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- Impedance matching;** transformer sections; microwave networks of known length. *Steinbrecher, Donald H.*, 67 Jun 382
- Impedance matching;** transmission-line transformers; graphic design techniques; quarter-wave transformer comparison. *Hamid, M. A.*, 67 Sep 528
- Impedance matching;** Y-junction circulators; external tuning elements. *Anderson, Lawrence K.*, 67 Jan 42
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- Input resistance;** parametric amplifiers; multiple idlers. *Ernst, Robert L.*, 67 Jan 9
- Insulating films;** permittivity measurement; microwave integrated circuits. *Sobol, H.*, 67 Jun 377
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- Integrated circuits;** ceramic substrates; TEM transmission lines; inhomogeneous media; ground-plane effects; numerical solutions. *Brenner, Helmut E.*, 67 Aug 485
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- Integrated circuits;** microwaves; microstrip transmission lines; high-dielectric substrates; titanium dioxide. *Vendelin, George D.*, 67 Dec 750
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- Integrated tunnel-diode devices (ITDD);** beam-lead unencapsulated diodes; thin-film on sapphire physical configuration; characteristics and applications; negative-resistance reflection amplifiers; transmission-line mounting. *Okean, Herman C.*, 67 Nov 613
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- Interdigital filters;** transmission-line cascade; relationships between parameters for equivalence; admittance matrix. *Riblei, Henry J.*, 67 Mar 161

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L-band = 1 GHz

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Laplace transforms; Wiener-Hopf techniques; boundary-value problems; resonant frequency; open-ended cylindrical microwave cavities. *Wenger, Norman C.*, 67 Jun 334

Laplace's equation; finite-difference solutions; accuracy and computer time improvement; corners and edges; expansion in circular harmonics. *Duncan, James W.*, 67 Oct 575

Laplace's equation; finite-difference solution; partially dielectric-filled slotted coaxial lines. *Hatsuda, Takeshi*, 67 Nov 643

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Laser-beam focusing; acoustically modulated gas lenses. *Kerdiles, Jacques*, 67 May 321

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Least-weighted-square invariance transformation; perturbation methods; synthesis and analysis; transmission-line geometry theory; polygonal-circular example. *Seshagiri, N.*, 67 Sep 494

Lenses, randomly misaligned; beam waveguides; probability distribution for ray position. *Marcuse, D.*, 67 Mar 167

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Light beams, guided; beam waveguides; randomly misaligned lenses; statistical modes; amplitude attenuation. *Schwering, Felix K.*, 67 Apr 206

Light beams, guided; lens-type beam waveguide; excitation by aperture field of circular waveguide; launching efficiency of fundamental beam mode. *Schwering, Felix K.*, 67 Mar 191

Limiters, passive; ferroelectric materials; permittivity variation with field; L-band; temperature dependence problem. *Horton, John B.*, 67 Sep 517

Loaded Q; cavity resonators; approximate non-transcendental solution; relationship to input-output inductive coupling normalized susceptibility. *Kurzrok, Richard M.*, 67 Mar 192

Longitudinal waves; hot nonuniform plasma; electromagnetic wave theory. *Lonngren, K. E.*, 66 Oct 494

Lorentz transformation approach; waveguides filled with moving lossy medium. *Daly, Peter*, 67 Apr 274

LSI; cf. Integrated circuits

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Magic tees; broadband hybrid junctions; waveguide components; experimental models. *Bouthinon, M.*, 67 Jul 431

Magnetic circuit analysis and design; temperature stabilization; microwave ferrite devices; flux leakage and saturation phenomena; *BH* loop characteristics. *Stern, Ernest*, 67 May 295

Magnetic Kerr effect; semiconductors; microwave measurement techniques; dual-mode reflectometers. *Hauge, Peter S.*, 67 Jul 406

Magnetic materials; cf. Ferrites

Magnetic timing; UHF bandpass filters; strip transmission lines; YIG-disk resonators. *Young, Leo*, 67 Feb 72

