

1976 Index

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This index covers all items—papers, correspondence, reviews, etc.—that appeared in this periodical during 1977, and items from prior years that were commented upon or corrected in 1977. The index is divided into an Author Index and a Subject Index, both arranged alphabetically.

The *Author Index* contains the primary entry for each item; this entry is listed under the name of the first author and includes coauthor names, title, location of the item, and notice of corrections and comments if any. Cross-references are given from each coauthor name to the name of the corresponding first author. The location of the item is specified by the journal name (abbreviated), year, month, inclusive pages, and microfiche code. [The microfiche code, given in parentheses following the inclusive pages, consists of four characters to be interpreted as follows: the first character identifies the microfiche number within the set of fiches for the issue; the second character identifies the row in which the first frame of the particular item is located, and the last two characters designate the position of that frame within the row.]

The *Subject Index* contains several entries for each item, each consisting of a subject heading, modifying phrase(s), first author's name, and location of the item. For information on coauthors, title, comments and corrections if any, etc., it is necessary to refer to the Author Index. Some generic subject headings are used in this index in addition to the usual technical headings, e.g., *Books* (books reviewed in this periodical), *Bibliographies* (both papers that are bibliographies and any other papers which contain more than 50 references), *Conferences* (technical meetings a substantial number of whose abstracts or papers have appeared in this periodical), and *Special Issues* (issues of this periodical devoted primarily to a specific subject). The Subject Index includes subject cross-references as required by the subject matter.

