Young, Leo, *see* Schiffman, Bernard M.; *T-MTT v12 n2 Mar 64* 155-163
Young, Leo, and B. M. Schiffman; Pulse power capacity of short-slot couplers (Corresp.); *T-MTT v13 n1 Jan 65* 133
Young, Leo; Microwave filters—1965; *T-MTT v13 n5 Sep 65* 489-508
Young, Leo, *see* Cristal, Edward G.; *T-MTT v13 n5 Sep 65* 544-558
Young, Leo, *see* Schiffman, Bernard M.; *T-MTT v13 n5 Sep 65* 575-580
Young, Leo, and E. G. Cristal; Low-pass and high-pass filters consisting of multilayer dielectric stacks; *T-MTT v14 n2 Feb 66* 75-80
Young, Leo, *see* Schiffman, Bernard M.; *T-MTT v14 n10 Oct 66* 474-482
Young, Leo, and D. B. Weller; A 500-to-1000 MHz magnetically tunable band-pass filter using two YIG-disk resonators; *T-MTT v15 n2 Feb 67* 72-86
Young, Leo, *see* Karp, Arthur; *T-MTT v15 n3 Mar 67* 193-195
Young, Leo, *see* Cristal, E. G.; *T-MTT v15 n3 Mar 67* 195
Young, Leo; The characteristic impedance of waveguide (Corresp.); *T-MTT v16 n11 Nov 68* 975-976
Young, Leo, *see* Robinson, Lloyd A.; *T-MTT v20 n12 Dec 72* 855-857 (2B09)
Younger, C., *see* Quine, J. P.; *T-MTT v16 n11 Nov 68* 952-955
Youssef, S. E., *see* Hussein, Ali M.; *T-MTT v23 n11 Nov 75* 923-926 (1F03)
Youssef, Saad E., *see* Hussein, Ali M.; *T-MTT v25 n2 Feb 77* 150-152 (1E14)
Yu, Jiunn Shang; A resonance method for measurement of large dielectric constant with small loss (Corresp.); *T-MTT v17 n9 Sep 69* 724-726
Yu, Se Puan, and John D. Young; Measurement of interaction impedance of microwave circuits for solid-state devices (Corresp.); *T-MTT v18 n11 Nov 70* 999-1001
Yuan, L. T., G. M. Yamaguchi, and J. E. Raue; Design, implementation, and performance analysis of a broad-band *V*-band network analyzer (Short p.); *T-MTT v24 n12 Dec 76* 981-987 (2A10)
Yuan, Shui, *see* Bura, P.; *T-MTT v16 n7 Jul 68* 424-428
Yuki, S., *see* Akaike, M.; *T-MTT v24 n3 Mar 76* 147-151 (1B07)
Yunik, M. M., *see* Hamid, M. A.; *T-MTT v15 n9 Sep 67* 528-529
Yura, Harold T., *see* Shapiro, Alan R.; *T-MTT v19 n2 Feb 71* 187-196 (2B10)

Z

Zanboorie, M. H.; A semi-automatic technique for tuning a reflectometer (Corresp.); *T-MTT v13 n5 Sep 65* 709-710
Zaret, Milton M., *see* Kaplan, Ira T.; *T-MTT v19 n2 Feb 71* 168-173 (1E08)
Zarfler, A., *see* Schwering, F.; *T-MTT v15 n3 Mar 67* 191-192
Zayats, V. A., *see* Vavilov, V. S.; *T-MTT v22 n12 Dec 74* 1086-1089 (2A11)
Zelby, L. W.; Comment on 'Cerenkov radiation anisotropic ferrites'; *T-MTT v12 n3 May 64* 383
Zieger, Dietmar, *see* Vaccaro, Frank E.; *T-MTT v19 n7 Jul 71* 609-616 (1E07)
Zimmer, H., *see* Schmitt, H. J.; *T-MTT v14 n4 Apr 66* 206-207
Zimmer, Robert P., H. Allen Ecker, and Vojin P. Popovic; Selective electromagnetic heating of tumors in animals in deep hypothermia; *T-MTT v19 n2 Feb 71* 238-245 (3B07)
Zimmerer, Robert W., Milo V. Anderson, G. L. Strine, and Yardley Beers; Millimeter wavelength resonant structures; *T-MTT v11 n2 Mar 63* 142-150
Zimmerer, Robert W.; Spherical mirror Fabry–Perot resonators; *T-MTT v11 n5 Sep 63* 371-379
Zimmerer, Robert W.; ADI Auxiliary Publications Program (Corresp.); *T-MTT v13 n6 Nov 65* 883-884
Zimmerer, Robert W.; Suggested name 'nanowave region' for the E-M spectrum between 10 micrometers to 10 millimeters wavelength (Corresp.); *T-MTT v14 n3 Mar 66* 157-158
Zimmerman, R. L., *see* Nudd, Graham R.; *T-MTT v22 n1 Jan 74* 25-32 (1B13)
Zimmermann, Peter, *see* Haas, Robert W.; *T-MTT v24 n11 Nov 76* 881-883 (3C01)
Zimmermann, Peter, *see* Keen, Nigel J.; *T-MTT v26 n10 Oct 78* 843-844 (2D07)
Zimmermann, U., *see* Adam, B.; *T-MTT v22 n12 Dec 74* 1118 (2D01)
Ziolkowski, Fred P., *see* Castro, Alfredo A.; *T-MTT v24 n11 Nov 76* 780-786 (2A13)
Zublin, Kurt E.; Strip type components for 2000 megacycle receiver head-end; *T-MTT v3 n2 Mar 55* 65-74
Zucker, Henry, and George I. Cohn; Propagation of TE modes in nonuniform waveguides; *T-MTT v10 n3 May 62* 202-208
Zuckerman, Douglas N., and Paul Diament; Rank reduction of ill-conditioned matrices in waveguide junction problems; *T-MTT v25 n7 Jul 77* 613-619 (1D07)
Zuckerman, Douglas N., and Paul Diament; Analysis of a waveguide hybrid junction by rank reduction; *T-MTT v25 n9 Sep 77* 768-773 (1D10)
Zuckerman, Douglas N., *see* Harkless, Earl T.; *T-MTT v27 n12 Dec 79* 975-982 (1D09)
Zwerdling, S., *see* Summers, C. J.; *T-MTT v22 n12 Dec 74* 1009-1013 (1C03)
Zwick, U., *see* Gast, J.; *T-MTT v22 n12 Dec 74* 1026-1027 (1D06)
Zysman, George I., and A. Kent Johnson; Coupled transmission line networks in an inhomogeneous dielectric medium; *T-MTT v17 n10 Oct 69* 753-759

SUBJECT INDEX

Absorbing media
iterative solutions of the scalar Helmholtz equation in lossy regions; *Molberg, James R.; T-MTT v17 n8 Aug 69* 460-464
Absorbing media; cf. Electromagnetic propagation, absorbing media
Accelerators; cf. Electron accelerators; Linear accelerators
Achieser–Zolotarev polynomials
even polynomials which complement Achieser–Zolotarev polynomials; *Riblet, Henry J.; T-MTT v19 n11 Nov 71* 891-892 (1F03)
Acoustic bulk-wave delay lines
pulse-compression lines; reflection-mode dispersive delay line with high performance in large time–bandwidth product systems; *Martin, Tom A.; T-MTT v21 n4 Apr 73* 186-194 (1D04)
Acoustic bulk-wave excitation
conversion from surface to bulk waves at discontinuities; *Tuan, Hang-Sheng; T-MTT v20 n7 Jul 72* 472-477 (2B01)
surface wave–bulk wave conversion at a discontinuity; application to tapping of Rayleigh waves in nonpiezoelectric solid; *Chang, Chi-Pin; T-MTT v21 n8 Aug 73* 558-560 (2C04)
Acoustic bulk-wave pulse compression
reflection-mode dispersive delay line with high performance in large time–bandwidth product systems; *Martin, Tom A.; T-MTT v21 n4 Apr 73* 186-194 (1D04)
Acoustic bulk waves
shallow-bulk wave generation, propagation, and properties; *Ballato, Arthur; T-MTT v27 n12 Dec 79* 1004-1012 (1F10)
Acoustic delay lines
broadband fixed-tuned; operation in *L*- and *S*-band regions; *Whicker, L. R.; T-MTT v15 n12 Dec 67* 755-757
C-band ultrasonic delay line using mode conversion in YAG; *Smith, A. B.; T-MTT v18 n10 Oct 70* 733-734
microwave; determination of properties with a modified nodal shift method; *Rupprecht, Georg; T-MTT v17 n11 Nov 69* 942-956
microwave; use of transistor circuits for active impedance matching; *Ho, R. Y. C.; T-MTT v17 n11 Nov 69* 1041-1042
piezoelectric, semiconductor; properties and capabilities; *Hickernell, Fred S.; T-MTT v17 n11 Nov 69* 957-963
Acoustic delay lines; cf. Acoustic bulk-wave delay lines; Acoustic surface-wave delay lines; Microwave acoustic delay lines; YIG delay lines
Acoustic diffraction; cf. Acoustic surface-wave diffraction
Acoustic filters
linear signal processing and ultrasonic transversal filters; *Squire, William D.; T-MTT v17 n11 Nov 69* 1020-1040
microwave acoustic devices for a dispersive filter for a pulse-compression radar; *Court, Ian N.; T-MTT v17 n11 Nov 69* 968-986
Acoustic filters; cf. Acoustic surface-wave filters; Crystal filters
Acoustic measurements; cf. Acoustic surface-wave measurements
Acoustic propagation; cf. Acoustic surface-wave propagation; Microwave acoustics
Acoustic reflection; cf. Acoustic surface-wave reflection
Acoustic signal processing; cf. Acoustic bulk-wave signal processing; Acoustic surface-wave signal processing
Acoustic surface-wave amplifiers
acoustoelectric delay line amplification; definition and analysis; *Lakin, Kenneth M.; T-MTT v17 n11 Nov 69* 912-920
Acoustic surface-wave convolution
chirp-*Z* transform implementation for spectral analysis of spread-spectrum signals; *Nudd, Graham R.; T-MTT v24 n1 Jan 76* 54-56 (1D14)
Acoustic surface-wave coupling
multistrip directional couplers; applications; *Marshall, F. Graham; T-MTT v21 n4 Apr 73* 216-225 (2B01)
multistrip directional couplers; theory and design; *Marshall, F. Graham ; T-MTT v21 n4 Apr 73* 206-215 (1E06)
Rayleigh waves coupling from one substrate to adjacent substrate when either is nonpiezoelectric; *Li, Robert C. M.; T-MTT v20 n7 Jul 72* 477-486 (2B06)
Acoustic surface-wave delay lines
acoustoelectric amplifiers; definition and analysis; *Lakin, Kenneth M.; T-MTT v17 n11 Nov 69* 912-920
analog, nondispersive with interdigital transducers; design; *Smith, W. Richard; T-MTT v17 n11 Nov 69* 856-873
design of optimum delay lines; *Slobodnik, Andrew J., Jr.; T-MTT v22 n4 Apr 74* 458-462 (2D06)
dispersive, utilizing gold film overlay on lithium niobate; *Smith, W. Richard; T-MTT v17 n11 Nov 69* 1043-1044
pseudonoise-sequence generation using surface-wave delay line in place of shift register; *Morgan, D. P.; T-MTT v21 n4 Apr 73* 306 (3D11)
pulse-compression lines; reflection grating device with time–bandwidth product of 1500; *Williamson, Richard C.; T-MTT v21 n4 Apr 73* 195-205 (1E01)
tapped, fabricated on crystalline quartz; use as analog matched filters; *Costanza, S. T.; T-MTT v17 n11 Nov 69* 1042-1043
Acoustic surface-wave devices
admittance formalism for derivation of performance characteristics; *Burgess, Alan S.; T-MTT v21 n10 Oct 73* 611-618 (1C01)
piezoelectric coupling in three-layer substates; *Venema, A.; T-MTT v23 n9 Sep 75* 765-767 (1D05)
Acoustic surface-wave diffraction
Fresnel integral evaluation; *Lewin, L.; T-MTT v27 n2 Feb 79* 208 (2B07)
numerical technique for simulating effect of diffraction on device performance; *Penunuri, David; T-MTT v26 n4 Apr 78* 288-294 (1E10)
Acoustic surface-wave filters
admittance formalism for derivation of performance characteristics; *Burgess, Alan S.; T-MTT v21 n10 Oct 73* 611-618 (1C01)
bandpass filters; surface-wave delay line using FM transducers as input and output; *Worley, J. C.; T-MTT v21 n4 Apr 73* 302-303 (3D07)

variations; *Vinding, Jorgen P.*; *T-MTT v4 n4 Oct 56* 244-245
Agriculture
microwave irradiation chamber for studies on agricultural products; *Olsen, R. G.*; *T-MTT v25 n5 May 77* 428-433 (1G04)
Aircraft
very sensitive airborne microwave radiometer using two reference temperatures; *Hach, Johann-Peter*; *T-MTT v16 n9 Sep 68* 629-636
diffraction simulation; numerical technique; *Penunuri, David*; *T-MTT v26 n4 Apr 78* 288-294 (1E10)
dispersive apodized interdigital arrays; phase corrections; *Gerard, Henry M.*; *T-MTT v20 n2 Feb 72* 188-192 (2E10)
interdigital filters having Chebyshev characteristic; tap weight determination; *Matthaei, George L.*; *T-MTT v24 n1 Jan 76* 1-10 (1A03)
linear FM dispersive filter with time–bandwidth product of 1000; *Gerard, Henry M.*; *T-MTT v21 n4 Apr 73* 176-186 (1C06)
programmable filters; theory, device performance, fabrication procedures; *Staples, Edward J.*; *T-MTT v21 n4 Apr 73* 279-287 (3B08)
programmable matched filters for phase-coded spread-spectrum waveforms; *Hagon, P. J.*; *T-MTT v21 n4 Apr 73* 303-306 (3D11)
tapping of Rayleigh waves in nonpiezoelectric solid by surface wave–bulk wave conversion at a discontinuity; *Chang, Chi-Pin*; *T-MTT v21 n8 Aug 73* 558-560 (2C04)
transversal filters; design of tapping structure that synthesizes in sampled form the impulse response of any specified transfer function; *Atzeni, Carlo*; *T-MTT v21 n8 Aug 73* 505-519 (1B03)
Acoustic surface-wave measurements
metal film height-above surface of piezoelectric substrate determined from attenuation and phase delay measurements; *Crowley, J. D.*; *T-MTT v26 n2 Feb 78* 134-135 (1G04)
Acoustic surface-wave memories
digital recirculating memory; bit rate of 220 MHz and storage capacity of 1280 bits per recirculation loop; *van de Vaart, H.*; *T-MTT v21 n4 Apr 73* 236-243 (2C09)
Acoustic surface-wave oscillators
distributed feedback oscillators; *Elachi, Charles*; *T-MTT v22 n10 Oct 74* 907-908 (1E05)
frequency stability, frequency setting accuracy, and frequency modulation deviation and maximum rate; *Salmon, S. K.*; *T-MTT v27 n12 Dec 79* 1012-1018 (1G04)
spectral analysis; chirp-*Z* transform implemented using acoustic surface-wave devices; *Nudd, Graham R.*; *T-MTT v24 n1 Jan 76* 54-56 (1D14)
Acoustic surface-wave propagation
generation and propagation at microwave frequencies; review; *Carr, Paul H.*; *T-MTT v17 n11 Nov 69* 844-855
tantalum pentoxide thin films on *YX* quartz; *Weller, J. F.*; *T-MTT v22 n11 Nov 74* 973-975 (1E07)
Acoustic surface-wave propagation, nonhomogeneous media
composite layered structure of piezoelectric medium and magnetoelastic medium separated by conducting plate; *Bhattacharyya, Tushar*; *T-MTT v24 n4 Apr 76* 226-230 (1E08)
interdigital structure in multilayer media; static capacitance calculation; *Venema, Adrian*; *T-MTT v26 n4 Apr 78* 294-297 (1F02)
Acoustic surface-wave pulse compression
linear FM dispersive filter with time–bandwidth product of 1000; *Gerard, Henry M.*; *T-MTT v21 n4 Apr 73* 176-186 (1C06)
reflection grating device with time–bandwidth product of 1500; *Williamson, Richard C.*; *T-MTT v21 n4 Apr 73* 195-205 (1E01)
Acoustic surface-wave reflection
Gaussian beams, multiple reflection in circular cross section; *Shin, Sang-Yung*; *T-MTT v26 n11 Nov 78* 845-851 (1A03)
pulse-compression device using reflection grating; time–bandwidth product of 1500; *Williamson, Richard C.*; *T-MTT v21 n4 Apr 73* 195-205 (1E01)
reflector arrays; time-domain analysis; *Fildes, Roger D.*; *T-MTT v27 n2 Feb 79* 194-198 (2A07)
Acoustic surface-wave scattering
piezoelectric Rayleigh wave excitation by bulk wave scattering; *Bertoni, Henry L.*; *T-MTT v17 n11 Nov 69* 873-882
Acoustic surface-wave signal processing
pseudonoise-sequence generation using surface-wave delay line in place of shift register; *Morgan, D. P.*; *T-MTT v21 n4 Apr 73* 306 (3D11)
special issue; *T-MTT v21 n4 Apr 73* 161-306
special issue foreword; *Reeder, Thomas M.*; *T-MTT v21 n4 Apr 73* 161 (1B03)
Acoustic surface-wave signal processing; cf. Acoustic surface-wave filters; Acoustic surface-wave pulse compression
Acoustic surface-wave transducers
excitation function of unapodized interdigital transducer determined by measuring discrete impulse response; *Panasik, Carl M.*; *T-MTT v26 n6 Jun 78* 447-450 (1E13)
interdigital, electrically loaded; calculation of acoustic scattering parameters; *Gerard, H. M.*; *T-MTT v17 n11 Nov 69* 1045-1046
interdigital electrode form; analysis by use of an equivalent circuit model; *Smith, W. Richard*; *T-MTT v17 n11 Nov 69* 856-864
interdigital electrode geometry; sets of electrodes connected in series through dog-leg electrode; *Lakin, Kenneth M.*; *T-MTT v22 n8 Aug 74* 763-768 (1A09)
interdigital structure in multilayer media; static capacitance calculation; *Venema, Adrian*; *T-MTT v26 n4 Apr 78* 294-297 (1F02)
interdigital transducer circuiS models; crossed-field and in-line three-port models; *Smith, W. Richard*; *T-MTT v22 n11 Nov 74* 960-964 (1D08)
interdigital transducers; electrode resistance effects; *Lakin, Kenneth M.*; *T-MTT v22 n4 Apr 74* 418-424 (2A08)
interdigital transducers; in-line and crossed-field three-port circuit models; *Smith, W. R.*; *T-MTT v19 n4 Apr 71* 416-417 (2C12)
interdigital transducers with arbitrary metallization ratios and polarity sequences; circuit model for fundamental- and harmonic-frequency operation; *Smith, W. Richard*; *T-MTT v23 n11 Nov 75* 853-864 (1A03)
reflection and amplification of acoustic surface waves by interdigital transducers with active circuit loading; *Bahr, Alfred J.*; *T-MTT v18 n9 Sep 70* 642-647
surface charge, potential, and electric field in finite transducer over low coupling substrate; moment method solution; *Ristic, Velimir M.*; *T-MTT v27 n11 Nov 79* 897-901 (1B13)
unapodized transducers with spectral weighting; number of effective transducer elements varied as function of frequency to obtain required conversion loss; *Nudd, Graham R.*; *T-MTT v22 n1 Jan 74* 25-32 (1B13)
Acoustic surface waves
component realizations which perform the functions of transduction, amplification and coupling; *Stern, Ernest*; *T-MTT v17 n11 Nov 69* 835-844
guided by thin films consisting of gold films deposited on fused quartz; *Adkins, Larry R.*; *T-MTT v17 n11 Nov 69* 904-911
piezoelectric Rayleigh wave excitation by bulk wave scattering; *Bertoni, Henry L.*; *T-MTT v17 n11 Nov 69* 873-882
reflection and amplification by interdigital transducers with active circuit loading; *Bahr, Alfred J.*; *T-MTT v18 n9 Sep 70* 642-647
variational expressions derivation for problems involving coupling between electric and acoustic fields; systematic derivation procedure; *Morishita, Katsumi*; *T-MTT v26 n9 Sep 78* 684-689 (1E02)
Acoustic surface waves; cf. Magnetoelastic surface waves; Piezoelectric surface
Acoustic surface-wave waveguides
asymptotic solution to eigenvalue equation; *Snyder, Allan W.*; *T-MTT v18 n9 Sep 70* 650-651
laser-beam focusing; acoustic gas lenses for light; *Kerdiles, Jacques*; *T-MTT v15 n5 May 67* 321-322
microsound surface waveguides; theoretical and experimental progress; *Ash, Eric A.*; *T-MTT v17 n11 Nov 69* 882-892
nonhomogeneous guiding structures; finite element analysis; *Stone, Geoffrey O.*; *T-MTT v21 n8 Aug 73* 538-542 (1D12)
overview; comparison with optical guides; *Oliner, Arthur A.*; *T-MTT v24 n12 Dec 76* 914-920 (1B02)
tapping of Love waves in surface waveguide by surface-to-bulk wave transduction; *Tuan, Hang-Sheng*; *T-MTT v20 n7 Jul 72* 472-477 (2B01)
waves
Acoustic transducers; cf. Acoustic surface-wave transducers; Interdigital transducers; Piezoelectric transducers
Acoustic waveguides
guided microsonic waves; theoretical problems; *Waldron, R. A.*; *T-MTT v17 n11 Nov 69* 893-904
microwave network methods for guided elastic waves; *Oliner, Arthur A.*; *T-MTT v17 n11 Nov 69* 812-826
plane light wave incident obliquely upon isotropic dielectric layer traversed longitudinally by acoustic microwaves; guide-wave theory; *Chu, Ruey-Shi*; *T-MTT v18 n8 Aug 70* 486-504
Acoustic waveguides; cf. Acoustic surface-wave waveguides
Acoustic waves
excitation of elastic waves in general anisotropic crystal; *Ingebrigtsen, Kjell A.*; *T-MTT v17 n11 Nov 69* 827-835
guided microsonic waves; theoretical problems; *Waldron, R. A.*; *T-MTT v17 n11 Nov 69* 893-904
guided; use of microwave network methods; *Oliner, Arthur A.*; *T-MTT v17 n11 Nov 69* 812-826
theory of acoustic fields and waves in solids; application of microwave concepts; *Auld, Bert A.*; *T-MTT v17 n11 Nov 69* 800-811
Acoustic waves; cf. Acoustic surface waves
Acoustic ...; cf. Microwave acoustic ...
Acoustoelectricity
variational expressions derivation for problems involving coupling between electric and acoustic fields; systematic derivation procedure; *Morishita, Katsumi*; *T-MTT v26 n9 Sep 78* 684-689 (1E02)
Acoustooptic diffraction
guided-wave theory of light diffraction by acoustic microwaves; *Chu, Ruey-Shi*; *T-MTT v17 n11 Nov 69* 1002-1020
Active arrays
microwave radiometry; active elements at subarray level for increasing resolution; *Levis, Curt A.*; *T-MTT v25 n4 Apr 77* 248-253 (1A10)
satellite multibeam antennas with active beam-forming networks; *Matthews, E. W.*; *T-MTT v27 n12 Dec 79* 998-1004 (1F04)
Active distributed filters
transversal filter using MESFETs as coupling elements; *Jutzi, Wilhelm*; *T-MTT v19 n9 Sep 71* 760-767 (1C10)
Active filters
microwave all-pass network using FETs; *Sussman-Fort, S. E.*; *T-MTT v27 n12 Dec 79* 1023-1025 (2A02)
microwave transistor filters; analysis and design; *Snyder, Richard V., Jr.*; *T-MTT v18 n1 Jan 70* 2-9
stable, using transistors as high-*Q* inductors; realization at UHF and microwave frequencies; *Adams, David K.*; *T-MTT v17 n9 Sep 69* 662-670
Active filters; cf. Inductance simulation
Active networks
matrix representations of noise figures and noise figure charts in terms of power wave variables; *Hirano, Kotaro*; *T-MTT v16 n9 Sep 68* 692-699
reflection coefficient chart; extension to include active networks; *Kaplan, L. J.*; *T-MTT v7 n2 Apr 59* 298-299
representation of impedances with negative real parts in projective chart; *Stock, D. J. R.*; *T-MTT v7 n4 Oct 59* 475
Active networks; cf. Distributed-active networks
Adapters
microwave measurements; adapter evaluation using automated network analyzer; *Engen, Glenn F.*; *T-MTT v22 n12 Dec 74* 1255-1260 (4D12)
Adaptive equalizers; cf. Transversal filters
Adhesives; cf. Bonding
Adjoint networks
group delay sensitivities calculation for linear time-invariant networks; *Bandler, John W.*; *T-MTT v24 n4 Apr 76* 188-194 (1B12)
group delay sensitivities calculation for linear time-invariant networks. *Bandler, John W., Correction*; *T-MTT v25 n5 May 77* 445 (2A09)
microwave network optimization; computer program; *Herrick, D. L.*; *T-MTT v23 n10 Oct 75* 849-850 (1F01)
Admittance measurement
IMPATT diode large-signal electronic admittance as function of frequency and

RF voltage level; network analyzer techniques and computer-aided data reduction; *Syrett, Barry A.*; *T-MTT v27 n10 Oct 79* 830-834 (1A08)

AFC
molecular resonance AFC system for millimeter oscillators; *Cram, Milton E.*; *T-MTT v16 n8 Aug 68* 548-553

AGC
microwave systems; keeping constant power level in spite of input power

Aircraft antennas
switching network for dual-mode antenna; 2–3 kW switching; *Albanese, Victor J.*; *T-MTT v26 n5 May 78* 348-354 (1C02)

Aircraft landing guidance
microwave landing system ground antennas; *Cox, Richard M.*; *T-MTT v24 n12 Dec 76* 964-971 (1E10)

Aircraft radar
commercial airlines; use of double-ridge waveguide designed to propagate *C*- and *X*-band; *Anderson, Tore N.*; *T-MTT v3 n4 Jul 55* 2-9
commercial airlines; use of double-ridge waveguide designed to propagate *C*- and *X*-band. *Anderson, Tore N., Correction*; *T-MTT v4 n1 Jan 56* 54
ground echoes; microwave acoustic simulation; *Hance, Harold V.*; *T-MTT v17 n11 Nov 69* 963-967
multipactor receiver protectors for airborne applications; 50-kW peak power and 12.5 percent bandwidth in *X*-band; *Carlisle, Thomas P.*; *T-MTT v26 n5 May 78* 345-347 (1B13)
radar target amplitude, angle and Doppler scintillation from analysis of echo signal propagating in space; *Dunn, John H.*; *T-MTT v16 n9 Sep 68* 715-728

Airy function; cf. Functional analysis

Alfven waves
transmission in bismuth at 311 μm and 337 μm; *Verdun, H. R.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

Alkali halides
submillimeter-wave spectral thermal emission of small crystals and thin films; *Kälin, R.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

All-pass networks
cascaded commensurate transmission-line C-section all-pass networks; analysis and exact synthesis; *Cristal, Edward G.*; *T-MTT v14 n6 Jun 66* 285-291
cascaded commensurate transmission-line C-section all-pass networks; analysis and exact synthesis. *Cristal Edward G., Correction*; *T-MTT v14 n10 Oct 66* 498-499
coupled-line directional couplers and all-pass networks; synthesis; *Steenaart, Willem*; *T-MTT v16 n8 Aug 68* 554-555
lossy, incorporating coupled transmission line; amplitude response; *Kolker, Richard A.*; *T-MTT v15 n8 Aug 67* 438-443
microwave active filter using FETs; *Sussman-Fort, S. E.*; *T-MTT v27 n12 Dec 79* 1023-1025 (2A02)
microwave phase equalizer using directly connected TEM mode transmission lines; *Ross, Gerald F.*; *T-MTT v15 n11 Nov 67* 647-650
microwave, supporting a TEM mode of propagation; realization of arbitrary delay characteristic by transformerless, coupled-line network within arbitrary additive constant; *Scanlan, Sean O.*; *T-MTT v16 n2 Feb 68* 62-72
optical all-pass network; *Jacobson, A. D.*; *T-MTT v13 n4 Jul 65* 475-477
synthesis of coupled transmission line all-pass networks in cascades of 1 to *n*; UHF frequencies; *Steenaart, Willem J. D.*; *T-MTT v11 n1 Jan 63* 23-29
transmission line equalizers operating in TEM, TE, or TM modes; general theory and design; *Cristal, Edward G.*; *T-MTT v17 n1 Jan 69* 28-38

Altimetry; cf. Satellite altimetry

Alumina substrates
microstrip lines; effect of anisotropy in alumina substrates on dielectric constant of line; *van Heuven, Johan H. C.*; *T-MTT v20 n11 Nov 72* 775-777 (2B06)

Aluminum alloys/compounds, devices
microstrip on sapphire substrates; dispersion measurements on 10–100 lines covering 2–18 GHz range; *Edwards, Terence C.*; *T-MTT v24 n8 Aug 76* 506-513 (1B04)
microstrip on sapphire substrates; quasi-static characteristics; *Owens, Roger P.*; *T-MTT v24 n8 Aug 76* 499-505 (1A11)
ruby masers; reflected-wave maser with *K*-band tuning range and large instantaneous bandwidth; *Moore, Craig R.*; *T-MTT v27 n3 Mar 79* 249-256 (1C07)

Aluminum alloys/compounds; cf. Gallium alloys/compounds

AM
semiconductor device used as a modulator at 9600 MHz; *Jacobs, Harold*; *T-MTT v8 n5 Sep 60* 553-559
waveguide cavity CW Gunn oscillator; AM and FM; *Tsai, Wei Ching*; *T-MTT v18 n11 Nov 70* 877-884

AM modulation/demodulation
microwave SSB modulator pumped at submultiple of carrier frequency; Schottky diode modulator; *Chramiec, Jerzy*; *T-MTT v26 n9 Sep 78* 635-638 (1A09)

AM amplifiers
IMPATT diode amplifiers; nonlinear characteristics, large-signal effects, and transient response; *Kuno, H. J.*; *T-MTT v21 n11 Nov 73* 694-702 (1E04)

AAM noise
IMPATT diode amplifiers and oscillators; *Schiek, Burkhard*; *T-MTT v20 n7 Sep 72* 631-632 (2C06)
measurement in pulsed oscillators and amplifiers; *Levine, Peter A.*; *T-MTT v18 n10 Oct 70* 712-715
microwave measurements; accuracy of measurements using carrier-suppression filter and phase detector; *Fikart, Josef L.*; *T-MTT v20 n10 Oct 72* 702-703 (2C02)
microwave system for measurements of AM and FM noise spectra; *Ondria, John G.*; *T-MTT v16 n9 Sep 68* 767-781

AM noise; cf. Oscillator noise

Amorphous semiconductors
microwave dielectric properties of As_2Te_3–As_2Se_3; *Wilson, L. K.*; *T-MTT v22 n4 Apr 74* 470-471 (2E04)

Amplifier distortion
GaAs FET amplifiers; third-order intermodulation distortion and gain compression; *Tucker, Rodney S.*; *T-MTT v27 n5 May 79* 400-408 (1C10)
millimeter-wave IMPATT amplifiers; nonlinear characteristics and intermodulation distortion; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 744-751 (1E08)

Amplifier noise
AM; measurement in pulsed oscillators and amplifiers; *Levine, Peter A.*; *T-MTT v18 n10 Oct 70* 712-715
GaAs FET amplifier, cryogenically cooled; 1.1-dB noise figure at 5 GHz; *Pierro, John*; *T-MTT v24 n12 Dec 76* 972-975 (2A01)
measurement of near-carrier noise in microwave amplifiers; *Sann, Klaus H.*; *T-MTT v16 n9 Sep 68* 761-766
microwave FET amplifiers for satellite communication repeaters; low-noise and linear amplifiers; *Cowan, D. A.*; *T-MTT v25 n12 Dec 77* 995-1000 (1C05)
microwave GaAs MESFET broadband low-noise amplifiers; relationships between device parameters and two-port noise parameters; *Fukui, Hatsuaki*; *T-MTT v27 n7 Jul 79* 643-650 (1B03)
microwave linear devices; wave approach to characterizing noise properties; *Meys, R. P.*; *T-MTT v26 n1 Jan 78* 34-37 (1C08)
microwave transistor amplifiers; low-noise design; *Tucker, R. S.*; *T-MTT v23 n8 Aug 75* 697-700 (2A01)
parametric amplifier noise analysis; *Vice, David G.*; *T-MTT v13 n2 Mar 65* 162-167
parametric amplifier; *X*-band low-noise lightweight paramp for airborne environment; *Niehenke, E. C.*; *T-MTT v25 n12 Dec 77* 992-994 (1C02)

Amplifiers; cf. Dielectric amplifiers; Distributed amplifiers; FM amplifiers; IF amplifiers; Infrared amplifiers; Microwave amplifiers; Millimeter-wave amplifiers; Optical amplifiers; Parametric amplifiers; Phase-locked amplifiers; PM amplifiers; Power amplifiers; Pulse amplifiers; Submillimeter-wave amplifiers; UHF amplifiers

AM–PM conversion
GaAs FET amplifiers; third-order intermodulation distortion and gain compression; *Tucker, Rodney S.*; *T-MTT v27 n5 May 79* 400-408 (1C10)
varactor frequency doublers; amplitude and phase fluctuations transfer functions; *Bava, Elio*; *T-MTT v27 n8 Aug 79* 753-757 (1C11)
varactor frequency multipliers; nonlinear behavior and hysteresis phenomena; *Bava, Elio*; *T-MTT v27 n2 Feb 79* 141-147 (1D09)

Analog–digital conversion
1200-Mbit/s microwave-carrier Gray-code analog-to-digital converter; *Fisher, Reed E.*; *T-MTT v16 n8 Aug 68* 541-547

Analog integrated circuits; cf. Microwave integrated circuits

Analog memories
microwave frequency memory device using transferred-electron device oscillator; *Curtice, W. R.*; *T-MTT v23 n12 Dec 75* 1074-1076 (2C11)

Anisotropic media
circular waveguides lined with anisotropic dielectric material; propagation characteristics; *Chang, Christopher T. M.*; *T-MTT v20 n8 Aug 72* 517-523 (1D03)
electrostatic field problems involving nonhomogeneous anisotropic media; Green's function technique; *Kobayashi, Masanori*; *T-MTT v26 n7 Jul 78* 510-512 (1D14)
Fabry–Perot resonator filled with anisotropic medium; optimum mirror shape for resonance of extraordinary wave; *Tanaka, Toshiki*; *T-MTT v20 n8 Aug 72* 546-547 (2B01)
fields in moving anisotropic media; radial transmission line representations; *Fukai, Ichiro*; *T-MTT v19 n11 Nov 71* 882-883 (1E06)
metric factor and normalized metric factor; minimum principle of effective path length; electrostatic problem with two anisotropic media; transforming anisotropic problem into isotropic problem; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 769-775 (1A03)
slab waveguides; anisotropic dielectric slab coated on, or embedded in, isotropic substrate materials; *Satomura, Yutaka*; *T-MTT v22 n2 Feb 74* 86-92 (1A08)
thin dielectric sheets separated by set of thin sheets with a different dielectric constant; anisotropic properties; *Collin, R. E.*; *T-MTT v6 n2 Apr 58* 206-209
thin dielectric sheets separated by set of thin sheets with a different dielectric constant; anisotropic properties. *Collin, R. E., Correction*; *T-MTT v6 n4 Oct 58* 414

Anisotropic media; cf. Electromagnetic propagation, anisotropic media

Antenna accessories
diplexers; quasi-optical waveguide-polarization diplexers; *Mendonça, J. T.*; *T-MTT v21 n9 Sep 73* 586-587 (1C04)
switching network for dual-mode antenna; 2–3 kW switching; *Albanese, Victor J.*; *T-MTT v26 n5 May 78* 348-354 (1C02)

Antenna accessories; cf. Diplexers

Antenna array mutual coupling
waveguide arrays; two parallel-plate guides having same axis of symmetry. *Elmoazzen, Y. E., Correction*; *T-MTT v22 n8 Aug 74* 816 (1E06)

Antenna arrays
phase equalization problem is in a phased-array transmitter; *Rambo, S. Ivan*; *T-MTT v13 n2 Mar 65* 167-171
spin wave excitation by wire arrays; comments; *LaRosa, R.*; *T-MTT v14 n10 Oct 66* 495-496
spin wave excitation by wire arrays. *La Rosa, R., Correction*; *T-MTT v15 n2 Feb 67* 136

Antenna arrays; cf. Active arrays; Dipole arrays; Frequency-scanned arrays; Periodic arrays; Phased arrays; Radio telescopes; Retrodirective arrays; Slot arrays; Waveguide arrays; Waveguide phased arrays; Yagi–Uda arrays

Antenna feed networks
waveguide phased arrays; optimum dual-series feed networks; *Jones, William R.*; *T-MTT v19 n5 May 71* 451-458 (1D07)

Antenna feeds
high-power rotary waveguide joint; *Smith, P. H.*; *T-MTT v12 n1 Jan 64* 55-58
multicouplers; tunable passive units employing minimum-loss filters; *Cline, J. F.*; *T-MTT v7 n1 Jan 59* 121-127. *Correction, T-MTT v7 n3 Jul 59* 121-127.

Antenna feeds; cf. Horn antennas
Antenna measurements
antenna-efficiency measurements; integrated isotropic level compared with that of lossless reference antenna; *Eden, William D.*; *T-MTT v20 n1 Jan 72* 82-83 (2D05)
antenna temperature measurement at microwave frequencies; *Penzias, Arno A.*; *T-MTT v16 n9 Sep 68* 608-611
circular apertures; discrete-point representation of radiated power; *Kak, Avinash C.*; *T-MTT v20 n1 Jan 72* 74-81 (2C09)
directive gain, computation from measurements; program description; *Kramer, C.*; *T-MTT v20 n1 Jan 72* 83 (2D06)
electric-field distributions; use of modulated scattering technique; *Richmond, J. H.*; *T-MTT v3 n4 Jul 55* 13-15
feed systems; directive gain and relative phase measurements; *Dijk, Jakob*; *T-MTT v20 n1 Jan 72* 48-51 (1F02)
mutual coupling of identical coupled antennas; use of microwave phase bridge technique; *Mailloux, R. J.*; *T-MTT v16 n2 Feb 68* 129-130
time-domain techniques for broadband microwave measurements; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
time-domain techniques for broadband microwave measurements. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
Antenna measurements; cf. Computer-aided antenna measurements
Antenna terrain factors
electric-field probe near interface between different media; effect of interface on antenna response; application to probing fields in biological bodies; *Smith, Glenn S.*; *T-MTT v27 n3 Mar 79* 270-278 (1D14)
far-field patterns; simplified calculation, with application to radome problems; *Richmond, J. H.*; *T-MTT v3 n4 Jul 55* 9-12
Antenna thermal factors
factors affecting earth to satellite millimeter wavelength communications; propagation path loss, refractions, antenna temperature; *Straiton, Archie W.*; *T-MTT v11 n5 Sep 63* 296-301
Antennas
annotated bibliography on advances in microwave theory and techniques in Japan in 1959; *Morita, Kiyoshi*; *T-MTT v8 n4 Jul 60* 395-397
cooling to reduce noise of microwave crystal mixers; *Messenger, George C.*; *T-MTT v5 n1 Jan 57* 62-63
Antennas; cf. Aircraft antennas; Aperture antennas; Dielectric antennas; Dielectric-covered antennas; Dipole antennas; Feed antennas; Helical antennas; Horn antennas; Infrared antennas; Leaky-wave antennas; Lens antennas; Line-source antennas; Microstrip antennas; Microwave antennas; Millimeter-wave antennas; Monopulse radar antennas; Multibeam antennas; Optical antennas; Probe antennas; Radar antennas; Radio navigation antennas; Reflector antennas; Satellite antennas; Scanning antennas; Slot antennas; Spiral antennas; Stripline antennas; Submillimeter-wave antennas; Underwater antennas; Waveguide antennas; Wire antennas
Antiferromagnetic resonance
submillimeter-wave spectroscopy of weak antiferromagnets in magnetic fields up to 300 kOe; *Rudashevsky, E. G.*; *T-MTT v22 n12 Dec 74* 1064-1069 (1G02)
Aperture antennas
radiated power measurement; discrete-point representation for real power radiated by circular aperture; *Kak, Avinash C.*; *T-MTT v20 n1 Jan 72* 74-81 (2C09)
Aperture antennas; cf. Waveguide antennas
Apertures
conducting screen perforated periodically with apertures; transmission and reflection; *Chen, Chao Chun*; *T-MTT v18 n9 Sep 70* 627-632
coupling through small apertures in walls of arbitrary thickness; circular and rectangular apertures; *McDonald, Noel A.*; *T-MTT v20 n10 Oct 72* 689-695 (2B01)
electromagnetic transmission through filled slit in conducting plane of finite thickness; TE case; *Auckland, David T.*; *T-MTT v26 n7 Jul 78* 499-505 (1D03)
equivalent circuits for symmetrical longitudinal apertures and obstacles; *Oliner, Arthur A.*; *T-MTT v8 n1 Jan 60* 72-80
ferrite-loaded waveguide apertures in transverse magnetic fields; beam displacements; *Medved, David B.*; *T-MTT v6 n1 Jan 58* 101-104
microstrip–cavity resonator coupling through aperture in substrate ground plane; *Kumar, Mahesh*; *T-MTT v26 n9 Sep 78* 690-691 (1E08)
optical diffraction; beam mode expansion applied to analysis of noise reduction structure; *Tanaka, Kazumasa*; *T-MTT v23 n7 Jul 75* 595-598 (1E01)
theory of artificial dielectrics and aperture coupling using two-dimensional lattice; *Collin, Robert E.*; *T-MTT v9 n2 Mar 61* 110-115
waveguide couplers; slot coupling between uniform rectangular guides; *Sangster, A. J.*; *T-MTT v27 n7 Jul 79* 705-707 (1F09)
waveguide couplers, transverse slot in common broadwall between two guides; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v26 n3 Mar 78* 209-212 (1F05)
waveguide couplers, transverse slot in common broadwall between two guides. *Pandharipande, V. M., Correction*; *T-MTT v27 n2 Feb 79* 208 (2B07)
waveguide couplers, transverse slot in common broadwall between two guides. *Pandharipande, V. M., Correction*; *T-MTT v27 n7 Jul 79* 707-708 (1F11)
waveguide slot coupler, long axial slot in narrow wall between two rectangular guides; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n9 Sep 79* 800-804 (1C06)
waveguide tee junction coupled through narrow transverse slot of variable length; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n1 Jan 79* 65-69 (1E11)
wire inside rectangular cavity excited by external sources coupled to interior by aperture in cavity wall; current excited on wire; *Seidel, David B.*; *T-MTT v26 n11 Nov 78* 908-914 (1E10)
APK
abbr. of Amplitude-and-phase shift keying
APK modulation/demodulation
1.6-Gb/s 16-level superposed modem using baseband signal processing coherent demodulator; *Shimamura, Tadao*; *T-MTT v26 n12 Dec 78* 945-951 (1B09)
Approximation methods
formula for approximate values of the first zeros of a combination Bessel function equation; *Gunston, M. A. R.*; *T-MTT v11 n1 Jan 63* 93-94
Approximation methods; cf. Chebyshev approximation; Least-*p*th approximation; Minimax approximation; Polynomial approximation
Approximation techniques
gamma function; accurate formula; *Lewin, L.*; *T-MTT v22 n10 Oct 74* 910 (1E08)
least *p*th approximation; computer program; *Popović, J. R.*; *T-MTT v22 n1 Jan 74* 76-77 (1F08)
least *p*th approximation including interpolation; computer program; *Popović, J. R.*; *T-MTT v22 n1 Jan 74* 76 (1F08)
Arc discharges
ferrite isolators, thermal stress-induced breakdown; adhesive layer rupture initiates breakdown; *Buck, Daniel C.*; *T-MTT v26 n5 May 78* 357-360 (1C11)
waveguide at 28 GHz; *Nakamura, Makoto*; *T-MTT v26 n5 May 78* 354-356 (1C08)
Arms; cf. Human limbs
Arrays; cf. Antenna arrays; Periodic arrays
Artificial dielectrics
electrically controllable liquid artificial dielectrics for millimeter-wave applications; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)
Astronomy; cf. Infrared astronomy; Millimeter-wave astronomy; Radar astronomy; Radio astronomy; Submillimeter-wave astronomy
Atmosphere
submillimeter-wave spectroscopy using airborne Michelson interferometer in lower stratosphere; 200–700 μm; *Mankin, W. G.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
Atmosphere; cf. Meteorology
Atmospheric noise; cf. Electromagnetic noise/interference, atmospheric
Atmospheric propagation
submillimeter-wave attenuation measurement at 1.3 mm and 0.87 mm using harmonic mixing radiometer; *Goldsmith, Paul F.*; *T-MTT v22 n12 Dec 74* 1115-1116 (2C12)
Atmospheric radio propagation; cf. Radio propagation meteorological factors
Attenuation measurement
attenuation constant for lunar line and for the *T*-septate lunar line; *Hu, Ann Yung*; *T-MTT v11 n4 Jul 63* 243-250
calibration of fixed attenuators; effect of realizability conditions on estimated limits of mismatch error; *Beatty, R. W.*; *T-MTT v16 n11 Nov 68* 976
characteristics of a rectangular waveguide with an arbitrarily loaded slab are analyzed; *Mushiake, Yasuto*; *T-MTT v13 n4 Jul 65* 451-457
dielectric image lines; electric probe measurements in 26–90 GHz range; *Solbach, Klaus*; *T-MTT v26 n10 Oct 78* 755-758 (1D11)
formula for attenuation in coaxial cables; *Spaderna, Conan H.*; *T-MTT v12 n3 May 64* 363-364
human torso, 1.8–2.7 GHz band; *Yamaura, Itsuo*; *T-MTT v25 n8 Aug 77* 707-710 (1F09)
laminate materials at *L*-band; *Cooper, H. Warren*; *T-MTT v3 n2 Mar 55* 87-92
measurement of *Q* for low loss transmission lines; *Somlo, P. I.*; *T-MTT v11 n6 Nov 63* 472-478
microwave loss and mode-conversion measurement; frequency-domain shuttle-pulse method; *Bernardi, Paolo*; *T-MTT v26 n3 Mar 78* 203-209 (1E13)
microwave SSB modulator for bridge measurements; 10 GHz signal shifted by 1 kHz, carrier suppressed by 65 dB and unwanted sideband by over 57 dB. *Brooker, P. G.*; *T-MTT v19 n10 Oct 71* 829-834 (1E03)
microwave SSB modulator for bridge measurements; *Brooker, P. G., Correction*; *T-MTT v20 n5 May 72* 345 (1F04)
microwaves; use of audio modulation substitution system to achieve high accuracy; *Korewick, John*; *T-MTT v1 n1 Mar 53* 14-21
millimeter-wave dielectric waveguides of circular cross section; attenuation characteristics in 72-GHz band; *Jablonski, Daniel*; *T-MTT v26 n9 Sep 78* 667-671 (1C13)
millimeter-wave oversized circular waveguide; surfacc-resistance measurement; *Hatano, Satomi*; *T-MTT v24 n11 Nov 76* 886-887 (3C06)
millimeter-wave propagation at 230 GHz through total atmosphere; *Wrixon, Gerard T.*; *T-MTT v26 n6 Jun 78* 434-439 (1D14)
millimeter-wave waveguide components; excess conduction losses; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)
millimeter-wave waveguides; commercially available guides, 25–200 GHz; *Tischer, Frederick J.*; *T-MTT v27 n1 Jan 79* 31-37 (1C05)
off-null vs. power ratio method; analysis; *Larson, Wilbur*; *T-MTT v18 n2 Feb 70* 112-113
phase shift and attenuation measurement through active microwave networks; *Alday, John R.*; *T-MTT v10 n2 Mar 62* 143
radiometric measurement of attenuation and emission by the Earth's atmosphere at wavelengths from 4 cm tS 8 mm; *Haroules, George G.*; *T-MTT v16 n9 Sep 68* 611-620
submillimeter-wave guides, polyethylene slab; attenuation constants measurement at 337 μm; *Tsuji, Mikio*; *T-MTT v27 n11 Nov 79* 873-878 (1A03)
two-channel off-null technique for measuring small changes of attenuation that are not accompanied by significant changes in phase shift; *Nemoto, T.*; *T-MTT v17 n7 Jul 69* 396-397
waveguide attenuation; determination from electrical measurements on short samples; *Pomeroy, A. F.*; *T-MTT v4 n2 Apr 56* 122-129
Attenuation standards
microwave, 0.01-dB and 0.001-dB step attenuators having high long-term stability; side-arm-switched directional coupler; *Somlo, Peter I.*; *T-MTT v22 n9 Sep 74* 830-835 (1A12)
Attenuators
dissipationless attenuators in mismatched systems; physical error limits due to mismatch; *Youla, Dante C.*; *T-MTT v12 n3 May 64* 289-299
general power loss method for attenuation of cavities and waveguides; *Gustincic, Jacob J.*; *T-MTT v11 n1 Jan 63* 83-87
impedance matching methods for attenuators and microstrips; *Thompson, G. H. B.*; *T-MTT v9 n3 May 61*
instrinsic attenuation (insertion loss) calculated from scattering coefficients; *Beatty, Robert W.*; *T-MTT v11 n3 May 63* 179-182
intrinsic attenuation (insertion loss) calculated from scattering coefficients. *Beatty, R. W., Correction*; *T-MTT v13 n2 Mar 65* 258
intrinsic attenuation (insertion loss) calculated from scattering coefficients; *Baudrand, H.*; *T-MTT v12 n4 Jul 64* 470-471
method free from mismatch errors for measuring the loss of attenuators; *Leber, Arthur N.*; *T-MTT v12 n4 Jul 64* 480
microwave integrated circuits; p-i-n variable attenuator with small phase shift; 0.5 to 3 GHz; *Parris, W. J.*; *T-MTT v20 n9 Sep 72* 618-619 (2B05)
Attenuators; cf. Microwave attenuators; Millimeter-wave attenuators; Submillimeter-wave attenuators; Waveguide attenuators
Auditory system
microwave-induced hearing sensation; *Lin, James C.*; *T-MTT v25 n7 Jul 77* 605-613 (1C13)

microwave-induced hearing sensation; frequency of auditory signal depends only on size and acoustic property of head; *Lin, James C.; T-MTT v25 n11 Nov 77* 938-943 (1F04)

Automobiles; cf. Road vehicles

Avalanche breakdown

frequency multiplication using p-i-n diode driven into avalanche breakdown; *Ntake, Pasteur L.; T-MTT v23 n6 Jun 75* 477-485 (1B05)

Schottky-barrier diodes in 75–115 GHz range; avalanche noise; *Keen, Nigel J.; T-MTT v26 n10 Oct 78* 843-844 (2D07)

Avalanche diode amplifiers

GaAs Read-diode *X*-band amplifier in microstrip; 12-W output; *Tserng, Hua Quen; T-MTT v26 n10 Oct 78* 774-778 (1F02)

gain-bandwidth optimization; theoretical and experimental results; *Ku, Walter H.; T-MTT v18 n11 Nov 70* 932-942

large-signal effects on the performance under various operating and circuit conditions; *Scherer, Ernst F.; T-MTT v18 n11 Nov 70* 922-932

low-gain cascade; optimum efficiency; *Steinbrecher, Donald H.; T-MTT v18 n11 Nov 70* 951-956

power amplification with anomalous avalanche diodes; *Prager, H. John; T-MTT v18 n11 Nov 70* 956-963

reflection-type amplifier providing 200 W pulsed output with 10 dB gain at 1.01 GHz; two diodes in antiparallel configuration; *Kawamoto, Hiroshusa; T-MTT v19 n12 Dec 71* 911-915 (1C07)

X-band, CW high-efficiency, providing one watt; *Snider, David M.; T-MTT v18 n11 Nov 70* 963-967

Avalanche diode amplifiers; cf. IMPATT diode amplifiers; IMPATT diode oscillators; TRAPATT diode amplifiers

Avalanche diode oscillators

amplitude noise spectra of *X*-band microwave oscillators; comparison of measurements with theory; *Scherer, Ernst F.; T-MTT v16 n9 Sep 68* 781-788

C. T. Rucker's multidevice symmetrical oscillator; analysis; *Kurokawa, K.; T-MTT v18 n11 Nov 70* 967-969

compact *L*-band microstrip circuit using avalanche diodes operating in the high-efficiency mode; *Liu, Shing Gong; T-MTT v18 n11 Nov 70* 982-983

frequency-vs-temperature stabilization in avalanche transit-time oscillators by use of diode parasitic elements; *Sigmon, Bernard E.; T-MTT v18 n11 Nov 70* 971-973

germanium avalanche diodes; application as beat oscillators in microwave receivers; *Harkless, E. T.; T-MTT v16 n8 Aug 68* 564-565

harmonic and subharmonic signals; effects on performance; *Schroeder, W. E.; T-MTT v18 n6 Jun 70* 327-331

injection-locking figure of merit; derivation in terms of the frequency compliance coefficient; *Khandelwal, Deen D.; T-MTT v18 n11 Nov 70* 989-992

MIC Doppler module comprised of Ge avalanche diode oscillator and Schottky-barrier detector diode; *Nanbu, Shutaro; T-MTT v26 n3 Mar 78* 192-196 (1E02)

MIC oscillator circuit for *X*-band using Ge avalanche diode; *Nanbu, Shutaro; T-MTT v24 n3 Mar 76* 151-153 (1B11)

microstrip circuit, designed and operated with high-power high-efficiency avalanche diodes. *Liu, S. G., Correction; T-MTT v18 n9 Sep 70* 601

microstrip circuit, designed and operated with high-power high-efficiency avalanche diodes; *Liu, Shing Gong; T-MTT v17 n12 Dec 69* 1068-1071

multiple-diode, high-average-power type; *Rucker, C. T.; T-MTT v17 n12 Dec 69* 1156-1158

passivated silicon chip operated as pulsed avalanche oscillator in a microwave integrated circuit; *Blau, R.; T-MTT v16 n3 Mar 68* 196-197

transit-time; determination of frequency modulation characteristics; *Amoss, John W.; T-MTT v15 n12 Dec 67* 742-747

transit-time oscillators, frequency multipliers and frequency dividers; characterization of nonlinear interactions; *Mouthaan, Koenraad; T-MTT v18 n11 Nov 70* 853-862

X-band; operation as superregenerative amplifier by coupling a 10-MHz current into diode biasing loop; *Ver Planck, Peter; T-MTT v17 n3 Mar 69* 171-172

Avalanche diode oscillators; cf. IMPATT diode oscillators; TRAPATT diode oscillators

Avalanche diodes

circuit analyzed by W. J. Evans; analytic theory; *Carroll, J. E.; T-MTT v18 n11 Nov 70* 977-979

frequency multipliers and upconverters; *Rolland, Paul-Alain; T-MTT v24 n11 Nov 76* 768-775 (2A01)

GaAs diode for frequency multiplication at millimeter wavelengths; 4-to-32 GHz multiplication; *Kramer, B. M.; T-MTT v24 n11 Nov 76* 861-863 (3A09)

noise source; stability improvement; *Kanda, Motohisa; T-MTT v24 n12 Dec 76* 990-995 (2B05)

noise sources for 18–40 GHz range; *Keen, Nigel J.; T-MTT v24 n3 Mar 76* 153-155 (1B13)

packaged; simple theoretical arguments showing that at low current densities the negative-resistance properties may be represented by only three parameters; *Shackle, P. W.; T-MTT v18 n11 Nov 70* 995-998

reverse-biased p-n junctions operating in an avalanche transit time mode; experimental results of cooling; *Baranowski, Joseph J.; T-MTT v15 n12 Dec 67* 754-755

silicon and germanium types; large-signal characteristics; *Decker, David R.; T-MTT v18 n11 Nov 70* 872-876

silicon; computer simulation of anomalous-mode oscillation; *Matsumura, Masakiyo; T-MTT v18 n11 Nov 70* 975-977

silicon, mounted in capacitively loaded TEM coupled lines; use for metal ceramic microstrip oscillator; *Rosen, A.; T-MTT v18 n11 Nov 70* 979-981

switches; optoelectronic microwave switch; *Kiehl, Richard A.; T-MTT v27 n5 May 79* 533-539 (2F04)

transit-time devices; basic principles and properties: *Haddad, George I.; T-MTT v18 n11 Nov 70* 752-772

tunnel injection transit time diode operating from 100 to 248 GHz; GaAs diodes; *Nishizawa, Jun-ichi; T-MTT v26 n12 Dec 78* 1029-1035 (2A13)

ultrahigh-speed diode switch for 50 GHz, utilizing avalanche breakdown in varactor diodes; *Sugimoto, Shigetoki; T-MTT v16 n12 Dec 68* 1017-1021

Avalanche diodes; cf. IMPATT diodes; TRAPATT diodes

Awards

1960 Microwave Prize to A. F. Harvey; *T-MTT v9 n6 Nov 61* 458

1961 Microwave Prize-George L. Matthaei; *T-MTT v10 n6 Nov 62* 408-409

IEEE Microwave Theory and Techniques Group 1966 Microwave Prize to A. A. Oliner; *T-MTT v15 n12 Dec 67* 658-660

IEEE Microwave Theory and Techniques Group 1967 Microwave Prize to R. J. Wenzel; *T-MTT v16 n12 Dec 68* 986

IEEE Microwave Theory and Techniques Society 1978 awards; *Rodrigue, G. P.; T-MTT v27 n12 Dec 79* 936-937 (1A12)

IEEE Microwave Theory and Techniques Society award presentations for 1973; *Horton, John B. tMTT awards for 1973; T-MTT v22 n12 Dec 74* 1128-1130 (3A10)

IEEE Microwave Theory and Techniques Society awards for 1975; *Horton, J. B.; T-MTT v24 n12 Dec 76* 910-912 (1A12)

IEEE Microwave Theory and Techniques Society awards for 1976; *Rodrigue, G. P.; T-MTT v25 n12 Dec 77* 970-972 (1A08)

IEEE Microwave Theory and Techniques Society awards for 1977; *Rodrigue, G. P.; T-MTT v26 n12 Dec 78* 932-934 (1A10)

IEEE Microwave Theory and Techniques Society awards presentations for 1974; *Horton, John B.; T-MTT v23 n12 Dec 75* 947-951 (1A09)

IRE Microwave Theory and Techniques Group 1957 Microwave Prize to Harold Seidel; *Pritchard, W. L.; T-MTT v6 n4 Oct 58* 343

Microwave Prize for 1958 to Ladislas Goldstein; *Saad, Theodore S., Chmn.; T-MTT v8 n1 Jan 60* 3

Microwave Prize of 1959 given to B. A. Auld; *T-MTT v9 n1 Jan 61* 2

B

Backward diodes

backward diodes for small-signal detection made from *n* type germanium; *Burrus, Charles A., Jr.; T-MTT v11 n5 Sep 63* 357-362

conditions for double frequency oscillation in waveguide mounted tunnel diodes; *Hoffins, Cordell C.; T-MTT v12 n2 Mar 64* 176-183

low noise properties of backward diodes as mixers at microwave frequencies; *Eng, Sverre T.; T-MTT v9 n5 Sep 61* 419-425

numerical analysis of the tunnel-diode frequency converter; *Barber, Mark R.; T-MTT v13 n5 Sep 65* 663-670

octave bandwidth tunnel diode amplifier using hybrids and a low pass filter; *Lepoff, Jack H.; T-MTT v12 n1 Jan 64* 21-26

parasitic elements in tunnel-diode amplifier performance; *Scanlan, Sean O.; T-MTT v13 n6 Nov 65* 827-836

stability and gain prediction of tunnel-diode reflection amplifiers; *Bandler, John W.; T-MTT v13 n6 Nov 65* 814-819

Backward-wave oscillators

two-mode theory is applied to M-BWO, and to the M-FWA; *Rowe, J. E.; T-MTT v9 n2 Mar 61* 182-186

Baluns

1:1 type constructed of a bifilar delay line and an inverse 1:1 transformer; analysis of input impedance; *Shimada, Yuuki; T-MTT v18 n5 May 70* 264-269

analysis of split coaxial line balun; *Kogō, Hiroshi; T-MTT v8 n2 Mar 60* 245-246

broadband; design exploiting quadrature properties of stripline, parallel line directional couplers; *Walker, Scott; T-MTT v16 n2 Feb 68* 132-133

broadband stripline balun; 1000–4000 MHz operation; *Craven, J. H.; T-MTT v8 n6 Nov 60* 673

compensated; analysis of bandwidth and design; *Oltman, George; T-MTT v14 n3 Mar 66* 112-119

microstrip; impedance-matched wideband balun and magic tee; *Laughlin, Gordon J.; T-MTT v24 n3 Mar 76* 135-141 (1A09)

printed circuit balun for use with spiral antennas; *Bawer, Robert; T-MTT v8 n3 May 60* 319-325

wideband, parallel-connected; theory and design; *Phelan, H. Richard; T-MTT v18 n5 May 70* 259-263

wideband stripline balun using pair of dual coupled-stripline bandpass filters; *Jones, E. M. T.; T-MTT v7 n1 Jan 59* 128-134

wideband type, operating over frequency range from 650 MHz to 8.5 GHz; *McLaughlin, John W.; T-MTT v6 n3 Jul 58* 314-316

Band-splitting filters; cf. Channel bank filters

Bandpass filters

acoustic surface-wave delay line using FM transducers as input and output; *Worley, J. C.; T-MTT v21 n4 Apr 73* 302-303 (3D07)

acoustic surface-wave filters; diffraction simulation; *Penunuri, David; T-MTT v26 n4 Apr 78* 288-294 (1E10)

aperture-coupled; design procedure based on the theory of conventional coupled circuits; *Shnurer, Florian; T-MTT v5 n4 Oct 57* 238-243

bandpass and pseudo-high-pass quasi-optical filters; use for millimeter-wave and far-infrared frequencies; *Leedom, David A.; T-MTT v18 n5 May 70* 253-259

bandpass spurline resonators; design equations; *Cristal, Edward G.; T-MTT v14 n6 Jun 66* 296-297

bandpass spurline resonators; design equations. *Cristal, Edward G., Correction; T-MTT v14 n9 Sep 66* 436

broadband microwave frequency discriminator; *Mohr, Richard J.; T-MTT v11 n4 Jul 63* 263-264

broadband microwave frequency discriminator; *Robinson, Stephen J.; T-MTT v12 n2 Mar 64* 255-256

broadbanding the match into bandpass structures; *Hensel, Marion L.; T-MTT v12 n3 May 64* 309-315

cavity-resonator filter using dual mode circular cavity structure; *Williams, Albert E.; T-MTT v25 n12 Dec 77* 1021-1026 (1E03)

cavity-resonator filters in circular guide excited in TE_{011}-mode; *Atia, Ali E.; T-MTT v24 n10 Oct 76* 640-648 (1A12)

cavity-resonator filters; mixed mode filters using alternating TE_{011} and TE_{n11} circular waveguide cavity modes; *Taggart, David A.; T-MTT v22 n10 Oct 74* 898-902 (1D10)

cavity-resonator filters; synthesis of narrow-bandpass filters having ripple in passband and stopband as coupled waveguide cavities; *Atia, Ali E.; T-MTT v20 n4 Apr 72* 258-265 (1C04)

cavity-resonator filters using trapped-mode resonators for damping spurious resonances; *Schiffman, Bernard M.; T-MTT v13 n5 Sep 65* 575-580

circular TE_{011}-mode, trapped-mode band-pass filters; *Matthaei, George L.; T-MTT v13 n5 Sep 65* 581-589

coaxial-line filter; immittance inverter realization technique; *Davis, W. Alan; T-MTT v19 n4 Apr 71* 373-380 (1D05)

comb-line bandpass filter interstage couplings; *Kurzrok, R. M.; T-MTT v15 n4 Apr 67* 262-263

comb-line bandpass filters; design; *Kurzrok, R. M.; T-MTT v14 n7 Jul 66* 351-353

Bandpass filters, *cont.*

comb-line filters with tunable frequency range of 2:1 in *S*-band; mismatch and overcoupling compensation; *O'Clock, George D., Jr.*; *T-MTT v20 n3 Mar 72* 238-239 (1E04)
coupled-strip-transmission-line filters and directional couplers; theory of operation and design; *Jones, E. M. T.*; *T-MTT v4 n2 Apr 56* 75-81
coupled-stripline filters for wideband stripline balun; *Jones, E. M. T.*; *T-MTT v7 n1 Jan 59* 128-134
couplings in direct-coupled waveguide bandpass filters; *Kurzrok, Richard M.*; *T-MTT v10 n5 Sep 62* 389-390
design curves for interdigital bandpass filters; *Pyle, John R.*; *T-MTT v12 n5 Sep 64* 559-567
design of band-pass filters using interdigital arrays of resonator line elements; *Matthaei, George L.*; *T-MTT v10 n6 Nov 62* 479-491
design of filters combining image and insertion loss points of view; *Matthaei, George L.*; *T-MTT v8 n6 Nov 60* 580-593
design of interstage coupling apertures for narrow band tunable coaxial band-pass filters; *Kurzrok, Richard M.*; *T-MTT v10 n2 Mar 62* 143-144
digital elliptic filter; compact sharp-cutoff design for wide bandstop or bandpass requirements; *Horton, M. C.*; *T-MTT v15 n5 May 67* 307-314
diplexers, asymmetric bandpass channel diplexers; direct design formulas; *Haine, John L.*; *T-MTT v25 n10 Oct 77* 807-813 (1A03)
direct- and quarter-wave-coupled microwave bandpass filters with adjustable transmission characteristics; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 73-77
direct-coupled cavity filters for wide and narrow bandwidths; *Young, Leo*; *T-MTT v11 n3 May 63* 162-178
direct-coupled cavity filters for wide and narrow bandwidths. *Young, Leo, Correction*; *T-MTT v11 n6 Nov 63* 561
direct synthesis of bandpass transmission line structures; *Carlin, Herbert J.*; *T-MTT v13 n3 May 65* 283-297
distortion of a quarter-wave transformer to obtain a direct-coupled cavity filter; *Young, Leo*; *T-MTT v8 n5 Sep 60* 483-489
distributed-element; computer program for the synthesis; *Johnson, A. Kent*; *T-MTT v17 n8 Aug 69* 643
distributed-lumped filters; comb-line elliptic filter for VHF and UHF bands; *Levy, Ralph*; *T-MTT v19 n1 Jan 71* 26-29 (1D04)
effect of increased design bandwidth on direct-coupled-resonator filters; *Whiting, K.*; *T-MTT v11 n6 Nov 63* 557-560
empirical formula for the design of radial line filters; *Gunston, M. A. R.*; *T-MTT v12 n5 Sep 64* 571-572
equal-element filter with fixed midband insertion loss and rejection bandwidth; determination of number of resonators for minimum volume; *Taub, Jesse J.*; *T-MTT v16 n4 Apr 68* 264-265
equivalent circuits to two plasma resonance devices used as rejection and transmission filters; *Bryant, G. H.*; *T-MTT v12 n4 Jul 64* 469-470
experimental results for practical coaxial and waveguide band-pass filters; *Kurzrok, Richard M.*; *T-MTT v10 n3 May 62* 218-219
ferrite-loaded, circularly polarized microwave cavity filters; *Whirry, Walter L.*; *T-MTT v6 n1 Jan 58* 59-65
five-stage, equal-element waveguide filter; improvement of frequency response; *Bawer, R.*; *T-MTT v5 n3 Jul 57* 175-176
formulas for peak fields inside each cavity of a direct-coupled-cavity filter; *Young, Leo*; *T-MTT v8 n6 Nov 60* 612-616
fourth-order antimetric elliptic filter function in a waveguide; realization; *Williams, Albert E.*; *T-MTT v18 n12 Dec 70* 1109-1114
half-wave parallel coupled-line filter having up to two attenuation poles at finite frequencies in stopband; *Cristal, Edward G.*; *T-MTT v20 n10 Oct 72* 696-699 (2B08)
half-wave parallel coupled-line filter using up to two attenuation poles at finite frequencies in stopband. *Cristal, E. G., Correction*; *T-MTT v21 n9 Sep 73* 598 (1D04)
high-power *S*-band, waffle-iron filter; *Guthart, H.*; *T-MTT v10 n2 Mar 62* 148-149
high-power wide-band, low-pass filter using three waffle-iron filters; *L*-band operation; *Sharp, Eugene D.*; *T-MTT v11 n2 Mar 63* 111-116
interdigital bandpass filters and related coupled structures; exact theory; *Wenzel, R. J.*; *T-MTT v13 n5 Sep 65* 559-575
interdigital filter elements; resonant frequency; *Khandelwal, D. D.*; *T-MTT v15 n5 May 67* 322-324
interdigital; resonant frequency; *Nicholson, B. F.*; *T-MTT v14 n5 May 66* 250-251
interdigital structure; exact equivalence with transmission-line cascade; *Riblet, Henry J.*; *T-MTT v15 n3 Mar 67* 161-166
interdigital structure; exact equivalence with transmission-line cascade. *Riblet, H. J., Correction*; *T-MTT v16 n1 Jan 68* 55
magnetically tunable 500-to-1000 MHz filter using two YIG-disk resonators; *Young, Leo*; *T-MTT v15 n2 Feb 67* 72-86
magnetically tunable nonreciprocal band-pass filters using ferrimagnetic resonators; application as a limiter; *Patel, C. N.*; *T-MTT v10 n3 May 62* 152-161
maximally-flat; bandwidth curves for W. W. Mumford's design; *Schiffman, B. M.*; *T-MTT v15 n10 Oct 67* 589
maximally flat filter considered by W. W. Mumford; insertion loss vs. normalized frequency curves; *Hindin, Harvey J.*; *T-MTT v16 n5 May 68* 316-318
microwave; computer-aided design; *Young, Leo*; *T-MTT v7 n1 Jan 59* 99-101
microwave, containing high-*Q* dielectric resonators; *Cohn, Seymour B.*; *T-MTT v16 n4 Apr 68* 218-227
microwave filters; design equations for resonator filters, interdigital filters, and stub filters; *Cristal, Edward G.*; *T-MTT v19 n5 May 71* 486-490 (2B12)
microwave filters with constant group delay and equiripple passband magnitude; tables for nonminimum-phase even-degree low-pass prototype networks; *Cloete, J. H.*; *T-MTT v27 n2 Feb 79* 123-128 (1C05)
microwave integrated-circuit application; use of slot transmission line on a dielectric substrate; *Mariani, Elio A.*; *T-MTT v18 n12 Dec 70* 1089-1095
microwave, linear-phase; design and synthesis; *Rhodes, John David*; *T-MTT v17 n4 Apr 69* 189-204
microwave; suitability for stripline construction; *Davis, Richard M.*; *T-MTT v17 n7 Jul 69* 404-406
millimeter-wave channel dropping filter using dielectric rectangular waveguide; *Itanami, Takao*; *T-MTT v26 n10 Oct 78* 759-764 (1E01)
millimeter-wave filter composed of inductive windows in rectangular guide; higher order modes can propagate; *Yamamoto, Kazuyuki*; *T-MTT v24 n11 Nov 76* 837-842 (2E14)
millimeter-wave filters; use of direct-coupled confocal resonators; *Cohen, J.*; *T-MTT v14 n12 Dec 66* 698-699
millimeter-wave quasi-optical filters; practical considerations; *Saleh, Adel A. M.*; *T-MTT v22 n7 Jul 74* 734-739 (1B14)
millimeter-wave quasi-optical filters; theory and design; *Saleh, Adel A. M.*; *T-MTT v22 n7 Jul 74* 728-734 (1B08)
millimeter-wave tunable bandpass ring filter for dielectric waveguide IC; *Kaurs, Allan R.*; *T-MTT v24 n11 Nov 76* 875-876 (3B09)
miniature high-*Q* narrowband filter operating in 2200 to 2300 MHz telemetry band; application of TiO_2 dielectric resonators; *Harrison, William H.*; *T-MTT v16 n4 Apr 68* 210-218
multiplexer channel separating units using interdigital and parallel coupled filters; *Matthaei, George L.*; *T-MTT v13 n3 May 65* 328-334
narrow-band, digital, TEM-line, elliptic; design; *Rhodes, J. D.*; *T-MTT v17 n12 Dec 69* 1102-1107
narrow-band, elliptic; design in a compact digital form; *Rhodes, John David*; *T-MTT v17 n4 Apr 69* 178-184
narrow-band, microwave; delay equalization; *Abele, Thomas A.*; *T-MTT v15 n10 Oct 67* 566-574
nonuniform waveguide high-pass filters with extremely steep cutoff; *Tang, Charles C. H.*; *T-MTT v12 n3 May 64* 300-309
passband VSWR of maximally flat bandpass filters; *Kurzrok, Richard M.*; *T-MTT v10 n2 Mar 62* 145
quasi-optical bandpass filter consisting of several wire-grid polarizers; network representation and unloaded *Q*; *Chen, Ming Hui*; *T-MTT v27 n4 Apr 79* 357-360 (1E11)
quasi-optical resonator filters for millimeter and submillimeter wave frequencies; *Taub, J. J.*; *T-MTT v12 n6 Nov 64* 618-619
review of duplexing systems at microwave frequencies; *Harvey, A. F.*; *T-MTT v8 n4 Jul 60* 415-431
side-wall-coupled, stripline magnetically tunable filters using ferrimagnetic YIG resonators; *Carter, Philip S.*; *T-MTT v13 n3 May 65* 306-315
stepped impedance transformer theory applied to bandpass filters; quarter wave transformers converted to halfwave filter prototypes; *Young, Leo*; *T-MTT v10 n5 Sep 62* 339-359
stripline construction; design and development; *Bradley, E. H.*; *T-MTT v4 n2 Apr 56* 86-93
stripline filters, parallel-coupled filters in edge-coupled stripline; extending realizable bandwidth; *Kirton, Paul A.*; *T-MTT v25 n8 Aug 77* 672-676 (1D02)
stripline structure; design and realization; *Bradley, E. H.*; *T-MTT v3 n2 Mar 55* 163-169
strongly coupled cavity chains to form a bandpass filter; *Allen, Matthew A.*; *T-MTT v8 n3 May 60* 362-372
strongly coupled cavity chains to form a bandpass filter; *Bevensee, R. M.*; *T-MTT v8 n6 Nov 60* 669-671
synthesis procedure for microwave bandpass with the Chebyshev response using orthogonal circuit resonators coupled by a ferrimagnetic resonator; *Comstock, R. Lawrence*; *T-MTT v12 n6 Nov 64* 599-607
three cavity, circularly polarized waveguide directional filter; four ports; *Williams, Robert L.*; *T-MTT v10 n5 Sep 62* 321-328
transmission-line resonator filters consisting of series of half-wavelength resonant conductors; synthesis; *Cohn, Seymour B.*; *T-MTT v6 n2 Apr 58* 223-231
traveling-wave directional filter; *Coale, Franklin S.*; *T-MTT v4 n4 Oct 56* 256-260
tunable bandpass microwave filter using ferrimagnetic resonance in a YIG crystal; *Carter, Philip S., Jr.*; *T-MTT v9 n3 May 61* 252-260
UHF bandpass filter using orthogonally-coupled, capacitively-loaded TEM resonators; *Mariani, Elio A.*; *T-MTT v16 n11 Nov 68* 966-967
up-converters for use as electronically-tunable bandpass filters; design; *Matthaei, George L.*; *T-MTT v9 n5 Sep 61* 425-435
waffle-iron low-pass filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 555-557
waveguide dimensions to optimize performance of narrow-band waveguide filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 522-527
waveguide filters using evanescent mode; *Snyder, Richard V.*; *T-MTT v25 n12 Dec 77* 1013-1021 (1D09)
waveguide filters using evanescent mode resonators; design theory; *Craven, George F.*; *T-MTT v19 n3 Mar 71* 295-308 (1E03)
waveguide resonant-iris filters; theory and performance; *Chen, Tsung-Shan*; *T-MTT v15 n4 Apr 67* 260-262
waveguide-sandwich resonator filters; *Tajima, Yusuke*; *T-MTT v22 n9 Sep 74* 839-841 (1B07)
waveguide with inductive strip in center of guide parallel to *E*-plane; *Konishi, Yoshihiro*; *T-MTT v22 n10 Oct 74* 869-873 (1B09)
wide stopband UHF coaxial bandpass filter; *Lally, J. F.*; *T-MTT v11 n5 Sep 63* 452
YIG-disk filter; control of resonant frequency by doublet tuning; *Karp, Arthur*; *T-MTT v15 n3 Mar 67* 193-195
YIG filter for incorporation into microstrip circuits; narrow-band filter with finite-pole frequencies; *Röschmann, Peter*; *T-MTT v21 n1 Jan 73* 52-57 (2B05)

Bandpass filters; cf. Channel bank filters

Bandstop filters

bandstop filters in the presence of dissipation; *Taub, Jesse J.*; *T-MTT v13 n5 Sep 65* 589-616
design of microwave bandstop filters; *Young, Leo*; *T-MTT v10 n6 Nov 62* 416-427
design of microwave bandstop filters. *Young, Leo, Correction*; *T-MTT v14 n3 Mar 66* 164
design techniques for bandstop radial line coaxial filters; microwave frequencies; *De Loach, Bernard C.*; *T-MTT v11 n1 Jan 63* 50-55
digital elliptic filter; compact sharp-cutoff design for wide bandstop or bandpass requirements; *Horton, M. C.*; *T-MTT v15 n5 May 67* 307-314
distributed filters approximating elliptic-function response; uses noncommensurate lines; *Malherbe, Johannes A. G.*; *T-MTT v24 n5 May 76* 242-248 (1A08)
elliptic filters; unit element transforms performed on unresonated prototype and resultant network is resonated; *Malherbe, J. A. G.*; *T-MTT v25 n8 Aug 77* 717 (1G05)
elliptic-function waveguide filters; equirriple in passband and stopband; *Rhodes, J. David*; *T-MTT v20 n11 Nov 72* 715-718 (1B03)
empirical formula for the design of radial line filters; *Gunston, M. A. R.*; *T-MTT v12 n5 Sep 64* 571-572
equivalent circuits to two plasma resonance devices used as rejection and transmission filters; *Bryant, G. H.*; *T-MTT v12 n4 Jul 64* 469-470
exact method for designing bandstop filters is adapted to design a four-element

filter; matched at fundamental with infinite attenuation at harmonics; *Schiffman, Bernard M.*; *T-MTT v12 n5 Sep 64* 512-516
exact method for the design of bandstop filters which adapts the work of Ozaka and Ishii; *Schiffman, Bernard M.*; *T-MTT v12 n1 Jan 64* 6-15
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii. *Schiffman, B. M., Correction*; *T-MTT v13 n5 Sep 65* 703
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii; *Cristal, E. G.*; *T-MTT v12 n3 May 64* 364-382
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii. *Cristal, E. G., Addendum*; *T-MTT v13 n1 Jan 65* 141
harmonic rejection filter with one point of perfect mold and another of infinite attenuation; *Schiffman, Bernard M.*; *T-MTT v12 n1 Jan 64* 58-60
high-pass and bandstop filters; incidental dissipation; *Smythe, R. C.*; *T-MTT v14 n4 Apr 66* 208-209
high-power, bandstop, iris-coupled waveguide filters; *Torgow, Eugene N.*; *T-MTT v13 n5 Sep 65* 508-513
high-power wide-band, low-pass filter using three waffle-iron filters; *L*-band operation; *Sharp, Eugene D.*; *T-MTT v11 n2 Mar 63* 111-116
improved stripline resonator used as a bandstop filter; design permits application of printed circuit fabrication; *Standley, Robert D.*; *T-MTT v11 n6 Nov 63* 548-549
magnetically tunable absorbing type; propagation of first-order modes; *Bernardi, P.*; *T-MTT v17 n2 Feb 69* 62-66
microwave; folded-line and hybrid folded-line filters; *Dupuis, Paul A.*; *T-MTT v22 n12 Dec 74* 1312-1316 (5C04)
microwave integrated-circuit application; use of slot transmission line on a dielectric substrate; *Mariani, Elio A.*; *T-MTT v18 n12 Dec 70* 1089-1095
microwave; two nomograms for coupled-line sections; *Schiffman, B. M.*; *T-MTT v14 n6 Jun 66* 297-299
millimeter-wave channel dropping filter using dielectric rectangular waveguide; *Itanami, Takao*; *T-MTT v26 n10 Oct 78* 759-764 (1E01)
modification of exact design procedure for bandstop filters; *Schiffman, B. M.*; *T-MTT v13 n2 Mar 65* 253-254
multiplexer channel separating units using interdigital and parallel coupled filters; *Matthaei, George L.*; *T-MTT v13 n3 May 65* 328-334
nonreflective hybrid stopband filter; *Wanselow, Robert D.*; *T-MTT v10 n1 Jan 62* 91
optimum, microwave filters consisting of quarter-wave spaced shunt open-circuited stubs; design tables; *Gupta, O. P.*; *T-MTT v18 n7 Jul 70* 402-404
simple relation between cavity Q and maximum rejection for narrowband microwave stopband filters; *Lubell, Peter D.*; *T-MTT v12 n1 Jan 64* 145
single-resonator; summary of a few simple formulas; *Cristal, E. G.*; *T-MTT v15 n3 Mar 67* 195
three cavity, circularly polarized waveguide directional filter; four ports; *Williams, Robert L.*; *T-MTT v10 n5 Sep 62* 321-328
transmission-line filters, even-order equally terminated filters; synthesis procedure; *Nedunuri, Ramamurty*; *T-MTT v27 n8 Aug 79* 742-744 (1B14)
waffle-iron low-pass filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 555-557
waveguide filters constructed from thin plates sandwiched together; *Rhodes, J. David*; *T-MTT v22 n4 Apr 74* 394-399 (1D02)
waveguide resonant-iris filters; theory and performance; *Chen, Tsung-Shan*; *T-MTT v15 n4 Apr 67* 260-262
wide stopband UHF coaxial bandpass filter; *Lally, J. F.*; *T-MTT v11 n5 Sep 63* 452
wideband elliptic-function transmission-line filters; design tables; *Schiffman, Bernard M.*; *T-MTT v14 n10 Oct 66* 474-482

BARITT diode oscillators
detectors for Doppler radar; *East, Jack R.*; *T-MTT v24 n12 Dec 76* 943-948 (1D03)
dynamic resistance and capacitance as function of frequency and current density; use in predicting electronic tuning performance; *Sultan, Nizar B.*; *T-MTT v20 n11 Nov 72* 773-775 (2B04)
MIC X-band self-mixing oscillator for Doppler sensor applications; *Kwok, Siang Ping*; *T-MTT v27 n10 Oct 79* 844-847 (1B08)

BARITT diodes
Doppler detectors for Doppler frequencies 1–1000 Hz; *Iijima, Y.*; *T-MTT v26 n2 Feb 78* 132-133 (1G02)
equivalent circuit, frequency-independent large-signal; application to amplifier analysis; *Okazaki, Kaoru*; *T-MTT v24 n8 Aug 76* 527-529 (1C11)
large-signal characterization at microwave frequencies of Si diodes; *Montress, Gary K.*; *T-MTT v27 n5 May 79* 458-462 (1G12)
surface-wave digital recirculating memory; bit rate of 200 MHz and storage capacity of 1280 bits per recirculation loop; *van de Vaart, H.*; *T-MTT v21 n4 Apr 73* 236-243 (2C09)

Barium alloys/compounds, devices
$BaTi_4O_9$ microstrip; dispersion and loss measurements up to 18 GHz and temperature stability measurements at 14 GHz; *Lee, Young Soo*; *T-MTT v27 n7 Jul 79* 655-660 (1C01)
GaAs FET integrated oscillator with BaO–TiO_2 ceramic resonator; high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
microwave frequency synthesizer using Si bipolar transistor and $Ba_2Ti_9O_{20}$ dielectric resonator; FM noise less than 0.0003 Hz in any 1 Hz band more than 1000 Hz from 1 GHz carrier; *Alley, Gary D.*; *T-MTT v27 n12 Dec 79* 969-974 (1D03)

Barretters; cf. Bolometers
Beam focusing; cf. Millimeter-wave focusing
Beam-lead devices
tunnel diodes; characteristics and application in low-cost microstrip reflection amplifiers; *Welch, Jerry D.*; *T-MTT v18 n12 Dec 70* 1077-1083

Beam-plasma tubes
analogy between modulated electron beam in a plasma and transmission lines; *Freire, Gabriel F.*; *T-MTT v12 n3 May 64* 360-361

Beam steering
antennas; nonmechanical beam steering by scattering from spherical ferrite immersed in a static magnetic field; *Wheeler, Myron S.*; *T-MTT v6 n1 Jan 58* 38-42

Beam waveguides
analogy to electric transmission lines; *Daly, James C.*; *T-MTT v18 n9 Sep 70* 657-658
beam waveguide using metal reflectors instead of dielectric lenses; *Degenford, James E.*; *T-MTT v12 n4 Jul 64* 445-453
beam waveguides, iris and lens types, for long distance transmission at optical frequencies with less than 1 db loss per km; *Goubau, Georg*; *T-MTT v12 n2 Mar 64* 212-220
bends in dielectric-frame beam waveguides; *Checcacci, P. F.*; *T-MTT v22 n5 May 74* 576-578 (2C07)
design considerations for bent-beam waveguides; *Marcuse, D.*; *T-MTT v13 n5 Sep 65* 647-651
dielectric frame waveguides; minimization of dielectric structures; *Checcacci, Pier Francesco*; *T-MTT v21 n5 May 73* 362-363 (1F04)
discrete reflecting type, with parabolic cylindrical reflectors; analysis; *Suzuki, Michio*; *T-MTT v18 n7 Jul 70* 338-347
discrete reflecting type, with parabolic cylindrical reflectors; experiments; *Kamimura, Masao*; *T-MTT v18 n7 Jul 70* 348-351
equispaced dielectric frames; field pattern and power loss measurements at 10 GHz and 37 GHz; *Checcacci, Pier Francesco*; *T-MTT v20 n9 Sep 72* 608-613 (1E10)
guided beam wave transmission system composed of two parallel concave reflectors; *Nakahara, Tsuneo*; *T-MTT v15 n2 Feb 67* 66-71
lens-type; excitation by aperture field of a tubular waveguide; *Schwering, F.*; *T-MTT v15 n3 Mar 67* 191-192
light beam waveguide using hyperbolic-type gas lenses. *Suematsu, Y., Correction*; *T-MTT v15 n5 May 67* 294
light beam waveguide using hyperbolid-type gas lenses; *Suematsu, Yasuharu*; *T-MTT v14 n12 Dec 66* 657-665
loss measurements of low loss beam waveguides for millimeter-wave and shorter waveguides; *Beyer, James B.*; *T-MTT v11 n1 Jan 63* 18-22
low-loss launcher for the beam-lens waveguide; *Chaffin, R. J.*; *T-MTT v12 n5 Sep 64* 555
low-pass, quasi-optical filters for oversized or focused-beam waveguides; *Matthaei, George L.*; *T-MTT v16 n12 Dec 68* 1038-1047
magnetic loop, diode detector compatible with microwave and beam waveguides; *Degenford, J. E.*; *T-MTT v13 n3 May 65* 380-382
metallic-frame beam waveguides; *Checcacci, Pier Francesco*; *T-MTT v21 n10 Oct 73* 649-651 (1F03)
open-beam waveguides; field propagation; *Consortini, A.*; *T-MTT v23 n7 Jul 75* 593-595 (1D13)
paraxial ray propagation; analysis by Z-transform techniques; *Daly, James C.*; *T-MTT v16 n2 Feb 68* 95-98
quartz lenses use; long-distance transmission loss; *Christian, J. R.*; *T-MTT v15 n4 Apr 67* 216-219
randomly misaligned; determination of expected attenuation; *Schwering, Felix K.*; *T-MTT v15 n4 Apr 67* 206-215
ray position; derivation of probability distributions; *Marcuse, D.*; *T-MTT v15 n3 Mar 67* 167-171
reflecting type; design consideration for circular bend section; *Yamasaki, T.*; *T-MTT v16 n6 Jun 68* 373-374
vacuum forming technique for the fabrication of spherical or prolate spheroidal reflectors; *Degenford, J. E.*; *T-MTT v11 n6 Nov 63* 553
wall current detector for use with beam waveguides; *Sirkis, M. D.*; *T-MTT v11 n6 Nov 63* 552

Beam waveguides; cf. Lens waveguides
Bessel functions
formulas for calculating approximate values of zeros for combinations of Bessel functions; *Cochran, J. A.*; *T-MTT v11 n6 Nov 63* 546-547

Bessel filters; cf. Maximally-flat delay filters
Bibliographies
advances in microwave theory and techniques in 1960 (USA); status report; *Hansen, Robert C.*; *T-MTT v9 n4 Jul 61* 278-290
advances in microwave theory and techniques in Great Britain in 1958; status report and bibliographies; *Brown, John*; *T-MTT v7 n3 Jul 59* 325-327
advances in microwave theory and techniques in Japan in 1958; status report and bibliographies; *Someya, Isao*; *T-MTT v7 n3 Jul 59* 331
advances in microwave theory and techniques in USA in 1958; status report and bibliographies; *Beam, Robert E.*; *T-MTT v7 n3 Jul 59* 308-325
advances in microwave theory and techniques in Western Europe in 1958; status report and bibliographies; *Goudet, Georges*; *T-MTT v7 n3 Jul 59* 327-330
annotated bibliography on advances in microwave theory and techniques in Great Britain in 1959; *Brown, John*; *T-MTT v8 n4 Jul 60* 382-386
annotated bibliography on advances in microwave theory and techniques in Japan in 1959; *Morita, Kiyoshi*; *T-MTT v8 n4 Jul 60* 395-397
annotated bibliography on advances in microwave theory and techniques in Western Europe in 1959; *Goudet, Georges*; *T-MTT v8 n4 Jul 60* 387-394
biological effects of low-power RF energy; *Frey, Allan H.*; *T-MTT v19 n2 Feb 71* 153-164 (1D05)
biological effects of microwaves; *Michaelson, Sol M.*; *T-MTT v19 n2 Feb 71* 131-146 (1B07)
directional couplers; 140 publications from 1951 to 1965; *Caswell, W. E.*; *T-MTT v15 n2 Feb 67* 120-123
directional couplers; covering 1935 and consecutive years 1943–1953; *Medhurst, R. G.*; *T-MTT v3 n3 Apr 55* 42-43
directional couplers; covering 1935 and consecutive years 1943–1953; *Schwartz, Richard F.*; *T-MTT v2 n2 Jul 54* 58-63
electromagnetic fields; comprehensive review of methods for their solution; *Wexler, Alvin*; *T-MTT v17 n8 Aug 69* 416-439
ferrite-junction circulators; covering period from Jan 1956 to Sep 1969; *Kumar, Ramesh C.*; *T-MTT v18 n9 Sep 70* 524-530
IMPATT diodes at microwave frequencies, CW operation; *Gewartowski, James W.*; *T-MTT v27 n5 May 79* 434-442 (1F02)
integrated optics in Japan; *Suematsu, Yasuharu*; *T-MTT v23 n1 Jan 75* 16-20 (1B04)
lasers; heterostructure injection lasers; *Panish, Morton B.*; *T-MTT v23 n1 Jan 75* 20-30 (1B08)
lossy ferrimagnetic slab; electromagnetic propagation on slab; modal spectrum; *Bardati, Fernando*; *T-MTT v27 n7 Jul 79* 679-688 (1D11)
MESFETs, GaAs power MESFETs; *DiLorenzo, James V.*; *T-MTT v27 n5 May 79* 367-378 (1A05)
microwave FETs; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 279-300 (1A05)
microwave theory and techniques; report of advances in 1954; *King, D. D.*; *T-MTT v3 n3 Apr 55* 4-7
microwave theory and techniques; report of advances in 1955; *King, D. D.*; *T-MTT v4 n2 Apr 56* 68-74
optical fiber waveguides; *Gloge, Detlef*; *T-MTT v23 n1 Jan 75* 106-120 (2B01)

parametric devices and masers; *Mount, Ellis*; *T-MTT v8 n2 Mar 60* 222-243
rectangular waveguide-to-coaxial line transitions; 1968 progress report and up-to-date bibliography; *Brady, M. Michael*; *T-MTT v17 n3 Mar 69* 170
state-of-the-art review of filters in 1965; bandpass, bandstop, high-pass, tunable filters, with extensive bibliography; *Young, Leo*; *T-MTT v13 n5 Sep 65* 489-508
Binary sequences; cf. Pseudonoise sequences
Biochemistry
brain enzyme inactivation in rats by microwave irradiation; 986 MHz compared with 2450 MHz; *Meyerhoff, James L.*; *T-MTT v27 n3 Mar 79* 267-270 (1D11)
brain enzymes; *in vivo* inactivation using microwave heating; *Lenox, Robert H.*; *T-MTT v24 n1 Jan 76* 58-61 (1E04)
Bioelectric phenomena
coherent electrical vibrations in 10^{10}–10^{12} Hz range in biological systems; role of vibrations in controlling growth of tissues; *Fröhlich, H.*; *T-MTT v26 n8 Aug 78* 613-617 (2A01)
Bioelectrical phenomena; cf. Microwave radiation effects
Biological cells
coherent electrical vibrations in 10^{10}–10^{12} Hz range in biological systems; role of vibrations in controlling growth of tissues; *Fröhlich, H.*; *T-MTT v26 n8 Aug 78* 613-617 (2A01)
dielectric measurements in HF band for noninvasive analysis of cell membrane physiology and pathophysiology; *Larsen, Lawrence E.*; *T-MTT v26 n8 Aug 78* 581-595 (1E11)
Biological cells; cf. Tumors
Biological radiation effects
biomolecular absorption of microwave radiation; mechanisms and implications; *Rabinowitz, James R.*; *T-MTT v21 n12 Dec 73* 850-851 (3C05)
electromagnetic irradiation of human eye; fields and induced temperatures due to plane waves at 750 MHz and 1.5 GHz; *Taflove, Allen*; *T-MTT v23 n11 Nov 75* 888-896 (1C10)
electromagnetic power deposition in spherical model of man exposed to 1–20 MHz field. *Lin, J. C., Correction*; *T-MTT v23 n2 Feb 75* 265 (1F13)
electromagnetic power deposition in spherical model of man exposed to 1–20 MHz fields; *Lin, James C.*; *T-MTT v21 n12 Dec 73* 791-797 (2B01)
electromagnetic; rabbit cervical ganglion exposed to 2450-MHz fields; *Courtney, Kenneth R.*; *T-MTT v23 n10 Oct 75* 809-813 (1C03)
electromagnetic radiation on eyes; 2450-MHz radiation cataractogenic effects on rabbit eye; *Guy, Arthur W.*; *T-MTT v23 n6 Jun 75* 492-498 (1C06)
electromagnetic radiation; teratogenic effects of low-level microwave radiation in pupae of darkling beetle; *Liu, L. M.*; *T-MTT v23 n11 Nov 75* 929-931 (1F09)
microwave dosimetry system for measuring sampled integral-dose rate; *Christman, Chrisotpher L.*; *T-MTT v22 n12 Dec 74* 1267-1277 (4E10)
microwave irradiation of isolated poikilothermic hearts; bradycardia induced; *Lords, James L.*; *T-MTT v21 n12 Dec 73* 834-836 (3B01)
microwave radiation hazards; World Health Organization program; *Michaelson, Sol M.*; *T-MTT v22 n12 Dec 74* 1301-1302 (5B07)
microwaves; nonthermal effects; *Lindauer, G. A.*; *T-MTT v22 n8 Aug 74* 790-793 (1C08)
UHF, VHF, and ELF irradiation of chicks and rats; effects of continuous exposure on growth rate and feed consumption; *Giarola, Attilio J.*; *T-MTT v22 n4 Apr 74* 432-437 (2B08)
waveguide irradiation facility for exposure of small animals to 2450-MHz CW energy; *Ho, Henry S.*; *T-MTT v21 n12 Dec 73* 837-840 (3B04)
Biological radiation effects; cf. Electromagnetic radiation effects; Microwave radiation effects; RF radiation effects
Biological systems; cf. Cardiovascular system; Nervous system
Biological tissues; cf. Cranium; Eyes; Heart; Human limbs; Insects; Tumors
Biomedical imaging
microwave interrogation of biological targets using water-immersed antennas; *Jacobi, John H.*; *T-MTT v27 n1 Jan 79* 70-78 (1F02)
Biomedical instrumentation
microwave thermal effects study; environmental chamber for air temperature control; *Samaras, George M.*; *T-MTT v19 n2 Feb 71* 245-247 (3C02)
Bipolar transistor amplifiers
microwave Class C broadband amplifiers; large-signal transistor characterization and broadband matching; performance data for 13-W, 1010 to 1460 MHz stage; *Pitzalis, Octavius, Jr.*; *T-MTT v21 n11 Nov 73* 660-668 (1B06)
Bipolar transistor amplifiers; cf. Microwave bipolar transistor amplifiers; Microwave transistor amplifiers; UHF bipolar transistor amplifiers
Bipolar transistor oscillators; cf. Microwave bipolar transistor oscillators
Bipolar transistors
scattering parameters measurement; large-signal *S*-parameters measurement using two-signal method; *Mazumder, Shamsur R.*; *T-MTT v26 n6 Jun 78* 417-420 (1C11)
Bipolar transistors; cf. Microwave bipolar transistors; Microwave transistors
Bismuth
Alfven wave transmission study at 311 μm and 337 μm; *Verdun, H. R.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
Bismuth alloys/compounds, devices
microstrip directional coupler with thin-film Bi_2O_3 overlay; *Karekar, R. N.*; *T-MTT v25 n1 Jan 77* 74-75 (1F06)
microstrip resonator with thin-film Bi_2O_3 overlay; effect on *Q*; *Karekar, R. N.*; *T-MTT v24 n5 May 76* 262-264 (1B14)
Bolometer mounts
50-Ohm coaxial bolometer units; calibration at 3 GHz; *National Bureau of Standards*; *T-MTT v14 n3 Mar 66* 161
calibration system using power equation concept and automation techniques; *Komarek, Ernest L.*; *T-MTT v22 n12 Dec 74* 1260-1267 (4E03)
efficiency measurement technique by impedance method performed in Japan; *Tamaru, T.*; *T-MTT v14 n9 Sep 66* 437
measurement of mount efficiency at millimeter wavelengths; *Miller, R. H.*; *T-MTT v11 n5 Sep 63* 435-436
millimeter-wave bolometer mount for measuring TE_{01}-mode power at 100 GHz; *Inoue, Takemi*; *T-MTT v25 n8 Aug 77* 694-697 (1E10)
oversize bolometer unit for short millimeter wave region; *Kashiwagi, Hiroshi*; *T-MTT v15 n3 Mar 67* 180
Bolometers
calibration of coaxial bolometer units; *Radio Standards Laboratory, National Bureau of Standards*; *T-MTT v13 n6 Nov 65* 884
calibration using six-port reflectometer system; automated system; *Komarek, Ernest L.*; *T-MTT v25 n12 Dec 77* 1122-1127 (2E12)
components for 1–2 mm region; attenuators, phase shifters, bolometers, calorimeters; *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 332-338
current distribution in barretters and its application to microwave power measurements; *Adams, John W.*; *T-MTT v17 n10 Oct 69* 778-785
dc-biased bolometer (barretter) detector; small-signal dynamic equivalent circuit; *Cohn, Seymour B.*; *T-MTT v16 n8 Aug 68* 536-541
dc-biased bolometer (barretter) detector; small-signal dynamic equivalent circuit; *Whalen, J. J.*; *T-MTT v17 n7 Jul 69* 403-404
far-infrared detectors using compensated n-type Si at liquid-helium temperatures; *Summers, C. J.*; *T-MTT v22 n12 Dec 74* 1009-1013 (1C03)
far-infrarei Ge bolometer cooled to 0.10 K; *Draine, B. T.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
measured values of substitution error; agreement with calculated values based on theoretical analysis by H. J. Carlin and M. Sucher; *Adams, J. W.*; *T-MTT v16 n3 Mar 68* 201-202
microwave power measurement in WR112 waveguide (7.05 to 10.0 GHz); calibration service offered by NBS, Radio Standards Laboratory, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n5 May 66* 254
microwave power measurement in WR137 waveguide (5.85–8.20 GHz); calibration service offered by NBS, Radio Standards Laboratory, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n4 Apr 66* 213
microwave type bolometer for submillimeter wave measurements; *Byrne, John F.*; *T-MTT v11 n5 Sep 63* 379-384
power measurement at 3 GHz; international intercomparison of standards; *Engen, Glenn F.*; *T-MTT v19 n4 Apr 71* 411-413 (2C07)
temperature probe for biological systems irradiated by electromagnetic fields; consists of thermistor and plastic high-resistance leads; *Bowman, Ronald R.*; *T-MTT v24 n1 Jan 76* 43-45 (1D03)
thin-film bolometers for measuring the total unwanted power transmitted in any or all possible modes and frequencies; *Schiffman, Bernard M.*; *T-MTT v12 n2 Mar 64* 155-163
wire grid bolometer for multimode power measurement; *Schiffman, Bernard M.*; *T-MTT v13 n4 Jul 65* 427-431
Wollaston (thin platinum) wire bolometers under pulsed power conditions; dynamic behavior; *Sucher, Max*; *T-MTT v3 n4 Jul 55* 45-52
Bonding
adhesively bonded aluminum foil seams; microwave properties; *Rueggeberg, Werner*; *T-MTT v15 n2 Feb 67* 117-118
ferrite isolators, thermal stress-induced breakdown; adhesive layer rupture initiates breakdown; *Buck, Daniel C.*; *T-MTT v26 n5 May 78* 357-360 (1C11)
Boundary-value problems
finite-difference methods for potential problems with boundary at infinity; *Sandy, F.*; *T-MTT v19 n5 May 71* 484-486 (2B10)
spherical cavity with impedance wall; eigenvalues; *Bhartia, P.*; *T-MTT v19 n1 Jan 71* 110-111 (2F06)
thick-strip microstrip lines; Green's function; *Yamashita, Eikichi*; *T-MTT v19 n1 Jan 71* 120-122 (3B09)
variational methods; formulation of Dirichlet condition as natural boundary condition; *Coen, Shimon*; *T-MTT v21 n9 Sep 73* 577-598 (1D03)
variational techniques; formulation of Dirichlet condition as natural boundary condition; *Hazel, Terence George*; *T-MTT v20 n6 Jun 72* 385-390 (1E03)
waveguide walls with impedance boundary conditions; *Dybdal, Robert B.*; *T-MTT v19 n1 Jan 71* 2-9 (1B04)
Bragg scattering
Gunn oscillator in dielectric waveguide; distributed Bragg reflection oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
Gunn oscillator with Bragg reflector grating for dielectric waveguide integrated circuits; *Itoh, Tatsuo*; *T-MTT v27 n5 May 79* 514-518 (2D13)
Braided-shield cables; cf. Coaxial cables
Brain
enzyme inactivation in rats by microwave irradiation; 986 MHz compared with 2450 MHz; *Meyerhoff, James L.*; *T-MTT v27 n3 Mar 79* 267-270 (1D11)
enzymes; *in vivo* inactivation using microwave heating; *Lenox, Robert H.*; *T-MTT v24 n1 Jan 76* 58-61 (1E04)
Breakdown; cf. Gas discharges
Broadband matching
tables of normalized lumped lossless networks which approximate prescribed attenuation versus frequency characteristics; *Pitzalis, Octavius, Jr.*; *T-MTT v19 n4 Apr 71* 381-386 (1E01)
Broadcasting; cf. Satellite communication, broadcast
Bulk waves; cf. Acoustic bulk waves

C

Cables
infinite rectangular bar asymmetrically located inside infinite U-shaped outer conductor; even-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v25 n5 May 77* 410-412 (1E14)
infinite rectangular bar asymmetrically located inside infinite U-shaped outer conductor; odd-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v24 n3 Mar 76* 157-159 (1C03)
shielded balanced pair; capacitances and surface-charge distributions; *Nordgard, John D.*; *T-MTT v24 n2 Feb 76* 94-100 (1B14)
Cables; cf. Coaxial cables; Wire communication cables
Cadmium telluride
far-infrared properties, 10–100 cm^{-1}; *Danielewicz, E. J.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
Calorimetry
in line calorimeter for microwave waveguide; *Brady, M. Michael*; *T-MTT v10 n5 Sep 62* 357-366
in-line calorimeters for microwave waveguides. *Brady, M. M., Correction*; *T-MTT v11 n2 Mar 63* 152
microwave power measurement (0–75 GHz) by broadband nonadiabatic, twin dry-load calorimeters; analysis and design; *Sucher, Max*; *T-MTT v6 n2 Apr 58* 188-194
microwave power measurements (0–75 GHz) by broadband twin-Joule calorimeters using dry loads; construction and performance; *James, Allan V.*; *T-MTT v6 n2 Apr 58* 195-202

power measurements at mm wavelengths; *Sharpless, W. M.*; *T-MTT v2 n3 Sep 54* 45-47
resistive-film calorimeters for microwave power measurement; *Lane, J. A.*; *T-MTT v7 n1 Jan 59* 177
Cancer; cf. Tumors
Capacitance
irregular finite conductors on dielectric sheet; capacitance coefficients; *Birtles, A. B.*; *T-MTT v21 n8 Aug 73* 568-569 (2D02)
microstrip line with right-angle bend; *Horton, R.*; *T-MTT v21 n6 Jun 73* 427-429 (2C04)
multiconductor systems; three-dimensional capacitance calculations using integral equation formulation; *Ruehli, Albert E.*; *T-MTT v21 n2 Feb 73* 76-82 (1B10)
rectangular bars between parallel plates; interaction between symmetrical fringing capacitances; *Riblet, Henry J.*; *T-MTT v21 n10 Oct 73* 644-647 (1E10)
stripline structures with electric or magnetic walls; includes dielectric-supported air-strip line; *Costamagna, Eugenio*; *T-MTT v21 n3 Mar 73* 155-156 (1E01)
Capacitance calculations
acoustic surface-wave interdigital transducer in multilayer media; static capacitance; *Venema, Adrian*; *T-MTT v26 n4 Apr 78* 294-297 (1F02)
approximate fringing capacitances evaluation; conformal mapping parameters calculation; *Riblet, Henry J.*; *T-MTT v27 n2 Feb 79* 148-150 (1E02)
cable, shielded unbalanced pair; *Nordgard, John D.*; *T-MTT v25 n2 Feb 77* 137-140 (1E01)
cables, shielded balanced pair; *Nordgard, John D.*; *T-MTT v24 n2 Feb 76* 94-100 (1B14)
coaxial-to-circular waveguide abrupt transition; *Razaz, M.*; *T-MTT v27 n6 Jun 79* 564-569 (1A10)
coupled rectangular bars between parallel plates; interaction between symmetrical odd-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v23 n3 Mar 75* 322-323 (1D14)
excess capacitance; mapping simplification; *Riblet, Henry J.*; *T-MTT v22 n4 Apr 74* 467 (2E01)
fringing capacitance curves for coplanar rectangular coupled bars; *Gupta, R. R.*; *T-MTT v17 n8 Aug 69* 637-638
infinite rectangular bar asymmetrically located inside infinite U-shaped outer conductor; even-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v25 n5 May 77* 410-412 (1E14)
infinite rectangular bar asymmetrically located inside infinite U-shaped outer conductor; odd-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v24 n3 Mar 76* 157-159 (1C03)
integrated-circuit metal interconnection lines; *Chang, W. H.*; *T-MTT v24 n9 Sep 76* 608-611 (1E08)
microstrip; algorithm; *Premoli, Amedeo*; *T-MTT v23 n8 Aug 75* 642-648 (1C12)
microstrip discontinuities; quasi-static formulation; *Gopinath, A.*; *T-MTT v26 n10 Oct 78* 831-836 (2C09)
microstrip discontinuities; right-angle bends, T-junctions, and crossings. *Silvester, P., Correction*; *T-MTT v23 n5 May 75* 456 (1E02)
microstrip disk resonators; *Borkar, Suresh R.*; *T-MTT v23 n7 Jul 75* 588-591 (1D08)
microstrip, inhomogeneous lines; *Ros, Alain*; *T-MTT v23 n8 Aug 75* 703-706 (2A07)
microstrip; upper bound on capacitance; variational method and spectral domain approach; *Araki, Kiyomichi*; *T-MTT v26 n7 Jul 78* 506-509 (1D10)
microstrip with anisotropic substrate; anisotropic problem transformed into isotropic problem and effective filling fraction formula used; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 776-778 (1A10)
microstrip with anisotropic substrates and electrooptic modulators; Green's function obtained using image coefficient method; *Kobayashi, Masanori*; *T-MTT v26 n2 Feb 78* 119-126 (1F03)
microstrip with step change in width; equivalent capacitance of step; *Gupta, Chandra*; *T-MTT v25 n10 Oct 77* 819-822 (1B01)
parallel-strip transmission line; *Rochelle, J. M.*; *T-MTT v23 n8 Aug 75* 712-714 (2B02)
parallel-strip transmission lines; *Crampagne, Raymond*; *T-MTT v24 n8 Aug 76* 532-534 (1D02)
rectangular-coaxial-strip transmission lines; *Tippet, John C.*; *T-MTT v24 n9 Sep 76* 602-604 (1E02)
shielded multiconductor transmission lines; numerical computation method; *Chestnut, Paul C.*; *T-MTT v17 n10 Oct 69* 734-745
shielded-slab line; characteristic impedancn calculation; *Riblet, Henry J.*; *T-MTT v27 n6 Jun 79* 557-559 (1A03)
stripline structures with electric or magnetic walls, including dielectric-supported air-strip line. *Castamagna, Eugenio, Correction*; *T-MTT v22 n4 Apr 74* 474 (2E08)
thin-film electrooptic modulators; distributed capacitance; *Yamashita, Eikichi*; *T-MTT v23 n1 Jan 75* 177-178 (2G02)
waveguide mounts, parallel two-post structures; reactance calculation; *El-Sayed, Osman L.*; *T-MTT v25 n1 Jan 77* 24-33 (1B12)
Capacitance measurement
microwave transistor mounted in microstrip; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
Capacitance standards
coaxial line terminated in circular waveguide; discontinuity capacitance; use as standard termination and low-frequency capacitance standard; *Risley, Edward W., Jr.*; *T-MTT v21 n8 Aug 73* 564-566 (2C10)
Capacitors
interdigital capacitors; effect of shape on Q and capacitance slope; interactive design; *Hobdell, John L.*; *T-MTT v27 n9 Sep 79* 788-791 (1B08)
interdigital; theory and application to lumped-element microwave integrated circuits; *Alley, Gary D.*; *T-MTT v18 n12 Dec 70* 1028-1033
microstrip dc blocking capacitors of interdigital type for octave bandwidth; *LaCombe, David*; *T-MTT v20 n8 Aug 72* 555-556 (2B10)
Capacitors; cf. Microstrip capacitors
Cardiography
apexcardiography; microwave recording of ACG; *Lin, James C.*; *T-MTT v27 n6 Jun 79* 618-620 (1E08)
Cardiovascular system, heart
electromagnetic irradiation of isolated turtle hearts at 960-MHz CW; rate effects; *Tinney, Charles E.*; *T-MTT v24 n1 Jan 76* 18-24 (1B06)
microwave irradiation of isolated poikilothermic hearts; bradycardia induced; *Lords, James L.*; *T-MTT v21 n12 Dec 73* 834-836 (3B01)
microwave irradiation of rabbits; heart-rate effects; *Kaplan, Ira T.*; *T-MTT v19 n2 Feb 71* 168-173 (1E08)
Carrier processes; cf. Charge-carrier processes
Cascade networks
commensurate transmission-line C-section all-pass networks; analysis and exact synthesis; *Cristal, Edward G.*; *T-MTT v14 n6 Jun 66* 285-291
commensurate transmission-line C-section all-pass networks; analysis and exact synthesis. *Cristal, Edward G., Correction*; *T-MTT v14 n10 Oct 66* 498-499
low-gain amplifiers; optimum efficiency; *Steinbrecher, Donald H.*; *T-MTT v18 n11 Nov 70* 951-956
mismatched N-cascaded two-port networks; applications and analysis of noise generation; *Mukaihata, Tadao*; *T-MTT v16 n9 Sep 68* 699-708
multiconductor transmission lines; matrix chain parameter identities; *Paul, Clayton R.*; *T-MTT v23 n9 Sep 75* 756-760 (1C10)
N-directional filters connected in cascade through sections of transmission lines; properties; *Wing, Omar*; *T-MTT v7 n2 Apr 59* 197-201
sensitivity and tolerance analysis; *Bandler, J. W.*; *T-MTT v26 n12 Dec 78* 963-972 (1C13)
transmission-line networks; numerical calculation of characteristic impedance of commensurate-line networks; *Komiak, James*; *T-MTT v24 n4 Apr 76* 212-215 (1D08)
two-port networks connected by transmission lines; design procedure; *Levy, Ralph*; *T-MTT v21 n8 Aug 73* 519-526 (1C05)
Cassegrain antennas; cf. Reflector antennas, Cassegrain
Cathode-ray oscilloscopes
sampling techniques; achievement of bandwidth from dc to X-band; *Grove, Wayne M.*; *T-MTT v14 n12 Dec 66* 629-635
Cavity perturbation methods
dielectric constant measurement based on stationarity of resonant frequency of rectangular cavity as function of sample thickness; *Eugene, Christian E.*; *T-MTT v21 n12 Dec 73* 847-850 (3C02)
dielectric measurements on thin samples of length less than height of cavity; *Parkash, Anand*; *T-MTT v27 n9 Sep 79* 791-795 (1B11)
loss tangent measurement for low-loss materials; resonator bridge method; *Watanabe, K.*; *T-MTT v26 n4 Apr 78* 314-315 (2A01)
loss tangent measurement of low-loss material; resonator bridge method; *Kneppo, Ivan*; *T-MTT v25 n5 May 77* 418-423 (1F08)
microwave transistor mounted in microstrip; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
rectangular drift tube-loaded cavity; field components measurement using various perturbing objects; *Brunner, F.*; *T-MTT v23 n3 Mar 75* 319-320 (1D11)
simultaneous measurement of size and permittivity of dielectric samples; use of Gunn flangT oscillators; *Lakshminarayana, Mysore R.*; *T-MTT v27 n7 Jul 79* 661-665 (1C07)
Cavity-resonator filters
alignment and diagnosis, computer-aided; *Thal, Herbert L., Jr.*; *T-MTT v26 n12 Dec 78* 958-963 (1C08)
application of stepped impedance transformer theory; *Young, Leo*; *T-MTT v10 n5 Sep 62* 339-359
bandpass filters in circular guide excited in TE_{011}-mode; *Atia, Ali E.*; *T-MTT v24 n10 Oct 76* 640-648 (1A12)
circularly polarized cavities; ferrite-loaded; *Whirry, Walter L.*; *T-MTT v6 n1 Jan 58* 59-65
circularly polarized equalizers using crossed slot coupling aperture; *Wanselow, Robert D.*; *T-MTT v22 n1 Jan 74* 63-66 (1E09)
circularly polarized microwave cavity filters; *Nelson, Conrad E.*; *T-MTT v5 n2 Apr 57* 136-147
cylindrical TE_{011}/TM_{111} mode control by cavity shaping; *Thal, Herbert L., Jr.*; *T-MTT v27 n12 Dec 79* 982-986 (1E02)
diplexers, asymmetric bandpass channel diplexers; direct design formulas; *Haine, John L.*; *T-MTT v25 n10 Oct 77* 807-813 (1A03)
direct- and quarter-wave-coupled microwave bandpass filters with adjustable transmission characteristics; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 73-77
direct-coupled cavities vs. quarter-wave coupled cavities; *Kurzrok, Richard M.*; *T-MTT v7 n4 Oct 59* 475
direct-coupled cavity filters for wide and narrow bandwidths; *Young, Leo*; *T-MTT v11 n3 May 63* 162-178
direct-coupled cavity filters for wide and narrow bandwidths. *Young, Leo, Correction*; *T-MTT v11 n6 Nov 63* 561
direct-coupled-cavity filters; improved agreement between theory and exactly computed results; *Levy, R.*; *T-MTT v16 n8 Aug 68* 567-568
direct-coupled; design theory; *Levy, Ralph*; *T-MTT v15 n6 Jun 67* 340-348
direct coupled filters; precision design; *Reed, J.*; *T-MTT v15 n2 Feb 67* 134-136
direct-coupled multicavity resonator filters exhibiting bandpass behavior; computer-aided design; *Young, Leo*; *T-MTT v7 n1 Jan 59* 99-101
discontinuity effects in single resonator traveling-wave filters; *Standley, Robert D.*; *T-MTT v11 n6 Nov 63* 551-552
dual-mode circular cavity structure for realizing general class of coupled cavity transfer functions; *Williams, Albert E.*; *T-MTT v25 n12 Dec 77* 1021-1026 (1E03)
effect of increased design bandwidth on direct-coupled-resonator filters; *Whiting, K.*; *T-MTT v11 n6 Nov 63* 557-560
high-power multiple-resonator filters; design consideration; *Cohn, Seymour B.*; *T-MTT v7 n1 Jan 59* 149-153
millimeter-wave diplexers; 80-GHz band low-loss ring-type channel diplexer using semicircular electric mode; *Nakajima, Nobuo*; *T-MTT v24 n11 Nov 76* 831-836 (2E08)
millimeter-wave directional filter cavities; *Moore, Brad D.*; *T-MTT v24 n11 Nov 76* 843-847 (2F06)
mixed mode bandpass filters using alternating TE_{011} and TE_{n11} circular waveguide cavity modes; *Taggart, David A.*; *T-MTT v22 n10 Oct 74* 898-902 (1D10)
narrow-band generalized direct-coupled linear phase filters; design; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 308-313
narrow-bandpass filters having ripple in passband and stopband; synthesis as coupled waveguide cavities; *Atia, Ali E.*; *T-MTT v20 n4 Apr 72* 258-265 (1C04)
nonequiripple antimetric elliptic filters which can be realized in dual-mode waveguide; *Wanselow, Robert D.*; *T-MTT v23 n8 Aug 75* 708-711 (2A12)
quasi-optical resonator filters for millimeter and submillimeter wave frequencies; *Taub, J. J.*; *T-MTT v12 n6 Nov 64* 618-619
simple relation between cavity Q and maximum rejection for narrowband microwave stopband filters; *Lubell, Peter D.*; *T-MTT v12 n1 Jan 64* 145

trapped-mode resonators for damping spurious resonances; two-resonator filter with narrow passband and very wide stopband; *Schiffman, Bernard M.*; *T-MTT v13 n5 Sep 65* 575-580
use of step-twist-junction discontinuities in waveguide filters; *DeLoach, Bernard C., Jr.*; *T-MTT v9 n2 Mar 61* 130-135
waveguide-sandwich resonator filters; *Tajima, Yusuke*; *T-MTT v22 n9 Sep 74* 839-841 (1B07)
Cavity-resonator filters; cf. Waveguide filters
Cavity resonators
analysis of the necessity for rounded corners in high-power filters and other components; *Cohn, Seymour B.*; *T-MTT v9 n5 Sep 61* 389-397
analysis of transmission cavity wavemeter; *Young, Leo*; *T-MTT v8 n4 Jul 60* 436-439
bandwidth measurement by transmission of a signal with sine-wave modulation; *Lerner, David S.*; *T-MTT v8 n3 May 60* 343-345
cavities terminating transmission lines; measurement of parameters; *Lebowitz, R. A.*; *T-MTT v4 n1 Jan 56* 51-53
cavities terminating transmission lines; refined method for the measurement of parameters; *St. Clair, Maurice W.*; *T-MTT v4 n3 Jul 56* 184
circular-guide cavities, TE_{011}-mode; temperature compensation; *Atia, Ali E.*; *T-MTT v24 n10 Oct 76* 668-669 (1C12)
coaxial, ferrite-filled; dispersion relations; *Mueller, Ralph S.*; *T-MTT v16 n10 Oct 68* 835-842
coupling between two identical cavities by small aperture in wall of arbitrary thickness; *McDonald, Noel A.*; *T-MTT v20 n10 Oct 72* 689-695 (2B01)
coupling; changing by means of a stub tuner; *Kulke, Bernhard*; *T-MTT v15 n3 Mar 67* 184-185
coupling holes between cavities or waveguides evaluated in terms of volume ratios; *Wheeler, Harold A.*; *T-MTT v12 n2 Mar 64* 231-244
coupling measurement for system of coupled cavities; *Atia, A. E.*; *T-MTT v23 n6 Jun 75* 519-522 (1E05)
cylindrical cavity in isotropic, lossy compressible plasma; low-frequency resonances; *Burman, R.*; *T-MTT v14 n5 May 66* 251-252
cylindrical reentering cavity; lumped-parameter equivalent circuit; *Rivier, Edouard*; *T-MTT v19 n3 Mar 71* 309-314 (1F05)
cylindrical resonator for measuring complex permittivity; sensitive method; *Roussy, Georges*; *T-MTT v14 n4 Apr 66* 171-175
determination of the effect of a sample insertion hole on the dielectric measurements of a cylindrical cavity resonator; *Estin, Arthur J.*; *T-MTT v8 n6 Nov 60* 650-653
dielectric-loaded cylindrical cavities; computer program for calculating eigenmodes; *Joly, J. C.*; *T-MTT v20 n6 Jun 72* 422 (2C09)
dielectric-loaded, with high-permittivity dielectrics; resonant frequency calculation; *Van Bladel, Jean*; *T-MTT v22 n1 Jan 74* 32-37 (1C06)
dual TE_{111} mode preselector having wide-tuning range and compact size; *Fjerstad, Roger L.*; *T-MTT v14 n9 Sep 66* 424-427
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions; *Rahmat-Samii, Y.*; *T-MTT v23 n9 Sep 75* 762-765 (1D02)
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions. *Rahmat-Samii, Y., Correction*; *T-MTT v26 n1 Jan 78* 44 (1D04)
dyadic Green's functions for rectangular cavity. *Tai, C. T., Correction*; *T-MTT v25 n4 Mar 77* 235 (1E13)
dyadic Green's functions for rectangular cavity; various representations; *Tai, Chen-To*; *T-MTT v24 n9 Sep 76* 597-601 (1D11)
effect of mismatches in the transmission lines and components connecting a cavity on the loaded Q of the cavity; analysis; *Bady, Isidore*; *T-MTT v17 n3 Mar 69* 165-166
electric and magnetic eigenvectors for cavities containing media with tensor characteristics; *Van Bladel, Jean G.*; *T-MTT v10 n1 Jan 62* 9-13
electromagnetic fields; expansion of functions and supplement to the classical theory of J. C. Slater; *Kurokawa, Kaneyuki*; *T-MTT v6 n2 Apr 58* 178-187
evaluation of resonance frequencies in cylindrical cavities with radial vanes; *Singh, A.*; *T-MTT v9 n1 Jan 61* 101-102
extension of TE_{01n} resonator method of dielectric measurements on solids; *Paris, D. T.*; *T-MTT v12 n2 Mar 64* 251-252
external cavity for frequency stabilization of a microwave oscillator; *Goldstein, Irving*; *T-MTT v5 n1 Jan 57* 57-62
ferrimagnetic power limiter using a ferrite-loaded cavity; *Krokstad, Jarle*; *T-MTT v13 n1 Jan 65* 119-122
ferrite-tuned coaxial cavity; *Butler, J. K.*; *T-MTT v11 n2 Mar 63* 153
ferrites; evaluation of scalar permittivity and permeability by two partially filled cavity-resonator techniques; *Sinha, J. K.*; *T-MTT v15 n9 Sep 67* 523-525
formulas for peak fields inside each cavity of a direct-coupled-cavity filter; *Young, Leo*; *T-MTT v8 n6 Nov 60* 612-616
frequency selective phase shifters using resonant cavities; *McDonald, N. A.*; *T-MTT v25 n10 Oct 77* 855-856 (1D09)
general power loss method for attenuation of cavities and waveguides; *Gustincic, Jacob J.*; *T-MTT v11 n1 Jan 63* 83-87
gyromagnetic rod centered in a right circular cylindrical cavity resonator; exact solution; *Bussey, H. E.*; *T-MTT v6 n1 Jan 58* 72-76
high-Q, external; used for frequency stabilization of reflex klystrons; *Rabinowitz, S. J.*; *T-MTT v2 n3 Sep 54* 23-26
high-Q TE_{011}-mode reflection cavity; use for stabilizing X-band Gunn oscillator; *Ito, Yukio*; *T-MTT v18 n11 Nov 70* 890-897
insertion loss and VSWR of a waveguide resonator constructed by spacing two unequal reflecting elements approximately one-half wavelength apart; *Riblet, Henry J.*; *T-MTT v11 n1 Jan 63* 78-83
integral quotient in measurements of ambipolar diffused plasma with TE_{011} cavity; *Jääskeläinen, Paavo*; *T-MTT v12 n5 Sep 64* 552
interaction of microwaves with gas-discharge plasmas; *Brown, Sanborn C.*; *T-MTT v7 n1 Jan 59* 69-72
klystron cavities; calculation of shunt impedance; *Ginzton, E. L.*; *T-MTT v3 n5 Oct 55* 4-7
klystron resonant cavities; general treatment and equivalent circuits; *Fujisawa, Kazuo*; *T-MTT v6 n4 Oct 58* 344-358
linear tuning of a microwave cavity; *Vetter, M. J.*; *T-MTT v13 n6 Nov 65* 880
loaded Q of waveguide resonators; comments; *Kurzrok, R. M.*; *T-MTT v15 n3 Mar 67* 192-193
lossy coupling mechanism; effect on internal Q; *Danielsen, M.*; *T-MTT v20 n11 Nov 72* 758-760 (1E10)
low-frequency excitation; theory of model expansions; *Méndez, Horacio A.*; *T-MTT v18 n8 Aug 70* 444-448
magnetically tunable cylindrical cavity containing full-height triangular post; point-matching solution; magnetic tuning characteristics; *Khilla, Abdel-Messias*; *T-MTT v27 n6 Jun 79* 592-598 (1C10)
measurement of short time changes of Q factor and resonant frequency; *Richter, Kurt R.*; *T-MTT v17 n6 Jun 69* 339-344
measurement of short time changes of Q factor and resonant frequency. *Richter, K. R., Addendum*; *T-MTT v18 n4 Apr 70* 229
measurement of varactor quality expanding on Houlding's resonant cavity method; *Keywell, Frank*; *T-MTT v10 n6 Nov 62* 567-572
measuring coupling coefficients of transmission-type cavities; swept frequency method; *Magerl, Gottfried*; *T-MTT v26 n3 Mar 78* 223-224 (1G05)
measuring intercavity couplings; *McDonald, N. A.*; *T-MTT v24 n3 Mar 76* 162 (1C08)
measuring loss and mode-conversion; frequency-domain shuttle-pulse method; *Bernardi, Paolo*; *T-MTT v26 n3 Mar 78* 203-209 (1E13)
measuring Q; method based on relation between integral of resonance curve and Q of cavity; *Kneppo, Ivan*; *T-MTT v26 n2 Feb 78* 131 (1G01)
microstrip circuits enclosed by conducting walls; resonant frequency calculations; *Robinson, Gerald H.*; *T-MTT v19 n7 Jul 71* 665-666 (2E08)
microstrip–cavity resonator coupling through aperture in substrate ground plane; *Kumar, Mahesh*; *T-MTT v26 n9 Sep 78* 690-691 (1E08)
microwave oscillators stabilized by transmission cavity; matching; *Schünemann, Klaus*; *T-MTT v26 n3 Mar 78* 147-155 (1A13)
microwave Q measurements in the presence of coupling losses; *Ginzton, Edward L.*; *T-MTT v6 n4 Oct 58* 383-389
millimeter-wave IMPATT oscillators; cavity stabilization and electronic tuning by parametric interaction; *Okamoto, Hiroshi*; *T-MTT v26 n6 Jun 78* 420-424 (1C14)
modes in radial wave beam resonators; *Goubau, G.*; *T-MTT v13 n6 Nov 65* 749-755
multiband cavity for high temperature plasma measurements; *Maloney, William T.*; *T-MTT v12 n6 Nov 64* 616-617
nonseparable solutions of Helmholtz wave equation; field energy and power; *Luypaert, P. J.*; *T-MTT v23 n12 Dec 75* 1061-1064 (2B12)
numerical analysis using transmission-line matrix method; inhomogeneous lossy cavities; *Akhtarzad, Sina*; *T-MTT v23 n12 Dec 75* 990-997 (1D10)
numerical computation of eigenvalues for a centrally loaded cylindrical cavity; *Bolle, Donald M.*; *T-MTT v10 n2 Mar 62* 133-138
open-ended, cylindrical circular; TE_{011} mode of oscillation; *Wenger, Norman C.*; *T-MTT v15 n6 Jun 67* 334-340
open-ended microwave type; design and analysis; *Thorn, D. C.*; *T-MTT v7 n3 Jul 59* 389-390
open-ended rectangular cavity; resonant frequency and Q; *Pozar, David M.*; *T-MTT v25 n7 Jul 77* 589-593 (1B11)
orthogonality relationships for waveguides and cavities with inhomogeneous anisotropic media; *Villeneuve, Alfred T.*; *T-MTT v7 n4 Oct 59* 441-446
oven mode tuning by slab dielectric loads; *Mihran, Theodore G.*; *T-MTT v26 n6 Jun 78* 381-387 (1A03)
Q-factor and circuit efficiency; improved measurement and evaluation method; *Singh, Amarjit*; *T-MTT v6 n2 Apr 58* 155-160
Q measurement of cavities strongly coupled to its transmission line; *Alvarez, R.*; *T-MTT v11 n1 Jan 63* 89-90
Q measurement; transmitted power compared with that of reference resonator; *Kneppo, Ivan*; *T-MTT v25 n5 May 77* 423-426 (1F13)
reentrant cavities; admittance at gap; *Uenakada, Katsuaki*; *T-MTT v21 n1 Jan 73* 48-51 (2B01)
reentrant cylindrical cavities having narrow gap; resonant frequency and tuning characteristics; *Vaughan, J. R. M.*; *T-MTT v25 n7 Jul 77* 625 (1E05)
reentrant cylindrical cavities having narrow gap; resonant frequency and tuning characteristics; *Williamson, A. G.*; *T-MTT v24 n4 Apr 76* 182-187 (1B06)
reentrant cylindrical cavities; resonant frequency calculation; *Jaworski, Marek*; *T-MTT v26 n4 Apr 78* 256-260 (1C06)
reentrant cylindrical cavity with narrow-gap; resonant frequency calculation; *Green, Harry E.*; *T-MTT v25 n3 Mar 77* 233-234 (1E11)
reference cavity; design considerations; *Gerard, William A.*; *T-MTT v5 n2 Apr 57* 148-152
resonant cavity type mode transducer; principles of operation and properties; *Shimada, Sadakuni*; *T-MTT v14 n8 Aug 66* 384-391
ridge-waveguide cavity for Gunn oscillators; wideband tuning; *Mizushina, S.*; *T-MTT v24 n5 May 76* 257-259 (1B09)
semiconductor-filled microwave cavity; perturbation by nuclear radiation particles; *Haden, C. R.*; *T-MTT v14 n7 Jul 66* 347-349
slope detection for perturbation measurements; *Mallory, K. B.*; *T-MTT v10 n2 Mar 62* 146-147
spherical cavity with impedance wall; eigenvalues; *Bhartia, P.*; *T-MTT v19 n1 Jan 71* 110-111 (2F06)
spherical; determination of optimum position of the exciting source for any TE or TM mode; *Ghose, Rabindra N.*; *T-MTT v5 n1 Jan 57* 18-22
spheroidal cavity; theoretical expressions of lumped parameters; *Rivier, E.*; *T-MTT v17 n9 Sep 69* 720
strongly coupled cavity chains to form a bandpass filter; *Allen, Matthew A.*; *T-MTT v8 n3 May 60* 362-372
strongly coupled cavity chains to form a bandpass filter; *Bevensee, R. M.*; *T-MTT v8 n6 Nov 60* 669-671
swept-frequency cavity measurements of properties of materials; errors due to uncertainty principle; *Waldron, R. A.*; *T-MTT v16 n5 May 68* 314-315
temperature control of coaxial cavity by controlling capacitance between center conductor and end plate; *Cogdell, John R.*; *T-MTT v8 n2 Mar 60* 151-155
toroidal resonator with conducting separating wall; exact solution of Maxwell equations; *Deutsch, Rudolf*; *T-MTT v27 n2 Feb 79* 172-178 (1F12)
toroidal resonators; exact solution; *Cap, Ferdinand*; *T-MTT v26 n7 Jul 78* 478-486 (1B10)
tunable cavity filled with a dry inert gas and hermetically sealed; temperature compensation; *Saad, Theodore S.*; *T-MTT v1 n1 Mar 53* 25-28
tunable, dielectric loaded microwave cavities; high Q and filling factor; *Ammann, Eugene O.*; *T-MTT v11 n6 Nov 63* 528-542
tunable, two-mode cavity with capacitative loading; *McGee, J. D.*; *T-MTT v8 n5 Sep 60* 569-570

varactor frequency modulated AFC reference cavity; *Farokhrooz, A.*; *T-MTT v11 n4 Jul 63* 258-260
wire inside rectangular cavity excited by external sources coupled to interior by aperture in cavity wall; current excited on wire; *Seidel, David B.*; *T-MTT v26 n11 Nov 78* 908-914 (1E10)
X-band TE_{01} type; effects of different end plate configurations on the *Q*; *Thompson, M. C., Jr.*; *T-MTT v7 n3 Jul 59* 388-389

Cavity resonators; cf. Cavity perturbation techniques; Coaxial resonators; Millimeter-wave cavity resonators; Resonators; Superconducting cavity resonators

Ceramic materials
nondestructive evaluation using electromagnetic millimeter waves to detect and locate defects; *Bahr, Alfred J.*; *T-MTT v26 n9 Sep 78* 676-683 (1D08)

Cerenkov radiation
Cerenkov radiation in anisotropic ferrite; *Zelby, L. W.*; *T-MTT v12 n3 May 64* 383
Cerenkov radiation in anisotropic ferrites; *Rosenbaum, Fred J.*; *T-MTT v11 n5 Sep 63* 302-311
millimeter-wave generation by Cerenkov radiation; *Danos, M.*; *T-MTT v2 n3 Sep 54* 21-22
submillimeter-wave Cerenkov radiation from relativistic electron-beam-driven dielectric-loaded waveguide; *Walsh, J. E.*; *T-MTT v25 n6 Jun 77* 561-563 (2C06)

Channel bank filters
blazed diffraction grating as frequency-selective element; *Henry, Paul S.*; *T-MTT v26 n6 Jun 78* 428-433 (1D08)
frequency selective phase shifters using resonant cavities; *McDonald, N. A.*; *T-MTT v25 n10 Oct 77* 855-856 (1D09)
general manifold multiplexer design; bandpass channel filters connected to uniform-impedance manifold; *Rhodes, J. David*; *T-MTT v27 n2 Feb 79* 111-123 (1B07)
generalized multiplexer theory; design of multiplexers having any number of channels with arbitrary channel complexity, bandwidths, and interchannel spacing; *Rhodes, J. David*; *T-MTT v27 n2 Feb 79* 99-111 (1A09)
millimeter-wave band-splitting filter using Michelson interferometer hybrid; *Suzuki, Nobuo*; *T-MTT v24 n5 May 76* 237-241 (1A03)
millimeter-wave channel dropping filter using dielectric rectangular waveguide; *Itanami, Takao*; *T-MTT v26 n10 Oct 78* 759-764 (1E01)

Channel bank filters; cf. Diplexers

Charge-carrier processes
Ge; submillimeter-wave absorption spectra and phase transitions of indirect excitons; *Vavilov, V. S.*; *T-MTT v22 n12 Dec 74* 1086-1089 (2A11)
magnetostatic surface-wave interaction with drifting carriers in semiconductor; *Kawasaki, Kiyohiro*; *T-MTT v22 n11 Nov 74* 918-924 (1A08)

Chebyshev approximation
circulators; junction circulator with Chebyshev characteristics; *Helszajn, Joseph*; *T-MTT v23 n7 Jul 75* 548-554 (1A10)
microstrip problems; *Gladwell, Graham M. L.*; *T-MTT v23 n11 Nov 75* 865-870 (1B01)

Chebyshev approximation; cf. Minimax approximation

Chebyshev arrays
extension of Chebyshev's procedure to functions with double-value singularities; application to familiar transmission line problems; *Riblet, Henry J.*; *T-MTT v12 n4 Jul 64* 415-421

Chebyshev filters
acoustic surface-wave interdigital filters; tap weight determination; *Matthaei, George L.*; *T-MTT v24 n1 Jan 76* 1-10 (1A03)
Chebyshev impedance transformers consisting of short sections of transmission line; *Matthaei, George L.*; *T-MTT v14 n8 Aug 66* 372-383
Chebyshev transformers; simplified determination of impedances; *Stegen, R. J.*; *T-MTT v14 n7 Jul 66* 354
commensurate line filters; roots of equiripple insertion-loss functions; *Gupta, Om P.*; *T-MTT v19 n4 Apr 71* 410-411 (2C06)
extension of Chebyshev's procedure to functions with double-value singularities; application to familiar transmission line problems; *Riblet, Henry J.*; *T-MTT v12 n4 Jul 64* 415-421
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z*; *Gledhill, Cyril S.*; *T-MTT v17 n7 Jul 69* 379-386
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z*; *Levy, R.*; *T-MTT v18 n9 Sep 70* 648
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z.Gledhill, C. S., Correction*; *T-MTT v17 n11 Nov 69* 1046
synthesis procedure for microwave bandpass with the Chebyshev response using orthogonal circuit resonators coupled by a ferrimagnetic resonator; *Comstock, R. Lawrence*; *T-MTT v12 n6 Nov 64* 599-607
waveguide filters; explicit design formulas for single-sided filters; *Rhodes, J. David*; *T-MTT v23 n8 Aug 75* 681-689 (1F09)

Chebyshev functions
generalized rational function approximation in finite intervals using Zolotarev functions; *Levy, Ralph*; *T-MTT v18 n12 Dec 70* 1052-1064

Chirp modulation
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)

Circular waveguides
annular metallic strip in circular guide; scattering matrix for multimodal guide and susceptance for single-mode TE_{01} guide; variation approach; *Sugiura, Torahiko*; *T-MTT v27 n2 Feb 79* 160-167 (1E14)
antennas fed from Te_{01}-mode guide; pencil beam formation; *Wengenroth, Robert D.*; *T-MTT v26 n5 May 78* 332-334 (1A14)
approximate method of determining the cutoff frequencies of waveguides of arbitrary cross section; *Chi, M.*; *T-MTT v12 n2 Mar 64* 248-249
broadband dual-mode waveguide transducer; *Tompkins, R. D.*; *T-MTT v4 n3 Jul 56* 181-183
coaxial line driving thin cylindrical probe in TE_{11} circular guide; input impedance seen by coaxial line; *Bondyopadhyay, Probir K.*; *T-MTT v27 n3 Mar 79* 284-285 (1E14)

Circular waveguides, *cont.*
coaxial line driving thin cylindrical probe in TE_{11} circular guide; input impedance seen by coaxial line. *Bondyopadhyay, Probir K., Correction*; *T-MTT v27 n6 Jun 79* 621 (1E11)
coaxial line driving thin cylindrical probe in TE_{11}-mode circular guide; input impedance seen by coaxial line; *Deshpande, M. D.*; *T-MTT v25 n11 Nov 77* 954-957 (1A11)
coaxial line driving thin cylindrical probe in TE_{11}-mode guide; input impedance seen by coaxial line. *Deshpande, M. D., Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
coaxial line terminated in a circular waveguide; calculation of discontinuity capacitance using the Rayleigh–Ritz variational technique; *Risley, Edward W., Jr.*; *T-MTT v17 n2 Feb 69* 86-92
coaxial-to-circular waveguide abrupt transition; capacitance calculation; *Razaz, M.*; *T-MTT v27 n6 Jun 79* 564-569 (1A10)
components for TE_{01} at 94GHz; rectangular-to-circular conversion mode filter, 90° bends, 10db couplers, flexible sections, attenuators, etc.; *Simmons, Alan J.*; *T-MTT v11 n5 Sep 63* 324-332
coupling rectangular-to-circular guide at millimeter-wave frequencies; helical coupler; *Predmore, C. Read*; *T-MTT v24 n11 Nov 76* 847-852 (2F10)
cylindrical, containing longitudinally magnetized ferrite rods; propagation constants; *Severin, Hans K. F.*; *T-MTT v7 n3 Jul 59* 337-346
cylindrical, of arbitrary cross section; equations of propagation of electromagnetic waves; *Kong, Jin A.*; *T-MTT v16 n2 Feb 68* 99-103
deformed shape; effect on H_{01} mode characteristics; *Lagasse, Paul*; *T-MTT v20 n5 May 72* 331-337 (1E02)
design and development of a medium CW and a high CW power level, broadband ridge ferrite-loaded waveguide; *Grimes, E. S., Jr.*; *T-MTT v8 n5 Sep 60* 489-492
dielectric-lined waveguides; bandwidth enhancement; *Tsandoulas, G. N.*; *T-MTT v21 n10 Oct 73* 651-654 (1F05)
digital communication using TE_{01} mode; 35–120 GHz; *Abele, Thomas A.*; *T-MTT v23 n4 Apr 75* 326-333 (1A04)
eccentric waveguides; cutoff frequencies; *Yee, Hung Yuet*; *T-MTT v14 n10 Oct 66* 487-493
ellipticity effect on dominant-mode axial ratio; *Sandsmark, P. I.*; *T-MTT v3 n5 Oct 55* 15-20
excitation; end launcher transition for exciting TE_{11} mode from coaxial line; *Bondyopadhyay, Probir K.*; *T-MTT v27 n6 Jun 79* 621 (1E11)
excitation; end launcher transition for exciting TE_{11} mode from coaxial line; *Deshpande, M. D.*; *T-MTT v26 n9 Sep 78* 672-675 (1D04)
expansion of bandwidth of a circular waveguide by lining it with dielectric; *Meier, Paul J.*; *T-MTT v12 n2 Mar 64* 171-175
feasibility study on a TE_{01} mode circular waveguide resonance isolator; waveguide loaded with rings of hexagonal ferrite; *Henschke, Richard A.*; *T-MTT v12 n4 Jul 64* 392-400
ferrite loaded, azimuthally magnetized ferrite tube; *Parriaux, Olivier*; *T-MTT v25 n3 Mar 77* 221-224 (1D13)
general two-plate polarizer; cross polarization; *Breithaupt, R. W.*; *T-MTT v15 n1 Jan 67* 55-57
group and energy velocity in a periodically loaded, circular waveguide; *Walker, George B.*; *T-MTT v10 n1 Jan 62* 30-33
guided waves in inhomogeneous focusing media; asymptotic solution for general weak inhomogeneity; *Kurtz, Clark N.*; *T-MTT v17 n5 May 69* 250-253
guided waves in inhomogeneous focusing media; formulation, solution for quadratic inhomogeneity; *Kurtz, Clark N.*; *T-MTT v17 n1 Jan 69* 11-15
guided waves in inhomogeneous focusing media; wall effects, losses, and transition from fast to slow waves; *Kurtz, Clark N.*; *T-MTT v17 n7 Jul 69* 360-363
H_{01} mode; launching method; *Lanciani, D. A.*; *T-MTT v2 n2 Jul 54* 45-51
helically corrugated multimode circular waveguide; wave propagation and mode conversion; *Tang, Charles C. H.*; *T-MTT v14 n6 Jun 66* 275-284
hybrid junction consisting of two *X*-band rectangular guides and *X*-band circular guide; *Jain, A. K.*; *T-MTT v21 n7 Jul 73* 482-483 (2B01)
hybrid junction with multilayer dielectric sheet; nearly constant power division over 40–110 GHz band; *Harkless, Earl T.*; *T-MTT v27 n12 Dec 79* 975-982 (1D09)
lined with anisotropic dielectric material; propagation characteristics; *Chang, Christopher T. M.*; *T-MTT v20 n8 Aug 72* 517-523 (1D03)
magnetoplasma-filled; 'twist' modes; *Champlin, Keith S.*; *T-MTT v18 n9 Sep 70* 566-570
measuring mode conversion; frequency-domain shuttle-pulse method; *Bernardi, Paolo*; *T-MTT v26 n3 Mar 78* 203-209 (1E13)
metallic, cylindrical; excitation of a dielectric rod; *Angulo, Carlos M.*; *T-MTT v6 n4 Oct 58* 389-393
millimeter-wave dielectric guides; attenuation characteristics in 72-GHz band; *Jablonski, Daniel*; *T-MTT v26 n9 Sep 78* 667-671 (1C13)
millimeter-wave oversized circular waveguide; surface-resistance measurement; *Hatano, Satomi*; *T-MTT v24 n11 Nov 76* 886-887 (3C06)
mode filters for millimeter-wave guides; TE_{02} and TE_{03} attenuation; *Hashimoto, Kunio*; *T-MTT v24 n1 Jan 76* 25-31 (1B13)
mode reordering in guides containing one or more dielectrics; *Tsandoulas, G. N.*; *T-MTT v19 n4 Apr 71* 386-392 (1E06)
multimode tapered waveguides; mode correspondence between circular and square configurations; *Tang, Charles C. H.*; *T-MTT v15 n5 May 67* 314-317
nonreciprocal circular polarizer; converts linear polarization propagating in rectangular waveguide into circular polarization propagating in circular waveguide; *Reuss, Max L., Jr.*; *T-MTT v15 n1 Jan 67* 37-41
numerical computation of eigenvalues for a centrally loaded cylindrical cavity; *Bolle, Donald M.*; *T-MTT v10 n2 Mar 62* 133-138
open-ended cylindrical cavity consisting of circular waveguide; TE_{011} mode of oscillation; *Wenger, Norman C.*; *T-MTT v15 n6 Jun 67* 334-340
oversize guides and transitions; millimeter-wave waveguides; *King, Howard E.*; *T-MTT v19 n1 Jan 71* 116-119 (3B05)
periodic leaky waveguides for helix and solid metal waveguides carrying a circular TE_{01} mode; propagation characteristics; *Mikoshiba, Koichi*; *T-MTT v17 n1 Jan 69* 15-19
phase characteristics of a circularly symmetric dual-mode transducer; *Agarwal, K. K.*; *T-MTT v18 n1 Jan 70* 69-71
polystyrene-filled; properties of thin annular resonant slots; *Cohn, Marvin*; *T-MTT v1 n2 Nov 53* 39-44

propagation characteristics of waveguide with uniformly spaced cylindrical posts; 2840 MHz; *Altshuler, Edward E.*; *T-MTT v9 n5 Sep 61* 398-402
propagation in cylindrical waveguide containing inhomogeneous dielectric; *Yamada, R.*; *T-MTT v13 n5 Sep 65* 716-717
quadruply-ridged; use for broadband ferrite rotators; *Chait, Herman N.*; *T-MTT v7 n1 Jan 59* 38-41
random discrete imperfections in millimeter-wave circular guide; attenuation increase; *Falciasecca, Gabriele*; *T-MTT v25 n11 Nov 77* 911-915 (1D05)
rod waveguide; effect of surface impedance variation on surface wave propagation; *Tsandoulas, G. N.*; *T-MTT v16 n10 Oct 68* 886-888
short conical and asymmetrical-rectangular waveguide tapers; mode conversion; *Tomiyasu, K.*; *T-MTT v16 n3 Mar 68* 197-199
sinusoidally perturbed walls; TM mode propagation; *Asfar, Omar Rafik*; *T-MTT v23 n9 Sep 75* 728-734 (1A10)
solid-state plasma waveguide; microwave Faraday effect and propagation; *Kuno, H. J.*; *T-MTT v16 n10 Oct 68* 895
solid-state plasma waveguide; microwave Faraday effect and propagation; *Kuno, Hiromu J.*; *T-MTT v15 n12 Dec 67* 661-668
step-discontinuity; power conversion coefficients and launch phase of propagating modes excited by discontinuity; *English, William J.*; *T-MTT v21 n10 Oct 73* 633-636 (1D11)
stepped-dielectric transformer, rectangular-to-circular waveguide; *Maher, B.*; *T-MTT v9 n6 Nov 61* 572-573
tapered; mode conversion at and near cutoff; *Tang, Charles C. H.*; *T-MTT v14 n5 May 66* 233-239
tapered transition design; *Christensen, P. S.*; *T-MTT v19 n1 Jan 71* 99-100 (2E07)
TE_{01}-mode-transmitting, multimode; circumferential gap; *Morita, Nagayoshi*; *T-MTT v16 n3 Mar 68* 183-189
TE_{10} rectangular to TE_{01} circular waveguide transitions; *Wolfert, Paul H.*; *T-MTT v11 n5 Sep 63* 430-431
theoretical considerations on the use of circularly symmetric TE modes for digital ferrite phase shifters; *Bolle, Donald M.*; *T-MTT v13 n4 Jul 65* 421-426
transitions; optimum tapered transitions; *Hecken, Rudolph P.*; *T-MTT v21 n6 Jun 73* 374-380 (1B08)
waveguide with 2 coaxial bifurcations forming a directional coupler; *Oguchi, Bunichi*; *T-MTT v8 n6 Nov 60* 660-666
wideband circular waveguide polarizer using dielectric discs; *Meier, Paul J.*; *T-MTT v13 n6 Nov 65* 763-767

Circular waveguides; cf. Underground electromagnetic communication

Circulators
broadband 3-port *H*-plane waveguide circulators; theoretical design; *Parsonson, C. G.*; *T-MTT v16 n4 Apr 68* 256-258
broadband Faraday rotation circulator for the 10.7–11.7 GHz band; *Clavin, Alvin*; *T-MTT v5 n2 Apr 57* 164-165
broadband Faraday rotation circulator for the 10.7–11.7 GHz band; *Ohm, Edward A.*; *T-MTT v4 n4 Oct 56* 210-217
circulator-coupled negative resistance reflection amplifiers; *Okean, H. C.*; *T-MTT v14 n7 Jul 66* 323-337
circulator time-delay circuit; effect of 'ring resonance'; *Shipley, C. A.*; *T-MTT v16 n3 Mar 68* 202-203
cyclic *H*-plane junctions; exact three-dimensional field theory; *Copplestone, Ray J.*; *T-MTT v27 n6 Jun 79* 577-584 (1B09)
design criteria for nonreciprocal coupled-mode devices; application as isolators, circulators, duplexers; *Whicker, Lawrence R.*; *T-MTT v10 n1 Jan 62* 20-25
diplexing action in a *Y*-junction circulator; *Brown, J.*; *T-MTT v10 n4 Jul 62* 298
E-plane 3-port *X*-band waveguide circulators; *Davis, L. E.*; *T-MTT v11 n5 Sep 63* 443-445
half-height waveguide *X*-band *Y* and *T* junction circulators; construction and performance; *Freibergs, Elmer*; *T-MTT v17 n9 Sep 69* 729-730
junction circulator with Chebyshev characteristics; scattering matrix; *Helszajn, Joseph*; *T-MTT v23 n7 Jul 75* 548-554 (1A10)
light-weight *Y*-junction stripline circulator; *Freiberg, L.*; *T-MTT v8 n6 Nov 60* 672
lossless, nonideal junction circulators; flow graph analysis; *Hagelin, Sven*; *T-MTT v14 n5 May 66* 243-249
lossy circulators; performance limitations; *Bex, H.*; *T-MTT v19 n5 May 71* 493-494 (2C07)
lossy symmetrical three-port networks with circulator properties; analysis; *Hagelin, Sven*; *T-MTT v17 n6 Jun 69* 328-333
lumped-element *Y* circulator; equivalent circuit; *Bergman, J. O.*; *T-MTT v16 n5 May 68* 308-310
m-port single-junction type; systematic adjustment procedure; *Helszajn, Joseph*; *T-MTT v18 n10 Oct 70* 705-711
narrow band circulator employing but a single junction and a 45-degree Faraday rotator; *Allen, Philip J.*; *T-MTT v4 n4 Oct 56* 223-227
nonideal; operation with negative-conductance amplifier to achieve greater gain-bandwidth products and stable operation; *Sard, Eugene W.*; *T-MTT v7 n2 Apr 59* 288-293
phase-shift through symmetrical three-port circulators; *Riblet, G.*; *T-MTT v23 n5 May 75* 446-449 (1D06)
quarter-wave coupled circulators with Chebyshev characteristics; synthesis procedure; *Helszajn, Joseph*; *T-MTT v20 n11 Nov 72* 764-769 (1F04)
quarter-wave coupled reciprocal 3-port symmetrical junctions for which eigennetwork appears as short-circuit at reference terminals; relation to class of 3-port circulators; *Helszajn, Joseph*; *T-MTT v21 n8 Aug 73* 533-537 (1D07)
resonant circuits and circulators; broadband matching; *Schwartz, Eduard*; *T-MTT v16 n3 Mar 68* 158-165
resonant circuits and circulators; broadband matching. *Schwartz, E., Correction*; *T-MTT v16 n10 Oct 68* 894
symmetric, *Y*-junction, *E*-plane circulator capable of handling 500 kW peak and 670 W average power; operation at 9375 MHz; *Wright, William H., Jr.*; *T-MTT v16 n8 Aug 68* 557-559
symmetrical 4-ports; eigenadmittance condition for perfect circulation to be obtainable by matching alone; *Riblet, Gordon P.*; *T-MTT v26 n4 Apr 78* 275-279 (1D11)
three-port Y-junction circulator; analysis of broadband circulators with external tuning elements; *Anderson, Lawrence K.*; *T-MTT v15 n1 Jan 67* 42-47
waveguide on stripline *N*-port circulators, based on a threeport network with reactive elements; *Humphreys, B. L.*; *T-MTT v10 n6 Nov 62* 551-554
waveguide or stripline *N*-port circulators based on a three-port network with reactive elements; *Humphreys, B. L.*; *T-MTT v11 n4 Jul 63* 263

Circulators; cf. Ferrite circulators; Lumped-element circulators; Microstrip circulators; Millimeter-wave circulators; Optical circulators; Stripline circulators; UHF circulators

Clavier, Andre G.
obituary; *Saad, Theodore S.*; *T-MTT v20 n12 Dec 72* 792-793 (1B03)

Clouds
submillimeter-wave attenuation by clouds and rain; *Deirmendjian, D.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

Coaxial cable discontinuities
360° circumferential slots in rigid dielectric-coated coaxial cable; radiation characteristics; *Dewar, William J.*; *T-MTT v18 n8 Aug 70* 449-455
bead spacing in microwave transmission lines; reflection coefficient minimization; *Reed, John*; *T-MTT v7 n4 Oct 59* 477
capacitance of discontinuities formed by coplanar steps in both conductors of cable; computer program description; *Jurkus, A.*; *T-MTT v20 n10 Oct 72* 708-709 (2C08)
coaxial line terminated in circular waveguide; discontinuity capacitance; use as standard termination and low-frequency capacitance standard; *Risley, Edward W., Jr.*; *T-MTT v21 n8 Aug 73* 564-566 (2C10)
coaxial-to-circular waveguide abrupt transition; capacitance calculation; *Razaz, M.*; *T-MTT v27 n6 Jun 79* 564-569 (1A10)
junction with waveguide, coaxial line entering broad wall of rectangular guide; equivalent circuit; *Eisenhart, Robert L.*; *T-MTT v26 n3 Mar 78* 172-174 (1C10)
nonuniform coaxial line with an isoparametric sheath deformation used for impedance matching; *Seshagiri, N.*; *T-MTT v11 n6 Nov 63* 478-480
numerical technique for solving the field problem in a region bounded on two sides by infinitely extending coaxial lines; *Silvester, P.*; *T-MTT v17 n8 Aug 69* 489-495
outer braid of a coaxial cable, severed to obtain dc isolation; *Sparks, R. A.*; *T-MTT v9 n4 Jul 61* 360

Coaxial cable transitions
microstrip launchers; parasitic reactances, equivalent circuit; *Wight, J. S.*; *T-MTT v22 n1 Jan 74* 48-52 (1D08)
slotline–coax transitions; *Knorr, Jeffrey B.*; *T-MTT v22 n5 May 74* 548-554 (2A07)

Coaxial cables
braided coaxial cable in circular tunnel; braid transfer impedance dependence on propagation constant; *Wait, J. R.*; *T-MTT v25 n1 Jan 77* 72-74 (1F04)
braided-shield coaxial cables; electromagnetic theory of loosely braided cable; *Wait, James R.*; *T-MTT v24 n9 Sep 76* 547-553 (1A03)
coaxial-slot surface wave launchers; *Dewar, William J.*; *T-MTT v18 n8 Aug 70* 449-455
ferrite-filled coaxial line; propagation of the quasi-TEM mode; *Weiner, M. M.*; *T-MTT v14 n1 Jan 66* 49-50
line with helical dielectric support; approximate analysis; *Griemsmann, John W. E.*; *T-MTT v4 n1 Jan 56* 13-23
measurement of loss and dispersion in 0.4–10 GHz range; time-domain metrology; *Luce, D. A.*; *T-MTT v24 n1 Jan 76* 50-54 (1D10)
rectangular coaxial line with ratio 2:1 of outer-to-inner conductor side length; characteristic impedance; *Terakado, Ryuiti*; *T-MTT v24 n2 Feb 76* 124-125 (1E02)
rectangular cross section; dimensions of conductors for specified characteristic impedance; *Riblet, Henry J.*; *T-MTT v20 n8 Aug 72* 538-541 (1D12)
rectangular lines with thin center conductor and air dielectric; characteristic impedance; *Weil, Claude M.*; *T-MTT v26 n4 Apr 78* 238-242 (1B02)
regular polygon concentric with circle; characteristic impedance calculation using approximate conformal mapping method; *Laura, P. A. A.*; *T-MTT v25 n2 Feb 77* 160-161 (1F10)
regular polygon concentric with circle; characteristic impedance calculation using conformal mapping method; *Laura, P. A. A.*; *T-MTT v25 n2 Feb 77* 162-163 (1F12)
square concentric with circle; characteristic impedance calculation; *Riblet, Henry J.*; *T-MTT v23 n8 Aug 75* 714-715 (2B04)
transmission line; equivalent circuit of a series gap in the center conductor; *Dawirs, Harvel N.*; *T-MTT v17 n2 Feb 69* 127-129
tunnel communications; braided coaxial cable located close to tunnel wall; *Hill, David A.*; *T-MTT v24 n7 Jul 76* 476-480 (2B07)
tunnel containing braided coaxial cable; transmission modes in cable and coupling to tunnel environment; *Seidel, David B.*; *T-MTT v26 n7 Jul 78* 494-499 (1C12)

Coaxial cables; cf. Coaxial waveguides

Coaxial circuits
characteristic impedance of square coaxial line; *Green, Harry E.*; *T-MTT v11 n6 Nov 63* 554-555
low-pass filters; optimal design method; *Haack, G. R.*; *T-MTT v17 n3 Mar 69* 169-170
low-pass filters; precise design; *Levy, Ralph*; *T-MTT v16 n3 Mar 68* 142-147
power divider using coaxial line; increasing divider bandwidth; *David, Sidney*; *T-MTT v15 n4 Apr 67* 270-271
techniques for utilizing exponential transmission lines in microwave components; *Womack, Charles P.*; *T-MTT v10 n2 Mar 62* 124-132
variable harmonic phase delay coaxial network; *Wanselow, Robert D.*; *T-MTT v13 n5 Sep 65* 708-709

Coaxial components
analysis of split coaxial line balun; *Kogō, Hiroshi*; *T-MTT v8 n2 Mar 60* 245-246
annotated bibliography on advances in microwave theory and techniques in Western Europe in 1959; *Goudet, Georges*; *T-MTT v8 n4 Jul 60* 387-394
application to balanced transmission-line measurements; *Dyson, John D.*; *T-MTT v19 n1 Jan 71* 94-96 (2E02)
broadband coaxial to stripline transitions; *Pyle, J. R.*; *T-MTT v12 n3 May 64* 364-365
calculating coaxial transmission-line step capacitance; *Somlo, P. I.*; *T-MTT v11 n5 Sep 63* 454
circular waveguide excitation from coaxial line; end launcher transition for exciting TE_{11} mode; *Bondyopadhyay, Probir K.*; *T-MTT v27 n6 Jun 79* 621 (1E11)
circular waveguide excitation from coaxial line; end launcher transition for exciting TE_{11} mode; *Deshpande, M. D.*; *T-MTT v26 n9 Sep 78* 672-675 (1D04)
coaxial line; computation of step capacitances suitable for programming in digital computers; *Somlo, P. I.*; *T-MTT v15 n1 Jan 67* 48-53
coaxial line terminated in a circular waveguide; calculation of discontinuity capacitance using the Rayleigh–Ritz variational technique; *Risley, Edward W., Jr.*; *T-MTT v17 n2 Feb 69* 86-92

coaxial noise sources; method of calibrating in terms of a waveguide standard; *Engen, Glenn F.; T-MTT v16 n9 Sep 68* 636-639
coaxial-to-slab line transition; design by numerical solution to Laplace's equation in three dimensions; *Sinnott, D. H.; T-MTT v16 n2 Feb 68* 135-136
coaxial to strip transmission line adapter; *Craven, J. H.; T-MTT v9 n2 Mar 61* 200-201
coaxial-to-stripline transformers using rectangular lines; *Levy, R.; T-MTT v9 n3 May 61* 273-274
design procedure for a 100–11,000 MHz glass-to-metal coaxial vacuum seal; *Nunn, Walter M., Jr.; T-MTT v9 n3 May 61* 248-251
design techniques for bandstop radial line coaxial filters; microwave frequencies; *De Loach, Bernard C.; T-MTT v11 n1 Jan 63* 50-55
equations to predict bandwidth of coaxial choke couplings; applications to rotary joints, dc isolation units; *King, Howard E.; T-MTT v8 n2 Mar 60* 132-135
ferrite-filled transmission lines; propagation; *Mueller, Ralph S.; T-MTT v16 n10 Oct 68* 835-842
high-power, *L*-band coaxial ferrite phase shifter; *Boxer, A. S.; T-MTT v9 n6 Nov 61* 577
isolator utilizing YIG; *Freiberg, L.; T-MTT v6 n4 Oct 58* 454
L-band ferroelectric switch; *Amoss, John W.; T-MTT v13 n6 Nov 65* 789-793
line containing two cylinders of different dielectric constant; transverse electric resonances; *Carr, J. W.; T-MTT v3 n4 Jul 55* 41-44
low input VSWR coaxial diode switch for a broadband centered at 1000 MHz; *Ecklund, W. L.; T-MTT v12 n3 May 64* 359
magic-T; design of three different types; *Morita, T.; T-MTT v1 n2 Nov 53* 17-23
microwave low-pass filter; new 'inside-out' realization; *Snyder, Richard V.; T-MTT v16 n4 Apr 68* 262-264
multichannel TEM filter design; *Wenzel, Robert J.; T-MTT v13 n1 Jan 65* 5-15
multiplicity of solutions in coaxial coupler synthesis; *Seidel, H.; T-MTT v13 n3 May 65* 275-283
multiplicity of solutions in transmission line synthesis; *Seidel, H.; T-MTT v13 n4 Jul 65* 398-407
multistub coaxial line tuner whose geometry is basically that of a parallel plate transmission line; *Little, W. E.; T-MTT v12 n5 Sep 64* 570-571
off-on ferrite switches in coaxial or stripline; *Fay, Clifford E.; T-MTT v10 n6 Nov 62* 455-458
phase, attenuation and impedance characteristics of coaxial transmission lines with thin tubular conductors; *Post, E. J.; T-MTT v11 n2 Mar 63* 129-136
phase shifter application of dielectric slug in helically wound sheath; *Augustine, Carl F.; T-MTT v8 n4 Jul 60* 398-402
practical UHF multidiscriminator unit; *Chiu, Planet; T-MTT v11 n1 Jan 63* 88-89
precision coaxial standards and components; design principles; *MacKenzie, Thomas E.; T-MTT v14 n1 Jan 66* 29-39
rapid coaxial phase shifter for 150 watts; *Gerke, H.; T-MTT v12 n6 Nov 64* 620-621
re-entrant cross section and wideband 3-db hybrid couplers; *Cohn, Seymour B.; T-MTT v11 n4 Jul 63* 254-258
re-entrant directional coupler using strip transmission line; *Lavendol, L.; T-MTT v13 n5 Sep 65* 700-701
rectangular waveguide-to-coaxial line transitions; 1968 progress report and up-to-date bibliography; *Brady, M. Michael; T-MTT v17 n3 Mar 69* 170
sliding coaxial termination for impedance measurements using a modified reflectometer technique; *Little, W. E.; T-MTT v12 n2 Mar 64* 247-248
slotted coaxial line; evaluation of characteristic impedance; *Collin, R. E.; T-MTT v4 n1 Jan 56* 4-8
slotted coaxial line, partially filled; computation of impedance; *Hatsuda, Takeshi; T-MTT v15 n11 Nov 67* 643-644
slotted lines; calculation of characteristic impedance; *Smolarska, Jadwiga; T-MTT v6 n2 Apr 58* 161-166
split coaxial line; characteristic impedance; *Kogō, Hiroshi; T-MTT v7 n3 Jul 59* 393-394
study of multielement transmission lines; *Kogo, Hiroshi; T-MTT v8 n2 Mar 60* 136-142
tables for asymmetric multielement coupled transmission line directional couplers; *Levy, Ralph; T-MTT v12 n3 May 64* 275-279
temperature control of coaxial cavity by controlling capacitance between center conductor and end plate; *Cogdell, John R.; T-MTT v8 n2 Mar 60* 151-155
theory and analysis of ganged pair of line stretchers with error analysis; *Ellerbruch, Doyle A.; T-MTT v12 n4 Jul 64* 453-459
theory of TEM diode switching; *Garver, Robert V.; T-MTT v9 n3 May 61* 224-238
transitions, coaxial-to-microstrip; *England, E. H.; T-MTT v24 n1 Jan 76* 47-48 (1D07)
transmission line composed of two coaxial cylindrical conductors; filled with nonconcentric dielectrics; *Angelakos, D. J.; T-MTT v2 n2 Jul 54* 39-44
transmission line; equivalent circuit of series gap in the center conductor; *Dawirs, Harvel N.; T-MTT v17 n2 Feb 69* 127-129
trough and slab lines; characteristic impedance derived by variational method; *Chisholm, Robin M.; T-MTT v4 n3 Jul 56* 166-172
varactor-tuned UHF coaxial filter; design methods; *Benguerel, A. P.; T-MTT v12 n4 Jul 64* 468-469
variable characteristic impedance coaxial line; *Cruz, J. E.; T-MTT v13 n4 Jul 65* 477-478

Coaxial connectors
high-precision measurement of VSWR of coaxial connectors; *Sanderson, Albert E.; T-MTT v9 n6 Nov 61* 524-528
microwave, with capacitive RF coupling and isolated dc returns; broadband operation; *Lin, C. M.; T-MTT v6 n4 Oct 58* 454-455

Coaxial directional couplers
adjustable-slot-length coupler for 0.3 to 8.5 GHz range; *Hudson, Paul A.; T-MTT v19 n9 Sep 71* 781-783 (1E07)

Coaxial resonators
bandstop filters in the presence of dissipation; *Taub, Jesse J.; T-MTT v13 n5 Sep 65* 589-616
design procedure for round rod interdigital filters; *Dishal, M.; T-MTT v13 n5 Sep 65* 696-698
driving-point impedance at terminals of gap in center conductor of coaxial cavity; *Alexander, Philip H.; T-MTT v23 n10 Oct 75* 831-833 (1D11)
ferrite-filled resonator; lowest-order mode and quasi-TEM mode; *Wolff, Ingo; T-MTT v20 n8 Aug 72* 558-560 (2C01)
ferrite-tuned coaxial cavity; *Butler, J. K.; T-MTT v11 n2 Mar 63* 153
synthesis of dual resonant coaxial cavities for varactor capacitance measurements; *Waltz, Frederick M.; T-MTT v12 n1 Jan 64* 132-138
temperature control of a coaxial cavity by controlling capacitance between the center conductor and end plate; *Cogdell, John R.; T-MTT v8 n2 Mar 60* 151-155

Coaxial waveguides
band rejection filters in microwave region; rejection frequency determination; *Varon, Dan; T-MTT v15 n12 Dec 67* 680-687
broadband hybrid ring; analysis; *Albanese, Victor J.; T-MTT v6 n4 Oct 58* 369-373
characteristic impedance of rectangular coaxial transmission lines; *Cruzan, O. R.; T-MTT v12 n5 Sep 64* 488-495
characteristic impedance of square coaxial line; *Conning, S. W.; T-MTT v12 n4 Jul 64* 468
ferrite-filled coaxial lines; sufficient conditions for quasi-TEM mode; *Weiner, Melvin M.; T-MTT v21 n3 Mar 73* 156-157 (1E02)
formula for attenuation in coaxial cables; *Spaderna, Conan H.; T-MTT v12 n3 May 64* 363-364
impedance and attenuation of TEM-lines by finite difference methods; *Schneider, Martin V.; T-MTT v13 n6 Nov 65* 793-800
numerical solution of transmission-line problems; *Green, Harry E.; T-MTT v13 n5 Sep 65* 676-692
phase, attenuation and impedance characteristics of coaxial transmission lines with thin tubular conductors; *Post, E. J.; T-MTT v11 n2 Mar 63* 129-136
phase velocity in continuously loaded coaxial cables; *Large, D. B.; T-MTT v13 n2 Mar 65* 243
reactive guiding surfaces; propagating modes; *Arora, Rajendra K.; T-MTT v20 n3 Mar 72* 210-214 (1B12)
reactive guiding surfaces; propagating modes; *Waldron, R. A.; T-MTT v21 n1 Jan 73* 61-62 (2C02)
rectangular-coaxial-strip transmission lines; capacitance calculation; *Tippet, John C.; T-MTT v24 n9 Sep 76* 602-604 (1E02)
rectangular coaxial structures with off-centered strip inner conductor; characteristic impedance; *Riblet, Henry J.; T-MTT v27 n4 Apr 79* 294-298 (1A04)
rectangular; higher-order modes; *Gruner, L.; T-MTT v15 n8 Aug 67* 483-485
rectangular line with offset inner conductor; characteristic impedance; *Tippet, John C.; T-MTT v26 n11 Nov 78* 876-883 (1C06)
shielded surface waves; scattering by wall impedance discontinuity; *Vijayaraghavan, S.; T-MTT v19 n8 Aug 71* 736-739 (2B09)
uniform coaxial line with an elliptic-circular cross section; *Seshagiri, N.; T-MTT v11 n6 Nov 63* 549-551
uniform cylindrical waveguide formed by placing one conductor inside a conducting tube; cutoff frequencies; *Yee, Hung Yuet; T-MTT v14 n10 Oct 66* 487-493
waveguide-to-coaxial transducers; optimum bandwidth; *Friedman, David S.; T-MTT v5 n1 Jan 57* 75

Comb filters
bandpass filter interstage couplings; *Kurzrok, R. M.; T-MTT v15 n4 Apr 67* 262-263
bandpass filters with tunable frequency range of 2:1 in *S*-band; mismatch and overcoupling compensation; *O'Clock, George D., Jr.; T-MTT v20 n3 Mar 72* 238-239 (1E04)
infinite interdigital structures; computer subprogram to determine capacitance; *Cermak, I. A.; T-MTT v18 n2 Feb 70* 116
microstrip combline-type filters; design approach; *Vincze, Arpad D.; T-MTT v22 n12 Dec 74* 1171-1181 (3D11)
parallel conductor array; equivalent circuit; *Seviora, Rudolf; T-MTT v16 n10 Oct 68* 875-877
post-coupled TEM comb-line resonators; frequency behavior; *Kurzrok, R. M.; T-MTT v16 n10 Oct 68* 888-889
tapped-line coupled lines; application to combline and interdigital filters; *Cristal, Edward G.; T-MTT v23 n12 Dec 75* 1007-1012 (1E13)

Communication engineering education
microwave equipment for college laboratories; *Reich, Robert J.; T-MTT v4 n3 Jul 56* 187

Communication systems
microwave; provides communication essential in the maintenance and operation of pipeline which runs from Texas to New York; *Rhodes, H. A.; T-MTT v2 n1 Apr 54* 89-92
microwave radio system for pipeline use; reliability problems; *Dyke, Ed; T-MTT v2 n1 Apr 54* 60-62
microwave relay systems incorporating klystrons; design considerations; *Olthuis, R. W.;* 103-107
microwave repeaters; site planning and development; *Chapman, R. M.; T-MTT v2 n1 Apr 54* 16-31
microwave; site selection in undeveloped country; *Pynn, R. D.; T-MTT v2 n1 Apr 54* 9-15
microwave, to provide communication in the maintenance and operation of a pipeline; *Maginnis, W. P.; T-MTT v2 n1 Apr 54* 1-8
microwave; use of standby engine generator sets to provide input power to microwave equipment; *Halvorson, Robert L.; T-MTT v2 n1 Apr 54* 32-35

Communication systems; cf. Data transmission systems; Radio communication; VHF radio communication; Waveguide communication

Companding
FM radio systems with frequency division multiplexing; application of compandors; *Harp, M. C.; T-MTT v2 n1 Apr 54* 36-40
FM radio systems with frequency division multiplexing; application of compandors. *Harp, M. C., Addenda; T-MTT v2 n2 Jul 54* 64

Comparators; cf. Phase comparators

Component reliability; cf. Semiconductor device reliability

Computer-aided circuit analysis
planar circuits; analysis based on contour-integral solution of wave equation; *Okoshi, Takanori; T-MTT v20 n4 Apr 72* 245-252 (1B03)

Computer-aided circuit design
parametric amplifiers, single-tuned; voltage gain–bandwidth product performance index; *Maeda, Minoru; T-MTT v19 n12 Dec 71* 916-921 (1C02)

Computer-aided filter design
transmission-line filters; optimum synthesis; *Hoffman, G.; T-MTT v20 n10 Oct 72* 709-710 (2C09)

