

MTT-S 84 EXHIBITION GUIDE

Accumet Engineering Corp. 909
Hudson, MA

J. Snook, S. Brodeur, L. Voyer

Lapped and polished Al_2O_3/BeO /fused silica substrates for the microelectronic industry.

Acrian, Inc. 812
Cupertino, CA

A. Juodikis, G. Bishop, D. Herrick, M. Mallinger

RF and microwave power devices and module assemblies for military, commercial and microwave applications from DC to 6 GHz.

Adams-Russell, Antenna & Microwave Div. 716
Amesbury, MA

D. Ryan, K. Akerley, J. Ripple, G. Guy, D. Herling, L. Larivieie, J. Hurd, F. April, R. Hamilton

RF and microwave antennas and cable.

Adams-Russell, Anzac Div. 716
Burlington, MA

M. Rosenzweig, K. Lambert, J. Parker, R. Grandmaison

RF and microwave signal processing components and subassemblies.

Adams-Russell, Brazonics Div. 716
Amesbury, MA

D. Ryan, F. April

Complex dip-brazed assemblies.

Adams-Russell, Micro-Tel Div. 716
Hunt Valley, MD

R. Biller, J. Spera, W. Brandt, B. Trussell

Surveillance receivers, signal generators and test equipment.

Adams-Russell, Microwave Products Div. 716
Chatsworth, CA

S. LaLond, C. Goetter, H.P. Johnson, S. Hamilton

Flatplate antennas and microwave sub-assemblies.

Adams-Russell, Modpak Div. 716
Burlington, MA

P. Moran, M. Rosenzweig

RF shielded enclosures.

Adams-Russell, Semiconductor Center 716
Burlington, MA

R. Gold, J. Parker, M. Rosenzweig

GaAs monolithic microwave integrated circuits (MMIC) and foundry.

Airpax Corp. 241
Cambridge, MD

J. Buchanan, D. Bailey, R. Cox, T. Rice, C. Brock, W. Nilsson, T. Thornton

Packages for mounting hybrid and microwave components.

Alan Industries, Inc. 211
Columbus, IN

M. Burton, D. Barringer, B. Kennedy, S. Kennedy

Attenuators, terminations, RF fuses, matching pads and other accessories. Miniature programmable attenuators, continuously variable attenuators, miniature precision toggle-switch attenuators, directional couplers and laboratory switch attenuators.

Alpha Industries, Inc. 500
Woburn, MA

N. Bishop, M. Antell, A. Decarolis, V. Jackson, A. Kariotis, M. Reid, K. Korbuba, J. Diesso, B. Stiles, R. Middlebrook, K. Kelly, B. Ruff

Semiconductor devices, mm-wave antennas, components, subsystems, switches, limiters, attenuators, supercomponents, amplifiers, mm-wave oscillators and amplifiers, microwave ferrites, dielectrics, VCOs, DSOs, mm-wave phase-locked sources, microwave/mm-wave integrated subsystems and dielectric resonators.

American Electronic Laboratories, Inc. 650
Lansdale, PA

F. McDonnell, K. Veith, B. Shillady, M. Nussbaum, B. Faust, A. Gross, T. Keffer, D. Ihasz, J. Dougherty

MIC technology oriented to custom requirements, including receiver front-ends, control devices and RF processors implemented in various transmission media, using both thick and thin film techniques.

American Microwave Corp. 348
Gaithersburg, MD

R. Sicotte, B. Sicotte

RF transformers, couplers, power dividers; microwave PIN diode switches and modulators; microwave receivers.

American Technical Ceramics 715
Huntington Station, NY

D. O'Toole, R. Wood, H. Seaman

A variety of multilayer and single layer porcelain and ceramic mm-wavelength capacitors to meet RF requirements. Products feature high Q's, stability and rugged UNI-TERM[®] terminations.

American Valence Corp. 1012
Mountain View, CA

T. Mocanu, P. DuVall, J. Hagerty, K. Johnson, A. Mocanu

Varactor, PIN, step-recovery, Schottky and hyperabrupt diodes.

Amperex Electronics Corp. 924
Hicksville, NY

G. Marshall, E. R. Hansen, R. Badami, J. M. Billaud, J. Salvay

RF and microwave power transistors for mobile communications, cellular radio, radar, IFF, DME, TACAN, FM and TV broadcast, EW, SSB, air communications and amateur radio. Transistors are available with output powers from 1 to 1100 watts. Silicon bipolar transistors operate from 1.6 MHz to 4.2 GHz; GaAs FETs operate from 4.2 to 16 GHz.

Ampex Sunnyvale, CA 148

J. Bedgood, F. Monforte, A. Grace, P. Kohler, W. Kuwada

Microwave ferrite and inductor ferrite materials and aluminum oxide ceramics.

Amphenol Products 200
Oak Brook, IL

B. Gorman, G. White

SMA and SSMA connectors, coaxial and triaxial switches, microwave cable assemblies, precision connectors and adapters.