Magnetodynamic modes; ferrite resonators; axial magnetization; microwave frequencies; eigenfrequency calculations. *Godmann, H.-D.*, 67 Aug 478

Magnetoelastic two-port delay lines; UHF; YIG; insertion-loss variation; delay-time variation. *Skudera, William, Jr.*, 67 Feb 96

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Metal windows; tantalum foil; parallel waveguides with very thin common wall; accurately calculable coupling ratio; directional couplers; theory and experiment, X-band. *Hall, Maurice B.*, 67 Nov 598

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Microwave antenna-array theory; radiation from infinite array; parallel-plate waveguides; thick walls; Wiener-Hopf techniques. *Lee, Shung-Wu*, 67 Jun 364

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Microwave circuits; cf. Limiters

Microwave components; cf. Circulators; also Directional couplers; Discriminators; Hybrid junctions; Power dividers; Transmission lines; and Waveguides

Microwave components; passive limiters; ferroelectric materials; permittivity variation with field; L-band; temperature dependence problem. *Horton, John B.*, 67 Sep 517

Microwave devices; cf. Directional couplers; also Microwave phase shifters; Phase shifters; and Resonators

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Microwave-filter design; digital elliptic filters; bandpass or bandstop characteristics; octave filter; experimental results. *Horton, M. C.*, 67 May 307

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Microwave filters; cavity resonators; loaded Q ; approximate non-transcendental solution; relationship to input-output inductive coupling normalized susceptibility. *Kurzrok, Richard M.*, 67 Mar 192

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Microwave filters; ferrimagnetic resonators; YIG disks; doublet tuning; resonant frequency. *Karp, Arthur*, 67 Mar 193