Computer-aided measurements; cf. Computer-aided microwave measurements

Computer-aided microwave analysis
cavity resonators; eigenmodes for dielectric-loaded cylindrical cavity; computer program description; *Joly, J. C.; T-MTT v20 n6 Jun 72* 422 (2C09)

coaxial cable discontinuities; capacitance of discontinuities formed by coplanar steps in both conductors of cable; *Jurkus, A.*; *T-MTT v20 n10 Oct 72* 708-709 (2C08)
coupled thin-film conductors in suspended substrate; capacitance parameters; *Smith, John I.*; *T-MTT v19 n5 May 71* 424-431 (1B04)
dielectric-loaded waveguides; program for resonant frequencies and field components determination; *Csendes, Z.*; *T-MTT v19 n9 Sep 71* 789 (1F03)
dual-series feed networks for waveguide phased arrays; *Jones, William R.*; *T-MTT v19 n5 May 71* 451-458 (1D07)
ferrite isolators; *Gardiol, Fred E.*; *T-MTT v19 n3 Mar 71* 315-322 (2B01)
ferrite isolators; optimization of geometry and material; *Decreton, Marc*; *T-MTT v19 n3 Mar 71* 322-331 (2B08)
ferrite-loaded circular waveguides; *Duputz, A. M.*; *T-MTT v22 n6 Jun 74* 601-613 (1B01)
meander-line networks; *Sato, Risaburo*; *T-MTT v19 n5 May 71* 431-442 (1B11)
microstrip discontinuities; Galerkin's method applied in Fourier transform domain; *Rahmat-Samii, Yahya*; *T-MTT v22 n4 Apr 74* 372-378 (1B08)
microstrip dispersion characteristics; method based on application of Galerkin's method in spectral domain; *Itoh, Tatsuo*; *T-MTT v21 n7 Jul 73* 496-499 (2C03)
microstrip line parameters; computer program description; *Bryant, Thomas G.*; *T-MTT v19 n4 Apr 71* 418-419 (2D02)
multiconductor transmission lines; equivalent circuit models; *Ruehli, Albert E.*; *T-MTT v22 n3 Mar 74* 216-221 (1E10)
nonhomogenous waveguides; transmission-line matrix method; *Johns, Peter B.*; *T-MTT v22 n3 Mar 74* 209-215 (1E03)
perturbation technique; renormalization to obtain nondivergent second-order term; application to inhomogeneously-loaded waveguide; *Hidaka, Takehiko*; *T-MTT v20 n2 Feb 72* 180-181 (2E02)
surface waveguides; mode computation using transverse field components; *Williams, C. G.*; *T-MTT v22 n3 Mar 74* 329-330 (3A13)
waveguide junction problems; *Oraizi, H.*; *T-MTT v21 n10 Oct 73* 640-642 (1E06)

Computer-aided microwave analysis; cf. Computer-aided circuit analysis; Numerical methods

Computer-aided microwave design; cf. Computer applications, microwave design
adapter calibration; *Uhlir, A., Jr.*; *T-MTT v22 n3 Mar 74* 330-332 (3A14)
automated network analyzer calibration; application to adapter evaluation; *Engen, Glenn F.*; *T-MTT v22 n12 Dec 74* 1255-1260 (4D12)
bolometer unit calibration system using power equation concept; *Komarek, Ernest L.*; *T-MTT v22 n12 Dec 74* 1260-1267 (4E03)
dielectric constant measurement using partially filled waveguide; exact numerical evaluation of complex permittivity as function of propagation constant; *Somlo, Peter I.*; *T-MTT v22 n4 Apr 74* 468-469 (2E02)
dielectric properties computation from waveguide measurements; *Nelson, Stuart O.*; *T-MTT v22 n3 Mar 74* 342-343 (3B12)
group-delay measurement; smoothing by noncentral statistics; *Uhlir, A., Jr.*; *T-MTT v22 n3 Mar 74* 339-340 (3B09)
scattering parameters measurement using automatic network analyzer; calibration process; *Rehnmark, Stig*; *T-MTT v22 n4 Apr 74* 457-458 (2D05)

Computer applications, microwave design
broad-band, with complex loads; computer-aided design; *Trick, Timothy N.*; *T-MTT v18 n9 Sep 70* 541-547
current status; panel discussion; *Cermak, Ivan A.*; *T-MTT v22 n3 Mar 74* 155-160 (1A05)
directional coupler synthesis; program description; *Hoffmann, M.*; *T-MTT v22 n1 Jan 74* 77 (1F09)
integrated approach involving centering, tolerancing, tuning, parasitic effects, uncertainties in models and reference planes, and mismatched terminations; *Bandler, John W.*; *T-MTT v24 n9 Sep 76* 584-591 (1C12)
interstage matching networks for amplifiers; *Mellor, Douglas J.*; *T-MTT v23 n12 Dec 75* 1013-1020 (1F05)
microstrip capacitance calculation; *Premoli, Amedeo*; *T-MTT v23 n8 Aug 75* 642-648 (1C12)
microstrip resonator analysis; computer program based on TLM method; *Akhtarzad, S.*; *T-MTT v24 n10 Oct 76* 681 (1D11)
mixers; nonlinear large-signal analysis and linear small-signal analysis of resistive mixers; *Egami, Shunichiro*; *T-MTT v22 n3 Mar 74* 270-275 (2B08)
parametric amplifiers; broadband design for lower *K*-band; *Branner, G. R.*; *T-MTT v20 n2 Feb 72* 176-178 (2D10)
parametric amplifiers, single-tuned; voltage gain–bandwidth product performance index; *Maeda, Minoru*; *T-MTT v19 n12 Dec 71* 916-921 (1C02)
network optimization program; *Herrick, D. L.*; *T-MTT v23 n10 Oct 75* 849-850 (1F01)
planar circuit analysis; segmentation method; *Okoshi, T.*; *T-MTT v24 n10 Oct 76* 662-668 (1C06)
planar circuit analysis; short boundar circuits; *Okoshi, Takanori*; *T-MTT v23 n3 Mar 75* 299-306 (1C05)
special issue; *T-MTT v22 n3 Mar 74* 153-342 (1A03)
special issue foreword; *Bandler, John W.*; *T-MTT v22 n3 Mar 74* 153-154 (1A03)
transmission-line matrix method applied to cavity resonators; *Akhtarzad, Sina*; *T-MTT v23 n12 Dec 75* 990-997 (1D10)
waveguide multiplexers; *Atia, Ali E.*; *T-MTT v22 n3 Mar 74* 332-336 (3B02)

Computer-aided microwave measurements

Computer applications, microwave design; cf. Computer program descriptions; Computer software

Computer applications, microwave measurements
reflectometers; program for direct calibration; *Gelnovatch, Vladimir G.*; *T-MTT v24 n1 Jan 76* 45-47 (1D05)

Computer program descriptions
antennas; directive gain calculations; *Kramer, C.*; *T-MTT v20 n1 Jan 72* 83 (2D06)
cavity resonators; eigenmodes for dielectric-loaded cylindrical cavity; *Joly, J. C.*; *T-MTT v20 n6 Jun 72* 422 (2C09)
coaxial cable discontinuities; capacitance of discontinuities formed by coplanar steps in both conductors of cable; *Jurkus, A.*; *T-MTT v20 n10 Oct 72* 708-709 (2C08)
dielectric-loaded waveguides; resonant frequencies and field components determination; *Csendes, Z.*; *T-MTT v19 n9 Sep 71* 789 (1F03)
dielectric properties computation from waveguide measurements; *Nelson, Stuart O.*; *T-MTT v22 n3 Mar 74* 342-343 (3B12)
directional coupler synthesis; *Hoffmann, M.*; *T-MTT v22 n1 Jan 74* 77 (1F09)
Laplace's equation solution using successive extrapolated relaxation method; *Kinsner, W.*; *T-MTT v21 n5 May 73* 365 (1F07)
least *p*th approximation; general program; *Popović, J. R.*; *T-MTT v22 n1 Jan 74* 76-77 (1F08)
least *p*th approximation including interpolation; *Popović, J. R.*; *T-MTT v22 n1 Jan 74* 76 (1F08)
microstrip line parameters; *Bryant, Thomas G.*; *T-MTT v19 n4 Apr 71* 418-419 (2D02)
minimax optimization; *Bandler, John W.*; *T-MTT v21 n6 Jun 73* 433 (2C10)
minimization of nonlinear objective function subject to nonlinear inequality constraints; *Schenk, K. F.*; *T-MTT v22 n3 Mar 74* 343-344 (3B13)
transmission-line filters; optimum synthesis; *Hoffman, G.*; *T-MTT v20 n10 Oct 72* 709-710 (2C09)
zeros of analytic function; computer program description; *Lampariello, P.*; *T-MTT v23 n5 May 75* 457-458 (1E03)

Computer program descriptions; cf. Computer applications, microwave design; Computer software

Computer software
automatic general-purpose microwave circuit analysis programs; panel discussion; *Green, Peter E.*; *T-MTT v17 n8 Aug 69* 527-533
broadband multisection stepped rectangular waveguide impedance transformers; computer-aided optimization; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 563-571
comments and introduction by Guest Editor on special issue dealing with computer programs that are relevant to microwaves; *Getsinger, William J., Guest ed.*; *T-MTT v17 n8 Aug 69* 415
DIPNET program for simple and rapid solution of elaborate microwave networks on a time-sharing computer; *Parker, William N.*; *T-MTT v17 n8 Aug 69* 495-505
ECAP program for the analysis of the UHF-transistor-oscillator transient response; *Toussaint, Hans-Norbert*; *T-MTT v17 n8 Aug 69* 620-626
general-purpose computer programs for the frequency-domain analysis of microwave circuits; *Green, Peter E.*; *T-MTT v17 n8 Aug 69* 506-514
microwave circuit design and analysis with the aid of digital computer in batch mode; *Murray-Lasso, Marco A.*; *T-MTT v17 n8 Aug 69* 514-526
optimization methods for computer-aided design; survey and bibliography; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 533-552
optimization of microwave networks by razor search method; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 552-562
program EHPOL for analysis of arbitrarily shaped waveguide by polynomial approximation; *Bulley, Raymond M.*; *T-MTT v18 n12 Dec 70* 1022-1028
programs that are relevant to microwaves; editorial comment; *Haddad, George I., Ed.*; *T-MTT v17 n8 Aug 69* 414

Computer software; cf. Computer applications, microwave design; Computer program descriptions

Conducting bodies; cf. Ellipsoids

Conducting films; cf. Metal films

Conducting materials
millimeter and submillimeter wavelength excess conduction loss in copper waveguides; screening potential theory; *Wang, Yen-Chu*; *T-MTT v26 n11 Nov 78* 858-861 (1B02)

Conducting media
boundary conditions and ohmic losses in conducting wedges; *Chisholm, Robin M.*; *T-MTT v8 n2 Mar 60* 189-198
boundary conditions describing perfectly conducting surfaces; development for the four-component vector potential; *Jelsma, Lawrence F.*; *T-MTT v18 n9 Sep 70* 648-649

Conducting screens
circular hole arrays in flat metallic plates; electromagnetic transmission; *Otoshi, Tom Y.*; *T-MTT v20 n3 Mar 72* 235-236 (1E01)
conducting screen perforated periodically with apertures; transmission and reflection; *Chen, Chao Chun*; *T-MTT v18 n9 Sep 70* 627-632
diffraction by screen perforated periodically with circular holes; *Chen, Chao-Chun*; *T-MTT v19 n5 May 71* 475-481 (2B01)
excitation of surface waves on a unidirectionally conducting screen; *Seshadri, S. R.*; *T-MTT v10 n4 Jul 62* 279-286
infinite perfectly conducting gratings of arbitrary profile; diffraction efficiencies; *Green, Robert B.*; *T-MTT v18 n6 Jun 70* 313-318
microwave transmission through plates of finite thickness with round or rectangular holes; *Chen, Chao-Chun*; *T-MTT v21 n1 Jan 73* 1-6 (1B03)

Conducting strips; cf. Strip conductors

Conductivity measurement
conductivity and permittivity of semiconductor spheres; *Champlin, Keith S.*; *T-MTT v9 n6 Nov 61* 545-551
metal films of thickness less that 100 Å; dc and microwave resistivity measurements using waveguide impedance method; *Chaurasia, H. K.*; *T-MTT v21 n1 Jan 73* 51-52 (2B04)
microwave conductivity of semiconductors; *Roy, P. K.*; *T-MTT v22 n2 Feb 74* 144-146 (1E10)
p-type silicon; measurement of complex microwave conductivity and the associated errors; *Datta, A. N.*; *T-MTT v18 n3 Mar 70* 162-166

Conductor–dielectric mixtures
complex permittivity; concentration dependence; *Rothwell, W. S.*; *T-MTT v19 n4 Apr 71* 413-414 (2C09)

Conductors; cf. Multiconductor systems; Transmission lines

Cones
ultra-low-noise space communication ground RF system (ultra cone). *Levy, Gerald S.*; *T-MTT v16 n9 Sep 68* 596-602

Conferences
1954 IRE–URSI Meeting; selected papers; *T-MTT v2 n3 Sep 54* 1-54
1955 IRE–URSI Meeting; papers from microwave sessions; *T-MTT v3 n6 Dec 55* 1-64
1956 National Symposium on Microwave Techniques; selected papers; *T-MTT v4 n4 Oct 56* 191-274
1960 National Microwave Symposium; selected papers; *T-MTT v9 n1 Jan 61* 1-107
1960 National Microwave Symposium; summary and photographs; *T-MTT v9 n1 Jan 61* 103-104
1961 National Microwave Symposium; selected papers; *T-MTT v9 n6 Nov 61* 459-585
1961 National Microwave Symposium; summary and photographs; *T-MTT v9 n6 Nov 61* 580-581

1962 National Microwave Symposium; selected papers; *T-MTT v10 n6 Nov 62* 408-619
1963 National Microwave Symposium; selected papers; *T-MTT v12 n1 Jan 64* 1-150
1964 National Microwave Symposium; selected papers; *T-MTT v13 n1 Jan 65* 1-145
1965 National Microwave Symposium; selected papers; *T-MTT v13 n6 Nov 65* 729-891
1966 International Microwave Symposium; selected papers; *T-MTT v14 n12 Dec 66* 585-708
1967 International Microwave Symposium; selected papers; *T-MTT v15 n12 Dec 67* 658-760
1968 International Microwave Symposium; selected papers; *T-MTT v16 n12 Dec 68* 985-1066
1969 International Microwave Symposium; selected papers; *T-MTT v17 n12 Dec 69* 1054-1164
1970 International Microwave Symposium; selected papers; *T-MTT v18 n12 Dec 70* 1018-1186
1971 International Microwave Symposium; selected papers; *T-MTT v19 n12 Dec 71* 896-957
1971 International Microwave Symposium; report; *Whicker, Lawrence R.*; *T-MTT v19 n12 Dec 71* 896-898 (1B04)
1972 International Microwave Symposium; selected papers; *T-MTT v20 n12 Dec 72* 792-860
1972 International Microwave Symposium; report; *Knox, Robert H.*; *T-MTT v20 n12 Dec 72* 794-797 (1B05)
1973 International Microwave Symposium; selected papers; *T-MTT v21 n12 Dec 73* 746-855
1973 International Microwave Symposium; report; *Wait, David F.* ; *T-MTT v21 n12 Dec 73* 747-751 (1B04)
1974 Submillimeter Waves and Their Applications Conference; papers and abstracts; *T-MTT v22 n12 Dec 74 Part I* 981-1120 (1A03)
1974 International Microwave Symposium; selected papers; *T-MTT v22 n12 Dec 74 Part II* 1122-1340 (3A04)
1974 International Microwave Symposium; program; *Rodrigue, G. P.* ; *T-MTT v22 n12 Dec 74* 1123-1127 (3A05)
1974 International Microwave Symposium; keynote address by IEEE President; *Guarrera, John J.*; *T-MTT v22 n12 Dec 74* 1131-1133 (3A13)
1975 International Microwave Symposium; selected papers; *T-MTT v23 n12 Dec 75* 942-1088 (1A04)
1975 International Microwave Symposium; summary; *Adam, Stephen F.*; *T-MTT v23 n12 Dec 75* 943-947 (1A05)
1976 International Conference on Submillimeter Waves and Their Applications; selected papers; *T-MTT v25 n6 Jun 77* 455-566 (1A03)
1976 International Microwave Symposium; selected papers; *T-MTT v24 n12 Dec 76* 901-997 (1A03)
1976 International Microwave Symposium; summary; *De Marinis, Bernard D.*; *T-MTT v24 n12 Dec 76* 904-909 (1A06)
1977 International Microwave Symposium; selected papers; *T-MTT v25 n12 Dec 77* 965-1127 (1A03)
1977 International Microwave Symposium; summary; *Rubin, David* ; *T-MTT v25 n12 Dec 77* 966-969 (1A04)
1978 International Microwave Symposium; selected papers; *T-MTT v26 n12 Dec 78* 925-1051 (1A03)
1978 International Microwave Symposium; summary; *Steenaart, Willem* ; *T-MTT v26 n12 Dec 78* 927-931 (1A05)
1979 International Microwave Symposium; selected papers; *T-MTT v27 n12 Dec 79* 927-1098 (1A03)
1979 International Microwave Symposium; summary; *Henning, Rudolf E.*; *T-MTT v27 n12 Dec 79* 928-935 (1A04)

Conformal transformations; cf. Schwarz-Christoffel transformation

Conical waveguides
TE and TM modes; transmission characteristics; *Narasimhan, M. S.*; *T-MTT v22 n11 Nov 74* 965-970 (1D13)

Connectors; cf. Coaxial connectors

Coplanar stripline; cf. Stripline

Coplanar waveguides
finite-thickness substrate; impedance and effective dielectric constant calculations; *Davis, M. E.*; *T-MTT v21 n9 Sep 73* 594-596 (1C12)

Copper devices
millimeter and submillimeter wavelength excess conduction loss in copper waveguides; screening potential theory; *Wang, Yen-Chu*; *T-MTT v26 n11 Nov 78* 858-861 (1B02)

Correlation functions
submillimeter-wave angular autocorrelation functions of polyatomic molecules in liquids; group theory; *Keller, B.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
submillimeter-wave autocorrelation functions describing random rotation of symmetric molecules; Coriolis coupling effects; *Müller, K.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)

Correlators
microwave; signal delay provided by two transmission mode YIG delay line; *Payer, Stephen F.*; *T-MTT v18 n8 Aug 70* 426-432

Corrugated antennas; cf. Horn antennas, corrugated

Corrugated surfaces
propagation speed of surface waves at microwave frequencies on modulated corrugated rods; *Wang, Chia Chun*; *T-MTT v10 n3 May 62* 161-165
YIG film, periodically corrugated; magnetic wave interactions; *Seshadri, S. R.*; *T-MTT v27 n2 Feb 79* 199-204 (2A12)
YIG slab having periodically corrugated surface; magnetostatic-wave propagation. *Tsutsumi, Makoto, Correction*; *T-MTT v26 n5 May 78* 374 (1D14)

Corrugated waveguides
description of dielectric rods, dielectric-clad materials and corrugated surfaces; surface wave instruments and circuits; *Harvey, A. F.*; *T-MTT v8 n1 Jan 60* 30-61
helically corrugated multimode circular waveguide; wave propagation and mode conversion; *Tang, Charles C. H.*; *T-MTT v14 n6 Jun 66* 275-284
planar dielectric guides with interacting step discontinuities; network description derived from field analysis; *Rozzi, Tullio E.*; *T-MTT v27 n4 Apr 79* 303-309 (1A13)
propagation of surface waves at microwave frequencies on modulated corrugate rods; *Blank, S. J.*; *T-MTT v12 n1 Jan 64* 146-147
propagation speed of surface waves at microwave frequencies on modulated corrugated rods; *Wang, Chia Chun*; *T-MTT v10 n3 May 62* 161-165
rectangular guides with impedance boundary conditions on walls; propagation characteristics; *McIsaac, P. R.*; *T-MTT v22 n11 Nov 74* 972-973 (1E06)
rectangular guides with impedance boundary conditions on walls; propagation characteristics; *Narasimhan, M. S.*; *T-MTT v22 n11 Nov 74* 973 (1E07)
ring-loaded corrugated guide with bandwidth 1.8 times broader than conventional corrugated guide; use in matching sections; *Takeichi, Yoshihiro*; *T-MTT v19 n12 Dec 71* 947-950 (1F07)

Cosmic radiation
background measurement in 3 mm–300 μm range using balloon-borne liquid-helium-cooled polarizing interferometer; *Robson, E. I.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
background measurements in 7–10 cm^{-1} atmospheric window; *Dall'Oglio, G.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
far-infrared spectrometer to measure cosmic background radiation in 3–18 cm^{-1} region; balloon-borne spectrometer; *Mather, John C.*; *T-MTT v22 n12 Dec 74* 1046-1048 (1E12)

Coupled-mode analysis
acoustic surface waves; coupling of Rayleigh waves from one substrate to adjacent substrate when either is nonpiezoelectric; *Li, Robert C. M.*; *T-MTT v20 n7 Jul 72* 477-486 (2B06)
circular polarization of millimeter waves by total internal reflection; *Buizert, H.*; *T-MTT v12 n4 Jul 64* 477-478
coupled mode description of crossed-field interactions; *Rowe, J. E.*; *T-MTT v9 n2 Mar 61* 182-186
coupled pairs of microstrip lines; computation of even and odd mode impedance; *Chen, Wen H.*; *T-MTT v18 n1 Jan 70* 55-57
coupling holes between cavities or waveguides evaluated in terms of volume ratios; *Wheeler, Harold A.*; *T-MTT v12 n2 Mar 64* 231-244
coupling of modes on a tapered dielectric cylinder; *Snyder, Allan W.*; *T-MTT v18 n7 Jul 70* 383-392
design criteria for nonreciprocal coupled-mode devices; application as isolators, circulators, duplexers; *Whicker, Lawrence R.*; *T-MTT v10 n1 Jan 62* 20-25
dielectric-loaded waveguides; vane of dielectric material extending into guide through slot i3 broad wall; *Arnold, Richard M.*; *T-MTT v20 n10 Oct 72* 699-701 (2B11)
dielectric resonators; coupling between finite resonators; *Pettersson, Lars*; *T-MTT v24 n9 Sep 76* 615-619 (1F01)
dissimilar waveguides; use of coupled-mode theory to determine coupling between them; *Kopp, Eugene H.*; *T-MTT v16 n1 Jan 68* 6-11
engineering design of an *X*-band amplifier consisting of a cascade of iris coupled ruby resonators separated by garnet isolators; *Goodwin, Frank E.*; *T-MTT v12 n3 May 64* 349-358
exact synthesis and design of microwave filters consisting of quarter-wave lines, quarter-wave stubs and coupled wave lines; *Horton, M. C.*; *T-MTT v13 n3 May 65* 316-327
ferrite phase shifters, longitudinally magnetized; *Hord, William E.*; *T-MTT v22 n2 Feb 74* 135-138 (1E01)
fields in waveguide bends expressed in terms of coupled local annular waveguide modes; *Bahar, Ezekiel*; *T-MTT v17 n4 Apr 69* 210-217
high-power variable attenuator consisting of a coupled wave structure between two modes in adjacent primary and secondary waveguides; *Whicker, L. R.*; *T-MTT v11 n5 Sep 63* 450-451
impulse response of a passively coupled system; *Barnes, Casper W.*; *T-MTT v13 n4 Jul 65* 432-435
integrated optics components using periodic structures; *Chang, William S. C.*; *T-MTT v21 n12 Dec 73* 775-785 (1D08)
magnetostatic forward volume wave reflection characteristics of shallow grooved grating on YIG film; *Parekh, Jayantkumar P.*; *T-MTT v26 n12 Dec 78* 1039-1044 (2B09)
maser amplifier structure consisting of a cascade of iris coupled $\pi/2$ cavities intermixed with isolators; *O'Meara, Thomas R.*; *T-MTT v12 n3 May 64* 336-348
method to analyze the properties of optical system composed of several coupled resonators with active media; *Fontana, Jorge R.*; *T-MTT v12 n4 Jul 64* 400-405
mode couplers and multimode measurement techniques; *Lewis, David J.*; *T-MTT v7 n1 Jan 59* 110-116
mode coupling to compute phase constant in uniform composite waveguides; *Bahiana, Luiz C.*; *T-MTT v8 n4 Jul 60* 454-458
nonhomogeneously loaded guide with dielectric and metallic losses; *Gauthier, Francis*; *T-MTT v25 n11 Nov 77* 904-907 (1C12)
nonuniform coupled transmission lines; *Adair, James E.*; *T-MTT v17 n10 Oct 69* 746-752
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure; *Cristal, Edward G.*; *T-MTT v12 n4 Jul 64* 428-439
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure. *Cristal, E. G.*,
normalized self and mutual capacitances of periodic, circular, cylindrical rods between parallel ground plates; application to filter structure; *Vadopalas, P.*; *T-MTT v13 n2 Mar 65* 254-255
Correction; *T-MTT v13 n1 Jan 65* 141
optical fibers, multimode; power flow equation analysis; *Tatekura, Kohichi*; *T-MTT v26 n7 Jul 78* 487-493 (1C05)
optical fibers; numerical solution of coupled-power equation in step-index fibers; *Rousseau, Michel*; *T-MTT v25 n7 Jul 77* 577-585 (1A13)
optical fibers; statistical coupled equations; *Crosignani, Bruno*; *T-MTT v23 n5 May 75* 416-420 (1B04)
optical fibers with coupled dispersive modes; *Steinberg, Richard*; *T-MTT v23 n9 Sep 75* 721-724 (1A03)
optical waveguide coupling from multimode to single-mode linear waveguides using horn-shaped structures; *Winn, Robert K.*; *T-MTT v23 n1 Jan 75* 92-97 (2A01)
parallel-coupled conductors of arbitrary cross sections; accurate calculation of TEM mode impedances using computer-aided finite-difference method; *Gupta, R. R.*; *T-MTT v17 n8 Aug 69* 479-489
parallel-plate waveguides; coupling between two collinear guides; moment method solution; *Elmoazzen, Y. E.*; *T-MTT v23 n11 Nov 75* 871-876 (1B07)
parallel-plate waveguides, two identical guides having same axis of symmetry; radiation field and mutual coupling. *Elmoazzen, Y. E., Correction*; *T-MTT v22 n8 Aug 74* 816 (1E06)
parallel-plate waveguides, two identical guides having same axis of symmetry;

radiation field and mutual coupling between guides; *Elmoazzen, Y. E.*; *T-MTT v21 n12 Dec 73* 825-833 (2D11)
properties of three coupled waves; *Solymar, Laszlo*; *T-MTT v8 n3 May 60* 284-291
random coupling of two waves traveling in opposite directions; average output power of incident wave; *Morrison, John A.*; *T-MTT v22 n2 Feb 74* 126-130 (1D06)
random media; minimum-phase behavior; *Rowe, Harrison E.*; *T-MTT v23 n5 May 75* 411-416 (1A13)
randomly imperfect metallic waveguides for millimeter-wave and submillimeter-wave long-distance communication; *Koyama, Masaki*; *T-MTT v23 n7 Jul 75* 561-565 (1B09)
resonant cavity type mode transducer; principles of operation and properties; *Shimada, Sadakuni*; *T-MTT v14 n8 Aug 66* 384-391
shielded coupled-strip transmission line; *Cohn, Seymour B.*; *T-MTT v3 n5 Oct 55* 29-38
side-wall-coupled, stripline magnetically tunable filters using ferrimagnetic YIG resonators; *Carter, Philip S.*; *T-MTT v13 n3 May 65* 306-315
tapered circular waveguides; mode conversion at and near cutoff; *Tang, Charles C. H.*; *T-MTT v14 n5 May 66* 233-239
two Gouban surface wave lines; derivation of eigenvalue equation using the point matching method for solutions of boundary value problems; *Cook, Kenneth R.*; *T-MTT v17 n5 May 69* 265-270
variational approach to mode coupling in periodic cold structures; *Goblick, T. J., Jr.*; *T-MTT v8 n5 Sep 60* 500-509
wave coupling by warped normal modes; *Fox, A. G.*; *T-MTT v3 n6 Dec 55* 2-6
waveguide bends of nonuniform curvature in rectangular and annular guides; spurious modes in multimode *H*-plane bends; *Bahar, Ezekiel*; *T-MTT v21 n12 Dec 73* 819-824 (2D05)
waveguide mode coupling and conversion measurement; shuttle pulse method; *Bernardi, P.*; *T-MTT v24 n5 May 76* 264-266 (1C02)
waveguide transitions; gradually tapered guide with arbitrary cross sections; *Saad, S. S.*; *T-MTT v25 n5 May 77* 437-440 (2A01)

Coupled-strip transmission lines
bandpass filters having up to two attenuation poles at finite frequencies in stopband; half-wave parallel coupled-line filters; *Cristal, Edward G.*; *T-MTT v20 n10 Oct 72* 696-699 (2B08)
broadside-coupled strips in layered dielectric medium and enclosed by rectangular shield; odd- and even-mode phase velocities; *Allen, James L.*; *T-MTT v20 n10 Oct 72* 662-669 (1D06)
capacitance and charge distribution calculation for structures with electric or magnetic walls; includes dielectric-supported air-strip line; *Costamagna, Eugenio*; *T-MTT v21 n3 Mar 73* 155-156 (1E01)
loss calculations for coupled microstrip lines; *Horton, R.*; *T-MTT v21 n5 May 73* 359-360 (1F01)
microstrip; dispersion curves for fundamental and higher order hybrid modes in single and coupled microstrip; finite-difference methods; *Corr, Douglas G.*; *T-MTT v20 n10 Oct 72* 669-678 (1E01)
microstrip; dispersion predictions for even and odd modes of parallel-coupled microstrip using LSE mode model; *Getsinger, W. J.*; *T-MTT v21 n3 Mar 73* 144-145 (1D02)
microstrip; frequency-dependent characteristics of single and coupled lines in shielded microstrip; *Krage, Mark K.*; *T-MTT v20 n10 Oct 72* 678-688 (1E10)

Coupled transmission lines
admittance matrix derivation; *Grayzel, A. I.*; *T-MTT v22 n10 Oct 74* 902-904 (1D14)
all-pass network with loss; amplitude response; *Kolker, Richard A.*; *T-MTT v15 n8 Aug 67* 438-443
application of stepped impedance transformer theory; *Young, Leo*; *T-MTT v10 n5 Sep 62* 339-359
asymmetric coupled lines in inhomogeneous medium; terminal characteristics; *Tripathi, Vijai K.*; *T-MTT v23 n9 Sep 75* 734-739 (1B02)
asymmetric coupled lines in nonhomogeneous medium; terminal characteristics; *Costamagna, Eugenio*; *T-MTT v24 n8 Aug 76* 541 (1D11)
asymmetric nonuniform-coupled transmission-line directional couplers, having a high-pass Chebyshev equal-ripple coupling response; *Arndt, Fritz*; *T-MTT v18 n9 Sep 70* 633-638
broadband, high-directivity, 90-degree couplers using nonuniform line techniques; design and construction; *Tresselt, C. P.*; *T-MTT v14 n12 Dec 66* 647-656
broadband microwave 90-degree differential phase shifters; new class; *Schiffman, Bernard M.*; *T-MTT v6 n2 Apr 58* 232-237
broadside-coupled strips in layered dielectric medium. *Allen, J. L., Correction*; *T-MTT v23 n9 Sep 75* 779 (1E05)
capacitance parameters for thin-film conductors in suspended substrate; *Smith, John I.*; *T-MTT v19 n5 May 71* 424-431 (1B04)
characteristic impedances of multiconductor strip transmission lines; *Duncan, James W.*; *T-MTT v13 n1 Jan 65* 107-118
conductor thickness corrections for capacitive obstacles and strip conductors; *Cohn, Seymour B.*; *T-MTT v8 n6 Nov 60* 638-644
coupled rectangular bars between parallel plates; design curves; *Getsinger, William J.*; *T-MTT v10 n1 Jan 62* 65-72
coupled rectangular strips in a waveguide; characteristic impedance and coupling coefficient; *Krage, Mark K.*; *T-MTT v16 n5 May 68* 302-307
coupling holes between cavities or waveguides evaluated in terms of volume ratios; *Wheeler, Harold A.*; *T-MTT v12 n2 Mar 64* 231-244
dc blocks realized using $\lambda/4$ 3-dB directional coupler with coupled port and transmitted port opened-circuited; *Ho, Chen Y.*; *T-MTT v23 n9 Sep 75* 773-774 (1D13)
degeneracy of propagation constant; normal mode theory which accounts for some of the propagation constants being equal; *Guckel, H.*; *T-MTT v20 n6 Jun 72* 412-413 (2B11)
design of synchronous branch guide directional couplers; *Young, Leo*; *T-MTT v10 n6 Nov 62* 459-475
dielectric image lines of rectangular cross section; *Solbach, Klaus*; *T-MTT v27 n1 Jan 79* 54-58 (1D14)
dielectric image lines of rectangular cross section; field distributions and phase constants calculation for single and coupled lines; *Solbach, Klaus*; *T-MTT v26 n4 Apr 78* 266-274 (1D02)
directional couplers; design formulas for any value of coupling; *Shimizu, James K.*; *T-MTT v6 n4 Oct 58* 403-410
directional couplers; directivity improvement and measuring couplers parameters; *Rehnmark, Stig*; *T-MTT v25 n12 Dec 77* 1116-1121 (2E06)

Coupled transmission lines. *cont.*
directional couplers with coupled lines of unequal characteristic impedances; *Cristal, Edward G.*; *T-MTT v14 n7 Jul 66* 337-346
even and odd mode impedances of shielded coupled strip transmission lines; derivation of formulas; *Cohn, Seymour B.*; *T-MTT v8 n6 Nov 60* 633-637
filters based on inhomogeneous coupled-line structures having large mode-velocity ratios; *Allen, James L.*; *T-MTT v22 n12 Dec 74* 1182-1186 (3E08)
filters; hairpin-line and hybrid pairpin-line/half-wave parallel-coupled-line filters; *Gysel, Ulrich H.*; *T-MTT v22 n5 May 74* 523-531 (1D03)
high-power variable attenuator consisting of a coupled wave structure between two modes in adjacent primary and secondary waveguides; *Whicker, L. R.*; *T-MTT v11 n5 Sep 63* 450-451
higher order modes in coupled helices; *Hayes, R. E.*; *T-MTT v8 n1 Jan 60* 119-120
impulse response of a coupled-mode system; *Barnes, Casper W.*; *T-MTT v13 n4 Jul 65* 432-435
interdigital bandpass filters and related coupled structures; exact theory; *Wenzel, R. J.*; *T-MTT v13 n5 Sep 65* 559-575
loss calculations; *Tripathi, V. K.*; *T-MTT v20 n2 Feb 72* 178-180 (2D12)
lossless, in a nonhomogeneous dielectric medium; transient analysis; *Chang, Fung Yuel*; *T-MTT v18 n9 Sep 70* 616-626
meander-folded coupled lines; shortening of electric length due to folding; *Rehnmark, Stig*; *T-MTT v26 n4 Apr 78* 225-231 (1A03)
meander-line networks; design method using equivalent circuit transformations; *Sato, Risaburo*; *T-MTT v19 n5 May 71* 431-442 (1B11)
microstrip; design procedure; *Akhtarzad, Sina*; *T-MTT v23 n6 Jun 75* 486-492 (1B14)
microstrip differential phase shifters; broadband matching using stepped impedance design; *Schiek, Burkhard*; *T-MTT v25 n8 Aug 77* 666-671 (1C10)
microstrip direction filters employing parallel-coupled microstrip; mode compensation; *Lee, Y. S.*; *T-MTT v22 n1 Jan 74* 66-69 (1E12)
microstrip directional coupler sensitivity analysis. *Shamasundara, S. D., Correction*; *T-MTT v27 n2 Feb 79* 208 (2B07)
microstrip directional couplers; sensitivities of parameters of coupled-line coupler with respect to even- and odd-mode impedances; *Shamasundara, Srigiripuram D.*; *T-MTT v26 n10 Oct 78* 788-794 (1G02)
microstrip dispersion, and dielectric and conductor losses; spectral-domain analysis, higher order solution; *Mirshekar-Syahkal, D.*; *T-MTT v27 n7 Jul 79* 694-699 (1E12)
microstrip dispersion modeling using coupled lines; *Carlin, Herbert J.*; *T-MTT v21 n9 Sep 73* 589-591 (1C07)
microstrip double-ring resonator; *Wolff, Ingo*; *T-MTT v23 n5 May 75* 441-444 (1D01)
microstrip even- and odd-mode characteristics; semi-empirical design equations; *Garg, Ramesh*; *T-MTT v27 n7 Jul 79* 700-705 (1F04)
microstrip filters; parallel coupled lines in nonhomogeneous medium; *Pompei, Dominique*; *T-MTT v26 n4 Apr 78* 231-238 (1A09)
microstrip, inhomogeneous coupled lines; design charts; *Ros, Alain E.*; *T-MTT v26 n6 Jun 78* 394-400 (1B02)
microstrip line design; *Shamasundara, S. D.*; *T-MTT v25 n3 Mar 77* 232-233 (1E10)
microstrip; obtaining dimensions of lines from self and mutual capacitances; *Milligan, Thomas A.*; *T-MTT v25 n5 May 77* 405-410 (1E09)
microstrip on anisotropic substrates; *Alexopoulos, Nicolaos G.*; *T-MTT v26 n6 Jun 78* 387-393 (1A09)
microstrip, parallel-coupled; dispersion model; *Carlin, Herbert J.*; *T-MTT v23 n5 May 75* 444-446 (1D04)
microstrip parameters computation; high-speed procedure; *Jansen, Rolf H.*; *T-MTT v26 n2 Feb 78* 75-82 (1C01)
microstrip parameters computation; high-speed procedure. *Jansen, R. H., Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
microstrip propagation-mode parameters, empirical formulas; application to interdigital circuit analysis and synthesis; *Dalby, Arne Brejning*; *T-MTT v27 n8 Aug 79* 744-752 (1C02)
microstrip; spectral-domain dispersion analysis; frequency dependence of characteristic impedance; *Knorr, Jeffrey B.*; *T-MTT v23 n9 Sep 75* 725-728 (1A07)
microstrip three-line system use as six-port reflectometer; *Collier, Richard J.*; *T-MTT v27 n10 Oct 79* 847-853 (1B11)
microstrip varactor doublers using thin-film lines on a ceramic substrate; *Belohoubek, E. F.*; *T-MTT v17 n5 May 69* 286-288
microwave filters realized with coupled lines and lumped capacitances; *Pregla, Reinhold*; *T-MTT v18 n5 May 70* 278-280
millimeter channel-dropping filter using circular electric modes; *Marcatili, Enrique A. J.*; *T-MTT v9 n2 Mar 61* 176-182
mode coupling to compute phase constant in uniform composite waveguides; *Bahiana, Luiz C.*; *T-MTT v8 n4 Jul 60* 454-458
multiplicity of solutions in coaxial coupler synthesis; *Seidel, H.*; *T-MTT v13 n3 May 65* 275-283
n coupled lines equivalent to network consisting of *n*-1 pairs of coupled lines; *Grayzel, A. I.*; *T-MTT v22 n10 Oct 74* 904-906 (1E02)
network model for transmission lines with gyromagnetic coupling; *Boyd, Charles R., Jr.*; *T-MTT v13 n5 Sep 65* 652-662
networks; simplified analysis by using network graphs and graph transformations; *Sato, Risaburo*; *T-MTT v18 n3 Mar 70* 122-131
nonsymmetrical coupled-line two-ports in nonhomogeneous medium; equivalent circuits; *Tripathi, Vijai K.*; *T-MTT v25 n2 Feb 77* 140-142 (1E04)
nonsymmetrical lines in nonhomogeneous media; even- and odd-mode waves; *Speciale, Ross A.*; *T-MTT v23 n11 Nov 75* 897-907 (1D05)
nonsymmetrical, of reentrant cross section; generalization; *Cristal, Edward G.*; *T-MTT v15 n9 Sep 67* 529-530
nonsymmetrical, of reentrant cross section; generalization. *Cristal, E. G., Correction*; *T-MTT v16 n1 Jan 68* 57
nonuniform; coupled-mode analysis; *Adair, James E.*; *T-MTT v17 n10 Oct 69* 746-752
nonuniform lines; theory and applications; *Yamamoto, Sadahiko*; *T-MTT v15 n4 Apr 67* 220-231
optimum design of helix couplers with shielding; *Berceli, T.*; *T-MTT v13 n4 Jul 65* 471-472
parallel-coupled conductors of arbitrary cross sections; accurate calculation of TEM mode impedances using computer-aided finite-difference method; *Gupta, R. R.*; *T-MTT v17 n8 Aug 69* 479-489

parallel-coupled transmission-line resonator filters; synthesis; *Cohn, Seymour B.*; *T-MTT v6 n2 Apr 58* 223-231
parallel TEM structures, including nonadjacent couplings; rigorous procedure for obtaining equivalent circuits; *Ren, Chung-Li*; *T-MTT v17 n5 May 69* 242-249
parameters of microstrip transmission lines and of coupled pairs of microstrip lines; *Bryant, Thomas G.*; *T-MTT v16 n12 Dec 68* 1021-1027
plasma discharge, used to couple microwave energy between two adjacent metal waveguides; *Steier, William H.*; *T-MTT v9 n6 Nov 61* 499-506
re-entrant directional coupler using strip transmission line; *Lavendol, L.*; *T-MTT v13 n5 Sep 65* 700-701
rectangular bars between parallel plates; interaction between symmetrical fringing capacitances; *Riblet, Henry J.*; *T-MTT v21 n10 Oct 73* 644-647 (1E10)
rectangular bars between parallel plates; interaction between symmetrical odd-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v23 n3 Mar 75* 322-323 (1D14)
rectangular coaxial structures with off-centered strip inner conductor; characteristic impedance; *Riblet, Henry J.*; *T-MTT v27 n4 Apr 79* 294-298 (1A04)
rectangular coupled bars; calculation of incidental loss; *Horton, M. C.*; *T-MTT v18 n10 Oct 70* 736-738
shielded coupled strip transmission line with three center conductors; exact analysis; *Yamamoto, Sadahiko*; *T-MTT v14 n10 Oct 66* 446-461
shielded parallel coplanar strips midway between ground planes; odd and even TEM modes; *Cohn, Seymour B.*; *T-MTT v3 n5 Oct 55* 29-38
slit-coupled strip transmission lines; use for printed-circuit realization; *Yamamoto, Sadahiko*; *T-MTT v14 n11 Nov 66* 542-553
strip lines with rectangular inner conductors; determination of characteristic impedance; *Horgan, James D.*; *T-MTT v5 n2 Apr 57* 92-99
stripline filters and directional couplers; theory of operation and design; *Jones, E. M. T.*; *T-MTT v4 n2 Apr 56* 75-81
stripline filters, parallel-coupled filters in edge-coupled stripline; extending realizable bandwidth; *Kirton, Paul A.*; *T-MTT v25 n8 Aug 77* 672-676 (1D02)
symmetrical three-line microstrip; immittance parameters in terms of normal modes of coupled system; *Tripathi, Vijai K.*; *T-MTT v25 n9 Sep 77* 726-729 (1A10)
synthesis of asymmetric multi-element coupled transmission line couplers; *Levy, Ralph*; *T-MTT v11 n4 Jul 63* 226-237
synthesis of coupled transmission line all-pass networks in cascades of 1 to n; UHF frequencies; *Steenaart, Willem J. D.*; *T-MTT v11 n1 Jan 63* 23-29
synthesis of symmetrical TEM-mode directional couplers; *Toulios, Peter P.*; *T-MTT v13 n5 Sep 65* 536-544
tables for asymmetric multielement coupled transmission line directional couplers; *Levy, Ralph*; *T-MTT v12 n3 May 64* 275-279
tapped-line coupled lines; application to combline and interdigital filters; *Cristal, Edward G.*; *T-MTT v23 n12 Dec 75* 1007-1012 (1E13)
theory and tables of symmetrical TEM transmission line directional couplers; *Cristal, Edward G.*; *T-MTT v13 n5 Sep 65* 544-558
transducers for selectively coupling between a single-mode waveguide and one mode of multi-mode waveguide; theory and experimental results; *Miller, S. E.*; *T-MTT v1 n1 Mar 53* 14
TRAPATT amplifier broadbanding using coupled microstrip circuits; *Quine, John P.*; *T-MTT v27 n1 Jan 79* 23-31 (1B11)
two-port networks composed of two identical, coupled transmission lines embedded in an inhomogeneous dielectric; *Zysman, George I.*; *T-MTT v17 n10 Oct 69* 753-759
variational formulation and analysis; *Matsuhara, Masanori*; *T-MTT v22 n4 Apr 74* 378-382 (1B14)

Coupled transmission lines; cf. Microstrip couplers; Multiconductor transmission lines

Couplers
3-dB couplers constructed from two tandem connected 8.34-dB asymmetric couplers; *Hindin, Harvey J.*; *T-MTT v16 n2 Feb 68* 125-126
analysis of split coaxial line balun; *Kogô, Hiroshi*; *T-MTT v8 n2 Mar 60* 245-246
analytical solution to a waveguide leaky-wave filter structure; *Cristal, Edward G.*; *T-MTT v11 n3 May 63* 182-190
application of coupled wave theory; coupling of three waves; *Solymar, Laszlo*; *T-MTT v8 n3 May 60* 284-291
circularly polarized equalizers using crossed slot coupling aperture; *Wanselow, Robert D.*; *T-MTT v22 n1 Jan 74* 63-66 (1E09)
components for TE_{01} at 94GHz; rectangular-to-circular conversion mode filter, 90° bends, 10db couplers, flexible sections, attenuators, etc.; *Simmons, Alan J.*; *T-MTT v11 n5 Sep 63* 324-332
dual-mode, in which two rectangular waveguides excite orthogonal dominant modes (TE_{10} and TE_{01}) in a square waveguide; *Johnson, R. C.*; *T-MTT v15 n11 Nov 67* 651-652
energy coupling between a waveguide mode and a semiconductor (or gas discharge) slow wave; *Larrabee, R. D.*; *T-MTT v15 n6 Jun 67* 382-384
finline circuits; recent advances in eliminating adverse effects; *Robertson, Sloan D.*; *T-MTT v4 n4 Oct 56* 263-267
hybrid; use of slot transmission line on a dielectric substrate; *Mariani, Elio A.*; *T-MTT v18 n12 Dec 70* 1089-1095
improved mode selecting coupler; microwave frequency; *Sleeper, George B., Jr.*; *T-MTT v12 n3 May 64* 362-363
lossy resonant slot coupling; *Bevensee, R. M.*; *T-MTT v8 n6 Nov 60* 669-671
maximum efficiency of a two-arm waveguide junction; *Beatty, Robert W.*; *T-MTT v11 n1 Jan 63* 94
maximum efficiency of a two-arm waveguide junction; *Lefeuvre, S.*; *T-MTT v11 n6 Nov 63* 549
multiplicity of solutions in coaxial coupler synthesis; *Seidel, H.*; *T-MTT v13 n3 May 65* 275-283
multiplicity of solutions in transmission line synthesis; *Seidel, H.*; *T-MTT v13 n4 Jul 65* 398-407
noise temperature of passive coupling networks; *Bedrosian, E.*; *T-MTT v8 n4 Jul 60* 463
novel 3 terminal device having a single matched input and two outputs whose relative phase can be continuously varied; *Wilkinson, E. J.*; *T-MTT v10 n5 Sep 62* 390-391
phase shifter application of 3 db coupler with ganged movable shorts on two ports; *Augustine, Carl F.*; *T-MTT v8 n4 Jul 60* 398-402
ridge waveguide coupled to Fabry–Perot resonator; *Van Blaricum, Michael L.*; *T-MTT v23 n11 Nov 75* 931-934 (1F11)
rotating coupler for VHF range; transformer coupling between two windings; *Allen, C. W.*; *T-MTT v24 n5 May 76* 267-269 (1C05)
slot coupling between uniform rectangular guides; *Sangster, A. J.*; *T-MTT v27 n7 Jul 79* 705-707 (1F09)
small apertures in walls of arbitrary thickness; circular and rectangular apertures; *McDonald, Noel A.*; *T-MTT v20 n10 Oct 72* 689-695 (2B01)
TEM quarter-wave; possibility of continuously varying the coupling value over ranges up to 100% of nominal value; *Chao, Gene*; *T-MTT v18 n9 Sep 70* 576-583
temperature stability of gyromagnetic couplers using a single crystal YIG sphere as a coupling element; *Clark, J.*; *T-MTT v11 n5 Sep 63* 447-449
three classes of equal-ripple nonuniform line couplers; design and computed theoretical performance; *Tresselt, C. P.*; *T-MTT v17 n4 Apr 69* 218-230
waveguide slot coupler, long axial slot in narrow wall between two rectangular guides; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n9 Sep 79* 800-804 (1C06)
waveguide tee junction coupled through narrow transverse slot of variable length; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n1 Jan 79* 65-69 (1E11)
waveguides, transverse slot in common broadwall between two guides. *Pandharipande, V. M., Correction*; *T-MTT v27 n2 Feb 79* 208 (2B07)
waveguides, transverse slot in common broadwall between two guides; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v26 n3 Mar 78* 209-212 (1F05)
waveguides, transverse slot in common broadwall between two guides. *Pandharipande, V. M., Correction*; *T-MTT v27 n7 Jul 79* 707-708 (1F11)

Couplers; cf. Acoustic surface-wave couplers; Apertures; Directional couplers; Microstrip couplers; Optical couplers; Slotline couplers; Stripline couplers

Coupling networks
broadband coupling between resistive source and high-Q resonant load; *Reeder, Thomas M.*; *T-MTT v20 n7 Jul 72* 453-458 (1D07)
broadband coupling of series resonant RLC load to resistive source using quarter-wave transmission-line inverter; *Borgaonkar, S. R.*; *T-MTT v27 n7 Jul 79* 688-690 (1E06)

Cranium; cf. Head

Crossed-field amplifiers
coupled mode description of crossed-field interactions; *Rowe, J. E.*; *T-MTT v9 n2 Mar 61* 182-186

Cryogenics
millimeter-wave receivers using molecular beam epitaxy diodes; 60–90 GHz band; *Linke, R. A.*; *T-MTT v26 n12 Dec 78* 935-938 (1A13)
p-i-n diode switch matrix consisting of 8 diodes in stripline package; cryogenically cooled C-band switch for radio astronomy; *Behrens, George H., Jr.*; *T-MTT v26 n9 Sep 78* 629-635 (1A03)
three-port, low-loss stripline circulator; operation in L-band at 15°K with 0.5 dB insertion loss; *Edrich, Jochen*; *T-MTT v18 n10 Oct 70* 743-745

Crystal filters
stacked-crystal filters of two or more crystal plates stacked together with electrodes between them; design approach using microwave network methods; *Ballato, Arthur*; *T-MTT v22 n1 Jan 74* 14-25 (1B02)

Crystals
general, anisotropic; excitation of elastic waves; *Ingebrigtsen, Kjell A.*; *T-MTT v17 n11 Nov 69* 827-835

Current measurement
electric probe for measurement of induced surface currents on obstacles in a parallel plate region; *Plonsey, Robert*; *T-MTT v10 n3 May 62* 214-217

Curve fitting
orthogonal coordinate system for curved pipes; derivation from the Serret–Frenet frame; *Tang, C. H.*; *T-MTT v18 n1 Jan 70* 69

Curved waveguides; cf. Waveguide bends

CW lasers
HCN 337-μm CW lasers; gain saturation, emission line shape, and power; *Belland, P.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)

Cyclotron radiation
tokamaks; emission from plasma near electron cyclotron frequency; *Costley, A. E.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)

Cyclotron radiation; cf. Gyrotrons; Submillimeter-wave generation

Cyclotron resonance
metals; 0.6–2 mm measurements; *Goy, P.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
metals; 4-mm measurements compared with 220-m measurements; *Peech, J.*; *T-MTT v22 n11 Dec 74* 1120 (2D03)

Cylinders
electromagnetic power absorption in dielectric cylinder in presence of reflecting plane; *Ruppin, R.*; *T-MTT v27 n11 Nov 79* 910-913 (1C12)
electromagnetic scattering by inhomogeneous dielectric cylinders; application to waveguide discontinuity problem; *Cicconi, Gabriele*; *T-MTT v25 n11 Nov 77* 885-892 (1B07)

D

Data acquisition; cf. Measurement

Deconvolution
microwave holography image reconstruction using double holograms obtained at different positions in space; *Shigesawa, Hiroshi*; *T-MTT v24 n8 Aug 76* 529-531 (1C13)
reflection coefficient measurement as function of distance using locating reflectometer; deconvolution to increase axial resolution; *Somlo, Peter I.*; *T-MTT v27 n2 Feb 79* 128-135 (1C10)

Delay
group delay sensitivities calculation for linear time-invariant networks using adjoint network concept; *Bandler, John W.*; *T-MTT v24 n4 Apr 76* 188-194 (1B12)
group delay sensitivities calculation for linear time-invariant networks using adjoint network concept. *Bandler, J. W., Correction*; *T-MTT v25 n5 May 77* 445 (2A09)

Delay devices
adjustable microwave delay equalizer; *Woo, Kenneth*; *T-MTT v13 n2 Mar 65* 224-232
delay distortion equalization; *Torgow, Eugene N.*; *T-MTT v13 n6 Nov 65* 756-762
delay techniques using YIG; *Olson, Frank A.*; *T-MTT v13 n1 Jan 65* 63-69
information recirculated through an amplifier to obtain microwave signal storage; *Kellett, James D.*; *T-MTT v9 n4 Jul 61* 306-312
microwave, variable, nondispersive; their need in radar, communication, ECM

and test systems reviewed; *Kirchner, Ernst K.*; *T-MTT v17 n11 Nov 69* 986-997
narrow-band microwave delay equalizer; adjustable; *Abele, Thomas A.*; *T-MTT v15 n10 Oct 67* 566-574
variable harmonic phase delay coaxial network; *Wanselow, Robert D.*; *T-MTT v13 n5 Sep 65* 708-709
Delay equalizers
directional filter cascades for time-delay equalization in millimeter-wave waveguide systems; *Standley, Robert D.*; *T-MTT v19 n5 May 71* 497-498 (2C11)
microwave; computer-aided design; *Tu, Peter J.*; *T-MTT v17 n8 Aug 69* 626-634
microwave, narrow-band; for the delay equalization of narrow-band microwave bandpass filters; *Abele, Thomas A.*; *T-MTT v15 n10 Oct 67* 566-574
Delay filters; cf. All-pass networks; Linear-phase filters
Delay lines
adjustable microwave delay equalizer; *Woo, Kenneth*; *T-MTT v13 n2 Mar 65* 224-232
delay equalization by tapered cutoff waveguides; *Tang, Charles C. H.*; *T-MTT v12 n6 Nov 64* 608-615
delay techniques using YIG; *Olson, Frank A.*; *T-MTT v13 n1 Jan 65* 63-69
dielectric-filled waveguides; pulse-compression performance; *Minakovic, B.*; *T-MTT v19 n6 Jun 71* 562-563 (2C04)
dispersionless variable microwave delay line; *van de Vaart, H.*; *T-MTT v16 n11 Nov 68* 965-966
equivalent circuits for coupled-cavity slow-wave structures; *Curnow, Harold J.*; *T-MTT v13 n5 Sep 65* 671-675
frequency-domain measurements using automatic network analyzers; *Uhlir, Arthur, Jr.*; *T-MTT v20 n1 Jan 72* 51-53 (1F05)
L-band variable-delay-time, YIG–YAG–YIG and YAG–YIG–YAG; *Smith, Alan B.*; *T-MTT v17 n11 Nov 69* 997-1001
magnetic waves for microwave time delay; spin waves and magnetostatic waves; *Kaufman, Irving*; *T-MTT v13 n4 Jul 65* 458-467
magnetoelastic, two-port delay line using single crystal rod of YIG at frequency range 200 to 1000 MHz; *Skudera, William, Jr.*; *T-MTT v15 n2 Feb 67* 96-100
magnetostatic delay lines; delay limits due to dispersion; *Bini, M.*; *T-MTT v20 n11 Nov 72* 771-773 (2B02)
optimum transducer coupling coefficient of a multiple reflection pulsed microwave delay line; *Tomiyasu, K.*; *T-MTT v13 n3 May 65* 390
orthogonal coupling to YIG delay lines; *Wrobel, E. J.*; *T-MTT v13 n5 Sep 65* 707-708
YIG; use for correlator operating at microwave frequencies; *Payer, Stephen F.*; *T-MTT v18 n8 Aug 70* 426-432
Delay lines; cf. Acoustic delay lines; Microwave acoustic delay lines
Delay measurement; cf. Time-delay measurement
Delay networks
circulator time-delay circuit; effect of 'ring resonance'; *Shipley, C. A.*; *T-MTT v16 n3 Mar 68* 202-203
commensurate TEM microwave networks; finding characteristic polynomial to provide equiripple delay characteristics; *Scanlan, Sean O.*; *T-MTT v18 n1 Jan 70* 15-25
Demodulation
universal *X*-band waveguide wall current detector; *Ronde, Frans C. de*; *T-MTT v12 n1 Jan 64* 112-117
Demodulation; cf. Detectors; Modulation/demodulation; TV demodulation
Detectors; cf. Infrared detectors; Microwave detectors; Millimeter-wave detectors; Modulation/demodulation; Radiation detectors;F Submillimeter-wave detectors; TV demodulation
Deuterium oxide lasers
submillimeter-wave lasers; *Keilman, F.*; *T-MTT v22 n12 Dec 74* 1118 (1D01)
Device models; cf. Semiconductor device models
Device packaging; cf. Semiconductor device packaging
Diathermy; cf. Electromagnetic radiation therapy
Dielectric amplifiers
resonant slope amplifier using a microwave pump frequency; *Mayer, R. J.*; *T-MTT v11 n1 Jan 63* 92
Dielectric antennas
Gunn oscillator in dielectric waveguide; distributed Bragg reflection oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
millimeter-wave antennas for insular line IC applications; *V*-band; *Shiau, Yih*; *T-MTT v24 n11 Nov 76* 869-872 (3B03)
millimeter-wave frequency scanning array consisting of silicon dielectric rectangular rod with periodic metallic stripe perturbations on one side; *Klohn, Kenneth L.*; *T-MTT v26 n10 Oct 78* 764-773 (1E06)
Dielectric bodies
electromagnetic scattering by materials used in laboratory animal restrainers; *Lin, James C.*; *T-MTT v24 n4 Apr 76* 219-223 (1E01)
electromagnetic scattering; moment-method convergence improvement using interpolants; *Hagmann, Mark J.*; *T-MTT v26 n11 Nov 78* 904-908 (1E06)
evaluation of dipole moments of small circular disk for arbitrary incident fields; *Eggimann, W. H.*; *T-MTT v9 n1 Jan 61* 98
radially, nonuniform; use to improve propagation characteristics on a cylindrical surface wave; *Gallawa, Robert L.*; *T-MTT v18 n8 Aug 70* 432-436
Dielectric bodies; cf. Cylinders; Ellipsoids; Prolate spheroids
Dielectric breakdown; cf. Gas discharges
Dielectric constant
conductor–dielectric mixtures; complex permittivity; *Rothwell, W. S.*; *T-MTT v19 n4 Apr 71* 413-414 (2C09)
saline water; complex dielectric constant calculations; *Stogryn, A.*; *T-MTT v19 n8 Aug 71* 733-736 (2B06)
Dielectric constant measurement
cavity method requiring only resonant frequency measurement; dielectric disk placed in cutoff circular-waveguide cavity; *Hanfling, J.*; *T-MTT v20 n3 Mar 72* 233-235 (1D11)
complex permittivity of arbitrarily shaped samples using resonant cavity methods; *Rueggeberg, Werner*; *T-MTT v19 n6 Jun 71* 517-52 (1C05)
computer-aided time-domain techniques for broadband microwave measurements; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
insulating films; measurement at microwave frequencies; *Sobol, H.*; *T-MTT v15 n6 Jun 67* 377-378
microwave integrated circuit substrates; *Napoli, Louis S.*; *T-MTT v19 n7 Jul 71* 664-665 (2E07)
microwave measurement of complex permittivity using multipoint technique; *Rodríguez-Vidal, M.*; *T-MTT v22 n5 May 74* 542-544 (2A01)
microwave measurement of liquids and solids using partially-loaded slotted waveguide; *Bahl, Inder J.*; *T-MTT v22 n1 Jan 74* 52-54 (1D12)
microwave measurement using microstrip cavity; dielectric constant and loss factor of slab-type materials; *Itoh, Tatsuo*; *T-MTT v22 n5 May 74* 572-576 (2C03)
waveguide measurements; computer program for complex permittivity computation; *Nelson, Stuart O.*; *T-MTT v22 n3 Mar 74* 342-343 (3B12)
waveguide partially filled with dielectric; exact numerical evaluation of complex permittivity as function of propagation constant; *Somlo, Peter I.*; *T-MTT v22 n4 Apr 74* 468-469 (2E02)
Dielectric constant measurement; cf. Dielectric measurements; Permittivity measurement
Dielectric-covered antennas
probes in finite heterogeneous biological bodies; response of insulated spherical probes; *Mousavinezhad, Seyed Hossein*; *T-MTT v26 n8 Aug 78* 599-607 (1G01)
Dielectric devices
coaxial line with a helical dielectric support; approximate analysis; *Griemsmann, John W. E.*; *T-MTT v4 n1 Jan 56* 13-23
dielectric image lines; determination of losses in the image line; *King, D. D.*; *T-MTT v5 n1 Jan 57* 31-36
dielectric image lines; effects of dielectric constant and guiding surface geometry on basic properties; *Schlesinger, S. Perry*; *T-MTT v6 n3 Jul 58* 291-299
dielectric-shielded *G*-line; protection from environmental conditions; *Partch, Jerome E.*; *T-MTT v17 n5 May 69* 271-274
image line coupler; *Angelakos, D. J.*; *T-MTT v7 n3 Jul 59* 391-392
infinite circular rod; excitation by a metallic, cylindrical waveguide; *Angulo, Carlos M.*; *T-MTT v6 n4 Oct 58* 389-393
strip transmission lines, partially dielectric loaded; nonreciprocity; *Fleri, Dominic*; *T-MTT v7 n1 Jan 59* 23-27
Dielectric fibers
excitation and scattering of modes; *Snyder, Allan W.*; *T-MTT v17 n12 Dec 69* 1138-1144
Dielectric films
insulating; measurement of permittivity at microwave frequencies; *Sobol, H.*; *T-MTT v15 n6 Jun 67* 377-378
optical surface waves on thin films and their application to integrated data processors; *Shubert, Richard*; *T-MTT v16 n12 Dec 68* 1048-1054
Dielectric heating; cf. Electromagnetic radiation effects; Electromagnetic radiation therapy; Microwave heating
Dielectric-loaded antennas
Gaussian-beam launcher for producing focused microwave exposure field in biological experiments; corrugated scalar horn loaded with dielectric hemisphere; *Neelakantaswamy, Perambur S.*; *T-MTT v27 n9 Sep 79* 797-799 (1C03)
Dielectric-loaded waveguides
application of perturbation theory to the calculation of ω–β characteristics for periodic structures; *Sirkis, Murray D.*; *T-MTT v8 n2 Mar 60* 251-252
bandwidth optimization with minimal power handling capacity and/or maximal allowed losses as constraints; *Halevy, Shalom*; *T-MTT v26 n6 Jun 78* 406-412 (1B14)
broadband impedance matching between two dielectric-filled waveguides; *X*-band; *Goodwin, Frank E.*; *T-MTT v11 n1 Jan 63* 36-39
circular guide periodically loaded with dielectric disks; attenuation and phase-shift coefficients; *Minakovic, B.*; *T-MTT v21 n8 Aug 73* 568 (2D02)
circular waveguides lined with anisotropic dielectric material; propagation characteristics; *Chang, Christopher T. M.*; *T-MTT v20 n8 Aug 72* 517-523 (1D03)
circular waveguides lined with dielectric; bandwidth enhancement; *Tsandoulas, G. N.*; *T-MTT v21 n10 Oct 73* 651-654 (1F05)
circularly polarized electric field in partially filled guide; application to nonreciprocal devices utilizing gyroelectric effect in magnetized semiconductors; *Gardiol, Fred E.*; *T-MTT v22 n5 May 74* 563-565 (2B08)
complex permittivity as function of propagation constant for dielectric partially filling guide; exact numerical evaluation; *Somlo, Peter I.*; *T-MTT v22 n4 Apr 74* 468-469 (2E02)
computerized solution using a variation–iteration method; *Vander Vorst, André S.*; *T-MTT v18 n8 Aug 70* 468-475
conditions for TE mode propagation in waveguides with nonuniform dielectric media; *Zucker, Henry*; *T-MTT v10 n3 May 62* 202-208
containing moving dielectric medium; electromagnetic wave propagation and mode behavior; *Daly, P.*; *T-MTT v15 n4 Apr 67* 274-275
corrections to 1970 *T-MTT* paper by Tsandoulas, Temme, and Willwerth and 1965 *Radio Electron. Eng.* paper by Chatterjee and Chatterjee; *Bui, Van Re*; *T-MTT v20 n6 Jun 72* 421-422 (2C08)
cutoff frequencies and propagation constants; determination of approximate values by an algebraic procedure; *Hord, William E.*; *T-MTT v16 n4 Apr 68* 228-233
cylindrical waveguide containing inhomogeneous dielectric; propagation of electromagnetic waves; *Ah Sam, E.*; *T-MTT v15 n1 Jan 67* 60-61
cylindrical waveguide containing inhomogeneous dielectric; propagation of electromagnetic waves; *Richter, Stephen*; *T-MTT v15 n8 Aug 67* 488-489
cylindrical waveguide partially filled with a dielectric light modulation material; propagation characteristics; *Chen, Di*; *T-MTT v14 n10 Oct 66* 482-486
E-vector variational principle; reduction of vector Maxwell equations to matrix eigenvalue problem; *English, William J.*; *T-MTT v19 n1 Jan 71* 40-46 (1E06)
edge condition in modal analysis; *Vassallo, C.*; *T-MTT v24 n4 Apr 76* 208-212 (1D04)
effects of dielectric loading on ferrite phase shifters in rectangular waveguides; *Jordan, Arthur K.*; *T-MTT v10 n1 Jan 62* 83-84
expansion of bandwidth of a circular waveguide by lining it with dielectric; *Meier, Paul J.*; *T-MTT v12 n2 Mar 64* 171-175
filters in over-moded guide loaded with dielectric disks. *Ren, C. L., Correction*; *T-MTT v23 n6 Jun 75* 537 (1F09)
full-height slab centered in rectangular guide; field distribution along slab, transmission and reflection coefficients, power absorbed; *Liu, L. M.*; *T-MTT v24 n4 Apr 76* 216-219 (1D12)
group and energy velocity in a periodically loaded, circular waveguide; *Walker, George B.*; *T-MTT v10 n1 Jan 62* 30-33
H-guide with dielectric slab; field distribution and characteristics; *Tischer, Frederick J.*; *T-MTT v18 n1 Jan 70* 9-15

Dielectric-loaded waveguides, , *cont.*
high-permittivity dielectrics; resonant frequency calculation; *Van Bladel, Jean*; *T-MTT v22 n1 Jan 74* 32-37 (1C06)
higher-order modes in dielectrically loaded rectangular waveguides; computer calculations; *Gardiol, Fred E.*; *T-MTT v16 n11 Nov 68* 919-924
impedance wall concept applied to problem of propagation of TE zero-order modes; *Bernardi, P.*; *T-MTT v16 n2 Feb 68* 126-127
inhomogeneous, rectangular; reflection and transmission of electromagnetic waves; *Kao, T. W.*; *T-MTT v17 n8 Aug 69* 639-641
inhomogeneously filled rectangular waveguide; use of Rayleigh–Ritz method to obtain approximations to the first N eigenfunctions and corresponding eigenvalues; *Collin, Robert E.*; *T-MTT v5 n3 Jul 57* 177-184
inhomogeneously filled rectangular waveguide; use of Rayleigh–Ritz method to obtain approximations to the first N eigenfunctions and corresponding eigenvalues; *Angulo, Carlos M.*; *T-MTT v5 n4 Oct 57* 268
investigation of TE modes of dielectric loaded trough line; *Cohn, Marvin*; *T-MTT v8 n4 Jul 60* 449-454
junction between partially dielectric-filled rectangular guides; equivalent circuit; *Chang, Christopher T. M.*; *T-MTT v21 n6 Jun 73* 403-411 (1E01)
laminated teflon-filled dielectric waveguide; mechanical and electric development; *Anderson, Tore N.*; *T-MTT v3 n2 Mar 55* 82-86
laser-beam phase modulator using rectangular waveguide loaded with electrooptic material; *El-Shandwily, M. Ezzat*; *T-MTT v20 n2 Feb 72* 132-137 (1E10)
longitudinal section mode analysis; application to ferrite phase shifter design; *Bui, Van Re*; *T-MTT v20 n6 Jun 72* 421-422 (2C08)
lossy dielectric; attenuation when guide is partially filled with H-plane slab of lossy dielectric compared with attenuation when guide is completely filled; *Gardiol, Fred E.*; *T-MTT v21 n7 Jul 73* 457-461 (1C11)
lossy dielectric; propagation constant determination from slotted-line measurements; *Gardiol, Fred E.*; *T-MTT v23 n3 Mar 75* 317-319 (1D09)
lossy H-plane slab with air gap between slab and broadwall; effect of air gap on propagation characteristics; *Ness, John B.*; *T-MTT v26 n11 Nov 78* 894-897 (1D10)
lossy nonhomogeneous dielectric loading; shooting method analysis; *McIntosh, R. E.*; *T-MTT v22 n11 Nov 74* 952-954 (1C14)
lossy sphere in rectangular guide; resonant frequencies; *Affolter, Peter*; *T-MTT v21 n9 Sep 73* 573-578 (1B03)
LSE_{20} mode propagation in rectangular guides; application to ferrite phase shifter design; *Tsandoulas, G. N.*; *T-MTT v20 n4 Apr 72* 253-258 (1B11)
measurement of dielectric constant of liquids and solids using partially-loaded slotted waveguide; *Bahl, Inder J.*; *T-MTT v22 n1 Jan 74* 52-54 (1D12)
mode inversion in circular waveguides; *Tsandoulas, G. N.*; *T-MTT v19 n4 Apr 71* 386-392 (1E06)
mode separation and group velocity at the $n\pi$-modes of a dielectrically loaded slow wave structure; *McDiarmid, D. R.*; *T-MTT v16 n5 May 68* 318-319
multilayered type; mode propagation analysis by ray theory; *Robinson, J. E.*; *T-MTT v16 n4 Apr 68* 261
nonhomogeneous in one transverse direction of rectangular guide; characteristic equations and field components of LSE and LSM modes; *Casey, K. F.*; *T-MTT v21 n8 Aug 73* 566-567 (2C12)
nonhomogeneously loaded guide with dielectric and metallic losses; coupled-mode analysis; *Gauthier, Francis*; *T-MTT v25 n11 Nov 77* 904-907 (1C12)
nonhomogeneously loaded guides; numerical analysis using transmission-line matrix; *Johns, Peter B.*; *T-MTT v22 n3 Mar 74* 209-215 (1E03)
normalized cutoff frequencies and propagation numbers for TE_{n0} modes; computer-printed tables; *Seckelmann, Robert*; *T-MTT v16 n6 Jun 68* 362-368
obstacles in irregularly shaped guide for which form function is imprecisely known; lower bound on phase shifts; *Kalikstein, Kalman*; *T-MTT v26 n4 Apr 78* 250-252 (1B14)
parallel plane waveguide; analysis of wave propagation; *Cohn, Marvin*; *T-MTT v7 n2 Apr 59* 202-208
parallel plate loaded with a ferroelectric slab to form UHF–VHF phase shifter; *Cohn, Marvin*; *T-MTT v10 n6 Nov 62* 536-548
periodic structures; experimental determination of wavelength; *Weissberg, Efraim*; *T-MTT v7 n4 Oct 59* 480-481
phase shift characteristics of dielectrically loaded waveguide; *Bland, G. F.*; *T-MTT v10 n6 Nov 62* 492-496
polystyrene-filled, circular; properties of thin annular resonant slots; *Cohn, Marvin*; *T-MTT v1 n2 Nov 53* 39-44
process heating systems for sheet materials; applicator loaded with tapered dielectric slabs; *Kashyap, S. C.*; *T-MTT v24 n2 Feb 76* 125-126 (1E03)
propagation in cylindrical waveguide containing inhomogeneous dielectric; *Yamada, R.*; *T-MTT v13 n5 Sep 65* 716-717
properties of parallel strips separated by dielectric sheet; *Wheeler, Harold A.*; *T-MTT v13 n2 Mar 65* 172-185
pulse-compression performance; *Minakovic, B.*; *T-MTT v19 n6 Jun 71* 562-563 (2C04)
quarter-wave plates operating over wide frequency band; construction using dielectric slabs in square waveguide; *Ayres, Wesley P.*; *T-MTT v5 n4 Oct 57* 258-261
rectangular, containing an H-plane slab of lossless dielectric; wave propagation and bandwidth; *Gardiol, F. E.*; *T-MTT v17 n1 Jan 69* 56-57
rectangular guide partially filled with dielectric slab in E-plane; power handling capacity maximized; *Findakly, Talal K.*; *T-MTT v24 n1 Jan 76* 39-43 (1C13)
rectangular guide partially filled with dielectric slab in E-plane; power handling capacity maximized; *Gardiol, Fred E.*; *T-MTT v25 n7 Jul 77* 624-625 (1E04)
rectangular; longitudinal section mode analysis with application to the design of nonreciprocal remanence ferrite phase shifters; *Tsandoulas, G. N.*; *T-MTT v18 n2 Feb 70* 88-95
rectangular, partially filled with a linearly inhomogeneous dielectric; closed form solution for the TE_{10} mode; *Gonzalez, Guillermo*; *T-MTT v18 n7 Jul 70* 404-406
rectangular, partially filled with an inhomogeneous dielectric; closed-form solution for the TE_{10} mode; *Gonzalez, Guillermo*; *T-MTT v17 n5 May 69* 284-286
rectangular, partially filled with dielectric; four-terminal network equivalent; *Angulo, Carlos M.*; *T-MTT v5 n1 Jan 57* 68-74
rectangular; propagation at varying slab thickness and dielectric constant; *Vartanian, P. H.*; *T-MTT v6 n2 Apr 58* 215-222
rectangular; propagation of TE modes; *Seckelmann, Robert*; *T-MTT v14 n11 Nov 66* 518-527
rectangular waveguide filled with skew uniaxial dielectric; propagation; *Davies, J. B.*; *T-MTT v15 n6 Jun 67* 372-376
rectangular waveguide partially filled with dielectric; propagation constants; *Weeks, W. L.*; *T-MTT v7 n2 Apr 59* 294
rectangular waveguides containing lossless dielectric slab; propagation in the off-center E-plane; *Eberhardt, Nikolai*; *T-MTT v15 n5 May 67* 282-289
rectangular waveguides filled with a transversely inhomogeneous dielectric; calculation of waves and evanescent fields; *Baier, Walter*; *T-MTT v18 n10 Oct 70* 696-705
resonant frequencies and field components determination; computer program description; *Csendes, Z.*; *T-MTT v19 n9 Sep 71* 789 (1F03)
ridge guides with inhomogeneous dielectric slab-loading; dispersion characteristics; *Magerl, Gottfried*; *T-MTT v26 n6 Jun 78* 413-416 (1C07)
ridge guides with inhomogeneous dielectric-slab loading; dispersion characteristics; *Young, C. W., Jr.*; *T-MTT v26 n11 Nov 78* 919 (1F06)
S-band, high average power broadband ferrite load isolator; use of dielectric loaded waveguide and a composite ferrite; *Skomal, E. N.*; *T-MTT v7 n1 Jan 59* 174-175
sinusoidal variation of dissipation along uniform waveguide with standing waves; *Persky, George*; *T-MTT v10 n6 Nov 62* 591-595
solution of the Fourier heat flow equation in waveguides filled with lossy dielectrics; *Gallagher, William J.*; *T-MTT v11 n6 Nov 63* 552-553
square waveguide lined with dielectric; *Tsandoulas, G. N.*; *T-MTT v23 n5 May 75* 406-410 (1A08)
submillimeter-wave Cerenkov radiation from relativistic electron-beam-driven guide; *Walsh, J. E.*; *T-MTT v25 n6 Jun 77* 561-563 (2C06)
TE excitation on dielectric-loaded parallel plane and trough waveguides; *Cohn, Marvin*; *T-MTT v8 n5 Sep 60* 545-552
TEM mode in a parallel plate waveguide filled with a gyrotropic dielectric; *Seshadri, S. R.*; *T-MTT v11 n5 Sep 63* 436-437
TEM propagation in inhomogeneously filled rectangular waveguide; *Heeren, R. G.*; *T-MTT v19 n11 Nov 71* 884-885 (1E08)
three-dimensional arbitrarily shaped dielectric obstacles inside rectangular guide; analysis using dyadic Green's function; *Wang, Johnson J. H.*; *T-MTT v26 n7 Jul 78* 457-462 (1A03)
transitions; use of microstrip transmission line to make an ideal TEM (coaxial) transition; *Hoover, John C.*; *T-MTT v15 n4 Apr 67* 273-274
transmission-type Esaki-diode amplifier using dielectric-loaded rectangular waveguide; analysis and experimental results; *Toyota, Sachihiro*; *T-MTT v17 n1 Jan 69* 40-42
transverse magnetic wave propagation in sinusoidally stratified dielectric media; infinite medium and loaded waveguide analyzed; *Yeh, Cavour W. H.*; *T-MTT v13 n3 May 65* 297-302
two rectangular waveguides partially filled with dielectric slabs; junction problem; *Bava, G. P.*; *T-MTT v18 n3 Mar 70* 167-168
uniform waveguide of arbitrary cross section filled with moving dielectric; transmission-line treatment; *Fujioka, H.*; *T-MTT v15 n4 Apr 67* 265-267
vane of dielectric material extending into guide through slot in broad wall; approximate analysis in terms of coupled empty waveguide modes; *Arnold, Richard M.*; *T-MTT v20 n10 Oct 72* 699-701 (2B11)
variational expression of electromagnetic fields, discretized using the finite-element method; *Csendes, Zoltan J.*; *T-MTT v18 n12 Dec 70* 1124-1132
variational techniques; hybrid-mode analysis; *English, William J.*; *T-MTT v19 n1 Jan 71* 9-18 (1B11)
Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric; *Holmes, Dale A.*; *T-MTT v12 n2 Mar 64* 152-155
Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric; *Wexler, A.*; *T-MTT v13 n6 Nov 65* 875-878
Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric. *Wexler, A., Correction*; *T-MTT v14 n3 Mar 66* 164
with a symmetrically placed microstrip line; numerical analysis using a finite-difference technique; *Hornsby, J. S.*; *T-MTT v17 n9 Sep 69* 684-690

Dielectric loss measurement
complex permittivity of arbitrarily shaped samples using resonant cavity methods; *Rueggeberg, Werner*; *T-MTT v19 n6 Jun 71* 517-52 (1C05)

Dielectric loss measurement; cf. Dielectric measurements

Dielectric materials
amorphous semiconductors; microwave dielectric properties of As_2Te_3–As_2Se_3; *Wilson, L. K.*; *T-MTT v22 n4 Apr 74* 470-471 (2E04)
artificial anisotropic dielectric medium; *Collin, R. E.*; *T-MTT v6 n2 Apr 58* 206-209
artificial anisotropic dielectric medium. *Collin, R. E., Correction*; *T-MTT v6 n4 Oct 58* 414
conductor–dielectric mixtures; complex permittivity; *Rothwell, W. S.*; *T-MTT v19 n4 Apr 71* 413-414 (2C09)
cork composition materials; complex permittivity from 10 to 10,000 MHz; *Rueggeberg, Werner*; *T-MTT v16 n1 Jan 68* 55-57
dielectric image lines; determination of losses in the image line; *King, D. D.*; *T-MTT v5 n1 Jan 57* 31-36
dielectric image lines; effects of dielectric constant and guiding surface geometry on basic properties; *Schlesinger, S. Perry*; *T-MTT v6 n3 Jul 58* 291-299
electromagnetic wave propagation; velocity modulation; *Morgenthaler, Frederic R.*; *T-MTT v6 n2 Apr 58* 167-172
equivalent expressions for the electric permittivity and magnetic permeability tensors of artificial dielectrics; *Leite, Rogerio C. C.*; *T-MTT v12 n1 Jan 64* 117-122
infinite circular rod; excitation by a metallic, cylindrical waveguide; *Angulo, Carlos M.*; *T-MTT v6 n4 Oct 58* 389-393
inhomogeneous; numerical determination of potential by Earnshaw's theorem; *Weiss, Jerald A.*; *T-MTT v18 n9 Sep 70* 595-601
lossless coupled transmission lines in a nonhomogeneous dielectric medium; transient analysis; *Chang, Fung Yuel*; *T-MTT v18 n9 Sep 70* 616-626
quasi-optical components operating at 90 GHz using total reflection in dielectrics; *Hanson, D. W.*; *T-MTT v18 n4 Apr 70* 233-234
slot line on a dielectric substrate; analysis and possible applications; *Cohn, Seymour B.*; *T-MTT v17 n10 Oct 69* 768-778
theory of artificial dielectrics and aperture coupling using two-dimensional lattice; *Collin, Robert E.*; *T-MTT v9 n2 Mar 61* 110-115

wave propagation in sinusiodally stratified dielectric media. *Tamir, T., Correction*; *T-MTT v13 n1 Jan 65* 141
wave propagation in sinusoidally stratified dielectric media; *Kallas, R. A.*; *T-MTT v13 n1 Jan 65* 139-141
wave propagation in sinusoidally stratified dielectric media; *Kallas, R. A.*; *T-MTT v13 n5 Sep 65* 715
wave propagation in sinusoidally stratified dielectric media; *Tamir, Theodor*; *T-MTT v12 n3 May 64* 323-335
wire grid parallel to a dielectric interface; equivalent shunt impedance; *Wait, James R.*; *T-MTT v5 n2 Apr 57* 99-102
Dielectric materials; cf. Artificial dielectrics; Liquid dielectrics; Nonhomogeneous dielectric media
Dielectric measurements
$BaTi_4O_9$ microstrip; dispersion and loss measurements up to 18 GHz and temperature stability measurements at 14 GHz; *Lee, Young Soo*; *T-MTT v27 n7 Jul 79* 655-660 (1C01)
biological cell membrane physiological and pathophysiological measurements in HF band; *Larsen, Lawrence E.*; *T-MTT v26 n8 Aug 78* 581-595 (1E11)
cavity resonator method based on stationarity of resonant frequency of rectangular cavity as function of sample thickness; *Eugene, Christian E.*; *T-MTT v21 n12 Dec 73* 847-850 (3C02)
complex dielectric constant; measurement at cm and mm wavelengths by optical methods; *Talpey, T. E.*; *T-MTT v2 n3 Sep 54* 1-12
complex permittivity measurement of powders using a microwave resonator; sensitive method; *Roussy, Georges*; *T-MTT v14 n4 Apr 66* 171-175
complex permittivity of microwave insulators; analysis and evaluation of measuring method; *Courtney, William E.*; *T-MTT v18 n8 Aug 70* 476-485
complex permittivity of some cork composition materials from 10 to 10,000 MHz; *Rueggeberg, Werner*; *T-MTT v16 n1 Jan 68* 55-57
computer-aided time-domain techniques for broadband microwave measurements. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
conductivity and permittivity of semiconductor spheres; *Champlin, Keith S.*; *T-MTT v9 n6 Nov 61* 545-551
dielectric constant and loss tangent; rapid graphical measurement technique; *Bowie, Duncan M.*; *T-MTT v4 n3 Jul 56* 137-140
effects of elevated temperature on the dielectric properties of ferrites; *X*-band experimental data; *Bady, Isidore*; *T-MTT v11 n4 Jul 63* 222-226
extension of TE_{01n} resonator method of dielectric measurements on solids; *Paris, D. T.*; *T-MTT v12 n2 Mar 64* 251-252
ferrites; by two partially filled cavity-resonator techniques; *Sinha, J. K.*; *T-MTT v15 n9 Sep 67* 523-525
ferrites; effect of transmission line mismatch of cavity *Q*; *Bady, Isidore*; *T-MTT v17 n3 Mar 69* 165-166
ferroelectric materials at microwave frequencies having large dielectric constants; measurement of dielectric constant and loss tangent; *Horton, J. B.*; *T-MTT v16 n10 Oct 68* 873-875
graphical method for determining real and imaginary parts of dielectric constant at microwave frequency; *Sharpe, Charles B.*; *T-MTT v8 n2 Mar 60* 155-159
high-dielectric-constant materials; precise microwave measurement techniques; *Cohn, Seymour B.*; *T-MTT v14 n9 Sep 66* 406-410
large dielectric constant with small loss; use of a resonance method; *Yu, Jiunn Shang*; *T-MTT v17 n9 Sep 69* 724-726
large permittivities; 'gap effect'; *Champlin, K. S.*; *T-MTT v14 n8 Aug 66* 397-398
microwave cavity perturbation measurements on thin samples of length less than height of cavity; *Parkash, Anand*; *T-MTT v27 n9 Sep 79* 791-795 (1B11)
microwave; ceramic substrates for microstrip applications; *Gerhard, A. R.*; *T-MTT v24 n7 Jul 76* 485-487 (2C02)
microwave electric susceptibility of gases; waveguide interferometry; *Srivastava, G. P.*; *T-MTT v24 n1 Jan 76* 56-57 (1E02)
microwave; Gunn oscillator sensitivity to load is basis for measurement method requiring only dc voltage and current measurements; *Partain, Larry D.*; *T-MTT v24 n10 Oct 76* 656-660 (1B14)
microwave heating of oil shale; abrupt change in dielectric constant due to high-power heating; *Hu, Chia-Lun J.*; *T-MTT v27 n1 Jan 79* 38-43 (1C12)
microwave integrated circuit substrates; *Howell, John Q.*; *T-MTT v21 n3 Mar 73* 142-143 (1C12)
microwave integrated circuit substrates; *Ladbrooke, P. H.*; *T-MTT v21 n8 Aug 73* 570-571 (2D04)
microwave integrated circuit substrates; coupling errors in cavity-resonance measurements; *Ladbrooke, P. H.*; *T-MTT v21 n8 Aug 73* 560-562 (2C06)
microwave interrogation of biological targets using water-immersed antennas; *Jacobi, John H.*; *T-MTT v27 n1 Jan 79* 70-78 (1F02)
microwave loss tangent of low-loss material; resonator bridge method; *Kneppo, Ivan*; *T-MTT v25 n5 May 77* 418-423 (1F08)
microwave loss tangent of low-loss materials; resonator bridge method; *Watanabe, K.*; *T-MTT v26 n4 Apr 78* 314-315 (2A01)
microwave measurement of castable dielectrics at room temperature and 77 K; complex permittivity at 22 GHz; *Haas, Robert W.*; *T-MTT v24 n11 Nov 76* 881-883 (3C01)
microwave measurement of complex permittivity; slotted-line measurements; *Gardiol, Fred E.*; *T-MTT v23 n3 Mar 75* 317-319 (1D09)
microwave measurements using disk resonator; *Tanabe, Kosai*; *T-MTT v23 n6 Jun 75* 508-511 (1D08)
microwave resonant technique for complex permittivity measurement; nondestructive method; *Decreton, Marc C.*; *T-MTT v23 n12 Dec 75* 1077-1080 (2C14)
microwave technique for simultaneously measuring size and permittivity of dielectric samples; use of Gunn flange oscillators; *Lakshminarayana, Mysore R.*; *T-MTT v27 n7 Jul 79* 661-665 (1C07)
microwave techniques for measurement of the dielectric properties of soils; *Curtis, W. L.*; *T-MTT v11 n3 May 63* 211-212
microwaves; use of automatic dielectrometer; *Gabriel, William F.*; *T-MTT v7 n4 Oct 59* 481
millimeter-wave dielectric waveguides of circular cross section; attenuation characteristics in 72-GHz band; *Jablonski, Daniel*; *T-MTT v26 n9 Sep 78* 667-671 (1C13)
millimeter-wave evaluation of ceramic materials; detecting and locating defects; *Bahr, Alfred J.*; *T-MTT v26 n9 Sep 78* 676-683 (1D08)
millimeter-wave measurement of ferrites using open resonator; 60–90 GHz range; *Song Lint, B. Chan*; *T-MTT v24 n11 Nov 76* 883-886 (3C03)
millimeter-wave measurement of low-loss slabs using stopband phenomena in periodic structures created in inverted strip dielectric waveguides; *Itoh, Tatsuo*; *T-MTT v27 n10 Oct 79* 841-844 (1B05)
millimeter-wave measurements for fat and muscle tissues; 40–90 GHz complex permittivity and penetration depth; *Edrich, Jochen*; *T-MTT v24 n5 May 76* 273-275 (1C11)
optical thin-film waveguides; refractive index profile measurement; *Mittra, R.*; *T-MTT v23 n1 Jan 75* 176-177 (2G01)
small dielectric losses in material with large dielectric constant at microwave frequencies; *Bell, Richard O.*; *T-MTT v9 n3 May 61* 239-242
stripline cavity for measurement of dielectric constants and gyromagnetic resonance line widths; *Waldron, Richard A.*; *T-MTT v12 n1 Jan 64* 123-131
submillimeter-wave measurements on polar liquids; Poley absorption; *Chantry, G. W.*; *T-MTT v25 n6 Jun 77* 496-500 (1D02)
theory of artificial dielectrics and aperture coupling using two-dimensional lattice; *Collin, Robert E.*; *T-MTT v9 n2 Mar 61* 110-115
Dielectric measurements; cf. Dielectric constant measurement
Dielectric-resonator filters
branching network using multilayer dielectric filter for 4-, 6-, 20-, and 30-GHz band signals; *Shindo, Shuichi*; *T-MTT v24 n12 Dec 76* 953-958 (1D13)
frequency-stabilized microwave band-rejection filter using high dielectric constant resonators; *Gerdine, Milton A.*; *T-MTT v17 n7 Jul 69* 354-359
low-pass and high-pass filters consisting of multilayer dielectric stacks; *Young, Leo*; *T-MTT v14 n2 Feb 66* 75-80
millimeter-wave tunable bandpass ring filter for dielectric waveguide IC; *Kaurs, Allan R.*; *T-MTT v24 n11 Nov 76* 875-876 (3B09)
mode chart for accurate design of cylindrical dielectric resonators; *Rebsch, D. L.*; *T-MTT v13 n4 Jul v5 468-469*
Dielectric resonators
circular cylindrical and rectangular parallelopiped high dielectric resonators; fundamental modes; *Sethares, James C.*; *T-MTT v14 n1 Jan 66* 2-7
coupling between finite resonators; *Pettersson, Lars*; *T-MTT v24 n9 Sep 76* 615-619 (1F01)
cylindrical; field pattern and new method of approximation for the solution; *Chow, K. K.*; *T-MTT v14 n9 Sep 66* 439
cylindrical resonators; field distribution and resonant frequency determination; *Jaworski, Marek*; *T-MTT v27 n7 Jul 79* 639-643 (1A13)
cylindrical resonators for TEM line circuit applications; resonant frequencies of TE modes; *Pospieszalski, Marian W.*; *T-MTT v27 n3 Mar 79* 233-238 (1B05)
double dielectric resonators; effect of conducting walls on resonant frequencies; *Fiedziuszko, Slawomir*; *T-MTT v19 n9 Sep 71* 779-781 (1E05)
free dielectric spheres; electromagnetic resonances; *Gastine, Monique*; *T-MTT v15 n12 Dec 67* 694-700
frequency stability; relative humidity effects; *Smith, D. M.*; *T-MTT v15 n8 Aug 67* 480-482
GaAs FET integrated oscillator with $BaO–TiO_2$ ceramic resonator; high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
Gunn oscillator in MIC using dielectric resonator; highly stabilized oscillator; *Makino, Toshihiko*; *T-MTT v27 n7 Jul 79* 633-638 (1A07)
lossy spheres; resonances and *Q*-factors; effect of waveguiding structure on resonant frequencies; *Affolter, Peter*; *T-MTT v21 n9 Sep 73* 573-578 (1B03)
measurement of dielectric and magnetic properties of homogeneous isotropic media; *Hukki, Basil W.*; *T-MTT v8 n4 Jul 60* 402-410
measurement of guide wavelength in rectangular guides at microwave and millimeter-wave frequencies; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
microwave bandpass filters containing high-*Q* dielectric resonators; *Cohn, Seymour B.*; *T-MTT v16 n4 Apr 68* 218-227
microwave frequency synthesizer using Si bipolar transistor and $Ba_2Ti_9O_{20}$ dielectric resonator; FM noise less than 0.0003 Hz in any 1 Hz band more than 1000 Hz from o GHz carrier; *Alley, Gary D.*; *T-MTT v27 n12 Dec 79* 969-974 (1D03)
microwave, having no conducting boundaries; experimental data on circuit properties; *Karp, Arthur*; *T-MTT v16 n10 Oct 68* 818-828
miniature high-*Q* narrowband bandpass filter operating in 2200 to 2300 MHz telemetry band; application of TiO_2 dielectric resonators; *Harrison, William H.*; *T-MTT v16 n4 Apr 68* 210-218
mode chart for accurate design of cylindrical dielectric resonators; *Rebsch, D. L.*; *T-MTT v13 n4 Jul v5 468-469*
natural resonant frequencies of microwave dielectric resonators; *Yee, Hung Yuet*; *T-MTT v13 n2 Mar 65* 256
open-circuited resonators; radiation losses; effect on *Q* factor; *Watkins, J.*; *T-MTT v21 n10 Oct 73* 636-639 (1C02)
planar resonators; oscillation modes characterized in terms of *R/Q* parameter; radiation loss calculation; *Schott, Frederick W.*; *T-MTT v25 n5 May 77* 416-418 (1F06)
post resonator with large ϵ_r; modal analysis; *Pospieszalski, Marian W.*; *T-MTT v25 n3 Mar 77* 228-231 (1E06)
resonant frequencies calculation; *Guillon, P.*; *T-MTT v25 n11 Nov 77* 916-922 (1D10)
resonant frequency computation; *Itoh, Tatsuo*; *T-MTT v25 n1 Jan 77* 52-55 (1D12)
resonators placed in microwave structures; effect of conducting walls on resonant frequencies; *Fiedziuszko, Slawomir*; *T-MTT v19 n9 Sep 71* 778-779 (1E04)
resonators using single crystal rutile; *D'Aiello, R. V. D.*; *T-MTT v12 n5 Sep 64* 549-550
ring resonators of very high permittivity; magnetic-dipole resonances; *Verplanken, Marleen*; *T-MTT v27 n4 Apr 79* 328-333 (1C10)
shielded; optimization of filling factor; *Pellegrin, Jean-Louis*; *T-MTT v17 n10 Oct 69* 764-768
$TE_{01\delta}$ resonators; resonant frequency calculation; *Konishi, Yoshihiro*; *T-MTT v24 n2 Feb 76* 112-114 (1D04)
use as microstrip-circuit elements for applications requiring high *Q* and small size; *Day, Walter R., Jr.*; *T-MTT v18 n12 Dec 70* 1175-1176
very-high-permittivity resonators; excitation; *Van Bladel, Jean*; *T-MTT v23 n2 Feb 75* 208-217 (1B12)
very-high-permittivity resonators; resonant modes; *Van Bladel, Jean*; *T-MTT v23 n2 Feb 75* 199-208 (1B03)
waveguide-junction circulators using coupled open dielectric resonators; suppression of higher order modes; *Tan, F. C. F.*; *T-MTT v24 n5 May 76* 271-273 (1C09)

Dielectric waveguides
anisotropic dielectric; production of broadband circular polarization; *Kirschbaum, Herbert S.*; *T-MTT v5 n3 Jul 57* 199-203
anisotropic dielectric slab coated on, or embedded in, isotropic substrate materials; *Satomura, Yutaka*; *T-MTT v22 n2 Feb 74* 86-92 (1A08)
anisotropic hollow cylindrical dielectric guides; hybrid mode propagation; *Chaudhuri, B. B.*; *T-MTT v27 n2 Feb 79* 170-172 (1F10)
asymptotic expressions for eigenfunctions and eigenvalues; *Snyder, Allan W.*; *T-MTT v17 n12 Dec 69* 1130-1138
clad inhomogeneous guides; generalized characteristic vectors formulation; *Bahar, Ezekiel*; *T-MTT v27 n4 Apr 79* 345-352 (1D13)
coaxial transmission line filled with two nonconcentric dielectrics; *Angelakos, D. J.*; *T-MTT v2 n2 Jul 54* 39-44
continuous mode spectrum of circular dielectric rods; radiating modes; *Snyder, Allan W.*; *T-MTT v19 n8 Aug 71* 720-727 (1F02)
coupling of modes on a tapered dielectric cylinder; *Snyder, Allan W.*; *T-MTT v18 n7 Jul 70* 383-392
curved dielectric rod guides; radiation from bends; *Neumann, Ernst-Georg*; *T-MTT v23 n1 Jan 75* 142-149 (2D09)
curved slab and fiber waveguides; radiation condition; *Arnaud, Jacques A.*; *T-MTT v23 n11 Nov 75* 935-936 (1G01)
curved slab and fiber waveguides; radiation condition; *Lewin, Leonard*; *T-MTT v22 n7 Jul 74* 718-727 (1A12)
description of dielectric rods, dielectric-clad materials and corrugated surfaces, surface wave instruments and circuits; *Harvey, A. F.*; *T-MTT v8 n1 Jan 60* 30-61
dielectric-clad rod; propagation of higher-order modes; *Savard, Jean Y.*; *T-MTT v15 n3 Mar 67* 151-155
dielectric image lines; circuit components; *King, D. D.*; *T-MTT v3 n6 Dec 55* 35-39
dielectric image lines; determination of losses in the image line; *King, D. D.*; *T-MTT v5 n1 Jan 57* 31-36
dielectric image lines; effects of dielectric constant and guiding surface geometry on basic properties; *Schlesinger, S. Perry*; *T-MTT v6 n3 Jul 58* 291-299
dielectric surface-wave structure; the V-line; *Diament, Paul*; *T-MTT v9 n4 Jul 61* 332-337
discontinuities analyzed using least squares boundary residual method; *Morishita, Katsumi*; *T-MTT v27 n4 Apr 79* 310-315 (1B06)
field mapping with the aid of computer graphics; *Nagelberg, Elliott R.*; *T-MTT v15 n3 Mar 67* 187-189
generalized plots of mode patterns in a cylindrical dielectric waveguide applied to retinal cones; *Biernson, George*; *T-MTT v13 n3 May 65* 345-356
generalized plots of mode patterns in a cylindrical dielectric waveguide applied to retinal cones; *Diament, P.*; *T-MTT v13 n6 Nov 65* 884-885
Goubau lines, cutoff wavenumbers; *Fikioris, John G.*; *T-MTT v27 n6 Jun 79* 570-573 (1B02)
Goubau lines; impedance and scattering properties of perfectly conducting plane annulus surrounding Goubau line; *Gillespie, Edmond S.*; *T-MTT v19 n10 Oct 71* 837-839 (1E11)
graded index dielectric rods; guided modes; *Yamada, Ryozo*; *T-MTT v22 n8 Aug 74* 813-814 (1E03)
Gunn oscillator in dielectric waveguide; distributed Bragg reflection oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
Gunn oscillator with Bragg reflector grating for dielectric waveguide integrated circuits; *Itoh, Tatsuo*; *T-MTT v27 n5 May 79* 514-518 (2D13)
higher-order hybrid modes of dielectric cylinders; *Schlesinger, S. P.*; *T-MTT v8 n2 Mar 60* 252-253
hollow; attenuation and guidance of modes; *Glaser, Jerome I.*; *T-MTT v17 n3 Mar 69* 173-174
hollow cylindrical guides with periodic boundary perturbations; *E*-type modes; *Topuz, Ercan*; *T-MTT v24 n11 Nov 76* 872-875 (3B06)
image guide passive devices for millimeter-wave IC; couplers, detectors, and balanced mixers; *Paul, Jeffrey A.*; *T-MTT v26 n10 Oct 78* 751-754 (1D07)
image line bends; radiation loss measurements from 26 to 90 GHz and minimum acceptable curvature radius as function of frequency; *Solbach, Klaus*; *T-MTT v27 n1 Jan 79* 51-53 (1D11)
image line coupling properties; rectangular cross section lines; *Solbach, Klaus*; *T-MTT v27 n1 Jan 79* 54-58 (1D14)
image lines at millimeter wavelengths; characteristics; *Wiltse, James C.*; *T-MTT v7 n1 Jan 59* 65-69
image lines; electric probe measurements in 26–90 GHz range; *Solbach, Klaus*; *T-MTT v26 n10 Oct 78* 755-758 (1D11)
image lines for millimeter-wave IC; low-loss E^{x}_{11} mode rectangular line; *Shindo, Shuichi*; *T-MTT v26 n10 Oct 78* 747-751 (1D03)
image lines of rectangular cross section; field distributions and phase constants calculation for single and coupled lines; *Solbach, Klaus*; *T-MTT v26 n4 Apr 78* 266-274 (1D02)
inhomogeneous fibers, core with arbitrary refractive-index distribution and uniform cladding; variational method analysis; *Okoshi, Takanori*; *T-MTT v22 n11 Nov 74* 938-945 (1B14)
inhomogeneous guides; perturbation method for analyzing guides whose index distributions depart from well-known profiles; *Hashimoto, Masahiro*; *T-MTT v24 n9 Sep 76* 559-566 (1B01)
inhomogeneous slab guides; propagation analysis using regularized WKBJ method; *Ikuno, Hiroyoshi*; *T-MTT v26 n4 Apr 78* 261-266 (1C11)
integrated circuits, microwave and millimeter-wave; *Knox, Robert M.*; *T-MTT v24 n11 Nov 76* 806-814 (2C11)
inverted strip dielectric guides for IC components in 75–80 GHz range; directional couplers and ring resonators; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
inverted strip dielectric waveguides used for dielectric constant measurement at millimeter-wave frequencies; *Itoh, Tatsuo*; *T-MTT v27 n10 Oct 79* 841-844 (1B05)
launching efficiency of the HE_{11} surface wave mode on a dielectric rod; *Yip, Gar Lam*; *T-MTT v18 n12 Dec 70* 1033-1041
launching of HE_{11} surface-wave mode on dielectric tube; *Yip, Gar Lam*; *T-MTT v22 n1 Jan 74* 6-14 (1A08)
low-loss types for moderate distance transmission; development work at Bell Telephone Laboratories; *Weiss, M. T.*; *T-MTT v2 n3 Sep 54* 38-44
measurement of guide wavelength in rectangular guides at microwave and millimeter-wave frequencies; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
measurements of dispersion characteristics and field distributions in rectangular guide and its modifications; *Ogusu, Kazuhiko*; *T-MTT v26 n3 Mar 78* 169-171 (1C07)
millimeter-wave guides of circular cross section; attenuation characteristics; *Jablonski, Daniel*; *T-MTT v26 n9 Sep 78* 667-671 (1C13)
millimeter-wave guides; properties of dielectric image lines; *King, D. D.*; *T-MTT v3 n2 Mar 55* 75-81
millimeter-wave IC filter; tunable bandpass ring filter; *Kaurs, Allan R.*; *T-MTT v24 n11 Nov 76* 875-876 (3B09)
millimeter-wave image line IC; ferrite devices; *Nanda, Ved P.*; *T-MTT v24 n11 Nov 76* 876-879 (3B10)
millimeter-wave image lines using casting resins; fabrication and properties; *Solbach, Klaus*; *T-MTT v24 n11 Nov 76* 879-881 (3B13)
millimeter-wave insular line integrated circuits; *V*-band radio receiver and transmitter system; *Kietzer, James E.*; *T-MTT v24 n11 Nov 76* 797-803 (2C02)
millimeter-wave integrated circuits; inverted strip dielectric guide; *Itoh, Tatsuo*; *T-MTT v24 n11 Nov 76* 821-827 (2D12)
mode cutoff frequencies in screened dielectric rod waveguides; *Thompson, A. S.*; *T-MTT v11 n4 Jul 63* 262-263
modes and pseudomodes; existence of solutions; *Marcuse, Dietrich*; *T-MTT v18 n1 Jan 70* 62-63
O-guide and X-guide; advanced surface wave transmission concept composed of thin dielectric sheets; *Sugi, Masao*; *T-MTT v7 n3 Jul 59* 366-369
optical surface-wave excitation using shaped tunneling regions; *Harris, Jay H.*; *T-MTT v19 n3 Mar 71* 269-276 (1C01)
planar guide for ground transportation obstacle detection; surface-wave scattering by dielectric obstacles on guide; *Rulf, Benjamin*; *T-MTT v24 n8 Aug 76* 539-541 (1D09)
planar guide step discontinuity; rigorous variational approach; *Rozzi, T. E.*; *T-MTT v26 n10 Oct 78* 738-746 (1C08)
planar guide with interacting step discontinuities; network description derived from field analysis; *Rozzi, Tullio E.*; *T-MTT v27 n4 Apr 79* 303-309 (1A13)
plane dielectric-coated conductor surface waveguide; energy guiding around a corner; *Stutzman, Warren L.*; *T-MTT v16 n1 Jan 68* 52-53
quasi-optical surface waveguide and other components for the 100–300 GHz region; *Sobel, Frederick*; *T-MTT v9 n6 Nov 61* 512-518
radiation losses due to variations of radius on dielectric or optical fibers; *Snyder, Allen W.*; *T-MTT v18 n9 Sep 70* 608-615
refractive index variation in transverse direction; propagation modes and scattering loss; *Suematsu, Yasuharu*; *T-MTT v20 n8 Aug 72* 524-531 (1D10)
single dielectric slab arbitrary polarization structure; use in surface wave antennas; *Hansen, Robert C.*; *T-MTT v5 n2 Apr 57* 115-120
slab of graded-index medium whose refractive index is polynomial expression of transverse coordinate; *Pratesi, Riccardo*; *T-MTT v26 n11 Nov 78* 856-858 (1A14)
submillimeter-wave guides, polyethylene slab; attenuation constants measurement at 337 μm; *Tsuji, Mikio*; *T-MTT v27 n11 Nov 79* 873-878 (1A03)
submillimeter-wave phase shifters; multilayer dielectric waveguide driven by p-i-n diode. *Buckman, A. B., Correction*; *T-MTT v26 n2 Feb 78* 127 (1F11)
surface wave excitation on a dielectric cylinder; efficiency determination; *Duncan, James W.*; *T-MTT v7 n2 Apr 59* 257-268
surface waves on symmetrical three-layer sandwiches; *Richmond, J. H.*; *T-MTT v8 n5 Sep 60* 572
three-layer cylindrical guides; cutoff characteristics; *Safaai-Jazi, Ahmad*; *T-MTT v26 n11 Nov 78* 898-903 (1D14)
wave coupling by warped normal modes; *Fox, A. G.*; *T-MTT v3 n6 Dec 55* 2-6
wires and slots for dielectric rod waveguide; surfacewave launching efficiency; *DuHamel, Raymond H.*; *T-MTT v6 n3 Jul 58* 277-284
Dielectric waveguides; cf. Optical fibers; Optical waveguides
Difference methods; cf. Finite-difference methods
Differential equations; cf. Partial differential equations
Diffraction
Fresnel integral evaluation; *Lewin, L.*; *T-MTT v27 n2 Feb 79* 208 (2B07)
generation of coherent infrared radiation from diffraction grating; *Bird, George R.*; *T-MTT v11 n5 Sep 63* 432
Diffraction; cf. Acoustic diffraction; Acoustooptic diffraction; Electromagnetic diffraction; Optical diffraction
Difluoroethylene lasers
submillimeter laser transitions of CF_2CH_2; assignment of optically pumped lines to pure rotation transitions; *Duxbury, G.*; *T-MTT v22 n12 Dec 74* 1108-1109 (2C05)
Digital communication
waveguide system using TE_{01} mode in circular guide; 35–120 GHz; *Abele, Thomas A.*; *T-MTT v23 n4 Apr 75* 326-333 (1A04)
Digital communication; cf. PSK
Digital filters
narrow-band, bandpass, elliptic; design in a compact digital form; *Rhodes, John David*; *T-MTT v17 n4 Apr 69* 178-184
narrow-band, bandpass, TEM-line, elliptic; design; *Rhodes, J. D.*; *T-MTT v17 n12 Dec 69* 1102-1107
open interdigital-line structure; dispersion characteristics obtained by treating the structure as a radiator; *Wu, Pei Rin*; *T-MTT v17 n3 Mar 69* 159-163
Digital filters; cf. Comb filters
Digital image processing
microwave holography; image reconstruction using data sampled by straight line approximation and fast Fourier transform; *Nagai, Keinosuke*; *T-MTT v21 n1 Jan 73* 13-18 (1C03)
Digital modulation/demodulation; cf. APK; FSK; PSK
Diode phase shifters
binary, diode controlled; *Connerney, William R.*; *T-MTT v16 n2 Feb 68* 134-135
broadband binary 180° diode phase modulators; *Garver, Robert V.*; *T-MTT v13 n1 Jan 65* 32-38
loaded-line phasers; design equations for any susceptance spacing; *Davis, W. Alan*; *T-MTT v22 n5 May 74* 561-563 (2B06)
matching network design for hybrid-coupled phase shifters; transmission-line matching networks. *Starski, J. Piotr, Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
millimeter-wave phase shifters; *Garver, Robert V.*; *T-MTT v27 n5 May 79* 523-529 (2E08)

p-i-n diode controlled microwave transmission phase shifter; *White, Joseph F.; T-MTT v13 n2 Mar 65* 233-242
p-i-n diode parameters; effect on performance of reflection-type phase shifters; *Wahi, Pradeep; T-MTT v24 n9 Sep 76* 619-621 (1F05)
pin phase shifter on microstrip; 4-bit phase shifter with low RF attenuation, fast switching time, and low switching power requirements; *Glance, Bernard; T-MTT v27 n1 Jan 79* 14-16 (1B02)
reflection-type 180 section using interdigitated coupler; 2-GHz bandwidth in *X*-band; *Yahara, T.; T-MTT v23 n3 Mar 75* 307-309 (1C13)
submillimeter-wave phase shifters; multilayer dielectric waveguide driven by p-i-n diode. *Buckman, A. B., Correction; T-MTT v26 n2 Feb 78* 127 (1F11)
switched-line phaser using resistive loading technique to avoid resonance problems; *Lynes, Guy D.; T-MTT v22 n6 Jun 74* 693-697 (2B05)
types and characteristics; p-i-n diode characteristics, drivers, performance in *L, S, C,* and *X* bands; *White, Joseph F.; T-MTT v22 n6 Jun 74* 658-674 (1F02)
varactor phase shifter with optimized frequency response; continuous phase shifter; *Ulriksson, Bengt; T-MTT v27 n7 Jul 79* 650-654 (1B10)
varactor phase shifter with controlled wideband differential; *Liechti, C. A.; T-MTT v15 n10 Oct 67* 586-589

Diodes; cf. Semiconductor diodes

Diplexers
asymmetric bandpass channel diplexers; direct design formulas; *Haine, John L.; T-MTT v25 n10 Oct 77* 807-813 (1A03)
diplexer using hybrid junctions; *Ricardi, Leon J.; T-MTT v14 n8 Aug 66* 364-371
diplexing action in a *Y*-junction circulator; *Brown, J.; T-MTT v10 n4 Jul 62* 298
evanescent-mode waveguide diplexers; whole unit built in single waveguide without T junction and connecting flanges; *Mok, C. K.; T-MTT v21 n1 Jan 73* 43-48 (1E09)
frequency diplexing with waveguide bifurcations; *Kefalas, George P.; T-MTT v10 n3 May 62* 221-222
L-band diplexing filter incorporating hybrid junction and waveguide sections; high-power capability; *Young, Leo; T-MTT v7 n3 Jul 59* 384-387
millimeter-wave; 80-GHz band low-loss ring-type channel diplexer using semicircular electric mode; *Nakajima, Nobuo; T-MTT v24 n11 Nov 76* 831-836 (2E08)
millimeter-wave channel diplexer using multimode waveguide filters; *Ren, Chung-Li; T-MTT v20 n12 Dec 72* 820-827 (1D07)
millimeter-wave filters utilizing circular TE_{011} mode resonators; *Standley, R. D.; T-MTT v16 n1 Jan 68* 50-51
millimeter-wave waveguide transmission system; semicircular waveguide-type diplexer; *Shimada, Sadakuni; T-MTT v22 n2 Feb 74* 111-118 (1C05)
quasi-optical waveguide-polarization diplexers; metal grating or dielectric plate at Brewster's angle in oversize 3-port junction; *Mendonça, J. T.; T-MTT v21 n9 Sep 73* 586-587 (1C04)
wideband, high-selectivity; use of digital elliptic filters; *Wenzel, R. J.; T-MTT v16 n10 Oct 68* 895
wideband, high-selectivity; use of digital elliptic filters; *Wenzel, Robert J.; T-MTT v15 n12 Dec 67* 669-680

Dipole antennas
MIC Doppler module with stripline dipole antenna and output radiation normal to substrate plane; *Nanbu, Shutaro; T-MTT v26 n1 Jan 78* 3-5 (1A05)
thick dipole antenna between parallel planes; determination of mutual and input impedance; *Hayt, William H., Jr.; T-MTT v3 n2 Mar 55* 114-118

Dipole arrays
plane waves on periodic structures and their application to surface wave antennas; *Shefer, Joshua; T-MTT v10 n6 Nov 62* 585-592

Directional couplers
10-db X_L cross guide coupler; *Gerlack, Richard Z.; T-MTT v9 n6 Nov 61* 571
300–350 GHz; in oversized rectangular waveguide using optical techniques; *Taub, Jesse J.; T-MTT v11 n5 Sep 63* 338-345
analysis of two-section coupler; *Sweet, Leonard O.; T-MTT v10 n4 Jul 62* 295
application of stepped impedance transformer theory to branch-guide directional couplers; *Young, Leo; T-MTT v10 n5 Sep 62* 339-359
asymmetric Chebyshev high-pass TEM-mode type; design tables; *Arndt, Fritz; T-MTT v18 n9 Sep 70* 633-638
asymmetrical branch-guide directional coupler-impedance transformers; synthesis; *Lind, Larry F.; T-MTT v17 n1 Jan 69* 45-48
bibliography covering 140 publications covering the period from 1951 to 1965; *Caswell, W. E.; T-MTT v15 n2 Feb 67* 120-123
bibliography covering 1935 and consecutive years 1943–1953; *Medhurst, R. G.; T-MTT v3 n3 Apr 55* 42-43
bibliography covering 1935 and consecutive years 1943–1953; *Schwartz, Richard F.; T-MTT v2 n2 Jul 54* 58-63
branch-guide couplers with tight-coupling values: design method based on Zolotarev functions; *Levy, Ralph; T-MTT v21 n2 Feb 73* 95-99 (1D05)
broadband, high-directivity, 90-degree couplers using nonuniform line techniques; design and construction; *Tresselt, C. P.; T-MTT v14 n12 Dec 66* 647-656
broadband multibranch waveguide coupler; method for accurate design; *Patterson, Kenneth G.; T-MTT v7 n4 Oct 59* 466-473
circular electric mode coupler; two coaxial bifurcations in circular waveguide; *Oguchi, Bunichi; T-MTT v8 n6 Nov 60* 660-666
coaxial coupler having high directivity (50-dB) and broadband (0.7 to 1.5 and 3 to 4 GHz). *Hudson, P. A.; T-MTT v14 n6 Jun 66* 293-294
coaxial hybrid junction using a series and a shunt junction; *Stark, Louis; T-MTT v9 n2 Mar 61* 124-129
computer-aided synthesis; program description; *Hoffmann, M.; T-MTT v22 n1 Jan 74* 77 (1F09)
conductor thickness corrections for capacitive obstacles and strip conductors; *Cohn, Seymour B.; T-MTT v8 n6 Nov 60* 638-644
continuously variable directional coupler in a rectangular waveguide using a movable dielectric slab; *Brodwin, Morris E.; T-MTT v11 n2 Mar 63* 137-142
coplanar-waveguide; analytic design using quasi-static zeroth-order approximations; *Wen, Cheng P.; T-MTT v18 n6 Jun 70* 318-322
coupled-line directional couplers and all-pass networks; synthesis; *Steenaart, Willem; T-MTT v16 n8 Aug 68* 554-555
coupled-transmission-line type; design formulas for any value of coupling; *Shimizu, James K.; T-MTT v6 n4 Oct 58* 403-410
coupled-transmission-line, with coupled lines of unequal characteristic impedances; *Cristal, Edward G.; T-MTT v14 n7 Jul 66* 337-346
cross-guide coupler; use for measuring the line width and the *g* factor of spherical ferrite; *Stinson, Donald C.; T-MTT v6 n4 Oct 58* 446-450

Directional couplers, *cont.*
directional coupler and two p-i-n diodes in limiter;Rodriquez, M. J.; *T-MTT v10 n3 May 62* 219-220
Rodriguez, M. J.; T-MTT v10 n3 May 62 219-220
dc blocks realized using $\lambda/4$ 3-dt directional coupler with coupled port and transmitted port opened-circuited; *Ho, Chen Y.; T-MTT v23 n9 Sep 75* 773-774 (1D13)
design of synchronous branch guide directional couplers; *Young, Leo; T-MTT v10 n6 Nov 62* 459-475
design using capacitance matrix transformations; *Wenzel, R. J.; T-MTT v14 n12 Dec 66* 635-647
design with the aid of Fourier transforms; *Sensiper, Samuel; T-MTT v6 n2 Apr 58* 238
directivity measurement method; *Schafer, George E.; T-MTT v6 n4 Oct 58* 419-422
directivity measurement method. *Schafer, G. E., Correction; T-MTT v12 n3 May 64* 361
discharge tube used as the coupling element in the common narrow wall between two guides; *Willis, Jack; T-MTT v10 n5 Sep 62* 383-389
discrete *N*-section and continuously tapered symmetrical microwave TEM type; computer-aided design; *Kammler, David W.; T-MTT v17 n8 Aug 69* 577-590
even and odd mode impedances of shielded coupled strip transmission lines; derivation of formulas; *Cohn, Seymour B.; T-MTT v8 n6 Nov 60* 633-637
ferrite-type, with off-center apertures; expressions for coupling and directivity; *Stinson, Donald C.; T-MTT v6 n3 Jul 58* 332-333
field description in, and on, walls of a ridge waveguide; design of ridge waveguide directional couplers; *Getsinger, William J.; T-MTT v10 n1 Jan 62* 41-50
finline coupler; use to design hybrids, directional couplers, and polarization-selective couplers operating over bandwidths of at least 3:1 in frequency; *Robertson, Sloan D.; T-MTT v3 n6 Dec 55* 45-48
general treatment of double stub four-port hybrid directional couplers *L*-band; *Boyd, Charles R., Jr.; T-MTT v10 n4 Jul 62* 287-294
high-power switching network for dual-mode antenna; *Albanese, Victor J.; T-MTT v26 n5 May 78* 348-354 (1C02)
hybrid-ring directional coupler for arbitrary power divisions; *Pon, Chuck Y.; T-MTT v9 n6 Nov 61* 529-535
image line coupler; *Angelakos, D. J.; T-MTT v7 n3 Jul 59* 391-392
impedance-transforming couplers; even-odd mode analysis of mismatched couplers; *Ekinge, Roland B.; T-MTT v19 n4 Apr 71* 415-416 (2C11)
internal reflections in dielectric prisms; application to bidirectional coupler; *Fellers, Rufus G.; T-MTT v12 n6 Nov 64* 584-587
internal reflections in dielectric prisms; application to bidirectional couplers. *Fellers, R. G., Correction; T-MTT v13 n2 Mar 65* 258
loop-type, for the *L*-band; design criteria; *Lombardini, Pietro P.; T-MTT v4 n4 Oct 56* 234-239
loop-type, for the *L*-band; design criteria; *Schwartz, Richard F.; T-MTT v5 n2 Apr 57* 162
low-noise; class-*C* oscillator using a directional coupler; *Peppiatt, Harry J.; T-MTT v16 n9 Sep 68* 748-752
magic-T using 3db asymmetric coupled transmission line coupler and phase shift network; *Kraker, David I.; T-MTT v12 n6 Nov 64* 595-597
measuring the directivity of directional couplers using a sliding short circuit and an adjustable sliding termination; *Beatty, R. W.; T-MTT v12 n3 May 64* 383
method of improving the response of waveguide directional couplers; *Sweet, Leonard; T-MTT v11 n6 Nov 63* 554
microstrip at *X*-band; experimental investigation; *Kelley, Douglas; T-MTT v16 n8 Aug 68* 560-562
microwave integrated circuits; 14-dB directivity with $\lambda/16$ coupler at 3.6 GHz; *Weirather, Robert R.; T-MTT v22 n1 Jan 74* 70-71 (1F02)
microwave reflectometer; adjustment techniques; *Engen, Glenn F.; T-MTT v7 n3 Jul 59* 351-355
millimeter-wave cavity coupling by a quarter wave transformer; *Strain, R. J.; T-MTT v10 n6 Nov 62* 612-614
multiline 2*N*-port contradirectional coupler; theory and design; *Ott, Edward; T-MTT v14 n11 Nov 66* 578-579
multiple-branch; rectangular waveguide applications for series junctions; *Reed, John; T-MTT v6 n4 Oct 58* 398-403
nonreciprocal directional couplers; *Berger, Henry; T-MTT v13 n4 Jul 65* 474-475
optimum design of helix couplers with shielding; *Berceli, T.; T-MTT v13 n4 Jul 65* 471-472
oversized waveguide directional coupler using dielectric prisms; *Hindin, H. J.; T-MTT v10 n5 Sep 62* 394-395
parallel push-pull hybrid circuits used in power combining; *Miyagi, Masahisa; T-MTT v10 n1 Jan 62* 34-40
plasma discharge, used to couple microwave energy between two adjacent metal waveguides; *Steier, William H.; T-MTT v9 n6 Nov 61* 499-506
power capacity of short-slot couplers; *Young, L.; T-MTT v13 n1 Jan 65* 133
printed circuit balun for use with spiral antennas; *Bawer, Robert; T-MTT v8 n3 May 60* 319-325
properties of symmetric hybrid waveguide junctions; *Levy, R.; T-MTT v8 n5 Sep 60* 573
quasi-optical oversize waveguide directional coupler with two prisms, interface-matched by means of the Brewster's-angle effect; *Takao, I.; T-MTT v17 n2 Feb 69* 124-125
re-entrant cross section and wideband 3-db hybrid couplers; *Cohn, Seymour B.; T-MTT v11 n4 Jul 63* 254-258
re-entrant directional coupler using strip transmission line; *Lavendol, L.; T-MTT v13 n5 Sep 65* 700-701
side-arm-switched directional coupler as single-step attenuator of high long-term stability; 0.01-dB and 0.001-dB step attenuators; *Somlo, Peter I.; T-MTT v22 n9 Sep 74* 830-835 (1A12)
stripline coupler that allows very close coupling; *Getsinger, William J.; T-MTT v9 n6 Nov 61* 535-544
stripline, utilizing a nonhomogeneous dielectric medium; *Dalley, James E.; T-MTT v17 n9 Sep 69* 706-712
symmetrical, branch-guide; synthesis; *Levy, Ralph; T-MTT v16 n2 Feb 68* 80-89
symmetrical, branch-guide; synthesis; *Riblet, H. J.; T-MTT v18 n1 Jan 70* 47-48
synthesis of asymmetric multi-element coupled transmission line couplers; *Levy, Ralph; T-MTT v11 n4 Jul 63* 226-237
synthesis of symmetrical TEM-mode directional couplers; *Toulios, Peter P.; T-MTT v13 n5 Sep 65* 536-544
tables for asymmetric multielement coupled transmission line directional couplers; *Levy, Ralph; T-MTT v12 n3 May 64* 275-279

theory and tables of symmetrical TEM transmission line directional couplers; *Cristal, Edward G.*; *T-MTT v13 n5 Sep 65* 544-558
transmission-line; design to produce high-pass coupling with approximately equal ripple characteristic at high frequency; *Dutta Roy, Suhash C.*; *T-MTT v17 n7 Jul 69* 400
transmission line, nonuniform; equivalence principle; *Sharpe, Charles B.*; *T-MTT v15 n7 Jul 67* 398-405
transmission-line type, with high-pass coupling characteristic; *Arndt, Fritz*; *T-MTT v16 n5 May 68* 310-311
traveling-wave directional filter; *Coale, Franklin S.*; *T-MTT v4 n4 Oct 56* 256-260
two hybrids to form a directional coupler of arbitrary power division over a broad band; *Marcatili, Enrique A. J.*; *T-MTT v10 n4 Jul 62* 251-257
use in reflection coefficient measurement; errors due to residual SWR; *Beatty, Robert W.*; *T-MTT v21 n5 May 73* 364 (1F06)
very flat coupling characteristic; equivalent admittance of symmetrical 4-port couplers; *Riblet, Gordon P.*; *T-MTT v26 n2 Feb 78* 70-74 (1B10)
very flat coupling characteristic; equivalent admittance of symmetrical 4-port couplers. *Riblet, Gordon P., Correction*; *T-MTT v26 n9 Sep 78* 691 (1E09)
VSWR measurement; *Gewartowski, J. W.*; *T-MTT v15 n2 Feb 67* 134
wave coupling by warped normal modes; *Fox, A. G.*; *T-MTT v3 n6 Dec 55* 2-6
waveguide branch-guide couplers; agreement between experiment and theory when account is taken of *T*-junction discontinuities; *Levy, R.*; *T-MTT v17 n5 May 69* 289-290
waveguide multiaperture couplers; analysis and synthesis; *Levy, Ralph*; *T-MTT v16 n12 Dec 68* 995-1006
wideband equal-ripple TEM directional couplers and fixed phase shifters; approximate synthesis technique; *Shelton, J. Paul*; *T-MTT v14 n10 Oct 66* 462-473
X-band, consisting of two adjacent lengths of parallel waveguide with common tantalum wall; calculation of coupling ratio; *Hall, Maurice B.*; *T-MTT v15 n11 Nov 67* 598-603
zero-decibel type; use as a duplexer; *Reed, John*; *T-MTT v4 n4 Oct 56* 246-252
zero-decibel type; use as a duplexer. *Reed, John, Correction*; *T-MTT v5 n2 Apr 57* 162

Directional couplers; cf. Acoustic surface-wave coupling; Coaxial directional couplers; Hybrid junctions; Microstrip couplers; Microstrip directional couplers; Millimeter-wave directional couplers; Optical directional couplers; Slotline directional couplers; Stripline directional couplers

Directional filters
microstrip filters employing parallel-coupled microstrip; mode compensation; *Lee, Y. S.*; *T-MTT v22 n1 Jan 74* 66-69 (1E12)
microwave; applications for multiplexing systems; *Coale, Franklin S.*; *T-MTT v6 n4 Oct 58* 450-453
millimeter-wave directional filter cavities; *Moore, Brad D.*; *T-MTT v24 n11 Nov 76* 843-847 (2F06)
one- and two-resonator maximally flat directional filters; experimental results in the 50-GHz band; *Shimada, Sadakuni*; *T-MTT v18 n1 Jan 70* 61-62
TEM-mode transmission-type filters; exact and approximate synthesis; *Walker, John L. B.*; *T-MTT v26 n3 Mar 78* 186-192 (1D10)
time-delay equalizer using cascaded directional filters; millimeter-wave waveguide system; *Standley, Robert D.*; *T-MTT v19 n5 May 71* 497-498 (2C11)

Discontinuities
calculating coaxial transmission-line step capacitance; *Somlo, P. I.*; *T-MTT v11 n5 Sep 63* 454
loaded transmission line synthesis; *Reed, John*; *T-MTT v9 n2 Mar 61* 201-202
radial line; resonant frequencies of higher-order modes; *Stinson, D. C.*; *T-MTT v3 n4 Jul 55* 18-23
randomly spaced discontinuities in transmission lines; effects of reflections; *Moore, Richard K.*; *T-MTT v5 n2 Apr 57* 121-126
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetrir strip lines; *Altschuler, H. M.*; *T-MTT v11 n1 Jan 63* 87
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines; *Altschuler, Helmut M.*; *T-MTT v8 n3 May 60* 328-339
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines. *Altschuler, H. M., Addendum*; *T-MTT v10 n2 Mar 62* 143
VSWR of randomly spaced discontinuities; prediction of the probability distribution; *Mullen, James A.*; *T-MTT v5 n2 Apr 57* 127-130
Wiener-Hopf technique applied to two dimensional scattering for wall impedance changes in waveguides; *Johansen, Elmer L.*; *T-MTT v10 n1 Jan 62* 26-29

Discontinuities; cf. Coaxial cable discontinuities; Microstrip discontinuities; Slot-line discontinuities; Stripline discontinuities; Transmission-line discontinuities; Waveguide discontinuities

Dispersive media; cf. Electromagnetic propagation, dispersive media; Optical propagation, dispersive media

Dissipative media; cf. Absorbing media

Distance measurement; cf. Radar distance measurement; Radio distance measurement

Distortion; cf. Amplifier distortion; Intermodulation distortion

Distributed-active networks
microwave power amplifier consisting of nonreciprocal transmission line periodically loaded by negative-resistance diodes; *Paik, S. F.*; *T-MTT v20 n3 Mar 72* 202-209 (1B04)

Distributed amplifiers
extension of mode theory of the lossless periodically distributed amplifier to the lossy case; *Kurokawa, Kaneyuki*; *T-MTT v8 n1 Jan 60* 10-17
lossless periodically distributed parametric type; mode theory; *Kurokawa, Kaneyuki*; *T-MTT v7 n3 Jul 59* 360-365

Distributed Bragg reflector oscillators; cf. Gunn device oscillators

Distributed-feedback lasers
fiber and diffused waveguide structures; *Elachi, C.*; *T-MTT v23 n6 Jun 75* 532-536 (1F04)

Distributed-feedback oscillators
acoustic surface-wave oscillators; *Elachi, Charles*; *T-MTT v22 n10 Oct 74* 907-908 (1E05)

Distributed filters
bandpass; computer program for the synthesis; *Johnson, A. Kent*; *T-MTT v17 n8 Aug 69* 643
bandstop filters approximating elliptic-function response; uses noncommensurate lines; *Malherbe, Johannes A. G.*; *T-MTT v24 n5 May 76* 242-248 (1A08)
bandstop filters, even-order equally terminated transmission-line filters; synthesis procedure; *Nedunuri, Ramamurty*; *T-MTT v27 n8 Aug 79* 742-744 (1B14)
class of sharp cutoff filters using combinations of lumped constant and distributed constant reactance; *Oltman, George*; *T-MTT v11 n1 Jan 63* 30-35
commensurate transmission-line networks; frequency transformation; *Cristal, Edward G.*; *T-MTT v15 n6 Jun 67* 348-357
commensurate transmission-line networks; frequency transformation. *Cristal, E. G., Correction*; *T-MTT v16 n1 Jan 68* 45
design techniques for bandstop radial line coaxial filters; microwave frequencies; *De Loach, Bernard C.*; *T-MTT v11 n1 Jan 63* 50-55
elliptic-function bandstop filters; unit element transforms performed on unresonated prototype and resultant network is resonated; *Malherbe, J. A. G.*; *T-MTT v25 n8 Aug 77* 717 (1G05)
elliptic-function filters for distributed constant system; optimum design; *Fraiture, L.*; *T-MTT v15 n8 Aug 67* 482-483
elliptic-function; synthesis utilizing published tables of lumped-constant prototypes; *Levy, Ralph*; *T-MTT v14 n11 Nov 66* 506-517
equalizer in output of microwave transistor amplifier; gain–bandwidth limitations; *Tucker, Rodney S.*; *T-MTT v21 n5 May 73* 322-327 (1B12)
equally terminated low-pass lumped and distributed filters of even order; synthesis; *Lind, Larry F.*; *T-MTT v17 n1 Jan 69* 43-45
exact synthesis and design of microwave filters consisting of quarter-wave lines, quarter-wave stubs and coupled wave lines; *Horton, M. C.*; *T-MTT v13 n3 May 65* 316-327
interdigital bandpass filters and related coupled structures; exact theory; *Wenzel, R. J.*; *T-MTT v13 n5 Sep 65* 559-575
ladder networks containing lumped and distributed elements; design procedure; *Sobhy, M. I.*; *T-MTT v25 n12 Dec 77* 1037-1041 (1F05)
microwave bandstop filters; two nomograms for coupled-line sections; *Schiffman, B. M.*; *T-MTT v14 n6 Jun 66* 297-299
minimum-loss; use for tunable passive multicouplers; *Cline, J. F.*; *T-MTT v7 n1 Jan 59* 121-127
minimum-loss; use for tunable passive multicouplers. *Cline, J. F., Correction*; *T-MTT v7 n3 Jul 59* 369
minimum-phase filters with simultaneous conditions on amplitude and delay; degrees of freedom divided between providing flat amplitude and flat delay; *Scanlan, Sean O.*; *T-MTT v19 n9 Sep 71* 749-759 (1B11)
prototype; new class, with applications to mixed lumped/distributed component design; *Levy, Ralph*; *T-MTT v18 n12 Dec 70* 1064-1071
tables of element values for distributed low-pass prototype filter; *Levy, Ralph*; *T-MTT v13 n5 Sep 65* 514-536
TEM equal stub admittance filters; design; *Hindin, H. J.*; *T-MTT v15 n9 Sep 67* 525-528
waveguide filters; synthesis of tapered corrugated waveguide low-pass filters; *Levy, Ralph*; *T-MTT v21 n8 Aug 73* 526-532 (1C12)
wideband elliptic-function bandstop filters; design tables; *Schiffman, Bernard M.*; *T-MTT v14 n10 Oct 66* 474-482

Distributed filters; cf. Active distributed filters; Distributed-lumped filters; Microwave filters; Millimeter-wave filters; Transmission-line filters; Transversal filters

Distributed-lumped filters
comb-line elliptic filter for VHF and UHF bands; bandpass filters; *Levy, Ralph*; *T-MTT v19 n1 Jan 71* 26-29 (1D04)

Distributed-lumped networks
cascade of two-port networks connected by transmission lines; design procedure; *Levy, Ralph*; *T-MTT v21 n8 Aug 73* 519-526 (1C05)

Distributed networks
commensurate transmission-line networks; frequency transformation; *Cristal, Edward G.*; *T-MTT v15 n6 Jun 67* 348-357
commensurate transmission-line networks; frequency transformation. *Cristal, E. G., Correction*; *T-MTT v16 n1 Jan 68* 45
delay distortion equalization; *Torgow, Eugene N.*; *T-MTT v13 n6 Nov 65* 756-762
DIPNET: a general distributed parameter network analysis program; *Parker, William N.*; *T-MTT v17 n8 Aug 69* 495-505
distributed parameter system guiding waves from one point in space to another; optimal synthesis; *Karnik, Avinash R.*; *T-MTT v17 n8 Aug 69* 605-611
exponentially tapered transmission lines with arbitrary nonlinear sending and receiving networks; transient analysis; *Hill, James L.*; *T-MTT v25 n9 Sep 77* 777-783 (1E05)
filters with lumped-distributed elements or frequency variable terminations; computer design; *Carlin, Herbert J.*; *T-MTT v17 n8 Aug 69* 598-604
least *p*th optimization; computer program; *Herrick, D. L.*; *T-MTT v23 n10 Oct 75* 849-850 (1F01)
lumped *LC* representation of transmission-line networks; *Pang, Khee K.*; *T-MTT v21 n10 Oct 73* 601-607 (1B03)
matching networks for hybrid-coupled phase shifters. *Starski, J. Piotr, Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
minimax network optimization algorithm not requiring derivatives. *Madsen, K., Correction*; *T-MTT v24 n4 Apr 76* 233 (1F01)
minimax optimization; *Charalambous, Christakis*; *T-MTT v23 n10 Oct 75* 834-838 (1D14)
minimax optimization; *Einarsson, Olov*; *T-MTT v23 n10 Oct 75* 838-841 (1E04)
nonlinearly loaded networks; scattering variables analysis based on Volterra series; *Weiner, Donald D.*; *T-MTT v24 n7 Jul 76* 422-433 (1C04)
planar microwave networks; finite-element analysis; *Silvester, Peter*; *T-MTT v21 n2 Feb 73* 104-108 (1E02)
rectangular structure composed of dielectric layer between two conducting layers, two ports having variable widths and positions; transmission zeros and filtering properties; *Bianco, Bruno*; *T-MTT v20 n5 May 72* 297-303 (1B03)
reflection coefficient; synthesis of particular unit real functions; *Gledhill, C. S.*; *T-MTT v15 n4 Apr 67* 267-268
reflection coefficient; synthesis of particular unit real functions. *Gledhill, C. S., Correction*; *T-MTT v17 n1 Jan 69* 54-55
rotating coupler for VHF range; transformer coupling between two windings; *Allen, C. W.*; *T-MTT v24 n5 May 76* 267-269 (1C05)
surface wave excitation by distributed coupling; *Ravid-Weissberg, Efraim*; *T-MTT v9 n6 Nov 61* 573-575
synthesis of coupled transmission line all-pass networks in cascades of 1 to *n*; UHF frequencies; *Steenaart, Willem J. D.*; *T-MTT v11 n1 Jan 63* 23-29
time-domain analysis of lumped-distributed networks; *Allen, James L.*; *T-MTT v27 n11 Nov 79* 890-896 (1B06)

Distributed networks; cf. Circulators; Directional couplers; Distributed-active networks; Distributed filters; Distributed-lumped networks; Microwave circuits; Transmission lines
Distributed networks, linear
cascade commensurate-line networks; numerical calculation of characteristic impedance; *Komiak, James*; *T-MTT v24 n4 Apr 76* 212-215 (1D08)
commensurate transmission-line networks; integral relationships; *Cristal, Edward G.*; *T-MTT v24 n7 Jul 76* 463-468 (2A08)
hybrid junctions; wideband balanced line microwave hybrids consisting of lossless two-ports and reversed-phase hybrid ring; *Rehnmark, Stig*; *T-MTT v25 n10 Oct 77* 825-830 (1B07)
impedance matching using tapered transmission line; computation of Hecken impedance function; *Cloete, J. H.*; *T-MTT v25 n5 May 77* 440 (2A04)
impedance transformation between two arbitrary impedances using single transmission-line matching section; *Milligan, T. A.*; *T-MTT v24 n3 Mar 76* 159 (1C05)
impedance transformation between two arbitrary impedances using single transmission-line matching section; *Potok, M. H. N.*; *T-MTT v25 n1 Jan 77* 77 (1F09)
matching network optimally matched to conductance shunted by stub; *Riblet, H. J.*; *T-MTT v24 n1 Jan 76* 65-66 (1E11)
tapered microstrip; input impedance calculation; computer program; *Suryanarayana Rao, K. N.*; *T-MTT v25 n2 Feb 77* 164 (1F14)
TEM networks; design using capacitance matrix transformations; *Wenzel, R. J.*; *T-MTT v14 n12 Dec 66* 635-647
Distributed networks, nonlinear
Schottky-contact microstrip; slow-wave propagation; *Jäger, Dieter*; *T-MTT v24 n9 Sep 76* 566-573 (1B08)
Distributions
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions; *Rahmat-Samii, Y.*; *T-MTT v23 n9 Sep 75* 762-765 (1D02)
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions. *Rahmat-Samii, Y., Correction*; *T-MTT v26 n1 Jan 78* 44 (1D04)
Domestic appliances; cf. Heating appliances
Doping; cf. Semiconductor device doping
Doppler effect
submillimeter-wave generation by coherent scattering of relatively long wavelengths from relativistic electron beam; *Granatstein, V. L.*; *T-MTT v25 n6 Jun 77* 545-550 (2B04)
Doppler measurements
BARITT self-mixing oscillator for *X*-band Doppler sensor applications; MIC implementation; *Kwok, Siang Ping*; *T-MTT v27 n10 Oct 79* 844-847 (1B08)
MIC Doppler module comprised of Ge avalanche diode oscillator and Schottky-barrier detector diode; *Nanbu, Shutaro*; *T-MTT v26 n3 Mar 78* 192-196 (1E02)
MIC Doppler module with stripline dipole antenna and output radiation normal to substrate plane; *Nanbu, Shutaro*; *T-MTT v26 n1 Jan 78* 3-5 (1A05)
solid-state detectors for Doppler frequencies 1–1000 Hz; IMPATT, BARITT, and Gunn devices; *Iijima, Y.*; *T-MTT v26 n2 Feb 78* 132-133 (1G02)
Doppler radar
BARITT diodes as self-oscillating Doppler detectors; *East, Jack R.*; *T-MTT v24 n12 Dec 76* 943-948 (1D03)
error of Doppler radar in target speed determination for traffic control; *Ishii, T. Koryu*; *T-MTT v13 n3 May 65* 389-390
radar target amplitude, angle and Doppler scintillation from analysis of the echo signal propagating in space; *Dunn, John H.*; *T-MTT v16 n9 Sep 68* 715-728
Dosimetry; cf. Electromagnetic radiation monitoring; Microwave dosimetry
Duplexers
6 kw peak-power varactor duplexer; *Hoover, John C.*; *T-MTT v10 n6 Nov 62* 476-479
arc loss of multimegawatt gas-discharge duplexers; *Ward, Charles S.*; *T-MTT v13 n6 Nov 65* 801-805
broadband balanced circuits; comparison between two principal configurations employing gaseous switching devices; *Jones, Clarence W.*; *T-MTT v5 n1 Jan 57* 4-12
design criteria for nonreciprocal coupled-mode devices; application as isolators, circulators, duplexers; *Whicker, Lawrence R.*; *T-MTT v10 n1 Jan 62* 20-25
duplexer using zero permeability characteristics of ferrite; *Wilson, L. K.*; *T-MTT v9 n6 Nov 61* 578
high-power duplexers using TR and ATR tubes; analysis; *Muehe, Charles E., Jr.*; *T-MTT v9 n6 Nov 61* 506-512
microwave filters; design for communication equipment operating in the 1.7–2.0 GHz region; *Crosby, D. R.*; *T-MTT v1 n1 Mar 53* 31-38
microwave type, capable of handling twice as much power as an equivalent balanced duplexer; new form; *Lomer, P. D.*; *T-MTT v6 n3 Jul 58* 264-267
nanosecond pulse performance of ferrite and diode duplexers; *Fitzgerald, D. J.*; *T-MTT v22 n4 Apr 74* 471-473 (2E05)
pre-TR tube for high average power duplexing; 3000 MHz operation; *Downton, D. W.*; *T-MTT v8 n6 Nov 60* 654-659
review of duplexing systems at microwave frequencies; *Harvey, A. F.*; *T-MTT v8 n4 Jul 60* 415-431

E

Earth–ionosphere waveguide
microwave model terrestrial waveguide having a variable surface impedance; propagation characteristics; *Bahar, Ezekiel*; *T-MTT v14 n11 Nov 66* 572-578
Eigenvalue problems
coupled transmission lines with some propagation constants equal; *Guckel, H.*; *T-MTT v20 n6 Jun 72* 412-413 (2B11)
ridged waveguides; integral eigenvalue equation solution using Ritz-Galerkin method; *Montgomery, James P.*; *T-MTT v19 n6 Jun 71* 547-555 (2B01)
spherical cavity with impedance wall; *Bhartia, P.*; *T-MTT v19 n1 Jan 71* 110-111 (2F06)
Elastic waves; cf. Acoustic waves
Electric heating; cf. Microwave heating
Electric variables measurement; cf. Microwave measurements
Electrical engineering education
specialization in undergraduate curriculum; *Chu, Lan Jen*; *T-MTT v6 n3 Jul 58* 249-250
Electrodes; cf. Bioelectrodes
Electroencephalography; cf. EEG
Electromagnetic analysis
boundary conditions describing perfectly conducting surfaces; development for the four-component vector potential; *Jelsma, Lawrence F.*; *T-MTT v18 n9 Sep 70* 648-649
characteristics of a traveling wave maser using ruby and a Karp-type slow-wave structure in the *X*-band; theoretical and experimental results; *Haddad, George I.*; *T-MTT v12 n4 Jul 64* 406-414
corrections on the tabulations of constants for ridge waveguides; *Brady, M. Michael*; *T-MTT v12 n2 Mar 64* 253-254
cutoff wavelengths of waveguides with unusual cross sections; *Pyle, John R.*; *T-MTT v12 n5 Sep 64* 556-557
electromagnetic fields; comprehensive review of methods for their solution; *Wexler, Alvin*; *T-MTT v17 n8 Aug 69* 416-439
electromagnetic propagation in lossy ferrites; transverse propagation constant and power absorbed by semi-infinite ferrite; *Rosenbaum, Fred J.*; *T-MTT v12 n5 Sep 64* 517-528
electromagnetic propagation in lossy ferrites; transverse propagation constant and power absorbed by semi-infinite ferrite. *Rosenbaum, F. J., Correction*; *T-MTT v13 n2 Mar 65* 258
extension of modulated scattering method for measuring $\vec{E}$ field to the measurement of $\vec{H}$ field; *Hu, Ming-Kuei*; *T-MTT v8 n3 May 60* 295-300
formula for attenuation in coaxial cables; *Spaderna, Conan H.*; *T-MTT v12 n3 May 64* 363-364
functional approximations for solving boundary value problems by computer; *Thomas, David T.*; *T-MTT v17 n8 Aug 69* 447-454
reciprocity theorem based on Onsager relations; applicable to all causal and linear media; *McIsaac, Paul R.*; *T-MTT v27 n4 Apr 79* 340-342 (1D08)
reciprocity theorem for multiregions with piezoelectric media and surface impedance; *Kobayashi, Masanori*; *T-MTT v27 n4 Apr 79* 343-345 (1D11)
transmission line properties of parallel wide strips by a conformal mapping approximation; *Wheeler, Harold A.*; *T-MTT v12 n3 May 64* 280-289
variational expression derivation; unified approach; *Morishita, Katsumi*; *T-MTT v25 n1 Jan 77* 34-40 (1C08)
variational expressions derivation for problems involving coupling between electric and acoustic fields; systematic derivation procedure; *Morishita, Katsumi*; *T-MTT v26 n9 Sep 78* 684-689 (1E02)
Electromagnetic coupling; cf. Apertures; Couplers
Electromagnetic diffraction
blazed grating as frequency-selective element in multiplexer; *Henry, Paul S.*; *T-MTT v26 n6 Jun 78* 428-433 (1D08)
conducting screen perforated periodically with circular holes; *Chen, Chao-Chun*; *T-MTT v19 n5 May 71* 475-481 (2B01)
diffraction by an array of perfectly conducting disks; *Eggimann, Wilhelm H.*; *T-MTT v10 n6 Nov 62* 528-535
gratings; modified residue-calculus technique for solving a class of boundary value problems; *VanBlaricum, Glenn F., Jr.*; *T-MTT v17 n6 Jun 69* 310-319
higher-order evaluation of electromagnetic diffraction by circular disks; *Eggimann, Wilhelm H.*; *T-MTT v9 n5 Sep 61* 408-418
higher-order evaluation of electromagnetic diffraction by circular disks. *Eggiman, W. H., Correction*; *T-MTT v10 n6 Nov 62* 610
infinite perfectly conducting gratings of arbitrary profile; diffraction efficiencies; *Green, Robert B.*; *T-MTT v18 n6 Jun 70* 313-318
open resonator losses as function of geometry; *Bisio, G. R.*; *T-MTT v19 n5 May 71* 490-491 (2C04)
radiation pattern caused by a noise excited thin slot; microwave region operation; *George, Nicholas*; *T-MTT v8 n5 Sep 60* 493-500
resonators, unstable open; edge diffraction calculation using ray optical technique; *Santana, Carlos*; *T-MTT v26 n2 Feb 78* 101-108 (1D13)
slab periodic medium bounded by different media on both sides; modal theory. *Chu, Ruey-Shi, Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
slit in conducting plane of finite thickness filled with lossy material; TE case; *Auckland, David T.*; *T-MTT v26 n7 Jul 78* 499-505 (1D03)
Electromagnetic diffraction; cf. Optical diffraction
Electromagnetic induction; cf. Electromagnetic radiation effects
Electromagnetic measurements
bandwidth of microwave resonator with a sinusoidally modulated signal; *Lerner, David S.*; *T-MTT v8 n3 May 60* 343-345
Correction; *T-MTT v8 n6 Nov 60* 653
characteristics of a traveling wave maser using ruby and a Karp-type slow-wave structure in the *X*-band; theoretical and experimental results; *Haddad, George I.*; *T-MTT v12 n4 Jul 64* 406-414
dielectric and magnetic properties of homogeneous isotropic media; *Hakki, Basil W.*; *T-MTT v8 n4 Jul 60* 402-410
extension of modulated scattering method for measuring $\vec{E}$ field to the measurement of $\vec{H}$ field; *Hu, Ming-Kuei*; *T-MTT v8 n3 May 60* 295-300
ferromagnetic line width of nonoriented polycrystalline hexagonal ferrites with large magnetic anisotropy fields; *Bady, Isidore*; *T-MTT v11 n5 Sep 63* 442-443
field measurements in a small cross section waveguide loaded with magnetized ferrite; *Bujatti, M.*; *T-MTT v13 n3 May 65* 385-387
field measurements using active scatterers; *Harrington, Roger F.*; *T-MTT v11 n5 Sep 63* 454-455
measurement of electromagnetic field using oscillating spring as reradiation antenna; *Iizuka, Keigo*; *T-MTT v11 n6 Nov 63* 498-505
measurement of narrow linewidth ferromagnetic samples using a nonresonant waveguide system; *Jones, George R.*; *T-MTT v11 n6 Nov 63* 547-548
measurement techniques for spinwave linewidths from the saturation of the ferrimagnetic resonance line; *Seiden, Phillip E.*; *T-MTT v10 n1 Jan 62* 51-55
microwave and high frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards*; *T-MTT v12 n4 Jul 64* 480-482
microwave power measurements of multimode waveguides; *Sharp, Eugene D.*; *T-MTT v10 n1 Jan 62* 73-82
phase shift and attenuation measurement through active microwave networks; *Alday, John R.*; *T-MTT v10 n2 Mar 62* 143
second harmonic effects in tuned reflectometers; *Brady, M. Michael*; *T-MTT v10 n1 Jan 62* 90-91

summary of measurement techniques of noise figures on parametric amplifiers; *Haun, Robert D., Jr.*; *T-MTT v8 n4 Jul 60* 410-415
theory and experiments on detecting and describing nanosecond pulses in the microwave region; *Miyauchi, Kazuhiro*; *T-MTT v12 n2 Mar 64* 221-230
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines; *Altschuler, H. M.*; *T-MTT v11 n1 Jan 63* 87
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines; *Altschuler, Helmut M.*; *T-MTT v8 n3 May 60* 328-339
verification of formulas for equivalent circuit parameters foF center conductor discontinuities in symmetric strip lines. *Altschuler, H. M., Addendum*; *T-MTT v10 n2 Mar 62* 143

Electromagnetic measurements; cf. Dielectric measurements; Electromagnetic radiation effects; Microwave measurements; Millimeter-wave measurements; Optical measurements; Polarimetry; Probe antennas; Submillimeter-wave measurements; UHF measurements

Electromagnetic noise/interference, radiated
testing using rectangular strip transmission line; characteristic impedance of rectangular lines with thin center conductor and air dielectric; *Weil, Claude M.*; *T-MTT v26 n4 Apr 78* 238-242 (1B02)

Electromagnetic propagation
analysis of a progressive disturbance on a guided electromagnetic wave; *Simon, Jean-Claude*; *T-MTT v8 n1 Jan 60* 18-29
boundary conditions and ohmic losses in conducting wedges; *Chisholm, Robin M.*; *T-MTT v8 n2 Mar 60* 189-198
circular hole arrays in flat metallic plates; *Otoshi, Tom Y.*; *T-MTT v20 n3 Mar 72* 235-236 (1E01)
circularly polarized wave by use of two orthogonal dipoles drawn in parallel by a common transmission line; *Bolster, Morris F.*; *T-MTT v9 n5 Sep 61* 385-388
coupling coefficient; general definition; *Van Bladel, J.*; *T-MTT v15 n4 Apr 67* 268-269
cutoff wavelengths for non-simple cross-section waveguides; *Valenzuela, G. R.*; *T-MTT v9 n4 Jul 61* 363-364
CW power transmission; *Okress, E.*; *T-MTT v13 n6 Nov 65* 870-871
dielectric media; velocity modulation and propagation effects; *Morgenthaler, Frederic R.*; *T-MTT v6 n2 Apr 58* 167-172
dielectric surface-wave structure; the V-line; *Diament, Paul*; *T-MTT v9 n4 Jul 61* 332-337
electromagnetic field traveling inside a waveguide; plotting by power dissipation; *Ottavi, C. M.*; *T-MTT v15 n1 Jan 67* 59-60
electromagnetic fields; comprehensive review of methods for their solution; *Wexler, Alvin*; *T-MTT v17 n8 Aug 69* 416-439
examination of microwave power transmission through uniform waveguides; *Kahn, Walter K.*; *T-MTT v10 n5 Sep 62* 329-331
existence of leaky waves due to a line source above a grounded dielectric slab; *Cassedy, Edward S.*; *T-MTT v9 n3 May 61* 243-247
generation of phase-coherent signals for transient measurements; *Ross, Gerald F.*; *T-MTT v13 n5 Sep 65* 704-706
higher-order evaluation of electromagnetic diffraction by circular disks; *Eggimann, Wilhelm H.*; *T-MTT v9 n5 Sep 61* 408-418
higher-order evaluation of electromagnetic diffraction by circular disks. *Eggiman, W. H., Correction*; *T-MTT v10 n6 Nov 62* 610
hollow conducting elliptical waveguides; *Kretzschmar, Jan G.*; *T-MTT v18 n9 Sep 70* 547-554
impedance and attenuation of TEM-lines by finite difference methods; *Schneider, Martin V.*; *T-MTT v13 n6 Nov 65* 793-800
internal reflections in dielectric prisms; application to bidirectional coupler; *Fellers, Rufus G.*; *T-MTT v12 n6 Nov 64* 584-587
internal reflections in dielectric prisms; application to bidirectional couplers. *Fellers, R. G., Correction*; *T-MTT v13 n2 Mar 65* 258
phase shift characteristics of dielectrically loaded waveguide; *Bland, G. F.*; *T-MTT v10 n6 Nov 62* 492-496
power-voltage, power current, voltage-current, impedances for elliptical waveguides for the $_eH_1$ at end of line but *Valenzuela, G. R., Correction*; *T-MTT v9 n1 Jan 61* 38
power-voltage, power-current, voltage-current, impedances for elliptical waveguides for the $_eH_1$ mode; *Valenzuela, Gaspar R.*; *T-MTT v8 n4 Jul 60* 431-435
principle of complementarity in the study of transmission lines; *Owyang, Gilbert H.*; *T-MTT v8 n2 Mar 60* 172-181
propagation in a gradual transducer; *Solymar, L.*; *T-MTT v8 n1 Jan 60* 61-65
ray-optical methods for trapped and slightly leaky modes in multilayered or multiwave regions; *Maurer, Stewart J.*; *T-MTT v18 n9 Sep 70* 584-595
review of microwave work in Britain in 1960; *Karbowiak, A. E.*; *T-MTT v9 n5 Sep 61* 374-384
sets of eigenvectors for volumes of revolution; *Van Bladel, Jean G.*; *T-MTT v8 n3 May 60* 309-319
study of multielement transmission lines; *Kogo, Hiroshi*; *T-MTT v8 n2 Mar 60* 136-142
surface wave excitation by distributed coupling; *Ravid-Weissberg, Efraim*; *T-MTT v9 n6 Nov 61* 573-575
survey of the theory of wire grids; *Larsen, Tove*; *T-MTT v10 n3 May 62* 191-201
TEM impedance and cross coupling for two center conductors in a double ridge waveguide; *Storer, James E.*; *T-MTT v9 n2 Mar 61* 116-123
TEM waves; propagations in parallel-plate region of finite width; *Hudson, Arthur C.*; *T-MTT v5 n2 Apr 57* 161-162

Electromagnetic propagation, absorbing media
examination of microwave power transmission through uniform waveguides; *Kahn, Walter K.*; *T-MTT v10 n5 Sep 62* 329-331
factors affecting earth to satellite millimeter wavelength communications; propagation path loss, refractions, antenna temperature; *Straiton, Archie W.*; *T-MTT v11 n5 Sep 63* 296-301
instrinsic attenuation (insertion loss) calculated from scattering coefficients; *Beatty, Robert W.*; *T-MTT v11 n3 May 63* 179-182
intrinsic attenuation (insertion loss) calculated from scattering coefficients; *Baudrand, H.*; *T-MTT v12 n4 Jul 64* 470-471
intrinsic attenuation (insertion loss) calculated from scattering coefficients. *Beatty, R. W., Correction*; *T-MTT v13 n2 Mar 65* 258
lossy dielectric sheet backed by a conducting surface and used as an absorber; dependence of reflection on incidence angle; *Redheffer, Raymond*; *T-MTT v7 n4 Oct 59* 423-429
microstrip and coaxial cable; time-domain measurement of loss and dispersion in 0.4–10 GHz range; *Luce, D. A.*; *T-MTT v24 n1 Jan 76* 50-54 (1D10)
short-pulse behavior of lossy tapered transmission lines; *Stapelfeldt, Roelif*; *T-MTT v9 n4 Jul 61* 290-296
slit in conducting plane of finite thickness filled with lossy material; TE case; *Auckland, David T.*; *T-MTT v26 n7 Jul 78* 499-505 (1D03)
variational integral for evaluating propagation constant in transmission lines; *Collin, Robert E.*; *T-MTT v8 n3 May 60* 339-342

Electromagnetic propagation, absorbing media; cf. Electromagnetic radiation effects

Electromagnetic propagation, anisotropic media
anisotropic properties of strip-type artificial dielectric; *Kolettis, Nicholas J.*; *T-MTT v9 n5 Sep 61* 436-441
anisotropic, source-free uniform waveguide; vector formulations for equations determining components of the electromagnetic field; *Bresler, A. D.*; *T-MTT v7 n2 Apr 59* 298
bianisotropic media; reciprocity theorem for region with inhomogeneous bianisotropic media and surface impedance; *Kobayashi, Masanori*; *T-MTT v24 n2 Feb 76* 114-116 (1D06)
boundary excitation of waveguides containing anisotropic media; *Van Bladel, J.*; *T-MTT v11 n5 Sep 63* 437-438
Cerenkov radiation in anisotropic ferrite; *Zelby, L. W.*; *T-MTT v12 n3 May 64* 383
Cerenkov radiation in anisotropic ferrites; *Rosenbaum, Fred J.*; *T-MTT v11 n5 Sep 63* 302-311
cylindrical waveguide of arbitrary cross section; derivation of equations using Maxwell–Minkowski theory; *Kong, Jin A.*; *T-MTT v16 n2 Feb 68* 99-103
dielectric medium; artificial, having anisotropic properties. *Collin, R. E., Correction*; *T-MTT v6 n4 Oct 58* 414
dielectric medium; artificial, having anisotropic properties; *Collin, R. E.*; *T-MTT v6 n2 Apr 58* 206-209
dielectric; production of broadband circular polarization; *Kirschbaum, Herbert S.*; *T-MTT v5 n3 Jul 57* 199-203
electric and magnetic eigenvectors for cavities containing media with tensor characteristics; *Van Bladel, Jean G.*; *T-MTT v10 n1 Jan 62* 9-13
electric field and wave impedance in spin wave propagation; *Kaufman, I.*; *T-MTT v13 n5 Sep 65* 703-704
electromagnetic waves in rectangular guides filled with a semiconductor with a transverse magnetic field; *Engineer, M. H.*; *T-MTT v13 n5 Sep 65* 641-646
equivalent expressions for the electric permittivity and magnetic permeability tensors of artificial dielectrics; *Leite, Rogerio C. C.*; *T-MTT v12 n1 Jan 64* 117-122
excitation of surface waves by a static magnetic field interacting with the field of a line source located in a lossless plasma region; *Seshadri, S. R.*; *T-MTT v10 n6 Nov 62* 573-578
ferrite-filled microstrip; determination of propagation constant; *Brodwin, Morris E.*; *T-MTT v6 n2 Apr 58* 150-155
field equations for gyroelectric media with sources; *Likuski, R. K.*; *T-MTT v13 n6 Nov 65* 881-882
fields in moving anisotropic media; radial transmission line representations; *Fukai, Ichiro*; *T-MTT v19 n11 Nov 71* 882-883 (1E06)
Green's function techniques for inhomogeneous anisotropic media; *Villeneuve, Alfred T.*; *T-MTT v9 n2 Mar 61* 197-198
ionized gaseous media; nonreciprocal propagation; *Goldstein, Ladislas*; *T-MTT v6 n1 Jan 58* 19-29
magnetic materials for millimeter and submillimeter wave applications; *Rodrigue, G. P.*; *T-MTT v11 n5 Sep 63* 351-356
magnetic waves for microwave time delay; spin waves and magnetostatic waves; *Kaufman, Irving*; *T-MTT v13 n4 Jul 65* 458-467
magnetoplasma effects in solids; *Lax, Benjamin*; *T-MTT v9 n1 Jan 61* 83-89
metric factor and normalized metric factor; minimum principle of effective path length; electrostatic problem with two anisotropic media; transforming anisotropic problem into isotropic problem; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 769-775 (1A03)
microstrip on anisotropic substrates; *Alexopoulos, Nicolaos G.*; *T-MTT v26 n6 Jun 78* 387-393 (1A09)
microstrip on sapphire substrates; quasi-static characteristics; *Owens, Roger P.*; *T-MTT v24 n8 Aug 76* 499-505 (1A11)
microstrip with anisotropic substrate; anisotropic problem transformed into isotropic problem and effective filling fraction formula used; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 776-778 (1A10)
microstrip with anisotropic substrate; Green's function obtained using image coefficient method; capacitance calculation; *Kobayashi, Masanori*; *T-MTT v26 n2 Feb 78* 119-126 (1F03)
modes in waveguide loaded with transversely magnetized slab of ferrite; *Barzilai, Giorgio*; *T-MTT v9 n5 Sep 61* 403-408
on between the propagation of transverse waves in a plasma (with no magnetic field) and a tapered waveguide; *Lashinsky, Herbert*; *T-MTT v12 n2 Mar 64* 256-258
orthogonality relationships for waveguides and cavities with inhomogeneous anisotropic media; *Villeneuve, Alfred T.*; *T-MTT v7 n4 Oct 59* 441-446
plane uniform TEM waves propagating along twist axis of a twisted anisotropic medium; solution of differential equation; *DaSilva, J. Borges*; *T-MTT v16 n5 May 68* 296-302
propagation constants for TE and TM surface waves on an anisotropic dielectric cylinder; *Longaker, Perry R.*; *T-MTT v11 n6 Nov 63* 543-546
propagation in arbitrarily magnetized ferrites between two conducting parallel plates; *Unz, Hillel*; *T-MTT v11 n3 May 63* 204-210
radiation from a uniformly moving charge in an anisotropic plasma; *Tuan, Hang Sheng*; *T-MTT v11 n6 Nov 63* 462-471
reciprocity theorem for multiregions with piezoelectric media and surface impedance; *Kobayashi, Masanori*; *T-MTT v27 n4 Apr 79* 343-345 (1D11)
rectangular waveguide containing anisotropic slabs; *Gardiol, Fred E.*; *T-MTT v18 n8 Aug 70* 461-467
solution of guided waves in nonhomogeneous anisotropic media by perturbation and variational methods; *Gabriel, Garabet J.*; *T-MTT v13 n3 May 65* 364-370
surface wave scattering by discontinuities in a unidirectionally conducting screen; *Seshadri, S. R.*; *T-MTT v10 n5 Sep 62* 367-375
surface waves on an anisotropic plasma sheath over a perfectly conducting screen; *Seshadri, S. R.*; *T-MTT v12 n5 Sep 64* 529-541
theory of artificial dielectrics and aperture coupling using two-dimensional lattice; *Collin, Robert E.*; *T-MTT v9 n2 Mar 61* 110-115

theory of the ferrite resonance isolator; *Schlömann, Ernst*; *T-MTT v8 n2 Mar 60* 199-206
TM and TE mode surface waves on grounded, anisotropic, inhomogeneous, lossless, dielectric slabs; *Holmes, D. A.*; *T-MTT v12 n1 Jan 64* 141
transmission characteristics of a broadband circular polarizer consisting of anisotropic dielectric plates; *Adachi, Saburo*; *T-MTT v8 n5 Sep 60* 520-525
twisted anisotropic media; polarization transformation; *Shelton, Paul*; *T-MTT v14 n11 Nov 66* 579
twisted anisotropic media; polarization transformation; *Van Doeren, R. E.*; *T-MTT v14 n3 Mar 66* 106-111
twisted medium; solution to propagation; *McCormick, Glendon C.*; *T-MTT v15 n8 Aug 67* 443-450
use of a crystal as chief component in a mixer system; *Mohr, Richard J.*; *T-MTT v8 n6 Nov 60* 622-627
vector variational formulation; *Konrad, A.*; *T-MTT v24 n9 Sep 76* 553-559 (1A09)
Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric; *Holmes, Dale A.*; *T-MTT v12 n2 Mar 64* 152-155
Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric; *Wexler, A.*; *T-MTT v13 n6 Nov 65* 875-878
Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric. *Wexler, A., Correction*; *T-MTT v14 n3 Mar 66* 164

Electromagnetic propagation, anisotropic media; cf. Ferrite devices; Ferrite-loaded waveguides; Magnetostatic surface waves; Optical propagation, anisotropic media; Plasma-loaded waveguides

Electromagnetic propagation, dispersive media
anisotropic properties of strip-type artificial dielectric; *Kolettis, Nicholas J.*; *T-MTT v9 n5 Sep 61* 436-441
characteristics of periodic loaded lines; *Harvey, A. F.*; *T-MTT v8 n1 Jan 60* 30-61
dispersion of pulsed electromagnetic waves in a plasma; *Schmitt, H. J.*; *T-MTT v13 n4 Jul 65* 472-473
dispersion of very short *X*-band pulses in a waveguide; *Ito, Mabo*; *T-MTT v13 n3 May 65* 357-364
guided waves in moving dispersive media; nonrelativistic velocities; *Berger, Henry*; *T-MTT v16 n1 Jan 68* 11-16
guided waves in moving dispersive media; relativistic velocities; *Berger, Henry*; *T-MTT v16 n1 Jan 68* 16-20
helical waveguide, flattened sheath helix; *Arora, Rajendra K.*; *T-MTT v25 n1 Jan 77* 71-72 (1F03)
microstrip and coaxial cable; time-domain measurement of loss and dispersion in 0.4–10 GHz range; *Luce, D. A.*; *T-MTT v24 n1 Jan 76* 50-54 (1D10)
microstrip; coupled-line model for dispersion in parallel-coupled microstrip; *Carlin, Herbert J.*; *T-MTT v23 n5 May 75* 444-446 (1D04)
microstrip lines; empirically derived equation; *Chudobiak, Walter J.*; *T-MTT v19 n9 Sep 71* 783-784 (1E09)
microstrip lines, shielded; dispersion characteristics computation using spectral-domain anlaysis; *Itoh, Tatsuo*; *T-MTT v22 n10 Oct 74* 896-898 (1D08)
microstrip on sapphire substrates; dispersion measurements on 10–100 lines covering 2–18 GHz range; *Edwards, Terence C.*; *T-MTT v24 n8 Aug 76* 506-513 (1B04)
microstrip parameter computation, single and coupled lines; high-speed procedure. *Jansen, R. H., Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
microstrip parameters computation, single and coupled lines; high-speed procedure; *Jansen, Rolf H.*; *T-MTT v26 n2 Feb 78* 75-82 (1C01)
microstrip; spectral-domain dispersion analysis; frequency dependence of characteristic impedance; *Knorr, Jeffrey B.*; *T-MTT v23 n9 Sep 75* 725-728 (1A07)
microwave absorption modulation by electron mobility variation in *N*-type germanium; *Harmatz, Milton*; *T-MTT v9 n2 Mar 61* 199-200
pulse waveform degradation due to dispersion in waveguide; *Knop, C. M.*; *T-MTT v11 n5 Sep 63* 445-447
Rayleigh wave delay line utilizing gold film overlay on lithium niobate; *Smith, W. Richard*; *T-MTT v17 n11 Nov 69* 1043-1044
shock waves on nonlinear dispersive transmission lines; *Karbowiak, A. E.*; *T-MTT v23 n5 May 75* 453-454 (1D13)
slab periodic medium bounded by different media on both sides; modal theory. *Chu, Ruey-Shi, Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
waveguide filled with moving medium; *Yee, Hung Yuet*; *T-MTT v19 n4 Apr 71* 400-401 (2B08)
waveguides of composite structure containing dispersive media in relative motion; perturbation formulas for modes; *Gruenberg, Harry*; *T-MTT v15 n11 Nov 67* 636-642

Electromagnetic propagation, dispersive media; cf. Electromagnetic propagation, magnetic media; Electromagnetic propagation, plasma media; Electromagnetic transient propagation; Optical propagation, dispersive media; Transmission lines; Waveguides

Electromagnetic propagation, magnetic media
approximate solution to ferrite-filled waveguides with longitudinal magnetization; *Sandler, Sheldon S.*; *T-MTT v9 n2 Mar 61* 162-168
Cerenkov radiation in anisotropic ferrite; *Zelby, L. W.*; *T-MTT v12 n3 May 64* 383
Cerenkov radiation in anisotropic ferrites; *Rosenbaum, Fred J.*; *T-MTT v11 n5 Sep 63* 302-311
design and development of a medium CW and a high CW power level, broadband ridge ferrite-loaded waveguide; *Grimes, E. S., Jr.*; *T-MTT v8 n5 Sep 60* 489-492
electric and magnetic eigenvectors for cavities containing media with tensor characteristics; *Van Bladel, Jean G.*; *T-MTT v10 n1 Jan 62* 9-13
electric field and wave impedance in spin wave propagation; *Kaufman, I.*; *T-MTT v13 n5 Sep 65* 703-704
electromagnetic propagation in lossy ferrites; transverse propagation constant and power absorbed by semi-infinite ferrite; *Rosenbaum, Fred J.*; *T-MTT v12 n5 Sep 64* 517-528
electromagnetic propagation in lossy ferrites; transverse propagation constant and power absorbed by semi-infinite ferrite. *Rosenbaum, F. J., Correction*; *T-MTT v13 n2 Mar 65* 258
electromagnetic waves in cylindrically stratified, axially magnetized plasma; differential equation; *Burman, R.*; *T-MTT v14 n5 May 66* 253-254
electromagnetic waves in ferrite rods; classification scheme; *Schott, F. W.*; *T-MTT v16 n11 Nov 68* 959-961

Electromagnetic propagation, magnetic media, *cont.*
ferrite-filled microstrip; determination of propagation constant; *Brodwin, Morris E.*; *T-MTT v6 n2 Apr 58* 150-155
ferrite-filled transversely magnetized rectangular waveguide; propagation of higher modes; *Vartanian, P. H.*; *T-MTT v4 n3 Jul 56* 140-143
ferrites at *X*-band in waveguides; *Sakiotis, N. G.*; *T-MTT v1 n2 Nov 53* 11-16
ferrites with planar anisotropy at microwave frequencies; *Bady, Isidore*; *T-MTT v9 n1 Jan 61* 52-62
ferromagnetic linewidth and *g*-factor 2 to 18 Gc/s; *Brand, H.*; *T-MTT v13 n5 Sep 65* 712-713
guided waves propagating along the magnetostatic field at a plane boundary of a semi-infinite magnetoionic medium; *Owyang, Gilbert H.*; *T-MTT v14 n3 Mar 66* 136-144
gyrotropic media; simplification of Maxwell' equations; *Vasile, Carmine F.*; *T-MTT v15 n5 May 67* 324-325
high power ferromagnetic resonance at *X*-band in polycrystalline garnets and ferrites; *Green, Jerome J.*; *T-MTT v8 n1 Jan 60* 100-103
L-band ferroelectric switch; *Amoss, John W.*; *T-MTT v13 n6 Nov 65* 789-793
L-band ferromagnetic resonance experiments at high peak power levels; *Schlömann, Ernst*; *T-MTT v8 n1 Jan 60* 96-100
lossy ferrimagnetic slab; modal spectrum; *Bardati, Fernando*; *T-MTT v27 n7 Jul 79* 679-688 (1D11)
magnetic materials for millimeter and submillimeter wave applications; *Rodrigue, G. P.*; *T-MTT v11 n5 Sep 63* 351-356
magnetic waves for microwave time delay; spin waves and magnetostatic waves; *Kaufman, Irving*; *T-MTT v13 n4 Jul 65* 458-467
magnetoplasma effects in solids; *Lax, Benjamin*; *T-MTT v9 n1 Jan 61* 83-89
measurement of dielectric and magnetic properties; *Hakki, Basil W.*; *T-MTT v8 n4 Jul 60* 402-410
microwave frequency doubling using thick ferrite slabs in waveguides; *Bady, Isidore*; *T-MTT v10 n1 Jan 62* 55-64
network model for transmission lines with gyromagnetic coupling; *Boyd, Charles R., Jr.*; *T-MTT v13 n5 Sep 65* 652-662
plane and quasi-optical wave propagation in gyromagnetic media; *Eberhardt, Nikolai*; *T-MTT v18 n9 Sep 70* 554-565
propagation in a ferrite-loaded rectangular waveguide; *Bresler, Aaron D.*; *T-MTT v8 n1 Jan 60* 81-95
propagation in arbitrarily magnetized ferrites between two conducting parallel plates; *Unz, Hillel*; *T-MTT v11 n3 May 63* 204-210
propagation of electromagnetic waves in a plasma in a magnetic field; *Allis, William P.*; *T-MTT v9 n1 Jan 61* 79-82
radiation from rectangular waveguide with ferrite slabs; *Chien, T. M.*; *T-MTT v13 n1 Jan 65* 137-138
resonant line-width dependence on incident RF power; *Carter, J. L.*; *T-MTT v9 n2 Mar 61* 195-197
size effect in the measurement of microwave permeability of ferrites; *Maher, B.*; *T-MTT v9 n1 Jan 61* 96
solution for the propagation constants of a quasi-TEM mode in ferrite filled parallel plates; *Brodwin, Morris E.*; *T-MTT v12 n5 Sep 64* 496-503
surface modes of finite thickness slab with magnetization parallel to air–ferrite–air interfaces. *Gerson, T. J., Correction*; *T-MTT v23 n2 Feb 75* 266 (1F14)
surface modes of ferrite slab of finite thickness with magnetization parallel to air–ferrite–air interfaces; *Gerson, Thomas J.* ; *T-MTT v22 n8 Aug 74* 757-763 (1A03)
surface waveguide composed of a central conductor surrounded by axially magnetized ferrite tube; dispersion relations for axially symmetric modes; *Mueller, Ralph S.*; *T-MTT v17 n2 Feb 69* 92-100
theory of the ferrite resonance isolator; *Schlömann, Ernst*; *T-MTT v8 n2 Mar 60* 199-206