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- inhomogeneous guides; perturbation method for analyzing guides whose index distributions depart from well-known profiles. *Hashimoto, Masahiro, T-MTT 76 Sep 559-566 (1B01)*
- integrated circuits, microwave and millimeter-wave. *Knox, Robert M., T-MTT 76 Nov 806-814 (2C11)*
- inverted strip dielectric guides for IC components in 75-80 GHz range; directional couplers and ring resonators. *Rudokas, R., T-MTT 76 Dec 978-981 (2A07)*
- measurement of guide wavelength in rectangular guides at microwave and millimeter-wave frequencies. *Jacobs, Harold, T-MTT 76 Nov 815-820 (2D06)*
- millimeter-wave IC filter; tunable bandpass ring filter. *Kaurs, Allan R., T-MTT 76 Nov 875-876 (3B09)*
- millimeter-wave image line IC; ferrite devices. *Nanda, Ved P., T-MTT 76 Nov 876-879 (3B10)*
- millimeter-wave image lines using casting resins; fabrication and properties. *Solbach, Klaus, T-MTT 76 Nov 879-881 (3B13)*
- millimeter-wave insular line integrated circuits; V-band radio receiver and transmitter system. *Kietzer, James E., T-MTT 76 Nov 797-803 (2C02)*
- millimeter-wave integrated circuits; inverted strip dielectric guide. *Itoh, Tatsuo, T-MTT 76 Nov 821-827 (2D12)*
- planar guide for ground transportation obstacle detection; surface-wave scattering by dielectric obstacles on guide. *Mahmoud, Samir F., T-MTT 75 Feb 193-198 (1A11) ♦*
- Dielectric waveguides; cf. Optical waveguides**
- Digital modulation; cf. FSK; PSK**
- Digital repeaters; cf. Repeaters**
- Diode phase shifters**
- p-i-n diode parameters; effect on performance of reflection-type phase shifters. *Wahi, Pradeep, T-MTT 76 Sep 619-621 (1F05)*
- Diplexers**
- millimeter-wave; 80-GHz band low-loss ring-type channel diplexer using semicircular electric mode. *Nakajima, Nobuo, T-MTT 76 Nov 831-836 (2E08)*
- Directional couplers; cf. Hybrid junctions; Microstrip directional couplers; Millimeter-wave directional couplers**
- Directional filters**
- millimeter-wave directional filter cavities. *Moore, Brad D., T-MTT 76 Nov 843-847 (2F06)*
- Discontinuities; cf. Transmission-line discontinuities; Waveguide discontinuities**
- Dispersive media; cf. Electromagnetic propagation, dispersive media**
- Dissipative media; cf. Absorbing media**
- Distortion; cf. Amplifier distortion; Intermodulation distortion**
- Distributed filters**
- bandstop filters approximating elliptic-function response; uses noncommensurate lines. *Malherbe, Johannes A. G., T-MTT 76 May 242-248 (1A08)*
- Distributed filters; cf. Microwave filters; Millimeter-wave filters**
- Distributed networks, linear**
- impedance transformation between two arbitrary impedances using single transmission-line matching section. *Milligan, T. A., T-MTT 76 Mar 159 (1C05)*
- Distributed networks**
- minimax network optimization algorithm not requiring derivatives. *Madsen, Kaj, T-MTT 75 Oct 803-809 (1B11) ♦*
- nonlinearly loaded networks; scattering variables analysis based on Volterra series. *Weiner, Donald D., T-MTT 76 Jul 422-433 (1C04)*
- rotating coupler for VHF range; transformer coupling between two windings. *Allen, C. W., T-MTT 76 May 267-269 (1C05)*
- Distributed networks; cf. Circulators; Directional couplers; Distributed filters; Microwave circuits; Transmission lines**
- Distributed networks, linear**
- cascade commensurate-line networks; numerical calculation of characteristic impedance. *Komiak, James, T-MTT 76 Apr 212-215 (1D08)*
- commensurate transmission-line networks; integral relationships. *Cristal, Edward G., T-MTT 76 Jul 463-468 (2A08)*
- matching network optimally matched to conductance shunted by stub. *Riblet, H. J., T-MTT 76 Jan 65-66 (1E11)*
- Distributed networks, nonlinear**
- Schottky-contact microstrip; slow-wave propagation. *Jäger, Dieter, T-MTT 76 Sep 566-573 (1B08)*
- Doppler radar**
- BARITT diodes as self-oscillating Doppler detectors. *East, Jack R., T-MTT 76 Dec 943-948 (1D03)*
- Electromagnetic propagation, absorbing media**
- microstrip and coaxial cable; time-domain measurement of loss and dispersion in 0.4-10 GHz range. *Luce, D. A., T-MTT 76 Jan 50-54 (1D10)*
- Electromagnetic propagation, absorbing media; cf. Electromagnetic radiation effects**
- Electromagnetic propagation, anisotropic media**
- bianisotropic media; reciprocity theorem for region with inhomogeneous bianisotropic media and surface impedance. *Kobayashi, Masanori, T-MTT 76 Feb 114-116 (1D06)*
- microstrip on sapphire substrates; quasi-static characteristics. *Owens, Roger P., T-MTT 76 Aug 499-505 (1A11)*
- vector variational formulation. *Konrad, A., T-MTT 76 Sep 553-559 (1A09)*
- Electromagnetic propagation, anisotropic media; cf. Ferrite devices; Ferrite-loaded waveguides; Magnetostatic surface waves; Plasma-loaded waveguides**
- Electromagnetic propagation, dispersive media**
- microstrip and coaxial cable; time-domain measurement of loss and dispersion in 0.4-10 GHz range. *Luce, D. A., T-MTT 76 Jan 50-54 (1D10)*
- microstrip on sapphire substrates; dispersion measurements on 10-100Ω lines covering 2-18 GHz range. *Edwards, Terence C., T-MTT 76 Aug 506-513 (1B04)*
- Electromagnetic propagation, magnetic media; cf. Ferrite-loaded waveguides**
- Electromagnetic propagation, moving media**
- bianisotropic media; reciprocity theorem for region with inhomogeneous bianisotropic media and surface impedance. *Kobayashi, Masanori, T-MTT 76 Feb 114-116 (1D06)*
- Electromagnetic propagation, nonhomogeneous media**
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- coupled transmission lines; terminal characteristics of asymmetric coupled lines in nonhomogeneous medium. *Tripathi, Vijai K., T-MTT 75 Sep 734-739 (1B02) ♦*
- dielectric waveguides whose index distributions depart from well-known profiles; perturbation method solution. *Hashimoto, Masahiro, T-MTT 76 Sep 559-566 (1B01)*
- microstrip; Green's function for multilayer microstrip with rectangular side walls. *Kobayashi, Masanori, T-MTT 76 Sep 626-628 (1F12)*
- Electromagnetic propagation, nonhomogeneous media; cf. Electromagnetic radiation effects; Nonhomogeneously loaded waveguides; Optical propagation, nonhomogeneous media**
- Electromagnetic propagation, nonlinear media; cf. Distributed networks**
- Electromagnetic propagation, nonreciprocal media; cf. Isolators**
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- Electromagnetic propagation, semiconducting media; cf. Semiconductor-loaded waveguides**
- Electromagnetic radiation effects, biological**
- brain enzymes; *in vivo* inactivation using microwave heating. *Lenox, Robert H., T-MTT 76 Jan 58-61 (1E04)*
- dielectric materials used in laboratory animal restrainers; microwave scattering properties. *Lin, James C., T-MTT 76 Apr 219-223 (1E01)*
- dielectric slab centered in rectangular waveguide; field distribution along slab, transmission and reflection coefficients, power absorbed. *Liu, L. M., T-MTT 76 Apr 216-219 (1D12)*
- heart rate effects; 960-MHz CW irradiation of isolated turtle hearts. *Tinney, Charles E., T-MTT 76 Jan 18-24 (1B06)*
- induced fields inside finite bodies; experimental and theoretical studies. *Guru, Bhag Singh, T-MTT 76 Jul 433-440 (1D01)*
- layered-tissue media; effects of surroundings on power absorption. *Bernardi, Paolo, T-MTT 76 Sep 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 76 Aug 514-521 (1B12)*
- millimeter-wave measurements for fat and muscle tissues; 40-90 GHz complex permittivity and penetration depth. *Edrich, Jochen, T-MTT 76 May 273-275 (1C11)*
- samples placed in stripline; power absorbed by rectangular-shaped conductive dielectric samples. *Joines, W. T., T-MTT 76 Aug 536-538 (1D06)*
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- Electromagnetic scattering**
- biological radiation effects experiments; scattering properties of dielectric materials used in laboratory animal restrainers. *Lin, James C., T-MTT 76 Apr 219-223 (1E01)*
- 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 76 Aug 514-521 (1B12)*
- Electromagnetic scattering; cf. Transmission-line discontinuities; Waveguide discontinuities**
- Electromagnetic shielding**
- braided-shield coaxial cables; electromagnetic theory of loosely braided cable. *Wait, James R., T-MTT 76 Sep 547-553 (1A03)*
- cables, shielded balanced pair; capacitances and surface-charge distributions. *Nordgard, John D., T-MTT 76 Feb 94-100 (1B14)*
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- Electromagnetic surface-wave waveguides**
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- Electrostatics**
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- distributed bandstop filters approximating elliptic-function response; uses noncommensurate lines. *Malherbe, Johannes A. G., T-MTT 76 May 242-248 (1A08)*
- Enzymes; cf. Biochemistry**
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Equiripple filters