Amplifica, Inc. 404
Newbury Park, CA

L. Nevin, G. Keithley, W. Reed, R. Benton, E. Teyssier, L. Lerner, D. Henault, B. Dunn, B. Wilson



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RF Amplifiers: low-noise, EW, radar, communication, frequency: P-Band through Ku-band

Amplifier Research 529 **Souderton, PA**

D. R. Shepherd, J. O'Halloran

High-power, broadband RF amplifiers, frequency range from 10 kHz to 1000 MHz, power levels from 1 to 10,000 watts. Antennas, TEM cells and accessories for RFI susceptibility testing.

Amplifonix, Inc. 224 **Bristol, PA**

A. Riben, J. Day

Broadband hybrid RF amplifiers.

Anaren Microwave, Inc. 702 **E. Syracuse, NY**

L. Nielsen, L. Buckridge, J. Krastel, D. Gustin, M. Waldman

EW subsystem elements including digital frequency discriminators (DFDs) and digital ESM receivers; wideband stripline microwave components 0.03 to 18 GHz, including couplers, power-dividers, mixers, PIN attenuators and phase discriminators.

Andersen Laboratories 845 **Bloomfield, CT**

E. Hodur, D. Lowcavage, S. Gentilozzi, L. Lettre, M. Adams, C. Lanzel, B. Bernardo, M. Magda, J. Ainley

Acoustic signal-processing devices, consumer and professional SAW filters, SAW and IMCON dispersive filters, SAW oscillators, frequency synthesizers, filter banks, bulk acoustic wave delay lines, Q-switches, A-O modulators and RF amplifiers.

Antech Antenna Technologies Ltd. 652 **Kirkland, Quebec, Canada**

A. Raab and Z. Huszar

Custom-designed antennas and microwave components in waveguide and MIC slotted arrays, specialty earth station feeds, flight-qualified beam-forming networks for spacecraft and shaped-beam antennas for DBS/FSS applications.

Apollo Microwaves Ltd. 112 **Montreal, Quebec, Canada**

P. Hannan, N. Vouloumanos, S. Barbari, S. Pidgeon

Microwave passive components for communications systems.

Applied Engineering Products 226 **New Haven, CT**

C. Goff, A. Garrett, D. Winn

Subminiature coaxial connectors and cable assemblies.

Aristographics Corp. 429 **Randolph, NJ**

E. Harthous, O. Jones, R. Cook, M. Stone

Precision mask/artwork generator for microwave/hybrid circuitry.

ARRA, Inc. 203 **Bay Shore, NY**

B. Alimena, M. Geraci

Thin-wall waveguides, complex waveguide bend and twist assemblies, WR-75 thin-wall waveguide, microwave radio path simulators in three configurations: 4-port, 6-port, and 8-port, from 2-13.5 GHz.

Artech House 530 **Dedham, MA**

W. Bazzi, D. Ricci

Artech House publishes some of the most advanced books in print on microwave, radar and telecommunications technology, theory and applications.

Astrolab, Inc. 703 **Linden, NJ**

O. Johnson, S. Toma

Precision 50-ohm, coax connectors, adapters, and cable assemblies, up to 40 GHz, including new precision SMA 3.5mm connection series.

Automatic Connector 1031 **Commack, NY**

B. Pitcher

RF and microwave coaxial connectors: BNC, TNC, SMA, SMB, SMC, SMS and special designs.

Avantek, Inc. 630 **Santa Clara, CA**

B. Berridge, B. Etheredge, D. Herron

Line of 26.5-40 GHz GaAs FET amplifiers, GaAs FET YIG-tuned oscillators, planar-pak[™] surface-mounting and Avapak[™] miniature-microwave-packaged components, IMFET[™] internally-matched GaAs power FETs and monolithic MIC products and developments.

AVX Corp. 841 **Great Neck, NY**

J. Tinkler, J. Sarvis, R. Phillips, E. Philofsky, B. Rawal, J. Thomkins

Fixed porcelain and ceramic chip capacitors.

Aydin Microwave Div. 439 **San Jose, CA**

J. Harris

RF Hybrid amplifiers and custom hybrid capability (755 MHz - 18.0 GHz).

Aydin Vector Div. 439 **Newtown, PA**

H. Jastrow, H. Weil, J. Tomisaka, M. Radmand, H. Christie

RF hybrid amplifiers and custom hybrids.

Balo Precision Parts, Inc. 900 **Franklin Lakes, NJ**

E. Rapoza, D. White

Kovar modules with tolerances to $\pm 0.001''$; clear, bubble-free glass; 50-ohm feed-

throughs, air launchers, channelized cavities; Kovar power packages with copper Kovar inserts (bolt channels, pill packages, hot spot specials). Fiber-optic hermetic packages, with heat sinks, TIG weldable glass seals. Comply with MIL-STD-883, MIL-C-45662A, MIL-I-45208A & Q9858A.

Boonton Electronics Corp. 620 **Randolph, NJ**

S. Elkins

IEEE-488 bus-compatible instruments: programmable FM/AM signal generator, dual-input microwave power meter, dual-input millivoltmeter, AM/FM modulation, capacitance and inductance meters, RMS voltmeter and 1 MHz capacitance bridge.