Electromagnetic propagation, magnetic media; cf. Ferrite devices; Ferrite-loaded waveguides; Magnetostatic surface waves

Electromagnetic propagation, moving media
bianisotropic media; reciprocity theorem for region with inhomogeneous bianisotropic media and surface impedance; *Kobayashi, Masanori*; *T-MTT v24 n2 Feb 76* 114-116 (1D06)
bounded simple medium; Green's dyadic for radiation; *Seto, Y. J.*; *T-MTT v15 n8 Aug 67* 455-462
cylindrical waveguide of arbitrary cross section; derivation of equations using Maxwell–Minkowski theory; *Kong, Jin A.*; *T-MTT v16 n2 Feb 68* 99-103
dispersive waveguides; influence of moving media on propagation of transient electromagnetic modal waves; *Berger, Henry*; *T-MTT v16 n10 Oct 68* 842-849
extended del-operator relations with reference to electromagnetic waves in moving simple media; *Nathan, Amos*; *T-MTT v16 n10 Oct 68* 883-884
fields in moving anisotropic media; radial transmission line representations; *Fukai, Ichiro*; *T-MTT v19 n11 Nov 71* 882-883 (1E06)
first-order theory to obtain relatively simple formalism; *Censor, Dan*; *T-MTT v16 n8 Aug 68* 565-566
guided waves in a moving isotropic medium; *Collier, J. Robert*; *T-MTT v13 n4 Jul 65* 441-445
guided waves in moving dispersive media; nonrelativistic velocities; *Berger, Henry*; *T-MTT v16 n1 Jan 68* 11-16
guided waves in moving dispersive media; relativistic velocities; *Berger, Henry*; *T-MTT v16 n1 Jan 68* 16-20
guided waves in moving media; cutoff phenomena; *Du, Li-jen*; *T-MTT v14 n8 Aug 66* 358-363
moving anisotropic media; radial transmission line representations; *Fukai, Ichiro*; *T-MTT v19 n11 Nov 71* 882-883 (1E06)
nonmagnetostatic surface waves on ferrite magnetized perpendicular to interface; *Vaslow, Dale F.*; *T-MTT v22 n7 Jul 74* 743-745 (1C09)
radially moving media; first-order (in v/c) vector wave equation; *Censor, Dan*; *T-MTT v17 n7 Jul 69* 374-378
theory of thermal gradient gas lens; *Marcuse, Dietrich*; *T-MTT v13 n6 Nov 65* 734-739
thermal gradient gas lens measurements; *Steier, William H.*; *T-MTT v13 n6 Nov 65* 740-748
uniform waveguide of arbitrary cross section filled with moving dielectric; transmission-line treatment; *Fujioka, H.*; *T-MTT v15 n4 Apr 67* 265-267
waveguide containing moving dielectric; derivation of mode behavior; *Daly, P.*; *T-MTT v15 n4 Apr 67* 274-275
waveguide filled with moving medium; dispersion relations; *Yee, Hung Yuet*; *T-MTT v19 n4 Apr 71* 400-401 (2B08)

waveguides of composite structure containing dispersive media in relative motion; perturbation formulas for modes; *Gruenberg, Harry*; *T-MTT v15 n11 Nov 67* 636-642

Electromagnetic propagation, nonhomogeneous media

bianisotropic media; reciprocity theorem for region with inhomogeneous bianisotropic media and surface impedance; *Kobayashi, Masanori*; *T-MTT v24 n2 Feb 76* 114-116 (1D06)

broadside-coupled strips in layered dielectric medium and enclosed by rectangular shield; odd- and even-mode phase velocities; *Allen, James L.*; *T-MTT v20 n10 Oct 72* 662-669 (1D06)

characteristic and cutoff equation for higher order surface wave modes on lossless isotropic cylinders with arbitrary radial permittivity variation; *Vigants, Arvids*; *T-MTT v10 n5 Sep 62* 375-382

circular-waveguide multilayer sheet hybrid junction having nearly constant power division over 40–110 GHz band; *Harkless, Earl T.*; *T-MTT v27 n12 Dec 79* 975-982 (1D09)

conditions for TE mode propagation in waveguides with nonuniform dielectric media; *Zucker, Henry*; *T-MTT v10 n3 May 62* 202-208

coupled transmission lines in nonhomogeneous medium; equivalent circuits for nonsymmetrical coupled-line two-ports; *Tripathi, Vijai K.*; *T-MTT v25 n2 Feb 77* 140-142 (1E04)

coupled transmission lines; nonsymmetrical lines in nonhomogeneous media; even- and odd-mode waves; *Speciale, Ross A.*; *T-MTT v23 n11 Nov 75* 897-907 (1D05)

coupled transmission lines; terminal characteristics of asymmetric coupled lines in inhomogeneous medium; *Tripathi, Vijai K.*; *T-MTT v23 n9 Sep 75* 734-739 (1B02)

coupled transmission lines; terminal characteristics of asymmetric coupled lines in nonhomogeneous medium; *Costamagna, Eugenio*; *T-MTT v24 n8 Aug 76* 541 (1D11)

coupling of modes on a tapered dielectric cylinder; *Snyder, Allan W.*; *T-MTT v18 n7 Jul 70* 383-392

cylindrical waveguide containing inhomogeneous dielectric; *Ah Sam, E.*; *T-MTT v15 n1 Jan 67* 60-61

cylindrical waveguide containing inhomogeneous dielectric; *Richter, Stephen*; *T-MTT v15 n8 Aug 67* 488-489

dielectric waveguides whose index distributions depart from well-known profiles; perturbation method solution; *Hashimoto, Masahiro*; *T-MTT v24 n9 Sep 76* 559-566 (1B01)

electric-field probe near interface between different media; effect of interface on antenna response; application to probing fields in biological bodies; *Smith, Glenn S.*; *T-MTT v27 n3 Mar 79* 270-278 (1D14)

Green's function in multidielectric region with inhomogeneous isotropic media; *Kobayashi, Masanori*; *T-MTT v23 n9 Sep 75* 760-762 (1C14)

guided structures containing anisotropic and inhomogeneous media; development of modified perturbation method; *Chang, I. C.*; *T-MTT v16 n4 Apr 68* 260

guided waves in inhomogeneous focusing media; asymptotic solution for general weak inhomogeneity; *Kurtz, Clark N.*; *T-MTT v17 n5 May 69* 250-253

guided waves in inhomogeneous focusing media; formulation, solution for quadratic inhomogeneity; *Kurtz, Clark N.*; *T-MTT v17 n1 Jan 69* 11-15

guided waves in inhomogeneous focusing media; wall effects, losses, and transition from fast to slow waves; *Kurtz, Clark N.*; *T-MTT v17 n7 Jul 69* 360-363

longitudinal temperature-dependent waves; propagation in slightly inhomogeneous hot plasma; *Kalluri, D.*; *T-MTT v15 n5 May 67* 326-327

longitudinal temperature-dependent waves; propagation in slightly inhomogeneous hot plasma; *Lonngren, K. E.*; *T-MTT v14 n10 Oct 66* 494-495

microscopic wedge-shaped boundaries between regions of different permittivity; induced fields up to 100 times larger than average fields; *Nilsson, B. Olle*; *T-MTT v27 n6 Jun 79* 616-618 (1E06)

microstrip; Green's function for multilayer microstrip with rectangular side walls; *Kobayashi, Masanori*; *T-MTT v24 n9 Sep 76* 626-628 (1F12)

microstrip, multiple conductors on various interfaces; propagation characteristics calculation using spectral domain method; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 983-987 (1E05)

microstrip with multilayered dielectric structures; Green's function determination; *Crampagne, Raymond*; *T-MTT v26 n2 Feb 78* 82-87 (1C08)

multiconductor transmission lines with inhomogeneous dielectrics; characteristic admittance matrix; *Sun, Y. Y.*; *T-MTT v26 n11 Nov 78* 915-918 (1F02)

multilayer cylindrical models of man; absorption characteristics; *Massoudi, Habib*; *T-MTT v27 n10 Oct 79* 825-830 (1A03)

orthogonality relationships for waveguides and cavities with inhomogeneous anisotropic media; *Villeneuve, Alfred T.*; *T-MTT v7 n4 Oct 59* 441-446

periodic and guiding structures; *Harvey, A. F.*; *T-MTT v8 n1 Jan 60* 30-61

propagation in cylindrical waveguide containing inhomogeneous dielectric; *Yamada, R.*; *T-MTT v13 n5 Sep 65* 716-717

properties of parallel strips separated by dielectric sheet; *Wheeler, Harold A.*; *T-MTT v13 n2 Mar 65* 172-185

quarter-wavelength impedance transformers having equal-ripple performance; *Riblet, Henry J.*; *T-MTT v13 n5 Sep 65* 622-629

reciprocity theorem for multiregions with piezoelectric media and surface impedance; *Kobayashi, Masanori*; *T-MTT v27 n4 Apr 79* 343-345 (1D11)

review of microwave work in Britain in 1960; *Karbowiak, A. E.*; *T-MTT v9 n5 Sep 61* 374-384

slab of graded-index medium whose refractive index is polynomial expression of transverse coordinate; *Pratesi, Riccardo*; *T-MTT v26 n11 Nov 78* 856-858 (1A14)

slab periodic medium bounded by different media on both sides; modal theory. *Chu, Ruey-Shi, Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)

solution of guided waves in nonhomogeneous anisotropic media by perturbation and variational methods; *Gabriel, Garabet J.*; *T-MTT v13 n3 May 65* 364-370

submillimeter-wave phase shifters; multilayer dielectric waveguide driven by p-i-n diode. *Buckman, A. B., Correction*; *T-MTT v26 n2 Feb 78* 127 (1F11)

surface wave propagation on an inhomogeneous plane layer; *Richmond, J. H.*; *T-MTT v10 n6 Nov 62* 554-558

TEM-line problems; numerical solution; *Brenner, H. E.*; *T-MTT v15 n8 Aug 67* 485-487

TM and TE mode surface waves on grounded, anisotropic, inhomogeneous, lossless, dielectric slabs; *Holmes, D. A.*; *T-MTT v12 n1 Jan 64* 141

transmission line with dielectric medium consisting of various homogeneous regions; field expansion as power series of frequency; *Dos Santos, A. F.*; *T-MTT v23 n9 Sep 75* 753-756 (1C07)

transverse magnetic wave propagation in sinusoidally stratified dielectric media; infinite medium and loaded waveguide analyzed; *Yeh, Cavour W. H.*; *T-MTT v13 n3 May 65* 297-302

variational expression for the propagation constant of the waves in waveguides with inhomogeneous media and with wall impedance; *Kurokawa, Kaneyuki*; *T-MTT v10 n5 Sep 62* 314-320

wave in medium exhibiting a progressive sinusoidal disturbance; rigorous solution; *Hessel, Alexander*; *T-MTT v9 n4 Jul 61* 337-343

wave propagation in periodic media; *Casey, K. F.*; *T-MTT v13 n5 Sep 65* 710-711

wave propagation in sinusiodally stratified dielectric media. *Tamir, T., Correction*; *T-MTT v13 n1 Jan 65* 141

wave propagation in sinusoidally stratified dielectric media; *Kallas, R. A.*; *T-MTT v13 n1 Jan 65* 139-141

wave propagation in sinusoidally stratified dielectric media; *Kallas, R. A.*; *T-MTT v13 n5 Sep 65* 715

wave propagation in sinusoidally stratified dielectric media; *Tamir, Theodor*; *T-MTT v12 n3 May 64* 323-335

Wentzel, Kramers and Brillouin approximation used to solve wave equation in rectangular waveguide nonhomogeneously loaded with anisotropic dielectric. *Wexler, A., Correction*; *T-MTT v14 n3 Mar 66* 164

YIG slab having periodically corrugated surface; magnetostatic-wave propagation. *Tsutsumi, Makoto, Correction*; *T-MTT v26 n5 May 78* 374 (1D14)

Electromagnetic propagation, nonhomogeneous media; cf. Electromagnetic radiation effects; Electromagnetic scattering, nonhomogeneous media; Nonhomogeneously loaded waveguides; Optical propagation, nonhomogeneous media; Waveguides

Electromagnetic propagation, nonlinear media

extended theory of Manley–Rowe's energy relations; nonlinear elements and nonlinear lossless media; *Iwasawa, H.*; *T-MTT v8 n4 Jul 60* 459-460

high-power ferromagnetic resonance at *X*-band in polycrystalline garnets and ferrites; *Green, Jerome J.*; *T-MTT v8 n1 Jan 60* 100-103

L-band ferromagnetic resonance experiments at high peak power levels; *Schlömann, Ernst*; *T-MTT v8 n1 Jan 60* 96-100

measurement of nonlinear properties of ferroelectric material; *Das, S. N.*; *T-MTT v12 n4 Jul 64* 440-445

propagation in a gradual transducer; *Solymar, L.*; *T-MTT v8 n1 Jan 60* 61-65

propagation in a gradual transducer; additional relation for 'Design of mode transducers'; *Churchill, D. B.*; *T-MTT v12 n5 Sep 64* 547-548

Electromagnetic propagation, nonlinear media; cf. Distributed networks; Nonlinear transmission lines

Electromagnetic propagation, nonreciprocal media

propagation in a ferrite-loaded rectangular waveguide; *Bresler, Aaron D.*; *T-MTT v8 n1 Jan 60* 81-95

resonant line-width dependence on incident RF power; *Carter, J. L.*; *T-MTT v9 n2 Mar 61* 195-197

semiconductor-loaded waveguide subjected to transverse magnetic field; *Ness, J. B.*; *T-MTT v23 n9 Sep 75* 767-772 (1D07)

Electromagnetic propagation, nonreciprocal media; cf. Electromagnetic propagation, ferrite media; Isolators; Optical propagation, nonreciprocal media

Electromagnetic propagation, periodic media; cf. Optical propagation, periodic media

Electromagnetic propagation, plasma media

application of a focused Fabry–Perot resonator to plasma diagnostics; *Primich, Robin I.*; *T-MTT v12 n1 Jan 64* 33-42

azimuth-independent electromagnetic fields in cylindrically stratified media; derivation of exact wave functions; *Burman, R.*; *T-MTT v16 n2 Feb 68* 127-129

coherent excitation of plasma oscillations in solids; *Pines, David*; *T-MTT v9 n1 Jan 61* 89-92

dipolar resonance of cylindrical arc discharges; *Battocletti, Joseph H.*; *T-MTT v11 n3 May 63* 193-203

dispersion of pulsed electromagnetic waves in a plasma; *Schmitt, H. J.*; *T-MTT v13 n4 Jul 65* 472-473

electromagnetic waves in a cylindrically stratified, axially magnetized plasma; differential equation; *Burman, R.*; *T-MTT v14 n5 May 66* 253-254

excitation of surface waves by a static magnetic field interacting with the field of a line source located in a lossless plasma region; *Seshadri, S. R.*; *T-MTT v10 n6 Nov 62* 573-578

guide filled with uniaxial anisotropic warm plasma; wave propagation and mode theory; *Tuan, Hang Sheng*; *T-MTT v17 n3 Mar 69* 134-137

gyrotropic plasma; propagation in the direction of the external magnetostatic field; *Owyang, Gilbert H.*; *T-MTT v14 n3 Mar 66* 136-144

ionized gaseous media; nonreciprocal propagation; *Goldstein, Ladislas*; *T-MTT v6 n1 Jan 58* 19-29

longitudinal temperature-dependent waves; propagation in slightly inhomogeneous hot plasma; *Kalluri, D.*; *T-MTT v15 n5 May 67* 326-327

longitudinal temperature-dependent waves; propagation in slightly inhomogeneous hot plasma; *Lonngren, K. E.*; *T-MTT v14 n10 Oct 66* 494-495

low pressure, hot cathode arc discharge applied to microwave switches; *Hill, Robert M.*; *T-MTT v8 n6 Nov 60* 628-633

magnetoplasma effects in solids; *Lax, Benjamin*; *T-MTT v9 n1 Jan 61* 83-89

microwave transmission through a plasma sheath; *Willis, J.*; *T-MTT v12 n5 Sep 64* 553-555

on between the propagation of transverse waves in a plasma (with no magnetic field) and a tapered waveguide; *Lashinsky, Herbert*; *T-MTT v12 n2 Mar 64* 256-258

production of microwave surface waves from the interaction of an electron beam with a beam generated hydrogen plasma; *Crepeau, P. J.*; *T-MTT v10 n5 Sep 62* 391-392

propagation of electromagnetic waves in a plasma in a magnetic field; *Allis, William P.*; *T-MTT v9 n1 Jan 61* 79-82

radiation characteristics of a line source of magnetic current imbedded in a homogeneous electron plasma; *Seshadri, S. R.*; *T-MTT v11 n1 Jan 63* 39-50

radiation from a uniformly moving charge in an anisotropic plasma; *Tuan, Hang Sheng*; *T-MTT v11 n6 Nov 63* 462-471

radiation properties of parallel-plane waveguide in transversely magnetized, homogeneous plasma; *Johansen, Elmer L.*; *T-MTT v13 n1 Jan 65* 77-83

semi-infinite longitudinally drifting homogeneous cold magnetoplasma; nonrelativistic solution to problem of normal incidence; *Unz, Hillel*; *T-MTT v15 n7 Jul 67* 432-433

surface waves on a metal rod surrounded by a concentric isotropic plasma sheath; *Tamir, Theodor*; *T-MTT v12 n2 Mar 64* 189-196

surface waves on a perfectly conducting plane covered with magnetoplasma; *Adachi, S.*; *T-MTT v12 n5 Sep 64* 569-570
surface waves on an anisotropic plasma sheath over a perfectly conducting screen; *Seshadri, S. R.*; *T-MTT v12 n5 Sep 64* 529-541
TEM mode in a parallel plate waveguide filled with a gyrotropic dielectric; *Seshadri, S. R.*; *T-MTT v11 n5 Sep 63* 436-437
warm-plasma-filled rectangular waveguide with strong transverse magnetic field; *Tuan, Hang Sheng*; *T-MTT v17 n3 Mar 69* 164-165
Electromagnetic propagation, plasma media; cf. Plasma-loaded waveguides
Electromagnetic propagation, random media
minimum-phase behavior; *Rowe, Harrison E.*; *T-MTT v23 n5 May 75* 411-416 (1A13)
Electromagnetic propagation, random media; cf. Optical propagation, random media
Electromagnetic propagation, semiconducting media; cf. Semiconductor-loaded waveguides
Electromagnetic propagation, surface waves; cf. Electromagnetic surface-wave propagation
Electromagnetic propagation, time-varying media
microwave propagation in a semiconductor filter waveguide with the carrier density varying in time; *Nag, Biswaranjan R.*; *T-MTT v10 n6 Nov 62* 564-567
nondispersive transmission line networks; mathematical analysis of time response; *Getsinger, William J.*; *T-MTT v8 n3 May 60* 301-309
phase modulation by waveguide in a high intensity acoustic field; *Goldstein, Irving*; *T-MTT v8 n3 May 60* 372-375
Electromagnetic propagation, transient; cf. Electromagnetic transient propagation
Electromagnetic propagation ...; cf. Microwave propagation; Optical propagation; Radio propagation; Submillimeter-wave propagation; Underground electromagnetic propagation; Waveguides
Electromagnetic pulse ...; cf. Electromagnetic transient ...
Electromagnetic radiation effects
measurement accuracy of a microwave radiometer as limited by quantum fluctuations; *Bolgiano, L. Paul, Jr.*; *T-MTT v9 n4 Jul 61* 315-321
radiation from a uniformly moving charge in an anisotropic plasma; *Tuan, Hang Sheng*; *T-MTT v11 n6 Nov 63* 462-471
radiation properties of parallel-plane waveguide in transversely magnetized, homogeneous plasma; *Johansen, Elmer L.*; *T-MTT v13 n1 Jan 65* 77-83
testing using rectangular strip transmission line; characteristic impedance of rectangular lines with thin center conductor and air dielectric; *Weil, Claude M.*; *T-MTT v26 n4 Apr 78* 238-242 (1B02)
Electromagnetic radiation effects; cf. Microwave radiation effects; RF radiation effects
Electromagnetic radiation effects, biological
absorption in multilayer cylindrical models of man; *Massoudi, Habib*; *T-MTT v27 n10 Oct 79* 825-830 (1A03)
absorption in prolate spheroids; calculation by point-matching method; *Ruppin, R.*; *T-MTT v26 n2 Feb 78* 87-90 (1C13)
biological effects of UHF, VHF, and ELF irradiation of chicks and rats; effects of continuous exposure on growth rate and feed consumption; *Giarola, Attilio J.*; *T-MTT v22 n4 Apr 74* 432-437 (2B08)
biological effects; power deposition in spherical model of man exposed to 1–20 MHz fields; *Lin, James C.*; *T-MTT v21 n12 Dec 73* 791-797 (2B01)
biological systems; power deposition in spherical model of man exposed to 1–20 MHz fields. *Lin, J. C., Correction*; *T-MTT v23 n2 Feb 75* 265 (1F13)
biological systems; rabbit cervical ganglion exposed to 2450-MHz fields; *Courtney, Kenneth R.*; *T-MTT v23 n10 Oct 75* 809-813 (1C03)
biological systems; teratogenic effects of low-level microwave radiation in pupae of darkling beetle; *Liu, L. M.*; *T-MTT v23 n11 Nov 75* 929-931 (1F09)
brain enzyme inactivation in rats by microwave irradiation; 986 MHz compared with 2450 MHz; *Meyerhoff, James L.*; *T-MTT v27 n3 Mar 79* 267-270 (1D11)
brain enzymes; *in vivo* inactivation using microwave heating; *Lenox, Robert H.*; *T-MTT v24 n1 Jan 76* 58-61 (1E04)
cranial structure inhomogeneous spherical model in near-field of 3-GHz loop or dipole antennas; heat potential distribution; *Hizal, Altunkan*; *T-MTT v26 n8 Aug 78* 607-612 (1G09)
deposition of energy in block model of man; numerical calculation; *Hagmann, Mark J.*; *T-MTT v27 n9 Sep 79* 804-809 (1C10)
electric-field probe near interface between different media; effect of interface on antenna response; application to probing fields in biological bodies; *Smith, Glenn S.*; *T-MTT v27 n3 Mar 79* 270-278 (1D14)
ellipsoidal model of man irradiated by plane wave; wavelength long compared to ellipsoid dimensions; induced fields and power absorbed; *Massoudi, Habib*; *T-MTT v25 n1 Jan 77* 41-46 (1D01)
ellipsoidal model of man irradiated by plane wave; wavelength long compared to ellipsoid dimensions; power absorbed; *Massoudi, Habib*; *T-MTT v25 n1 Jan 77* 47-52 (1D07)
eyes; 2450-MHz radiation cataractogenic effects on rabbit eye; *Guy, Arthur W.*; *T-MTT v23 n6 Jun 75* 492-498 (1C06)
Gaussian-beam launcher for producing focused microwave exposure field in biological experiments; corrugated scalar horn loaded with dielectric hemisphere; *Neelakantaswamy, Perambur S.*; *T-MTT v27 n9 Sep 79* 797-799 (1C03)
head resonance; numerical solutions and experimental results; *Hagmann, Mark J.*; *T-MTT v27 n9 Sep 79* 809-813 (1D01)
hearing sensation induced by pulsed microwave radiation; *Lin, James C.*; *T-MTT v25 n7 Jul 77* 605-613 (1C13)
hearing sensation induced by pulsed microwave radiation; frequency of auditory signal depends only on size and acoustic property of head; *Lin, James C.*; *T-MTT v25 n11 Nov 77* 938-943 (1F04)
heart rate effects; 960-MHz CW irradiation of isolated turtle hearts; *Tinney, Charles E.*; *T-MTT v24 n1 Jan 76* 18-24 (1B06)
human eye irradiated by plane waves at 750 MHz and 1.5 GHz; fields and induced temperatures; *Taflove, Allen*; *T-MTT v23 n11 Nov 75* 888-896 (1C10)
human torso irradiation in 1–500 MHz range; internal field and absorbed power density; *Chen, Kun-Mu*; *T-MTT v25 n9 Sep 77* 746-756 (1C02)
induced fields inside finite bodies; experimental and theoretical studies; *Bassen, H. I.*; *T-MTT v25 n7 Jul 77* 623-624 (1E03)
induced fields inside finite bodies; experimental and theoretical studies; *Guru, Bhag Singh*; *T-MTT v24 n7 Jul 76* 433-440 (1D01)
internal fields and power deposition in homogeneous lossy body of revolution evaluated using surface integral equation method; *Wu, Te-Kao*; *T-MTT v27 n3 Mar 79* 279-283 (1E09)
isolated nerve and muscle preparations; 2450-MHz irradiation; *Chou, Chung-Kwang*; *T-MTT v26 n3 Mar 78* 141-147 (1A07)
layered-tissue media; effects of surroundings on power absorption; *Bernardi, Paolo*; *T-MTT v24 n9 Sep 76* 621-625 (1F07)
measurement of interior fields; diode imbedded in sample exposed to dual-frequency illumination; scattered field related to interior field; *Brodwin, Morris E.*; *T-MTT v24 n8 Aug 76* 514-521 (1B12)
measuring attenuation in human torso in 1.8–2.7 GHz band; *Yamaura, Itsuo*; *T-MTT v25 n8 Aug 77* 707-710 (1F09)
microscopic wedge-shaped boundaries between regions of different permittivity; induced fields up to 100 times larger than average fields; *Nilsson, B. Olle*; *T-MTT v27 n6 Jun 79* 616-618 (1E06)
microwave Gaussian beam launcher for exposure studies; circular waveguide illuminates dielectric sphere lens; *Neelakantaswamy, Perambur S.*; *T-MTT v26 n9 Sep 78* 665-666 (1C11)
microwave irradiation chamber for studies on agricultural products; *Olsen, R. G.*; *T-MTT v25 n5 May 77* 428-433 (1G04)
microwave irradiation of many animals simultaneously; *Oliva, Stephen A.*; *T-MTT v25 n5 May 77* 433-436 (1G09)
microwaves in medicine; special issue; *T-MTT v26 n8 Aug 78* 517-626 (1A03)
microwaves in medicine; special issue foreword; *Guy, Arthur W., Guest ed.*; *T-MTT v26 n8 Aug 78* 517-518 (1A03)
millimeter-wave measurements for fat and muscle tissues; 40–90 GHz complex permittivity and penetration depth; *Edrich, Jochen*; *T-MTT v24 n5 May 76* 273-275 (1C11)
millimeter-wave transmission through normal and tumor cells; standing waves; *Hershberger, W. D.*; *T-MTT v26 n8 Aug 78* 618-619 (2A06)
neuroelectric potentials; mechanism for influence of radiation on potentials; *MacGregor, Ronald J.*; *T-MTT v27 n11 Nov 79* 914-921 (1D02)
non-thermal effects; *Barnes, Frank S.*; *T-MTT v25 n9 Sep 77* 742-746 (1B12)
nonlinear capacitance of membranes; signal mixing and difference-frequency generation in membranes; *Berkowitz, Gary C.*; *T-MTT v27 n2 Feb 79* 204-207 (2B03)
probes in finite heterogeneous biological bodies; response of insulated spherical probes; *Mousavinezhad, Seyed Hossein*; *T-MTT v26 n8 Aug 78* 599-607 (1G01)
rats in 918-MHz near field; thermographic and behavioral studies; *Lin, James C.*; *T-MTT v25 n10 Oct 77* 833-836 (1C01)
samples placed in stripline; power absorbed by rectangular-shaped conductive dielectric samples; *Joines, W. T.*; *T-MTT v24 n8 Aug 76* 536-538 (1D06)
simulated biomaterials for dosimetry studies of hazardous microwave radiation; *Cheung, Augustine Y.*; *T-MTT v24 n10 Oct 76* 669-673 (1C13)
specific absorption rate calculation over broad frequency band for prolate spheroidal models of humans and animals; empirical formula; *Durney, Carl H.*; *T-MTT v27 n8 Aug 79* 758-763 (1D02)
temperature electrode for *in situ* use during microwave exposure; MIC electrode using electrothermal matching concept; *Larsen, Lawrence E.*; *T-MTT v27 n7 Jul 79* 673-679 (1D05)
temperature probe consisting of thermistor and plastic high-resistance leads; *Bowman, Ronald R.*; *T-MTT v24 n1 Jan 76* 43-45 (1D03)
tumor detection; thermographic detection enhancement using microwave heating; *Thompson, J. E.*; *T-MTT v26 n8 Aug 78* 573-580 (1E03)
Electromagnetic radiation effects, biological; cf. Electromagnetic radiation therapy; Microwave radiation effects
Electromagnetic radiation meters
characteristics; microwave-oven leakage measurement; *Aslan, Edward E.*; *T-MTT v19 n2 Feb 71* 249-250 (3C06)
Electromagnetic radiation monitoring; cf. Microwave dosimetry
Electromagnetic radiation protection, biological
microwave power transmission; antenna design and safety considerations; *Dickinson, Richard M.*; *T-MTT v26 n5 May 78* 335-340 (1B03)
Electromagnetic radiation therapy
cancer treatment; special issue; *T-MTT v26 n8 Aug 78* 517-626 (1A03)
cancer treatment; special issue foreword; *Guy, Arthur W., Guest ed.*; *T-MTT v26 n8 Aug 78* 517-518 (1A03)
cutaneous tumors; 27.12-MHz selective heating; *Antich, Peter P.*; *T-MTT v26 n8 Aug 78* 569-572 (1D13)
microwave direct-contact applicator for 2450 MHz; *Kantor, Gideon*; *T-MTT v26 n8 Aug 78* 563-568 (1D07)
microwave heating of tumors; animals in hypothermia; *Zimmer, Robert P.*; *T-MTT v19 n2 Feb 71* 238-245 (3B07)
microwave hyperthermia dose definition; *Atkinson, E. Ronald*; *T-MTT v26 n8 Aug 78* 595-598 (1F11)
tumor growth in mice inhibited by 3000-MHz radiation, polyriboinosinic-polyribocytidylic, and mouse interferon; *Szmigielski, Stanislaw*; *T-MTT v26 n8 Aug 78* 520-522 (1A06)
tumor hyperthermia; microwave system for controlled production of local tumor hyperthermia in animals; *Magin, Richard L.*; *T-MTT v27 n1 Jan 79* 78-83 (1F10)
tumor therapy at 27.12 MHz; *Overgaard, Jens*; *T-MTT v26 n8 Aug 78* 523-529 (1A09)
tumors; 2450-MHz radiation used in conjunction with gamma-ray therapy on flour beetle; *Lai, Ping-Kwong*; *T-MTT v26 n8 Aug 78* 530-534 (1B02)
tumors; microwave applicator system for small animals; *Baker, Robert J.*; *T-MTT v26 n8 Aug 78* 541-545 (1B13)
tumors; microwave hyperthermia of mouse cancers; applicator and free-field techniques at 2450 MHz; *Robinson, J. Eugene*; *T-MTT v26 n8 Aug 78* 546-549 (1C04)
tumors; microwave therapy, hyperthermia, and *L*-ascorbic acid effect on Ehrlich ascites carcinoma cell metabolism; *Piontek, Gerald E.*; *T-MTT v26 n8 Aug 78* 535-540 (1B07)
UHF (915 MHz) direct-contact applicator for deep-tissue heating in humans; clinical evaluation; *Lehmann, Justus F.*; *T-MTT v26 n8 Aug 78* 556-563 (1C14)
UHF (915 MHz) direct-contact applicator for heating deep tissues; *Guy, Arthur W.*; *T-MTT v26 n8 Aug 78* 550-556 (1C08)
Electromagnetic reflection
conducting screens of finite thickness with round or rectangular holes; microwave transmission characteristics; *Chen, Chao-Chun*; *T-MTT v21 n1 Jan 73* 1-6 (1B03)

electromagnetic waves, obliquely incident on a sinusoidally stratified half-space; *Burman, R.*; *T-MTT v15 n3 Mar 67* 189-190
Gaussian beams, multiple reflection in circular cross section; *Shin, Sang-Yung*; *T-MTT v26 n11 Nov 78* 845-851 (1A03)
lossy dielectric sheet backed by a conducting surface and used as an absorber; dependence of reflection on incidence angle; *Redheffer, Raymond*: *T-MTT v7 n4 Oct 59* 423-429

Electromagnetic reflection; cf. Electromagnetic scattering; Optical reflection

Electromagnetic scattering
axial cylindrical surface wave; scattering by perfectly conducting plane annulus; *Gillespie, Edmond S.*; *T-MTT v16 n6 Jun 68* 334-341
biological radiation effects experiments; scattering properties of dielectric materials used in laboratory animal restrainers; *Lin, James C.*; *T-MTT v24 n4 Apr 76* 219-223 (1E01)
boundary conditions and ohmic losses in conducting wedges; *Chisholm, Robin M.*; *T-MTT v8 n2 Mar 60* 189-198
circular cylindrical post of arbitrary complex permittivity centered in a rectangular waveguide; *Nielsen, Eric Dragø*; *T-MTT v17 n3 Mar 69* 148-153
conducting strip above dielectric-coated conducting plane surface waveguide; impedance and scattering properties; *Brown, John*; *T-MTT v22 n4 Apr 74* 469 (2E03)
dielectric bodies; moment-method convergence improvement using interpolants; *Hagmann, Mark J.*; *T-MTT v26 n11 Nov 78* 904-908 (1E06)
diffraction by an array of perfectly conducting disks; *Eggimann, Wilhelm H.*; *T-MTT v10 n6 Nov 62* 528-535
evaluation of dipole moments of small circular disk for arbitrary incident fields; *Eggimann, W. H.*; *T-MTT v9 n1 Jan 61* 98
extension of modulated scattering method for measuring $\vec{E}$ field to the measurement of $\vec{H}$ field; *Hu, Ming-Kuei*; *T-MTT v8 n3 May 60* 295-300
ferrimagnetic circular cylinder in rectangular waveguide; *Okamoto, Nobuo*; *T-MTT v19 n6 Jun 71* 521-527 (1C09)
ferrimagnetic circular cylinder in rectangular waveguide. *Okamoto, N., Correction*; *T-MTT v20 n11 Nov 72* 782-783 (2C01)
Goubau lines; perfectly conducting plane annulus surrounding Goubau line; *Gillespie, Edmond S.*; *T-MTT v19 n10 Oct 71* 837-839 (1E11)
lossy dielectric spheres; resonances and *Q*-factors calculated using Mie scattering theory; *Affolter, Peter*; *T-MTT v21 n9 Sep 73* 573-578 (1B03)
measurement of fields inside biological materials; diode imbedded in sample exposed to dual-frequency illumination; intermodulation products of scattered field related to interior field; *Brodwin, Morris E.*; *T-MTT v24 n8 Aug 76* 514-521 (1B12)
millimeter-wave field measurement in free space using modulated-scattering technique; metallic dipole attached to vibrating nylon cord; *Mathews, Neville A.*; *T-MTT v22 n2 Feb 74* 103-110 (1B11)
moment method; cell size upper bounds when using pulse functions; *Hagmann, Mark J.*; *T-MTT v25 n10 Oct 77* 831-832 (1B13)
numerical solution; least-squares boundary residual method; *Davies, J. Brian*; *T-MTT v21 n2 Feb 73* 99-104 (1D09)
perturbation techniques in semiconductor diagnostics; *Champlin, Keith S.*; *T-MTT v11 n1 Jan 63* 73-77
proposed experiment for eliciting multiple resonances from the ionosphere; *Hershberger, W. D.*; *T-MTT v10 n5 Sep 62* 396-397
scattering by nonsymmetric obstacle in rectangular waveguide determined by a variational bound (minimum) principle in quantum mechanics; *Kalikstein, K.*; *T-MTT v18 n1 Jan 70* 60-61
scattering of a shielded surface wave by a wall-impedance discontinuity; *Arora, R. K.*; *T-MTT v18 n10 Oct 70* 734-736
spheres; Mie series solution; computer program; *Mautz, Joseph R.*; *T-MTT v26 n5 May 78* 375 (1E01)
submillimeter-wave generation by coherent scattering of relatively long wavelengths from relativistic electron beam; *Granatstein, V. L.*; *T-MTT v25 n6 Jun 77* 545-550 (2B04)
time-domain measurement techniques for broadband measurements; computer-aided measurement; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
time-domain measurement techniques for broadband measurements; computer-aided measurement. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
TM surface wave scattering by a perfectly conducting strip; *Gillespie, Edmond S.*; *T-MTT v13 n5 Sep 65* 630-640
use of small resonant scatters to measure electric and magnetic fields at microwave frequencies; *Harrington, Roger F.*; *T-MTT v10 n3 May 62* 165-174
variational bound principle for scattering of electromagnetic waves by symmetric dielectric obstacles; *Aronson, Irving*; *T-MTT v18 n10 Oct 70* 725-731
wave scattering in nonuniform waveguides with large flare angles and near cutoff; *Bahar, Ezekiel*; *T-MTT v16 n8 Aug 68* 503-510
waveguide posts; round metal post with gap between post and waveguide floor; incident electric field parallel to post; *Bradshaw, John A.*; *T-MTT v21 n5 May 73* 313-322 (1B03)
waveguide scattering problems; moment method solutions; *Wu, Sien-Chong*; *T-MTT v20 n11 Nov 72* 744-749 (1D08)
waveguides; analysis by the ray-optical method; *Yee, Hung Yuet*; *T-MTT v17 n9 Sep 69* 671-683

Electromagnetic scattering; cf. Radar scattering; Transmission-line discontinuities; Waveguide discontinuities

Electromagnetic scattering, anisotropic media
scattering of unidirectional surface waves on a perfectly conducting screen imbedded in a gyrotropic medium; *Seshadri, S. R.*; *T-MTT v11 n4 Jul 63* 238-243

Electromagnetic scattering, magnetic media
magnetized ferrite cylinder scattering measurement; *Eggimann, Wilhelm H.*; *T-MTT v8 n4 Jul 60* 440-445
magnetized ferrite cylinder scattering measurement. *Eggiman, W. H., Correction*; *T-MTT v9 n1 Jan 61* 22

Electromagnetic scattering, moving media
radially moving media; first-order (in v/c) vector wave equation; *Censor, Dan*; *T-MTT v17 n7 Jul 69* 374-378
time-harmonic, linearly polarized plane electromagnetic wave scattered by cylinder uniformly moving along its axis; *Censor, Dan*; *T-MTT v17 n3 Mar 69* 154-158

Electromagnetic scattering, moving surfaces
back-scattering measurement of a slowly moving target; *McDuff, Odis P.*; *T-MTT v12 n5 Sep 64* 541-546

Electromagnetic scattering, nonhomogeneous media
dielectric cylinders; vector wave equation solutions; application to waveguide discontinuity problem; *Cicconi, Gabriele*; *T-MTT v25 n11 Nov 77* 885-892 (1B07)
scattering by arbitrary array of parallel wires; *Richmond, Jack H.*; *T-MTT v13 n4 Jul 65* 408-412

Electromagnetic scattering, rough surfaces
guided surface waves and lateral waves excited by field incident on rough surface; fields scattered by rough surfaces excited by surface waves and lateral waves; coupling between surface and lateral waves; *Bahar, Ezekiel*; *T-MTT v25 n11 Nov 77* 923-931 (1E03)

Electromagnetic scattering, rough surfaces; cf. Sea scatter

Electromagnetic shielding; cf. Wire communication cable shielding

Electromagnetic suface waves; cf. Magnetostatic surface waves

Electromagnetic surface-wave propagation
characteristic and cutoff equation for higher order surface wave modes on lossless isotropic cylinders with arbitrary radial permittivity variation; *Vigants, Arvids*; *T-MTT v10 n5 Sep 62* 375-382
cylindrical, axial; improving propagation characteristics by structure having radially nonuniform dielectric; *Gallawa, Robert L.*; *T-MTT v18 n8 Aug 70* 432-436
dielectric image lines; determination of losses in the image line; *King, D. D.*; *T-MTT v5 n1 Jan 57* 31-36
dielectric image lines; effects of dielectric constant and guiding surface geometry on basic properties; *Schlesinger, S. Perry*; *T-MTT v6 n3 Jul 58* 291-299
excitation of surface waves by a static magnetic field interacting with the field of a line source located in a lossless plasma region; *Seshadri, S. R.*; *T-MTT v10 n6 Nov 62* 573-578
ferrite slab of finite thickness with magnetization parallel to air–ferrite–air interfaces; *Gerson, Thomas J.*; *T-MTT v22 n8 Aug 74* 757-763 (1A03)
ferrite slab of finite thickness with magnetization parallel to air–ferrite–air interfaces. *Gerson, T. J., Correction*; *T-MTT v23 n2 Feb 75* 266 (1F14)
guided waves propagating along the magnetostatic field at a plane boundary of a semi-infinite magnetoionic medium; *Owyang, Gilbert H.*; *T-MTT v14 n3 Mar 66* 136-144
launching efficiency of HE_{11} surface-wave mode on dielectric rod; *Yip, Gar Lam*; *T-MTT v18 n12 Dec 70* 1033-1041
lossy ferrimagnetic slab; modal spectrum; *Bardati, Fernando*; *T-MTT v27 n7 Jul 79* 679-688 (1D11)
production of microwave surface waves from the interaction of an electron beam with a beam generated hydrogen plasma; *Crepeau, P. J.*; *T-MTT v10 n5 Sep 62* 391-392
propagation constants for TE and TM surface waves on an anisotropic dielectric cylinder; *Longaker, Perry R.*; *T-MTT v11 n6 Nov 63* 543-546
propagation of surface waves at microwave frequencies on modulated corrugated rods; *Blank, S. J.*; *T-MTT v12 n1 Jan 64* 146-147
propagation speed of surface waves at microwave frequencies on modulated corrugated rods; *Wang, Chia Chun*; *T-MTT v10 n3 May 62* 161-165
rod waveguide; effect of surface impedance variation; *Tsandoulas, G. N.*; *T-MTT v16 n10 Oct 68* 886-888
surface wave propagation on an inhomogeneous plane layer; *Richmond, J. H.*; *T-MTT v10 n6 Nov 62* 554-558
surface waves on a metal rod surrounded by a concentric isotropic plasma sheath; *Tamir, Theodor*; *T-MTT v12 n2 Mar 64* 189-196
surface waves on a perfectly conducting plane covered with magnetoplasma; *Adachi, S.*; *T-MTT v12 n5 Sep 64* 569-570
surface waves on an anisotropic plasma sheath over a perfectly conducting screen; *Seshadri, S. R.*; 529-541

Electromagnetic surface-wave transmission lines
Goubau line above ground; transition from ground-return line to surface-wave line; *Chiba, Jiro*; *T-MTT v25 n2 Feb 77* 83-93 (1A03)
Goubau line having bends; loss and radiation; *Chiba, Jiro*; *T-MTT v25 n2 Feb 77* 94-100 (1A14)
nonresonant periodic structures of conducting cylinders used as an open surface-wave transmission line; *Shefer, Joshua*; *T-MTT v11 n1 Jan 63* 55-61
TM surface wave scattering by a perfectly conducting strip; *Gillespie, Edmond S.*; *T-MTT v13 n5 Sep 65* 630-640

Electromagnetic surface-wave transmission lines; cf. Underground electromagnetic communication

Electromagnetic surface-wave waveguides
asymptotic solution to the eigenvalue equation; *Snyder, Allan W.*; *T-MTT v18 n9 Sep 70* 650-651
conducting strip above dielectric-coated conducting plane surface waveguide; impedance and scattering properties; *Brown, John*; *T-MTT v22 n4 Apr 74* 469 (2E03)
coplanar waveguide with finite-thickness substrate; impedance and effective dielectric constant calculations; *Davis, M. E.*; *T-MTT v21 n9 Sep 73* 594-596 (1C12)
cylindrical surface-wave structures; propagation of higher-order modes; *Savard, Jean Y.*; *T-MTT v15 n3 Mar 67* 151-155
dielectric planar guide for ground transportation obstacle detection; surface-wave scattering by dielectric obstacles on guide; *Rulf, Benjamin*; *T-MTT v24 n8 Aug 76* 539-541 (1D09)
dielectric tube; launching of HE_{11} surface-wave mode; *Yip, Gar Lam*; *T-MTT v22 n1 Jan 74* 6-14 (1A08)
Goubau lines; impedance and scattering properties of perfectly conducting plane annulus surrounding Goubau line; *Gillespie, Edmond S.*; *T-MTT v19 n10 Oct 71* 837-839 (1E11)
H-guide for millimeter and submillimeter wavelengths; thin dielectric film supported across guide by channels in conducting planes; *Doswell, A.*; *T-MTT v21 n9 Sep 73* 587-589 (1C05)
numerical solution using transverse field components; *Williams, C. G.*; *T-MTT v22 n3 Mar 74* 329-330 (3A13)
open-ring line consisting of equally spaced metallic rings; *Fray, Claude*; *T-MTT v26 n11 Nov 78* 886-892 (1D02)
quasi-optical surface waveguide and other components for the 100–300 GHz region; *Sobel, Frederick*; *T-MTT v9 n6 Nov 61* 512-518
surface waves on symmetrical three layer sandwiches; *Richmond, J. H.*; *T-MTT v8 n5 Sep 60* 572

Electromagnetic surface-wave waveguides; cf. Dielectric waveguides; Helical waveguides
Electromagnetic surface waves
characteristic and cutoff equation for higher order surface wave modes on lossless isotropic cylinders with arbitrary radial permittivity variation; *Vigants, Arvids*; *T-MTT v10 n5 Sep 62* 375-382
excitation of lowest order TM surface wave on an infinite dielectric cylinder; efficiency determination; *Duncan, James W.*; *T-MTT v7 n2 Apr 59* 257-268
excitation of surface waves on unidirectionally conducting screen; *Seshadri, S. R.*; *T-MTT v10 n4 Jul 62* 279-286
ferrite magnetized perpendicular to interface; nonmagnetostatic surface waves; *Vaslow, Dale F.*; *T-MTT v22 n7 Jul 74* 743-745 (1C09)
rough surfaces; coupling between surface waves and lateral waves; guided surface waves and lateral waves excited by field incident on rough surface; *Bahar, Ezekiel*; *T-MTT v25 n11 Nov 77* 923-931 (1E03)
scattering of an axial surface wave by a perfectly conducting plane annulus; *Gillespie, Edmond S.*; *T-MTT v16 n6 Jun 68* 334-341
scattering of unidirectional surface waves on perfectly conducting screen imbedded in a gyrotropic medium; *Seshadri, S. R.*; *T-MTT v11 n4 Jul 63* 238-243
shielded; solution with the aid of Lagrange's expansion; *Wang, Yen-Chu*; *T-MTT v17 n4 Apr 69* 236-237
shielded surface waves in coaxial waveguides; scattering by wall impedance discontinuity; *Vijayaraghavan, S.*; *T-MTT v19 n8 Aug 71* 736-739 (2B09)
surface wave scattering by discontinuities in unidirectionally conducting screen; *Seshadri, S. R.*; *T-MTT v10 n5 Sep 62* 367-375
TM surface wave scattering by a perfectly conducting strip; *Gillespie, Edmond S.*; *T-MTT v13 n5 Sep 65* 630-640
Electromagnetic surface waves; cf. Magnetostatic surface waves; Optical surface waves
Electromagnetic transient propagation; cf. Waveguide transient propagation
Electromagnets
annotated bibliography on advances in microwave theory and techniques in Japan in 1959; *Morita, Kiyoshi*; *T-MTT v8 n4 Jul 60* 395-397
Electron accelerators
X-band electron–cyclotron-resonance plasma accelerator; *Miller, David B.*; *T-MTT v14 n3 Mar 66* 162-164
Electron-beam applications
submillimeter-wave radiation from relativistic electron beams; 100 kW in 390–540 μm range; *Granatstein, V. L.*; *T-MTT v22 n12 Dec 74* 1000-1005 (1B08)
Electron-beam applications; cf. Gyrotrons; Submillimeter-wave generation
Electron-beam deflection
coherence properties of a deflection modulated electron beam for harmonic generation; *Baird, Jack R.*; *T-MTT v11 n5 Sep 63* 312-317
Electron-beam interaction
interactions with a beam generated hydrogen plasma to produce microwave energy in the plasma; *Crepeau, P. J.*; *T-MTT v10 n5 Sep 62* 391-392
Electron radiation protection
microwave bipolar transistor linear amplifiers for space applications; *Gibson, Maurice H.*; *T-MTT v26 n10 Oct 78* 779-788 (1F07)
Electron tubes
annotated bibliography on advances in microwave theory and techniques in Japan in 1959; *Morita, Kiyoshi*; *T-MTT v8 n4 Jul 60* 395-397
annotated bibliography on advances in microwave theory and techniques in Western Europe in 1959; *Goudet, Georges*; *T-MTT v8 n4 Jul 60* 387-394
automatic phasing system for Stanford linear accelerator; *Williams, Colin B.*; *T-MTT v13 n6 Nov 65* 806-814
design and construction of synchrotron for use in the Cambridge Electron Accelerator; *Robinson, Kenneth W.*; *T-MTT v8 n6 Nov 60* 593-596
injected RF signal locking of magnetrons; *Thal, Herbert L., Jr.*; *T-MTT v13 n6 Nov 65* 836-846
injection locking of a Laddertron at 35 Gc/s; *Strauch, R. G.*; *T-MTT v13 n4 Jul 65* 473-474
lossy resonant slot coupling; *Bevensee, R. M.*; *T-MTT v8 n6 Nov 60* 669-671
model studies of a strongly coupled synchrotron system; *Barrington, A. E.*; *T-MTT v8 n6 Nov 60* 597-604
racetrack microtron for millimeter-wave and submillimeter-wave generation; *Froelich, Heinrich R.*; *T-MTT v11 n5 Sep 63* 288-291
spectrum analysis of pulsed microwave amplifiers; UHF, *L*-band operation; *Koontz, Roland F.*; *T-MTT v10 n6 Nov 62* 440-454
vacuum window for *X*-band; use in broadband high-power tubes; *Shaw, Herbert J.*; *T-MTT v6 n3 Jul 58* 326-330
velocity sorting detection in backward wave autodyne reception; *Pulfer, J. K.*; *T-MTT v8 n4 Jul 60* 463-464
Electron tubes; cf. Traveling-wave tubes
Electrooptic devices
thermal gradient gas lens measurements; *Steier, William H.*; *T-MTT v13 n6 Nov 65* 740-748
Electrooptic modulation
anisotropic media; Green's function obtained using image coefficient method; capacitance calculation; *Kobayashi, Masanori*; *T-MTT v26 n2 Feb 78* 119-126 (1F03)
integrated-optics modulators; analysis using transformation of MIC formulas; *Yamashita, Eikichi*; *T-MTT v25 n2 Feb 77* 146-150 (1E10)
laser-beam phase modulator; waveguide loaded with electrooptic material; *El-Shandwily, M. Ezzat*; *T-MTT v20 n2 Feb 72* 132-137 (1E10)
thin-film modulators; distributed capacitance calculation; *Yamashita, Eikichi*; *T-MTT v23 n1 Jan 75* 177-178 (2G02)
wide-band modulation of light by means of the electro-optic effect with power continuously fed into the light carrying guide; *Kaminow, Ivan P.*; *T-MTT v10 n5 Sep 62* 311-313
Electrooptic switches
microwave avalanching optoelectronic switch; *Kiehl, Richard A.*; *T-MTT v27 n5 May 79* 533-539 (2F04)
RF pulse generation using optoelectronic switching in Si; *Proud, Joseph M.*; *T-MTT v26 n3 Mar 78* 137-140 (1A03)
Electrophoresis
F8T5 fluorescent lamps; effect of cataphoresis on noise temperature; *Guentzler, Ronald E.*; *T-MTT v18 n7 Jul 70* 393-400
Electrostatic analysis
anisotropic media, two media problem; transforming anisotropic problem into isotropic problem; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 769-775 (1A03)
infinite rectangular bar asymmetrically located inside infinite U-shaped outer conductor; odd-mode fringing capacitances; *Riblet, Henry J.*; *T-MTT v24 n3 Mar 76* 157-159 (1C03)
nonhomogeneous anisotropic media; Green's function technique; *Kobayashi, Masanori*; *T-MTT v26 n7 Jul 78* 510-512 (1D14)
nonself-adjoint operators; variational formulation derived from standard quadratic functional for self-adjoint operators; *Jeng, Garbo*; *T-MTT v26 n2 Feb 78* 91-94 (1D03)
Electrostatic analysis; cf. Capacitance calculations
Ellipsoids
electromagnetic plane wave irradiation of ellipsoidal model of man; wavelength long compared to ellipsoid dimensions; *Massoudi, Habib*; *T-MTT v25 n1 Jan 77* 41-46 (1D01)
electromagnetic plane wave irradiation of ellipsoidal model of man; wavelength long compared to ellipsoid dimensions; power absorbed; *Massoudi, Habib*; *T-MTT v25 n1 Jan 77* 47-52 (1D07)
Elliptic filters
bandpass fourth-order antimetric; waveguide realization; *Williams, Albert E.*; *T-MTT v18 n12 Dec 70* 1109-1114
bandstop filters; unit element transforms performed on unresonated prototype and resultant network is resonated; *Malherbe, J. A. G.*; *T-MTT v25 n8 Aug 77* 717 (1G05)
cavity-resonator filter using dual mode circular cavity structure; *Williams, Albert E.*; *T-MTT v25 n12 Dec 77* 1021-1026 (1E03)
cavity-resonator filters; nonequirriple antimetric filters which can be realized in dual-mode waveguide; *Wanselow, Robert D.*; *T-MTT v23 n8 Aug 75* 708-711 (2A12)
commensurate linelength filters; effectiveness of component elements; *Horton, M. C.*; *T-MTT v16 n8 Aug 68* 555-557
digital; compact sharp-cutoff design for wide bandstop or bandpass requirements; *Horton, M. C.*; *T-MTT v15 n5 May 67* 307-314
digital; use for wideband, high-selectivity diplexers; *Wenzel, R. J.*; *T-MTT v16 n10 Oct 68* 895
digital; use for wideband, high-selectivity diplexers; *Wenzel, Robert J.*; *T-MTT v15 n12 Dec 67* 669-680
distributed bandstop filters approximating elliptic-function response; uses noncommensurate lines; *Malherbe, Johannes A. G.*; *T-MTT v24 n5 May 76* 242-248 (1A08)
distributed elliptic-function filters; synthesis utilizing published tables of lumped-constant prototypes; *Levy, Ralph*; *T-MTT v14 n11 Nov 66* 506-517
distributed-lumped bandpass filters for VHF and UHF bands; comb-line type; *Levy, Ralph*; *T-MTT v19 n1 Jan 71* 26-29 (1D04)
half-wave, stepped, digital; design; *Rhodes, J. D.*; *T-MTT v17 n12 Dec 69* 1102-1107
low-pass, microwave, compact; easy design and construction with low passband loss; *Wenzel, Robert J.*; *T-MTT v18 n12 Dec 70* 1150-1158
narrow-band bandpass; design in a compact digital form; *Rhodes, John David*; *T-MTT v17 n4 Apr 69* 178-184
narrow-bandwidth, microwave; realization circuit; *Rubinstein, Irving*; *T-MTT v17 n12 Dec 69* 1108-1115
optimum; for distributed constant systems; *Fraiture, L.*; *T-MTT v15 n8 Aug 67* 482-483
waveguide bandstop filters; equirriple in passband and stopband; *Rhodes, J. David*; *T-MTT v20 n11 Nov 72* 715-718 (1B03)
waveguide filters; explicit design formulas for single-sided filters; *Rhodes, J. David*; *T-MTT v23 n8 Aug 75* 681-689 (1F09)
wideband elliptic-function transmission-line filters; design tables; *Schiffman, Bernard M.*; *T-MTT v14 n10 Oct 66* 474-482
Elliptical resonators
microstrip resonators; mode chart and unloaded *Q*; *Kretzschmar, Jan G.*; *T-MTT v20 n5 May 72* 342-343 (1F01)
Elliptical waveguides
application of electromagnetic wave solutions to heat conduction in elliptical geometrics; *Laura, Patricio A.*; *T-MTT v20 n4 Apr 72* 292 (1F02)
attenuation characteristics; cross-section curvature effects; *Lewin, Leonard*; *T-MTT v22 n5 May 74* 504-509 (1B12)
attenuation factor for TE and TM modes; perturbation technique; *Falciasecca, G.*; *T-MTT v21 n3 Mar 73* 154 (1D12)
attenuation factor for TE and TM modes; perturbation technique; *Kretzschmar, Jan G.*; *T-MTT v20 n4 Apr 72* 280-284 (1E02)
Engineering
microwave engineering; comments as to being considered specialization or diversification; *Wheeler, H. A.*; *T-MTT v4 n2 Apr 56* 66-67
practice–theory gap; *Fubini, Eugene G.*; *T-MTT v6 n4 Oct 58* 340-342
pure vs. applied research; *Riblet, Henry J.*; *T-MTT v7 n3 Jul 59* 306-307
Engineering education
quality education; assistance from government and industry; *Whinnery, John R.*; *T-MTT v5 n1 Jan 57* 2-3
Engineering societies
IRE 'Affiliate' Plan; new venture in engineering society structure and service adopted on Jan 4, 1957 by the IRE Board of Directors; *Baker, W. R. G., Chmn.*; *T-MTT v5 n2 Apr 57* 161
Equalizers
adjustable microwave delay equalizer; *Woo, Kenneth*; *T-MTT v13 n2 Mar 65* 224-232
cavity-resonator filters using crossed slot coupling aperture; circularly polarized equalizers; *Wanselow, Robert D.*; *T-MTT v22 n1 Jan 74* 63-66 (1E09)
distributed equalizer in output of microwave transistor amplifier; gain–bandwidth limitations; *Tucker, Rodney S.*; *T-MTT v21 n5 May 73* 322-327 (1B12)
microwave FET amplifiers; broadband equalization method bypasses analytic gain-bandwidth theory; *Carlin, Herbert J.*; *T-MTT v27 n2 Feb 79* 93-99 (1A03)
phase, microwave; use of directly connected TEM mode transmission lines; *Ross, Gerald F.*; *T-MTT v15 n11 Nov 67* 647-650
transmission-line all-pass type, operating in TEM, TE or TM modes; general theory and design; *Cristal, Edward G.*; *T-MTT v17 n1 Jan 69* 28-38
transmission-line reactance networks; design for equalizer applications; *Cristal, Edward G.*; *T-MTT v18 n9 Sep 70* 531-540
Equalizers; cf. Delay equalizers; Impedance matching; Transversal filters

Equiripple filters
microwave filters with constant group delay and equiripple passband magnitude; tables for nonminimum-phase even-degree low-pass prototype networks; *Cloete, J. H.*; *T-MTT v27 n2 Feb 79* 123-128 (1C05)
single transmission zeros at real or imaginary frequencies; *Levy, Ralph*; *T-MTT v24 n4 Apr 76* 172-181 (1A10)
Equiripple filters; cf. ChebysheF filters; Elliptic filters
Equiripple functions
even polynomials which complement Achieser–Zolotarev polynomials; *Riblet, Henry J.*; *T-MTT v19 n11 Nov 71* 891-892 (1F03)
Equivalent circuits
cylindrical reentering cavity; lumped-parameter equivalent circuit; *Rivier, Edouard*; *T-MTT v19 n3 Mar 71* 309-314 (1F05)
meander-line networks; *Sato, Risaburo*; *T-MTT v19 n5 May 71* 431-442 (1B11)
Equivalent networks
exact design of TEM microwave networks using quarter-wave line; *Wenzel, Robert J.*; *T-MTT v12 n1 Jan 64* 94-111
exact design of TEM microwave networks using quarter-wave line. *Wenzel, R. J., Correction*; *T-MTT v18 n11 Nov 70* 1005-1006
inductive irises having finite thickness and interacting with neighboring irises; *Rozzi, Tullio E.*; *T-MTT v20 n5 May 72* 323-330 (1D06)
microwave circuit analysis using the equivalent generator concept; *Nemoto, Toshio*; *T-MTT v16 n10 Oct 68* 866-873
multimode planar, perfectly conducting, zero-thickness grating; *Palócz, István*; *T-MTT v18 n5 May 70* 244-252
parallel conductor array; *Seviora, Rudolf*; *T-MTT v16 n10 Oct 68* 875-877
transmission-line networks; lumped *LC* representation; *Pang, Khee K.*; *T-MTT v21 n10 Oct 73* 601-607 (1B03)
waveguide-mounted Gunn device oscillators; equivalent circuit representation of impedance presented to device terminals; *Jethwa, C. P.*; *T-MTT v20 n9 Sep 72* 565-572 (1B03)
Equivalent networks; cf. Semiconductor device models
Extraterrestrial radiation
cosmic microwave background radiation; measurement; *Penzias, Arno A.*; *T-MTT v16 n9 Sep 68* 608-611
Extraterrestrial radiation protection
microwave bipolar transistor linear amplifiers for space applications; *Gibson, Maurice H.*; *T-MTT v26 n10 Oct 78* 779-788 (1F07)
Extraterrestrial radio sources; cf. Radio astronomy
Eyes; cf. Visual system, eyes

F

Fabry–Perot interferometers
application of corner mirrors for ultra-microwave interferometers; *Kloza, M.*; *T-MTT v12 n1 Jan 64* 141-142
design and operation of high resolution interferometer at 6 mm; *Culshaw, William*; *T-MTT v8 n2 Mar 60* 182-189
design problems on performance of millimeter-wave Fabry–Perot reflector plates; *Welling, H.*; *T-MTT v12 n2 Mar 64* 249-250
microwave; design and implementation of reflectors; *Culshaw, William*; *T-MTT v7 n2 Apr 59* 221-228
resonators for millimeter and submillimeter wavelengths, flat plate and conical; *Culshaw, William*; *T-MTT v9 n2 Mar 61* 135-144
spherical mirror type; resonance at 60–70 GHz; *Zimmerer, Robert W.*; *T-MTT v11 n5 Sep 63* 371-379
tunable submillimeter interferometers; Fabry–Perot type; metal grid reflector; *Ulrich, R.*; *T-MTT v11 n5 Sep 63* 363-371
Fabry–Perot resonators
application of a focused Fabry–Perot resonator to plasma diagnostics; *Primich, Robin I.*; *T-MTT v12 n1 Jan 64* 33-42
beam-wave theory; accuracy; *Cullen, A. L.*; *T-MTT v24 n8 Aug 76* 534-535 (1D04)
construction of millimeter-wave Fabry–Perot resonators using planar and spherical resonators; *Zimmerer, Robert W.*; *T-MTT v11 n2 Mar 63* 142-150
coupling of single-ridge waveguide to Fabry–Perot resonator; *Van Blaricum, Michael L.*; *T-MTT v23 n11 Nov 75* 931-934 (1F11)
curved-rim open resonators; field configurations and resonant frequencies; *Consortini, A.*; *T-MTT v22 n1 Jan 74* 60-63 (1E06)
design and operation of high resolution interferometer at 6 mm; *Culshaw, William*; *T-MTT v8 n2 Mar 60* 182-189
design problems on performance of millimeter-wave Fabry–Perot reflector plates; *Welling, H.*; *T-MTT v12 n2 Mar 64* 249-250
dual-mode beam waveguide resonator and frequency stabilizer; use at millimeter-wave frequencies; *Mink, James W.*; *T-MTT v14 n5 May 66* 222-228
extension of the confocal Fabry–Perot resonator integral equation to the high loss region; *Lonngren, K. E.*; *T-MTT v13 n2 Mar 65* 243-244
filled with anisotropic medium; optimum mirror shape for resonance of extraordinary wave; *Tanaka, Toshiki*; *T-MTT v20 n8 Aug 72* 546-547
five-layer (air, reflector, ruby, reflector, air) optical maser for microwave amplification is treated as a Fabry–Perot resonator; *Jacobs, Harold*; *T-MTT v12 n2 Mar 64* 163-170
focused Fabry–Perot resonators in plasma diagnostics; *Lonngren, K. E.*; *T-MTT v12 n5 Sep 64* 548-549
high-order azimuthal modes excited at 10 GHz; *Erickson, Clifford W.*; *T-MTT v24 n10 Oct 76* 673-674 (1D03)
integral equation valid for Fabry–Perot resonators with reflectors of arbitrary curvature and spacing; *Tang, C. L.*; *T-MTT v11 n2 Mar 63* 153
integral equation valid for Fabry–Perot resonators with reflectors of arbitrary curvature and spacing; *Culshaw, William*; *T-MTT v10 n5 Sep 62* 331-339
microwave frequencies; resonant frequencies and loss factor computation; *Itoh, Tatsuo*; *T-MTT v22 n2 Feb 74* 99-102 (1B07)
microwave; plasma diagnostics; *Chaffin, Roger J.*; *T-MTT v16 n1 Jan 68* 37-45
microwave; use for diagnostics of an anisotropic plasma; *Chaffin, R. J.*; *T-MTT v16 n10 Oct 68* 878-879
millimeter-wave measurement of ferrites using open resonator; 60–90 GHz range; *Song Lint, B. Chan*; *T-MTT v24 n11 Nov 76* 883-886 (3C03)
resonators for millimeter and submillimeter wavelengths, flat plate and conical; *Culshaw, William*; *T-MTT v9 n2 Mar 61* 135-144
spherical mirror resonators; high-order modes in large aperture approximate solution; *Erickson, Clifford W.*; *T-MTT v23 n2 Feb 75* 218-223 (1C08)
spherical mirror type; resonance at 60–70 GHz; *Zimmerer, Robert W.*; *T-MTT v11 n5 Sep 63* 371-379
spherical resonators; perturbation theory generalized to arbitrary (*p,l*) modes; *Erickson, Clifford W.*; *T-MTT v25 n11 Nov 77* 958 (2B01)
tunable submillimeter interferometers; Fabry–Perot type; metal grid reflector; *Ulrich, R.*; *T-MTT v11 n5 Sep 63* 363-371
X-band model of resonator having mirrors with step or sloped rims; *Checcacci, P. F.*; *T-MTT v18 n5 May 70* 282-283
Facsimile; cf. Image transmission
Far infrared; cf. Infrared (0.70–100 μm); Submillimeter-wave (300–3000 GHz)
Faraday effect
ferrites in waveguide at 0.87 cm and 1.9 cm wavelengths; *Stewart, Clyde*; *T-MTT v3 n3 Apr 55* 27-31
FDM (frequency-division multiplexing); cf. Diplexers; Frequency-division multiplexing
FEDs; cf. Field-effect diodes
Feed antennas
measurement of directive gain and relative phase; computer-aided measurement; *Dijk, Jakob*; *T-MTT v20 n1 Jan 72* 48-51 (1F02)
Feed networks; cf. Antenna feed networks
Ferrimagnetic-loaded waveguides
scattering by ferrimagnetic circular cylinder in rectangular waveguide; *Okamoto, Nobuo*; *T-MTT v19 n6 Jun 71* 521-527 (1C09)
Ferrimagnetic materials
microwave radiation from ferrimagnetically coupled electrons in transient magnetic fields; *Morgenthaler, Frederic R.*; *T-MTT v7 n1 Jan 59* 6-11
polycrystalline rare-earth garnets; measurements of resonance; *Rodrigue, G. P.*; *T-MTT v6 n1 Jan 58* 83-91
lossy ferrimagnetic slab; electromagnetic propagation on slab; modal spectrum; *Bardati, Fernando*; *T-MTT v27 n7 Jul 79* 679-688 (1D11)
Ferrite circulators
100-kW CW *Y*-junction waveguide circulator; *Okada, Fumiaki*; *T-MTT v26 n5 May 78* 364-369 (1D04)
50-kW CW differential phase-shift circulator at 2450 MHz; *Fournet-Fayas, Cristian*; *T-MTT v26 n5 May 78* 360-363 (1C14)
analysis including higher-order cylindrical modes and evanescent modes; explanation of hump discrepancy in measured reflection coefficient curve; *Castillo, Joseph B.*; *T-MTT v20 n6 Jun 72* 410-412 (2B09)
analysis of a three-port *Y*-junction ferrite circulator where the ferrite can support propagation of a bound surface wave; *Skomal, Edward N.*; *T-MTT v1 n2 Mar 63* 117-122
analysis of the *m*-port symmetrical *H*-plane waveguide junction with a central ferrite post; *Davies, J. B.*; *T-MTT v10 n6 Nov 62* 596-604
bibliography of ferrite-junction circulators, covering period from Jan 1956 to Sep 1969; *Kumar, Ramesh C.*; *T-MTT v18 n9 Sep 70* 524-530
broadbanding using quarter-wave transmission lines; *Naito, Yoshiyuki*; *T-MTT v19 n4 Apr 71* 367-372 (1C11)
calculations based on Bosma's theory of a 3-port stripline circulator; modified to find scattering matrix and bandwidth; *Davies, J. B.*; *T-MTT v11 n6 Nov 63* 506-512
cyclic *H*-plane junctions; exact three-dimensional field theory; *Copplestone, Ray J.*; *T-MTT v27 n6 Jun 79* 577-584 (1B09)
cylindrical cavity containing full-height triangular ferrite post; point-matching solution; magnetic tuning characteristics; *Khilla, Abdel-Messias*; *T-MTT v27 n6 Jun 79* 592-598 (1C10)
design of a four-port crossed waveguide junction circulator at 2.5 to 25 GHz; *Davis, L. E.*; *T-MTT v12 n1 Jan 64* 43-47
design of a pulse-operated ferrite circulator switch; *Freiberg, L.*; *T-MTT v9 n3 May 61* 266
dielectric material replaces part of ferrite material; stripline circulators; *Helszajn, Joseph*; *T-MTT v22 n4 Apr 74* 400-410 (1D08)
E-plane 3-port *X*-band waveguide circulators; *Davis, L. E.*; *T-MTT v11 n5 Sep 63* 443-445
E-plane junction circulators; mode charts; *Helszajn, Joseph*; *T-MTT v20 n2 Feb 72* 187-188 (2E09)
E-plane waveguide junction circulator having full-height ferrite configuration; exact field theory treatment; *El-Shandwily, M. Ezzat*; *T-MTT v25 n9 Sep 77* 784-793 (1E12)
E-plane waveguide junction circulator having two-disk ferrite configuration; exact field theory treatment; *El-Shandwily, M. Ezzat*; *T-MTT v25 n9 Sep 77* 794-803 (1F08)
edge-guided-wave circulators for 8–12 GHz band; MIC realization; *De Santis, P.*; *T-MTT v23 n6 Jun 75* 516-519 (1E02)
experimental results of an *X*-band junction circulator; *Kraszewski, Andrzej*; *T-MTT v13 n3 May 65* 382-383
four-port waveguide junction circulator with dielectric loading; *Sidhu, G. S.*; *T-MTT v13 n3 May 65* 388-389
frequency separation of microwave filters; *Rapaport, Harold*; *T-MTT v6 n1 Jan 58* 53-58
H-plane waveguide junctions with full-height ferrites of arbitrary shape; computer-aided design; *Okamoto, Naomichi*; *T-MTT v27 n4 Apr 79* 315-321 (1B11)
high peak power differential phase shift circulators; biasing at direct magnetic field between subsidiary and main resonances; *Helszajn, Joseph*; *T-MTT v26 n9 Sep 78* 653-658 (1B13)
input impedance of stripline circulator; *Salay, Steven J.*; *T-MTT v19 n1 Jan 71* 109-110 (2F05)
integrated microstrip circulator for 1.75- to 2.23-GHz range; *Poirier, A. L.*; *T-MTT v19 n7 Jul 71* 661-662 (2E04)
L-band stripline circulator using phase-shift sections; *Koop, W. S.*; *T-MTT v9 n6 Nov 61* 571-572
latching ring-and-post ferrite waveguide circulator; performance and normalized design; *Siekanowicz, Wieslaw W.*; *T-MTT v18 n4 Apr 70* 212-216
lossless three-port *H*-plane waveguide junction loaded coaxially with inhomogeneous ferrite cylinders; performance evaluation; *Castillo, Joseph B., Jr.*; *T-MTT v18 n1 Jan 70* 25-34
lumped-element circulator for 4 GHz region; compatible with integrated circuits; *Knerr, Reinhard H.*; *T-MTT v21 n3 Mar 73* 150-151 (1D08)
lumped-element temperature-stabilized 1.7-GHz broadband circulator; *Katoh, Hidehiko*; *T-MTT v23 n8 Aug 75* 689-696 (1G03)

microstrip circulator; inverted-microstrip configuration for 30-GHz range; *Trambarulo, Ralph F.*; *T-MTT v19 n7 Jul 71* 662-664 (2E05)
microstrip circulators; broadbanding without using matching transformers; *March, Steven*; *T-MTT v22 n1 Jan 74* 72-74 (1F04)
microstrip-inserted puck circulator using arc-plasma-sprayed ferrite; *Wu, Y. S.*; *T-MTT v23 n6 Jun 75* 504-506 (1D04)
microstrip *Y*-junction circulators; octave bandwidth operation; *Wu, Y. S.*; *T-MTT v22 n10 Oct 74* 849-856 (1A03)
microwave noise measurements improved by the use of ferrite isolator; *Mayer, C. H.*; *T-MTT v4 n1 Jan 56* 24-28
millimeter-wave waveguide circulator for 27–34 GHz and 31–38 GHz bands; *Piotrowski, W. S.*; *T-MTT v24 n11 Nov 76* 863-866 (3A11)
millimeter-wave *Y* circulators; bandwidth enlargement by loading resonators in each terminal; *Akaiwa, Yoshihiko*; *T-MTT v22 n12 Dec 74* 1283-1286 (5A03)
miniaturized, temperature-stable, coaxial *Y*-junction circulators; *Clark, J.*; *T-MTT v9 n3 May 61* 267-269
mismatched terminations; comparison of coupled-line circulators and differential phase-shift circulators; *Gardiol, Fred E.*; *T-MTT v19 n6 Jun 71* 561-562 (2C03)
nonlinearities and intermodulation characteristics of 3-port distributed circulators; *Wu, You-Sun*; *T-MTT v24 n2 Feb 76* 69-77 (1A03)
nonreciprocal circular polarizer; converts linear polarization propagating in rectangular waveguide into circular polarization propagating in circular waveguide; *Reuss, Max L., Jr.*; *T-MTT v15 n1 Jan 67* 37-41
nonreciprocal coupling with single-crystal ferrites; *Skeie, Halvor*; *T-MTT v12 n6 Nov 64* 587-594
partial height ferrite, *Y*-junction circulators; mode of operation; *Owen, Brian*; *T-MTT v18 n12 Dec 70* 1096-1100
quarter-wave coupled circulators with Chebyshev characteristics; synthesis procedure; *Helszajn, Joseph*; *T-MTT v20 n11 Nov 72* 764-769 (1F04)
radial-waveguide circulators using partial-height ferrite resonators; *Helszajn, Joseph*; *T-MTT v23 n3 Mar 75* 288-298 (1B08)
reciprocal and nonreciprocal switches using ferrite junction circulators; *Clavin, Alvin*; *T-MTT v11 n3 May 63* 217-218
S-band four-port *E*-plane junction circulator; 1-MW peak power, 1-kW average power; *DeCamp, Edward E., Jr.*; *T-MTT v19 n1 Jan 71* 100-103 (2E08)
S-band high-power Y junction circulator; 800-kW peak power and 800-W average power; *Stern, R. A.*; *T-MTT v21 n12 Dec 73* 840-842 (3B07)
spurious spikes; resonant modes of ferrite-post open resonator; *Castillo, Joseph B., Jr.*; *T-MTT v19 n1 Jan 71* 112-113 (3B01)
stacked-junction, in which two ordinary ferrite-loaded junctions are stacked and assembled in a common housing; *Okamura, Sohji*; *T-MTT v17 n12 Dec 69* 1151-1152
stripline circulators, four-port; performance characteristics; *Hussein, Ali M.*; *T-MTT v23 n11 Nov 75* 923-926 (1F03)
stripline junction circulators; measurement of gyrator conductance, susceptance slope parameter, and frequencies of two split resonant modes; *Helszajn, Joseph*; *T-MTT v21 n5 May 73* 347-351 (1E07)
stripline-latching circulator with finite gap; *El-Shandwily, M. E.*; *T-MTT v22 n1 Jan 74* 57-60 (1E03)
stripline *Y*-circulators below resonance; insertion loss dependence on ferrite loss parameters; *Cattarin, Giuseppe*; *T-MTT v22 n7 Jul 74* 752-754 (1D04)
symmetrical 4-ports; eigenadmittance condition for perfect circulation to be obtainable by matching alone; *Riblet, Gordon P.*; *T-MTT v26 n4 Apr 78* 275-279 (1D11)
symmetrical waveguide circulators; synthesis; *Auld, Bert A.*; *T-MTT v7 n2 Apr 59* 238-246
three-port circulator with one port terminated in variable short circuit; insertion loss; *Helszajn, Joseph*; *T-MTT v23 n11 Nov 75* 926-927 (1F06)
three-port waveguide circulators; frequency analysis and optimization; computer program; *Meixner, R. P.*; *T-MTT v25 n1 Jan 77* 77-78 (1F09)
triangular ferrite post for *Y* circulator; mode classification; *Akaiwa, Yoshihiko*; *T-MTT v25 n1 Jan 77* 59-61 (1E05)
triangular ferrite post for *Y*-circulator; mode classification. *Akaiwa, Y., Correction*; *T-MTT v27 n7 Jul 79* 709 (1F13)
UHF-region operated; design calculations; *Boyet, H.*; *T-MTT v7 n4 Oct 59* 475-476
VHF high-power *Y*-circulator; *Buehler, G. V.*; *T-MTT v9 n6 Nov 61* 569-570
waveguide and stripline 4-port single-junction circulators; modal and eigenvalue analysis; *Helszajn, Joseph*; *T-MTT v21 n10 Oct 73* 630-633 (1D08)
waveguide circulators with partial-height ferrite post in junction; design procedure; *Denlinger, E. J.*; *T-MTT v22 n8 Aug 74* 810-813 (1D14)
waveguide junction circulators; exact field theory treatment; *El-Shandwily, M. Ezzat*; *T-MTT v21 n6 Jun 73* 392-403 (1D02)
waveguide-junction circulators using coupled open dielectric resonators; suppression of higher order modes; *Tan, F. C. F.*; *T-MTT v24 n5 May 76* 271-273 (1C09)
waveguide *Y* circulators with circular or triangular ferrite post; operation modes; *Akaiwa, Yoshihiko*; *T-MTT v22 n11 Nov 74* 954-960 (1D02)
X-band; capable of handling average power of 1 kw; *Rizzi, Peter A.*; *T-MTT v5 n4 Oct 57* 230-237
Y-circulators with circular or triangular ferrite post; operation modes. *Akaiwa, Y., Correction*; *T-MTT v27 n7 Jul 79* 709 (1F13)
Y-junction circulator multifrequency operation; *Hansson, E. R. Bertil*; *T-MTT v27 n4 Apr 79* 322-328 (1C04)

Ferrite circulators; cf. Lumped-element circulators; Microstrip circulators; Stripline circulators

Ferrite components; cf. Microstrip components; Slot-line components; Stripline components

Ferrite devices

application at microwave frequencies; developments during last two years; *Lax, Benjamin*; *T-MTT v6 n1 Jan 58* 5-18
attenuators; technique for minimizing hysteresis in a 35-db variable attenuator; *Glass, H. I.*; *T-MTT v7 n2 Apr 59* 295-296
broadband rotators using quadruply-ridged circular waveguide; *Chait, Herman N.*; *T-MTT v7 n1 Jan 59* 38-41
directional couplers with off-center apertures; expressions for coupling and directivity; *Stinson, Donald C.*; *T-MTT v6 n3 Jul 58* 332-333
electromagnetic waves in ferrite rods; classification scheme; *Schott, F. W.*; *T-MTT v16 n11 Nov 68* 959-961
ferrimagnetic power limiter using a ferrite-loaded cavity; *Krokstad, Jarle*; *T-MTT v13 n1 Jan 65* 119-122
ferrites with planar anisotropy at microwave frequencies; *Bady, Isidore*; *T-MTT v9 n1 Jan 61* 52-62
ferromagnetic linewidth and *g*-factor 2 to 18 Gc/s; *Brand, H.*; *T-MTT v13 n5 Sep 65* 712-713
frequency-selective limiting; *Kotzebue, Kenneth L.*; *T-MTT v10 n6 Nov 62* 516-520
harmonic generator; generation of 50 watts peak power at 2-mm wavelength; *Ayres, Wesley P.*; *T-MTT v7 n1 Jan 59* 62-65
isolation rating of ferrite components at high pulse powers; *Narayanan, K. G.*; *T-MTT v18 n6 Jun 70* 322-323
magnetically tunable nonreciprocal band-pass filters using ferrimagnetic resonators; application as a limiter; *Patel, C. N.*; *T-MTT v10 n3 May 62* 152-161
microwave; composite magnetic circuits for temperature stabilization; *Stern, Ernest*; *T-MTT v15 n5 May 67* 295-300
microwave devices; latching properties; *Mueller, R. S.*; *T-MTT v24 n8 Aug 76* 522-525 (1C06)
microwave ferrite planar circuits with ferrite substrate magnetized perpendicular to ground plane; *Miyoshi, Tanroku*; *T-MTT v25 n7 Jul 77* 593-600 (1C01)
microwave limiters; improving performance; *Uebele, George S.*; *T-MTT v7 n1 Jan 59* 18-23
microwave; reducing dependence of resonance frequency on temperature; *Melchor, Jack L.*; *T-MTT v7 n1 Jan 59* 15-18
microwave single-sideband modulator using ferrites; *Cacheris, John C.*; *T-MTT v4 n3 Jul 56* 152-155
millimeter-wave dielectric image line IC; *Nanda, Ved P.*; *T-MTT v24 n11 Nov 76* 876-879 (3B10)
miniature; use of slot lines; *Robinson, Gerald H.*; *T-MTT v17 n12 Dec 69* 1097-1101
pulsed millimeter-wave generation using ferrites; *Elliott, Brian J.*; *T-MTT v9 n1 Jan 61* 92-94
reciprocal; design in TEM mode transmission lines to operate in low-microwave frequency region; *Fleri, Dominic*; *T-MTT v6 n1 Jan 58* 91-96
rotating coupler for VHF range; transformer coupling between two windings; *Allen, C. W.*; *T-MTT v24 n5 May 76* 267-269 (1C05)
serrodyne for microwave frequency translation of *X*-band signals; *O'Hara, Francis J.*; *T-MTT v7 n1 Jan 59* 32-37
spherical, immersed in a static magnetic field; nonmechanical beam steering by scattering; *Wheeler, Myron S.*; *T-MTT v6 n1 Jan 58* 38-42
theoretical limitations of ferromagnetic parametric amplifiers; *Damon, Richard W.*; *T-MTT v8 n1 Jan 60* 4-9
thin type; use for microwave integrated circuits; *Roome, Gerard T.*; *T-MTT v16 n7 Jul 68* 411-420

Ferrite devices; cf. Microstrip components; Stripline components; YIG devices

Ferrite filters

circularly polarized microwave cavity filters; use as tunable bandpass or band-rejection filters or as passive, selective duplexers; *Whirry, Walter L.*; *T-MTT v6 n1 Jan 58* 59-65
magnetically tunable UHF bandpass filter using two YIG-disk resonators; *Young, Leo*; *T-MTT v15 n2 Feb 67* 72-86
X-band, tunable; performance and evaluation; *Mueller, Ralph S.*; *T-MTT v16 n10 Oct 68* 835-842

Ferrite isolators

bandwidth as a function of resonant frequency of a single crystal ferrite resonance isolator at millimeter wavelengths; *Bady, Isidore*; *T-MTT v11 n5 Sep 63* 439-442
bandwidth as a function of resonant frequency of a single crystal ferrite resonance isolator at millimeter wavelengths; *Vilmur, Paul L.*; *T-MTT v10 n2 Mar 62* 108-113
broadband microwave isolator with 30 dB isolation from 8 to 11 GHz; *Vartanian, P. H.*; *T-MTT v4 n1 Jan 56* 8-13
bulk and deposited; for millimeter maser application; *Peyton, B. J.*; *T-MTT v16 n5 May 68* 319-320
coaxial; use of yttrium–rion garnet; *Freiberg, L.*; *T-MTT v6 n4 Oct 58* 454
computer-aided optimization of geometry and material of *E*-plane resonance isolators; *Decreton, Marc*; *T-MTT v19 n3 Mar 71* 322-331 (2B08)
computer analysis of *E*-plane resonance isolators; *Gardiol, Fred E.*; *T-MTT v19 n3 Mar 71* 315-322 (2B01)
design and development of a medium CW and a high CW power level, broadband ridge ferrite-loaded waveguide; *Grimes, E. S., Jr.*; *T-MTT v8 n5 Sep 60* 489-492
edge-mode isolator for VHF band; *Courtois, Louis*; *T-MTT v24 n3 Mar 76* 129-135 (1A03)
edge-mode isolator for VHF band; *Craig, Robert A.*; *T-MTT v25 n1 Jan 77* 76-77 (1F08)
ferrimagnetic resonance isolators operating over waveguide bandwidths; *K, V, Q* bands; *Taft, Donald R.*; *T-MTT v11 n5 Sep 63* 346-350
ferrite isolators and variable attenuators for 50-60 GHz region; *Barnes, Clare E.*; *T-MTT v9 n6 Nov 61* 519-524
ferrite shape considerations; *Stern, E.*; *T-MTT v8 n5 Sep 60* 565
field-displacement; analysis of the operation; *Button, Kenneth J.*; *T-MTT v6 n3 Jul 58* 303-308
field displacement isolator in WR-159 waveguide consisting of a ferrite slab having resistive film on one face; *Comstock, R. Lawrence*; *T-MTT v8 n6 Nov 60* 605-611
field displacement type; performance at 4, 6, 11, and 24 GHz; *Weisbaum, Samuel*; *T-MTT v5 n3 Jul 57* 194-198
gadolinium substituted YIG as a ferrite isolator developed in conjunction with a traveling wave maser; *Morris, L. C.*; *T-MTT v12 n4 Jul 64* 421-428
high-power ferrite load isolators; design using principles of ferromagnetic resonance; *Clavin, Alvin*; *T-MTT v3 n5 Oct 55* 38-43
high-power system capable of feeding 78% of available power from an *S*-band megawatt magnetron into a microwave cavity; *Spuhler, H. A.*; *T-MTT v7 n3 Jul 59* 391
measurement at 1.3 GHz; optimum geometry at low microwave frequency in rectangular waveguide; *Heller, Gerald S.*; *T-MTT v6 n1 Jan 58* 97-100
microstrip edge-guided mode isolators; *Araki, K.*; *T-MTT v23 n3 Mar 75* 321 (1D13)
microwave noise measurements improved by the use of ferrite isolator; *Mayer, C. H.*; *T-MTT v4 n1 Jan 56* 24-28
millimeter resonance isolator using chemically deposited ferrite filing; *Wade, W., Jr.*; *T-MTT v10 n6 Nov 62* 611

millimeter resonance isolator using Ni and NiZn ferrite films; *Wade, W. L., Jr.*; *T-MTT v13 n1 Jan 65* 127-128
millimeter-wave dielectric image line IC; *Nanda, Ved P.*; *T-MTT v24 n11 Nov 76* 876-879 (3B10)
millimeter-wave insular line integrated circuits; *V*-band radio receiver and transmitter system; *Kietzer, James E.*; *T-MTT v24 n11 Nov 76* 797-803 (2C02)
non-reciprocal attenuation of ferrite in single-ridge waveguide; *Chen, T. S.*; *T-MTT v8 n2 Mar 60* 247-248
nonreciprocal coupling with single-crystal ferrites; *Skeie, Halvor*; *T-MTT v12 n6 Nov 64* 587-594
nonreciprocal, TEM-mode structure for wideband gyrator and isolator applications; use of conductors and ferrite rod; *Jones, E. M. T.*; *T-MTT v7 n4 Oct 59* 453-460
rectangular waveguide resonance isolators; improved performance; *Weiss, Max T.*; *T-MTT v4 n4 Oct 56* 240-243
S-band, high average power broadband ferrite load isolator; use of dielectric loaded waveguide and a composite ferrite; *Skomal, E. N.*; *T-MTT v7 n1 Jan 59* 174-175
slot-line isolators: *Courtois, L.*; *T-MTT v23 n6 Jun 75* 511-516 (1D11)
tapered dc magnetic field used to broaden the band of ferrite resonance isolators of the rectangular waveguide type; *Chen, Fang-Shang*; *T-MTT v10 n6 Nov 62* 579-584
theoretical analysis of dielectric loading of ferrite devices; *Soohoo, Ronald F.*; *T-MTT v9 n3 May 61* 220-224
theory of the ferrite resonance isolator; *Schlömann, Ernst*; *T-MTT v8 n2 Mar 60* 199-206
thermal stress-induced breakdown in *S*-band isolator; adhesive layer rupture initiates breakdown; *Buck, Daniel C.*; *T-MTT v26 n5 May 78* 357-360 (1C11)
waveguide resonance absorption isolators; use under high peak and average power conditons at *L*-band; *Schulz-DuBois, Erich O.*; *T-MTT v6 n4 Oct 58* 423-428
wide-band resonance isolator using parallel-plate transmission line; *Anderson, William W.*; *T-MTT v9 n1 Jan 61* 63-67
X-band waveguide isolator for operation over a 45% bandwidth and at high power levels; design; *Duncan, B. J.*; *T-MTT v6 n4 Oct 58* 411-414

Ferrite isolators; cf. Microstrip isolators; Stripline isolators

Ferrite limiters

microwave subsidiary-resonance limiter with dynamic range greater than 200 kW; multilayer ferrite–dielectric sandwich on narrow wall of rectangular guide; *Allen, James L.*; *T-MTT v20 n2 Feb 72* 193-194 (2F03)

Ferrite-loaded resonators

coaxial resonators filled with ferrite; lowest-order mode and quasi-TEM mode; *Wolff, Ingo*; *T-MTT v20 n8 Aug 72* 558-560 (2C01)
cylindrical cavities and planar resonators; point-matching solution; magnetic tuning characteristics; *Khilla, Abdel-Messias*; *T-MTT v27 n6 Jun 79* 592-598 (1C10)

Ferrite-loaded waveguides

analysis of circulators using reciprocal *T* junctions and nonreciprocal phase shifters; *Weiss, Jerald A.*; *T-MTT v13 n1 Jan 65* 38-44
analysis of junction circulators in terms of counter-rotating normal modes; *Fay, Clifford E.*; *T-MTT v13 n1 Jan 65* 15-27
anisotropic media; vector variational formulation; *Konrad, A.*; *T-MTT v24 n9 Sep 76* 553-559 (1A09)
anomalous loss at ferrite boundary; explanation in terms of surface waves; *Lewin, Leonard*; *T-MTT v20 n9 Sep 72* 604-607 (1E06)
approximate solution to ferrite-filled waveguides with longitudinal magnetization; *Sandler, Sheldon S.*; *T-MTT v9 n2 Mar 61* 162-168
azimuthally dependent magnetostatic modes in cylindrical ferrite; effect of adjacent dielectric; *Masuda, Masamitsu*; *T-MTT v19 n10 Oct 71* 834-836 (1E08)
bidirectionality conditions for guides containing gyrotropic media; *McIsaac, Paul R.*; *T-MTT v24 n4 Apr 76* 223-226 (1E05)
broadband absorption modulator for rapid switching of microwave power; *Reggia, Frank*; *T-MTT v9 n4 Jul 61* 343-349
circular, cylindrical, containing longitudinally magnetized ferrite rods; propagation constants; *Severin, Hans K. F.*; *T-MTT v7 n3 Jul 59* 337-346
circular guide loaded with azimuthally magnetized ferrite tube; *Parriaux, Olivier*; *T-MTT v25 n3 Mar 77* 221-224 (1D13)
circular TE_{11} guide partially or completely loaded with axially magnetized ferrite rod; propagation characteristics; *Duputz, A. M.*; *T-MTT v22 n6 Jun 74* 601-613 (1B01)
coaxial line filled with ferrite; sufficient conditions for quasi-TEM mode; *Weiner, Melvin M.*; *T-MTT v21 n3 Mar 73* 156-157 (1E02)
coupling through an aperture containing anisotropic ferrites; analysis by extension of Bethe's small-hole coupling theory; *Stinson, Donald C.*; *T-MTT v5 n3 Jul 57* 184-191
design and development of a medium CW and a high CW power level, broadband ridge ferrite-loaded waveguide; *Grimes, E. S., Jr.*; *T-MTT v8 n5 Sep 60* 489-492
deterioration of ferrite devices caused by high-power thermal and nonlinear effects; *Stern, Ernest*; *T-MTT v7 n1 Jan 59* 11-15
discontinuity problems; analysis using singular integral equations; *Lewin, L.*; *T-MTT v9 n4 Jul 61* 321-332
effects of ferrite strip positions on millimeter-wave isolator characteristics; *Ishii, K.*; *T-MTT v9 n4 Jul 61* 362
electronic scan using ferrite aperture Luneberg lens system; *Medved, David B.*; *T-MTT v6 n1 Jan 58* 101-104
experimental data on the effects of elevated temperature on the dielectric properties of ferrites; *X*-band; *Bady, Isidore*; *T-MTT v11 n4 Jul 63* 222-226
Faraday rotation and insertion loss; study to determine power-handling capacities; *Rizzi, Peter A.*; *T-MTT v5 n4 Oct 57* 230-237
Faraday rotations; production at 0.87 cm and 1.9 cm wavelengths; *Stewart, Clyde*; *T-MTT v3 n3 Apr 55* 27-31
feasibility study on a TE_{01} mode circular waveguide resonance isolator; waveguide loaded with rings of hexagonal ferrite; *Henschke, Richard A.*; *T-MTT v12 n4 Jul 64* 392-400
ferrimagnetic circular cylinder in rectangular guide; scattering properties; *Bhartia, Prakash*; *T-MTT v22 n11 Nov 74* 975-976 (1E09)
ferrite-tuned coaxial cavity; *Butler, J. K.*; *T-MTT v11 n2 Mar 63* 153
ferrites with planar anisotropy at microwave frequencies; *Bady, Isidore*; *T-MTT v9 n1 Jan 61* 52-62

Ferrite-loaded waveguides, *cont.*

field displacement isolator in WR-159 waveguide consisting of a ferrite slab having resistive film on one face; *Comstock, R. Lawrence*; *T-MTT v8 n6 Nov 60* 605-611
field displacement isolators consisting of rectangular slab of ferrite partially filling rectangular waveguide; performance at 4, 6, 11, and 24 GHz; *Weisbaum, Samuel*; *T-MTT v5 n3 Jul 57* 194-198
field measurements in a small cross section waveguide loaded with magnetized ferrite; *Bujatti, M.*; *T-MTT v13 n3 May 65* 385-387
guide wavelengths and impedance measurement applied to step transformers; *Leibowitz, Michael R.*; *T-MTT v9 n4 July 61* 366-367
guide wavelengths and impedance measurement applied to step transformers; *Sullivan, Donald J.*; *T-MTT v8 n2 Mar 60* 212-217
gyroelectric and gyromagnetic media in rectangular waveguides; difference in modes; *Gabriel, G. J.*; *T-MTT v14 n6 Jun 66* 292-293
gyrotropic media; simplification of Maxwell's equations; *Vasile, Carmine F.*; *T-MTT v15 n5 May 67* 324-325
H-plane junction with triangular ferrite post; exact field theory treatment; *Khilla, Abdel-Messias*; *T-MTT v26 n4 Apr 78* 279-287 (1E01)
H-plane waveguide junctions with full-height ferrites of arbitrary shape; computer-aided design; *Okamoto, Naomichi*; *T-MTT v27 n4 Apr 79* 315-321 (1B11)
hybrid-frequency cutoffs in axially magnetized waveguide filled with ferrite; *de Santis, Pietro*; *T-MTT v20 n3 Mar 72* 237-238 (1E03)
inhomogeneously loaded guides; scattering matrix for single-aperture and double-aperture discontinuities; *Bernues, Francisco J.*; *T-MTT v22 n12 Dec 74* 1187-1193 (3E13)
K-band reciprocal ferrite phase modulators; *Reggia, Frank*; *T-MTT v9 n3 May 61* 269-270
K_a-band ferrite phase shifter using longitudinally magnetized ferriteM *McCarter, R. S.*; *T-MTT v9 n3 May 61* 271
latching ring-and-post ferrite waveguide circulator; performance and normalized design; *Siekanowicz, Wieslaw W.*; *T-MTT v18 n4 Apr 70* 212-216
limiter saturated by strong primary signal; absorption of weak secondary signal; *Emtage, P. R.*; *T-MTT v25 n3 Mar 77* 210-213 (1D02)
limiters under subsidiary resonance conditions; *Helszajn, Joseph*; *T-MTT v25 n3 Mar 77* 190-196 (1B10)
line width measurements of ferrite with a cross-guide coupler; *Stinson, Donald C.*; *T-MTT v12 n6 Nov 64* 621-622
longitudinally magnetized, coaxial; mode propagation; *Mueller, Ralph S.*; *T-MTT v16 n10 Oct 68* 835-842
longitudinally magnetized; propagation characteristics; *Buck, Daniel C.*; *T-MTT v16 n12 Dec 68* 1028-1033
longitudinally magnetized square waveguide; normal modes determined by generalized telegraphist's equations; *Hord, W. E.*; *T-MTT v16 n11 Nov 68* 967-969
magnetic materials for millimeter and submillimeter wave applications; *Rodrigue, G. P.*; *T-MTT v11 n5 Sep 63* 351-356
magnetically tunable absorbing type; propagation of first-order modes; *Bernardi, P.*; *T-MTT v17 n2 Feb 69* 62-66
measurement of narrow linewidth ferromagnetic samples using a nonresonant waveguide system; *Jones, George R.*; *T-MTT v11 n6 Nov 63* 547-548
microwave frequency doubling using thick ferrite slabs in waveguides; *Bady, Isidore*; *T-MTT v10 n1 Jan 62* 55-64
modes in waveguide loaded with transversely magnetized slab of ferrite; *Barzilai, Giorgio*; *T-MTT v9 n5 Sep 61* 403-408
narrow line width ferromagnets; *Masters, J. I.*; *T-MTT v8 n5 Sep 60* 565-566
network model for transmission lines with gyromagnetic coupling; *Boyd, Charles R., Jr.*; *T-MTT v13 n5 Sep 65* 652-662
non-reciprocal attenuation of ferrite in single-ridge waveguide; *Chen, T. S.*; *T-MTT v8 n2 Mar 60* 247-248
nonreciprocal remanence phase shifters in rectangular waveguides; theoretical model: *Ince, William J.*; *T-MTT v15 n2 Feb 67* 87-95
operation of tetrahedral junction; *Helszajn, J.*; *T-MTT v13 n1 Jan 65* 132-133
paradoxical surface wave (crack wave); establishment of its existence; *Gagné, Réal R. J.*; *T-MTT v16 n4 Apr 68* 241-250
planar helix on magnetized ferrite slab; nonreciprocal dispersion characteristics; *Aditya, Sheel*; *T-MTT v27 n10 Oct 79* 864-868 (1C14)
problems in designing microwave Faraday-rotation devices; *Lewandowski, S. J.*; *T-MTT v8 n2 Mar 60* 249-251
propagation in a ferrite-loaded rectangular waveguide; *Bresler, Aaron D.*; *T-MTT v8 n1 Jan 60* 81-95
propagation in arbitrarily magnetized ferrites between two conducting parallel plates; *Unz, Hillel*; *T-MTT v11 n3 May 63* 204-210
quadruply-ridged circular waveguides; use for broadband ferrite rotators; *Chait, Herman N.*; *T-MTT v7 n1 Jan 59* 38-41
radiation from rectangular waveguide with ferrite slabs; *Chien, T. M.*; *T-MTT v13 n1 Jan 65* 137-138
rectangular; approximate analytical solution to problem of radiation; *Tyras, George*; *T-MTT v6 n3 Jul 58* 268-277
rectangular; approximate analytical solution to problem of radiation; *Unz, H.*; *T-MTT v10 n1 Jan 62* 88-89
rectangular guide containing axially magnetized cylindrical ferrite rod parallel to *E*-field of TE_{10} mode; transmission and reflection coefficients; *Yoshida, Toshio*; *T-MTT v20 n11 Nov 72* 739-743 (1D03)
rectangular, loaded by twin-slab phase shifters; *Schlömann, Ernst*; *T-MTT v14 n1 Jan 66* 15-23
rectangular; solution of boundary-value problem; *Sharpe, C. B.*; *T-MTT v6 n1 Jan 58* 42-46
rectangular waveguide twist; characteristics; *Barrington, A. E.*; *T-MTT v7 n2 Apr 59* 299-300
resonant line-width dependence on incident RF power; *Carter, J. L.*; *T-MTT v9 n2 Mar 61* 195-197
scattering by ferrimagnetic circular cylinder in rectangular waveguide. *Okamoto, N., Correction*; *T-MTT v20 n11 Nov 72* 782-783 (2C01)
scattering by ferrimagnetic circular cylinder in rectangular waveguide; *Okamoto, Nobuo*; *T-MTT v19 n6 Jun 71* 521-527 (1C09)
single-sideband modulator using two Faraday rotation ferrite balanced modulators; *Clavin, Alvin*; *T-MTT v10 n2 Mar 62* 98-102
solution for the propagation constants of a quasi-TEM mode in ferrite filled parallel plates; *Brodwin, Morris E.*; *T-MTT v12 n5 Sep 64* 496-503

suppressed-rotation reciprocal ferrite phase shifter; theory; *Hord, William E.*; *T-MTT v16 n11 Nov 68* 902-910
switches obtained in waveguide containing longitudinally magnetized ferrite; *Clavin, A.*; *T-MTT v9 n4 Jul 61* 365-366
tapered dc magnetic field used to broaden the band of ferrite resonance isolators of the rectangular waveguide type; *Chen, Fang-Shang*; *T-MTT v10 n6 Nov 62* 579-584
temperature sensitivity of Reggia–Spencer phase shifter; *Clavin, Alvin*; *T-MTT v8 n2 Mar 60* 254-255
theoretical analysis of dielectric loading of ferrite devices; *Soohoo, Ronald F.*; *T-MTT v9 n3 May 61* 220-224
theoretical considerations on the use of circularly symmetric TE modes for digital ferrite phase shifters; *Bolle, Donald M.*; *T-MTT v13 n4 Jul 65* 421-426
theory of the ferrite resonance isolator; *Schlömann, Ernst*; *T-MTT v8 n2 Mar 60* 199-206
transverse electric field distributions; *Angelakos, D. J.*; *T-MTT v7 n3 Jul 59* 390-391
transversely magnetized rectangular waveguide; propagation of higher modes; *Vartanian, P. H.*; *T-MTT v4 n3 Jul 56* 140-143
wide-band resonance isolator using parallel-plate transmission line; *Anderson, William W.*; *T-MTT v9 n1 Jan 61* 63-67
X-band ferrites; propagation characteristics; *Sakiotis, N. G.*; *T-MTT v1 n2 Nov 53* 11-16
X-band power limiter using ferrite and diodes; *Krupke, William F.*; *T-MTT v9 n6 Nov 61* 472-480

Ferrite phase shifters
C-, *X*-, and *Ku*-bands; using segregated-mode resonance in single-crystal YIG; *Hines, Marion E.*; *T-MTT v15 n3 Mar 67* 181-183
coupled-mode analysis of longitudinally magnetized phase shifters; *Hord, William E.*; *T-MTT v22 n2 Feb 74* 135-138 (1E01)
dielectric material as replacement for part of ferrite material; *Bell, H. Clark, Jr.*; *T-MTT v22 n4 Apr 74* 360-364 (1A10)
differential phase shift using planar ferrites in waveguide operated below resonance; *Sodha, M. S.*; *T-MTT v24 n4 Apr 76* 215-216 (1D11)
digital latching phase shifters; use of feedthrough for damping higher-order modes excited by air gap at ferrite–waveguide-wall interface; *Hanfling, J. D.*; *T-MTT v20 n8 Aug 72* 549-552 (2B04)
digital phaser for *S*-band; 100-kW peak power, 2-kW average power; *Moore, Robert Avery*; *T-MTT v22 n6 Jun 74* 626-634 (1C12)
dual-mode and polarization-insensitive phasers; optimization of *X*-band phasers; *Duputz, A. M.*; *T-MTT v22 n6 Jun 74* 601-613 (1B01)
dual-mode, providing latching reciprocal phase shift over a moderate frequency band; *Boyd, Charles R., Jr.*; *T-MTT v18 n12 Dec 70* 1119-1124
dual-mode reciprocal latching phasers; design and manufacture of *X*-band phasers; *Boyd, Charles R., Jr.*; *T-MTT v22 n6 Jun 74* 593-601 (1A07)
dual-mode reciprocal; study of insertion-phase variations; *Boyd, Charles R., Jr.*; *T-MTT v18 n12 Dec 70* 1084-1089
effects of dielectric loading on ferrite phase shifters in rectangular waveguides; *Jordan, Arthur K.*; *T-MTT v10 n1 Jan 62* 83-84
four-bit latching ferrite switch; *Landry, D. H.*; *T-MTT v13 n6 Nov 65* 866-867
garnet and lithium ferrite phasers for *S*-band; construction techniques and performance; *Charlton, Donald A.*; *T-MTT v22 n6 Jun 74* 614-617 (1B14)
garnet phaser for tactical multifunction phased-array radar; driver and phaser design; *Landry, Norman R.*; *T-MTT v22 n6 Jun 74* 617-625 (1C03)
high-power, *L*-band coaxial ferrite phase shifter; *Boxer, A. S.*; *T-MTT v9 n6 Nov 61* 577
high-power small lightweight phase shifter for phased arrays; 115-kW peak and 600-W average power; *Clark, William P.*; *T-MTT v13 n6 Nov 65* 785-788
K_a-band ferrite phase shifter using longitudinally magnetized ferrite; *McCarter, R. S.*; *T-MTT v9 n3 May 61* 271
K-band reciprocal ferrite phase modulators; *Reggia, Frank*; *T-MTT v9 n3 May 61* 269-270
latching phase shifter in rectangular guide; phase shift and loss calculation; *Gardiol, Fred E.*; *T-MTT v21 n1 Jan 73* 57-61 (2B10)
latching phasers; toroid corner chamfering for improving figure of merit; *Ince, William J.*; *T-MTT v19 n6 Jun 71* 563-564 (2C05)
latching properties; *Mueller, R. S.*; *T-MTT v24 n8 Aug 76* 522-525 (1C06)
latching, reciprocal, polarization-insensitive phase shifter; *Meier, Paul J.*; *T-MTT v16 n11 Nov 68* 958-959
latching; transien thermal behavior; *Klein, Gerald*; *T-MTT v15 n7 Jul 67* 429-430
latching type; operation by digital current control; *Whicker, L. R.*; *T-MTT v14 n1 Jan 66* 45-46
longitudinal section mode analysis; application shifter design; *Bui, Van Re*; *T-MTT v20 n6 Jun 72* 421-422 (2C08)
LSE_{22} mode cutoff threshold as limiting factor in selection of dimensions of rectangular phase shifters; *Tsandoulas, G. N.*; *T-MTT v20 n4 Apr 72* 253-258 (1B11)
magnetostriction in remanence phase shifters; *Stern, E.*; *T-MTT v13 n6 Nov 65* 873-874
millimeter-wave phase shifters; reciprocal dual-mode phase shifter; *Whicker, Lawrence R.*; *T-MTT v19 n12 Dec 71* 944-945 (1F04)
miniaturized *C*-band digital latching phase shifter; *Parks, J. K.*; *T-MTT v14 n12 Dec 66* 688-694
nonreciprocal analog-latching phase shifter for *X*-band; 250 W average power, 50 kW peak power; *Hering, Karl H.*; *T-MTT v20 n4 Apr 72* 284-286 (1E06)
nonreciprocal latching configurations; comparison of rectangular toroid and circumferentially magnetized circular rod; *Ince, William J.*; *T-MTT v19 n1 Jan 71* 105-107 (2F01)
nonreciprocal remanence phase shifters in rectangular waveguides; theoretical model; *Ince, William J.*; *T-MTT v15 n2 Feb 67* 87-95
nonreciprocal remanence phase shifters using grooved waveguide; *Mizobuchi, Akihito*; *T-MTT v26 n12 Dec 78* 1012-1016 (1G06)
nonreciprocal remanence type; design using longitudinal section mode analysis of dielectrically loaded rectangular waveguides; *Tsandoulas, G. N.*; *T-MTT v18 n2 Feb 70* 88-95
nonreciprocal waveguide digital type; operating dynamics and performance limitations; *Rodrigue, George P.*; *T-MTT v15 n12 Dec 67* 709-713
periodic loading for low-cost remanence phase shifters; *Spaulding, William G.*; *T-MTT v19 n12 Dec 71* 922-928 (1D06)
phase shift control by servo system; *King, D. D.*; *T-MTT v7 n2 Apr 59* 229-233
phase shifters consisting of a helix surrounded by, or surrounding, a ferrite toroid; *Seckelmann, Robert*; *T-MTT v14 n1 Jan 66* 24-28
problems in designing microwave Faraday-rotation devices; *Lewandowski, S. J.*; *T-MTT v8 n2 Mar 60* 249-251
reciprocal Faraday-rotation phase shifter; longitudinally magnetized ferrite-filled square waveguide; theoretical and experimental analysis; *Hord, William E.*; *T-MTT v20 n2 Feb 72* 112-119 (1D02)
reciprocal, in rectangular waveguide; improving power handling ability; *Clavin, Alvin*; *T-MTT v6 n3 Jul 58* 334
reciprocal; theory of suppressed rotation; *Hord, William E.*; *T-MTT v16 n11 Nov 68* 902-910
remanent; peak power threshold approximation; *King, Richard R.*; *T-MTT v17 n10 Oct 69* 790
single-sideband modulator; development of short rugged ferrite half-wave plate for modulator; *Glass, H. I.*; *T-MTT v7 n2 Apr 59* 295
temperature sensitivity of Reggia–Spencer phase shifter; *Clavin, Alvin*; *T-MTT v8 n2 Mar 60* 254-255
theoretical considerations on the use of circularly symmetric TE modes for digital ferrite phase shifters; *Bolle, Donald M.*; *T-MTT v13 n4 Jul 65* 421-426
thin ferrite devices for microwave integrated circuits; *Roome, Gerard T.*; *T-MTT v16 n7 Jul 68* 411-420
toroids in latching ferrite devices; computation of relative permeability; *Davis, L. E.*; *T-MTT v14 n2 Feb 66* 95-97
twin-slab nonreciprocal type; technique for improving the figure-of-merit; *Clark, William P.*; *T-MTT v16 n11 Nov 68* 974-975
twin-slab phase shifters in rectangular waveguide; *Schlömann, Ernst*; *T-MTT v14 n1 Jan 66* 15-23
waveguide latching ferrite phasers suitable for high average power applications; propagation characteristics; *Allen, James L.*; *T-MTT v21 n8 Aug 73* 543-544 (2B01)
X-band, circularly-polarized, nonreciprocal, ferrite phase shifter; use in phased array antennas; *Mohr, Max C.*; *T-MTT v14 n12 Dec 66* 672-683
X-band ferroelectric phase shifter in waveguide; *DiDomenico, Mauro, Jr.*; *T-MTT v10 n3 May 62* 179-185
yttrium-gadolinium garnets with manganese substitution; remanent phase shifters; *Hudson, Andrew S.*; *T-MTT v19 n1 Jan 71* 119-120 (3B08)

Ferrite phase shifters; cf. Stripline phase shifters

Ferrite resonators; cf. Microstrip resonators

Ferrite slot-line components
nonreciprocal components; *Courtois, L.*; *T-MTT v23 n6 Jun 75* 511-516 (1D11)

Ferrite switches
air-cooled, 500-kW, *X*-band SPDT latching switch; *Stern, Richard A.*; *T-MTT v16 n12 Dec 68* 1034-1037
broad-band ferrite coaxial switch; *Booth, R. L.*; *T-MTT v9 n5 Sep 61* 452-453
broad-band ferrite reflective switch; *Johnson, C. M.*; *T-MTT v8 n4 Jul 60* 466-467
broadband absorption modulator for rapid switching of microwave power; *Reggia, Frank*; *T-MTT v9 n4 Jul 61* 343-349
duplexer using zero permeability characteristics of ferrite; *Wilson, L. K.*; *T-MTT v9 n6 Nov 61* 578
four-bit latching ferrite switch; *Landry, D. H.*; *T-MTT v13 n6 Nov 65* 866-867
latching switch consisting of short-slot waveguide junction loaded with a latched ferrite at the coupling section; *Nakahara, Shojiro*; *T-MTT v18 n12 Dec 70* 1048-1051
microwave, reflective; use of cutoff phenomenon in transversely-magnetized ferrites; *Soohoo, Ronald F.*; *T-MTT v7 n3 Jul 59* 332-336
millimeter-wave region; tetrahedral waveguide junction type; *Stern, Richard A.*; *T-MTT v19 n9 Sep 71* 786-788 (1E12)
normally open (attenuating) switch; operation in the 70 GHz region; *Turner, Edward H.*; *T-MTT v6 n3 Jul 58* 300-303
off-on ferrite switches in coaxial or stripline; *Fay, Clifford E.*; *T-MTT v10 n6 Nov 62* 455-458
switches obtained in waveguide containing longitudinally magnetized ferrite; *Clavin, A.*; *T-MTT v9 n4 Jul 61* 365-366
temperature-stable, fail-safe, latching TR switch; *Siekanowicz, Wieslaw W.*; *T-MTT v17 n9 Sep 69* 712-717
tetrahedral junction as a waveguide switch; *Weiss, J. A.*; *T-MTT v8 n1 Jan 60* 120-121

Ferrites
dielectric and tensor-magnetic measurements; application of exact solution for a gyromagnetic sample placed in a right circular cylindrical cavity resonator; *Bussey, H. E.*; *T-MTT v6 n1 Jan 58* 72-76
dielectric loss measurements; effect of transmission line mismatch on cavity *Q*; *Bady, Isidore*; *T-MTT v17 n3 Mar 69* 165-166
electromagnetic wave interaction with ferrites; definitions of parameters characterizing ferrite; *Bolle, D. M.*; *T-MTT v21 n2 Feb 73* 118 (1F04)
experimental data on the effects of elevated temperature on the dielectric properties of ferrites; *X*-band; *Bady, Isidore*; *T-MTT v11 n4 Jul 63* 222-226
ferromagnetic line width of nonoriented polycrystalline hexagonal ferrites with large magnetic anisotropy fields; *Bady, Isidore*; *T-MTT v11 n5 Sep 63* 442-443
gyrotropic media; reciprocity relationships; *Harrington, Roger F.*; *T-MTT v6 n3 Jul 58* 308-310
hexagonal, having planar anisotropy in unsaturated state; calculation of ferromagnetic resonance frequency; *Christopher, A.*; *T-MTT v16 n5 May 68* 315-316
hexagonal Zn_2Y, with dc field off the easy plane; parallel pumping; *Helszajn, Joseph*; *T-MTT v18 n9 Sep 70* 518-524
line width and gyromagnetic ratio of ferrite materials; *Bady, I.*; *T-MTT v8 n3 May 60* 376-377
Li–Ti ferrite compositions; microwave properties; *Green, Jerome J.*; *T-MTT v25 n2 Feb 77* 155-159 (1F05)
magnetization at an arbitrary direction to the axes of the microwave carrier; permeability matrix and eigenvalues; *Tyras, George*; *T-MTT v7 n1 Jan 59* 176-177
microwave applications; *Hogan, Clarence Lester*; *T-MTT v6 n1 Jan 58* 2-3
microwave characterization of partially magnetized ferrites; *Green, Jerome J.*; *T-MTT v22 n6 Jun 74* 641-645 (1D13)
microwave; explanation of Faraday rotation and applications; *Fox, A. G.*; *T-MTT v1 n1 Mar 53* 22
microwave properties of partially magnetized ferrites; low-power loss and high-power threshold properties; *Green, Jerome J.*; *T-MTT v22 n6 Jun 74* 645-651 (1E03)

millimeter-wave measurements using open resonator; 60–90 GHz range; *Song Lint, B. Chan*; *T-MTT v24 n11 Nov 76* 883-886 (3C03)
nickel aluminate ferrite; use for high-power *L*-band waveguide resonance absorption isolators; *Schulz-DuBois, Erich O.*; *T-MTT v6 n4 Oct 58* 423-428
nickel-cobalt and nickel ferrite-aluminates; resonance measurements as a function of temperature; *Pippin, John E.*; *T-MTT v6 n1 Jan 58* 77-82
nickel cobalt ferrite; use for high-power *L*-band waveguide resonance absorption isolators; *Schulz-DuBois, Erich O.*; *T-MTT v6 n4 Oct 58* 423-428
permittivity and permeability evaluation by two partially filled cavity-resonator techniques; *Sinha, J. K.*; *T-MTT v15 n9 Sep 67* 523-525
planar; ferromagnetic resonance analyzed; *Silber, L. M.*; *T-MTT v18 n1 Jan 70* 68
size effect in the measurement of microwave permeability of ferrites; *Maher, B.*; *T-MTT v9 n1 Jan 61* 96
spherical; measurement of line width and the *g* factor in a cross-guide coupler; *Stinson, Donald C.*; *T-MTT v6 n4 Oct 58* 446-450
spin-wave instability in hexagonal ferrites under perpendicular pumping at large signal power; first-order nonlinear theory; *Helszajn, Joseph*; *T-MTT v20 n7 Jul 72* 437-446 (1C03)

Ferrites; cf. Lithium ferrites; Magnetostatic surface waves

Ferroelectric devices
high-power ferroelectric limiter; *Cohn, Marvin*; *T-MTT v13 n1 Jan 65* 47-54

Ferroelectric materials
measurement of nonlinear properties of ferroelectric material; *Das, S. N.*; *T-MTT v12 n4 Jul 64* 440-445
microwave limiter operating at 1-GHz; design and analysis; *Horton, John B.*; *T-MTT v15 n9 Sep 67* 517-523
$(NH_4)_4Tl_3(H_2AsO_4)_7$ (Atlas); dielectric constant at 9363 MHz; *Das, R.*; *T-MTT v15 n1 Jan 67* 61-62

Ferromagnetic resonance
in planar ferrites; analysis *Silber, L. M.*; *T-MTT v18 n1 Jan 70* 68
spin-wave instability in hexagonal ferrites under perpendicular pumping at large signal power; first-order nonlinear theory; *Helszajn, Joseph*; *T-MTT v20 n7 Jul 72* 437-446 (1C03)

FETs; cf. MESFETs; Microwave FETs; Millimeter-wave FETs; MOSFETs; Power FETs; Schottky-barrier FETs; UHF FETs

Fiber optics; cf. Optical fibers

Field-effect transistors; cf. FETs

Films; cf. Dielectric films; Metal films

Filters
cascade directional filter; properties; *Wing, Omar*; *T-MTT v7 n2 Apr 59* 197-201
high-power, bandstop, iris-coupled waveguide filters; *Torgow, Eugene N.*; *T-MTT v13 n5 Sep 65* 508-513
orthogonal-loop-coupled magnetic resonance filters; equivalent circuit and bandwidth narrowing due to coupling inductance; *Carter, Philip S.*; *T-MTT v18 n2 Feb 70* 100-105
state-of-the-art review of filters in 1965; bandpass, bandstop, high-pass, tunable filters, with extensive bibliography; *Young, Leo*; *T-MTT v13 n5 Sep 65* 489-508
Zobel type; extension of the concept of stop and pass bands to a general reciprocal two-port network with nonloxodromic transformation; *Stock, D. J. R.*; *T-MTT v7 n3 Jul 59* 392-393

Filters; cf. Acoustic filters; Acoustic surface-wave filters; Active distributed filters; Active filters; All-pass networks; Bandpass filters; Bandstop filters; Butterworth filters; Cavity-resonator filters; Channel bank filters; Chebyshev filters; Comb filters; Crystal filters; Dielectric-resonator filters; Digital filters; Diplexers; Directional filters; Distributed filters; Distributed-lumped filters; Elliptic filters; Equalizers; Equiripple filters; Ferrite filters; High-pass filters; Impedance matching; Infrared filters; Interdigital filters; Ladder filters; Linear-phase filters; Low-pass filters; Matched filters; Maximally-flat delay filters; Maximally-flat-magnitude filters; Microstrip filters; Microwave filters; Millimeter-wave filters; Optical filters; Resonator filters; Ring-type filters; Stripline filters; Submillimeter-wave filters; Transmission-line filters; Transversal filters; Tunable filters; UHF filters; VHF filters; Waveguide filters; YIG filters

Finite-difference methods
microstrip lines; dispersion curves for fundamental and higher order hybrid modes in single and coupled microstrip; *Corr, Douglas G.*; *T-MTT v20 n10 Oct 72* 669-678 (1E01)
microstrip lines; dominant mode analysis; *Wharton, R. P.*; *T-MTT v20 n8 Aug 72* 552-555 (2B07)
numerical analysis of a dielectric-loaded waveguide with a symmetrically placed microstrip line; *Hornsby, J. S.*; *T-MTT v17 n9 Sep 69* 684-690
optical fiber waveguides; coupled-power equation solution for step-index fibers; *Rousseau, Michel*; *T-MTT v25 n7 Jul 77* 577-585 (1A13)
successive overrelaxation technique for potential problems with boundary at infinity; *Sandy, F.*; *T-MTT v19 n5 May 71* 484-486 (2B10)

Finite-difference methods; cf. Relaxation methods

Finite-element methods
acoustic propagation in nonhomogeneous guiding structures; *Stone, Geoffrey O.*; *T-MTT v21 n8 Aug 73* 538-542 (1D12)
closed microstrip; hybrid-mode analysis; *Daly, P.*; *T-MTT v19 n1 Jan 71* 19-25 (1C09)
electromagnetic field problems in unbounded regions; *McDonald, Bruce H.*; *T-MTT v20 n12 Dec 72* 841-847 (1F04)
exterior region satisfying Laplace equation; *Csendes, Z. J.*; *T-MTT v24 n7 Jul 76* 468-473 (2A13)
microstrip discontinuity inductance calculation; *Neale, Brian M.*; *T-MTT v26 n10 Oct 78* 827-831 (2C05)
microwave planar network analysis; computer program descriptions; *Silvester, P.*; *T-MTT v25 n11 Nov 77* 959 (2B02)
optical fibers, radially inhomogeneous; vectorial wave analysis; *Okamoto, Katsunari*; *T-MTT v26 n2 Feb 78* 109-114 (1E07)
planar microwave networks; admittance matrix calculation; *Silvester, Peter*; *T-MTT v21 n2 Feb 73* 104-108 (1E02)

Finline; cf. Microwave integrated circuits; Millimeter-wave integrated circuits

Flip-chip devices
microwave FET oscillators with flip-chip mounted devices in common-drain configuration; *Camisa, Raymond L.*; *T-MTT v27 n5 May 79* 391-394 (1C01)

Fluorescent lamps; cf. Gas-discharge devices; Lighting

FM
broadband frequency modulation; use for measuring reflections on moderately long transmission lines; *Mahle, C.*; *T-MTT v14 n10 Oct 66* 496-497
power amplification for FM and PM signals with synchronized IMPATT oscillators; *Isobe, Toyosaku*; *T-MTT v18 n11 Nov 70* 906-911
narrow-band signals in lossless abrupt-junction nonoverdriven varactor doubler; distortion; *Grayzel, A. I.*; *T-MTT v17 n9 Sep 69* 727-728
waveguide cavity CW Gunn oscillator; AM and FM; *Tsai, Wei Ching*; *T-MTT v18 n11 Nov 70* 877-884

FM amplifiers
IMPATT power amplifiers; two-stage amplifier with 4-W output at 6 GHz; *Willing, Harry A.*; *T-MTT v21 n11 Nov 73* 707-716 (2B01)
microwave power amplifier using phased-locked voltage-tuned oscillator; *Hines, Marion E.*; *T-MTT v24 n7 Jul 76* 393-404 (1A03)
nonlinear power amplifiers in stable and injection-locked modes; dynamic equations; *Takayama, Yoichiro*; *T-MTT v20 n9 Sep 72* 591-595 (1D05)

FM broadcast receivers
satellite broadcast receiver for 12-GHz band; low-noise low-cost receiver; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 720-725 (1B04)

FM communication
microwave radio relay transmitter for 4-GHz band; *Kitahara, Yuji*; *T-MTT v22 n12 Dec 74* 1305-1308 (5B11)
radio systems with frequency division multiplexing; application of compandors; *Harp, M. C.*; *T-MTT v2 n1 Apr 54* 36-40
radio systems with frequency division multiplexing; application of compandors. *Harp, M. C., Addenda*; *T-MTT v2 n2 Jul 54* 64

FM demodulation
microwave frequency discriminator using single hybrid tee; *Nigrin, J.*; *T-MTT v23 n9 Sep 75* 776-778

FM noise
Gunn device oscillators; FM noise shown to vary inversely with external *Q* of resonant circuit; *Herbst, H.*; *T-MTT v21 n2 Feb 73* 114-115
IMPATT diode amplifiers and oscillators; *Schiek, Burkhard*; *T-MTT v20 n7 Sep 72* 631-632 (2C06)
microwave measurements; accuracy of measurements using carrier-suppression filter and phase detector; *Fikart, Josef L.*; *T-MTT v20 n10 Oct 72* 702-703 (2C02)
microwave system for measurements of AM and FM noise spectra; *Ondria, John G.*; *T-MTT v16 n9 Sep 68* 767-781
suppression; of an injection phase-locked oscillator; *Hines, M. E.*; *T-MTT v16 n9 Sep 68* 738-742

FM noise; cf. Oscillator noise

FM oscillators
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)

FM pulse compression; cf. Chirp modulation

Fourier series
expression of frequency responses of linear components of nondispersive transmission lines; *Getsinger, William J.*; *T-MTT v8 n3 May 60* 301-309

Fourier spectroscopy
far-infrared dispersive-reflection spectroscopy on solids; Michelson interferometer field of view divided to allow specimen and reference mirror to be placed side by side; *Parker, T. J.*; *T-MTT v22 n12 Dec 74* 1032-1036 (1D12)
far-infrared Fourier spectrometer for amplitude-phase reflection spectroscopy on solids: 10–1000 cm^{-1} region; *Gast, J.*; *T-MTT v22 n12 Dec 74* 1026-1027 (1D06)
submillimeter-wave spectroscopy of gases; resolution of 0.05 cm^{-1} in the 10–40 cm^{-1} region; *Fleming, J. W.*; *T-MTT v22 n12 Dec 74* 1023-1025 (1D03)
submillimeter wave spectroscopy; recent advances in commercial spectrometers; *Milward, R. C.*; *T-MTT v22 n12 Dec 74* 1018-1023 (1C12)
submillimeter-wave spectroscopy using polarizing interferometer; *Martin, D. H.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)

Fourier transforms
application to microstrip propagation analysis; *Denlinger, Edgar J.*; *T-MTT v19 n1 Jan 71* 30-39 (1D08)
directional couplers; design aid; *Sensiper, Samuel*; *T-MTT v6 n2 Apr 58* 238
microstrip capacitance upper bound calculation using variational method and spectral domain approach; *Araki, Kiyomichi*; *T-MTT v26 n7 Jul 78* 506-509 (1D10)
physical applications of Fourier transform pairs in wave theory and circuitry; *Bolinder, E. Folke*; *T-MTT v5 n2 Apr 57* 153-158

Fredholm integral equations; cf. Integral equations

Frequency conversion
broadbanding cavity-type nondegenerate parametric amplifiers; *Johnson, Kenneth M.*; *T-MTT v9 n2 Mar 61* 187-194
C-band stripline frequency translator; *Rutz, Elisabeth M.*; *T-MTT v9 n2 Mar 61* 158-161
cavity-type parametric circuit as a phase-distortionless limiter; *Olson, Frank A.*; *T-MTT v9 n2 Mar 61* 153-157
design of a nondegenerate traveling-wave parametric amplifier; *Grabowski, Kenneth P.*; *T-MTT v10 n2 Mar 62* 103-107
four-frequency parametric up-converters; *Luksch, James A.*; *T-MTT v9 n1 Jan 61* 44-52
frequency doublers using varactors with 'punch-through' capacitance-voltage behavior; *Chao, Cheng Lee*; *T-MTT v14 n1 Jan 66* 43-45
intermodulation distortion in abrupt-junction current-pumped varactor converters; *Gardiner, John Graham*; *T-MTT v19 n9 Sep 71* 741-749 (1B03)
intermodulation distortion in abrupt-junction current-pumped varactor converters. *Gardiner, J. G., Correction*; *T-MTT v20 n4 Apr 72* 293 (1F03)
intermodulation noise analysis using Volterra series; *Swerdlow, Richard B.*; *T-MTT v26 n4 Apr 78* 305-313 (1F13)
low-noise *X*-band parametric amplifier using silicon mesa diode; *Weglein, Rolf D.*; *T-MTT v9 n1 Jan 61* 39-43
MIS varactor multiplier with pulsed output power of 5.5 W at 5.4 GHz; *Schumacher, F.*; *T-MTT v21 n10 Oct 73* 648-649 (1F02)
optimum design of wide-band parametric amplifiers and up-converters; *Matthaei, George L.*; *T-MTT v9 n1 Jan 61* 23-38
parametric lower sideband up-converter; effect of upper sideband impedance; *Davis, W. Alan*; *T-MTT v21 n6 Jun 73* 386-392 (1C08)
progress in solid-state microwave power sources; *Sterzer, Fred*; *T-MTT v13 n6 Nov 65* 768-772
S-band to *Ku*-band converter; integrated circuit using varactor; *Bura, P.*; *T-MTT v21 n3 Mar 73* 136-137 (1C06)

solid-state maser operation at signal frequencies higher than pump frequency; *Arams, Frank R.*; *T-MTT v9 n1 Jan 61* 68-72
system to obtain phase shifting using harmonic mixing; *Rubin, Milton D.*; *T-MTT v10 n1 Jan 62* 92
temporal instabilities in travelling-wave parametric amplifiers; *Cassedy, E. S.*; *T-MTT v10 n1 Jan 62* 86-87
tunnel diode used as a mixing amplifier; *Dickens, L. E.*; *T-MTT v9 n1 Jan 61* 99-101
varactor doublers using abrupt junction varactors; closed-form analysis; *Sard, Eugene W.*; *T-MTT v27 n6 Jun 79* 604-611 (1D08)
varactor frequency doublers; amplitude and phase fluctuations transfer functions; *Bava, Elio*; *T-MTT v27 n8 Aug 79* 753-757 (1C11)
varactor frequency multipliers; nonlinear behavior and hysteresis phenomena; *Bava, Elio*; *T-MTT v27 n2 Feb 79* 141-147 (1D09)

Frequency conversion; cf. Microwave frequency conversion; Millimeter-wave frequency conversion; Mixers; Submillimeter-wave frequency conversion; UHF frequency conversion

Frequency-division multiplexing
twenty-GHz radio relay system; channel multiplexing–demultiplexing networks; *Ohthomo, Isao*; *T-MTT v21 n7 Jul 73* 492-494
blazed diffraction grating as frequency-selective element; *Henry, Paul S.*; *T-MTT v26 n6 Jun 78* 428-433 (1D08)
FM radio systems with frequency division multiplexing; application of compandors; *Harp, M. C.*; *T-MTT v2 n1 Apr 54* 36-40
FM radio systems with frequency division multiplexing; application of compandors. *Harp, M. C., Addenda*; *T-MTT v2 n2 Jul 54* 64
general manifold multiplexer design; bandpass channel filters connected to uniform-impedance manifold; *Rhodes, J. David*; *T-MTT v27 n2 Feb 79* 111-123 (1B07)
generalized multiplexer theory; design of multiplexers having any number of channels with arbitrary channel complexity, bandwidths, and interchannel spacing; *Rhodes, J. David*; *T-MTT v27 n2 Feb 79* 99-111 (1A09)
waveguide multiplexers; computer-aided design; *Atia, Ali E.*; *T-MTT v22 n3 Mar 74* 332-336

Frequency-division multiplexing; cf. Channel bank filters; Diplexers

Frequency measurement
far infrared; limitations imposed by the noise spectrum in harmonic mixing; *Frenkel, L.*; *T-MTT v17 n5 May 69* 281-282
instantaneous frequency-measuring receivers; history of development; *Goddard, N. E.*; *T-MTT v20 n4 Apr 72* 292-293 (2F02)
mean square deviation measurement; *Espersen, George A.*; *T-MTT v8 n5 Sep 60* 474-477
microwave frequencies; measurement and control by lower radio frequencies; *Mackey, Richard C.*; *T-MTT v5 n1 Jan 57* 64-68
microwave frequency discriminator using single hybrid tee; *Nigrin, J.*; *T-MTT v23 n9 Sep 75* 776-778
microwave frequency standard by quenching oscillator control; *Sawazaki, N.*; *T-MTT v4 n2 Apr 56* 116-121
short time changes of Q factor and resonance in a cavity. *Richter, K. R., Addendum*; *T-MTT v18 n4 Apr 70* 229
short time changes of Q factor and resonance in a cavity; *Richter, Kurt R.*; *T-MTT v17 n6 Jun 69* 339-344
wideband wavemeter for millimeter waves; high-precision type; *Schulten, G.*; *T-MTT v15 n7 Jul 67* 430-431

Frequency measurement; cf. Cavity perturbation methods

Frequency multiplication; cf. Frequency conversion

Frequency-scanned arrays
millimeter-wave array consisting of silicon dielectric rectangular rod with periodic metallic stripe perturbations on one side; *Klohn, Kenneth L.*; *T-MTT v26 n10 Oct 78* 764-773 (1E06)

Frequency-shift keying; cf. FSK

Frequency stability; cf. Oscillator stability

Frequency standards
microwave frequency spectrum generation of evenly spaced sidebands; *Wall, Robert E., Jr.*; *T-MTT v3 n1 Jan 55* 4-10
microwave standard obtained by quenching oscillator control; *Sawazaki, N.*; *T-MTT v4 n2 Apr 56* 116-121
microwave; use of optically pumped sodium vapor; *Bell, W. Earl*; *T-MTT v7 n1 Jan 59* 95-98

Frequency synthesizers; cf. Microwave frequency synthesizers

FSK communication
oscillators for 60-GHz transmitter; microstrip varactor-tuned IMPATT oscillator; *Glance, B. S.*; *T-MTT v24 n3 Mar 76* 156-157 (1C02)

G

Gallium alloys/compounds, devices
IMPATT diode noise measure; lower limits; *Haus, Hermann A.*; *T-MTT v19 n10 Oct 71* 801-813 (1B11)
IMPATT, MITATT, and TUNNETT mode devices; high-frequency limitations; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)
LSA reflection amplifier at 9.5 GHz; GaAs diode oscillating in LSA mode with gain at frequency not harmonically related to fundamental frequency; *Lidgey, F. John*; *T-MTT v21 n11 Nov 73* 736-738 (2D06)
switches, coplanar transmission lines on GaAs substrate; *Fleming, Paul L.*; *T-MTT v27 n12 Dec 79* 1032-1035 (2A11)
tunnel injection transit time diode operating from 100 to 248 GHz; GaAs diodes; *Nishizawa, Jun-ichi*; *T-MTT v26 n12 Dec 78* 1029-1035 (2A13)

Gallium alloys/compounds, devices; cf. Avalanche diodes; Gunn devices; IMPATT diodes; LSA devices; Microwave FETs; Millimeter-wave FETs; Schottky-barrier devices

Gallium alloys/compounds, lasers
heterostructure AlGaAs–GaAs lasers; state-of-the art; *Panish, Morton B.*; *T-MTT v23 n1 Jan 75* 20-30 (1B08)

Gallium arsenide
far-infrared reflectivity and electron scattering in 16–230 cm^{-1} range; *Perkowitz, S.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
far-infrared source; recombination radiation from Landau states in impact-ionized GaAs; tunable source; *Waldman, J.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)

Gallium arsenide devices
submillimeter-wave photoconductive detectors; dc-biased and microwave-biased detectors; *Crowley, J. D.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)

Gallium arsenide FETs
microwave Schottky-barrier FET amplifiers; *Liechti, Charles A.*; *T-MTT v22 n5 May 74* 510-517 (1C04)

Galvanomagnetism
transferred-electron device electrical characterization using galvanomagnetic technique; *McBretney, J.*; *T-MTT v27 n3 Mar 79* 256-265 (1C14)

Gamma function
accurate formula; *Lewin, L.*; *T-MTT v22 n10 Oct 74* 910 (1E08)

Gamma-ray therapy
tumors; 2450-MHz radiation used in conjunction with gamma-ray therapy on flour beetle; *Lai, Ping-Kwong*; *T-MTT v26 n8 Aug 78* 530-534 (1B02)

Garnet devices
phase shifter for tactical multifunction phased-array radar; driver and phaser design; *Landry, Norman R.*; *T-MTT v22 n6 Jun 74* 617-625 (1C03)
phasers for S-band; construction techniques and performance, comparison with lithium ferrite phasers; *Charlton, Donald A.*; *T-MTT v22 n6 Jun 74* 614-617 (1B14)
polycrystalline garnet spheres; spinwave linewidth measurements with low-power RF sources; *Courtney, W. E.*; *T-MTT v18 n8 Aug 70* 510

Garnet devices; cf. YIG devices

Garnet microstrip lines
experimental data; comparison with theoretical values; *Massé, Daniel J.*; *T-MTT v20 n5 May 72* 309-313 (1C04)

Garnets
complex permittivity of microwave insulators; analysis and evaluation of measuring method; *Courtney, William E.*; *T-MTT v18 n8 Aug 70* 476-485
microwave characterization of partially magnetized ferrites; *Green, Jerome J.*; *T-MTT v22 n6 Jun 74* 641-645 (1D13)
microwave properties of partially magnetized ferrites; low-power loss and high-power threshold properties; *Green, Jerome J.*; *T-MTT v22 n6 Jun 74* 645-651 (1E03)
rare-earth, polycrystalline; measurements of ferrimagnetic resonance; *Rodrigue, G. P.*; *T-MTT v6 n1 Jan 58* 83-91

Garnets; cf. Gadolinium iron garnets; YIG; Yttrium-gadolinium garnets

Gas-discharge devices
1 MW, C-band microwave spark gap switch; *Farber, Herman*; *T-MTT v13 n1 Jan 65* 28-32
application of a fast microwave switch to high-peak-power plasma diagnostics; *Goldie, H.*; *T-MTT v12 n1 Jan 64* 143-144
arc loss of multimegawatt gas-discharge duplexers; *Ward, Charles S.*; *T-MTT v13 n6 Nov 65* 801-805
dipolar resonance of cylindrical arc discharges; *Battocletti, Joseph H.*; *T-MTT v11 n3 May 63* 193-203
fluorescent lamps; noise-temperature behavior of F8T5 lamps; *Guentzler, Ronald E.*; *T-MTT v24 n8 Aug 76* 538-539 (1D08)
high-power duplexers using TR and ATR tubes; analysis; *Muehe, Charles E., Jr.*; *T-MTT v9 n6 Nov 61* 506-512
microwave switches; high-power magnetic-field controlled; *Tetenbaum, Sidney J.*; *T-MTT v7 n1 Jan 59* 73-82
noise sources; band transition noise measurements; *Olson, Keith W.*; *T-MTT v16 n9 Sep 68* 797
noise sources; measured noise temperature versus theoretical electron temperature; *Olson, Keith W.*; *T-MTT v16 n9 Sep 68* 640-645
noise sources; microwave noise temperatures; *Guentzler, Ronald E.*; *T-MTT v22 n4 Apr 74* 469-470 (2E03)
review of duplexing systems at microwave frequencies; *Harvey, A. F.*; *T-MTT v8 n4 Jul 60* 415-431
S-band argon noise source tubes; characteristics; *Medd, W. J.*; *T-MTT v7 n3 Jul 59* 395
tubes and waveguide mounts; development as reference standards of noise for S, C, and X-band in WR284, WR137, and WR90 waveguide; *Denson, Colin I.*; *T-MTT v16 n9 Sep 68* 655-663

Gas-discharge devices; cf. Glow-discharge devices

Gas discharges
interaction of microwaves with gas-discharge plasmas; *Brown, Sanborn C.*; *T-MTT v7 n1 Jan 59* 69-72
microwave noise power generation considered as thermal noise *Bergmann, Saul M.*; *T-MTT v5 n4 Oct 57* 237-238
pulse-excited ammonia molecules; coherent spontaneous microwave emission; *Norton, Lowell E.*; *T-MTT v5 n4 Oct 57* 262-265

Gas discharges; cf. Arc discharges

Gas lasers
far-infrared gas lasers; rate equation model; *Tucker, J. R.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
submillimeter-wave lasers; optical pumping of polar molecules by infrared lasers; *Chang, T. Y.*; *T-MTT v22 n12 Dec 74* 983-988 (1A05)

Gas lasers; cf. Deuterium oxide lasers; Difluoroethylene lasers; Hydrogen cyanide lasers; Methanol lasers; Methyl fluoride lasers

Gases
microwave electric susceptibility measurement using waveguide interferometer; *Srivastava, G. P.*; *T-MTT v24 n1 Jan 76* 56-57 (1E02)
recording microwave spectrograph to study absorption and index of refraction; *Ilias, D.*; *T-MTT v9 n2 Mar 61* 144-152

Gaussian beams
launcher for producing focused microwave exposure field in biological experiments; corrugated scalar horn loaded with dielectric hemisphere; *Neelakantaswamy, Perambur S.*; *T-MTT v27 n9 Sep 79* 797-799 (1C03)
microwave Gaussian beam launcher for biological irradiation studies; circular waveguide illuminates dielectric sphere lens; *Neelakantaswamy, Perambur S.*; *T-MTT v26 n9 Sep 78* 665-666 (1C11)
multiple reflection in circular cross section; *Shin, Sang-Yung*; *T-MTT v26 n11 Nov 78* 845-851 (1A03)

Geometrical optics
resonators, unstable open; edge diffraction calculation using ray optical technique; *Santana, Carlos*; *T-MTT v26 n2 Feb 78* 101-108 (1D13)
scattering by discontinuities in a waveguide; novel approach using ray optics; *Yee, Hung Yuet*; *T-MTT v17 n2 Feb 69* 73-85
theory of thermal gradient gas lens; *Marcuse, Dietrich*; *T-MTT v13 n6 Nov 65* 734-739
thermal gradient gas lens measurements; *Steier, William H.*; *T-MTT v13 n6 Nov 65* 740-748

Germanium
submillimeter-wave absorption spectra and phase transitions of indirect excitons; *Vavilov, V. S.*; *T-MTT v22 n12 Dec 74* 1086-1089 (2A11)
Germanium devices
avalanche diode oscillator for *X*-band in MIC; *Nanbu, Shutaro*; *T-MTT v24 n3 Mar 76* 151-153 (1B11)
avalanche diodes; large-signal characteristics; *Decker, David R.*; *T-MTT v18 n11 Nov 70* 872-876
backward diodes for small-signal detection made from *n* type germanium; *Burrus, Charles A., Jr.*; *T-MTT v11 n5 Sep 63* 357-362
bolometers; far-infrared bolometer cooled to 0.10 K; *Draine, B. T.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
MIC Doppler module comprised of Ge avalanche diode oscillator and Schottky-barrier detector diode; *Nanbu, Shutaro*; *T-MTT v26 n3 Mar 78* 192-196 (1E02)
microwave absorption modulation by electron mobility variation in *N*-type germanium; *Harmatz, Milton*; *T-MTT v9 n2 Mar 61* 199-200
Glass fibers; cf. Optical fiber waveguides
Glasses; cf. Amorphous semiconductors
Glow-discharge devices
gas discharge detector for millimeter waves; simple and rugged wideband implementation; *Severin, Piet J. W.*; *T-MTT v14 n9 Sep 66* 431-436
mixers at *X*-band for high local oscillator power levels; IF conversion gain; *Kopeika, Norman S.*; *T-MTT v27 n3 Mar 79* 227-232 (1A13)
X-band radiation detection using commercial glow-discharge tubes; *Kopeika, N. S.*; *T-MTT v23 n10 Oct 75* 843-845 (1E09)
X-band radiation detection using neon indicator lamps; very high sensitivity detection; *Makover, Yaakov*; *T-MTT v26 n1 Jan 78* 38-43 (1C12)
Green's function
anisotropic media; Green's function obtained using image coefficient method; capacitance calculation for microstrip and electrooptic modulator; *Kobayashi, Masanori*; *T-MTT v26 n2 Feb 78* 119-126 (1F03)
dielectric obstacles inside rectangular waveguide, three-dimensional arbitrarily shaped obstacles; analysis using dyadic Green's function; *Wang, Johnson J. H.*; *T-MTT v26 n7 Jul 78* 457-462 (1A03)
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions. *Rahmat-Samii, Y., Correction*; *T-MTT v26 n1 Jan 78* 44 (1D04)
electrostatic field problems involving nonhomogeneous anisotropic media; *Kobayashi, Masanori*; *T-MTT v26 n7 Jul 78* 510-512 (1D14)
for Poisson equation in two-dielectric region; *dos Santos, Antonio F.*; *T-MTT v20 n11 Nov 72* 777 (2B08)
microstrip; space-domain frequency-dependent dyadic Green's function; *Chow, Y. L.*; *T-MTT v26 n12 Dec 78* 978-983 (1D14)
microstrip with multilayered dielectric structures; *Crampagne, Raymond*; *T-MTT v26 n2 Feb 78* 82-87 (1C08)
multiconductor transmission line analysis using Green's matrix; *Gruner, L.*; *T-MTT v22 n9 Sep 74* 837-839 (1B07)
thick-strip microstrip lines; *Yamashita, Eikichi*; *T-MTT v19 n1 Jan 71* 120-122 (3B09)
wire inside rectangular cavity excited by external sources coupled to interior by aperture in cavity wall; current excited on wire; *Seidel, David B.*; *T-MTT v26 n11 Nov 78* 908-914 (1E10)
Green's function; cf. Cavity resonators; Microstrip; Stripline; Waveguide; Waveguides
Group theory
application to symmetrical waveguide junctions; *Knorr, Jeffrey B.*; *T-MTT v19 n4 Apr 71* 414-415 (2C10)
submillimeter-wave angular autocorrelation functions of polyatomic molecules in liquids; *Keller, B.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
symmetry analysis of uniform waveguides; summary of results; *McIsaac, Paul R.*; *T-MTT v23 n5 May 75* 421-429 (1B09)
symmetry analysis of uniform waveguides; theory; *McIsaac, Paul R.*; *T-MTT v23 n5 May 75* 429-433 (1C03)
Guided ground transportation
obstacle detection using dielectric planar waveguide; surfave-wave scattering by dielectric obstacles on guide; *Rulf, Benjamin*; *T-MTT v24 n8 Aug 76* 539-541 (1D09)
Guided waves; cf. Waveguides
Gunn device amplifiers
CW waveguide amplifier in *X*-band range; power gains between 10 and 15 dB and half-power bandwidths greater than 1 GHz; *Séne, Amadou*; *T-MTT v20 n10 Oct 72* 645-650 (1C01)
epitaxial-GaAs transferred-electron devices; use for stable CW and pulsed linear-reflection-type amplification at *C*- and *X*-band frequencies; *Perlman, Barry S.*; *T-MTT v18 n11 Nov 70* 911-921
Ka-band amplifier in reduced-height waveguide; 15-GHz gain¹-bandwidth product; *Rubin, David*; *T-MTT v23 n10 Oct 75* 833-834 (1D13)
millimeter-wave; InP amplifiers for 26–40 GHz range; *Hamilton, Robert J., Jr.*; *T-MTT v24 n11 Nov 76* 775-780 (2A08)
reflection amplifiers for *X, Ku,* and *Ka* bands; small-signal multistage amplifiers; *de Koning, J. G.*; *T-MTT v23 n4 Apr 75* 367-374 (1D03)
transferred-electron amplifiers and oscillators; review of current status; *Narayan, S. Yegna*; *T-MTT v18 n11 Nov 70* 773-783
Gunn device amplifiers; cf. Transferred-electron device amplifiers
Gunn device oscillators
AM and FM noise characteristics; physical causes of noise; *Gnerlich, Hans R.*; *T-MTT v25 n12 Dec 77* 977-981 (1B01)
cavity-stabilized, *X*-band; design and investigation of a pulling mechanism; *Ito, Yukio*; *T-MTT v18 n11 Nov 70* 890-897
dielectric measurement method based on oscillator's sensitivity to load; requires only d voltage and current measurements; *Partain, Larry D.*; *T-MTT v24 n10 Oct 76* 656-660 (1B14)
distributed Bragg reflection dielectric waveguide oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
distributed Bragg reflector oscillators for dielectric waveguide integrated circuits; *Itoh, Tatsuo*; *T-MTT v27 n5 May 79* 514-518 (2D13)
flange oscillators for simultaneously measuring size and permittivity of dielectric samples; *Lakshminarayana, Mysore R.*; *T-MTT v27 n7 Jul 79* 661-665 (1C07)
FM noise; inverse proportionality to external *Q* of resonant circuit; *Herbst, H.*; *T-MTT v21 n2 Feb 73* 114-115
frequency memory device using Gunn oscillator; *Magarshack, J.*; *T-MTT v16 n12 Dec 68* 1055-1057
GaAs, high-power; mounted on a type-IIa diamond to reduce thermal spreading resistance just under the wafer of the diodes; *Migitaka, Masatoshi*; *T-MTT v18 n11 Nov 70* 1004-1005
high-frequency quenched-domain mode; large-signal analysis; *Khandelwal, Deen D.*; *T-MTT v18 n4 Apr 70* 178-187
high-power, in *L*-band; compact microwave circuits for obtaining high-efficiency operation; *Reynolds, James F.*; *T-MTT v18 n11 Nov 70* 827-834
high-power (up to 100 W), 1-GHz, coplanar, epitaxial-layer type; *Norton, L. E.*; *T-MTT v16 n7 Jul 68* 480-481
injection-locked pulsed oscillators with very fast switching characteristics; phase and amplitude transients; *Pavlidis, Dimitrios*; *T-MTT v26 n3 Mar 78* 162-169 (1B14)
injection-locking figure of merit; derivation in terms of the frequency compliance coefficient; *Khandelwal, Deen D.*; *T-MTT v18 n11 Nov 70* 989-992
integrated circuit *X*-band oscillator; frequency stability of 2×10^{7}; *Chan, C. K.*; *T-MTT v22 n8 Aug 74* 815 (1E05)
magnetically tunable oscillator using YIG resonator with isolator property; *Okada, Fumiaki*; *T-MTT v26 n12 Dec 78* 1035-1039 (2B05)
MIC oscillator using dielectric resonator; highly stabilized oscillator; *Makino, Toshihiko*; *T-MTT v27 n7 Jul 79* 633-638 (1A07)
microstrip oscillator at 5.2 GHz; frequency stabilized using microstrip discriminator and integrated feedback loop; *Glance, B.*; *T-MTT v24 n10 Oct 76* 648-650 (1B06)
millimeter-wave; InP oscillators for 26–40 GHz and 50–75 GHz ranges; *Hamilton, Robert J., Jr.*; *T-MTT v24 n11 Nov 76* 775-780 (2A08)
millimeter-wave oscillators with high output power; *Ruttan, Thomas G.*; *T-MTT v22 n2 Feb 74* 142-144 (1E08)
millimeter-wave varactor-tuned oscillator on microstrip; 35-GHz oscillator with 1-GHz tuning range; *Rubin, David*; *T-MTT v24 n11 Nov 76* 866-867 (3A14)
output power and tuning range as functions of the fundamental resonant-load resistance; *Pollmann, Horst*; *T-MTT v18 n11 Nov 70* 817-827
post-coupled-waveguide-cavity; equivalent circuit using lumped constant elements; *Tsai, Wei Ching*; *T-MTT v18 n11 Nov 70* 808-817
progress in solid-state microwave power sources; *Sterzer, Fred*; *T-MTT v13 n6 Nov 65* 768-772
ridge-waveguide cavity for wideband tuning; *Mizushina, S.*; *T-MTT v24 n5 May 76* 257-259 (1B09)
single-tuned circuit suitable for Gunn diode characterization; *Dorman, P. W.*; *T-MTT v20 n10 Oct 72* 701-702 (2C01)
subharmonically injection phase-locked Gunn oscillator; experiments; *Oltman, H. G.*; *T-MTT v17 n9 Sep 69* 728-729
temperature stabilization of *C*-band microstrip oscillator; dielectric loading technique; *Cohen, Jerome*; *T-MTT v21 n2 Feb 73* 115-116 (1F01)
transferred-electron amplifiers and oscillators; review of current status; *Narayan, S. Yegna*; *T-MTT v18 n11 Nov 70* 773-783
transferred-electron oscillators; frequency-saturation effects; *Taylor, Brian C.*; *T-MTT v18 n11 Nov 70* 799-807
transmission cavity stabilized oscillators; matching; *Schünemann, Klaus*; *T-MTT v26 n3 Mar 78* 147-155 (1A13)
tuning characteristics of electromechanically tuned oscillators; *Joshi, J. S.*; *T-MTT v21 n9 Sep 73* 582-586 (1B12)
two waveguide high-*Q* oscillators analyzed in terms of loaded *Q*; *Higgins, Ian D.*; *T-MTT v25 n5 May 77* 412-416 (1F02)
varactor-tuned coaxial oscillators, wideband; *Corbey, Colin D.*; *T-MTT v24 n1 Jan 76* 31-39 (1C05)
varactor-tuned oscillator in full-height waveguide cavity; wideband *X*-band oscillator; *Joshi, J. S.*; *T-MTT v21 n3 Mar 73* 137-139 (1C07)
waveguide mount analysis; two-post mounting structure for varactor-tuned oscillators; *El-Sayed, Osman L.*; *T-MTT v22 n8 Aug 74* 769-776 (1B01)
waveguide-cavity CW oscillator; amplitude and frequency modulation; *Tsai, Wei Ching*; *T-MTT v18 n11 Nov 70* 877-884
waveguide-mounted oscillators; equivalent circuit for impedance presented to device terminals; *Singh, D. N.*; *T-MTT v21 n8 Aug 73* 569 (2D03)
waveguide-mounted oscillators; equivalent circuit representation of impedance presented to device terminals; *Jethwa, C. P.*; *T-MTT v20 n9 Sep 72* 565-572 (1B03)
waveguide-tunable oscillators; power generation dependence on harmonics due to diode nonlinearity; *Bastida, Ezio M.*; *T-MTT v22 n8 Aug 74* 796-798 (1C14)
Gunn device oscillators; cf. Transferred-electron device oscillators
Gunn device oscillators, millimeter-wave
distributed Bragg reflection dielectric waveguide oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
distributed Bragg reflector oscillators for dielectric waveguide integrated circuits; *Itoh, Tatsuo*; *T-MTT v27 n5 May 79* 514-518 (2D13)
dual-diode 73-GHz oscillator with 80-mW output; two resonant cap structures mounted in common waveguide to combine power from two diodes; *Talwar, Ashok K.*; *T-MTT v27 n5 May 79* 510-512 (2D09)
two-diode oscillator in 50–60 GHz band; 23.75-dBm power output, mechanical tuning range of 6 GHz, varactor tuning bandwidth of 200 MHz; *Sun, C.*; *T-MTT v27 n5 May 79* 512-514 (2D11)
Gunn devices
circuit model simulation that retains time-dependent and nonlinear properties; *Mantena, Niladiri R.*; *T-MTT v17 n7 Jul 69* 363-373
diode operating at a bias voltage exceeding threshold; direct broadband measurement of the impedance; *Pence, Ira W.*; *T-MTT v18 n11 Nov 70* 784-789
Doppler detectors for Doppler frequencies 1–1000 Hz; *Iijima, Y.*; *T-MTT v26 n2 Feb 78* 132-133 (1G02)
electrical characterization using galvanomagnetic technique; *McBretney, J.*; *T-MTT v27 n3 Mar 79* 256-265 (1C14)
millimeter-wave diodes; construction, performance, and application; *Kramer, N. B.*; *T-MTT v24 n11 Nov 76* 685-693 (1A05)
multiplexing and demultiplexing in Gb/s range; *Mause, Klaus*; *T-MTT v24 n12 Dec 76* 926-929 (1B14)
negative-conductance measurement by measuring envelope of transient amplitude of oscillations; validity of method; *Tomizawa, K.*; *T-MTT v21 n9 Sep 73* 596-597 (1D02)
packages; microwave equivalent-circuit parameters; *Owens, R. P.*; *T-MTT v18 n11 Nov 70* 790-798
parallel combinations of Gunn diodes for *X*-band; fabrication with three n-type GaAs crystals; *Mitsui, Shigeru*; *T-MTT v17 n12 Dec 69* 1158-1160
stabilized K_a-band oscillator; frequency stability of 3×10^{-5} from 0 to 50 C; *Nagano, S.*; *T-MTT v20 n2 Feb 72* 174-176 (2D08)

surface-oriented transferred-electron devices using MESFET technology; *Shur, Michael S.*; *T-MTT v26 n12 Dec 78* 1023-1028 (2A07)
transferred-electron amplifiers and oscillators; review of current status; *Narayan, S. Yegna*; *T-MTT v18 n11 Nov 70* 773-783
use as microwave power limiters; *Aitchison, C. S.*; *T-MTT v20 n2 Feb 72* 181-182 (2E03)
with moving reflector; behavior as self-excited mixer when reflector velocity is large and as load variation detector when velocity is small; *Nagano, Shigemichi*; *T-MTT v19 n12 Dec 71* 906-910 (1C02)
YIG-tuned oscillators; wideband phase locking and phase shifting using feedback control; *X*-band oscillators; *Rubin, David*; *T-MTT v20 n4 Apr 72* 286-289 (1E08)

Gyromagnetic materials
cavity resonator containing gyromagnetic rod; exact solution; *Bussey, H. E.*; *T-MTT v6 n1 Jan 58* 72-76
coplanar waveguide consisting of a surface strip transmission line suitable for nonreciprocal gyromagnetic device applications; *Wen, Cheng P.*; *T-MTT v17 n12 Dec 69* 1087-1090
plane and quasi-optical wave propagation in gyromagnetic media; *Eberhardt, Nikolai*; *T-MTT v18 n9 Sep 70* 554-565

Gyrotrons
traveling-wave amplifiers; characteristics and optimum operating parameters; 35-GHz amplifier with 340-kW output, 2-dB/cm gain, and 51 percent efficiency; *Chu, Kwo Ray*; *T-MTT v27 n2 Feb 79* 178-187 (1G04)

Gyrotrons; cf. Submillimeter-wave generation

H

Hall effect
waveguide completely filled with semiconductor and subject to transverse magnetic field; *Ness, J. B.*; *T-MTT v24 n7 Jul 76* 473-476 (2B04)

Harmonic analysis
microwave class-C amplifier design using harmonic analysis; *Filicori, Fabio*; *T-MTT v27 n12 Dec 79* 1043-1051 (2B08)

Harmonic generation
3-mm wave region; performance; *Richardson, John M.*; *T-MTT v5 n2 Apr 57* 131-135
coherence properties of a deflection modulated electron beam for harmonic generation; *Baird, Jack R.*; *T-MTT v11 n5 Sep 63* 312-317
ferrite generator excited by 4-mm source; 50-W peak power at 2-mm wavelength; *Ayres, Wesley P.*; *T-MTT v7 n1 Jan 59* 62-65
harmonic generation and parametric amplification by multiple quantum effects; *Pantell, Richard H.*; *T-MTT v11 n5 Sep 63* 317-324
magnetron harmonics or frequency multiplication of power emitted by a klystron; *Nethercot, A. H., Jr.*; *T-MTT v2 n3 Sep 54* 17-20
microwave source using reactance-diode harmonic generators; *Hyltin, Tom M.*; *T-MTT v9 n1 Jan 61* 73-78
microwave source using reactance-diode harmonic generators; *Stracca, G. B.*; *T-MTT v10 n5 Sep 62* 399-401
millimeter-wave diodes for harmonic power generation; *Dickens, Lawrence E.*; *T-MTT v15 n1 Jan 67* 32-37
millimeter-wave spectroscopic components; development work; *King, W. C.*; *T-MTT v2 n3 Sep 54* 13-16
p-i-n diode in microwave switching application; *Mott, Harold*; *T-MTT v15 n3 Mar 67* 180-181
silicon diodes; excess noise produced by microwave excitation; *Richardson, John M.*; *T-MTT v5 n3 Jul 57* 208-212

Harmonic generation; cf. Frequency conversion; Optical harmonic generation

Head
electromagnetic energy absorption; resonance phenomenon; *Hagmann, Mark J.*; *T-MTT v27 n9 Sep 79* 809-813 (1D01)
electromagnetic irradiation of cranial structure; inhomogeneous spherical model in near-field of 3-GHz loop or dipole antennas; heat potential distribution; *Hizal, Altunkan*; *T-MTT v26 n8 Aug 78* 607-612 (1G09)
microwave radiation effects, induced fields and heating patterns; *Shapiro, Alan R.*; *T-MTT v19 n2 Feb 71* 187-196 (2B10)

Hearing; cf. Auditory system

Heart; cf. Cardio...

Heating; cf. Electric heating; Microwave heating

Heat; cf. Thermal ...