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- Microwave filters;** quarter-wave comb-line resonator stages; interstage coupling adjustment; bandpass response. *Kurzrok, Richard M.*, 67 Apr 262
- Microwave filters;** resonant irises; matching, insertion loss, and attenuation; maximally flat, low- Q , wideband characteristics. *Chen, Tsung-Shan*, 67 Apr 260
- Microwave filters, high Q ;** p - i - n diodes; negative resistance; IMPATT (impact avalanche transit time) operation. *Dawson, Robert W.*, 67 Apr 272
- Microwave frequencies;** parametric amplifier design and performance; varactor diodes. *Aitchison, Colin S.*, 67 Jan 22
- Microwave frequencies;** phase shifters, nonreciprocal; rectangular waveguides; remanence (latching) type; ferrites and garnet; theory and experiment. *Ince, William J.*, 67 Feb 87
- Microwave frequencies;** quasioptical ring resonators; resonator Q ; reflection-coefficient measurement; resonant-frequency splitting. *Schul-ten, G.*, 67 Jan 54
- Microwave frequencies;** transistor characterization; three-port scattering parameters; measurement techniques; comparison with two-port admittance parameters. *Anderson, A. P.*, 67 Apr 263
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- Microwave high-power attenuators, adjustable;** laboratory equipment; S-band. *True, Robert M.*, 67 Oct 584
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- Microwave integrated circuits;** lumped elements; performance capabilities; transistor amplifier design. *Daly, Daniel A.*, 67 Dec 713
- Microwave integrated circuits;** microstrip transmission lines; high-dielectric substrates; titanium dioxide. *Vendelin, George D.*, 67 Dec 750
- Microwave integrated circuits;** permittivity measurement; insulating films. *Sobol, H.*, 67 Jun 337
- Microwave measurement;** comparison reflectometers; performance and applications; increased sensitivity; computer processing of data. *Hollway, D. L.*, 67 Apr 250
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- Microwave measurement;** directional couplers; VSWR. *Gewartowski, J. W.*, 67 Feb 134
- Microwave measurement techniques;** dual-mode reflectometers; magnetic Kerr effect; semiconductors. *Hauge, Peter S.*, 67 Jul 406
- Microwave mixers;** Schottky diodes; noise figure; conversion loss theory, design graphs, and experiment. *Barber, Mark R.*, 67 Nov 629
- Microwave networks of known length;** impedance matching. *Steinbrecher, Donald H.*, 67 Jun 382
- Microwave open transmission lines;** guided beams; concave parallel reflectors. *Nakahara, Tsuneo*, 67 Feb 66
- Microwave phase shifters, tunable;** single crystal YIG devices; segregated-mode resonance. *Hines, Marion E.*, 67 Mar 181
- Microwave propagation;** cf. Waveguide
- Microwave properties;** aluminum-foil seams; adhesive bonds; insertion effects; surface resistance and reactance; resonant cavity effects. *Rueggeberg, Werner*, 67 Feb 117
- Microwave refractometry;** instrumentation; dielectric properties of liquids and gases; flow-through cavity resonators; resonant frequency. *Wenger, Norman C.*, 67 Jun 334
- Microwave resonators;** relative humidity and temperature dependence; nomographs; frequency-shift computation. *Smith, David M.*, 67 Aug 480
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- Microwave time-delay media;** spin waves; YIG; excitation by wire arrays. *LaRosa, R.*, 66 Oct 495
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- Millimeter-wave devices;** circulators; Y-junction; ferrite devices; construction and characteristics. *Liebe, H. J.*, 67 Mar 190
- Millimeter-wave diodes;** semiconductor point-contact formed junctions; harmonic-power generation. *Dickens, Lawrence E.*, 67 Jan 32
- Millimeter-wave propagation;** rectangular waveguide; skew uniaxial dielectric medium; Rayleigh-Ritz variational method; traveling-wave maser design application. *Davies, J. B.*, 67 Jun 372
- Millimeter-wave region, short;** bolometers; oversized waveguide mount with focal reflector; VSWR characteristics. *Kashiwagi, Hiroshi*, 67 Mar 180
- Millimeter waves;** frequency measurement; wideband wavemeters; cavity resonators. *Schulien, G.*, 67 Jul 430
- Millimeter waves (140 GHz);** circulator action; waveguide junctions; semiconductor loading; indium antimonide. *Brodwin, M.*, 67 Sep 530
- Mixers, microwave;** Schottky diodes; noise figure; conversion loss; theory, design graphs, and experiment. *Barber, Mark R.*, 67 Nov 629
- Mixing, harmonic;** superheterodyne receivers; submillimeter waves. *Strauch, R. G.*, 65 Nov 873
- Modal analysis;** waveguide discontinuities and junctions; numerical methods; electromagnetic wave theory. *Wexler, Alvin*, 67 Sep 508
- Mode correspondence and coupling;** circular and square waveguides. *Tang, Charles C. H.*, 67 May 314
- Mode-matching principle;** step-capacitance determination; coaxial lines; computation methods. *Somlo, P. I.*, 67 Jan 48
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- Mode propagation;** waveguide modes; electromagnetic field plotting; power-flux maxima. *Ottavi, C. M.*, 67 Jan 59
- Mode suppression;** square waveguide; periodically-spaced septums; scattering-matrix analysis; attenuation less than rectangular waveguide. *Franklin, Sidney B.*, 67 Apr 240
- Modes in waveguide and cavities;** cf. Dual-mode
- Modes of higher order;** eigenvalues; coaxial rectangular waveguides; symmetrical structures. *Gruner, L.*, 67 Aug 483
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- Modulators, diode;** filters; waveguides and transmission lines; switching-transient suppression. *Garver, Robert V.*, 67 Jul 390
- Moving dispersive media;** waveguides of composite structure; modes; dispersion relations; relativistic considerations; perturbation theory. *Gruenberg, Harry*, 67 Nov 636
- Moving lossy medium in waveguide;** arbitrary cross section; inhomogeneous field equations solved; transmission-line formulation. *Fujioka, H.*, 67 Apr 265
- Moving media, bounded;** Green's dyadic; electromagnetic wave propagation; radiation; antennas. *Seto, Y. Jo*, 67 Aug 455
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- Multimode waveguides;** mode correspondence and coupling; circular and square waveguides. *Tang, Charles C. H.*, 67 May 314
- Multiplexing networks;** microwave duplexers; design tables; digital elliptic filters. *Wenzel, Robert J.*, 67 Dec 669
- Mumford's design, bandwidth curves for;** maximally flat bandpass filters. *Schiffman, Bernard M.*, 67 Oct 589