single transmission zeros at real or imaginary frequencies. *Levy, Ralph, T-MTT 76 Apr 172-181 (1A10)*

Equiripple filters; cf. Chebyshev filters; Elliptic filters

F

Fabrication; cf. Semiconductor device fabrication

Fabry-Perot resonators

beam-wave theory; accuracy. *Cullen, A. L., T-MTT 76 Aug 534-535 (1D04)*
high-order azimuthal modes excited at 10 GHz. *Erickson, Clifford W., T-MTT 76 Oct 673-674 (1D03)*

millimeter-wave measurement of ferrites using open resonator; 60-90 GHz range. *Song Lint, B. Chan, T-MTT 76 Nov 883-886 (3C03)*

Ferrites

millimeter-wave measurements using open resonator; 60-90 GHz range. *Song Lint, B. Chan, T-MTT 76 Nov 883-886 (3C03)*

Ferrite circulators

millimeter-wave waveguide circulator for 27-34 GHz and 31-38 GHz bands. *Piotrowski, W. S., T-MTT 76 Nov 863-866 (3A11)*

nonlinearities and intermodulation characteristics of 3-port distributed circulators. *Wu, You-Sun, T-MTT 76 Feb 69-77 (1A03)*

waveguide-junction circulators using coupled open dielectric resonators; suppression of higher order modes. *Tan, F. C. F., T-MTT 76 May 271-273 (1C09)*