Helical antennas
0 and −1 space harmonics in helical antennas; *MacLean, T. S.*; *T-MTT v8 n2 Mar 60* 251

Helical transmission lines
ferrite-loaded line; coaxial inner conductor filled with circumferentially magnetized gyromagnetic medium; *Ivanov, K. P.*; *T-MTT v19 n9 Sep 71* 784-786 (1E10)
impedance computation for infinitely long thin-wire helix; *Wynn, D. C.*; *T-MTT v22 n5 May 74* 556-559 (2B01)

Helical waveguides
circular electric waves; calculation of eddy-current and heat losses; *Morrison, J. A.*; *T-MTT v6 n2 Apr 58* 173-177
coupling rectangular-to-circular guide at millimeter-wave frequencies; helical coupler; *Predmore, C. Read*; *T-MTT v24 n11 Nov 76* 847-852 (2F10)
flattened sheath helix; *Arora, Rajendra K.*; *T-MTT v25 n1 Jan 77* 71-72 (1F03)
helically corrugated multimode circular waveguide; wave propagation and mode conversion; *Tang, Charles C. H.*; *T-MTT v14 n6 Jun 66* 275-284
leaky waves in helix waveguide covered with slitted cylinder; propagation characteristics; *Mikoshiba, Koichi*; *T-MTT v17 n2 Feb 69* 66-73
planar helix composed of pair of parallel arrays which conduct in different directions in the two arrays; *Aditya, Sheel*; *T-MTT v27 n10 Oct 79* 860-863 (1C10)
planar helix on magnetized ferrite slab; nonreciprocal dispersion characteristics; *Aditya, Sheel*; *T-MTT v27 n10 Oct 79* 864-868 (1C14)
transmission characteristics of TE_{01} wave; numerical calculations; *Hosono, Toshio*; *T-MTT v7 n3 Jul 59* 370-373

Helmholtz equations
nonseparable solutions; waveguide and cavity synthesis; *Luypaert, P. J.*; *T-MTT v23 n12 Dec 75* 1061-1064 (2B12)

Heterodyne detection; cf. Infrared heterodyne detection; Millimeter-wave heterodyne detection; Modulation/demodulation; Submillimeter-wave heterodyne detection

Heterodyning
four superheterodyne radiometers for use at 70 GHz and 140 GHz. *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 397-411
four superheterodyne radiometers for use at 70 GHz and 140 Ghz; *Meredith, Ronald, Correction*; *T-MTT v12 n4 Jul 64* 471

Heterojunctions; cf. Semiconductor heterojunctions

High-pass filters
bandpass and pseudo-high-pass quasi-optical filters; use for millimeter-wave and far-infrared frequencies; *Leedom, David A.*; *T-MTT v18 n5 May 70* 253-259
high-pass and bandstop filters; incidental dissipation; *Smythe, R. C.*; *T-MTT v14 n4 Apr 66* 208-209
millimeter-wave, infrared, and optical filters consisting of multilayer dielectric stacks; *Young, Leo*; *T-MTT v14 n2 Feb 66* 75-80

Hilbert transforms
reflection coefficient measurement as function of distance using locating reflectometer; deconvolution to increase axial resolution; *Somlo, Peter I.*; *T-MTT v27 n2 Feb 79* 128-135 (1C10)

History
cyclotron masers; *Hirshfield, J. L.*; *T-MTT v25 n6 Jun 77* 522-527 (1E14)
microwave theory and technology; *Barrow, Wilmer L.*; *T-MTT v5 n4 Oct 57* 223-225

Holography; cf. Microwave holography

Homodyne detection
application to measurement of microwave reflection coefficients; *King, R. J.*; *T-MTT v18 n9 Sep 70* 658-660
automated microwave measurement system; phase and amplitude measurement using RF substitution method; *Schafer, George E.*; *T-MTT v21 n6 Jun 73* 432 (2C09)
modulation method for optimum detection sensitivity; binary modulation method; *Watanabe, Kenzo*; *T-MTT v23 n4 Apr 75* 354-359 (1C04)

Horn antennas
fed from circular TE_{01}-mode guide; pencil beam formation; *Wengenroth, Robert D.*; *T-MTT v26 n5 May 78* 332-334 (1A14)
monopulse tracking feed for long-range imaging radar; high-power *X*-band feed; *Goudey, Kenneth R.*; *T-MTT v26 n5 May 78* 326-332 (1A08)
shunt capacitance introduced by junction between uniform guide and one which tapers linearly in plane of *E* field; Lewin's formula; *Riblet, Henry J.*; *T-MTT v25 n8 Aug 77* 711-712 (1F13)

Horn antennas, corrugated
Gaussian-beam launcher for producing focused microwave exposure field in biological experiments; corrugated scalar horn loaded with dielectric hemisphere; *Neelakantaswamy, Perambur S.*; *T-MTT v27 n9 Sep 79* 797-799 (1C03)

Hybrid integrated circuits; cf. Microwave integrated circuits; Millimeter-wave integrated circuits; Thin-film circuits

Hybrid junctions
broadband; analysis and application to the star modulator; *Mouw, Robert B.*; *T-MTT v16 n11 Nov 68* 911-918
broadband coaxial hybrid ring; analysis; *Albanese, Victor J.*; *T-MTT v6 n4 Oct 58* 369-373
broadband hybrid junctions; *Robinson, S. J.*; *T-MTT v8 n6 Nov 60* 671-672
broadband three-port TEM-mode hybrid; use as power divider and power combiner; *Cohn, Seymour B.*; *T-MTT v16 n2 Feb 68* 110-116
circular electric mode coupler; two coaxial bifurcations in circular waveguide; *Oguchi, Bunichi*; *T-MTT v8 n6 Nov 60* 660-666
circular-waveguide multilayer sheet hybrid junction having nearly constant power division over 40–110 GHz band; *Harkless, Earl T.*; *T-MTT v27 n12 Dec 79* 975-982 (1D09)
circular waveguides; junction consisting of two *X*-band rectangular guides and *X*-band circular guide; *Jain, A. K.*; *T-MTT v21 n7 Jul 73* 482-483 (2B01)
coaxial hybrid junction using a series and a shunt junction; *Stark, Louis*; *T-MTT v9 n2 Mar 61* 124-129
coaxial magic-T; design of three different types; *Morita, T.*; *T-MTT v1 n2 Nov 53* 17-23
compact, top-wall; implementation for high performance and optimum geometry; *Hadge, Eugene*; *T-MTT v1 n1 Mar 53* 29-30
diplexer using hybrid junctions; *Ricardi, Leon J.*; *T-MTT v14 n8 Aug 66* 364-371
E-plane forked hybrid-T junction; novel arrangement; *Kahn, W. K.*; *T-MTT v3 n6 Dec 55* 52-58
equations to predict bandwidth of coaxial choke couplings; applications to rotary joints, dc isolation units; *King, Howard E.*; *T-MTT v8 n2 Mar 60* 132-135
five-port matched pseudo-magic T; *X*-, *K*-, *M*-bands operation; *Okaya, Akira*; *T-MTT v9 n3 May 61* 216-219
frequency discriminator using single hybrid tee; *Nigrin, J.*; *T-MTT v23 n9 Sep 75* 776-778
general treatment of double stub four-port hybrid directional couplers, *L*-band; *Boyd, Charles R., Jr.*; *T-MTT v10 n4 Jul 62* 287-294
H guide with dielectric slab; field distribution and characteristics; *Tischer, Frederick J.*; *T-MTT v18 n1 Jan 70* 9-15
high-IF mixer based on broadband stripline magic-T; *Tresselt, C. P.*; *T-MTT v18 n1 Jan 70* 58-60
high-power switching network for dual-mode antenna; *Albanese, Victor J.*; *T-MTT v26 n5 May 78* 348-354 (1C02)
hybrid junction–cutoff waveguide filters; realization of low-pass and bandpass characteristics; *Torgow, Eugene N.*; *T-MTT v7 n1 Jan 59* 163-167
hybrid-ring directional coupler for arbitrary power divisions; *Pon, Chuck Y.*; *T-MTT v9 n6 Nov 61* 529-535
microstrip branch-arm hybrid with 3-dB coupling at all harmonics of fundamental frequency; *Wight, J. S.*; *T-MTT v24 n2 Feb 76* 122-124 (1D14)
microstrip; impedance-matched wideband balun and magic tee; *Laughlin, Gordon J.*; *T-MTT v24 n3 Mar 76* 135-141 (1A09)
microstrip magic tee; tapered asymmetric coupler; *Arain, M. H.*; *T-MTT v23 n12 Dec 75* 1064-1067 (2C01)
millimeter-wave band-splitting filter using Michelson interferometer hybrid; *Suzuki, Nobuo*; *T-MTT v24 n5 May 76* 237-241 (1A03)
millimeter-wave directional couplers; 55 GHz branch-guide coupler; waveguide couplers; *Bottjer, Martin F.*; *T-MTT v20 n2 Feb 72* 182-184 (2E04)

n-port TEM-mode hybrids using tapered transmission lines; power dividers/summers; *Tetarenko, R. P.*; *T-MTT v19 n11 Nov 71* 887-889 (1E11)
N-way hybrid power divider; *Wilkinson, Ernest J.*; *T-MTT v8 n1 Jan 60* 116-118
N-way hybrid power dividers; *Tauh, J. J.*; *T-MTT v12 n2 Mar 64* 260-261
parallel push–pull hybrid circuits used in power combining; *Miyagi, Masahisa*; *T-MTT v10 n1 Jan 62* 34-40
planar circuit analysis; segmentation method; *Okoshi, T.*; *T-MTT v24 n10 Oct 76* 662-668 (1C06)
preselector using a hybrid circuit; improvement of frequency characteristics; *Nishimura, Sadahiko*; *T-MTT v16 n10 Oct 68* 891-893
printed circuit balun for use with spiral antennas; *Bawer, Robert*; *T-MTT v8 n3 May 60* 319-325
properties of symmetric hybrid waveguide junctions; *Levy, R.*; *T-MTT v8 n5 Sep 60* 573
re-entrant cross section and wideband 3-db hybrid couplers; *Cohn, Seymour B.*; *T-MTT v11 n4 Jul 63* 254-258
reentrant hybrid tee; experimental results of transmission characteristics; *Ishii, T. Koryu*; *T-MTT v17 n9 Sep 69* 718
reentrant hybrid tee; experimental results of transmission characteristics; *Gardiol, Fred E.*; *T-MTT v18 n9 Sep 70* 656
reentrant hybrid tee; transmission characteristics; *Clarke, John*; *T-MTT v18 n9 Sep 70* 665-666
silver bonded germanium varactor diodes used in conjunction with 3 db short-slot couplers to form a microwave switch; *Higgins, V. J.*; *T-MTT v12 n2 Mar 64* 258-259
strip line network; equivalent circuit displaying the properties of a hybrid junctions; *Pascalar, Herbert G.*; *T-MTT v5 n1 Jan 57* 23-30
stripline power splitter, UHF 20% bandwidth; *Tatsuguchi, Isamu*; *T-MTT v9 n1 Jan 61* 3-6
symmetrical 4-ports; eigenadmittance condition for 90° hybrids to be obtainable by matching alone; *Riblet, Gordon P.*; *T-MTT v26 n4 Apr 78* 275-279 (1D11)
three-port hybrid for transforming identical complex load impedance at two ports to real level at third port; *Sobol, Harold*; *T-MTT v19 n9 Sep 71* 774-776 (1D12)
three-way; *Y* to Δ transformation; *Lange, J. H., Jr.*; *T-MTT v17 n10 Oct 69* 789-790
transmission line realizations; wideband balanced line microwave hybrids consisting of lossless two-ports and reversed-phase hybrid ring; *Rehnmark, Stig*; *T-MTT v25 n10 Oct 77* 825-830 (1B07)
twisted-wire quadrature hybrids centered at 7 and 300 MHz; *Fisher, R. E.*; *T-MTT v21 n5 May 73* 355-357 (1E09)
two hybrids forming broadband a directional coupler of arbitrary power division; *Marcatili, Enrique A. J.*; *T-MTT v10 n4 Jul 62* 251-257
ultra-broadband hybrid tee composed of two broadband line transformers and lumped branching point; more than three decades bandwidth; *Barabas, Udo*; *T-MTT v27 n1 Jan 79* 58-64 (1E04)
waveguide hybrid junction transversed by dielectric sheet; scattering matrix calculation using reduced-rank spectral expansion technique; *Zuckerman, Douglas N.*; *T-MTT v25 n9 Sep 77* 768-773 (1D10)
waveguide hybrid tee junctions; design techniques; *Loth, Patricia A.*; *T-MTT v4 n4 Oct 56* 268-271
wideband stripline hybrid ring; *March, Steven*; *T-MTT v16 n6 Jun 68* 361

Hydrogen cyanide lasers
CW 337-μm lasers; gain saturation, emission line shape, and power; *Belland, P.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
plasma effects in pulsed HCN laser; *Turner, R.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
plasma modulation; effects of transient plasma separated from processes of HCN molecule formation and population inversion; *Tait, G. D.*; *T-MTT v22 n12 Dec 74* 1109-1111 (2C06)
transversely excited 337-μm laser with 1-kW output power; *Adam, B.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)

Hysteresis
varactor frequency multipliers; nonlinear behavior and hysteresis phenomena; *Bava, Elio*; *T-MTT v27 n2 Feb 79* 141-147 (1D09)

I

IEEE
new activities; keynote address by IEEE President at International Microwave Symposium: *Guarrera, John J.*; *T-MTT v22 n12 Dec 74* 1131-1133 (3A13)

IEEE Microwave Theory and Techniques Group
1962 Microwave Prize to Leonard Lewin; *T-MTT v12 n1 Jan 64* 2-3
1963 Microwave Prize to Dr. Leo Young; *T-MTT v13 n1 Jan 65* 2
1963 PTGMTT National Symposium; *T-MTT v12 n1 Jan 64* 4-5
1964 G-MTT International Symposium, New York; *T-MTT v13 n1 Jan 65* 3-4
1965 G-MTT Symposium; *T-MTT v13 n6 Nov 65* 729-731
1965 Microwave Prize to Hendrik Bosma; *T-MTT v14 n12 Dec 66* 586-587
1966 Microwave Prize to A. A. Oliner; *T-MTT v15 n12 Dec 67* 658-660
1967 Microwave Prize to R. J. Wenzel; *T-MTT v16 n12 Dec 68* 986
1970 National Lectureship; summary; *Sobol, Harold*; *T-MTT v18 n12 Dec 70* 1020-1021
1970 International Microwave Symposium; technical program, digest, social functions and ladies program; *Sensiper, S., Chmn.*; *T-MTT v18 n12 Dec 70* 1018-1020
1971 National Lectureship; summary; *Blake, Carl*; *T-MTT v19 n12 Dec 71* 898-899 (1B06)
1972 National Lectureship; *Saad, Theodore*; *T-MTT v20 n12 Dec 72* 797-798 (1B08)
appointment of new editor for *Transactions*; *Haddad, George I.*; *T-MTT v20 n1 Jan 72* 1 (1B01)
editorial appointment; *Okwit, S.*; *T-MTT v16 n12 Dec 68* 985
editorial policies; *Rosenbaum, Fred J., Ed.*; *T-MTT v20 n3 Mar 72* 201 (1B03)
message from outgoing editor; *Beatty, Robert W., Ed.*; *T-MTT v14 n4 Apr 66* 170
message from editor; *Beatty, Robert W.*; *T-mTT v12 n6 Nov 64* 582-583
note on ADI Auxiliary Publications Program; *Zimmerer, Robert W.*; *T-MTT v13 n6 Nov 65* 883-884
thoughts on 1965 G-MTT symposium; *King, D. D.*; *T-MTT v13 n6 Nov 65* 732-733

IEEE Microwave Theory and Techniques Group; cf. IRE Microwave Theory and Techniques Group

IEEE Microwave Theory and Techniques Society
1973 International Microwave Symposium; report on activities; *Wait, David F.*; *T-MTT v21 n12 Dec 73* 747-751 (1B04)
1973 National Lecture on solid-state reliability; *Allen, John L.*; *T-MTT v21 n12 Dec 73* 752 (1B09)
1974 National Lecture on low-noise reception and technology; *Okwit, Seymour*; *T-MTT v22 n12 Dec 74* 1130 (3A12)
appointment of new *Transactions* editor; *Rosenbaum, Fred J.*; *T-MTT v23 n3 Mar 75* 269 (1A03)
award presentations for 1973; *Horton, John B. T-MTT awards for 1973*; *T-MTT v22 n12 Dec 74* 1128-1130 (3A10)
awards for 1975; H. J. Riblet—Microwave Career Award; T. E. Rozzi and W. F. G. Mecklenbräuker—Microwave Prize; J. F. White—Microwave Application Award; R. W. Beatty—National Lecturer Plaque; *Horton, J. B.*; *T-MTT v24 n12 Dec 76* 910-912 (1A12)
awards for 1976; *Rodrigue, G. P.*; *T-MTT v25 n12 Dec 77* 970-972 (1A08)
awards for 1977; *Rodrigue, G. P.*; *T-MTT v26 n12 Dec 78* 932-934 (1A10)
awards for 1978; *Rodrigue, G. P.*; *T-MTT v27 n12 Dec 79* 936-937 (1A12)
awards presentations for 1974; *Horton, John B.*; *T-MTT v23 n12 Dec 75* 947-951 (1A09)
changes in *Transactions* during previous three years; *Parker, Don*; *T-MTT v26 n1 Jan 78* 1 (1A03)
comments of new *Transactions* editor; *Parker, Don*; *T-MTT v23 n3 Mar 75* 270 (1A04)
directions for the 1970s; keynote address at 1973 International Microwave Symposium; *Horton, J. B.*; *T-MTT v21 n12 Dec 73* 746 (1B03)
editorial policy; *Allen, James Lamar, Ed.*; *T-MTT v26 n1 Jan 78* 2 (1A04)
editorial policy; *Parker, D., Ed.*; *T-MTT v25 n5 May 77* 451 (1B01)
evaluation of *Transactions*; *Hines, M. E.*; *T-MTT v25 n3 Mar 77* 233-235 (1E11)
International Microwave Symposium, Dallas, TX, 1969; *Horton, J. B., Chmn.*; *T-MTT v17 n12 Dec 69* 1054-1059
National Lectureship for 1975; *Beatty, Robert W.*; *T-MTT v23 n12 Dec 75* 952 (1A14)
National Lectureship for 1976; *Sterzer, Fred*; *T-MTT v24 n12 Dec 76* 913 (1B01)
President's message; *Rivers, Robert A.*; *T-MTT v22 n12 Dec 74* 1123 (3A05)
President's message; 25th anniversary of society; *Rodrigue, G. P.*; *T-MTT v24 n12 Dec 76* 902-904 (1A04)

IGFETs; cf. MOSFETs

Image conversion; cf. Millimeter-wave image conversion

Image processing; cf. Digital image processing

Imaging
gas lenses; imaging property; *Aoki, Yoshinao*; *T-MTT v15 n1 Jan 67* 2-8

Imaging; cf. Biomedical imaging; Radar imaging; Radiometry; Synthetic-aperture imaging

Immittance inverters
realization technique; application to coaxial bandpass filter design; *Davis, W. Alan*; *T-MTT v19 n4 Apr 71* 373-380 (1D05)

IMPATT diode amplifiers
amplitude instability; hysteresis effects caused by amplitude-dependent susceptance; *Hansson, Bertil*; *T-MTT v21 n11 Nov 73* 739-741 (2D09)
broadband, multistage transmission amplifiers; analytical design and experimental performance; *Bowers, Harold C.*; *T-MTT v18 n11 Nov 70* 943-951
broadbanding using active reactance compensation; *Bains, Amarjit S.*; *T-MTT v27 n1 Jan 79* 17-23 (1B05)
characterization using diode biased below breakdown; *Kenyon, N. D.*; *T-MTT v23 n5 May 75* 454-455 (1D14)
CW operation up to 20 GHz; recent developments; *Gewartowski, James W.*; *T-MTT v27 n5 May 79* 434-442 (1F02)
FM power amplifiers; two-stage amplifier with 4-W output at 6 GHz; *Willing, Harry A.*; *T-MTT v21 n11 Nov 73* 707-716 (2B01)
gain-bandwidth optimization; theoretical and experimental results; *Ku, Walter H.*; *T-MTT v18 n11 Nov 70* 932-942
high-power *C*-band reflection amplifiers using multiple diodes and microstrip power combiners; *Lee, Robert E.*; *T-MTT v24 n5 May 76* 249-253 (1B01)
intermodulation products generated when two equal-amplitude signals are applied to input of *X*-band amplifier; *Trew, Robert J.*; *T-MTT v20 n12 Dec 72* 805-812 (1C04)
measurement of internal circuit loss, load conductance, and equivalent circuit susceptances using diode biased below breakdown; *Tozer, R. C.*; *T-MTT v22 n8 Aug 74* 806-808 (1D10)
millimeter-wave amplifiers for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
millimeter-wave amplifiers; nonlinear and large-signal characteristics; 60-GHz amplifier for PM signal amplification; *Kuno, H. J.*; *T-MTT v21 n11 Nov 73* 703-706 (1F01)
millimeter-wave; nonlinear characteristics and intermodulation distortion; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 744-751 (1E08)
millimeter-wave oscillators and amplifiers in reduced-height guide; *V*-band circuit characterization; *Fong, T. T.*; *T-MTT v24 n11 Nov 76* 752-758 (1F02)
millimeter-wave power amplifier/combiner; 1-W output at 60 GHz with 6-GHz bandwidth; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 758-767 (1F08)
millimeter-wave power amplifiers; device characterization and circuit design procedure; *K*-band amplifier with 250-mW output, 7-dB gain, 5-GHz bandwidth; *Peterson, Dean F.*; *T-MTT v21 n11 Nov 73* 681-689 (1D03)
mode locking at *X*-band using IMPATT diode as gain element and Schottky-barrier diode as saturable absorber; *Glasser, Lance A.*; *T-MTT v26 n2 Feb 78* 62-69 (1B02)
noise characteristics; experimental and theoretical investigations; *Schiek, Burkhard*; *T-MTT v20 n7 Sep 72* 631-632 (2C06)
nonlinear characteristics, large-signal effects, and transient response; PM and AM signal amplification; *Kuno, H. J.*; *T-MTT v21 n11 Nov 73* 694-702 (1E04)
nonlinear power amplifiers using IMPATT diodes in stable and injection-locked modes; *Takayama, Yoichiro*; *T-MTT v20 n4 Apr 72* 266-272 (1C12)
package parasitics; effect on amplifier behavior; *Monroe, John W.*; *T-MTT v21 n11 Nov 73* 731-735 (2D01)
paralleling of two packaged diodes; 8-W power output at 4 GHz; *Knerr, Reinhard H.*; *T-MTT v22 n5 May 74* 569-572 (2B14)
parametric instability elimination; *Gonda, Joseph*; *T-MTT v25 n5 May 77* 343-352 (1A03)

power amplifier using GaAs FETs and IMPATT diodes; 15-GHz, 4-W, 15-dB gain microstrip amplifier; *Sokolov, Vladimir*; *T-MTT v27 n12 Dec 79* 1058-1065 (2C09)
power amplifiers for *J*-band; 5-W output, 10-dB gain, 17 percent efficiency; *Nishitani, Kazuo*; *T-MTT v25 n12 Dec 77* 973-977 (1A11)
QPSK signal amplification at 11 GHz; reflection amplifier and hybrid amplifier with 1-W output and 30-dB gain; *Paik, S. F.*; *T-MTT v21 n11 Nov 73* 716-720 (2B10)
subharmonic oscillations in periodically driven circuits; threshold conditions; *Peterson, Dean F.*; *T-MTT v22 n8 Aug 74* 784-790 (1C02)
up-conversion characteristics determination; *Gupta, Ramesh K.*; *T-MTT v26 n1 Jan 78* 28-30 (1C02)
IMPATT diode oscillators
60-W CW oscillator for *C*-band; combines outputs from six GaAs multimesa Read diodes; *Wallace, R. N.*; *T-MTT v24 n7 Jul 76* 483-485 (2B14)
anomalous-mode oscillation in silicon avalanche diodes: computer simulation; *Matsumura, Masakiyo*; *T-MTT v18 n11 Nov 70* 975-977
cavity-stabilized oscillator followed by one-stage high-power reflection-type IMPATT amplifier; *K*-band oscillator; *Ito, Yukio*; *T-MTT v20 n12 Dec 72* 799-805 (1B10)
characterization using diode biased below breakdown; *Kenyon, N. D.*; *T-MTT v23 n5 May 75* 454-455 (1D14)
CW operation up to 20 GHz; recent developments; *Gewartowski, James W.*; *T-MTT v27 n5 May 79* 434-442 (1F02)
electronically tuned by circuit using an abrupt junction varactor; *Grace, M. I.*; *T-MTT v18 n1 Jan 70* 44-45
measurement of internal circuit loss, load conductance, and equivalent circuit susceptances using diode biased below breakdown; *Tozer, R. C.*; *T-MTT v22 n8 Aug 74* 806-808 (1D10)
microstrip varactor-tuned IMPATT oscillator for 60-GHz FSK transmitter; *Glance, B. S.*; *T-MTT v24 n3 Mar 76* 156-157 (1C02)
multiple-device oscillator using single cavity; stable operation free from moding problems; *Kurokawa, Kaneyuki*; *T-MTT v19 n10 Oct 71* 793-801 (1B03)
noise characteristics; experimental and theoretical investigations; *Schiek, Burkhard*; *T-MTT v20 n7 Sep 72* 631-632 (2C06)
nonlinear behavior under free-running and bias-modulated conditions; *Chao, Chente*; *T-MTT v21 n10 Oct 73* 619-630 (1C09)
parametric instability elimination; *Gonda, Joseph*; *T-MTT v25 n5 May 77* 343-352 (1A03)
subharmonic oscillations in periodically driven circuits; threshold conditions; *Peterson, Dean F.*; *T-MTT v22 n8 Aug 74* 784-790 (1C02)
subharmonically injection phase-locked; measured FM noise spectra; *Perichon, Robert*; *T-MTT v18 n11 Nov 70* 988-989
synchronized; used for power amplification of FM and PM signals; *Isobe, Toyosaku*; *T-MTT v18 n11 Nov 70* 906-911
tuned-harmonic mode; examination under restriction of a maximum limit to the peak-to-peak voltage swing; *Brackett, C. A.*; *T-MTT v18 n11 Nov 70* 992-993
X-band, having a stabilized output power of over 0.5 watt; *Nagano, Shigemichi*; *T-MTT v18 n11 Nov 70* 885-890
YIG-tuned oscillators; lumped model; *Moore, I. J. H. S.*; *T-MTT v21 n6 Jun 73* 422-425 (2B11)
IMPATT diode oscillators, millimeter-wave
200-GHz, 50-mW CW oscillation with Si SDR diode; *Ishibashi, T.*; *T-MTT v24 n11 Nov 76* 858-859 (3A06)
30–250 CW Si diodes and oscillators; present status; *Midford, Thomas A.*; *T-MTT v27 n5 May 79* 483-492 (2B10)
cavity stabilization and electronic tuning by parametric interaction; *Okamoto, Hiroshi*; *T-MTT v26 n6 Jun 78* 420-424 (1C14)
high-power pulsed sources; present status; *Fong, T. T.*; *T-MTT v27 n5 May 79* 492-499 (2C05)
high-stability low-noise oscillator at 75 GHz using injection locking and AFC with crystal oscillator as reference; *Okamoto, Hiroshi*; *T-MTT v26 n2 Feb 78* 136 (1G06)
highly stable low-noise 75-GHz oscillator using parametric injection locking and AFC; *Okamoto, Hiroshi*; *T-MTT v26 n8 Aug 78* 627-628 (2B01)
millimeter-wave diodes mounted in low-impedance waveguide mounts tuned b varying dc bias current; *Akaike, M.*; *T-MTT v24 n3 Mar 76* 147-151 (1B07)
millimeter-wave; high-power 50-GHz double-drift-region oscillators with improved bias circuits for eliminating low-frequency instabilities; *Hirachi, Yasutake*; *T-MTT v24 n11 Nov 76* 731-737 (1D09)
millimeter-wave oscillators and amplifiers in reduced-height guide; *V*-band circuit characterization; *Fong, T. T.*; *T-MTT v2 n11 Nov 76* 752-758 (1F02)
millimeter-wave oscillators for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
millimeter-wave oscillators; reaction-cavity controlled oscillator havin good stability at 80 GHz; *Nagano, S.*; *T-MTT v21 n7 Jul 73* 491-492 (2B10)
millimeter-wave sources for 130–170 GHz range; *Weller, Kenneth P.*; *T-MTT v24 n11 Nov 76* 738-743 (1E02)
millimeter-wave transceiver for civilian use; 60-GHz compact, low-cost transceiver; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)
pretuned modules; *Cachier, Gérard*; *T-MTT v27 n5 May 79* 505-510 (2D04)
subharmonic injection locking to weak parasitic oscillating signal; *Hayashi, Risao*; *T-MTT v27 n5 May 79* 500-504 (2C13)
varactor-tuned oscillator with tuning bandwidth of 27% potential range in excess of 40%; *Claxton, Dale H.*; *T-MTT v23 n6 Jun 75* 501-50 (1D01)
Y-band (170–260 GHz) tunable CW oscillators; *Chao, Chente*; *T-MTT v25 n12 Dec 77* 985-991 (1B09)
IMPATT diodes
active; determination of junction parameters from basic microwave measurements by use of a computer program; *Gewartowski, James W.*; *T-MTT v18 n3 Mar 70* 157-161
avalanche transit-time devices; large-signal equivalent circuits; *Greiling, Paul T.*; *T-MTT v18 n11 Nov 70* 842-853
basic principles and properties; *Haddad, George I.*; *T-MTT v18 n11 Nov 70* 752-772
computer-aided small-signal characterization; *Dunn, Charles N.*; *T-MTT v17 n9 Sep 69* 691-695
Doppler detectors for Doppler frequencies 1–1000 Hz; *Iijima, Y.*; *T-MTT v26 n2 Feb 78* 132-133 (1G02)
equivalent circuits; frequency-independent small-signal and noise equivalent circuit; *Gupta, Madhu-Sudan*; *T-MTT v21 n9 Sep 73* 591-594 (1C09)
four-mesa Si p+-n-n+ diodes; electrical symmetry considerations; *Rucker, C. T.*; *T-MTT v25 n1 Jan 77* 75-76 (1F07)
frequency-independent small-signal and noise equivalent circuit; *Gupta, Madhu-Sudan*; *T-MTT v21 n9 Sep 73* 591-594 (1C09)
high-frequency; consequences of 'skin effect'; *DeLoach, B. C., Jr.*; *T-MTT v18 n1 Jan 70* 72-74
high peak pulse power Si double-drift diodes operated at medium pulse repetition frequency; *Pfund, George*; *T-MTT v27 n5 May 79* 450-451 (1G04)
measurement of large-signal electronic admittance as function of frequency and RF voltage level using network analyzer and computer-aided data reduction; *Syrett, Barry A.*; *T-MTT v27 n10 Oct 79* 830-834 (1A08)
microwave filters having a high *Q*; *Dawson, R. W.*; *T-MTT v15 n4 Apr 67* 272-273
millimeter-wave diodes; construction, performance, and application; *Kramer, N. B.*; *T-MTT v24 n11 Nov 76* 685-693 (1A05)
neutron radiation effect to increase efficiency; *Chaffin, Roger J.*; *T-MTT v17 n2 Feb 69* 119-120
noise measure for gallium arsenide diodes; lower limits; *Haus, Hermann A.*; *T-MTT v19 n10 Oct 71* 801-813 (1B11)
power combining; multichip configurations; *Rucker, Charles T.*; *T-MTT v27 n12 Dec 79* 951-957 (1B13)
pulsed operation of Si double-drift diodes in 8.5–18 GHz region; *Pfund, George*; *T-MTT v22 n12 Dec 74* 1134-1140 (2B02)
Si; admittance measurement at *X*-band; *Isobe, Toyosaku*; *T-MTT v18 n11 Nov 70* 993-995
small-signal lumped models; use of state–space analysis; *Stewart, J. A. Carson*; *T-MTT v18 n11 Nov 70* 835-842
spurious parametric oscillations; effect of depletion-layer modulation; *Tang, D.*; *T-MTT v25 n9 Sep 77* 734-741 (1B04)
temperature effect on admittance of GaAs and Si diodes; *Takayama, Yoichiro*; *T-MTT v23 n8 Aug 75* 673-680 (1F01)
traveling-wave mode in distributed structure; *Franz, Michael*; *T-MTT v26 n11 Nov 78* 861-865 (1B05)
IMPATT diodes, millimeter-wave
30–250 CW Si diodes and oscillators; present status; *Midford, Thomas A.*; *T-MTT v27 n5 May 79* 483-492 (2B10)
high-frequency limitations of IMPATT, MITATT, and TUNNETT mode devices; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)
testing; use of oscillator circuit with cap structures; *Misawa, T.*; *T-MTT v18 n11 Nov 70* 969-970
IMPATT diodes, submillimeter-wave
high-frequency limitations of IMPATT, MITATT, and TUNNETT mode devices; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)
Impedance matching
5-port lossless reciprocal waveguide junctions; restrictions imposed by losslessness and reciprocity; *Hieber, A. L.*; *T-MTT v21 n8 Aug 73* 547-552 (2B05)
active; for microwave acoustic delay lines; *Ho, R. Y. C.*; *T-MTT v17 n11 Nov 69* 1041-1042
analogy between Weissfloch transformer and the ideal attenuator (reflection coefficient transformer) and extension to include the general lossy two-port; *Stock, D. J. R.*; *T-MTT v7 n4 Oct 59* 473-474
analysis of an inhomogeneous quarter-wave transformer of two sections; *Young, Leo*; *T-MTT v8 n6 Nov 60* 645-649
asymmetrical branch-guide directional coupler-impedance transformers; synthesis; *Lind, Larry F.*; *T-MTT v17 n1 Jan 69* 45-48
balun and magic tee suitable for microstrip; *Laughlin, Gordon J.*; *T-MTT v24 n3 Mar 76* 135-141 (1A09)
broadband Chebyshev-type stepped waveguide transformers from rectangular to double-ridged waveguide; design; *Hensperger, Edward S.*; *T-MTT v6 n3 Jul 58* 311-314
broadband coupling between resistive source and high-*Q* resonant load; *Reeder, Thomas M.*; *T-MTT v20 n7 Jul 72* 453-458 (1D07)
broadband coupling of series resonant *RLC* load to resistive source using quarter-wave transmission-line inverter; *Borgaonkar, S. R.*; *T-MTT v27 n7 Jul 79* 688-690 (1E06)
broadband impedance matching between two dielectric-filled waveguides; *X*-band; *Goodwin, Frank E.*; *T-MTT v11 n1 Jan 63* 36-39
broadband matching of a parametric amplifier by using R. M. Fano's method; *Porra, V.*; *T-MTT v16 n10 Oct 68* 880-882
broadband matching of resonant circuits and circulators; *Schwartz, Eduard*; *T-MTT v16 n3 Mar 68* 158-165
broadband matching of resonant circuits and circulators. *Schwartz, E., Correction*; *T-MTT v16 n10 Oct 68* 894
broadband multisection stepped rectangular waveguide impedance transformers; computer-aided optimization; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 563-571
broadbanding the match into bandpass structures; *Hensel, Marion L.*; *T-MTT v12 n3 May 64* 309-315
characteristic impedance of waveguides; analysis; *Young, Leo*; *T-MTT v16 n11 Nov 68* 975-976
characterization of variable reactance short circuits; *Ishii, Koryu*; *T-MTT v9 n1 Jan 61* 96-97
Chebyshev impedance transformers consisting of short sections of transmission line; *Matthaei, George L.*; *T-MTT v14 n8 Aug 66* 372-383
circulators and hybrids, symmetrical 4-ports; eigenadmittance condition for perfect circulation or 90° hybrids to be obtainable by matching alone; *Riblet, Gordon P.*; *T-MTT v26 n4 Apr 78* 275-279 (1D11)
circulators; quarter-wave coupled circulators with Chebyshev characteristics; *Helszajn, Joseph*; *T-MTT v20 n11 Nov 72* 764-769 (1F04)
comments on impedance matching using charts; *Leibowitz, Michael R.*; *T-MTT v9 n1 Jan 61* 101
conditions for maximum power transfer; *Castagnetto, L.*; *T-MTT v11 n2 Mar 63* 153-154
conditions for maximum power transfer; *Mathis, H. F.*; *T-MTT v11 n5 Sep 63* 453
conditions for maximum power transfer; *Shulman, Carl*; *T-MTT v9 n5 Sep 61* 453-454
design of an optimum quarter-wave transformer; *Young, Leo*; *T-MTT v8 n5 Sep 60* 478-482
design of mode transducers; *Solymar, L.*; *T-MTT v8 n1 Jan 60* 61-65
dielectric-filled transmission line; use of negative capacitor; *Kelly, Alexander J.*; *T-MTT v15 n10 Oct 67* 583-584
dielectric-filled transmission line; use of negative capacitor. *Kelly, A. J., Addendum*; *T-MTT v16 n6 Jun 68* 374

Impedance matching, *cont.*
direct- and quarter-wave-coupled microwave bandpass filters with adjustable transmission characteristics; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 73-77
dissipationless attenuators in mismatched systems; physical error limits due to mismatch; *Youla, Dante C.*; *T-MTT v12 n3 May 64* 289-299
distortion of a quarter-wave transformer to obtain a direct-coupled cavity filter; *Young, Leo*; *T-MTT v8 n5 Sep 60* 483-489
double layer matching structures for millimeter waves; *Kott, Michael A.*; *T-MTT v10 n5 Sep 62* 401
double section matching transformers; *French, G. N.*; *T-MTT v17 n9 Sep 69* 719
empirical design method for ridge waveguide transducers; *Thompson, G. H. B.*; *T-MTT v9 n3 May 61* 263-266
exact design of TEM microwave networks using quarter-wave line; *Wenzel, Robert J.*; *T-MTT v12 n1 Jan 64* 94-111
exact design of TEM microwave networks using quarter-wave line. *Wenzel, R. J., Correction*; *T-MTT v18 n11 Nov 70* 1005-1006
exact synthesis and design of microwave filters consisting of quarter-wave lines, quarter-wave stubs and coupled wave lines; *Horton, M. C.*; *T-MTT v13 n3 May 65* 316-327
exponential transmission lines used as resonators and transformers; *Ghose, Rabindra N.*; *T-MTT v5 n3 Jul 57* 213-217
extension of Chebyshev's procedure to functions with double-value singularities; application to familiar transmission line problems; *Riblet, Henry J.*; *T-MTT v12 n4 Jul 64* 415-421
graphical method for transforming impedances and reflectances through a lossy twoport; *Hinckelmann, Otto F.*; *T-MTT v10 n2 Mar 62* 139-141
high-resolution swept-frequency reflectometer, capable of measuring reflection coefficients of 0.001, suitable for precise impedance matching; *Hollway, D. L.*; *T-MTT v17 n4 Apr 69* 185-188
impedance and polarization-ratio transformations by graphical method using isometric circles; *Bolinder, E. Folke*; *T-MTT v4 n3 Jul 56* 176-180
impedance of the diode cartridge; *Garver, Robert V.*; *T-MTT v8 n1 Jan 60* 104-107
impedance-transforming networks of low-pass-filter form; *Cristal, E. G.*; *T-MTT v13 n5 Sep 65* 693-695
inhomogeneous quarter-wave transformers; computer-aided design; *Iveland, T. D.*; *T-MTT v17 n2 Feb 69* 120-121
low VSWR matching technique; useful for the design of microwave components; *Goldstone, Lenrod*; *T-MTT v5 n2 Apr 57* 163
low VSWR matching technique; useful for the design of microwave components; *Rizzi, Peter A.*; *T-MTT v4 n3 Jul 56* 184-186
matched generator; determination of available power from the measured load power in the presence of small dissipation and mismatch of the connecting network. *Sweet, L., Correction*; *T-MTT v5 n4 Oct 57* 265
matched generator; determination of available power from the measured load power in the presence of small dissipation and mismatch of the connecting network; *Sweet, Leonard*; *T-MTT v5 n2 Apr 57* 167-168
matching methods for microstrip loads and attenuators; *Thompson, G. H. B.*; *T-MTT v9 n3 May 61* 263
matching of reflection coefficients in 3 port networks to approximate an *N*-port circulator by means of reactive elements; *Humphreys, B. L.*; *T-MTT v10 n6 Nov 62* 551-554
matching of reflection coefficients in three-port networks to approximate an *N*-port circulator by means of reactive elements; *Humphreys, B. L.*; *T-MTT v11 n4 Jul 63* 263
microstrip differential phase shifters; stepped impedance design; *Schiek, Burkhard*; *T-MTT v25 n8 Aug 77* 666-671 (1C10)
microwave amplifier interstage matching networks; computer-aided design; *Mellor, Douglas J.*; *T-MTT v23 n12 Dec 75* 1013-1020 (1F05)
microwave circuits; design when exact value of input impedance is not *a priori* known; *Steinbrecher, Donald H.*; *T-MTT v15 n6 Jun 67* 382
microwave Class C broadband amplifiers; matching structure design; *Pitzalis, Octavius, Jr.*; *T-MTT v21 n11 Nov 73* 660-668 (1B06)
microwave device modeling using negative image equivalent source and load networks; applicating to GaAs FET amplifier design; *Medley, Max W., Jr.*; *T-MTT v27 n9 Sep 79* 784-788 (1B04)
microwave FET amplifiers; broadband equalization method bypasses analytic gain-bandwidth theory; *Carlin, Herbert J.*; *T-MTT v27 n2 Feb 79* 93-99 (1A03)
microwave oscillators stabilized by transmission cavity; *Schünemann, Klaus*; *T-MTT v26 n3 Mar 78* 147-155 (1A13)
microwave phase equalizer using directly connected TEM mode transmission lines; *Ross, Gerald F.*; *T-MTT v15 n11 Nov 67* 647-650
microwave power GaAs MESFETs; broadband internal matching; *Honjo, Kazuhiko*; *T-MTT v27 n1 Jan 79* 3-8 (1A05)
millimeter-wave cavity coupling by a quarter wave transformer; *Strain, R. J.*; *T-MTT v10 n6 Nov 62* 612-614
multiplicity of solutions in coaxial coupler synthesis; *Seidel, H.*; *T-MTT v13 n3 May 65* 275-283
multiplicity of solutions in transmission line synthesis; *Seidel, H.*; *T-MTT v13 n4 Jul 65* 398-407
nonuniform coaxial line with an isoparametric sheath deformation used for impedance matching; *Seshagiri, N.*; *T-MTT v11 n6 Nov 63* 478-480
phase shifters, hybrid-coupled; transmission-line matching networks. *Starski, J. Piotr, Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
power bipolar transistor amplifiers capable of 2.5-W peak output at 2.25 GHz with 400-MHz bandwidth; *Emery, F. E.*; *T-MTT v14 n12 Dec 66* 696-698
propagation in gradual transducer; design of mode transducers; *Churchill, D. B.*; *T-MTT v12 n5 Sep 64* 547-548
quarter-wave impedance transformers; general synthesis of RF configuration; *Young, Leo*; *T-MTT v7 n4 Oct 59* 477-478
quarter-wave impedance transformers; general synthesis of RF configuration; *Ozaki, Hiroshi*; *T-MTT v6 n3 Jul 58* 331-332
quarter-wave impedance transformers; general synthesis of RF configuration; *Riblet, Henry J.*; *T-MTT v5 n1 Jan 57* 36-43
quarter-wave impedance transformers; general synthesis of RF configuration; *Riblet, Henry J.*; *T-MTT v7 n2 Apr 59* 297-298
quarter-wave transformers, cascaded homogeneous; design by computer-generated tables; *Young, Leo*; *T-MTT v7 n2 Apr 59* 233-237
quarter-wave transformers, cascaded homogeneous; design by computer-generated tables. *Young, L., Correction*; *T-MTT v8 n2 Mar 60* 243
quarter wave transformers; design formulas and tables for homogeneous, synchronous transformers and filters only; *Young, Leo*; *T-MTT v10 n5 Sep 62* 339-359
quarter-wavelength impedance transformers having equal-ripple performance; *Riblet, Henry J.*; *T-MTT v13 n5 Sep 65* 622-629
stepped-dielectric transformer, rectangular-to-circular waveguide; *Maher, B.*; *T-MTT v9 n6 Nov 61* 572-573
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z*; *Gledhill, Cyril S.*; *T-MTT v17 n7 Jul 69* 379-386
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z*; *Levy, R.*; *T-MTT v18 n9 Sep 70* 648
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z.Gledhill, C. S., Correction*; *T-MTT v17 n11 Nov 69* 1046
stepped transmission line transformers; matching using a standard Smith chart; *French, G. N.*; *T-MTT v16 n10 Oct 68* 885-886
stepped transmission-line transformers; optimum design; *Cohn, Seymour B.*; *T-MTT v3 n3 Apr 55* 16-21
stepped transmission-line transformers; optimum design; *Solymar, L.*; *T-MTT v6 n4 Oct 58* 374-378
synthetic transmission line transformers; *Mathis, H. F.*; *T-MTT v10 n4 Jul 62* 296-298
tapered matching section without impedance steps at ends; near-optimum matching; *Hecken, Rudolph P.*; *T-MTT v20 n11 Nov 72* 734-739 (1C10)
tapered transmission lines; computation of Hecken impedance function; *Cloete, J. H.*; *T-MTT v25 n5 May 77* 440 (2A04)
tapered transmission lines; design equations for large transformation ratios; *Kajfez, Darko*; *T-MTT v21 n5 May 73* 364 (1F06)
theorem on an optimum stepped impedance transformers; *Riblet, Henry J.*; *T-MTT v8 n2 Mar 60* 169-170
transformations by the isometric circle method; *Bolinder, E. Folke*; *T-MTT v6 n1 Jan 58* 111-112
transforming impedances through lossless networks; *Mathis, H. F.*; *T-MTT v11 n3 May 63* 213-214
transmission line matching when characteristic impedance is unknown; use of Smith chart; *Somlo, P. I.*; *T-MTT v23 n8 Aug 75* 715 (1B05)
transmission-line network optimally matched to conductance shunted by stub; *Riblet, H. J.*; *T-MTT v24 n1 Jan 76* 65-66 (1E11)
transmission line or waveguide; symmetric matching for a symmetric lossless discontinuity; *Mathis, H. F.*; *T-MTT v4 n2 Apr 56* 132
transmission-line transformation between arbitrary impedances using single matching section; *Milligan, T. A.*; *T-MTT v24 n3 Mar 76* 159 (1C05)
transmission-line transformation between arbitrary impedances using single matching section; *Potok, M. H. N.*; *T-MTT v25 n1 Jan 77* 77 (1F09)
transmission line transformation between complex impedances using single matching section; *Day, P. I.*; *T-MTT v23 n9 Sep 75* 772-773 (1D12)
transmission-line transformers; design by graphical method; *Hamid, M. A.*; *T-MTT v15 n9 Sep 67* 528-529
transmission lines; range of terminating impedance; *Balabanian, Norman*; *T-MTT v3 n4 Jul 55* 53
transmission lines; transformation of complex load impedances into resistive load impedance using Smith chart, when characteristic impedance is unknown; *Arnold, R. M.*; *T-MTT v22 n11 Nov 74* 977-978 (1E11)
two-port with mismatched source and load and/or arbitrary reference planes; bounds on reflection coefficient amplitude; *Tromp, H.*; *T-MTT v26 n12 Dec 78* 973-978 (1D09)
use of sampling theorem in synthesis of transmission-line tapers and antenna patterns; *Collin, R. E.*; *T-MTT v10 n5 Sep 62* 393-394
variable characteristic impedance coaxial line; *Cruz, J. E.*; *T-MTT v13 n4 Jul 65* 477-478
waveguide-to-coaxial transducers; optimum bandwidth; *Friedman, David S.*; *T-MTT v5 n1 Jan 57* 75
wide band matching of lossless waveguide two-ports; *Kajfež, Darko*; *T-MTT v10 n3 May 62* 174-178
wide-band rectangular-to-circular waveguide mode and impedance transformer; *Stuchly, Stanislaw*; *T-MTT v13 n3 May 65* 379-380

Impedance-matching networks
impedance-transforming directional couplers; even-odd mode analysis of mismatched couplers; *Ekinge, Roland B.*; *T-MTT v19 n4 Apr 71* 415-416 (2C11)
ring-loaded corrugated waveguide for broadband matching; *Takeichi, Yoshihiro*; *T-MTT v19 n12 Dec 71* 947-950 (1F07)
stepped-impedance transformers; exact synthesis procedure; *Chang, Feng-Cheng*; *T-MTT v20 n9 Sep 72* 620-621 (2B07)
tables of normalized lumped lossless networks which approximate prescribed attenuation versus frequency characteristics; *Pitzalis, Octavius, Jr.*; *T-MTT v19 n4 Apr 71* 381-386 (1E01)
tapered transmission-line transformer for *n*-port TEM-mode hybrids; *Tetarenko, R. P.*; *T-MTT v19 n11 Nov 71* 887-889 (1E11)
three-port hybrid for transforming identical complex load impedances at two ports to real level at third port; *Sobol, Harold*; *T-MTT v19 n9 Sep 71* 774-776 (1D12)
tuning circuit for source or load matching in waveguide and transmission line systems; *Beatty, Robert W.*; *T-MTT v19 n3 Mar 71* 337-338 (2C12)

Impedance measurement
analysis of a multimode transmission line; *Dave, Himanshu B.*; *T-MTT v10 n4 Jul 62* 274-278
at frequencies above 300 MHz; *Somlo, Peter I.*; *T-MTT v11 n1 Jan 63* 87-88
characteristic impedance of dielectric sheet supported strip transmission lines at *L*-band; *Cooper, H. Warren*; *T-MTT v3 n2 Mar 55* 87-92
characteristic impedance of rectangular coaxial transmission lines; *Cruzan, O. R.*; *T-MTT v12 n5 Sep 64* 488-495
characteristic impedance of square coaxial line; *Conning, S. W.*; *T-MTT v12 n4 Jul 64* 468
characteristic impedances of rectangular transmission lines; review of past work and comparison to precise calculations; *Garver, Robert V.*; *T-MTT v9 n3 May 61* 262-263
characterization of microwave variable capacitance diodes; *Eng, Sverre T.*; *T-MTT v9 n1 Jan 61* 11-22
conductor thickness corrections for capacitive obstacles and strip conductors; *Cohn, Seymour B.*; *T-MTT v8 n6 Nov 60* 638-644

crystal diodes; measurement at low levels; *Dawirs, H. N.*; *T-MTT v4 n2 Apr 56* 94-96
determination of capacitance, inductance, and impedance of rectangular lines by conformal transformation; *Chen, Tsung-Shan*; *T-MTT v8 n5 Sep 60* 510-519
even and odd mode impedances of shielded coupled strip transmission lines; derivation of formulas; *Cohn, Seymour B.*; *T-MTT v8 n6 Nov 60* 633-637
graphical method for transforming impedances and reflectances through lossy twoport; *Hinckelmann, Otto F.*; *T-MTT v10 n2 Mar 62* 139-141
Gunn diode operating at a bias voltage exceeding threshold; *Pence, Ira W.*; *T-MTT v18 n11 Nov 70* 784-789
high-accuracy impedance meter; *Beatty, R. W.*; *T-MTT v8 n4 Jul 60* 461-463
impedance of generalized strip transmission lines computed by variational methods; *Clark, A. A.*; *T-MTT v16 n8 Aug 68* 555
impedance of generalized strip transmission lines computed by variational methods; *Guckel, Henry*; *T-MTT v13 n3 May 65* 270-274
matrix description of waveguide discontinuities in the presence of propagation and evanescent modes; *Haskal, Haim*; *T-MTT v12 n2 Mar 64* 184-188
measurement of detector impedance; *Szente, P. A.*; *T-MTT v11 n4 Jul 63* 263
measurements of varactor diode impedance on slotted line from 2–18 GHz; *Roberts, D. A. E.*; *T-MTT v12 n4 Jul 64* 471-475
measuring the ω-β diagram of periodic structures; *McDuff, Odis P.*; *T-MTT v10 n4 Jul 62* 295-296
microwave measurement by sliding short circuit in one arm of directional coupler and observing response of detector located in other arm; *Beatty, Robert W.*; *T-MTT v22 n5 May 74* 583 (2C14)
microwave region; use of computer; *Dalley, James E.*; *T-MTT v17 n8 Aug 69* 572-576
mixed two-port parameters for characterizing varactor mounts in waveguides; *Vigh, Mats E.*; *T-MTT v11 n3 May 63* 218-219
periodically loaded transmission lines; use of non-Euclidean geometry in measurements; *Kyhl, R. L.*; *T-MTT v4 n2 Apr 56* 111-115
power-voltage, power-current, voltage-current, impedances for elliptical waveguides for the $_eH_1$ mode; *Valenzuela, Gaspar R.*; *T-MTT v8 n4 Jul 60* 431-435
power–voltage, power–current, voltage–current, impedances for elliptical waveguides for the $_eH_1$ mode *Valenzuela, Gaspar R., Correction*; *T-MTT v9 n1 Jan 61* 38
Si IMPATT diodes; admittance measurement at *X*-band; *Isobe, Toyosaku*; *T-MTT v18 n11 Nov 70* 993-995
simple test to measure insertion losses at microwave frequencies; *Stelzried, C. T.*; *T-MTT v12 n4 Jul 64* 475-477
sliding coaxial termination for impedance measurements using a modified reflectometer technique; *Little, W. E.*; *T-MTT v12 n2 Mar 64* 247-248
slotted-line measurements with signal introduced across probe; errors in VSWR and phase; *Garver, Robert V.*; *T-MTT v23 n6 Jun 75* 536-537 (1F08)
slotted-line technique with signal introduced across slotted-line probe; errors in VSWR and phase; *Barbero, Jesus*; *T-MTT v22 n10 Oct 74* 887-889 (1C13)
surface wave scattering by discontinuities in a unidirectionally conducting screen; *Seshadri, S. R.*; *T-MTT v10 n5 Sep 62* 367-375
tangent relation for determining immitance inverter parameters; *Churchill, D. B.*; *T-MTT v12 n5 Sep 64* 551-552
TE modes of dielectric loaded trough line; *Cohn, Marvin*; *T-MTT v8 n4 Jul 60* 449-454
transformation method to find load impedance of lossy two-port network; *Mittra, Raj*; *T-MTT v10 n1 Jan 62* 13-19
transformation method to find load impedance of lossy two-port network; *Stock, D. J. R.*; *T-MTT v10 n5 Sep 62* 398-399
transmission lines; guide wavelength and impedance measurement applied to stepped transformers; *Leibowitz, Michael R.*; *T-MTT v9 n4 July 61* 366-367
transmission lines; guide wavelength and impedance measurement applied to stepped transformers; *Sullivan, Donald J.*; *T-MTT v8 n2 Mar 60* 212-217
tuning circuit for source or load matching in waveguide and transmission line systems; *Beatty, Robert W.*; *T-MTT v19 n3 Mar 71* 337-338 (2C12)
two-port transmission line devices; simplified calibration; *Wentworth, Frederick L.*; *T-MTT v4 n3 Jul 56* 173-175
UHF and microwave range; analysis of 'quarter-wave' technique of error reduction; *Little, William E.*; *T-MTT v15 n9 Sep 67* 504-507
use of small resonant scatters to measure electric and magnetic fields at microwave frequencies; *Harrington, Roger F.*; *T-MTT v10 n3 May 62* 165-174
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines; *Altschuler, H. M.*; *T-MTT v11 n1 Jan 63* 87
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines; *Altschuler, Helmut M.*; *T-MTT v8 n3 May 60* 328-339
verification of formulas for equivalent circuit parameters for center conductor discontinuities in symmetric strip lines. *Altschuler, H. M., Addendum*; *T-MTT v10 n2 Mar 62* 143
waveguide impedance meter for the automatic display of complex reflection coefficients; *Bachman, Henry L.*; *T-MTT v3 n1 Jan 55* 22-30
Wiener-Hopf technique applied to two dimensional scattering for wall impedance changes in waveguides; *Johansen, Elmer L.*; *T-MTT v10 n1 Jan 62* 26-29
X-band reflection measuring device with full band display of reflection coefficient; *Ronde, Frans C. de*; *T-MTT v13 n4 Jul 65* 435-440

Impedance measurement; cf. Scattering parameters measurement

Impedance transformers; cf. Impedance matching

Implantable transducers
microwave compatible MIC temperature electrode for use in biological dielectrics; *Larsen, Lawrence E.*; *T-MTT v27 n7 Jul 79* 673-679 (1D05)

Indium alloys/compounds
'twist' mode propagation in InSb at 70 GHz; *Glover, Gary H.*; *T-MTT v18 n9 Sep 70* 570-575

Indium alloys/compounds, devices
InP Gunn amplifiers and oscillators for millimeter-wave frequencies; *Hamilton, Robert J., Jr.*; *T-MTT v24 n11 Nov 76* 775-780 (2A08)
InSb thin-film directional coupler performance in 32–36 GHz band; coupling varied by applied dc magnetic field; *Tanaka, Ikuo*; *T-MTT v24 n10 Oct 76* 660-662 (1C04)
Schottky-barrier diode mixer conversion losses up to 5 THz; GaAs, Si, and InSb diodes; *Kelly, William M.*; *T-MTT v27 n7 Jul 79* 665-672 (1C11)

Indium antimonide
far-infrared generation; electric-dipole contribution to resonant difference-frequency mixing; *Wherrett, B. S.*; *T-MTT v22 n12 Dec 74* 1100-1103 (2B11)
far-infrared source; radiative emission from impact-ionized shallow donors in N-type InSb: tunable source; *Gornik, E.*; *T-MTT v22 n12 Dec 74* 991-995 (1A13)

Indium antimonide devices
isolator using coaxial solid-state plasma in longitudinal magnetic fields; 35 GHz; *McLeod, Bruce R.*; *T-MTT v19 n6 Jun 71* 510-516 (1B10)
millimeter-wave detectors based on surface channel detection; *Stannard, J.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
millimeter-wave isolator at 94 GHz; *Kanda, Motohisa*; *T-MTT v22 n11 Nov 74* 913-917 (1A03)
millimeter-wave isolators at 87 GHz using vacuum-deposited films; *Dinger, Robert J.*; *T-MTT v22 n10 Oct 74* 879-880 (1C05)
submillimeter-wave spectroradiometers using n-type InSb detectors; 2–0.2 mm region; *Vystavkin, A. N.*; *T-MTT v22 n12 Dec 74* 1041-1046 (1E07)

Indium arsenide
submillimeter magnetospectroscopy of shallow donor impurity in InAs epitaxial layers; *Litton, C. W.*; *T-MTT v22 n12 Dec 74* 1117-1118 (1C14)

Inductance calculations
microstrip discontinuities; finite-element method; *Neale, Brian M.*; *T-MTT v26 n10 Oct 78* 827-831 (2C05)
microstrip discontinuity inductance calculation using moment method; application to right-angle bends; *Gopinath, A.*; *T-MTT v22 n10 Oct 74* 880-883 (1C06)
microstrip with narrow transverse slit; equivalent series inductance of slit; *Hoefer, Wolfgang J. R.*; *T-MTT v25 n10 Oct 77* 822-825 (1B04)
microstrip with step change in width and cross junctions; *Gopinath, A.*; *T-MTT v24 n3 Mar 76* 142-144 (1B02)
nonstraight conductor close to ground return plane; *Ruehli, A. E.*; *T-MTT v23 n8 Aug 75* 706-708 (2A10)
parallel-strip transmission line; *Rochelle, J. M.*; *T-MTT v23 n8 Aug 75* 712-714 (2B02)
parallel-strip transmission lines; *Crampagne, Raymond*; *T-MTT v24 n8 Aug 76* 532-534 (1D02)
waveguide mounts, parallel two-post structures; reactance calculation; *El-Sayed, Osman L.*; *T-MTT v25 n1 Jan 77* 24-33 (1B12)

Inductance measurement
microwave transistor mounted in microstrip; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)

Inductance simulation
inverted common-collector transistor circuit; frequency range of operation; *Fliegler, Emanuel*; *T-MTT v19 n1 Jan 71* 89-91 (2D09)

Infrared (0.70–100 μm); cf. Submillimeter-wave (300–3000 GHz)

Infrared amplifiers
MBM point-contact diode with negative differential resistance region in *I–V* characteristic; *Drury, David M.*; *T-MTT v27 n6 Jun 79* 598-603 (1D02)

Infrared communication
frontier between classical and quantum physics; *Fox, A. G.*; *T-MTT v7 n4 Oct 59* 400-401

Infrared detectors
far-infrared bolometer detectors using compensated n-type Si at liquid-helium temperatures; *Summers, C. J.*; *T-MTT v22 n12 Dec 74* 1009-1013 (1C03)
far-infrared Ge bolometer cooled to 0.10 K; *Draine, B. T.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
far-infrared Si photoconductive detectors; long-wavelength limit of 400 μm; *Norton, P.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
MOSFET photoconductive detectors for far-infrared; voltage-tunable detector; *Goldberg, H. S.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
pyroelectric detectors for far-infrared; *Handi, A.*; *T-MTT v22 n12 Dec 74* 1016-1018 (1C10)
Schottky-barrier diode cutoff frequencies; Si and GaAs diodes; *Champlin, Keith S.*; *T-MTT v26 n1 Jan 78* 31-34 (1C05)

Infrared detectors; cf. Submillimeter-wave detectors

Infrared filters
bandpass and pseudo-high-pass quasi-optical filters; use for millimeter-wave and far-infrared frequencies; *Leedom, David A.*; *T-MTT v18 n5 May 70* 253-259
low-pass and high-pass filters consisting of multilayer dielectric stacks; *Young, Leo*; *T-MTT v14 n2 Feb 66* 75-80
quasi-optical bandpass filter consisting of several wire-grid polarizers; network representation and unloaded *Q*; *Chen, Ming Hui*; *T-MTT v27 n4 Apr 79* 357-360 (1E11)
quasi-optical bandpass filters for far-infrared region; practical considerations; *Saleh, Adel A. M.*; *T-MTT v22 n7 Jul 74* 734-739 (1B14)
quasi-optical bandpass filters for far-infrared region; theory and design; *Saleh, Adel A. M.*; *T-MTT v22 n7 Jul 74* 728-734 (1B08)

Infrared generation
far-infrared generation in InSb; electric-dipole contribution to resonant difference-frequency mixing; *Wherrett, B. S.*; *T-MTT v22 n12 Dec 74* 1100-1103 (2B11)
far-infrared source; radiative emission from impact-ionized shallow donors in N-type InSb; tunable source; *Gornik, E.*; *T-MTT v22 n12 Dec 74* 991-995 (1A13)
far-infrared source; recombination radiation from Landau states in impact-ionized GaAs; tunable source; *Waldman, J.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
generation of coherent infrared radiation from diffraction grating; *Bird, George R.*; *T-MTT v11 n5 Sep 63* 432
Josephson junction far-infrared source; frequencies up to 30 cm^{-1}; *Elsey, R. K.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)

Infrared generation; cf. Infrared lasers

Infrared heterodyne detection; cf. Submillimeter-wave heterodyne detection

Infrared imaging
tumor detection; thermographic detection enhancement using microwave heating; *Thompson, J. E.*; *T-MTT v26 n8 Aug 78* 573-580 (1E03)

Infrared interferometry
far-infrared region; pulse control unit for slow-scan FIR interferometry; *Strom, U.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)

Infrared lasers
far-infrared CH_3OH laser pumped by laser; rate equations; *Henningsen, J. O.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)

far-infrared gas lasers; rate equation model; *Tucker, J. R.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)

Infrared lasers; cf. Submillimeter-wave lasers

Infrared mixers

far-infrared generation in InSb; electric-dipole contribution to resonant difference-frequency mixing; *Wherrett, B. S.*; *T-MTT v22 n12 Dec 74* 1100-1103 (2B11)

Schottky-barrier diode cutoff frequencies; Si and GaAs diodes; *Champlin, Keith S.*; *T-MTT v26 n1 Jan 78* 31-34 (1C05)

Schottky-barrier diode mixer conversion losses up to 5 THz; GaAs, Si, and InSb diodes; *Kelly, William M.*; *T-MTT v27 n7 Jul 79* 665-672 (1C11)

Infrared spectroscopy

far-infrared dispersive-reflection spectroscopy on solids; Michelson interferometer field of view divided to allow specimen and reference mirror to be placed side by side; *Parker, T. J.*; *T-MTT v22 n12 Dec 74* 1032-1036 (1D12)

far-infrared Fourier spectrometer for amplitude-phase reflection spectroscopy on solids; 10–1000 cm^{-1} region; *Gast, J.*; *T-MTT v22 n12 Dec 74* 1026-1027 (1D06)

far-infrared grill spectrometer; application to methyl cyanide study near 360 cm^{-1}; *Gauffre, G.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)

far-infrared spectrometer to measure cosmic background radiation in 3–18 cm^{-1} region; balloon-borne spectrometer; *Mather, John C.*; *T-MTT v22 n12 Dec 74* 1046-1048 (1E12)

GaAs, far-infrared reflectivity and electron scattering in 16–230 cm^{-1} range; *Perkowitz, S.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

ionic solids; high-pressure far-infrared cell for spectral range below 120 cm^{-1} and hydrostatic pressures to 8 kbar; *Lowndes, R. P.*; *T-MTT v22 n12 Dec 74* 1076-1080 (2A01)

photometer for 20-μm atmospheric window; *Wijnbergen, J. J.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

Infrared spectroscopy; cf. Infrared interferometry; Submillimeter-wave spectroscopy

Infrared waveguides

organic superconductor and dielectric infrared waveguide, resonator and antenna models of insects' sensory organs; *Okress, E. C.*; *T-MTT v13 n5 Sep 65* 706-707

organic superconductor and dielectric infrared waveguide, resonator and antenna models of insects' sensory organs. *Okress, E. C., Correction*; *T-MTT v14 n3 Mar 66* 164

Infrared waveguides; cf. Optical fibers

Inhomogeneous; cf. Nonhomogeneous

Injection-locked oscillators

amplitude behavior with respect to changes in the amplitude of the injected signal; *Osborne, Thomas L.*; *T-MTT v18 n11 Nov 70* 897-905

FM noise suppression of an injection phased-locked oscillator; *Hines, M. E.*; *T-MTT v16 n9 Sep 68* 738-742

GaAs FET transmission-type injection-locked oscillators and self-oscillating mixers; *Tajima, Yusuke*; *T-MTT v27 n7 Jul 79* 629-632 (1A03)

IMPATT diode oscillator at 75 GHz; high-stability low-noise oscillator using injection locking and AFC with crystal oscillator as reference; *Okamoto, Hiroshi*; *T-MTT v26 n2 Feb 78* 136 (1G06)

IMPATT oscillator at 75 GHz; highly stable low-noise oscillator using parametric injection locking and AFC; *Okamoto, Hiroshi*; *T-MTT v26 n8 Aug 78* 627-628 (2B01)

IMPATT oscillators in millimeter-wave range; subharmonic injection locking to weak parasitic oscillating signal; *Hayashi, Risao*; *T-MTT v27 n5 May 79* 500-504 (2C13)

injection-locking figure of merit; derivation in terms of the frequency compliance coefficient; *Khandelwal, Deen D.*; *T-MTT v18 n11 Nov 70* 989-992

injection locking of a Laddertron at 35 Gc/s; *Strauch, R. G.*; *T-MTT v13 n4 Jul 65* 473-474

millimeter-wave IMPATT oscillators; cavity stabilization and electronic tuning by parametric interaction; *Okamoto, Hiroshi*; *T-MTT v26 n6 Jun 78* 420-424 (1C14)

noise, nonlinear theory for synchronized oscillators; *Schünemann, Klaus F.*; *T-MTT v27 n5 May 79* 452-458 (1G06)

nonreciprocal injection locking of bilateral microwave oscillators; criterion; *Perlman, B. S.*; *T-MTT v18 n8 Aug 70* 507-508

output power and loss analysis of 2^n injection-locked oscillators combined through an ideal and symmetric hybrid combiner; *Nevarez, Joseph R.*; *T-MTT v17 n1 Jan 69* 2-10

phase-locked IMPATT oscillator; measured FM noise spectra; *Perichon, Robert*; *T-MTT v18 n11 Nov 70* 988-989

phase-locked loop model of driven oscillator with FM feedback; *Couch, Leon W.*; *T-MTT v19 n4 Apr 71* 357-366 (1C01)

phase-locked; use as input microwave-limiting amplifier for a microwave discriminator used for noise measurement; *Ashley, J. Robert*; *T-MTT v18 n11 Nov 70* 1001-1002

pulsed oscillators with very fast switching characteristics; phase and amplitude transients; *Pavlidis, Dimitrios*; *T-MTT v26 n3 Mar 78* 162-169 (1B14)

subharmonically injection phase-locked Gunn oscillator; experiments; *Oltman, H. G.*; *T-MTT v17 n9 Sep 69* 728-729

transmission-type injection locking of GaAs MESFET oscillators; *Tajima, Yusuke*; *T-MTT v27 n5 May 79* 386-391 (1B10)

Injection-locked oscillators; cf. Phase-locked oscillators

Insects

microwave irradiation; nonthermal effects on insect pupae; *Carpenter, Russell L.*; *T-MTT v19 n2 Feb 71* 173-178 (1F01)

microwave irradiation; teratogenic effects of low-level radiation in pupae of darkling beetle; *Liu, L. M.*; *T-MTT v23 n11 Nov 75* 929-931 (1F09)

organic superconductor and dielectric infrared waveguide, resonator, and antenna models of insects' sensory organs; *Okress, E. C.*; *T-MTT v13 n5 Sep 65* 706-707

organic superconductor and dielectric infrared waveguide, resonator, and antenna models of insects' sensory organs; *Okress, E. C., Correction*; *T-MTT v14 n3 Mar 66* 164

Instantaneous frequency-measuring receivers

history of development; *Goddard, N. E.*; *T-MTT v20 n4 Apr 72* 292-293 (2F02)

Instrumentation; cf. Biomedical instrumentation; Measurements

Integral equations

application to microstrip propagation analysis; *Denlinger, Edgar J.*; *T-MTT v19 n1 Jan 71* 30-39 (1D08)

application to waveguide problems; relation to inversion of Schwarz-Christoffel transformation; *Lewin, Leonard*; *T-MTT v19 n6 Jun 71* 542-546 (2E06)

capacitance calculation for three-dimensional multiconductor systems; efficient computation technique; *Ruehli, Albert E.*; *T-MTT v21 n2 Feb 73* 76-82 (1B10)

coaxial line of rectangular cross section with offset inner conductor; characteristic impedance; *Tippet, John C.*; *T-MTT v26 n11 Nov 78* 876-883 (1C06)

electromagnetic fields and power deposition in homogeneous lossy body of revolution evaluated using surface integral equation method; *Wu, Te-Kao*; *T-MTT v27 n3 Mar 79* 279-283 (1E09)

equivalence of different integral equations for confocal resonators; *Kogelnik, H.*; *T-MTT v12 n6 Nov 64* 624

Fredholm integral equation resulting from Laplace equation with Dirichlet boundary conditions; variational solution. *McDonald, G. H.*; *T-MTT v22 n3 Mar 74* 237-248 (1G03)

Fredholm integral equation resulting from Laplace equation with Dirichlet boundary conditions; variational solution. *McDonald, B. H., Correction*; *T-MTT v23 n2 Feb 75* 265-266 (1F13)

Fresnel integral evaluation; *Lewin, L.*; *T-MTT v27 n2 Feb 79* 208 (2B07)

mathematical comments on a class of integral equations with complex kernels which occur in laser theory; *Morgan, Samuel P.*; *T-MTT v11 n3 May 63* 191-193

nonself-adjoint operators; variational formulation derived from standard quadratic functional for self-adjoint operators; *Jeng, Garbo*; *T-MTT v26 n2 Feb 78* 91-94 (1D03)

shielded microstrip of trapezoidal cross section; integral equation approach for numerical calculation; *Rizzoli, Vittorio*; *T-MTT v27 n2 Feb 79* 150-157 (1E04)

strip transmission line analysis using nonuniform discretization of integral equations; *Yamashita, Eikichi*; *T-MTT v24 n4 Apr 76* 195-200 (1C05)

waveguide discontinuities, two-to-one *E*-plane step in rectangular guide with capacitive diaphragm at junction; singular integral equation method; *Ruehle, Thomas*; *T-MTT v27 n2 Feb 79* 158-160 (1E12)

waveguide discontinuity problems; singular integral equation method that retains expansion terms of all modes appearing in Green's function; *Lewin, Leonard*; *T-MTT v20 n12 Dec 72* 849-852 (2B03)

wire inside rectangular cavity excited by external sources coupled to interior by aperture in cavity wall; current excited on wire; *Seidel, David B.*; *T-MTT v26 n11 Nov 78* 908-914 (1F10)

Integral equations; cf. Moment methods; Variational methods

Integrated-circuit metallization

interconnection lines; capacitance calculation; *Chang, W. H.*; *T-MTT v24 n9 Sep 76* 608-611 (1E08)

Integrated circuits; cf. Integrated optics; Microwave integrated circuits; Millimeter-wave integrated circuits; Submillimeter-wave integrated circuits

Integrated optics

data processors; application of optical surface waves on thin dielectric films; *Shubert, Richard*; *T-MTT v16 n12 Dec 68* 1048-1054

in Japan; recent progress; *Suematsu, Yasuharu*; *T-MTT v23 n1 Jan 75* 16-20 (1B04)

periodic structures; coupled-mode analysis of components using periodic structures; *Chang, William S. C.*; *T-MTT v21 n12 Dec 73* 775-785 (1D08)

special issue; *T-MTT v23 n1 Jan 75* 1-180 (1A03)

special issue foreword; *Marcuse, D.*; *T-MTT v23 n1 Jan 75* 1 (1A03)

Integrated optics; cf. Optical planar waveguides; Optical strip waveguides

Interdigital filters

acoustic surface-wave dispersive filters; phase corrections for apodized interdigital arrays; *Gerard, Henry M.*; *T-MTT v20 n2 Feb 72* 188-192 (2E10)

Interdigital transducers; cf. Acoustic surface-wave transducers

Interference; cf. Electromagnetic noise/interference

Interferometric techniques

microwave magneto-Kerr effect in semiconductors; measurement using interferometric polarization analyzer; *Vernon, Ronald J.*; *T-MTT v19 n3 Mar 71* 287-294 (1D07)

Interferometry; cf. Fabry–Perot interferometers; Infrared interferometry; Microwave interferometry; Millimeter-wave interferometry; Radio interferometers; Radio interferometry; Submillimeter-wave interferometry

Intermodulation distortion

ferrite circulators, distributed 3-port; *Wu, You-Sun*; *T-MTT v24 n2 Feb 76* 69-77 (1A03)

frequency converter analysis using Volterra series; *Swerdlow, Richard B.*; *T-MTT v26 n4 Apr 78* 305-313 (1F13)

GaAs FET amplifiers; third-order intermodulation distortion and gain compression; *Tucker, Rodney S.*; *T-MTT v27 n5 May 79* 400-408 (1C10)

IMPATT diode amplifiers; intermodulation products generated when two equal-amplitude signals are applied to input of *X*-band amplifier; *Trew, Robert J.*; *T-MTT v20 n12 Dec 72* 805-812 (1C04)

intermodulation rejection in mixers; improvement in superheterodyne receivers; *Lepoff, Jack H.*; *T-MTT v14 n12 Dec 66* 618-623

measurement of fields inside biological materials; diode imbedded in sample exposed to dual-frequency illumination; intermodulation products of scattered field related to interior field; *Brodwin, Morris E.*; *T-MTT v24 n8 Aug 76* 514-521 (1B12)

microwave devices and systems; characterization of amplitude and phase nonlinearities; *Heiter, George L.*; *T-MTT v21 n12 Dec 73* 797-805 (2B07)

millimeter-wave IMPATT amplifiers; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 744-751 (1E08)

varactor frequency converters; abrupt-junction current-pumped varactor; *Gardiner, John Graham*; *T-MTT v19 n9 Sep 71* 741-749 (1B03)

varactor frequency converters; abrupt-junction current-pumped varactor. *Gardiner, John Graham, Correction*; *T-MTT v10 n4 Apr 72* 293 (1F03)

varactor frequency converters; gain compression related to distortion performance; *Ghobrial, S. I.*; *T-MTT v23 n2 Feb 75* 255-257 (1F03)

International Conference on Submillimeter Waves and Their Applications; cf. Conferences

International Microwave Symposium; cf. Conferences

Interpolation

moment-method convergence improvement using interpolants; *Hagmann, Mark J.*; *T-MTT v26 n11 Nov 78* 904-908 (1E06)

Inverters; cf. Immittance inverters

Ionic solids

far-infrared high-pressure spectroscopy; cell for spectral range below 120 cm^{-1} and hydrostatic pressures to 8 kbar; *Lowndes, R. P.*; *T-MTT v22 n12 Dec 74* 1076-1080 (2A01)

Ionospheric propagation
proposed experiment for eliciting multiple resonances from the ionosphere; *Hershberger, W. D.*; *T-MTT v10 n5 Sep 62* 396-397
IRE Microwave Theory and Techniques Group
1957 Microwave Prize to Harold Seidel; *Pritchard, W. L.*; *T-MTT v6 n4 Oct 58* 343
1959 annual meeting; *T-MTT v8 n1 Jan 60* 123
activities; *Mumford, William Walden*; *T-MTT v3 n3 Apr 55* 2-3
Administrative Committee, 1959–1960; *T-MTT v8 n3 May 60* 272-273
Microwave Prize for 1958 to Ladislas Goldstein; *Saad, Theodore S., Chmn.*; *T-MTT v8 n1 Jan 60* 3
organizational structure; *Saad, Theodore S., Chmn.*; *T-MTT v7 n1 Jan 59* 2
photoraphs of 1960 Administrative Committee; *T-MTT v8 n4 Jul 60* 471
planning 1956 meeting; *Schwartz, Richard F.*; *T-MTT v4 n4 Oct 56* 192
planning 1957 Annual Meeting; *Anderson, Tore N.*; *T-MTT v6 n1 Jan 58* 4
planning National Symposium; *Aden, A. L.*; *T-MTT v7 n1 Jan 59* 5
Ted Saad retires as editor; *Engelmann, Herbert F., Chmn.*; *T-MTT v5 n3 Jul 57* 174
IRE Microwaves Theory and Techniques Group; cf. IEEE Microwave Theory and Techniques Group
IRE publications
publication policy and relationship between *Proceedings* and *Transactions*; *Pierce, J. R.*; *T-MTT v3 n4 Jul 55* 52-53
Irises; cf. Waveguide discontinuities
Isolators
design criteria for nonreciprocal coupled-mode devices; application as isolators, circulators, duplexers; *Whicker, Lawrence R.*; *T-MTT v10 n1 Jan 62* 20-25
engineering design of an *X*-band amplifier consisting of a cascade of iris coupled ruby resonators separated by garnet isolators; *Goodwin, Frank E.*; *T-MTT v12 n3 May 64* 349-358
high isolation; high speed microwave modulator; *Alday, J. R.*; *T-MTT v12 n6 Nov 64* 622
improved mode selecting coupler; microwave frequency; *Sleeper, George B., Jr.*; *T-MTT v12 n3 May 64* 362-363
maser amplifier structure consisting of a cascade of iris coupled $\pi/2$ cavities intermixed with isolators; *O'Meara, Thomas R.*; *T-MTT v12 n3 May 64* 336-348
Isolators; cf. Ferrite isolators; Microstrip isolators; Millimeter-wave isolators; Optical isolators; Plasma isolators; Semiconductor isolators; Stripline isolators; UHF isolators

J

Japan
integrated optics; recent progress; *Suematsu, Yasuharu*; *T-MTT v23 n1 Jan 75* 16-20 (1B04)
microwave papers published in Japanese journals, Jun–Dec 1973; *Okoshi, T.*; *T-MTT v22 n8 Aug 74* 819-820 (1E09)
JFETs
microwave FETs; recent developments; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 279-300 (1A05)
Johnson, Carl C.
obituary; *Justesen, Don R.*; *T-MTT v26 n8 Aug 78* 519 (1A05)
Josephson device mixers/frequency converters
millimeter-wave and submillimeter wave receivers tunable over 220–325 GHz band; *Edrich, Jochen*; *T-MTT v25 n6 Jun 77* 476-479 (1B10)
millimeter-wave mixers; low-noise 47-GHz mixer; *Edrich, Jochen*; *T-MTT v24 n11 Nov 76* 706-709 (1B12)
submillimeter-wave self-oscillator mixer for 0.1–2 THz range; *Vernet, G.*; *T-MTT v25 n6 Jun 77* 473-476 (1B07)
Josephson device oscillators
submillimeter-wave self-oscillator mixer for 0.1–2 THz range; *Vernet, G.*; *T-MTT v25 n6 Jun 77* 473-476 (1B07)
Josephson junctions
far-infrared generation at frequencies up to 30 cm^{-1}; *Elsey, R. K.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
heterodyne detectors; 36-GHz performance; *Taur, Y.*; *T-MTT v22 n12 Dec 74* 1005-1009 (1B13)
submillimeter-wave mixers for heterodyne reception at 337 μm; *Blaney, T. G.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
submillimeter-wave parametric oscillations; parametric amplification at 1.6 mm; *Levinsen, M. T.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
Journals; cf. Technical journals
Junctions; cf. Hybrid junctions; Josephson junctions; Waveguide junctions; Waveguide transitions

K

Kerr effect
liquid artificial dielectrics for millimeter-wave applications; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)
measurement of magneto-microwave Kerr effect in semiconductors using reflectometers; *Vernon, R. J.*; *T-MTT v16 n4 Apr 68* 262
microwave magneto-Kerr effect in semiconductors; measurement using interferometric polarization analyzer; *Vernon, Ronald J.*; *T-MTT v19 n3 Mar 71* 287-294 (1D07)
Klystrons
automatic phasing system for Stanford linear accelerator; *Williams, Colin B.*; *T-MTT v13 n6 Nov 65* 806-814
beat frequencies resulting from several orders of mixing of power of two klystrons; study on a spectrum analyzer; *Frenkel, L.*; *T-MTT v17 n5 May 69* 281-282
cavities; calculation of shunt impedance; *Ginzton, E. L.*; *T-MTT v3 n5 Oct 55* 4-7
discontinuities in the repeller current of a reflex klystron detector; *Ishii, Koryu*; *T-MTT v11 n2 Mar 63* 154-155
equivalent circuit of the internal cavity reflex klystron amplifier; *Ishii, Koryu*; *T-MTT v8 n6 Nov 60* 667-668
generation of a short rectangular pulse from a CW source; *Row, R. V.*; *T-MTT v12 n1 Jan 64* 146
harmonics generation at millimeter wavelengths; *Nethercot, A. H., Jr.*; *T-MTT v2 n3 Sep 54* 17-20
injection locked phase modulator using a klystron; *Mackey, Richard C.*; *T-MTT v11 n2 Mar 63* 150
injection phase locking of two-cavity klystron oscillators; *Day, Walter R., Jr.*; *T-MTT v11 n5 Sep 63* 436
investigation of millimeter-wave reflex klystron amplifiers; *Ishii, K.*; *T-MTT v11 n3 May 63* 212-213
investigation of noise at approximately 9400 MHz; *Ishii, Koryu*; *T-MTT v8 n3 May 60* 291-294
K_A band klystron replacements using a diffused junction gallium–arsenide varactor; *Munro, J.*; *T-MTT v12 n5 Sep 64* 553
low-power reflex klystrons; pulsing technique; *Davis, J. I.*; *T-MTT v4 n1 Jan 56* 40-47
microwave relay systems incorporating klystrons; design considerations; *Olthuis, R. W.*; *T-MTT v2 n1 Apr 54* 103-107
noise properties of 2 cavity CW klystron; contribution close to center frequency in audio range; *Espersen, George A.*; *T-MTT v8 n5 Sep 60* 474-477
phase adjustment effects on cascaded reflex klystron amplifiers; *Ishii, Koryu*; *T-MTT v8 n4 Jul 60* 445-449
reflex; frequency stabilization by high-Q external cavities; *Rabinowitz, S. J.*; *T-MTT v2 n3 Sep 54* 23-26
reflex klystron amplifier for microwave spectroscopy; *Chapman, Frederick W.*; *T-MTT v11 n2 Mar 65* 150-152
reflex klystrons; dual cavity-beam interaction; *Hamilton, J. J.*; *T-MTT v14 n4 Apr 66* 209-210
reflex; stabilization of frequency; *Altman, Jerome L.*; *T-MTT v2 n2 Jul 54* 16-25
regenerative and pull in modes of millimeter-wave reflex klystron amplifiers; *Raue, George E.*; *T-MTT v12 n5 Sep 64* 547
resonant cavities; general treatment and equivalent circuits; *Fujisawa, Kazuo*; *T-MTT v6 n4 Oct 58* 344-358
spurious harmonic outputs from high power pulsed magnetrons, klystrons and traveling-wave tubes; *Tomiyasu, Kiyo*; *T-MTT v9 n6 Nov 61* 480-484
synchronization of a klystron by injection locking; *Mackey, Richard C.*; *T-MTT v10 n4 Jul 62* 228-235

L

Laboratories
college undergraduate curriculum; furnishing of microwave equipment; *Reich, Robert J.*; *T-MTT v4 n3 Jul 56* 187
Ladder filters
distributed–lumped networks; design procedure; *Sobhy, M. I.*; *T-MTT v25 n12 Dec 77* 1037-1041 (1F05)
Ladder networks
cascade of two-port networks connected by transmission lines; design procedure; *Levy, Ralph*; *T-MTT v21 n8 Aug 73* 519-526 (1C05)
dielectrically loaded ladder lines for traveling-wave masers; characteristics and applications; *Haddad, George I.*; *T-MTT v14 n3 Mar 66* 120-129
Lamps; cf. Fluorescent lamps
Landing guidance systems; cf. Aircraft landing guidance
Laplace equation
computer program using successive extrapolated relaxation method; *Kinsner, W.*; *T-MTT v21 n5 May 73* 365 (1F07)
exterior region satisfying Laplace equation; finite-element solution; *Csendes, Z. J.*; *T-MTT v24 n7 Jul 76* 468-473 (2A13)
Fredholm integral equations resulting from Laplace equation with Dirichlet boundary conditions; variational solution; *McDonald, B. H.*; *T-MTT v22 n3 Mar 74* 237-248 (1G03)
Fredholm integral equation resulting from Laplace equation with Dirichlet boundary conditions; variational solution. *McDonald, B. H., Correction*; *T-MTT v23 n2 Feb 75* 265-266 (1F13)
finite-difference solution for the electric field normal to the conductor boundary at a right-angle corner and at the edge of a thin plate; accuracy; *Duncan, James W.*; *T-MTT v15 n10 Oct 67* 575-582
three dimensions; solution by numerical methods; *Sinnott, D. H.*; *T-MTT v16 n2 Feb 68* 135-136
Laser-beam focusing
He–Ne 6328 Å*Kerdiles, Jacques*; *T-MTT v15 n5 May 67* 321-322
Laser plasma generation
submillimeter wave high-power lasers; *Lax, B.*; *T-MTT v22 n12 Dec 74* 1049-1052 (1F01)
Laser resonators
configuration whereby higher order Hermite-Gaussian mode becomes lowest loss mode; *Kawakami, Shojiro*; *T-MTT v19 n4 Apr 71* 403-406 (2B11)
Lasers
mathematical comments on a class of integral equations with complex kernels which occur in laser theory; *Morgan, Samuel P.*; *T-MTT v11 n3 May 63* 191-193
Lasers; cf. Distributed-feedback lasers; Gas lasers; Infrared lasers; Masers; Pulsed lasers; Semiconductor lasers; Submillimeter-wave lasers; Waveguide lasers
Lattice networks
graphical procedures for finding matrix elements for a lattice network; *Mathis, H. F.*; *T-MTT v13 n1 Jan 65* 130-132
Layered media; cf. Nonhomogeneous media; Stratified media
Leaky-wave antennas
electronically scannable antennas integrated in quasi-planar dielectric waveguide; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 987-991 (1E09)
existence of leaky waves due to a line source above a grounded dielectric slab; *Cassedy, Edward S.*; *T-MTT v9 n3 May 61* 243-247
Gunn oscillator in dielectric waveguide; distributed Bragg reflection oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
Least-*p*th approximation
minimax design using least-*p*th approximations; computer program; *Bandler, J. W.*; *T-MTT v24 n8 Aug 76* 543 (1D13)

minimax design using sequence of least-*p*th approximations; *Bandler, J. W.*; *T-MTT v24 n2 Feb 76* 116-119 (1D08)
optimization with extrapolation to minimax solutions; computer program; *Bandler, J. W.*; *T-MTT v24 n8 Aug 76* 543-544 (1D13)
Least-squares approximation
microwave two-port noise parameters determination using least-squares method; *Caruso, Giuseppe*; *T-MTT v26 n9 Sep 78* 639-642 (1A13)
Legendre polynomial; cf. Polynomial approximation
Legs; cf. Human limbs
Lens antennas
Luneberg lens system, ferrite aperture; electronic scan; *Medved, David B.*; *T-MTT v6 n1 Jan 58* 101-104
microwave landing system ground antennas; *Cox, Richard M.*; *T-MTT v24 n12 Dec 76* 964-971 (1E10)
millimeter-wave antennas using electrically controllable liquid artificial dielectrics; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)
theory of thermal gradient gas lens; *Marcuse, Dietrich*; *T-MTT v13 n6 Nov 65* 734-739
thermal gradient gas lens measurements; *Steier, William H.*; *T-MTT v13 n6 Nov 65* 740-748
Lenses
microwave Gaussian beam launcher for biological irradiation studies; circular waveguide illuminates dielectric sphere lens; *Neelakantaswamy, Perambur S.*; *T-MTT v26 n9 Sep 78* 665-666 (1C11)
Lens waveguides
beam waveguides, iris and lens types, for long distance transmission at optical frequencies with less than 1 db loss per km; *Goubau, Georg*; *T-MTT v12 n2 Mar 64* 212-220
complex permittivity lens-like medium; *Sawa, Shinnosuke*; *T-MTT v23 n7 Jul 75* 566-575 (1B14)
design considerations for bent-beam waveguides; *Marcuse, D.*; *T-MTT v13 n5 Sep 65* 647-651
gas lens for optical transmission line; *Beck, A. C.*; *T-MTT v15 n7 Jul 67* 433-434
gas lenses; imaging property; *Aoki, Yoshinao*; *T-MTT v15 n1 Jan 67* 2-8
iris beam waveguide; investigation of the effect of alignment of the irises, width of the iris frames, and curvature of the guide axis on the transmission loss; *Mink, J. W.*; *T-MTT v17 n1 Jan 69* 48-49
iris beam waveguide; investigation of the effect of alignment of the irises, width of the iris frames, and curvature of the guide axis on the transmission loss.*Mink, J. W., Correction*; *T-MTT v17 n8 Aug 69* 641
light beam waveguide using hyperbolid-type gas lenses; *Suematsu, Yasuharu*; *T-MTT v14 n12 Dec 66* 657-665
light beam waveguide using hyperbolic-type gas lenses. *Suematsu, Y., Correction*; *T-MTT v15 n5 May 67* 294
loss measurements of low loss beam waveguides for millimeter-wave and shorter waveguides; *Beyer, James B.*; *T-MTT v11 n1 Jan 63* 18-22
low-loss launcher for the beam-lens waveguide; *Chaffin, R. J.*; *T-MTT v12 n5 Sep 64* 555
scalar modes in lens-like medium related to vector modes in self-focusing optical fiber; *Yip, G. L.*; *T-MTT v23 n2 Feb 75* 260-263 (1F08)
square-law lenslike medium with bends; propagation characteristics; *Sawa, Shinnosuke*; *T-MTT v24 n7 Jul 76* 441-455 (1D09)
tapered lens-like medium with permittivity profile varying in direction of guide axis and transverse direction; *Sawa, Shinnosuke*; *T-MTT v24 n2 Feb 76* 77-93 (1A11)
with a curved axis; transmission bandwidth; *Hirano, Junzo*; *T-MTT v18 n7 Jul 70* 373-376
Lenses; cf. Lens antennas; Microwave devices
Light; cf. Optical ...
Light-triggered switches
microwave avalanching optoelectronic switch; *Kiehl, Richard A.*; *T-MTT v27 n5 May 79* 533-539 (2F04)
RF pulse generation using optoelectronic switching in Si; *Proud, Joseph M.*; *T-MTT v26 n3 Mar 78* 137-140 (1A03)
Lighting
F8T5 fluorescent lamps; effect of cataphoresis on noise temperature; *Guentzler, Ronald E.*; *T-MTT v18 n7 Jul 70* 393-400
fluorescent lamps as microwave noise sources at 9 GHz; data on temperature dependence; *Mumford, William W.*; *T-MTT v3 n6 Dec 55* 12-17
fluorescent lamps; noise-temperature behavior of F8T5 lamps; *Guentzler, Ronald E.*; *T-MTT v24 n8 Aug 76* 538-539 (1D08)
Limbs; cf. Human limbs
Limiting; cf. Microwave limiters
Line-source antennas
radiation characteristics of a line source of magnetic current imbedded in a homogeneous electron plasma; *Seshadri, S. R.*; *T-MTT v11 n1 Jan 63* 39-50
Linear accelerators
Stanford linear accelerator using *S*-band, rectangular-waveguide networks; accurate measurement of electrical phase lengths; *Weaver, James*; *T-MTT v14 n12 Dec 66* 623-629
Linear FM; cf. Chirp modulation
Linear networks, time-invariant
group delay sensitivities calculation using adjoint network concept; *Bandler, John W.*; *T-MTT v24 n4 Apr 76* 188-194 (1B12)
group delay sensitivities calculation using adjoint network concept. *Bandler, John W., Correction*; *T-MTT v25 n5 May 77* 445 (2A09)
Linear networks; cf. Distributed networks
Linear-phase filters
equiripple filters with single transmission zeros at real or imaginary frequencies; *Levy, Ralph*; *T-MTT v24 n4 Apr 76* 172-181 (1A10)
microwave, bandpass; design and synthesis; *Rhodes, John David*; *T-MTT v17 n4 Apr 69* 189-204
microwave filters with constant group delay and equiripple passband magnitude; tables for nonminimum-phase even-degree low-pass prototype networks; *Cloete, J. H.*; *T-MTT v27 n2 Feb 79* 123-128 (1C05)
microwave; use of low-pass prototype network; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 290-301
narrow-band generalized interdigital type; design theory; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 301-307
narrow-band waveguide generalized direct-coupled cavity type; design; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 308-313
Liquid dielectrics
dielectric constant measurement at microwave frequencies using partially-loaded slotted waveguide; *Bahl, Inder J.*; *T-MTT v22 n1 Jan 74* 52-54 (1D12)
electrically controllable liquid artificial dielectrics for millimeter-wave applications; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)
submillimeter-wave measurements on polar liquids; Poley absorption; *Chantry, G. W.*; *T-MTT v25 n6 Jun 77* 496-500 (1D02)
Lithium ferrite devices
phasers for *S*-band; construction techniques and performance, comparison with garnet phasers; *Charlton, Donald A.*; *T-MTT v22 n6 Jun 74* 614-617 (1B14)
Lithium ferrites
Li–Ti ferrite compositions; microwave properties; *Green, Jerome J.*; *T-MTT v25 n2 Feb 77* 155-159 (1F05)
microwave properties; comparison with other spinel ferrites and rare earth iron garnets; *Argentina, Gil M.*; *T-MTT v22 n6 Jun 74* 652-658 (1E10)
Loaded waveguides
adapter between two waveguides of different cutoff frequencies and different sizes, the smaller filled with a dielectric; *Bramanti, Mauro*; *T-MTT v17 n2 Feb 69* 116-118
angular frequency analyzed as function of phase shift per cell; *Goblick, T. J., Jr.*; *T-MTT v8 n5 Sep 60* 500-509
anisotropic media; vector variational formulation; *Konrad, A.*; *T-MTT v24 n9 Sep 76* 553-559 (1A09)
asymmetrically loaded waveguides; analysis using variational techniques; *Vorst, A. S. vander*; *T-MTT v17 n1 Jan 69* 51-52
axially symmetric periodic waveguide; approximate wave equation; *James, C. R.*; *T-MTT v14 n9 Sep 66* 428-430
characteristics of rectangular waveguide with arbitrarily loaded slab *Mushiake, Yasuto*; *T-MTT v13 n4 Jul 65* 451-457
composite structure containing dispersive media in relative motion; perturbation formulas for modes; *Gruenberg, Harry*; *T-MTT v15 n11 Nov 67* 636-642
dissipation along uniform waveguides; *Persky, George*; *T-MTT v10 n6 Nov 62* 591-595
field displacement isolator in WR-159 waveguide consisting of a ferrite slab having resistive film on one face; *Comstock, R. Lawrence*; *T-MTT v8 n6 Nov 60* 605-611
guided waves in a moving isotropic medium; *Collier, J. Robert*; *T-MTT v13 n4 Jul 65* 441-445
gyrotropic media; bidirectionality conditions; *McIsaac, Paul R.*; *T-MTT v24 n4 Apr 76* 223-226 (1E05)
inductive iris with TE_{k0} incidence in rectangular waveguide; complete solution; *Palais, Joseph C.*; *T-MTT v15 n3 Mar 67* 156-160
iris-loaded; perturbation measurement of transverse R/Q; *Hahn, Harald*; *T-MTT v16 n1 Jan 68* 20-29
loaded and unloaded Q of a resonant ring circuit; *Golde, Hellmut*; *T-MTT v8 n5 Sep 60* 560-564
loaded transmission line synthesis; *Reed, John*; *T-MTT v9 n2 Mar 61* 201-202
mode coupling to compute phase constant in uniform composite waveguides; *Bahiana, Luiz C.*; *T-MTT v8 n4 Jul 60* 454-458
narrow-axial strip in rectangular guide; equivalent circuit; *Chang, Kai*; *T-MTT v24 n9 Sep 76* 611-615 (1E11)
numerical computation of eigenvalues for a centrally loaded cylindrical cavity; *Bolle, Donald M.*; *T-MTT v10 n2 Mar 62* 133-138
orthogonality relationships for waveguides and cavities with inhomogeneous anisotropic media; *Villeneuve, Alfred T.*; *T-MTT v7 n4 Oct 59* 441-446
passive dissipationless anisotropic uniform waveguide; far field excitation by a point source; *Bresler, Aaron D.*; *T-MTT v7 n2 Apr 59* 282-287
periodic structure consisting of equally spaced perfectly conducting rings surrounded by conducting pipe; hybrid mode propagation; *Garault,*; *T-MTT v22 n2 Feb 74* 92-99 (1A14)
perturbation methods; expansion of axial field components in terms of normal modes; *Vassallo, C.*; *T-MTT v23 n2 Feb 75* 264-265 (1F12)
perturbation techniques in semiconductor diagnostics; *Champlin, Keith S.*; *T-MTT v11 n1 Jan 63* 73-77
phase shift by periodic loading of waveguide and its application to broadband circular polarization; *Simmons, Alan J.*; *T-MTT v3 n6 Dec 55* 18-21
phase velocity in continuously loaded coaxial cables; *Large, D. B.*; *T-MTT v13 n2 Mar 65* 243
propagation characteristics of waveguide with uniformly spaced cylindrical posts; 2840 MHz; *Altshuler, Edward E.*; *T-MTT v9 n5 Sep 61* 398-402
ray-optical methods for trapped and slightly leaky modes in multilayered or multiwave regions; *Maurer, Stewart J.*; *T-MTT v18 n9 Sep 70* 584-595
thin-iris loaded periodic waveguides; *Rosenberg, David*; *T-MTT v14 n3 Mar 66* 145-153
transmission line with capacitive loads at regular intervals along line; switching time of incident wave; *Malaviya, Shashi D.*; *T-MTT v27 n10 Oct 79* 854-859 (1C04)
variational expression for the propagation constant of the waves in waveguides with inhomogeneous media and with wall impedance; *Kurokawa, Kaneyuki*; *T-MTT v10 n5 Sep 62* 314-320
X-band ferroelectric phase shifter in waveguide; *DiDomenico, Mauro, Jr.*; *T-MTT v10 n3 May 62* 179-185
Loaded waveguides; cf. Dielectric-loaded waveguides; Ferrite-loaded waveguides; Magnetic-material-loaded waveguides; Nonhomogeneously loaded waveguides; Plasma-loaded waveguides; Semiconductor-loaded waveguides; Waveguide discontinuities
Locked amplifiers; cf. Phase-locked amplifiers
Locked oscillators
locking equations which account for nonsinusoidal device waveforms; calculation of locking bandwidth; *Quine, John P.*; *T-MTT v20 n6 Jun 72* 418-420 (2C05)
Locked oscillators; cf. Injection-locked oscillators; Phase-locked oscillators
Logic devices; cf. Semiconductor logic devices
Lossless networks
coupled transmission lines in a nonhomogeneous dielectric medium; transient analysis; *Chang, Fung Yuel*; *T-MTT v18 n9 Sep 70* 616-626
transmission line filters consisting of symmetrical and identical sections; graphical analysis by Smith chart; *Dawirs, Harvel N.*; *T-MTT v3 n1 Jan 55* 15-21
transmission line matching systems; analysis in terms of real functions; *Gledhill, C. S.*; *T-MTT v16 n1 Jan 68* 49-50
transmission-line reactance networks; design for equalizer applications; *Cristal, Edward G.*; *T-MTT v18 n9 Sep 70* 531-540

two-port; impedance transformations by the isometric circle method; *Bolinder, E. Folke*; *T-MTT v6 n1 Jan 58* 111-112
Lossy media; cf. Absorbing media
Lossy networks
analogy between Weissfloch transformer and the ideal attenuator (reflection coefficient transformer) and extension to include the general lossy two-port; *Stock, D. J. R.*; *T-MTT v7 n4 Oct 59* 473-474
circulators; performance limitations; *Bex, H.*; *T-MTT v19 n5 May 71* 493-494 (2C07)
four-poles; semi-precision measuring method based on a modified H. A. Wheeler network; *Altschuler, Helmut M.*; *T-MTT v3 n1 Jan 55* 30-36
graphical method for transforming impedances and reflectances through a lossy twoport; *Hinckelmann, Otto F.*; *T-MTT v10 n2 Mar 62* 139-141
high-power harmonic suppressor using leaky wall waveguide; *Wantuch, Ernest*; *T-MTT v10 n6 Nov 62* 428-431
integral for evaluating propagation constant in lossy transmission lines; *Collin, Robert E.*; *T-MTT v8 n3 May 60* 339-342
passive; effective noise temperature; *Strum, Peter D.*; *T-MTT v4 n3 Jul 56* 145-151
scattering parameters of passive lossy nonreciprocal two-port networks; *Glasser, Jerome I.*; *T-MTT v21 n3 Mar 73* 135-136 (1C05)
symmetrical, three-port, with circulator properties; analysis; *Hagelin, Sven*; *T-MTT v17 n6 Jun 69* 328-333
two-port, mismatched lossy microwave network; intrinsic insertion loss; *Tomiyasu, Kiyo*; *T-MTT v3 n1 Jan 55* 40-44
Lossy waveguide junctions
dissipation and scattering matrices in terms of eigenvalues of dissipation matrix; *Schwartz, E.*; *T-MTT v22 n1 Jan 74* 75 (1F07)
dissipation and scattering matrices in terms of eigenvalues of dissipation matrix; *Helszajn, Joseph*; *T-MTT v20 n11 Nov 72* 779-782 (2B10)
Low-pass filters
coaxial; optimal design method; *Haack, G. R.*; *T-MTT v17 n3 Mar 69* 169-170
coaxial; precise design; *Levy, Ralph*; *T-MTT v16 n3 Mar 68* 142-147
coupled-strip-transmission-line filters and directional couplers; theory of operation and design; *Jones, E. M. T.*; *T-MTT v4 n2 Apr 56* 75-81
elliptic, microwave, compact; easy design and construction with low passband loss; *Wenzel, Robert J.*; *T-MTT v18 n12 Dec 70* 1150-1158
equally terminated lumped and distributed filters of even order; synthesis; *Lind, Larry F.*; *T-MTT v17 n1 Jan 69* 43-45
equiripple filters with single transmission zeros at real or imaginary frequencies; *Levy, Ralph*; *T-MTT v24 n4 Apr 76* 172-181 (1A10)
high-power wide-band, low-pass filter using three waffle-iron filters; *L*-band operation; *Sharp, Eugene D.*; *T-MTT v11 n2 Mar 63* 111-116
impedance-transforming networks of low-pass-filter form; *Cristal, E. G.*; *T-MTT v13 n5 Sep 65* 693-695
low-pass filter that attenuates by dissipation; *Schiffman, Bernard M.*; *T-MTT v13 n5 Sep 65* 699-700
microwave coaxial low-pass structure; new 'inside-out' realization; *Snyder, Richard V.*; *T-MTT v16 n4 Apr 68* 262-264
microwave filters with constant group delay and equiripple passband magnitude; tables for nonminimum-phase even-degree low-pass prototype networks; *Cloete, J. H.*; *T-MTT v27 n2 Feb 79* 123-128 (1C05)
millimeter-wave, infrared, and optical filters consisting of multilayer dielectric stacks; *Young, Leo*; *T-MTT v14 n2 Feb 66* 75-80
prototype network for microwave linear phase filters; approximation theory; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 290-301
quasi-optical; use for oversized or focused-beam waveguides; *Matthaei, George L.*; *T-MTT v16 n12 Dec 68* 1038-1047
quasi-optical, which attenuate by absorption; *Matthaei, George L.*; *T-MTT v17 n12 Dec 69* 1123-1129
waffle-iron low-pass filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 555-557
waveguide filters for over-moded applications; *Ren, Chung-Li*; *T-MTT v22 n12 Dec 74* 1202-1209 (4A01)
waveguide filters; synthesis of tapered corrugated waveguide filters; *Levy, Ralph*; *T-MTT v21 n8 Aug 73* 526-532 (1C12)
LSA amplifiers
reflection amplifier at 9.5 GHz; GaAs diode oscillating in LSA mode with gain at frequency not harmonically related to fundamental frequency; *Lidgey, F. John*; *T-MTT v21 n11 Nov 73* 736-738 (2D06)
LSA oscillators
step-iris resonator circuit to increase efficiency; *Spiwak, R. R.*; *T-MTT v18 n11 Nov 70* 973-975
Lumped-distributed filters; cf. Distributed-lumped filters
Lumped-distributed networks; cf. Distributed-lumped networks
Lumped-element circulators
4 GHz circulator using beam-crossover technology; compatible with integrated circuits; *Knerr, Reinhard H.*; *T-MTT v21 n3 Mar 73* 150-151 (1D08)
changing of operating frequency using varactor diodes; *Naito, Yoshiyuki*; *T-MTT v19 n4 Apr 71* 367-372 (1C11)
switching circulators; switching by changing two capacitance values while keeping magnetic biasing field constant; *Knerr, Reinhard H.*; *T-MTT v20 n6 Jun 72* 396-401 (1F02)
temperature-stabilized 1.7-GHz broadband circulator; *Katoh, Hidehiko*; *T-MTT v23 n8 Aug 75* 689-696 (1G03)
thin-film, photolithographically produced; design for operation at fields below the field for gyromagnetic resonance; *Knerr, R. H.*; *T-MTT v17 n12 Dec 69* 1152-1154
voltage-tuned circulator using varactor; *Helszajn, Joseph*; *T-MTT v19 n10 Oct 71* 825-826 (1D11)
without crossovers; *L*-band circulator; *Knerr, Reinhard H.*; *T-MTT v22 n5 May 74* 544-548 (2A03)
Lumped-element circulators, ferrite
4-port E-plane cross-junction circulators; broadbanding; *Longley, S. R.*; *T-MTT v15 n6 Jun 67* 378-380
broadband UHF circulator covering 400–700 MHz range; *McChesney, G.*; *T-MTT v15 n3 Mar 67* 198-199
compact broadband thin-film *L*-band type; *Knerr, Reinhard H.*; *T-MTT v18 n12 Dec 70* 1100-1108
high-power circulator for 35 GHz; improved symmetry; *Darwent, A. P.*; *T-MTT v15 n2 Feb 67* 120
lumped-constant circulator; calculation of the junction inductance; *Helszajn, J.*; *T-MTT v18 n1 Jan 70* 50-52
lumped-element *Y* circulator; *Konishi, Yoshihiro*; *T-MTT v13 n6 Nov 65* 852-864
temperature-stabilized 1.7-GHz broadband circulator. *Katoh, H., Correction*; *T-MTT v24 n3 Mar 76* 162-163 (1C08)
VHF-band, stacked; construction; *Okamura, Sohji*; *T-MTT v17 n12 Dec 69* 1151-1152
Y-circulator with ferrite post; operation at 258 GHz; *Liebe, H. J.*; *T-MTT v15 n3 Mar 67* 190-191
Lumped-element microwave circuits
elliptic-function filters; use of published tables for synthesis of distributed elliptic-function filters; *Levy, Ralph*; *T-MTT v14 n11 Nov 66* 506-517
equally terminated low-pass lumped and distributed filters of even order; synthesis; *Lind, Larry F.*; *T-MTT v17 n1 Jan 69* 43-45
filters with lumped-distributed elements or frequency variable terminations; computer design; *Carlin, Herbert J.*; *T-MTT v17 n8 Aug 69* 598-604
general IMPATT diode small-signal lumped models; use of state–space analysis; *Stewart, J. A. Carson*; *T-MTT v18 n11 Nov 70* 835-842
hybrid lumped-element thin-film amplifiers; design and development; *Caulton, Martin*; *T-MTT v16 n7 Jul 68* 397-404
integrated circuits using interdigital capacitors; *Alley, Gary D.*; *T-MTT v18 n12 Dec 70* 1028-1033
lumped-element fabrication and use up to *X*-band; capacitors, inductors, resistors, and gyrators; *Aitchison, Colin S.*; *T-MTT v19 n12 Dec 71* 928-937 (1D12)
mixed lumped/distributed component design; use of new class of distributed prototype filters; *Levy, Ralph*; *T-MTT v18 n12 Dec 70* 1064-1071

M

Magnetic-material-loaded waveguides
axially magnetized plasma-filled; variational expression for the propagation coefficient of the normal modes; *Champlin, Keith S.*; *T-MTT v17 n7 Jul 69* 401
circular, magnetoplasma-filled waveguides; 'twist' modes; *Champlin, Keith S.*; *T-MTT v18 n9 Sep 70* 566-570
microwave magnetic Kerr effect in semiconductors; measurement by dual-mode reflectometer; *Hauge, Peter S.*; *T-MTT v15 n7 Jul 67* 406-410
rectangular, infinite, lossless waveguide semi-infinitely filled with transversely magnetized magnetic material; microwave properties; *O'Brien, Kevin C.*; *T-MTT v18 n7 Jul 70* 400-402
rectangular, loaded with a thin slab of transversely magnetized semiconductor; boundary value problem; *Hirota, Ryogo*; *T-MTT v18 n4 Apr 70* 188-195
slabs of uniformly magnetized material filling the cross section of a rectangular waveguide operating in TE_{NO} modes; microwave properties; *O'Brien, Kevin C.*; *T-MTT v18 n7 Jul 70* 377-382
Magnetic-material-loaded waveguides; cf. Ferrite-loaded waveguides
Magnetic materials; cf. Ferrites; Garnets; Microwave magnetic materials
Magnetic microstrip lines
effective relative permeability, propagation and attenuation filling factors; *Pucel, Robert A.*; *T-MTT v20 n5 May 72* 304-308 (1B11)
Magnetic microstrip lines; cf. Ferrite microstrip lines; Garnet microstrip lines
Magnetic resonance
ferrite circulators, high peak power differential phase shift circulators; biasing at direct magnetic field between subsidiary and main resonances; *Helszajn, Joseph*; *T-MTT v26 n9 Sep 78* 653-658 (1B13)
orthogonal-loop-coupled filters; equivalent circuit and bandwidth narrowing due to coupling inductance; *Carter, Philip S.*; *T-MTT v18 n2 Feb 70* 100-105
Magnetic resonance; cf. Antiferromagnetic resonance; Ferromagnetic resonance; Paramagnetic resonance
Magnetic thermal factors
ferrite isolators, thermal stress-induced breakdown; adhesive layer rupture initiates breakdown; *Buck, Daniel C.*; *T-MTT v26 n5 May 78* 357-360 (1C11)
Magnetoelastic delay lines; cf. YIG delay lines
Magnetoelastic surface waves
composite layered structure of piezoelectric medium and magnetoelastic medium separated by conducting plate; *Bhattacharyya, Tushar*; *T-MTT v24 n4 Apr 76* 226-230 (1E08)
parametric amplification of magnetoelastic waves in YIG rods at room temperature; *Lacklison, D. E.*; *T-MTT v16 n11 Nov 68* 951-952
Magnetoplasma-loaded waveguides; cf. Plasma-loaded waveguides
Magnetospectroscopy
submillimeter spectroscopy of shallow donor impurity in InAs epitaxial layers; *Litton, C. W.*; *T-MTT v22 n12 Dec 74* 1117-1118 (1C14)
Magnetostatic delay lines
delay limits due to dispersion; *Bini, M.*; *T-MTT v20 n11 Nov 72* 771-773 (2B02)
Magnetostatic surface-wave devices
isolator for VHF band; edge-mode isolator; *Craig, Robert A.*; *T-MTT v25 n1 Jan 77* 76-77 (1F08)
isolators for VHF band; edge-mode isolators; *Courtois, Louis*; *T-MTT v24 n3 Mar 76* 129-135 (1A03)
transducer theory; design equations; *Sethares, James C.*; *T-MTT v27 n11 Nov 79* 902-909 (1C04)
Magnetostatic surface waves
curved ferrite surfaces; propagation characteristics; *Srivastava, Neeraj C.*; *T-MTT v26 n4 Apr 78* 252-256 (1C02)
ferrite magnetized perpendicular to interface; nonmagnetostatic surface waves; *Vaslow, Dale F.*; *T-MTT v22 n7 Jul 74* 743-745 (1C09)
ferrites; aximuthally dependent magnetostatic modes in cylindrical ferrite; effect of adjacent dielectric; *Masuda, Masamitsu*; *T-MTT v19 n10 Oct 71* 834-836 (1E08)
lossy ferrimagnetic slab; modal spectrum; *Bardati, Fernando*; *T-MTT v27 n7 Jul 79* 679-688 (1D11)
microstrip-excited surface waves; radiation impedance calculation; *Ganguly, Achintya K.*; *T-MTT v26 n6 Jun 78* 444-447 (1E10)
passband control by spacing metal plate apart from ferrite surface; *Kawasaki, Kiyohiro*; *T-MTT v22 n11 Nov 74* 924-929 (1A14)
semiconductor effects; interaction of surface waves with drifting carriers in semiconductor; *Kawasaki, Kiyohiro*; *T-MTT v22 n11 Nov 74* 918-924 (1A08)

thin dielectric slab between oppositely magnetized ferrites; *Srivastava, N. C.; T-MTT v26 n3 Mar 78* 213-215 (1F09)
two ferrite slabs of different magnetic saturation with weak coupling between them; YIG and Ga-YIG slabs; *Tsutsumi, Makoto; T-MTT v24 n9 Sep 76* 591-597 (1D05)
YIG film, periodically corrugated; magnetic wave interactions; *Seshadri, S. R.; T-MTT v27 n2 Feb 79* 199-204 (2A12)
YIG rods; surface metallization effect on surface waves propagating in direction of external dc magnetic field; *Kawasaki, Kiyohiro; T-MTT v22 n4 Apr 74* 391-394 (1C13)
YIG slab having periodically corrugated surface. *Tsutsumi, Makoto, Correction; T-MTT v26 n5 May 78* 374 (1D14)

Magnetostatic volume waves
shallow grooved grating on YIG film; reflection characteristics; *Parekh, Jayantkumar P.; T-MTT v26 n12 Dec 78* 1039-1044 (2B09)

Magnetrons
harmonics generation at millimeter wavelengths; *Nethercot, A. H., Jr.; T-MTT v2 n3 Sep 54* 17-20
injected RF signal locking of magnetrons; *Thal, Herbert L., Jr.; T-MTT v13 n6 Nov 65* 836-846
pulsed; long-line effect and its prevention; *Pritchard, W. L.; T-MTT v4 n2 Apr 56* 97-110
research at Columbia University Radiation Laboratory towards production of the shortest wavelengths in the mm region; *Bernstein, M. J.; T-MTT v2 n3 Sep 54* 33-37
spurious harmonic outputs from high power pulsed magnetrons, klystrons and traveling-wave tubes; *Tomiyasu, Kiyo; T-MTT v9 n6 Nov 61* 480-484

Manufacturing
microwave structures; mechanical design and manufacture; *Harvey, A. F.; T-MTT v7 n4 Oct 59* 402-422
microwave transmission lines; use of photoetching technique; *Wild, Norman R.; T-MTT v3 n2 Mar 55* 21-30

Masers
broadband, traveling-wave type; noise performance; *De Gruyl, Johannes A.; T-MTT v16 n9 Sep 68* 586-595
bulk and deposited ferrite isolators for millimeter maser application; *Peyton, B. J.; T-MTT v16 n5 May 68* 319-320
characteristics of a traveling wave maser using ruby and a Karp-type slow-wave structure in the *X*-band; theoretical and experimental results; *Haddad, George I.; T-MTT v12 n4 Jul 64* 406-414
description of a microwave and millimeter-wave ruby maser pumped by a ruby laser; *Devor, Donald P.; T-MTT v11 n4 Jul 63* 251-254
double-amplification mode of operation; chromium-doped rutile traveling-wave maser utilizing simultaneously two signal frequency transitions; *Dmitrevsky, S.; T-MTT v21 n6 Jun 73* 426-427 (2C03)
engineering design of an *X*-band amplifier consisting of a cascade of iris coupled ruby resonators separated by garnet isolators; *Goodwin, Frank E.; T-MTT v12 n3 May 64* 349-358
five layer (air, reflector, ruby, reflector, air) optical maser for microwave amplification is treated as a Fabry–Perot resonator; *Jacobs, Harold; T-MTT v12 n2 Mar 64* 163-170
frequency divider using parametric diodes and an ammonia maser controlled signal generator; *Stitch, Malcolm L.; T-MTT v8 n2 Mar 60* 218-221
gain-stabilized maser radiometer for 13 cm; *Nicolson, G. D.; T-MTT v18 n3 Mar 70* 169
generalized solutions for optical maser amplifier using the Laplace transform method; *Kumagai, Nobuaki; T-MTT v13 n4 Jul 65* 445-451
maser amplifier structure consisting of a cascade of iris coupled $\pi/2$ cavities intermixed with isolators; *O'Meara, Thomas R.; T-MTT v12 n3 May 64* 336-348
millimeter wave molecular oscillator and amplifier; proposal for a tunable type; *Singer, Jerome R.; T-MTT v7 n2 Apr 59* 268-272
noise figure of a maser amplifier; calculation and measurements; *Helmer, J. C.; T-MTT v6 n2 Apr 58* 210-214
noise performance of traveling-wave masers; *Higa, W. H.; T-MTT v12 n1 Jan 64* 139
noise temperature measurements of an operational maser system; 15°K; *Clauss, R. C.; T-MTT v12 n6 Nov 64* 619-620
parametric devices and masers; annotated bibliography; *Mount, Ellis; T-MTT v8 n2 Mar 60* 222-243
rectangular waveguide filled with skew uniaxial dielectric; propagation; *Davies, J. B.; T-MTT v15 n6 Jun 67* 372-376
reflected-wave ruby maser with *K*-band tuning range and large instantaneous bandwidth; *Moore, Craig R.; T-MTT v27 n3 Mar 79* 249-256 (1C07)
ruby traveling-wave maser for *K*-band using photoetched slow-wave structure; *Yngvesson, K. Sigfrid; T-MTT v24 n11 Nov 76* 711-717 (1C03)
rutile traveling-wave maser for 20–40 GHz band using dielectric image line slow-wave structure; *Kollberg, Erik L.; T-MTT v24 n11 Nov 76* 718-725 (1C10)
rutile traveling-wave maser system for the 84-ft. radio telescope in Onsala, Sweden; *Rydbeck, O. E. H.; T-MTT v16 n9 Sep 68* 799-803
single-mode cavity maser at 2200 Mc; *Hanson, D. W.; T-MTT v9 n1 Jan 61* 97-98
solid-state maser operation at signal frequencies higher than pump frequency; *Arams, Frank R.; T-MTT v9 n1 Jan 61* 68-72
solid-state microwave amplifiers; operation, performance, and bibliography; *Heffner, Hubert; T-MTT v7 n1 Jan 59* 83-91
solid-state microwave maser at 77.4°K; *Ammann, Eugene O.; T-MTT v13 n2 Mar 65* 186-193
solid-state, operating at 300–500 MHz; use of chromium doped potassium cobalticyanide; *Kingston, R. H.; T-MTT v7 n1 Jan 59* 92-94
solid-state; three-level excitation; *Scovil, H. E. D.; T-MTT v6 n1 Jan 58* 29-38
traveling-wave maser use in ultra-low-noise two-channel tunable amplifier operating in 1.5–2.5 GHz range; *Sard, Eugene; T-MTT v14 n12 Dec 66* 608-618
traveling wave maser using the meander line as the slow wave circuit and rutile as the active maser crystal; *Morris, L. C.; T-MTT v12 n4 Jul 64* 421-428
traveling-wave; optimum pitch; *Kollberg, Erik; T-MTT v14 n4 Apr 66* 212-213
traveling-wave; use of dielectrically loaded ladder lines; *Haddad, George I.; T-MTT v14 n3 Mar 66* 120-129
two-level, solid-state; modes of operation and use as microwave generators; *Bolef, Dan I.; T-MTT v6 n1 Jan 58* 47-52
X-band traveling-wave maser in double ring ladder line; *Haddad, George I.; T-MTT v10 n1 Jan 62* 3-8
X-band traveling-wave type; use at 8448 MHz; *Petty, S. M.; T-MTT v16 n1 Jan 68* 47-48

Masers; cf. Gyrotrons; Submillimeter-wave generation

Matched filters
acoustic surface-wave filters for phase-coded spread-spectrum waveforms; programmable filters; *Hagon, P. J.; T-MTT v21 n4 Apr 73* 303-306 (3D11)
analog; use of tapped acoustic surface-wave delay lines; *Costanza, S. T.; T-MTT v17 n11 Nov 69* 1042-1043
programmable acoustic surface-wave filters; *Staples, Edward J.; T-MTT v21 n4 Apr 73* 279-287 (3B08)

Matching; cf. Impedance matching

Materials testing
ceramic materials; electromagnetic millimeter waves for detecting and locating defects; *Bahr, Alfred J.; T-MTT v26 n9 Sep 78* 676-683 (1D08)

Matrix methods
application of hypercomplex matrix analysis to variable parameter networks; *Krongelb, Sol; T-MTT v10 n4 Jul 62* 236-251
dielectric-loaded waveguides; reduction of vector Maxwell equations to matrix eigenvalue problem; *English, William J.; T-MTT v19 n1 Jan 71* 40-46 (1E06)
eigenvalue calculation; anomalous convergence of iterative methods; *Albani, M.; T-MTT v20 n9 Sep 72* 630-631 (2C05)
method to analyze the properties of optical system composed of several coupled resonators with active media; *Fontana, Jorge R.; T-MTT v12 n4 Jul 64* 400-405
monochromatic two-dimensional field problems solved by matrix methods; considerations and estimation of their errors; *Hashimoto, Masahiro; T-MTT v18 n7 Jul 70* 352-359
multiconductor transmission lines; matrix chain parameter identities; *Paul, Clayton R.; T-MTT v23 n9 Sep 75* 756-760 (1C10)
ridged waveguide eigenvalue spectrum; integral eigenvalue equation solution using Ritz-Galerkin method; *Montgomery, James P.; T-MTT v19 n6 Jun 71* 547-555 (2B01)

Matrix methods; cf. Mode-matching methods; Moment methods; Sparse-matrix methods

Maximally-flat delay filters
minimum-phase distributed filters with simultaneous conditions on amplitude and delay; degrees of freedom divided between flat amplitude and flat delay; *Scanlan, Sean O.; T-MTT v19 n9 Sep 71* 749-759 (1B11)

Maximally-flat-magnitude filters
bandpass; bandwidth curves for W. W. Mumford's design; *Schiffman, B. M.; T-MTT v15 n10 Oct 67* 589
maximally flat filters using shorted quarter-wave stubs; *Mumford, W. W.; T-MTT v13 n5 Sep 65* 695-696
maximally flat multistub filter for microstrip line; *Atwood, W.; T-MTT v16 n7 Jul 68* 477-480
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z*; *Gledhill, Cyril S.; T-MTT v17 n7 Jul 69* 379-386
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z.Gledhill, C. S., Correction; T-MTT v17 n11 Nov 69* 1046
stepped impedance transformers having maximally flat and Chebyshev characteristics; exact solutions involving the line vector *z*; *Levy, R.; T-MTT v18 n9 Sep 70* 648
symmetric bandpass type, considered by W. W. Mumford; insertion loss vs. normalized frequency curves; *Hindin, Harvey J.; T-MTT v16 n5 May 68* 316-318

Maximally-flat-magnitude filters; cf. Butterworth filters

MBM devices
abbr. of Metal-barrier-metal devices
amplification at infrared and optical frequencies by point-contact MBM diode with negative differential resistance region in *I–V* characteristic; *Drury, David M.; T-MTT v27 n6 Jun 79* 598-603 (1D02)

Measurement standards
Australian National Standards Laboratory *X*-band radiometer for the calibration of noise sources; *Somlo, P. I.; T-MTT v16 n9 Sep 68* 664-669
Australian National Standards Laboratory *X*-band radiometer for the calibration of noise sources.*Somlo, P. L., Correction; T-MTT v17 n3 Mar 69* 174
calibrated reflection coefficient standards for the circular TE_{01} mode; *Champlin, Keith S.; T-MTT v16 n2 Feb 68* 90-94
high-accuracy microwave phase standard for use in primary calibration laboratories; *James, Allan V.; T-MTT v16 n11 Nov 68* 944-949
international standards for microwave power measurements; *Engen, G. F.; T-MTT v13 n5 Sep 65* 713-715
low-temperature microwave noise standard; *Trembath, Charles L.; T-MTT v16 n9 Sep 68* 709-714
microwave and high-frequency calibration services at NBS, Part IV; *US National Bureau of Standards, Radio Standards Lab.; T-MTT v13 n1 Jan 65* 138-139
microwave and high frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards; T-MTT v12 n4 Jul 64* 480-482
microwave and high-frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards; T-MTT v12 n5 Sep 64* 572-576
microwave and high-frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards; T-MTT v12 n6 Nov 64* 623-624
microwave power at 3 GHz; international intercomparison of standards; *Engen, Glenn F.; T-MTT v19 n4 Apr 71* 411-413 (2C07)
microwave thermal noise; mathematical expression for the noise temperature; *Stelzried, Charles T.; T-MTT v16 n9 Sep 68* 646-655

Measurement standards; cf. Attenuation standards

Measurements, cf. Acoustic measurements; Antenna measurements; Conductivity measurement; Electromagnetic measurements; Infrared spectroscopy; Mechanical variables measurement; Microwave measurements; Millimeter-wave measurements; Optical measurements; Semiconductor device measurements; Submillimeter-wave spectroscopy; Voltage measurement

Mechanical factors
microwave structures; mechanical design and manufacture; *Harvey, A. F.; T-MTT v7 n4 Oct 59* 402-422

Mechanical variables measurement; cf. Size measurement

Memories; cf. Acoustic memories; Analog memories

MESFETs; cf. Microwave FETs; Millimeter-wave FETs; Schottky-barrier FETs

Meshes; cf. Conducting screens
Metal-barrier-metal; cf. MBM
Metal films
conductivity measurement for films of thickness less than 100 Å; dc and microwave measurements using waveguide impedance method; *Chaurasia, H. K.*; *T-MTT v21 n1 Jan 73* 51-52 (2B04)
Metal semiconductor FETs; cf. MESFETs
Metals
cyclotron resonance in metals; 0.6–2 mm; *Goy, P.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
cyclotron resonance in metals; 4-mm measurements compared with 220-m measurements; *Peech, J.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
RF surface resistance of several metals; computation using the anomalous skin effect theory; *Duncan, L. W.*; *T-MTT v16 n2 Feb 68* 130-131
Meteorological factors
radiometric measurement of attenuation and emission by the Earth's atmosphere at wavelengths from 4 cm to 8 mm; *Haroules, George G.*; *T-MTT v16 n9 Sep 68* 611-620
rain cancellation using turnstile junction to provide necessary polarization of the fields; reduction of rain return in radar feed system; *Crandell, Paul A.*; *T-MTT v3 n1 Jan 55* 10-15
submillimeter-wave attenuation by clouds and rain; *Deirmendjian, D.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
Meteorological factors; cf. Radio propagation meteorological factors
Meteorological radar
commercial airlines; use of double-ridge waveguide designed to propagate *C*- and *X*-band; *Anderson, Tore N.*; *T-MTT v3 n4 Jul 55* 2-9
commercial airlines; use of double-ridge waveguide designed to propagate *C*- and *X*-band. *Anderson, Tore N., Correction*; *T-MTT v4 n1 Jan 56* 54
Methanol lasers
far-infrared CH_3OH laser pumped by laser; rate equations; *Henningsen, J. O.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
Methyl cyanide
far-infrared spectroscopy near 360 cm^{-1} using grill spectrometer; *Gauffre, G.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
Methyl fluoride lasers
submillimeter-wave lasers for plasma diagnostic applications; megawatt-level, 30-MHz linewidth at 496 μm in CH_3F; *Brown, Fielding*; *T-MTT v22 n12 Dec 74* 1112-1113 (2C09)
submillimeter-wave lasers using transverse optical pumping; tunable 496-μm laser; *Brown, F.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
Microstrip
anisotropic substrates; covered single and coupled microstrip; *Alexopoulos, Nicolaos G.*; *T-MTT v26 n6 Jun 78* 387-393 (1A09)
anisotropic substrates; Green's function obtained using image coefficient method; capacitance calculation; *Kobayashi, Masanori*; *T-MTT v26 n2 Feb 78* 119-126 (1F03)
anisotropic substrates; transforming anisotropic problem into isotropic problem; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 769-775 (1A03)
$BaTi_4O_9$ dielectric; dispersion and loss measurements up to 18 GHz and temperature stability measurements at 14 GHz; *Lee, Young Soo*; *T-MTT v27 n7 Jul 79* 655-660 (1C01)
boundary singularities in finite difference solutions of Laplace's equation; *Whiting, K. B.*; *T-MTT v16 n10 Oct 68* 889-891
capacitance calculation algorithm; *Premoli, Amedeo*; *T-MTT v23 n8 Aug 75* 642-648 (1C12)
capacitance of a microstrip line; computation using Fourier transform and variational techniques; *Yamashita, Eikichi*; *T-MTT v16 n4 Apr 68* 251-256
capacitance upper bound calculation using variational method and spectral domain approach; *Araki, Kiyomichi*; *T-MTT v26 n7 Jul 78* 506-509 (1D10)
characteristic impedance definition based on wave impedance; *Getsinger, William J.*; *T-MTT v27 n4 Apr 79* 293 (1A03)
characteristic impedance definitions for uniform microstrip; frequency dependence of characteristic impedance; *Bianco, Bruno*; *T-MTT v26 n3 Mar 78* 182-185 (1D06)
characteristic impedance of shielded microstrip; hybrid-mode concept for calculating frequency-dependent characteristic impedance; *Arndt, Fritz*; *T-MTT v27 n8 Aug 79* 724-731 (1A08)
Chebyshev approximation method for microstrip problems; *Gladwell, Graham M. L.*; *T-MTT v23 n11 Nov 75* 865-870 (1B01)
conductor losses in microstrip transmission lines; derivation of formulas; *Pucel, Robert A.*; *T-MTT v16 n6 Jun 68* 342-350
conductor losses in microstrip transmission lines; derivation of formulas. *Pucel, R. A., Correction*; *T-MTT v16 n12 Dec 68* 1064
coupled line design; *Akhtarzad, Sina*; *T-MTT v23 n6 Jun 75* 486-492 (1B14)
coupled line design; *Shamasundara, S. D.*; *T-MTT v25 n3 Mar 77* 232-233 (1E10)
coupled-line model for dispersion in parallel-coupled microstrip; *Carlin, Herbert J.*; *T-MTT v23 n5 May 75* 444-446 (1D04)
coupled lines and interdigital structures on microstrip; obtaining dimensions of lines from self and mutual capacitances; *Milligan, Thomas A.*; *T-MTT v25 n5 May 77* 405-410 (1E09)
coupled microstrip even- and odd-mode characteristics; semi-empirical design equations; *Garg, Ramesh*; *T-MTT v27 n7 Jul 79* 700-705 (1F04)
coupled microstrip propagation-mode parameters, empirical formulas; application to interdigital circuit analysis and synthesis; *Dalby, Arne Brejning*; *T-MTT v27 n8 Aug 79* 744-752 (1C02)
coupled microstrip transmission lines; coupled-mode formulation of inhomogeneous lines; *Krage, Mark K.*; *T-MTT v18 n4 Apr 70* 217-222
coupled microstrip transmission lines; evaluation of coupled-line parameters; *Krage, Mark K.*; *T-MTT v18 n4 Apr 70* 222-228
coupled pair of microstrip lines; determination of frequency dependence by Fourier-transform method; *Denlinger, Edgar J.*; *T-MTT v18 n10 Oct 70* 731-733
coupled pairs of microstrip lines; computation of even and odd mode impedance; *Chen, Wen H.*; *T-MTT v18 n1 Jan 70* 55-57
coupled suspended lines with tuning septums; generalized spectral domain analysis; *Itoh, Tatsuo*; *T-MTT v26 n10 Oct 78* 820-827 (2B12)
crossover structures; *Wight, J. S.*; *T-MTT v24 n5 May 76* 270 (1C08)
cylindrical and cylindrically warped lines; impedance calculation; *Wang, Yen-Chu*; *T-MTT v26 n1 Jan 78* 20-23 (1B08)
dielectric constant of substrates; measurement technique; *Howell, John Q.*; *T-MTT v21 n3 Mar 73* 142-143 (1C12)
Microstrip. *cont.*
dielectric constant of substrates; measurement technique; *Ladbrooke, P. H.*; *T-MTT v21 n8 Aug 73* 570-571 (2D04)
dielectric-loaded waveguide with a symmetrically placed microstrip line; numerical analysis using a finite-difference technique; *Hornsby, J. S.*; *T-MTT v17 n9 Sep 69* 684-690
dielectric loss calculation; *Simpson, Ted L.*; *T-MTT v24 n2 Feb 76* 106-108 (1C12)
disk networks; impedance matrix of multiport with fringing fields at disk edge; *Bonetti, René R.*; *T-MTT v26 n7 Jul 78* 471-477 (1B03)
dispersion characteristics of open microstrip; computation methods; *Kuester, Edward F.*; *T-MTT v27 n7 Jul 79* 691-694 (1E09)
dispersion, dielectric and conductor losses; spectral-domain analysis, higher order solution; *Mirshekar-Syahkal, D.*; *T-MTT v27 n7 Jul 79* 694-699 (1E12)
dispersion properties; approximate formula for computer-aided design of MIC; *Yamashita, Eikichi*; *T-MTT v27 n12 Dec 79* 1036-1038 (2B01)
effective filling fraction for line with isotropic substrate; appliction to anisotropic substrate; *Kobayashi, Masanori*; *T-MTT v27 n9 Sep 79* 776-778 (1A10)
ferrite-filled; determination of propagation constant; *Brodwin, Morris E.*; *T-MTT v6 n2 Apr 58* 150-155
frequency dependence of characteristic impedance; spectral-domain dispersion analysis; *Knorr, Jeffrey B.*; *T-MTT v23 n9 Sep 75* 725-728 (1A07)
Green's function for multilayer microstrip with rectangular side walls; *Kobayashi, Masanori*; *T-MTT v24 n9 Sep 76* 626-628 (1F12)
Green's function for open or covered microstrip; *Coen, Shimon*; *T-MTT v23 n7 Jul 75* 591-593 (1D11)
Green's function for two- and three-dimensional problems; *Crampagne, Raymond*; *T-MTT v25 n5 May 77* 442-444 (2A06)
Green's function in multidielectric region with inhomogeneous isotropic media; *Kobayashi, Masanori*; *T-MTT v23 n9 Sep 75* 760-762 (1C14)
Green's function in space domain; frequency-dependent dyadic Green's function; *Chow, Y. L.*; *T-MTT v26 n12 Dec 78* 978-983 (1D14)
guided waves in limit cases; *Eaves, R. E., Jr.*; *T-MTT v18 n4 Apr 70* 231-232
impedance matching methods for attenuators and microstrips; *Thompson, G. H. B.*; *T-MTT v9 n3 May 61* 263
inhomogeneous coupled lines; design charts; *Ros, Alain E.*; *T-MTT v26 n6 Jun 78* 394-400 (1B02)
inhomogeneous lines; variation of characteristics with dielectric constant of substrate and geometrical dimensions; *Ros, Alain*; *T-MTT v23 n8 Aug 75* 703-706 (2A07)
integral equation solution using nonuniform discretization; *Yamashita, Eikichi*; *T-MTT v24 n4 Apr 76* 195-200 (1C05)
irregular finite conductors on dielectric sheet; capacitance coefficients; *Birtles, A. B.*; *T-MTT v21 n8 Aug 73* 568-569 (2D02)
line in the presence of a neighboring strip; calculation of current distribution; *Hellman, Martin E.*; *T-MTT v17 n5 May 69* 254-259
lines on fused quartz; measurement of attenuation constant and their effective relative dielectric constant; *Heuven, J. H. C. van*; *T-MTT v18 n2 Feb 70* 113-114
lumped capacitance calculation using moment methods. *Farrar, A., Correction*; *T-MTT v20 n4 Apr 72* 294 (2F04)
magnetostatic surface-wave excitation using microstrip; radiation impedance calculation; *Ganguly, Achintya K.*; *T-MTT v26 n6 Jun 78* 444-447 (1E10)
measurement of loss and dispersion in 0.4–10 GHz range; time-domain metrology; *Luce, D. A.*; *T-MTT v24 n1 Jan 76* 50-54 (1D10)
measuring attenuation; frequency-domain shuttle-pulse method; *Bernardi, Paolo*; *T-MTT v26 n3 Mar 78* 203-209 (1E13)
measuring dielectric constant of ceramic substrates; *Gerhard, A. R.*; *T-MTT v24 n7 Jul 76* 485-487 (2C02)
microwave transmission; new use of classical two-wire transmission line; *Engelmann, H. F.*; *T-MTT v1 n1 Mar 53* 22
millimeter-wave microstrip down-converter; experimental results; *Standley, R. D.*; *T-MTT v18 n4 Apr 70* 232-233
multilayered dielectric structures; Green's function determination; *Crampagne, Raymond*; *T-MTT v26 n2 Feb 78* 82-87 (1C08)
multiple conductors on various interfaces; propagation characteristics calculation using spectral domain method; application to suspended microstrip with tuning septums; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 983-987 (1E05)
nonhomogeneous anisotropic media; Green's function technique; *Kobayashi, Masanori*; *T-MTT v26 n7 Jul 78* 510-512 (1D14)
on anisotropic sapphire substrates; quasi-static characteristics; *Owens, Roger P.*; *T-MTT v24 n8 Aug 76* 499-505 (1A11)
on sapphire substrates; dispersion measurements on 10–100 lines covering 2–18 GHz range; *Edwards, Terence C.*; *T-MTT v24 n8 Aug 76* 506-513 (1B04)
open-strip UHF transmission line; determination of parameters; *Black, Kenneth G.*; *T-MTT v3 n2 Mar 55* 93-113
parallel-strip line embedded in or printed on a dielectric sheet; *Yamashita, Eikichi*; *T-MTT v16 n11 Nov 68* 972-973
parameters computation for single and coupled lines; high-speed computation; *Jansen, Rolf H.*; *T-MTT v26 n2 Feb 78* 75-82 (1C01)
parameters computation for single and coupled lines high-speed computation. *Jansen, R. H., Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
parameters of microstrip transmission lines and of coupled pairs of microstrip lines; *Bryant, Thomas G.*; *T-MTT v16 n12 Dec 68* 1021-1027
radiation loss calculation; *van der Pauw, Leo J.*; *T-MTT v25 n9 Sep 77* 719-725 (1A03)
Schottky-contact microstrip; slow-wave propagation; *Jäger, Dieter*; *T-MTT v24 n9 Sep 76* 566-573 (1B08)
shielded microstrip of trapezoidal cross section; integral equation approach for numerical calculation; *Rizzoli, Vittorio*; *T-MTT v27 n2 Feb 79* 150-157 (1E04)
shielded microstrip on ferrite substrate; characteristic impedance and field patterns; *Yeh, David T.*; *T-MTT v23 n7 Jul 75* 585-588 (1D05)
shielded striplines; calculation of charge and potential distributions; *Mittra, Raj*; *T-MTT v18 n3 Mar 70* 149-156
symmetrical coupled three-line microstrip; immittance parameters in terms of normal modes of coupled system; *Tripathi, Vijai K.*; *T-MTT v25 n9 Sep 77* 726-729 (1A10)
synthesis; simple analytic formulas in terms of elliptic functions; *Crampagne, Raymond*; *T-MTT v25 n5 May 77* 440-442 (2A04)
tapered line; input impedance calculation; computer program; *Suryanarayana Rao, K. N.*; *T-MTT v25 n2 Feb 77* 164 (1F14)
thick- and thin-film technologies compared; alumina and fused silica substrates; *Ramy, Jean-Pierre*; *T-MTT v26 n10 Oct 78* 814-820 (2B06)
time-harmonic analysis of covered and uncovered microstrip; propagation

constants for fundamental and higher-order modes; *Farrar, Andrew*; *T-MTT v24 n7 Jul 76* 456-460 (2A01)
tolerance analysis using sensitivity approach; *Garg, Ramesh*; *T-MTT v26 n1 Jan 78* 16-19 (1B04)
transmission line; capacity per unit length calculated by 'method of moments'; *Farrar, A.*; *T-MTT v18 n1 Jan 70* 65-66
transmission-line properties; explicit formulas for practical applications; *Wheeler, Harold A.*; *T-MTT v25 n8 Aug 77* 631-647 (1A03)
transmission lines; calculation of coupled-line parameter by analytical method; *Judd, Stewart V.*; *T-MTT v18 n2 Feb 70* 78-87
transmission lines like microstrip; analysis by variational method; *Yamashita, Eikichi*; *T-MTT v16 n8 Aug 68* 529-535
uniform microstrip transmission lines; calculation of impedance, velocity and attenuation by computer; *Stinehelfer, Harold E., Sr.*; *T-MTT v16 n7 Jul 68* 439-444
waveguides; theoretical aspects; *Deschamps, G. A.*; *T-MTT v2 n1 Apr 54* 100-102

Microstrip antennas
slot antennas at *X*-band; input impedance and radiation patterns; *Yoshimura, Yoshikazu*; *T-MTT v20 n11 Nov 72* 760-762 (1E12)
stripline radiators; fabrication; *Fubini, Eugene G.*; *T-MTT v3 n2 Mar 55* 149-156

Microstrip circuits
amplifiers; 12-W GaAs Read-diode amplifier at *X*-band; *Tserng, Hua Quen*; *T-MTT v26 n10 Oct 78* 774-778 (1F02)
circuits enclosed by conducting walls; resonant frequency calculations; *Robinson, Gerald H.*; *T-MTT v19 n7 Jul 71* 665-666 (2E08)
compact image rejection balanced mixer developed in microstrip medium; *Kurpis, G. P.*; *T-MTT v18 n12 Dec 70* 1181-1182
compact *L*-band oscillator using avalanche diodes operating in high-efficiency mode; *Liu, Shing Gong*; *T-MTT v18 n11 Nov 70* 982-983
crystal mixer with integral dc return; broadband design; *Carlson, Eric*; *T-MTT v3 n2 Mar 55* 175-177
dc blocking capacitors; interdigital-type capacitors for octave bandwidth; *LaCombe, David*; *T-MTT v20 n8 Aug 72* 555-556 (2B10)
dielectric-resonator filters; design technique for bandpass Chebyshev and Butterworth filters; *Araki, Tohru*; *T-MTT v19 n7 Jul 71* 638-643 (2C05)
dielectric resonators; used for applications requiring high *Q* and small size; *Day, Walter R., Jr.*; *T-MTT v18 n12 Dec 70* 1175-1176
frequency converter; varactor square-law converter having pump frequency much greater than input signal frequency; *Abdullah, Faruq*; *T-MTT v25 n2 Feb 77* 127-136 (1D05)
GaAs FET power amplifier for *X*-band; 1-W output and 22-dB gain; *Tserng, Hua Quen*; *T-MTT v24 n12 Dec 76* 936-943 (1C10)
Gunn device oscillators; temperature stabilization of *C*-band microstrip oscillator; dielectric loading technique; *Cohen, Jerome*; *T-MTT v21 n2 Feb 73* 115-116 (1F01)
Gunn device oscillators; *X*-band oscillator with frequency stability of 2×10^7; *Chan, C. K.*; *T-MTT v22 n8 Aug 74* 815 (1E05)
Gunn oscillator at 5.2 GHz; frequency stablized using microstrip discriminator and integrated feedback loop; *Glance, B.*; *T-MTT v24 n10 Oct 76* 648-650 (1B06)
high-dielectric substrates for microwave hybrid integrated circuits; *Vendelin, George D.*; *T-MTT v15 n12 Dec 67* 750-752
high-power, high-efficiency avalanche-diode oscillator; *Liu, Shing Gong*; *T-MTT v17 n12 Dec 69* 1068-1071
high-power, high-efficiency avalanche-diode oscillator. *Liu, S. G., Correction*; *T-MTT v18 n9 Sep 70* 601
hybrid, microwave type; evaluation of materials and processes for their fabrication; *Keister, Frank Z.*; *T-MTT v16 n7 Jul 68* 469-475
IMPATT amplifiers; high-power *C*-band reflection amplifiers using multiple diodes and microstrip power combiners; *Lee, Robert E.*; *T-MTT v24 n5 May 76* 249-253 (1B01)
interdigital circuits analysis and synthesis; empirical formulas for coupled microstrip propagation-mode parameters; *Dalby, Arne Brejning*; *T-MTT v27 n8 Aug 79* 744-752 (1C02)
L-band oscillator using high-efficiency silicon avalanche diodes mounted in capacitively loaded TEM coupled lines; *Rosen, A.*; *T-MTT v18 n11 Nov 70* 979-981
low-noise mixer, on a plastic substrate; *Hallford, Ben R.*; *T-MTT v18 n12 Dec 70* 1178-1181
microwave wiring applications; *Arditi, Maurice*; *T-MTT v3 n2 Mar 55* 31-56
millimeter-wave mixer on microstrip; K_a-band; *Kelly, Alexander J.*; *T-MTT v24 n11 Nov 76* 867-869 (3B01)
millimeter-wave oscillators; varactor-tuned Gunn oscillator with 1-GHz tuning range; *Rubin, David*; *T-MTT v24 n11 Nov 76* 866-867 (3A14)
oscillators for 60 GHz; varactor-tuned IMPATT oscillator for FSK transmitter; *Glance, B. S.*; *T-MTT v24 n3 Mar 76* 156-157 (1C02)
parametric amplifier with self-contained solid-state pump source; *S*-band; *Okean, Herman C.*; *T-MTT v19 n5 May 71* 491-493 (2C05)
power amplifier using GaAs FETs and IMPATT diodes; 15-GHz, 4-W, 15-dB gain microstrip amplifier; *Sokolov, Vladimir*; *T-MTT v27 n12 Dec 79* 1058-1065 (2C09)
reflection amplifiers; use of beam lead tunnel diodes; *Welch, Jerry D.*; *T-MTT v18 n12 Dec 70* 1077-1083
silicon microstrip microwave transmission lines; experimental work; *Emery, F. E.*; *T-MTT v16 n7 Jul 68* 483-484
three-line system use as six-port reflectometer; *Collier, Richard J.*; *T-MTT v27 n10 Oct 79* 847-853 (1B11)
transistor package mounted in microstrip; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
transmission-line on ceramic substrate; use for thin-film single idler varactor quadrupler; *Horton, John B.*; *T-MTT v15 n12 Dec 67* 752-754
TRAPATT amplifier broadbanding using coupled microstrip circuits; *Quine, John P.*; *T-MTT v27 n1 Jan 79* 23-31 (1B11)
tuning using microcantilever air gaps; *Heng, T. M. S.*; *T-MTT v19 n7 Jul 71* 652-654 (2D07)
varactor doublers using thin-film lines on a ceramic substrate; *Belohoubek, E. F.*; *T-MTT v17 n5 May 69* 286-288
varactor package mounted in shunt configuration in microstrip line; equivalent circuit; *Cohen, Jerome*; *T-MTT v21 n6 Jun 73* 412-413 (2B01)
varactor-tuned bipolar transistor oscillator integrated with FET amplifier for *X*-band; FM noise is −132 dB/Hz at 1 MHz; *Niehenke, Edward C.*; *T-MTT v27 n12 Dec 79* 1075-1079 (2D12)
YIG bandpass filter for incorporation into microstrip circuits; narrow-band filter with finite-pole frequencies; *Röschmann, Peter*; *T-MTT v21 n1 Jan 73* 52-57 (2B05)

Microstrip circulators
edge-guided-wave circulators for 8–12 GHz range; *De Santis, P.*; *T-MTT v23 n6 Jun 75* 516-519 (1E02)
ferrite circulator incorporated as integral part of microstrip circuit; 1.75- to 2.23-GHz range; *Poirier, A. L.*; *T-MTT v19 n7 Jul 71* 661-662 (2E04)
ferrite circulators; broadbanding without using matching transformers; *March, Steven*; *T-MTT v22 n1 Jan 74* 72-74 (1F04)
ferrite pucks sprayed into cavities in dielectric substrates using arc-plasma-spray process; *Wu, Y. S.*; *T-MTT v23 n6 Jun 75* 504-506 (1D04)
inverted-microstrip configuration for 30-GHz range; *Trambarulo, Ralph F.*; *T-MTT v19 n7 Jul 71* 662-664 (2E05)
Y-junction circulators; octave bandwidth operation; *Wu, Y. S.*; *T-MTT v22 n10 Oct 74* 849-856 (1A03)

Microstrip circulators, ferrite
four-port edge-guided wave circulators; *De Santis, Pietro*; *T-MTT v24 n1 Jan 76* 10-18 (1A12)
size reduction, making them easily incorporated with microwave integrated circuits; *Dunn, V. E.*; *T-MTT v16 n12 Dec 68* 1060-1061
X-band all-garnet junction circulator; use for microwave integrated circuits; *Hershenov, B.*; *T-MTT v15 n12 Dec 67* 748-750
Y-junction circulators; frequency behavior; *Ayter, Sevič*; *T-MTT v26 n3 Mar 78* 197-202 (1E07)

Microstrip components
baluns and magic tees; impedance-matched wideband components; *Laughlin, Gordon J.*; *T-MTT v24 n3 Mar 76* 135-141 (1A09)
interdigital capacitors; effect of shape on *Q* and capacitance slope; interactive design; *Hobdell, John L.*; *T-MTT v27 n9 Sep 79* 788-791 (1B08)
microstrip transmission on semiconductor substrates; *Hyltin, Tom M.*; *T-MTT v13 n6 Nov 65* 777-781

Microstrip components, ferrite
fringing-field effects in edge-guide wave devices; *De Santis, Pietro*; *T-MTT v24 n7 Jul 76* 409-415 (1B05)
hybrid microwave integrated circuits; performance data for several microstrip ferrite devices; *Allen, J. Lamar*; *T-MTT v16 n7 Jul 68* 405-411
isolator using edge-guided mode; *Araki, K.*; *T-MTT v23 n3 Mar 75* 321 (1D13)
nonreciprocal tunable YIG filter in a microstrip configuration; *Greene, Carl K.*; *T-MTT v16 n7 Jul 68* 484-486
reciprocal and nonreciprocal modes of propagation; *Hines, Marion F.*; *T-MTT v19 n5 May 71* 442-451 (1C10)
shielded microstrip on ferrite substrate; characteristic impedance and field patterns; *Yeh, David T.*; *T-MTT v23 n7 Jul 75* 585-588 (1D05)

Microstrip components; cf. *Specific type*

Microstrip couplers
cavity resonator–microstrip coupling through aperture in substrate ground plane; *Kumar, Mahesh*; *T-MTT v26 n9 Sep 78* 690-691 (1E08)
directional coupler; 14-dB directivity with $\lambda/16$ coupler at 3.6 GHz; *Weirather, Robert R.*; *T-MTT v22 n1 Jan 74* 70-71 (1F02)
interdigital stripline quadrature hybrid; fabrication on 40-mil alumina; *Lange, Julius*; *T-MTT v17 n12 Dec 69* 1150-1151
three-line couplers; *Pavlidis, Dimitrios*; *T-MTT v24 n10 Oct 76* 631-640 (1A03)
wideband quadrature hybrid coupler for 2.5- to 10-GHz range; *Garcia, James A.*; *T-MTT v19 n7 Jul 71* 660-661 (2E03)

Microstrip couplers; cf. Microstrip directional couplers

Microstrip directional couplers
branch-arm hybrid with 3-dB coupling at all harmonics of fundamental frequency; *Wight, J. S.*; *T-MTT v24 n2 Feb 76* 122-124 (1D14)
coupled-transmission-line couplers; directivity improvement and measuring coupler parameters; *Rehnmark, Stig*; *T-MTT v25 n12 Dec 77* 1116-1121 (2E06)
dielectric overlay coupler design using spectral domain techniques; *Paolino, Donald D.*; *T-MTT v26 n9 Sep 78* 646-649 (1B06)
dielectric-overlay couplers using edge-coupled microstrip; design procedure; *Sheleg, Boris*; *T-MTT v22 n12 Dec 74* 1216-1220 (4B01)
hybrid branchline couplers; two transmission lines connected alternately to quarter-wavelength shunt and series branches; *Schiek, Burkhard*; *T-MTT v22 n10 Oct 74* 864-869 (1B04)
interdigital couplers; design equations; *Mosko, Joseph A.*; *T-MTT v24 n9 Sep 76* 628 (1F14)
interdigitated 3-dB coupler on alumina substrate with three strips and two bond wires; *Tulaja, Volker*; *T-MTT v26 n9 Sep 78* 643-645 (1B03)
interdigitated coupler design; *Kajfez, Darko*; *T-MTT v26 n10 Oct 78* 806-808 (2A12)
interdigitated coupler design; *Presser, Adolph*; *T-MTT v26 n10 Oct 78* 801-805 (2A07)
interdigitated coupler design; *Rizzoli, Vittorio*; *T-MTT v26 n1 Jan 78* 7-15 (1A09)
interdigitated couplers; design equations; *Ou, Wen Pin*; *T-MTT v23 n2 Feb 75* 253-255 (1F01)
inverted strip dielectric guides for IC components in 75–80 GHz range; directional couplers and ring resonators; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
junction reactance and dimensional tolerance; rat-race and branch-line couplers; *Leighton, William H., Jr.*; *T-MTT v19 n10 Oct 71* 818-824 (1D04)
magic tee; tapered asymmetric coupler; *Arain, M. H.*; *T-MTT v23 n12 Dec 75* 1064-1067 (2C01)
multistrip quadrature couplers; interdigitated couplers; *Tajima, Yusuke*; *T-MTT v26 n10 Oct 78* 795-801 (2A01)
quadrature couplers; broadband backward-wave quadrature coupler; *Waugh, Raymond*; *T-MTT v20 n11 Nov 72* 777-779 (2B08)
quarter-wave couplers; perturbations of the critical parameters; *Brenner, H. E.*; *T-MTT v15 n6 Jun 67* 384-385
sensitivity analysis of coupled-line couplers; sensitivities of parameters with respect to even- and odd-mode impedance; *Shamasundara, Srigiripuram D.*; *T-MTT v26 n10 Oct 78* 788-794 (1G02)
sensitivity analysis. *Shamasundara, S. D., Correction*; *T-MTT v27 n2 Feb 79* 208 (2B07)
slot–strip couplers; improving isolation of 3-dB couplers by lengthening slotline; *Schiek, Burkhard*; *T-MTT v26 n1 Jan 78* 5-7 (1A07)
T-junction discontinuity; effect on design of 3-dB branchline and rat-race couplers; *Vogel, R. W.*; *T-MTT v21 n3 Mar 73* 145-146 (1D03)

thin-film Bi_2O_3 overlay on *X*-band coupler; *Karekar, R. N.*; *T-MTT v25 n1 Jan 77* 74-75 (1F06)

Microstrip discontinuities
abrupt impedance step; equivalent lengths of uniform microstrip line; *Horton, R.*; *T-MTT v21 n8 Aug 73* 562-564 (2C08)
bends and *Y*-junctions of arbitrary angles; scattering parameters calculations; *Mehran, Reza*; *T-MTT v26 n6 Jun 78* 400-405 (1B08)
bends; symmetric bends and their compensation; *Douville, Rene J. P.*; *T-MTT v26 n3 Mar 78* 175-182 (1C13)
capacitance calculation; quasi-static formulation; *Gopinath, A.*; *T-MTT v26 n10 Oct 78* 831-836 (2C09)
directional couplers; effect of T-junction discontinuity on design of 3-dB branchline and rat-race couplers; *Vogel, R. W.*; *T-MTT v21 n3 Mar 73* 145-146 (1D03)
end and gap effects measurement; resonant technique; *Gupta, Chandra*; *T-MTT v26 n9 Sep 78* 649-652 (1B09)
end effect of open-circuit microstrip lines; *Napoli, Louis S.*; *T-MTT v19 n6 Jun 71* 559-561 (2C01)
equivalent circuits; *Easter, Brian*; *T-MTT v23 n8 Aug 75* 655-660 (1D11)
frequency-dependent properties calculation; *Menzel, Wolfgang*; *T-MTT v25 n2 Feb 77* 107-112 (1B13)
fringe capacitance due to abrupt truncation of uniform line; spectral-domain approach using Galerkin's method; *Itoh, Tsutomu*; *T-MTT v20 n12 Dec 72* 847-849 (2B01)
gap capacitance in strip conductors; variational formulation of equivalent circuit; numerical results; *Maeda, Minoru*; *T-MTT v20 n6 Jun 72* 390-396 (1E08)
gaps and steps; equivalent capacitive networks; integral equation approach; *Benedek, Peter*; *T-MTT v20 n11 Nov 72* 729-733 (1C05)
inductance calculation using finite-element method; *Neale, Brian M.*; *T-MTT v26 n10 Oct 78* 827-831 (2C05)
inductance calculation using moment method; ayplication to right-angle bends; *Gopinath, A.*; *T-MTT v22 n10 Oct 74* 880-883 (1C06)
nonstraight conductor close to ground return plane; inductance calculation; *Ruehli, A. E.*; *T-MTT v23 n8 Aug 75* 706-708 (2A10)
open-end and edge effects; empirical equation for microstrip on alumina substrate; *Jain, O. P.*; *T-MTT v20 n9 Sep 72* 626-628 (2C01)
parasitic reactances, equivalent circuit; coaxial-to-microstrip launchers; *Wight, J. S.*; *T-MTT v22 n1 Jan 74* 48-52 (1D08)
quasi-static equivalent circuits; Galerkin's method applied in Fourier transform domain; *Rahmat-Samii, Yahya*; *T-MTT v22 n4 Apr 74* 372-378 (1B08)
radiation calculation methods; *Abouzahra, Mohamad Deeb*; *T-MTT v27 n8 Aug 79* 722-723 (1A08)
resonant ring containing small reciprocal discontinuity; measurement of equivalent circuit parameters of discontinuity; *Hoefer, Wolfgang J. R.*; *T-MTT v23 n12 Dec 75* 1067-1071 (2C04)
right-angle bends; equivalent electrical length and additional capacitance; *Horton, R.*; *T-MTT v21 n6 Jun 73* 427-429 (2C04)
right-angle bends, T junctions, and crossings; discontinuity capacitances; *Silvester, Peter*; *T-MTT v21 n5 May 73* 341-346 (1D07)
right-angle bends, T-junctions, and crossings; discontinuity capacitances. *Silvester, P., Correction*; *T-MTT v23 n5 May 75* 456 (1E02)
step change in width and cross junctions; inductance calculation; *Gopinath, A.*; *T-MTT v24 n3 Mar 76* 142-144 (1B02)
step change in width; equivalent capacitance; *Gupta, Chandra*; *T-MTT v25 n10 Oct 77* 819-822 (1B01)
T-junctions, unsymmetric; scattering parameters calculation, computer program; *Menzel, W.*; *T-MTT v26 n3 Mar 78* 217 (1F13)
transverse slit; equivalent series inductance; *Hoefer, Wolfgang J. R.*; *T-MTT v25 n10 Oct 77* 822-825 (1B04)
very large impedance steps; equivalent circuit; *Neidert, R. E.*; *T-MTT v22 n8 Aug 74* 808-810 (1D12)
Y junction radiation as function of angle and substrate dielectric constant and thickness; *Lewin, Leonard*; *T-MTT v26 n11 Nov 78* 893-894 (1D09)

Microstrip discontinuities; cf. Microstrip transitions

Microstrip filters
combline-type filters; design approach; *Vincze, Arpad D.*; *T-MTT v22 n12 Dec 74* 1171-1181 (3D11)
computer-aided design considering dispersion, loss, and discontinuity effects; *Mehran, Reza*; *T-MTT v27 n3 Mar 79* 239-245 (1B11)
coupled line at *X*-band; experimental investigation; *Kelley, Douglas*; *T-MTT v16 n8 Aug 68* 560-562
directional filters using parallel-coupled microstrip; mode compensation; *Lee, Y. S.*; *T-MTT v22 n1 Jan 74* 66-69 (1E12)
hairpin-line and hybrid hairpin-line/half-wave parallel-coupled-line filters; *Gysel, Ulrich H.*; *T-MTT v22 n5 May 74* 523-531 (1D03)
maximally flat multistub filter for microstrip line; *Atwood, W.*; *T-MTT v16 n7 Jul 68* 477-480
parallel coupled lines in nonhomogeneous medium; *Pompei, Dominique*; *T-MTT v26 n4 Apr 78* 231-238 (1A09)
ring resonator in which two ring networks are connected by two quarter-wave lines; *Kaiser, J. A.*; *T-MTT v9 n4 Jul 61* 359-360
tapped-line filter design; interdigital and hairpin-line filters; *Wong, Joseph S.*; *T-MTT v27 n1 Jan 79* 44-50 (1D04)

Microstrip isolators, ferrite
edge-guided mode isolator using ferromagnetic resonance absorption; *Noguchi, Tsutomu*; *T-MTT v25 n2 Feb 77* 100-106 (1B06)
edge-guided mode isolators; modeling; *Talisa, Salvador H.*; *T-MTT v27 n6 Jun 79* 584-591 (1C02)

Microstrip lines
anisotropy in alumina substrates; effect on dielectric constant of line; *van Heuven, Johan H. C.*; *T-MTT v20 n11 Nov 72* 775-777 (2B06)
attenuation reduction; *Albrey, I. J.*; *T-MTT v22 n7 Jul 74* 739-742 (1C05)
cantilever air gaps for tuning and matching applications; *Heng, T. M. S.*; *T-MTT v19 n7 Jul 71* 652-654 (2D07)
capacitance parameters for coupled thin-film conductors in suspended substrate; *Smith, John I.*; *T-MTT v19 n5 May 71* 424-431 (1B04)
coupled lines; Green's matrix analysis of arbitrarily terminated lossy lines with excitation applied at arbitrary point; *Gruner, L.*; *T-MTT v22 n9 Sep 74* 837-839 (1B07)
coupled lines; loss calculations; *Horton, R.*; *T-MTT v21 n5 May 73* 359-360 (1F01)
covered microstrip analysis using potential theory method; *Farrar, Andrew*; *T-MTT v21 n7 Jul 73* 494-496 (2C01)
dispersion characteristics; numerical method based on application of Galerkin's method in spectral domain; *Itoh, Tatsuo*; *T-MTT v21 n7 Jul 73* 496-499 (2C03)
dispersion curves for fundamental and higher order hybrid modes in single and coupled microstrip; finite-difference methods; *Corr, Douglas G.*; *T-MTT v20 n10 Oct 72* 669-678 (1E01)
dispersion; empirically derived equation; *Chudobiak, Walter J.*; *T-MTT v19 n9 Sep 71* 783-784 (1E09)
dispersion model based on longitudinal-section electric mode in modified microstrip structure; *Getsinger, William J.*; *T-MTT v21 n1 Jan 73* 34-39 (1D12)
dispersion modeling using coupled lines; *Carlin, Herbert J.*; *T-MTT v21 n9 Sep 73* 589-591 (1C07)
dominant mode analysis; numerical methods and experimental measurements; *Wharton, R. P.*; *T-MTT v20 n8 Aug 72* 552-555 (2B07)
ferrite microstrip lines; comparison of experimental data to theoretical values; *Massé, Daniel J.*; *T-MTT v20 n5 May 72* 309-313 (1C04)
finite-element methods; hybrid-mode analysis for closed microstrip; *Daly, P.*; *T-MTT v19 n1 Jan 71* 19-25 (1C09)
frequency-dependent characteristics of single and coupled lines in shielded microstrip; *Krage, Mark K.*; *T-MTT v20 n10 Oct 72* 678-688 (1E10)
frequency-dependent solutions; dielectric and demagnetized ferrite substrates; *Denlinger, Edgar J.*; *T-MTT v19 n1 Jan 71* 30-39 (1D08)
Green's function for thick-strip lines; *Yamashita, Eikichi*; *T-MTT v19 n1 Jan 71* 120-122 (3B09)
linearly tapered transmission line; analysis and application in microwaves; *Rustogi, O. P.*; *T-MTT v17 n3 Mar 69* 166-168
loss measurement in microstrip on fused-silica and alumina substrates; conduction and radiation losses; *van Heuven, J. H. C.*; *T-MTT v22 n9 Sep 74* 841-844 (1B09)
lumped capacitance calculation using moment methods; *Farrar, Andrew*; *T-MTT v19 n5 May 71* 495-497 (2C09)
magnetic substrates; effective relative permeability propagation and attenuation filling factors; *Pucel, Robert A.*; *T-MTT v20 n5 May 72* 304-308 (1B11)
magnetic substrates; experimental data for microstrip on ferrite and garnet substrates; *Massé, Daniel J.*; *T-MTT v20 n5 May 72* 309-313 (1C04)
millimeter-wave waveguide similar to microstrip geometry; does not support TEM or quasi-TEM modes; *Fong, T. T.*; *T-MTT v22 n8 Aug 74* 776-783 (1B08)
miniature strip transmission lines; fabrication; *Torgow, Eugene N.*; *T-MTT v3 n2 Mar 55* 57-64
multilayer microstrip analysis; *Farrar, Andrew*; *T-MTT v22 n10 Oct 74* 889-891 (1D01)
on silicon–silicon dioxide system; parallel-plate waveguide model; analysis and experimental results; *Hasegawa, Hideki*; *T-MTT v19 n11 Nov 71* 869-881 (1D05)
open-circuit microstrip stub; radiation conductance; *Sobol, H.*; *T-MTT v19 n11 Nov 71* 885-887 (1E09)
parallel-coupled microstrip; dispersion predictions for even and odd modes using LSE mode model; *Getsinger, W. J.*; *T-MTT v21 n3 Mar 73* 144-145 (1D02)
parameter computation; computer program description; *Bryant, Thomas G.*; *T-MTT v19 n4 Apr 71* 418-419 (2D02)
shielded microstrip dispersion characteristics; computation using spectral-domain analysis; *Itoh, Tatsuo*; *T-MTT v22 n10 Oct 74* 896-898 (1D08)
shielded microstrip on ferrite substrate; modal analysis; *Minor, James C.*; *T-MTT v19 n7 Jul 71* 570-577 (1B04)

Microstrip mixers
oversized microstrip; low-noise mixer for 5-mm band; *Meier, Paul J.*; *T-MTT v22 n4 Apr 74* 450-451 (2C12)

Microstrip phase shifters
broadbanding matching of differential phase shifters; stepped impedance design; *Schiek, Burkhard*; *T-MTT v25 n8 Aug 77* 666-671 (1C10)
diode phaser using interdigitated coupler; reflection-type 180 section with 2-GHz bandwidth in *X*-band; *Yahara, T.*; *T-MTT v23 n3 Mar 75* 307-309 (1C13)
microwave phase-shift networks; multisection type; *Schiffman, B. M.*; *T-MTT v14 n4 Apr 66* 209
p-i-n diode phase shifter; 4-bit phase shifter with low RF attenuation, fast switching time, and low switching power requirements; *Glance, Bernard*; *T-MTT v27 n1 Jan 79* 14-16 (1B02)
switched-line diode phase shifter with octave bandwidth, 2.5–5.0 GHz; *Coats, Robert P.*; *T-MTT v21 n7 Jul 73* 444-449 (1B10)

Microstrip phase shifters, ferrite
lightweight, reciprocal using transverse and longitudinal magnetization; *Buck, G. J.*; *T-MTT v18 n12 Dec 70* 1170-1173

Microstrip resonators
computer-aided analysis; program based on TLM method; *Akhtarzad, S.*; *T-MTT v24 n10 Oct 76* 681 (1D11)
dielectric properties measurement for slab-type materials using microstrip cavity; *Itoh, Tatsuo*; *T-MTT v22 n5 May 74* 572-576 (2C03)
disk and transmission-line types; fractional amount of radiated power; *Denlinger, Edgar J.*; *T-MTT v17 n4 Apr 69* 235-236
disk resonators; capacitance calculation; *Borkar, Suresh R.*; *T-MTT v23 n7 Jul 75* 588-591 (1D08)
double-ring resonators; *Wolff, Ingo*; *T-MTT v23 n5 May 75* 441-444 (1D01)
elliptical resonators; mode chart and unloaded *Q*; *Kretzschmar, Jan G.*; *T-MTT v20 n5 May 72* 342-343 (1F01)
ferrite substrate; fringing-field effects in edge-guided wave devices; *De Santis, Pietro*; *T-MTT v24 n7 Jul 76* 409-415 (1B05)
full-wave analysis; accurate method for computing resonant frequencies; *Itoh, Tatsuo*; *T-MTT v22 n11 Nov 74* 946-952 (1C08)
inverted strip dielectric guides for IC components in 75–80 GHz range; directional couplers and ring resonators; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
loss measurement in microstrip on fused-silica and alumina substrates; conduction and radiation losses; *van Heuven, J. H. C.*; *T-MTT v22 n9 Sep 74* 841-844 (1B09)
numerical analysis using transmission-line matrix method; *Akhtarzad, Sina*; *T-MTT v23 n12 Dec 75* 990-997 (1D10)
planar triangular resonators with magnetic walls; *Helszajn, Joseph*; *T-MTT v26 n2 Feb 78* 95-100 (1D07)
radiation loss calculation; *van der Pauw, Leo J.*; *T-MTT v25 n9 Sep 77* 719-725 (1A03)

radiation losses; effect on *Q*; *Belohoubek, E.*; *T-MTT v23 n6 Jun 75* 522-526 (1E08)
resonant ring containing small reciprocal discontinuity; measurement of equivalent circuit parameters of discontinuity; *Hoefer, Wolfgang J. R.*; *T-MTT v23 n12 Dec 75* 1067-1071 (2C04)
ring resonators; resonant frequencies computation using reaction concept; *Pintzos, Sotirios G.*; *T-MTT v26 n10 Oct 78* 809-813 (2B01)
ring resonators; universal mode chart relating resonant frequency to ring width and circumference; *Wu, Y. S.*; *T-MTT v21 n7 Jul 73* 487-489 (2B06)
thin-film Bi_2O_3 overlay; effect on *Q*; *Karekar, R. N.*; *T-MTT v24 n5 May 76* 262-264 (1B14)
Microstrip resonators, ferrite
disk resonators magnetized perpendicularly to ground plane; high azimuthal-index resonances; *de Santis, Pietro*; *T-MTT v25 n5 May 77* 360-367 (1B06)
Microstrip switches
SPDT power switch using *p.i.n*-terminated stubs; frequency adjustable over octave range; *Toussaint, Hans-Norbert*; *T-MTT v19 n7 Jul 71* 657-659 (2D12)
SPDT switch on plastic substrate; switches 10-W CW carriers into common load with 90-dB isolation in 1.7- to 2.3-GHz range; *Hallford, Ben R.*; *T-MTT v19 n7 Jul 71* 654-657 (2D09)
three-port remanence circulator switch for phased array radar at *S*-band (2.9 GHz). *Betts, Foster*; *T-MTT v14 n12 Dec 66* 665-669
Microstrip terminations
50- termination having maximum VSWR of 1.46 from 1 to 18 GHz; *LaCombe, David*; *T-MTT v20 n4 Apr 72* 290-292 (1E12)
Microstrip transitions
cavity resonator–microstrip coupling through aperture in substrate ground plane; *Kumar, Mahesh*; *T-MTT v26 n9 Sep 78* 690-691 (1E08)
coaxial-to-microstrip launchers; parasitic reactances, equivalent circuit; *Wight, J. S.*; *T-MTT v22 n1 Jan 74* 48-52 (1D08)
coaxial-to-microstrip transition; *England, E. H.*; *T-MTT v24 n1 Jan 76* 47-48 (1D07)
slot line–microstrip transitions; *Knorr, Jeffrey B.*; *T-MTT v22 n5 May 74* 548-554 (2A07)
slotline–microstrip transitions; *Schiek, B.*; *T-MTT v24 n4 Apr 76* 231-233 (1E13)
waveguide–microstrip transition; *van Heuven, J. H. C.*; *T-MTT v24 n3 Mar 76* 144-147 (1B04)
Microstrip transitions; cf. Coaxial cable–microstrip transitions
Microwave (3–30 GHz); cf. Millimeter-wave (30–300 GHz); UHF (300–3000 MHz)
Microwave absorbers
ferrite; matching frequency and matching thickness; *Naito, Yoshiyuki*; *T-MTT v19 n1 Jan 71* 65-72 (2B09)
Microwave absorbers; cf. Waveguide attenuators
Microwave acoustics
editor's note on special issue; *Haddad, George I.*; *T-MTT v17 n11 Nov 69* 798
introduction to special issue; *Bahr, A. J., Guest ed.*; *T-MTT v17 n11 Nov 69* 799
theory of acoustic fields and waves in solids; application of microwave concepts; *Auld, Bert A.*; *T-MTT v17 n11 Nov 69* 800-811
Microwave acoustics; cf. *Specific topic*
Microwave acoustic delay lines
design method for optimization of bandwidth phase linearity and spurious signal suppression; application to 4 μs *L*-band unit; *Sperry, W. R.*; *T-MTT v19 n12 Dec 71* 945-947 (1F05)
Microwave acoustic delay lines; cf. YIG delay lines
Microwave amplifiers
backward-wave; application to microwave autodyne reception; *Pulfer, J. K.*; *T-MTT v7 n3 Jul 59* 356-359
broad-band, low-noise integrated; computer-aided design; *Houston, Theodore W.*; *T-MTT v17 n8 Aug 69* 612-614
design of a balanced type parametric amplifier using resonating diode and series-connected diode loop; *Hayasi, Syuiti*; *T-MTT v10 n3 May 62* 185-190
design procedure for optimum bandwidth negative resistance amplifiers; *Scanlan, Sean O.*; *T-MTT v12 n5 Sep 64* 504-511
discontinuities in the repeller current of a reflex klystron detector; *Ishii, Koryu*; *T-MTT v11 n2 Mar 63* 154-155
engineering design of an *X*-band amplifier consisting of a cascade of iris coupled ruby resonators separated by garnet isolators; *Goodwin, Frank E.*; *T-MTT v12 n3 May 64* 349-358
five layer (air, reflector, ruby, reflector, air) optical maser for microwave amplification is treated as a Fabry–Perot resonator; *Jacobs, Harold*; *T-MTT v12 n2 Mar 64* 163-170
generalized solutions for optical maser amplifier using the Laplace transform method; *Kumagai, Nobuaki*; *T-MTT v13 n4 Jul 65* 445-451
integrated tunnel-diode devices; for use as active element in microwave reflection amplifiers; *Okean, Herman C.*; *T-MTT v15 n11 Nov 67* 613-622
investigation of 2K25 reflex klystron amplifier; noise at approximately 9400 MHz; *Ishii, Koryu*; *T-MTT v8 n3 May 60* 291-294
limitations on amplifier noise performance; *Weglein, Rolf D.*; *T-MTT v8 n5 Sep 60* 538-544
lumped-element thin-film amplifiers; design and development; *Caulton, Martin*; *T-MTT v16 n7 Jul 68* 397-404
maser amplifier structure consisting of a cascade of iris coupled $\pi/2$ cavities intermixed with isolators; *O'Meara, Thomas R.*; *T-MTT v12 n3 May 64* 336-348
masers; ruby traveling-wave maser for *K*-band using photoetched slow-wave structure; *Yngvesson, K. Sigfrid*; *T-MTT v24 n11 Nov 76* 711-717 (1C03)
masers; rutile traveling-wave masers for 20–40 GHz band using dielectric image line slow-wave structure; *Kollberg, Erik L.*; *T-MTT v24 n11 Nov 76* 718-725 (1C10)
matching network design; computer program; *Mellor, Douglas J.*; *T-MTT v23 n12 Dec 75* 1013-1020 (1F05)
maximum bandwidth performance of a nondegenerate parametric amplifier with a single-tuned idler circuit; *De Jager, Jan T.* T-MTT v12 n4 Jul 64 459-467
measurement of near-carrier noise; *Sann, Klaus H.*; *T-MTT v16 n9 Sep 68* 761-766
multistage, 4-GHz transistor amplifiers of simple construction; *Ayaki, Kazuo*; *T-MTT v17 n12 Dec 69* 1072-1077
negative conductance amplifier operated with a nonideal circulator; analysis; *Sard, Eugene W.*; *T-MTT v7 n2 Apr 59* 288-293
noise figure measurement for small noise output in microwave amplifiers; *Kaplan, L. J.*; *T-MTT v10 n5 Sep 62* 402-403
noise properties of 2 cavity CW klystron; contribution close to center frequency in audio range; *Espersen, George A.*; *T-MTT v8 n5 Sep 60* 474-477
nonlinear biasing resistors for microwave tunnel-diode oscillators; *Wallmark, J. T.*; *T-MTT v11 n4 Jul 63* 260-262
nonlinear power amplifiers in stable and injection-locked modes; dynamic equations for modulated signals; *Takayama, Yoichiro*; *T-MTT v20 n9 Sep 72* 591-595 (1D05)
octave bandwidth tunnel diode amplifier using hybrids and a low pass filter; *Lepoff, Jack H.*; *T-MTT v12 n1 Jan 64* 21-26
parasitic elements in tunnel-diode amplifier performance; *Scanlan, Sean O.*; *T-MTT v13 n6 Nov 65* 827-836
phase-locked voltage-tuned oscillator used for power amplification of FM signals; *Hines, Marion E.*; *T-MTT v24 n7 Jul 76* 393-404 (1A03)
power amplifier consisting of nonreciprocal transmission line periodically loaded by negative-resistance diodes; *Paik, S. F.*; *T-MTT v20 n3 Mar 72* 202-209 (1B04)
prototypes for use in broadbanding reflection amplifiers; element values as functions of gain and ripple; *Getsinger, William J.*; *T-MTT v11 n6 Nov 63* 486-497
reflex klystron amplifier for microwave spectroscopy; *Chapman, Frederick W.*; *T-MTT v11 n2 Mar 65* 150-152
regenerative and pull in modes of millimeter-wave reflex klystron amplifiers; *Raue, George E.*; *T-MTT v12 n5 Sep 64* 547
resonant slope (resonant dielectric) amplifier; *Mayer, R. J.*; *T-MTT v11 n1 Jan 63* 92
solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
solid-state devices; special issue foreword; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)
special issue on solid-state power amplifiers; *T-MTT v21 n11 Nov 73* 657-744 (1B03)
special issue on solid-state power amplifiers; foreword; *Hines, Marion E., Guest ed.*; *T-MTT v21 n11 Nov 73* 657-659 (1B03)
spectrum analysis of pulsed microwave amplifiers; UHF, *L*-band operation; *Koontz, Roland F.*; *T-MTT v10 n6 Nov 62* 440-454
spurious harmonic outputs from high power pulsed magnetrons, klystrons and traveling-wave tubes; *Tomiyasu, Kiyo*; *T-MTT v9 n6 Nov 61* 480-484
stability and gain prediction of tunnel-diode reflection amplifiers; *Bandler, John W.*; *T-MTT v13 n6 Nov 65* 814-819
stability criteria for tunnel-diode amplifiers; *Henoch, B.*; *T-MTT v10 n5 Sep 62* 397-398
superregenerative, *X*-band; use of an avalanche diode; *Ver Planck, Peter*; *T-MTT v17 n3 Mar 69* 171-172
synchronization of a klystron by injection locking; *Mackey, Richard C.*; *T-MTT v10 n4 Jul 62* 228-235
temporal instabilities in travelling-wave parametric amplifiers; *Cassedy, E. S.*; *T-MTT v10 n1 Jan 62* 86-87
transmission-type Esaki-diode amplifier using dielectric-loaded rectangular waveguide; analysis and experimental results; *Toyota, Sachihiro*; *T-MTT v17 n1 Jan 69* 40-42
tunnel-diode amplifier, placed in slot of slot array antenna; *Pedinoff, Melvin E.*; *T-MTT v9 n6 Nov 61* 557-566
tunnel-diode amplifiers; high-frequency stability; *Plutchok, Hy*; *T-MTT v14 n2 Feb 66* 93-94
tunnel-diode, in stripline; design technique; *Miller, Barbara A.*; *T-MTT v15 n10 Oct 67* 554-561
wide-band Esaki diode amplifier; 1.3Gc operation; *Hamasaki, Joji*; *T-MTT v13 n2 Mar 65* 213-224
wideband integrated microwave transistor amplifiers on high dielectric substrates; computer aided design; *Gelnovatch, V. G.*; *T-MTT v16 n7 Jul 68* 429-439
X-band klystron amplifiers; phase adjustment effects on a cascaded reflex system; *Ishii, Koryu*; *T-MTT v8 n4 Jul 60* 445-449
Microwave amplifiers; cf. Avalanche diode amplifiers; BARITT diode amplifiers; Crossed-field amplifiers; Gunn device amplifiers; IMPATT diode amplifiers; Masers; Microwave bipolar transistor amplifiers; Microwave FET amplifiers; Microwave transistor amplifiers; Parametric amplifiers; Phase-locked amplifiers; Reflection amplifiers; Transferred-electron device amplifiers; TRAPATT diode amplifiers; Traveling-wave amplifiers; Tunnel-diode amplifiers; UHF amplifiers
Microwave antennas
phased array antennas; use of *X*-band, circularly-polarized, nonreciprocal, ferrite phase shifter; *Mohr, Max C.*; *T-MTT v14 n12 Dec 66* 672-683
pillbox; development of coupler-type bend; *Mazzola, Vincent*; *T-MTT v15 n8 Aug 67* 462-468
power transmission; antenna design and safety considerations; *Dickinson, Richard M.*; *T-MTT v26 n5 May 78* 335-340 (1B03)
strip conductors; use as microwave antennas; *Fubini, Eugene G.*; *T-MTT v3 n2 Mar 55* 149-156
two-dimensional *X*-band array consisting of 16 slots fed by photoetched tri-plate transmission line; *Sommers, Donald J.*; *T-MTT v3 n2 Mar 55* 157-162
X-band, employed in satellite communications link; use of new dual-channel rotary joint combining TM_{01} mode and circularly polarized TE_{11} modes in circular waveguide; *Woodward, O. M.*; *T-MTT v18 n12 Dec 70* 1072-1077
Microwave antennas; cf. *Specific type*
Microwave attenuators
0.01-dB and 0.001-dB step attenuators having long-term stability; side-arm-switched directional coupler; *Somlo, Peter I.*; *T-MTT v22 n9 Sep 74* 830-835 (1A12)
calibration by an absolute method, using a bridge; *Laverick, Elizabeth*; *T-MTT v5 n4 Oct 57* 250-254
dissipationless attenuators in mismatched systems; physical error limits due to mismatch; *Youla, Dante C.*; *T-MTT v12 n3 May 64* 289-299
ferrite variable 35-db attenuator; minimization of hysteresis; *Glass, H. I.*; *T-MTT v7 n2 Apr 59* 295-296
inline waveguide attenuator useful as an interlab standard; *Larson, Wilbur*; *T-MTT v12 n3 May 64* 367-368
measurement of traveling-wave tube attenuators at 2 GHz; *Dix, C. H.*; *T-MTT v8 n1 Jan 60* 121-122
microwave variable attenuators and modulators using PIN diodes; *Hunton, James Keith*; *T-MTT v10 n4 Jul 62* 262-273
new, variable; use of p-i-n diodes and three-port hybrids; *Ekinge, Roland*; *T-MTT v18 n9 Sep 70* 661-662
p-i-n germanium diode in rectangular waveguide as electrically controlled

millimeter-wave modulator; *Ronde, Frans C. de*; *T-MTT v8 n3 May 60* 325-327
rotary-vane precision attenuator standard components; wave reflections; *Rahman, M. H.*; *T-MTT v17 n7 Jul 69* 402-403
Microwave attenuators; cf. Waveguide attenuators
Microwave bipolar transistor amplifiers
class-C amplifier design using harmonic analysis; *Filicori, Fabio*; *T-MTT v27 n12 Dec 79* 1043-1051 (2B08)
large signal operation of microwave transistors; *Vincent, Britton T.*; *T-MTT v13 n6 Nov 65* 865-866
matching network design for power amplifiers capable of 2.5-W peak output at 2.25 GHz with 400-MHz bandwidth; *Emery, F. E.*; *T-MTT v14 n12 Dec 66* 696-698
power amplifier; 15-W output, 4.8-dB gain, and 38 percent collector efficiency at 3 GHz; *Uchizaki, Ichiro*; *T-MTT v27 n12 Dec 79* 1038-1042 (2B03)
power amplifier design; quasi-linear approach; *Kotzebue, K. L.*; *T-MTT v24 n12 Dec 76* 975-978 (2A04)
radiation protection of linear amplifiers for space applications; *Gibson, Maurice H.*; *T-MTT v26 n10 Oct 78* 779-788 (1F07)
Microwave bipolar transistor oscillators
common-base circuit using a varactor in series with the collector to tune over octave bandwidths; *Johnson, Kenneth M.*; *T-MTT v14 n11 Nov 66* 564-572
frequency synthesizer using Si transistor and $Ba_2Ti_9O_{20}$ dielectric resonator; FM noise less than 0.0003 Hz in any 1 Hz band more than 1000 Hz from 1 GHz carrier; *Alley, Gary D.*; *T-MTT v27 n12 Dec 79* 969-974 (1D03)
microstrip varactor-tuned bipolar transistor oscillator integrated with FET amplifier for *X*-band; FM noise is -132 dB/Hz at 1 MHz; *Niehenke, Edward C.*; *T-MTT v27 n12 Dec 79* 1075-1079 (2D12)
wideband tunable oscillator design technique based on negative resistance concepts; *Basawapatna, Ganesh R.*; *T-MTT v27 n5 May 79* 379-385 (1B03)
Microwave bipolar transistors
high-frequency transistor; evaluation by three-port scattering parameters; *Anderson, A. P.*; *T-MTT v15 n4 Apr 67* 263-265
linear power transistor design; *Chen, James T. C.*; *T-MTT v27 n5 May 79* 423-430 (1E05)
microstrip-mounted package; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
noise measurement techniques in the *L*- and *S*-bands; *Baechtold, Werner*; *T-MTT v16 n9 Sep 68* 578-585
noise parameters of two-ports; determination using computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
power Si transistors; present status of commercially available transistors and forecast for next few years; *Allison, Richard*; *T-MTT v27 n5 May 79* 415-422 (1D11)
progress in solid-state microwave power sources; *Sterzer, Fred*; *T-MTT v13 n6 Nov 65* 768-772
scattering parameters measurement; large-signal *S*-parameters measurement using two-signal method; *Mazumder, Shamsur R.*; *T-MTT v26 n6 Jun 78* 417-420 (1C11)
Microwave bipolar transistors; cf. Microwave transistors
Microwave circuits
6 kW peak-power varactor duplexer; *Hoover, John C.*; *T-MTT v10 n6 Nov 62* 476-479
allpass commensurate, supporting a TEM mode of propagation; realization of arbitrary delay characteristic; *Scanlan, Sean O.*; *T-MTT v16 n2 Feb 68* 62-72
application of hypercomplex matrix analysis to variable parameter networks; *Krongelb, Sol*; *T-MTT v10 n4 Jul 62* 236-251
automatic analysis and design using a digital computer in batch mode; *Murray-Lasso, Marco A.*; *T-MTT v17 n8 Aug 69* 514-526
automatic gain control; *Vinding, Jorgen P.*; *T-MTT v4 n4 Oct 56* 244-245
automatic general-purpose analysis programs; panel discussion; *Green, Peter E.*; *T-MTT v17 n8 Aug 69* 527-533
bandpass filters; waveguide with inductive strip in center of guide parallel to *E*-plane; *Konishi, Yoshihiro*; *T-MTT v22 n10 Oct 74* 869-873 (1B09)
characterizations of symmetric stripline junction and analysis of appropriate network form based thereon; *Franco, Albert G.*; *T-MTT v10 n2 Mar 62* 118-124
commensurate TEM microwave networks; finding characteristic polynomial to provide equiripple delay characteristics; *Scanlan, Sean O.*; *T-MTT v18 n1 Jan 70* 15-25
computer-aided optimization using razor search method; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 552-562
computer subroutine PERM; algorithm computes the permanent of a square matrix which was shown to yield the number of loops in microwave network flow graph; *Auckenthaler, Alethia M.*; *T-MTT v17 n10 Oct 69* 791-792
design approach involving centering, tolerancing, tuning, parasitic effects, uncertainties in models and reference planes and mismatched terminations; *Bandler, John W.*; *T-MTT v24 n9 Sep 76* 584-591 (1C12)
design of bandpass filters on the insertion loss basis; *Matthaei, George L.*; *T-MTT v8 n6 Nov 60* 580-593
design of synchronous branch guide directional couplers; *Young, Leo*; *T-MTT v10 n6 Nov 62* 459-475
DIPNET program for simple and rapid solution of elaborate microwave networks on a time-sharing computer; *Parker, William N.*; *T-MTT v17 n8 Aug 69* 495-505
equivalent circuit of the internal cavity reflex klystron amplifier; *Ishii, Koryu*; *T-MTT v8 n6 Nov 60* 667-668
equivalent circuits for coupled-cavity slow-wave structures; *Curnow, Harold J.*; *T-MTT v13 n5 Sep 65* 671-675
exact design of TEM microwave networks using quarter-wave line; *Wenzel, Robert J.*; *T-MTT v12 n1 Jan 64* 94-111
exact design of TEM microwave networks using quarter-wave line. *Wenzel, R. J., Correction*; *T-MTT v18 n11 Nov 70* 1005-1006
finite difference solution of microwave circuit problems; *Sinnott, Donald H.*; *T-MTT v17 n8 Aug 69* 464-478
finline couplers; elimination of certain adverse effects; *Robertson, Sloan D.*; *T-MTT v4 n4 Oct 56* 263-267
general-purpose computer program for the frequency-domain analysis; *Green, Peter E.*; *T-MTT v17 n8 Aug 69* 506-514
group delay sensitivities calculation using adjoint network concept; *Bandler, John W.*; *T-MTT v24 n4 Apr 76* 188-194 (1B12)
group delay sensitivities calculation using adjoint network concept. *Bandler, J. W., Correction*; *T-MTT v25 n5 May 77* 445 (2A09)
guided elastic waves; use of microwave network methods; *Oliner, Arthur A.*; *T-MTT v17 n11 Nov 69* 812-826
high-power transferred electron oscillators in *L*-band; compact circuits for high-efficiency operation; *Reynolds, James F.*; *T-MTT v18 n11 Nov 70* 827-834
impedance matching; *Steinbrecher, Donald H.*; *T-MTT v15 n6 Jun 67* 382
least *p*th optimization; computer program; *Herrick, D. L.*; *T-MTT v23 n10 Oct 75* 849-850 (1F01)
loaded and unloaded *Q* of a resonant ring circuit; *Golde, Hellmut*; *T-MTT v8 n5 Sep 60* 560-564
matching of waveguide two-ports; *Kajfež, Darko*; *T-MTT v10 n3 May 62* 174-178
measurement of interaction impedance of circuits for solid-state microwave devices; *Yu, Se Puan*; *T-MTT v18 n11 Nov 70* 999-1001
millimicrosecond pulse generators using microwave traveling-wave tube; *Beck, Alfred C.*; *T-MTT v3 n6 Dec 55* 48-51
minimax network optimization algorithm not requiring derivatives. *Madsen, K., Correction*; *T-MTT v24 n4 Apr 76* 233 (1F01)
minimax optimization; *Charalambous, Christakis*; *T-MTT v23 n10 Oct 75* 834-838 (1D14)
minimax optimization; *Einarsson, Olov*; *T-MTT v23 n10 Oct 75* 838-841 (1E04)
mixers; planar circuit mounted in waveguide; 12-GHz low-noise converter; *Konishi, Yoshihiro*; *T-MTT v22 n4 Apr 74* 451-454 (2C13)
noise parameters of two-ports; determination using computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
noise; two-port noise parameters determination using least-squares method; *Caruso, Giuseppe*; *T-MTT v26 n9 Sep 78* 639-642 (1A13)
optimization methods for computer-aided design; survey and bibliography; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 533-552
packaged and mounted diode as a microwave circuit; *Getsinger, William J.*; *T-MTT v14 n2 Feb 66* 58-69
planar circuits; finite-element analysis; *Silvester, Peter*; *T-MTT v21 n2 Feb 73* 104-108 (1E02)
printed; historical survey; *Barrett, Robert M.*; *T-MTT v3 n2 Mar 55* 1-9
pulse-forming network for the generation of phase-coherent microwave signals; *Ross, Gerald F.*; *T-MTT v17 n1 Jan 69* 52-54
ring circuits; wave propagation and resonance properties investigated; *Tischer, Friedrich J.*; *T-MTT v5 n1 Jan 57* 51-56
ring resonator in which two ring networks are connected by two quarter-wave lines; *Kaiser, J. A.*; *T-MTT v9 n4 Jul 61* 359-360
S-band, rectangular-waveguide networks of Stanford linear accelerator; accurate measurement of electrical phase lengths; *Weaver, James*; *T-MTT v14 n12 Dec 66* 623-629
scattering matrices; use for network analysis; *Matthews, E. W., Jr.*; *T-MTT v3 n3 Apr 55* 21-26
scattering matrix analysis of complicated problems using the equivalent generator concept; *Nemoto, Toshio*; *T-MTT v16 n10 Oct 68* 866-873
solid-state FM deviator; extended deviation and baseband response; *Clemetson, W. J.*; *T-MTT v15 n5 May 67* 326
stripline; practical design method; *Millican, George L.*; *T-MTT v17 n9 Sep 69* 696-705
striplines; characteristics at 1–16 GHz band and applications in the 2.5–10 GHz band; *Fromm, Winfield E.*; *T-MTT v3 n2 Mar 55* 13-20
striplines; research activities at Tufts College; *Frost, Albert D.*; *T-MTT v3 n2 Mar 55* 10-12
TEM mode four-port networks; transient analysis; *Ross, Gerald F.*; *T-MTT v14 n11 Nov 66* 528-542
TEM-mode networks; stored energy and bandwidth; *Ross, Gerald F.*; *T-MTT v17 n7 Jul 69* 386-395
two-port, mismatched network; intrinsic insertion loss; *Tomiyasu, Kiyo*; *T-MTT v3 n1 Jan 55* 40-44
two-port with mismatched source and load and/or arbitrary reference planes; bounds on reflection coefficient amplitude; *Tromp, H.*; *T-MTT v26 n12 Dec 78* 973-978 (1D09)
X-band power divider and multiplexer; variable ratio capability; *Teeter, W. L.*; *T-MTT v5 n4 Oct 57* 227-229
X-band waveguide frequency discriminator; development; *Mishra, S. R.*; *T-MTT v18 n9 Sep 70* 660-661
Microwave circuits; cf. *Specific type*
Microwave communication
special issue; *T-MTT v23 n4 Apr 75* 325-400 (1A03)
special issue foreword; *Fisher, Reed E., Guest ed.*; *T-MTT v23 n4 Apr 75* 325 (1A03)
trunk facilities for telegraph purposes, provided by microwave system; *Lenehan, J. J.*; *T-MTT v2 n1 Apr 54* 50-59
Microwave communication; cf. Microwave radio communication; Waveguide communication
Microwave detectors
application of detection theory to metal-to-semiconductor junction behavior at microwave frequencies; *Garver, Robert V.*; *T-MTT v8 n1 Jan 60* 108-111
broad-band crystal mount 10.5 kmc–20 kmc; *Staniforth, A.*; *T-MTT v8 n4 Jul 60* 464-465
correlation radiometry technique; *Fujimoto, Kyohei*; *T-MTT v12 n2 Mar 64* 203-212
discontinuities in the repeller current of a reflex klystron detector; *Ishii, Koryu*; *T-MTT v11 n2 Mar 63* 154-155
discriminator (FM demodulator) used for noise measurement; improvement by an injection phase-locked oscillator; *Ashley, J. Robert*; *T-MTT v18 n11 Nov 70* 1001-1002
excess noise in microwave detector diodes; *Faris, John J.*; *T-MTT v9 n4 Jul 61* 312-314
glow-discharge tubes as detectors of *X*-band radiation; *Kopeika, N. S.*; *T-MTT v23 n10 Oct 75* 843-845 (1E09)
Gunn oscillator with moving reflector; behavior as load variation detector when reflector velocity is small; *Nagano, Shigemichi*; *T-MTT v19 n12 Dec 71* 906-910 (1C02)
improvement in the same-law operation of crystal rectifiers as detectors; *Staniforth, Allan*; *T-MTT v8 n1 Jan 60* 111-115
improvements of a wall current detector; *Ronde, F. C. de*; *T-MTT v12 n6 Nov 64* 616
low-noise plasma video detector; use with high CW carrier power and low modulation frequency; *McCain, Douglas C.*; *T-MTT v18 n1 Jan 70* 64-65
magnetic loop, diode detector compatible with microwave and beam waveguides; *Degenford, J. E.*; *T-MTT v13 n3 May 65* 380-382

neon indicator lamps for very high sensitivity detection of *X*-band radiation; *Makover, Yaakov*; *T-MTT v26 n1 Jan 78* 38-43 (1C12)
reflex klystron amplifier for microwave spectroscopy; *Chapman, Frederick W.*; *T-MTT v11 n2 Mar 65* 150-152
silicon diodes for operation as detectors and harmonic generators; excess noise produced by microwave excitation; *Richardson, John M.*; *T-MTT v5 n3 Jul 57* 208-212
solid-state square-law detectors; quantitative comparison; *Cowley, A. Michael*; *T-MTT v14 n12 Dec 66* 588-602
theory and experiments on detecting and describing nanosecond pulses in the microwave region; *Miyauchi, Kazuhiro*; *T-MTT v12 n2 Mar 64* 221-230
tunnel-diode low-level detection; analysis; *Gabriel, William F.*; *T-MTT v15 n10 Oct 67* 538-553
universal *X*-band waveguide wall current detector; *Ronde, Frans C. de*; *T-MTT v12 n1 Jan 64* 112-117
velocity sorting detection in backward wave autodyne reception; *Pulfer, J. K.*; *T-MTT v8 n4 Jul 60* 463-464
wire grid bolometer for multimode power measurement; *Schiffman, Bernard M.*; *T-MTT v13 n4 Jul 65* 427-431