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- Narrow-band filters;** coaxial transmission lines; rejection-frequency calculation; boundary-value problems; calculus of variations; Rayleigh-Ritz method. *Varon, Dan*, 67 Dec 680
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- Negative resistance;** p - i - n diodes; IMPATT (impact avalanche transit time) operation; microwave filters, high Q . *Dawson, Robert W.*, 67 Apr 272
- Negative-resistance characteristic;** tunnel-diode circuits; low-level detectors; circuit analysis and design; analytic expression for static characteristic; sensitivity maximization. *Gabriel, William F.*, 67 Oct 538
- Negative-resistance circuits;** comparison of immittance vs. reflection coefficient representations; Nyquist-type stability criterion; Smith-chart techniques. *Bandler, J. W.*, 67 Sep 532
- Negative-resistance reflection amplifiers;** microwave integrated circuits; thin-film on sapphire physical configuration; design and performance; transmission-line mounting. *Okean, Herman C.*, 67 Nov 613
- Network synthesis;** directional couplers; nonuniform transmission lines; equivalence principle; symmetry. *Sharpe, Charles B.*, 67 Jul 398
- Networks;** cf. Distributed parameter networks
- Noise figure;** avalanche diodes; parametric amplifiers; effect of cooling. *Baranowski, Joseph J.*, 67 Dec 754
- Noise figure;** conversion loss; microwave mixers; Schottky diodes; theory, design graphs, and experiment. *Barber, Mark R.*, 67 Nov 629
- Noise figure;** parametric amplifiers; unilateral operation. *Brenner, Helmut E.*, 67 May 301
- Noise performance;** bandwidth-sensitivity tradeoff; tunnel-diode circuits; low-level detectors; microwaves. *Gabriel, William F.*, 67 Oct 538
- Noise performance;** parametric amplifiers; multiple idlers. *Ernst, Robert L.*, 67 Jan 9
- Nomographs;** frequency-shift computation; microwave resonators; relative-humidity and temperature dependence. *Smith, David M.*, 67 Aug 480
- Nonlinear analysis;** tunnel-diode frequency converters; analog simulation. *Tang, Charles C. H.*, 67 Nov 604
- Nonreciprocal devices;** cf. Circulators
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Nonreciprocal microwave devices; solid-state plasma waveguide; wave-propagation theory; Faraday effect; helicon waves. *Kuno, Hiromu J.*, 67 Dec 661

Nonreciprocal two-ports; UHF; scattering-parameter measurement methods; reflection coefficients. *Hoffman, G. R.*, 67 Feb 131

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Nonuniform transmission lines; distributed coupling; all-pass networks; directional couplers. *Yamamoto, Sadahiko*, 67 Apr 220

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Numerical methods; validity; point-matching method; two-dimensional boundary-value problems; scattering problems; waveguide problems; symmetry effects. *Bates, R. H. T.*, 67 Mar 185

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Numerical solution; Laplace's equation; inhomogeneous media; TEM transmission lines; integrated circuits; ground-plane effects. *Brenner, Helmut E.*, 67 Aug 485

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Wave-propagation theory; rectangular waveguides; off-center dielectric loading; TE-modes; cutoff frequencies; numerical results graphed; microwave filter applications. *Eberhardt, Nikolai*, 67 May 282

Wave-propagation theory; simplification of Maxwell's equations; gyrotropic media. *Vasile, Carmine F.*, 67 May 324

Wave-propagation theory; surface waves; parallel impedance boundaries; waveguide modes; models. *Wait, James R.*, 67 Jul 410

Wave-propagation theory; waveguide, solid-state plasma waveguide; Faraday effect. *Kuno, Hiromu J.*, 67 Dec 661