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

Ferrite devices

microwave devices; latching properties. *Mueller, R. S., T-MTT 76 Aug 522-525 (1C06)*

millimeter-wave dielectric image line IC. *Nanda, Ved P., T-MTT 76 Nov 876-879 (3B10)*

rotating coupler for VHF range; transformer coupling between two windings. *Allen, C. W., T-MTT 76 May 267-269 (1C05)*

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

Ferrite isolators

edge-mode isolator for VHF band. *Courtois, Louis, T-MTT 76 Mar 129-135 (1A03)*

millimeter-wave dielectric image line IC. *Nanda, Ved P., T-MTT 76 Nov 876-879 (3B10)*

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Ferrite-loaded waveguides

anisotropic media; vector variational formulation. *Konrad, A., T-MTT 76 Sep 553-559 (1A09)*

bidirectionality conditions for guides containing gyrotropic media. *McIsaac, Paul R., T-MTT 76 Apr 223-226 (1E05)*

Ferrite phase shifters

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latching properties. *Mueller, R. S., T-MTT 76 Aug 522-525 (1C06)*

FETs; cf. Microwave FETs

FET amplifiers; cf. Microwave FET amplifiers

Fiber optics; cf. Optical fibers

Filters; cf. Acoustic surface-wave filters; Bandpass filters; Bandstop filters; Channel bank filters; Directional filters; Distributed filters; Equiripple filters; Impedance matching; Linear-phase filters; Microwave filters; Millimeter-wave filters; Resonator filters

Finite-element methods
exterior region satisfying Laplace equation. *Csendes, Z. J., T-MTT 76 Jul 468-473 (2A13)*

Fluorescent lamps; cf. Gas-discharge devices**FM amplifiers**

microwave power amplifier using phased-locked voltage-tuned oscillator. *Hines, Marion E., T-MTT 76 Jul 393-404 (1A03)*

FM noise; cf. Oscillator noise

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

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

Frequency-shift keying; cf. FSK

Frequency stability; cf. Oscillator frequency stability

FSK

abbr. of Frequency-shift keying

FSK communication

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

G

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

Gases

microwave electric susceptibility measurement using waveguide interferometer. *Srivastava, G. P., T-MTT 76 Jan 56-57 (1E02)*

Gas-discharge devices

fluorescent lamps; noise-temperature behavior of F8T5 lamps. *Guentzler, Ronald E., T-MTT 76 Aug 538-539 (1D08)*

Germanium devices

avalanche diode oscillator for X-band in MIC. *Nanbu, Shutaro, T-MTT 76 Mar 151-153 (1B11)*

Green's function; cf. Cavity resonators; Microstrip

Guided ground transportation

obstacle detection using dielectric planar waveguide; surface-wave scattering by dielectric obstacles on guide. *Mahmoud, Samir F., T-MTT 75 Feb 193-198 (1A11) ♦*

Gunn devices

millimeter-wave diodes; construction, performance, and application. *Kramer, N. B., T-MTT 76 Nov 685-693 (1A05)*

multiplexing and demultiplexing in Gb/s range. *Mause, Klaus, T-MTT 76 Dec 926-929 (1B14)*

Gunn devices; cf. Transferred-electron devices

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Gunn device amplifiers

millimeter-wave; InP amplifiers for 26-40 GHz range. *Hamilton, Robert J., Jr., T-MTT 76 Nov 775-780 (2A08)*

Gunn device oscillators

dielectric measurement method based on oscillator's sensitivity to load; requires only dc voltage and current measurements. *Partain, Larry D., T-MTT 76 Oct 656-660 (1B14)*

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millimeter-wave; InP oscillators for 26-40 GHz and 50-75 GHz ranges. *Hamilton, Robert J., Jr., T-MTT 76 Nov 775-780 (2A08)*

millimeter-wave varactor-tuned oscillator on microstrip; 35-GHz oscillator with 1-GHz tuning range. *Rubin, David, T-MTT 76 Nov 866-867 (3A14)*

ridge-waveguide cavity for wideband tuning. *Mizushima, S., T-MTT 76 May 257-259 (1B09)*

varactor-tuned coaxial oscillators, wideband. *Corbey, Colin D., T-MTT 76 Jan 31-39 (1C05)*

Gunn device oscillators; cf. Transferred-electron device oscillators

H**Hall effect**

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

Harmonic generation; cf. Frequency conversion

Heart; cf. Cardio...