Microwave devices
1200-Megabit per second microwave-carrier Gray-code analog-to-digital converter; *Fisher, Reed E.*; *T-MTT v16 n8 Aug 68* 541-547
acoustic delay lines; broadband fixed-tuned to operate in *L*- and *S*-band regions; *Whicker, L. R.*; *T-MTT v15 n12 Dec 67* 755-757
acoustic transducers; effect of top electrode thickness on the performance; *Larson, John D.*; *T-MTT v18 n9 Sep 70* 602-608
acoustic transducers for volume wave excitation; characteristics; *Reeder, Thomas M.*; *T-MTT v17 n11 Nov 69* 927-941
acoustic; use for a dispersive filter for a pulse-compression radar; *Court, Ian N.*; *T-MTT v17 n11 Nov 69* 968-986
adhesively bonded aluminum foil seams; microwave properties; *Rueggeberg, Werner*; *T-MTT v15 n2 Feb 67* 117-118
C-band ultrasonic delay line using mode conversion in YAG; *Smith, A. B.*; *T-MTT v18 n10 Oct 70* 733-734
circular polarizing transducers; broadbanding possibilities; *Margerum, D. L.*; *T-MTT v1 n2 Nov 53* 24-29
coaxial connector with capacitive RF coupling and isolated dc returns; broadband operation; *Lin, C. M.*; *T-MTT v6 n4 Oct 58* 454-455
college laboratory for undergraduate curriculum; *Reich, Robert J.*; *T-MTT v4 n3 Jul 56* 187
correlator operating at *L*-band; use of YIG delay lines; *Payer, Stephen F.*; *T-MTT v18 n8 Aug 70* 426-432
delay equalizer; computer-aided design; *Tu, Peter J.*; *T-MTT v17 n8 Aug 69* 626-634
delay lines; use of transistor circuits for active impedance matching; *Ho, R. Y. C.*; *T-MTT v17 n11 Nov 69* 1041-1042
ferrite components; temperature effects on frequency; *Melchor, Jack L.*; *T-MTT v7 n1 Jan 59* 15-18
ferrite medium magnetized at an arbitrary direction; permeability matrix and eigenvalues; *Tyras, George*; *T-MTT v7 n1 Jan 59* 176-177
ferrites; application to microwave circulators, modulators and phase chargers; *Fox, A. G.*; *T-MTT v1 n1 Mar 53* 22
ferrites; composite magnetic circuits for temperature stabilization; *Stern, Ernest*; *T-MTT v15 n5 May 67* 295-300
generalized rational function approximation in finite intervals using Zolotarev functions; *Levy, Ralph*; *T-MTT v18 n12 Dec 70* 1052-1064
high-power components; testing with variable impedance termination; *Stegen, R. J.*; *T-MTT v4 n1 Jan 56* 54
high-power microwaves; special issue; *T-MTT v26 n5 May 78* 321-374 (1A03)
high-power microwaves; special issue foreword; *Tomiyasu, Kiyo, Guest ed.*; *T-MTT v26 n5 May 78* 321 (1A03)
L-band variable-delay-time YIG–YAG–YIG and YAG–YIG–YAG delay lines; *Smith, Alan B.*; *T-MTT v17 n11 Nov 69* 997-1001
lenses; semi-infinite array of parallel metallic plates of finite thickness for microwave lenses; *Primich, Robin I.*; *T-MTT v4 n3 Jul 56* 156-166
low VSWR matching technique; useful for the design of microwave components; *Goldstone, Lenrod*; *T-MTT v5 n2 Apr 57* 163
low VSWR matching technique; useful for the design of microwave components; *Rizzi, Peter A.*; *T-MTT v4 n3 Jul 56* 184-186
measurement of interaction impedance of circuits for solid-state microwave devices; *Yu, Se Puan*; *T-MTT v18 n11 Nov 70* 999-1001
mechanical design and manufacture of microwave structure; *Harvey, A. F.*; *T-MTT v7 n4 Oct 59* 402-422
microwave relay systems; remote control of standby engine generator sets; *Halvorson, Robert L.*; *T-MTT v2 n1 Apr 54* 32-35
modeling using negative image equivalent source and load networks; application GaAs FET amplifier design; *Medley, Max W., Jr.*; *T-MTT v27 n9 Sep 79* 784-788 (1B04)
noise properties of linear devices; wave approach; *Meys, R. P.*; *T-MTT v26 n1 Jan 78* 34-37 (1C08)
nondispersive, microwave, variable; their need in radar, communication, ECM and test systems reviewed; *Kirchner, Ernst K.*; *T-MTT v17 n11 Nov 69* 986-997
nonreciprocal; method for enhancing the performance; *Ancker-Johnson, Betsy*; *T-MTT v7 n3 Jul 59* 394-395
packaging of semiconductor devices; low-inductance package eliminating springs and ribbons; *Spiwak, Robert R.*; *T-MTT v19 n8 Aug 71* 732-733 (2B05)
partially decoupled round rods between parallel ground planes; data for design of UHF and TEM microwave components; *Cristal, Edward G.*; *T-MTT v16 n5 May 68* 311-314
rotary joint for two microwave transmission channels of the same frequency band; *Raabe, Herbert P.*; *T-MTT v1 n1 Mar 53* 48
S-band argon noise source tubes; characteristics; *Medd, W. J.*; *T-MTT v7 n3 Jul 59* 395
solid-state power sources; summary of 1971 IEEE G-MTT National Lectureship; *Blake, Carl*; *T-MTT v19 n12 Dec 71* 898-899 (1B06)
transmission lines; production using photoetching technique; *Wild, Norman R.*; *T-MTT v3 n2 Mar 55* 21-30
turnstile junction; properties and applications; *Meyer, Maurice A.*; *T-MTT v3 n6 Dec 55* 40-45
VSWR of randomly spaced discontinuities; prediction of the probability distribution; *Mullen, James A.*; *T-MTT v5 n2 Apr 57* 127-130
waveguide mounts; circuit impedance at terminals of device mounted in shunt across guide; *Eisenhart, Robert L.*; *T-MTT v19 n8 Aug 71* 706-719 (1D12)
waveguide systems; miniaturization; *Lewin, Leonard*; *T-MTT v4 n4 Oct 56* 261-262
wideband variable TEM quarter-wave coupler; *Chao, Gene*; *T-MTT v18 n9 Sep 70* 576-583
X-band fluorescent lamp noise sources; data on temperature dependence; *Mumford, William W.*; *T-MTT v3 n6 Dec 55* 12-17
X-band rotary joint; achievement of low VSWR over a 11% frequency band; *Riblet, H. J.*; *T-MTT v1 n1 Mar 53* 23-24

Microwave devices; cf. *Specific type*

Microwave diodes
broadbanding microwave diode switches; *Fisher, R. E.*; *T-MTT v13 n5 Sep 65* 706
crystal rectifiers; pressure dependence; *Matthei, Wesley G.*; *T-MTT v6 n1 Jan 58* 112
crystals; use for microwave switching; *Millet, Murray R.*; *T-MTT v6 n3 Jul 58* 284-290
diode with a 4-Terrahertz cutoff frequency for monolithic integrated microwave circuits; optimization; *Battershall, Barry W.*; *T-MTT v16 n7 Jul 68* 445-450
germanium diode used for mixer; cooling to reduce noise; *Messenger, George C.*; *T-MTT v5 n1 Jan 57* 62-63
germanium mixer crystals; investigation of properties at low temperatures; *Anderson, Lawrence K.*; *T-MTT v6 n4 Oct 58* 393-398
Gunn; broadband equivalent-circuit determination; *Pence, Ira W.*; *T-MTT v18 n11 Nov 70* 784-789
high-quality varactor diodes; characterization by power reflection technique; *Vendelin, George D.*; *T-MTT v14 n12 Dec 66* 603-608
impedance of the diode cartridge; *Garver, Robert V.*; *T-MTT v8 n1 Jan 60* 104-107
magnetic loop, diode detector compatible with microwave and beam waveguides; *Degenford, J. E.*; *T-MTT v13 n3 May 65* 380-382
measurement; de-embedding errors, bounds; *Glasser, Lance A.*; *T-MTT v26 n5 May 78* 379-380 (1E05)
mounted in transmission lines; equivalent circuits; *Getsinger, William J.*; *T-MTT v15 n11 Nov 67* 650-651
noise in point-contact diodes under RF and dc excitations; low-frequency noise spectra; *Lipkin, Y.*; *T-MTT v22 n8 Aug 74* 793-796 (1C11)
noise sources for 18–40 GHz range using avalanche diode in waveguide mount; *Keen, Nigel J.*; *T-MTT v24 n3 Mar 76* 153-155 (1B13)
nonlinear biasing resistors for microwave tunnel-diode oscillators; *Wallmark, J. T.*; *T-MTT v11 n4 Jul 63* 260-262
packaged and mounted diode as a microwave circuit; *Getsinger, William J.*; *T-MTT v14 n2 Feb 66* 58-69
packaged, in reduced-height waveguide; characterization; *Roe, James M.*; *T-MTT v18 n9 Sep 70* 638-642
switching action of germanium microwave diodes; *Garver, Robert V.*; *T-MTT v8 n1 Jan 60* 108-111

Microwave diodes; cf. Avalanche diodes; BARITT diodes; Gunn devices; IMPATT diodes; Microwave amplifiers; Microwave mixers; Microwave oscillators; Tunnel diodes

Microwave dosimetry
sampled integral-dose rate measurement; *Christman, Chrisotpher L.*; *T-MTT v22 n12 Dec 74* 1267-1277 (4E10)

Microwave FET amplifiers
all-pass network using FETs; *Sussman-Fort, S. E.*; *T-MTT v27 n12 Dec 79* 1023-1025 (2A02)
broadband equalization method bypasses analytic gain-bandwidth theory; *Carlin, Herbert J.*; *T-MTT v27 n2 Feb 79* 93-99 (1A03)
broadband low-noise amplifiers; relationships between device parameters and two-port noise parameters; *Fukui, Hatsuaki*; *T-MTT v27 n7 Jul 79* 643-650 (1B03)
cryogenically cooled GaAs FET amplifier with 1.1-dB noise figure at 5 GHz; *Pierro, John*; *T-MTT v24 n12 Dec 76* 972-975 (2A01)
GaAs MESFET four-stage amplifier; 6-GHz band, 1-W output power, 26-dB gain, 8-dB noise figure; *Arai, Youichi*; *T-MTT v24 n6 Jun 76* 381-383 (2B01)
GaAs MESFET pulse amplifier in Gb/s range; *Beneking, H.*; *T-MTT v24 n6 Jun 76* 385-386 (2B05)
GaAs MESFET small-signal *X*-band amplifiers; *Slaymaker, Nicholas A.*; *T-MTT v24 n6 Jun 76* 329-337 (1D13)
GaAs MESFET wideband power amplifiers; *Neidert, Robert E.*; *T-MTT v24 n6 Jun 76* 342-350 (1E12)
GaAs MESFETs; 100-mW amplifiers for 2–6.2 GHz and 5.9–12.4 GHz bands; *Hornbuckle, Derry P.*; *T-MTT v24 n6 Jun 76* 338-342 (1E08)
GaAs MESFETs; cooled amplifier for 11.7–12.2 GHz band; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 376-381 (2A10)
GaAs power amplifier for *X*-band; microstrip amplifier with 1-W output and 22-dB gain; *Tserng, Hua Quen*; *T-MTT v24 n12 Dec 76* 936-943 (1C10)
low-noise and linear amplifiers for satellite communication repeaters; *Cowan, D. A.*; *T-MTT v25 n12 Dec 77* 995-1000 (1C05)
microstrip varactor-tuned bipolar transistor oscillator integrated with FET amplifier for *X*-band; FM noise is −132 dB/Hz at 1 MHz; *Niehenke, Edward C.*; *T-MTT v27 n12 Dec 79* 1075-1079 (2D12)
modeling devices using negative image equivalent source and load networks; application to GaAs amplifier design; *Medley, Max W., Jr.*; *T-MTT v27 n9 Sep 79* 784-788 (1B04)
nonlinear distortion in GaAs FETs; third-order intermodulation distortion and gain compression; *Tucker, Rodney S.*; *T-MTT v27 n5 May 79* 400-408 (1C10)
potentially unstable FETs; amplifier design using maximally efficient gain concept; *Kotzebue, Kenneth L.*; *T-MTT v27 n1 Jan 79* 1-3 (1A03)
power amplifier using GaAs FETs and IMPATT diodes; 15-GHz, 4-W, 15-dB gain microstrip amplifier; *Sokolov, Vladimir*; *T-MTT v27 n12 Dec 79* 1058-1065 (2C09)
power amplifiers; 12-GHz, 1-W, five-stage GaAs MESFET amplifier; *Nakatani, Masaaki*; *T-MTT v27 n12 Dec 79* 1066-1070 (2D03)
power GaAs FET large-signal characterization; load-pull technique using new method for determining tuner *Y* parameters; *Abe, Hiroyuki*; *T-MTT v27 n5 May 79* 394-399 (1C04)
power GaAs MESFETs; broadband internal matching; *Honjo, Kazuhiko*; *T-MTT v27 n1 Jan 79* 3-8 (1A05)
reflection-type GaAs MESFET amplifier in 23-GHz band; operated as negative resistance two-terminal device; *Tohyama, Hideki*; *T-MTT v27 n5 May 79* 408-411 (1D04)

Microwave FET oscillators
design using large-signal scattering parameters; *Mitsui, Yasuo*; *T-MTT v25 n12 Dec 77* 981-984 (1B05)
flip-chip mounted devices in common-drain configuration: *Camisa, Raymond L.*; *T-MTT v27 n5 May 79* 391-394 (1C01)
GaAs FET integrated oscillator with $BaO–TiO_2$ ceramic resonator: high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
GaAs Schottky-barrier FET oscillators for *X*-band; *Maeda, Minoru*; *T-MTT v23 n8 Aug 75* 661-667 (1E03)
injection-locked oscillators, transmission-type; self-oscillating mixers; *Tajima, Yusuke*; *T-MTT v27 n7 Jul 79* 629-632 (1A03)
injection locking, transmission-type; *Tajima, Yusuke*; *T-MTT v27 n5 May 79* 386-391 (1B10)
large-signal GaAs MESFET oscillator design; *Johnson, Kenneth M.*; *T-MTT v27 n3 Mar 79* 217-227 (1A03)
wideband tunable oscillator design technique based on negative resistance concepts; *Basawapatna, Ganesh R.*; *T-MTT v27 n5 May 79* 379-385 (1B03)
YIG-tuned oscillators; designing broadband *X*-band oscillators; *Trew, Robert J.*; *T-MTT v27 n1 Jan 79* 9-14 (1A10)

Microwave FETs
burnout properties when subjected to nanosecond pulses; *Whalen, James J.*; *T-MTT v27 n12 Dec 79* 1026-1031 (2A05)
dual-gate GaAs MESFET as frequency multiplier at *Ku*-band; *Chen, Philip T.*; *T-MTT v27 n5 May 79* 411-415 (1D07)
GaAs MESFET for power applications; drain–source breakdown voltage in excess of 17 V; *Fukuta, Masumi*; *T-MTT v24 n6 Jun 76* 312-317 (1C10)
GaAs MESFET mixer using I_G–V_G nonlinearity; *Kurita, Osamu*; *T-MTT v24 n6 Jun 76* 361-366 (1G03)
GaAs MESFET mixers at *X*-band; *Pucel, Robert A.*; *T-MTT v24 n6 Jun 76* 351-360 (1F07)
GaAs MESFET pulse regenerator in Gb/s range; *Beneking, H.*; *T-MTT v24 n6 Jun 76* 385-386 (2B05)
GaAs MESFET regenerator for PSK signals; *Komaki, Shozo*; *T-MTT v24 n6 Jun 76* 367-372 (2A01)
GaAs MESFET reliability and failure modes; *Abbott, David A.*; *T-MTT v24 n6 Jun 76* 317-321 (1D01)
GaAs MESFET reliability and failure modes; *Irie, Toshiaki*; *T-MTT v24 n6 Jun 76* 321-328 (1D05)
GaAs MESFETs; noise and scattering parameters as function of temperature; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 376-381 (2A10)
GaAs MESFETs; positive feedback conductance; *Vendelin, George D.*; *T-MTT v24 n6 Jun 76* 383-385 (2B03)
GaAs MESFETs; self-aligned technique for producing submicrometer gate lengths and spacings between contacts; *Baudet, P.*; *T-MTT v24 n6 Jun 76* 372-376 (2A06)
GaAs MESFETs; submicron single-gate and dual-gate structures with improved low-noise and high-gain performance; *Ogawa, Masaki*; *T-MTT v24 n6 Jun 76* 300-305 (1B12)
high reliability GaAs MESFETs with static mean NF_{min} of 0.89 dB and standard deviation of 0.07 dB at 4 GHz; *Suzuki, T.*; *T-MTT v27 n12 Dec 79* 1070-1074 (2D07)
MESFETs, JFETs, and MOSFETs; recent developments; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 279-300 (1A05)
MESFETs; use in transversal filters as coupling element; *Jutzi, Wilhelm*; *T-MTT v19 n9 Sep 71* 760-767 (1C10)
microstrip-mounted package; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
MOS Si power transistors; VMOST technology; *Oakes, James G.*; *T-MTT v24 n6 Jun 76* 305-311 (1C03)
nonlinear performance prediction for GaAs FET in arbitrary circuit; *Rauscher, Christen*; *T-MTT v27 n10 Oct 79* 834-840 (1A12)
nonlinear performance prediction for GaAs FETs; *Willing, Harry A.*; *T-MTT v26 n12 Dec 78* 1017-1023 (2A01)
power GaAs MESFETs; design, fabrication, and performance; *DiLorenzo, James V.*; *T-MTT v27 n5 May 79* 367-378 (1A05)
Si MOSFETs with 0.8-μm channel; noise figure 3.5 dB at 4 GHz and f_{max} of 12 GHz; *Tsironis, C.*; *T-MTT v27 n12 Dec 79* 1052-1058 (2C03)
special issue; *T-MTT v24 n6 Jun 76* 277-391 (1A03)
special issue foreword; *Liechti, Charles A., Guest ed.*; *T-MTT v24 n6 Jun 76* 277-278 (1A03)
switches; speed and power; *Garver, Robert V.*; *T-MTT v27 n5 May 79* 523-529 (2E08)

Microwave FETs; cf. Microwave transistors

Microwave filters
$3\lambda_0/4$ parallel-staggered, bandpass; suitability for stripline construction; *Davis, Richard M.*; *T-MTT v17 n7 Jul 69* 404-406
active all-pass network using FETs; *Sussman-Fort, S. E.*; *T-MTT v27 n12 Dec 79* 1023-1025 (2A02)
active; direct use of transistors as high-*Q* inductors; *Adams, David K.*; *T-MTT v17 n9 Sep 69* 662-670
all-pass phase equalizer using directly connected TEM mode transmission lines; *Ross, Gerald F.*; *T-MTT v15 n11 Nov 67* 647-650
analysis of the necessity for rounded corners in high-power filters and other components; *Cohn, Seymour B.*; *T-MTT v9 n5 Sep 61* 389-397
aperture-coupled; design procedure based on the theory of conventional coupled circuits; *Shnurer, Florian*; *T-MTT v5 n4 Oct 57* 238-243
band rejection filters in coaxial waveguides; rejection frequency determination; *Varon, Dan*; *T-MTT v15 n12 Dec 67* 680-687
bandpass, containing high-*Q* dielectric resonators; *Cohn, Seymour B.*; *T-MTT v16 n4 Apr 68* 218-227
bandpass; design using stripline techniques; *Bradley, E. H.*; *T-MTT v3 n2 Mar 55* 163-169
bandpass filters with steep skirt selectivity; *Torgow, E. N.*; *T-MTT v13 n1 Jan 65* 124-126
bandpass interdigital filters; method of predicting the center frequencies; *Nicholson, B. F.*; *T-MTT v14 n5 May 66* 250-251
bandpass, linear-phase; design and synthesis; *Rhodes, John David*; *T-MTT v17 n4 Apr 69* 189-204
bandstop filters in the presence of dissipation; *Taub, Jesse J.*; *T-MTT v13 n5 Sep 65* 589-616
bandstop, optimum filters consisting of quarter-wave spaced shunt open-circuited stubs; design tables; *Gupta, O. P.*; *T-MTT v18 n7 Jul 70* 402-404

Microwave filters, *cont.*
broadband microwave frequency discriminator; *Mohr, Richard J.*; *T-MTT v11 n4 Jul 63* 263-264
broadband microwave frequency discriminator; *Robinson, Stephen J.*; *T-MTT v12 n2 Mar 64* 255-256
cavity filters; circularly polarized; *Nelson, Conrad E.*; *T-MTT v5 n2 Apr 57* 136-147
channelizing; input manifolds; *Edson, William A.*; *T-MTT v18 n5 May 70* 270-276
circular TE_{011}-mode, trapped-mode band-pass filters; *Matthaei, George L.*; *T-MTT v13 n5 Sep 65* 581-589
class of sharp cutoff filters using combinations of lumped constant and distributed constant reactance; *Oltman, George*; *T-MTT v11 n1 Jan 63* 30-35
coaxial low-pass structure; new 'inside-out' realization; *Snyder, Richard V.*; *T-MTT v16 n4 Apr 68* 262-264
commensurate-linelength complementary and pseudo-complementary filters; general properties; *Wenzel, Robert J.*; *T-MTT v16 n3 Mar 68* 191-192
commensurate TEM microwave networks; finding characteristic polynomial to provide equiripple delay characteristics; *Scanlan, Sean O.*; *T-MTT v18 n1 Jan 70* 15-25
compression type; use in high-resolution radar and rapid-scan receiver systems; *Hewitt, Harry S.*; *T-MTT v15 n12 Dec 67* 687-694
delay equalization of narrow-band bandpass filters; *Abele, Thomas A.*; *T-MTT v15 n10 Oct 67* 566-574
design curves for interdigital bandpass filters; *Pyle, John R.*; *T-MTT v12 n5 Sep 64* 559-567
design equations for resonator filters, interdigital filters, and stub filters; bandpass filters; *Cristal, Edward G.*; *T-MTT v19 n5 May 71* 486-490 (2B12)
design of band-pass filters using interdigital arrays of resonator line elements; *Matthaei, George L.*; *T-MTT v10 n6 Nov 62* 479-491
design of interstage coupling apertures for narrow band tunable coaxial band-pass filters; *Kurzrok, Richard M.*; *T-MTT v10 n2 Mar 62* 143-144
design of microwave bandstop filters; *Young, Leo*; *T-MTT v10 n6 Nov 62* 416-427
design of microwave bandstop filters. *Young, Leo, Correction*; *T-MTT v14 n3 Mar 66* 164
design of multiplexers having contiguous channels; *Cristal, E. G.*; *T-MTT v12 n1 Jan 64* 88-93
design procedure for round rod interdigital filters; *Dishal, M.*; *T-MTT v13 n5 Sep 65* 696-698
diode modulators and demodulators; high-speed characteristics; *Garver, Robert V.*; *T-MTT v15 n7 Jul 67* 390-397
direct- and quarter-wave-coupled microwave bandpass filters with adjustable transmission characteristics; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 73-77
direct coupled and waveguide band-pass filters; *Kurzrok, Richard M.*; *T-MTT v10 n3 May 62* 218-219
direct-coupled multicavity resonator filters exhibiting bandpass behavior; computer-aided design; *Young, Leo*; *T-MTT v7 n1 Jan 59* 99-101
direct synthesis of bandpass transmission line structures; *Carlin, Herbert J.*; *T-MTT v13 n3 May 65* 283-297
directional; applications for multiplexing systems; *Coale, Franklin S.*; *T-MTT v6 n4 Oct 58* 450-453
discontinuity effects in single resonator traveling-wave filters; *Standley, Robert D.*; *T-MTT v11 n6 Nov 63* 551-552
duplexing; design for communication equipment operating in the 1.7–2.0 GHz region; *Crosby, D. R.*; *T-MTT v1 n1 Mar 53* 31-38
effect of increased design bandwidth on direct-coupled-resonator filters; *Whiting, K.*; *T-MTT v11 n6 Nov 63* 557-560
empirical formula for the design of radial line filters; *Gunston, M. A. R.*; *T-MTT v12 n5 Sep 64* 571-572
equiripple filters with single transmission zeros at real or imaginary frequencies; *Levy, Ralph*; *T-MTT v24 n4 Apr 76* 172-181 (1A10)
evanescent-mode waveguide filters; use in diplexers; *Mok, C. K.*; *T-MTT v21 n1 Jan 73* 43-48 (1E09)
exact method for designing bandstop filters is adapted to design a four-element filter; matched at fundamental with infinite attenuation at harmonics; *Schiffman, Bernard M.*; *T-MTT v12 n5 Sep 64* 512-516
exact method for the design of bandstop filters which adapts the work of Ozaka and Ishii; *Schiffman, Bernard M.*; *T-MTT v12 n1 Jan 64* 6-15
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii. *Schiffman, B. M., Correction*; *T-MTT v13 n5 Sep 65* 703
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii; *Cristal, E. G.*; *T-MTT v12 n3 May 64* 364-382
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii. *Cristal, E. G., Addendum*; *T-MTT v13 n1 Jan 65* 141
exact synthesis and design of microwave filters consisting of quarter-wave lines, quarter-wave stubs and coupled wave lines; *Horton, M. C.*; *T-MTT v13 n3 May 65* 316-327
examination of forbidden regions of open periodic structures and application to sharp cutoff absorptive filters; *Birdsall, Charles K.*; *T-MTT v12 n2 Mar 64* 197-202
ferrite-loaded, circularly polarized cavity filters; *Whirry, Walter L.*; *T-MTT v6 n1 Jan 58* 59-65
filters with lumped-distributed elements or frequency variable terminations; computer design; *Carlin, Herbert J.*; *T-MTT v17 n8 Aug 69* 598-604
folded-line and hybrid folded-line bandstop filters; *Dupuis, Paul A.*; *T-MTT v22 n12 Dec 74* 1312-1316 (5C04)
formulas for peak fields inside each cavity of a direct-coupled-cavity filter; *Young, Leo*; *T-MTT v8 n6 Nov 60* 612-616
four-resonator filters; general type; *Kurzrok, R. M.*; *T-MTT v14 n6 Jun 66* 295-296
four-resonator filters; general type. *Kurzrok, R. M., Correction*; *T-MTT v14 n10 Oct 66* 498
frequency diplexing with waveguide bifurcations; *Kefalas, George P.*; *T-MTT v10 n3 May 62* 221-222
frequency response of stripline traveling-wave directional filters; *Standley, Robert D.*; *T-MTT v11 n4 Jul 63* 264-265
frequency separation by means of ferrite circulator; *Rapaport, Harold*; *T-MTT v6 n1 Jan 58* 53-58
frequency-stabilized band-rejection; use of high dielectric constant resonators; *Gerdine, Milton A.*; *T-MTT v17 n7 Jul 69* 354-359
frequency transformations enabling realizations with coupled lines and lumped capacitances; *Pregla, Reinhold*; *T-MTT v18 n5 May 70* 278-280

Microwave filters, *cont.*
harmonic rejection filter with one point of perfect mold and another of infinite attenuation; *Schiffman, Bernard M.*; *T-MTT v12 n1 Jan 64* 58-60
high-pass and bandstop filters; incidental dissipation; *Smythe, R. C.*; *T-MTT v14 n4 Apr 66* 208-209
high-power, bandstop, iris-coupled waveguide filters; *Torgow, Eugene N.*; *T-MTT v13 n5 Sep 65* 508-513
high-power harmonic suppressor using leaky wall waveguide; *Wantuch, Ernest*; *T-MTT v10 n6 Nov 62* 428-431
high-power multiple-resonator filters; design consideration; *Cohn, Seymour B.*; *T-MTT v7 n1 Jan 59* 149-153
high-power *S*-band, waffle-iron filter; *Guthart, H.*; *T-MTT v10 n2 Mar 62* 148-149
high-power; use of radial lines and uniform line discontinuities; *Vogelman, Joseph H.*; *T-MTT v6 n4 Oct 58* 429-439
high-power waffle-iron harmonic suppression filters; *Caputo, J.*; *T-MTT v13 n5 Sep 65* 701-703
high-power wide-band, low-pass filter using three waffle-iron filters; *L*-band operation; *Sharp, Eugene D.*; *T-MTT v11 n2 Mar 63* 111-116
high-*Q* filters using IMPATT active elements; *Dawson, R. W.*; *T-MTT v15 n4 Apr 67* 272-273
impedance-transforming networks of low-pass-filter form; *Cristal, E. G.*; *T-MTT v13 n5 Sep 65* 693-695
iris-coupled YIG-tuned filters in the 12–40 GHz region; design and realization; *Fjerstad, Roger L.*; *T-MTT v18 n4 Apr 70* 205-212
L- through *S*-band regions; accurate design to meet special frequency-response requirements; *Wehner, Donald R.*; *T-MTT v17 n2 Feb 69* 115-116
linear-phase filters with equiripple passband magnitude; tables for nonminimum-phase even-degree low-pass prototype networks; *Cloete, J. H.*; *T-MTT v27 n2 Feb 79* 123-128 (1C05)
linear phase; use of low-pass prototype network; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 290-301
lossless transmission line filters; graphical analysis by Smith chart; *Dawirs, Harvel N.*; *T-MTT v3 n1 Jan 55* 15-21
low-pass filter that attenuates by dissipation; *Schiffman, Bernard M.*; *T-MTT v13 n5 Sep 65* 699-700
magnetically tunable bandstop filters using YIG spheres; *Matthaei, George I.*; *T-MTT v13 n2 Mar 65* 203-212
maximally flat filters using shorted quarter-wave stubs; *Mumford, W. W.*; *T-MTT v13 n5 Sep 65* 695-696
miniature high-*Q* narrowband bandpass filter operating in 2200 to 2300 MHz telemetry band; application of TiO_2 dielectric resonators; *Harrison, William H.*; *T-MTT v16 n4 Apr 68* 210-218
modification of exact design procedure for bandstop filters; *Schiffman, B. M.*; *T-MTT v13 n2 Mar 65* 253-254
multichannel TEM filter design; *Wenzel, Robert J.*; *T-MTT v13 n1 Jan 65* 5-15
multiplexer design; bandpass channel filters connected to uniform-impedance manifold; *Rhodes, J. David*; *T-MTT v27 n2 Feb 79* 111-123 (1B07)
multiplexer design for any number of channels with arbitrary channel complexity, bandwidths, and interchannel spacing; *Rhodes, J. David*; *T-MTT v27 n2 Feb 79* 99-111 (1A09)
narrow-band, bandpass, TEM-line, elliptic, digital; design; *Rhodes, J. D.*; *T-MTT v17 n12 Dec 69* 1102-1107
narrow-band generalized interdigital linear phase filters; design theory; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 301-307
narrow-bandwidth, elliptic-function; realization circuit; *Rubinstein, Irving*; *T-MTT v17 n12 Dec 69* 1108-1115
nonminimum-phase filters in which reactive elements are combined with a magic-T or a 90-degree microwave hybrid; *Fjällbrant, Tore T.*; *T-MTT v16 n12 Dec 68* 990-994
nonreflective hybrid stopband filter; *Wanselow, Robert D.*; *T-MTT v10 n1 Jan 62* 91
nonuniform waveguide high-pass filters with extremely steep cutoff; *Tang, Charles C. H.*; *T-MTT v12 n3 May 64* 300-309
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure; *Cristal, Edward G.*; *T-MTT v12 n4 Jul 64* 428-439
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure. *Cristal, E. G., Correction*; *T-MTT v13 n1 Jan 65* 141
normalized self and mutual capacitances of periodic, circular, cylindrical rods between parallel ground plates; application to filter structure; *Vadopalas, P.*; *T-MTT v13 n2 Mar 65* 254-255
parallel-coupled quasi-stripline filters; design by conformal mapping; *Frigyes, I.*; *T-MTT v18 n3 Mar 70* 170-171
passband VSWR of maximally flat bandpass filters; *Kurzrok, Richard M.*; *T-MTT v10 n2 Mar 62* 145
planar circuit transmission zeros; analysis based on expansion in resonant modes; *D'Inzeo, Guglielmo*; *T-MTT v26 n7 Jul 78* 462-471 (1A08)
plasma-column band-pass microwave filter; *Kaufman, Irving*; *T-MTT v10 n6 Nov 62* 431-439
printed-circuit complementary stripline filters for narrow bandwidth multiplexers; *Wenzel, Robert J.*; *T-MTT v16 n3 Mar 68* 147-157
reactive; development of a new model for synthesis procedure; *Seidel, Harold*; *T-MTT v5 n2 Apr 57* 107-114
review of duplexing systems at microwave frequencies; *Harvey, A. F.*; *T-MTT v8 n4 Jul 60* 415-431
side-wall-coupled, stripline magnetically tunable filters using ferrimagnetic YIG resonators; *Carter, Philip S.*; *T-MTT v13 n3 May 65* 306-315
simple relation between cavity *Q* and maximum rejection for narrowband microwave stopband filters; *Lubell, Peter D.*; *T-MTT v12 n1 Jan 64* 145
sine-plane design procedure; *Pang, Khee K.*; *T-MTT v21 n10 Oct 73* 607-611 (1B09)
synthesis procedure for microwave bandpass with the Chebyshev response using orthogonal circuit resonators coupled by a ferrimagnetic resonator; *Comstock, R. Lawrence*; *T-MTT v12 n6 Nov 64* 599-607
tables of element values for distributed low-pass prototype filter; *Levy, Ralph*; *T-MTT v13 n5 Sep 65* 514-536
TEM equal stub admittance filters; design; *Hindin, H. J.*; *T-MTT v15 n9 Sep 67* 525-528
theory of strongly coupled cavity chains; *Allen, Matthew A.*; *T-MTT v8 n3 May 60* 362-372
tunable bandpass microwave filter using ferrimagnetic resonance in a YIG crystal; *Carter, Philip S., Jr.*; *T-MTT v9 n3 May 61* 252-260
tunable, dielectric loaded microwave cavities; high *Q* and filling factor; *Ammann, Eugene O.*; *T-MTT v11 n6 Nov 63* 528-542
waffle-iron low-pass filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 555-557
waveguide branching filter; separates 4-GHz band from combined 4-, 6-, and 11-GHz common carrier bands with loss of 0.05 dB; *Ohm, E. A.*; *T-MTT v22 n10 Oct 74* 891-894 (1D03)
waveguide dimensions to optimize performance of narrow-band waveguide filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 522-527
waveguide filters constructed from thin plates sandwiched together; bandstop filters; *Rhodes, J. David*; *T-MTT v22 n4 Apr 74* 394-399 (1D02)
waveguide filters for over-moded applications; *Ren, Chung-Li*; *T-MTT v22 n12 Dec 74* 1202-1209 (4A01)
waveguide filters; synthesis of tapered corrugated waveguide low-pass filters; *Levy, Ralph*; *T-MTT v21 n8 Aug 73* 526-532 (1C12)
waveguide multiplexers; computer-aided design; *Atia, Ali E.*; *T-MTT v22 n3 Mar 74* 332-336 (3B02)
waveguide quadruplexer using four-channel waveguide branching system; *Foldes, Peter*; *T-MTT v9 n4 Jul 61* 297-306
waveguide with inductive strip in center of guide parallel to *E*-plane; bandpass filter; *Konishi, Yoshihiro*; *T-MTT v22 n10 Oct 74* 869-873 (1B09)
Microwave filters; cf. Acoustic surface-wave filters; Bandpass filters; Bandstop filters; Cavity-resonator filters; Comb filters; Dielectric-resonator filters; Diplexers; Directional filters; Distributed filters; Equiripple filters; Filters; Impedance matching; Low-pass filters; Magnetic-resonator filters; Microstrip filters; Millimeter-wave filters; Resonator filters; Stripline filters; Transmission-line filters; Waveguide filters; YIG filters
Microwave frequency conversion
abrupt junction varactor doubler; performance computation; *Grayzel, Alfred I.*; *T-MTT v14 n5 May 66* 239-242
abrupt-junction varactor frequency doubler; modified series model; *Levin, Burton J.*; *T-MTT v14 n4 Apr 66* 184-188
analysis of four frequency nonlinear reactance circuits; *Adams, David K.*; *T-MTT v8 n3 May 60* 274-283
avalanche transit-time oscillators, frequency multipliers and frequency dividers; characterization of nonlinear interactions; *Mouthaan, Koenraad*; *T-MTT v18 n11 Nov 70* 853-862
broadband frequency doublers using charge-storage diodes; design; *Kotzebue, Kenneth L.*; *T-MTT v17 n12 Dec 69* 1077-1086
broadband frequency translator with 30-dB suppression of spurious sidebands; theory and design; *Grauling, C. H., Jr.*; *T-MTT v18 n9 Sep 70* 651-652
broadband microwave frequency translator by new device called DIGILATOR; *Klein, Gerald*; *T-MTT v15 n3 Mar 67* 172-179
design aspects of wideband up-converters and nondegenerate parametric amplifiers; *Getsinger, W. J.*; *T-MTT v12 n1 Jan 64* 77-87
design of multiplexers having contiguous channels; *Cristal, E. G.*; *T-MTT v12 n1 Jan 64* 88-93
diplexing action in a *Y*-junction circulator; *Brown, J.*; *T-MTT v10 n4 Jul 62* 298
direct and indirect PAM by a high-efficiency microwave frequency multiplier with varactor diodes; comparison of methods; *Marković, Aleksandar M.*; *T-MTT v18 n8 Aug 70* 504-506
division using transferred-electron device in resistive circuit; *Huang, C. I.*; *T-MTT v24 n1 Jan 76* 61-63 (1E07)
equations and design curves for microwave frequency converters; *Perlman, Barry S.*; *T-MTT v13 n2 Mar 65* 150-161
experimental results for a single-varactor diode frequency multiplier (×16); operable from 350 to 5600 MHz; *Rossen, Selma*; *T-MTT v12 n1 Jan 64* 142-143
frequency divider using parametric diodes and an ammonia maser controlled signal generator; *Stitch, Malcolm L.*; *T-MTT v8 n2 Mar 60* 218-221
frequency division using harmonically synchronized oscillators; noise and transfer properties; *Knochel, Reinhard*; *T-MTT v26 n12 Dec 78* 939-944 (1B03)
frequency multiplication by hot carriers in bulk semiconductors; *Machi, Yoshio*; *T-MTT v17 n6 Jun 69* 333-338
frequency translation of *X*-band signals; use of a ferrite serrodyne; *O'Hara, Francis J.*; *T-MTT v7 n1 Jan 59* 32-37
GaAs MESFET as frequency multiplier at *Ku*-band; dual-gate FET; *Chen, Philip T.*; *T-MTT v27 n5 May 79* 411-415 (1D07)
harmonic generation using reactance diodes; *Hyltin, Tom M.*; *T-MTT v9 n1 Jan 61* 73-78
harmonic generation using reactance diodes; *Stracca, G. B.*; *T-MTT v10 n5 Sep 62* 399-401
IMPATT amplifier up-conversion characteristics determination; *Gupta, Ramesh K.*; *T-MTT v26 n1 Jan 78* 28-30 (1C02)
in space retrodirective arrays tunnel diodes function as frequency modulator with gain; *Rutz-Philipp, Elizabeth M.*; *T-MTT v11 n5 Sep 63* 420-426
input conductance of four frequency parametric up-converter; *Korpel, Adrianus*; *T-MTT v13 n1 Jan 65* 96-106
intermodulation distortion prediction in varactor upconverters; *Grayzel, A. I.*; *T-MTT v15 n3 Mar 67* 183-184
intermodulation distortion prediction in varactor upconverters; *Perlow, Stewart M.*; *T-MTT v13 n6 Nov 65* 820-827
intermodulation noise analysis using Volterra series; *Swerdlow, Richard B.*; *T-MTT v26 n4 Apr 78* 305-313 (1F13)
K_A band klystron replacements using a diffused junction gallium–arsenide varactor; *Munro, J.*; *T-MTT v12 n5 Sep 64* 553
large-signal analysis of a harmonic generator using a semiconductor diode; *Johnson, Kenneth M.*; *T-MTT v8 n5 Sep 60* 525-532
limitations on amplifier noise performance; *Weglein, Rolf D.*; *T-MTT v8 n5 Sep 60* 538-544
lossless abrupt-junction nonoverdriven varactor doubler; distortion of a narrow-band FM signal; *Grayzel, A. I.*; *T-MTT v17 n9 Sep 69* 727-728
maximally flat bandwidth of a nondegenerate parametric amplifier with a double tuned signal circuit and a single tuned idler circuit; *Connors, W. P.*; *T-MTT v13 n2 Mar 65* 251-252
microstrip varactor doublers using thin-film lines on a ceramic substrate; *Belohoubek, E. F.*; *T-MTT v17 n5 May 69* 286-288
microwave frequency doubling using thick ferrite slabs in waveguides; *Bady, Isidore*; *T-MTT v10 n1 Jan 62* 55-64
microwave frequency translator using semiconductor diode switching; *Jaffe, Jerome S.*; *T-MTT v13 n3 May 65* 371-378
multiplier-frequency shifter; *Luzzatto, Giorgio*; *T-MTT v13 n3 May 65* 388

Microwave frequency conversion, *cont.*
noise parameters determination for microwave two-ports; computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
numerical analysis of the tunnel-diode frequency converter; *Barber, Mark R.*; *T-MTT v13 n5 Sep 65* 663-670
overdriven frequency doublers using punch-through or bimode varactors; design parameters; *Grayzel, Alfred I.*; *T-MTT v17 n6 Jun 69* 345-347
overdriven frequency doublers using punch-through or bimode varactors; design parameters.*Grayzel, A. I., Correction*; *T-MTT v17 n12 Dec 69* 1160
p-i-n diode driven into avalanche breakdown; frequency multiplication; *Ntake, Pasteur L.*; *T-MTT v23 n6 Jun 75* 477-485 (1B05)
S- to *X*-band frequency quadrupler; use of hybrid integrated microwave circuit techniques; *Johnson, Kenneth M.*; *T-MTT v16 n7 Jul 68* 420-424
spurious harmonic outputs from high power pulsed magnetrons, klystrons and traveling-wave tubes; *Tomiyasu, Kiyo*; *T-MTT v9 n6 Nov 61* 480-484
stripline down-converter pumped at submultiple of local oscillator frequency; *Schneider, Martin V.*; *T-MTT v23 n3 Mar 75* 271-275 (1A05)
submillimeter generation by microwave multiplication; *Rashid, A. F.*; *T-MTT v12 n3 May 64* 384
thin-film *X*-band varactor quadrupler; use of microstrip transmission-line circuitry; *Horton, John B.*; *T-MTT v15 n12 Dec 67* 752-754
tunnel-diode converters; approximate nonlinear analysis; *Tang, Charles C. H.*; *T-MTT v15 n11 Nov 67* 604-612
up-converters for use as electronically-tunable bandpass filters; design; *Matthaei, George L.*; *T-MTT v9 n5 Sep 61* 425-435
varactor converters; intermodulation distortion and gain compression; *Ghobrial, S. I.*; *T-MTT v23 n2 Feb 75* 255-257 (1F03)
varactor frequency doublers; amplitude and phase fluctuations transfer functions; *Bava, Elio*; *T-MTT v27 n8 Aug 79* 753-757 (1C11)
varactor frequency multipliers; exact analysis; *Tang, Charles C. H.*; *T-MTT v14 n4 Apr 66* 210-212
varactor frequency multipliers; nonlinear behavior and hysteresis phenomena; *Bava, Elio*; *T-MTT v27 n2 Feb 79* 141-147 (1D09)
varactor frequency tripler; *Chao, Cheng Lee*; *T-MTT v13 n2 Mar 65* 256-258
varactor square-law converter having pump frequency much greater than input signal frequency; *Abdullah, Faruq*; *T-MTT v25 n2 Feb 77* 127-136 (1D05)
X- to *K*-band broadband varactor frequency doubler; *Kurpis, G.*; *T-MTT v14 n2 Feb 66* 94
X-band parametric amplifier using closed cycle cooling; *Rucker, C. T.*; *T-MTT v13 n1 Jan 65* 123-124
Microwave frequency conversion; cf. Microwave mixers
Microwave frequency synthesizers
low FM noise synthesizer using Si bipolar transistor and $Ba_2Ti_9O_{20}$ dielectric resonator; *Alley, Gary D.*; *T-MTT v27 n12 Dec 79* 969-974 (1D03)
octave bandwidth synthesizer with improved spectral purity; VCXO output translated to *X*-band using phase-locked loop; *Tipon, Paul G.*; *T-MTT v22 n12 Dec 74* 1246-1254 (4D03)
Microwave generation
broadband microwave frequency spectrum generation; use as frequency standards; *Wall, Robert E., Jr.*; *T-MTT v3 n1 Jan 55* 4-10
multifrequency microwave generation using a large capacitance tunnel diode; *Jaskolski, Stanley V.*; *T-MTT v12 n3 May 64* 361-362
noise power generation by a gas discharge; conditions for considering it as thermal noise; *Bergmann, Saul M.*; *T-MTT v5 n4 Oct 57* 237-238
pickup antennas for waveguide motors; *Steinhoff, R. W.*; *T-MTT v14 n9 Sep 66* 438
power generation using $\lambda/4$ transmission-line resonator containing spark gap; *Ristic, Velimir M.*; *T-MTT v26 n5 May 78* 369-374 (1D09)
progress in solid-state microwave power sources; *Sterzer, Fred*; *T-MTT v13 n6 Nov 65* 768-772
propagation and generation of acoustic surface waves at microwave frequencies; *Carr, Paul H.*; *T-MTT v17 n11 Nov 69* 844-855
pulse-forming network for the generation of phase-coherent microwave signals; *Ross, Gerald F.*; *T-MTT v17 n1 Jan 69* 52-54
Microwave generation; cf. Masers; Microwave oscillators
Microwave heating
microwave oven leakage measurement; radiation meter; *Aslan, Edward E.*; *T-MTT v19 n2 Feb 71* 249-250 (3C06)
oil shale subjected high-power heating; abrupt change in dielectric constant; *Hu, Chia-Lun J.*; *T-MTT v27 n1 Jan 79* 38-43 (1C12)
oven mode tuning by slab dielectric loads; *Mihran, Theodore G.*; *T-MTT v26 n6 Jun 78* 381-387 (1A03)
sheet materials; waveguide applicator loaded with tapered dielectric slabs; *Kashyap, S. C.*; *T-MTT v24 n2 Feb 76* 125-126 (1E03)
TEM mode systems; air knife inside applicator as center conductor of TEM structure; *Johnston, D. A.*; *T-MTT v20 n8 Aug 72* 547-549 (2B02)
Microwave heating; cf. Electromagnetic radiation effects
Microwave holography
image reconstruction using double holograms obtained at different positions in space; *Shigesawa, Hiroshi*; *T-MTT v24 n8 Aug 76* 529-531 (1C13)
numerical reconstruction of images; data sampling by straight line approximation and image calculation using fast Fourier transform; *Nagai, Keinosuke*; *T-MTT v21 n1 Jan 73* 13-18 (1C03)
object-synthesized apertures; conversion of image distortion to variations in object velocity vector; *Farhat, Nabil H.*; *T-MTT v22 n5 May 74* 531-535 (1D11)
Microwave integrated circuits
1.8-GHz parametric amplifier fabricated in microstrip transmission-line configuration; *Bura, P.*; *T-MTT v16 n7 Jul 68* 424-428
attenuators; p-i-n variable attenuator with small phase shift; 0.5 to 3 GHz; *Parris, W. J.*; *T-MTT v20 n9 Sep 72* 618-619 (2B05)
balanced mixers; selecting matched diodes from a diode array; *Leighton, W. H., Jr.*; *T-MTT v17 n1 Jan 69* 49-51
BARITT self-mixing oscillator for *X*-band Doppler sensor applications; *Kwok, Siang Ping*; *T-MTT v27 n10 Oct 79* 844-847 (1B08)
broad-band and low-noise microwave amplifiers; computer-aided design; *Houston, Theodore W.*; *T-MTT v17 n8 Aug 69* 612-614
dc blocks realized using $\lambda/4$ 3-dB directional coupler with coupled port and transmitted port opened-circuited; *Ho, Chen Y.*; *T-MTT v23 n9 Sep 75* 773-774 (1D13)
dielectric constant measurement for substrates; *Napoli, Louis S.*; *T-MTT v19 n7 Jul 71* 664-665 (2E07)

Microwave integrated circuits, *cont.*
dielectric constant measurement using cavity-resonance method; coupling errors; *Ladbrooke, P. H.*; *T-MTT v21 n8 Aug 73* 560-562 (2C06)
dielectric-resonator filters; design technique for bandpass Chebyshev and Butterworth filters; *Araki, Tohru*; *T-MTT v19 n7 Jul 71* 638-643 (2C05)
dielectric waveguide integrated circuits; *Knox, Robert M.*; *T-MTT v24 n11 Nov 76* 806-814 (2C11)
dielectric waveguide integrated circuits; guide wavelength measurement in rectangular guides; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
diode with a 4-Terrahertz cutoff frequency for monolithic integrated microwave circuits; optimization; *Battershall, Barry W.*; *T-MTT v16 n7 Jul 68* 445-450
Doppler module comprised of Ge avalanche diode oscillator and Schottky-barrier detector diode; *Nanbu, Shutaro*; *T-MTT v26 n3 Mar 78* 192-196 (1E02)
Doppler module with stripline dipole antenna and output radiation normal to substrate plane; *Nanbu, Shutaro*; *T-MTT v26 n1 Jan 78* 3-5 (1A05)
ferrite planar circuits with ferrite substrate magnetized perpendicular to ground plane; *Miyoshi, Tanroku*; *T-MTT v25 n7 Jul 77* 593-600 (1C01)
finline balanced mixer in 9–11 GHz band with 70-MHz IF; *Begemann, Günther*; *T-MTT v26 n12 Dec 78* 1007-1011 (1G01)
frequency converter using varactor; *S*-band to *Ku*-band converter; *Bura, P.*; *T-MTT v21 n3 Mar 73* 136-137 (1C06)
GaAs; desirable features and usefulness for microwave integrated circuits; *Mehal, Edward W.*; *T-MTT v16 n7 Jul 68* 451-454
GaAs FET oscillator with BaO–TiO_2 ceramic resonator; high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
Gunn oscillator in dielectric waveguide; distributed Bragg reflection oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
Gunn oscillator using dielectric resonator; highly stabilized oscillator; *Makino, Toshihiko*; *T-MTT v27 n7 Jul 79* 633-638 (1A07)
Gunn oscillator with Bragg reflector grating for dielectric waveguide integrated circuits; *Itoh, Tatsuo*; *T-MTT v27 n5 May 79* 514-518 (2D13)
hybrid microstrip circuits; evaluation of materials and processes applicable to their fabrication; *Keister, Frank Z.*; *T-MTT v16 n7 Jul 68* 469-475
hybrid thin-film, digital loaded-line phase shifters; design and fabrication; *Opp, Francis L.*; *T-MTT v16 n7 Jul 68* 462-468
hybrid; use of microstrip transmission lines having high dielectric constant; *Vendelin, George D.*; *T-MTT v15 n12 Dec 67* 750-752
hybrid, using microstrip ferrite devices; *Allen, J. Lamar*; *T-MTT v16 n7 Jul 68* 405-411
IFF receivers; front end for *L*-band receiver; *Giannini, Richard J.*; *T-MTT v19 n7 Jul 71* 622-627 (2B01)
introduction to special issue; *Horton, John B., Guest ed.*; *T-MTT v19 n7 Jul 71* 569 (1B03)
L- and*S*-band; size reductions by use of lumped elements; *Daly, Daniel A.*; *T-MTT v15 n12 Dec 67* 713-721
lumped-element circulator for 4 GHz region; compatible with integrated circuits; *Knerr, Reinhard H.*; *T-MTT v21 n3 Mar 73* 150-151 (1D08)
lumped-element fabrication and use up to *X*-band; capacitors, inductors, resistors, and gyrators; *Aitchison, Colin S.*; *T-MTT v19 n12 Dec 71* 928-937 (1D12)
lumped-element; use of interdigital capacitors; *Alley, Gary D.*; *T-MTT v18 n12 Dec 70* 1028-1033
microminiaturized, planar transmission lines; parallel-plate waveguide approach; *Guckel, Henry*; *T-MTT v15 n8 Aug 67* 468-476
microstrip circulators, reduced size; recent developments; *Dunn, V. E.*; *T-MTT v16 n12 Dec 68* 1060-1061
microstrip junction circulator having all-garnet substrate construction; *Hershenov, B.*; *T-MTT v15 n12 Dec 67* 748-750
microstrip transmission on semiconductor substrates; *Hyltin, Tom M.*; *T-MTT v13 n6 Nov 65* 777-781
mixer using GaAs Schottky-barrier diodes; image-enhanced balanced mixer; *Dickens, Lawrence E.*; *T-MTT v23 n3 Mar 75* 276-281 (1A10)
mixers; low-noise 4-GHz mixer using Schottky-barrier diode; *Katoh, Motonobu*; *T-MTT v19 n7 Jul 71* 634-637 (2C01)
mixers; planar circuit mounted in waveguide; 12-GHz low-noise converter; *Konishi, Yoshihiro*; *T-MTT v22 n4 Apr 74* 451-454 (1C13)
monolithic and hybrid semiconductor circuit technologies; applications to microwaves considered from semitechnical and economic viewpoint; *Webster, William M.*; *T-MTT v16 n7 Jul 68* 384-388
monolithic balanced mixers; selecting matched diodes from a diode array; *Leighton, W. H., Jr.*; *T-MTT v17 n1 Jan 69* 49-51
narrow-axial strip in rectangular guide; equivalent circuit; *Chang, Kai*; *T-MTT v24 n9 Sep 76* 611-615 (1E11)
oscillator for *X*-band using Ge avalanche diode; *Nanbu, Shutaro*; *T-MTT v24 n3 Mar 76* 151-153 (1B11)
parallel-strip line embedded in or printed on a dielectric sheet; *Yamashita, Eikichi*; *T-MTT v16 n11 Nov 68* 972-973
parameters of microstrip transmission lines and of coupled pairs of microstrip lines; *Bryant, Thomas G.*; *T-MTT v16 n12 Dec 68* 1021-1027
parametric amplifier with self-contained solid-state pump source; *S*-band; *Okean, Herman C.*; *T-MTT v19 n5 May 71* 491-493 (2C05)
passivated silicon chip operated as pulsed avalanche oscillator in a microwave integrated circuit; *Blau, R.*; *T-MTT v16 n3 Mar 68* 196-197
phased array power module; 10-W *S*-band module; *Vaccaro, Frank E.*; *T-MTT v19 n7 Jul 71* 609-616 (1E07)
planar circuit analysis based on expansion in resonant modes; filtering properties; *D'Inzeo, Guglielmo*; *T-MTT v26 n7 Jul 78* 462-471 (1A08)
planar circuit analysis; segmentation method; *Okoshi, T.*; *T-MTT v24 n10 Oct 76* 662-668 (1C06)
planar circuit mounted in shorted ridge waveguide; end effect calculation using variational method; *Konishi, Yoshihiro*; *T-MTT v27 n2 Feb 79* 168-170 (1F08)
planar circuit mounted in waveguide; 12-GHz band downconverter; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 716-719 (1A14)
planar circuit mounted in waveguide; downconverter for satellite broadcast FM receiver in 12-GHz band; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 720-725 (1B04)
planar circuits; analysis based on contour-integral solution of wave equation; *Okoshi, Takanori*; *T-MTT v20 n4 Apr 72* 245-252 (1B03)
planar circuits; computer-aided synthesis; *Kato, Fumio*; *T-MTT v25 n10 Oct 77* 814-819 (1A10)

Microwave integrated circuits, *cont.*
planar circuits; computer analysis of short boundary circuits; *Okoshi, Takanori*; *T-MTT v23 n3 Mar 75* 299-306 (1C05)
planar circuits; finite-element analysis; *Silvester, Peter*; *T-MTT v21 n2 Feb 73* 104-108 (1E02)
planar disk networks; impedance matrix of multiport with fringing fields at disk edge; *Bonetti, René R.*; *T-MTT v26 n7 Jul 78* 471-477 (1B03)
planar ferrite resonators; point-matching solution; magnetic tuning characteristics; *Khilla, Abdel-Messias*; *T-MTT v27 n6 Jun 79* 592-598 (1C10)
planar network analysis; computer program description; *Silvester, P.*; *T-MTT v25 n11 Nov 77* 959 (2B02)
planar resonators; oscillation modes characterized in terms of *R/Q* parameter; radiation loss calculation; *Schott, Frederick W.*; *T-MTT v25 n5 May 77* 416-418 (1F06)
power dividers; planar *n*-way hybrid dividers; *Nagai, Nobuo*; *T-MTT v25 n12 Dec 77* 1008-1012 (1D04)
radio relay repeater design for 20-GHz 400-Mb/s QPSK system; *Yamamoto, Heiichi*; *T-MTT v23 n4 Apr 75* 334-341 (1A12)
reflection amplifiers using tunnel-diode devices; *Okean, Herman C.*; *T-MTT v15 n11 Nov 67* 613-622
S- to *X*-band frequency quadrupler; use of hybrid integrated microwave circuit techniques; *Johnson, Kenneth M.*; *T-MTT v16 n7 Jul 68* 420-424
S-band parametric amplifier having flat gain and linear phase response; *Okean, H. C.*; *T-MTT v16 n12 Dec 68* 1057-1059
silicon microstrip microwave transmission lines; experimental work; *Emery, F. E.*; *T-MTT v16 n7 Jul 68* 483-484
small, light-weight, ruggedized, *L*-band, 200-mW oscillator; for hybrid integrated projectile telemetry transmitter; *Presser, A.*; *T-MTT v16 n7 Jul 68* 482-483
special issue; *IEEE G-MTT*; *T-MTT v19 n7 Jul 71*
special issue; *T-MTT v16 n7 Jul*
special issue; *T-MTT v26 n10 Oct 78*
special issue foreword; *Edwards, William J.*; *T-MTT v16 n7 Jul 68* 383
special issue foreword; *Knerr, Reinhard H., Guest ed.*; *T-MTT v26 n10 Oct 78* 705 (1A03)
SSB modulator pumped at submultiple of carrier frequency; Schottky diode modulator; *Chramiec, Jerzy*; *T-MTT v26 n9 Sep 78* 635-638 (1A09)
superheterodyne receiver; low-noise *X*-band sweeping receiver; *Meier, Paul J.*; *T-MTT v19 n7 Jul 71* 600-609 (1D10)
switches, coplanar transmission lines on GaAs substrate; *Fleming, Paul L.*; *T-MTT v27 n12 Dec 79* 1032-1035 (2A11)
TEM transmission line; characteristic impedance and effective dielectric constant; *Okean, H. C.*; *T-MTT v15 n5 May 67* 327-328
temperature electrode for use in biological tissues during microwave exposure; *Larsen, Lawrence E.*; *T-MTT v27 n7 Jul 79* 673-679 (1D05)
thick- and thin-film technologies compared; alumina and fused silica substrates; *Ramy, Jean-Pierre*; *T-MTT v26 n10 Oct 78* 814-820 (2B06)
thin ferrite devices for microwave integrated circuits; *Roome, Gerard T.*; *T-MTT v16 n7 Jul 68* 411-420
transmission line hybrid circuits; isolation; *Kurzrok, R. M.*; *T-MTT v15 n2 Feb 67* 127-128
transmission line hybrid circuits; isolation; *McGough, B.*; *T-MTT v15 n11 Nov 67* 652-653
transmission line hybrid circuits; isolation; *Ross, Gerald F.*; *T-MTT v16 n1 Jan 68* 53-54
TRAPATT diode arrays; *Rosen, A.*; *T-MTT v23 n10 Oct 75* 841-843 (1E07)
wideband integrated microwave transistor amplifiers on high dielectric substrates; computer aided design; *Gelnovatch, V. G.*; *T-MTT v16 n7 Jul 68* 429-439
X-band mixer; use of hybrid microwave integrated circuits; *Johnson, Kenneth M.*; *T-MTT v16 n7 Jul 68* 388-397
Microwave integrated circuits; cf. Lumped-element microwave circuits; Microstrip; Millimeter-wave integrated circuits; Slot lines; Stripline
Microwave interferometry
Fabry–Perot interferometer for microwave region; design and implementation of reflectors; *Culshaw, William*; *T-MTT v7 n2 Apr 59* 221-228
measurement of magneto-microwave Kerr effect in semiconductors using reflectometers; *Vernon, R. J.*; *T-MTT v16 n4 Apr 68* 262
time displacement measurement of a projectile within the barrel of a gun; *Hanks, H. C., Jr.*; *T-MTT v1 n1 Mar 53* 22
Microwave limiters
broad-band TEM diode limiting; *Garver, Robert V.*; *T-MTT v10 n5 Sep 62* 302-310
cavity-type parametric circuit as a phase-distortionless limiter; *Olson, Frank A.*; *T-MTT v9 n2 Mar 61* 153-157
design to enchance microwave-power-limiter characteristics; *Wright, William H., Jr.*; *T-MTT v9 n6 Nov 61* 575-576
ferrimagnetic power limiter using a ferrite-loaded cavity; *Krokstad, Jarle*; *T-MTT v13 n1 Jan 65* 119-122
ferrite-varactor limiter combination operating at *X*-band, incorporating YIG's; *Carter, John L.*; *T-MTT v17 n4 Apr 69* 231-232
ferrites, operating in *X*-band; improving the performance; *Uebele, George S.*; *T-MTT v7 n1 Jan 59* 18-23
ferroelectric, operating at 1-GHz; design and analysis; *Horton, John B.*; *T-MTT v15 n9 Sep 67* 517-523
ferromagnetic limiter saturated by strong primary signal; absorption of weak secondary signal; *Emtage, P. R.*; *T-MTT v25 n3 Mar 77* 210-213 (1D02)
frequency-selective limiting; *Kotzebue, Kenneth L.*; *T-MTT v10 n6 Nov 62* 516-520
Gunn devices as power limiters; *Aitchison, C. S.*; *T-MTT v20 n2 Feb 72* 181-182 (2E03)
gyromagnetic coupling limiter at *C*-band; *Clark, J.*; *T-MTT v10 n1 Jan 62* 84-85
high-power ferroelectric limiter; *Cohn, Marvin*; *T-MTT v13 n1 Jan 65* 47-54
high-power *PIN* diode limiting; design concepts; *Brown, Norman J.*; *T-MTT v15 n12 Dec 67* 732-742
limiter using directional coupler and two p-i-n junction diodes; *Rodriguez, M. J.*; *T-MTT v10 n3 May 62* 219-220
laminar subsidiary-resonance limiter; investigation of the limiting threshold; *Carter, John L.*; *T-MTT v18 n9 Sep 70* 652-654
low temperature microwave limiter; *Sansalone, F. J.*; *T-MTT v9 n3 May 61* 272-273
magnetically tunable nonreciprocal band-pass filters using ferrimagnetic resonators; application as a limiter; *Patel, C. N.*; *T-MTT v10 n3 May 62* 152-161
matched, ideally reflectionless at all power levels; *Chao, Gene*; *T-MTT v18 n5 May 70* 283-284
multipactor receiver protectors for airborne applications; 50-kW peak power and 12.5 percent bandwidth in *X*-band; *Carlisle, Thomas P.*; *T-MTT v26 n5 May 78* 345-347 (1B13)
practical microwave power limiter circuits; *Brown, J.*; *T-MTT v10 n1 Jan 62* 85-86
subsidiary-resonance limiter with dynamic range greater than 200 kW; multilayer ferrite–dielectric sandwich on narrow wall of rectangular guide; *Allen, James L.*; *T-MTT v20 n2 Feb 72* 193-194 (2F03)
synthesis procedure for microwave bandpass with the Chebyshev response using orthogonal circuit resonators coupled by a ferrimagnetic resonator; *Comstock, R. Lawrence*; *T-MTT v12 n6 Nov 64* 599-607
theory of parametric limiting with varactor diodes; *Ho, Irving T.*; *T-MTT v9 n6 Nov 61* 459-472
waveguide ferrite limiters under subsidiary resonance conditions; *Helszajn, Joseph*; *T-MTT v25 n3 Mar 77* 190-196 (1B10)
X-band diode limiting; *Garver, R. V.*; *T-MTT v9 n2 Mar 61* 202
X-band high power limiter; *Wantuch, E.*; *T-MTT v13 n6 Nov 65* 868-869
X-band power limiter using ferrite and diodes; *Krupke, William F.*; *T-MTT v9 n6 Nov 61* 472-480
YIG filters used as envelope limiters; *Cumming, Raymond C.*; *T-MTT v13 n5 Sep 65* 616-621
Microwave magnetic materials; cf. Ferrites; Garnets; YIG
Microwave materials
amorphous semiconductors; dielectric properties of As_2Te_3–As_2Se_3; *Wilson, L. K.*; *T-MTT v22 n4 Apr 74* 470-471 (2E04)
Microwave measurements
accurate measurement of electrical phase lengths of *S*-band, rectangular-waveguide networks of Stanford linear accelerator; *Weaver, James*; *T-MTT v14 n12 Dec 66* 623-629
active inductors; frequency range for inverted common-collector transistor circuit; *Fliegler, Emanuel*; *T-MTT v19 n1 Jan 71* 89-91 (2D09)
adapter calibration; *Uhlir, A., Jr.*; *T-MTT v22 n3 Mar 74* 330-332 (3A14)
alignment method for YIG spheres; *Auer, Martin*; *T-MTT v10 n1 Jan 62* 88
AM and FM noise spectra; use of microwave measuring system; *Ondria, John G.*; *T-MTT v16 n9 Sep 68* 767-781
analysis of a multimode transmission line; *Dave, Himanshu B.*; *T-MTT v10 n4 Jul 62* 274-278
analysis of transmission cavity wavemeter; *Young, Leo*; *T-MTT v8 n4 Jul 60* 436-439
annotated bibliography on advances in microwave theory and techniques in Great Britain in 1959; *Brown, John*; *T-MTT v8 n4 Jul 60* 382-386
antenna feed systems; directive gain and relative phase measurement; *Dijk, Jakob*; *T-MTT v20 n1 Jan 72* 48-51 (1F02)
antenna temperature measurement at microwave frequencies; *Penzias, Arno A.*; *T-MTT v16 n9 Sep 68* 608-611
approximate method of determining the cutoff frequencies of waveguides of arbitrary cross section; *Chi, M.*; *T-MTT v12 n2 Mar 64* 248-249
attenuation; use of audio modulation substitution system to achieve high accuracy; *Korewick, John*; *T-MTT v1 n1 Mar 53* 14-21
automatic compensation of unwanted signal level fluctuation in measuring strips which include a CW microwave generator and a detector; new concept; *Kaliński, Jerzy*; *T-MTT v16 n11 Nov 68* 963-965
calibration of coaxial bolometer units; *Radio Standards Laboratory, National Bureau of Standards*; *T-MTT v13 n6 Nov 65* 884
cavities terminating transmission lines; measurement of parameters; *Lebowitz, R. A.*; *T-MTT v4 n1 Jan 56* 51-53
cavities terminating transmission lines; refined method for the measurement of parameters; *St. Clair, Maurice W.*; *T-MTT v4 n3 Jul 56* 184
cavity coupling measurement for system of coupled cavities; *Atia, A. E.*; *T-MTT v23 n6 Jun 75* 519-522 (1E05)
cavity resonators; improved method for the determination of *Q* and circuit efficiency; *Singh, Amarjit*; *T-MTT v6 n2 Apr 58* 155-160
cavity resonators intercavity couplings; *McDonald, N. A.*; *T-MTT v24 n3 Mar 76* 162 (1C08)
changes in high-frequency and microwave calibration services; *US National Bureau of Standards, Radio Stds. Lab.*; *T-MTT v13 n5 Sep 65* 715-716
characteristics of a traveling wave maser using ruby and a Karp-type slow-wave structure in the *X*-band; theoretical and experimental results; *Haddad, George I.*; *T-MTT v12 n4 Jul 64* 406-414
characteristics of balanced two skate modulators; *Mackey, Richard C.*; *T-MTT v10 n2 Mar 62* 114-117
complex dielectric and magnetic constants at cm and mm wavelengths; use of optical methods; *Talpey, T. E.*; *T-MTT v2 n3 Sep 54* 1-12
computer program which processes standing wave measurements with or without line loss on a transmission-line or waveguide load leading to its one-port characterization; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 644-646
conductivity and permittivity of semiconductor spheres; *Champlin, Keith S.*; *T-MTT v9 n6 Nov 61* 545-551
coupled-transmission-line coupler parameters; *Rehnmark, Stig*; *T-MTT v25 n12 Dec 77* 1116-1121 (2E06)
delay lines; frequency-domain measurements using automatic network analyzer; *Uhlir, Arthur, Jr.*; *T-MTT v20 n1 Jan 72* 51-53 (1F05)
determination of capacitance, inductance, and impedance of rectangular lines by conformal transformation; *Chen, Tsung-Shan*; *T-MTT v8 n5 Sep 60* 510-519
determination of the effect of a sample insertion hole on the dielectric measurements of a cylindrical cavity resonator; *Estin, Arthur J.*; *T-MTT v8 n6 Nov 60* 650-653
dielectric constant and loss tangent in ferroelectric materials having large dielectric constants; *Horton, J. B.*; *T-MTT v16 n10 Oct 68* 873-875
dielectric constant of low-loss dielectric materials; use of automatic microwave dielectrometer; *Gabriel, William F.*; *T-MTT v7 n4 Oct 59* 481
dielectric waveguides; dispersion characteristics and field distributions in rectangular guide and its modifications; *Ogusu, Kazuhiko*; *T-MTT v26 n3 Mar 78* 169-171 (1C07)
dielectric waveguides; guide wavelength in rectangular guides; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
direct simultaneous measurement of two circularly polarized components of a plane electromagnetic wave; *Kajfez, D.*; *T-MTT v17 n9 Sep 69* 726-727
directivity of directional couplers; improved measuring method; *Schafer, George E.*; *T-MTT v6 n4 Oct 58* 419-422

Microwave measurements. *cont.*

directivity of directional couplers; improved measuring method. *Schafer, G. E., Correction*; *T-MTT v12 n3 May 64* 361
dissipative four-poles; semi-precision measuring method based on a modified H. A. Wheeler network; *Altschuler, Helmut M.*; *T-MTT v3 n1 Jan 55* 30-36
electric and magnetic field strength measurement by nonresonant perturbation technique; theory; *Steele, Charles W.*; *T-MTT v14 n2 Feb 66* 70-74
electric and magnetic field strength measurement by nonresonant perturbation technique; theory. *Steele, Charles W., Correction*; *T-MTT v14 n9 Sep 66* 436
electric-field distributions near waveguides or antennas: use of modulated scattering technique; *Richmond, J. H.*; *T-MTT v3 n4 Jul 55* 13-15
electric probe for measurement of induced surface currents on obstacles in a parallel plate region; *Plonsey, Robert*; *T-MTT v10 n3 May 62* 214-217
electromagnetic backscattering; use of microwave-pulse method; *Tang, Charles C. H.*; *T-MTT v7 n2 Apr 59* 209-213
electron resonance spectrometer using microwave oscillator; *Payne, John B., III*; *T-MTT v12 n1 Jan 64* 48-54
error of Doppler radar in target speed determination for traffic control; *Ishii, T. Koryu*; *T-MTT v13 n3 May 65* 389-390
F8T5 fluorescent lamps; effect of cataphoresis on noise temperature; *Guentzler, Ronald E.*; *T-MTT v18 n7 Jul 70* 393-400
fast sweep; of relaxation times in superconducting cavities; *Schmitt, H. J.*; *T-MTT v14 n4 Apr 66* 206-207
ferrite isolation at 1.3 GHz; use in rectangular waveguide; *Heller, Gerald S.*; *T-MTT v6 n1 Jan 58* 97-100
flow graphs to evaluate mistermination errors in loss and phase measurements; *Leed, Daniel*; *T-MTT v9 n5 Sep 61* 454
frequency; measurement and control by lower radio frequencies; *Mackey, Richard C.*; *T-MTT v5 n1 Jan 57* 64-68
frequency regulation system; *Singer, J. R.*; *T-MTT v8 n2 Mar 60* 249
graphical method for determining real and imaginary parts of dielectric constant at microwave frequency; *Sharpe, Charles B.*; *T-MTT v8 n2 Mar 60* 155-159
harmonic power generated by microwave transmitters; *Price, Vernon G.*; *T-MTT v7 n1 Jan 59* 116-120
high-accuracy impedance meter; *Beatty, R. W.*; *T-MTT v8 n4 Jul 60* 461-463
high-accuracy microwave phase standard for use in primary calibration laboratories; *James, Allan V.*; *T-MTT v16 n11 Nov 68* 944-949
high-dielectric-constant materials; precise microwave measurement techniques; *Cohn, Seymour B.*; *T-MTT v14 n9 Sep 66* 406-410
high-precision measurement of VSWR of coaxial connectors; *Sanderson, Albert E.*; *T-MTT v9 n6 Nov 61* 524-528
homodyne method for phase and amplitude measurements; RF substitution techniques; *Schafer, George E.*; *T-MTT v21 n6 Jun 73* 432 (2C09)
homodyne systems; modulation method for optimum detection sensitivity; *Watanabe, Kenzo*; *T-MTT v23 n4 Apr 75* 354-359 (1C04)
impedance; analysis of 'quarter-wave' technique of error reduction; *Little, William E.*; *T-MTT v15 n9 Sep 67* 504-507
impedance; computer-aided measurement; *Dalley, James E.*; *T-MTT v17 n8 Aug 69* 572-576
in line calorimeter for microwave waveguide; *Brady, M. Michael*; *T-MTT v10 n5 Sep 62* 357-366
insertion loss and VSWR of a waveguide resonator constructed by spacing two unequal reflecting elements approximately one-half wavelength apart; *Riblet, Henry J.*; *T-MTT v11 n1 Jan 63* 78-83
interchange of source and detector in low-power microwave network measurements; *Altschuler, Helmut M.*; *T-MTT v13 n1 Jan 65* 84-90
international standards for microwave power measurements; *Engen, G. F.*; *T-MTT v13 n5 Sep 65* 713-715
line width and *g* factor of a spherical ferrite in a cross-guide coupler; *Stinson, Donald C.*; *T-MTT v6 n4 Oct 58* 446-450
line width and gyromagnetic ratio of ferrite materials; *Bady, I.*; *T-MTT v8 n3 May 60* 376-377
line width measurements of ferrite with a cross-guide coupler; *Stinson, Donald C.*; *T-MTT v12 n6 Nov 64* 621-622
logarithmic transmission line chart; *Somlo, Peter I.*; *T-MTT v8 n4 Jul 60* 463
loss and mode-conversion measurement; frequency-domain shuttle-pulse method; *Bernardi, Paolo*; *T-MTT v26 n3 Mar 78* 203-209 (1E13)
low-loss quantities; use of lossy shunt structure; *Altschuler, Helmut M.*; *T-MTT v3 n4 Jul 55* 24-30
measurements using voltage induction method; *Toda, Minoru*; *T-MTT v16 n10 Oct 68* 828-835
matrix description of waveguide discontinuities in the presence of propagation and evanescent modes; *Haskal, Haim*; *T-MTT v12 n2 Mar 64* 184-188
measurement of an electromagnetic field by using an oscillating spring as a reradiation antenna; *Iizuka, Keigo*; *T-MTT v11 n6 Nov 63* 498-505
measurement of dispersion effects on narrow RF pulses; *Russo, F. A.*; *T-MTT v13 n2 Mar 65* 250-251
measurement of magneto-microwave Kerr effect in semiconductors using reflectometers; *Vernon, R. J.*; *T-MTT v16 n4 Apr 68* 262
measurement of material properties by the stripline cavity; *Waldron, R. A.*; *T-MTT v13 n5 Sep 65* 711
measurement of narrow linewidth ferromagnetic samples using a nonresonant waveguide system; *Jones, George R.*; *T-MTT v11 n6 Nov 63* 547-548
measurement of nonlinear properties of ferroelectric material; *Das, S. N.*; *T-MTT v12 n4 Jul 64* 440-445
measurement of *Q* for low loss transmission lines; *Somlo, P. I.*; *T-MTT v11 n6 Nov 63* 472-478
measurement of small dielectric losses in material with a large dielectric constant at microwave frequencies; *Bell, Richard O.*; *T-MTT v9 n3 May 61* 239-242
measurement of traveling-wave tube attenuators at 2 GHz; *Dix, C. H.*; *T-MTT v8 n1 Jan 60* 121-122
measurement of varactor quality expanding on Houlding's resonant cavity method; *Keywell, Frank*; *T-MTT v10 n6 Nov 62* 567-572
measurement technique to characterize diodes and varactors; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 15-20
measurement techniques for spinwave linewidths from the saturation of the ferrimagnetic resonance line; *Seiden, Phillip E.*; *T-MTT v10 n1 Jan 62* 51-55
measuring phase modulation or rapid phase changes system; *Ernst, William P.*; *T-MTT v13 n1 Jan 65* 70-76
measuring the directivity of directional couplers using a sliding short circuit and an adjustable sliding termination; *Beatty, R. W.*; *T-MTT v12 n3 May 64* 383
measuring the ω-β diagram of periodic structures; *McDuff, Odis P.*; *T-MTT v10 n4 Jul 62* 295-296
method for measurement of relative shift of microwave devices; *Finnila, Charles A.*; *T-MTT v8 n2 Mar 60* 143-147
method free from mismatch errors for measuring the loss of attenuators; *Leber, Arthur N.*; *T-MTT v12 n4 Jul 64* 480
microstrip lines; dominant mode analysis; *Wharton, R. P.*; *T-MTT v20 n8 Aug 72* 552-555 (2B07)
microstrip loss measurement; conduction and radiation losses; *van Heuven, J. H. C.*; *T-MTT v22 n9 Sep 74* 841-844 (1B09)
microstrip resonant ring containing small reciprocal discontinuity; measurement of equivalent circuit parameters of discontinuity; *Hoefer, Wolfgang J. R.*; *T-MTT v23 n12 Dec 75* 1067-1071 (2C04)
microwave absorption modulation by electron mobility variation in *N*-type germanium; *Harmatz, Milton*; *T-MTT v9 n2 Mar 61* 199-200
microwave and high-frequency calibration services at NBS, Part IV; *US National Bureau of Standards, Radio Standards Lab.*; *T-MTT v13 n1 Jan 65* 138-139
microwave and high frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards*; *T-MTT v12 n4 Jul 64* 480-482
microwave and high-frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards*; *T-MTT v12 n5 Sep 64* 572-576
microwave and high-frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards*; *T-MTT v12 n6 Nov 64* 623-624
microwave and millimeter-wave loss and delay measurement system; *Chasek, Marvin B.*; *T-MTT v10 n6 Nov 62* 521-527
microwave measurements on a semiconductor filled symmetrical strip transmission line; *Holmes, D. A.*; *T-MTT v12 n4 Jul 64* 478-480
microwave power measurements of multimode waveguides; *Sharp, Eugene D.*; *T-MTT v10 n1 Jan 62* 73-82
microwave techniques for measurement of the dielectric properties of soils; *Curtis, W. L.*; *T-MTT v11 n3 May 63* 211-212
mode coupling and conversion in waveguides; shuttle pulse method; *Bernardi, P.*; *T-MTT v24 n5 May 76* 264-266 (1C02)
multimode power measurements by mode sampling; *Taub, Jesse J.*; *T-MTT v10 n6 Nov 62* 496-505
multimode power measurements by mode sampling. *Taub, Jesse J., Correction*; *T-MTT v11 n3 May 63* 203
multimode waveguides; survey of measurement techniques; *Beck, A. C.*; *T-MTT v3 n3 Apr 55* 35-41
mutual coupling of identical coupled antennas; use of microwave phase bridge technique; *Mailloux, R. J.*; *T-MTT v16 n2 Feb 68* 129-130
narrow line width ferromagnets; *Masters, J. I.*; *T-MTT v8 n5 Sep 60* 565-566
near-field measurements at *X*-band; use of RF probes; *Richmond, J. H.*; *T-MTT v3 n3 Apr 55* 32-34
noise sources, attenuation, and reflection coefficient; calibration services by NBS Institute for Basic Standards, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n2 Feb 66* 93
noise-temperature calibrations; effect of mismatched components; *Otoshi, Tom Y.*; *T-MTT v16 n9 Sep 68* 675-686
noise-temperature calibrations; effect of mismatched components. *Otoshi, T. Y., Correction*; *T-MTT v17 n3 Mar 69* 174
oscillators; constant-power loci plots; p-i-n diode as variable-impedance termination; *Kosugi, Y.*; *T-MTT v20 n12 Dec 72* 852-855 (2B06)
oscilloscopes, sampling techniques; bandwidths from dc to *X*-band; *Grove, Wayne M.*; *T-MTT v14 n12 Dec 66* 629-635
p-type silicon; measurement of complex microwave conductivity and the associated errors; *Datta, A. N.*; *T-MTT v18 n3 Mar 70* 162-166
passband VSWR of maximally flat bandpass filters; *Kurzrok, Richard M.*; *T-MTT v10 n2 Mar 62* 145
passive phase comparison between signals of the same frequency consisting of two hybrids and an X-Y indicator; *Kaiser, Julius A., Jr.*; *T-MTT v10 n6 Nov 62* 548-550
peak-pulse power meters; calibration by Radio Standards Laboratory at Boulder, Colorado for frequency band 950–1200 MHz; *National Bureau of Standards*; *T-MTT v14 n1 Jan 66* 47-48
perturbation techniques in semiconductor diagnostics; *Champlin, Keith S.*; *T-MTT v11 n1 Jan 63* 73-77
phase and amplitude transmission measuring system; wideband frequency range (8.7–9.6 GHz). *Linker, J. B., Jr.*; *T-MTT v6 n4 Oct 58* 415-418
phase and field strength; measurement by nonresonant perturbation technique; *Mallory, K. B.*; *T-MTT v14 n2 Feb 66* 99-100
phase differences between the incident and transmitted waves at the input and output ports, respectively, of a two-arm waveguide junction; *Schafer, George E.*; *T-MTT v8 n6 Nov 60* 617-622
phase measurement at UHF and microwave frequencies; analysis of bridge circuits; *Dyson, John D.*; *T-MTT v14 n9 Sep 66* 410-423
phase measurement method for transmission-line networks; *Lacy, Peter*; *T-MTT v9 n6 Nov 61* 568-569
phase shift and attenuation measurement through active microwave networks; *Alday, John R.*; *T-MTT v10 n2 Mar 62* 143
plotting impedance on Smith chart; *Kaplan, L. J.*; *T-MTT v8 n6 Nov 60* 668
plotting impedances on Smith chart; *Kyhl, R. L.*; *T-MTT v8 n3 May 60* 377
power; in WR112 waveguide (7.05 to 10.0 GHz). *National Bureau of Standards*; *T-MTT v14 n5 May 66* 254
power; in WR137 waveguide (5.85–8.20 GHz). *National Bureau of Standards*; *T-MTT v14 n4 Apr 66* 213
power of low (0–1 mW) and medium (0–100 mW) levels at 0 to 75 GHz, by broadband nonadiabatic, twin dry-load calorimeters; analysis and design; *Sucher, Max*; *T-MTT v6 n2 Apr 58* 188-194
power of low (0–1 mW) and medium (0–100 mW) levels at 0 to 75 GHz, by broadband twin-Joule calorimeters using dry loads; construction and performance; *James, Allan V.*; *T-MTT v6 n2 Apr 58* 195-202
power; use of current distribution in barretters; *Adams, John W.*; *T-MTT v17 n10 Oct 69* 778-785
power; use of resistive-film calorimeters; *Lane, J. A.*; *T-MTT v7 n1 Jan 59* 177

Microwave measurements, *cont.*
practical measurement technique for determining the relative amplitude and phase of individual modes propagating in overmoded waveguide; *Levinson, David S.*; *T-MTT v14 n7 Jul 66* 310-322
practical measurement technique for determining the relative amplitude and phase of individual modes propagating in overmoded waveguide; *Puttre, R. E.*; *T-MTT v15 n2 Feb 67* 133-134
Q values of the microwave cavity; consideration of coupling losses; *Ginzton, Edward L.*; *T-MTT v6 n4 Oct 58* 383-389
radiation meter; microwave-oven leakage measurement; *Aslan, Edward E.*; *T-MTT v19 n2 Feb 71* 249-250 (3C06)
reflection coefficients; application of homodyne detection principle; *King, R. J.*; *T-MTT v18 n9 Sep 70* 658-660
reflection coefficients; magnified and squared VSWR responses; *Beatty, Robert W.*; *T-MTT v7 n3 Jul 59* 346-350
reflectometer; adjustment techniques; *Engen, Glenn F.*; *T-MTT v7 n3 Jul 59* 351-355
review of microwave work in Britain in 1960; *Karbowiak, A. E.*; *T-MTT v9 n5 Sep 61* 374-384
scattering parameter measurements with imperfect test set; *Kruppa, W.*; *T-MTT v19 n1 Jan 71* 122-123 (2B11)
second harmonic effects in tuned reflectometers; *Brady, M. Michael*; *T-MTT v10 n1 Jan 62* 90-91
semiautomatic technique for tuning a reflectometer; *Zanboorie, M. H.*; *T-MTT v13 n5 Sep 65* 709-710
Si IMPATT diodes; admittance measurement at *X*-band; *Isobe, Toyosaku*; *T-MTT v18 n11 Nov 70* 993-995
signal flow graph methods; *Hunton, J. K.*; *T-MTT v8 n2 Mar 60* 206-212
signal sources; amplitude stabilization; *Engen, Glenn F.*; *T-MTT v6 n2 Apr 58* 202-206
simple test to measure insertion losses at microwave frequencies; *Stelzried, C. T.*; *T-MTT v12 n4 Jul 64* 475-477
sliding coaxial termination for impedance measurements using a modified reflectometer technique; *Little, W. E.*; *T-MTT v12 n2 Mar 64* 247-248
slope detection for perturbation measurements; *Mallory, K. B.*; *T-MTT v10 n2 Mar 62* 146-147
slotted-line measurements with signal introduced across probe; errors in VSWR and phase; *Garver, Robert V.*; *T-MTT v23 n6 Jun 75* 536-537 (1F08)
smooth water; reflectivity at 19.24 and 22.43 GHz as measured with a free-wave microwave reflectometer; *Saxton, J. A.*; *T-MTT v18 n4 Apr 70* 230
smooth water; reflectivity at 19.24 and 22.43 GHz as measured with a free-wave microwave reflectometer; *Thompson, Edgar J.*; *T-MTT v16 n11 Nov 68* 938-943
special issue; *IEEE G-MTT*; *T-MTT v20 n1 Jan 72*
special issue guest editorial; *Stinehelfer, Harold E.*; *T-MTT v20 n1 Jan 72* 2 (1B04)
spinwave linewidth measurements with low-power RF sources; *Courtney, W. E.*; *T-MTT v18 n8 Aug 70* 510
standing-wave ratio; advantages of expressing SWR in decibels; *Dettinger, David*; *T-MTT v5 n3 Jul 57* 218
stripline cavity for measurement of dielectric constants and gyromagnetic resonance line widths; *Waldron, Richard A.*; *T-MTT v12 n1 Jan 64* 123-131
superheterodyne method of microwave noise measurement; *Kloza, Marian*; *T-MTT v13 n6 Nov 65* 882-883
susceptibility; by voltage induction method; *Toda, Minoru*; *T-MTT v16 n10 Oct 68* 828-835
swept-frequency cavity measurements of properties of materials; errors due to uncertainty principle; *Waldron, R. A.*; *T-MTT v16 n5 May 68* 314-315
system noise measurements at L-, S- and X-band frequencies; *Mukaihata, Tadao*; *T-MTT v10 n6 Nov 62* 506-516
temperature calibration of microwave thermal noise sources; *Stelzried, C. T.*; *T-MTT v13 n1 Jan 65* 128-130
theory and experiments on detecting and describing nanosecond pulses in the microwave region; *Miyauchi, Kazuhiro*; *T-MTT v12 n2 Mar 64* 221-230
thin-film bolometers for measuring the total unwanted power transmitted in any or all possible modes and frequencies; *Schiffman, Bernard M.*; *T-MTT v12 n2 Mar 64* 155-163
time-domain reflectometer in which pulse spectrum lines are radiated individually, measured reflections are added to compute echo; *Robinson, Lloyd A.*; *T-MTT v20 n12 Dec 72* 855-857 (2B09)
time-domain techniques for broadband measurements; application to scattering parameter, constitutive parameter, antenna, and scattering measurements; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
time-domain techniques for broadband measurements; application to scattering parameter, constitutive parameter, antenna, and scattering measurements. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
time-quadrature components of microwave signals by means of phase-sensitive coherent detector; *Richmond, J. H.*; *T-MTT v3 n3 Apr 55* 13-15
torque-operated wattmeter, capable of measuring 10 to 200 watts in the wavelength range 3.05–3.45 cm; *Cullen, Alexander L.*; *T-MTT v6 n2 Apr 58* 133-136
transverse *R/Q* in iris-loaded waveguides; use of perturbation technique; *Hahn, Harald*; *T-MTT v16 n1 Jan 68* 20-29
use of small resonant scatters to measure electric and magnetic fields at microwave frequencies; *Harrington, Roger F.*; *T-MTT v10 n3 May 62* 165-174
varactor measurements and equivalent circuits; *Houlding, N.*; *T-MTT v13 n6 Nov 65* 872-873
varactor *Q*; new calculation procedure from impedance versus bias measurements; *Houlding, N.*; *T-MTT v18 n4 Apr 70* 229-230
varactor *Q*; new calculation procedure from impedance versus bias measurements; *Sard, Eugene W.*; *T-MTT v16 n10 Oct 68* 849-860
variable characteristic impedance coaxial line; *Cruz, J. E.*; *T-MTT v13 n4 Jul 65* 477-478
VHF slow-wave slotted line for microwave VSWR measurements; *Oh, Luis L.*; *T-MTT v10 n2 Mar 62* 142
VSWR; locus of points of constant VSWR when renormalized to different characteristic impedance; *Malherbe, J. A. G.*; *T-MTT v25 n5 May 77* 444-445 (2A08)
VSWR measurement using slotted-line technique; *Barbero, Jesus*; *T-MTT v22 n10 Oct 74* 887-889 (1C13)
VSWR of a broad-band waveguide series-T junction; *Kurzrok, R. M.*; *T-MTT v11 n5 Sep 63* 452
waveguide losses calibrated by a dc potentiometer, ac ratio transformer, and reflectometer techniques; *Otoshi, T. Y.*; *T-MTT v18 n7 Jul 70* 406-409
X-band reflection measuring device with full band display of reflection coefficient; *Ronde, Frans C. de*; *T-MTT v13 n4 Jul 65* 435-440
Microwave measurements; cf. Attenuation measurement; Capacitance measurement; Cavity perturbation methods; Computer-aided microwave measurements; Conductivity measurement; Dielectric constant measurement; Dielectric measurements; Electromagnetic radiation effects; Frequency measurement; Impedance measurement; Inductance measurement; Magnetic measurements; Microwave dosimetry; Microwave radiometry; Noise measurement; Oscillographs; Permeability measurement; Phase measurement; Power measurement; *Q* measurement; Radio astronomy; Scattering parameters measurement; Semiconductor device measurements; Time-domain measurements; Transmission-line measurements; Voltage measurement
Microwave mixers
balanced crystal; test set to check matching of crystals; *Strum, P. D.*; *T-MTT v3 n1 Jan 55* 45
balanced, crystal; test set to check matching of crystals. *Strum, P. D., Correction*; *T-MTT v3 n1 Jan 55* 21
balanced; use of crystals; *Taub, Jesse*; *T-MTT v2 n2 Jul 54* 26-38
BARITT diodes as self-oscillating Doppler detectors; *East, Jack R.*; *T-MTT v24 n12 Dec 76* 943-948 (1D03)
biological membrane nonlinear capacitance; signal mixing and difference-frequency generation in membranes; *Berkowitz, Gary C.*; *T-MTT v27 n2 Feb 79* 204-207 (2B03)
compact image rejection balanced mixer developed in microstrip medium; *Kurpis, G. P.*; *T-MTT v18 n12 Dec 70* 1181-1182
computer-aided design of resistive mixers; *Egami, Shunichiro*; *T-MTT v22 n3 Mar 74* 270-275 (2B08)
conversion loss and noise; predicting mixer performance, experimental results; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 55-61 (1A09)
conversion loss and noise; predicting mixer performance, theory; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 49-55 (1A03)
conversion loss with reactively terminated image; 4-GHz integrated-circuit mixer; *Katoh, Motonobu*; *T-MTT v19 n7 Jul 71* 634-637 (2C01)
crystal; determination of delay distortion; *Kawahashi, Takeshi*; *T-MTT v7 n2 Apr 59* 247-256
crystal; optimum RF source impedance and interdependence of crystal and mixer noise temperatures; *Pritchard, Wilbur L.*; *T-MTT v3 n1 Jan 55* 37-39
crystals; accurate measurement of the noise temperature ratio; *Davis, Ronald E.*; *T-MTT v3 n6 Dec 55* 27-35
design of mixer for use at very high intermediate frequencies; *Butson, P. C.*; *T-MTT v10 n2 Mar 62* 147-148
diode mixer consisting of nonlinear capacitance and conductance and ohmic spreading resistance; analysis; *Macpherson, Alan C.*; *T-MTT v5 n1 Jan 57* 43-51
double sideband resistive mixers; fundamental limits on conversion loss; *Kelly, Alexander J.*; *T-MTT v25 n11 Nov 77* 867-869 (1A03)
finline technique used in 9–11 GHz balanced mixer with 70-MHz IF; *Begemann, Günther*; *T-MTT v26 n12 Dec 78* 1007-1011 (1G01)
frequency measurements in the far infrared; limitations imposed by the noise spectrum in harmonic mixing; *Frenkel, L.*; *T-MTT v17 n5 May 69* 281-282
GaAs FET transmission-type injection-locked oscillators and self-oscillating mixers; *Tajima, Yusuke*; *T-MTT v27 n7 Jul 79* 629-632 (1A03)
GaAs MESFET mixer using I_G–V_G nonlinearity; *Kurita, Osamu*; *T-MTT v24 n6 Jun 76* 361-366 (1G03)
GaAs MESFET mixers at *X*-band; *Pucel, Robert A.*; *T-MTT v24 n6 Jun 76* 351-360 (1F07)
germanium diodes; cooling to reduce noise; *Messenger, George C.*; *T-MTT v5 n1 Jan 57* 62-63
germanium diodes operated in an *X*-band receiver; investigation of properties at low temperatures; *Anderson, Lawrence K.*; *T-MTT v6 n4 Oct 58* 393-398
glow-discharge lamps as *X*-band mixers at high local oscillator power levels; IF conversion gain; *Kopeika, Norman S.*; *T-MTT v27 n3 Mar 79* 227-232 (1A13)
Gunn oscillator with moving reflector; behavior as self-excited mixer when reflector velocity is large; *Nagano, Shigemichi*; *T-MTT v19 n12 Dec 71* 906-910 (1C02)
harmonic mixing with antiparallel diode pair; *Cohn, Marvin*; *T-MTT v23 n8 Aug 75* 667-673 (1E09)
high IF mixer based on the use of a broadband stripline magic T; design; *Tresselt, C. P.*; *T-MTT v18 n1 Jan 70* 58-60
integrated-circuit balanced mixer using GaAs Schottky-barrier diodes; image-enhanced mixer; *Dickens, Lawrence E.*; *T-MTT v23 n3 Mar 75* 276-281 (1A10)
intermodulation rejection in mixers; improvement in superheterodyne receivers; *Lepoff, Jack H.*; *T-MTT v14 n12 Dec 66* 618-623
local oscillator waveforms computation; *Kerr, Anthony R.*; *T-MTT v23 n10 Oct 75* 828-831 (1D08)
low-noise down-converter with optimum matching at idle frequencies; *Stracca, G. B.*; *T-MTT v21 n8 Aug 73* 544-547 (2B02)
low-noise microstrip mixer on a plastic substrate; *Hallford, Ben R.*; *T-MTT v18 n12 Dec 70* 1178-1181
measurement of conversion conductances of Esaki mixer diodes; *Pucel, R. A.*; *T-MTT v9 n6 Nov 61* 567-568
microstrip balanced mixer for 20-GHz band; *Araki, Tohru*; *T-MTT v19 n7 Jul 71* 638-643 (2C05)
microstrip crystal mixer with integral dc return; broadband design; *Carlson, Eric*; *T-MTT v3 n2 Mar 55* 175-177
modulator; production of an amplitude-modulated wave at an intermediate frequency from mixing of two CW signals in a coaxial or waveguide system; *Schafer, G. E.*; *T-MTT v6 n3 Jul 58* 333-334
monolithic balanced mixers; selecting matched diodes from a diode array; *Leighton, W. H., Jr.*; *T-MTT v17 n1 Jan 69* 49-51
multiplier-frequency shifter; *Luzzatto, Giorgio*; *T-MTT v13 n3 May 65* 388
noise figure minimum; design aspects; *Bergmann, Saul M.*; *T-MTT v6 n3 Jul 58* 324-326
numerical analysis of the tunnel-diode frequency converter; *Barber, Mark R.*; *T-MTT v13 n5 Sep 65* 663-670
optimum source conductance of crystal mixers; *Mohr, Richard J.*; *T-MTT v8 n6 Nov 60* 622-627
planar circuit mounted in waveguide; 12-GHz band downconverter; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 716-719 (1A14)
planar circuit mounted in waveguide; 12-GHz low-noise converter; *Konishi, Yoshihiro*; *T-MTT v22 n4 Apr 74* 451-454 (2C13)
planar circuit mounted in waveguide; downconverter for satellite broadcast FM

receiver in 12-GHz band; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 720-725 (1B04)
resistive-diode mixers; shot noise and attenuator noise model; *Kerr, Anthony R.*; *T-MTT v27 n2 Feb 79* 135-140 (1D03)
Schottky-barrier diode burnout when subjected to RF spikes; *Morris, George E.*; *T-MTT v22 n7 Jul 74* 745-746 (1C11)
Schottky-barrier diode mixers; noise figure; *Gewartowski, James W.*; *T-MTT v19 n5 May 71* 481 (2B07)
Schottky-barrier diodes; waveshape of local oscillator voltage component across nonlinear junction of diode; *Fleri, Dominic A.*; *T-MTT v21 n1 Jan 73* 39-43 (1E09)
Schottky-barrier mixer diode; noise figure and conversion loss; *Barber, Mark R.*; *T-MTT v15 n11 Nov 67* 629-635
stabilization of mixer diode performance against L.O. power changes; *Carr, J. William*; *T-MTT v11 n2 Mar 63* 123-129
tunnel-diode, harmonic-mode; theoretical and experimental investigation; *Miller, Barbara A.*; *T-MTT v17 n2 Feb 69* 121-124
tunnel diode used as a mixing amplifier; *Dickens, L. E.*; *T-MTT v9 n1 Jan 61* 99-101
X-band integrated circuit mixer with reactively terminated image; *Johnson, Kenneth M.*; *T-MTT v16 n7 Jul 68* 388-397

Microwave mixers; cf. Microwave frequency conversion; Millimeter-wave mixers

Microwave modulation
amplitude and phase modulators in rectangular waveguides for 5 to 7 GHz; *Reggia, F.*; *T-MTT v14 n3 Mar 66* 154-157
characteristics of balanced two skate modulators; *Mackey, Richard C.*; *T-MTT v10 n2 Mar 62* 114-117
design of a single sideband modulator using two reflection types of Faraday rotation ferrite balanced modulators; *Clavin, Alvin*; *T-MTT v10 n2 Mar 62* 98-102
four-diode star mixer/modulator; application of broadband hybrid junction; *Mouw, Robert B.*; *T-MTT v16 n11 Nov 68* 911-918
high isolation; high speed microwave modulator; *Alday, J. R.*; *T-MTT v12 n6 Nov 64* 622
homodyne systems; modulation method for optimum detection sensitivity; *Watanabe, Kenzo*; *T-MTT v23 n4 Apr 75* 354-359 (1C04)
injection locked phase modulator using a klystron; *Mackey, Richard C.*; *T-MTT v11 n2 Mar 63* 150
measuring phase modulation or rapid phase changes system; *Ernst, William P.*; *T-MTT v13 n1 Jan 65* 70-76
microwave variable attenuators and modulators using PIN diodes; *Hunton, James Keith*; *T-MTT v10 n4 Jul 62* 262-273
nanosecond pulse-modulated microwave signals; spectrum analysis; *Welzenis, R. G. van*; *T-MTT v18 n5 May 70* 280-282
semiconductor device used as a modulator at 9600 MHz; *Jacobs, Harold*; *T-MTT v8 n5 Sep 60* 553-559
single-sideband modulator using ferrites; *Cacheris, John C.*; *T-MTT v4 n3 Jul 56* 152-155
SSB modulator pumped at submultiple of carrier frequency; Schottky diode modulator; *Chramiec, Jerzy*; *T-MTT v26 n9 Sep 78* 635-638 (1A09)
transferred-electron device oscillators; bias modulation characteristics; *Tang, D. D.*; *T-MTT v23 n9 Sep 75* 748-753 (1C02)
traveling-wave modulation of light; proposed microwave structure and design method; *Yamashita, Eikichi*; *T-MTT v17 n2 Feb 69* 118-119
varactor diode used as a microwave modulator using minimum modulation power; *Rutz, Elisabeth M.*; *T-MTT v10 n6 Nov 62* 605-610

Microwave modulation/demodulation; cf. Microwave mixers

Microwave oscillators
conditions for double frequency oscillation in waveguide mounted tunnel diodes; *Hoffins, Cordell C.*; *T-MTT v12 n2 Mar 64* 176-183
design and construction of synchrotron for use in the Cambridge Electron Accelerator; *Robinson, Kenneth W.*; *T-MTT v8 n6 Nov 60* 593-596
discontinuities in the repeller current of a reflex klystron detector; *Ishii, Koryu*; *T-MTT v11 n2 Mar 63* 154-155
electron resonance spectrometer using microwave oscillator; *Payne, John B., III*; *T-MTT v12 n1 Jan 64* 48-54
five layer (air, reflector, ruby, reflector, air) optical maser for microwave amplification is treated as a Fabry–Perot resonator; *Jacobs, Harold*; *T-MTT v12 n2 Mar 64* 163-170
frequency stabilization; *Altman, Jerome L.*; *T-MTT v2 n2 Jul 54* 16-25
frequency stabilization with an external cavity; *Goldstein, Irving*; *T-MTT v5 n1 Jan 57* 57-62
grid-separated triode; analysis and design; *Chaffin, Roger J.*; *T-MTT v19 n1 Jan 71* 91-93 (2D11)
injection phase locking of two-cavity klystron oscillators; *Day, Walter R., Jr.*; *T-MTT v11 n5 Sep 63* 436
investigation of 2K25 reflex klystron amplifier; noise at approximately 9400 MHz; *Ishii, Koryu*; *T-MTT v8 n3 May 60* 291-294
investigation of millimeter-wave reflex klystron amplifiers; *Ishii, K.*; *T-MTT v11 n3 May 63* 212-213
L-band compact microstrip high-power oscillator; use of avalanche diodes operating in high-efficiency mode; *Liu, Shing Gong*; *T-MTT v18 n11 Nov 70* 982-983
L-band, microstrip; use of silicon avalanche diodes; *Rosen, A.*; *T-MTT v18 n11 Nov 70* 979-981
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)
local oscillator noise suppression in a balanced mixer; *Taub, Jesse*; *T-MTT v2 n2 Jul 54* 26-38
low-noise, class-*C* oscillator using a directional coupler; *Peppiatt, Harry J.*; *T-MTT v16 n9 Sep 68* 748-752
maximum bandwidth performance of a nondegenerate parametric amplifier with a single-tuned idler circuit; *De Jager, Jan T.*; *T-MTT v12 n4 Jul 64* 459-467
measurement of AM- and FM-noise; *Ashley, J. Robert*; *T-MTT v16 n9 Sep 68* 753-760
measurements; automatic drawing of constant power loci plots using p-i-n diode as variable-impedance termination; *Kosugi, Y.*; *T-MTT v20 n12 Dec 72* 852-855 (2B06)
mode locking at *X*-band using IMPATT diode as gain element and Schottky-barrier diode as saturable absorber; *Glasser, Lance A.*; *T-MTT v26 n2 Feb 78* 62-69 (1B02)
model studies of a strongly coupled synchrotron system; *Barrington, A. E.*; *T-MTT v8 n6 Nov 60* 597-604
multifrequency microwave generation using a large capacitance tunnel diode; *Jaskolski, Stanley V.*; *T-MTT v12 n3 May 64* 361-362
multiple-device oscillator using single cavity; stable operation free from moding problems; *Kurokawa, Kaneyuki*; *T-MTT v19 n10 Oct 71* 793-801 (1B03)
noise properties of 2 cavity CW klystron; contribution close to center frequency in audiofrequency range; *Espersen, George A.*; *T-MTT v8 n5 Sep 60* 474-477
noise reduction by transmission stabilizing cavity; *Ashley, J. Robert*; *T-MTT v16 n9 Sep 68* 743-748
noise reduction in synchronized oscillators, including those using IMPATT and Gunn diodes; *Kurokawa, Kaneyuki*; *T-MTT v16 n4 Apr 68* 234-240
nonlinear biasing resistors for microwave tunnel-diode oscillators; *Wallmark, J. T.*; *T-MTT v11 n4 Jul 63* 260-262
nonreciprocal injection locking of bilateral microwave oscillators; criterion; *Perlman, B. S.*; *T-MTT v18 n8 Aug 70* 507-508
oscillator FM under random vibration; *Ashley, J. R.*; *T-MTT v13 n6 Nov 65* 869-870
progress in solid-state microwave power sources; *Sterzer, Fred*; *T-MTT v13 n6 Nov 65* 768-772
Q-measurement; by modulation technique based on injection phase-locking theory; *Ashley, J. Robert*; *T-MTT v18 n11 Nov 70* 1002-1004
reflex klystron amplifier for microwave spectroscopy; *Chapman, Frederick W.*; *T-MTT v11 n2 Mar 65* 150-152
resonator-feedback oscillator; temperature stabilization; *Kim, Johng R.*; *T-MTT v19 n3 Mar 71* 331-332 (2C05)
small, light-weight, ruggedized, *L*-band, 200-mW oscillator; for hybrid integrated projectile telemetry transmitter; *Presser, A.*; *T-MTT v16 n7 Jul 68* 482-483
solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
solid-state devices; special issue foreword; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)
synchronization of a klystron by injection locking; *Mackey, Richard C.*; *T-MTT v10 n4 Jul 62* 228-235
transmission cavity stabilized oscillators; matching; *Schünemann, Klaus*; *T-MTT v26 n3 Mar 78* 147-155 (1A13)
triode; frequency stabilization by reference to the field-independent hyperfine resonance of sodium; *Bell, W. Earl*; *T-MTT v7 n1 Jan 59* 95-98
tunnel-diode oscillator in an open structure; oscillation conditions; *Yamashita, Eikichi*; *T-MTT v15 n7 Jul 67* 415-421
varactor-tuned coaxial oscillators, wideband; *Corbey, Colin D.*; *T-MTT v24 n1 Jan 76* 31-39 (1C05)
varactor-tuned negative-resistance oscillators; varactor loading effect on oscillator *Q*; *Paik, S. F.*; *T-MTT v22 n5 May 74* 578-580 (2C09)
X-band klystron amplifiers; phase adjustment effects on a cascaded reflex system; *Ishii, Koryu*; *T-MTT v8 n4 Jul 60* 445-449

Microwave oscillators; cf. Acoustic surface-wave oscillators; Avalanche diode oscillators; BARITT diode oscillators; Gunn device oscillators; IMPATT diode oscillators; Injection-locked oscillators; Klystrons; LSA oscillators; Magnetrons; Microwave bipolar transistor oscillators; Microwave FET oscillators; Microwave transistor oscillators; Negative-resistance oscillators; Parametric oscillators; Transferred-electron device oscillators; TRAPATT diode oscillators; Tunnel-diode oscillators

Microwave ovens; cf. Microwave heating

Microwave phase measurement; cf. Phase measurement

Microwave plasma generation
interactions with a beam generated hydrogen plasma to produce microwave energy in the plasma; *Crepeau, P. J.*; *T-MTT v10 n5 Sep 62* 391-392
X-band electron–cyclotron-resonance plasma accelerator; *Miller, David B.*; *T-MTT v14 n3 Mar 66* 162-164

Microwave power transmission
earth-satellite solar power stations; dc power from solar cells converted to microwave power and transmitted to earth; *Brown, William C.*; *T-MTT v21 n12 Dec 73* 753-763 (1B10)
examination of microwave power transmission through uniform waveguides; *Kahn, Walter K.*; *T-MTT v10 n5 Sep 62* 329-331
microwave breakdown near a hot surface in a waveguide system; *Gilden, Meyer*; *T-MTT v12 n1 Jan 64* 26-33
rectangular waveguides; theoretical CW power capacity; *King, Howard E.*; *T-MTT v9 n4 Jul 61* 349-357
rectifier array power combining; *Gutmann, R. J.*; *T-MTT v27 n12 Dec 79* 958-968 (1C06)
transmitting antenna design; safety considerations; *Dickinson, Richard M.*; *T-MTT v26 n5 May 78* 335-340 (1B03)

Microwave propagation; cf. Microwave radio propagation; Waveguides

Microwave radiation effects
analeptic effect in laboratory animals; *McAfee, R. D.*; *T-MTT v19 n2 Feb 71* 251-253 (3C08)
biological effects; editor's note in special issue; *Haddad, George I.*; *T-MTT v19 n2 Feb 71* 128 (1B04)
biological effects; guest editorial in special issue; *Osepchuk, John M.*; *T-MTT v19 n2 Feb 71* 128-129 (1B04)
biological effects; introductory remarks in special issue; *Mumford, William W.*; *T-MTT v19 n2 Feb 71* 130 (1B06)
biological effects of microwaves; special issue; *IEEE G-MTT*; *T-MTT v19 n2 Feb 71*
biological effects; Tri-Service Program; *Michaelson, Sol M.*; *T-MTT v19 n2 Feb 71* 131-146 (1B07)
biological effects; waveguide irradiation facility for exposure of small animals to 2450-MHz CW energy; *Ho, Henry S.*; *T-MTT v21 n12 Dec 73* 837-840 (3B04)
biological organisms; nonthermal effects; *Lindauer, G. A.*; *T-MTT v22 n8 Aug 74* 790-793 (1C08)
biological systems; dosimetry system for measuring sampled integral-dose rate; *Christman, Chrisotpher L.*; *T-MTT v22 n12 Dec 74* 1267-1277 (4E10)
biomolecular absorption of microwave radiation; mechanisms and implications; *Rabinowitz, James R.*; *T-MTT v21 n12 Dec 73* 850-851 (3C05)
cataract production; *Neidlinger, Robert W.*; *T-MTT v19 n2 Feb 71* 250-251 (3C07)
cranial structure of monkeys; induced fields and heating patterns; *Shapiro, Alan R.*; *T-MTT v19 n2 Feb 71* 187-196 (2B10)
heart-rate effects in rabbits during low-level irradiation; *Kaplan, Ira T.*; *T-MTT v19 n2 Feb 71* 168-173 (1E08)

hearts; bradycardia induced in isolated poikilothermic hearts; *Lords, James L.; T-MTT v21 n12 Dec 73* 834-836 (3B01)
heating of tumors; animals in hypothermia; *Zimmer, Robert P.; T-MTT v19 n2 Feb 71* 238-245 (3B07)
nonthermal effects in insect pupae; *Carpenter, Russell L.; T-MTT v19 n2 Feb 71* 173-178 (1F01)
thermal effects study; environmental chamber for air temperature control; *Samaras, George M.; T-MTT v19 n2 Feb 71* 245-247 (3C02)
Microwave radiation effects; cf. Electromagnetic radiation; Microwave radiation hazards; RF radiation effects
Microwave radiation hazards
biological systems; World Health Organization program for exposure protection; *Michaelson, Sol M.; T-MTT v22 n12 Dec 74* 1301-1302 (5B07)
Microwave radio communication
900-MHz PTM over-the-horizon radio link; *Altman, Frederick J.; T-MTT v3 n6 Dec 55* 22-26
FM microwave radio relay link for military use; *T-MTT v2 n1 Apr 54* 84-88
microwave and VHF radio installation for electric utility in Missouri; *Fox, George W.; T-MTT v2 n1 Apr 54* 63-83
pipeline application; reliability problems; *Dyke, Ed; T-MTT v2 n1 Apr 54* 60-62
problems and challenges; *Southworth, George Clark; T-MTT v3 n1 Jan 55* 2-3
QPSK repeater design for 20-GHz 400 Mb/s system; MIC implementation; *Yamamoto, Heiichi; T-MTT v23 n4 Apr 75* 334-341 (1A12)
regenerators for PSK systems; GaAs MESFET direct regenerator; *Komaki, Shozo; T-MTT v24 n6 Jun 76* 367-372 (2A01)
solid-state repeaters for Hungarian 4-, 6-, and 8-GHz relay systems; *Berceli, T.; T-MTT v23 n4 Apr 75* 341-348 (1B05)
Microwave radio communication; cf. Satellite communication
Microwave radio receivers
autodyne reception; application of a backward-wave amplifier; *Pulfer, J. K.; T-MTT v7 n3 Jul 59* 356-359
balanced crystal mixer; matching of crystals; *Strum, P. D.; T-MTT v3 n1 Jan 55* 45
balanced crystal mixer; matching of crystals. *Strum, P. D., Correction; T-MTT v3 n1 Jan 55* 21
FM receiver for satellite broadcasting in 12-GHz band; *Konishi, Yoshihiro; T-MTT v26 n10 Oct 78* 720-725 (1B04)
germanium avalanche diodes; application as beat oscillators in microwave receivers; *Harkless, E. T.; T-MTT v16 n8 Aug 68* 564-565
IFF receivers; microwave integrated circuit front end for *L*-ban receiver; *Giannini, Richard J.; T-MTT v19 n7 Jul 71* 622-627 (2B01)
instantaneous frequency-measuring receivers; history of development; *Goddard, N. E.; T-MTT v20 n4 Apr 72* 292-293 (2F02)
integrated superheterodyne receiver; low-noise *X*-band sweeping receiver; *Meier, Paul J.; T-MTT v19 n7 Jul 71* 600-609 (1D10)
satellite communication direct TV reception; low-cost 12-GHz receivers; *Douville, R.; T-MTT v25 n12 Dec 77* 1000-1008 (1C10)
strip type components for 2-GHz receiver head-end; *Zublin, Kurt E.; T-MTT v3 n2 Mar 55* 65-74
superheterodyne receivers; improved intermodulation rejection in mixers; *Lepoff, Jack H.; T-MTT v14 n12 Dec 66* 618-623
Microwave radio relay
FM transmitter for 4-GHz band; 220-mW output, 5-W total dc input power, dc–RF signal conversion efficiency greater than4%;*Kitahara, Yuji; T-MTT v22 n12 Dec 74* 1305-1308 (5B11)
waveguide branching filter; separates 4-GHz band from combined 4-, 6-, and 11-GHz common carrier bands with loss of 0.05 dB; *Ohm, E. A.; T-MTT v22 n10 Oct 74* 891-894 (1D03)
Microwave radio transmitters
amplitude-modulated multiplex system; double sideband type; *Tharp, Nelson B.; T-MTT v2 n1 Apr 54* 41-49
AM/PM noise conversion; significance on prediction of noise performance in FM radio system; *Thomas, J. H.; T-MTT v16 n9 Sep 68* 797-799
noise measurement; AM and FM noise; *Ashley, J. Robert; T-MTT v25 n4 Apr 77* 294-318 (1D14)
noise measurement; AM and FM noise; *Knöchel, R.; T-MTT v27 n1 Jan 79* 84-85 (1G02)
Microwave radiometry
antenna array; active elements at subarray level for increasing resolution; *Levis, Curt A.; T-MTT v25 n4 Apr 77* 248-253 (1A10)
attenuation and emission by the Earth's atmosphere at wavelengths from 4 cm to 8 mm; *Haroules, George G.; T-MTT v16 n9 Sep 68* 611-620
Australian National Standards Laboratory *X*-band radiometer for the calibration of noise sources; *Somlo, P. I.; T-MTT v16 n9 Sep 68* 664-669
Australian National Standards Laboratory *X*-band radiometer for the calibration of noise sources.*Somlo, P. L., Correction; T-MTT v17 n3 Mar 69* 174
broadband null-balancing scanning radiometer for 3-cm wavelength; *Kuenzi, Klaus; T-MTT v16 n9 Sep 68* 789-791
correlation radiometry technique; *Fujimoto, Kyohei; T-MTT v12 n2 Mar 64* 203-212
gain-stabilized maser radiometer for 13 cm; *Nicolson, G. D.; T-MTT v18 n3 Mar 70* 169
insertion loss of radome materials; measurement by radiometric method; *Seidel, Boris L.; T-MTT v16 n9 Sep 68* 625-628
measurement accuracy of a microwave radiometer as limited by quantum fluctuations; *Bolgiano, L. Paul, Jr.; T-MTT v9 n4 Jul 61* 315-321
method for stabilizing receivers for radio telescopes and reducing sensitivity to gain fluctuations; *Seling, Theodore V.; T-MTT v10 n3 May 62* 209-213
noise calibration repeatibility of airborne third-generation *S*-band radiometer; *Blume, Hans-Juergen C.; T-MTT v25 n10 Oct 77* 852-855 (1D06)
p-i-n diode switch matrix consisting of 8 diodes in stripline package; cryogenically cooled *C*-band switch for radio astronomy; *Behrens, George H., Jr.; T-MTT v26 n9 Sep 78* 629-635 (1A03)
S-band radiometer for sea surface temperature measurement; *Keen, Nigel J.; T-MTT v23 n5 May 75* 456-457 (1E02)
S-band radiometer for sea surface temperature measurement; high absolute precision and accuracy; *Hardy, Walter N.; T-MTT v22 n4 Apr 74* 382-390 (1C04)
temperature reference for calibration of radiometers; *Hardy, Walter N.; T-MTT v21 n3 Mar 73* 149-150 (1D07)
very sensitive airborne microwave radiometer using two reference temperatures; *Hach, Johann-Peter; T-MTT v16 n9 Sep 68* 629-636
Microwave receivers; cf. Microwave radio receivers
Microwave relay systems
multiplexing–demultiplexing networks for 20-GHz system; *Ohtomo, Isao; T-MTT v21 n7 Jul 73* 492-494 (2B11)
Microwave spectroscopy
paramagnetic resonance investigation using paramagnetic spectroscope; *Mackey, R. C.; T-MTT v1 n2 Nov 53* 3-10
parametron preamplifier; application to the *X*-band superheterodyne ESR spectrometer; *Takao, Iwao; T-MTT v17 n2 Feb 69* 107-113
pulse-excited ammonia molecules; coherent spontaneous microwave emission; *Norton, Lowell E.; T-MTT v5 n4 Oct 57* 262-265
recording microwave spectrograph to study the absorption and index of refraction of gases; *Ilias, D.; T-MTT v9 n2 Mar 61* 144-152
Microwave switches
1 MW, *C*-band microwave spark gap switch; *Farber, Herman; T-MTT v13 n1 Jan 65* 28-32
7-GHz narrow-band waveguide switch using p-i-n junction diodes; *Peppiatt, Harry J.; T-MTT v13 n1 Jan 65* 44-47
7-GHz narrow-band waveguide switch using p-i-n junction diodes; *Rebsch, D. L.; T-MTT v13 n6 Nov 65* 874-875
application of a fast microwave switch to high-peak-power plasma diagnostics; *Goldie, H.; T-MTT v12 n1 Jan 64* 143-144
avalanching optoelectronic switch; *Kiehl, Richard A.; T-MTT v27 n5 May 79* 533-539 (2F04)
broadband absorption modulator for rapid switching of microwave power; *Reggia, Frank; T-MTT v9 n4 Jul 61* 343-349
broad-band ferrite coaxial switch; *Booth, R. L.; T-MTT v9 n5 Sep 61* 452-453
broad-band ferrite reflective switch; *Johnson, C. M.; T-MTT v8 n4 Jul 60* 466-467
broadbanding microwave diode switches; *Fisher, R. E.; T-MTT v13 n5 Sep 65* 706
coplanar transmission lines on GaAs substrate; *Fleming, Paul L.; T-MTT v27 n12 Dec 79* 1032-1035 (2A11)
design of a pulse-operated ferrite circulator switch; *Freiberg, L.; T-MTT v9 n3 May 61* 266
design of germanium diode microwave switch; *Garver, Robert V.; T-MTT v8 n1 Jan 60* 108-111
duplexer, capable of handling twice as much power as an equivalent balanced type; new form; *Lomer, P. D.; T-MTT v6 n3 Jul 58* 264-267
FETs and pin diodes; speed and power; *Garver, Robert V.; T-MTT v27 n5 May 79* 523-529 (2E08)
gas-discharge type; high-power magnetic-field controlled; *Tetenbaum, Sidney J.; T-MTT v7 n1 Jan 59* 73-82
harmonics produced by a p-i-n diode; *Mott, Harold; T-MTT v15 n3 Mar 67* 180-181
high-power duplexers using TR and ATR tubes; analysis; *Muehe, Charles E., Jr.; T-MTT v9 n6 Nov 61* 506-512
high-power switching network for dual-mode antenna; *Albanese, Victor J.; T-MTT v26 n5 May 78* 348-354 (1C02)
high speed microwave switch using silver-bonded diodes; 11 GHz operation; *Miyauchi, Kazuhiro; T-MTT v12 n3 May 64* 368-369
high-speed switching of semiconductor diode; *Garver, Robert V.; T-MTT v7 n2 Apr 59* 272-276
information recirculated through an amplifier to obtain microwave signal storage; *Kellett, James D.; T-MTT v9 n4 Jul 61* 306-312
L-band ferroelectric switch; *Amoss, John W.; T-MTT v13 n6 Nov 65* 789-793
low pressure, hot cathode arc discharge applied to microwave switches; *Hill, Robert M.; T-MTT v8 n6 Nov 60* 628-633
multipactor receiver protectors for airborne applications; 50-kW peak power and 12.5 percent bandwidth in *X*-band; *Carlisle, Thomas P.; T-MTT v26 n5 May 78* 345-347 (1B13)
p-i-n diode switch matrix consisting of 8 diodes in stripline package; cryogenically cooled *C*-band switch for radio astronomy; *Behrens, George H., Jr.; T-MTT v26 n9 Sep 78* 629-635 (1A03)
phase switches; 4-level phase switch using two switching diodes and one circulator; *Schlosser, Wolfgang O.; T-MTT v20 n9 Sep 72* 614-616 (2B01)
reciprocal and nonreciprocal switches using ferrite junction circulators; *Clavin, Alvin; T-MTT v11 n3 May 63* 217-218
review of duplexing systems at microwave frequencies; *Harvey, A. F.; T-MTT v8 n4 Jul 60* 415-431
silver bonded germanium varactor diodes used in conjunction with 3 db short-slot couplers to form a microwave switch; *Higgins, V. J.; T-MTT v12 n2 Mar 64* 258-259
solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
solid-state devices; special issue foreword; *Berson, Bert, Guest ed.; T-MTT v27 n5 May 79* 365-366 (1A03)
theory of TEM diode switching; *Garver, Robert V.; T-MTT v9 n3 May 61* 224-238
waveguides; high-speed broadband operation; *Teeter, W. L.; T-MTT v3 n5 Oct 55* 11-14
X-band, 500-kW, air-cooled ferrite latching switch; *Stern, Richard A.; T-MTT v16 n12 Dec 68* 1034-1037
X-band step twist diode switch; *Jones, H. S., Jr.; T-MTT v12 n5 Sep 64* 549
X_L-band waveguide switches using p-i-n diodes; development in the SPST, SP2T, SP4T and SP8T configurations; *Assaly, Robert N.; T-MTT v14 n11 Nov 553-563*
Microwave switches; cf. Diode switches; Duplexers; Microstrip switches; p-i-n diode switches; Semiconductor diode switches; Spark gaps; Waveguide switches
Microwave Symposium; cf. Conferences
Microwave technology
abstracts of papers published in Japanese journals, Jun–Dec 1973; *Okoshi, T.; T-MTT v22 n8 Aug 74* 819-820 (1E09)
academic research institutes in the microwave field; *Marcuvitz, Nathan; T-MTT v6 n2 Apr 58* 130-132
advances in microwave theory and techniques in 1954; status report and bibliography; *King, D. D.; T-MTT v3 n3 Apr 55* 4-7
advances in microwave theory and techniques in 1956; status report and bibliography; *King, Donald D.; T-MTT v5 n2 Apr 57* 83-91
advances in microwave theory and techniques in 1957; status report and bibliography; *Beam, Robert E.; T-MTT v6 n3 Jul 58* 251-263
advances in microwave theory and techniques in Great Britain in 1958; status report and bibliographies; *Brown, John; T-MTT v7 n3 Jul 59* 325-327
advances in microwave theory and techniques in Japan in 1958; status report and bibliographies; *Someya, Isao; T-MTT v7 n3 Jul 59* 331
advances in microwave theory and techniques in USA in 1958; status report and bibliographies; *Beam, Robert E.; T-MTT v7 n3 Jul 59* 308-325

advances in microwave theory and techniques in Western Europe in 1958; status report and bibliographies; *Goudet, Georges*; *T-MTT v7 n3 Jul 59* 327-330
annotated bibliography on advances in microwave theory and techniques in Great Britain in 1959; *Brown, John*; *T-MTT v8 n4 Jul 60* 382-386
annotated bibliography on advances in microwave theory and techniques in Japan in 1959; *Morita, Kiyoshi*; *T-MTT v8 n4 Jul 60* 395-397
annotated bibliography on advances in microwave theory and techniques in Western Europe in 1959; *Goudet, Georges*; *T-MTT v8 n4 Jul 60* 387-394
annotated bibliography—Advances in microwave theory and techniques—1960 (USA). *Hansen, Robert C.*; *T-MTT v9 n4 Jul 61* 278-290
history; *Barrow, Wilmer L.*; *T-MTT v5 n4 Oct 57* 223-225
letter symbols for microwave bands; *Lewin, L.*; *T-MTT v12 n5 Sep 64* 551
mechanical design and manufacture of microwave structure; *Harvey, A. F.*; *T-MTT v7 n4 Oct 59* 402-422
magnetron research conducted at Columbia University Radiation Laboratory to produce the shortest wavelengths in the mm region; *Bernstein, M. J.*; *T-MTT v2 n3 Sep 54* 33-37
microwave engineering; comments as to being considered specialization or diversification; *Wheeler, H. A.*; *T-MTT v4 n2 Apr 56* 66-67
microwave theory and techniques; report of advances in 1955; *King, D. D.*; *T-MTT v4 n2 Apr 56* 68-74
papers from 1955 URSI–IRE Symposium; special issue; *T-MTT v3 n6 Dec 55* 1-64
papers from 1955 URSI–IRE Symposium; special issue foreword; *Engelman, H.*; *T-MTT v3 n6 Dec 55* 1
research in the fields of microwaves, millimeter waves, and coherent optical waves at Japanese universities; review; *Kumagai, Nobuaki*; *T-MTT v14 n12 Dec 66* 694-696
review of microwave work in Britain in 1960; *Karbowiak, A. E.*; *T-MTT v9 n5 Sep 61* 374-384
scientific engineering; *Weber, Ernst*; *T-MTT v3 n5 Oct 55* 2-3
suggested name 'nanowave region' for the electromagnetic spectrum between 10 micrometers to 10 mm wavelength; *Zimmerer, R. W.*; *T-MTT v14 n3 Mar 66* 157-158
theory of acoustic fields and waves in solids; application of microwave concepts; *Auld, Bert A.*; *T-MTT v17 n11 Nov 69* 800-811
weak points in microwave knowledge; *Cohn, Seymour B.*; *T-MTT v7 n2 Apr 59* 189-191

Microwave technology; cf. *Specific topic*

Microwave Theory and Techniques Group; cf. IEEE Microwave Theory and Techniques Group; IRE Microwave Theory and Techniques Group

Microwave Theory and Techniques Society; cf. IEEE Microwave Theory and Techniques Society

Microwave transistor amplifiers
broadband Class C amplifiers; large-signal transistor characterization and broadband matching; performance data for 13-W, 1010 to 1460 MHz stage; *Pitzalis, Octavius, Jr.*; *T-MTT v21 n11 Nov 73* 660-668 (1B06)
GaAs Schottky-barrier FET amplifiers; *X*-band amplifier design and performance; *Liechti, Charles A.*; *T-MTT v22 n5 May 74* 510-517 (1C04)
gain–bandwidth limitations of broadband single-stage amplifiers; *Tucker, Rodney S.*; *T-MTT v21 n5 May 73* 322-327 (1B12)
noise; design of low-noise amplifiers; *Tucker, R. S.*; *T-MTT v23 n8 Aug 75* 697-700 (2A01)

Microwave transistors
power transistor reliability; 1973 S-MTT National Lecture; *Allen, John L.*; *T-MTT v21 n12 Dec 73* 752 (1B09)
small-signal and noise properties; computerized calculation; *Baechtold, Werner*; *T-MTT v17 n8 Aug 69* 614-619

Microwave transistors; cf. Microwave bipolar transistors; Microwave FETs

Microwave triodes
grid-separated triode oscillator; analysis and design; *Chaffin, Roger J.*; *T-MTT v19 n1 Jan 71* 91-93 (2D11)

MIC; cf. Microwave integrated circuits

Military communication
FM microwave radio relay link for military use; *T-MTT v2 n1 Apr 54* 84-88

Military weapon systems
microwave interferometer measurement of time displacement of projectile within gun barrel; *Hanks, H. C., Jr.*; *T-MTT v1 n1 Mar 53* 22

Millimeter-wave (30–300 GHz); cf. Microwave (3–30 GHz); Submillimeter-wave (300–3000 GHz)

Millimeter-wave amplifiers
broadband helix traveling-wave amplifier for mm wavelengths; experimental construction; *Robertson, S. D.*; *T-MTT v2 n3 Sep 54* 48-54
Gunn amplifier in reduced-height waveguide; *Ka*-band amplifier with 15-GHz gain–bandwidth product; *Rubin, David*; *T-MTT v23 n10 Oct 75* 833-834 (1D13)
Gunn amplifiers for *Ka*-band; small-signal multistage reflection amplifiers; *de Koning, J. G.*; *T-MTT v23 n4 Apr 75* 367-374 (1D03)
gyrotron traveling-wave amplifiers; characteristics and optimum operating parameters; 35-GHz amplifier with 340-kW output, 2-dB/cm gain, and 51 percent efficiency; *Chu, Kwo Ray*; *T-MTT v27 n2 Feb 79* 178-187 (1G04)
harmonic generation and parametric amplification by multiple quantum effects; *Pantell, Richard H.*; *T-MTT v11 n5 Sep 63* 317-324
IMPATT amplifiers for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
IMPATT amplifiers; nonlinear characteristics and intermodulation distortion; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 744-751 (1E08)
IMPATT diode amplifiers; nonlinear and large-signal characteristics; 60-GHz amplifier for PM signal amplification; *Kuno, H. J.*; *T-MTT v21 n11 Nov 73* 703-706 (1F01)
IMPATT oscillators and amplifiers in reduced-height guide; *V*-band circuit characterization; *Fong, T. T.*; *T-MTT v24 n11 Nov 76* 752-758 (1F02)
IMPATT power amplifier/combiner; 1-W output at 60 GHz with 6-GHz bandwidth; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 758-767 (1F08)
IMPATT power amplifiers; device characterization and circuit design procedure; *Ka*-band amplifier with 250-mW output, 7-dB gain, 5-GHz bandwidth; *Peterson, Dean F.*; *T-MTT v21 n11 Nov 73* 681-689 (1D03)
InP Gunn amplifiers for 26–40 GHz range; *Hamilton, Robert J., Jr.*; *T-MTT v24 n11 Nov 76* 775-780 (2A08)
investigation of millimeter-wave reflex klystron amplifiers; *Ishii, K.*; *T-MTT v11 n3 May 63* 212-213
masers; ruby traveling-wave maser for *K*-band using photoetched slow-wave structure; *Yngvesson, K. Sigfrid*; *T-MTT v24 n11 Nov 76* 711-717 (1C03)
masers; rutile traveling-wave masers for 20–40 GHz band using dielectric image line slow-wave structure; *Kollberg, Erik L.*; *T-MTT v24 n11 Nov 76* 718-725 (1C10)
parametric amplifiers; 20-K-cooled degenerate amplifier for 46 GHz; *Edrich, Jochen*; *T-MTT v22 n5 May 74* 581-583 (2C12)
parametric amplifiers; in-line signal circuit for broadband amplifiers; *Egami, Shunichiro*; *T-MTT v23 n3 Mar 75* 282-287 (1B02)
parametric, using wafer diodes; *Edrich, Jochen*; *T-MTT v18 n12 Dec 70* 1173-1175
regenerative and pull in modes of millimeter-wave reflex klystron amplifiers; *Raue, George E.*; *T-MTT v12 n5 Sep 64* 547
solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
solid-state devices; special issue foreword; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)

Millimeter-wave amplifiers; cf. Masers

Millimeter-wave antennas
dielectric rod antennas for insular line IC applications; *V*-band; *Shiau, Yih*; *T-MTT v24 n11 Nov 76* 869-872 (3B03)
electronically scannable leaky-wave antennas integrated in quasi-planar dielectric waveguide; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 987-991 (1E09)
fed from circular TE_{01}-mode guide; pencil beam formation; *Wengenroth, Robert D.*; *T-MTT v26 n5 May 78* 332-334 (1A14)
frequency scanning array consisting of silicon dielectric rectangular rod with periodic metallic stripe perturbations on one side; *Klohn, Kenneth L.*; *T-MTT v26 n10 Oct 78* 764-773 (1E06)
scanning antennas using electrically controllable liquid artificial dielectrics; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)

Millimeter-wave astronomy
molecular astronomy; *Snyder, Lewis E.*; *T-MTT v22 n12 Dec 74* 1299-1300 (5B05)
receivers for line astronomy; heterodyne-bolometer system with noise temperature of 300 K at 230 GHz; *Phillips, T. G.*; *T-MTT v22 n12 Dec 74* 1290-1292 (5A10)
solar observations in 20–3 mm range; *Castelli, John P.*; *T-MTT v22 n12 Dec 74* 1292-1299 (5A12)

Millimeter-wave astronomy; cf. Millimeter-wave radiometry

Millimeter-wave attenuators
components for 1–2 mm region; attenuators, phase shifters, bolometers, calorimeters; *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 332-338
components for TE_{01} at 94GHz; rectangular-to-circular conversion mode filter, 90° bends, 10db couplers, flexible sections, attenuators, etc.; *Simmons, Alan J.*; *T-MTT v11 n5 Sep 63* 324-332
double prism attenuator; *Raker, H. D.*; *T-MTT v10 n5 Sep 62* 392-393
energy attenuation through light-illuminated semiconductor panels; *Mavaddat, R.*; *T-MTT v18 n7 Jul 70* 360-364
ferrite isolators and variable attenuators for 50-60 GHz region; *Barnes, Clare E.*; *T-MTT v9 n6 Nov 61* 519-524
high-power variable attenuator consisting of a coupled wave structure between two modes in adjacent primary and secondary waveguides; *Whicker, L. R.*; *T-MTT v11 n5 Sep 63* 450-451
p-i-n germanium diode in rectangular waveguide as electrically controlled millimeter-wave modulator; *Ronde, Frans C. de*; *T-MTT v8 n3 May 60* 325-327

Millimeter-wave cavity resonators
surface roughness; surface resistance due to surface roughness at 35 GHz; *Tischer, F. J.*; *T-MTT v22 n5 May 74* 566-569 (2B11)

Millimeter-wave circuits
double layer matching structures for millimeter waves; *Kott, Michael A.*; *T-MTT v10 n5 Sep 62* 401
internal reflections in dielectric prisms; application to bidirectional coupler; *Fellers, Rufus G.*; *T-MTT v12 n6 Nov 64* 584-587
internal reflections in dielectric prisms; application to bidirectional couplers. *Fellers, R. G., Correction*; *T-MTT v13 n2 Mar 65* 258
quasi-optical surface waveguide and other components for the 100–300 GHz region; *Sobel, Frederick*; *T-MTT v9 n6 Nov 61* 512-518
special issue on circuits, components, and systems; *T-MTT v24 n11 Nov 76* 683-891 (1A03)
special issue on circuits, components, and systems; foreword; *Kuno, H. J., Guest ed.*; *T-MTT v24 n11 Nov 76* 683-684 (1A03)

Millimeter-wave circulators
E-plane 'Y' waveguide junction having InSb rod aligned with principal symmetry axis of the junction; circulator action at 140 GHz; *Brodwin, M.*; *T-MTT v15 n9 Sep 67* 530-531
fast switching, light-weight 35-GHz latching ferrite circulator: development and selection of ferromagnetic materials; *Passaro, William C.*; *T-MTT v14 n12 Dec 66* 669-672
high-power circulator for 35 GHz; improved symmetry; *Darwent, A. P.*; *T-MTT v15 n2 Feb 67* 120
waveguide circulator for 27–34 GHz and 31–38 GHz bands; *Piotrowski, W. S.*; *T-MTT v24 n11 Nov 76* 863-866 (3A11)
Y-circulator with ferrite post; operation at 258 GHz; *Liebe, H. J.*; *T-MTT v15 n3 Mar 67* 190-191
Y circulators; bandwidth enlargement by loading resonators in each terminals; *Akaiwa, Yoshihiko*; *T-MTT v22 n12 Dec 74* 1283-1286 (5A03)

Millimeter-wave communication; cf. Millimeter-wave radio communication; Millimeter-wave waveguide communication

Millimeter-wave components
diplexers; quasi-optical waveguide-polarization diplexers; *Mendonça, J. T.*; *T-MTT v21 n9 Sep 73* 586-587 (1C04)
magnetic materials for millimeter and submillimeter wave applications; *Rodrigue, G. P.*; *T-MTT v11 n5 Sep 63* 351-356
transition from waveguide to suspended stripline at 30 GHz; *Glance, B.*; *T-MTT v21 n2 Feb 73* 117-118 (1F03)

Millimeter wave components; cf. *Specific type*

Millimeter-wave detectors
backward diodes for small-signal detection made from *n* type germanium; *Burrus, Charles A., Jr.*; *T-MTT v11 n5 Sep 63* 357-362
behavior of a dc biased millimeter wave diode; theoretical analysis and experimental investigation; *Ishii, Koryu*; *T-MTT v10 n4 Jul 62* 258-262
crystal detectors operating in the 3-mm region; performance; *Richardson, John M.*; *T-MTT v5 n2 Apr 57* 131-135

detection of 4 and 2 mm waves by small, low-pressure, anomalous burning glow discharge in He or Ne; *Severin, Piet J. W.*; *T-MTT v14 n9 Sep 66* 431-436
dielectric image guide passive devices for IC; *Paul, Jeffrey A.*; *T-MTT v26 n10 Oct 78* 751-754 (1D07)
InSb devices based on surface channel detection; *Stannard, J.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
pyroelectric; reduction of response time; *Alday, J. R.*; *T-MTT v14 n2 Feb 66* 100
quasi-optical detector for 100–300 GHz waves propagating in free space; Schottky-barrier diode; *Kawasaki, Ryoji*; *T-MTT v27 n5 May 79* 530-533 (2F01)
semiconductor diodes; construction, performance, and application; *Kramer, N. B.*; *T-MTT v24 n11 Nov 76* 685-693 (1A05)
state of the art review 1963: Millimeter and submillimeter waves; *Coleman, Paul D.*; *T-MTT v11 n5 Sep 63* 271-288
tunnel diodes as millimeter-wave detectors and mixers; *Chase, P. E.*; *T-MTT v11 n6 Nov 63* 560-561
video detection by parallel-strip point-contact diode mount; *Gerdine, M. A.*; *T-MTT v14 n1 Jan 66* 41-42
wall current detector for use with beam waveguides; *Sirkis, M. D.*; *T-MTT v11 n6 Nov 63* 552

Millimeter-wave devices
dielectric image lines; characteristics; *Wiltse, James C.*; *T-MTT v7 n1 Jan 59* 65-69
electric noise at millimeter wavelengths generated by an absorbing gas in a cavity; *Senitzky, Benjamin*; *T-MTT v16 n9 Sep 68* 728-732
experimental measurements on groove guide; *Ruddy, John M.*; *T-MTT v13 n6 Nov 65* 880-881
ferrite isolators for millimeter maser application; bulk and deposited; *Peyton, B. J.*; *T-MTT v16 n5 May 68* 319-320
high-power variable attenuator consisting of a coupled wave structure between two modes in adjacent primary and secondary waveguides; *Whicker, L. R.*; *T-MTT v11 n5 Sep 63* 450-451
millimeter-wave cavity coupling by a quarter wave transformer; *Strain, R. J.*; *T-MTT v10 n6 Nov 62* 612-614
packaging of semiconductor devices; low-inductance package eliminating springs and ribbons; *Spiwak, Robert R.*; *T-MTT v19 n8 Aug 71* 732-733 (2B05)
quasi-optical components operating at 90 GHz using total reflection in dielectrics; *Hanson, D. W.*; *T-MTT v18 n4 Apr 70* 233-234
rectangular waveguide short circuit with cylindrical slugs; design; *Rzepecka, M.*; *T-MTT v14 n3 Mar 66* 161-162
special issue on circuits, components, and systems; *T-MTT v24 n11 Nov 76* 683-891 (1A03)
special issue on circuits, components, and systems; foreword; *Kuno, H. J., Guest ed.*; *T-MTT v24 n11 Nov 76* 683-684 (1A03)
state of the art review 1963: Millimeter and submillimeter waves; *Coleman, Paul D.*; *T-MTT v11 n5 Sep 63* 271-288
vacuum forming technique for the fabrication of spherical or prolate spheroidal reflectors; *Degenford, J. E.*; *T-MTT v11 n6 Nov 63* 553

Millimeter-wave diodes
behavior of a dc biased millimeter wave diode; theoretical analysis and experimental investigation; *Ishii, Koryu*; *T-MTT v10 n4 Jul 62* 258-262
construction, performance, and application; *Kramer, N. B.*; *T-MTT v24 n11 Nov 76* 685-693 (1A05)
IMPATT, MITATT, and TUNNETT mode devices; high-frequency limitations; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)
noise sources for 18–40 GHz range using avalanche diode in waveguide mount; *Keen, Nigel J.*; *T-MTT v24 n3 Mar 76* 153-155 (1B13)
point-contact, electrically formed semiconductor junctions; use for harmonic power generation; *Dickens, Lawrence E.*; *T-MTT v15 n1 Jan 67* 32-37
Schottky-barrier diodes in 75–115 GHz range; avalanche noise; *Keen, Nigel J.*; *T-MTT v26 n10 Oct 78* 843-844 (2D07)
tunnel injection transit time diode operating from 100 to 248 GHz; GaAs diodes; *Nishizawa, Jun-ichi*; *T-MTT v26 n12 Dec 78* 1029-1035 (2A13)

Millimeter-wave diodes; cf. IMPATT diodes; Millimeter-wave amplifiers; Millimeter-wave mixers; Millimeter-wave oscillators

Millimeter-wave directional couplers
circular-waveguide multilayer sheet hybrid junction having nearly constant power division over 40–110 GHz band; *Harkless, Earl T.*; *T-MTT v27 n12 Dec 79* 975-982 (1D09)
directional filter cavities; *Moore, Brad D.*; *T-MTT v24 n11 Nov 76* 843-847 (2F06)
hybrid junctions; 55 GHz top-wall coupler and 94 GHz branch-guide coupler; waveguide couplers; *Bottjer, Martin F.*; *T-MTT v20 n2 Feb 72* 182-184 (2E04)
InSb thin-film coupler performance in 32–36 GHz band; coupling varied by applied dc magnetic field; *Tanaka, Ikuo*; *T-MTT v24 n10 Oct 76* 660-662 (1C04)
inverted strip dielectric guides for IC components in 75–80 GHz range; directional couplers and ring resonators; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
multiple branch-guide coupler using TE_{01}-mode semicircular guide; *Shindo, Shuichi*; *T-MTT v24 n8 Aug 76* 525-527 (1C09)
rectangular-to-circular guide coupler; helical coupler; *Predmore, C. Read*; *T-MTT v24 n11 Nov 76* 847-852 (2F10)

Millimeter-wave FETs
power GaAs MESFETs; design, fabrication, and performance; *DiLorenzo, James V.*; *T-MTT v27 n5 May 79* 367-378 (1A05)

Millimeter-wave filters
bandpass and pseudo-high-pass quasi-optical filters; use for millimeter-wave and far-infrared frequencies; *Leedom, David A.*; *T-MTT v18 n5 May 70* 253-259
bandpass filter composed of inductive windows in rectangular guide; higher order modes can propagate; *Yamamoto, Kazuyuki*; *T-MTT v24 n11 Nov 76* 837-842 (2E14)
bandpass filters using direct-coupled confocal resonators; *Cohen, J.*; *T-MTT v14 n12 Dec 66* 698-699
channel diplexer using multimode waveguide filters; *Ren, Chung-Li*; *T-MTT v20 n12 Dec 72* 820-827 (1D07)
channel-dropping filter using circular electric modes; *Marcatili, Enrique A. J.*; *T-MTT v9 n2 Mar 61* 176-182
components for TE_{01} at 94GHz; rectangular-to-circular conversion mode filter, 90° bends, 10db couplers, flexible sections, attenuators, etc.; *Simmons, Alan J.*; *T-MTT v11 n5 Sep 63* 324-332
dielectric rectangular waveguide used for channel dropping filter; *Itanami, Takao*; *T-MTT v26 n10 Oct 78* 759-764 (1E01)
dielectric waveguide IC filters; tunable bandpass ring filter; *Kaurs, Allan R.*; *T-MTT v24 n11 Nov 76* 875-876 (3B09)
diplexers; 80-GHz band low-loss ring-type channel diplexer using semicircular electric mode; *Nakajima, Nobuo*; *T-MTT v24 n11 Nov 76* 831-836 (2E08)
diplexers; semicircular waveguide-type diplexer for millimeter-wave waveguide transmission system; *Shimada, Sadakuni*; *T-MTT v22 n2 Feb 74* 111-118 (1C05)
diplexing, utilizing circular TE_{011} mode resonators; *Standley, R. D.*; *T-MTT v16 n1 Jan 68* 50-51
directional filter cascades for time-delay equalization in waveguide systems; *Standley, Robert D.*; *T-MTT v19 n5 May 71* 497-498 (2C11)
directional filter cavities; *Moore, Brad D.*; *T-MTT v24 n11 Nov 76* 843-847 (2F06)
iris-coupled YIG-tuned filters in the 12–40 GHz region; design and realization; *Fjerstad, Roger L.*; *T-MTT v18 n4 Apr 70* 205-212
low-pass and high-pass filters consisting of multilayer dielectric stacks; *Young, Leo*; *T-MTT v14 n2 Feb 66* 75-80
Michelson interferometer-type band-splitting filter for 40–120 GHz waveguide transmission system; *Suzuki, Nobuo*; *T-MTT v22 n5 May 74* 565-566 (2B10)
Michelson interferometer-type band-splitting filter for guided communications; *Suzuki, Nobuo*; *T-MTT v24 n5 May 76* 237-241 (1A03)
mode filters for circular guides; TE_{02} and TE_{03} modes attenuation; *Hashimoto, Kunio*; *T-MTT v24 n1 Jan 76* 25-31 (1B13)
multiplexer uses blazed diffraction grating as frequency-selective element; *Henry, Paul S.*; *T-MTT v26 n6 Jun 78* 428-433 (1D08)
one- and two-resonator maximally flat directional filters; experimental results in the 50-GHz band; *Shimada, Sadakuni*; *T-MTT v18 n1 Jan 70* 61-62
quasi-optical bandpass filter consisting of several wire-grid polarizers; network representation and unloaded *Q*; *Chen, Ming Hui*; *T-MTT v27 n4 Apr 79* 357-360 (1E11)
quasi-optical bandpass filters; practical considerations; *Saleh, Adel A. M.*; *T-MTT v22 n7 Jul 74* 734-739 (1B14)
quasi-optical bandpass filters; theory and design; *Saleh, Adel A. M.*; *T-MTT v22 n7 Jul 74* 728-734 (1B08)
quasi-optical resonator filters for millimeter and submillimeter wave frequencies; *Taub, J. J.*; *T-MTT v12 n6 Nov 64* 618-619
state-of-the-art review of filters in 1965; bandpass, bandstop, high-pass, tunable filters, with extensive bibliography; *Young, Leo*; *T-MTT v13 n5 Sep 65* 489-508
tunable filters integrated in quasi-planar dielectric waveguide; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 987-991 (1E09)
two-cavity ring-type channel-dropping filters for multiplexers; *Ootomo, Isao*; *T-MTT v19 n5 May 71* 481-484 (2B07)
waveguide filters for over-moded applications; *Ren, Chung-Li*; *T-MTT v22 n12 Dec 74* 1202-1209 (4A01)
waveguide filters in over-moded guide loaded with dielectric disks. *Ren, C. L., Correction*; *T-MTT v23 n6 Jun 75* 537 (1F09)

Millimeter-wave focusing
52 GHz and 104 GHz beams focused by cylindrical mirrors; tests over 350 meter path with 10 refocusers; *Ruscio, J. T.*; *T-MTT v21 n3 Mar 73* 154-155 (1D12)
refocusing and redirecting by cylindrical mirrors; experimental results in 50 to 55 GHz band; *Arnaud, Jacques A.*; *T-MTT v20 n5 May 72* 344-345 (1F03)

Millimeter-wave frequency conversion
avalanche diode multipliers and upconverters; *Rolland, Paul-Alain*; *T-MTT v24 n11 Nov 76* 768-775 (2A01)
down-converter using adhesive-backed copper tape for microstrip circuit, an IMPATT diode local oscillator and a Schottky barrier mixer diode hybrid; *Standley, R. D.*; *T-MTT v18 n4 Apr 70* 232-233
frequency multiplication by nonlinear phenomena and frequency conversion by parametric systems; state-of-the-art in 1958; *Coleman, Paul D.*; *T-MTT v7 n1 Jan 59* 42-61
GaAs avalanche diodes for frequency multiplication; 4-to-32 GHz multiplication; *Kramer, B. M.*; *T-MTT v24 n11 Nov 76* 861-863 (3A09)
millimeter frequency multiplication with an in-line harmonic generator; *Wessel, Erling G.*; *T-MTT v12 n1 Jan 64* 139-141
multipliers at 300 and 450 GHz using thin-film IC; *Takada, Tohru*; *T-MTT v26 n10 Oct 78* 733-737 (1C03)
pulsed millimeter-wave generation using ferrites; *Elliott, Brian J.*; *T-MTT v9 n1 Jan 61* 92-94
quadrupler employing planar-diffused gallium-arsenide varactor diodes; *Lee, Tien Pei*; *T-MTT v16 n5 May 287-296*
thin-film downconverter for 60-GHz signal frequency; *Snell, William W., Jr.*; *T-MTT v24 n11 Nov 76* 804-806 (2C09)

Millimeter-wave frequency conversion; cf. Millimeter-wave mixers

Millimeter-wave generation
analysis of frequency and power performances of tunnel diode generators; *Oguey, Henri J.*; *T-MTT v11 n5 Sep 63* 412-419
Cerenkov radiation; used for mm-wave generation; *Danos, M.*; *T-MTT v2 n3 Sep 54* 21-22
coherence properties of a deflection modulated electron beam for harmonic generation; *Baird, Jack R.*; *T-MTT v11 n5 Sep 63* 312-317
frequency multiplication by nonlinear phenomena and frequency conversion by parametric systems; state-of-the-art in 1958; *Coleman, Paul D.*; *T-MTT v7 n1 Jan 59* 42-61
harmonic generation and parametric amplification by multiple quantum effects; *Pantell, Richard H.*; *T-MTT v11 n5 Sep 63* 317-324
harmonic generation by a diode array; *King, D. D.*; *T-MTT v12 n2 Mar 64* 256
harmonic generators and crystal detectors operating in the 3-mm region; performance; *Richardson, John M.*; *T-MTT v5 n2 Apr 57* 131-135
high-power 2-mm energy generated by ferrite harmonic generator excited by a 4-mm source; *Ayres, Wesley P.*; *T-MTT v7 n1 Jan 59* 62-65
magnetron harmonics or frequency multiplication of power emitted by a klystron; *Nethercot, A. H., Jr.*; *T-MTT v2 n3 Sep 54* 17-20
magnetron research at Columbia University Radiation Laboratory; *Bernstein, M. J.*; *T-MTT v2 n3 Sep 54* 33-37
racetrack microtron for millimeter-wave and submillimeter-wave generation; *Froelich, Heinrich R.*; *T-MTT v11 n5 Sep 63* 288-291
state of the art review 1963: Millimeter and submillimeter waves; *Coleman, Paul D.*; *T-MTT v11 n5 Sep 63* 271-288

Millimeter-wave generation; cf. Masers

Millimeter-wave heterodyne detection
astronomy; heterodyne-bolometer system with noise temperature of 300 K at 230 GHz; *Phillips, T. G.*; *T-MTT v22 n12 Dec 74* 1290-1292 (5A10)
Josephson junction heterodyne detectors; 36-GHz performance; *Taur, Y.*; *T-MTT v22 n12 Dec 74* 1005-1009 (1B13)

Millimeter-wave integrated circuits
antennas and filters in quasi-planar dielectric waveguide; electronically scannable leaky-wave antenna and tunable filter; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 987-991 (1E09)
dielectric image guide passive devices; couplers, detectors, and balanced mixers; *Paul, Jeffrey A.*; *T-MTT v26 n10 Oct 78* 751-754 (1D07)
dielectric image lines; electric probe measurements in 26–90 GHz range; *Solbach, Klaus*; *T-MTT v26 n10 Oct 78* 755-758 (1D11)
dielectric image lines; fabrication; *Solbach, Klaus*; *T-MTT v24 n9 Sep 76* 608-611 (1E09)
dielectric image lines; low-loss E^{x}_{11} mode rectangular line; *Shindo, Shuichi*; *T-MTT v26 n10 Oct 78* 747-751 (1D03)
dielectric image lines of rectangular cross section; field distributions and phase constants calculation for single and coupled lines; *Solbach, Klaus*; *T-MTT v26 n4 Apr 78* 266-274 (1D02)
dielectric image lines using casting resins; fabrication and properties; *Solbach, Klaus*; *T-MTT v24 n11 Nov 76* 879-881 (3B13)
dielectric rectangular waveguide used for channel dropping filter; *Itanami, Takao*; *T-MTT v26 n10 Oct 78* 759-764 (1E01)
dielectric rod antennas for insular line IC applications; *V*-band; *Shiau, Yih*; *T-MTT v24 n11 Nov 76* 869-872 (3B03)
dielectric waveguide IC filters; tunable bandpass ring filter; *Kaurs, Allan R.*; *T-MTT v24 n11 Nov 76* 875-876 (3B09)
dielectric waveguide integrated circuits; *Knox, Robert M.*; *T-MTT v24 n11 Nov 76* 806-814 (2C11)
dielectric waveguide integrated circuits; guide wavelength measurement in rectangular guides; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
dielectric waveguide integrated circuits; *V*-band radio receiver and transmitter system; *Kietzer, James E.*; *T-MTT v24 n11 Nov 76* 797-803 (2C02)
dielectric waveguide, inverted strip; *Itoh, Tatsuo*; *T-MTT v24 n11 Nov 76* 821-827 (2D12)
dielectric waveguide IC; ferrite devices; *Nanda, Ved P.*; *T-MTT v24 n11 Nov 76* 876-879 (3B10)
directional couplers and ring resonators using inverted strip dielectric guides; 75–80 GHz range; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
downconverter for 60-GHz signal frequency; thin-film circuit; *Snell, William W., Jr.*; *T-MTT v24 n11 Nov 76* 804-806 (2C09)
downconverter with subharmonic pump; waveguide/stripline circuit; *McMaster, Thomas F.*; *T-MTT v24 n12 Dec 76* 948-952 (1D08)
finline structures; analysis method; *Saad, Abdel Megid Kamal*; *T-MTT v26 n12 Dec 78* 1002-1007 (1F10)
frequency multipliers at 300 and 450 GHz using thin-film circuits; *Takada, Tohru*; *T-MTT v26 n10 Oct 78* 733-737 (1C03)
Gunn oscillator in dielectric waveguide; distributed Bragg reflection oscillator with built-in leaky-wave antenna; *Itoh, Tatsuo*; *T-MTT v27 n12 Dec 79* 1019-1022 (1G11)
Gunn oscillator with Bragg reflector grating for dielectric waveguide integrated circuits; *Itoh, Tatsuo*; *T-MTT v27 n5 May 79* 514-518 (2D13)
mixer in stripline; subharmonically pumped two-diode mixer; *Carlson, Eric R.*; *T-MTT v26 n10 Oct 78* 706-715 (1A04)
mixer on microstrip; K_a-band; *Kelly, Alexander J.*; *T-MTT v24 n11 Nov 76* 867-869 (3B01)
monolithic; design and fabrication on semi-insulating GaAs substrates using microstrip transmission lines; *Mao, Shing*; *T-MTT v16 n7 Jul 68* 455-461
oscillators; pretuned modules; *Cachier, Gérard*; *T-MTT v27 n5 May 79* 505-510 (2D04)
planar circuits suspended in *E*-plane of rectangular guide; *Meier, Paul J.*; *T-MTT v26 n10 Oct 78* 726-733 (1B10)
slot line, double-layered; *Samardzija, Nicola*; *T-MTT v24 n11 Nov 76* 827-831 (2E04)
special issue; *T-MTT v26 n10 Oct 78* 705-842 (1A03)
special issue foreword; *Knerr, Reinhard H., Guest ed.*; *T-MTT v26 n10 Oct 78* 705 (1A03)
varactor-tuned Gunn oscillator on microstrip; 35-GHz oscillator with 1-GHz tuning range; *Rubin, David*; *T-MTT v24 n11 Nov 76* 866-867 (3A14)
waveguides; planar dielectric strip guide; *Fong, T. T.*; *T-MTT v22 n8 Aug 74* 776-783 (1B08)

Millimeter-wave interferometry
application of corner mirrors for ultra-microwave interferometers; *Kloza, M.*; *T-MTT v12 n1 Jan 64* 141-142
design problems on performance of millimeter-wave Fabry–Perot reflector plates; *Welling, H.*; *T-MTT v12 n2 Mar 64* 249-250

Millimeter-wave isolators
bandwidth as a function of resonant frequency of a single crystal ferrite resonance isolator at millimeter wavelengths; *Bady, Isidore*; *T-MTT v11 n5 Sep 63* 439-442
bandwidth as a function of resonant frequency of a single crystal ferrite resonance isolator at millimeter wavelengths; *Vilmur, Paul L.*; *T-MTT v10 n2 Mar 62* 108-113
effects of ferrite strip positions on millimeter-wave isolator characteristics; *Ishii, K.*; *T-MTT v9 n4 Jul 61* 362
feasibility study on a TE_{01} mode circular waveguide resonance isolator; waveguide loaded with rings of hexagonal ferrite; *Henschke, Richard A.*; *T-MTT v12 n4 Jul 64* 392-400
ferrimagnetic resonance isolators operating over waveguide bandwidths; *K, V, Q* bands; *Taft, Donald R.*; *T-MTT v11 n5 Sep 63* 346-350
ferrite isolators and variable attenuators for 50-60 GHz region; *Barnes, Clare E.*; *T-MTT v9 n6 Nov 61* 519-524
ferrite isolators for dielectric image line IC; *Nanda, Ved P.*; *T-MTT v24 n11 Nov 76* 876-879 (3B10)
ferrite isolators for insular line IC; *Kietzer, James E.*; *T-MTT v24 n11 Nov 76* 797-803 (2C02)
InSb films at 87 GHz; field-displacement mode and Faraday rotation mode measurements; *Dinger, Robert J.*; *T-MTT v22 n10 Oct 74* 879-880 (1C05)
millimeter resonance isolator using chemically deposited ferrite filing; *Wade, W., Jr.*; *T-MTT v10 n6 Nov 62* 611
millimeter resonance isolator using Ni and NiZn ferrite films; *Wade, W. L., Jr.*; *T-MTT v13 n1 Jan 65* 127-128
resonance type, operating in the 5-mm range; *Weiss, M. T.*; *T-MTT v6 n3 Jul 58* 331
semiconductor mounted coaxially in circular waveguide in longitudinal dc field; measurements at 94 GHz; *Kanda, Motohisa*; *T-MTT v22 n11 Nov 74* 913-917 (1A03)
solid-state plasma isolator for use in reflection-beam system; 94-GHz performance; *Kanda, M.*; *T-MTT v23 n6 Jun 75* 506-508 (1D06)

Millimeter-wave measurements
amplitude and phase of fields in free space; vibrating dipole method; *King, R. J.*; *T-MTT v24 n1 Jan 76* 48-50 (1D08)
amplitude and phase of millimeter-wave fields; simultaneous measurement; *Mathews, Neville A.*; *T-MTT v22 n2 Feb 74* 140-142 (1E06)
biological cells, normal and tumorous; standing-wave patterns; *Hershberger, W. D.*; *T-MTT v26 n8 Aug 78* 618-619 (2A06)
biological tissues; complex permittivity and penetration depth for fat and muscle tissue in 40–90 GHz range; *Edrich, Jochen*; *T-MTT v24 n5 May 76* 273-275 (1C11)
bolometer mount for measuring TE_{01}-mode power at 100 GHz; *Inoue, Takemi*; *T-MTT v25 n8 Aug 77* 694-697 (1E10)
ceramic materials evaluation; detecting and locating defects; *Bahr, Alfred J.*; *T-MTT v26 n9 Sep 78* 676-683 (1D08)
circular waveguides; surface resistance of oversized guide; *Hatano, Satomi*; *T-MTT v24 n11 Nov 76* 886-887 (3C06)
complex dielectric and magnetic constants at cm and mm wavelengths; use of optical methods; *Talpey, T. E.*; *T-MTT v2 n3 Sep 54* 1-12
components for 1–2 mm region; attenuators, phase shifters, bolometers, calorimeters; *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 332-338
dielectric constant of low-loss slabs; method uses stopband phenomena in periodic structures created in inverted strip dielectric waveguides; *Itoh, Tatsuo*; *T-MTT v27 n10 Oct 79* 841-844 (1B05)
dielectric image lines; electric probe measurements in 26–90 GHz range; *Solbach, Klaus*; *T-MTT v26 n10 Oct 78* 755-758 (1D11)
dielectric waveguide, inverted strip; field distribution and dispersion; *Itoh, Tatsuo*; *T-MTT v24 n11 Nov 76* 821-827 (2D12)
dielectric waveguides; guide wavelength in rectangular guides; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
dielectric waveguides of circular cross section; attenuation characteristics in 72-GHz band; *Jablonski, Daniel*; *T-MTT v26 n9 Sep 78* 667-671 (1C13)
earth–space attenuation at 230 GHz; *Wrixon, Gerard T.*; *T-MTT v26 n6 Jun 78* 434-439 (1D14)
ferrites in 60–90 GHz range; open-resonator technique; *Song Lint, B. Chan*; *T-MTT v24 n11 Nov 76* 883-886 (3C03)
free space field measurement using modulated-scattering technique; metallic dipole attached to vibrating nylon cord; *Mathews, Neville A.*; *T-MTT v22 n2 Feb 74* 103-110 (1B11)
impedance measurement; swept-frequency technique; *Egami, Shunichiro*; *T-MTT v21 n10 Oct 73* 647-648 (1F01)
measurement of mount efficiency at millimeter wavelengths; *Miller, R. H.*; *T-MTT v11 n5 Sep 63* 435-436
measuring phase modulation or rapid phase changes system; *Ernst, William P.*; *T-MTT v13 n1 Jan 65* 70-76
microwave and millimeter-wave loss and delay measurement system; *Chasek, Marvin B.*; *T-MTT v10 n6 Nov 62* 521-527
millimeter-wave measurement of ferrites using open resonator; 60–90 GHz range; *Song Lint, B. Chan*; *T-MTT v24 n11 Nov 76* 883-886 (3C03)
mode coupling and conversion in waveguides; shuttle pulse method; *Bernardi, P.*; *T-MTT v24 n5 May 76* 264-266 (1C02)
network analyzer/reflection test unit for 50–75 GHz band; *Yuan, L. T.*; *T-MTT v24 n12 Dec 76* 981-987 (2A10)
noise standard; WR15 thermal noise standard for 56–64 GHz range; *Daywitt, W. C.*; *T-MTT v21 n12 Dec 73* 845-847 (3B12)
oversize bolometer unit for short millimeter wave region; *Kashiwagi, Hiroshi*; *T-MTT v15 n3 Mar 67* 180
phase measurement of signals in free space; varying reference phase; *Cleveland, Frederick H.*; *T-MTT v19 n4 Apr 71* 406-410 (2C02)
power levels of 1 mW, using calorimeter; *Sharpless, W. M.*; *T-MTT v2 n3 Sep 54* 45-47
power of low (0–1 mw) and medium (0–100 mw) levels at 0 to 75 GHz, by broadband twin-Joule calorimeters using dry loads; construction and performance; *James, Allan V.*; *T-MTT v6 n2 Apr 58* 195-202
power of low (0–1 mw) and medium (0–100mw) levels at 0 to 75 GHz, by broadband nonadiabatic, twin dry-load calorimeters; analysis and design; *Sucher, Max*; *T-MTT v6 n2 Apr 58* 188-194
simple grating for millimeter and submillimeter separation of harmonics; *Mallory, K. B.*; *T-MTT v11 n5 Sep 63* 433-434
six-port reflectometer system for power and reflection coefficient measurement; semi-automated system; *Weidman, Manly P.*; *T-MTT v25 n12 Dec 77* 1083-1085 (2C01)
subnanosecond switch at 300 Mb/s, 80.99-GHz p-i-n diode modulator; test set displaying transients in polar coordinates; *Bosch, Fridolin*; *T-MTT v26 n1 Jan 78* 24-27 (1B12)
waveguide components; excess conduction losses; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)
wideband wavemeter; high-precision type; *Schulten, G.*; *T-MTT v15 n7 Jul 67* 430-431

Millimeter-wave measurements; cf. Millimeter-wave radiometry

Millimeter-wave mixers
40–60 GHz fixed-tuned, balanced mixer using Schottky-barrier diodes; *Hislop, A.*; *T-MTT v24 n1 Jan 76* 63-64 (1E09)
60–90 GHz broadband mixers; *Kanmuri, Noboru*; *T-MTT v24 n5 May 76* 259-261 (1B11)
broadband second-harmonic mixer covering 76–106 GHz; uses single Schottky-barrier diode and wave absorber in IF circuit; *Kawasaki, Ryoji*; *T-MTT v26 n6 Jun 78* 425-427 (1D05)
conversion loss and noise; predicting mixer performance, experimental results; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 55-61 (1A09)
conversion loss and noise; predicting mixer performance, theory; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 49-55 (1A03)
dielectric image guide passive devices for IC; *Paul, Jeffrey A.*; *T-MTT v26 n10 Oct 78* 751-754 (1D07)
GaAs diodes prepared by molecular beam epitaxy for use in cryogenic receiver in 60–90 GHz band; *Linke, R. A.*; *T-MTT v26 n12 Dec 78* 935-938 (1A13)

Josephson devices; low-noise 47-GHz mixer; *Edrich, Jochen*; *T-MTT v24 n11 Nov 76* 706-709 (1B12)
Josephson junction heterodyne detectors; 36-GHz performance; *Taur, Y.*; *T-MTT v22 n12 Dec 74* 1005-1009 (1B13)
Josephson-mixer receiver tunable over 220–325 GHz band; *Edrich, Jochen*; *T-MTT v25 n6 Jun 77* 476-479 (1B10)
K_a-band mixer on microstrip; *Kelly, Alexander J.*; *T-MTT v24 n11 Nov 76* 867-869 (3B01)
microstrip balanced mixer for 20-GHz band; *Araki, Tohru*; *T-MTT v19 n7 Jul 71* 638-643 (2C05)
oversized microstrip; low-noise mixer for 5-mm band; *Meier, Paul J.*; *T-MTT v22 n4 Apr 74* 450-451 (2C12)
resistive-diode mixers; shot noise and attenuator noise model; *Kerr, Anthony R.*; *T-MTT v27 n2 Feb 79* 135-140 (1D03)
Schottky-barrier diode upconverters for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
Schottky-barrier diodes in 75–115 GHz range; avalanche noise; *Keen, Nigel J.*; *T-MTT v26 n10 Oct 78* 843-844 (2D07)
Schottky-barrier diodes with cutoff frequency in excess of 3000 GHz; *Wrixon, Gerard T.*; *T-MTT v24 n11 Nov 76* 702-706 (1B08)
Schottky diode mixer for 140–220 GHz band; low noise and conversion loss; *Kerr, Anthony R.*; *T-MTT v25 n5 May 77* 399-401 (1E03)
semiconductor diodes; construction, performance, and application; *Kramer, N. B.*; *T-MTT v24 n11 Nov 76* 685-693 (1A05)
subharmonically pumped two-diode mixer in stripline; *Carlson, Eric R.*; *T-MTT v26 n10 Oct 78* 706-715 (1A04)
tunnel diodes as millimeter-wave detectors and mixers; *Chase, P. E.*; *T-MTT v11 n6 Nov 63* 560-561
two-diode subharmonically pumped and balanced mixers; noise and conversion loss; theory; *Kerr, Anthony R.*; *T-MTT v27 n12 Dec 79* 938-943 (1A14)
two-diode subharmonically pumped and balanced mixers; noise and conversion loss; theory applied to practical mixers; *Kerr, Anthony R.*; *T-MTT v27 n12 Dec 79* 944-950 (1B06)
varactor mixer–modulator; 60-GHz transceiver for civilian use; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)

Millimeter-wave mixers; cf. Millimeter-wave frequency conversion

Millimeter-wave modulation
injection locked phase modulator using a klystron; *Mackey, Richard C.*; *T-MTT v11 n2 Mar 63* 150
measuring phase modulation or rapid phase changes system; *Ernst, William P.*; *T-MTT v13 n1 Jan 65* 70-76
p-i-n diode modulator at 80.99 GHz, subnanosecond switching at 300 Mb/s; test set displaying transients in polar coordinates; *Bosch, Fridolin*; *T-MTT v26 n1 Jan 78* 24-27 (1B12)
p-i-n germanium diode in rectangular waveguide as electrically controlled millimeter-wave modulator; *Ronde, Frans C. de*; *T-MTT v8 n3 May 60* 325-327
varactor mixer–modulator; 60-GHz transceiver for civilian use; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)

Millimeter-wave oscillators
biological systems, coherent oscillations in 10^{10}–10^{12} Hz range; role in controlling tissue growth; *Fröhlich, H.*; *T-MTT v26 n8 Aug 78* 613-617 (2A01)
frequency fluctuations; generating signals of high spectral purity; *Castro, Alfredo A.*; *T-MTT v24 n11 Nov 76* 780-786 (2A13)
Gunn device oscillators with high output power; *Ruttan, Thomas G.*; *T-MTT v22 n2 Feb 74* 142-144 (1E08)
Gunn oscillators; frequency stability of 3×10^{-5} from 0 to 50 C for $K_a$band; *Nagano, S.*; *T-MTT v20 n2 Feb 72* 174-176 (2D08)
IMPATT diode oscillators at 80 GHz; reaction-cavity controlled oscillator having good stability; *Nagano, S.*; *T-MTT v21 n7 Jul 73* 491-492 (2B10)
IMPATT diodes mounted in low-impedance waveguide mounts tuned by varying dc bias current; *Akaike, M.*; *T-MTT v24 n3 Mar 76* 147-151 (1B07)
IMPATT oscillators; 200-GHz, 50-mW CW oscillation with Si SDR diode; *Ishibashi, T.*; *T-MTT v24 n11 Nov 76* 858-859 (3A06)
IMPATT oscillators and amplifiers in reduced-height guide; *V*-band circuit characterization; *Fong, T. T.*; *T-MTT v24 n11 Nov 76* 752-758 (1F02)
IMPATT oscillators for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
IMPATT oscillators; high-power 50-GHz double-drift-region oscillators with improved bias circuits for eliminating low-frequency instabilities; *Hirachi, Yasutake*; *T-MTT v24 n11 Nov 76* 731-737 (1D09)
IMPATT sources for 130–170 GHz range; *Weller, Kenneth P.*; *T-MTT v24 n11 Nov 76* 738-743 (1E02)
InP Gunn oscillators for 26–40 GHz and 50–75 GHz ranges; *Hamilton, Robert J., Jr.*; *T-MTT v24 n11 Nov 76* 775-780 (2A08)
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)
microstrip varactor-tuned IMPATT oscillator for 60-GHz FSK transmitter; *Glance, B. S.*; *T-MTT v24 n3 Mar 76* 156-157 (1C02)
molecular resonance AFC system for millimeter oscillators; *Cram, Milton E.*; *T-MTT v16 n8 Aug 68* 548-553
pretuned modules for solid-state devices; *Cachier, Gérard*; *T-MTT v27 n5 May 79* 505-510 (2D04)
semiconductor diodes; construction, performance, and application; *Kramer, N. B.*; *T-MTT v24 n11 Nov 76* 685-693 (1A05)
solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
solid-state devices; special issue foreword; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)
testing of millimeter-wave IMPATT diodes by oscillator circuit with cap structures; *Misawa, T.*; *T-MTT v18 n11 Nov 70* 969-970
tunnel injection transit time diode operating from 100 to 248 GHz; GaAs diodes; *Nishizawa, Jun-ichi*; *T-MTT v26 n12 Dec 78* 1029-1035 (2A13)
varactor-tuned Gunn oscillator on microstrip; 35-GHz oscillator with 1-GHz tuning range; *Rubin, David*; *T-MTT v24 n11 Nov 76* 866-867 (3A14)

Millimeter-wave oscillators; cf. Gunn device oscillators; IMPATT diode oscillators; Masers

Millimeter-wave phase shifters
components for 1–2 mm region; attenuators, phase shifters, bolometers, calorimeters; *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 332-338
diode phase shifters; *Garver, Robert V.*; *T-MTT v27 n5 May 79* 523-529 (2E08)
electrically controllable liquid artificial dielectrics; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)
reciprocal ferrite phase shifters; dual-mode geometry; *Whicker, Lawrence R.*; *T-MTT v19 n12 Dec 71* 944-945 (1F04)

Millimeter-wave propagation; cf. Millimeter-wave focusing; Millimeter-wave radio propagation; Millimeter-wave waveguides

Millimeter-wave radar
94-GHz system for space object identification; *Hoffman, LaRue A.*; *T-MTT v17 n12 Dec 69* 1145-1149
sea surface mapping; 8-mm airborne Surface Contour Radar produces real-time topographical map of sea surface beneath aircraft; *Kenney, James E.*; *T-MTT v27 n12 Dec 79* 1080-1092 (2E03)

Millimeter-wave radiation effects/safety; cf. Electromagnetic radiation...