Waveguide; coupling to semiconductor slow waves; construction and operation; indium antimonide. *Larabee, R. D.*, 67 Jun 382

Waveguide absorbers; resistive sheets; normalized design curves; infinite-array approximation. *Witt, Howard R.*, 67 Oct 590

Waveguide bridge network; microwave measurement; complex reflection coefficient; analysis and calibration. *Champlin, Keith S.*, 67 Aug 477

Waveguide components; cf. Attenuators; also Circulators; and Directional couplers

Waveguide components; dual-mode couplers; design and characteristics. *Johnson, R. C.*, 67 Nov 651

Waveguide components; hybrid junctions, broadband; magic tees; experimental models. *Bouthinon, M.*, 67 Jul 431

Waveguide coupling; tunnel-diode oscillators; integral mounting; semi-circular loop antennas. *Yamashita, Eikichi*, 67 Jul 415

Waveguide discontinuities; inductive irises; rectangular waveguides; complete solution for TE₁₀ incidence; higher-order mode coupling; reflection and transmission coefficients. *Palais, Joseph C.*, 67 Mar 156

Waveguide discontinuities and junctions; numerical methods; modal analysis; boundary matching; electromagnetic wave theory. *Wexler, Alvin*, 67 Sep 508

Waveguide discontinuities and junctions of arbitrary cross section; rectangular waveguides; cutoff frequency determination; numerical solutions; computer methods. *Mulwyk, Cornelis A.*, 67 Aug 450

Waveguide filled with moving lossy medium; arbitrary cross section; transmission-line formulation; inhomogeneous field-equation solution. *Fujioka, H.*, 67 Apr 265

Waveguide filters; transmission-line filters; reflecting obstacles at half-wavelength spacing; high-power capabilities. *Reed, J.*, 67 Feb 134

Waveguide junction circulators; ferrite devices; broadband 4-port E-plane design; experimental result on several materials; YIG; garnet. *Longley, S. R.*, 67 Jun 378

Waveguide junctions; semiconductor loading; circulator action; indium antimonide; millimeter waves (140 GHz). *Brodwin, M.*, 67 Sep 530

Waveguide modes; cylindrical waveguides; inhomogeneous dielectric. *Ah Sam, E.*, 67 Jan 60

Waveguide modes; electromagnetic field plotting; power-flux maxima. *Ottavi, C. M.*, 67 Jan 59

Waveguide modes; surface waves; parallel impedance boundaries; models. *Wait, James R.*, 67 Jul 410

Waveguide networks; filters; switching-transient suppression; diode modulators and demodulators. *Garver, Robert V.*, 67 Jul 390

Waveguide problems; two-dimensional boundary-value problems; numerical methods; validity; point-matching method; symmetry effects. *Bates, R. H. T.*, 67 Mar 185

Waveguide, solid-state plasma; wave-propagation theory; Faraday effect; helicon waves. *Kuno, Hiromu J.*, 67 Dec 661

Waveguide transducers, cylindrical-to-rectangular; homogeneous (constant wavelength) conditions; broadband quarterwave transformer techniques. *Bathker, D. A.*, 67 Feb 128

Waveguides; cf. Microwave devices; also Rectangular coaxial waveguides; and Rectangular waveguides

Waveguides; beam-wave transmission; concave parallel reflectors. *Nakahara, Tsuneo*, 67 Feb 66

Waveguides; cross polarization; polarizers and rotators; quarter-wave plates. *Breithaupt, R. W.*, 67 Jan 55

Waveguides; direct-coupled cavity filters; design techniques; insertion loss. *Levy, Ralph*, 67 Jun 340

Waveguides; microwave filters; resonant irises; matching, insertion loss, and attenuation; maximally flat, low-Q, wideband characteristics. *Chen, Tsung-Shan*, 67 Apr 260