Heat; cf. Thermal

Heating; cf. Electric heating

Helical waveguides

coupling rectangular-to-circular guide at millimeter-wave frequencies; helical coupler. *Predmore, C. Read, T-MTT 76 Nov 847-852 (2F10)*

Holography; cf. Microwave holography

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

Hybrid junctions

microstrip branch-arm hybrid with 3-dB coupling at all harmonics of fundamental frequency. *Wight, J. S., T-MTT 76 Feb 122-124 (1D14)*

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

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planar circuit analysis; segmentation method. *Okoshi, T., T-MTT 76 Oct 662-668 (1C06)*

I

IC; cf. Integrated circuit

IEEE Microwave Theory and Techniques Society

awards for 1975; H. J. Riblet—Microwave Career Award; T. E. Rozzi and W. F. G. Mecklenbraüker—Microwave Prize; J. F. White—Microwave Application Award; R. W. Beatty—National Lecturer Plaque. *Horton, J. B., T-MTT 76 Dec 910-912 (1A12)*

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President's message; 25th anniversary of society. *Rodrigue, G. P., T-MTT 76 Dec 902-904 (1A04)*

President's message; 25th anniversary of society. *Rodrigue, G. P., T-MTT 76 Dec 902-904 (1A04)*

IGFETs; cf. MOSFETs

Imaging; cf. Radiometry

IMPATT diodes

millimeter-wave diodes; construction, performance, and application. *Kramer, N. B., T-MTT 76 Nov 685-693 (1A05)*

IMPATT diode amplifiers

high-power C-band reflection amplifiers using multiple diodes and microstrip power combiners. *Lee, Robert E., T-MTT 76 May 249-253 (1B01)*

millimeter-wave amplifiers for 86-GHz guided transmission system; high-reliability high-power components. *Akaike, Masami, T-MTT 76 Nov 693-701 (1A13)*

millimeter-wave; nonlinear characteristics and intermodulation distortion. *Kuno, H. J., T-MTT 76 Nov 744-751 (1E08)*

millimeter-wave oscillators and amplifiers in reduced-height guide; V-band circuit characterization. *Fong, T. T., T-MTT 76 Nov 752-758 (1F02)*

millimeter-wave power amplifier/combiner; 1-W output at 60 GHz with 6-GHz bandwidth. *Kuno, H. J., T-MTT 76 Nov 758-767 (1F08)*

IMPATT diode oscillators

60-W CW oscillator for C-band; combines outputs from six GaAs multimesa Read diodes. *Wallace, R. N., T-MTT 76 Jul 483-485 (2B14)*

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

millimeter-wave; 200-GHz, 50-mW CW oscillation with Si SDR diode. *Ishibashi, T., T-MTT 76 Nov 858-859 (3A06)*

millimeter-wave amplifiers for 86-GHz guided transmission system; high-reliability high-power components. *Akaike, Masami, T-MTT 76 Nov 693-701 (1A13)*

millimeter-wave diodes mounted in low-impedance waveguide mounts tuned by varying dc bias current. *Akaike, M., T-MTT 76 Mar 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 76 Nov 731-737 (1D09)*

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millimeter-wave sources for 130-170 GHz range. *Weller, Kenneth P., T-MTT 76 Nov 738-743 (1E02)*

millimeter-wave transceiver for civilian use; 60-GHz compact, low-cost transceiver. *Matsuo, Yoshio, T-MTT 76 Nov 794-797 (2B13)*

Impedance matching

balun and magic tee suitable for microstrip. *Laughlin, Gordon J., T-MTT 76 Mar 135-141 (1A09)*

transmission-line network optimally matched to conductance shunted by stub. *Riblet, H. J., T-MTT 76 Jan 65-66 (1E11)*