Millimeter-wave radio propagation
attenuation measurements at 230 GHz through total atmosphere; *Wrixon, Gerard T.*; *T-MTT v26 n6 Jun 78* 434-439 (1D14)
factors affecting earth to satellite millimeter wavelength communications; propagation path loss, refractions, antenna temperature; *Straiton, Archie W.*; *T-MTT v11 n5 Sep 63* 296-301
molecular transfer characteristics of air in 40–140 GHz band; *Liebe, Hans J.*; *T-MTT v23 n4 Apr 75* 380-386 (1E02)

Millimeter-wave radio receivers
60-GHz transceiver for communication between automobile and roadside terminals; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)
astronomy; low-noise multichannel receiver to study narrow-band signals from interstellar molecules and planetary atmospheres; *Wilson, William J.*; *T-MTT v25 n4 Apr 77* 332-335 (2A09)
astronomy; heterodyne-bolometer system with noise temperature of 300 K a 230 GHz; *Phillips, T. G.*; *T-MTT v22 n12 Dec 74* 1290-1292 (5A10)
cryogenic millimeter-wave receivers using molecular beam epitaxy diodes; 60–90 GHz band; *Linke, R. A.*; *T-MTT v26 n12 Dec 78* 935-938 (1A13)
radio telescopes; low-noise 115-GHz receiver on Columbia-GISS 4-ft telescope; *Cong, Hong-Ih*; *T-MTT v27 n3 Mar 79* 245-248 (1C03)
superheterodyne; detection capability in the 100–150 GHz region; *Johnson, C. M.*; *T-MTT v2 n3 Sep 54* 27-32
V-band system using dielectric waveguide integrated circuits; *Kietzer, James E.*; *T-MTT v24 n11 Nov 76* 797-803 (2C02)

Millimeter-wave radio transmitters
60-GHz transceiver for communication between automobile and roadside terminals; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)
V-band system using dielectric waveguide integrated circuits; *Kietzer, James E.*; *T-MTT v24 n11 Nov 76* 797-803 (2C02)

Millimeter-wave radiometry
3.3-mm radiometer; long-integration-time performance; *Johnson, Walter A.*; *T-MTT v16 n9 Sep 68* 621-625
astronomy applications; *Townes, Charles H.* applications; *T-MTT v24 n11 Nov 76* 709-711 (1C01)
attenuation and emission by the Earth's atmosphere at wavelengths from 4 cm to 8 mm; *Haroules, George G.*; *T-MTT v16 n9 Sep 68* 611-620
four superheterodyne radiometers for use at 70 GHz and 140 Ghz; *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 397-411
four superheterodyne radiometers for use at 70 GHz and 140 GHz. *Meredith, R., Correction*; *T-MTT v12 n4 Jul 64* 471
imaging system at 90 GHz; *Hollinger, James P.*; *T-MTT v24 n11 Nov 76* 786-793 (2B05)
interference modulation techniques for millimeter wave radiometry; *Long, Maurice W.*; *T-MTT v11 n5 Sep 63* 389-397
radio telescopes; low-noise 115-GHz receiver on Columbia-GISS 4-ft telescope; *Cong, Hong-Ih*; *T-MTT v27 n3 Mar 79* 245-248 (1C03)

Millimeter-wave resonators
construction of millimeter-wave Fabry–Perot resonators using planar and spherical resonators; *Zimmerer, Robert W.*; *T-MTT v11 n2 Mar 63* 142-150
dielectric resonators; guide wavelength measurement in rectangular guides; *Jacobs, Harold*; *T-MTT v24 n11 Nov 76* 815-820 (2D06)
directional filter cavities; *Moore, Brad D.*; *T-MTT v24 n11 Nov 76* 843-847 (2F06)
dual-mode beam waveguide resonator and frequency stabilizer; use at millimeter-wave frequencies; *Mink, James W.*; *T-MTT v14 n5 May 66* 222-228
excess conduction losses and discrepancies between theoretical and measured values of attenuation and surface resistance; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)
feasibility study on a TE_{01} mode circular waveguide resonance isolator; waveguide loaded with rings of hexagonal ferrite; *Henschke, Richard A.*; *T-MTT v12 n4 Jul 64* 392-400
inverted strip dielectric guides for IC components in 75–80 GHz range; directional couplers and ring resonators; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
resonators for millimeter and submillimeter wavelengths, flat plate and conical; *Culshaw, William*; *T-MTT v9 n2 Mar 61* 135-144
state of the art review 1963: Millimeter and submillimeter waves; *Coleman, Paul D.*; *T-MTT v11 n5 Sep 63* 271-288

Millimeter-wave spectroscopy
harmonic generators; development of various components; *King, W. C.*; *T-MTT v2 n3 Sep 54* 13-16

Millimeter-wave switches
fast switching, light-weight 35-GHz latching ferrite circulator; development and selection of ferromagnetic materials; *Passaro, William C.*; *T-MTT v14 n12 Dec 66* 669-672
ferrite switch; operation in the 70 GHz region; *Turner, Edward H.*; *T-MTT v6 n3 Jul 58* 300-303
ferrite switches; tetrahedral waveguide junction type; *Stern, Richard A.*; *T-MTT v19 n9 Sep 71* 786-788 (1E12)
p-i-n diode modulator at 80.99 GHz, subnanosecond switching at 300 Mb/s; test set displaying transients in polar coordinates; *Bosch, Fridolin*; *T-MTT v26 n1 Jan 78* 24-27 (1B12)
recent developments; *Garver, Robert V.*; *T-MTT v27 n5 May 79* 523-529 (2E08)
solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
solid-state devices; special issue foreword; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)
ultrahigh-speed diode switch for 50 GHz, utilizing avalanche breakdown in varactor diodes; *Sugimoto, Shigetoki*; *T-MTT v16 n12 Dec 68* 1017-1021

harmonic mixing with antiparallel diode pair; *Cohn, Marvin*; *T-MTT v23 n8 Aug 75* 667-673 (1E09)
IC downconverter with subharmonic pump; stripline/waveguide circuit; *McMaster, Thomas F.*; *T-MTT v24 n12 Dec 76* 948-952 (1D08)
Millimeter-wave waveguide communication
digital communication using TE_{01} mode in circular guide; 35–120 GHz; *Abele, Thomas A.*; *T-MTT v23 n4 Apr 75* 326-333 (1A04)
metallic guides with random imperfections for long-distance communication; *Koyama, Masaki*; *T-MTT v23 n7 Jul 75* 561-565 (1B09)
Millimeter-wave waveguides
attenuation of commercially available rectangular guides from 25 to 200 GHz; *Tischer, Frederick J.*; *T-MTT v27 n1 Jan 79* 31-37 (1C05)
beam waveguide consisting of equispaced dielectric frames; field pattern and power loss measurements at 10 GHz and 37 GHz; *Checcacci, Pier Francesco*; *T-MTT v20 n9 Sep 72* 608-613 (1E10)
comment on status report on international waveguide flange standards; *Lewin, L.*; *T-MTT v12 n5 Sep 64* 552-553
components for 1–2 mm region; attenuators, phase shifters, bolometers, calorimeters; *Meredith, Ronald*; *T-MTT v11 n5 Sep 63* 332-338
components for TE_{01} at 94GHz; rectangular-to-circular conversion mode filter, 90° bends, 10db couplers, flexible sections, attenuators, etc.; *Simmons, Alan J.*; *T-MTT v11 n5 Sep 63* 324-332
copper guide excess conduction loss; screening potential theory; *Wang, Yen-Chu*; *T-MTT v26 n11 Nov 78* 858-861 (1B02)
coupling rectangular-to-circular guide; helical coupler; *Predmore, C. Read*; *T-MTT v24 n11 Nov 76* 847-852 (2F10)
dielectric image line bends; radiation loss measurements from 26 to 90 GHz and minimum acceptable curvature radius as function of frequency; *Solbach, Klaus*; *T-MTT v27 n1 Jan 79* 51-53 (1D11)
dielectric image lines; properties; *King, D. D.*; *T-MTT v3 n2 Mar 55* 75-81
dielectric waveguides of circular cross section; attenuation characteristics in 72-GHz band; *Jablonski, Daniel*; *T-MTT v26 n9 Sep 78* 667-671 (1C13)
E-plane 'Y' waveguide junction having InSb rod aligned with principal symmetry axis of the junction; circulator action at 140 GHz; *Brodwin, M.*; *T-MTT v15 n9 Sep 67* 530-531
excess conduction losses and discrepancies between theoretical and measured values of attenuation and surface resistance; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)
flat waveguide; advantages and measurement of properties; *Hopfer, Samuel*; *T-MTT v2 n3 Sep 54* 54
H-guide and groove-guide for 100–1000 GHz; *Harris, D. J.*; *T-MTT v26 n12 Dec 78* 998-1001 (1F06)
H-guides in which thin dielectric film is supported across guide by channels in conducting planes; *Doswell, A.*; *T-MTT v21 n9 Sep 73* 587-589 (1C05)
loss measurements of low loss beam waveguides for millimeter-wave and shorter waveguides; *Beyer, James B.*; *T-MTT v11 n1 Jan 63* 18-22
low-loss groove guide for millimeter waves; *Tischer, Frederick J.*; *T-MTT v11 n5 Sep 63* 291-296
oversize circular waveguides and transitions; *King, Howard E.*; *T-MTT v19 n1 Jan 71* 116-119 (3B05)
oversized circular guide; surface-resistance measurement; *Hatano, Satomi*; *T-MTT v24 n11 Nov 76* 886-887 (3C06)
planar dielectric strip guide for integrated circuits; *Fong, T. T.*; *T-MTT v22 n8 Aug 74* 776-783 (1B08)
precision insertion-loss calibrations at 90 GHz; *Stelzried, C. T.*; *T-MTT v17 n4 Apr 69* 233-234
quasi-optical surface waveguide and other components for the 100–300 GHz region; *Sobel, Frederick*; *T-MTT v9 n6 Nov 61* 512-518
random discrete imperfections in millimeter-wave circular guide; attenuation increase; *Falciasecca, Gabriele*; *T-MTT v25 n11 Nov 77* 911-915 (1D05)
rectangular waveguide filled with skew uniaxial dielectric; propagation; *Davies, J. B.*; *T-MTT v15 n6 Jun 67* 372-376
state of the art review 1963: Millimeter and submillimeter waves; *Coleman, Paul D.*; *T-MTT v11 n5 Sep 63* 271-288
status report on international waveguide flange standards; *Anderson, Tore N.*; *T-MTT v11 n5 Sep 63* 427-429
surface roughness; surface resistance due to surface roughness at 35 GHz; *Tischer, F. J.*; *T-MTT v22 n5 May 74* 566-569 (2B11)
TE excitation on dielectric-loaded parallel plane and trough waveguides; *Cohn, Marvin*; *T-MTT v8 n5 Sep 60* 545-552
TE modes of dielectric loaded trough line; *Cohn, Marvin*; *T-MTT v8 n4 Jul 60* 449-454
transmission by oversize and shielded-beam waveguides; *Valenzuela, G. R.*; *T-MTT v11 n5 Sep 63* 429-430
'twist' mode propagation in InSb at 70 GHz; *Glover, Gary H.*; *T-MTT v18 n9 Sep 70* 570-575
Millimeter-wave waveguides; cf. Millimeter-wave integrated circuits
Minimax optimization
computer program for investigating minimax optimality conditions; *Bandler, John W.*; *T-MTT v21 n6 Jun 73* 433 (2C10)
least *p*th approximation for computer-aided optimization; *Bandler, John W.*; *T-MTT v20 n12 Dec 72* 834-840 (1E09)
least-*p*th approach to minimax design; *Bandler, J. W.*; *T-MTT v24 n2 Feb 76* 116-119 (1D08)
least-*p*th approach to minimax design; computer program; *Bandler, J. W.*; *T-MTT v24 n8 Aug 76* 543 (1D13)
least-*p*th optimization with extrapolation to minimax solutions; computer program; *Bandler, J. W.*; *T-MTT v24 n8 Aug 76* 543-544 (1D13)
microwave circuits; *Einarsson, Olov*; *T-MTT v23 n10 Oct 75* 838-841 (1E04)
microwave networks; *Charalambous, Christakis*; *T-MTT v23 n10 Oct 75* 834-838 (1D14)
network optimization algorithm not requiring derivatives; application to microwave circuits. *Madsen, K., Correction*; *T-MTT v24 n4 Apr 76* 233 (1F01)
Minimax optimization; cf. Chebyshev approximation
Mining industry; cf. Underground electromagnetic communication
Mixers
biological membrane nonlinear capacitance; signal mixing and difference-frequency generation in membranes; *Berkowitz, Gary C.*; *T-MTT v27 n2 Feb 79* 204-207 (2B03)
double sideband resistive mixers; fundamental limits on conversion loss; *Kelly, Alexander J.*; *T-MTT v25 n11 Nov 77* 867-869 (1A03)
hybrid; cancellation of oscillator noise; *Lange, J.*; *T-MTT v16 n6 Jun 68* 368-369
intermodulation rejection in mixers; improvement in superheterodyne receivers; *Lepoff, Jack H.*; *T-MTT v14 n12 Dec 66* 618-623
resistive-diode mixers; shot noise and attenuator noise model; *Kerr, Anthony R.*; *T-MTT v27 n2 Feb 79* 135-140 (1D03)
tunnel-diode mixer at 600 MHz; self-oscillating mixer with conversion gain dependent on bias; *Toker, Canan*; *T-MTT v20 n9 Sep 72* 616-618 (2B03)
tunnel-diode self-oscillating mixers; conversion loss becomes infinite when oscillation magnitude is maximum; *Toker, Canan*; *T-MTT v21 n6 Jun 73* 430-431 (2C07)
Mixers; cf. Frequency conversion; Infrared mixers; Josephson device mixers/frequency converters; Microstrip circuits; Microwave mixers; Millimeter-wave mixers; Optical mixers; Submillimeter-wave mixers; UHF mixers
Mode coupling; cf. Coupled-mode analysis
Mode locking; cf. Pulse generators
Mode-matching methods
ferrite circulators; higher order approximations; *Castillo, Joseph B.*; *T-MTT v20 n6 Jun 72* 410-412 (2B09)
inadequacy of discrete mode-matching techniques in some waveguide discontinuity problems; *Lewin, Leonard*; *T-MTT v18 n7 Jul 70* 364-372
Models; cf. Semiconductor device models
Modulation/demodulation; cf. AM; Digital modulation; FM; Microwave modulation; Millimeter-wave modulation; Mixers; Optical modulation/demodulation; PAM; PM; Submillimeter-wave modulation
Moment methods
acoustic surface-wave transducers; surface charge, potential, and electric field in finite transducer over low coupling substrate; *Ristic, Velimir M.*; *T-MTT v27 n11 Nov 79* 897-901 (1B13)
cell size upper bounds when using pulse functions; *Hagmann, Mark J.*; *T-MTT v25 n10 Oct 77* 831-832 (1B13)
coupling between collinear parallel-plate waveguides; *Elmoazzen, Y. E.*; *T-MTT v23 n11 Nov 75* 871-876 (1B07)
dielectric obstacles inside rectangular waveguide, three-dimensional arbitrarily shaped obstacles; analysis using dyadic Green's function; *Wang, Johnson J. H.*; *T-MTT v26 n7 Jul 78* 457-462 (1A03)
diffraction by conducting screen perforated periodically with circular holes; *Chen, Chao-Chun*; *T-MTT v19 n5 May 71* 475-481 (2B01)
electromagnetic scattering by dielectric bodies; convergence improvement using interpolants; *Hagmann, Mark J.*; *T-MTT v26 n11 Nov 78* 904-908 (1E06)
electromagnetic transmission through filled slit in conducting plane of finite thickness; TE case; *Auckland, David T.*; *T-MTT v26 n7 Jul 78* 499-505 (1D03)
microstrip discontinuity inductance calculation; application to right-angle bends; *Gopinath, A.*; *T-MTT v22 n10 Oct 74* 880-883 (1C06)
microstrip problems; lumped capacitance calculation; *Farrar, Andrew*; *T-MTT v19 n5 May 71* 495-497 (2C09)
microstrip problems; lumped capacitance calculation. *Farrar, A., Correction*; *T-MTT v20 n4 Apr 72* 294 (2F04)
waveguide scattering due to discontinuities; *Wu, Sien-Chong*; *T-MTT v20 n11 Nov 72* 744-749 (1D08)
Monolithic integrated circuits; cf. Microwave integrated circuits
Monopulse radar antennas
feed for long-imaging radar; high-power *X*-band feed; *Goudey, Kenneth R.*; *T-MTT v26 n5 May 78* 326-332 (1A08)
MOSFETs
far-infrared photoconductive detectors; voltage-tunable detector; *Goldberg, H. S.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
microwave FETs; recent developments; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 279-300 (1A05)
microwave Si MOSFETs with 0.8-μm channel; noise figure 3.5 dB at 4 GHz and f_{max} of 12 GHz; *Tsironis, C.*; *T-MTT v27 n12 Dec 79* 1052-1058 (2C03)
microwave Si power transistors; VMOST technology; *Oakes, James G.*; *T-MTT v24 n6 Jun 76* 305-311 (1C03)
Motors
waveguide motors; effect of various pickup antennas at frequencies of 2.56, 3.0 and 3.44 GHz; *Steinhoff, R. W.*; *T-MTT v14 n9 Sep 66* 438
Moving media; cf. Electromagnetic propagation, moving media
MSM diodes; cf. BARITT diodes
Multibeam antennas
satellite antennas with active beam-forming networks; *Matthews, E. W.*; *T-MTT v27 n12 Dec 79* 998-1004 (1F04)
Multiconductor systems
capacitance calculation for three-dimensional multiconductor systems; integral equation formulation; *Ruehli, Albert E.*; *T-MTT v21 n2 Feb 73* 76-82 (1B10)
capacitance coefficients for irregular finite conductors on dielectric sheet; *Birtles, A. B.*; *T-MTT v21 n8 Aug 73* 568-569 (2D02)
Multiconductor transmission lines
coefficients of capacitance, in the presence of a dielectric interface; calculation; *Weeks, William T.*; *T-MTT v18 n1 Jan 70* 35-43
conical line consisting of equiangular strips and exhibiting *N*-fold symmetry; TEM propagation modes and impedance characteristics; *Campbell, James J.*; *T-MTT v17 n2 Feb 69* 101-107
couplers; multistrip quadrature couplers and interdigitated couplers; *Tajima, Yusuke*; *T-MTT v26 n10 Oct 78* 795-801 (2A01)
dominant cutoff wavelength of a lunar line—2 eccentric circular metal tubes; *Hu, Ann Yung*; *T-MTT v9 n6 Nov 61* 552-556
eigenvalue degeneracy; matrix chain parameters of section of line; *Paul, Clayton R.*; *T-MTT v21 n8 Aug 73* 556-558 (2C02)
equivalent circuit models for three-dimensional systems; *Ruehli, Albert E.*; *T-MTT v22 n3 Mar 74* 216-221 (1E10)
Green's matrix analysis of arbitrarily terminated lossy lines with excitation applied at arbitrary point; *Gruner, L.*; *T-MTT v22 n9 Sep 74* 837-839 (1B07)
matrix chain parameter identities; *Paul, Clayton R.*; *T-MTT v23 n9 Sep 75* 756-760 (1C10)
microstrip, coupled suspended lines with tuning septums; generalized spectral domain analysis; *Itoh, Tatsuo*; *T-MTT v26 n10 Oct 78* 820-827 (2B12)
microstrip; multilayer microstrip analysis; *Farrar, Andrew*; *T-MTT v22 n10 Oct 74* 889-891 (1D01)
microstrip, multiple conductors on various interfaces; propagation characteristics calculation using spectral domain method; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 983-987 (1E05)
shielded; numerical method for computing the capacitances; *Chestnut, Paul C.*; *T-MTT v17 n10 Oct 69* 734-745

striplines placed symmetrically between two parallel ground planes with or without side walls; characteristic immittance calculation; *Llinnér, L. J. Peter*; *T-MTT v22 n11 Nov 74* 930-937 (1B06)
TEM modes on *n*-wire line; power division ratios; *Nagai, Nobuo*; *T-MTT v22 n4 Apr 74* 353-359 (1A03)
with inhomogeneous dielectrics; characteristic admittance matrix; *Sun, Y. Y.*; *T-MTT v26 n11 Nov 78* 915-918 (1F02)
with inhomogeneous dielectrics; propagation modes, equivalent circuits, and characteristic terminations; *Marx, Kenneth D.*; *T-MTT v21 n7 Jul 73* 450-457 (1C04)
Multiconductor transmission lines; cf. Coupled transmission lines
Multimode transmission lines; cf. Coupled transmission lines
Multimode waveguides
E- and *H*-plane bends for oversized waveguides; *Quine, John P.*; *T-MTT v13 n1 Jan 65* 54-63
helically corrugated multimode circular waveguide; wave propagation and mode conversion; *Tang, Charles C. H.*; *T-MTT v14 n6 Jun 66* 275-284
lossless symmetrical discontinuities; network representation; *Ren, Chung-Li*; *T-MTT v14 n2 Feb 66* 80-85
measurement of harmonic and spurious signals; use of mode couplers; *Lewis, David J.*; *T-MTT v7 n1 Jan 59* 110-116
measurement techniques; survey; *Beck, A. C.*; *T-MTT v3 n3 Apr 55* 35-41
microwave power measurement; *Sharp, Eugene D.*; *T-MTT v10 n1 Jan 62* 73-82
millimeter channel-dropping filter using circular electric modes; *Marcatili, Enrique A. J.*; *T-MTT v9 n2 Mar 61* 176-182
nonuniform transitions; forward and backward scattered modes; *Tang, Charles C. H.*; *T-MTT v16 n8 Aug 68* 494-502
optical waveguide coupling from multimode to single-mode linear waveguides using horn-shaped structures; *Winn, Robert K.*; *T-MTT v23 n1 Jan 75* 92-97 (2A01)
optimization of waveguide tapers used for multimode propagation; *Tang, Charles C. H.*; *T-MTT v9 n5 Sep 61* 442-452
overmoded; practical measurement technique for determining the relative amplitude and phase of individual propagation modes; *Levinson, David S.*; *T-MTT v14 n7 Jul 66* 310-322
overmoded; practical measurement technique for determining the relative amplitude and phase of individual propagation modes; *Puttre, R. E.*; *T-MTT v15 n2 Feb 67* 133-134
plane-parallel, perfectly conducting, zero-thickness grating; equivalent networks; *Palócz, István*; *T-MTT v18 n5 May 70* 244-252
tapered circular and square waveguides; mode correspondence; *Tang, Charles C. H.*; *T-MTT v15 n5 May 67* 314-317
TE_{01}-mode-transmitting, circular; circumferential gap; *Morita, Nagayoshi*; *T-MTT v16 n3 Mar 68* 183-189
TEM impedance and cross coupling for two center conductors in a double ridge waveguide; *Storer, James E.*; *T-MTT v9 n2 Mar 61* 116-123
two-mode discontinuities; measurement by a resonance technique; *Felsen, L. B.*; *T-MTT v7 n1 Jan 59* 102-110
Multimode waveguides; cf. Optical fiber waveguides
Multiplexing
20-GHz radio relay system; channel multiplexing–demultiplexing networks; *Ohtomo, Isao*; *T-MTT v21 n7 Jul 73* 492-494 (2B11)
amplitude-modulated, double sideband; use over microwave radio; *Tharp, Nelson B.*; *T-MTT v2 n1 Apr 54* 41-49
design of multiplexers having contiguous channels; *Cristal, E. G.*; *T-MTT v12 n1 Jan 64* 88-93
Gunn devices for multiplexing and demultiplexing in Gb/s range; *Mause, Klaus*; *T-MTT v24 n12 Dec 76* 926-929 (1B14)
microwave; applications of directional filters; *Coale, Franklin S.*; *T-MTT v6 n4 Oct 58* 450-453
microwave quadruplexer; *Kint, L, v. d.*; *T-MTT v11 n1 Jan 63* 90-92
millimeter-wave filters; two-cavity ring-type channel-dropping filter; *Ootomo, Isao*; *T-MTT v19 n5 May 71* 481-484 (2B07)
multichannel TEM filter design; *Wenzel, Robert J.*; *T-MTT v13 n1 Jan 65* 5-15
multiplexer channel separating units using interdigital and parallel coupled filters; *Matthaei, George L.*; *T-MTT v13 n3 May 65* 328-334
narrow bandwidth multiplexers; use of printed-circuit complementary filters; *Wenzel, Robert J.*; *T-MTT v16 n3 Mar 68* 147-157
waveguide quadruplexer using four-channel waveguide branching system; *Foldes, Peter*; *T-MTT v9 n4 Jul 61* 297-306
X-band power divider and multiplexer; variable ratio capability; *Teeter, W. L.*; *T-MTT v5 n4 Oct 57* 227-229
Multiplexing; cf. Diplexers; Frequency-division multiplexing
Multiport networks
matrix method for deriving equivalent scattering parameters of reduced multiport, derived by T. Y. Otoshi; simple verification of Otoshi's theorem; *Cullen, T. J.*; *T-MTT v18 n3 Mar 70* 171
nonlinear network scattering variables analysis based on Volterra series; *Weiner, Donald D.*; *T-MTT v24 n7 Jul 76* 422-433 (1C04)
passive, linear multiport; thermal noise; *Wait, David F.*; *T-MTT v16 n9 Sep 68* 687-691
reduced; basic matrix method for deriving the equivalent scattering parameters; *Otoshi, T. Y.*; *T-MTT v17 n9 Sep 69* 722-724
Muscles
electromagnetic radiation effects on isolated nerve and muscle preparations; 2450-MHz irradiation; *Chou, Chung-Kwang*; *T-MTT v26 n3 Mar 78* 141-147 (1A07)
millimeter-wave measurements for fat and muscle tissues; 40–90 GHz complex permittivity and penetration depth; *Edrich, Jochen*; *T-MTT v24 n5 May 76* 273-275 (1C11)

N

Negative-resistance circuits
design procedure for optimum bandwidth negative resistance amplifiers; *Scanlan, Sean O.*; *T-MTT v12 n5 Sep 64* 504-511
Negative-resistance devices
MBM diodes; optical and infrared amplification in point-contact diode with negative differential resistance region in *I–V* characteristic; *Drury, David M.*; *T-MTT v27 n6 Jun 79* 598-603 (1D02)
wide-band Esaki diode amplifier; 1.3Gc operation; *Hamasaki, Joji*; *T-MTT v13 n2 Mar 65* 213-224
Negative-resistance diode oscillators; cf. Microwave oscillators
Neon devices
X-band radiation detection using neon indicator lamps; very high sensitivity detection; *Makover, Yaakov*; *T-MTT v26 n1 Jan 78* 38-43 (1C12)
Nerves
electromagnetic radiation effects on isolated nerve and muscle preparations; 2450-MHz irradiation; *Chou, Chung-Kwang*; *T-MTT v26 n3 Mar 78* 141-147 (1A07)
Nervous system
microwave effect on rabbit superior cervical ganglion at 2450 MHz; *Courtney, Kenneth R.*; *T-MTT v23 n10 Oct 75* 809-813 (1C03)
electromagnetic radiation influence on neuroelectric potentials; *MacGregor, Ronald J.*; *T-MTT v27 n11 Nov 79* 914-921 (1D02)
Nervous system; cf. Brain
Network analysis; cf. Adjoint networks; Microwave circuits; Scattering parameters; Sensitivity analysis
Network models; cf. Equivalent networks
Network noise
cryogenic millimeter-wave receivers using molecular beam epitaxy diodes; 60–90 GHz band; *Linke, R. A.*; *T-MTT v26 n12 Dec 78* 935-938 (1A13)
matrix representations of noise figures and noise figure charts in terms of power wave variables; *Hirano, Kotaro*; *T-MTT v16 n9 Sep 68* 692-699
measuring noise parameters; computational method for evaluating measured source admittance errors; *Mitama, Masataka*; *T-MTT v27 n6 Jun 79* 612-615 (1E02)
microwave linear devices; wave approach to characterizing noise properties; *Meys, R. P.*; *T-MTT v26 n1 Jan 78* 34-37 (1C08)
microwave two-port noise parameters determination using computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
microwave two-port noise parameters determination using least-squares method; *Caruso, Giuseppe*; *T-MTT v26 n9 Sep 78* 639-642 (1A13)
millimeter-wave and microwave mixers, conversion loss and noise; predicting mixer performance, experimental results; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 55-61 (1A09)
millimeter-wave and microwave mixers, conversion loss and noise; predicting mixer performance, theory; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 49-55 (1A03)
mixers, millimeter-wave two-diode subharmonically pumped and balanced mixers; theory; *Kerr, Anthony R.*; *T-MTT v27 n12 Dec 79* 938-943 (1A14)
mixers, millimeter-wave two-diode subharmonically pumped and balanced mixers; theory applied to practical mixers; *Kerr, Anthony R.*; *T-MTT v27 n12 Dec 79* 944-950 (1B06)
mixers using resistive diodes; shot noise and attenuator noise mode; *Kerr, Anthony R.*; *T-MTT v27 n2 Feb 79* 135-140 (1D03)
thermal type; from a passive linear multiport; *Wait, David F.*; *T-MTT v16 n9 Sep 68* 687-691
Network noise; cf. Amplifier noise; Oscillator noise
Network sensitivity analysis
cascade networks; *Bandler, J. W.*; *T-MTT v26 n12 Dec 78* 963-972 (1C13)
microstrip directional couplers; sensitivities of parameters of coupled-line coupler with respect to even- and odd-mode impedances; *Shamasundara, Srigiripuram D.*; *T-MTT v26 n10 Oct 78* 788-794 (1G02)
microstrip directional couplers. *Shamasundara, S. D., Correction*; *T-MTT v27 n2 Feb 79* 208 (2B07)
Network sensitivity analysis; cf. Adjoint networks; Network tolerance analysis
Network synthesis
microwave and lumped-distributed networks; current trends in automated and computer-aided design; *Bandler, John W.*; *T-MTT v18 n12 Dec 70* 1159-1170
Network theory
Fourier transform pairs; physical applications in various fields of wave theory and circuitry; *Bolinder, E. Folke*; *T-MTT v5 n2 Apr 57* 153-158
Network tolerance analysis
cascade networks; *Bandler, J. W.*; *T-MTT v26 n12 Dec 78* 963-972 (1C13)
microstrip and slotline; sensitivity approach; *Garg, Ramesh*; *T-MTT v26 n1 Jan 78* 16-19 (1B04)
two-port with mismatched source and load and/or arbitrary reference planes; bounds on reflection coefficient amplitude; *Tromp, H.*; *T-MTT v26 n12 Dec 78* 973-978 (1D09)
Network tolerance assignment
microwave circuit design; *Bandler, John W.*; *T-MTT v24 n9 Sep 76* 584-591 (1C12)
Network transformations
impedance transformations by the isometric circle method; *Bolinder, E. Folke*; *T-MTT v6 n1 Jan 58* 111-112
Networks
reactive network formed by bending metal sheet containing dual slot lines; *Burton, Robert W.*; *T-MTT v13 n3 May 65* 303-306
Networks; cf. Active networks; All-pass networks; Cascade networks; Coaxial circuits; Delay networks; Distributed networks; Equivalent networks; Filters; Five-port junctions; Impedance matching; Impedance-matching networks; Ladder networks; Lattice networks; Linear networks; Lossless networks; Lossy networks; Microwave circuits; Millimeter-wave circuits; Multiport networks; Nonlinear networks; Nonreciprocal networks; Phase-difference networks; Planar circuits; Pulse-compression networks; Stripline circuits; Three-port junctions; Transmission-line networks; Tunnel-diode circuits; Two-port networks; Varactor circuits
Neutron radiation effects
IMPATT diodes; increase of efficiency; *Chaffin, Roger J.*; *T-MTT v17 n2 Feb 69* 119-120
Nickel–iron films; cf. Permalloy films
Noise
IEEE Microwave Theory and Techniques Society 1974 National Lecture on low-noise reception and technology; *Okwit, Seymour*; *T-MTT v22 n12 Dec 74* 1130 (3A12)
millimeter-wavelength noise in the presence of strong signals; *Senitzky, Benjamin*; *T-MTT v16 n9 Sep 68* 728-732
special issue; *T-MTT v16 n9 Sep 68* 575-810
special issue foreword; *Mumford, W. W., Guest ed.*; *T-MTT v16 n9 Sep 68* 576
Noise; cf. AM noise; Amplifier noise; Atmospheric noise; Electromagnetic noise/interference; FM noise; Gas discharges; Network noise; Oscillator noise; Semiconductor device noise

Noise generators
Australian National Standards Laboratory *X*-band radiometer for calibration of noise sources; *Somlo, P. I.*; *T-MTT v16 n9 Sep 68* 664-669
Australian National Standards Laboratory *X*-band radiometer for calibration of noise sources.*Somlo, P. L., Correction*; *T-MTT v17 n3 Mar 69* 174
avalanche diode noise sources for 18–40 GHz range; waveguide mounted; *Keen, Nigel J.*; *T-MTT v24 n3 Mar 76* 153-155 (1B13)
coaxial noise sources; method of calibrating in terms of waveguide standard; *Engen, Glenn F.*; *T-MTT v16 n9 Sep 68* 636-639
effective noise temperature; analysis; *Strum, Peter D.*; *T-MTT v4 n3 Jul 56* 145-151
fluorescent lamps; noise-temperature behavior of F8T5 lamps; *Guentzler, Ronald E.*; *T-MTT v24 n8 Aug 76* 538-539 (1D08)
gas discharge noise sources; measured noise temperature versus theoretical electron temperature; *Olson, Keith W.*; *T-MTT v16 n9 Sep 68* 640-645
gas discharge noise sources; microwave noise temperatures; *Guentzler, Ronald E.*; *T-MTT v22 n4 Apr 74* 469-470 (2E03)
low-temperature microwave noise standard; *Trembath, Charles L.*; *T-MTT v16 n9 Sep 68* 709-714
microwave; measurement of the probability density function; *Bates, C.*; *T-MTT v16 n9 Sep 68* 793-795
microwave noise-temperature calibrations; effect of mismatched components; *Otoshi, Tom Y.*; *T-MTT v16 n9 Sep 68* 675-686
microwave noise-temperature calibrations; effect of mismatched components.*Otoshi, Tom Y., Correction*; *T-MTT v17 n3 Mar 69* 174
mismatched noise source; measurement of noise temperature; *Wait, David F.*; *T-MTT v16 n9 Sep 68* 670-675
mismatched; precision measurement of noise temperature; *Wait, David F.*; *T-MTT v18 n10 Oct 70* 715-724
N-cascaded mismatched two-port networks; applications and analysis of noise generation; *Mukaihata, Tadao*; *T-MTT v16 n9 Sep 68* 699-708
plasma noise sources of improved accuracy; *Denson, Colin I.*; *T-MTT v16 n9 Sep 68* 655-663
Schottky-barrier diodes in 75–115 GHz range; avalanche noise; *Keen, Nigel J.*; *T-MTT v26 n10 Oct 78* 843-844 (2D07)
Si avalanche diode noise source; stability improvement; *Kanda, Motohisa*; *T-MTT v24 n12 Dec 76* 990-995 (2B05)
simultaneous measurement of gain and noise using only noise generators; *Kenney, James M.*; *T-MTT v16 n9 Sep 68* 603-607
temperature calibration of microwave thermal noise sources; *Stelzried, C. T.*; *T-MTT v13 n1 Jan 65* 128-130
X-band fluorescent lamp noise sources; data on temperature dependence; *Mumford, William W.*; *T-MTT v3 n6 Dec 55* 12-17
Noise measurement
accurate measurement of noise temperature ratio of microwave mixer crystals; *Davis, Ronald E.*; *T-MTT v3 n6 Dec 55* 27-35
additive noise in microwave amplifiers under CW and pulsed condition; *Sann, Klaus H.*; *T-MTT v16 n9 Sep 68* 761-766
AM and FM noise from microwave oscillators; *Ashley, J. Robert*; *T-MTT v16 n9 Sep 68* 753-760
AM and FM noise spectra; use of microwave measuring system; *Ondria, John G.*; *T-MTT v16 n9 Sep 68* 767-781
AM; measurement in pulsed oscillators and amplifiers; *Levine, Peter A.*; *T-MTT v18 n10 Oct 70* 712-715
Australian National Standards Laboratory *X*-band radiometer for calibration of noise sources; *Somlo, P. I.*; *T-MTT v16 n9 Sep 68* 664-669
Australian National Standards Laboratory *X*-band radiometer for calibration of noise sources.*Somlo, P. L., Correction*; *T-MTT v17 n3 Mar 69* 174
characterization of gallium-arsenide point-contact diodes; *Sharpless, W. M.*; *T-MTT v9 n1 Jan 61* 6-10
cosmic background measurements in 3 mm–300 μm range using balloon-borne liquid-helium-cooled polarizing interferometer; *Robson, E. I.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
cosmic background measurements in 7–10 cm^{-1} atmospheric window; *Dall'Oglio, G.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
excess noise ratio of gas-discharge tubes; *Olson, Keith W.*; *T-MTT v16 n9 Sep 68* 797
linear two-port noise parameters; computational method for evaluating measured source admittance errors; *Mitama, Masataka*; *T-MTT v27 n6 Jun 79* 612-615 (1E02)
microwave bipolar transistors; 0.6 to 4.2 GHz frequency range; *Baechtold, Werner*; *T-MTT v16 n9 Sep 68* 578-585
microwave frequencies; accuracy of AM and FM noise measurements using carrier-suppression filter and phase detector; *Fikart, Josef L.*; *T-MTT v20 n10 Oct 72* 702-703 (2C02)
microwave noise-temperature calibrations; effect of mismatched components; *Otoshi, Tom Y.*; *T-MTT v16 n9 Sep 68* 675-686
microwave noise-temperature calibrations; effect of mismatched components.*Otoshi, Tom Y., Correction*; *T-MTT v17 n3 Mar 69* 174
microwave thermal noise; mathematical expression for the noise temperature; *Stelzried, Charles T.*; *T-MTT v16 n9 Sep 68* 646-655
microwave transmitters; AM and FM noise; *Ashley, J. Robert*; *T-MTT v25 n4 Apr 77* 294-318 (1D14)
microwave transmitters; AM and FM noise; *Knöchel, R.*; *T-MTT v27 n1 Jan 79* 84-85 (1G02)
microwave two-port noise parameters determination using computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
mismatched noise generators; precision measurement of noise temperature; *Wait, David F.*; *T-MTT v18 n10 Oct 70* 715-724
mismatched noise source; measurement of noise temperature; *Wait, David F.*; *T-MTT v16 n9 Sep 68* 670-675
noise figure measurement for small noise output in microwave amplifiers; *Kaplan, L. J.*; *T-MTT v10 n5 Sep 62* 402-403
noise performance of traveling-wave masers; *Higa, W. H.*; *T-MTT v12 n1 Jan 64* 139
noise temperature measurements of an operational maser system; 15°K; *Clauss, R. C.*; *T-MTT v12 n6 Nov 64* 619-620
noise temperature of passive coupling networks; *Bedrosian, E.*; *T-MTT v8 n4 Jul 60* 463
oscillator FM under random vibration; *Ashley, J. R.*; *T-MTT v13 n6 Nov 65* 869-870
parametric amplifier noise analysis; *Vice, David G.*; *T-MTT v13 n2 Mar 65* 162-167
receiver noise figures; absolute measurement at UHF; *Maxwell, E.*; *T-MTT v4 n2 Apr 56* 81-85
simultaneous measurement of gain and noise using only noise generators; *Kenney, James M.*; *T-MTT v16 n9 Sep 68* 603-607
small microwave noise powers or small power differences; improved measurements using ferrite isolator and ferrite circulator; *Mayer, C. H.*; *T-MTT v4 n1 Jan 56* 24-28
spectrum analysis of pulsed microwave amplifiers; UHF, *L*-band operation; *Koontz, Roland F.*; *T-MTT v10 n6 Nov 62* 440-454
summary of noise measurement techniques; *Haun, Robert D., Jr.*; *T-MTT v8 n4 Jul 60* 410-415
superheterodyne method of microwave noise measurement; *Kloza, Marian*; *T-MTT v13 n6 Nov 65* 882-883
system noise measurements at L-, S- and X-band frequencies; *Mukaihata, Tadao*; *T-MTT v10 n6 Nov 62* 506-516
temperature calibration of microwave thermal noise sources; *Stelzried, C. T.*; *T-MTT v13 n1 Jan 65* 128-130
voltage probability density function of wide-band microwave noise; *Gottfried, A. H.*; *T-MTT v16 n9 Sep 68* 795-797
Noise sources; cf. Gas discharge noise sources; Noise generators
Noise standards
millimeter-wave standard for 56–64 GHz range; WR15 thermal noise standard; *Daywitt, W. C.*; *T-MTT v21 n12 Dec 73* 845-847 (3B12)
Nonhomogeneous media
electrostatic field problems involving nonhomogeneous anisotropic media; Green's function technique; *Kobayashi, Masanori*; *T-MTT v26 n7 Jul 78* 510-512 (1D14)
Nonhomogeneous media; cf. Acoustic propagation, nonhomogeneous media; Electromagnetic propagation, nonhomogeneous media; Electromagnetic scattering, nonhomogeneous media; Optical propagation, nonhomogeneous media
Nonhomogeneously loaded waveguides
anisotropic media; vector variational formulation; *Konrad, A.*; *T-MTT v24 n9 Sep 76* 553-559 (1A09)
circular waveguides lined with dielectric; bandwidth enhancement; *Tsandoulas, G. N.*; *T-MTT v21 n10 Oct 73* 651-654 (1F05)
computerized solution using variation–iteration method; *Vander Vorst, André S.*; *T-MTT v18 n8 Aug 70* 468-475
dielectric-filled, rectangular; reflection and transmission of electromagnetic waves; *Kao, T. W.*; *T-MTT v17 n8 Aug 69* 639-641
dielectric-loaded rectangular guide with dielectric and metallic losses; coupled-mode analysis; *Gauthier, Francis*; *T-MTT v25 n11 Nov 77* 904-907 (1C12)
dielectric nonhomogeneous in one transverse direction of rectangular guide; characteristic equations and field components of LSE and LSM modes; *Casey, K. F.*; *T-MTT v21 n8 Aug 73* 566-567 (2C12)
ferrite-loaded guides; scattering matrix for single-aperture and double-aperture discontinuities; *Bernues, Francisco J.*; *T-MTT v22 n12 Dec 74* 1187-1193 (3E13)
lossy dielectric loading; shooting method analysis; *McIntosh, R. E.*; *T-MTT v22 n11 Nov 74* 952-954 (1C14)
nonuniform, inhomogeneous, and anisotropic waveguides and transmission lines; general discussion of properties; *Klopfenstein, Ralph W.*; *T-MTT v4 n4 Oct 56* 193-196
numerical analysis using transmission-line matrix; *Johns, Peter B.*; *T-MTT v22 n3 Mar 74* 209-215 (1E03)
perturbation methods; expansion of axial field components in terms of normal modes; *Vassallo, C.*; *T-MTT v23 n2 Feb 75* 264-265 (1F12)
perturbation techniques; renormalization to obtain nondivergent second-order perturbation term; *Hidaka, Takehiko*; *T-MTT v20 n2 Feb 72* 180-181 (2E02)
rectangular, partially filled with inhomogeneous dielectric; closed-form solution for TE_{10} mode; *Gonzalez, Guillermo*; *T-MTT v17 n5 May 69* 284-286
semiconductor-loaded waveguides; transversely magnetized; *Sorrentino, Roberto*; *T-MTT v24 n4 Apr 76* 201-208 (1C11)
symmetry analysis of uniform waveguides; summary of results; *McIsaac, Paul R.*; *T-MTT v23 n5 May 75* 421-429 (1B09)
symmetry analysis of uniform waveguides; theory; *McIsaac, Paul R.*; *T-MTT v23 n5 May 75* 429-433 (1C03)
variational expression involving longitudinal fields in inhomogeneous guide; equivalence to simple relationship between power flow, stored energy, and phase velocity; *Daly, P.*; *T-MTT v21 n2 Feb 73* 113-114 (1E11)
Nonlinear distortion
GaAs FET nonlinear performance prediction for arbitrary circuit embedding; *Rauscher, Christen*; *T-MTT v27 n10 Oct 79* 834-840 (1A12)
IMPATT diode large-signal electronic admittance measurement as function of frequency and RF voltage level; *Syrett, Barry A.*; *T-MTT v27 n10 Oct 79* 830-834 (1A08)
varactor frequency doublers; amplitude and phase fluctuations transfer functions; *Bava, Elio*; *T-MTT v27 n8 Aug 79* 753-757 (1C11)
varactor frequency multipliers; nonlinear behavior and hysteresis phenomena; *Bava, Elio*; *T-MTT v27 n2 Feb 79* 141-147 (1D09)
Nonlinear distortion; cf. Amplifier distortion; Intermodulation distortion
Nonlinear magnetics
ferrite circulators, distributed 3-port; *Wu, You-Sun*; *T-MTT v24 n2 Feb 76* 69-77 (1A03)
high power ferromagnetic resonance at *X*-band in polycrystalline garnets and ferrites; *Green, Jerome J.*; *T-MTT v8 n1 Jan 60* 100-103
L-band ferromagnetic resonance experiments at high peak power levels; *Schlömann, Ernst*; *T-MTT v8 n1 Jan 60* 96-100
Nonlinear networks
exponentially tapered transmission lines with arbitrary nonlinear sending and receiving networks; transient analysis; *Hill, James L.*; *T-MTT v25 n9 Sep 77* 777-783 (1E05)
scattering variables analysis based on Volterra series; *Weiner, Donald D.*; *T-MTT v24 n7 Jul 76* 422-433 (1C04)
Nonlinear networks; cf. Frequency conversion; Mixers; Nonlinear transmission lines
Nonlinear oscillators
driven oscillator with FM feedback; phase-locked loop model; *Couch, Leon W.*; *T-MTT v19 n4 Apr 71* 357-366 (1C01)

harmonically synchronized oscillators; noise and transfer properties; *Knöchel, Reinhard*; *T-MTT v26 n12 Dec 78* 939-944 (1B03)
noise theory for synchronized oscillators; *Schünemann, Klaus F.*; *T-MTT v27 n5 May 79* 452-458 (1G06)
Nonlinear transmission lines
energy relations and constitutive relations; paradox concerning energy flow; *Karbowiak, A. E.*; *T-MTT v21 n5 May 73* 357-358 (1E11)
shock wave formation; *Karbowiak, A. E.*; *T-MTT v23 n5 May 75* 453-454 (1D13)
Nonlinear transmission lines; cf. Distributed networks, nonlinear
Nonlinear wave propagation; cf. Distributed networks, nonlinear
Nonlinearities
characterization by transformation of amplitude characteristic; *Stette, Gunnar R.*; *T-MTT v23 n4 Apr 75* 387-390 (1E09)
GaAs FETs; large-signal performance prediction; *Willing Harry A.*; *T-MTT v26 n12 Dec 78* 1017-1023 (2A01)
microwave devices and systems; characterization of amplitude and phase nonlinearities; *Heiter, George L.*; *T-MTT v21 n12 Dec 73* 797-805 (2B07)
Nonreciprocal electromagnetic propagation; cf. Ferrite-loaded waveguides; Semiconductor-loaded waveguides
Nonreciprocal networks
scattering parameters of passive lossy nonreciprocal two-port networks; *Glasser, Jerome I.*; *T-MTT v21 n3 Mar 73* 135-136 (1C05)
two-ports, represented by modified Wheeler networks; *Altschuler, Helmut M.*; *T-MTT v4 n4 Oct 56* 228-233
Nonreciprocal wave propagation; cf. Electromagnetic propagation, nonreciprocal media; Optical propagation, nonreciprocal media
Nonuniform transmission lines
exponential lines; normalized input impedance graphs; *Arnold, Robert P.*; *T-MTT v22 n11 Nov 74* 964-965 (1D12)
impedance matching using tapered lines; design equations for large transformation ratios; *Kajfez, Darko*; *T-MTT v21 n5 May 73* 364 (1F06)
matching section without impedance steps at ends; near-optimum matching; *Hecken, Rudolph P.*; *T-MTT v20 n11 Nov 72* 734-739 (1C10)
microstrip; variation of characteristics with dielectric constant of substrate and geometrical dimensions; *Ros, Alain*; *T-MTT v23 n8 Aug 75* 703-706 (2A07)
scattering parameters and admittance; *Berquist, Ake*; *T-MTT v20 n8 Aug 72* 557-558 (2B12)
scattering parameters and admittance; *Dutta Roy, Suhash C.*; *T-MTT v22 n2 Feb 74* 149-150 (1F01)
Nonuniform transmission lines; cf. Distributed networks; Microstrip transitions; Transmission-line discontinuities; Waveguide transitions
Nonuniform waveguides
branching filter using tapered guide; separates 4-GHz band from combined 4-, 6- and 11-GHz common carrier bands; *Ohm, E. A.*; *T-MTT v22 n10 Oct 74* 891-894 (1D03)
rectangular guides with continuously varying cross section; synthesis method; *Grüner, Konrad*; *T-MTT v22 n3 Mar 74* 317-322 (3A01)
***n*-port networks; cf.** Multiport networks
Nuclear fusion devices; cf. Tokamaks
Numerical methods
acoustic surface-wave diffraction; simulating effect on device performance; *Penunuri, David*; *T-MTT v26 n4 Apr 78* 288-294 (1E10)
electromagnetic energy absorption in tissue prolate spheroids; calculation by point-matching method; *Ruppin, R.*; *T-MTT v26 n2 Feb 78* 87-90 (1C13)
microstrip discontinuities; Galerkin's method applied in Fourier transform domain; *Rahmat-Samii, Yahya*; *T-MTT v22 n4 Apr 74* 372-378 (1B08)
microstrip dispersion characteristics; method based on application of Galerkin's method in spectral domain; *Itoh, Tatsuo*; *T-MTT v21 n7 Jul 73* 496-499 (2C03)
microstrip dispersion characteristics; spectral-domain analysis of shielded microstrip; *Itoh, Tatsuo*; *T-MTT v22 n10 Oct 74* 896-898 (1D08)
microstrip; frequency-dependent characteristics of single and coupled lines in shielded microstrip; *Krage, Mark K.*; *T-MTT v20 n10 Oct 72* 678-688 (1E10)
microstrip parameter computation, single and coupled lines; high-speed procedure. *Jansen, R. H., Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
microstrip parameters computation, single and coupled lines; high-speed procedure; *Jansen, Rolf H.*; *T-MTT v26 n2 Feb 78* 75-82 (1C01)
routine to supply Bessel functions as required in BASIC programs; *Vaughan, J. Rodney M.*; *T-MTT v18 n8 Aug 70* 511-512
transmission line problems. *Green, H. E., Correction*; *T-MTT v23 n5 May 75* 455 (1E01)
waveguide diaphragm problems; eigenmode series transformation that improves convergence; *Rozzi, Tullio E.*; *T-MTT v20 n11 Nov 72* 770-771 (2B01)
waveguide discontinuity problems; iterative solution using method of overlapping regions together with Schwarz's technique; *Iskander, Magdy F.*; *T-MTT v25 n9 Sep 77* 763-768 (1D05)
waveguide junction problems; *Oraizi, H.*; *T-MTT v21 n10 Oct 73* 640-642 (1E06)
waveguides; null-field method for guides of arbitrary cross section; *Ng, Fook Loy*; *T-MTT v20 n10 Oct 72* 658-662 (1D02)
Numerical methods; cf. Approximation methods; Finite-difference methods; Finite-element methods; Integral equations; Matrix methods; Modified residue-calculus techniques; Moment methods; Optimization methods; Rayleigh–Ritz methods; Relaxation methods; Sparse-matrix methods; Variational methods
Oceanography
complex dielectric constant calculations for saline water; *Stogryn, A.*; *T-MTT v19 n8 Aug 71* 733-736 (2B06)
Ocean; cf. Sea
Ohmmeters; cf. Impedance measurement
Oil
microwave heating of oil shale; abrupt change in dielectric constant due to high-power heating; *Hu, Chia-Lun J.*; *T-MTT v27 n1 Jan 79* 38-43 (1C12)
Operator theory
matrix formulation for the classical Taylor's series method of approximating differential operators by finite differences; *Silvester, P.*; *T-MTT v18 n10 Oct 70* 740-743
nonself-adjoint operators; variational formulation derived from standard quadratic functional for self-adjoint operators; *Jeng, Garbo*; *T-MTT v26 n2 Feb 78* 91-94 (1D03)
Optical amplifiers
MBM point-contact diode with negative differential resistance region in *I–V* characteristic; *Drury, David M.*; *T-MTT v27 n6 Jun 79* 598-603 (1D02)
Optical circuits; cf. Integrated optics
Optical circulators
optical all-pass network; *Jacobson, A. D.*; *T-MTT v13 n4 Jul 65* 475-477
Optical communication
frontier between classical and quantum physics; *Fox, A. G.*; *T-MTT v7 n4 Oct 59* 400-401
Optical couplers
quasi-optical oversize waveguide directional coupler with two prisms, interface-matched by means of the Brewster's-angle effect; *Takao, I.*; *T-MTT v17 n2 Feb 69* 124-125
Optical couplers; cf. Laser couplers; Optical directional couplers; Optical planar waveguide couplers; Optical strip waveguide couplers
Optical detectors; cf. Photodetectors
Optical diffraction
apertures; beam mode expansion applied to analysis of noise reduction structure; *Tanaka, Kazumasa*; *T-MTT v23 n7 Jul 75* 595-598 (1E01)
apertures; Gaussian wave beam transmission through two consecutive apertures; *Tanaka, Kazumasa*; *T-MTT v22 n2 Feb 74* 81-86 (1A03)
guided-wave theory of light diffraction by acoustic microwaves; *Chu, Ruey-Shi*; *T-MTT v17 n11 Nov 69* 1002-1020
plane light wave incident obliquely upon isotropic dielectric layer traversed longitudinally by acoustic microwaves; guide-wave theory; *Chu, Ruey-Shi*; *T-MTT v18 n8 Aug 70* 486-504
slab periodic medium bounded by different media on both sides; modal theory. *Chu, Ruey-Shi, Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
Optical diffraction gratings
echelette grating; analytical study, with application to open resonators; *Itoh, Tatsuo*; *T-MTT v17 n6 Jun 69* 319-327
wood anomalies in diffraction from strip gratings; *Itoh, T.*; *T-MTT v18 n1 Jan 70* 54-55
Optical directional couplers
fiber waveguides; *Kuwahara, H.*; *T-MTT v23 n1 Jan 75* 178-179 (2G03)
fiber waveguides; *Kuwahara, H.*; *T-MTT v23 n1 Jan 75* 179-180 (2G04)
thin-film waveguide couplers with linear velocity taper; *Wilson, Michael G. F.*; *T-MTT v23 n1 Jan 75* 85-92 (1G03)
Optical fiber waveguide transient propagation
multimode dispersion minimization; optimal refractive-index profile synthesis using computer-aided trial-and-error method; *Okamoto, Katsunari*; *T-MTT v25 n3 Mar 77* 213-221 (1D05)
Optical fiber waveguides
α-power refractive-index profile and uniform cladding; closed-form characteristic equation derived using variational formulation; *Okamoto, Katsunari*; *T-MTT v24 n7 Jul 76* 416-421 (1B12)
Airy function applications; *Arnaud, Jacques A.*; *T-MTT v23 n11 Nov 75* 927-929 (1F07)
cladded fiber with parabolic-index core and uniform cladding; propagation characteristics; *Hashimoto, Masahiro*; *T-MTT v25 n1 Jan 77* 11-17 (1A13)
coupled dispersive modes; *Steinberg, Richard*; *T-MTT v23 n9 Sep 75* 721-724 (1A03)
coupled modes; statistical coupled equations; *Crosignani, Bruno*; *T-MTT v23 n5 May 75* 416-420 (1B04)
coupled-power equation in step-index fibers; numerical solution; *Rousseau, Michel*; *T-MTT v25 n7 Jul 77* 577-585 (1A13)
couplers; film-to-fiber coupler using tapered film; *Tien, P. K.*; *T-MTT v23 n1 Jan 75* 79-85 (1F11)
curved guides; radiation condition; *Arnaud, Jacques A.*; *T-MTT v23 n11 Nov 75* 935-936 (1G01)
curved guides; radiation condition; *Lewin, Leonard*; *T-MTT v22 n7 Jul 74* 718-727 (1A12)
curved guides; radiation from bends; *Neumann, Ernst-Georg*; *T-MTT v23 n1 Jan 75* 142-149 (2D09)
directional coupler; *Kuwahara, H.*; *T-MTT v23 n1 Jan 75* 178-179 (2G03)
directional couplers; *Kuwahara, H.*; *T-MTT v23 n1 Jan 75* 179-180 (2G04)
distributed-feedback laser structures; *Elachi, C.*; *T-MTT v23 n6 Jun 75* 532-536 (1F04)
dual-mode grated-index fiber; only LP_{01} and LP_{11} modes propagate and virtually same group velocities; *Sakai, Jun-ichi*; *T-MTT v26 n9 Sep 78* 658-665 (1C04)
excitation and scattering of modes; *Snyder, Allan W.*; *T-MTT v17 n12 Dec 69* 1138-1144
excitation of dominant mode by incident plane waves and Gaussian beams; modal analysis; *Cardama, Angel*; *T-MTT v23 n1 Jan 75* 162-169 (2F01)
external higher index surroundings; quasi-guided modes and radiation losses; *Suematsu, Yasuharu*; *T-MTT v23 n1 Jan 75* 170-175 (2F09)
Gaussian beams, multiple reflection in circular cross section; *Shin, Sang-Yung*; *T-MTT v26 n11 Nov 78* 845-851 (1A03)
graded index dielectric rods; guided modes; *Yamada, Ryozo*; *T-MTT v22 n8 Aug 74* 813-814 (1E03)
inhomogeneous fibers, core with arbitrary refractive-index distribution and uniform cladding; variational method analysis; *Okoshi, Takanori*; *T-MTT v22 n11 Nov 74* 938-945 (1B14)
inhomogeneous fibers; vectorial wave analysis using finite-element method; *Okamoto, Katsunari*; *T-MTT v26 n2 Feb 78* 109-114 (1E07)
inhomogeneous guides; perturbation method for analyzing guides whose index distributions depart from well-known profiles; *Hashimoto, Masahiro*; *T-MTT v24 n9 Sep 76* 559-566 (1B01)
inhomogeneous slab guides; propagation analysis using regularized WKBJ method; *Ikuno, Hiroyoshi*; *T-MTT v26 n4 Apr 78* 261-266 (1C11)
lens-like medium with complex permittivity; *Sawa, Shinnosuke*; *T-MTT v23 n7 Jul 75* 566-575 (1B14)
lossy cladding, effect on modal dispersion in parabolic-index fiber; *Masaki, Yoshifumi*; *T-MTT v26 n11 Nov 78* 852-855 (1A10)
modal power distribution at output and launching conditions; measurement method; *Shigesawa, Hiroshi*; *T-MTT v26 n12 Dec 78* 992-997 (1E14)
multimode fiber mode coupling; power flow equation analysis; *Tatekura, Kohichi*; *T-MTT v26 n7 Jul 78* 487-493 (1C05)
power responses for modulated waves; linearity; *Vassallo, Charles*; *T-MTT v25 n7 Jul 77* 572-576 (1A08)
propagation characteristics; *Gloge, Detlef*; *T-MTT v23 n1 Jan 75* 106-120 (2B01)
radiation from curved dielectric slabs and fibers. *Lewin, L., Correction*; *T-MTT v23 n9 Sep 75* 779 (1E05)
radiation losses due to variations of radius on dielectric or optical fibers; *Snyder, Allan W.*; *T-MTT v18 n9 Sep 70* 608-615

self-focusing fiber with finite homogeneous cladding; vector modes related to scalar modes in lens-like medium; *Yip, G. L.*; *T-MTT v23 n2 Feb 75* 260-263 (1F08)
truncated parabolic-index fiber with minimum mode dispersion; *Geshiro, Masahiro*; *T-MTT v26 n2 Feb 78* 115-119 (1E13)
Optical fiber waveguides; cf. Optical fiber waveguide transient propagation
Optical fibers
deformed boundaries; modal analysis of homogeneous fibers; *Yamashita, Eikichi*; *T-MTT v27 n4 Apr 79* 352-356 (1E06)
Optical filters
bandpass and pseudo-high-pass quasi-optical filters; use for millimeter-wave and far-infrared frequencies; *Leedom, David A.*; *T-MTT v18 n5 May 70* 253-259
low-pass and high-pass filters consisting of multilayer dielectric stacks; *Young, Leo*; *T-MTT v14 n2 Feb 66* 75-80
low-pass, quasi-optical; attenuation by absorption; *Matthaei, George L.*; *T-MTT v17 n12 Dec 69* 1123-1129
low-pass, quasi-optical filters for oversized or focused-beam waveguides; *Matthaei, George L.*; *T-MTT v16 n12 Dec 68* 1038-1047
quasi-optical resonator filters for millimeter and submillimeter wave frequencies; *Taub, J. J.*; *T-MTT v12 n6 Nov 64* 618-619
Optical filters; cf. Infrared filters
Optical harmonic generation
five layer (air, reflector, ruby, reflector, air) optical maser for microwave amplification is treated as a Fabry–Perot resonator; *Jacobs, Harold*; *T-MTT v12 n2 Mar 64* 163-170
harmonic generation by a diode array; *King, D. D.*; *T-MTT v12 n2 Mar 64* 256
millimeter frequency multiplication with an in-line harmonic generator; *Wessel, Erling G.*; *T-MTT v12 n1 Jan 64* 139-141
Optical heterodyne detection; cf. Infrared heterodyne detection
Optical measurements
diffraction loss curve for nonconfocal spherical mirrors; *Omori, Takeo*; *T-MTT v12 n2 Mar 64* 258
fiber waveguide modal power distribution at output and launching conditions; *Shigesawa, Hiroshi*; *T-MTT v26 n12 Dec 78* 992-997 (1E14)
thin-film waveguides; refractive index profile measurement; *Mittra, R.*; *T-MTT v23 n1 Jan 75* 176-177 (2G01)
Optical modulation
cylindrical waveguide partially filled with a dielectric light modulation material; propagation characteristics; *Chen, Di*; *T-MTT v14 n10 Oct 66* 482-486
traveling-wave microwave modulation of light; shielded three-medium stripline; *Yamashita, Eikichi*; *T-MTT v17 n2 Feb 69* 118-119
wide-band modulation of light by means of the electro-optic effect with power continuously fed into the light carrying guide; *Kaminow, Ivan P.*; *T-MTT v10 n5 Sep 62* 311-313
Optical modulation/demodulation; cf. Electrooptic modulation
Optical planar waveguide components
electrooptic modulators; analysis using transformation of MIC formulas; *Yamashita, Eikichi*; *T-MTT v25 n2 Feb 77* 146-150 (1E10)
electrooptic modulators; distributed capacitance calculation; *Yamashita, Eikichi*; *T-MTT v23 n1 Jan 75* 177-178 (2G02)
periodic dielectric gratings; propagation characteristics; *Peng, S. T.*; *T-MTT v23 n1 Jan 75* 123-133 (2C04)
periodic dielectric gratings; propagation characteristics. *Peng, S. T., Correction*; *T-MTT v24 n8 Aug 76* 542 (1D12)
Optical planar waveguide couplers
directional couplers with linear velocity taper; *Wilson, Michael G. F.*; *T-MTT v23 n1 Jan 75* 85-92 (1G03)
tapered block coupling and mode conversion; *Teh, G. A.*; *T-MTT v27 n3 Mar 79* 265-266 (1D09)
tapered film coupler radiation fields; film-to-fiber coupler; *Tien, P. K.*; *T-MTT v23 n1 Jan 75* 79-85 (1F11)
Optical planar waveguides
anisotropic metal-diffused waveguides; leaky surface waves; *Yamanouchi, Kazuhiko*; *T-MTT v26 n4 Apr 78* 298-305 (1F06)
external higher index surroundings; quasi-guided modes and radiation losses; *Suematsu, Yasuharu*; *T-MTT v23 n1 Jan 75* 170-175 (2F09)
graded-index slab guide with metal cladding; propagation losses of guided modes; *Masuda, Masamitsu*; *T-MTT v25 n9 Sep 77* 773-776 (1E01)
inhomogeneous slab guides; propagation analysis using regularized WKBJ method; *Ikuno, Hiroyoshi*; *T-MTT v26 n4 Apr 78* 261-266 (1C11)
interacting step discontinuities; network description derived from field analysis; *Rozzi, Tullio E.*; *T-MTT v27 n4 Apr 79* 303-309 (1A13)
measurement of refractive index profile; *Mittra, R.*; *T-MTT v23 n1 Jan 75* 176-177 (2G01)
nonhomogeneous guides; propagation, attenuation, and dispersion characteristics; *Kuester, Edward F.*; *T-MTT v23 n1 Jan 75* 98-106 (2A07)
radiation from curved dielectric slabs and fibers. *Lewin, L., Correction*; *T-MTT v23 n9 Sep 75* 779 (1E05)
slab periodic medium bounded by different media on both sides; modal theory. *Chu, Ruey-Shi, Correction*; *T-MTT v26 n3 Mar 78* 216 (1F12)
step discontinuity analysis using rigorous variational approach; *Rozzi, T. E.*; *T-MTT v26 n10 Oct 78* 738-746 (1C08)
Optical PM
traveling-wave modulator; waveguide loaded with electrooptic material; *El-Shandwily, M. Ezzat*; *T-MTT v20 n2 Feb 72* 132-137 (1E10)
Optical propagation; cf. Optical waveguides
Optical propagation, absorbing media
wide-band modulation of light by means of the electro-optic effect with power continuously fed into the light carrying guide; *Kaminow, Ivan P.*; *T-MTT v10 n5 Sep 62* 311-313
Optical propagation, anisotropic media
dielectric waveguides; hybrid mode propagation in hollow cylindrical anisotropic guides; *Chaudhuri, B. B.*; *T-MTT v27 n2 Feb 79* 170-172 (1F10)
electrooptic modulators; Green's function obtained using image coefficient method; capacitance calculation; *Kobayashi, Masanori*; *T-MTT v26 n2 Feb 78* 119-126 (1F03)
waveguides, metal-diffused; leaky surface waves; *Yamanouchi, Kazuhiko*; *T-MTT v26 n4 Apr 78* 298-305 (1F06)
Optical propagation, dispersive media
optical fibers with coupled dispersive modes; *Steinberg, Richard*; *T-MTT v23 n9 Sep 75* 721-724 (1A03)
waveguides; pulse dispersion in single-mode guides; *Kuester, Edward F.*; *T-MTT v23 n11 Nov 75* 882-887 (1C04)
Optical propagation, dispersive media; cf. Optical transient propagation; Optical waveguides
Optical propagation, nonhomogeneous media
fibers; self-focusing fiber with finite homogeneous cladding; vector modes related to scalar modes in lens-like medium; *Yip, G. L.*; *T-MTT v23 n2 Feb 75* 260-263 (1F08)
integrated-optics modulators; analysis using transformation of MIC formulas; *Yamashita, Eikichi*; *T-MTT v25 n2 Feb 77* 146-150 (1E10)
slab of graded-index medium whose refractive index is polynomial expression of transverse coordinate; *Pratesi, Riccardo*; *T-MTT v26 n11 Nov 78* 856-858 (1A14)
slab waveguides; propagation, attenuation, and dispersion characteristics; *Kuester, Edward F.*; *T-MTT v23 n1 Jan 75* 98-106 (2A07)
Optical propagation, nonhomogeneous media; cf. Optical waveguides
Optical propagation, periodic media
thin-film waveguides with periodic variation along film; *Peng, S. T.*; *T-MTT v23 n1 Jan 75* 123-133 (2C04)
Optical propagation, random media
fibers; statistical coupled equations; *Crosignani, Bruno*; *T-MTT v23 n5 May 75* 416-420 (1B04)
Optical pumping
far-infrared CH_3OH laser pumped by laser; rate equations; *Henningsen, J. O.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
far-infrared gas lasers; rate equation model; *Tucker, J. R.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
submillimeter lasers; pumping far from molecular absorptions; lasing between vibrational levels with overtone pumping; *Fetterman, H. R.*; *T-MTT v22 n12 Dec 74* 1118 (1D01)
submillimeter-wave laser using transverse optical pumping; tunable CH_3F laser at 496 μm; *Brown, F.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
submillimeter-wave lasers; optical pumping of polar molecules by infrared lasers; *Chang, T. Y.*; *T-MTT v22 n12 Dec 74* 983-988 (1A05)
Optical reflection
Gaussian beams, multiple reflection in circular cross section; *Shin, Sang-Yung*; *T-MTT v26 n11 Nov 78* 845-851 (1A03)
Optical resonators
confocal resonator system with a large Fresnel number; *Lotsch, H.*; *T-MTT v12 n4 Jul 64* 482-483
equivalence of different integral equations for confocal resonators; *Kogelnik, H.*; *T-MTT v12 n6 Nov 64* 624
microwave optical ring resonators; properties and applications for the frequencies 17 GHz and 70 GHz; *Schulten, G.*; *T-MTT v15 n1 Jan 67* 54-55
ring resonators; modes and losses in four-mirror ring resonator; *Checcacci, P. F.*; *T-MTT v22 n7 Jul 74* 751-752 (1D03)
unstable open resonators; edge diffraction calculation using ray optical technique; *Santana, Carlos*; *T-MTT v26 n2 Feb 78* 101-108 (1D13)
Optical resonators; cf. Fabry–Perot resonators
Optical spectroscopy; cf. Infrared spectroscopy
Optical strip waveguide couplers
multimode to single-mode linear waveguide coupling using horn-shaped structures; *Winn, Robert K.*; *T-MTT v23 n1 Jan 75* 92-97 (2A01)
Optical strip waveguides
wood anomalies in diffraction from strip gratings; *Itoh, T.*; *T-MTT v18 n1 Jan 70* 54-55
Optical surface-wave excitation
coupling into thin-film waveguide using shaped tunneling regions; *Harris, Jay H.*; *T-MTT v19 n3 Mar 71* 269-276 (1C01)
Optical surface-wave propagation
plane and quasi-optical wave propagation in gyromagnetic media; *Eberhardt, Nikolai*; *T-MTT v18 n9 Sep 70* 554-565
Optical surface-wave waveguides; cf. Optical waveguides
Optical surface waves
anisotropic metal-diffused waveguides; leaky surface waves; *Yamanouchi, Kazuhiko*; *T-MTT v26 n4 Apr 78* 298-305 (1F06)
Optical switches; cf. Electrooptic switches
Optical transient propagation; cf. Optical fiber waveguide transient propagation
Optical waveguides
anisotropic hollow cylindrical dielectric guides; hybrid mode propagation; *Chaudhuri, B. B.*; *T-MTT v27 n2 Feb 79* 170-172 (1F10)
anisotropic metal-diffused waveguides; leaky surface waves; *Yamanouchi, Kazuhiko*; *T-MTT v26 n4 Apr 78* 298-305 (1F06)
asymptotic expressions for eigenfunctions and eigenvalues; *Snyder, Allan W.*; *T-MTT v17 n12 Dec 69* 1130-1138
beam waveguide using metal reflectors instead of dielectric lenses; *Degenford, James E.*; *T-MTT v12 n4 Jul 64* 445-453
circular dielectric rods; continuous mode spectrum; radiation from guide; *Snyder, Allan W.*; *T-MTT v19 n8 Aug 71* 720-727 (1F02)
cladded inhomogeneous dielectric guides; propagation characteristics; *Hashimoto, Masahiro*; *T-MTT v24 n7 Jul 76* 404-409 (1A14)
comparison with acoustic surface-wave guides; *Oliner, Arthur A.*; *T-MTT v24 n12 Dec 76* 914-920 (1B02)
curved dielectric slab and fiber waveguides; radiation condition; *Arnaud, Jacques A.*; *T-MTT v23 n11 Nov 75* 935-936 (1G01)
curved dielectric slab and fiber waveguides; radiation condition; *Lewin, Leonard*; *T-MTT v22 n7 Jul 74* 718-727 (1A12)
design considerations for bent-beam waveguides; *Marcuse, D.*; *T-MTT v13 n5 Sep 65* 647-651
method to analyze the properties of optical system composed of several coupled resonators with active media; *Fontana, Jorge R.*; *T-MTT v12 n4 Jul 64* 400-405
new type of quasi-optical waveguide component, based on use of Brewster angle and on rapid variation of reflectance and phase change near critical angle; *Carson, J. W.*; *T-MTT v18 n1 Jan 70* 57-58
optical transmission lines; effect of adding a negative lens between each pair of positive lenses; *Steier, William H.*; *T-MTT v14 n5 May 66* 228-233
optimum distribution of the refractive index with reference to waveform distortion; *Kawakami, Shojiro*; *T-MTT v16 n10 Oct 68* 814-818
pulse dispersion in single-mode guides; *Kuester, Edward F.*; *T-MTT v23 n11 Nov 75* 882-887 (1C04)
quasi-optical surface waveguide and other components for the 100–300 GHz region; *Sobel, Frederick*; *T-MTT v9 n6 Nov 61* 512-518

special issue; *T-MTT v23 n1 Jan 75* 1-180 (1A03)
special issue foreword; *Marcuse, D.*; *T-MTT v23 n1 Jan 75* 1 (1A03)
surface-wave excitation using shaped tunneling regions; thin-film waveguides; *Harris, Jay H.*; *T-MTT v19 n3 Mar 71* 269-276 (1C01)
wide-band modulation of light by means of the electro-optic effect with power continuously fed into the light carrying guide; *Kaminow, Ivan P.*; *T-MTT v10 n5 Sep 62* 311-313

Optical waveguides; cf. Beam waveguides; Fiber waveguides; Infrared waveguides; Lens waveguides; Optical fiber waveguides; Optical fibers; Optical planar waveguides; Optical strip waveguides

Optics; cf. Geometrical optics

Optimization methods
ferrite isolators; optimization of geometry and material; *Decreton, Marc*; *T-MTT v19 n3 Mar 71* 322-331 (2B08)
least *p*th approximation; computationally practical approach for use in design problems; *Bandler, John W.*; *T-MTT v20 n12 Dec 72* 834-840 (1E09)
microwave and lumped-distributed networks; current trends in automated and computer-aided design; *Bandler, John W.*; *T-MTT v18 n12 Dec 70* 1159-1170
microwave network least *p*th optimization; computer program; *Herrick, D. L.*; *T-MTT v23 n10 Oct 75* 849-850 (1F01)
minimax approximation; computer program description; *Bandler, John W.*; *T-MTT v21 n6 Jun 73* 433 (2C10)
nonlinear objective function subject to nonlinear inequality constraints; computer program; *Schenk, K. F.*; *T-MTT v22 n3 Mar 74* 343-344 (3B13)

Optimization methods; cf. Minimax optimization

Oscillator noise
AM; measurement in pulsed oscillators and amplifiers; *Levine, Peter A.*; *T-MTT v18 n10 Oct 70* 712-715
amplitude noise spectra of *X*-band microwave oscillators; comparison of measurements with theory; *Scherer, Ernst F.*; *T-MTT v16 n9 Sep 68* 781-788
cancellation in hybrid mixers; *Lange, J.*; *T-MTT v16 n6 Jun 68* 368-369
FM noise suppression of an injection phased-locked oscillator; *Hines, M. E.*; *T-MTT v16 n9 Sep 68* 738-742
GaAs FET integrated oscillator with BaO–TiO_2 ceramic resonator; high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
Gunn oscillator AM and FM noise characteristics; physical causes of noise; *Gnerlich, Hans R.*; *T-MTT v25 n12 Dec 77* 977-981 (1B01)
harmonically synchronized oscillators; *Knöchel, Reinhard*; *T-MTT v26 n12 Dec 78* 939-944 (1B03)
IMPATT diode oscillator at 75 GHz; high-stability low-noise oscillator using injection locking and AFC with crystal oscillator as reference; *Okamoto, Hiroshi*; *T-MTT v26 n2 Feb 78* 136 (1G06)
IMPATT oscillator at 75 GHz; highly stable low-noise oscillator using parametric injection locking and AFC; *Okamoto, Hiroshi*; *T-MTT v26 n8 Aug 78* 627-628 (2B01)
measurement of AM- and FM-noise from microwave oscillators; *Ashley, J. Robert*; *T-MTT v16 n9 Sep 68* 753-760
measurement of AM and FM noise in microwave transmitters; *Ashley, J. Robert*; *T-MTT v25 n4 Apr 77* 294-318 (1D14)
microstrip varactor-tuned bipolar transistor oscillator integrated with FET amplifier for *X*-band; FM noise is −132 dB/Hz at 1 MHz; *Niehenke, Edward C.*; *T-MTT v27 n12 Dec 79* 1075-1079 (2D12)
microwave frequency synthesizer using Si bipolar transistor and $Ba_2Ti_9O_{20}$ dielectric resonator; FM noise less than 0.0003 Hz in any 1 Hz band more than 1000 Hz from 1 GHz carrier; *Alley, Gary D.*; *T-MTT v27 n12 Dec 79* 969-974 (1D03)
microwave oscillator; noise reduction by a transmission stabilizing cavity; *Ashley, J. Robert*; *T-MTT v16 n9 Sep 68* 743-748
microwave transmitters; measurement of AM and FM noise; *Knöchel, R.*; *T-MTT v27 n1 Jan 79* 84-85 (1G02)
mutually synchronized oscillators; calculation of noise output; *Schlosser, Wolfgang O.*; *T-MTT v16 n9 Sep 68* 732-737
reduction in synchronized microwave oscillators, including those using IMPATT and Gunn diodes; *Kurokawa, Kaneyuki*; *T-MTT v16 n4 Apr 68* 234-240
synchronized oscillators; nonlinear noise theory; *Schünemann, Klaus F.*; *T-MTT v27 n5 May 79* 452-458 (1G06)
TED oscillators; AM and FM noise analysis including variation of device admittance with bias- and RF-voltage amplitudes; *Patterson, J. T.*; *T-MTT v24 n7 Jul 76* 460-463 (2A05)

Oscillator noise; cf. AM noise; FM noise

Oscillator stability
harmonically synchronized oscillators; *Knöchel, Reinhard*; *T-MTT v26 n12 Dec 78* 939-944 (1B03)
IMPATT diode circuit design for parametric stability; *Gonda, Joseph*; *T-MTT v25 n5 May 77* 343-352 (1A03)
injection-locked pulsed oscillators with very fast switching characteristics; phase and amplitude transients; *Pavlidis, Dimitrios*; *T-MTT v26 n3 Mar 78* 162-169 (1B14)
millimeter-wave IMPATT oscillators; cavity stabilization and electronic tuning by parametric interaction; *Okamoto, Hiroshi*; *T-MTT v26 n6 Jun 78* 420-424 (1C14)

Oscillator stability, frequency
acoustic surface-wave oscillators; *Salmon, S. K.*; *T-MTT v27 n12 Dec 79* 1012-1018 (1G04)
GaAs FET integrated oscillator with BaO–TiO_2 ceramic resonator; high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
IMPATT diode oscillator at 75 GHz; high-stability low-noise oscillator using injection locking and AFC with crystal oscillator as reference; *Okamoto, Hiroshi*; *T-MTT v26 n2 Feb 78* 136 (1G06)
IMPATT oscillator at 75 GHz; highly stable low-noise oscillator using parametric injection locking and AFC; *Okamoto, Hiroshi*; *T-MTT v26 n8 Aug 78* 627-628 (2B01)
IMPATT oscillators; high-power 50-GHz double-drift-region oscillators with improved bias circuits for eliminating low-frequency instabilities; *Hirachi, Yasutake*; *T-MTT v24 n11 Nov 76* 731-737 (1D09)
microstrip Gunn oscillator at 5.2 GHz; stabilized using microstrip discriminator and integrated feedback loop; *Glance, B.*; *T-MTT v24 n10 Oct 76* 648-650 (1B06)
microwave oscillators stabilized by transmission cavity; matching; *Schünemann, Klaus*; *T-MTT v26 n3 Mar 78* 147-155 (1A13)
millimeter-wave; generating signals of high spectral purity; *Castro, Alfredo A.*; *T-MTT v24 n11 Nov 76* 780-786 (2A13)
transferred-electron device voltage-controlled oscillators; drift after tuning; *Johnson, Kenneth M.*; *T-MTT v24 n10 Oct 76* 650-656 (1B08)

Oscillators; cf. Acoustic surface-wave oscillators; FM oscillators; Injection-locked oscillators; Josephson device oscillators; Locked oscillators; Microwave oscillators; Millimeter-wave oscillators; Nonlinear oscillators; Phase-locked oscillators; Submillimeter-wave oscillators; UHF oscillators; Voltage-controlled oscillators

Oscillographs
microwave; use of traveling-wave electron deflection system; *Honey, Richard C.*; *T-MTT v2 n2 Jul 54* 2-9

P

Packaging; cf. Semiconductor device packaging

PAM
direct and indirect, by a high-efficiency microwave frequency multiplier with varactor diodes; comparison of methods; *Marković, Aleksandar M.*; *T-MTT v18 n8 Aug 70* 504-506

Parallel-plate waveguides
coupling between two collinear guides; moment method solution; *Elmoazzen, Y. E.*; *T-MTT v23 n11 Nov 75* 871-876 (1B07)
dielectric-loaded parallel plane waveguide; analysis of wave propagation; *Cohn, Marvin*; *T-MTT v7 n2 Apr 59* 202-208
guided waves in a class of stripline and other parallel-plate structures; *Eaves, R. E., Jr.*; *T-MTT v18 n1 Jan 70* 66-68
infinite array with thick walls; radiation; *Lee, Shung Wu*; *T-MTT v15 n6 Jun 67* 364-371
microminiaturized, planar transmission lines for integrated circuits; analytical approach; *Guckel, Henry*; *T-MTT v15 n8 Aug 67* 468-476
multistub coaxial line tuner whose geometry is basically that of a parallel plate transmission line; *Little, W. E.*; *T-MTT v12 n5 Sep 64* 570-571
normalized self and mutual capacitances of periodic, circular, cylindrical rods between parallel ground plates; application to filter structure; *Vadopalas, P.*; *T-MTT v13 n2 Mar 65* 254-255
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure; *Cristal, Edward G.*; *T-MTT v12 n4 Jul 64* 428-439
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure. *Cristal, E. G., Correction*; *T-MTT v13 n1 Jan 65* 141
parallel plate loaded with a ferroelectric slab to form UHF–VHF phase shifter; *Cohn, Marvin*; *T-MTT v10 n6 Nov 62* 536-548
propagation in arbitrarily magnetized ferrites between two conducting parallel plates; *Unz, Hillel*; *T-MTT v11 n3 May 63* 204-210
radial guide with annular slots on conducting walls or annular metallic scatterers inside guide; internal field solution; *Azarbar, Bahman*; *T-MTT v27 n11 Nov 79* 883-890 (1A13)
radiation properties of parallel-plane waveguide in transversely magnetized, homogeneous plasma; *Johansen, Elmer L.*; *T-MTT v13 n1 Jan 65* 77-83
scattering of a shielded surface wave by a wall-impedance discontinuity; *Arora, R. K.*; *T-MTT v18 n10 Oct 70* 734-736
solution for the propagation constants of a quasi-TEM mode in ferrite filled parallel plates; *Brodwin, Morris E.*; *T-MTT v12 n5 Sep 64* 496-503
symmetrical four-port junction and specially truncated bends; application of the solutions of certain boundary value problems; *Campbell, James J.*; *T-MTT v16 n3 Mar 68* 165-176
symmetrically truncated right-angle corners; investigation as a function of the position of the truncation plane; *Campbell, James J.*; *T-MTT v16 n8 Aug 68* 517-529
TE excitation on dielectric-loaded parallel plane and trough waveguides; *Cohn, Marvin*; *T-MTT v8 n5 Sep 60* 545-552
TEM mode in a parallel plate waveguide filled with a gyrotropic dielectric; *Seshadri, S. R.*; *T-MTT v11 n5 Sep 63* 436-437
terminated in flange plane; aperture admittance; *Howard, A. Q., Jr.*; *T-MTT v27 n3 Mar 79* 285 (1F01)
transmission line properties of parallel wide strips by a conformal mapping approximation; *Wheeler, Harold A.*; *T-MTT v12 n3 May 64* 280-289

Paramagnetic resonance
microwave electron resonance in magnetic fields; investigation with the aid of parametric spectroscope; *Mackey, R. C.*; *T-MTT v1 n2 Nov 53* 3-10

Parametric amplifiers
18-GHz, single-tuned, low-noise with large gain bandwidth product; *Kinoshita, Y.*; *T-MTT v18 n7 Jul 70* 409-410
18-GHz broadband low-noise, using a single-packaged varactor diode with GaAs diffused junction; *Kinoshita, Yasuaki*; *T-MTT v18 n12 Dec 70* 1114-1119
analysis of progressive disturbance on guided electromagnetic wave; *Simon, Jean-Claude*; *T-MTT v8 n1 Jan 60* 18-29
analysis of four frequency nonlinear reactance circuits; *Adams, David K.*; *T-MTT v8 n3 May 60* 274-283
application of barium titanate compositions to parametric amplification; *Das, S. N.*; *T-MTT v13 n2 Mar 65* 245-247
application of parametric devices to lossless phase shifters; *Robertson, W. J.*; *T-MTT v10 n5 Sep 62* 394
balanced micropill-diode; determination of bandwidth; *Aitchison, C. S.*; *T-MTT v16 n1 Jan 68* 46-47
breadboard model of a UHF varactor diode backward wave parametric amplifier; *Okwit, Seymour*; *T-MTT v10 n6 Nov 62* 558-563
broadband design for lower *K*-band; computer-aided optimization; *Branner, G. R.*; *T-MTT v20 n2 Feb 72* 176-178 (2D10)
broadband matching by using R. M. Fano's method; *Porra, V.*; *T-MTT v16 n10 Oct 68* 880-882
broadbanding cavity-type nondegenerate parametric amplifiers; *Johnson, Kenneth M.*; *T-MTT v9 n2 Mar 61* 187-194
computer-aided design of single-tuned amplifiers; voltage gain–bandwidth product performance index; *Maeda, Minoru*; *T-MTT v19 n12 Dec 71* 916-921 (1C02)
design aspects of wideband up-converters and nondegenerate parametric amplifiers; *Getsinger, W. J.*; *T-MTT v12 n1 Jan 64* 77-87
design of a balanced type parametric amplifier using resonating diode and series-connected diode loop; *Hayasi, Syuiti*; *T-MTT v10 n3 May 62* 185-190

Parametric amplifiers, *cont.*
design of a nondegenerate traveling-wave parametric amplifier; *Grabowski, Kenneth P.*; *T-MTT v10 n2 Mar 62* 103-107
design of a wide-band parametric amplifier operated with a circulator and an initially series tuned varactor; *Henoch, Bengt T.*; *T-MTT v11 n1 Jan 63* 62-72
design of periodically loaded traveling wave parametric amplifier using variable reactance diodes; *Honey, Richard C.*; *T-MTT v8 n3 May 60* 351-361
discussion of parametric amplification; *Uzunoglu, Vasil*; *T-MTT v11 n3 May 63* 211
experimental verification of phase relationships in parametric amplifiers; *Matthei, Wesley G.*; *T-MTT v12 n3 May 64* 365-367
extension of mode theory of the lossless periodically distributed amplifier to the lossy case; *Kurokawa, Kaneyuki*; *T-MTT v8 n1 Jan 60* 10-17
gallium arsenide point contact varactors for parametric amplifiers; *Sharpless, W. M.*; *T-MTT v9 n1 Jan 61* 6-10
harmonic generation and parametric amplification by multiple quantum effects; *Pantell, Richard H.*; *T-MTT v11 n5 Sep 63* 317-324
high input signal levels; stabilization of gain vs. frequency characteristics; *Brenner, Helmut E.*; *T-MTT v15 n5 May 67* 290-294
hybrid-integrated amplifier fabricated in microstrip transmission-line configuration; 1.8-GHz operation; *Bura, P.*; *T-MTT v16 n7 Jul 68* 424-428
in-line signal circuit for microwave and millimeter-wave paramps; *Egami, Shunichiro*; *T-MTT v23 n3 Mar 75* 282-287 (1B02)
input conductance of four frequency parametric up-converter; *Korpel, Adrianus*; *T-MTT v13 n1 Jan 65* 96-106
integrated *S*-band modules with self-contained solid-state pump source; *Okean, Herman C.*; *T-MTT v19 n5 May 71* 491-493 (2C05)
interdependence of gain and idler conversion loss; *Singh, D. N.*; *T-MTT v25 n7 Jul 77* 621-622 (1E01)
intermodulation distortion prediction in varactor upconverters; *Grayzel, A. I.*; *T-MTT v15 n3 Mar 67* 183-184
intermodulation distortion prediction in varactor upconverters; *Perlow, Stewart M.*; *T-MTT v13 n6 Nov 65* 820-827
K-band cryogenically cooled wideband nondegenerate; use in millimeter-wave satellite-communication earth-terminal installations; *Takahashi, S.*; *T-MTT v18 n12 Dec 70* 1176-1178
large-signal analysis of a harmonic generator using a semiconductor diode; *Johnson, Kenneth M.*; *T-MTT v8 n5 Sep 60* 525-532
limitations on amplifier noise performance; *Weglein, Rolf D.*; *T-MTT v8 n5 Sep 60* 538-544
liquid-helium cooled 4-GHz broadband low-noise type; *Josenhans, J. G.*; *T-MTT v16 n9 Sep 68* 791-793
lossless periodically distributed; mode theory; *Kurokawa, Kaneyuki*; *T-MTT v7 n3 Jul 59* 360-365
low-noise room-temperature 12-GHz amplifier using varactor diodes; 26-dB gain, 660-MHz bandwidth; *Lacey, S. D.*; *T-MT v22 n12 Dec 74* 1329-1331 (5D07)
low-noise *X*-band parametric amplifier using silicon mesa diode; *Weglein, Rolf D.*; *T-MTT v9 n1 Jan 61* 39-43
magnetoelastic waves in YIG rods at room temperature; parametric amplification; *Lacklison, D. E.*; *T-MTT v16 n11 Nov 68* 951-952
Manley–Rowe relations; generalized to include power flow in field produced in the presence of lossless, nonlinear media; *Haus, Hermann A.*; *T-MTT v6 n3 Jul 58* 317-324
maximally flat bandwidth of a nondegenerate parametric amplifier with a double tuned signal circuit and a single tuned idler circuit; *Connors, W. P.*; *T-MTT v13 n2 Mar 65* 251-252
maximum bandwidth performance of a nondegenerate parametric amplifier with a single-tuned idler circuit; *De Jager, Jan T.*; *T-MTT v12 n4 Jul 64* 459-467
millimeter-wave amplifiers; 20-K-cooled degenerate parametric amplifier for 46 GHz; *Edrich, Jochen*; *T-MTT v22 n5 May 74* 581-583 (2C12)
multiple-idler arrangement; input resistance and noise performance; *Ernst, Robert L.*; *T-MTT v15 n1 Jan 67* 9-22
noise figure optimization; effect of frequency dependence of apparent varactor resistance; *Inal, Kubilay*; *T-MTT v19 n3 Mar 71* 333-334 (2C07)
nondegenerate amplifier with double-tuned signal circuit and single-tuned idler circuit; design theory; *Egami, Shunichiro*; *T-MTT v22 n2 Feb 74* 119-125 (1C13)
nondegenerate, *C*-band; group delay characteristics; *Chakraborty, D.*; *T-MTT v17 n9 Sep 69* 720-722
optimum design of wide-band parametric amplifiers and up-converters; *Matthaei, George L.*; *T-MTT v9 n1 Jan 61* 23-38
parametric amplification of elastic waves in YIG; *Sparks, R. A.*; *T-MTT v13 n6 Nov 65* 879-880
parametric amplifier noise analysis; *Vice, David G.*; *T-MTT v13 n2 Mar 65* 162-167
parametron preamplifier; application to the *X*-band superheterodyne ESR spectrometer; *Takao, Iwao*; *T-MTT v17 n2 Feb 69* 107-113
positive resistance upconverter for ultra-low-noise amplification; analysis; *Sard, Eugene*; *T-MTT v14 n12 Dec 66* 608-618
proposed parametric amplifier utilizing ferroelectrics; *Aoki, Yoshimasa*; *T-MTT v8 n4 Jul 60* 465-466
representation of parametric amplifier varactor diodes; *Brady, M. M.*; *T-MTT v13 n1 Jan 65* 133-135
review of microwave work in Britain in 1960; *Karbowiak, A. E.*; *T-MTT v9 n5 Sep 61* 374-384
S-band integrated type, having flat gain and linear phase response; *Okean, H. C.*; *T-MTT v16 n12 Dec 68* 1057-1059
S-band wideband degenerate parametric amplifier; *Henoch, Bengt T.*; *T-MTT v11 n5 Sep 63* 449
series-connected traveling-wave parametric amplifier; *Lee, Tuck Hop*; *T-MTT v9 n6 Nov 61* 578-579
simple diode design for use at *S*, *C*, and *X* band; *Aitchison, Colin S.*; *T-MTT v15 n1 Jan 67* 22-31
solid-state microwave amplifiers; operation, performance, and bibliography; *Heffner, Hubert*; *T-MTT v7 n1 Jan 59* 83-91
summary of noise measurement techniques; *Haun, Robert D., Jr.*; *T-MTT v8 n4 Jul 60* 410-415
synthesis of broadband amplifiers; precise design values for realization of amplifiers incorporating practical varactor diode models; *Branner, George R.*; *T-MTT v21 n7 Jul 73* 437-444 (1B03)
temporal instabilities in travelling-wave parametric amplifiers; *Cassedy, E. S.*; *T-MTT v10 n1 Jan 62* 86-87
theoretical limitations of ferromagnetic types; *Damon, Richard W.*; *T-MTT v8 n1 Jan 60* 4-9
three-port time-varying reactance circuits; theory of unidirectionality and conjugate matching; *Fantom, A. E.*; *T-MTT v15 n5 May 67* 318-320
transmission-phase relations for four-frequency parametric devices; analysis; *Anderson, Dean B.*; *T-MTT v9 n6 Nov 61* 491-498
triple-tuned signal circuit and single-tuned idler circuit; *Agrawal, Lal Ji*; *T-MTT v24 n3 Mar 76* 160-161 (1C06)
tuning range of backward traveling-wave parametric amplifier; *Straus, T. M.*; *T-MTT v9 n1 Jan 61* 95
two-idler type compared with single-idler amplifier with a broadbanding resonator at its input; *Kerr, A. R.*; *T-MTT v18 n5 May 70* 277-278
two-idler type; study of bandwidth characteristics and derivation of approximate equivalent circuit; *Kerr, A. R.*; *T-MTT v17 n1 Jan 69* 39-40
unilateral, using two varactor diodes; stability improvement; *Brenner, Helmut E.*; *T-MTT v15 n5 May 67* 301-306
upconverter; equations for overdriven varactor upper sideband upconverter; *Grayzel, Alfred I.*; *T-MTT v15 n10 Oct 67* 561-565
upconverter using planar-diffused GaAs varactor diodes; *Lee, Tien Pei*; *T-MTT v16 n5 May 287-296*
wide-band degenerate parametric amplifiers; design and performance; *Gilden, Meyer*; *T-MTT v9 n6 Nov 61* 484-490
wideband tunable millimeter-wave, coolable to 20°K; possible use even for higher millimeter- or submillimeter-wave region; *Edrich, Jochen*; *T-MTT v18 n12 Dec 70* 1173-1175
X-band low-noise lightweight paramp for airborne environment; *Niehenke, E. C.*; *T-MTT v25 n12 Dec 77* 992-994 (1C02)
X-band parametric amplifier using closed cycle cooling; *Rucker, C. T.*; *T-MTT v13 n1 Jan 65* 123-124
YIG-tuned parametric amplifier; *Kotzebue, Kenneth L.*; *T-MTT v13 n6 Nov 65* 773-776
Parametric devices
capacitance definitions for parametric operation; *Heffner, H.*; *T-MTT v9 n1 Jan 61* 98-99
cavity-type parametric circuit as a phase-distortionless limiter; *Olson, Frank A.*; *T-MTT v9 n2 Mar 61* 153-157
equations and design curves for microwave frequency converters; *Perlman, Barry S.*; *T-MTT v13 n2 Mar 65* 150-161
four-frequency parametric up-converters; *Luksch, James A.*; *T-MTT v9 n1 Jan 61* 44-52
frequency converter using varactor; *S*-band to *Ku*-band integrated converter; *Bura, P.*; *T-MTT v21 n3 Mar 73* 136-137 (1C06)
frequency converters; lower sideband up-converters; effect of upper sideband impedance; *Davis, W. Alan*; *T-MTT v21 n6 Jun 73* 386-392 (1C08)
frequency divider using parametric diodes and an ammonia maser controlled signal generator; *Stitch, Malcolm L.*; *T-MTT v8 n2 Mar 60* 218-221
high-capacitance parametric diode for use at low frequencies; *Aitchison, R. E.*; *T-MTT v10 n1 Jan 62* 91
parametric devices and masers; annotated bibliography; *Mount, Ellis*; *T-MTT v8 n2 Mar 60* 222-243
X-band traveling-wave maser in double ring ladder line; *Haddad, George I.*; *T-MTT v10 n1 Jan 62* 3-8
Parametric devices; cf. Acoustic bulk-wave parametric devices; Acoustic surface-wave parametric devices
Parametric oscillators
discussion of parametric amplification; *Uzunoglu, Vasil*; *T-MTT v11 n3 May 63* 211
experimental verification of phase relationships in parametric amplifiers; *Matthei, Wesley G.*; *T-MTT v12 n3 May 64* 365-367
IMPATT diode networks; subharmonic oscillations in periodically driven networks, threshold conditions; *Peterson, Dean F.*; *T-MTT v22 n8 Aug 74* 784-790 (1C02)
large-signal analysis of a harmonic generator using a semiconductor diode; *Johnson, Kenneth M.*; *T-MTT v8 n5 Sep 60* 525-532
millimeter-wave IMPATT oscillators; cavity stabilization and electronic tuning by parametric interaction; *Okamoto, Hiroshi*; *T-MTT v26 n6 Jun 78* 420-424 (1C14)
submillimeter-wave Josephson junction oscillators; parametric amplification at 1.6 mm; *Levinsen, M. T.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
three-port time-varying reactance circuits; theory of unidirectionality and conjugate matching; *Fantom, A. E.*; *T-MTT v15 n5 May 67* 318-320
Partial differential equations
finite-difference methods for potential problems with boundary at infinity; *Sandy, F.*; *T-MTT v19 n5 May 71* 484-486 (2B10)
variational techniques; formulation of Dirichlet condition as natural boundary condition; *Hazel, Terence George*; *T-MTT v20 n6 Jun 72* 385-390 (1E03)
Partial differential equations; cf. Helmholtz equation; Laplace equation
PCM communication
Gunn devices for multiplexing and demultiplexing in Gb/s range; *Mause, Klaus*; *T-MTT v24 n12 Dec 76* 926-929 (1B14)
step-recovery diode amplifiers for regenerating Gb/s PCM-type signals; *Barabas, Udo*; *T-MTT v24 n12 Dec 76* 929-935 (1C03)
Periodic arrays
electromagnetic transmission through circular hole arrays in flat metallic plates; *Otoshi, Tom Y.*; *T-MTT v20 n3 Mar 72* 235-236 (1E01)
periodic leaky waveguides for helix and solid metal waveguides carrying a circular TE_{01} mode; propagation characteristics; *Mikoshiba, Koichi*; *T-MTT v17 n1 Jan 69* 15-19
plane waves on periodic structures and their application to surface wave antennas; *Shefer, Joshua*; *T-MTT v10 n6 Nov 62* 585-592
Periodic arrays; cf. Yagi–Uda arrays
Periodic media; cf. Nonhomogeneous media; Optical propagation, periodic media
Periodic structures
application of perturbation theory to the calculation of ω–β characteristics for periodic structures; *Sirkis, Murray D.*; *T-MTT v8 n2 Mar 60* 251-252
axially symmetric periodic waveguide; approximate wave equation; *James, C. R.*; *T-MTT v14 n9 Sep 66* 428-430
circular waveguide with sinusoidally perturbed walls; TM mode propagation; *Asfar, Omar Rafik*; *T-MTT v23 n9 Sep 75* 728-734 (1A10)
dielectric-filled; experimental determination of wavelength; *Weissberg, Efraim*; *T-MTT v7 n4 Oct 59* 480-481
dielectric-loaded waveguide periodically loaded with dielectric disks; attenuation

and phase-shift coefficients; *Minakovic, B.*; *T-MTT v21 n8 Aug 73* 568 (2D02)
dispersive propagation in periodic loaded lines; *Harvey, A. F.*; *T-MTT v8 n1 Jan 60* 30-61
examination of forbidden regions of open periodic structures and application to sharp cutoff absorptive filters; *Birdsall, Charles K.*; *T-MTT v12 n2 Mar 64* 197-202
ferrite phase shifters; periodic loading for low-cost remanence phase shifters; *Spaulding, William G.*; *T-MTT v19 n12 Dec 71* 922-928 (1D06)
general proof of Floquet's theorem; *Gans, Michael J.*; *T-MTT v13 n3 May 65* 384-385
group and energy velocity in a periodically loaded, circular waveguide; *Walker, George B.*; *T-MTT v10 n1 Jan 62* 30-33
integrated optics components; coupled-mode analysis; *Chang, William S. C.*; *T-MTT v21 n12 Dec 73* 775-785 (1D08)
loaded transmission lines; use of non-Euclidean geometry in measurements of impedance; *Kyhl, R. L.*; *T-MTT v4 n2 Apr 56* 111-115
lossless, slow-wave; two examples of 'confluence'; *McDiarmid, Don R.*; *T-MTT v16 n1 Jan 68* 2-6
measuring the ω-β diagram of periodic structures; *McDuff, Odis P.*; *T-MTT v10 n4 Jul 62* 295-296
mode suppressors; solution of finite length septum problem; *Franklin, Sidney B.*; *T-MTT v15 n4 Apr 67* 240-249
nonresonant periodic structures of conducting cylinders used as an open surface-wave transmission line; *Shefer, Joshua*; *T-MTT v11 n1 Jan 63* 55-61
normalized self and mutual capacitances of periodic, circular, cylindrical rods between parallel ground plates; application to filter structure; *Vadopalas, P.*; *T-MTT v13 n2 Mar 65* 254-255
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure; *Cristal, Edward G.*; *T-MTT v12 n4 Jul 64* 428-439
normalized self and mutual capacitances of periodic, circular cylindrical rods between parallel ground plates; application to filter structure. *Cristal, E. G., Correction*; *T-MTT v13 n1 Jan 65* 141
phase shift by periodic loading of waveguide and its application to broadband circular polarization; *Simmons, Alan J.*; *T-MTT v3 n6 Dec 55* 18-21
plane waves on periodic structures and their application to surface wave antennas; *Shefer, Joshua*; *T-MTT v10 n6 Nov 62* 585-592
rectangular waveguide with sinusoidally varying width; propagation characteristics; *Mallick, Amiya Kumar*; *T-MTT v26 n4 Apr 78* 243-249 (1B07)
shielded ring lines; dispersion relations and attenuation of fundamental dipolar mode; *Fray, Claude*; *T-MTT v27 n4 Apr 79* 334-340 (1D02)
surface waveguide consisting of equally spaced metallic rings; open-ring line; *Fray, Claude*; *T-MTT v26 n11 Nov 78* 886-892 (1D02)
thin-iris loaded periodic waveguides; *Rosenberg, David*; *T-MTT v14 n3 Mar 66* 145-153
trough waveguide; modification of center fin in a periodic fashion; *Oliner, Arthur A.*; *T-MTT v7 n1 Jan 59* 134-142
variational approach to mode coupling in periodic cold structures; *Goblick, T. J., Jr.*; *T-MTT v8 n5 Sep 60* 500-509
waveguide consisting of equally spaced perfectly conducting rings surrounded by conducting pipe; hybrid mode propagation; *Garault, Yves*; *T-MTT v22 n2 Feb 74* 92-99 (1A14)

Periodic structures; cf. Yagi–Uda structures

Permalloy films
microwave transmission and reflection properties; conductivity; *Havemann, R. H.*; *T-MTT v19 n1 Jan 71* 113-116 (3B02)

Permeability measurement
complex permeability; measurement at cm and mm wavelengths by optical methods; *Talpey, T. E.*; *T-MTT v2 n3 Sep 54* 1-12
computer-aided time-domain techniques for broadband microwave measurements; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
computer-aided time-domain techniques for broadband microwave measurements. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
ferrites; by two partially filled cavity-resonator techniques; *Sinha, J. K.*; *T-MTT v15 n9 Sep 67* 523-525
line width and gyromagnetic ratio of ferrite materials; *Bady, I.*; *T-MTT v8 n3 May 60* 376-377
microwave insulators; analysis and evaluation of measuring method; *Courtney, William E.*; *T-MTT v18 n8 Aug 70* 476-485
size effect in the measurement of microwave permeability of ferrites; *Maher, B.*; *T-MTT v9 n1 Jan 61* 96

Permittivity; cf. Dielectric constant

Perturbation methods
circular waveguide with sinusoidally perturbed walls; TM mode propagation; *Asfar, Omar Rafik*; *T-MTT v23 n9 Sep 75* 728-734 (1A10)
elliptical waveguides; attenuation factor for TE and TM modes; *Kretzschmar, Jan G.*; *T-MTT v20 n4 Apr 72* 280-284 (1E02)
dielectric waveguides whose index distributions depart from well-known profiles; *Hashimoto, Masahiro*; *T-MTT v24 n9 Sep 76* 559-566 (1B01)
dielectric waveguides with periodic boundary perturbations; *E*-type modes for hollow cylindrical guides; *Topuz, Ercan*; *T-MTT v24 n11 Nov 76* 872-875 (3B06)
elliptical waveguides; attenuation factor for TE and TM modes; *Falciasecca, G.*; *T-MTT v21 n3 Mar 73* 154 (1D12)
Fabry–Perot spherical resonators; perturbation theory generalized to arbitrary (p,l) modes; *Erickson, Clifford W.*; *T-MTT v25 n11 Nov 77* 958 (2B01)
magnetostatic surface wave in two ferrite slabs of different magnetic saturation with weak coupling between them; *Tsutsumi, Makoto*; *T-MTT v24 n9 Sep 76* 591-597 (1D05)
renormalization to obtain nondivergent second-order perturbation term; application to inhomogeneously-loaded waveguide; *Hidaka, Takehiko*; *T-MTT v20 n2 Feb 72* 180-181 (2E02)
waveguides; expansion of axial field components in terms of normal modes; *Vassallo, C.*; *T-MTT v23 n2 Feb 75* 264-265 (1F12)

Perturbation methods; cf. Cavity perturbation methods

PGMTT National Symposium; cf. Conferences

Phase comparators
automatic phasing system for Stanford linear accelerator; *Williams, Colin B.*; *T-MTT v13 n6 Nov 65* 806-814
passive phase comparison between signals of the same frequency consisting of two hybrids and an X-Y indicator; *Kaiser, Julius A., Jr.*; *T-MTT v10 n6 Nov 62* 548-550

Phase-difference networks
three-port network with constant phase difference properties; *Geddry, Bernard L.*; *T-MTT v11 n1 Jan 63* 92-93

Phase-locked loops
microwave frequency synthesizers with octave bandwidth and improved spectral purity; VCXO output translated to *X*-band using phase-locked loop; *Tipon, Paul G.*; *T-MTT v22 n12 Dec 74* 1246-1254 (4D03)
phase-locked loop model of driven oscillator with FM feedback; *Couch, Leon W.*; *T-MTT v19 n4 Apr 71* 357-366 (1C01)

Phase-locked oscillators
amplitude instability; hysteresis effects caused by amplitude-dependent susceptance; *Hansson, Bertil*; *T-MTT v21 n11 Nov 73* 739-741 (2D09)
FM noise suppression of an injection phased-locked oscillator; *Hines, M. E.*; *T-MTT v16 n9 Sep 68* 738-742
injection IMPATT oscillator; measured FM noise spectra; *Perichon, Robert*; *T-MTT v18 n11 Nov 70* 988-989
injection; use as input microwave-limiting amplifier for a microwave discriminator used for noise measurement; *Ashley, J. Robert*; *T-MTT v18 n11 Nov 70* 1001-1002
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)
locking region of injection-locked oscillator with general tuning circuit; *Gustafsson, Lennart*; *T-MTT v21 n5 May 73* 353-355 (1E07)
microwave frequency synthesizer using Si bipolar transistor and $Ba_2Ti_9O_{20}$ dielectric resonator; FM noise less than 0.0003 Hz in any 1 Hz band more than 1000 Hz from 1 GHz carrier; *Alley, Gary D.*; *T-MTT v27 n12 Dec 79* 969-974 (1D03)
millimeter-wave; generating signals of high spectral purity; *Castro, Alfredo A.*; *T-MTT v24 n11 Nov 76* 780-786 (2A13)
power amplification of microwave FM signals; *Hines, Marion E.*; *T-MTT v24 n7 Jul 76* 393-404 (1A03)
subharmonic injection locking; basic properties; *Gustafsson, Lennart*; *T-MTT v21 n1 Jan 73* 28-34 (1D06)
subharmonically injection phase-locked Gunn oscillator; experiments; *Oltman, H. G.*; *T-MTT v17 n9 Sep 69* 728-729
YIG-tuned Gunn oscillators; wideband phase locking and phase shifting using feedback control; *X*-band oscillators; *Rubin, David*; *T-MTT v20 n4 Apr 72* 286-289 (1E08)

Phase-locked oscillators; cf. Injection-locked oscillators; Locked oscillators

Phase measurement
automated microwave measurement using RF substitution techniques; homodyne detection method; *Schafer, George E.*; *T-MTT v21 n6 Jun 73* 432 (2C09)
bridge circuits for measuring phase at UHF and microwave frequencies; *Dyson, John D.*; *T-MTT v14 n9 Sep 66* 410-423
dielectric image lines; electric probe measurements in 26–90 GHz range; *Solbach, Klaus*; *T-MTT v26 n10 Oct 78* 755-758 (1D11)
flow graphs to evaluate mistermination errors in loss and phase measurements; *Leed, Daniel*; *T-MTT v9 n5 Sep 61* 454
measuring phase modulation or rapid phase changes system; *Ernst, William P.*; *T-MTT v13 n1 Jan 65* 70-76
microwave transmission measuring system; wideband frequency range (8.7–9.6 GHz). *Linker, J. B., Jr.*; *T-MTT v6 n4 Oct 58* 415-418
millimeter-wave fields in free space; vibrating dipole method; *King, R. J.*; *T-MTT v24 n1 Jan 76* 48-50 (1D08)
millimeter-wave signals in free space; varying reference phase; *Cleveland, Frederick H.*; *T-MTT v19 n4 Apr 71* 406-410 (2C02)
mutual coupling of identical coupled antennas; use of microwave phase bridge technique; *Mailloux, R. J.*; *T-MTT v16 n2 Feb 68* 129-130
nonresonant perturbation technique; *Mallory, K. B.*; *T-MTT v14 n2 Feb 66* 99-100
phase measurement method for transmission-line networks; *Lacy, Peter*; *T-MTT v9 n6 Nov 61* 568-569
phase shifter calibration; absolute calibration of periodic phase shifter without use of standard phase shifter; *Somlo, P. I.*; *T-MTT v20 n8 Aug 72* 532-537 (1E06)
phase velocity of dielectric sheet supported strip transmission lines at *L*-band; *Cooper, H. Warren*; *T-MTT v3 n2 Mar 55* 87-92
reflection coefficient phase error when measured through lossless two-port network; limits of error; *Otoshi, Tom Y.*; *T-MTT v21 n3 Mar 73* 151-153 (1D09)

Phase modulation; cf. PM

Phase-shift keying; cf. PSK

Phase shifters
broadband diode phase shifters; design equations for switched line, reflection, loaded line, and phase shifter using lumped-element high-pass and low-pass circuits; *Garver, Robert V.*; *T-MTT v20 n5 May 72* 314-323 (1C09)
broadband tapered-line phase shift networks; *Tresselt, C. P.*; *T-MTT v16 n1 Jan 68* 51-52
calibration of periodic phase shifter without use of standard phase shifter; *Somlo, P. I.*; *T-MTT v20 n8 Aug 72* 532-537 (1E06)
continuously variable dielectric phase shifter; variation of dielectric constant; *Joines, William T.*; *T-MTT v19 n8 Aug 71* 729-732 (2B02)
design of two servo-driven phase shifters; *Augustine, Carl F.*; *T-MTT v8 n4 Jul 60* 398-402
differential microwave phase shifter; *Beatty, Robert W.*; *T-MTT v12 n2 Mar 64* 250-251
digital diode-loaded-line phase shifters; 75 separation between loading susceptances; *Yahara, T.*; *T-MTT v20 n10 Oct 72* 703-704 (2C03)
frequency selective phase shifters using resonant cavities; *McDonald, N. A.*; *T-MTT v25 n10 Oct 77* 855-856 (1D09)
high-accuracy microwave phase standard for use in primary calibration laboratories; *James, Allan V.*; *T-MTT v16 n11 Nov 68* 944-949
hybrid thin-film, digital loaded-line phase shifters; design and fabrication; *Opp, Francis L.*; *T-MTT v16 n7 Jul 68* 462-468
lossless electronic phase shifter using parametric devices; *Robertson, W. J.*; *T-MTT v10 n5 Sep 62* 394
magic-tee phase changer; analysis of errors due to nonlinearities; *Vaillancourt, Raymond M.*; *T-MTT v5 n3 Jul 57* 204-208
mechanical waveguide type; use of hybrid coupler and copper chopper; *Wong, J. Y.*; *T-MTT v9 n4 Jul 61* 364-365
microwave frequency translator using semiconductor diode switching; *Jaffe, Jerome S.*; *T-MTT v13 n3 May 65* 371-378

novel 3 terminal device having a single matched input and two outputs whose relative phase can be continuously varied; *Wilkinson, E. J.*; *T-MTT v10 n5 Sep 62* 390-391
periodic loading of waveguides by thin capacitive or inductive irises to produce phase delay or phase advance; *Simmons, Alan J.*; *T-MTT v3 n6 Dec 55* 18-21
rapid coaxial phase shifter for 150 watts; *Gerke, H.*; *T-MTT v12 n6 Nov 64* 620-621
selection criterion based on effective cost; *Long, Ronald W.*; *T-MTT v22 n6 Jun 74* 591-593 (1A05)
switched-line diode phase shifter with octave bandwidth, 2.5–5.0 GHz; *Coats, Robert P.*; *T-MTT v21 n7 Jul 73* 444-449 (1B10)
system to obtain phase shifting using harmonic mixing; *Rubin, Milton D.*; *T-MTT v10 n1 Jan 62* 92
theoretical analysis of dielectric loading of ferrite devices; *Soohoo, Ronald F.*; *T-MTT v9 n3 May 61* 220-224
theory and analysis of a ganged pair of line stretchers with error analysis; *Ellerbruch, Doyle A.*; *T-MTT v12 n4 Jul 64* 453-459
varactor phase shifter with optimized frequency response; continuous phase shifter; *Ulriksson, Bengt*; *T-MTT v27 n7 Jul 79* 650-654 (1B10)
wideband equal-ripple TEM directional couplers and fixed phase shifters; approximate synthesis technique; *Shelton, J. Paul*; *T-MTT v14 n10 Oct 66* 462-473

Phase shifters; cf. Diode phase shifters; Ferrite phase shifters; Microstrip phase shifters; Millimeter-wave phase shifters; Stripline phase shifters; Submillimeter-wave phase shifters; UHF phase shifters

Phased-array radar
tactical multifunction phased-array radar; phaser and driver design; *Landry, Norman R.*; *T-MTT v22 n6 Jun 74* 617-625 (1C03)
time-delay switching using stripline, three-port remanence circulator switch; *Betts, Foster*; *T-MTT v14 n12 Dec 66* 665-669

Phased arrays
antenna of lossless elements simulated in waveguide; program to compute the array-transmit impedance at the simulated scan angle; *Laughlin, Gordon J.*; *T-MTT v18 n9 Sep 70* 666-667
antenna simulated in waveguide; program using aperture impedance measurements to compute the array-transmit impedance at the simulated scan angle; *Laughlin, Gordon J.*; *T-MTT v18 n9 Sep 70* 667-669
microwave landing system ground antennas; *Cox, Richard M.*; *T-MTT v24 n12 Dec 76* 964-971 (1E10)
microwave power transmission; antenna design and safety considerations; *Dickinson, Richard M.*; *T-MTT v26 n5 May 78* 335-340 (1B03)
millimeter-wave antennas using electrically controllable liquid artificial dielectrics; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)
phase equalization problem is in a phased-array transmitter; *Rambo, S. Ivan*; *T-MTT v13 n2 Mar 65* 167-171
power module using microwave integrated circuits; 10-W *S*-band module; *Vaccaro, Frank E.*; *T-MTT v19 n7 Jul 71* 609-616 (1E07)
waveguide; modified residue-calculus technique for solving a class of boundary value problems; *VanBlaricum, Glenn F., Jr.*; *T-MTT v17 n6 Jun 69* 310-319
X-band, circularly-polarized, nonreciprocal, ferrite phase shifter; use in phased array antennas; *Mohr, Max C.*; *T-MTT v14 n12 Dec 66* 672-683

Phased arrays; cf. Waveguide phased arrays

Photoconducting devices
far-infrared detector using MOSFET; voltage-tunable detector; *Goldberg, H. S.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)
far-infrared Si photoconductive detectors; long-wavelength limit of 400 μm; *Norton, P.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
submillimeter-wave detectors; dc-biased and microwave-biased GaAs detectors; *Crowley, J. D.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)

Photometers
infrared photometer for 20-μm atmospheric window; *Wijnbergen, J. J.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

Piezoelectric-resonator filters; cf. Crystal filters

Piezoelectric semiconductor devices
acoustic delay lines; properties and capabilities; *Hickernell, Fred S.*; *T-MTT v17 n11 Nov 69* 957-963
power flow and energy storage; *Berger, Henry*; *T-MTT v18 n2 Feb 70* 105-111

Piezoelectric surface-wave propagation
composite layered structure of piezoelectric medium and magnetoelastic medium separated by conducting plate; *Bhattacharyya, Tushar*; *T-MTT v24 n4 Apr 76* 226-230 (1E08)

Piezoelectric surface waves
propagating in a layered medium consisting of a CdS film on a fused quartz substrate; solutions; *Schmidt, Ronald V.*; *T-MTT v17 n11 Nov 69* 920-926

Piezoelectric surface waves; cf. Acoustic surface waves

Piezoelectric transducers
crystal; excitation of a Rayleigh surface wave by scattering of bulk waves; *Bertoni, Henry L.*; *T-MTT v17 n11 Nov 69* 873-882
interdigital surface-wave transducers; in-line and crossed-field three-port circuit models; *Smith, W. R.*; *T-MTT v19 n4 Apr 71* 416-417 (2C12)
microwave acoustic transducers; effect of top electrode thickness on the performance; *Larson, John D.*; *T-MTT v18 n9 Sep 70* 602-608

Piezoelectricity
reciprocity theorem for multiregions with piezoelectric media and surface impedance; *Kobayashi, Masanori*; *T-MTT v27 n4 Apr 79* 343-345 (1D11)

***p-i-n* diodes**
automated microwave measurements using p-i-n diode as variable-impedance termination; *Kosugi, Y.*; *T-MTT v20 n12 Dec 72* 852-855 (2B06)
cryogenically cooled *C*-band 8-diode switch matrix in stripline package for radio astronomy; *Behrens, George H., Jr.*; *T-MTT v26 n9 Sep 78* 629-635 (1A03)
diode in rectangular waveguide as millimeter-wave modulator; *Ronde, Frans C. de*; *T-MTT v8 n3 May 60* 325-327
diode switches operating at 7.75 GHz; *Assaly, Robert N.*; *T-MTT v14 n11 Nov* 553-563
diode switches; voltage-controlled switch using p-i-n diodes loop-coupled to a section of WR975 waveguide; *Jakes, William C., Jr.*; *T-MTT v14 n4 Apr 66* 189-200
directional coupler and two PIN junction diodes used in limiter; *Rodriguez, M. J.*; *T-MTT v10 n3 May 62* 219-220
frequency multiplication using p-i-n diode driven into avalanche breakdown; *Ntake, Pasteur L.*; *T-MTT v23 n6 Jun 75* 477-485 (1B05)
high-power limiting; design concepts; *Brown, Norman J.*; *T-MTT v15 n12 Dec 67* 732-742
microwave attenuators; current-controlled variable attenuator with small phase shift; 0.5 to 3 GHz; *Parris, W. J.*; *T-MTT v20 n9 Sep 72* 618-619 (2B05)
microwave switching; production of harmonics; *Mott, Harold*; *T-MTT v15 n3 Mar 67* 180-181
microwave variable attenuators and modulators using PIN diodes; *Hunton, James Keith*; *T-MTT v10 n4 Jul 62* 262-273
microwave and millimeter-wave switches; speed and power; *Garver, Robert V.*; *T-MTT v27 n5 May 79* 523-529 (2E08)
millimeter-wave modulator at 80.99 GHz, subnanosecond switching at 300 Mb/s; test set displaying transients in polar coordinates; *Bosch, Fridolin*; *T-MTT v26 n1 Jan 78* 24-27 (1B12)
p-i-n diode controlled microwave transmission phase shifter; *White, Joseph F.*; *T-MTT v13 n2 Mar 65* 233-242
phase shifter on microstrip; 4-bit phase shifter with low RF attenuation, fast switching time, and low switching power requirements; *Glance, Bernard*; *T-MTT v27 n1 Jan 79* 14-16 (1B02)
phase shifters; effect of diode parameters on performance of reflection-type phase shifters; *Wahi, Pradeep*; *T-MTT v24 n9 Sep 76* 619-621 (1F05)
phase shifters, hybrid-coupled; transmission-line matching networks. *Starski, J. Piotr, Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
phase shifters; diode characteristics; *White, Joseph F.*; *T-MTT v22 n6 Jun 74* 658-674 (1F02)
phase shifters; switched-line diode switches using resistive loading technique to avoid resonance problems; *Lynes, Guy D.*; *T-MTT v22 n6 Jun 74* 693-697 (2B05)
submillimeter-wave phase shifters; multilayer dielectric waveguide driven by p-i-n diode. *Buckman, A. B., Correction*; *T-MTT v26 n2 Feb 78* 127 (1F11)
switch circuit; microstrip SPDT power switch with frequency adjustable over octave range; *Toussaint, Hans-Norbert*; *T-MTT v19 n7 Jul 71* 657-659 (2D12)
switch in the UHF band; intermodulation product and switching noise amplitudes; *Sicotte, Raymond L.*; *T-MTT v18 n1 Jan 70* 48-50
variable microwave attenuator using p-i-n diodes and three-port hybrids; *Ekinge, Roland*; *T-MTT v18 n9 Sep 70* 661-662
waveguide switches; p-i-n switching window mounted in resonant iris; *Cottrell, Peter E.*; *T-MTT v21 n5 May 73* 358-359 (1E12)

***p-i-n* diodes; cf.** Step-recovery diodes

Pipelines
microwave communication system; *Maginnis, W. P.*; *T-MTT v2 n1 Apr 54* 1-8
microwave communication system for pipeline which runs from Texas to New York; *Rhodes, H. A.*; *T-MTT v2 n1 Apr 54* 89-92
microwave radio system; reliability problems; *Dyke, Ed*; *T-MTT v2 n1 Apr 54* 60-62

Planar arrays
microwave radiometry; active elements at subarray level for increasing resolution; *Levis, Curt A.*; *T-MTT v25 n4 Apr 77* 248-253 (1A10)

Planar circuits; cf. Microwave integrated circuits; Millimeter-wave integrated circuits

Planar waveguides; cf. Optical planar waveguides

Plasma confinement; cf. Tokamaks

Plasma devices
analogy between modulated electron beam in a plasma and transmission lines; *Freire, Gabriel F.*; *T-MTT v12 n3 May 64* 360-361
dipolar resonance of cylindrical arc discharges; *Battocletti, Joseph H.*; *T-MTT v11 n3 May 63* 193-203
equivalent circuits to two plasma resonance devices used as rejection and transmission filters; *Bryant, G. H.*; *T-MTT v12 n4 Jul 64* 469-470
gas-discharge tubes and waveguide mounts; as noise reference standards for *S*, *C*, and *X*-band in WR284, WR137, and WR90 waveguide; *Denson, Colin I.*; *T-MTT v16 n9 Sep 68* 655-663
low-noise plasma video detector; use with high CW carrier power and low modulation frequency; *McCain, Douglas C.*; *T-MTT v18 n1 Jan 70* 64-65
low pressue, hot cathode arc discharge applied to microwave switches; *Hill, Robert M.*; *T-MTT v8 n6 Nov 60* 628-633
microwave directional coupler consisting of a discharge to be used as the coupling element in the common narrow wall between two guides; *Willis, Jack*; *T-MTT v10 n5 Sep 62* 383-389
multipactor receiver protectors for airborne applications; 50-kW peak power and 12.5 percent bandwidth in *X*-band; *Carlisle, Thomas P.*; *T-MTT v26 n5 May 78* 345-347 (1B13)
plasma-column band-pass microwave filter; *Kaufman, Irving*; *T-MTT v10 n6 Nov 62* 431-439
plasma column irradiated by a microwave exhibits Tonks–Dattner resonances in its absorption pattern; *Willis, J.*; *T-MTT v10 n5 Sep 62* 395-396

Plasma diagnostics
anisotropic plasma; diagnostics with a microwave Fabry–Perot resonator; *Chaffin, R. J.*; *T-MTT v16 n10 Oct 68* 878-879
application of a fast microwave switch to high-peak-power plasma diagnostics; *Goldie, H.*; *T-MTT v12 n1 Jan 64* 143-144
application of a focused Fabry–Perot resonator to plasma diagnostics; *Primich, Robin I.*; *T-MTT v12 n1 Jan 64* 33-42
focused Fabry–Perot resonators in plasma diagnostics; *Lonngren, K. E.*; *T-MTT v12 n5 Sep 64* 548-549
microwave Fabry–Perot resonator; *Chaffin, Roger J.*; *T-MTT v16 n1 Jan 68* 37-45
submillimeter-wave lasers for plasma diagnostic applications; megawatt-level, 30-MHz linewidth at 496 μm in CH_3F; *Brown, Fielding*; *T-MTT v22 n12 Dec 74* 1112-1113 (2C09)
tokamak plasmas; 337-μm interferometer; *Veron, D.*; *T-MTT v22 n12 Dec 74* 1117 (1C14)
tokamak plasmas; 337-μm Mach–Zender interferometer; *Brossier, P.*; *T-MTT v22 n12 Dec 74* 1053-0056 (1F05)
tokamaks; emission from plasma near electron cyclotron frequency; *Costley, A. E.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)

Plasma generation
radiation characteristics for a magnetic line source in homogeneous electron plasmas; *Cook, K. R.*; *T-MTT v12 n6 Nov 64* 617-618

Plasma generation; cf. Microwave plasma generation

Plasma isolators
indium antimonide isolator; coaxial solid-state plasma in longitudinal magnetic field; 35 GHz; *McLeod, Bruce R.*; *T-MTT v19 n6 Jun 71* 510-516 (1B10)
isolator using solid-state plasma waveguide; *Toda, Minoru*; *T-MTT v13 n1 Jan 65* 126-127
millimeter-wave solid-state plasma isolators for use in reflection-beam system; 94-GHz performance; *Kanda, M.*; *T-MTT v23 n6 Jun 75* 506-508 (1D06)
Plasma-loaded waveguides
anisotropic media; vector variational formulation; *Konrad, A.*; *T-MTT v24 n9 Sep 76* 553-559 (1A09)
axially magnetized; variational expression for the propagation coefficients of the normal modes, formulated in terms of waveguide symmetry; *Champlin, Keith S.*; *T-MTT v17 n7 Jul 6?* 401
bidirectionality conditions for guides containing gyrotropic media; *McIsaac, Paul R.*; *T-MTT v24 n4 Apr 76* 223-226 (1E05)
boundary excitation of waveguides containing anisotropic media; *Van Bladel, J.*; *T-MTT v11 n5 Sep 63* 437-438
circular, magnetoplasma-filled waveguides; 'twist' modes; *Champlin, Keith S.*; *T-MTT v18 n9 Sep 70* 566-570
circular, solid-state plasma waveguide; microwave Faraday effect and propagation; *Kuno, H. J.*; *T-MTT v16 n10 Oct 68* 895
circular, solid-state plasma waveguide; microwave Faraday effect and propagation; *Kuno, Hiromu J.*; *T-MTT v15 n12 Dec 67* 661-668
cylindrical waveguide partially filled with anisotropic plasma; measurement of propagation constants of the quasi-TE_{11} modes; *Carlile, R. N.*; *T-MTT v14 n7 Jul 66* 350-351
electromagnetic potentials and field expansion for plasma radiation in waveguides; *Collin, Robert E.*; *T-MTT v13 n4 Jul 65* 413-420
guide filled with uniaxial anisotropic warm plasma; wave propagation and mode theory; *Tuan, Hang Sheng*; *T-MTT v17 n3 Mar 69* 134-137
gyroelectric and gyromagnetic media in rectangular waveguides; difference in modes; *Gabriel, G. J.*; *T-MTT v14 n6 Jun 66* 292-293
hybrid-frequency cutoffs in axially magnetized waveguide filled with plasma; *de Santis, Pietro*; *T-MTT v20 n3 Mar 72* 237-238 (1E03)
integral quotient in measurements of ambipolar diffused plasma with TE_{011} cavity; *Jääskeläinen, Paavo*; *T-MTT v12 n5 Sep 64* 552
isolator using solid-state plasma waveguide; *Toda, Minoru*; *T-MTT v13 n1 Jan 65* 126-127
longitudinally magnetized plasma guides; resonator technique for studying dispersion; *Likuski, R. K.*; *T-MTT v14 n1 Jan 66* 40-41
magnetoplasma-loaded; field distribution at room temperature; *Hirota, Ryogo*; *T-MTT v18 n4 Apr 70* 188-195
magnetoplasma-loaded; variational formulation using waveguide symmetry; *Vassallo, Charles*; *T-MTT v19 n3 Mar 71* 338-339 (2C12)
nonreciprocal microwave device; use of Faraday rotation in a solid-state plasma; *Kuno, H. J.*; *T-MTT v15 n1 Jan 67* 57-58
partially-filled cylindrical guide; dipolar modes, field and power density distributions; *Yip, Gar Lam*; *T-MTT v25 n1 Jan 77* 65-70 (1E11)
plasma discharge, used to couple microwave energy between two adjacent metal waveguides; *Steier, William H.*; *T-MTT v9 n6 Nov 61* 499-506
rectangular waveguide containing transversely magnetized semiconductor; perturbation analysis; *Gabriel, Garabet J.*; *T-MTT v14 n6 Jun 66* 258-264
TEM mode in a parallel plate waveguide filled with a gyrotropic dielectric; *Seshadri, S. R.*; *T-MTT v11 n5 Sep 63* 436-437
warm-plasma-filled rectangular waveguide with strong transverse magnetic field; characteristics of electromagnetic wave propagation; *Tuan, Hang Sheng*; *T-MTT v17 n3 Mar 69* 164-165
Plasma-loaded waveguides; cf. Magnetoplasma-loaded waveguides
Plasma waves
gyrotropic plasma; propagation in the direction of the external magnetostatic field; *Owyang, Gilbert H.*; *T-MTT v14 n3 Mar 66* 136-144
Plasmas
coherent excitation of plasma oscillations in solids; *Pines, David*; *T-MTT v9 n1 Jan 61* 89-92
electromagnetic potentials and field expansion for plasma radiation in waveguides; *Collin, Robert E.*; *T-MTT v13 n4 Jul 65* 413-420
gyrotropic media; reciprocity relationships; *Harrington, Roger F.*; *T-MTT v6 n3 Jul 58* 308-310
interaction of microwaves with gas-discharge plasmas; *Brown, Sanborn C.*; *T-MTT v7 n1 Jan 59* 69-72
magnetoplasma effects in solids; *Lax, Benjamin*; *T-MTT v9 n1 Jan 61* 83-89
microwave transmission through a plasma sheath; *Willis, J.*; *T-MTT v12 n5 Sep 64* 553-555
multiband cavity for high temperature plasma measurements; *Maloney, William T.*; *T-MTT v12 n6 Nov 64* 616-617
proposed experiment for eliciting multiple resonances from the ionosphere; *Hershberger, W. D.*; *T-MTT v10 n5 Sep 62* 396-397
radiation characteristics for a magnetic line source in homogeneous electron plasmas; *Cook, K. R.*; *T-MTT v12 n6 Nov 64* 617-618
radiation characteristics of a line source of magnetic current imbedded in a homogeneous electron plasma; *Seshadri, S. R.*; *T-MTT v11 n1 Jan 63* 39-50
radiation pattern caused by a noise excited thin slot; microwave region operation; *George, Nicholas*; *T-MTT v8 n5 Sep 60* 493-500
radiation properties of parallel-plane waveguide in transversely magnetized, homogeneous plasma; *Johansen, Elmer L.*; *T-MTT v13 n1 Jan 65* 77-83
submillimeter-wave laser radiation interaction with plasmas; high-power lasers; *Lax, B.*; *T-MTT v22 n12 Dec 74* 1049-1052 (1F01)
Plasmas; cf. Electromagnetic propagation, plasma media; Plasma diagnostics; Solid-state plasmas
propagation, plasma media; Plasma diagnostics; Solid-state plasmas
Plates
quarter-wave, broadband; construction using dielectric slabs in square waveguide; *Ayres, Wesley P.*; *T-MTT v5 n4 Oct 57* 258-261
Plotters
contour plotting routine for line printers; computer program written in FORTRAN IV; *Cermak, I. A.*; *T-MTT v17 n8 Aug 69* 652-653
PM
abbr. of Phase modulation
combination of two 180° varactor diode phase modulators in an admittance adding network to obtain 360° phase modulation; *Garver, Robert V.*; *T-MTT v17 n3 Mar 69* 137-147
ferrite serrodyne for microwave frequency translation of *X*-band signals; *O'Hara, Francis J.*; *T-MTT v7 n1 Jan 59* 32-37
measuring phase modulation or rapid phase changes system; *Ernst, William P.*; *T-MTT v13 n1 Jan 65* 70-76
nanosecond pulse-modulated microwave signals; spectrum analysis; *Welzenis, R. G. van*; 280-282
power amplification for FM and PM signals with synchronized IMPATT oscillators; *Isobe, Toyosaku*; *T-MTT v18 n11 Nov 70* 906-911
PM; cf. PSK
reflection-type modulators using varactor diodes; continuously variable 360 phase shift; *Henoch, Bengt T.*; *T-MTT v19 n1 Jan 71* 103-105 (2E11)
PM amplifiers
IMPATT diode amplifiers for 60-GHz; nonlinear and large-signal characteristics; *Kuno, H. J.*; *T-MTT v21 n11 Nov 73* 703-706 (1F01)
IMPATT diode amplifiers; nonlinear characteristics, large-signal effects, and transient response; *Kuno, H. J.*; *T-MTT v21 n11 Nov 73* 694-702 (1E04)
PM modulation/demodulation
serrodyne based on phase velocity modulation of magnetostatic modes in YIG; *Webb, Denis C.*; *T-MTT v15 n7 Jul 67* 421-427
Point-contact diodes
characterization of gallium-arsenide point-contact diodes; *Sharpless, W. M.*; *T-MTT v9 n1 Jan 61* 6-10
gallium arsenide point-contact diodes to generate phase-locked carrier pulses at microwave and millimeter frequencies; *Dietrich, A. F.*; *T-MTT v12 n3 May 64* 316-322
MBM diodes; optical and infrared amplification in point-contact diode with negative differential resistance region in *I–V* characteristic; *Drury, David M.*; *T-MTT v27 n6 Jun 79* 598-603 (1D02)
microwave switch consisting of a germanium, point-contact, diode placed across section of *X*-band waveguide; *Garver, Robert V.*; *T-MTT v6 n4 Oct 58* 378-383
millimeter-wave diodes for harmonic power generation; *Dickens, Lawrence E.*; *T-MTT v15 n1 Jan 67* 32-37
mixer consisting of nonlinear capacitance and conductance and ohmic spreading resistance; analysis; *Macpherson, Alan C.*; *T-MTT v5 n1 Jan 57* 43-51
noise in microwave diodes under RF and dc excitations; low-frequency noise spectra; *Lipkin, Y.*; *T-MTT v22 n8 Aug 74* 793-796 (1C11)
parallel-strip diode mount for video detection of millimeter waves; *Gerdine, M. A.*; *T-MTT v14 n1 Jan 66* 41-42
spreading resistance as a function of frequency; *Dickens, Lawrence E.*; *T-MTT v15 n2 Feb 67* 101-109
submillimeter-wave detectors; conversion loss measurement; *Sauter, E.*; *T-MTT v25 n6 Jun 77* 468-470 (1B02)
Poisson equation
Green's function for Poisson equation in a two-dielectric region; *dos Santos, Antonio F.*; *T-MTT v20 n11 Nov 72* 777 (2B08)
Polarizers
circular; design for waveguides and in window form operating over broad band of frequencies, using anisotropic dielectric; *Kirschbaum, Herbert S.*; *T-MTT v5 n3 Jul 57* 199-203
circular polarization of millimeter waves by total internal reflection; *Buizert, H.*; *T-MTT v12 n4 Jul 64* 477-478
circular polarizers of fixed bandwidth; *Pyle, John R.*; *T-MTT v12 n5 Sep 64* 557-559
circular polarizing transducers; broadbanding possibilities; *Margerum, D. L.*; *T-MTT v1 n2 Nov 53* 24-29
circularly polarized wave by use of two orthogonal dipoles drawn in parallel by a common transmission line; *Bolster, Morris F.*; *T-MTT v9 n5 Sep 61* 385-388
four-component polarization resolver; *Allen, P. J.*; *T-MTT v10 n3 May 62* 220
general two-plate polarizer; cross polarization; *Breithaupt, R. W.*; *T-MTT v15 n1 Jan 67* 55-57
nonreciprocal circular polarizer; converts linear polarization propagating in rectangular waveguide into circular polarization propagating in circular waveguide; *Reuss, Max L., Jr.*; *T-MTT v15 n1 Jan 67* 37-41
nonreciprocal circular polarizer; converts linear polarization propagating in rectangular waveguide into circular polarization propagating in circular waveguide; *Reuss, Max L., Jr.*; *T-MTT v16 n2 Feb 68* 136
transmission characteristics of a broadband circular polarizer consisting of anisotropic dielectric plates; *Adachi, Saburo*; *T-MTT v8 n5 Sep 60* 520-525
turnstile junction used for rain canceller; reduction of rain return in radar feed system; *Crandell, Paul A.*; *T-MTT v3 n1 Jan 55* 10-15
wideband circular waveguide polarizer using dielectric discs; *Meier, Paul J.*; *T-MTT v13 n6 Nov 65* 763-767
Poles and zeros
zeros and poles of complex-valued function; computer program; *Oczkowski, G.*; *T-MTT v17 n8 Aug 69* 650
69 650
zeros of analytic function; computer program description; *Lampariello, P.*; *T-MTT v23 n5 May 75* 457-458 (1E03)
Police; cf. Law enforcement
Polynomials
proof of theorem on the polynomial of lowest degree having a prescribed root of unity as a multiple root; *Eaton, James E.*; *T-MTT v8 n2 Mar 60* 171
Power amplifiers
1-kW, high-gain, all-transistor, operating at 400 MHz; *Bailey, R. L.*; *T-MTT v17 n12 Dec 69* 1154-1156
amplification with anomalous avalanche diodes; *Prager, H. John*; *T-MTT v18 n11 Nov 70* 956-963
CW high-efficiency *X*-band avalanche-diode type, providing one watt; *Snider, David M.*; *T-MTT v18 n11 Nov 70* 963-967
GaAs Read-diode *X*-band amplifier in microstrip; 12-W output; *Tserng, Hua Quen*; *T-MTT v26 n10 Oct 78* 774-778 (1F02)
gyrotron traveling-wave amplifiers; characteristics and optimum operating parameters; 35-GHz amplifier with 340-kW output, 2-dB/cm gain, and 51 percent efficiency; *Chu, Kwo Ray*; *T-MTT v27 n2 Feb 79* 178-187 (1G04)
IMPATT amplifiers for *J*-band; 5-W output, 10-dB gain, 17 percent efficiency; *Nishitani, Kazuo*; *T-MTT v25 n12 Dec 77* 973-977 (1A11)
investigation of 2K25 reflex klystron amplifier; noise at approximately 9400 MHz; *Ishii, Koryu*; *T-MTT v8 n3 May 60* 291-294
microstrip amplifier using GaAs FETs and IMPATT diodes; 15-GHz, 4-W, 15-dB gain amplifier; *Sokolov, Vladimir*; *T-MTT v27 n12 Dec 79* 1058-1065 (2C09)
microwave FM amplifier using phase-locked voltage-tuned oscillator; *Hines, Marion E.*; *T-MTT v24 n7 Jul 76* 393-404 (1A03)
microwave IMPATT amplifiers; high-power *C*-band reflection amplifiers using

multiple diodes and microstrip power combiners; *Lee, Robert E.*; *T-MTT v24 n5 May 76* 249-253 (1B01)
microwave/millimeter-wave solid-state devices; special issue; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)
microwave/millimeter-wave solid-state devices; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)
millimeter-wave amplifiers for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
millimeter-wave IMPATT power amplifier/combiner; 1-W output at 60 GHz with 6-GHz bandwidth; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 758-767 (1F08)

Power amplifiers; cf. Power bipolar transistor amplifiers; Power FET amplifiers; Power transistors

Power bipolar transistor amplifiers
GaAs MESFET four-stage amplifier; 6-GHz band, 1-W output power, 26-dB gain, 8-dB noise figure; *Arai, Youichi*; *T-MTT v24 n6 Jun 76* 381-383 (2B01)
GaAs MESFET wideband power amplifiers; *Neidert, Robert E.*; *T-MTT v24 n6 Jun 76* 342-350 (1E12)
GaAs MESFETs; 100-mW amplifiers for 2–6.2 GHz and 5.9–12.4 GHz bands; *Hornbuckle, Derry P.*; *T-MTT v24 n6 Jun 76* 338-342 (1E08)
matching network design for power amplifiers capable of 2.5-W peak output at 2.25 GHz with 400-MHz bandwidth; *Emery, F. E.*; *T-MTT v14 n12 Dec 66* 696-698
microwave amplifier; 15-W output, 4.8-dB gain, and 38 percent collector efficiency at 3 GHz; *Uchizaki, Ichiro*; *T-MTT v27 n12 Dec 79* 1038-1042 (2B03)
microwave amplifier design; quasi-linear approach; *Kotzebue, K. L.*; *T-MTT v24 n12 Dec 76* 975-978 (2A04)
microwave class-C amplifier design using harmonic analysis; *Filicori, Fabio*; *T-MTT v27 n12 Dec 79* 1043-1051 (2B08)
UHF class-C amplifier using coupled-TEM-bar circuit to vary fundamental and second-harmonic impedance terminations; *Mazumder, Shamsur R.*; *T-MTT v27 n5 May 79* 430-433 (1E12)

Power bipolar transistors
microwave linear transistor design; *Chen, James T. C.*; *T-MTT v27 n5 May 79* 423-430 (1E05)
microwave Si transistors; present status of commercially available transistors and forecast for next few years; *Allison, Richard*; *T-MTT v27 n5 May 79* 415-422 (1D11)

Power combiners
broadband three-port TEM-mode hybrid; use as power divider and power combiner; *Cohn, Seymour B.*; *T-MTT v16 n2 Feb 68* 110-116
Gunn oscillator at 73 GHz with 80-mW output; two resonant cap structures mounted in common waveguide to combine power from two diodes; *Talwar, Ashok K.*; *T-MTT v27 n5 May 79* 510-512 (2D09)
Gunn oscillators in 50–60 GHz band; two-diode oscillator having 23.75-dBm power output, mechanical tuning range of 6 GHz, varactor tuning bandwidth of 200 MHz; *Sun, C.*; *T-MTT v27 n5 May 79* 512-514 (2D11)
hybrid, *N*-way more general version than one described by E. Wilkinson; *Taub, J. J.*; *T-MTT v17 n7 Jul 69* 406-408
ideal (2^n+1) port combiner formed by interconnecting (2^n-1) magic-tee hybrids; development of scattering matrix; *Nevarez, Joseph R.*; *T-MTT v17 n1 Jan 69* 2-10
ideal and symmetric hybrid combiner; nomogram giving directly phase and amplitude of output signal in terms of the two input signals; *Gardiol, Fred E.*; *T-MTT v18 n1 Jan 70* 71-72
IMPATT diode chips; *Rucker, Charles T.*; *T-MTT v27 n12 Dec 79* 951-957 (1B13)
microwave combining techniques for solid-state sources; *Russell, Kenneth J.*; *T-MTT v27 n5 May 79* 472-478 (2A13)
microwave IMPATT amplifiers; high-power *C*-band reflection amplifiers using multiple diodes and microstrip power combiners; *Lee, Robert E.*; *T-MTT v24 n5 May 76* 249-253 (1B01)
microwave rectifier array power combining; *Gutmann, R. J.*; *T-MTT v27 n12 Dec 79* 958-968 (1C06)
millimeter-wave IMPATT power amplifier/combiner; 1-W output at 60 GHz with 6-GHz bandwidth; *Kuno, H. J.*; *T-MTT v24 n11 Nov 76* 758-767 (1F08)
parallel push-pull hybrid circuits used in power combining; *Miyagi, Masahisa*; *T-MTT v10 n1 Jan 62* 34-40
TM_{010}-mode combiners; increasing bandwidth; *Aston, Richard*; *T-MTT v27 n5 May 79* 479-482 (2B06)

Power conversion, ac–dc
microwave rectifier array power combining; *Gutmann, R. J.*; *T-MTT v27 n12 Dec 79* 958-968 (1C06)

Power dividers
application of scattering matrices for an *n*-port power junction; *Price, O. R.*; *T-MTT v8 n6 Nov 60* 669
binary power dividers; reduced circuit length obtained by using all sections in single transformer; *Chapell, Harry F.*; *T-MTT v22 n5 May 74* 580-581 (2C11)
binary, TEM type; calculation and graph of VSWR vs. normalized frequency; *Hindin, Harvey J.*; *T-MTT v16 n2 Feb 68* 123-125
broadband stripline balun; 1000–4000 MHz operation; *Craven, J. H.*; *T-MTT v8 n6 Nov 60* 673
broadband TEM-mode divider of *N* output ports; design simplified by graphical technique using a Smith chart; *Yee, Hung Yuet*; *T-MTT v18 n10 Oct 70* 682-688
broadband three-port TEM-mode hybrid; use as power divider and power combiner; *Cohn, Seymour B.*; *T-MTT v16 n2 Feb 68* 110-116
coaxial hybrid junction using a series and a shunt junction; *Stark, Louis*; *T-MTT v9 n2 Mar 61* 124-129
coaxial-line version; increasing the bandwidth; *David, Sidney*; *T-MTT v15 n4 Apr 67* 270-271
hybrid, *N*-way more general version than one described by E. Wilkinson; *Taub, J. J.*; *T-MTT v17 n7 Jul 69* 406-408
hybrid-ring directional coupler for arbitrary power divisions; *Pon, Chuck Y.*; *T-MTT v9 n6 Nov 61* 529-535
lossy *N*-way hybrid; analytic and graphic information on input VSWR and output isolation vs. frequency and loss; *Hindin, Harvey J.*; *T-MTT v16 n3 Mar 68* 199-201
matched, equiphase; synthesis procedure by computer program; *Ekinge, Roland B.*; *T-MTT v18 n11 Nov 70* 1006-1007
matrix representation of *N*-way power dividers; *Kagan, Herman*; *T-MTT v9 n2 Mar 61* 198-199
microwave matched power divider using branch-guide couplers; *Levy, Ralph*; *T-MTT v21 n2 Feb 73* 95-99 (1D05)
microwave *n*-way planar hybrid dividers; *Nagai, Nobuo*; *T-MTT v25 n12 Dec 77* 1008-1012 (1D04)
microwave variable divider without phase shifter; *Nyström, Lennart*; *T-MTT v27 n1 Jan 79* 89-90 (1G07)
multiplexer channel separating units using interdigital and parallel coupled filters; *Matthaei, George L.*; *T-MTT v13 n3 May 65* 328-334
n-port TEM-mode hybrids using tapered transmission lines; *Tetarenko, R. P.*; *T-MTT v19 n11 Nov 71* 887-889 (1E11)
N-terminal power dividers; analysis; *Peterson, R. W.*; *T-MTT v9 n6 Nov 61* 571
N-way hybrid power divider; *Wilkinson, Ernest J.*; *T-MTT v8 n1 Jan 60* 116-118
N-way hybrid power dividers; *Taub, J. J.*; *T-MTT v12 n2 Mar 64* 260-261
N-way power dividers; analysis; *Mohr, Richard J.*; *T-MTT v9 n6 Nov 61* 573
printed circuit balun for use with spiral antennas; *Bawer, Robert*; *T-MTT v8 n3 May 60* 319-325
S-band; high-power handling capability; *True, Robert M.*; *T-MTT v15 n10 Oct 67* 584-586
split-tee power dividers; *Parad, Leonard I.*; *T-MTT v13 n1 Jan 65* 91-95
stripline hybrid junction, UHF 20% bandwidth; *Tatsuguchi, Isamu*; *T-MTT v9 n1 Jan 61* 3-6
TEM modes on *n*-wire line; power division ratios; *Nagai, Nobuo*; *T-MTT v22 n4 Apr 74* 353-359 (1A03)
unisolated 'binary' power divider at midband; determination of scattering parameters; *Hindin, Harvey J.*; *T-MTT v16 n8 Aug 68* 568-569
variable microwave attenuator using p-i-n diodes and three-port hybrids; *Ekinge, Roland*; *T-MTT v18 n9 Sep 70* 661-662
variable-ratio microwave power divider; analysis; *Vaillancourt, R. M.*; *T-MTT v6 n2 Apr 58* 238-239
X-band; adjustment possibly so that microwave power is divided between two outputs in any desired ratio; *Teeter, W. L.*; *T-MTT v5 n4 Oct 57* 227-229

Power dividers; cf. Stripline power dividers

Power FET amplifiers
GaAs MESFET amplifiers; 12-GHz, 1-W, five-stage amplifier; *Nakatani, Masaaki*; *T-MTT v27 n12 Dec 79* 1066-1070 (2D03)
microstrip amplifier using GaAs FETs and IMPATT diodes; 15-GHz, 4-W, 15-dB gain amplifier; *Sokolov, Vladimir*; *T-MTT v27 n12 Dec 79* 1058-1065 (2C09)
microstrip GaAs amplifier for *X*-band with 1-W output and 22-dB gain; *Tserng, Hua Quen*; *T-MTT v24 n12 Dec 76* 936-943 (1C10)
microwave GaAs FET large-signal characterization; load-pull technique using new method for determining tuner *Y* parameters; *Abe, Hiroyuki*; *T-MTT v27 n5 May 79*
microwave power GaAs MESFETs; broadband internal matching; *Honjo, Kazuhiko*; *T-MTT v27 n1 Jan 79* 3-8 (1A05)
nonlinear distortion in GaAs FETs; third-order intermodulation distortion and gain compression; *Tucker, Rodney S.*; *T-MTT v27 n5 May 79* 400-408 (1C10)

Power FETs
microwave/millimeter-wave GaAs MESFETs; design, fabrication, and performance; *DiLorenzo, James V.*; *T-MTT v27 n5 May 79* 367-378 (1A05)

Power generation control
standby engine generator sets providing input power to equipment of microwave relay system; starting by remote control; *Halvorson, Robert L.*; *T-MTT v2 n1 Apr 54* 32-35

Power industry
microwave and VHF radio installation for electric utility in Missouri; *Fox, George W.*; *T-MTT v2 n1 Apr 54* 63-83

Power measurement
bolometers under pulsed power conditons; dynamic behavior; *Sucher, Max*; *T-MTT v3 n4 Jul 55* 45-52
coaxial bolometer mounts; calibration at 3 GHz; *National Bureau of Standards*; *T-MTT v14 n3 Mar 66* 161
coaxial directional coupler; adjustable-slot-length coupler for 0.3 to 8.5 GHz range; *Hudson, Paul A.*; *T-MTT v19 n9 Sep 71* 781-783 (1E07)
harmonic power generated by microwave transmitters; *Price, Vernon G.*; *T-MTT v7 n1 Jan 59* 116-120
in line calorimeter for microwave waveguide; *Brady, M. Michael*; *T-MTT v10 n5 Sep 62* 357-366
international standards for microwave power measurements; *Engen, G. F.*; *T-MTT v13 n5 Sep 65* 713-715
microwave measurement; bolometer unit calibration system using power equation concept and automation technique; *Komarek, Ernest L.*; *T-MTT v22 n12 Dec 74* 1260-1267 (4E03)
microwave GaAs MESFET; drain–source breakdown voltage in excess of 17 V; *Fukuta, Masumi*; *T-MTT v24 n6 Jun 76* 312-317 (1C10)
microwave MOSFETs; VMOST technology; *Oakes, James G.*; *T-MTT v24 n6 Jun 76* 305-311 (1C03)
microwave power at 3 GHz; international intercomparison of standards; *Engen, Glenn F.*; *T-MTT v19 n4 Apr 71* 411-413 (2C07)
microwave power measurement (0–75 GHz) by broadband nonadiabatic, twin dry-load calorimeters; analysis and design; *Sucher, Max*; *T-MTT v6 n2 Apr 58* 188-194
microwave power measurement in WR112 waveguide (7.05 t 10.0 GHz); calibration service offered by NBS, Radio Standards Laboratory, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n5 May 66* 254
microwave power measurement in WR137 waveguide (5.85–8.20 GHz); calibration service offered by NBS, Radio Standards Laboratory, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n4 Apr 66* 213
microwave power measurements (0–75 GHz) by broadband twin-Joule calorimeters using dry loads; construction and performance; *James, Allan V.*; *T-MTT v6 n2 Apr 58* 195-202
microwave power measurements of multimode waveguides; *Sharp, Eugene D.*; *T-MTT v10 n1 Jan 62* 73-82
microwave; use of current distribution in barretters; *Adams, John W.*; *T-MTT v17 n10 Oct 69* 778-785
microwave; use of resistive-film calorimeters; *Lane, J. A.*; *T-MTT v7 n1 Jan 59* 177
millimeter-wave bolometer mount for measuring TE_{01}-mode power at 100 GHz; *Inoue, Takemi*; *T-MTT v25 n8 Aug 77* 694-697 (1E10)
millimeter-wave six-port reflectometer system; semi-automated system; *Weidman, Manly P.*; *T-MTT v25 n12 Dec 77* 1083-1085 (2C01)
millimeter wavelengths power levels of 1 mW, using calorimeter; *Sharpless, W. M.*; *T-MTT v2 n3 Sep 54* 45-47

multimode power measurements by mode sampling; *Taub, Jesse J.*; *T-MTT v10 n6 Nov 62* 496-505
multimode power measurements by mode sampling.*Taub, Jesse J., Correction*; *T-MTT v11 n3 May 63* 203
small microwave noise powers or small power differences; improved measurements using ferrite isolator and ferrite circulator; *Mayer, C. H.*; *T-MTT v4 n1 Jan 56* 24-28
thin-film bolometers for measuring the total unwanted power transmitted in any or all possible modes and frequencies; *Schiffman, Bernard M.*; *T-MTT v12 n2 Mar 64* 155-163
torque-operated wattmeter, capable of measuring 10 to 200 watts in the wavelength range 3.05–3.45 cm; *Cullen, Alexander L.*; *T-MTT v6 n2 Apr 58* 133-136
wire grid bolometer for multimode power measurement; *Schiffman, Bernard M.*; *T-MTT v13 n4 Jul 65* 427-431

Power measurement standards
peak-pulse power meters; calibration by Radio Standards Laboratory at Boulder, Colorado for frequency band 950–1200 MHz; *National Bureau of Standards*; *T-MTT v14 n1 Jan 66* 47-48

Power semiconductor devices
design of balanced type parametric amplifier using resonating diode and series-connected diode loop; *Hayasi, Syuiti*; *T-MTT v10 n3 May 62* 185-190
microwave/millimeter-wave power generation, amplification, and control; special issue foreword; *Berson, Bert, Guest ed.*; *T-MTT v27 n5 May 79* 365-366 (1A03)
microwave/millimeter-wave power generation, amplification, and control; special issue; *T-MTT v27 n5 May 79* 365-554 (1A03)

Power semiconductor devices; cf. Power bipolar transistors; Power FETs

Power stations; cf. Generating stations

Power supplies
superconducting pulse power supply; *Wiederhold, Pieter R.*; *T-MTT v12 n3 May 64* 386

Power system reliability
microwave relay systems; remote control of standby engine generator sets; *Halvorson, Robert L.*; *T-MTT v2 n1 Apr 54* 32-35

Power transistors
microwave transistor reliability; 1973 S-MTT National Lecture; *Allen, John L.*; *T-MTT v21 n12 Dec 73* 752 (1B09)

Power transistors; cf. Power bipolar transistors; Power FETs

Power transmission; cf. Microwave power transmission

Printed circuits
complementary filters for narrow bandwidth multiplexers; *Wenzel, Robert J.*; *T-MTT v16 n3 Mar 68* 147-157
microwave; historical survey; *Barrett, Robert M.*; *T-MTT v3 n2 Mar 55* 1-9
photoetched tri-plate transmission line; use for two-dimensional *X*-band antenna array; *Sommers, Donald J.*; *T-MTT v3 n2 Mar 55* 157-162
slit-coupled strip transmission lines; use for printed-circuit realization; *Yamamoto, Sadahiko*; *T-MTT v14 n11 Nov 66* 542-553

Printers
contour plotting routine for line printers; computer program written in FORTRAN IV; *Cermak, I. A.*; *T-MTT v17 n8 Aug 69* 652-653