Waveguides; symposium announcement. *G-MTT*, 67 Apr 277

Waveguides; symposium report. *G-MTT*, 67 Dec 658

- Waveguides, beam;** propagation of light rays; randomly misaligned lenses; probability distribution for ray position. *Marcuse, D.*, 67 Mar 167
- Waveguides, beam;** propagation of light rays; randomly misaligned lenses; statistical modes; amplitude attenuation. *Schwering, Felix K.*, 67 Apr 206
- Waveguides, beam;** quartz lenses; long-distance transmission loss; experimental results. *Christian, J. Robert*, 67 Apr 216
- Waveguides, bidirectional;** lossless passive waveguides; power-mode theorems; pseudo-energy. *Chorney, P.*, 67 Jan 58
- Waveguides, channel;** propagation of guided waves; cutoff characteristics; TE_{10} and TE_{01} modes. *Muilwyk, Cornelis A.*, 67 Mar 199
- Waveguides, dielectric-filled;** transmission lines; microwave transition sections; microstrip transformers. *Hoover, John C.*, 67 Apr 273
- Waveguides filled with moving lossy medium;** electromagnetic wave theory; Lorentz transformation approach. *Daly, Peter*, 67 Apr 274
- Waveguides, lens-type beam;** excitation by aperture field of circular waveguide; launching efficiency of fundamental beam mode. *Schwering, Felix K.*, 67 Mar 191
- Waveguides, loaded rectangular;** parallel longitudinal sheets of finite conductivity; propagation constants; digital-computer results; comparison with array of sheets in free space. *Witt, Howard R.*, 67 Apr 232
- Waveguides, multimode;** mode correspondence and coupling; circular and square waveguides. *Tang, Charles C. H.*, 67 May 314
- Waveguides of composite structure;** moving dispersive media; modes; dispersion relations; relativistic considerations; perturbation theory. *Gruenberg, Harry*, 67 Nov 636
- Waveguides, open;** cf. Guided waves; also Striplines
- Waveguides, overmoded rectangular;** mode measurement theory; phase-sensitive detector. *Levinson, David S.*, 66 Jul 310
- Waveguides, parallel-plate model;** transmission-line analysis; integrated-circuit conductors; propagation modes; delay characteristics. *Guckel, Henry*, 67 Aug 468
- Waveguides, rectangular coaxial;** modes of higher order; eigenvalues; symmetrical structures. *Gruner, L.*, 67 Aug 483
- Waveguides, square;** attenuation less than rectangular waveguide; mode suppression; periodically-spaced septums; scattering matrix analysis. *Franklin, Sidney B.*, 67 Apr 240
- Wavemeters, wideband;** frequency measurement; cavity resonators; millimeter waves. *Schulten, G.*, 67 Jul 430
- Wiener-Hopf techniques;** electromagnetic wave theory; radiation from infinite array; parallel-plate waveguides; thick walls. *Lee, Shung-Wu*, 67 Jun 364
- Wiener-Hopf techniques;** Laplace transforms; boundary-value problems; resonant frequency; open-ended cylindrical microwave cavities. *Wenger, Norman C.*, 67 Jun 334

X

- X-band;** high power; pulse compression; sequential gas discharges; plasma. *Goldie, Harry*, 67 Dec 722

Y

- Y-junction circulators;** impedance matching; bandwidth characteristics; external tuning elements. *Anderson, Lawrence K.*, 67 Jan 42
- YIG;** magnetoelastic two-port delay lines; UHF; insertion loss variation; delay-time variation. *Skudera, William Jr.*, 67 Feb 96
- YIG;** spin waves; excitation by wire arrays. *LaRosa, R.*, 66 Oct 495
- YIG;** waveguide junction circulators; broadband 4-port E-plane design; experimental result on several materials. *Longley, S. R.*, 67 Jun 378
- YIG devices;** serrodyne; frequency translation; microwave signals; noise suppression. *Webb, Denis C.*, 67 Jul 421
- YIG devices, single crystal;** microwave phase shifters, tunable; segregated-mode resonance. *Hines, Marion E.*, 67 Mar 181
- YIG disk resonators;** magnetic timing; UHF bandpass filters; strip transmission lines. *Young, Leo*, 67 Feb 72