- transmission-line transformation between arbitrary impedances using single matching section. *Milligan, T. A., T-MTT 76 Mar 159 (1C05)*
- Indium alloys/compounds, devices**
- InP Gunn amplifiers and oscillators for millimeter-wave frequencies. *Hamilton, Robert J., Jr., T-MTT 76 Nov 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 76 Oct 660-662 (1C04)*
- Inductance calculations**
- microstrip with step change in width and cross junctions. *Gopinath, A., T-MTT 76 Mar 142-144 (1B02)*
- parallel-strip transmission lines. *Rochelle, J. M., T-MTT 75 Aug 712-714 (2B02)* ♦
- Inhomogeneous; cf.** Nonhomogeneous
- Injection-locked oscillators; cf.** Phase-locked oscillators
- Instrumentation; cf.** Measurement
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- Integrated-circuit fabrication**
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- Integrated-circuit metallization**
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- Interferometry; cf.** Radio interferometry
- Intermodulation distortion**
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- millimeter-wave IMPATT amplifiers. *Kuno, H. J., T-MTT 76 Nov 744-751 (1E08)*
- International Microwave Symposium; cf.** Microwave Symposium, International, Cherry Hill, NJ, 1976
- Irises; cf.** Waveguide discontinuities
- Isolators; cf.** Ferrite isolators; Millimeter-wave isolators

J

- JFETs**
- microwave FETs; recent developments. *Liechti, Charles A., T-MTT 76 Jun 279-300 (1A05)*
- Josephson device mixers/frequency converters**
- millimeter-wave mixers; low-noise 47-GHz mixer. *Edrich, Jochen, T-MTT 76 Nov 706-709 (1B12)*
- Junctions; cf.** Hybrid junctions

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- Landing guidance systems; cf.** Aircraft landing guidance
- Laplace equations**
- exterior region satisfying Laplace equation; finite-element solution. *Csendes, Z. J., T-MTT 76 Jul 468-473 (2A13)*
- Layered media; cf.** Nonhomogeneous media
- Least-*p*th approximation**
- minimax design using least-*p*th approximations; computer program. *Bandler, J. W., T-MTT 76 Aug 543 (1D13)*
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- Lens antennas**
- microwave landing system ground antennas. *Cox, Richard M., T-MTT 76 Dec 964-971 (1E10)*
- Lens waveguides**
- square-law lenslike medium with bends; propagation characteristics. *Sawa, Shinnosuke, T-MTT 76 Jul 441-455 (1D09)*
- tapered lens-like medium with permittivity profile varying in direction of guide axis and transverse direction. *Sawa, Shinnosuke, T-MTT 76 Feb 77-93 (1A11)*
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- equiripple filters with single transmission zeros at real or imaginary frequencies. *Levy, Ralph, T-MTT 76 Apr 172-181 (1A10)*
- Loaded waveguides**
- anisotropic media; vector variational formulation. *Konrad, A., T-MTT 76 Sep 553-559 (1A09)*
- gyrotropic media; bidirectionality conditions. *McIsaac, Paul R., T-MTT 76 Apr 223-226 (1E05)*
- narrow-axial strip in rectangular guide; equivalent circuit. *Chang, Kai, T-MTT 76 Sep 611-615 (1E11)*
- Loaded waveguides; cf.** Dielectric-loaded waveguides; Ferrite-loaded waveguides; Nonhomogeneously loaded waveguides; Plasma-loaded waveguides; Semiconductor-loaded waveguides; Waveguide discontinuities
- Locked oscillators; cf.** Phase-locked oscillators
- Logic devices; cf.** Semiconductor logic devices
- Lossy media; cf.** Absorbing media
- Low-pass filters**
- equiripple filters with single transmission zeros at real or imaginary frequencies. *Levy, Ralph, T-MTT 76 Apr 172-181 (1A10)*
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- Lumped-element circulators, ferrite**
- temperature-stabilized 1.7-GHz broadband circulator. *Katoh, Hidehiko, T-MTT 75 Aug 689-696 (1G03)* ♦