Probe antennas
electric-field probe near interface between different media; effect of interface on antenna response; application to probing fields in biological bodies; *Smith, Glenn S.*; *T-MTT v27 n3 Mar 79* 270-278 (1D14)
in circular waveguide; input impedance seen by coaxial line driving thin cylindrical probe in TE_{11} guide; *Bondyopadhyay, Probir K.*; *T-MTT v27 n3 Mar 79* 284-285 (1E14)
in circular waveguide; input impedance seen by coaxial line driving thin cylindrical probe in TE_{11} guide. *Bondyopadhyay, Probir K., Correction*; *T-MTT v27 n6 Jun 79* 621 (1E11)
in circular waveguide; input impedance seen by coaxial line driving thin cylindrical probe in TE_{11}-mode guide; *Deshpande, M. D.*; *T-MTT v25 n11 Nov 77* 954-957 (1A11)
in circular waveguide; input impedance seen by coaxial line driving thin cylindrical probe in TE_{11}-mode guide. *Deshpande, M. D., Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
in finite heterogeneous biological bodies; response of insulated probes; *Mousavinezhad, Seyed Hossein*; *T-MTT v26 n8 Aug 78* 599-607 (1G01)

Process heating; cf. Electric process heating

Pseudonoise sequences
generation using acoustic surface-wave delay line in place of shift register; *Morgan, D. P.*; *T-MTT v21 n4 Apr 73* 306 (3D11)

Pseudorandom modulation; cf. Spread-spectrum communication

PSK
abbr. of Phase-shift keying

PSK amplifiers
IMPATT diode amplifiers for QPSK signals; 11-GHz amplifier with 1-W output and 30-dB gain; *Paik, S. F.*; *T-MTT v21 n11 Nov 73* 716-720 (2B10)

PSK communication
direct regenerator using GaAs MESFET; *Komaki, Shozo*; *T-MTT v24 n6 Jun 76* 367-372 (2A01)
microwave radio repeater design for 20-GHz 400-Mb/s QPSK system; *Yamamoto, Heiichi*; *T-MTT v23 n4 Apr 75* 334-341 (1A12)

PSK modulation/demodulation
injection-locked pulsed oscillators with very fast switching characteristics; phase and amplitude transients; *Pavlidis, Dimitrios*; *T-MTT v26 n3 Mar 78* 162-169 (1B14)
p-i-n diode modulator at 80.99 GHz, subnanosecond switching at 300 Mb/s; test set displaying transients in polar coordinates; *Bosch, Fridolin*; *T-MTT v26 n1 Jan 78* 24-27 (1B12)
four-level phase switch using two switching diodes and one circulator; *Schlosser, Wolfgang O.*; *T-MTT v20 n9 Sep 72* 614-616 (2B01)

PSK signal detection
acoustic surface-wave matched filters for biphase-coded waveforms; programmable filters; *Hagon, P. J.*; *T-MTT v21 n4 Apr 73* 303-306 (3D11)

PSK; cf. APK

Publishing; cf. Technical journals

Pulse amplifiers
GaAs MESFET pulse amplifier in Gb/s range; *Beneking, H.*; *T-MTT v24 n6 Jun 76* 385-386 (2B05)
measurement of AM noise; *Levine, Peter A.*; *T-MTT v18 n10 Oct 70* 712-715
spectrum analysis of pulsed microwave amplifiers; UHF, *L*-band operation; *Koontz, Roland F.*; *T-MTT v10 n6 Nov 62* 440-454
step-recovery diode amplifiers for regenerating Gb/s PCM-type signals; *Barabas, Udo*; *T-MTT v24 n12 Dec 76* 929-935 (1C03)
X-band TRAPATT diode amplifiers; 10% bandwidth, 5-dB gain, 38-W peak power; *Cox, N. W.*; *T-MTT v22 n12 Dec 74* 1325-1328 (5D03)

Pulse-amplitude modulation; cf. PAM

Pulse circuits
IMPATT diodes in 8.5–18 GHz region; Si double-drift diodes; *Pfund, George*; *T-MTT v22 n12 Dec 74* 1134-1140 (2B02)
pulse-forming network for the generation of phase-coherent microwave signals; *Ross, Gerald F.*; *T-MTT v17 n1 Jan 69* 52-54

Pulse-compression networks
microwave compression filter; computer-aided design giving a compression factor of 720:1; *Hewitt, Harry S.*; *T-MTT v15 n12 Dec 67* 687-694
ultra-bandwidth, using YIG rods; performance; *Bongianni, W. L.*; *T-MTT v16 n12 Dec 68* 1061-1064

Pulse-compression radar
microwave acoustic devices for dispersive filters; *Court, Ian N.*; *T-MTT v17 n11 Nov 69* 968-986
microwave compression filter; computer-aided design giving a compression factor of 720:1; *Hewitt, Harry S.*; *T-MTT v15 n12 Dec 67* 687-694

Pulse-compression techniques
use of dielectric-filled waveguides; *Minakovic, B.*; *T-MTT v19 n6 Jun 71* 562-563 (2C04)

Pulse compression techniques; cf. Acoustic bulk-wave pulse compression; Acoustic surface-wave pulse compression; chirp modulation

Pulse generators
gallium arsenide point-contact diodes to generate phase-locked carrier pulses at microwave and millimeter frequencies; *Dietrich, A. F.*; *T-MTT v12 n3 May 64* 316-322
generation of a short rectangular pulse from a CW source; *Row, R. V.*; *T-MTT v12 n1 Jan 64* 146
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)
microwave testing with multimicrosecond pulses; *Beck, A. C.*; *T-MTT v2 n1 Apr 54* 93-99
millimicrosecond pulses; use of microwave traveling-wave tube; *Beck, Alfred C.*; *T-MTT v3 n6 Dec 55* 48-51
mode locking at *X*-band using IMPATT diode as gain element and Schottky-barrier diode as saturable absorber; *Glasser, Lance A.*; *T-MTT v26 n2 Feb 78* 62-69 (1B02)
multikilowatt *X*-band nanosecond source; new generation technique; *Goldie, Harry*; *T-MTT v15 n12 Dec 67* 722-731
optoelectronic switching in silicon for converting dc energy to RF pulses; *Proud, Joseph M.*; *T-MTT v26 n3 Mar 78* 137-140 (1A03)
picosecond pulse sequence generation using step-recovery diodes shunting transmission line; *Cronson, Harry M.*; *T-MTT v23 n12 Dec 75* 1048-1049 (2A13)
pulse-modulated signals at *C*-band; nanosecond pulse duration; *Ross, Gerald F.*; *T-MTT v19 n1 Jan 71* 96-99 (2E04)
superconducting pulse power supply; *Wiederhold, Pieter R.*; *T-MTT v12 n3 May 64* 386

Pulse measurements; cf. Time-domain measurements

Pulse modulation
PTM; application to 900-MHz over-the-horizon radio link; *Altman, Frederick J.*; *T-MTT v3 n6 Dec 55* 22-26

Pulse propagation; cf. Electromagnetic transient propagation; Optical transient propagation; Transient propagation; Waveguide transient propagation

Pulse radar
duplexing of very short pulses; ferrite and diode duplexers; *Fitzgerald, D. J.*; *T-MTT v22 n4 Apr 74* 471-473 (2E05)

Pulse repeaters; cf. Repeaters

Pulsed lasers
HCN laser plasma modulation; submillimeter-wave pulse generation; *Tait, G. D.*; *T-MTT v22 n12 Dec 74* 1109-1111 (2C06)
HCN lasers; plasma effects in pulsed lasers; *Turner, R.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)

Pumping; cf. Optical pumping; Transversely excited lasers

Punchthrough diodes; cf. BARITT diodes

Punchthrough oscillators
dynamic resistance and capacitance as function of frequency and current density; use in predicting electronic tuning performance; *Sultan, Nizar B.*; *T-MTT v20 n11 Nov 72* 773-775 (2B04)

Punchtrough oscillators; cf. BARITT oscillators

Pyroelectric detectors
far-infrared detectors; *Handi, A.*; *T-MTT v22 n12 Dec 74* 1016-1018 (1C10)

Pyroelectric devices
millimeter and submillimeter-wave detectors; reduction of response time; *Alday, J. R.*; *T-MTT v14 n2 Feb 66* 100

Q

***Q* measurement**
cavities strongly coupled to transmission line; *Alvarez, R.*; *T-MTT v11 n1 Jan 63* 89-90
measurement of *Q* for low loss transmission lines; *Somlo, P. I.*; *T-MTT v11 n6 Nov 63* 472-478
microwave oscillators; by modulation technique based on injection phase-locking theory; *Ashley, J. Robert*; *T-MTT v18 n11 Nov 70* 1002-1004
microwave resonators; method based on relation between integral of resonance curve and *Q* of cavity; *Kneppo, Ivan*; *T-MTT v26 n2 Feb 78* 131 (1G01)
microwave resonators; transmitted power compared with that of reference resonator; *Kneppo, Ivan*; *T-MTT v25 n5 May 77* 423-426 (1F13)
short time changes of *Q* factor of a cavity; *Richter, Kurt R.*; *T-MTT v17 n6 Jun 69* 339-344
short time changes of *Q* factor of a cavity. *Richter, K. R., Addendum*; *T-MTT v18 n4 Apr 70* 229
varactor diodes with external loss present; *Roe, James M.*; *T-MTT v19 n8 Aug 71* 728-729 (2B01)

varactors; error minimization in four-bias measurement; *Benson, Walter S., Jr.*; *T-MTT v25 n4 Apr 77* 335-338 (2A12)
varactors; measurement in presence of external loss; *Sard, Eugene W.*; *T-MTT v20 n6 Jun 72* 420-421 (2C07)
Q measurement; cf. Cavity perturbation techniques
Quantum theory
communication; frontier between classical and quantum physics; *Fox, A. G.*; *T-MTT v7 n4 Oct 59* 400-401
Quartz
microstrip lines on fused quartz; measurement of properties; *Heuven, J. H. C. van*; *T-MTT v18 n2 Feb 70* 113-114
tantalum pentoxide films on quartz; acoustic surface-wave properties; *Weller, J. F.*; *T-MTT v22 n11 Nov 74* 973-975 (1E07)

R

Radar; cf. Aircraft radar; Doppler radar; Millimeter-wave radar; Monopulse radar; Phased-array radar; Pulse-compression radar; Pulse radar; Road-vehicle radar; Search radar; Space-vehicle radar
Radar altimetry; cf. Satellite altimetry
Radar antennas
currents excited on a conducting surface of large radius of curvature; *Wait, James R.*; *T-MTT v4 n3 Jul 56* 143-145
rotary joint for two microwave transmission channels of the same frequency band; *Raabe, H. P.*; *T-MTT v3 n4 Jul 55* 30-41
Radar astronomy
400-kW long pulse *X*-band planetary radar; components; *Hartop, Rob*; *T-MTT v24 n12 Dec 76* 958-963 (1E04)
Radar clutter
rain cancellation using turnstile junction to provide necessary polarization of the fields; reduction of rain return in radar feed system; *Crandell, Paul A.*; *T-MTT v3 n1 Jan 55* 10-15
Radar distance measurement
short-range radar; accurate measurement using microwave delay line techniques; *Ross, Gerald F.*; *T-MTT v23 n12 Dec 75* 1071-1074 (2C08)
Radar imaging
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.*; *T-MTT v26 n5 May 78* 322-325 (1A04)
monopulse tracking feed for long-range imaging radar; high-power *X*-band feed; *Goudey, Kenneth R.*; *T-MTT v26 n5 May 78* 326-332 (1A08)
Radar mapping
ground transportation obstacle detection using planar waveguide; *Rulf, Benjamin*; *T-MTT v24 n8 Aug 76* 539-541 (1D09)
sea surface mapping; 8-mm airborne Surface Contour Radar produces real-time topographical map of sea surface beneath aircraft; *Kenney, James E.*; *T-MTT v27 n12 Dec 79* 1080-1092 (2E03)
Radar receivers
balanced crystal mixer; matching of crystals; *Strum, P. D.*; *T-MTT v3 n1 Jan 55* 45
balanced crystal mixer; matching of crystals. *Strum, P. D., Correction*; *T-MTT v3 n1 Jan 55* 21
temperature-stable, fail-safe, latching ferrite TR switch; *Siekanowicz, Wieslaw W.*; *T-MTT v17 n9 Sep 69* 712-717
Radar scattering
backscattering, electromagnetic; measurements by a time-separation method; *Tang, Charles C. H.*; *T-MTT v7 n2 Apr 59* 209-213
back-scattering measurement of a slowly moving target; *McDuff, Odis P.*; *T-MTT v12 n5 Sep 64* 541-546
Radar scattering; cf. Sea scatter; Sea surface
Radar target recognition
amplitude, angle and Doppler scintillation from analysis of the echo signal propagating in space; *Dunn, John H.*; *T-MTT v16 n9 Sep 68* 715-728
Radar tracking antennas; cf. Monopulse radar antennas
Radar transmitters
temperature-stable, fail-safe, latching ferrite TR switch; *Siekanowicz, Wieslaw W.*; *T-MTT v17 n9 Sep 69* 712-717
Radial waveguides; cf. Parallel-plate waveguides; Waveguides
Radiation detectors; cf. Infrared detectors; Microwave detectors; Submillimeter-wave detectors
Radiation effects; cf. Biological radiation effects; Cerenkov radiation; Electromagnetic radiation effects; Microwave radiation effects; RF radiation effects
Radiation protection; cf. Semiconductor device radiation protection
Radiation therapy; cf. Electromagnetic radiation therapy; Gamma-ray therapy
Radio astronomy
millimeter-wave receiver; low-noise multichannel receiver to study narrow-band signals from interstellar molecules and planetary atmospheres; *Wilson, William J.*; *T-MTT v25 n4 Apr 77* 332-335 (2A09)
millimeter-wave technology; *Townes, Charles H.*; *T-MTT v24 n11 Nov 76* 709-711 (1C01)
p-i-n diode switch matrix consisting of 8 diodes in stripline package; cryogenically cooled *C*-band switch for radio astronomy; *Behrens, George H., Jr.*; *T-MTT v26 n9 Sep 78* 629-635 (1A03)
ruby traveling-wave maser for *K*-band using photoetched slow-wave structure; *Yngvesson, K. Sigfrid*; *T-MTT v24 n11 Nov 76* 711-717 (1C03)
rutile traveling-wave maser for 20–40 GHz band using dielectric image line slow-wave structure; *Kollberg, Erik L.*; *T-MTT v24 n11 Nov 76* 718-725 (1C10)
Radio astronomy; cf. Millimeter-wave astronomy; Submillimeter-wave astronomy
Radio broadcast receivers; cf. Microwave radio receivers
Radio communication
FM radio systems with frequency division multiplexing; application of compandors; *Harp, M. C.*; *T-MTT v2 n1 Apr 54* 36-40
FM radio systems with frequency division multiplexing; application of compandors. *Harp, M. C., Addenda*; *T-MTT v2 n2 Jul 54* 64
over-the-horizon radio link operating at 900 MHz; use of PTM; *Altman, Frederick J.*; *T-MTT v3 n6 Dec 55* 22-26
wire vs. wireless communication; *Clavier, A. G.*; *T-MTT v4 n1 Jan 56* 2-3
Radio communication; cf. Microwave radio communication; Military communication; Satellite communication; Underground electromagnetic communication; VHF radio communication
Radio interferometry
millimeter-wave filters; Michelson interferometer-type band-splitting filter for 40–120 GHz waveguide transmission systems; *Suzuki, Nobuo*; *T-MTT v22 n5 May 74* 565-566 (2B10)
millimeter-wave band-splitting filter using Michelson interferometer hybrid; *Suzuki, Nobuo*; *T-MTT v24 n5 May 76* 237-241 (1A03)
waveguide interferometer for measuring electric susceptibility of gases; *Srivastava, G. P.*; *T-MTT v24 n1 Jan 76* 56-57 (1E02)
Radio navigation antennas
microwave landing system ground antennas; *Cox, Richard M.*; *T-MTT v24 n12 Dec 76* 964-971 (1E10)
Radio propagation
microwave model terrestrial waveguide having a variable surface impedance; propagation characteristics; *Bahar, Ezekiel*; *T-MTT v14 n11 Nov 66* 572-578
Radio propagation; cf. Millimeter-wave radio propagation
Radio propagation meteorological factors
factors affecting earth to satellite millimeter wavelength communications; propagation path loss, refractions, antenna temperature; *Straiton, Archie W.*; *T-MTT v11 n5 Sep 63* 296-301
millimeter waves; molecular transfer characteristics of air in 40–140 GHz band; *Liebe, Hans J.*; *T-MTT v23 n4 Apr 75* 380-386 (1E02)
Radio propagation meteorological factors; cf. Millimeter-wave radio propagation meteorological factors; Submillimeter-wave radio propagation meteorological factors
Radio propagation terrain factors
guided surface waves and lateral waves excited by field incident on rough surface; fields scattered by rough surfaces excited by surface waves and lateral waves; coupling between surface and lateral waves; *Bahar, Ezekiel*; *T-MTT v25 n11 Nov 77* 923-931 (1E03)
Radio receivers; cf. Microwave radio receivers; Millimeter-wave radio receivers
Radio relay; cf. Radio communication
Radio telescopes
84-ft. equatorially mounted in Onsala, Sweden; use of rutile traveling-wave maser system; *Rydbeck, O. E. H.*; *T-MTT v16 n9 Sep 68* 799-803
gas lens used as object lens; *Aoki, Yoshinao*; *T-MTT v15 n1 Jan 67* 2-8
method for stabilizing receivers for radio telescopes and reducing sensitivity to gain fluctuations; *Seling, Theodore V.*; *T-MTT v10 n3 May 62* 209-213
millimeter-wave receivers; low-noise 115-GHz receiver on Columbia-GISS 4-ft telescope; *Cong, Hong-Ih*; *T-MTT v27 n3 Mar 79* 245-248 (1C03)
Radio transmitters; cf. Microwave radio transmitters; Millimeter-wave radio transmitters
Radiometry
radiometric receivers; effects of video detector saturation on overall linearity; *Cogdell, J. R.*; *T-MTT v18 n6 Jun 70* 324-325
Radiometry; cf. Microwave radiometry; Millimeter-wave radiometry; Submillimeter-wave radiometry
Radomes
antenna far-field patterns; simplified calculations; *Richmond, J. H.*; *T-MTT v3 n4 Jul 55* 9-12
radiometric method for measuring the insertion loss of radome materials; *Seidel, Boris L.*; *T-MTT v16 n9 Sep 68* 625-628
sandwiches; transmission characteristics; *Mathis, H. F.*; *T-MTT v3 n5 Oct 55* 57-58
synthesizing air with a radome sandwich; *Mathis, Harold F.*; *T-MTT v13 n5 Sep 65* 708
Rail transportation; cf. Guided ground transportation
Rain; cf. Meteorological factors; Radio propagation meteorological factors
Random media; cf. Electromagnetic propagation, random media
Ranging; cf. Radio distance measurement
Ray optics; cf. Geometrical optics
Rayleigh waves; cf. Acoustic surface waves
Rayleigh–Ritz method
computer optimization procedure; *Vorst, Andre S. vander*; *T-MTT v17 n8 Aug 69* 454-460
computer optimization procedure. *Vander Vorst, A. S., Correction*; *T-MTT v18 n7 Jul 70* 412
use of the Rayleigh–Ritz method in nonself-adjoint problems; *Kaplan, S.*; *T-MTT v12 n2 Mar 64* 254-255
Reactance networks; cf. Lossless networks
Read diodes; cf. Avalanche diodes; IMPATT diodes
Receivers; cf. Microwave radio receivers; Millimeter-wave radio receivers
Rectifiers; cf. Power conversion, ac–dc
Reflection; cf. Acoustic reflection; Electromagnetic reflection; Optical reflection
Reflection amplifiers
design procedure for optimum bandwidth negative resistance amplifiers; *Scanlan, Sean O.*; *T-MTT v12 n5 Sep 64* 504-511
epitaxial-GaAs transferred-electron devices; use for stable CW and pulsed linear-reflection-type amplification at *C*- and *X*-band frequencies; *Perlman, Barry S.*; *T-MTT v18 n11 Nov 70* 911-921
GaAs MESFET amplifier in 23-GHz band; operated as negative resistance two-terminal device; *Tohyama, Hideki*; *T-MTT v27 n5 May 79* 408-411 (1D04)
Gunn amplifiers for *X*, *Ku*, and *Ka* bands; small-signal multistage amplifiers; *de Koning, J. G.*; *T-MTT v23 n4 Apr 75* 367-374 (1D03)
IMPATT amplifiers; high-power *C*-band amplifiers using multiple diodes and microstrip power combiners; *Lee, Robert E.*; *T-MTT v24 n5 May 76* 249-253 (1B01)
IMPATT diode amplifiers for QPSK signals; 11-GHz amplifier with 1-W output and 30-dB gain; *Paik, S. F.*; *T-MTT v21 n11 Nov 73* 716-720 (2B10)
integrated tunnel-diode devices; use as active element; *Okean, Herman C.*; *T-MTT v15 n11 Nov 67* 613-622
LSA amplifier at 9.5 GHz; GaAs diode oscillating in LSA mode with gain at frequency not harmonically related to fundamental oscillation frequency; *Lidgey, F. John*; *T-MTT v21 n11 Nov 73* 736-738 (2D06)
microstrip, low-cost; use of beam lead tunnel diodes; *Welch, Jerry D.*; *T-MTT v18 n12 Dec 70* 1077-1083
mode locking at *X*-band using IMPATT diode as gain element and Schottky-barrier diode as saturable absorber; *Glasser, Lance A.*; *T-MTT v26 n2 Feb 78* 62-69 (1B02)

negative resistance, employing band-limited circulators; synthesis; *Okean, H. C.*; *T-MTT v14 n7 Jul 66* 323-337
prototypes for use in broadbanding reflection amplifiers; element values as functions of gain and ripple; *Getsinger, William J.*; *T-MTT v11 n6 Nov 63* 486-497
stability and gain prediction of tunnel-diode reflection amplifiers; *Bandler, John W.*; *T-MTT v13 n6 Nov 65* 814-819
TED amplifier design using minimax optimization algorithm not requiring derivatives. *Madsen, K., Correction*; *T-MTT v24 n4 Apr 76* 233 (1F01)

Reflection coefficient measurement
semiautomatic technique for tuning a reflectometer; *Zanboorie, M. H.*; *T-MTT v13 n5 Sep 65* 709-710
tuning circuit for source or load matching in waveguide and transmission line systems; *Beatty, Robert W.*; *T-MTT v19 n3 Mar 71* 337-338 (2C12)

Reflection coefficient measurement; cf. Scattering parameters measurement

Reflector antennas
fed from circular TE_{01}-mode guide; pencil beam formation; *Wengenroth, Robert D.*; *T-MTT v26 n5 May 78* 332-334 (1A14)
MIC Doppler module with stripline dipole antenna and output radiation normal to substrate plane; *Nanbu, Shutaro*; *T-MTT v26 n1 Jan 78* 3-5 (1A05)

Reflector antennas, Cassegrain
monopulse tracking feed for long-range imaging radar; high-power *X*-band feed; *Goudey, Kenneth R.*; *T-MTT v26 n5 May 78* 326-332 (1A08)

Relativistic effects
submillimeter-wave radiation from relativistic electron beams; 100 kW in 390–540 μm range; *Granatstein, V. L.*; *T-MTT v22 n12 Dec 74* 1000-1005 (1B08)

Relativistic effects; cf. Gyrotrons; Submillimeter-wave generation

Relaxation methods
Laplace equation; computer program using successive extrapolated relaxation method; *Kinsner, W.*; *T-MTT v21 n5 May 73* 365 (1F07)
striplines; calculation of characteristics of coplanar-type striplines; *Hatsuda, Takeshi*; *T-MTT v20 n6 Jun 72* 413-416 (2B12)

Reliability; cf. Component reliability; Semiconductor device reliability

Remote sensing; cf. Radiometry

Repeaters
GaAs MESFET pulse regenerator in Gb/s range; *Beneking, H.*; *T-MTT v24 n6 Jun 76* 385-386 (2B05)
GaAs MESFET regenerator for PSK signals; *Komaki, Shozo*; *T-MTT v24 n6 Jun 76* 367-372 (2A01)
microwave; site planning and development; *Chapman, R. M.*; *T-MTT v2 n1 Apr 54* 16-31
step-recoveri diode amplifiers for regenerating Gb/s PCM-type signals; *Barabas, Udo*; *T-MTT v24 n12 Dec 76* 929-935 (1C03)

Repeaters; cf. Radio communication; Waveguide communication

Resistance calculations
spreading resistance as a function of frequency in parametric (capacitor) diodes and point-contact diodes; *Dickens, Lawrence E.*; *T-MTT v15 n2 Feb 67* 101-109

Resistance measurement
millimeter-wave oversized circular waveguide; surface-resistance measurement; *Hatano, Satomi*; *T-MTT v24 n11 Nov 76* 886-887 (3C06)
millimeter-wave waveguide components; excess conduction losses; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)

Resistivity measurement; cf. Conductivity measurement

Resonance; cf. Ferroresonance; Magnetic resonance

Resonator filters
bandpass filters for millimeter wavelengths using direct-coupled confocal resonators; *Cohen, J.*; *T-MTT v14 n12 Dec 66* 698-699
bandpass spurline resonators; design equations; *Cristal, Edward G.*; *T-MTT v14 n6 Jun 66* 296-297
bandpass spurline resonators; design equations. *Cristal, Edward G., Correction*; *T-MTT v14 n9 Sep 66* 436
class of sharp cutoff filters using combinations of lumped constant and distributed constant reactance; *Oltman, George*; *T-MTT v11 n1 Jan 63* 30-35
comb-line bandpass filters; design; *Kurzrok, R. M.*; *T-MTT v14 n7 Jul 66* 351-353
couplings in direct-coupled waveguide bandpass filters; *Kurzrok, Richard M.*; *T-MTT v10 n5 Sep 62* 389-390
design of band-pass filters using interdigital arrays of resonator line elements; *Matthaei, George L.*; *T-MTT v10 n6 Nov 62* 479-491
direct-coupled cavity filters for wide and narrow bandwidths; *Young, Leo*; *T-MTT v11 n3 May 63* 162-178
direct-coupled cavity filters for wide and narrow bandwidths. *Young, Leo, Correction*; *T-MTT v11 n6 Nov 63* 561
directional filters, TEM-mode transmission-type; exact and approximate synthesis; *Walker, John L. B.*; *T-MTT v26 n3 Mar 78* 186-192 (1D10)
four-resonator microwave filters; general type; *Kurzrok, R. M.*; *T-MTT v14 n6 Jun 66* 295-296
four-resonator microwave filters; general type. *Kurzrok, R. M., Correction*; *T-MTT v14 n10 Oct 66* 498
high-power, bandstop, iris-coupled waveguide filters; *Torgow, Eugene N.*; *T-MTT v13 n5 Sep 65* 508-513
'inverted common collector' transistor resonator filters; analysis and design; *Snyder, Richard V., Jr.*; *T-MTT v18 n1 Jan 70* 2-9
microstrip tapped-line filter design; interdigital and hairpin-line filters; *Wong, Joseph S.*; *T-MTT v27 n1 Jan 79* 44-50 (1D04)
ring resonator in which two ring networks are connected by two quarter-wave lines; *Kaiser, J. A.*; *T-MTT v9 n4 Jul 61* 359-360
state-of-the-art review of filters in 1965; bandpass, bandstop, high-pass, tunable filters, with extensive bibliography; *Young, Leo*; *T-MTT v13 n5 Sep 65* 489-508
strip-transmission-line half-wavelength directional filters; practical design; *Wanselow, Robert D.*; *T-MTT v7 n1 Jan 59* 168-173
tables of element values for distributed low-pass prototype filter; *Levy, Ralph*; *T-MTT v13 n5 Sep 65* 514-536
three cavity, circularly polarized waveguide directional filter; four ports; *Williams, Robert L.*; *T-MTT v10 n5 Sep 62* 321-328
three-resonator filters in waveguide; general type; *Kurzrok, Richard M.*; *T-MTT v14 n1 Jan 66* 46-47
transmission-line filters consisting of series of half-wavelength resonant conductors; synthesis; *Cohn, Seymour B.*; *T-MTT v6 n2 Apr 58* 223-231

Resonator filters; cf. Cavity-resonator filters; Crystal filters; Dielectric-resonator filters; Magnetic-resonator filters

Resonators
attenuation in a resonant ring; *Tomiyasu, K.*; *T-MTT v8 n2 Mar 60* 253-254
axially magnetized ferrite rods between two parallel conducting sheets; magnetodynamic modes; *Godtmann, H.-D.*; *T-MTT v15 n8 Aug 67* 478-480
broadband coupling of series resonant *RLC* load to resistive source using quarter-wave transmission-line inverter; *Borgaonkar, S. R.*; *T-MTT v27 n7 Jul 79* 688-690 (1E06)
concentric, spherical; tabulation of resonant frequencies; *Rode, D. L.*; *T-MTT v16 n6 Jun 68* 369-372
cylindrical, microwave; computer program that calculates and prints values of form factor and *Q* for all desired modes in the 100 lowest orders; *Dagg, I. R.*; *T-MTT v18 n9 Sep 70* 669
cylindrical, microwave; computer program which calculates, prints, and plots the data for mode charts; *Muc, A. M.*; *T-MTT v18 n5 May 70* 285-286
echelette grating; analytical study, with application to open resonators; *Itoh, Tatsuo*; *T-MTT v17 n6 Jun 69* 319-327
engineering design of an *X*-band amplifier consisting of a cascade of iris coupled ruby resonators separated by garnet isolators; *Goodwin, Frank E.*; *T-MTT v12 n3 May 64* 349-358
exponential transmission lines used as resonators and transformers; *Ghose, Rabindra N.*; *T-MTT v5 n3 Jul 57* 213-217
graphical analysis of resonator circuit; *Kajfež, Darko*; *T-MTT v11 n5 Sep 63* 453-454
harmonic rejection filter with one point of perfect mold and another of infinite attenuation; *Schiffman, Bernard M.*; *T-MTT v12 n1 Jan 64* 58-60
loaded and unloaded *Q* of a resonant ring circuit; *Golde, Hellmut*; *T-MTT v8 n5 Sep 60* 560-564
losses of open resonators as function of geometry; *Bisio, G. R.*; *T-MTT v19 n5 May 71* 490-491 (2C04)
mode losses in confocal resonators and transmission systems; *Heurtley, J. C.*; *T-MTT v13 n5 Sep 65* 711-712
open resonators; accuracy of beam-wave theory; *Cullen, A. L.*; *T-MTT v24 n8 Aug 76* 534-535 (1D04)
open-type *X*-band; constructed of two cylindrical reflectors with crossed axes; *Schiffman, Bernard M.*; *T-MTT v18 n8 Aug 70* 509-510
optimum design of wide-band parametric amplifiers and up-converters; *Matthaei, George L.*; *T-MTT v9 n1 Jan 61* 23-38
planar resonators; oscillation modes characterized in terms of R/Q parameter; radiation loss calculation; *Schott, Frederick W.*; *T-MTT v25 n5 May 77* 416-418 (1F06)
planar triangular resonators with magnetic walls; *Helszajn, Joseph*; *T-MTT v26 n2 Feb 78* 95-100 (1D07)
plasma column irradiated by a microwave exhibits Tonks–Dattner resonances in its absorption pattern; *Willis, J.*; *T-MTT v10 n5 Sep 62* 395-396
post-coupled TEM comb-line resonators; frequency behavior; *Kurzrok, R. M.*; *T-MTT v16 n10 Oct 68* 888-889
Q measurement; transmitted power compared with that of reference resonator; *Kneppo, Ivan*; *T-MTT v25 n5 May 77* 423-426 (1F13)
quarter-wave compensation of resonant discontinuities; *Muehe, C. E.*; *T-MTT v7 n2 Apr 59* 296-297
quarter-wave compensation of resonant discontinuities; *Young, Leo*; *T-MTT v7 n4 Oct 59* 478
radial; determination of slope parameter and *Q*; *Lindell, Ismo V.*; *T-MTT v14 n2 Feb 66* 97-98
radial line; resonant frequencies of higher-order modes; *Stinson, D. C.*; *T-MTT v3 n4 Jul 55* 18-23
relation between *Q* and the attenuation constant of a transmission line; *Hsu, H. P.*; *T-MTT v11 n4 Jul 63* 258
resonant circuits and circulators; broadband matching; *Schwartz, Eduard*; *T-MTT v16 n3 Mar 68* 158-165
resonant circuits and circulators; broadband matching. *Schwartz, E., Correction*; *T-MTT v16 n10 Oct 68* 894
ridge waveguide with planar circuit mounted in shorted guide; end effect calculation using variational method; *Konishi, Yoshihiro*; *T-MTT v27 n2 Feb 79* 168-170 (1F08)
ring circuits, nonreciprocal; resonant properties; *Tischer, F. J.*; *T-MTT v6 n1 Jan 58* 66-71
ring resonators; modes and losses in four-mirror ring resonator; *Checcacci, P. F.*; *T-MTT v22 n7 Jul 74* 751-752 (1D03)
ring resonators; *X*-band four-mirror ring resonator; *Checcacci, Pier Francesco*; *T-MTT v21 n5 May 73* 361-362 (1F03)
solid-state microwave maser at 77.4°K; *Ammann, Eugene O.*; *T-MTT v13 n2 Mar 65* 186-193
step-iris circuit; use to increase efficiency of LSA circuits; *Spiwak, R. R.*; *T-MTT v18 n11 Nov 70* 973-975
terminated by 'flat-roof' reflectors; modes and instabilities of modes; *Checcacci, Pier F.*; *T-MTT v16 n2 Feb 68* 103-109
traveling-wave resonant circuit; effect of mismatched ring on input reflection coefficient and wave amplification; *Tomiyasu, Kiyo*; *T-MTT v5 n4 Oct 57* 267
traveling-wave type; principles of operation and use as high-power testing equipment; *Milosevic, Ljubimko J.*; *T-MTT v6 n2 Apr 58* 136-143
unstable open resonators; edge diffraction calculation using ray optical technique; *Santana, Carlos*; *T-MTT v26 n2 Feb 78* 101-108 (1D13)
X-band open resonator terminated by flat mirrors with step rims; experimental tests; *Checcacci, P. F.*; *T-MTT v17 n2 Feb 69* 125-127

Resonators; cf. Cavity resonators; Coaxial resonators; Dielectric resonators; Fabry–Perot resonators; Ferrite-loaded resonators; Laser resonators; Microstrip resonators; Millimeter-wave resonators; Optical resonators; Stripline resonators; Submillimeter-wave resonators; Superconducting cavity resonators; Transmission-line resonators; Tuners; UHF resonators

Retrodirective arrays
in-space retrodirective arrays; tunnel diodes function as frequency modulator with gain; *Rutz-Philipp, Elizabeth M.*; *T-MTT v11 n5 Sep 63* 420-426

RF radiation effects
biological systems; low-power modulated RF energy; *Frey, Allan H.*; *T-MTT v19 n2 Feb 71* 153-164 (1D05)

RF radiation effects; cf. Microwave radiation effects

Ridge waveguides
broadband Chebyshev-type stepped waveguide transformers from rectangular to double-ridged waveguide; design; *Hensperger, Edward S.*; *T-MTT v6 n3 Jul 58* 311-314
cavity resonator for Gunn oscillators; wideband tuning; *Mizushina, S.*; *T-MTT v24 n5 May 76* 257-259 (1B09)

channel waveguide for increased power handling ability; *Vilmur, R. J.*; *T-MTT v10 n3 May 62* 220-224
corrections on the tabulations of constants for ridge waveguides; *Brady, M. Michael*; *T-MTT v12 n2 Mar 64* 253-254
coupling of single-ridge waveguide to Fabry–Perot resonator; *Van Blaricum, Michael L.*; *T-MTT v23 n11 Nov 75* 931-934 (1F11)
cutoff characteristics of channel waveguides; *Roth, James P.*; *T-MTT v12 n2 Mar 64* 245-247
design and development of a medium CW and a high CW power level, broadband ridge ferrite-loaded waveguide; *Grimes, E. S., Jr.*; *T-MTT v8 n5 Sep 60* 489-492
design curves presenting information on cutoff vs. geometry, bandwidth, attenuation, power handling capacity, and impedance; *Hopfer, Samuel*; *T-MTT v3 n5 Oct 55* 20-29
design curves presenting information on cutoff vs geometry, bandwidth, attenuation, power handling capacity, and impedance; *Kurzrok, Richard M.*; *T-MTT v8 n3 May 60* 377
dominant-mode cutoff wavelength; algebraic expression; *Chen, Tsung-Shan*; *T-MTT v5 n1 Jan 57* 12-17
double-ridge waveguide for commercial airlines weather radar installation. *Anderson, T. N., Correction*; *T-MTT v4 n1 Jan 56* 54
double-ridge waveguide for commercial airlines weather radar installation; *Anderson, Tore N.*; *T-MTT v3 n4 Jul 55* 2-9
empirical design method for ridge waveguide transducers; *Thompson, G. H. B.*; *T-MTT v9 n3 May 61* 263-266
field description in, and on, walls of a ridge waveguide; design of ridge waveguide directional couplers; *Getsinger, William J.*; *T-MTT v10 n1 Jan 62* 41-50
inhomogeneous dielectric-slab loading; dispersion characteristics; *Magerl, Gottfried*; *T-MTT v26 n6 Jun 78* 413-416 (1C07)
inhomogeneous dielectric-slab loading; dispersion characteristics; *Young, C. W., Jr.*; *T-MTT v26 n11 Nov 78* 919 (1F06)
non-reciprocal attenuation of ferrite in single-ridge waveguide; *Chen, T. S.*; *T-MTT v8 n2 Mar 60* 247-248
planar circuit mounted in shorted guide; end effect calculation using variational method; *Konishi, Yoshihiro*; *T-MTT v27 n2 Feb 79* 168-170 (1F08)
quadruply-ridged circular waveguides; use for broadband ferrite rotators; *Chait, Herman N.*; *T-MTT v7 n1 Jan 59* 38-41
rectangular and ridge waveguides; state-of-the-art and standardization. *Anderson, T. N., Correction*; *T-MTT v5 n3 Jul 57* 217
rectangular and ridge waveguides; state-of-the-art and standardization; *Anderson, Tore N.*; *T-MTT v4 n4 Oct 56* 201-209
rectangular having two semicircular ridges; solution of the two-dimensional Helmholtz equation; *Van Bladel, Jean G.*; *T-MTT v5 n2 Apr 57* 103-106
rectangular ridged waveguides of any aspect ratio; cutoff wavelength design curves; *Pyle, John R.*; *T-MTT v14 n4 Apr 66* 175-183
serrated; evaluation of index of refraction from significant dimensions of the guide and its ridge; *Kirschbaum, Herbert S.*; *T-MTT v7 n1 Jan 59* 142-148
shielded slot lines; characteristic impedance and free-space cutoff wavelength; *Lagerlöf, Rolf O. E.*; *T-MTT v21 n7 Jul 73* 499-501 (2C06)
TE-mode propagation in a rectangular waveguide with double ridges placed symmetrically about the guide axis; design curves; *Jull, E. V.*; *T-MTT v17 n7 Jul 69* 397-399
TEM impedance and cross coupling for two center conductors in a double ridge waveguide; *Storer, James E.*; *T-MTT v9 n2 Mar 61* 116-123
eigenvalue spectrum; integral eigenvalue equation solution using Ritz-Galerkin method; *Montgomery, James P.*; *T-MTT v19 n6 Jun 71* 547-555 (2B01)

Ridge waveguides; cf. Optical strip waveguides

Ring-type filters
two-cavity ring-type channel-dropping filters for millimeter-wave multiplexers; *Ootomo, Isao*; *T-MTT v19 n5 May 71* 481-484 (2B07)

Road-vehicle electronics
60-GHz transceiver for communication between automobile and roadside terminals; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)

Road-vehicle radar
range measurement; accurate measurement using microwave delay line techniques; *Ross, Gerald F.*; *T-MTT v23 n12 Dec 75* 1071-1074 (2C08)

Roots; cf. Poles and zeros

Rough surfaces
dielectric waveguides with periodic boundary perturbations; *E*-type modes for hollow cylindrical guides; *Topuz, Ercan*; *T-MTT v24 n11 Nov 76* 872-875 (3B06)
millimeter and submillimeter wavelength excess conduction loss in copper waveguides; screening potential theory; *Wang, Yen-Chu*; *T-MTT v26 n11 Nov 78* 858-861 (1B02)
millimeter-wave components; surface resistance due to surface roughness at 35 GHz; *Tischer, F. J.*; *T-MTT v22 n5 May 74* 566-569 (2B11)
millimeter-wave oversized circular waveguide; surface-resistance measurement; *Hatano, Satomi*; *T-MTT v24 n11 Nov 76* 886-887 (3C06)
millimeter-wave waveguide components; excess conduction losses; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)

Rough surfaces; cf. Corrugated surfaces; Electromagnetic scattering, rough surfaces; Sea surface

Ruby masers; cf. Masers

S

Sandwich-wire antennas
radome design equations based on transmission characteristics of sandwiches; *Mathis, H. F.*; *T-MTT v3 n5 Oct 55* 57-58

Sapphire; cf. Aluminum alloys/compounds

Satellite altimetry
instrumentation and applications; *McGoogan, Joseph T.*; *T-MTT v23 n12 Dec 75* 970-978 (1C04)

Satellite antennas
microwave power transmission; antenna design and safety considerations; *Dickinson, Richard M.*; *T-MTT v26 n5 May 78* 335-340 (1B03)
multibeam antennas with active beam-forming networks; *Matthews, E. W.*; *T-MTT v27 n12 Dec 79* 998-1004 (1F04)

Satellite applications, power station
transmitting antenna design and safety considerations; *Dickinson, Richard M.*; *T-MTT v26 n5 May 78* 335-340 (1B03)

Satellite communication
X-band antenna; use of new dual-channel rotary joint combining TM_{01} mode and circularly polarized TE_{11} modes in circular waveguide; *Woodward, O. M.*; *T-MTT v18 n12 Dec 70* 1072-1077

Satellite communication, broadcast
direct TV reception; low-cost 12-GHz receiver; *Douville, R.*; *T-MTT v25 n12 Dec 77* 1000-1008 (1C10)
FM receiver for 12-GHz band; low-noise low-cost receiver; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 720-725 (1B04)

Satellite communication, earth terminals
branching network using multilayer dielectric filter for 4-, 6-, 20-, and 30-GHz band signals; *Shindo, Shuichi*; *T-MTT v24 n12 Dec 76* 953-958 (1D13)
direct TV reception; low-cost 12-GHz receiver; *Douville, R.*; *T-MTT v25 n12 Dec 77* 1000-1008 (1C10)
FM broadcast receiver for 12-GHz band; low-noise low-cost receiver; *Konishi, Yoshihiro*; *T-MTT v26 n10 Oct 78* 720-725 (1B04)
millimeter-wavelength; use of *K*-band cryogenically cooled wideband nondegenerate parametric amplifier; *Takahashi, S.*; *T-MTT v18 n12 Dec 70* 1176-1178

Satellite communication repeaters
microwave FET amplifiers; low-noise and linear; *Cowan, D. A.*; *T-MTT v25 n12 Dec 77* 995-1000 (1C05)
radiation protection of microwave bipolar transistor linear amplifiers; *Gibson, Maurice H.*; *T-MTT v26 n10 Oct 78* 779-788 (1F07)

Satellite measurement applications
ocean wave and surface wind measurements using microwave scatter; *Jones, W. Linwood*; *T-MTT v23 n12 Dec 75* 1053-1058 (2B04)

Satellite power stations
solar power stations; dc power from solar cells converted to microwave power and transmitted to earth; *Brown, William C.*; *T-MTT v21 n12 Dec 73* 753-763 (1B10)

Scanning antennas
leaky-wave antennas integrated in quasi-planar dielectric waveguide; electronically scannable antenna; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 987-991 (1E09)
millimeter-wave antennas using electrically controllable liquid artificial dielectrics; *Buscher, Harold T.*; *T-MTT v27 n5 May 79* 540-545 (2F11)

Scanning arrays; cf. Frequency-scanned arrays; Phased arrays

Scattering; cf. Electromagnetic scattering; Waveguide discontinuities

Scattering matrices
application to an *n*-port power-divider; *Price, O. R.*; *T-MTT v8 n6 Nov 60* 669
calculation of cascaded 2*n*-ports; *Stock, D. J. R.*; *T-MTT v9 n5 Sep 61* 454
circulators; junction circulator with Chebyshev characteristics; *Helszajn, Joseph*; *T-MTT v23 n7 Jul 75* 548-554 (1A10)
graphical procedures for finding matrix elements for a lattice network; *Mathis, H. F.*; *T-MTT v13 n1 Jan 65* 130-132
lossy waveguide junctions; dissipation and scattering matrices in terms of eigenvalues of dissipation matrix; *Helszajn, Joseph*; *T-MTT v20 n11 Nov 72* 779-782 (2B10)
lossy waveguide junctions; dissipation and scattering matrices in terms of eigenvalues of dissipation matrix; *Schwartz, E.*; *T-MTT v22 n1 Jan 74* 75 (1F07)
microwave circuits analysis; *Matthews, E. W., Jr.*; *T-MTT v3 n3 Apr 55* 21-26
phase differences between the incident and transmitted waves at the input and output ports, respectively, of a two-arm waveguide junction; *Schafer, George E.*; *T-MTT v8 n6 Nov 60* 617-622
physical meaning and properties of scattering parameters and scattering matrix; *Kurokawa, Kaneyuki*; *T-MTT v13 n2 Mar 65* 194-202
tensor character of symmetrical waveguide junctions; *Knorr, Jeffrey B.*; *T-MTT v19 n4 Apr 71* 414-415 (2C10)
waveguide discontinuities; calculation of scattering matrix for lossless discontinuities using small aperture and small obstacle theory; unitary scattering matrix derivation; *Ren, Chung-Li*; *T-MTT v20 n7 Jul 72* 488-490 (2C05)
waveguide hybrid junction transversed by dielectric sheet; scattering matrix calculation using reduced-rank spectral expansion technique; *Zuckerman, Douglas N.*; *T-MTT v25 n9 Sep 77* 768-773 (1D10)

Scattering parameters
graphical procedures for finding matrix elements for a lattice network; *Mathis, H. F.*; *T-MTT v13 n1 Jan 65* 130-132
high-frequency transistor; evaluation by three-port scattering parameters; *Anderson, A. P.*; *T-MTT v15 n4 Apr 67* 263-265
instrinsic attenuation (insertion loss) calculated from scattering coefficients; *Beatty, Robert W.*; *T-MTT v11 n3 May 63* 179-182
intrinsic attenuation (insertion loss) calculated from scattering coefficients. *Beatty, R. W., Correction*; *T-MTT v13 n2 Mar 65* 258
intrinsic attenuation (insertion loss) calculated from scattering coefficients; *Baudrand, H.*; *T-MTT v12 n4 Jul 64* 470-471
matrix method for deriving equivalent scattering parameters of reduced multiport, derived by T. Y. Otoshi; simple verification of Otoshi's theorem; *Cullen, T. J.*; *T-MTT v18 n3 Mar 70* 171
microstrip *T*-junctions, unsymmetric; computer program for scattering parameters computation; *Menzel, W.*; *T-MTT v26 n3 Mar 78* 217 (1F13)
microwave FET oscillator design using large-signal *S*-parameters; *Mitsui, Yasuo*; *T-MTT v25 n12 Dec 77* 981-984 (1B05)
nonlinear networks; Volterra series analysis; *Weiner, Donald D.*; *T-MTT v24 n7 Jul 76* 422-433 (1C04)
passive, lossy nonreciprocal two-port networks; *Glasser, Jerome I.*; *T-MTT v21 n3 Mar 73* 135-136 (1C05)
passive two-port networks; existence range of scattering parameters and limitations on moduli; *Carli, Edoardo*; *T-MTT v22 n9 Sep 74* 835-837 (1B03)
physical meaning and properties of scattering parameters and scattering matrix; *Kurokawa, Kaneyuki*; *T-MTT v13 n2 Mar 65* 194-202
theory and analysis of a ganged pair of line stretchers with error analysis; *Ellerbruch, Doyle A.*; *T-MTT v12 n4 Jul 64* 453-459
two-port measurements with imperfect test set; *Kruppa, W.*; *T-MTT v19 n1 Jan 71* 122-123 (2B11)
two-port with mismatched source and load and/or arbitrary reference planes; bounds on reflection coefficient amplitude; *Tromp, H.*; *T-MTT v26 n12 Dec 78* 973-978 (1D09)
UHF amplifier design using scattering parameters; *Gledhill, C. S.*; *T-MTT v20 n4 Apr 72* 289-290 (1E11)

unisolated 'binary' power dividers; use of scattering matrix to determine scattering parameters; *Hindin, Harvey J.*; *T-MTT v16 n8 Aug 68* 568-569

Scattering parameters measurement

50–75 GHz band; network analyzer/reflection test unit; *Yuan, L. T.*; *T-MTT v24 n12 Dec 76* 981-987 (2A10)
analysis of a multimode transmission line; *Dave, Himanshu B.*; *T-MTT v10 n4 Jul 62* 274-278
apexcardiography; microwave recording of ACG; *Lin, James C.*; *T-MTT v27 n6 Jun 79* 618-620 (1E08)
automated network analyzer calibration; application to adapter evaluation; *Engen, Glenn F.*; *T-MTT v22 n12 Dec 74* 1255-1260 (4D12)
automated systems; computer program for direct calibration of two-port reflectometers; *Gelnovatch, Vladimir G.*; *T-MTT v24 n1 Jan 76* 45-47 (1D05)
automatic network analyzers; calibration process; *Rehnmark, Stig*; *T-MTT v22 n4 Apr 74* 457-458 (2D05)
bipolar transistors; large-signal *S*-parameters measurement using two-signal method; *Mazumder, Shamsur R.*; *T-MTT v26 n6 Jun 78* 417-420 (1C11)
calibrated reflection coefficient standards for the circular TE_{01} mode; *Champlin, Keith S.*; *T-MTT v16 n2 Feb 68* 90-94
characteristic impedance of rectangular coaxial transmission lines; *Cruzan, O. R.*; *T-MTT v12 n5 Sep 64* 488-495
characteristic impedance of square coaxial line; *Conning, S. W.*; *T-MTT v12 n4 Jul 64* 468
de-embedding errors, bounds; *Glasser, Lance A.*; *T-MTT v26 n5 May 78* 379-380 (1E05)
direct measurement of reflection coefficients through a lossless network; *Mathis, H. F.*; *T-MTT v3 n5 Oct 55* 58
dual six-port automatic network analyzer; performance; *Hoer, Cletus A.*; *T-MTT v27 n12 Dec 79* 993-998 (1E13)
dual six-port reflectometer calibration using thru-reflect-line technique; *Engen, Glenn F.*; *T-MTT v27 n12 Dec 79* 987-993 (1E07)
efficiencies of two-port networks with arbitrary load; calculation from input reflection coefficient data measured with output terminated in sliding short; *Beatty, Robert W.*; *T-MTT v20 n5 May 72* 343-344 (1F02)
errors due to residual SWR of slotted lines or directional couplers; *Beatty, Robert W.*; *T-MTT v21 n5 May 73* 364 (1F06)
extension of modulated scattering method for measuring $\vec{E}$ field to the measurement of $\vec{H}$ field; *Hu, Ming-Kuei*; *T-MTT v8 n3 May 60* 295-300
graphical method for transforming impedances and reflectances through a lossy twoport; *Hinckelmann, Otto F.*; *T-MTT v10 n2 Mar 62* 139-141
high-resolution swept-frequency reflectometer, capable of measuring reflection coefficients of 0.001, suitable for precise impedance matching; *Hollway, D. L.*; *T-MTT v17 n4 Apr 69* 185-188
interchange of source and detector in low-power microwave network measurements; *Altschuler, Helmut M.*; *T-MTT v13 n1 Jan 65* 84-90
magnetized ferrite cylinder; *Eggimann, Wilhelm H.*; *T-MTT v8 n4 Jul 60* 440-445
magnetized ferrite cylinder. *Eggiman, W. H., Correction*; *T-MTT v9 n1 Jan 61* 22
matching of reflection coefficients in 3 port networks to approximate an *N*-port circulator by means of reactive elements; *Humphreys, B. L.*; *T-MTT v10 n6 Nov 62* 551-554
matrix description of waveguide discontinuities in the presence of propagation and evanescent modes; *Haskal, Haim*; *T-MTT v12 n2 Mar 64* 184-188
measured points distributed in form of a circle in a complex plane; numerical data processing; *Kajfez, Darko*; *T-MTT v18 n2 Feb 70* 96-100
measurement of detector impedance; *Szente, P. A.*; *T-MTT v11 n4 Jul 63* 263
measurements of varactor diode impedance on a slotted line from 2–18 GHz; *Roberts, D. A. E.*; *T-MTT v12 n4 Jul 64* 471-475
measuring the ω-β diagram of periodic structures; *McDuff, Odis P.*; *T-MTT v10 n4 Jul 62* 295-296
microstrip three-line system use as six-port reflectometer; *Collier, Richard J.*; *T-MTT v27 n10 Oct 79* 847-853 (1B11)
microwave; application of homodyne detection principle; *King, R. J.*; *T-MTT v18 n9 Sep 70* 658-660
microwave magnetic Kerr effect in semiconductors; measurement by dual-mode reflectometer; *Hauge, Peter S.*; *T-MTT v15 n7 Jul 67* 406-410
microwave reflection coefficients; magnified and squared VSWR responses; *Beatty, Robert W.*; *T-MTT v7 n3 Jul 59* 346-350
microwave swept-frequency reflectometer using double-swept-frequency source; *Yamaura, Itsuo*; *T-MTT v23 n3 Mar 75* 316-317 (1D08)
mixed two-port parameters for characterizing varactor mounts in waveguides; *Viggh, Mats E.*; *T-MTT v11 n3 May 63* 218-219
multiport waveguide junctions; application of Deschamps' graphical method; *Chang, C. T. M.*; *T-MTT v20 n2 Feb 72* 186-187 (2E08)
nonreciprocal two-ports; improved method; *Altschuler, Helmut M.*; *T-MTT v16 n4 Apr 68* 261-262
nonreciprocal two-ports; improved method; *Hoffman, G. R.*; *T-MTT v15 n2 Feb 67* 131-133
phase error of reflection coefficient when measured through lossless two-port network; limits of error; *Otoshi, Tom Y.*; *T-MTT v21 n3 Mar 73* 151-153 (1D09)
physical meaning and properties of scattering parameters and scattering matrix; *Kurokawa, Kaneyuki*; *T-MTT v13 n2 Mar 65* 194-202
real-time measurement of complex reflection coefficient; simple technique using hybrid tee and two crystal detectors; *Glover, Gary H.*; *T-MTT v18 n7 Jul 70* 410-412
reflection coefficient bridge for use with any waveguide mode; analysis and calibration; *Champlin, Keith S.*; *T-MTT v15 n8 Aug 67* 477-478
reflection coefficient measurement as function of distance using locating reflectometer; deconvolution to increase axial resolution; *Somlo, Peter I.*; *T-MTT v27 n2 Feb 79* 128-135 (1C10)
reflection measurements on moderately long transmission lines; application of broadband frequency modulation; *Mahle, C.*; *T-MTT v14 n10 Oct 66* 496-497
semiconductor materials; microwave conductivity measurement; *Roy, P. K.*; *T-MTT v22 n2 Feb 74* 144-146 (1E10)
simple test to measure insertion losses at microwave frequencies; *Stelzried, C. T.*; *T-MTT v12 n4 Jul 64* 475-477
six-port reflectometer; *Engen, Glenn F.*; *T-MTT v25 n12 Dec 77* 1075-1080 (2B07)
six-port reflectometer system for broadband bolometer unit calibration; automated system; *Komarek, Ernest L.*; *T-MTT v25 n12 Dec 77* 1122-1127 (2E12)
six-port reflectometer system for millimeter-wave power and reflection coefficient measurement; semi-automated system; *Weidman, Manly P.*; *T-MTT v25 n12 Dec 77* 1083-1085 (2C01)
six-port reflectometer techniques; improved circuit; *Engen, Glenn F.*; *T-MTT v25 n12 Dec 77* 1080-1083 (2B12)
six-port reflectometer; two-port device measurement using two six-port reflectometers; *Hoer, Cletus A.*; *T-MTT v25 n12 Dec 77* 1070-1074 (2B02)
six-port reflectometers; calibration using sliding terminations; *Engen, Glenn F.*; *T-MTT v26 n12 Dec 78* 951-957 (1C01)
stripline junction circulators; measurement of gyrator conductance, susceptance slope parameter, and frequencies of two split resonant modes; *Helszajn, Joseph*; *T-MTT v21 n5 May 73* 347-351 (1E07)
surface wave scattering by discontinuities in a unidirectionally conducting screen; *Seshadri, S. R.*; *T-MTT v10 n5 Sep 62* 367-375
swept-frequency technique for impedance measurement in 17.5–19.5 GHz band; *Egami, Shunichiro*; *T-MTT v21 n10 Oct 73* 647-648 (1F01)
tangent relation for determining immitance inverter parameters; *Churchill, D. B.*; *T-MTT v12 n5 Sep 64* 551-552
time-domain reflectometer in which pulse spectrum lines are radiated individually, measured reflections are added to compute echo; *Robinson, Lloyd A.*; *T-MTT v20 n12 Dec 72* 855-857 (2B09)
time-domain techniques for broadband microwave measurements; computer-aided measurement; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
time-domain techniques for broadband microwave measurements; computer-aided measurement. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
Through-Short-Delay calibration procedure for multiport measurements affected by leakage; *Speciale, Ross A.*; *T-MTT v25 n12 Dec 77* 1100-1115 (2D04)
transformation method to find the load impedance of a lossy two-port network; *Mittra, Raj*; *T-MTT v10 n1 Jan 62* 13-19
transformation method to find the load impedance of a lossy two-port network; *Stock, D. J. R.*; *T-MTT v10 n5 Sep 62* 398-399
two-port junctions; iconocenter determination from input reflection coefficient measurements; *Deschamps, Georges*; *T-MTT v5 n2 Apr 57* 159-161
varactor *Q* measurement; error minimization in four-bias method; *Benson, Walter S., Jr.*; *T-MTT v25 n4 Apr 77* 335-338 (2A12)
waveguide impedance meter for the automatic display of complex reflection coefficients; *Bachman, Henry L.*; *T-MTT v3 n1 Jan 55* 22-30
wide band matching of lossless waveguide two-ports; *Kajfež, Darko*; *T-MTT v10 n3 May 62* 174-178
Wiener-Hopf technique applied to two dimensional scattering for wall impedance changes in waveguides; *Johansen, Elmer L.*; *T-MTT v10 n1 Jan 62* 26-29
X-band reflection measuring device with full band display of reflection coefficient; *Ronde, Frans C. de*; *T-MTT v13 n4 Jul 65* 435-440

Scattering parameters measurement standards

reduced-height waveguide reflection standards; effect of flange loss on reflection coefficient; *Somlo, Peter I.*; *T-MTT v27 n9 Sep 79* 795-797 (1C01)

Schottky-barrier devices

microstrip line on semiconductor substrate; slow-wave propagation; *Jäger, Dieter*; *T-MTT v24 n9 Sep 76* 566-573 (1B08)

Schottky-barrier diodes

amplifiers; 12-W GaAs Read-diode *X*-band amplifier in microstrip; *Tserng, Hua Quen*; *T-MTT v26 n10 Oct 78* 774-778 (1F02)
avalanche noise in 75–115 GHz range; *Keen, Nigel J.*; *T-MTT v26 n10 Oct 78* 843-844 (2D07)
GaAs microwave mixers; integrated-circuit image-enhanced balanced mixer; *Dickens, Lawrence E.*; *T-MTT v23 n3 Mar 75* 276-281 (1A10)
IMPATT diode amplifiers consisting of packaged diodes in parallel; *Knerr, Reinhard H.*; *T-MTT v22 n5 May 74* 569-572 (2B14)
IMPATT diodes; temperature effect on admittance; *Takayama, Yoichiro*; *T-MTT v23 n8 Aug 75* 673-680 (1F01)
Ku-band mixer diode burnout when subjected to RF spikes; *Morris, George E.*; *T-MTT v22 n7 Jul 74* 745-746 (1C11)
MIC Doppler module comprised of Ge avalanche diode oscillator and Schottky-barrier detector diode; *Nanbu, Shutaro*; *T-MTT v26 n3 Mar 78* 192-196 (1E02)
microwave modulator; SSB modulator pumped at submultiple of carrier frequency; *Chramiec, Jerzy*; *T-MTT v26 n9 Sep 78* 635-638 (1A09)
millimeter-wave and microwave mixers, conversion loss and noise; predicting mixer performance, experimental results; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 55-61 (1A09)
millimeter-wave and microwave mixers, conversion loss and noise; predicting mixer performance, theory; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 49-55 (1A03)
millimeter-wave detection; quasi-optical detector for 100–300 GHz waves propagating in free space; *Kawasaki, Ryoji*; *T-MTT v27 n5 May 79* 530-533 (2F01)
millimeter-wave frequency multipliers at 300 and 450 GHz using thin-film IC; *Takada, Tohru*; *T-MTT v26 n10 Oct 78* 733-737 (1C03)
millimeter-wave mixer, 76–106 GHz; broadband second-harmonic mixer uses single diode and wave absorber in IF circuit; *Kawasaki, Ryoji*; *T-MTT v26 n6 Jun 78* 425-427 (1D05)
millimeter-wave mixer diodes prepared by molecular beam epitaxy for use in cryogenic receiver in 60–90 GHz band; *Linke, R. A.*; *T-MTT v26 n12 Dec 78* 935-938 (1A13)
millimeter-wave mixer for 140–220 GHz band; low noise and conversion loss; *Kerr, Anthony R.*; *T-MTT v25 n5 May 77* 399-401 (1E03)
millimeter-wave mixer in stripline; subharmonically pumped two-diode mixer; *Carlson, Eric R.*; *T-MTT v26 n10 Oct 78* 706-715 (1A04)
millimeter-wave mixer on microstrip; K_a-band; *Kelly, Alexander J.*; *T-MTT v24 n11 Nov 76* 867-869 (3B01)
millimeter-wave mixers; 60–90 GHz broadband mixer; *Kanmuri, Noboru*; *T-MTT v24 n5 May 76* 259-261 (1B11)
millimeter-wave mixers for 86-GHz guided transmission system; high-reliability high-power components; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
millimeter-wave mixers with cutoff frequency in excess of 3000 GHz; *Wrixon, Gerard T.*; *T-MTT v24 n11 Nov 76* 702-706 (1B08)
millimeter-wave thin-film downconverter for 60-GHz signal frequency; *Snell, William W., Jr.*; *T-MTT v24 n11 Nov 76* 804-806 (2C09)
mixer conversion losses up to 5 THz; GaAs, Si, and InSb diodes; *Kelly, William M.*; *T-MTT v27 n7 Jul 79* 665-672 (1C11)
mixer covering 40-60 GHz band; fixed-tuned, balanced mixer; *Hislop, A.*; *T-MTT v24 n1 Jan 76* 63-64 (1E09)

mixer for submillimeter wavelengths; conversion loss limitations; *McColl, Malcolm*; *T-MTT v25 n1 Jan 77* 54-59 (1D14)
mixer operation; noise figure and conversion loss; *Barber, Mark R.*; *T-MTT v15 n11 Nov 67* 629-635
mixers; 4-GHz integrated-circuit mixer; *Katoh, Motonobu*; *T-MTT v19 n7 Jul 71* 634-637 (2C01)
mixers; waveshape of local oscillator voltage component across nonlinear junction of diode; *Fleri, Dominic A.*; *T-MTT v21 n1 Jan 73* 39-43 (1E09)
mode locking at *X*-band using IMPATT diode as gain element and Schottky-barrier diode as saturable absorber; *Glasser, Lance A.*; *T-MTT v26 n2 Feb 78* 62-69 (1B02)
noise figure of mixer diode; *Gewartowski, James W.*; *T-MTT v19 n5 May 71* 481 (2B07)
submillimeter-wave and infrared cutoff frequencies; Si and GaAs diodes; *Champlin, Keith S.*; *T-MTT v26 n1 Jan 78* 31-34 (1C05)
submillimeter-wave detection using planar diodes; *Murphy, R. A.*; *T-MTT v25 n6 Jun 77* 494-495 (1C14)
submillimeter-wave detectors; printed resonant antennas for monolithic GaAs detectors; *Mizuno, K.*; *T-MTT v25 n6 Jun 77* 470-472 (1B04)
submillimeter-wave frequency triplers and quadruplers with output at 450 and 600 GHz; *Takada, Tohru*; *T-MTT v27 n5 May 79* 519-523 (2E04)
submillimeter-wave heterodyne detectors and harmonic mixers; *Fetterman, H. R.*; *T-MTT v22 n12 Dec 74* 1013-1015 (1C07)

Schottky-barrier diodes; cf. BARITT diodes

Schottky-barrier FET amplifiers
microwave amplifiers; low-noise design; *Tucker, R. S.*; *T-MTT v23 n8 Aug 75* 697-700 (2A01)
microwave amplifiers; *X*-band amplifier design and performance; *Liechti, Charles A.*; *T-MTT v22 n5 May 74* 510-517 (1C04)

Schottky-barrier FET oscillators
X-band oscillators; *Maeda, Minoru*; *T-MTT v23 n8 Aug 75* 661-667 (1E03)

Schottky-barrier FETs; cf. Microwave FETs; Millimeter-wave FETs

Schwarz–Christoffel transformation
inversion procedure; application to waveguide discontinuity problems; *Lewin, Leonard*; *T-MTT v19 n6 Jun 71* 542-546 (2E06)

Science
education and science in a mature society; *Pritchard, Wilbur L.*; *T-MTT v7 n1 Jan 59* 3-4
pure vs. applied research; *Riblet, Henry J.*; *T-MTT v7 n3 Jul 59* 306-307
scientific education of public administrators; *Pritchard, Wilbur L.*; *T-MTT v7 n1 Jan 59* 3-4

Screens; cf. Conducting screens

Sea surface
satellite altimetry; *McGoogan, Joseph T.*; *T-MTT v23 n12 Dec 75* 970-978 (1C04)
smooth water; reflectivity at 19.24 and 22.43 GHz as measured with a free-wave microwave reflectometer; *Saxton, J. A.*; *T-MTT v18 n4 Apr 70* 230
smooth water; reflectivity at 19.24 and 22.43 GHz as measured with a free-wave microwave reflectometer; *Thompson, Edgar J.*; *T-MTT v16 n11 Nov 68* 938-943
temperature measurement; *S*-band radiometer; *Keen, Nigel J.*; *T-MTT v23 n5 May 75* 456-457 (1E02)
temperature measurement; *S*-band radiometer with high absolute precision and accuracy; *Hardy, Walter N.*; *T-MTT v22 n4 Apr 74* 382-390 (1C04)

Sea surface electromagnetic scattering
airborne Surface Contour Radar produces real-time topographical map of sea surface beneath aircraft; 8-mm radar; *Kenney, James E.*; *T-MTT v27 n12 Dec 79* 1080-1092 (2E03)
microwave measurement of ocean wave and surface wind conditions; aircraft and satellite programs; *Jones, W. Linwood*; *T-MTT v23 n12 Dec 75* 1053-1058 (2B04)

Search radar
high-power *S*-band; evacuated waveguide filter for suppressing spurious transmision. *Wheeler, H. A., Correction*; *T-MTT v7 n3 Jul 59* 369
high-power *S*-band; evacuated waveguide filter for suppressing spurious transmission; *Wheeler, Harold A.*; *T-MTT v7 n1 Jan 59* 154-162

Selenium
far-infrared properties, 10–100 cm^{-1}; *Danielewicz, E. J.*; *T-MTT v22 n12 Dec 74* 1120 (2D03)

Semiconductor charge carriers; cf. Charge-carrier processes

Semiconductor device fabrication
GaAs MESFETs; self-aligned technique for producing submicrometer gate lengths and spacings between contacts; *Baudet, P.*; *T-MTT v24 n6 Jun 76* 372-376 (2A06)
GaAs MESFETs; submicron single-gate and dual-gate structures with improved low-noise and high-gain performance; *Ogawa, Masaki*; *T-MTT v24 n6 Jun 76* 300-305 (1B12)
microwave MOSFETs; VMOST technology; *Oakes, James G.*; *T-MTT v24 n6 Jun 76* 305-311 (1C03)

Semiconductor device measurements
bipolar transistor scattering parameters; large-signal *S*-parameters measurement using two-signal method; *Mazumder, Shamsur R.*; *T-MTT v26 n6 Jun 78* 417-420 (1C11)
Gunn diode negative-conductance measurement by measuring envelope of transient amplitude of oscillations; validity of method; *Tomizawa, K.*; *T-MTT v21 n9 Sep 73* 596-597 (1D02)
IMPATT diode large-signal electronic admittance as function of frequency and RF voltage level; network analyzer techniques and computer-aided data reduction; *Syrett, Barry A.*; *T-MTT v27 n10 Oct 79* 830-834 (1A08)
IMPATT diode oscillators and amplifiers; characterization using diode biased below breakdown; *Kenyon, N. D.*; *T-MTT v23 n5 May 75* 454-455 (1D14)
IMPATT diode oscillators and amplifiers; measurement of internal circuit loss, load conductance, and equivalent circuit susceptances using diode biased below breakdown; *Tozer, R. C.*; *T-MTT v22 n8 Aug 74* 806-808 (1D10)
measurement of conversion conductances of Esaki mixer diodes; *Pucel, R. A.*; *T-MTT v9 n6 Nov 61* 567-568
microwave absorption modulation by electron mobility variation in *N*-type germanium; *Harmatz, Milton*; *T-MTT v9 n2 Mar 61* 199-200
microwave diodes; de-embedding errors, bounds; *Glasser, Lance A.*; *T-MTT v26 n5 May 78* 379-380 (1E05)
microwave transistor mounted in microstrip; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
perturbation techniques in semiconductor diagnostics; *Champlin, Keith S.*; *T-MTT v11 n1 Jan 63* 73-77
transferred-electron oscillators; negative conductance of diode as function of microwave voltage; *Hartnagel, Hans L.*; *T-MTT v21 n7 Jul 73* 468-477 (1D10)

Semiconductor device modeling; cf. *Specific topic and type*

Semiconductor device noise
avalanche diode noise sources for 18–40 GHz range; waveguide mounted; *Keen, Nigel J.*; *T-MTT v24 n3 Mar 76* 153-155 (1B13)
double-injection space-charge-limited solid-state diodes; noise effect smaller than for single-injection diodes; *van der Ziel, A.*; *T-MTT v16 n5 May 68* 308
excess noise in microwave detector diodes; *Faris, John J.*; *T-MTT v9 n4 Jul 61* 312-314
GaAs FET amplifier, cryogenically cooled; 1.1-dB noise figure at 5 GHz; *Pierro, John*; *T-MTT v24 n12 Dec 76* 972-975 (2A01)
GaAs MESFETs; noise and scattering parameters as function of temperature; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 376-381 (2A10)
Gunn device oscillators; FM noise shown to vary inversely with external *Q* of resonant circuit; *Herbst, H.*; *T-MTT v21 n2 Feb 73* 114-115
Gunn oscillator AM and FM noise characteristics; physical causes of noise; *Gnerlich, Hans R.*; *T-MTT v25 n12 Dec 77* 977-981 (1B01)
IMPATT diode amplifiers and oscillators; *Schiek, Burkhard*; *T-MTT v20 n7 Sep 72* 631-632 (2C06)
IMPATT diodes; noise equivalent circuit; *Gupta, Madhu-Sudan*; *T-MTT v21 n9 Sep 73* 591-594 (1C09)
IMPATT diodes; optimum noise measure for gallium arsenide diodes; *Haus, Hermann A.*; *T-MTT v19 n10 Oct 71* 801-813 (1B11)
low noise properties of backward diodes as mixers at microwave frequencies; *Eng, Sverre T.*; *T-MTT v9 n5 Sep 61* 419-425
measuring noise parameters; computational method for evaluating measured source admittance errors; *Mitama, Masataka*; *T-MTT v27 n6 Jun 79* 612-615 (1E02)
method for stabilizing receivers for radio telescopes and reducing sensitivity to gain fluctuations; *Seling, Theodore V.*; *T-MTT v10 n3 May 62* 209-213
microwave GaAs MESFET broadband low-noise amplifiers; relationships between device parameters and two-port noise parameters; *Fukui, Hatsuaki*; *T-MTT v27 n7 Jul 79* 643-650 (1B03)
microwave linear devices; wave approach to characterizing noise properties; *Meys, R. P.*; *T-MTT v26 n1 Jan 78* 34-37 (1C08)
microwave point-contact diodes under RD and dc excitations; low-frequency noise spectra; *Lipkin, Y.*; *T-MTT v22 n8 Aug 74* 793-796 (1C11)
microwave two-port noise parameters determination using computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
microwave two-port noise parameters determination using least-squares method; *Caruso, Giuseppe*; *T-MTT v26 n9 Sep 78* 639-642 (1A13)
millimeter-wave and microwave mixers, conversion loss and noise; predicting mixer performance, experimental results; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 55-61 (1A09)
millimeter-wave and microwave mixers, conversion loss and noise; predicting mixer performance, theory; *Held, Daniel N.*; *T-MTT v26 n2 Feb 78* 49-55 (1A03)
mixers using resistive diodes; shot noise and attenuator noise mode; *Kerr, Anthony R.*; *T-MTT v27 n2 Feb 79* 135-140 (1D03)
parametric amplifier noise analysis; *Vice, David G.*; *T-MTT v13 n2 Mar 65* 162-167
Schottky-barrier diodes with cutoff frequency in excess of 3000 GHz; *Wrixon, Gerard T.*; *T-MTT v24 n11 Nov 76* 702-706 (1B08)
Si avalanche diode noise source; stability improvement; *Kanda, Motohisa*; *T-MTT v24 n12 Dec 76* 990-995 (2B05)
TED oscillators; AM and FM noise analysis including variation of device admittance with bias- and RF-voltage amplitudes; *Patterson, J. T.*; *T-MTT v24 n7 Jul 76* 460-463 (2A05)

Semiconductor device packaging
Gunn-effect devices; microwave equivalent-circuit parameters; *Owens, R. P.*; *T-MTT v18 n11 Nov 70* 790-798
microwave and millimeter-wave devices; low-inductance package eliminating springs and ribbons; *Spiwak, Robert R.*; *T-MTT v19 n8 Aug 71* 732-733 (2B05)
microwave negative-resistance amplifiers; effect of package parasitics on amplifier behavior; *Monroe, John W.*; *T-MTT v21 n11 Nov 73* 731-735 (2D01)
microwave transistor mounted in microstrip; parasitic reactances measurement using resonance method; *Beneking, H.*; *T-MTT v26 n1 Jan 78* 43 (1D03)
miniaturization of microwave assemblies; *Lewin, Leonard*; *T-MTT v4 n4 Oct 56* 261-262
packaged and mounted diode as a microwave circuit; *Getsinger, William J.*; *T-MTT v14 n2 Feb 66* 58-69
packaged microwave diodes in reduced-height waveguides; characterization; *Roe, James M.*; *T-MTT v18 n9 Sep 70* 638-642

Semiconductor device radiation effects
nuclear radiation perturbation of a semiconductor-filled microwave cavity; *Haden, C. R.*; *T-MTT v14 n7 Jul 66* 347-349

Semiconductor device radiation protection
microwave bipolar transistor linear amplifiers for space applications; *Gibson, Maurice H.*; *T-MTT v26 n10 Oct 78* 779-788 (1F07)

Semiconductor device reliability
GaAs MESFETs; *Abbott, David A.*; *T-MTT v24 n6 Jun 76* 317-321 (1D01)
GaAs MESFETs; *Irie, Toshiaki*; *T-MTT v24 n6 Jun 76* 321-328 (1D05)
GaAs MESFETs with static mean NF_{min} of 0.89 dB and standard deviation of 0.07 dB at 4 GHz; *Suzuki, T.*; *T-MTT v27 n12 Dec 79* 1070-1074 (2D07)
microwave FETs subjected to nanosecond pulses; burnout properties; *Whalen, James J.*; *T-MTT v27 n12 Dec 79* 1026-1031 (2A05)
millimeter-wave diodes; high-power 86-GHz components for guided transmission system; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)

Semiconductor device testing
millimeter-wave IMPATT diodes; use of oscillator circuit with cap structures; *Misawa, T.*; *T-MTT v18 n11 Nov 70* 969-970
TRAPATT diodes; test circuit using parallel-plate transmission line; *Jenkins, William C.*; *T-MTT v22 n11 Nov 74* 976-977 (1E10)

Semiconductor devices
amplitude modulator at 9600 MHz; *Jacobs, Harold*; *T-MTT v8 n5 Sep 60* 553-559
annotated bibliography on advances in microwave theory and techniques in Great Britain in 1959; *Brown, John*; *T-MTT v8 n4 Jul 60* 382-386
light-illuminated panels; use to attenuate millimeter-wave energy; *Mavaddat, R.*; *T-MTT v18 n7 Jul 70* 360-364

piezoelectric acoustic delay lines; properties and capabilities; *Hickernell, Fre S.*; *T-MTT v17 n11 Nov 69* 957-963
Semiconductor devices; cf. Piezoelectric semiconductor devices; Semiconductor plasma devices
Semiconductor diode amplifiers
low-noise *X*-band parametric amplifier using silicon mesa diode; *Weglein, Rolf D.*; *T-MTT v9 n1 Jan 61* 39-43
microwave power amplifier consisting of nonreciprocal transmission line periodically loaded by negative-resistance diodes; *Paik, S. F.*; *T-MTT v20 n3 Mar 72* 202-209 (1B04)
nonlinear power amplifiers in stable and injection-locked modes; dynamic equations for modulated signals; *Takayama, Yoichiro*; *T-MTT v20 n9 Sep 72* 591-595 (1D05)
Semiconductor diode amplifiers; cf. Gunn device amplifiers; IMPATT diode amplifiers; Transferred-electron amplifiers
Semiconductor diode oscillators
varactor-tuned negative-resistance oscillators; varactor loading effect on oscillator *Q*; *Paik, S. F.*; *T-MTT v22 n5 May 74* 578-580 (2C09)
Semiconductor diode oscillators; cf. Avalanche diode oscillators; Gunn device oscillators; IMPATT diode oscillators; Transferred-electron oscillators; TRAPATT diode oscillators
Semiconductor diode phase shifters; cf. Diode phase shifters
Semiconductor diode switches
7-GHz narrow-band waveguide switch using p-i-n junction diodes; *Peppiatt, Harry J.*; *T-MTT v13 n1 Jan 65* 44-47
7-GHz narrow-band waveguide switch using p-i-n junction diodes; *Rebsch, D. L.*; *T-MTT v13 n6 Nov 65* 874-875
broadbanding microwave diode switches; *Fisher, R. E.*; *T-MTT v13 n5 Sep 65* 706
design of germanium diode microwave switch; *Garver, Robert V.*; *T-MTT v8 n1 Jan 60* 108-111
diode switches; voltage-controlled switch using p-i-n diodes loop-coupled to a section of WR975 waveguide; *Jakes, William C., Jr.*; *T-MTT v14 n4 Apr 66* 189-200
germanium, point-contact, diode placed across section of standard *X*-band waveguide; microwave operation; *Garver, Robert V.*; *T-MTT v6 n4 Oct 58* 378-383
high speed microwave switch using silver-bonded diodes; 11 GHz operation; *Miyauchi, Kazuhiro*; *T-MTT v12 n3 May 64* 368-369
high-speed microwave switching; *Garver, Robert V.*; *T-MTT v7 n2 Apr 59* 272-276
low-input VSWR coaxial diode switch for a broadband centered at 1000 MHz; *Ecklund, W. L.*; *T-MTT v12 n3 May 64* 359
low-noise *X*-band parametric amplifier using silicon mesa diode; *Weglein, Rolf D.*; *T-MTT v9 n1 Jan 61* 39-43
microwave avalanching optoelectronic switch; *Kiehl, Richard A.*; *T-MTT v27 n5 May 79* 533-539 (2F04)
microwave crystals; use as RF switching element; *Millet, Murray R.*; *T-MTT v6 n3 Jul 58* 284-290
microwave frequency translator using semiconductor diode switching; *Jaffe, Jerome S.*; *T-MTT v13 n3 May 65* 371-378
narrow-band type; operating parameters and performance; *Coale, Franklin S.*; *T-MTT v3 n6 Dec 55* 59-61
narrow-band type; operating parameters and performance. *Coale, F. S., Correction*; *T-MTT v4 n3 Jul 56* 183
RF pulse generation using optoelectronic switching in Si; *Proud, Joseph M.*; *T-MTT v26 n3 Mar 78* 137-140 (1A03)
microstrip SPDT power switch using *p-i-n*-terminated stubs; frequency adjustable over octave range; *Toussaint, Hans-Norbert* ; *T-MTT v19 n7 Jul 71* 657-659 (2D12)
shunt-type and series-type switches; *Galejs, Janis*; *T-MTT v8 n5 Sep 60* 566-569
silver bonded germanium varactor diodes used in conjunction with 3 db short-slot couplers to form a microwave switch; *Higgins, V. J.*; *T-MTT v12 n2 Mar 64* 258-259
SPDT switching at high power with octave microwave bandwidth; *White, Joseph F.*; *T-MTT v16 n1 Jan 68* 30-36
theory of TEM diode switching; *Garver, Robert V.*; *T-MTT v9 n3 May 61* 224-238
ultrahigh-speed, for 50 GHz; use of avalanche breakdown in varactor diodes; *Sugimoto, Shigetoki*; *T-MTT v16 n12 Dec 68* 1017-1021
waveguide switches; p-i-n switching window mounted in resonant iris; *Cottrell, Peter E.*; *T-MTT v21 n5 May 73* 358-359 (1E12)
X-band step twist diode switch; *Jones, H. S., Jr.*; *T-MTT v12 n5 Sep 64* 549
X_L-band waveguide switches using p-i-n diodes; development in the SPST, SP2T, SP4T and SP8T configurations; *Assaly, Robert N.*; *T-MTT v14 n11 Nov 553-563*
Semiconductor diode switches; cf. p-i-n diodes
Semiconductor diodes
6 kw peak-power varactor duplexer; *Hoover, John C.*; *T-MTT v10 n6 Nov 62* 476-479
behavior of a dc biased millimeter wave diode; theoretical analysis and experimental investigation; *Ishii, Koryu*; *T-MTT v10 n4 Jul 62* 258-262
broad-band crystal mount 10.5 kmc–20 kmc; *Staniforth, A.*; *T-MTT v8 n4 Jul 60* 464-465
broad-band TEM diode limiting; *Garver, Robert V.*; *T-MTT v10 n5 Sep 62* 302-310
broadband binary 180° diode phase modulators; *Garver, Robert V.*; *T-MTT v13 n1 Jan 65* 32-38
C-band stripline frequency translator; *Rutz, Elisabeth M.*; *T-MTT v9 n2 Mar 61* 158-161
characterization of microwave variable capacitance diodes; *Eng, Sverre T.*; *T-MTT v9 n1 Jan 61* 11-22
crystal diodes; measurement of impedances at low levels; *Dawirs, H. N.*; *T-MTT v4 n2 Apr 56* 94-96
design aspects of wideband up-converters and nondegenerate parametric amplifiers; *Getsinger, W. J.*; *T-MTT v12 n1 Jan 64* 77-87
design of periodically loaded traveling wave parametric amplifier using variable reactance diodes; *Honey, Richard C.*; *T-MTT v8 n3 May 60* 351-361
doub;e-injection space-charge-limited solid-state diodes; noise effect smaller than for single-injection diodes; *van der Ziel, A.*; *T-MTT v16 n5 May 68* 308
electrolytic pointing of fine wires used in diode whisker contacts; *Dozier, J. W.*; *T-MTT v12 n3 May 64* 360
electrolytic pointing of fine wires used in diode whisker contacts. *Dozier, J. W., Correction*; *T-MTT v12 n5 Sep 64* 572
equations and design curves for microwave frequency converters; *Perlman, Barry S.*; *T-MTT v13 n2 Mar 65* 150-161
excess noise in microwave detector diodes; *Faris, John J.*; *T-MTT v9 n4 Jul 61* 312-314
high-capacitance parametric diode for use at low frequencies; *Aitchison, R. E.*; *T-MTT v10 n1 Jan 62* 91
improvement in the same-law operation of crystal rectifiers as detectors; *Staniforth, Allan*; *T-MTT v8 n1 Jan 60* 111-115
input conductance of four frequency parametric up-converter; *Korpel, Adrianus*; *T-MTT v13 n1 Jan 65* 96-106
intermodulation distortion prediction in varactor upconverters; *Grayzel, A. I.*; *T-MTT v15 n3 Mar 67* 183-184
intermodulation distortion prediction in varactor upconverters; *Perlow, Stewart M.*; *T-MTT v13 n6 Nov 65* 820-827
limitations on amplifier noise performance; *Weglein, Rolf D.*; *T-MTT v8 n5 Sep 60* 538-544
measurement technique to characterize diodes and varactors; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 15-20
microwave crystal rectifiers; pressure dependence; *Matthei, Wesley G.*; *T-MTT v6 n1 Jan 58* 112
stabilization of mixer diode performance against L.O. power changes; *Carr, J. William*; *T-MTT v11 n2 Mar 63* 123-129
theory of parametric limiting with varactor diodes; *Ho, Irving T.*; *T-MTT v9 n6 Nov 61* 459-472
transmission-phase relations for four-frequency parametric devices; analysis; *Anderson, Dean B.*; *T-MTT v9 n6 Nov 61* 491-498
varactor diode used as a microwave modulator using minimum modulation power; *Rutz, Elisabeth M.*; *T-MTT v10 n6 Nov 62* 605-610
wide-band degenerate parametric amplifiers; design and performance; *Gilden, Meyer*; *T-MTT v9 n6 Nov 61* 484-490
X-band diode limiting; *Garver, R. V.*; *T-MTT v9 n2 Mar 61* 202
X-band power limiter using ferrite and diodes; *Krupke, William F.*; *T-MTT v9 n6 Nov 61* 472-480
Semiconductor diodes; cf. Avalanche diodes; Backward diodes; BARITT diodes; Gunn devices; Gunn diodes; IMPATT diodes; LSA devices; Microwave diodes; Millimeter-wave diodes; p-i-n diodes; Point-contact diodes; Schottky-barrier diodes; Step-recovery diodes; Transferred-electron devices; TRAPATT diodes; Tunnel diodes; Varactor diodes; Varactors
Semiconductor domains; cf. Gunn devices
Semiconductor-filled waveguides
waveguide isolator using InSb; operation at 35 GHz; *May, W. G.*; *T-MTT v16 n10 Oct 68* 877-878
Semiconductor heterojunction devices; cf. Gallium alloys/compounds, devices; Semiconductor lasers
Semiconductor isolators
indium antimonide; 35-GHz isolator using coaxial solid-state plasma in longitudinal magnetic field; *McLeod, Bruce R.*; *T-MTT v19 n6 Jun 71* 510-516 (1B10)
InSb films at 87 GHz; field-displacement mode and Faraday rotation mode measurements; *Dinger, Robert J.*; *T-MTT v22 n10 Oct 74* 879-880 (1C05)
millimeter-wave isolator at 94 GHz; semiconductor mounted coaxially in circular waveguide in longitudinal dc field; *Kanda, Motohisa*; *T-MTT v22 n11 Nov 74* 913-917 (1A03)
millimeter-wave solid-state plasma isolators for use in reflection-beam system; 94-GHz performance; *Kanda, M.*; *T-MTT v23 n6 Jun 75* 506-508 (1D06)
waveguide isolator using InSb; operation at 35 GHz; *May, W. G.*; *T-MTT v16 n10 Oct 68* 877-878
Semiconductor lasers
heterojunction lasers; radiation pattern and mode conversion calculations; *Lewin, Leonard*; *T-MTT v23 n7 Jul 75* 576-585 (1C10)
Semiconductor lasers; cf. Gallium alloys/compounds, lasers
Semiconductor-loaded waveguides
circular cylindrical semiconductor rod placed in rectangular waveguide; electromagnetic field distribution for positive and negative conductivity; *Andersen, J. Bach*; *T-MTT v16 n3 Mar 68* 194-196
conditions for double frequency oscillation in waveguide mounted tunnel diodes; *Hoffins, Cordell C.*; *T-MTT v12 n2 Mar 64* 176-183
dominant mode propagation in Ge and Si loaded guides with carrier density decaying exponentially; *Holmes, D. A.*; *T-MTT v12 n1 Jan 64* 144-145
E-plane 'Y' waveguide junction having InSb rod aligned with principal symmetry axis of the junction; circulator action at 140 GHz; *Brodwin, M.*; *T-MTT v15 n9 Sep 67* 530-531
electromagnetic waves in rectangular guides filled with a semiconductor with a transverse magnetic field; *Engineer, M. H.*; *T-MTT v13 n5 Sep 65* 641-646
inhomogeneously filled with transversely magnetized semiconductor; *Sorrentino, Roberto*; *T-MTT v24 n4 Apr 76* 201-208 (1C11)
InSb thin-film directional coupler performance in 32–36 GHz band; coupling varied by applied dc magnetic field; *Tanaka, Ikuo*; *T-MTT v24 n10 Oct 76* 660-662 (1C04)
microstrip transmission on semiconductor substrates; *Hyltin, Tom M.*; *T-MTT v13 n6 Nov 65* 777-781
microwave magnetic Kerr effect in semiconductors; measurement by dual-mode reflectometer; *Hauge, Peter S.*; *T-MTT v15 n7 Jul 67* 406-410
microwave measurements on a semiconductor filled symmetrical strip transmission line; *Holmes, D. A.*; *T-MTT v12 n4 Jul 64* 478-480
microwave propagation in a semiconductor filter waveguide with the carrier density varying in time; *Nag, Biswaranjan R.*; *T-MTT v10 n6 Nov 62* 564-567
nonreciprocal wave propagation; loss reduction by placing semiconductor in plane of circularly polarized electric field indielectric-loaded guide; *Gardiol, Fred E.*; *T-MTT v22 n5 May 74* 563-565 (2B08)
rectangular guide completely filled with semiconductor and subject to transverse magnetic field; Hall field and magnetoresistance effects; *Ness, J. B.*; *T-MTT v24 n7 Jul 76* 473-476 (2B04)
rectangular guide containing semiconductor subjected to transverse magnetic field; *Ness, J. B.*; *T-MTT v23 n9 Sep 75* 767-772 (1D07)
rectangular, inhomogeneously filled with semiconductors; wave propagation; *Sheikh, R. H.*; *T-MTT v16 n2 Feb 68* 117-121
rectangular, loaded with a thin slab of transversely magnetized semiconductor; boundary value problem; *Hirota, Ryogo*; *T-MTT v18 n4 Apr 70* 188-195
rectangular, subjected to a uniform transverse steady magnetic field; determination of field components and propagation constant of electromagnetic waves; *Rahman, S. A.*; *T-MTT v17 n5 May 69* 279-281
rectangular waveguide containing transversely magnetized semiconductor; perturbation analysis; *Gabriel, Garabet J.*; *T-MTT v14 n6 Jun 66* 258-264

rectangular waveguides with one high-conductivity semiconductor side wall; propagation characteristics; *Larrabee, Robert D.*; *T-MTT v14 n7 Jul 66* 306-310
Schottky-contact microstrip; slow-wave propagation; *Jäger, Dieter*; *T-MTT v24 n9 Sep 76* 566-573 (1B08)
'twist' mode propagation in InSb at 70 GHz; *Glover, Gary H.*; *T-MTT v18 n9 Sep 70* 570-575

Semiconductor-loaded waveguides; cf. Semiconductor isolators

Semiconductor logic devices
Gunn devices for multiplexing and demultiplexing in Gb/s range; *Mause, Klaus*; *T-MTT v24 n12 Dec 76* 926-929 (1B14)

Semiconductor materials
bulk semiconductors; microwave frequency multiplication using hot electrons; *Machi, Yoshio*; *T-MTT v17 n6 Jun 69* 333-338

Semiconductor materials; cf. Amorphous semiconductors; Cadmium telluride; Germanium; Indium antimonide; Selenium

Semiconductor materials measurement
conductivity and permittivity of semiconductor spheres; *Champlin, Keith S.*; *T-MTT v9 n6 Nov 61* 545-551
microwave measurements; use of rectangular waveguides with one high-conductivity semiconductor side wall; *Larrabee, Robert D.*; *T-MTT v14 n7 Jul 66* 306-310
measurement of magneto-microwave Kerr effect in semiconductors using reflectometers; *Vernon, R. J.*; *T-MTT v16 n4 Apr 68* 262
measurement of microwave magneto-Kerr effect in semiconductors using interferometric polarization analyzer; *Vernon, Ronald J.*; *T-MTT v19 n3 Mar 71* 287-294 (1D07)
microwave conductivity measurement; *Roy, P. K.*; *T-MTT v22 n2 Feb 74* 144-146 (1E10)

Semiconductor memories
microwave frequency memory device using transferred-electron device oscillator; *Curtice, W. R.*; *T-MTT v23 n12 Dec 75* 1074-1076 (2C11)

Semiconductor phase shifters; cf. Diode phase shifters

Semiconductor plasma; cf. Plasma

Semiconductor switches
coplanar transmission lines on GaAs substrate; *Fleming, Paul L.*; *T-MTT v27 n12 Dec 79* 1032-1035 (2A11)

Semiconductor switches; cf. FET switches; Semiconductor diode switches

Semiconductor waveguides; cf. Semiconductor-loaded waveguides

Sensitivity analysis; cf. Network sensitivity analysis; Tolerance analysis

Servosystems
phase shift control of ferrite phase shifters; *King, D. D.*; *T-MTT v7 n2 Apr 59* 229-233

Shielding; cf. Electromagnetic shielding; Wire communication cable shielding

Shift-register sequences; cf. Pseudonoise sequences

Shock waves
electromagnetic shock waves on nonlinear dispersive transmission lines; *Karbowiak, A. E.*; *T-MTT v23 n5 May 75* 453-454 (1D13)

Shot noise
mixers using resistive diodes; shot noise and attenuator noise mode; *Kerr, Anthony R.*; *T-MTT v27 n2 Feb 79* 135-140 (1D03)

Signal analysis; cf. Spectral analysis

Signal processing
information recirculated through an amplifier to obtain microwave signal storage; *Kellett, James D.*; *T-MTT v9 n4 Jul 61* 306-312
linear; role of ultrasonic transversal filters; *Squire, William D.*; *T-MTT v17 n11 Nov 69* 1020-1040

Signal processing; cf. Acoustic bulk-wave signal processing; Acoustic surface-wave signal processing

Signal transformers
rotating coupler for VHF range; transformer coupling between two windings; *Allen, C. W.*; *T-MTT v24 n5 May 76* 267-269 (1C05)

Silicon
p-type; techniques for measurement of complex microwave conductivity; *Datta, A. N.*; *T-MTT v18 n3 Mar 70* 162-166

Silicon devices
antennas; millimeter-wave frequency scanning array consisting of silicon rectangular rod with periodic metallic stripe perturbations on one side; *Klohn, Kenneth L.*; *T-MTT v26 n10 Oct 78* 764-773 (1E06)
avalanche diodes; large-signal characteristics; *Decker, David R.*; *T-MTT v18 n11 Nov 70* 872-876
far-infrared bolometer detectors using compensated n-type Si at liquid-helium temperatures; *Summers, C. J.*; *T-MTT v22 n12 Dec 74* 1009-1013 (1C03)
far-infrared Si photoconductive detectors; long-wavelength limit of 400 μm; *Norton, P.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
IMPATT, MITATT, and TUNNETT mode devices; high-frequency limitations; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)
microstrip line on silicon–silicon dioxide system; parallel-plate waveguide model; *Hasegawa, Hideki*; *T-MTT v19 n11 Nov 71* 869-881 (1D05)

Silicon devices; cf. BARITT diodes; Bipolar transistors; IMPATT diodes; MOSFETs; Schottky-barrier devices; TRAPATT diodes

Silicon diodes
IMPATT diodes; pulsed operation of double-drift diodes in 8.5–18 GHz region; *Pfund, George*; *T-MTT v22 n12 Dec 74* 1134-1140 (2B02)
TRAPATT diodes; comparison of n+-p-p+ and p+-n-n+ diodes; *Haddad, George I.*; *T-MTT v21 n7 Jul 73* 501-502 (2C08)

Single-sideband; cf. SSB

Size measurement
microwave technique for simultaneously measuring size and permittivity of dielectric samples; use of Gunn flange oscillators; *Lakshminarayana, Mysore R.*; *T-MTT v27 n7 Jul 79* 661-665 (1C07)

Skin
tumors; 27.12-MHz selective heating; *Antich, Peter P.*; *T-MTT v26 n8 Aug 78* 569-572 (1D13)

Skin effect
high-frequency IMPATT diodes; consequences of 'skin effect'; *DeLoach, B. C., Jr.*; *T-MTT v18 n1 Jan 70* 72-74
millimeter and submillimeter wavelength excess conduction loss in copper waveguides; screening potential theory; *Wang, Yen-Chu*; *T-MTT v26 n11 Nov 78* 858-861 (1B02)
millimeter-wave waveguide components; excess conduction losses; *Tischer, Frederick J.*; *T-MTT v24 n11 Nov 76* 853-858 (3A01)
RF surface resistance of several metals; computation using the anomalous skin effect theory; *Duncan, L. W.*; *T-MTT v16 n2 Feb 68* 130-131

Slab waveguides; cf. Optical planar waveguides

Slot antennas
currents excited on a conducting surface of large radius of curvature; *Wait, James R.*; *T-MTT v4 n3 Jul 56* 143-145
microstrip slot antenna at *X*-band; input impedance and radiation pattern; *Yoshimura, Yoshikazu*; *T-MTT v20 n11 Nov 72* 760-762 (1E12)
tunnel-diode amplifier, placed in slot of slot array antenna; *Pedinoff, Melvin E.*; *T-MTT v9 n6 Nov 61* 557-566

Slot arrays
conductance of offset series slots in stripline; calculation by frequency-independent curves; *Breithaupt, Robert W.*; *T-MTT v16 n11 Nov 68* 969-970
radial guide with annular slots on conducting walls or annular metallic scatterers inside guide; internal field solution; *Azarbar, Bahman*; *T-MTT v27 n11 Nov 79* 883-890 (1A13)
two-dimensional *X*-band array consisting of 16 slots fed by photoetched tri-plate transmission line; *Sommers, Donald J.*; *T-MTT v3 n2 Mar 55* 157-162

Slot-line components
ferrite-loaded slot line; nonreciprocal properties; *Courtois, L.*; *T-MTT v23 n6 Jun 75* 511-516 (1D11)
fields in air and dielectric regions of slot-line cross section; *Cohn, Seymour B.*; *T-MTT v20 n2 Feb 72* 172-174 (2D06)
strip–slot directional couplers; improving isolation of 3-dB couplers by lengthening slotline; *Schiek, Burkhard*; *T-MTT v26 n1 Jan 78* 5-7 (1A07)

Slot-line discontinuities
shorted slot line; inductive reactance at end of slot; *Knorr, Jeffrey B.*; *T-MTT v21 n9 Sep 73* 579-580 (1B09)

Slot-line transitions
coax–slot and microstrip–slot transitions; *Knorr, Jeffrey B.*; *T-MTT v22 n5 May 74* 548-554 (2A07)
microstrip–slot line transitions; *Schiek, B.*; *T-MTT v24 n4 Apr 76* 231-233 (1E13)

Slot lines
adhesive between metal and substrate; effect on wavelength; *Knorr, Jeffrey B.*; *T-MTT v21 n10 Oct 73* 642-644 (1E08)
application to miniature ferrite devices; *Robinson, Gerald H.*; *T-MTT v17 n12 Dec 69* 1097-1101
coaxial; calculation of characteristic impedance; *Smolarska, Jadwiga*; *T-MTT v6 n2 Apr 58* 161-166
coaxial; evaluation of characteristic impedance by variational expressions; *Collin, R. E.*; *T-MTT v4 n1 Jan 56* 4-8
conductance of offset series slots in stripline; calculation by frequency-independent curves; *Breithaupt, Robert W.*; *T-MTT v16 n11 Nov 68* 969-970
dielectric substrate construction; analysis and possible applications; *Cohn, Seymour B.*; *T-MTT v17 n10 Oct 69* 768-778
double-substrate slot line; relative wavelength and characteristic impedance; *Cohn, Seymour B.*; *T-MTT v19 n9 Sep 71* 773-774 (1D11)
dual slot line studied experimentally when the metal sheet containing the slots is bent through angles of up to 90°; *Burton, Robert W.*; *T-MTT v13 n3 May 65* 303-306
experimental and theoretical data on wavelength, characteristic impedance, transitions and tolerances; *Mariani, Elio A.*; *T-MTT v17 n12 Dec 69* 1091-1096
impedance of a finite, but narrow slot; approximation; *Plonus, M. A.*; *T-MTT v14 n1 Jan 66* 48-49
metal-coating thickness greater than zero; phase constant calculation; *Kitazawa, T.*; *T-MTT v21 n9 Sep 73* 580-582 (1B10)
millimeter-wave IC; double-layered slot line; *Samardzija, Nicola*; *T-MTT v24 n11 Nov 76* 827-831 (2E04)
miniature stripline to waveguide slot adapter; *Shahan, Onnig*; *T-MTT v10 n2 Mar 62* 142-143
partially filled and slotted coaxial line; computation of impedance; *Hatsuda, Takeshi*; *T-MTT v15 n11 Nov 67* 643-644
principle of complementarity in the study of transmission lines; *Owyang, Gilbert H.*; *T-MTT v8 n2 Mar 60* 172-181
shielded slot lines; characteristic impedance and free-space cutoff wavelength; *Lagerlöf, Rolf O. E.*; *T-MTT v21 n7 Jul 73* 499-501 (2C06)
transmission line on a dielectric substrate; use for bandpass and bandstop filters as well as a hybrid coupler; *Mariani, Elio A.*; *T-MTT v18 n12 Dec 70* 1089-1095
tolerance analysis using sensitivity approach; *Garg, Ramesh*; *T-MTT v26 n1 Jan 78* 16-19 (1B04)
use in reflection coefficient measurement; errors due to residual SWR; *Beatty, Robert W.*; *T-MTT v21 n5 May 73* 364 (1F06)
wavelength and characteristic impedance; closed-form expressions; *Garg, Ramesh*; *T-MTT v24 n8 Aug 76* 532 (1D02)

Slot-line measurements
signal introduced across slotted-line probe; errors in VSWR and phase; *Barbero, Jesus*; *T-MTT v22 n10 Oct 74* 887-889 (1C13)

Slot-line measurements; cf. Microwave measurements

Slow-wave structures
application of perturbation theory to the calculation of ω–β characteristics for periodic structures; *Sirkis, Murray D.*; *T-MTT v8 n2 Mar 60* 251-252
energy coupling between a waveguide mode and a semiconductor (or gas discharge) slow wave; *Larrabee, R. D.*; *T-MTT v15 n6 Jun 67* 382-384
equivalent circuits for coupled-cavity slow-wave structures; *Curnow, Harold J.*; *T-MTT v13 n5 Sep 65* 671-675
group and energy velocity in a periodically loaded, circular waveguide; *Walker, George B.*; *T-MTT v10 n1 Jan 62* 30-33
higher order modes in coupled helices; *Hayes, R. E.*; *T-MTT v8 n1 Jan 60* 119-120
mode separation and group velocity at the $n\pi$-modes of a dielectrically loaded slow wave structure; *McDiarmid, D. R.*; *T-MTT v16 n5 May 68* 318-319
periodic, lossless; two examples of 'confluence'; *McDiarmid, Don R.*; *T-MTT v16 n1 Jan 68* 2-6
Schottky-contact microstrip lines; *Jäger, Dieter*; *T-MTT v24 n9 Sep 76* 566-573 (1B08)
VHF slow-wave slotted line for microwave VSWR measurements; *Oh, Luis L.*; *T-MTT v10 n2 Mar 62* 142
wave propagation in coaxial-cylindrical slow-wave systems; *Nunn, W. M., Jr.*; *T-MTT v9 n4 Jul 61* 358-359

Slow-wave structures; cf. Traveling-wave devices
Smith charts
computer programs for performing Smith-chart analysis; *Verzino, Joseph W.*; *T-MTT v17 n8 Aug 69* 649-650
graphical analysis of resonator circuit; *Kajfež, Darko*; *T-MTT v11 n5 Sep 63* 453-454
logarithmic transmission line chart; *Somlo, Peter I.*; *T-MTT v8 n4 Jul 60* 463
logarithmic transmission line chart, believed to be more convenient than Smith chart; *Hudson, Arthur C.*; *T-MTT v7 n2 Apr 59* 277-281
lossless transmission line filters consisting of symmetrical and identical sections; graphical analysis; *Dawirs, Harvel N.*; *T-MTT v3 n1 Jan 55* 15-21
negative-resistance stability criterion, Nyquist-type; direct formulation in terms of a transformed reflection coefficient; *Bandler, J. W.*; *T-MTT v15 n9 Sep 67* 532-533
plotting impedances with negative resistive components; *Kaplan, L. J.*; *T-MTT v8 n6 Nov 60* 668
plotting impedances with negative resistive components; *Kyhl, R. L.*; *T-MTT v8 n3 May 60* 377
reflection coefficient angle in wavelength fractions, measurement from horizontal line to right of origin; *Schott, F. W.*; *T-MTT v26 n4 Apr 78* 314 (2A01)
reflection coefficient chart; extension to include active networks; *Kaplan, L. J.*; *T-MTT v7 n2 Apr 59* 298-299
representation of impedances with negative real parts in the projective chart; *Stock, D. J. R.*; *T-MTT v7 n4 Oct 59* 475
transmission line impedance matching; complex load impedance matching to resistive source impedance when characteristic impedance is unknown, using Smith chart; *Arnold, R. M.*; *T-MTT v22 n11 Nov 74* 977-978 (1E11)
transmission line matching when characteristic impedance is unknown; *Somlo, P. I.*; *T-MTT v23 n8 Aug 75* 715 (1B05)
transmission line transformation between complex impedances using single matching section; *Day, P. I.*; *T-MTT v23 n9 Sep 75* 772-773 (1D12)
trigonometric functions read directly from Smith chart; *Senise, J. T.*; *T-MTT v21 n8 Aug 73* 569-570 (2D03)
Snow; cf. Radio propagation meteorological factors
Social factors
education and science in a mature society; *Pritchard, Wilbur L.*; *T-MTT v7 n1 Jan 59* 3-4
Solar power stations
earth-satellite stations; dc power from solar cells converted to microwave power and transmitted to earth; *Brown, William C.*; *T-MTT v21 n12 Dec 73* 753-763 (1B10)
Solar radiation
millimeter-wave observations in 20–3 mm range; *Castelli, John P.*; *T-MTT v22 n12 Dec 74* 1292-1299 (5A12)
submillimeter-wave solar brightness temperature measurement using balloon-borne lamellar-grating interferometer; 100–500 μm; *Stettler, P.*; *T-MTT v22 n12 Dec 74* 1119-1120 (2D02)
submillimeter-wave spectroscopy using airborne Michelson interferometer in lower stratosphere; 200–700 μm; *Mankin, W. G.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
Southworth, George C.
obituary; *Saad, Theodore S.*; *T-MTT v20 n12 Dec 72* 792-793 (1B03)
Space-vehicle communication
ultra-low-noise space communication ground RF system (ultra cone). *Levy, Gerald S.*; *T-MTT v16 n9 Sep 68* 596-602
Space-vehicle radar
94-GHz system for space object identification; *Hoffman, LaRue A.*; *T-MTT v17 n12 Dec 69* 1145-1149
radar target amplitude, angle and Doppler scintillation from analysis of the echo signal propagating in space; *Dunn, John H.*; *T-MTT v16 n9 Sep 68* 715-728
Spark-gap switches
microwave power generation using λ/4 transmission-line resonator containing spark gap; *Ristic, Velimir M.*; *T-MTT v26 n5 May 78* 369-374 (1D09)
Spark gaps
1 MW, *C*-band microwave spark gap switch; *Farber, Herman*; *T-MTT v13 n1 Jan 65* 28-32
dc-triggered spark-gap switch for oversize rectangular waveguides; *Quine, J. P.*; *T-MTT v16 n11 Nov 68* 952-955
waveguide spark gap; development of standard component; *Dettinger, David*; *T-MTT v1 n1 Mar 53* 39-48
Spectroscopy; cf. Fourier spectroscopy; Infrared spectroscopy; Magnetospectroscopy; Microwave spectroscopy; Millimeter-wave spectroscopy; Submillimeter-wave spectroscopy
Spheres
electromagnetic irradiation of cranial structure; inhomogeneous spherical model in near-field of 3-GHz loop or dipole antennas; heat potential distribution; *Hizal, Altunkan*; *T-MTT v26 n8 Aug 78* 607-612 (1G09)
electromagnetic power deposition in spherical model of man exposed to 1–20 MHz field. *Lin, J. C., Correction*; *T-MTT v23 n2 Feb 75* 265 (1F13)
electromagnetic scattering; Mie series solution; computer program; *Mautz, Joseph R.*; *T-MTT v26 n5 May 78* 375 (1E01)
Spherical antennas
probes in finite heterogeneous biological bodies; response of insulated spherical probes; *Mousavinezhad, Seyed Hossein*; *T-MTT v26 n8 Aug 78* 599-607 (1G01)
Spheroids
electromagnetic absorption in prolate spheroidal models of humans and animals; empirical formula for broadband specific absorption rate calculations; *Durney, Carl H.*; *T-MTT v27 n8 Aug 79* 758-763 (1D02)
electromagnetic energy absorption in tissue prolate spheroids; calculation by point-matching method; *Ruppin, R.*; *T-MTT v26 n2 Feb 78* 87-90 (1C13)
Spin waves
excitation of spin waves by wire arrays; comments; *LaRosa, R.*; *T-MTT v14 n10 Oct 66* 495-496
excitation of spin waves by wire arrays. *LaRosa, R., Correction*; *T-MTT v15 n2 Feb 67* 136
Spiral antennas
differences between equiangular and Archimedes spiral antennas; *Bawer, R.*; *T-MTT v9 n2 Mar 61* 204-205
differences between equiangular and Archimedes spiral antennas; *Mayes, P. E.*; *T-MTT v9 n2 Mar 61* 203-204
differences between equiangular and Archimedes spiral antennas; *Mayes, P. E.*; *T-MTT v9 n2 Mar 61* 205
printed circuit balun for use with spiral antennas; *Bawer, Robert*; *T-MTT v8 n3 May 60* 319-325
Spontaneous emission
Dicke superradiance in submillimeter-wave region; *Bowden, C. M.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
Spread-spectrum communication
spectral analysis; chirp-*Z* transform implemented using acoustic surface-wave devices; *Nudd, Graham R.*; *T-MTT v24 n1 Jan 76* 54-56 (1D14)
Stability; cf. Oscillator stability; Temperature stability
Standards
coaxial noise sources; method of calibrating in terms of a waveguide standard; *Engen, Glenn F.*; *T-MTT v16 n9 Sep 68* 636-639
comment on status report on international waveguide flange standards; *Lewin, L.*; *T-MTT v12 n5 Sep 64* 552-553
return loss vs. frequency for quarter-wavelength short-circuited waveguide impedance standards; determination by formulas and a graph; *Beatty, R. W.*; *T-MTT v17 n5 May 69* 282-284
status report on international waveguide flange standards; *Anderson, Tore N.*; *T-MTT v11 n5 Sep 63* 427-429
Standards; cf. Measurement standards
Standing-wave measurement; cf. Microwave measurements
Step-recovery diodes
pulse amplifiers for regenerating Gb/s PCM-type signals; *Barabas, Udo*; *T-MTT v24 n12 Dec 76* 929-935 (1C03)
pulse generators using step-recovery diodes shunting transmission line; picosecond pulse sequence generation; *Cronson, Harry M.*; *T-MTT v23 n12 Dec 75* 1048-1049 (2A13)
Step-recovery diodes; cf. p-i-n diodes
Stratified media
microstrip; multilayer microstrip analysis; *Farrar, Andrew*; *T-MTT v22 n10 Oct 74* 889-891 (1D01)
Stratified media; cf. Nonhomogeneous media
Strip resonators
tuning: single tuning screw vs. two tuning screws *Kurzrok, Richard M.*; *T-MTT v7 n4 Oct 59* 475
Strip transmission lines
broadside-coupled strips in layered dielectric medium. *Allen, J. L., Correction*; *T-MTT v23 n9 Sep 75* 779 (1E05)
characteristic admittances and coupling coefficients; calculation; *Kammler, David W.*; *T-MTT v16 n11 Nov 68* 925-937
characteristic impedance; calculation to a given degree of accuracy; *de Buda, Rudolf G.*; *T-MTT v6 n4 Oct 58* 440-446
characteristic impedance of line with rectangular inner conductor of arbitrary dimensions; universal approximate formula; *Pease, Robert L.*; *T-MTT v3 n2 Mar 55* 144-148
characteristic impedances of multiconductor strip transmission lines; *Duncan, James W.*; *T-MTT v13 n1 Jan 65* 107-118
coaxial to strip transmission line adapter; *Craven, J. H.*; *T-MTT v9 n2 Mar 61* 200-201
conductor thickness corrections for capacitive obstacles and strip conductors; *Cohn, Seymour B.*; *T-MTT v8 n6 Nov 60* 638-644
coplanar waveguide consisting of a surface strip transmission line suitable for nonreciprocal gyromagnetic device applications; *Wen, Cheng P.*; *T-MTT v17 n12 Dec 69* 1087-1090
coplanar waveguide with finite-thickness substrate; impedance and effective dielectric constant calculations; *Davis, M. E.*; *T-MTT v21 n9 Sep 73* 594-596 (1C12)
coupled rectangular bars between parallel plates; design curves; *Getsinger, William J.*; *T-MTT v10 n1 Jan 62* 65-72
coupled with rectangular inner conductors; determination of characteristic impedance; *Horgan, James D.*; *T-MTT v5 n2 Apr 57* 92-99
dielectric-filled; determination of thermal conductance from characteristic impedance; *Levine, Richard C.*; *T-MTT v15 n11 Nov 67* 645-646
dielectric-filled shielded-strip line; determination of characteristic impedance, attenuation and Q; *Cohn, Seymour B.*; *T-MTT v3 n2 Mar 55* 119-126
dielectric loaded TEM mode lines; nonreciprocal propagation characteristics; *Fleri, Dominic*; *T-MTT v7 n1 Jan 59* 23-27
dielectric-supported air strip transmission line with side walls and center conductors; characteristic impedance and phase velocity; *Gish, Dennis L.*; *T-MTT v18 n3 Mar 70* 131-148
dimensions for a given characteristic impedance; design by the Newton–Raphson method; *Yamashita, E.*; *T-MTT v17 n8 Aug 69* 638-639
discontinuities in balanced time; formulas for equivalent circuits; *Oliner, Arthur A.*; *T-MTT v3 n2 Mar 55* 134-143
electrostatic capacity and characteristic impedance of lines with rectangular inner conductors; *Begovich, Nicholas A.*; *T-MTT v3 n2 Mar 55* 127-133
even and odd mode impedances of shielded coupled strip transmission lines; derivation of formulas; *Cohn, Seymour B.*; *T-MTT v8 n6 Nov 60* 633-637
finline structures; analysis method; *Saad, Abdel Megid Kamal*; *T-MTT v26 n12 Dec 78* 1002-1007 (1F10)
half-wavelength resonator directional filters; practical design; *Wanselow, Robert D.*; *T-MTT v7 n1 Jan 59* 168-173
impedance of a generalized strip transmission line; computed by variational methods; *Clark, A. A.*; *T-MTT v16 n8 Aug 68* 555
impedance of a generalized strip transmission line; computed by variational methods; *Guckel, Henry*; *T-MTT v13 n3 May 65* 270-274
inhomogeneous, shielded; characteristic impedance and velocity ratio; *Earle, Michael A.*; *T-MTT v16 n10 Oct 68* 884-885
integral equation solution using nonuniform discretization; *Yamashita, Eikichi*; *T-MTT v24 n4 Apr 76* 195-200 (1C05)
inverted strip dielectric guides for IC components in 75–80 GHz range; directional couplers and ring resonators; *Rudokas, R.*; *T-MTT v24 n12 Dec 76* 978-981 (2A07)
inverted strip dielectric waveguides used for dielectric constant measurement at millimeter-wave frequencies; *Itoh, Tatsuo*; *T-MTT v27 n10 Oct 79* 841-844 (1B05)
laminate materials at *L*-band; measurements of attenuation, characteristic impedance and phase velocity; *Cooper, H. Warren*; *T-MTT v3 n2 Mar 55* 87-92
microstrip-like transmission lines; analysis by variational method; *Yamashita, Eikichi*; *T-MTT v16 n8 Aug 68* 529-535
microwave measurements on a semiconductor filled symmetrical strip transmission line; *Holmes, D. A.*; *T-MTT v12 n4 Jul 64* 478-480

microwave; production using photoetching technique; *Wild, Norman R.*; *T-MTT v3 n2 Mar 55* 21-30
miniature; for microwave applications; *Torgow, Eugene N.*; *T-MTT v3 n2 Mar 55* 57-64
multidielectric lines; field expansion as power series of frequency; *Dos Santos, A. F.*; *T-MTT v23 n9 Sep 75* 753-756 (1C07)
numerical solution of transmission-line problems; *Green, Harry E.*; *T-MTT v13 n5 Sep 65* 676-692
offset parallel-coupled strip configuration; analysis by conformal mapping; *Shelton, J. Paul, Jr.*; *T-MTT v14 n1 Jan 66* 7-15
offset parallel-coupled strip configuration; analysis by conformal mapping. *Shelton, J. Paul, Jr., Correction*; *T-MTT v14 n5 May 66* 249
open-strip UHF lines; calculation of performance; *Black, Kenneth G.*; *T-MTT v3 n2 Mar 55* 93-113
parallel-strip lines; capacitance, repulsive force, and inductance calculations; *Crampagne, Raymond*; *T-MTT v24 n8 Aug 76* 532-534 (1D02)
parallel-strip lines; capacitance, repulsive force, and inductance calculations; *Rochelle, J. M.*; *T-MTT v23 n8 Aug 75* 712-714 (2B02)
perfectly conducting strip above plane-surface waveguide; *Brown, John*; *T-MTT v22 n4 Apr 74* 469 (2E03)
properties of parallel strips separated by dielectric sheet; *Wheeler, Harold A.*; *T-MTT v13 n2 Mar 65* 172-185
re-entrant directional coupler using strip transmission line; *Lavendol, L.*; *T-MTT v13 n5 Sep 65* 700-701
receiver head-end operating at 2 GHz using strip type components; *Zublin, Kurt E.*; *T-MTT v3 n2 Mar 55* 65-74
rectangular-coaxial-strip transmission lines; capacitance calculation; *Tippet, John C.*; *T-MTT v24 n9 Sep 76* 602-604 (1E02)
rectangular coaxial structures with off-centered strip inner conductor; characteristic impedance; *Riblet, Henry J.*; *T-MTT v27 n4 Apr 79* 294-298 (1A04)
rectangular lines with thin center conductor and air dielectric; characteristic impedance; *Weil, Claude M.*; *T-MTT v26 n4 Apr 78* 238-242 (1B02)
shielded coupled, with three center conductors; exact analysis; *Yamamoto, Sadahiko*; *T-MTT v14 n10 Oct 66* 446-461
shielded parallel coplanar strips midway between ground planes; odd and even TEM modes; *Cohn, Seymour B.*; *T-MTT v3 n5 Oct 55* 29-38
shielded-strip transmission line; formulas for characteristic impedance; *Cohn, Seymour B.*; *T-MTT v2 n2 Jul 54* 52-57
silicon microstrip microwave transmission lines; experimental work; *Emery, F. E.*; *T-MTT v16 n7 Ju 68* 483-484
slit-coupled strip transmission lines; use for printed-circuit realization; *Yamamoto, Sadahiko*; *T-MTT v14 n11 Nov 66* 542-553
strip-circuit transmission lines; for excitation of surface waveguides and radiating slots; *Frost, Albert D.*; *T-MTT v4 n4 Oct 56* 218-222
symmetrical four-port junction of center strips and mitred bends in balanced lines; boundary value problems; *Campbell, James J.*; *T-MTT v16 n3 Mar 68* 165-176
symmetrical; optimum characteristic impedance and dimensions; *Packard, Karle S.*; *T-MTT v5 n4 Oct 57* 244-247
uniform microstrip transmission lines; calculation of impedance, velocity and attenuation by computer; *Stinehelfer, Harold E., Sr.*; *T-MTT v16 n7 Jul 68* 439-444

Strip transmission lines; cf. Microstrip; Slot line; Striplines

Stripline antennas

MIC Doppler module with stripline dipole antenna and output radiation normal to substrate plane; *Nanbu, Shutaro*; *T-MTT v26 n1 Jan 78* 3-5 (1A05)
microwave antenna radiators using striplines; *Fubini, Eugene G.*; *T-MTT v3 n2 Mar 55* 149-156

Stripline circuits

broadband stripline balun; 1000–4000 MHz operation; *Craven, J. H.*; *T-MTT v8 n6 Nov 60* 673
characteristic impedance and velocity ratio of dielectric-supported stripline; *Green, H. E.*; *T-MTT v13 n1 Jan 65* 135-137
characteristic impedances of multiconductor strip transmission lines; *Duncan, James W.*; *T-MTT v13 n1 Jan 65* 107-118
characterizations of symmetric stripline junction and analysis of appropriate network form based thereon; *Franco, Albert G.*; *T-MTT v10 n2 Mar 62* 118-124
discriminators; two octave bandwidth for *L*- and *S*-band; *Sisodia, M. L.*; *T-MTT v15 n4 Apr 67* 271-272
equivalent circuit displaying the properties of a hybrid junction; *Pascalar, Herbert G.*; *T-MTT v5 n1 Jan 57* 23-30
exact method for designing bandstop filters is adapted to design a four-element filter; matched at fundamental with infinite attenuation at harmonics; *Schiffman, Bernard M.*; *T-MTT v12 n5 Sep 64* 512-516
frequency converters; harmonically pumped down-converter; *Schneider, Martin V.*; *T-MTT v23 n3 Mar 75* 271-275 (1A05)
log-periodic transmission line circuits; one-port type; *DuHamel, Raymond H.*; *T-MTT v14 n6 Jun 66* 264-274
measurements to check validity of formulas for equivalent circuit parameters of center conductor discontinuities in symmetric lines. *Altschuler, H. M., Addendum*; *T-MTT v10 n2 Mar 62* 143
measurements to check validity of formulas for equivalent circuit parameters of center conductor discontinuities in symmetric lines; *Altschuler, H. M.*; *T-MTT v11 n1 Jan 63* 87
measurements to check validity of formulas for equivalent circuit parameters of center conductor discontinuities in symmetric lines; *Altschuler, Helmut M.*; *T-MTT v8 n3 May 60* 328-339
microwave integrated circuits using TEM transmission line; characteristic impedance and effective dielectric constant; *Okean, H. C.*; *T-MTT v15 n5 May 67* 327-328
microwave; practical design method; *Millican, George L.*; *T-MTT v17 n9 Sep 69* 696-705
microwave; research activities at Tufts College; *Frost, Albert D.*; *T-MTT v3 n2 Mar 55* 10-12
millimeter-wave downconverter; subharmonically pumped converter using waveguide/stripline circuit; *McMaster, Thomas F.*; *T-MTT v24 n12 Dec 76* 948-952 (1D08)
millimeter-wave mixer; subharmonically pumped two-diode mixer; *Carlson, Eric R.*; *T-MTT v26 n10 Oct 78* 706-715 (1A04)
millimeter-wave thin-film downconverter for 60-GHz signal frequency; *Snell, William W., Jr.*; *T-MTT v24 n11 Nov 76* 804-806 (2C09)
parallel-coupled quasi-stripline filters; design by conformal mapping; *Frigyes, I.*; *T-MTT v18 n3 Mar 70* 170-171
preselector filter, four-stage maximally flat type; implementation in balanced strip line; *Michelson, Max*; *T-MTT v3 n2 Mar 55* 170-174
serrodyne based on phase velocity modulation of magnetostatic modes in YIG; *Webb, Denis C.*; *T-MTT v15 n7 Jul 67* 421-427
strip-circuit transmission lines; for excitation of surface waveguides and radiating slots; *Frost, Albert D.*; *T-MTT v4 n4 Oct 56* 218-222
techniques for utilizing exponential transmission lines in microwave components; *Womack, Charles P.*; *T-MTT v10 n2 Mar 62* 124-132
tunnel-diode microwave amplifiers; design technique; *Miller, Barbara A.*; *T-MTT v15 n10 Oct 67* 554-561

Stripline circulators

4-port single-junction circulators; modal and eigenvalue analysis; *Helszajn, Joseph*; *T-MTT v21 n10 Oct 73* 630-633 (1D08)
boundary value problem on stripline *Y*-circulation at UHF is approximately solved; *Bosma, Hendrik*; *T-MTT v12 n1 Jan 64* 61-72
calculations based on Bosma's theory of a 3-port stripline circulator; modified to find scattering matrix and bandwidth; *Davies, J. B.*; *T-MTT v11 n6 Nov 63* 506-512
edge-guided-wave circulators for 8–12 GHz range; *De Santis, P.*; *T-MTT v23 n6 Jun 75* 516-519 (1E02)
ferrite latching circulator with finite gap; *El-Shandwily, M. E.*; *T-MTT v22 n1 Jan 74* 57-60 (1E03)
ferrite material replaced in part by dielectric material; *Helszajn, Joseph*; *T-MTT v22 n4 Apr 74* 400-410 (1D08)
four-port circulators; performance characteristics; *Hussein, Ali M.*; *T-MTT v23 n11 Nov 75* 923-926 (1F03)
input impedance of ferrite circulator; *Salay, Steven J.*; *T-MTT v19 n1 Jan 71* 109-110 (2F05)
low-loss cryogenic *L*-band; operation at 15°K with 0.5 dB insertion loss; *Edrich, Jochen*; *T-MTT v18 n10 Oct 70* 743-745
measurement of gyrator conductance, susceptance slope parameter, and frequencies of two split resonant modes for below-resonance junction circulator; *Helszajn, Joseph*; *T-MTT v21 n5 May 73* 347-351 (1E07)
phase-shift through symmetrical three-port circulators; *Riblet, G.*; *T-MTT v23 n5 May 75* 446-449 (1D06)
planar triangular resonators; theoretical analysis; *Helszajn, Joseph*; *T-MTT v27 n2 Feb 79* 188-193 (2A01)
S-band, three-port ring circulator composed of reciprocal *T* junctions and nonreciprocal phase shifters; theory, design and performance; *Ewing, Samuel D., Jr.*; *T-MTT v15 n11 Nov 67* 623-628
UHF circulators; design data; *Whiting, K.*; *T-MTT v15 n3 Mar 67* 195-198
waveguide on stripline *N*-port circulators, based on a threeport network with reactive elements; *Humphreys, B. L.*; *T-MTT v10 n6 Nov 62* 551-554
waveguide or stripline *N*-port circulators based on a three-port network with reactive elements; *Humphreys, B. L.*; *T-MTT v11 n4 Jul 63* 263
Y-circulators below resonance; insertion loss dependence on ferrite loss parameters; *Cattarin, Giuseppe*; *T-MTT v22 n7 Jul 74* 752-754 (1D04)
Y-junction circulators; octave bandwidth operation; *Wu, Y. S.*; *T-MTT v22 n10 Oct 74* 849-856 (1A03)

Stripline circulators, ferrite

150 MHz circulator using an Airton garnet material; *Maher, B.*; *T-MTT v14 n1 Jan 66* 42-43
analysis of circulators using reciprocal *T* junctions and nonreciprocal phase shifters; *Weiss, Jerald A.*; *T-MTT v13 n1 Jan 65* 38-44
analysis of junction circulators in terms of counter-rotating normal modes; *Fay, Clifford E.*; *T-MTT v13 n1 Jan 65* 15-27
below resonance operation of the stripline *Y*-circulator; *Sokolov, J.*; *T-MTT v12 n5 Sep 64* 568-569
central metal post for increasing bandwidth of 3-port circulator; *Hussein, Ali M.*; *T-MTT v25 n2 Feb 77* 150-152 (1E14)
circulator with stripline inputs incorporating YAIG and a large, metallic short circuit; *Bonfeld, M. D.*; *T-MTT v14 n2 Feb 66* 98-99
continuous tracking design approach applied to wideband *Y*-junction circulator for 18–26 GHz band; *de Koning, J. G.*; *T-MTT v25 n2 Feb 77* 152-155 (1F02)
double circulation frequency operation of *Y*-junction circulators loaded with dielectric–ferrite composites; *Nagao, Tsukasa*; *T-MTT v25 n3 Mar 77* 181-189 (1B01)
four-port edge-guided wave circulators; *De Santis, Pietro*; *T-MTT v24 n1 Jan 76* 10-18 (1A12)
higher-order mode resonances in stripline *Y*-junction circulators; *Clavin, Alvin*; *T-MTT v9 n6 Nov 61* 575
latching switchable junction type; for application requiring fast, low-energy switching; *Siekanowicz, W. W.*; *T-MTT v16 n3 Mar 68* 177-183
light-weight *Y*-junction stripline circulator; *Freiberg, L.*; *T-MTT v8 n6 Nov 60* 672
octave bandwidth stripline, *Y*-junction, ferrite circulators; *Simon, Joseph W.*; *T-MTT v13 n3 May 65* 335-345
theoretical approach to the three port symmetrical stripline circulator; 800–1600 MHz operated; *Milano, Ugo*; *T-MTT v8 n3 May 60* 346-351
three-port remanence circulator switch for phased array radar at *S*-band (2.9 GHz). *Betts, Foster*; *T-MTT v14 n12 Dec 66* 665-669
UHF-band, stacked; construction; *Okamura, Sohji*; *T-MTT v17 n12 Dec 69* 1151-1152
wideband *Y*-junction circulator for 18–26 GHz band; continuous tracking design approach; *Ayasli, Y.*; *T-MTT v26 n4 Apr 78* 314 (2A01)
Y-junction circulator broadband operation; double circulation frequency operation; *Nagao, Tsukasa*; *T-MTT v25 n12 Dec 77* 1042-1047 (1F10)
Y-junction circulators; frequency behavior; *Ayter, Sevig*; *T-MTT v26 n3 Mar 78* 197-202 (1E07)

Stripline components

6 kw peak-power varactor duplexer; *Hoover, John C.*; *T-MTT v10 n6 Nov 62* 476-479
broad-band ferrite coaxial switch; *Booth, R. L.*; *T-MTT v9 n5 Sep 61* 452-453
broadband balun using quadrature coupling; *Walker, Scott*; *T-MTT v16 n2 Feb 68* 132-133
C-band stripline frequency translator; *Rutz, Elisabeth M.*; *T-MTT v9 n2 Mar 61* 158-161
characteristic impedance and velocity ratio of dielectric-supported stripline; *Green, H. E.*; *T-MTT v13 n1 Jan 65* 135-137
design of wide-band strip line Magic-T; *Jones, E. M. T.*; *T-MTT v8 n2 Mar 60* 160-168

exact method for the design of bandstop filters which adapts the work of Ozaka and Ishii; *Schiffman, Bernard M.*; *T-MTT v12 n1 Jan 64* 6-15
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii; *Cristal, E. G.*; *T-MTT v12 n3 May 64* 364-382
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii. *Cristal, E. G., Addendum*; *T-MTT v13 n1 Jan 65* 141
exact method for the design of bandstop filters which adapts the work of Ozaki and Ishii. *Schiffman, B. M., Correction*; *T-MTT v13 n5 Sep 65* 703
frequency response of stripline traveling-wave directional filters; *Standley, Robert D.*; *T-MTT v11 n4 Jul 63* 264-265
frequency-selective limiting; *Kotzebue, Kenneth L.*; *T-MTT v10 n6 Nov 62* 516-520
isolators for VHF band; edge-mode isolators; *Courtois, Louis*; *T-MTT v24 n3 Mar 76* 129-135 (1A03)
microwave; characteristics at 1–16 GHz band and applications in the 2.5–10 GHz band; *Fromm, Winfield E.*; *T-MTT v3 n2 Mar 55* 13-20
split-tee power dividers; *Parad, Leonard I.*; *T-MTT v13 n1 Jan 65* 91-95
state-of-the-art review of filters in 1965; bandpass, bandstop, high-pass, tunable filters, with extensive bibliography; *Young, Leo*; *T-MTT v13 n5 Sep 65* 489-508
wideband stripline balun using pair of dual coupled-stripline bandpass filters; *Jones, E. M. T.*; *T-MTT v7 n1 Jan 59* 128-134
wideband stripline hybrid ring; *March, Steven*; *T-MTT v16 n6 Jun 68* 361

Stripline components, ferrite
off-on ferrite switches in coaxial or stripline; *Fay, Clifford E.*; *T-MTT v10 n6 Nov 62* 455-458
reciprocal and nonreciprocal modes of propagation; *Hines, Marion E.*; *T-MTT v19 n5 May 71* 442-451 (1C10)
transmission characteristics; reflection problems; *Araki, Kiyomichi*; *T-MTT v24 n8 Aug 76* 491-498 (1A03)

Stripline couplers
characteristic impedances of multiconductor strip transmission lines; *Duncan, James W.*; *T-MTT v13 n1 Jan 65* 107-118
characterizations of symmetric stripline junction and analysis of appropriate network form based thereon; *Franco, Albert G.*; *T-MTT v10 n2 Mar 62* 118-124
coupled rectangular bars between parallel plates; design curves; *Getsinger, William J.*; *T-MTT v10 n1 Jan 62* 65-72
directional, utilizing a nonhomogeneous dielectric medium; *Dalley, James E.*; *T-MTT v17 n9 Sep 69* 706-712
frequency response of stripline traveling-wave directional filters; *Standley, Robert D.*; *T-MTT v11 n4 Jul 63* 264-265
fringing capacitance; existence of relationship for side-by-side strips; *Singletary, J., Jr.*; *T-MTT v14 n8 Aug 66* 398
fringing capacitance; existence of relationship for side-by-side strips. *Singletary, J., Jr., Correction*; *T-MTT v15 n3 Mar 67* 200
hybrid-ring directional coupler for arbitrary power divisions; *Pon, Chuck Y.*; *T-MTT v9 n6 Nov 61* 529-535
hybrids, symmetrical 4-ports; eigenadmittance condition for 90° hybrids to be obtainable by matching alone; *Riblet, Gordon P.*; *T-MTT v26 n4 Apr 78* 275-279 (1D11)
magic-T using 3db asymmetric coupled transmission line coupler and phase shift network; *Kraker, David I.*; *T-MTT v12 n6 Nov 64* 595-597
meander-folded coupled lines; shortening of electric length due to folding; *Rehnmark, Stig*; *T-MTT v26 n4 Apr 78* 225-231 (1A03)
stripline coupler that allows very close coupling; *Getsinger, William J.*; *T-MTT v9 n6 Nov 61* 535-544
UHF hybrid junction, 20% bandwidth, VSWR $<$ 1.20; *Tatsuguchi, Isamu*; *T-MTT v9 n1 Jan 61* 3-6

Stripline directional couplers
coupled; derivation of design formulas; *Jones, E. M. T.*; *T-MTT v4 n2 Apr 56* 75-81
design of wide-band strip line Magic-T; *Jones, E. M. T.*; *T-MTT v8 n2 Mar 60* 160-168
interdigital stripline quadrature hybrid; fabrication on 40-mil alumina; *Lange, Julius*; *T-MTT v17 n12 Dec 69* 1150-1151
quarter-wave couplers; perturbations of the critical parameters; *Brenner, H. E.*; *T-MTT v15 n6 Jun 67* 384-385
re-entrant directional couplers having direct coupled center conductors; realization; *Cristal, Edward G.*; *T-MTT v14 n4 Apr 66* 207-208
synthesis of symmetrical TEM-mode directional couplers; *Toulios, Peter P.*; *T-MTT v13 n5 Sep 65* 536-544
theory and tables of symmetrical TEM transmission line directional couplers; *Cristal, Edward G.*; *T-MTT v13 n5 Sep 65* 544-558
very flat coupling characteristic; equivalent admittance of symmetrical 4-port couplers; *Riblet, Gordon P.*; *T-MTT v26 n2 Feb 78* 70-74 (1B10)
very flat coupling characteristic; equivalent admittance of symmetrical 4-port couplers. *Riblet, Gordon P., Correction*; *T-MTT v26 n9 Sep 78* 691 (1E09)

Stripline discontinuities
ferrite substrate; short- and open-end reflection problems; *Araki, Kiyomichi*; *T-MTT v24 n8 Aug 76* 491-498 (1A03)
impedance step discontinuities in symmetric stripline; resulting series lumped inductance and compensation; *Nalbandian, Vahakn*; *T-MTT v20 n9 Sep 72* 573-578 (1B11)
nonstraight conductor close to ground return plane; inductance calculation; *Ruehli, A. E.*; *T-MTT v23 n8 Aug 75* 706-708 (2A10)
resonators; end effects of half-wave resonator; foreshortening required to achieve prescribed resonant frequency; *Lagerlöf, Rolf O. E.*; *T-MTT v21 n5 May 73* 351-353 (1E05)

Stripline filters
bandstop filters approximating elliptic-function response; uses noncommensurate lines; *Malherbe, Johannes A. G.*; *T-MTT v24 n5 May 76* 242-248 (1A08)
combline-type filters; design approach; *Vincze, Arpad D.*; *T-MTT v22 n12 Dec 74* 1171-1181 (3D11)
coupled-strip-transmission-line filters and directional couplers; theory of operation and design; *Jones, E. M. T.*; *T-MTT v4 n2 Apr 56* 75-81
directional filters, TEM-mode transmission-type; exact and approximate synthesis; *Walker, John L. B.*; *T-MTT v26 n3 Mar 78* 186-192 (1D10)
folded-line and hybrid folded-line bandstop filters; *Dupuis, Paul A.*; *T-MTT v22 n12 Dec 74* 1312-1316 (5C04)
hairpin-line and hybrid hairpin-line/half-wave parallel-coupled-line filters; *Gysel, Ulrich H.*; *T-MTT v22 n5 May 74* 523-531 (1D03)
microwave bandpass filters having prescribed bandwidth, skirt selectivity and passband ripple tolerance; design and development; *Bradley, E. H.*; *T-MTT v4 n2 Apr 56* 86-93
narrow-bandwidth end-coupled symmetric; gap spacing; *Richardson, J. K.*; *T-MTT v16 n8 Aug 68* 559-560
parallel-coupled filters in edge-coupled stripline; extending realizable bandwidth; *Kirton, Paul A.*; *T-MTT v25 n8 Aug 77* 672-676 (1D02)
side-wall-coupled, stripline magnetically tunable filters using ferrimagnetic YIG resonators; *Carter, Philip S.*; *T-MTT v13 n3 May 65* 306-315

Stripline isolators, ferrite
edge-guided mode isolator using ferromagnetic resonance absorption; *Noguchi, Tsutomu*; *T-MTT v25 n2 Feb 77* 100-106 (1B06)
edge-guided mode isolators; modeling; *Talisa, Salvador H.*; *T-MTT v27 n6 Jun 79* 584-591 (1C02)
edge-mode isolator for VHF band; *Craig, Robert A.*; *T-MTT v25 n1 Jan 77* 76-77 (1F08)

Stripline junctions
quarter-wave coupled reciprocal 3-port symmetrical junctions for which eigennetwork appears as short-circuit at reference terminals; relation to class of 3-port circulators; *Helszajn, Joseph*; *T-MTT v21 n8 Aug 73* 533-537 (1D07)

Stripline phase shifters
broadband microwave 90-degree differential phase shifters; new class; *Schiffman, Bernard M.*; *T-MTT v6 n2 Apr 58* 232-237
continuously variable dielectric phase shifter; variation of dielectric constant; *Joines, William T.*; *T-MTT v19 n8 Aug 71* 729-732 (2B02)
miniaturized *C*-band digital latching phase shifter; *Parks, J. K.*; *T-MTT v14 n12 Dec 66* 688-694

Stripline phase shifters, ferrite
analog *X*-band shifter using commercially available ferrites; *Nelson, T.*; *T-MTT v18 n1 Jan 70* 45-46
C-band digital latching ferrite stripline phase shifter; *Whicker, Lawrence R.*; *T-MTT v13 n6 Nov 65* 781-784
compact, low-loss for the 200–800 MHz region; development; *Johnson, Charles M.*; *T-MTT v7 n1 Jan 59* 27-31
edge-guided mode nonreciprocal phase shifters; differential phase shift, insertion loss, and effective bandwidth; *Bolle, Donald M.*; *T-MTT v27 n11 Nov 79* 878-882 (1A08)
L-band stripline circulator using phase-shift sections; *Koop, W. S.*; *T-MTT v9 n6 Nov 61* 571-572
nonreciprocal, digital, slow wave phase shifter combining submicrosecond switching times with compact strip transmission line; *Jones, Raymond R.*; *T-MTT v14 n12 Dec 66* 684-688

Stripline resonators
cylindrical dielectric resonators for TEM line circuit applications; resonant frequencies of TE modes; *Pospieszalski, Marian W.*; *T-MTT v27 n3 Mar 79* 233-238 (1B05)
disk resonators; thin conducting disk in median plane between two infinite parallel conducting plates; eigenmode frequencies; *Tanabe, Kosai*; *T-MTT v23 n6 Jun 75* 508-511 (1D08)
end effects of half-wave resonators; foreshortening required to achieve prescribed resonant frequency; *Lagerlöf, Rolf O. E.*; *T-MTT v21 n5 May 73* 351-353 (1E05)
frequency stabilizing reference element in an AFC circuit; *Michelson, Max*; *T-MTT v3 n2 Mar 55* 170-174
improved stripline resonator used as a bandstop filter; design permits application of printed circuit fabrication; *Standley, Robert D.*; *T-MTT v11 n6 Nov 63* 548-549
measurement of material properties by the stripline cavity; *Waldron, R. A.*; *T-MTT v13 n5 Sep 65* 711
stripline cavity for measurement of dielectric constants and gyromagnetic resonance line widths; *Waldron, Richard A.*; *T-MTT v12 n1 Jan 64* 123-131

Stripline resonators, ferrite
disk resonators magnetized perpendicularly to ground plane; high azimuthal-index resonances; *de Santis, Pietro*; *T-MTT v25 n5 May 77* 360-367 (1B06)

Stripline switches
coplanar transmission lines on GaAs substrate; *Fleming, Paul L.*; *T-MTT v27 n12 Dec 79* 1032-1035 (2A11)
p-i-n diode switch matrix consisting of 8 diodes in stripline package; cryogenically cooled *C*-band switch for radio astronomy; *Behrens, George H., Jr.*; *T-MTT v26 n9 Sep 78* 629-635 (1A03)

Stripline transitions
broadband coaxial to stripline transitions; *Pyle, J. R.*; *T-MTT v12 n3 May 64* 364-365
coaxial to strip transmission line adapter; *Craven, J. H.*; *T-MTT v9 n2 Mar 61* 200-201
coaxial-to-stripline transformers using rectangular lines; *Levy, R.*; *T-MTT v9 n3 May 61* 273-274
miniature stripline to waveguide slot adapter; *Shahan, Onnig*; *T-MTT v10 n2 Mar 62* 142-143
waveguide-to-stripline transition; development of two new types; *Knerr, R. H.*; *T-MTT v16 n3 Mar 68* 192-194

Striplines
asymmetric stripline analyzed using conformal mapping; *Rao, J. S.*; *T-MTT v27 n4 Apr 79* 299-303 (1A09)
boundary singularities in finite difference solutions of Laplace's equation; *Whiting, K. B.*; *T-MTT v16 n10 Oct 68* 889-891
capacitance and charge distribution calculation for structures with electric or magnetic walls; includes dielectric-supported air-strip line; *Costamagna, Eugenio*; *T-MTT v21 n3 Mar 73* 155-156 (1E01)
capacitance and charge distribution calculation for structures with electric or magnetic walls, including dielectric-supported air-strip line. *Castamagna, E., Correction*; *T-MTT v22 n4 Apr 74* 474 (2E08)
conductance of offset series slots in stripline; calculation by frequency-independent curves; *Breithaupt, Robert W.*; *T-MTT v16 n11 Nov 68* 969-970
coplanar-type striplines; calculation of characteristics using relaxation methods; *Hatsuda, Takeshi*; *T-MTT v20 n6 Jun 72* 413-416 (2B12)
coplanar structures; dispersion, dielectric and conductor losses; spectral-domain analysis, higher order solution; *Mirshekar-Syahkal, D.*; *T-MTT v27 n7 Jul 79* 694-699 (1E12)
coplanar waveguide with thick metal coating; *Kitazawa, T.*; *T-MTT v24 n9 Sep 76* 604-608 (1E04)

crossover structures; *Wight, J. S.*; *T-MTT v24 n5 May 76* 270 (1C08)
cylindrical and cylindrically warped lines; impedance calculation: *Wang, Yen-Chu*; *T-MTT v26 n1 Jan 78* 20-23 (1B08)
disk networks; impedance matrix of multiport with fringing fields at disk edge; *Bonetti, René R.*; *T-MTT v26 n7 Jul 78* 471-477 (1B03)
coupled rectangular strips in a waveguide; characteristic impedance and coupling coefficient; *Krage, Mark K.*; *T-MTT v16 n5 May 68* 302-307
double-ground-plane system for microwaves; transmission characteristics and design formulas; *Dahlman, B. A.*; *T-MTT v3 n5 Oct 55* 52-57
ferrite substrate; transmission characteristics and reflection problems; *Araki, Kiyomichi*; *T-MTT v24 n8 Aug 76* 491-498 (1A03)
Green's function for two- and three-dimensional problems; *Crampagne, Raymond*; *T-MTT v25 n5 May 77* 442-444 (2A06)
Green's function for Poisson equation in a two-dielectric region; *dos Santos, Antonio F.*; *T-MTT v20 n11 Nov 72* 777 (2B08)
guided waves in a class of stripline and other parallel-plate structures; *Eaves, R. E., Jr.*; *T-MTT v18 n1 Jan 70* 66-68
improved stripline resonator used as a bandstop filter; design permits application of printed circuit fabrication; *Standley, Robert D.*; *T-MTT v11 n6 Nov 63* 548-549
integrated-circuit interconnection lines; capacitance calculation; *Chang, W. H.*; *T-MTT v24 n9 Sep 76* 608-611 (1E08)
multiconductor lines placed symmetrically between two parallel ground planes with or without side walls; characteristic immittance matrix computation; *Llinér, L. J. Peter*; *T-MTT v22 n11 Nov 74* 930-937 (1B06)
multiconductor transmission lines, in the presence of a dielectric interface; calculation of coefficients of capacitance; *Weeks, William T.*; *T-MTT v18 n1 Jan 70* 35-43
parallel-strip line embedded in or printed on a dielectric sheet; *Yamashita, Eikichi*; *T-MTT v16 n11 Nov 68* 972-973
power absorbed by rectangular-shaped conductive dielectric samples in stripline; *Joines, W. T.*; *T-MTT v24 n8 Aug 76* 536-538 (1D06)
shielded microstrip lines; calculation of charge and potential distributions; *Mittra, Raj*; *T-MTT v18 n3 Mar 70* 149-156
special two-conductor line; approximations for the characteristic impedance; *Hilberg, Wolfgang*; *T-MTT v17 n5 May 69* 259-265
symmetric stripline; approximate formula for calculating the characteristic impedance; *Richardson, J. K.*; *T-MTT v15 n2 Feb 67* 130-131
synthesis; simple analytic formulas in terms of elliptic functions; *Crampagne, Raymond*; *T-MTT v25 n5 May 77* 440-442 (2A04)
thermal analysis; transient temperature distribution in stripline with triple-layer dielectric; *Sasaki, Masaki*; *T-MTT v24 n2 Feb 76* 119-121 (1D11)
transmission-line properties; explicit formulas for practical applications; *Wheeler, Harold A.*; *T-MTT v26 n11 Nov 78* 866-876 (1B10)
transmission line characteristics of strip lines with rectangular outer conductor and three dielectric layers; *Yamashita, Eikichi*; *T-MTT v18 n5 May 70* 238-244
transmission line properties of parallel wide strips by a conformal mapping approximation; *Wheeler, Harold A.*; *T-MTT v12 n3 May 64* 280-289
zero-thickness strip centered between two ground planes of finite width; exact potential solution; *Hayt, William H., Jr.*; *T-MTT v3 n4 Jul 55* 16-18

Striplines; cf. Coplanar waveguides; Strip transmission lines

Submillimeter-wave (300–3000 GHz); cf. Infrared (0.70–100 μm); Millimeter-wave (30–300 GHz)

Submillimeter-wave amplifiers
wideband tunable millimeter-wave parametric; possible use even for higher millimeter- or submillimeter-wave region; *Edrich, Jochen*; *T-MTT v18 n12 Dec 70* 1173-1175

Submillimeter-wave antennas
printed resonant antennas for monolithic GaAs Schottky-barrier detectors; *Mizuno, K.*; *T-MTT v25 n6 Jun 77* 470-472 (1B04)

Submillimeter-wave attenuators
directional couplers, attenuators, phase shifters using optical techniques in oversize rectangular waveguide; 300–350 GHz; *Taub, Jesse J.*; *T-MTT v11 n5 Sep 63* 338-345

Submillimeter-wave communication
frontier between classical and quantum physics; *Fox, A. G.*; *T-MTT v7 n4 Oct 59* 400-401

Submillimeter-wave components
directional couplers, attenuators, phase shifters using optical techniques in oversize rectangular waveguide; 300–350 GHz; *Taub, Jesse J.*; *T-MTT v11 n5 Sep 63* 338-345
low-loss groove guide for millimeter waves; *Tischer, Frederick J.*; *T-MTT v11 n5 Sep 63* 291-296
magnetic materials for millimeter and submillimeter wave applications; *Rodrigue, G. P.*; *T-MTT v11 n5 Sep 63* 351-356
state of the art review 1963: Millimeter and submillimeter waves; *Coleman, Paul D.*; *T-MTT v11 n5 Sep 63* 271-288

Submillimeter-wave detectors
antennas for monolithic GaAs Schottky-barrier detectors; printed resonant antennas; *Mizuno, K.*; *T-MTT v25 n6 Jun 77* 470-472 (1B04)
GaAs photoconductive detectors; dc-biased and microwave-biased detectors; *Crowley, J. D.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
photon counting in ruby at 500 GHz; *Strain, R. J.*; *T-MTT v11 n5 Sep 63* 434-435
pyroelectric; reduction of response time; *Alday, J. R.*; *T-MTT v14 n2 Feb 66* 100
Schottky-barrier diode cutoff frequencies; Si and GaAs diodes; *Champlin, Keith S.*; *T-MTT v26 n1 Jan 78* 31-34 (1C05)
Schottky-barrier planar diodes; *Murphy, R. A.*; *T-MTT v25 n6 Jun 77* 494-495 (1C14)
special issue foreword; selected papers from International Conference on Submillimeter Waves and Their Applications, 2nd, San Juan, PR, 1976; *Button, Kenneth J., Guest ed.*; *T-MTT v25 n6 Jun 77* 455-456 (1A03)

Submillimeter-wave detectors; cf. Infrared detectors; Submillimeter-wave mixers

Submillimeter-wave devices
special issue; selected papers from 2nd International Conference on Submillimeter Waves and Their Applications, 1976; *T-MTT v25 n6 Jun 77* 455-566 (1A03)

Submillimeter-wave diodes
IMPATT, MITATT, and TUNNETT mode devices; high-frequency limitations; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)

Submillimeter-wave filters
quasi-optical bandpass filter consisting of several wire-grid polarizers; network representation and unloaded *Q*; *Chen, Ming Hui*; *T-MTT v27 n4 Apr 79* 357-360 (1E11)
quasi-optical resonator filters for millimeter and submillimeter wave frequencies; *Taub, J. J.*; *T-MTT v12 n6 Nov 64* 618-619

Submillimeter-wave frequency conversion
frequency multiplication by nonlinear phenomena and frequency conversion by parametric systems; state-of-the-art in 1958; *Coleman, Paul D.*; *T-MTT v7 n1 Jan 59* 42-61
submillimeter-wave harmonic mixing; *Schulten, G.*; *T-MTT v15 n1 Jan 67* 60
submillimeter-wave harmonic mixing; *Strauch, R. G.*; *T-MTT v13 n6 Nov 65* 873
triplers and quadruplers with output at 450 and 600 GHz using GaAs Schottky-barrier diodes; *Takada, Tohru*; *T-MTT v27 n5 May 79* 519-523 (2E04)

Submillimeter-wave frequency conversion; cf. Submillimeter-wave mixers

Submillimeter-wave generation
coherent scattering of relatively long wavelengths from relativistic electron beam; *Granatstein, V. L.*; *T-MTT v25 n6 Jun 77* 545-550 (2B04)
cyclotron maser instability; linear and nonlinear theory; *Sprangle, P.*; *T-MTT v25 n6 Jun 77* 528-544 (2A01)
cyclotron masers; historical survey; *Hirshfield, J. L.*; *T-MTT v25 n6 Jun 77* 522-527 (1E14)
Dicke superradiance in submillimeter-wave region; *Bowden, C. M.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
frequency multiplication by nonlinear phenomena and frequency conversion by parametric systems; state-of-the-art in 1958; *Coleman, Paul D.*; *T-MTT v7 n1 Jan 59* 42-61
Josephson junction parametric oscillators; parametric amplification at 1.6 mm; *Levinsen, M. T.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
Josephson junction source; frequencies up to 30 cm^{-1}; *Elsey, R. K.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
racetrack microtron for millimeter-wave and submillimeter-wave generation; *Froelich, Heinrich R.*; *T-MTT v11 n5 Sep 63* 288-291
relativistic electron-beam-driven dielectric-loaded waveguide; Cerenkov radiation; *Walsh, J. E.*; *T-MTT v25 n6 Jun 77* 561-563 (2C06)
relativistic electron beams; 100 kW in 390–540 μm range; *Granatstein, V. L.*; *T-MTT v22 n12 Dec 74* 1000-1005 (1B08)
relativistic electron beams; selected papers from International Conference on Submillimeter Waves and Their Applications, 2nd, San Juan, PR, 1976; *Granastein, Victor L.*; *T-MTT v25 n6 Jun 77* 513 (1E05)
submillimeter generation by microwave multiplication; *Rashid, A. F.*; *T-MTT v12 n3 May 64* 384

Submillimeter-wave generation; cf. Submillimeter-wave lasers

Submillimeter-wave heterodyne detection
measurement system using a harmonic mixing superheterodyne receiver; *Cotton, John M., Jr.*; *T-MTT v11 n5 Sep 63* 385-389
Schottky diodes as heterodyne detectors and harmonic mixers; *Fetterman, H. R.*; *T-MTT v22 n12 Dec 74* 1013-1015 (1C07)

Submillimeter-wave heterodyne detection; cf. Submillimeter-wave mixers

Submillimeter-wave interferometry
Michelson interferometer with frustrated total reflection beamsplitter; *Daehler, M.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
plasma diagnostics on tokamak plasmas; 337-μm interferometer; *Veron, D.*; *T-MTT v22 n12 Dec 74* 1117 (1C14)
plasma diagnostics on tokamak plasmas; 337-μm Mach–zender interferometer; *Brossier, P.*; *T-MTT v22 n12 Dec 74* 1053-0056 (1F05)
submillimeter radiometry using the interferometric modulator; *Williams, Richard A.*; *T-MTT v11 n6 Nov 63* 513-522
tunable submillimeter interferometers; Fabry–Perot type; metal grid reflector; *Ulrich, R.*; *T-MTT v11 n5 Sep 63* 363-371
waveguides for interferometers in 0.1–1 mm wavelength range for measuring electron density of tokamak plasmas; *Crenn, Jean Pierre*; *T-MTT v27 n6 Jun 79* 573-577 (1B05)

Submillimeter-wave lasers
CF_2CH_2 lasers; assignment of optically pumped lines to pure rotation transitions; *Duxbury, G.*; *T-MTT v22 n12 Dec 74* 1108-1109 (2C05)
CH_3F laser using transverse optical pumping; tunable 496-μm laser; *Brown, F.*; *T-MTT v22 n12 Dec 74* 1117 (2C14)
CH_3F lasers for plasma diagnostic applications; megawatt-level, 30-MHz linewidth at 496 μm; *Brown, Fielding*; *T-MTT v22 n12 Dec 74* 1112-1113 (2C09)
D_2O lasers; *Keilman, F.*; *T-MTT v22 n12 Dec 74* 1118 (1D01)
HCN 337-μm CW lasers; gain saturation, emission line shape, and power; *Belland, P.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
HCN laser plasma modulation; pulse generation; *Tait, G. D.*; *T-MTT v22 n12 Dec 74* 1109-1111 (2C06)
HCN lasers; plasma effects in pulsed lasers; *Turner, R.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
HCN lasers; transversely excited 337-μm laser with 1-kW output power; *Adam, B.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
optical pumping far from molecular absorptions; lasing between vibrational levels with overtone pumping; *Fetterman, H. R.*; *T-MTT v22 n12 Dec 74* 1118 (1D01)
optical pumping of polar molecules by infrared lasers; *Chang, T. Y.*; *T-MTT v22 n12 Dec 74* 983-988 (1A05)
plasma interactions with intense submillimeter-wave radiation; *Lax, B.*; *T-MTT v22 n12 Dec 74* 1049-1052 (1F01)

Submillimeter-wave measurements
dielectric measurements on polar liquids; Poley absorption; *Chantry, G. W.*; *T-MTT v25 n6 Jun 77* 496-500 (1D02)
measurement system using a harmonic mixing superheterodyne receiver; *Cotton, John M., Jr.*; *T-MTT v11 n5 Sep 63* 385-389
microwave type bolometer for submillimeter wave measurements; *Byrne, John F.*; *T-MTT v11 n5 Sep 63* 379-384
mixer conversion loss of point-contact diodes; *Sauter, E.*; *T-MTT v25 n6 Jun 77* 468-470 (1B02)
polyethylene slab waveguides; attenuation constants measurement at 337 μm; *Tsuji, Mikio*; *T-MTT v27 n11 Nov 79* 873-878 (1A03)
simple grating for millimeter and submillimeter separation of harmonics; *Mallory, K. B.*; *T-MTT v11 n5 Sep 63* 433-434
special issue foreword; selected papers from International Conference on Submillimeter Waves and Their Applications, 2nd, San Juan, PR, 1976; *Button, Kenneth J., Guest ed.*; *T-MTT v25 n6 Jun 77* 455-456 (1A03)

Submillimeter-wave measurements; cf. Submillimeter-wave radiometry; Submillimeter-wave spectroscopy
Submillimeter-wave mixers
Josephson junction mixers for heterodyne reception at 337 μm; *Blaney, T. G.; T-MTT v22 n12 Dec 74* 1118 (2D01)
Josephson-mixer receiver tunable over 220–325 GHz band; *Edrich, Jochen; T-MTT v25 n6 Jun 77* 476-479 (1B10)
Josephson self-oscillator mixer for 0.1–2 THz range; *Vernet, G.; T-MTT v25 n6 Jun 77* 473-476 (1B07)
point-contact diodes; measuring conversion loss; *Sauter, E.; T-MTT v25 n6 Jun 77* 468-470 (1B02)
Schottky-barrier diode; conversion loss limitations; *McColl, Malcolm; T-MTT v25 n1 Jan 77* 54-59 (1D14)
Schottky-barrier diode cutoff frequencies; Si and GaAs diodes; *Champlin, Keith S.; T-MTT v26 n1 Jan 78* 31-34 (1C05)
Schottky-barrier diode mixer conversion losses up to 5 THz; GaAs, Si, and InSb diodes; *Kelly, William M.; T-MTT v27 n7 Jul 79* 665-672 (1C11)
Schottky-barrier planar diodes; *Murphy, R. A.; T-MTT v25 n6 Jun 77* 494-495 (1C14)
Schottky diodes as heterodyne detectors and harmonic mixers; *Fetterman, H. R.; T-MTT v22 n12 Dec 74* 1013-1015 (1C07)
submillimeter-wave harmonic mixing; *Schulten, G.; T-MTT v15 n1 Jan 67* 60
submillimeter-wave harmonic mixing; *Strauch, R. G.; T-MTT v13 n6 Nov 65* 873
Submillimeter-wave oscillators
biological systems, coherent oscillations in 10^{10}–10^{12} Hz range; role in controlling tissue growth; *Fröhlich, H.; T-MTT v26 n8 Aug 78* 613-617 (2A01)
Submillimeter-wave phase shifters
directional couplers, attenuators, phase shifters using optical techniques in oversize rectangular waveguide; 300–350 GHz; *Taub, Jesse J.; T-MTT v11 n5 Sep 63* 338-345
Submillimeter-wave propagation
atmospheric attenuation measurement at 1.3 mm and 0.87 mm using harmonic mixing radiometer; *Goldsmith, Paul F.; T-MTT v22 n12 Dec 74* 1115-1116 (2C12)
cloud and rain attenuation; *Deirmendjian, D.; T-MTT v22 n12 Dec 74* 1120 (2D03)
Submillimeter-wave radiometry
atmospheric attenuation measurement at 1.3 mm and 0.87 mm using harmonic mixing radiometer; *Goldsmith, Paul F.; T-MTT v22 n12 Dec 74* 1115-1116 (2C12)
spectroradiometers using n-type InSb detectors; 2–0.2 mm region; *Vystavkin, A. N.; T-MTT v22 n12 Dec 74* 1041-1046 (1E07)
submillimeter radiometry using the interferometric modulator; *Williams, Richard A.; T-MTT v11 n6 Nov 63* 513-522
Submillimeter-wave resonators
modified *H* guide as open resonator; characteristics at 890 GHz; *Batt, R. J.; T-MTT v22 n12 Dec 74* 1089-1094 (2A14)
resonators for millimeter and submillimeter wavelengths, flat plate and conical; *Culshaw, William; T-MTT v9 n2 Mar 61* 135-144
Submillimeter-wave spectroscopy
Alfven wave transmission study of bismuth at 311 ,m and 337 μm; *Verdun, H. R.; T-MTT v22 n12 Dec 74* 1120 (2D03)
alkali halides; thermal emission of small crystals and thin films; *Kälin, R.; T-MTT v22 n12 Dec 74* 1120 (2D03)
antiferromagnet studies; weak antiferromagnets in magnetic fields up to 300 kOe; *Rudashevsky, E. G.; T-MTT v22 n12 Dec 74* 1064-1069 (1G02)
autocorrelation functions describing random rotation of symmetric molecules; Coriolis coupling effects; *Müller, K.; T-MTT v22 n12 Dec 74* 1119 (2D02)
cosmic background measurements in 3 mm–300 μm range using balloon-borne liquid-helium-cooled polarizing interferometer; *Robson, E. I.; T-MTT v22 n12 Dec 74* 1120 (2D03)
cosmic background measurements in 7–10 cm^{-1} atmospheric window; *Dall'Oglio, G.; T-MTT v22 n12 Dec 74* 1120 (2D03)
cyclotron resonance in metals; 0.6 2 mm; *Goy, P.; T-MTT v22 n12 Dec 74* 1120 (2D03)
cyclotron resonance in metals; 4-mm measurements compared with 220-m measurements; *Peech, J.; T-MTT v22 n12 Dec 74* 1120 (2D03)
D_2O, D_2S, and HDS; absorbing ν_2 transitions in near coincidence to CO_2 laser lines; *Keilman, F.; T-MTT v22 n12 Dec 74* 1118 (1D01)
Fourier spectrometers; recent advances in commercial spectrometers; *Milward, R. C.; T-MTT v22 n12 Dec 74* 1018-1023 (1C12)
Fourier spectrometry of gases; resolution of 0.05 cm^{-1} in the 10–40 cm^{-1} region; *Fleming, J. W.; T-MTT v22 n12 Dec 74* 1023-1025 (1D03)
Fourier spectroscopy using polarizing interferometer; *Martin, D. H.; T-MTT v22 n12 Dec 74* 1119 (2D02)
Ge; absorption spectra and phase transitions of indirect excitons; *Vavilov, V. S.; T-MTT v22 n12 Dec 74* 1086-1089 (2A11)
group theory of angular autocorrelation functions of polyatomic molecules in liquids; *Keller, B.; T-MTT v22 n12 Dec 74* 1119 (2D02)
magnetospectroscopy of shallow donor impurity in InAs epitaxial layers; *Litton, C. W.; T-MTT v22 n12 Dec 74* 1117-1118 (1C14)
Se and CdTe properties in 10–100 cm^{-1} range; *Danielewicz, E. J.; T-MTT v22 n12 Dec 74* 1120 (2D03)
solar and stratospheric spectroscopy using airborne Michelson interferometer in lower stratosphere; 200–700 μm; *Mankin, W. G.; T-MTT v22 n12 Dec 74* 1119 (2D02)
solar brightness temperature measurement using balloon-borne lamellar-grating interferometer; 100–500 μm; *Stettler, P.; T-MTT v22 n12 Dec 74* 1119-1120 (2D02)
spectroradiometers using n-type InSb detectors; 2–0.2 mm region; *Vystavkin, A. N.; T-MTT v22 n12 Dec 74* 1041-1046 (1E07)
Submillimeter-wave spectroscopy; cf. Infrared spectroscopy; Submillimeter-wave interferometry
Submillimeter-wave waveguide communication
metallic guides with random imperfections for long-distance communication; *Koyama, Masaki; T-MTT v23 n7 Jul 75* 561-565 (1B09)
Submillimeter-wave waveguides
copper guide excess conduction loss; screening potential theory; *Wang, Yen-Chu; T-MTT v26 n11 Nov 78* 858-861 (1B02)
H-guide and groove-guide for 100–1000 GHz; *Harris, D. J.; T-MTT v26 n12 Dec 78* 998-1001 (1F06)
interferometers in 0.1–1 mm wavelength range for measuring electron density of tokamak plasmas; *Crenn, Jean Pierre; T-MTT v27 n6 Jun 79* 573-577 (1B05)
modified *H* guide; characteristics at 890 GHz; *Batt, R. J.; T-MTT v22 n12 Dec 74* 1089-1094 (2A14)
polyethylene slab waveguides; attenuation constants measurement at 337 μm; *Tsuji, Mikio; T-MTT v27 n11 Nov 79* 873-878 (1A03)
Submillimeter Waves and Their Application Conference; cf. Conferences
Superconducting cavity resonators
fast sweep measurements of relaxation times; *Schmitt, H. J.; T-MTT v14 n4 Apr 66* 206-207
organic superconductor and dielectric infrared waveguide, resonator and antenna models of insects' sensory organs; *Okress, E. C.; T-MTT v13 n5 Sep 65* 706-707
organic superconductor and dielectric infrared waveguide, resonator and antenna models of insects' sensory organs. *Okress, E. C., Correction; T-MTT v14 n3 Mar 66* 164
Superconducting devices; cf. Josephson devices
Superheterodyne receivers
microwave integrated circuits; low-noise *X*-band sweeping receiver; *Meier, Paul J.; T-MTT v19 n7 Jul 71* 600-609 (1D10)
Surface-wave antennas
single dielectric slab arbitrary polarization structure; use in surface wave antennas; *Hansen, Robert C.; T-MTT v5 n2 Apr 57* 115-120
Surface waves
higher-order hybrid modes of dielectric cylinders; *Schlesinger, S. P.; T-MTT v8 n2 Mar 60* 252-253
O-guide and X-guide; advanced surface wave transmission concept composed of thin dielectric sheets; *Sugi, Masao; T-MTT v7 n3 Jul 59* 366-369
paradoxical surface wave (crack wave); existence in ferrite-filled waveguide; *Gagné, Réal R. J.; T-MTT v16 n4 Apr 68* 241-250
shielded; analysis of modes; *Wait, James R.; T-MTT v15 n7 Jul 67* 410-414
surface wave excitation by distributed coupling; *Ravid-Weissberg, Efraim; T-MTT v9 n6 Nov 61* 573-575
surface waves on symmetrical three layer sandwiches; *Richmond, J. H.; T-MTT v8 n5 Sep 60* 572
Surface waves; cf. Acoustic surface waves; Electromagnetic surface waves; Magnetoelastic surface waves; Magnetostatic surface waves; Optical surface waves; Piezoelectric surface waves
Sweep oscillators
linear FM ramp generator for long-range imaging radar; 1000-MHz bandwidth and 250-μs duration; *Bromaghim, Dan R.; T-MTT v26 n5 May 78* 322-325 (1A04)
Switches
projective chart for the solution of transmission line and polarization problems; *Deschamps, Georges; T-MTT v1 n1 Mar 53* 5-13
projective chart for the solution of transmission line and polarization problems. *Deschamps, G., Correction; T-MTT v1 n2 Nov 53* 44
Switches; cf. Electrooptic switches; Ferrite switches; Light-triggered switches; Microstrip switches; Microstrip switches; Microwave switches; Millimeter-wave switches; Semiconductor switches; Spark-gap switches; UHF switches; Waveguide switches
switches; Light-triggered switches; Microstrip switches; Microwave switches; Millimeter-wave switches; Semiconductor switches; Spark-gap switches; UHF switches; Waveguide switches
Symmetry analysis; cf. Group theory
Synthetic-aperture imaging techniques
object-synthesized apertures; conversion of image distortion to variations in object velocity vector; *Farhat, Nabil H.; T-MTT v22 n5 May 74* 531-535 (1D11)

T

Tantalum oxide films
acoustic surface-wave properties of tantalum pentoxide films on *YX* quartz; *Weller, J. F.; T-MTT v22 n11 Nov 74* 973-975 (1E07)
Technical journals
IEEE Transactions on Microwave Theory and Techniques; evaluation; *Hines, M. E.; T-MTT v25 n3 Mar 77* 233-235 (1E11)
TED; cf. Transferred-electron devices
Telegraphy
trunk service provided by microwave system; *Lenehan, J. J.; T-MTT v2 n1 Apr 54* 50-59
Telemetry
small, light-weight, ruggedized, *L*-band, 200-mW oscillator; for hybrid integrated projectile telemetry transmitter; *Presser, A.; T-MTT v16 n7 Jul 68* 482-483
Telephone systems
VHF nonoptical propagation between Sardinia and Minorca; investigation; *Clara, José Maria; T-MTT v3 n6 Dec 55* 7-12
Telescopes; cf. Radio telescopes
Temperature transducers
electromagnetic irradiated biological systems; probe consisting of thermistor and plastic high-resistance leads; *Bowman, Ronald R.; T-MTT v24 n1 Jan 76* 43-45 (1D03)
microwave compatible MIC temperature electrode for use in biological dielectrics; *Larsen, Lawrence E.; T-MTT v27 n7 Jul 79* 673-679 (1D05)
S-band radiometer for sea surface temperature measurement; *Keen, Nigel J.; T-MTT v23 n5 May 75* 456-457 (1E02)
S-band radiometer for sea surface temperature measurement; high absolute precision and accuracy; *Hardy, Walter N.; T-MTT v22 n4 Apr 74* 382-390 (1C04)
Temperature; cf. Thermal
Terminology
clarifying waveguide designations; *Brady, M. M.; T-MTT v13 n2 Mar 65* 247-249
letter symbols for microwave bands; *Lewin, L.; T-MTT v12 n5 Sep 64* 551
suggested name 'nanowave region' for the electromagnetic spectrum between 10 micrometers to 10 mm wavelength; *Zimmerer, R. W.; T-MTT v14 n3 Mar 66* 157-158
Terrain mapping
microwave systems; site selection in undeveloped country; *Pynn, R. D.; T-MTT v2 n1 Apr 54* 9-15

Thermal factors
cavity resonators, TE_{011}-mode circular; temperature compensation; *Atia, Ali E.*; *T-MTT v24 n10 Oct 76* 668-669 (1C12)
ferrite isolators, thermal stress-induced breakdown; adhesive layer rupture initiates breakdown; *Buck, Daniel C.*; *T-MTT v26 n5 May 78* 357-360 (1C11)
GaAs MESFETs; noise and scattering parameters as function of temperature; *Liechti, Charles A.*; *T-MTT v24 n6 Jun 76* 376-381 (2A10)
IMPATT diodes, GaAs and Si; temperature effect on admittance; *Takayama, Yoichiro*; *T-MTT v23 n8 Aug 75* 673-680 (1F01)
millimeter-wave diodes; high-power 86-GHz components for guided transmission system; *Akaike, Masami*; *T-MTT v24 n11 Nov 76* 693-701 (1A13)
stripline; transient temperature distribution in stripline with triple-layer dielectric; *Sasaki, Masaki*; *T-MTT v24 n2 Feb 76* 119-121 (1D11)
Thermistors; cf. Bolometers
Thermography; cf. Infrared imaging
Thick-film circuits
microwave circuits on alumina and fused silica substrates; thick- and thin-film technologies compared; *Ramy, Jean-Pierre*; *T-MTT v26 n10 Oct 78* 814-820 (2B06)
Thin-film circuits
microwave circuits on alumina and fused silica substrates; thick- and thin-film technologies compared; *Ramy, Jean-Pierre*; *T-MTT v26 n10 Oct 78* 814-820 (2B06)
microwave hybrid digital loaded-line phase shifters; design and fabrication; *Opp, Francis L.*; *T-MTT v16 n7 Jul 68* 462-468
microwave lumped-element amplifiers; design and development; *Caulton, Martin*; *T-MTT v16 n7 Jul 68* 397-404
millimeter-wave frequency multipliers at 300 and 450 GHz using thin-film IC; *Takada, Tohru*; *T-MTT v26 n10 Oct 78* 733-737 (1C03)
Thin-film circuits; cf. Hybrid integrated circuits; Integrated optics
Thin-film devices
compact broadband lumped-element *L*-band circulator; *Knerr, Reinhard H.*; *T-MTT v18 n12 Dec 70* 1100-1108
InSb thin-film directional coupler performance in 32–36 GHz band; coupling varied by applied dc magnetic field; *Tanaka, Ikuo*; *T-MTT v24 n10 Oct 76* 660-662 (1C04)
lumped-element circulator; photolithographic production; *Knerr, R. H.*; *T-MTT v17 n12 Dec 69* 1152-1154
Thin-film waveguides
elastic surface waves guided by thin gold films deposited on fused quartz; *Adkins, Larry R.*; *T-MTT v17 n11 Nov 69* 904-911
thin-film screens of finite conductivity placed in transverse plane of an *X*-band rectangular waveguide; theory of microwave transmission; *Ramey, Robert L.*; *T-MTT v18 n4 Apr 70* 196-204
Thin-film waveguides; cf. Optical planar waveguides
Thin films; cf. Metal films; Permalloy films
Three-port junctions
quarter-wave coupled reciprocal 3-port symmetrical junctions for which eigennetwork appears as short-circuit at reference terminals; relation to class of 3-port circulators; *Helszajn, Joseph*; *T-MTT v21 n8 Aug 73* 533-537 (1D07)
Time-delay measurement
group-delay measurement using automatic network analyzer; smoothing by noncentral statistics; *Uhlir, A., Jr.*; *T-MTT v22 n3 Mar 74* 339-340 (3B09)
Time-domain analysis; cf. Network time-domain analysis; Transient analysis
Time-domain measurements
Gunn diode negative-conductance measurement by measuring envelope of transient amplitude of oscillations; validity of method; *Tomizawa, K.*; *T-MTT v21 n9 Sep 73* 596-597 (1D02)
microstrip and coaxial cable; loss and dispersion in 0.4–10 GHz range; *Luce, D. A.*; *T-MTT v24 n1 Jan 76* 50-54 (1D10)
waveguide mode coupling and conversion measurement; shuttle pulse method; *Bernardi, P.*; *T-MTT v24 n5 May 76* 264-266 (1C02)
Time domain reflectometry
automated broadband microwave measurements; applications; *Nicolson, A. Murray*; *T-MTT v20 n1 Jan 72* 3-9 (1B05)
automated broadband microwave measurements; applications. *Nicolson, A. M., Addendum*; *T-MTT v20 n10 Oct 72* 707 (2C07)
synthetic spectrum approach; pulse spectrum lines radiated individually, measured reflections added to compute echo; *Robinson, Lloyd A.*; *T-MTT v20 n12 Dec 72* 855-857 (2B09)
Time measurement
time displacement of a projectile within the barrel of a gun; measurement by microwave interferometer; *Hanks, H. C., Jr.*; *T-MTT v1 n1 Mar 53* 22
Titanium alloys/compounds
Li–Ti ferrite compositions; microwave properties; *Green, Jerome J.*; *T-MTT v25 n2 Feb 77* 155-159 (1F05)
Titanium alloys/compounds, devices
GaAs FET integrated oscillator with $BaO–TiO_2$ ceramic resonator; high-stability low-noise; *Abe, Hiroyuki*; *T-MTT v26 n3 Mar 78* 156-162 (1B08)
masers; rutile traveling-wave masers for 20–40 GHz band using dielectric image line slow-wave structure; *Kollberg, Erik L.*; *T-MTT v24 n11 Nov 76* 718-725 (1C10)
Tokamaks
emission from plasma near electron cyclotron frequency; *Costley, A. E.*; *T-MTT v22 n12 Dec 74* 1119 (2D02)
plasma diagnostics using 337-μm interferometer; *Veron, D.*; *T-MTT v22 n12 Dec 74* 1117 (1C14)
plasma diagnostics using 337-μm Mach–Zender interferometer; *Brossier, P.*; *T-MTT v22 n12 Dec 74* 1053-0056 (1F05)
waveguides for interferometers in 0.1–1 mm wavelength range for measuring electron density of tokamak plasmas; *Crenn, Jean Pierre*; *T-MTT v27 n6 Jun 79* 573-577 (1B05)
Tolerance analysis; cf. Network tolerance analysis
Toroids
resonators; exact solution of Helmholtz equation in toroidal coordinates; *Cap, Ferdinand*; *T-MTT v26 n7 Jul 78* 478-486 (1B10)
resonators, toroid with conducting separating wall; exact solution of Maxwell equations; *Deutsch, Rudolf*; *T-MTT v27 n2 Feb 79* 172-178 (1F12)
TR tubes
arc loss of multimegawatt gas-discharge duplexers; *Ward, Charles S.*; *T-MTT v13 n6 Nov 65* 801-805
pre-TR tube for high average power duplexing; 3000 MHz operation; *Downton, D. W.*; *T-MTT v8 n6 Nov 60* 654-659
review of duplexing systems at microwave frequencies; *Harvey, A. F.*; *T-MTT v8 n4 Jul 60* 415-431
Traffic control
error of Doppler radar in target speed determination for traffic control; *Ishii, T. Koryu*; *T-MTT v13 n3 May 65* 389-390
Traffic control; cf. Air-traffic control; Rail-traffic control
Transducers; cf. Acoustic surface-wave transducers; Acoustic transducers; Interdigital transducers; Piezoelectric transducers; Temperature transducers
Transferred-electron device amplifiers
experimental study of stabilized amplifiers; *Talwar, Ashok K.*; *T-MTT v21 n7 Jul 73* 477-481 (1E07)
package parasitics; effect on amplifier behavior; *Monroe, John W.*; *T-MTT v21 n11 Nov 73* 731-735 (2D01)
reflection amplifier design using minimax optimization algorithm not requiring derivatives. *Madsen, K., Correction*; *T-MTT v24 n4 Apr 76* 233 (1F01)
Transferred-electron device amplifiers; cf. Gunn device amplifiers
Transferred-electron device oscillators
bias tuning and modulation characteristics; *Tang, D. D.*; *T-MTT v23 n9 Sep 75* 748-753 (1C02)
frequency memory device; *Curtice, W. R.*; *T-MTT v23 n12 Dec 75* 1074-1076 (2C11)
noise analysis including variation of device admittance with bias- and RF-voltage amplitudes; *Patterson, J. T.*; *T-MTT v24 n7 Jul 76* 460-463 (2A05)
negative conductance of diode as function of microwave voltage; measurements and computer simulation studies; *Hartnagel, Hans L.*; *T-MTT v21 n7 Jul 73* 468-477 (1D10)
post-mounted waveguide oscillators; distributed-lumped equivalent circuit for 12–18 GHz band; *Dean, Michael*; *T-MTT v21 n3 Mar 73* 121-127 (1B03)
quenched-domain mode oscillation in pulse-biased waveguide-mounted oscillators; *Curtice, Walter R.*; *T-MTT v21 n6 Jun 73* 369-374 (1B03)
varactor-tuned oscillators mounted in full-height *X*-band guide; mechanical and electronic tuning characteristics; *Templin, A. S.*; *T-MTT v22 n5 May 74* 554-556 (2A13)
voltage-controlled oscillators; frequency drift after tuning; *Johnson, Kenneth M.*; *T-MTT v24 n10 Oct 76* 650-656 (1B08)
waveguide mounting configuration for varactor-tuned oscillators; *Joshi, J. S.*; *T-MTT v24 n9 Sep 76* 573-584 (1C01)
Transferred-electron device oscillators; cf. Gunn device oscillators
Transferred-electron devices
internal dynamics and microwave properties of *X*-band TED having ohmic contacts; *Kiehl, Richard A.*; *T-MTT v24 n4 Apr 76* 165-172 (1A03)
microwave frequency division using TED in resistive circuit; *Huang, C. I.*; *T-MTT v24 n1 Jan 76* 61-63 (1E07)
Transferred-electron devices; cf. Gunn devices
Transformers; cf. Impedance matching; Signal transformers
Transforms; cf. Fourier transforms; Hilbert transforms; *Z* transforms
Transient analysis; cf. Network time-domain analysis; Network transient analysis
Transient propagation; cf. Electromagnetic transient propagation; Optical fiber waveguide transient propagation; Waveguide transient propagation
Transistors; cf. Bipolar transistors; FETs; Microwave bipolar transistors; Microwave FETs; Microwave transistors; Millimeter-wave FETs; Power transistors; Power FETs; Power transistors; UHF transistors
Transitions; cf. Coaxial cable transitions; Microstrip transitions; Slot-line transitions; Stripline transitions; Stripline–waveguide transitions; Waveguide transitions
Transmission coefficient measurement; cf. Scattering parameters measurement
Transmission-line discontinuities
dielectric image lines; electric probe measurements in 26–90 GHz range; *Solbach, Klaus*; *T-MTT v26 n10 Oct 78* 755-758 (1D11)
group delay effects; *Beatty, Robert W.*; *T-MTT v23 n11 Nov 75* 919-923 (1E13)
step discontinuities in TEM-mode lines; compensation using taper; *Malherbe, Johannes A. G.*; *T-MTT v26 n11 Nov 78* 883-885 (1C13)
use of sampling theorem in the synthesis of transmission-line tapers and antenna patterns; *Collin, R. E.*; *T-MTT v10 n5 Sep 62* 393-394
Transmission-line discontinuities; cf. Coaxial cable discontinuities; Microstrip discontinuities; Slot-line discontinuities; Stripline discontinuities; Waveguide discontinuities
Transmission-line filters
bandpass filters having up to two attenuation poles at finite frequencies in stopband; half-wave parallel coupled-line filters. *Cristal, E. G., Correction*; *T-MTT v21 n9 Sep 73* 598 (1D04)
bandpass filters having up to two attenuation poles at finite frequencies in stopband; half-wave parallel coupled-line filters; *Cristal, Edward G.*; *T-MTT v20 n10 Oct 72* 696-699 (2B08)
coaxial-line bandpass filter; immittance inverter realization technique; *Davis, W. Alan*; *T-MTT v19 n4 Apr 71* 373-380 (1D05)
computer-aided design; computer program for optimum synthesis; *Hoffman, G.*; *T-MTT v20 n10 Oct 72* 709-710 (2C09)
coupled-line filters; inhomogeneous coupled-line structures having large mode-velocity ratios; *Allen, James L.*; *T-MTT v22 n12 Dec 74* 1182-1186 (3E08)
design equations for resonator filters, interdigital filters, and stub filters; *Cristal, Edward G.*; *T-MTT v19 n5 May 71* 486-490 (2B12)
roots of equiripple insertion-loss functions for commensurate line filters; *Gupta, Om P.*; *T-MTT v19 n4 Apr 71* 410-411 (2C06)
sine-plane design procedure; *Pang, Khee K.*; *T-MTT v21 n10 Oct 73* 607-611 (1B09)
symmetrical cascade of commensurate lines having equiripple performance; even polynomials which complement Achieser–Zolotarev polynomials; *Riblet, Henry J.*; *T-MTT v19 n11 Nov 71* 891-892 (1F03)
tapped-line coupled lines; application to combline and interdigital filters; *Cristal, Edward G.*; *T-MTT v23 n12 Dec 75* 1007-1012 (1E13)
Transmission-line filters; cf. Coaxial-line filters; Distributed filters; Microstrip filters; Stripline filters
Transmission-line measurements
balanced two-conductor lines; use of coaxial equipment; *Dyson, John D.*; *T-MTT v19 n1 Jan 71* 94-96 (2E02)
microstrip and coaxial cable; loss and dispersion in 0.4–10 GHz range; time-domain metrology; *Luce, D. A.*; *T-MTT v24 n1 Jan 76* 50-54 (1D10)
microstrip end and gap effects measurement using resonant technique; *Gupta, Chandra*; *T-MTT v26 n9 Sep 78* 649-652 (1B09)

Transmission-line networks
cascaded commensurate transmission-line C-section all-pass networks; analysis and exact synthesis; *Cristal, Edward G.*; *T-MTT v14 n6 Jun 66* 285-291
cascaded commensurate transmission-line C-section all-pass networks; analysis and exact synthesis. *Cristal, Edward G., Correction*; *T-MTT v14 n10 Oct 66* 498-499
commensurate; digital computer techniques for the approximation of periodic frequency characteristics; *Steenaart, Willem*; *T-MTT v17 n12 Dec 69* 1115-1122
commensurate; frequency transformation; *Cristal, Edward G.*; *T-MTT v15 n6 Jun 67* 348-357
commensurate; frequency transformation. *Cristal, E. G., Correction*; *T-MTT v16 n1 Jan 68* 45
dominant pole synthesis of networks which are interconnections of uniform line elements; *Mahdi, Solaimanul*; *T-MTT v17 n8 Aug 69* 591-597
frequency transformations; Cristal's transformation; *Grayzel, A. I.*; *T-MTT v23 n8 Aug 75* 715-716 (1B05)
group delay and dissipation loss in transmission-line filters. *Young, Leo, Correction*; *T-MTT v11 n6 Nov 63* 561
group delay and dissipation loss in transmission-line filters; *Young, Leo*; *T-MTT v11 n3 May 63* 215-217
parallel conductor array; equivalent circuit; *Seviora, Rudolf*; *T-MTT v16 n10 Oct 68* 875-877
reactance networks; design for equalizer applications; *Cristal, Edward G.*; *T-MTT v18 n9 Sep 70* 531-540
Transmission-line networks; cf. Distributed networks
Transmission-line resonators
microwave power generation using $\lambda/4$ transmission-line resonator containing spark gap; *Ristic, Velimir M.*; *T-MTT v26 n5 May 78* 369-374 (1D09)
Transmission lines
all-pass equalizers operating in TEM, TE, or TM modes; general theory and design; *Cristal, Edward G.*; *T-MTT v17 n1 Jan 69* 28-38
analogy between modulated electron beam in a plasma and transmission lines; *Freire, Gabriel F.*; *T-MTT v12 n3 May 64* 360-361
analogy of beam waveguides to electric transmission lines; *Daly, James C.*; *T-MTT v18 n9 Sep 70* 657-658
analysis of an inhomogeneous quarter-wave transformer of two sections; *Young, Leo*; *T-MTT v8 n6 Nov 60* 645-649
anisotropic properties of strip-type artificial dielectric; *Kolettis, Nicholas J.*; *T-MTT v9 n5 Sep 61* 436-441
annotated bibliography on advances in microwave theory and techniques in Great Britain in 1959; *Brown, John*; *T-MTT v8 n4 Jul 60* 382-386
annotated bibliography on advances in microwave theory and techniques in Western Europe in 1959; *Goudet, Georges*; *T-MTT v8 n4 Jul 60* 387-394
arbitrary geometry; least-weighted-square method for analysis and synthesis; *Seshagiri, N.*; *T-MTT v15 n9 Sep 67* 494-503
arbitrary, uniform waveguides by point-matching method; *Yee, Hung Yuet*; *T-MTT v13 n6 Nov 65* 847-851
array of parasitic linear elements; dispersion characteristics; *Nagelberg, Elliott R.*; *T-MTT v14 n8 Aug 66* 391-396
attenuation constant for lunar line and for the *T*-septate lunar line; *Hu, Ann Yung*; *T-MTT v11 n4 Jul 63* 243-250
boundary conditions and ohmic losses in conducting wedges; *Chisholm, Robin M.*; *T-MTT v8 n2 Mar 60* 189-198
boundary singularities in finite difference solutions of Laplace's equation; *Whiting, K. B.*; *T-MTT v16 n10 Oct 68* 889-891
calculating coaxial transmission-line step capacitance; *Somlo, P. I.*; *T-MTT v11 n5 Sep 63* 454
capacitive loads at regular intervals along line; switching time of incident wave; *Malaviya, Shashi D.*; *T-MTT v27 n10 Oct 79* 854-859 (1C04)
cascade connection of equal-length TEM-mode lines; finding system function by inspection; *Ross, G. F.*; *T-MTT v18 n10 Oct 70* 738-740
cavities terminating transmission lines; measurement of parameters; *Lebowitz, R. A.*; *T-MTT v4 n1 Jan 56* 51-53
cavities terminating transmission lines; refined method for the measurement of parameters; *St. Clair, Maurice W.*; *T-MTT v4 n3 Jul 56* 184
channel waveguide for increased power handling ability; *Vilmur, R. J.*; *T-MTT v10 n3 May 62* 220-224
characteristic impedance of square coaxial line; *Green, Harry E.*; *T-MTT v11 n6 Nov 63* 554-555
characteristic impedances of rectangular transmission lines; review of past work and comparison to precise calculations; *Garver, Robert V.*; *T-MTT v9 n3 May 61* 262-263
coaxial; equivalent circuit of a series gap in the center conductor; *Dawirs, Harvel N.*; *T-MTT v17 n2 Feb 69* 127-129
coaxial line; computation of step capacitances suitable for programming in digital computers; *Somlo, P. I.*; *T-MTT v15 n1 Jan 67* 48-53
coaxial lines of rectangular cross section; dimensions of conductors for specified characteristic impedance; *Riblet, Henry J.*; *T-MTT v20 n8 Aug 72* 538-541 (1D12)
computer program for processing standing wave measurements; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 644-646
coupled microstrip transmission lines; coupled-mode formulation of inhomogeneous lines; *Krage, Mark K.*; *T-MTT v18 n4 Apr 70* 217-222
coupled microstrip transmission lines; evaluation of coupled-line parameters; *Krage, Mark K.*; *T-MTT v18 n4 Apr 70* 222-228
cutoff wavelengths for non-simple cross-section waveguides; *Valenzuela, G. R.*; *T-MTT v9 n4 Jul 61* 363-364
CW power transmission; *Okress, E.*; *T-MTT v13 n6 Nov 65* 870-871
design of bandpass filters on the insertion loss basis; *Matthaei, George L.*; *T-MTT v8 n6 Nov 60* 580-593
determination of capacitance, inductance, and impedance of rectangular lines by conformal transformation; *Chen, Tsung-Shan*; *T-MTT v8 n5 Sep 60* 510-519
dielectric-filled; impedance matching by negative capacitor; *Kelly, Alexander J.*; *T-MTT v15 n10 Oct 67* 583-584
dielectric-filled; impedance matching by negative capacitor. *Kelly, A. J., Addendum*; *T-MTT v16 n6 Jun 68* 374
dielectric-shielded *G*-line; protection from environmental conditions; *Partch, Jerome E.*; *T-MTT v17 n5 May 69* 271-274
dielectric surface-wave structure; the V-line; *Diament, Paul*; *T-MTT v9 n4 Jul 61* 332-337
differential microwave phase shifter; *Beatty, Robert W.*; *T-MTT v12 n2 Mar 64* 250-251
Transmission lines, *cont.*
diode modulators and demodulators; high-speed characteristics; *Garver, Robert V.*; *T-MTT v15 n7 Jul 67* 390-397
direct-coupled-cavity filters; design theory; *Levy, Ralph*; *T-MTT v15 n6 Jun 67* 340-348
directional couplers; equivalence principle; *Sharpe, Charles B.*; *T-MTT v15 n7 Jul 67* 398-405
discontinuities, randomly spaced; effects of reflections; *Moore, Richard K.*; *T-MTT v5 n2 Apr 57* 121-126
dominant cutoff wavelength of a lunar line—2 eccentric circular metal tubes; *Hu, Ann Yung*; *T-MTT v9 n6 Nov 61* 552-556
electric probe for measurement of induced surface currents on obstacles in a parallel plate region; *Plonsey, Robert*; *T-MTT v10 n3 May 62* 214-217
equivalent cascade; relationship with interdigital bandpass filters; *Riblet, Henry J.*; *T-MTT v15 n3 Mar 67* 161-166
equivalent cascade; relationship with interdigital bandpass filters. *Riblet, H. J., Correction*; *T-MTT v16 n1 Jan 68* 55
equivalent circuits for coupled-cavity slow-wave structures; *Curnow, Harold J.*; *T-MTT v13 n5 Sep 65* 671-675
exponential; use as resonators and transformers; *Ghose, Rabindra N.*; *T-MTT v5 n3 Jul 57* 213-217
field within a radial transmission line; *Dienst, Joseph F.*; *T-MTT v8 n5 Sep 60* 571-572
frequency response in the reflection coefficient plan plotted by digital computer; *Bandler, J. W.*; *T-MTT v14 n8 Aug 66* 399-400
general, nonuniform transmission line; intrinsic properties and analysis in terms of Sturm–Liouville equation; *Protonotarios, Emmanuel N.*; *T-MTT v15 n3 Mar 67* 142-150
generalized plots of mode patterns in a cylindrical dielectric waveguide applied to retinal cones; *Biernson, George*; *T-MTT v13 n3 May 65* 345-356
generalized plots of mode patterns in a cylindrical dielectric waveguide applied to retinal cones; *Diament, P.*; *T-MTT v13 n6 Nov 65* 884-885
Goubau line above ground; transition from ground-return line to surface-wave line; *Chiba, Jiro*; *T-MTT v25 n2 Feb 77* 83-93 (1A03)
Goubau line having bends; loss and radiation; *Chiba, Jiro*; *T-MTT v25 n2 Feb 77* 94-100 (1A14)
graphical procedures for finding matrix elements for a lattice network; *Mathis, H. F.*; *T-MTT v13 n1 Jan 65* 130-132
guide wavelengths and impedance measurement applied to step transformers; *Leibowitz, Michael R.*; *T-MTT v9 n4 July 61* 366-367
guide wavelengths and impedance measurement applied to step transformers; *Sullivan, Donald J.*; *T-MTT v8 n2 Mar 60* 212-217
helical RF lines; attenuation and power-handling capability; *Bryant, J. H.*; *T-MTT v1 n2 Nov 53* 33-38
high-pass transmission-line directional coupler; *Arndt, Fritz*; *T-MTT v16 n5 May 68* 310-311
impedance and attenuation of TEM-lines by finite difference methods; *Schneider, Martin V.*; *T-MTT v13 n6 Nov 65* 793-800
impedance matching; design of an optimum quarter-wave transformer; *Young, Leo*; *T-MTT v8 n5 Sep 60* 478-482
impedance matching using a cascaded section of line; range of terminating impedance; *Balabanian, Norman*; *T-MTT v3 n4 Jul 55* 53
improving isolation in multi-channel systems; *Engen, G. F.*; *T-MTT v8 n4 Jul 60* 460-461
insertion loss calculation of transmission lines used in matching networks; *Ricardi, L. J.*; *T-MTT v16 n3 Mar 68* 189-191
integral for evaluating propagation constant in lossy transmission lines; *Collin, Robert E.*; *T-MTT v8 n3 May 60* 339-342
Laplace's equation; accuracy of finite-difference solutions; *Duncan, James W.*; *T-MTT v15 n10 Oct 67* 575-582
linear tuning of a transmission-line type resonator; *Wadia, B. H.*; *T-MTT v8 n1 Jan 60* 66-72
linearly tapered; analysis and application to microwaves; *Rustogi, O. P.*; *T-MTT v17 n3 Mar 69* 166-168
loaded transmission line synthesis; *Reed, John*; *T-MTT v9 n2 Mar 61* 201-202
logarithmic chart for impedance calculations; *Hudson, Arthur C.*; *T-MTT v7 n2 Apr 59* 277-281
lossless; analysis of matching systems in terms of real functions; *Gledhill, C. S.*; *T-MTT v16 n1 Jan 68* 49-50
lossless conductor system; current distribution and impedance; *Brooke, Robert L.*; *T-MTT v15 n6 Jun 67* 358-364
lossless discontinuity; determination of equivalent circuit parameters; *Collin, R. E.*; *T-MTT v5 n4 Oct 57* 266-267
low-loss groove guide for millimeter waves; *Tischer, Frederick J.*; *T-MTT v11 n5 Sep 63* 291-296
matching between complex impedances using single matching section; *Day, P. I.*; *T-MTT v23 n9 Sep 75* 772-773 (1D12)
matching complex load impedances to resistive source impedances; use of Smith chart when characteristic impedance is unknown; *Arnold, R. M.*; *T-MTT v22 n11 Nov 74* 977-978 (1E11)
matching of a complex load impedance to characteristic impedance of a transmission line; *French, G. N.*; *T-MTT v17 n9 Sep 69* 719
matching when characteristic impedance in unknown; use of Smith chart; *Somlo, P. I.*; *T-MTT v23 n8 Aug 75* 715 (1B05)
mathematical analysis of time response of linear components of nondispersive transmission lines; *Getsinger, William J.*; *T-MTT v8 n3 May 60* 301-309
measurement of cutoff frequencies; *Audeh, N. F.*; *T-MTT v13 n6 Nov 65* 878-879
measurement of *Q* for low loss transmission lines; *Somlo, P. I.*; *T-MTT v11 n6 Nov 63* 472-478
microstrip; calculation of capacity per unit length by 'method of moments'; *Farrar, A.*; *T-MTT v18 n1 Jan 70* 65-66
mode losses in confocal resonators and transmission systems; *Heurtley, J. C.*; *T-MTT v13 n5 Sep 65* 711-712
moderately long transmission lines; reflection measurements using broadband frequency modulation; *Mahle, C.*; *T-MTT v14 n10 Oct 66* 496-497
multidielectric lines; field expansion as power series of frequency; *Dos Santos, A. F.*; *T-MTT v23 n9 Sep 75* 753-756 (1C07)
multifin type; conformal mapping of characteristic impedance; *Boyd, C. R.*; *T-MTT v15 n8 Aug 67* 487-488

Transmission lines, *cont.*
nonuniform, inhomogeneous, and anisotropic waveguides and transmission lines; general discussion of properties; *Klopfenstein, Ralph W.*; *T-MTT v4 n4 Oct 56* 193-196
numerical solution of transmission-line problems; *Green, Harry E.*; *T-MTT v13 n5 Sep 65* 676-692
numerical solutions. *Green, H. E., Correction*; *T-MTT v23 n5 May 75* 455 (1E01)
open interdigital-line structure; dispersion characteristics obtained by treating the structure as a radiator; *Wu, Pei Rin*; *T-MTT v17 n3 Mar 69* 159-163
open wire lines; fundamentals and properties; *Goubau, Georg*; *T-MTT v4 n4 Oct 56* 197-200
periodically loaded; use of non-Euclidean geometry in impedance measurements; *Kyhl, R. L.*; *T-MTT v4 n2 Apr 56* 111-115
phase, attenuation and impedance characteristics of coaxial transmission lines with thin tubular conductors; *Post, E. J.*; *T-MTT v11 n2 Mar 63* 129-136
phase measurement method for transmission-line networks; *Lacy, Peter*; *T-MTT v9 n6 Nov 61* 568-569
planar; calculation of characteristic impedance and attenuation; *Park, David*; *T-MTT v3 n3 Apr 55* 8-12
planar; calculation of characteristic impedance and attenuation. *Park, David, Addendum*; *T-MTT v5 n1 Jan 57* 75
planar, consisting of two parallel strips of foil placed between, and perpendicular to, two wide plates; expression for characteristic impedance; *Giger, Adolf J.*; *T-MTT v4 n3 Jul 56* 184
planar, consisting of two parallel strips of foil placed between, and perpendicular to, two wide plates; expression for characteristic impedance; *Park, David*; *T-MTT v3 n5 Oct 55* 7-11
planar; simple approximations to characteristic impedance and attenuation. *Packard, K. S., Correction*; *T-MTT v5 n4 Oct 57* 265
planar; simple approximations to characteristic impedance and attenuation; *Packard, Karle S., Jr.*; *T-MTT v5 n2 Apr 57* 163
planar; simple approximations to characteristic impedance and attenuation; *Park, D.*; *T-MTT v4 n2 Apr 56* 130
plane, parallel; effect of neighboring conductors on the currents and fields; *Hellman, Martin E.*; *T-MTT v17 n5 May 69* 254-259
point-matching technique for computing the Z_0 of TEM lines; *Bates, Richard H. T.*; *T-MTT v17 n6 Jun 69* 294-301
principle of complementarity in the study of transmission lines; *Owyang, Gilbert H.*; *T-MTT v8 n2 Mar 60* 172-181
projective chart for the solution of transmission line and polarization problems; *Deschamps, Georges*; *T-MTT v1 n1 Mar 53* 5-13
projective chart for the solution of transmission line and polarization problems. *Deschamps, G., Correction*; *T-MTT v1 n2 Nov 53* 44
Q determination for individual frequency-selective sections and relationship to total required *Q*; *Joines, William T.*; *T-MTT v16 n4 Apr 68* 258-260
quarter-wave compensation of resonant discontinuities; *Muehe, C. E.*; *T-MTT v7 n2 Apr 59* 296-297
quarter-wave compensation of resonant discontinuities; *Young, Leo*; *T-MTT v7 n4 Oct 59* 478
quarter-wave impedance transformers; general synthesis of RF configuration; *Young, Leo*; *T-MTT v7 n4 Oct 59* 477-478
quarter-wave impedance transformers; general synthesis of RF configuration; *Ozaki, Hiroshi*; *T-MTT v6 n3 Jul 58* 331-332
quarter-wave impedance transformers; general synthesis of RF configuration; *Riblet, Henry J.*; *T-MTT v5 n1 Jan 57* 36-43
quarter-wave impedance transformers; general synthesis of RF configuration; *Riblet, Henry J.*; *T-MTT v7 n2 Apr 59* 297-298
quarter-wavelength impedance transformers having equal-ripple performance; *Riblet, Henry J.*; *T-MTT v13 n5 Sep 65* 622-629
reciprocal ferrite devices in TEM lines to operate in low-microwave frequency region; *Fleri, Dominic*; *T-MTT v6 n1 Jan 58* 91-96
relation between *Q* and the attenuation constant of a transmission line; *Hsu, H. P.*; *T-MTT v11 n4 Jul 63* 258
round wire in polygon shield; *Wheeler, Harold A.*; *T-MTT v27 n8 Aug 79* 717-721 (1A03)
sets of eigenvectors for volumes of revolution; *Van Bladel, Jean G.*; *T-MTT v8 n3 May 60* 309-319
shielded-slab line; characteristic impedance calculation; *Riblet, Henry J.*; *T-MTT v27 n6 Jun 79* 557-559 (1A03)
shielded slab line; exact calculation of characteristic impedance in terms of elliptic functions; *Bates, R. H. T.*; *T-MTT v4 n1 Jan 56* 28-33
short-pulse behavior of lossy tapered transmission lines; *Stapelfeldt, Roelif*; *T-MTT v9 n4 Jul 61* 290-296
split coaxial line; characteristic impedance; *Kogō, Hiroshi*; *T-MTT v7 n3 Jul 59* 393-394
stepped transformers; optimum design; *Solymar, L.*; *T-MTT v6 n4 Oct 58* 374-378
stepped transmission line transformers; matching using a standard Smith chart; *French, G. N.*; *T-MTT v16 n10 Oct 68* 885-886
study of multielement transmission lines; *Kogo, Hiroshi*; *T-MTT v8 n2 Mar 60* 136-142
surface-wave; mode coupling between them; *Cook, Kenneth R.*; *T-MTT v17 n5 May 69* 265-270
synthetic transmission line transformers; *Mathis, H. F.*; *T-MTT v10 n4 Jul 62* 296-298
techniques for utilizing exponential transmission lines in microwave components; *Womack, Charles P.*; *T-MTT v10 n2 Mar 62* 124-132
TEM impedance and cross coupling for two center conductors in a double ridge waveguide; *Storer, James E.*; *T-MTT v9 n2 Mar 61* 116-123
TEM-line problems involving inhomogeneous media; numerical solution; *Brenner, H. E.*; *T-MTT v15 n8 Aug 67* 485-487
TEM-mode lines with curved boundaries; upper and lower bounds on the characteristic impedance; *Sinnott, D. H.*; *T-MTT v16 n11 Nov 68* 971-972
TEM-mode parameters; calculation by finite-difference computation of electric flux; *Sinnott, Donald H.*; *T-MTT v17 n8 Aug 69* 634-637
TEM mode structures; use of interpolation in improving finite difference solutions; *Sinnott, Donald H.*; *T-MTT v17 n1 Jan 69*
TEM mode transmission lines; upper and lower bounds on the characteristic impedance; *Carson, C. T.*; *T-MTT v14 n10 Oct 66* 497-498
theorem on an optimum stepped impedance transformers; *Riblet, Henry J.*; *T-MTT v8 n2 Mar 60* 169-170
transformers for impedance matching; design by graphical method; *Hamid, M. A.*; *T-MTT v15 n9 Sep 67* 528-529
trough and slab lines; characteristic impedance derived by variational method; *Chisholm, Robin M.*; *T-MTT v4 n3 Jul 56* 166-172
two-port transmission line devices; simplified calibration; *Wentworth, Frederick L.*; *T-MTT v4 n3 Jul 56* 173-175
uniform; phase shift and attenuation determined by circular transmission line charts; *Mathis, H. F.*; *T-MTT v4 n2 Apr 56* 130-131
uniform TEM mode transmission lines with curved boundaries; numerical solution; *Carson, C. T.*; *T-MTT v15 n4 Apr 67* 269-270
uniform transmission line equivalence of cascaded exponential lines; *Das, Dipti*; *T-MTT v16 n8 Aug 68* 511-516
Transmission lines; cf. Cables; Coaxial cables; Coupled transmission lines; Distributed networks; Electromagnetic surface-wave transmission lines; Microstrip; Multiconductor transmission lines; Nonlinear transmission lines; Slot lines; Strip transmission lines; Striplines; Underground electromagnetic communication; Wire communication
Transmitters; cf. Microwave transmitters; Radio transmitters
Transponders
microwave integrated circuit front end for *L*-band IFF receiver; *Giannini, Richard J.*; *T-MTT v19 n7 Jul 71* 622-627 (2B01)
Transport processes; cf. Charge-carrier transport processes
Transportation; cf. Guided ground transportation; Rail transportation
Transversal filters
acoustic surface-wave filters; admittance formalism for derivation of performance characteristics; *Burgess, Alan S.*; *T-MTT v21 n10 Oct 73* 611-618 (1C01)
acoustic surface-wave filters; design of tapping structure that synthesizes in sampled form the impulse response of any specified transfer function; *Atzeni, Carlo*; *T-MTT v21 n8 Aug 73* 505-519 (1B03)
active filter using MESFETs as coupling elements; *Jutzi, Wilhelm*; *T-MTT v19 n9 Sep 71* 760-767 (1C10)
Transversely excited lasers
HCN lasers; 337-μm laser with 1-kW output power; *Adam, B.*; *T-MTT v22 n12 Dec 74* 1118 (2D01)
TRAPATT diode amplifiers
8–10 GHz Si diodes; cascaded three-stage amplifier design; *Oxley, Christopher H.*; *T-MTT v27 n5 May 79* 463-471 (2A04)
broadbanding using coaxial-line circuits or coupled microstrip circuits; *Quine, John P.*; *T-MTT v27 n1 Jan 79* 23-31 (1B11)
high-efficiency CW amplification, using germanium TRAPATT diodes; *Evans, W. J.*; *T-MTT v18 n11 Nov 70* 986-988
X-band pulse amplifiers; 10° bandwidth, 5-dB gain, 38-W peak power; *Cox, N. W.*; *T-MTT v22 n12 Dec 74* 1325-1328 (5D03)
TRAPATT diode oscillators
circuits for high-efficiency avalanche-diode oscillators; analysis; *Evans, W. J.*; *T-MTT v17 n12 Dec 69* 1060-1067
Fairchild FD-300 diode operated at 502 MHz; 40° efficiency, 90 W peak power output; *Cohen, Eliot D.*; *T-MTT v20 n2 Feb 72* 184-186 (2E06)
harmonic tuning effects of *S*-band oscillator; *Trew, R. J.*; *T-MTT v23 n12 Dec 75* 1043-1047 (2A08)
high-power oscillations from parallel-connected low-cost diodes; *Chaffin, R. J.*; *T-MTT v18 n11 Nov 70* 985-986
microstripline circuit suitable to support TRAPATT oscillations; proposed model; *Chaffin, R. J.*; *T-MTT v18 n11 Nov 70* 983-985
optimization of *S*-band oscillators; *Trew, R. J.*; *T-MTT v22 n12 Dec 74* 1166-1176 (3D06)
p+-n-n+ Si junction devices; 500-W pulsed power output in UHF and *L*-band; *Obah, Chuka O. G.*; *T-MTT v23 n12 Dec 75* 959-970 (1B07)
p+-n-n+ Si junction devices, 500-W pulsed power output in UHF and *L*-band. *Obah, C. O. G., Correction*; *T-MTT v24 n3 Mar 76* 163 (1C09)
series-connected diodes at 0.5, 2, and 8 GHz; *Gleason, K. Reed*; *T-MTT v22 n8 Aug 74* 804-806 (1D08)
TRAPATT diodes
8–10 GHz Si diodes; design and fabrication; *Oxley, Christopher H.*; *T-MTT v27 n5 May 79* 463-471 (2A04)
initial starting conditions; analysis using a large-scale computer program; *Evans, William J.*; *T-MTT v18 n11 Nov 70* 862-871
integrated arrays of diodes; *Rosen, A.*; *T-MTT v23 n10 Oct 75* 841-843 (1E07)
n+-p-p+ and p+-n-n+ silicon diodes; comparison ot properties; *Haddad, George I.*; *T-MTT v21 n7 Jul 73* 501-502 (2C08)
test circuit using parallel-plate transmission line; *Jenkins, William C.*; *T-MTT v22 n11 Nov 74* 976-977 (1E10)
Traveling-wave amplifiers
gyrotron traveling-wave amplifiers; characteristics and optimum operating parameters; 35-GHz amplifier with 340-kW output, 2-dB/cm gain, and 51 percent efficiency; *Chu, Kwo Ray*; *T-MTT v27 n2 Feb 79* 178-187 (1G04)
masers; ruby traveling-wave maser for *K*-band using photoetched slow-wave structure; *Yngvesson, K. Sigfrid*; *T-MTT v24 n11 Nov 76* 711-717 (1C03)
masers; rutile traveling-wave masers for 20–40 GHz band using dielectric image line slow-wave structure; *Kollberg, Erik L.*; *T-MTT v24 n11 Nov 76* 718-725 (1C10)
MBM diodes; optical and infrared amplification in point-contact diode with negative differential resistance region in *I–V* characteristic; *Drury, David M.*; *T-MTT v27 n6 Jun 79* 598-603 (1D02)
Traveling-wave devices
application of coupled wave theory; coupling of three waves; *Solymar, Laszlo*; *T-MTT v8 n3 May 60* 284-291
directional filter; application in multiplexing filters as well as in matched bandpass and band-rejection filters; *Coale, Franklin S.*; *T-MTT v4 n4 Oct 56* 256-260
electron deflection structure; use in microwave oscillographs; *Honey, Richard C.*; *T-MTT v2 n2 Jul 54* 2-9
frequency response of stripline traveling-wave directional filters; *Standley, Robert D.*; *T-MTT v11 n4 Jul 63* 264-265
IMPATT diode distributed structure; *Franz, Michael*; *T-MTT v26 n11 Nov 78* 861-865 (1B05)
method for measurement of relative phase shift; *Finnila, Charles A.*; *T-MTT v8 n2 Mar 60* 143-147
resonant circuit; effect of mismatched ring on input reflection coefficient and wave amplification; *Tomiyasu, Kiyo*; *T-MTT v5 n4 Oct 57* 267
resonators; principles of operation and use as high-power testing equipment; *Milosevic, Ljubimko J.*; *T-MTT v6 n2 Apr 58* 136-143
traveling-wave masers; optimum pitch; *Kollberg, Erik*; *T-MTT v14 n4 Apr 66* 212-213

Traveling-wave tubes
high-power, broadband; use of 'centipede' coupled-cavity waveguides; *Reeder, Thomas M.*; *T-MTT v14 n4 Apr 66* 200-205
measurement of traveling-wave tube attenuators at 2 GHz; *Dix, C. H.*; *T-MTT v8 n1 Jan 60* 121-122
microwave; use for millimicrosecond pulse generators; *Beck, Alfred C.*; *T-MTT v3 n6 Dec 55* 48-51
phase equalization problem is in a phased-array transmitter; *Rambo, S. Ivan*; *T-MTT v13 n2 Mar 65* 167-171
spurious harmonic outputs from high power pulsed magnetrons, klystrons and traveling-wave tubes; *Tomiyasu, Kiyo*; *T-MTT v9 n6 Nov 61* 480-484
24-GHz traveling wave tube with helical gating used for generating nanosecond carrier pulses; *Miyauchi, Kazuhiro*; *T-MTT v11 n1 Jan 63* 3-17
wave propagation in coaxial-cylindrical slow-wave systems; *Nunn, W. M., Jr.*; *T-MTT v9 n4 Jul 61* 358-359
Traveling-wave tubes; cf. Electron tubes
Tri-Service Program
biological effects of microwaves; *Michaelson, Sol M.*; *T-MTT v19 n2 Feb 71* 131-146 (1B07)
Triglycine sulfate devices
pyroelectric detectors for far-infrared; *Handi, A.*; *T-MTT v22 n12 Dec 74* 1016-1018 (1C10)
Triodes; cf. Microwave triodes
Tumors
coherent electrical vibrations in 10^{10}–10^{12} Hz range in biological systems; role of vibrations in controlling growth of tissues; *Fröhlich, H.*; *T-MTT v26 n8 Aug 78* 613-617 (2A01)
cutaneous tumors; 27.12-MHz selective heating; *Antich, Peter P.*; *T-MTT v26 n8 Aug 78* 569-572 (1D13)
diathermy at 27.12 MHz; *Overgaard, Jens*; *T-MTT v26 n8 Aug 78* 523-529 (1A09)
electromagnetic radiation therapy; special issue; *T-MTT v26 n8 Aug 78* 517-626 (1A03)
electromagnetic radiation therapy; special issue foreword; *Guy, Arthur W., Guest ed.*; *T-MTT v26 n8 Aug 78* 517-518 (1A03)
microwave applicator system for small animals; *Baker, Robert J.*; *T-MTT v26 n8 Aug 78* 541-545 (1B13)
microwave direct-contact applicator for 2450 MHz; *Kantor, Gideon*; *T-MTT v26 n8 Aug 78* 563-568 (1D07)
microwave heating; animals in hypothermia; *Zimmer, Robert P.*; *T-MTT v19 n2 Feb 71* 238-245 (3B07)
microwave hyperthermia dose definition; *Atkinson, E. Ronald*; *T-MTT v26 n8 Aug 78* 595-598 (1F11)
microwave hyperthermia of mouse cancers; applicator and free-field techniques at 2450 MHz; *Robinson, J. Eugene*; *T-MTT v26 n8 Aug 78* 546-549 (1C04)
microwave hyperthermia, polyriboinosinic-polyribocytidylic, and mouse interferon inhibit tumor growth in mice; *Szmigielski, Stanislaw*; *T-MTT v26 n8 Aug 78* 520-522 (1A06)
microwave hyperthermia; system for controlled production of local tumor hyperthermia in animals; *Magin, Richard L.*; *T-MTT v27 n1 Jan 79* 78-83 (1F10)
microwave therapy at 2450-MHz used in conjunction with gamma-ray therapy on flour beetle; *Lai, Ping-Kwong*; *T-MTT v26 n8 Aug 78* 530-534 (1B02)
microwave therapy, hyperthermia, and *L*-ascorbic acid effect on Ehrlich ascites carcinoma cell metabolism; *Piontek, Gerald E.*; *T-MTT v26 n8 Aug 78* 535-540 (1B07)
millimeter-wave transmission through normal and tumor cells; standing waves; *Hershberger, W. D.*; *T-MTT v26 n8 Aug 78* 618-619 (2A06)
thermographic detection enhancement using microwave heating; *Thompson, J. E.*; *T-MTT v26 n8 Aug 78* 573-580 (1E03)
UHF (915 MHz) direct-contact applicator for deep-tissue heating in humans; clinical evaluation; *Lehmann, Justus F.*; *T-MTT v26 n8 Aug 78* 556-563 (1C14)
UHF (915 MHz) direct-contact applicator for heating deep tissues; *Guy, Arthur W.*; *T-MTT v26 n8 Aug 78* 550-556 (1C08)
Tunable filters
millimeter-wave filters integrated in quasi-planar dielectric waveguide; *Itoh, Tatsuo*; *T-MTT v26 n12 Dec 78* 987-991 (1E09)
millimeter-wave tunable bandpass ring filter for dielectric waveguide IC; *Kaurs, Allan R.*; *T-MTT v24 n11 Nov 76* 875-876 (3B09)
UHF bandpass filter; 500-to-1000 MHz magnetically tunable using two YIG-disk resonators; *Young, Leo*; *T-MTT v15 n2 Feb 67* 72-86
Tuners
capacitive-screw; effect on waveguide loss; *Stelzried, C. T.*; *T-MTT v17 n3 Mar 69* 172-173
high-power waveguide tuners; *Muehe, C. E.*; *T-MTT v16 n10 Oct 68* 882-883
source or load matching in waveguide and transmission line systems; *Beatty, Robert W.*; *T-MTT v19 n3 Mar 71* 337-338 (2C12)
transferred-electron device oscillators; bias tuning characteristics; *Tang, D. D.*; *T-MTT v23 n9 Sep 75* 748-753 (1C02)
Tuners; cf. Varactor tuners; YIG tuners
Tunnel-diode amplifiers
bandpass; stability criterion; *Hefni, I.*; *T-MTT v15 n7 Jul 67* 427-429
beam lead tunnel diodes; characteristics and application in low-cost microstrip reflection amplifiers; *Welch, Jerry D.*; *T-MTT v18 n12 Dec 70* 1077-1083
high-frequency stability; *Plutchok, Hy*; *T-MTT v14 n2 Feb 66* 93-94
microwave amplifiers using integrated tunnel-diode devices; *Okean, Herman C.*; *T-MTT v15 n11 Nov 67* 613-622
microwave, in stripline; design technique; *Miller, Barbara A.*; *T-MTT v15 n10 Oct 67* 554-561
octave bandwidth tunnel diode amplifier using hybrids and a low pass filter; *Lepoff, Jack H.*; *T-MTT v12 n1 Jan 64* 21-26
parasitic elements in tunnel-diode amplifier performance; *Scanlan, Sean O.*; *T-MTT v13 n6 Nov 65* 827-836
stability and gain prediction of tunnel-diode reflection amplifiers; *Bandler, John W.*; *T-MTT v13 n6 Nov 65* 814-819
stability criteria for tunnel-diode amplifiers; *Henoch, B.*; *T-MTT v10 n5 Sep 62* 397-398
stabilizing network; computer optimization; *Bandler, John W.*; *T-MTT v16 n6 Jun 68* 326-333
stable, wideband type; new design technique; *Shirahata, Kiyoshi*; *T-MTT v18 n1 Jan 70* 52-54
transmission type, using dielectric loaded rectangular waveguide; analysis and experimental results; *Toyota, Sachihiro*; *T-MTT v17 n1 Jan 69* 40-42
tunnel-diode amplifier, placed in slot of slot array antenna; *Pedinoff, Melvin E.*; *T-MTT v9 n6 Nov 61* 557-566
tunnel diode used as a mixing amplifier; *Dickens, L. E.*; *T-MTT v9 n1 Jan 61* 99-101
wide-band Esaki diode amplifier; 1.3Gc operation; *Hamasaki, Joji*; *T-MTT v13 n2 Mar 65* 213-224
Tunnel-diode circuits
analysis of frequency and power performances of tunnel diode generators; *Oguey, Henri J.*; *T-MTT v11 n5 Sep 63* 412-419
converters; approximate nonlinear analysis; *Tang, Charles C. H.*; *T-MTT v15 n11 Nov 67* 604-612
harmonic-mode mixer; theoretical and experimental investigation; *Miller, Barbara A.*; *T-MTT v17 n2 Feb 69* 121-124
Tunnel-diode mixers
self-oscillating mixer with conversion gain dependent on bias; 600 MHz signal frequency; *Toker, Canan*; *T-MTT v20 n9 Sep 72* 616-618 (2B03)
self-oscillating mixers; conversion loss becomes infinite when oscillation magnitude is maximum; *Toker, Canan*; *T-MTT v21 n6 Jun 73* 430-431 (2C07)
Tunnel-diode oscillators
conditions for double frequency oscillation in waveguide mounted tunnel diodes; *Hoffins, Cordell C.*; *T-MTT v12 n2 Mar 64* 176-183
diode mounted at feed point of a semicircular loop antenna; oscillation conditions; *Yamashita, Eikichi*; *T-MTT v15 n7 Jul 67* 415-421
nonlinear biasing resistors for microwave tunnel-diode oscillators; *Wallmark, J. T.*; *T-MTT v11 n4 Jul 63* 260-262
pulling of fundamental frequency (800 MHz) by signal injected in the neighborhood of its ninth harmonic (7.2 GHz). *Mashock, James A.*; *T-MTT v17 n6 Jun 69* 347-349
Tunnel diodes
analysis of frequency and power performances of tunnel diode generators; *Oguey, Henri J.*; *T-MTT v11 n5 Sep 63* 412-419
backward diodes for small-signal detection made from *n* type germanium; *Burrus, Charles A., Jr.*; *T-MTT v11 n5 Sep 63* 357-362
detection, low-level; analysis; *Gabriel, William F.*; *T-MTT v15 n10 Oct 67* 538-553
diode burnout from video transient of gaseous noise sources; *Blake, C.*; *T-MTT v10 n1 Jan 62* 88
effect of parasitic elements on potential stability criteria; *Markowski, J.*; *T-MTT v16 n6 Jun 68* 374
in space retrodirective arrays tunnel diodes function as frequency modulator with gain; *Rutz-Philipp, Elizabeth M.*; *T-MTT v11 n5 Sep 63* 420-426
low noise properties of backward diodes as mixers at microwave frequencies; *Eng, Sverre T.*; *T-MTT v9 n5 Sep 61* 419-425
measurement of conversion conductances of Esaki mixer diodes; *Pucel, R. A.*; *T-MTT v9 n6 Nov 61* 567-568
MITATT and TUNNETT mode devices; high-frequency limitations; *Elta, Michael E.*; *T-MTT v27 n5 May 79* 442-449 (1F10)
multifrequency microwave generation using a large capacitance tunnel diode; *Jaskolski, Stanley V.*; *T-MTT v12 n3 May 64* 361-362
numerical analysis of the tunnel-diode frequency converter; *Barber, Mark R.*; *T-MTT v13 n5 Sep 65* 663-670
prototypes for use in broadbanding reflection amplifiers; element values as functions of gain and ripple; *Getsinger, William J.*; *T-MTT v11 n6 Nov 63* 486-497
push-pull operation; *Dickens, L. E.*; *T-MTT v9 n4 Jul 61* 361
tunnel diodes as millimeter-wave detectors and mixers; *Chase, P. E.*; *T-MTT v11 n6 Nov 63* 560-561
tunnel injection transit time diode operating from 100 to 248 GHz; GaAs diodes; *Nishizawa, Jun-ichi*; *T-MTT v26 n12 Dec 78* 1029-1035 (2A13)
Tunnels; cf. Underground electromagnetic communication; Underground electromagnetic propagation
TV demodulation
video detector; effects of saturation on overall linearity of a radiometric receiver; *Cogdell, J. R.*; *T-MTT v18 n6 Jun 70* 324-325
Two-port networks
analogy between Weissfloch transformer and the ideal attenuator (reflection coefficient transformer) and extension to include the general lossy two-port; *Stock, D. J. R.*; *T-MTT v7 n4 Oct 59* 473-474
conjugate-matched two-port as UHF amplifier; *Gledhill, C. S.*; *T-MTT v20 n4 Apr 72* 289-290 (1E11)
coupled transmission lines embedded in an inhomogeneous dielectric; *Zysman, George I.*; *T-MTT v17 n10 Oct 69* 753-759
efficiencies of two-ports with arbitrary load; calculation from input reflection coefficient data measured with outpu terminated in sliding short; *Beatty, Robert W.*; *T-MTT v20 n5 May 72* 343-344 (1F02)
mismatched source and load and/or arbitrary reference planes; bounds on reflection coefficient amplitude; *Tromp, H.*; *T-MTT v26 n12 Dec 78* 973-978 (1D09)
N-cascaded mismatched; applications and analysis of noise generation; *Mukaihata, Tadao*; *T-MTT v16 n9 Sep 68* 699-708
noise parameters determination for microwave two-ports; computer-aided frequency conversion techniques; *Caruso, Giuseppe*; *T-MTT v27 n9 Sep 79* 779-783 (1A13)
nonreciprocal; represented by modified Wheeler networks; *Altschuler, Helmut M.*; *T-MTT v4 n4 Oct 56* 228-233
passive, reciprocal; bounds on output VSWR from forward measurements; *Uhlir, Arthur, Jr.*; *T-MTT v18 n9 Sep 70* 662-663
reciprocal having a nonloxodromic transformation; extension of the concept of stop and pass bands of a Zobel type filter; *Stock, D. J. R.*; *T-MTT v7 n3 Jul 59* 392-393
scattering parameter measurements with imperfect test set; *Kruppa, W.*; *T-MTT v19 n1 Jan 71* 122-123 (2B11)
scattering parameters of passive lossy nonreciproca two-port networks; *Glasser, Jerome I.*; *T-MTT v21 n3 Mar 73* 135-136 (1C05)
scattering parameters of passive networks; existence range of scattering parameters and limitations on moduli; *Carli, Edoardo*; *T-MTT v22 n9 Sep 74* 835-837 (1B03)
simultaneous measurement of gain and noise using only noise generators; *Kenney, James M.*; *T-MTT v16 n9 Sep 68* 603-607

U

UHF amplifiers
breadboard model of UHF varactor diode backward-wave parametric amplifier; *Okwit, Seymour*; *T-MTT v10 n6 Nov 62* 558-563
design of periodically loaded traveling wave parametric amplifier using variable reactance diodes; *Honey, Richard C.*; *T-MTT v8 n3 May 60* 351-361
design using scattering parameters; *Gledhill, C. S.*; *T-MTT v20 n4 Apr 72* 289-290 (1E11)
power amplifier in which outputs of 64 overlay transistors are combined to provide 1-kW CW output at 400 MHz; *Bailey, R. L.*; *T-MTT v17 n12 Dec 69* 1154-1156
solid-state maser operating at 300–500 MHz; use of chromium doped potassium cobalticyanide; *Kingston, R. H.*; *T-MTT v7 n1 Jan 59* 92-94
UHF amplifiers; cf. UHF bipolar transistor amplifiers
UHF bipolar transistor amplifiers
class-C power amplifier using coupled-TEM-bar circuit to vary fundamental and second-harmonic impedance terminations; *Mazumder, Shamsur R.*; *T-MTT v27 n5 May 79* 430-433 (1E12)
UHF circulators
aluminum substituted YIG materials used to broadband four-port circulator; UHF, *L*-band operation; *Arams, Frank*; *T-MTT v9 n3 May 61* 212-216
boundary value problem on stripline *Y*-circulation at UHF is approximately solved; *Bosma, Hendrik*; *T-MTT v12 n1 Jan 64* 61-72
broadband circulator covering the 400–700 MHz range; use of lumped-element techniques; *McChesney, G.*; *T-MTT v15 n3 Mar 67* 198-199
ferrite type; design calculations; *Boyet, H.*; *T-MTT v7 n4 Oct 59* 475-476
high-power; insertion loss, bandwidth ratio and nonlinearity; *Konishi, Yoshihiro*; *T-MTT v15 n12 Dec 67* 700-708
miniature lumped-element type with passband from 300 to 400 MHz; use as a protective isolator; *Fliegler, Emanuel*; *T-MTT v17 n5 May 69* 275-277
stripline geometries; design data; *Whiting, K.*; *T-MTT v15 n3 Mar 67* 195-198
stripline, stacked; construction; *Okamura, Sohji*; *T-MTT v17 n12 Dec 69* 1151-1152
UHF devices
magnetoelastic, two-port delay line using single crystal rod of YIG at frequency range 200 to 1000 MHz; *Skudera, William, Jr.*; *T-MTT v15 n2 Feb 67* 96-100
open-strip UHF transmission line; determination of parameters; *Black, Kenneth G.*; *T-MTT v3 n2 Mar 55* 93-113
partially decoupled round rods between parallel ground planes; data for design of UHF and TEM microwave components; *Cristal, Edward G.*; *T-MTT v16 n5 May 68* 311-314
practical UHF multidiscriminator unit; *Chiu, Planet*; *T-MTT v11 n1 Jan 63* 88-89
stripline hybrid junction, UHF 20% bandwidth; *Tatsuguchi, Isamu*; *T-MTT v9 n1 Jan 61* 3-6
synthesis of coupled transmission line all-pass networks in cascades of 1 to *n*; UHF frequencies; *Steenaart, Willem J. D.*; *T-MTT v11 n1 Jan 63* 23-29
UHF filters
active; direct use of transistors as high-*Q* inductors; *Adams, David K.*; *T-MTT v17 n9 Sep 69* 662-670
magnetically tunable bandpass filter; designed in strip transmission line and with two YIG-disk resonators; *Young, Leo*; *T-MTT v15 n2 Feb 67* 72-86
narrow, bandpass filter using orthogonally-coupled, capacitively-loaded TEM resonators; *Mariani, Elio A.*; *T-MTT v16 n11 Nov 68* 966-967
varactor-tuned UHF coaxial filter; design methods; *Benguerel, A. P.*; *T-MTT v12 n4 Jul 64* 468-469
wide stopband UHF coaxial bandpass filter; *Lally, J. F.*; *T-MTT v11 n5 Sep 63* 452
YIG-disk filter; control of resonant frequency by doublet tuning; *Karp, Arthur*; *T-MTT v15 n3 Mar 67* 193-195
UHF frequency conversion
design of multiplexers having contiguous channels; *Cristal, E. G.*; *T-MTT v12 n1 Jan 64* 88-93
experimental results for a single-varactor diode frequency multiplier (×16); operable from 350 to 5600 MHz; *Rossen, Selma*; *T-MTT v12 n1 Jan 64* 142-143
UHF generation
power generation using $\lambda/4$ transmission-line resonator containing spark gap; *Ristic, Velimir M.*; *T-MTT v26 n5 May 78* 369-374 (1D09)
UHF isolators
350-MHz broadband lumped-element circulator as a protective isolator; *Fliegler, Emanuel*; *T-MTT v17 n5 May 69* 275-277
ferrite shape considerations; *Stern, E.*; *T-MTT v8 n5 Sep 60* 565
UHF measurements
human torso; attenuation measurement in 1.8–2.7 GHz band; *Yamaura, Itsuo*; *T-MTT v25 n8 Aug 77* 707-710 (1F09)
impedance; analysis of 'quarter-wave' technique of error reduction; *Little, William E.*; *T-MTT v15 n9 Sep 67* 504-507
microwave and high-frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards*; *T-MTT v12 n5 Sep 64* 572-576
microwave and high-frequency calibration services of the National Bureau of Standards; *Engineering Div., Radio Stds. Lab., National Bureau of Standards*; *T-MTT v12 n6 Nov 64* 623-624
noise figures of receivers; absolute measurement; *Maxwell, E.*; *T-MTT v4 n2 Apr 56* 81-85
phase measurement at UHF and microwave frequencies; analysis of bridge circuits; *Dyson, John D.*; *T-MTT v14 n9 Sep 66* 410-423
stripline cavity for measurement of dielectric constants and gyromagnetic resonance line widths; *Waldron, Richard A.*; *T-MTT v12 n1 Jan 64* 123-131
UHF measurements; cf. Electromagnetic radiation effects
UHF oscillators
transistor-oscillator transient response; analysis with the aid of the ECAP computer program: *Toussaint, Hans-Norbert*; *T-MTT v17 n8 Aug 69* 620-626
TRAPATT diodes, p+-n-n+ Si junction devices; 500-W pulse power output. *Obah, C. O. G., Correction*; *T-MTT v24 n3 Mar 76* 163 (1C09)
TRAPATT diodes, p+-n-n+ Si junction devices; 500-W pulsed power output; *Obah, Chuka O. G.*; *T-MTT v23 n12 Dec 75* 959-970 (1B07)
TRAPATT oscillations from Fairchild FD-300 diode; 502 MHz, 40° efficiency, 90 W peak power output; *Cohen, Eliot D.*; *T-MTT v20 n2 Feb 72* 184-186 (2E06)
UHF phase shifters
analysis, construction and performance of a surface wave ferroelectric phase shifter; 100–1000 MHz operation; *Cohn, Marvin*; *T-MTT v10 n6 Nov 62* 536-548
ferrite, low-loss, extremely compact; development for the 200–800 MHz region; *Johnson, Charles M.*; *T-MTT v7 n1 Jan 59* 27-31
UHF radiation effects/safety; cf. Electromagnetic radiation ...
UHF resonators
linear tuning of a transmission-line type resonator; *Wadia, B. H.*; *T-MTT v8 n1 Jan 60* 66-72
UHF switches
low input VSWR coaxial diode switch for a broadband centered at 1000 MHz; *Ecklund, W. L.*; *T-MTT v12 n3 May 64* 359
p-i-n diode switch; intermodulation product and switching noise amplitudes; *Sicotte, Raymond L.*; *T-MTT v18 n1 Jan 70* 48-50
UHF transistors
progress in solid-state microwave power sources; *Sterzer, Fred*; *T-MTT v13 n6 Nov 65* 768-772
transistor-oscillator transient response; analysis with the aid of the ECAP computer program; *Toussaint, Hans-Norbert*; *T-MTT v17 n8 Aug 69* 620-626
Underground electromagnetic communication
braided coaxial cable in circular tunnel; braid transfer impedance dependence on propagation constant; *Wait, J. R.*; *T-MTT v25 n1 Jan 77* 72-74 (1F04)
tunnels; attenuation constant of radio waves; *Chiba, Jiro*; *T-MTT v26 n6 Jun 78* 439-443 (1E05)
Underground electromagnetic propagation
tunnel containing braided coaxial cable; transmission modes in cable and coupling to tunnel environment; *Seidel, David B.*; *T-MTT v26 n7 Jul 78* 494-499 (1C12)
tunnel of arbitrary cross-section shape containing thin wire; low-frequency behavior of propagation constant along wire; *Kuester, Edward F.*; *T-MTT v27 n8 Aug 79* 736-741 (1B08)
tunnels; braided coaxial cable located close to tunnel wall; *Hill, David A.*; *T-MTT v24 n7 Jul 76* 476-480 (2B07)
Underwater antennas
microwave antenna for interrogating spatial variation of permittivity of biological systems; *Jacobi, John H.*; *T-MTT v27 n1 Jan 79* 70-78 (1F02)

V

Vacuum switchgear
multipactor receiver protectors for airborne applications; 50-kW peak power and 12.5 percent bandwidth in *X*-band; *Carlisle, Thomas P.*; *T-MTT v26 n5 May 78* 345-347 (1B13)
Vacuum technology
design procedure for a 100–11,000 MHz glass-to-metal coaxial vacuum seal; *Nunn, Walter M., Jr.*; *T-MTT v9 n3 May 61* 248-251
Vacuum tubes; cf. Electron tubes
Varactor circuits
6-kW peak-power varactor duplexer; *Hoover, John C.*; *T-MTT v10 n6 Nov 62* 476-479
abrupt-junction varactor doubler; performance computation; *Grayzel, Alfred I.*; *T-MTT v14 n5 Ma 66* 239-242
abrupt-junction varactor frequency doubler; modified series model; *Levin, Burton J.*; *T-MTT v14 n4 Apr 66* 184-188
breadboard model of a UHF varactor diode backward wave parametric amplifier; *Okwit, Seymour*; *T-MTT v10 n6 Nov 62* 558-563
combination of two 180° varactor diode phase modulators in an admittance adding network to obtain 360° phase modulation; *Garver, Robert V.*; *T-MTT v17 n3 Mar 69* 137-147
design of a wide-band parametric amplifier operated with a circulator and an initially series tuned varactor; *Henoch, Bengt T.*; *T-MTT v11 n1 Jan 63* 62-72
frequency converter having pump frequency much greater than input signal frequency; square-law converter; *Abdullah, Faruq*; *T-MTT v25 n2 Feb 77* 127-136 (1D05)
frequency converters; intermodulation distortion and gain compression; *Ghobrial, S. I.*; *T-MTT v23 n2 Feb 75* 255-257 (1F03)
frequency converters; intermodulation noise analysis using Volterra series; *Swerdlow, Richard B.*; *T-MTT v26 n4 Apr 78* 305-313 (1F13)
frequency doublers; amplitude and phase fluctuations transfer functions; *Bava, Elio*; *T-MTT v27 n8 Aug 79* 753-757 (1C11)
frequency doublers using abrupt junction varactors; closed-form analysis; *Sard, Eugene W.*; *T-MTT v27 n6 Jun 79* 604-611 (1D08)
frequency multipliers; exact analysis; *Tang, Charles C. H.*; *T-MTT v14 n4 Apr 66* 210-212
frequency multipliers; nonlinear behavior and hysteresis phenomena; *Bava, Elio*; *T-MTT v27 n2 Feb 79* 141-147 (1D09)
IMPATT oscillator, electronically tuned by circuit using an abrupt junction varactor; *Grace, M. I.*; *T-MTT v18 n1 Jan 70* 44-45
intermodulation distortion prediction in varactor upconverters; *Grayzel, A. I.*; *T-MTT v15 n3 Mar 67* 183-184
intermodulation distortion prediction in varactor upconverters; *Perlow, Stewart M.*; *T-MTT v13 n6 Nov 65* 820-827
lossless abrupt-junction nonoverdriven varactor doubler; distortion of a narrow-band FM signal; *Grayzel, A. I.*; *T-MTT v17 n9 Sep 69* 727-728
microstrip varactor doublers using thin-film lines on a ceramic substrate; *Belohoubek, E. F.*; *T-MTT v17 n5 May 69* 286-288
overdriven frequency doublers using punch-through or bimode varactors; design parameters; *Grayzel, Alfred I.*; *T-MTT v17 n6 Jun 69* 345-347
overdriven frequency doublers using punch-through or bimode varactors; design parameters.*Grayzel, A. I., Correction*; *T-MTT v17 n12 Dec 69* 1160
parametric amplifier; bandwidth determination; *Aitchison, C. S.*; *T-MTT v16 n1 Jan 68* 46-47
parametric amplifier; *X*-band low-noise lightweight paramp for airborne environment; *Niehenke, E. C.*; *T-MTT v25 n12 Dec 77* 992-994 (1C02)
parametric amplifiers; low-noise room-temperature 12-GHz amplifier; *Lacey, S. D.*; *T-MTT v22 n12 Dec 74* 1329-1331 (5D07)
phase shifter with optimized frequency response; continuous phase shifter; *Ulriksson, Bengt*; *T-MTT v27 n7 Jul 79* 650-654 (1B10)
'punch-through' capacitance-voltage behavior; use as frequency doublers; *Chao, Cheng Lee*; *T-MTT v14 n1 Jan 66* 43-45

theory of parametric limiting with varactor diodes; *Ho, Irving T.*; *T-MTT v9 n6 Nov 61* 459-472
thin-film *X*-band quadrupler incorporating unpackaged beam lead varactor; *Horton, John B.*; *T-MTT v15 n12 Dec 67* 752-754
upconverter; equations for overdriven varactor upper sideband upconverter; *Grayzel, Alfred I.*; *T-MTT v15 n10 Oct 67* 561-565
varactor measurements and equivalent circuits; *Houlding, N.*; *T-MTT v13 n6 Nov 65* 872-873
varactor-tuned microwave transistor oscillator; common-base configuration using a varactor in series with the collector to tune over octave bandwidths; *Johnson, Kenneth M.*; *T-MTT v14 n11 Nov 66* 564-572
X- to *K*-band broadband varactor frequency doubler; *Kurpis, G.*; *T-MTT v14 n2 Feb 66* 94

Varactor diodes
continuously variable 360 phase shift; phase-shift circuit application; *Henoch, Bengt T.*; *T-MTT v19 n1 Jan 71* 103-105 (2E11)
frequency dependence of apparent resistance; effect on parametric amplifier noise figure; *Inal, Kubilay*; *T-MTT v19 n3 Mar 71* 333-334 (2C07)
frequency multiplier using MIS varactors; 5.5-W pulsed output power at 5.4 GHz; *Schumacher, F.*; *T-MTT v21 n10 Oct 73* 648-649 (1F02)
microstrip-mounted varactor package; equivalent circuit; *Cohen, Jerome*; *T-MTT v21 n6 Jun 73* 412-413 (2B01)
Q measurement for mounted diodes; *Sard, Eugene W.*; *T-MTT v20 n6 Jun 72* 420-421 (2C07)
use in lumped-element circulator for changing operating frequency; *Naito, Yoshiyuki*; *T-MTT v19 n4 Apr 71* 367-372 (1C11)

Varactor frequency converters
intermodulation distortion in abrupt-junction current-pumped varactor frequency converters; *Gardiner, John Graham*; *T-MTT v19 n9 Sep 71* 741-749 (1B03)
current-pumped varactor converters. *Gardiner, J. H., Correction*; *T-MTT v10 n4 Apr 72* 293 (1F03)
S-band to *Ku*-band integrated converters; *Bura, P.*; *T-MTT v21 n3 Mar 73* 136-137 (1C06)

Varactor tuners
Gunn device oscillators in waveguide; impedance characterization of two-post mounting structure; *El-Sayed, Osman L.*; *T-MTT v22 n8 Aug 74* 769-776 (1B01)
Gunn oscillator in full-height waveguide cavity; wideband *X*-band oscillator; *Joshi, J. S.*; *T-MTT v21 n3 Mar 73* 137-139 (1C07)
Gunn oscillators in 50–60 GHz band; two-diode oscillator having 23.75-dBm power output, mechanical tuning range of 6 GHz, varactor tuning bandwidth of 200 MHz; *Sun, C.*; *T-MTT v27 n5 May 79* 512-514 (2D11)
IMPATT oscillators with tuning bandwidth of 27° potential range in excess of 40°; *Claxton, Dale H.*; *T-MTT v23 n6 Jun 75* 501-504 (1D01)
lumped-element circulator voltage-tuned by varactor; *Helszajn, Joseph*; *T-MTT v19 n10 Oct 71* 825-826 (1D11)
microstrip IMPATT oscillator for 60-GHz FSK transmitter; *Glance, B. S.*; *T-MTT v24 n3 Mar 76* 156-157 (1C02)
microstrip varactor-tuned bipolar transistor oscillator integrated with FET amplifier for *X*-band; FM noise is −132 dB/Hz at 1 MHz; *Niehenke, Edward C.*; *T-MTT v27 n12 Dec 79* 1075-1079 (2D12)
microwave wideband coaxial oscillators; *Corbey, Colin D.*; *T-MTT v24 n1 Jan 76* 31-39 (1C05)
millimeter-wave oscillators; varactor-tuned Gunn oscillator with 1-GHz tuning range; *Rubin, David*; *T-MTT v24 n11 Nov 76* 866-867 (3A14)
negative-resistance oscillators; varactor loading effect on oscillator *Q*; *Paik, S. F.*; *T-MTT v22 n5 May 74* 578-580 (2C09)
transferred-electron device oscillators; frequency drift tuning; *Johnson, Kenneth M.*; *T-MTT v24 n10 Oct 76* 650-656 (1B08)
transferred-electron device oscillators; waveguide mounting configuration; *Joshi, J. S.*; *T-MTT v24 n9 Sep 76* 573-584 (1C01)
transferred-electron oscillators mounted in full-height *X*-band waveguide; mechanical and electronic tuning characteristics; *Templin, A. S.*; *T-MTT v22 n5 May 74* 554-556 (2A13)

Varactors
characterization of gallium-arsenide point-contact diodes; *Sharpless, W. M.*; *T-MTT v9 n1 Jan 61* 6-10
characterization of microwave variable capacitance diodes; *Eng, Sverre T.*; *T-MTT v9 n1 Jan 61* 11-22
diodes; use in controlled wideband differential phase shifters; *Liechti, C. A.*; *T-MTT v15 n10 Oct 67* 586-589
direct and indirect PAM by a high-efficiency microwave frequency multiplier with varactor diodes; comparison of methods; *Marković, Aleksandar M.*; *T-MTT v18 n8 Aug 70* 504-506
equations and design curves for microwave frequency converters; *Perlman, Barry S.*; *T-MTT v13 n2 Mar 65* 150-161
experimental results for a single-varactor diode frequency multiplier (×16); operable from 350 to 5600 MHz; *Rossen, Selma*; *T-MTT v12 n1 Jan 64* 142-143
intermodulation distortion in abrupt-junction high-quality varactor diodes; characterization by power reflection technique; *Vendelin, George D.*; *T-MTT v14 n12 Dec 66* 603-608
K_A band klystron replacements using a diffused junction gallium–arsenide varactor; *Munro, J.*; *T-MTT v12 n5 Sep 64* 553
measurement of varactor quality expanding on Houlding's resonant cavity method; *Keywell, Frank*; *T-MTT v10 n6 Nov 62* 567-572
measurement technique to characterize diodes and varactors; *DeLoach, Bernard C.*; *T-MTT v12 n1 Jan 64* 15-20
measurements of varactor diode impedance on a slotted line from 2–18 GHz; *Roberts, D. A. E.*; *T-MTT v12 n4 Jul 64* 471-475
measuring cutofff frequency and *Q*; error minimization in four-bias measurement; *Benson, Walter S., Jr.*; *T-MTT v25 n4 Apr 77* 335-338 (2A12)
millimeter-wave mixer–modulator; 60-GHz transceiver for civilian use; *Matsuo, Yoshio*; *T-MTT v24 n11 Nov 76* 794-797 (2B13)
mixed two-port parameters for characterizing varactor mounts in waveguides; *Viggh, Mats E.*; *T-MTT v11 n3 May 63* 218-21o
planar-diffused GaAs varactor diodes; use for millimeter-wave quadrupler and upconverter; *Lee, Tien Pei*; *T-MTT v16 n5 May 287-296*
Q at high frequencies; calculation procedure from impedance versus bias measurements; *Houlding, N.*; *T-MTT v18 n4 Apr 70* 229-230
Q at high frequencies; calculation procedure from impedance versus bias measurements; *Sard, Eugene W.*; *T-MTT v16 n10 Oct 68* 849-860
Q-measurement for mounted diodes; *Roe, James M.*; *T-MTT v19 n8 Aug 71* 728-729 (2B01)
representation of parametric amplifier varactor diodes; *Brady, M. M.*; *T-MTT v13 n1 Jan 65* 133-135
silver bonded germanium varactor diodes used in conjunction with 3 db short-slot couplers to form a microwave switch; *Higgins, V. J.*; *T-MTT v12 n2 Mar 64* 258-259
single-packaged GaAs varactor diode; use for a K_u-band nondegenerate parametric amplifier; *Kinoshita, Yasuaki*; *T-MTT v18 n12 Dec 70* 1114-1119
spreading resistance as a function of frequency; *Dickens, Lawrence E.*; *T-MTT v15 n2 Feb 67* 101-109
synthesis of dual resonant coaxial cavities for varactor capacitance measurements; *Waltz, Frederick M.*; *T-MTT v12 n1 Jan 64* 132-138
ultrahigh-speed diode switch for 50 GHz, utilizing avalanche breakdown in varactor diodes; *Sugimoto, Shigetoki*; *T-MTT v16 n12 Dec 68* 1017-1021
varactor diode used as a microwave modulator using minimum modulation power; *Rutz, Elisabeth M.*; *T-MTT v10 n6 Nov 62* 605-610
varactor frequency modulated AFC reference cavity; *Farokhrooz, A.*; *T-MTT v11 n4 Jul 63* 258-260
varactor frequency tripler; *Chao, Cheng Lee*; *T-MTT v13 n2 Mar 65* 256-258
varactor measurements and equivalent circuits; *Houlding, N.*; *T-MTT v13 n6 Nov 65* 872-873
varactor-tuned UHF coaxial filter; design methods; *Benguerel, A. P.*; *T-MTT v12 n4 Jul 64* 468-469

Variational methods
analysis of angular frequency in periodic 'cold' microwave structures; *Goblick, T. J., Jr.*; *T-MTT v8 n5 Sep 60* 500-509
boundary-value problems; formulation of Dirichlet condition as natural boundary condition; *Coen, Shimon*; *T-MTT v21 n9 Sep 73* 577-598 (1D03)
boundary-value problems; formulation of Dirichlet condition as natural boundary condition; *Hazel, Terence George*; *T-MTT v20 n6 Jun 72* 385-390 (1E03)
coupled transmission lines; *Matsuhara, Masanori*; *T-MTT v22 n4 Apr 74* 378-382 (1B14)
dielectric-loaded waveguides; *E*-vector variational principle; *English, William J.*; *T-MTT v19 n1 Jan 71* 40-46 (1E06)
dielectric-loaded waveguides; hybrid-mode analysis; *English, William J.*; *T-MTT v19 n1 Jan 71* 9-18 (1B11)
electromagnetic and/or acoustic field problems; systematic derivation of variational expressions; *Morishita, Katsumi*; *T-MTT v26 n9 Sep 78* 684-689 (1E02)
electromagnetic fields in anisotropic media; vector variational formulation; *Konrad, A.*; *T-MTT v24 n9 Sep 76* 553-559 (1A09)
electromagnetic problems; unified approach to variational expression derivation; *Morishita, Katsumi*; *T-MTT v25 n1 Jan 77* 34-40 (1C08)
electromagnetic scattering; least-squares boundary residual method; *Davies, J. Brian*; *T-MTT v21 n2 Feb 73* 99-104 (1D09)
fiber waveguide propagation analysis; inhomogeneous fibers; *Okoshi, Takanori*; *T-MTT v22 n11 Nov 74* 938-945 (1B14)
Fredholm integral equation resulting from Laplace equation with Dirichlet boundary conditions; variational solution. *McDonald, B. H., Correction*; *T-MTT v23 n2 Feb 75* 265-266 (1F13)
inductive irises having finite thickness and interacting with neighboring irises; equivalent network; *Rozzi, Tullio E.*; *T-MTT v20 n5 May 72* 323-330 (1D06)
integral for evaluating propagation constant in lossy transmission lines; *Collin, Robert E.*; *T-MTT v8 n3 May 60* 339-342
magnetoplasma-loaded waveguides; formulation using waveguide symmetry; *Vassallo, Charles*; *T-MTT v19 n3 Mar 71* 338-339 (2C12)
mathematical comments on a class of integral equations with complex kernels which occur in laser theory; *Morgan, Samuel P.*; *T-MTT v11 n3 May 63* 191-193
microstrip capacitance upper bound calculation using variational method and spectral domain approach; *Araki, Kiyomichi*; *T-MTT v26 n7 Jul 78* 506-509 (1D10)
microstrip ring resonators; reaction concept applied to resonant frequencies computation; *Pintzos, Sotirios G.*; *T-MTT v26 n10 Oct 78* 809-813 (2B01)
microstrip discontinuities; equivalent circuit for gap capacitance in strip conductors; *Maeda, Minoru*; *T-MTT v20 n6 Jun 72* 390-396 (1E08)
microstrip fringe capacitance calculation; spectral-domain approach using Galerkin's method; *Itoh, Tsutomu*; *T-MTT v20 n12 Dec 72* 847-849 (2B01)
multimode waveguide scattering; variational bound principle; *Kalikstein, Kalman*; *T-MTT v19 n8 Aug 71* 673-677 (1B03)
nonself-adjoint operators; variational formulation derived from standard quadratic functional for self-adjoint operators; *Jeng, Garbo*; *T-MTT v26 n2 Feb 78* 91-94 (1D03)
optical fiber waveguides having α-power refractive-index profile and uniform cladding; closed-form characteristic equation derivation; *Okamoto, Katsunari*; *T-MTT v24 n7 Jul 76* 416-421 (1B12)
planar dielectric waveguide step discontinuity; *Rozzi, T. E.*; *T-MTT v26 n10 Oct 78* 738-746 (1C08)
ridge waveguide with planar circuit mounted in shorted guide; end effect calculation using variational method; *Konishi, Yoshihiro*; *T-MTT v27 n2 Feb 79* 168-170 (1F08)
variational expression for the propagation constant of the waves in waveguides with inhomogeneous media and with wall impedance; *Kurokawa, Kaneyuki*; *T-MTT v10 n5 Sep 62* 314-320
waveguide discontinuities, annular metallic strip in circular guide; scattering matrix for multimodal guide and susceptance for single-mode TE_{01} guide; *Sugiura, Torahiko*; *T-MTT v27 n2 Feb 79* 160-167 (1E14)
waveguide inductive irises; two thick interacting irises; *Rozzi, Tullio E.*; *T-MTT v21 n2 Feb 73* 82-88
waveguide obstacles; narrow conducting strip; *Chang, Kai*; *T-MTT v25 n5 May 74* 536-541
waveguides; variational expression involving longitudinal fields in inhomogeneous guide; *Daly, P.*; *T-MTT v21 n2 Feb 73* 113-114 (1E11)

VHF devices
isolator for VHF band; edge-mode isolator; *Craig, Robert A.*; *T-MTT v25 n1 Jan 77* 76-77 (1F08)
isolators for VHF band; edge-mode isolators; *Courtois, Louis*; *T-MTT v24 n3 Mar 76* 129-135 (1A03)
rotating coupler; transformer coupling between two windings; *Allen, C. W.*; *T-MTT v24 n5 May 76* 267-269 (1C05)

VHF filters
bandpass filters with steep skirt selectivity; *Torgow, E. N.*; *T-MTT v13 n1 Jan 65* 124-126
VHF oscillators
model studies of a strongly coupled synchrotron system; *Barrington, A. E.*; *T-MTT v8 n6 Nov 60* 597-604
VHF radio communication
microwave and VHF radio installation for electric utility in Missouri; *Fox, George W.*; *T-MTT v2 n1 Apr 54* 63-83
VHF radio propagation
nonoptical propagation between Sardinia and Minorca; report of experimental results; *Clara, José Maria*; *T-MTT v3 n6 Dec 55* 7-12
Visual system, eyes
electromagnetic irradiation of human eye; fields and induced temperatures due to plane waves at 750 MHz and 1.5 GHz; *Taflove, Allen*; *T-MTT v23 n11 Nov 75* 888-896 (1C10)
electromagnetic radiation effects; 2450-MHz radiation cataractogenic effects on rabbit eye; *Guy, Arthur W.*; *T-MTT v23 n6 Jun 75* 492-498 (1C06)
microwave radiation effects; cataract production; *Neidlinger, Robert W.*; *T-MTT v19 n2 Feb 71* 250-251 (3C07)
Voltage-controlled oscillators
transferred-electron device oscillators; frequency drift tuning; *Johnson, Kenneth M.*; *T-MTT v24 n10 Oct 76* 650-656 (1B08)
Voltage-controlled oscillators; cf. Varactor tuners
Voltage measurement
microwave measurement of complex voltage ratio of two signals using six-port junction; *Hoer, Cletus A.*; *T-MTT v23 n12 Dec 75* 978-984 (1C12)
probability density function of wideband microwave noise; measurement; *Gottfried, A. H.*; *T-MTT v16 n9 Sep 68* 795-797
Volterra series
frequency converter intermodulation noise analysis; *Swerdlow, Richard B.*; *T-MTT v26 n4 Apr 78* 305-313 (1F13)
microwave nonlinear network analysis using scattering variables; *Weiner, Donald D.*; *T-MTT v24 n7 Jul 76* 422-433 (1C04)
VSWR measurement; cf. Microwave measurements

W

Water
complex dielectric constant calculations for saline water; *Stogryn, A.*; *T-MTT v19 n8 Aug 71* 733-736 (2B06)
Wave diffraction; cf. Diffraction
Wave equations
general solutions for amplitudes of three coupled waves; *Solymar, Laszlo*; *T-MTT v8 n3 May 60* 284-291
Wave functions
circular and Cartesian; scalar product of certain types; *Amity, N.*; *T-MTT v16 n4 Apr 68* 265-266
Wave propagation; cf. Optical propagation; Propagation; Waveguides
Wave scattering; cf. Electromagnetic scattering; Scattering; Waveguide discontinuities
Waveform analysis
Fourier transform pairs; physical applications in various fields of wave theory and circuitry; *Bolinder, E. Folke*; *T-MTT v5 n2 Apr 57* 153-158
Waveform generators; cf. Oscillators; Pulse generators
Waveguide antennas
Gaussian beam launcher for biological irradiation studies; circular waveguide illuminates dielectric sphere lens; *Neelakantaswamy, Perambur S.*; *T-MTT v26 n9 Sep 78* 665-666 (1C11)
parallel-plate waveguides, two identical guides having same axis of symmetry; radiation field and mutual coupling between guides; *Elmoazzen, Y. E.*; *T-MTT v21 n12 Dec 73* 825-833 (2D11)
pickup antennas for waveguide motors; *Steinhoff, R. W.*; *T-MTT v14 n9 Sep 66* 438
rectangular guide feeding rectangular aperture in perfectly conducting plane of infinite extent; computer program for admittance, tangential field in aperture, and radiation patterns; *Mautz, J. R.*; *TMTT v26 n1 Jan 78* 44-45 (1D04)
rectangular guide feeding rectangular aperture in perfectly conducting plane of infinite extent; computer programs; *Gardiol, Fred E.*; *T-MTT v26 n9 Sep 78* 690 (1E08)
Waveguide arrays
millimeter-wave frequency scanning array consisting of silicon dielectric rectangular rod with periodic metallic stripe perturbations on one side; *Klohn, Kenneth L.*; *T-MTT v26 n10 Oct 78* 764-773 (1E06)
parallel-plate waveguides, two identical guides having same axis of symmetry; radiation field and mutual coupling. *Elmoazzen, Y. E., Correction*; *T-MTT v22 n8 Aug 74* 816 (1E06)
Waveguide attenuators
cascade-connected variable type; mismatch errors; *Schafer, George E.*; *T-MTT v7 n4 Oct 59* 447-453
general power loss method for attenuation of cavities and waveguides; *Gustincic, Jacob J.*; *T-MTT v11 n1 Jan 63* 83-87
inline waveguide attenuator useful as interlab standard; *Larson, Wilbur*; *T-MTT v12 n3 May 64* 367-368
rotary-vane attenuators; compact precision attenuator based on modified attenuation law; *Otoshi, Tom Y.*; *T-MTT v19 n11 Nov 71* 843-854 (1B03)
rotary-vane precision attenuators; measured and calculated reflection coefficients; *Holm, J. D.*; *T-MTT v15 n2 Feb 67* 123-124
Waveguide bends
band transition noise measurements of gas-discharge noise sources; *Olson, Keith W.*; *T-MTT v16 n9 Sep 68* 797
beam waveguides; circular bends in dielectric-frame beam waveguides; *Checcacci, P. F.*; *T-MTT v22 n5 May 74* 576-578 (2C07)
components for TE_{01} at 94GHz; rectangular-to-circular conversion mode filter, 90° bends, 10db couplers, flexible sections, attenuators, etc.; *Simmons, Alan J.*; *T-MTT v11 n5 Sep 63* 324-332
coupler-type bend for double-layer pillbox antennas; *Mazzola, Vincent*; *T-MTT v15 n8 Aug 67* 462-468
dielectric image line bends; radiation loss measurements from 26 to 90 GHz and minimum acceptable curvature radius as function of frequency; *Solbach, Klaus*; *T-MTT v27 n1 Jan 79* 51-53 (1D11)
dielectric rod guides; radiation from bends; *Neumann, Ernst-Georg*; *T-MTT v23 n1 Jan 75* 142-149 (2D09)
dielectric slab and fiber waveguides; radiation condition; *Arnaud, Jacques A.*; *T-MTT v23 n11 Nov 75* 935-936 (1G01)
dielectric slab and fiber waveguides; radiation condition; *Lewin, Leonard*; *T-MTT v22 n7 Jul 74* 718-727 (1A12)
dielectric slab and fiber waveguides; radiation. *Lewin, L., Correction*; *T-MTT v23 n9 Sep 75* 779 (1E05)
E- and *H*-plane bends for oversized waveguides; *Quine, John P.*; *T-MTT v13 n1 Jan 65* 5463
equations for determining capacitivity functions which have equivalent curved waveguides; *Zucker, Henry*; *T-MTT v10 n3 May 62* 202-208
fields in bends with arbitrary curvature and cross section, expressed in terms of coupled local annular waveguide modes; *Bahar, Ezekiel*; *T-MTT v17 n4 Apr 69* 210-217
Goubau line having bends; loss and radiation; *Chiba, Jiro*; *T-MTT v25 n2 Feb 77* 94-100 (1A14)
H_{01}–E_{11} mode degeneracy problem; avoidance of problem; *Lanciani, D. A.*; *T-MTT v2 n2 Jul 54* 45-51
ice used in bending waveguide; *Coale, Franklin S.*; *T-MTT v8 n2 Mar 60* 252
iterative solution using method of overlapping regions together with Schwarz's technique; *Iskander, Magdy F.*; *T-MTT v25 n9 Sep 77* 763-768 (1D05)
lens waveguide with a curved axis; transmission bandwidth; *Hirano, Junzo*; *T-MTT v18 n7 Jul 70* 373-376
magnetostatic surface-waves along curved ferrite surfaces; *Srivastava, Neeraj C.*; *T-MTT v26 n4 Apr 78* 252-256 (1C02)
magnitude and phase of propagating modes in *H*-plane bends; computer program; *Govindarajan, G.*; *T-MTT v25 n8 Aug 77* 713 (1G01)
microstrip bends and *Y*-junctions of arbitrary angles; scattering parameters calculation; *Mehran, Reza*; *T-MTT v26 n6 Jun 78* 400-405 (1B08)
microstrip; symmetric bends and their compensation; *Douville, Rene J. P.*; *T-MTT v26 n3 Mar 78* 175-182 (1C13)
optical waveguide consisting of square-law lenslike medium; *Sawa, Shinnosuke*; *T-MTT v24 n7 Jul 76* 441-455 (1D09)
orthogonal coordinate system for curved pipes; derivation from Serret–Frenet frame; *Tang, C. H.*; *T-MTT v18 n1 Jan 70* 69
spurious modes in multimode *H*-plane bends of nonuniform curvature; rectangular and annular guides; *Bahar, Ezekiel*; *T-MTT v21 n12 Dec 73* 819-824 (2D05)
symmetrically truncated right-angle corners in parallel-plate and rectangular waveguides; *Campbell, James J.*; *T-MTT v16 n8 Aug 68* 517-529
Waveguide communication
possibilities; *Beck, Alfred C.*; *T-MTT v5 n2 Apr 57* 81-82
Waveguide communication; cf. Millimeter-wave waveguide communication; Submillimeter-wave waveguide communication
Waveguide components
absorbers; normalized design curves; *Witt, Howard R.*; *T-MTT v15 n10 Oct 67* 590
adjustable microwave delay equalizer; *Woo, Kenneth*; *T-MTT v13 n2 Mar 65* 224-232
adjustable sliding termination for rectangular waveguide; *Beatty, Robert W.*; *T-MTT v5 n3 Jul 57* 192-194
analysis of resonant fields in waveguide dielectric windows; *Forrer, Max P.*; *T-MTT v8 n2 Mar 60* 147-150
broadband multibranch waveguide coupler; method for accurate design; *Patterson, Kenneth G.*; *T-MTT v7 n4 Oct 59* 466-473
circular polarizers of fixed bandwidth; *Pyle, John R.*; *T-MTT v12 n5 Sep 64* 557-559
continuously variable directional coupler in rectangular waveguide using movable dielectric slab; *Brodwin, Morris E.*; *T-MTT v11 n2 Mar 63* 137-142
delay distortion equalization using linearly tapered waveguides; *Torgow, Eugene N.*; *T-MTT v13 n6 Nov 65* 756-762
delay equalization by tapered cutoff waveguides; *Tang, Charles C. H.*; *T-MTT v12 n6 Nov 64* 608-615
E- and *H*-plane bends for oversized waveguides; *Quine, John P.*; *T-MTT v13 n1 Jan 65* 54-63
four-port waveguide junction circulator with dielectric loading; *Sidhu, G. S.*; *T-MTT v13 n3 May 65* 388-389
high-power waveguide tuners; *Muehe, C. E.*; *T-MTT v16 n10 Oct 68* 882-883
improvements of a wall current detector; *Ronde, F. C. de*; *T-MTT v12 n6 Nov 64* 616
mechanical waveguide type; use of hybrid coupler and copper chopper; *Wong, J. Y.*; *T-MTT v9 n4 Jul 61* 364-365
miniature waveguide flanges unpressurized contact type; RETMA Standard RS-166; *Anderson, Tore N.*; *T-MTT v5 n2 Apr 57* 162
modes in radial wave beam resonators; *Goubau, G.*; *T-MTT v13 n6 Nov 65* 749-755
multiaperture waveguide directional couplers; analysis and synthesis; *Levy, Ralph*; *T-MTT v16 n12 Dec 68* 995-1006
new type of quasi-optical waveguide component, based on use of Brewster angle and on rapid variation of reflectance and phase change near critical angle; *Carson, J. W.*; *T-MTT v18 n1 Jan 70* 57-58
nonreciprocal, TEM-mode structure for wideband gyrator and isolator applications; use of conductors and ferrite rod; *Jones, E. M. T.*; *T-MTT v7 n4 Oct 59* 453-460
precision waveguide twists; novel construction technique; *Jones, E. M. T.*; *T-MTT v4 n2 Apr 56* 131-132
radar astronomy; 400-kW long-pulse *X*-band planetary radar; *Hartop, Rob*; *T-MTT v24 n12 Dec 76* 958-963 (1E04)
rectangular and ridge waveguides; state-of-the-art and standardization. *Anderson, T. N., Correction*; *T-MTT v5 n3 Jul 57* 217
rectangular and ridge waveguides; stateof-the-art and standardization; *Anderson, Tore N.*; *T-MTT v4 n4 Oct 56* 201-209
rectangular waveguide flange nomenclature; *Brady, M. Michael*; *T-MTT v13 n4 Jul 65* 469-471
rotary joint for two microwave transmission channels of the same frequency band; *Raabe, Herbert P.*; *T-MTT v1 n1 Mar 53* 48
universal *X*-band waveguide wall current detector; *Ronde, Frans C. de*; *T-MTT v12 n1 Jan 64* 112-117

wideband circular waveguide polarizer using dielectric discs; *Meier, Paul J.*; *T-MTT v13 n6 Nov 65* 763-767
wire grid bolometer for multimode power measurement; *Schiffman, Bernard M.*; *T-MTT v13 n4 Jul 65* 427-431
X-band ferroelectric phase shifter in waveguide; *DiDomenico, Mauro, Jr.*; *T-MTT v10 n3 May 62* 179-185
Waveguide components; cf. *Specific type*
Waveguide discontinuities
analysis of resonant fields in waveguide dielectric windows; *Forrer, Max P.*; *T-MTT v8 n2 Mar 60* 147-150
annular metallic strip in circular guide; scattering matrix for multimodal guide and susceptance for single-mode TE_{01} guide; variation approach; *Sugiura, Torahiko*; *T-MTT v27 n2 Feb 79* 160-167 (1E14)
bounds on the elements of the susceptance matrix for asymmetrical obstacles in waveguides; *Kalikstein, K.*; *T-MTT v12 n2 Mar 64* 252-253
circular cylindrical post of arbitrary complex permittivity centered in a rectangular waveguide; scattering of plane electromagnetic wave; *Nielsen, Eric Drage*; *T-MTT v17 n3 Mar 69* 148-153
circular waveguide step-discontinuity; power conversion coefficients and launch phase of propagating modes excited by discontinuity; *English, William J.*; *T-MTT v21 n10 Oct 73* 633-636 (1D11)
couplers, transverse slot in common broadwall between two guides. *Pandharipande, V. M., Correction*; *T-MTT v27 n2 Feb 79* 208 (2B07)
couplers, transverse slot in common broadwall between two guides. *Pandharipande, V. M., Correction*; *T-MTT v27 n7 Jul 79* 707-708 (1F11)
couplers, transverse slot in common broadwall between two guides; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v26 n3 Mar 78* 209-212 (1F05)
diaphragms; eigenmode series transformation that improves convergence; *Rozzi, Tullio E.*; *T-MTT v20 n11 Nov 72* 770-771 (2B01)
diaphragms; singular integral equation method that retains expansion terms of all modes appearing in Green's function; *Lewin, Leonard*; *T-MTT v20 n12 Dec 72* 849-852 (2B03)
dielectric planar guide for ground transportation obstacle detection; surface-wave scattering by dielectric obstacles on guide; *Rulf, Benjamin*; *T-MTT v24 n8 Aug 76* 539-541 (1D09)
dielectric waveguides; analysis using least squares boundary residual method; *Morishita, Katsumi*; *T-MTT v27 n4 Apr 79* 310-315 (1B06)
discontinuity effects in single resonator traveling-wave filters; *Standley, Robert D.*; *T-MTT v11 n6 Nov 63* 551-552
discontinuity problems; analysis using singular integral equations; *Lewin, L.*; *T-MTT v9 n4 Jul 61* 321-332
dual slot line studied experimentally when the metal sheet containing the slots is bent through angles of up to 90°; *Burton, Robert W.*; *T-MTT v13 n3 May 65* 303-306
E-plane waveguide step with simultaneous change of media; susceptance calculation using singular integral equations; *Montgomery, James P.*; *T-MTT v20 n11 Nov 72* 763-764 (1F03)
edge condition in modal analysis; *Vassallo, C.*; *T-MTT v24 n4 Apr 76* 208-212 (1D04)
equivalent circuits for symmetrical longitudinal apertures and obstacles; *Oliner, Arthur A.*; *T-MTT v8 n1 Jan 60* 72-80
ferrimagnetic circular cylinder in rectangular guide; scattering properties; *Bhartia, Prakash*; *T-MTT v22 n11 Nov 74* 975-976 (1E09)
ferrite-loaded guides; scattering matrix for single-aperture and double-aperture discontinuities; *Bernues, Francisco J.*; *T-MTT v22 n12 Dec 74* 1187-1193 (3E13)
grating formulation for some problems involving cylindrical discontinuities in rectangular waveguides; *Green, Robert B.*; *T-MTT v17 n10 Oct 69* 760-763
inadequacy of discrete mode-matching techniques in some waveguide discontinuity problems; *Lewin, Leonard*; *T-MTT v18 n7 Jul 70* 364-372
inductive iris with TE_{10} incidence in rectangular waveguide; complete solution; *Palais, Joseph C.*; *T-MTT v15 n3 Mar 67* 156-160
inductive irises having finite thickness and interacting with neighboring irises; equivalent network; *Rozzi, Tullio E.*; *T-MTT v20 n5 May 72* 323-330 (1D06)
inductive irises; variational treatment of two thick interacting induction irises; *Rozzi, Tullio E.*; *T-MTT v21 n2 Feb 73* 82-88 (1C04)
inhomogeneous dielectric cylinders; vector wave equation solutions; *Cicconi, Gabriele*; *T-MTT v25 n11 Nov 77* 885-892 (1B07)
iterative solution using method of overlapping regions together with Schwarz's technique; *Iskander, Magdy F.*; *T-MTT v25 n9 Sep 77* 763-768 (1D05)
junction between partially dielectric-filled rectangular guides; equivalent circuit; *Chang, Christopher T. M.*; *T-MTT v21 n6 Jun 73* 403-411 (1E01)
junctions and diaphragms; solution by modal analysis; *Wexler, Alvin*; *T-MTT v15 n9 Sep 67* 508-517
linear tapers in waveguides propagating TE_{10} mode in vacuum dielectric; *Johnson, R. C.*; *T-MTT v9 n3 May 61* 261
location of discontinuities electronically; practical method; *Neau, Oakley T.*; *T-MTT v3 n1 Jan 55* 45-46
lossless discontinuities; scattering matrix calculation using small aperture and small obstacle theory; unitary scattering matrix derivation; *Ren, Chung-Li*; *T-MTT v20 n7 Jul 72* 488-490 (2C05)
lossless symmetrical discontinuities in a multimode waveguide; network representation; *Ren, Chung-Li*; *T-MTT v14 n2 Feb 66* 80-85
matrix description of waveguide discontinuities in the presence of propagation and evanescent modes; *Haskal, Haim*; *T-MTT v12 n2 Mar 64* 184-188
microwave breakdown near a hot surface in a waveguide system; *Gilden, Meyer*; *T-MTT v12 n1 Jan 64* 26-33
millimeter-wave bandpass filter composed of inductive windows in rectangular guide; higher order modes can propagate; *Yamamoto, Kazuyuki*; *T-MTT v24 n11 Nov 76* 837-842 (2E14)
modified residue-calculus technique for solving a class of boundary value problems; *VanBlaricum, Glenn F., Jr.*; *T-MTT v17 n6 Jun 69* 302-309
narrow-axial strip in rectangular guide; equivalent circuit; *Chang, Kai*; *T-MTT v24 n9 Sep 76* 611-615 (1E11)
narrow conducting strip inserted vertically into guide; variational analysis; *Chang, Kai*; *T-MTT v22 n5 May 74* 536-541 (1E02)
network parameter determination of nonsymmetric obstacles in waveguides by new quantum mechanical multichannel minimum principle for particle scattering; *Kalikstein, K.*; *T-MTT v18 n1 Jan 70* 60-61
network representations of certain obstacles in waveguide regions; use of *E*- and *H*-type modes; *Altschuler, Helmut M.*; *T-MTT v7 n2 Apr 59* 213-221
Waveguide discontinuities, *cont.*
nonuniform coaxial line with an isoparametric sheath deformation used for impedance matching; *Seshagiri, N.*; *T-MTT v11 n6 Nov 63* 478-480
nonuniform guides with continuously varying cross section; synthesis method; *Grüner, Konrad*; *T-MTT v22 n3 Mar 74* 317-322 (3A01)
numerical solution of scattering problems; least-squares boundary residual method; *Davies, J. Brian*; *T-MTT v21 n2 Feb 73* 99-104 (1D09)
numerical solution of waveguide problems by fast Fourier transforms; *Carson, C. T.*; *T-MTT v16 n11 Nov 68* 955-958
obstacles in irregularly shaped guide for which form function is imprecisely known; lower bound on phase shifts; *Kalikstein, Kalman*; *T-MTT v26 n4 Apr 78* 250-252 (1B14)
on between the propagation of transverse waves in a plasma (with no magnetic field) and a tapered waveguide; *Lashinsky, Herbert*; *T-MTT v12 n2 Mar 64* 256-258
optimization of waveguide tapers used for multimode propagation; *Tang, Charles C. H.*; *T-MTT v9 n5 Sep 61* 442-452
parallel-plate guide terminated in flange plane; aperture admittance; *Howard, A. Q., Jr.*; *T-MTT v27 n3 Mar 79* 285 (1F01)
planar dielectric guides with interacting step discontinuities; network description derived from field analysis; *Rozzi, Tullio E.*; *T-MTT v27 n4 Apr 79* 303-309 (1A13)
planar dielectric waveguide step discontinuity; rigorous variational approach; *Rozzi, T. E.*; *T-MTT v26 n10 Oct 78* 738-746 (1C08)
point-matching techniques; restricted validity; *Lewin, Leonard*; *TMTT v18 n12 Dec 70* 1041-1047
propagation characteristics of waveguide with uniformly spaced cylindrical posts; 2840 MHz; *Altshuler, Edward E.*; *T-MTT v9 n5 Sep 61* 398-402
properties of step-twist-junction discontinuities for use in microwave filters; *DeLoach, Bernard C., Jr.*; *T-MTT v9 n2 Mar 61* 130-135
radial guide with annular slots on conducting walls or annular metallic scatterers inside guide; internal field solution; *Azarbar, Bahman*; *T-MTT v27 n11 Nov 79* 883-890 (1A13)
random discrete imperfections in millimeter-wave circular guide; attenuation increase; *Falciasecca, Gabriele*; *T-MTT v25 n11 Nov 77* 911-915 (1D05)
rectangular waveguide junctions and discontinuities of arbitrary cross section; numerical solution; *Muilwyk, Cornelis A.*; *T-MTT v15 n8 Aug 67* 450-455
rectangular waveguide partially filled with dielectric; four-terminal network equivalent; *Angulo, Carlos M.*; *T-MTT v5 n1 Jan 57* 68-74
reduced-height waveguide reflection standards; effect of flange loss on reflection coefficient; *Somlo, Peter I.*; *T-MTT v27 n9 Sep 79* 795-797 (1C01)
ridge waveguide with planar circuit mounted in shorted guide; end effect calculation using variational method; *Konishi, Yoshihiro*; *T-MTT v27 n2 Feb 79* 168-170 (1F08)
round metal post with gap between post and guide floor; scattered fields for incident electric field parallel to post; *Bradshaw, John A.*; *T-MTT v21 n5 May 73* 313-322 (1B03)
scalar product of certain circular and Cartesian wave functions; *Amity, N.*; *T-MTT v16 n4 Apr 68* 265266
scattering; novel approach using ray optics; *Yee, Hung Yuet*; *T-MTT v17 n2 Feb 69* 73-85
scattering of a shielded surface wave by a wall-impedance discontinuity; *Arora, R. K.*; *T-MTT v18 n10 Oct 70* 734-736
scattering problems; moment method solutions; *Wu, Sien-Chong*; *T-MTT v20 n11 Nov 72* 744-749 (1D08)
Schwarz-Christoffel transformation; inversion procedure; *Lewin, Leonard*; *T-MTT v19 n6 Jun 71* 542-546 (2E06)
serrated choke; new type permitting cuts or gaps anywhere on the walls of a rectangular waveguide; *Tomiyasu, Kiyo*; *T-MTT v4 n1 Jan 56* 33-36
sinusoidally varying width, rectangular guide; propagation characteristics; *Mallick, Amiya Kumar*; *T-MTT v26 n4 Apr 78* 243-249 (1B07)
slant interface between two dielectric media in guide; *Kashyap, S. C.*; *T-MTT v23 n2 Feb 75* 257-260 (1F05)
slot couplers, long axial slot in narrow wall between two rectangular guides; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n9 Sep 79* 800-804 (1C06)
slot coupling between uniform rectangular guides; *Sangster, A. J.*; *T-MTT v27 n7 Jul 79* 705-707 (1F09)
suppression of higher-order modes in waveguides; use of finite-length metal septa; *Quine, John P.*; *T-MTT v16 n10 Oct 68* 879-880
synthesis of low-reflection waveguide joint systems; *Foldes, Peter*; *T-MTT v9 n2 Mar 61* 169-175
thin-iris loaded periodic waveguides; *Rosenberg, David*; *T-MTT v14 n3 Mar 66* 145-153
three-dimensional arbitrarily shaped dielectric obstacles inside rectangular guide; analysis using dyadic Green's function; *Wang, Johnson J. H.*; *T-MTT v26 n7 Jul 78* 457-462 (1A03)
time-harmonic scattering problems involving metallic obstacles; computer numerical solution using finite-difference Green's function; *Glaser, Jerome I.*; *T-MTT v18 n8 Aug 70* 436-443
two-mode discontinuities; measurement by a resonance technique; *Felsen, L. B.*; *T-MTT v7 n1 Jan 59* 102-110
two narrow transverse inductive strips of different widths unsymmetrically located in rectangular guide; coupling analysis; *Chang, Kai*; *T-MTT v24 n2 Feb 76* 101-105 (1C07)
two-to-one *E*-plane step in rectangular guide with capacitive diaphragm at junction; singular integral equation method; *Ruehle, Thomas*; *T-MTT v27 n2 Feb 79* 158-160 (1E12)
uniform coaxial line with an elliptic-circular cross section; *Seshagiri, N.*; *T-MTT v11 n6 Nov 63* 549-551
V-band IMPATT oscillators and amplifiers in reduced-height guide; circuit characterization; *Fong, T. T.*; *T-MTT v24 n11 Nov 76* 752-758 (1F02)
variational bound principle for multimode waveguide scattering; *Kalikstein, Kalman*; *T-MTT v19 n8 Aug 71* 673-677 (1B03)
variational bound principle for scattering of electromagnetic waves by symmetric dielectric obstacles; *Aronson, Irving*; *T-MTT v18 n10 Oct 70* 725-731
wall impedance discontinuity in coaxial waveguide; scattering of shielded surface wave; *Vijayaraghavan, S.*; *T-MTT v19 n8 Aug 71* 736-739 (2B09)
windows; thick rectangular resonant windows with finite conductivity in rectangular guide; reflection and transmission properties; *Luebbers, Raymond J.*; *T-MTT v21 n7 Jul 73* 461-468 (1D03)

Waveguide discontinuities; cf. Loaded waveguides; Transmissionline discontinuities; Waveguide bends; Waveguide junctions; Waveguide mounts; Waveguide obstacles; Waveguide transitions
Waveguide excitation
circular TE_{11} guide; input impedance seen by coaxial line driving thin cylindrical probe; *Bondyopadhyay, Probir K.*; *T-MTT v27 n3 Mar 79* 284-285 (1E14)
circular TE_{11} guide; input impedance seen by coaxial line driving thin cylindrical probe. *Bondyopadhyay, Probir K., Correction*; *T-MTT v27 n6 Jun 79* 621 (1E11)
circular TE_{11}-mode guide; input impedance seen by coaxial line driving thin cylindrical probe; *Deshpande, M. D.*; *T-MTT v25 n11 Nov 77* 954-957 (1A11)
circular TE_{11}-mode guide; input impedance seen by coaxial line driving thin cylindrical probe. *Deshpande, M. D., Correction*; *T-MTT v26 n4 Apr 78* 315 (2A02)
circular waveguide excitation from coaxial line; end launcher transition for exciting TE_{11} mode; *Bondyopadhyay, Probir K.*; *T-MTT v27 n6 Jun 79* 621 (1E11)
circular waveguides; end launcher transition for exciting TE_{11} mode from coaxial line; *Deshpande, M. D.*; *T-MTT v26 n9 Sep 78* 672-675 (1D04)
circularly polarized wave by use of two orthogonal dipoles drawn in parallel by a common transmission line; *Bolster, Morris F.*; *T-MTT v9 n5 Sep 61* 385-388
coax-waveguide transitions using loop couplers; *Maher, B.*; *T-MTT v9 n4 Jul 61* 362-363
cutoff wavelengths for non-simple cross-section waveguides; *Valenzuela, G. R.*; *T-MTT v9 n4 Jul 61* 363-364
rectangular guide TE_{01} mode excitation; end launcher coaxial-to-rectangular transition; *Deshpande, Manohar D.*; *T-MTT v27 n8 Aug 79* 731-735 (1B03)
TEM impedance and cross coupling for two center conductors in a double ridge waveguide; *Storer, James E.*; *T-MTT v9 n2 Mar 61* 116-123
Waveguide filters
analysis of the necessity for rounded corners in high-power filters and other components; *Cohn, Seymour B.*; *T-MTT v9 n5 Sep 61* 389397
analytical solution to a waveguide leaky-wave filter structure; *Cristal, Edward G.*; *T-MTT v11 n3 May 63* 182-190
band-rejection microwave filters employing waveguide cutoff effect; *Rizzi, P. A.*; *T-MTT v4 n1 Jan 56* 36-40
bandpass fourth-order antimetric elliptic filter function in a waveguide; realization; *Williams, Albert E.*; *T-MTT v18 n12 Dec 70* 1109-1114
bandstop filters in the presence of dissipation; *Taub, Jesse J.*; *T-MTT v13 n5 Sep 65* 589-616
broadbanding the match into bandpass structures; *Hensel, Marion L.*; *T-MTT v12 n3 May 64* 309-315
circular TE_{011}-mode, trappedmode band-pass filters; *Matthaei, George L.*; *T-MTT v13 n5 Sep 65* 581-589
couplings in direct-coupled waveguide bandpass filters; *Kurzrok, Richard M.*; *T-MTT v10 n5 Sep 62* 389-390
design techniques for bandstop radial line coaxial filters; microwave frequencies; *De Loach, Bernard C.*; *T-MTT v11 n1 Jan 63* 50-55
direct coupled and waveguide band-pass filters; *Kurzrok, Richard M.*; *T-MTT v10 n3 May 62* 218-219
direct-coupled-cavity filters; design theory; *Levy, Ralph*; *T-MTT v15 n6 Jun 67* 340-348
direct coupled filters; precision design; *Reed, J.*; *T-MTT v15 n2 Feb 67* 134-136
evacuated; for suppressing spurious transmission from high-power *S*-band radar; *Wheeler, Harold A.*; *T-MTT v7 n1 Jan 59* 154-162
evacuated; for suppressing spurious transmission from high-power *S*band radar. *Wheeler, H. A., Correction*; *T-MTT v7 n3 Jul 59* 369
evanescent-mode bandpass filters; *Snyder, Richard V.*; *T-MTT v25 n12 Dec 77* 1013-1021 (1D09)
evanescent mode bandpass filters; design; *Craven, George F.*; *T-MTT v19 n3 Mar 71* 295-308 (1E03)
five-stage, equal-element type; improvement in the frequency response; *Bawer, R.*; *T-MTT v5 n3 Jul 57* 175-176
frequency separation of microwave filters; *Rapaport, Harold*; *T-MTT v6 n1 Jan 58* 53-58
group delay and dissipation loss in transmission-line filters. *Young, Leo, Correction*; *T-MTT v11 n6 Nov 63* 561
group delay and dissipation loss in transmission-line filters; *Young, Leo*; *T-MTT v11 n3 May 63* 215-217
high-power, bandstop, iris-coupled waveguide filters; *Torgow, Eugene N.*; *T-MTT v13 n5 Sep 65* 508-513
high-power harmonic suppressor using leaky wall waveguide; *Wantuch, Ernest*; *T-MTT v10 n6 Nov 62* 428-431
high-power microwave rejection filters using higher-order modes; *Vogelman, Joseph H.*; *T-MTT v7 n4 Oct 59* 461-465
high-power *S*-band filter; reactive fourth-harmonic filter operating at 400-kW CW; *Mohr, Hans J.*; *T-MTT v26 n5 May 78* 341-345 (1B09)
high-power; use of radial lines and uniform line discontinuities; *Vogelman, Joseph H.*; *T-MTT v6 n4 Oct 58* 429-439
high-power waffle-iron harmonic suppression filters; *Caputo, J.*; *T-MTT v13 n5 Sep 65* 701-703
high-*Q*, direct-coupled; general design theory; *Riblet, Henry J.*; *T-MTT v6 n4 Oct 58* 359-368
hybrid junction–cutoff waveguide filters; realization of low-pass and bandpass characteristics; *Torgow, Eugene N.*; *T-MTT v7 n1 Jan 59* 163-167
L-band diplexing filter incorporating hybrid junction and waveguide sections; high-power capability; *Young, Leo*; *T-MTT v7 n3 Jul 59* 384-387
low-pass filter that attenuates by dissipation; *Schiffman, Bernard M.*; *T-MTT v13 n5 Sep 65* 699-700
millimeter channel-dropping filter using circular electric modes; *Marcatili, Enrique A. J.*; *T-MTT v9 n2 Mar 61* 176-182
millimeter-wave band-splitting filter using Michelson interferometer hybrid; *Suzuki, Nobuo*; *T-MTT v24 n5 May 76* 237-241 (1A03)
millimeter-wave bandpass filter composed of inductive windows in rectangular guide; higher order modes can propagate; *Yamamoto, Kazuyuki*; *T-MTT v24 n11 Nov 76* 837-842 (2E14)
millimeter-wave channel dropping filter using dielectric rectangular waveguide; *Itanami, Takao*; *T-MTT v26 n10 Oct 78* 759-764 (1E01)
mode filters for oversized rectangular waveguides; extension to case of sheets having a complex surface impedance; *Bernardi, P.*; *T-MTT v17 n4 Apr 69* 237-238
mode filters for oversized rectangular waveguides in which only the dominant H_{10} mode is wanted; *Butterweck, Hans-Jürgen*; *T-MTT v16 n5 May 68* 274-281
mode filters using resistive sheets; calculation of the attenuation constants of unwanted modes; *Shimada, Sadakuni*; *T-MTT v14 n3 Mar 66* 159-161
narrow-band generalized directcoupled cavity linear phase filters; design; *Rhodes, John David*; *T-MTT v18 n6 Jun 70* 308-313
nonminimum-phase filters in which reactive elements are combined with a magic-T or a 90-degree microwave hybrid; *Fjällbrant, Tore T.*; *T-MTT v16 n12 Dec 68* 990-994
nonuniform waveguide high-pass filters with extremely steep cutoff; *Tang, Charles C. H.*; *T-MTT v12 n3 May 64* 300-309
over-moded waveguide loaded with dielectric disks. *Ren, C. L., Correction*; *T-MTT v23 n6 Jun 75* 537 (1F09)
resonant-iris filters with very wide passband and stopbands suitable for microwave generators; *Chen, Tsung-Shan*; *T-MTT v15 n4 Apr 67* 260-262
single-sided filters; explicit design formulas; *Rhodes, J. David*; *T-MTT v23 n8 Aug 75* 681-689 (1F09)
state-of-the-art review of filters in 1965; bandpass, bandstop, high-pass, tunable filters, with extensive bibliography; *Young, Leo*; *T-MTT v13 n5 Sep 65* 489-508
theory of strongly coupled cavity chains; *Allen, Matthew A.*; *T-MTT v8 n3 May 60* 362-372
three-resonator filters in waveguide; general type; *Kurzrok, Richard M.*; *T-MTT v14 n1 Jan 66* 46-47
tunable, dielectric loaded microwave cavities; high *Q* and filling factor; *Ammann, Eugene O.*; *T-MTT v11 n6 Nov 63* 528-542
use of step-twist-junction discontinuities in waveguide filters; *DeLoach, Bernard C., Jr.*; *T-MTT v9 n2 Mar 61* 130-135
waveguide dimensions to optimize performance of narrow-band waveguide filters; *Young, Leo*; *T-MTT v11 n6 Nov 63* 522-527
waveguide quadruplexer using four-channel waveguide branching system; *Foldes, Peter*; *T-MTT v9 n4 Jul 61* 297-306
Waveguide filters; cf. Cavity-resonator filters; Microwave filters
Waveguide junctions
5-port matched pseudo-magic T; *X*-, *K*-, *M*-bands operation; *Okaya, Akira*; *T-MTT v9 n3 May 61* 216-219
10-db X_L cross guide coupler; *Gerlack, Richard Z.*; *T-MTT v9 n6 Nov 61* 571
adapter between two waveguides of different cutoff frequencies and different sizes, the smaller filled with a dielectric; *Bramanti, Mauro*; *T-MTT v17 n2 Feb 69* 116-118
all arms of hybrid junction are matched; theorem and proof; *Smith, J. M.*; *T-MTT v8 n2 Mar 60* 253
analysis of resonant fields in waveguide dielectric windows; *Forrer, Max P.*; *T-MTT v8 n2 Mar 60* 147-150
analysis of the *m*-port symmetrical *H*-plane waveguide junction with a central ferrite post; *Davies, J. B.*; *T-MTT v10 n6 Nov 62* 596-604
between uniform guide and one which tapers linearly in plane of *E* field; Lewin's formula for shunt capacitance introduced by discontinuity; *Riblet, Henry J.*; *T-MTT v25 n8 Aug 77* 711-712 (1F13)
calculation of junction and diaphragm interactions; *Lewin, Leonard*; *T-MTT v17 n10 Oct 69* 785-788
coaxial line entering broad wall of rectangular guide; equivalent circuit; *Eisenhart, Robert L.*; *T-MTT v26 n3 Mar 78* 172-174 (1C10)
cyclic *H*-plane junctions; exact three-dimensional field theory; *Copplestone, Ray J.*; *T-MTT v27 n6 Jun 79* 577-584 (1B09)
design of a four-port crossed waveguide junction circulator at 2.5 to 25 GHz; *Davis, L. E.*; *T-MTT v12 n1 Jan 64* 43-47
dielectric-loaded waveguides; equivalent circuit for junction between partially filled rectangular guides; *Chang, Christopher T. M.*; *T-MTT v21 n6 Jun 73* 403-411 (1E01)
dual-channel rotary joint for high average power operation; *Woodward, O. M.*; *T-MTT v18 n12 Dec 70* 1072-1077
dual-mode coupler in which two rectangular waveguides excite orthogonal dominant modes (TE_{10} and TE_{01}) in a square waveguide; *Johnson, R. C.*; *T-MTT v15 n11 Nov 67* 651-652
E-plane 'Y' waveguide junction having InSb rod aligned with principal symmetry axis of the junction; circulator action at 140 GHz; *Brodwin, M.*; *T-MTT v15 n9 Sep 67* 530-531
efficiencies of two-ports with arbitrary load; calculation from input reflection coefficient data measured with output terminated in sliding short; *Beatty, Robert W.*; *T-MTT v20 n5 May 72* 343-344 (1F02)
general treatment of double stub four-port hybrid directional couplers *L*-band; *Boyd, Charles R., Jr.*; *T-MTT v10 n4 Jul 62* 287-294
H-plane junction with triangular ferrite post; exact field theory treatment; *Khilla, Abdel-Messias*; *T-MTT v26 n4 Apr 78* 279-287 (1E01)
H-plane waveguide junctions with full-height ferrites of arbitrary shape; computer-aided design; *Okamoto, Naomichi*; *T-MTT v27 n4 Apr 79* 315-321 (1B11)
high-power rotary waveguide joint; *Smith, P. H.*; *T-MTT v12 n1 Jan 64* 55-58
impedance and admittance matrices determination for rectangular waveguide junctions; eigenfunction method; *Nalbandoğlu, Ali H.*; *T-MTT v25 n8 Aug 77* 688-694 (1E04)
improved mode selecting coupler; microwave frequency; *Sleeper, George B., Jr.*; *T-MTT v12 n3 May 64* 362-363
large-diameter conical junction; conversion of circular TE_{11} mode; *Tomiyasu, K.*; *T-MTT v17 n5 May 69* 277-279
lossless n-port junction having a scattering matrix with a specified row; design; *Mathis, H. F.*; *T-MTT v14 n3 Mar 66* 159
lossless, nonideal junction circulators; flow graph analysis; *Hagelin, Sven*; *T-MTT v14 n5 May 66* 243-249
lossless two-port; determination of equivalent network parameters; *Freyheit, P. J.*; *T-MTT v14 n2 Feb 66* 93
lossy junctions; dissipation and scattering matrices in terms of eigenvalues of dissipation matrix; *Helszajn, Joseph*; *T-MTT v20 n11 Nov 72* 779-782 (2B10)
lossy junctions; dissipation and scattering matrices in terms of eigenvalues of dissipation matrix; *Schwartz, E.*; *T-MTT v22 n1 Jan 74* 75 (1F07)
magic-tee phase changer; analysis of errors due to nonlinearities; *Vaillancourt, Raymond M.*; *T-MTT v5 n3 Jul 57* 204-208
matching 5-port lossless reciprocal waveguide junctions; restrictions imposed by losslessness and reciprocity; *Hieber, A. L.*; *T-MTT v21 n8 Aug 73* 547-552 (2B05)
matrix inversion, ill-conditioned matrices; low-rank spectral expansion technique; *Zuckerman, Douglas N.*; *T-MTT v25 n7 Jul 77* 613-619 (1D07)

Waveguide junctions, *cont.*
maximum efficiency of a two-arm waveguide junction; *Beatty, Robert W.*; *T-MTT v11 n1 Jan 63* 94
maximum efficiency of a two-arm waveguide junction; *Lefeuvre, S.*; *T-MTT v11 n6 Nov 63* 549
measurement of complex voltage ratio of two signals using sixport junction; *Hoer, Cletus A.*; *T-MTT v23 n12 Dec 75* 978-984 (1C12)
measurement of scattering coefficients of multiport junctions; application of Deschamps' graphical method; *Chang, C. T. M.*; *T-MTT v20 n2 Feb 72* 186-187 (2E08)
method of improving the response of waveguide directional couplers; *Sweet, Leonard*; *T-MTT v11 n6 Nov 63* 554
miniature stripline to waveguide slot adapter; *Shahan, Onnig*; *T-MTT v10 n2 Mar 62* 142-143
miniaturized, temperature-stable, coaxial *Y*-junction circulators; *Clark, J.*; *T-MTT v9 n3 May 61* 267-269
misalignment; reflection coefficient of unequal displaced rectangular guides; *Levy, Ralph*; *T-MTT v24 n7 Jul 76* 480-483 (2B11)
modal analysis solution; *Wexler, Alvin*; *T-MTT v15 n9 Sep 67* 508-517
multiplicity of solutions in transmission line synthesis; *Seidel, H.*; *T-MTT v13 n4 Jul 65* 398-407
numerical method for solution of junction problems; *Oraizi, H.*; *T-MTT v21 n10 Oct 73* 640-642 (1E06)
oversized waveguide directional coupler using dielectric prisms; *Hindin, H. J.*; *T-MTT v10 n5 Sep 62* 394-395
partial height ferrite, *Y*-junction circulators; mode of operation; *Owen, Brian*; *T-MTT v18 n12 Dec 70* 1096-1100
perturbation theorems; derivation and applications; *Kerns, David M.*; *T-MTT v14 n2 Feb 66* 85-92
phase differences between the incident and transmitted waves at the input and output ports, respectively, of a two-arm waveguide junction; *Schafer, George E.*; *T-MTT v8 n6 Nov 60* 617-622
phase shift of electromagnetic waves propagating through waveguide junctions; *Schumacher, D. E.*; *T-MTT v11 n5 Sep 63* 449-450
printed circuit balun for use with spiral antennas; *Bawer, Robert*; *T-MTT v8 n3 May 60* 319-325
properties of symmetric junctions; *Levy, R.*; *T-MTT v8 n5 Sep 60* 573
rectangular waveguide junctions and discontinuities of arbitrary cross section; numerical solution; *Muilwyk, Cornelis A.*; *T-MTT v15 n8 Aug 67* 450-455
rotary joint for two microwave transmission channels of the same frequency band; *Raabe, H. P.*; *T-MTT v3 n4 Jul 55* 30-41
slot-coupled tee junction in rectangular guide *E*-plane; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n1 Jan 79* 65-69 (1E11)
slot-coupled Tee junction in rectangular guide *H*plane; equivalent circuit; *Pandharipande, V. M.*; *T-MTT v27 n9 Sep 79* 800-804 (1C06)
step twist configuration, suited for fixed and rotary twist sections; *Wheeler, H. A.*; *T-MTT v3 n5 Oct 55* 44-52
switch employing the offset ring-switch junction; *X*-band operation; *Johnson, R. C.*; *T-MTT v8 n5 Sep 60* 532-537
symmetric, *Y*-junction, *E*-plane circulator capable of handling 500 kW peak and 670 W average power; operation at 9375 MHz; *Wright, William H., Jr.*; *T-MTT v16 n8 Aug 68* 557-559
symmetrical; analytical asymmetry parameters; *Cohen, Morris*; *T-MTT v7 n4 Oct 59* 430-441
symmetrical junctions; tensor character of scattering matrix; *Knorr, Jeffrey B.*; *T-MTT v19 n4 Apr 71* 414-415 (2C10)
symmetrical waveguide circulators; synthesis; *Auld, Bert A.*; *T-MTT v7 n2 Apr 59* 238-246
symmetrically excited rotary joint operating at 28–31 GHz; *de Mesquita, D. G.*; *T-MTT v18 n9 Sep 70* 654-656
synthesis of low-reflection waveguide joint systems; *Foldes, Peter*; *T-MTT v9 n2 Mar 61* 169-175
T-junction of rectangular waveguides having arbitrary cross sections; exact calculation; *Sharp, Eugene D.*; *T-MTT v15 n2 Feb 67* 109-116
tetrahedral junction as a waveguide switch; *Weiss, J. A.*; *T-MTT v8 n1 Jan 60* 120121
three-port waveguide junction circulators; computer-aided design; *Castillo, Joseph B., Jr.*; *T-MTT v18 n1 Jan 70* 25-34
transformation method to find the load impedance of a lossy two-port network; *Mittra, Raj*; *T-MTT v10 n1 Jan 62* 13-19
transformation method to find the load impedance of a lossy two-port network; *Stock, D. J. R.*; *T-MTT v10 n5 Sep 62* 398-399
turnstile junction; properties and applications; *Meyer, Maurice A.*; *T-MTT v3 n6 Dec 55* 40-45
two hybrids to form a directional coupler of arbitrary power division over a broad band; *Marcatili, Enrique A. J.*; *T-MTT v10 n4 Jul 62* 251-257
two-port; iconocenter determination from input reflection coefficient measurements; *Deschamps, Georges*; *T-MTT v5 n2 Apr 57* 159-161
two-to-one *E*-plane step in rectangular guide with capacitive diaphragm at junction; singular integral equation method; *Ruehle, Thomas*; *T-MTT v27 n2 Feb 79* 158-160 (1E12)
VSWR of a broad-band waveguide series-T junction; *Kurzrok, R. M.*; *T-MTT v11 n5 Sep 63* 452
Waveguide junctions; cf. Hybrid junctions; Waveguide discontinuities; Waveguide excitation; Waveguide transitions
Waveguide lasers; cf. Distributed-feedback lasers
Waveguide mounts
circuit impedance at terminals of device mounted in shunt across guide; *Eisenhart, Robert L.*; *T-MTT v19 n8 Aug 71* 706-719 (1D12)
diode packaged in a waveguide mount; impedance relations; *van Iperen, B. B.*; *T-MTT v16 n11 Nov 68* 961-963
gas-discharge tubes and waveguide mounts; as noise reference standards for *S, C,* and *X*-band in WR284, WR137, and WR90 waveguide; *Denson, Colin I.*; *T-MTT v16 n9 Sep 68* 655-663
Gunn device oscillators; dependence of power generation variation with tuning on harmonics due to diode nonlinearity; *Bastida, Ezio M.*; *T-MTT v22 n8 Aug 74* 796-798 (1C14)
Gunn device oscillators; equivalent circuit for impedance presented to device terminals; *Singh, D. N.*; *T-MTT v21 n8 Aug 73* 569 (2D03)
Gunn device oscillators; equivalent circuit representation of impedance presented to device terminals; *Jethwa, C. P.*; *T-MTT v20 n9 Sep 72* 565-572 (1B03)
Gunn device oscillators; impedance characterization of two-post mounting structure for varactor-tuned oscillators; *ElSayed, Osman L.*; *T-MTT v22 n8 Aug 74* 769-776 (1B01)
Ka-band Gunn amplifier in reduced-height waveguide; 15 GHz gain[1]–bandwidth product; *Rubin, David*; *T-MTT v23 n10 Oct 75* 833-834 (1D13)
mixed two-port parameters for characterizing varactor mounts in waveguides; *Viggh, Mats E.*; *T-MTT v11 n3 May 63* 218-219
packaged and mounted diode as a microwave circuit; *Getsinger, William J.*; *T-MTT v14 n2 Feb 66* 58-69
parallel two-post structure; reactance calculation; *El-Sayed, Osman L.*; *T-MTT v25 n1 Jan 77* 24-33 (1B12)
post-coupled-waveguide-cavity Gunn effect oscillator; equivalent circuit using lumped constant elements; *Tsai, Wei Ching*; *T-MTT v18 n11 Nov 70* 808-817
post-mounting structures in rectangular guide; influence of general terminations at ports; *Joshi, J. S.*; *T-MTT v26 n4 Apr 78* 319-320 (2A06)
post-mounting structures in rectangular guide; two posts each with single gap and single post with two gaps; *Joshi, J. S.*; *T-MTT v25 n3 Mar 77* 173-181 (1A07)
precision insertion-loss calibrations at 90 GHz; *Stelzried, C. T.*; *T-MTT v17 n4 Apr 69* 233-234
transferred-electron device oscillators, varactor-tuned; *Joshi, J. S.*; *T-MTT v24 n9 Sep 76* 573-584 (1C01)
transferred-electron oscillators; distributed-lumped equivalent circuit for postmounted oscillator in 12–18 GHz band; *Dean, Michael*; *T-MTT v21 n3 Mar 73* 121-127 (1B03)
two-gap diode mounts; equivalent circuit; *Eisenhart, Robert L.*; *T-MTT v24 n12 Dec 76* 987-990 (2B02)
V-band IMPATT oscillators and amplifiers in reduced-height guide; circuit characterization; *Fong, T. T.*; *T-MTT v24 n11 Nov 76* 752-758 (1F02)
varactor-tuned Gunn oscillator in full-height waveguide cavity; wideband *X*-band oscillator; *Joshi, J. S.*; *T-MTT v21 n3 Mar 73* 137-139 (1C07)
waveguide cavity CW Gunn oscillator; AM and FM; *Tsai, Wei Ching*; *T-MTT v18 n11 Nov 70* 877-884
Waveguide mounts; cf. Bolometer mounts
Waveguide obstacles
movable metal iris with nearly frequency-independent susceptance; *Bryan, J. G.*; *T-MTT v19 n11 Nov 71* 889-891 (1F01)
Waveguide obstacles; cf. Waveguide discontinuities
Waveguide phased arrays
feed networks; design of optimum dual-series networks; *Jones, William R.*; *T-MTT v19 n5 May 71* 451-458 (1D07)
Waveguide pulse propagation; cf. Waveguide transient propagation
Waveguide scattering; cf. Waveguide discontinuities
Waveguide switches
1 MW, *C*-band microwave spark gap switch; *Farber, Herman*; *T-MTT v13 n1 Jan 65* 28-32
7-GHz narrow-band waveguide switch using p-i-n junction diodes; *Peppiatt, Harry J.*; *T-MTT v13 n1 Jan 65* 44-47
7-GHz narrow-band waveguide switch using p-i-n junction diodes; *Rebsch, D. L.*; *T-MTT v13 n6 Nov 65* 874-875
broadband waveguide series *T* for switching; *Griemsmann, John W. E.*; *T-MTT v4 n4 Oct 56* 252-255
dc-triggered spark-gap switch for oversize rectangular waveguides; *Quine, J. P.*; *T-MTT v16 n11 Nov 68* 952-955
diode modulators and demodulators; high-speed characteristics; *Garver, Robert V.*; *T-MTT v15 n7 Jul 67* 390-397
diode switches; voltage-controlled switch using p-i-n diodes loop-coupled to a section of WR975 waveguide; *Jakes, William C., Jr.*; *T-MTT v14 n4 Apr 66* 189-200
ferrite switch for millimeter-wave region; tetrahedral waveguide junction type; *Stern, Richard A.*; *TMTT v19 n9 Sep 71* 786-788 (1E12)
ferrite; use of cutoff phenomenon in transversely-magnetized ferrites; *Soohoo, Ronald F.*; *T-MTT v7 n3 Jul 59* 332-336
germanium, point-contact, diode placed across section of standard *X*-band waveguide; microwave operation; *Garver, Robert V.*; *T-MTT v6 n4 Oct 58* 378-383
high speed microwave switch using silver-bonded diodes; 11 GHz operation; *Miyauchi, Kazuhiro*; *T-MTT v12 n3 May 64* 368-369
microwave crystals; use as RF switching element; *Millet, Murray R.*; *T-MTT v6 n3 Jul 58* 284-290
microwave energy switching to any of several separate waveguide loads; high-speed broadband operation; *Teeter, W. L.*; *T-MTT v3 n5 Oct 55* 11-14
multipactor receiver protectors for airborne applications; 50-kW peak power and 12.5 percent bandwidth in *X*-band; *Carlisle, Thomas P.*; *T-MTT v26 n5 May 78* 345-347 (1B13)
operation of tetrahedral junction; *Helszajn, J.*; *T-MTT v13 n1 Jan 65* 132-133
p-i-n switching window mounted in resonant iris; *Cottrell, Peter E.*; *T-MTT v21 n5 May 73* 358-359 (1E12)
pre-TR tube for high average power duplexing; 3000 MHz operation; *Downton, D. W.*; *T-MTT v8 n6 Nov 60* 654-659
switch employing the offset ring-switch junction; *X*-band operation; *Johnson, R. C.*; *T-MTT v8 n5 Sep 60* 532-537
tetrahedral junction as a waveguide switch; *Weiss, J. A.*; *T-MTT v8 n1 Jan 60* 120-121
two types of switches developed; performance and operation; *Pratt, Amasa*; *T-MTT v1 n2 Nov 53* 30-32
X-band step twist diode switch; *Jones, H. S., Jr.*; *T-MTT v12 n5 Sep 64* 549
X_L-band waveguide switches using p-i-n diodes; development in the SPST, SP2T, SP4T and SP8T configurations; *Assaly, Robert N.*; *T-MTT v14 n11 Nov 553-563*
Waveguide transient propagation
dispersive waveguides; influence of moving media on propagation of transient electromagnetic modal waves; *Berger, Henry*; *T-MTT v16 n10 Oct 68* 842-849
optical waveguides; pulse dispersion in single-mode guides; *Kuester, Edward F.*; *T-MTT v23 n11 Nov 75* 882-887 (1C04)
Sommerfeld pre- and postcursors in the context of waveguide transients; *Schulz-DuBois, Erich O.*; *T-MTT v18 n8 Aug 70* 455-460
Waveguide transient propagation; cf. Waveguides
Waveguide transitions
broadband coaxial to stripline transitions; *Pyle, J. R.*; *T-MTT v12 n3 May 64* 364-365
circular-to-circular tapered transition; *Christensen, P. S.*; *T-MTT v19 n1 Jan 71* 99-100 (2E07)

circular waveguide excitation from coaxial line; end launcher transition for exciting TE_{11} mode; *Bondyopadhyay, Probir K.*; *T-MTT v27 n6 Jun 79* 621 (1E11)
circular waveguide excitation from coaxial line; end launcher transition for exciting TE_{11} mode; *Deshpande, M. D.*; *T-MTT v26 n9 Sep 78* 672675 (1D04)
circular waveguides; optimum tapered transitions; *Hecken, Rudolph P.*; *T-MTT v21 n6 Jun 73* 374-380 (1B08)
coax-waveguide transitions using loop couplers; *Maher, B.*; *T-MTT v9 n4 Jul 61* 362-363
coaxial-to-circular waveguide abrupt transition; capacitance calculation; *Razaz, M.*; *T-MTT v27 n6 Jun 79* 564-569 (1A10)
delay equalization by tapered cutoff waveguides; *Tang, Charles C. H.*; *T-MTT v12 n6 Nov 64* 608-615
design of mode transducers; *Solymar, L.*; *T-MTT v8 n1 Jan 60* 61-65
dielectric-filled waveguide; use of microstrip transmission line to make an ideal TEM (coaxial) transition; *Hoover, John C.*; *T-MTT v15 n4 Apr 67* 273-274
E-plane taper junction in rectangular guide; reflection formulas; *Lewin, Leonard*; *T-MTT v27 n6 Jun 79* 560-563 (1A06)
empirical design method for ridge waveguide transducers; *Thompson, G. H. B.*; *T-MTT v9 n3 May 61* 263-266
gradually tapered guide with arbitrary cross sections; computer analysis; *Saad, S. S.*; *T-MTT v25 n5 May 77* 437-440 (2A01)
microstrip–cavity resonator coupling through aperture in substrate ground plane; *Kumar, Mahesh*; *T-MTT v26 n9 Sep 78* 690-691 (1E08)
microstrip–waveguide transitions; *van Heuven, J. H. C.*; *T-MTT v24 n3 Mar 76* 144-147 (1B04)
millimeter-wave guides; transitions from standard to oversize circular waveguides; *King, Howard E.*; *T-MTT v19 n1 Jan 71* 116-119 (3B05)
millimeter-wave rectangular–circular guide; helical coupler; *Predmore, C. Read*; *T-MTT v24 n11 Nov 76* 847-852 (2F10)
miniature stripline to waveguide slot adapter; *Shahan, Onnig*; *T-MTT v10 n2 Mar 62* 142-143
multimode nonuniform transitions; forward and backward scattered modes; *Tang, Charles C. H.*; *T-MTT v16 n8 Aug 68* 494-502
optimization of waveguide tapers used for multimode propagation; *Tang, Charles C. H.*; *T-MTT v9 n5 Sep 61* 442-452
propagation in a gradual transducer; additional relation for 'Design of mode transducers'; *Churchill, D. B.*; *T-MTT v12 n5 Sep 64* 547-548
rectangular guide TE_{01} mode excitation; end launcher coaxial-to-rectangular transition; *Deshpande, Manohar D.*; *T-MTT v27 n8 Aug 79* 731-735 (1B03)
rectangular to circular waveguide; circular H_{01} mode characteristics; *Lagasse, Paul*; *T-MTT v20 n5 May 72* 331-337 (1E02)
rectangular-to-cylindrical waveguide transducer which couples dominant rectangular and dominant cylindrical modes; *Bathker, D. A.*; *T-MTT v15 n2 Feb 67* 128-130
rectangular waveguide-to-coaxial line transitions; 1968 progress report and up-to-date bibliography; *Brady, M. Michael*; *T-MTT v17 n3 Mar 69* 170
suspended stripline–waveguide transition at 30 GHz; *Glance, B.*; *T-MTT v21 n2 Feb 73* 117-118 (1F03)
synthesis of low-reflection waveguide joint systems; *Foldes, Peter*; *T-MTT v9 n2 Mar 61* 169-175
TE_{10} rectangular to TE_{01} circular waveguide transitions; *Wolfert, Paul H.*; *T-MTT v11 n5 Sep 63* 430-431
waveguide-to-stripline transition; development of two new types; *Knerr, R. H.*; *T-MTT v16 n3 Mar 68* 192-194
wide-band rectangular-to-circular waveguide mode and impedance transformer; *Stuchly, Stanislaw*; *T-MTT v13 n3 May 65* 379-380
wideband circular waveguide polarizer using dielectric discs; *Meier, Paul J.*; *T-MTT v13 n6 Nov 65* 763-767

Waveguides
analysis of resonant fields in waveguide dielectric windows; *Forrer, Max P.*; *T-MTT v8 n2 Mar 60* 147-150
anisotropic, source-free uniform waveguide; vector formulations for equations determining components of the electromagnetic field; *Bresler, A. D.*; *T-MTT v7 n2 Apr 59* 298
annotated bibliography on advances in microwave theory and techniques in Great Britain in 1959; *Brown, John*; *T-MTT v8 n4 Jul 60* 382-386
arbitrarily shaped; analysis by a computer program EHPOL which produces polynomial approximations to eigenfunctions of the Helmholtz equation; *Bulley, Raymond M.*; *T-MTT v18 n12 Dec 70* 1022-1028
arbitrarily terminated inhomogeneous cascade of rectangular waveguides with or without junction discontinuity effects; response program; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 646-649
arbitrary, uniform waveguides by point-matching method; *Yee, Hung Yuet*; *T-MTT v13 n6 Nov 65* 847-851
arc location by sound ranging; *Browne, A.*; *T-MTT v16 n10 Oct 68* 894
arcing characteristics at 28 GHz; *Nakamura, Makoto*; *T-MTT v26 n5 May 78* 354-356 (1C08)
attenuation constant calculation for guides having general cross section; *Yee, H. Y.*; *T-MTT v14 n5 May 66* 252-253
attenuation constant for lunar line and for the *T*-septate lunar line; *Hu, Ann Yung*; *T-MTT v11 n4 Jul 63* 243-250
attenuation; determination from electrical measurements on short samples; *Pomeroy, A. F.*; *T-MTT v4 n2 Apr 56* 122-129
bidirectional-waveguide theorems; derivation without the artifice of an imperfect termination; *Chorney, P.*; *T-MTT v15 n1 Jan 67* 58-59
branch-guide directional couplers; analysis of practical type; *Levy, R.*; *T-MTT v17 n5 May 69* 289-290
broadband 3-port *H*-plane waveguide circulators; theoretical design; *Parsonson, C. G.*; *T-MTT v16 n4 Apr 68* 256-258
broadband multisection stepped rectangular waveguide impedance transformers; computer-aided optimization; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 563-571
capacitive-screw tuners; effect on waveguide loss; *Stelzried, C. T.*; *T-MTT v17 n3 Mar 69* 172-173
'centipede' coupled-cavity waveguides; equivalent circuit; *Reeder, Thomas M.*; *T-MTT v14 n4 Apr 66* 200-205
channel waveguide; cutoff characteristics; *Muilwyk, C. A.*; *T-MTT v15 n3 Mar 67* 199-200
characteristic impedance of waveguides; analysis; *Young, Leo*; *T-MTT v16 n11 Nov 68* 975-976
clarifying waveguide designations; *Brady, M. M.*; *T-MTT v13 n2 Mar 65* 247-249

Waveguides, *cont.*
coaxial noise sources; method of calibrating in terms of a waveguide standard; *Engen, Glenn F.*; *TMTT v16 n9 Sep 68* 636-639
computer optimization of the Rayleigh–Ritz method; *Vorst, Andre S. vander*; *T-MTT v17 n8 Aug 69* 454-460
computer optimization of the Rayleigh–Ritz method. *Vander Vorst, A. S., Correction*; *T-MTT v18 n7 Jul 70* 412
computer program for processing standing wave measurements; *Bandler, John W.*; *T-MTT v17 n8 Aug 69* 644-646
coplanar, consisting of a surface strip transmission line suitable for nonreciprocal gyromagnetic device applications; *Wen, Cheng P.*; *T-MTT v17 n12 Dec 69* 1087-1090
coplanar-waveguide directional couplers; design; *Wen, Cheng P.*; *T-MTT v18 n6 Jun 70* 318-322
coupled transmission lines; used as transducer for selectively coupling between a single-mode waveguide and one mode of a multi-mode waveguide; *Miller, S. E.*; *T-MTT v1 n1 Mar 53* 14
crossed rectangular guides; modes and cutoff frequencies; *Lin, Feng-Ling Cheng*; *T-MTT v25 n9 Sep 77* 756-763 (1C12)
crossed rectangular guides; modes and cutoff frequencies; *Tham, Quang C.*; *T-MTT v25 n7 Jul 77* 585-588 (1B07)
cutoff wavelengths of waveguides with unusual cross sections; *Pyle, John R.*; *T-MTT v12 n5 Sep 64* 556-557
CW power capacity for rectangular waveguides; theoretical considerations; *King, Howard E.*; *T-MTT v9 n4 Jul 61* 349-357
dispersion of very short *X*-band pulses in waveguide; *Ito, Mabo*; *T-MTT v13 n3 May 65* 357-364
dissimilar; analysis of coupling between them; *Kopp, Eugene H.*; *T-MTT v16 n1 Jan 68* 6-11
dominant cutoff wavelength of a lunar line—2 eccentric circular metal tubes; *Hu, Ann Yung*; *T-MTT v9 n6 Nov 61* 552-556
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions; *Rahmat-Samii, Y.*; *T-MTT v23 n9 Sep 75* 762-765 (1D02)
dyadic Green's function for rectangular guides and cavities; derivation using theory of distributions. *Rahmat-Samii, Y., Correction*; *T-MTT v26 n1 Jan 78* 44 (1D04)
E-plane tapered; calculation of reflection coefficients; *Matsumaru, Katsu*; *T-MTT v6 n2 Apr 58* 143-149
E-plane tapered; calculation of reflection coefficients; *Yang, Richard F. H.*; *T-MTT v7 n1 Jan 59* 175-176
electromagnetic field traveling inside a waveguide; plotting by power dissipation; *Ottavi, C. M.*; *T-MTT v15 n1 Jan 67* 59-60
electromagnetic scattering; analysis by the ray-optical method; *Yee, Hung Yuet*; *T-MTT v17 n9 Sep 69* 671-683
electromagnetic wave propagation in the interior of a waveguide filled with homogeneous, isotropic and lossless medium moving with constant velocity; *Du, Li-jen*; *T-MTT v14 n8 Aug 66* 358-363
extension of Chebyshev's procedure to functions with double-value singularities; application to familiar transmission line problems; *Riblet, Henry J.*; *T-MTT v12 n4 Jul 64* 415-421
frequency curves for rectangular guides; wavelength vs. frequency from 2600 MHz to 11,650 MHz; *Mumford, W. W.*; *T-MTT v2 n2 Jul 54* 1
general high-order finite-element computer analysis program; *Silvester, P.*; *T-MTT v17 n4 Apr 69* 204-210
guided waves in moving dispersive media; nonrelativistic velocities; *Berger, Henry*; *T-MTT v16 n1 Jan 68* 11-16
guided waves in moving dispersive media; relativistic velocities; *Berger, Henry*; *T-MTT v16 n1 Jan 68* 16-20
H-guide; attenuation of the HE_{11} mode; *Cohn, Marvin*; *T-MTT v7 n4 Oct 59* 478-480
half-height waveguide *X*-band *Y* and *T* junction circulators; construction and performance; *Freibergs, Elmer*; *T-MTT v17 n9 Sep 69* 729-730
high-order finite element; computer program for the analysis; *Silvester, P.*; *T-MTT v17 n8 Aug 69* 651
higher order modes; determination by accurate finite-difference method; *Beaubien, Marcel J.*; *T-MTT v16 n12 Dec 68* 1007-1017
hollow, conducting, elliptical; wave propagation; *Kretzschmar, Jan G.*; *T-MTT v18 n9 Sep 70* 547-554
ice used in bending waveguide; *Coale, Franklin S.*; *T-MTT v8 n2 Mar 60* 252
impedance boundary conditions on walls; propagation characteristics; *McIsaac, P. R.*; *T-MTT v22 n11 Nov 74* 972-973 (1E06)
impedance boundary conditions on walls; propagation characteristics; *Narasimhan, M. S.*; *T-MTT v22 n11 Nov 74* 973 (1E07)
impedance boundary conditions on walls; rectangular waveguides; *Dybdal, Robert B.*; *T-MTT v19 n1 Jan 71* 2-9 (1B04)
impedance meter for the automatic display of complex reflection coefficients; *Bachman, Henry L.*; *T-MTT v3 n1 Jan 55* 22-30
improving isolation in multi-channel systems; *Engen, G. F.*; *T-MTT v8 n4 Jul 60* 460-461
in line calorimeter for microwave waveguide; *Brady, M. Michael*; *T-MTT v10 n5 Sep 62* 357-366
in-line calorimeters for microwave waveguides. *Brady, M. M., Correction*; *T-MTT v11 n2 Mar 63* 152
influence of wall losses on energy flow center velocity of pulses; *Klapka, Jindřich L.*; *T-MTT v18 n10 Oct 70* 689-696
isotropic; inverse iteration method of analysis reexamined with a view to finding higher-order modes with the aid of generalized biharmonic operators; *Silvester, P.*; *T-MTT v18 n1 Jan 70* 63-64
latching switch consisting of short-slot waveguide junction loaded with a latched ferrite at the coupling section; *Nakahara, Shojiro*; *T-MTT v18 n12 Dec 70* 1048-1051
linear double tapers in rectangular waveguides; design; *Johnson, R. C.*; *T-MTT v7 n3 Jul 59* 374-378
linear double tapers in rectangular waveguides; design. *Johnson, R. C., Correction*; *T-MTT v8 n4 Jul 60* 458
linearly tapered; application of point-matching method in determining the reflection and transmission coefficients; *Shockley, T. D.*; *T-MTT v16 n8 Aug 68* 562-564
loaded *Q* of waveguide resonators; comments; *Kurzrok, R. M.*; *T-MTT v15 n3 Mar 67* 192-193
radiation pattern caused by noise-excited thin slot; microwave region operation; *George, Nicholas*; *T-MTT v8 n5 Sep 60* 493-500

Waveguides, *cont.*
low-pass, quasi-optical filters for oversized or focused-beam waveguides; *Matthaei, George L.*; *T-MTT v16 n12 Dec 68* 1038-1047
mathematics and microwaves; *Schelkunoff, Sergei Alexander*; *T-MTT v5 n3 Jul 57* 172-173
measurement of cutoff frequencies; *Audeh, N. F.*; *T-MTT v13 n6 Nov 65* 878-879
measurement of harmonic power generated by microwave transmitters; *Price, Vernon G.*; *T-MTT v7 n1 Jan 59* 116-120
microstrip; guided waves in limit cases; *Eaves, R. E., Jr.*; *T-MTT v18 n4 Apr 70* 231-232
microstrip; theoretical aspects; *Deschamps, G. A.*; *T-MTT v2 n1 Apr 54* 100-102
microwave breakdown near a hot surface in a waveguide system; *Gilden, Meyer*; *T-MTT v12 n1 Jan 64* 26-33
microwave model terrestrial waveguide having a variable surface impedance; propagation characteristics; *Bahar, Ezekiel*; *T-MTT v14 n11 Nov 66* 572-578
microwave power measurement in WR112 waveguide (7.05 to 10.0 GHz); calibration service offered by NBS, Radio Standards Laboratory, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n5 May 66* 254
microwave power measurement in WR137 waveguide (5.85–8.20 GHz); calibration service offered by NBS, Radio Standards Laboratory, Boulder, CO; *National Bureau of Standards*; *T-MTT v14 n4 Apr 66* 213
mode conversion in overmoded waveguide tapers; *Poulton, G.*; *T-MTT v17 n5 May 69* 288-289
mode coupling and conversion measurement; shuttle pulse method; *Bernardi, P.*; *T-MTT v24 n5 May 76* 264-266 (1C02)
monochromatic two-dimensional field problems solved by matrix methods; considerations and estimation of their errors; *Hashimoto, Masahiro*; *T-MTT v18 n7 Jul 70* 352-359
nonseparable solutions of Helmholtz wave equation; field energy and power; *Luypaert, P. J.*; *T-MTT v23 n12 Dec 75* 1061-1064 (2B12)
nonuniform, inhomogeneous, and anisotropic waveguides and transmission lines; general discussion of properties; *Klopfenstein, Ralph W.*; *T-MTT v4 n4 Oct 56* 193-196
nonuniform; spurious mode generation; *Solymar, L.*; *T-MTT v7 n3 Jul 59* 379-383
nonuniform, with large flare angles and near cutoff; wave scattering; *Bahar, Ezekiel*; *T-MTT v16 n8 Aug 68* 503-510
numerical solution for guides of arbitrary cross section; null-field method; *Ng, Fook Loy*; *T-MTT v20 n10 Oct 72* 658-662 (1D02)
numerical solution of transmission-line problems; *Green, Harry E.*; *T-MTT v13 n5 Sep 65* 676692
Waveguides, *cont.*
Waveguides, cont.
Waveguides, cont.
packaged microwave diodes in reduced-height waveguides; characterization; *Roe, James M.*; *T-MTT v18 n9 Sep 70* 638-642
perfectly conducting; improved theory of the point-matching method; *Bates, Richard H. T.*; *T-MTT v17 n6 Jun 69* 294-301
periodic structure consisting of equally spaced perfectly conducting rings surrounded by conducting pipe; hybrid mode propagation; *Garault, Yves*; *T-MTT v22 n2 Feb 74* 92-99 (1A14)
phased arrays; modified residue-calculus technique for solving a class of boundary value problems; *VanBlaricum, Glenn F., Jr.*; *T-MTT v17 n6 Jun 69* 310-319
point-matching method; application to waveguide problems; *Laura, P. A.*; *T-MTT v14 n5 May 66* 251
point-matching method for the numerical solution of boundary value problems for the Helmholtz equation; legitimacy of an assumption underlying the method; *Millar, R. F.*; *T-MTT v18 n6 Jun 70* 325-327
power-voltage, power current, voltage-current, impedances for elliptical waveguides for the $_eH_1$ at end of line but *Valenzuela, G. R., Correction*; *T-MTT v9 n1 Jan 61* 38
power-voltage, power-current, voltage-current, impedances for elliptical waveguides for the $_eH_1$ mode; *Valenzuela, Gaspar R.*; *T-MTT v8 n4 Jul 60* 431-435
pulse waveform degradation due to dispersion; *Elliott, Robert S.*; *T-MTT v5 n4 Oct 57* 254-258
pulse waveform degradation due to dispersion; *Knop, C. M.*; *T-MTT v18 n9 Sep 70* 663-665
pyramidally tapered, rectangular; derivation of the reflection coefficient; *Matsumaru, Katsu*; *T-MTT v7 n2 Apr 59* 192-196
radial-waveguide circulators using partial-height ferrite resonators; *Helszajn, Joseph*; *T-MTT v23 n3 Mar 75* 288-298 (1B08)
radiation fields; calculation by a principle of power balance; *Kaufman, Irving*; *T-MTT v18 n8 Aug 70* 418-425
random coupling of two waves traveling in opposite directions; average output power of incident wave; *Morrison, John A.*; *T-MTT v22 n2 Feb 74* 126-130 (1D06)
reciprocal ferrite phase shifters in rectangular waveguide; improving power handling ability; *Clavin, Alvin*; *T-MTT v6 n3 Jul 58* 334
rectangular; amplitude and phase modulators for 5 to 7 GHz; *Reggia, F.*; *T-MTT v14 n3 Mar 66* 154-157
rectangular, containing anisotropic slabs; problem of electromagnetic wave propagation; *Gardiol, Fred E.*; *T-MTT v18 n8 Aug 70* 461-467
rectangular guides with arbitrary internal and external media; propagation characteristics; *Andersen, Jo—a!rgen Bach*; *T-MTT v23 n7 Jul 75* 555-560 (1B03)
rectangular; tables of constants including waveguide wavelengths and other useful data vs. frequency; *T-MTT v4 n3 Jul 56* 3-12
rectangular; use of ferrite isolator operating at 1.3 GHz; *Heller, Gerald S.*; *T-MTT v6 n1 Jan 58* 97-100
rectangular; use of multiple branch directional coupler; *Reed, John*; *T-MTT v6 n4 Oct 58* 398-403
rectangular waveguide short circuit with cylindrical slugs; design; *Rzepecka, M.*; *T-MTT v14 n3 Mar 66* 161-162
return loss vs. frequency for quarter-wavelength short-circuited waveguide impedance standards; determination by formulas and a graph; *Beatty, R. W.*; *T-MTT v17 n5 May 69* 282-284
review of microwave work in Britain in 1960; *Karbowiak, A. E.*; *T-MTT v9 n5 Sep 61* 374-384
ring circuits, nonreciprocal; resonant properties; *Tischer, F. J.*; *T-MTT v6 n1 Jan 58* 66-71
ring circuits; wave propagation and resonance properties investigated; *Tischer, Friedrich J.*; *T-MTT v5 n1 Jan 57* 51-56
sets of eigenvectors for volumes of revolution; *Van Bladel, Jean G.*; *T-MTT v8 n3 May 60* 309319
shielded ring lines; dispersion relations and attenuation of fundamental dipolar mode; *Fray, Claude*; *T-MTT v27 n4 Apr 79* 334-340 (1D02)
shielded surface waves; analysis of modes; *Wait, James R.*; *T-MTT v15 n7 Jul 67* 410-414
square and rectangular waveguides with rounded corners; eigenfunctions, eigenvalues, and attenuation constants; application to deformed circular waveguides; *Lagasse, Paul*; *T-MTT v20 n5 May 72* 331-337 (1E02)
square waveguides with periodic septums; suppression of three of four possible modes; *Franklin, Sidney B.*; *T-MTT v15 n4 Apr 67* 240-249
standard; formulas for determining pressure carrying capacity; *Virgile, Lucien G.*; *T-MTT v5 n4 Oct 57* 247-250
suppression of higher-order modes in waveguides; use of finite-length metal septa; *Quine, John P.*; *T-MTT v16 n10 Oct 68* 879-880
surface waveguides and radiating slots; excitation by strip-circuit transmission lines; *Frost, Albert D.*; *T-MTT v4 n4 Oct 56* 218-222
symmetry analysis of uniform waveguides; summary of results; *McIsaac, Paul R.*; *T-MTT v23 n5 May 75* 421-429 (1B09)
symmetry analysis of uniform waveguides; theory; *McIsaac, Paul R.*; *T-MTT v23 n5 May 75* 429-433 (1C03)
TE modes in empty arbitrarily shaped guides; computer programs of approximate polynomial solutions; *Bulley, Ray M.*; *T-MTT v17 n8 Aug 69* 440-446
TE_{n0} modes of a ferrite slab loaded rectangular waveguide; *Bresler, Aaron D.*; *T-MTT v8 n1 Jan 60* 81-95
trapezoidal; transverse resonance solution; *Uptain, S. T.*; *T-MTT v14 n3 Mar 66* 158
trough; periodic modification of center fin; *Oliner, Arthur A.*; *T-MTT v7 n1 Jan 59* 134-142
trough type; determination of cutoff wavelength; *Packard, K. S.*; *T-MTT v6 n4 Oct 58* 455-456
two-dimensional boundary value problems; point-matching method for interior and exterior; *Bates, R. H. T.*; *T-MTT v15 n3 Mar 67* 185-187
two-mode rectangular waveguide, capable of supporting two modes with equal-phase velocities; *Elliott, Robert S.*; *T-MTT v16 n5 May 68* 282-286
unequal-arm finite-difference operators in the Positive–Definite Successive Overrelaxation (PDSOR) algorithm; *Beaubien, Marcel J.*; *T-MTT v18 n12 Dec 70* 1132-1149
uniform, nonsymmetric; solution of problem by point-matching method; *Fuller, J. A.*; *T-MTT v17 n2 Feb 69* 114-115
vacuum window for *X*-band; use in broadband high-power tubes; *Shaw, Herbert J.*; *T-MTT v6 n3 Jul 58* 326-330
waveguide-filled with moving medium; dispersion relations; *Yee, Hung Yuet*; *T-MTT v19 n4 Apr 71* 400-401 (2B08)
X-band waveguide frequency discriminator; development; *Mishra, S. R.*; *TMTT v18 n9 Sep 70* 660-661
X-band waveguide isolator for operation over a 45% bandwidth and at high power levels; design; *Duncan, B. J.*; *T-MTT v6 n4 Oct 58* 411-414
Yagi–Uda structures; current distribution, k–β diagram, cutoff frequencies; *Shen, Liang Chi*; *T-MTT v19 n6 Jun 71* 536-542 (1D12)
Waveguides; cf. Acoustic surface-wave waveguides; Acoustic waveguides; Beam waveguides; Circular waveguides; Coaxial waveguides; Conical waveguides; Corrugated waveguides; Curved waveguides; Dielectric-loaded waveguides; Dielectric waveguides; Earth–ionosphere waveguide; Electromagnetic surface-wave waveguides; Elliptical waveguides; Ferrite-loaded waveguides; Helical waveguides; Infrared waveguides; Lens waveguides; Loaded waveguides; Magnetic-material-loaded waveguides; Microstrip; Microstrip lines; Millimeter-wave waveguides; Multimode waveguides; Nonhomogeneously loaded waveguides; Nonuniform waveguides; Optical waveguides; Parallel-plate waveguides; Plasma-loaded waveguides; Ridge waveguides; Semiconductor-loaded waveguides; Slotline; Square waveguides; Strip waveguides; Striplines; Submillimeter-wave waveguides; Thin-film waveguides; Transmission lines; Underground electromagnetic communication
Wedges
electromagnetic fields in biological tissues; induced fields up to 100 times larger than average fields due to microscopic wedge-shaped boundaries; *Nilsson, B. Olle*; *T-MTT v27 n6 Jun 79* 616-618 (1E06)
Wire antennas
excitation of spin waves by wire arrays; comments; *LaRosa, R.*; *T-MTT v14 n10 Oct 66* 495-496
excitation of spin waves by wire arrays. *La Rosa, R., Correction*; *T-MTT v15 n2 Feb 67* 136
scattering by an arbitrary array of parallel wires; *Richmond, Jack H.*; *T-MTT v13 n4 Jul 65* 408-412
Wire communication
wire vs. wireless communication; *Clavier, A. G.*; *T-MTT v4 n1 Jan 56* 2-3
Wire communication cable shielding
braided coaxial cable in circular tunnel; braid transfer impedance dependence on propagation constant; *Wait, J. R.*; *T-MTT v25 n1 Jan 77* 72-74 (1F04)
braided-shield coaxial cables; electromagnetic theory of loosely braided cable; *Wait, James R.*; *T-MTT v24 n9 Sep 76* 547-553 (1A03)
cables, shielded balanced pair; capacitances and surface-charge distributions; *Nordgard, John D.*; *T-MTT v24 n2 Feb 76* 94-100 (1B14)
unbalanced shielded pair; capacitances and surface charge distributions; *Nordgard, John D.*; *T-MTT v25 n2 Feb 77* 137-140 (1E01)
Wire communication; cf. Underground electromagnetic communication
Wire scatterers
scattering by an arbitrary array of parallel wires; *Richmond, Jack H.*; *T-MTT v13 n4 Jul 65* 408-412
survey of the theory of wire grids; *Larsen, Tove*; *T-MTT v10 n3 May 62* 191-201
Wiring
microwave; characteristics and applications of microstrip; *Arditi, Maurice*; *T-MTT v3 n2 Mar 55* 31-56
wire grid parallel to a dielectric interface; equivalent shunt impedance; *Wait, James R.*; *T-MTT v5 n2 Apr 57* 99-102
World Health Organization
microwave exposure protection program; *Michaelson, Sol M.*; *T-MTT v22 n12 Dec 74* 1301-1302 (5B07)

Y

YAG
C-band ultrasonic delay line using mode conversion in YAG; *Smith, A. B.*; *T-MTT v18 n10 Oct 70* 733-734
Yagi–Uda structures
wave propagation; current distribution, k–β diagram, cutoff frequencies; *Shen, Liang Chi*; *T-MTT v19 n6 Jun 71* 536-542 (1D12)
Yagi–Uda arrays
array of parasitic linear elements; dispersion characteristics; *Nagelberg, Elliott R.*; *T-MTT v14 n8 Aug 66* 391-396
YIG
coaxial isolator application; operation at 2250 ± 50 MHz; *Freiberg, L.*; *T-MTT v6 n4 Oct 58* 454
magnetostatic surface-wave interaction with drifting carriers in semiconductor; *Kawasaki, Kiyohiro*; *T-MTT v22 n11 Nov 74* 918-924 (1A08)
magnetostatic surface-wave passband control by spacing metal plate apart from ferrite surface; *Kawasaki, Kiyohiro*; *T-MTT v22 n11 Nov 74* 924-929 (1A14)
magnetostatic surface waves propagating in direction of external dc magnet field; effect of surface metallization; *Kawasaki, Kiyohiro*; *T-MTT v22 n4 Apr 74* 391-394 (1C13)
magnetostatic-wave propagation in YIG slab having periodically corrugated surface. *Tsutsumi, Makoto, Correction*; *T-MTT v26 n5 May 78* 374 (1D14)
YIG devices
alignment method for YIG spheres; *Auer, Martin*; *T-MTT v10 n1 Jan 62* 88
delay lines; use in correlator operating at *L*-band; *Payer, Stephen F.*; *T-MTT v18 n8 Aug 70* 426-432
delay techniques using YIG; *Olson, Frank A.*; *T-MTT v13 n1 Jan 65* 63-69
device for aligning YIG crystals; *Sato, Y.*; *T-MTT v10 n6 Nov 62* 611-612
ferrite-varactor limiter combination operating at *X*-band, incorporating YIG's; *Carter, John L.*; *T-MTT v17 n4 Apr 69* 231-232
frequency-selective limiting; *Kotzebue, Kenneth L.*; *T-MTT v10 n6 Nov 62* 516-520
gadolinium substituted YIG as a ferrite isolator developed in conjunction with a traveling wave maser; *Morris, L. C.*; *T-MTT v12 n4 Jul 64* 421-428
gyromagnetic coupling limiter at *C*-band; *Clark, J.*; *T-MTT v10 n1 Jan 62* 84-85
L-band variable-delay-time YIG–YAG–YIG and YAG–YIG–YAG delay lines; *Smith, Alan B.*; *T-MTT v17 n11 Nov 69* 997-1001
low-dispersion delay line with electronically variable delay; *Moore, R. A.*; *T-MTT v19 n3 Mar 71* 334-337 (2C08)
low-temperature microwave limiter; *Sansalone, F. J.*; *T-MTT v9 n3 May 61* 272-273
magnetoelastic, two-port delay line using single crystal rod of YIG at frequency range 200 to 1000 MHz; *Skudera, William, Jr.*; *T-MTT v15 n2 Feb 67* 96-100
magnetostatic surface wave in two ferrite slabs of different magnetic saturation with weak coupling between them; *Tsutsumi, Makoto*; *T-MTT v24 n9 Sep 76* 591-597 (1D05)
measurement of the unloaded Q of a YIG resonator; *X*-band to 4 millimeters: *Douthett, D.*; *T-MTT v9 n3 May 61* 261262
method for rapidly orienting single crystal garnet spheres; *Willoughby, R. E.*; *T-MTT v12 n3 May 64* 385-386
nonreciprocal coupling with single-crystal ferrites; *Skeie, Halvor*; *T-MTT v12 n6 Nov 64* 587-594
orientation of YIG spheres for minimum temperature dependence; *Wrobel, E. J.*; *T-MTT v12 n5 Sep 64* 571
orthogonal coupling to YIG delay lines; *Wrobel, E. J.*; *T-MTT v13 n5 Sep 65* 707-708
parametric amplification of elastic waves in YIG; *Sparks, R. A.*; *T-MTT v13 n6 Nov 65* 879-880
parametric amplification of magnetoelastic waves in YIG rods at room temperature; *Lacklison, D. E.*; *T-MTT v16 n11 Nov 68* 951-952
polishing techniques for YIG spheres; *Pierce, Arvia L.*; *T-MTT v9 n3 May 61* 266-267
serrodyne based on phase velocity modulation of magnetostatic modes in YIG; *Webb, Denis C.*; *T-MTT v15 n7 Jul 67* 421-427
single-crystal YIG; phase shifter in *C*-, *X*-, and *Ku*-bands using segregated-mode resonance; *Hines, Marion E.*; *T-MTT v15 n3 Mar 67* 181-183
synthesis procedure for microwave bandpass with the Chebyshev response using orthogonal circuit resonators coupled by a ferrimagnetic resonator; *Comstock, R. Lawrence*; *T-MTT v12 n6 Nov 64* 599-607
technique for polishing YIG sphere; *Gianino, P. D.*; *TMTT v8 n5 Sep 60* 569
temperature stability of gyromagnetic couplers using a single crystal YIG sphere as a coupling element; *Clark, J.*; *T-MTT v11 n5 Sep 63* 447-449
UHF circulators; application of a substituted YIG to a broadband, four-port, UHF and *L*-band circulator; *Arams, Frank*; *T-MTT v9 n3 May 61* 212-216
ultra-bandwidth YIG pulse compression networks; performance; *Bongianni, W L.*; *T-MTT v16 n12 Dec 68* 1061-1064
X-band high power limiter; *Wantuch, E.*; *T-MTT v13 n6 Nov 65* 363-369
YIG-tuned parametric amplifier; *Kotzebue, Kenneth L.*; *T-MTT v13 n6 Nov 65* 773-776
YIG films
magnetostatic forward volume wave reflection characteristics of shallow grooved grating on YIG film; *Parekh, Jayantkumar P.*; *T-MTT v26 n12 Dec 78* 1039-1044 (2B09)
periodically corrugated film; magnetic wave interactions; *Seshadri, S. R.*; *T-MTT v27 n2 Feb 79* 199-204 (2A12)
YIG filters
bandpass filter for incorporation into microstrip circuits; narrow-band filter with finite-pole frequencies; *Röschmann, Peter*; *T-MTT v21 n1 Jan 73* 52-57 (2B05)
disks; control of resonant frequency by doublet tuning; *Karp, Arthur*; *T-MTT v15 n3 Mar 67* 193-195
iris-coupled YIG-tuned filters in the 12–40 GHz region; design and realization; *Fjerstad, Roger L.*; *T-MTT v18 n4 Apr 70* 205-212
magnetically tunable bandstop filters using YIG spheres; *Matthaei, George I.*; *T-MTT v13 n2 Mar 65* 203-212
magnetically tunable nonreciprocal band-pass filters using ferrimagnetic resonators; application as a limiter; *Patel, C. N.*; *T-MTT v10 n3 May 62* 152-161
measurement of the unloaded Q of a YIG resonator; *X*-band to 4 millimeters; *Douthett, D.*; *T-MTT v9 n3 May 61* 261-262
microstrip nonreciprocal tunable YIG filter; construction; *Greene, Carl K.*; *T-MTT v16 n7 Jul 68* 484-486
nonreciprocal coupling with single-crystal ferrites; *Skeie, Halvor*; *T-MTT v12 n6 Nov 64* 587-594
sidewall-coupled, stripline magnetically tunable filters using ferrimagnetic YIG resonators; *Carter, Philip S.*; *T-MTT v13 n3 May 65* 306-315
tunable bandpass microwave filter using ferrimagnetic resonance in a YIG crystal; *Carter, Philip S., Jr.*; *T-MTT v9 n3 May 61* 252-260
UHF bandpass filter; 500-to-1000 MHz magnetically tunable using two YIG-disk resonators; *Young, Leo*; *T-MTT v15 n2 Feb 67* 72-86
unloaded Q of a single crystal as a function of frequency; *Carter, P. S., Jr.*; *T-MTT v8 n5 Sep 60* 570
YIG filters used as envelope limiters; *Cumming, Raymond C.*; *T-MTT v13 n5 Sep 65* 616-621
YIG-tuned oscillators
Gunn oscillators; wideband phase locking and phase shifting using feedback control; *X*-band oscillators; *Rubin, David*; *T-MTT v20 n4 Apr 72* 286-289 (1E08)
IMPATT diode oscillators; lumped model; *Moore, I. J. H. S.*; *T-MTT v21 n6 Jun 73* 422-425 (2B11)
YIG tuners
microwave FET oscillators; designing broadband *X*-band oscillators; *Trew, Robert J.*; *T-MTT v27 n1 Jan 79* 9-14 (1A10)
resonator circuit with isolator property; application to magnetically tunable Gunn oscillator; *Okada, Fumiaki*; *T-MTT v26 n12 Dec 78* 1035-1039 (2B05)
YIG-tuned parametric amplifier; *Kotzebue, Kenneth L.*; *T-MTT v13 n6 Nov 65* 773-776
Yttrium-gadolinium garnets
manganese substitution; remanent phase shifters; *Hudson, Andrew S.*; *T-MTT v19 n1 Jan 71* 119-120 (3B08)
Yttrium iron garnet; cf. YIG

Z

***Z* transforms**
chirp-*Z* transform implementation for spectral analysis of spread-spectrum signals; *Nudd, Graham R.*; *T-MTT v24 n1 Jan 76* 54-56 (1D14)
paraxial ray propagation; analysis by *Z*-transform techniques; *Daly, James C.*; *T-MTT v16 n2 Feb 68* 95-98
Zeros; cf. Poles and zeros
Zolatarev–Achieser polynomials; cf. Achieser–Zolatarev polynomials
Zolotarev functions
branch-guide couplers with tight-coupling values; design method based on Zolotarev functions; *Levy, Ralph*; *TMTT v21 n2 Feb 73* 95-99