M

- Magnetic-material-loaded waveguides; cf.** Ferrite-loaded waveguides
- Magnetic measurements**
- millimeter-wave measurement of ferrites using open resonator; 60–90 GHz range. *Song Lint, B. Chan, T-MTT 76 Nov 883-886 (3C03)*
- Magnetoelastic surface waves**
- composite layered structure of piezoelectric medium and magnetoelastic medium separated by conducting plate. *Bhattacharyya, Tushar, T-MTT 76 Apr 226-230 (1E08)*
- Magnetoresistivity**
- waveguide completely filled with semiconductor and subject to transverse magnetic field. *Ness, J. B., T-MTT 76 Jul 473-476 (2B04)*
- Magnetostatic surface waves**
- two ferrite slabs of different magnetic saturation with weak coupling between them: YIG and Ga-YIG slabs. *Tsutsumi, Makoto, T-MTT 76 Sep 591-597 (1D05)*
- Magnetostatic surface-wave devices**
- isolators for VHF band; edge-mode isolators. *Courtois, Louis, T-MTT 76 Mar 129-135 (1A03)*
- Masers**
- ruby traveling-wave maser for K-band using photoetched slow-wave structure. *Yngesson, K. Sigfrid, T-MTT 76 Nov 711-717 (1C03)*
- rutile traveling-wave maser for 20–40 GHz band using dielectric image line slow-wave structure. *Kollberg, Erik L., T-MTT 76 Nov 718-725 (1C10)*
- rutile traveling-wave masers for 85–90 GHz band using slot-fed guide slow-wave circuit. *Cardasmenos, Apostle G., T-MTT 76 Nov 725-730 (1D03)*
- Matching; cf.** Impedance matching
- Measurement; cf.** Electromagnetic measurements
- MESFETs; cf.** Microwave FETs
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- dielectric loss calculation. *Simpson, Ted L., T-MTT 76 Feb 106-108 (1C12)*
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Traveling-wave amplifiers
 masers; ruby traveling-wave maser for K-band using photoetched slow-wave structure. *Yngvesson, K. Sigfrid, T-MTT 76 Nov 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 76 Nov 718-725 (1C10)*
 masers; rutile traveling-wave maser for 85-90 GHz band using slot-fed guide slow-wave circuit. *Cardasmenos, Apostole G., T-MTT 76 Nov 725-730 (1D03)*
Tunable filters
 millimeter-wave tunable bandpass ring filter for dielectric waveguide IC. *Kaurs, Allan R., T-MTT 76 Nov 875-876 (3B09)*
Tuners; cf. Varactor tuners
Tunnels; cf. Underground electromagnetic communication

U

UHF
 abbr. of Ultra high frequency
UHF oscillators
 TRAPATT diodes, p⁺-n-n⁺ Si junction devices; 500-W pulse power output. *Obah, Chuka O. G., T-MTT 75 Dec 959-970 (1B07) ♦*
UHF radiation effects/safety; cf. Electromagnetic radiation...
Underground electromagnetic propagation
 tunnels; braided coaxial cable located close to tunnel wall. *Hill, David A., T-MTT 76 Jul 476-480 (2B07)*

V

Varactors
 millimeter-wave mixer-modulator; 60-GHz transceiver for civilian use. *Matsuo, Yoshio, T-MTT 76 Nov 794-797 (2B13)*
 ♦ Check author entry for later corrections/comments

Varactor tuners
 microstrip IMPATT oscillator for 60-GHz FSK transmitter. *Glance, B. S., T-MTT 76 Mar 156-157 (1C02)*
 microwave wideband coaxial oscillators. *Corbey, Colin D., T-MTT 76 Jan 31-39 (1C05)*
 millimeter-wave oscillators; varactor-tuned Gunn oscillator with 1-GHz tuning range. *Rubin, David, T-MTT 76 Nov 866-867 (3A14)*
 transferred-electron device oscillators; waveguide mounting configuration. *Joshi, J. S., T-MTT 76 Sep 573-584 (1C01)*
 transferred-electron device oscillators; frequency drift tuning. *Johnson, Kenneth M., T-MTT 76 Oct 650-656 (1B08)*

Variational methods
 electromagnetic fields in anisotropic media; vector variational formulation. *Konrad, A., T-MTT 76 Sep 553-559 (1A09)*
 optical fiber waveguides having α -power refractive-index profile and uniform cladding; closed-form characteristic equation derivation. *Okamoto, Katsunari, T-MTT 76 Jul 416-421 (1B12)*

VHF
 abbr. of Very high frequency

VHF devices
 isolators for VHF band; edge-mode isolators. *Courtois, Louis, T-MTT 76 Mar 129-135 (1A03)*
 rotating coupler; transformer coupling between two windings. *Allen, C. W., T-MTT 76 May 267-269 (1C05)*

Voltage-controlled oscillators
 transferred-electron device oscillators; frequency drift tuning. *Johnson, Kenneth M., T-MTT 76 Oct 650-656 (1B08)*

Voltage-controlled oscillators; cf. Varactor tuners

Volterra series
 microwave nonlinear network analysis using scattering variables. *Weiner, Donald D., T-MTT 76 Jul 422-433 (1C04)*

W

Waveguides
 mode coupling and conversion measurement; shuttle pulse method. *Bernardi, P., T-MTT 76 May 264-266 (1C02)*

Waveguides; cf. Acoustic waveguides; Circular waveguides; Dielectric-loaded waveguides; Dielectric waveguides; Ferrite-loaded waveguides; Helical waveguides; Loaded waveguides; Microstrip; Millimeter-wave waveguides; Nonhomogeneously loaded waveguides; Optical waveguides; Plasma-loaded waveguides; Ridge waveguides; Semiconductor-loaded waveguides; Slot line; Stripline

Waveguide bends
 optical waveguide consisting of square-law lenslike medium. *Sawa, Shinnosuke, T-MTT 76 Jul 441-455 (1D09)*

Waveguide components
 radar astronomy; 400-kW long-pulse X-band planetary radar. *Hartop, Rob, T-MTT 76 Dec 958-963 (1E04)*

Waveguide discontinuities
 dielectric planar guide for ground transportation obstacle detection; surface-wave scattering by dielectric obstacles on guide. *Mahmoud, Samir F., T-MTT 75 Feb 193-198 (1A11) ♦*

edge condition in modal analysis. *Vassallo, C., T-MTT 76 Apr 208-212 (1D04)*
 millimeter-wave bandpass filter composed of inductive windows in rectangular guide; higher order modes can propagate. *Yamamoto, Kazuyuki, T-MTT 76 Nov 837-842 (2E14)*
 narrow-axial strip in rectangular guide; equivalent circuit. *Chang, Kai, T-MTT 76 Sep 611-615 (1E11)*

two narrow transverse inductive strips of different widths unsymmetrically located in rectangular guide; coupling analysis. *Chang, Kai, T-MTT 76 Feb 101-105 (1C07)*

V-band IMPATT oscillators and amplifiers in reduced-height guide; circuit characterization. *Fong, T. T., T-MTT 76 Nov 752-758 (1F02)*

Waveguide discontinuities; cf. Loaded waveguides; Transmission-line discontinuities; Waveguide junctions; Waveguide transitions

Waveguide filters
 millimeter-wave bandpass filter composed of inductive windows in rectangular guide; higher order modes can propagate. *Yamamoto, Kazuyuki, T-MTT 76 Nov 837-842 (2E14)*

millimeter-wave band-splitting filter using Michelson interferometer hybrid. *Suzuki, Nobuo, T-MTT 76 May 237-241 (1A03)*

Waveguide filters; cf. Cavity-resonator filters

Waveguide junctions
 misalignment; reflection coefficient of unequal displaced rectangular guides. *Levy, Ralph, T-MTT 76 Jul 480-483 (2B11)*

Waveguide junctions; cf. Hybrid junctions; Waveguide transitions

Waveguide mounts
 transferred-electron device oscillators, variator-tuned. *Joshi, J. S., T-MTT 76 Sep 573-584 (1C01)*
 two-gap diode mounts; equivalent circuit. *Eisenhart, Robert L., T-MTT 76 Dec 987-990 (2B02)*

V-band IMPATT oscillators and amplifiers in reduced-height guide; circuit characterization. *Fong, T. T., T-MTT 76 Nov 752-758 (1F02)*

Waveguide obstacles; cf. Waveguide discontinuities

Waveguide transitions
 microstrip-waveguide transitions. *van Heuven, J. H. C., T-MTT 76 Mar 144-147 (1B04)*

millimeter-wave rectangular-circular guide; helical coupler. *Predmore, C. Read, T-MTT 76 Nov 847-852 (2F10)*

Wave propagation; cf. Propagation

Wave scattering; cf. Scattering

Y

YIG devices
 magnetostatic surface wave in two ferrite slabs of different magnetic saturation with weak coupling between them. *Tsutsumi, Makoto, T-MTT 76 Sep 591-597 (1D05)*

Z

Z transforms
 chirp-Z transform implementation for spectral analysis of spread-spectrum signals. *Nudd, Graham R., T-MTT 76 Jan 54-56 (1D14)*