Brandt Electronics 239 **Sunnyvale, CA**

E. Brandt, S. Hall

Custom high voltage and low voltage power supplies for military systems applications.

California Amplifier Co. 837 **Newbury Park, CA**

F. Brown, R. Toft, D. Nicholes

Discrete amplifiers, MIC amplifiers from 300 MHz - 18 GHz, microwave subassemblies, downconverters, upconverters.

California Eastern 609 **Laboratories, Inc.** **Santa Clara, CA**

L. Eya, R. Chou, J. Swan

Microwave semiconductor devices and components, including power and small-signal bipolar transistors and low noise GaAs FETs; silicon MMICs.

Cascade Microwave 138 **Beaverton, OR**

D. Carlton, C. Crow, E. Strid, R. Gleason

Microwave wafer probe station and probe cards, DC to 18 GHz.

Cinox Corp. 342 **Cincinnati, OH**

R. Stephens, R. Camp

Precision quartz crystals, temperature compensated crystal oscillators, ovenized crystal oscillators, voltage controlled crystal oscillators.

Cir-Q-Tel 204 **Kensington, MD**

H. Wainwright, D. Alexander, R. Wainwright

Filters: 300 Hz to 40 GHz, LP, HP, BP; coaxial, waveguide, LC; isolators/circulators 0.79-18 GHz high power filters to 25 KW CW.

Coleman Microwave Co. 505 **Edinburg, VA**



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K. Coleman Sr., K. Coleman Jr., J. Coleman, N. Coleman, G. Brinkley, D. Braithwait

One to 26 GHz, tunable and fixed-tuned, highpass, lowpass, bandpass, and band-reject microwave filters designed as cavity, tubular and micro-miniature filters.

Com Dev Ltd. 852
Cambridge, Ontario, Canada
N. Emptage

Design and manufacture of microwave and SAW enhanced subsystems for communications satellites, earth stations, radar systems and other applications. Consultant services in areas related to satcom.

Communication Techniques, Inc. 415
East Hanover, NJ
A. Cox, J. B. Payne, E. Loeswick, L. Loeswick

Low phase-noise cavity and voltage tunable oscillators, mechanically tunable and automatic phase-locked signal sources, microwave frequency synthesizers and subsystems.

Compac Development Corp. 1000
Deer Park, NY
C. Groves, P. Rao, T. Duder, D. Rausch, H. Lenfettey, L. Gossweiler

RFI-shielded enclosures (standard and custom), gasketing, circuit board mounting systems, coaxial terminations and attenuators, RF connectors and switches, power relays, cable assemblies.

Compact Software, Inc. 431
Palo Alto, CA
J. Lindauer, L. Besser, H. Wong, D. Leiss, S. March, M. Ball

Computer-aided design tools for use in microwave circuit design: SUPERCOMPACT, for circuit analysis, optimization and synthesis; AUTOART, for automated and interactive mask layout of MICs, MICRO-COMPACT, for analysis and optimization of two-port circuits; MICRO-AMPSYN, for direct synthesis of amplifier input, output and interstage matching networks.

Compex Corp. 1022
Marlton, NJ
G. Gordon, S. Chen, A. Gordon

Single dielectric layer chip configuration capacitor provides low profile, small size and low series inductance; customized cases, square or rectangular.

Component General, Inc. 637
Tampa, FL
J. Cook, M. Giacalone

Power base mounted components: resistors, terminations, attenuators; SMA terminations; conduction cooled loads; power chips: resistors, terminations, attenuators. coaxial components: rods, disks, T-pads; flange terminations.

Connecting Devices, Inc. 408
El Segundo, CA

C. Wirtz, J. Dunbabin, R. Black, W. Carpenter

Microwave connectors and cable assemblies, including types SMA, SSMA, N, TNC, hermetics, field-replaceables, between-series adapters, radius right-angles, special connectors, flex and semi-rigid cable assemblies.

Continental Microwave, Inc. 141
Bradford, MA
D. Wall, R. Cicale

Double-ridged and rectangular flexible waveguide assemblies, components, waveguide test equipment.

Crystal Technology 531
Palo Alto, CA.

L. Castelli, A. Comparini, C. Holmes, T. Lewis

Surface acoustic wave (SAW) devices including bandpass filters, dispersive delay lines and resonators; acousto-optic devices, including signal processing Bragg cells.

CTT 837
Santa Clara, CA
J. Carollo, F. Levien, D. Tai
GaAs FET amplifiers

Custom Microwave Components, Inc. 1012
Mountain View, CA

G. Mau, W. Van Wyck, D. Duggan, L. McCreddin, S. McCreddin, B. Brann, P. Ieradi

PIN diode switches, attenuators and phase-shifters; fixed equalizers and mechanically adjustable phase-shifters.

Delta Microwave, Inc. 350
Camarillo, CA
R. Reed, A. Hatter

Filters, multiplexers, iso-filters, gain equalizers and integrated packages with a frequency average of 70 MHz through 20 GHz.

Diamond Antenna & Microwave Corp. 218
Winchester, MA
A. Hovannesian, B. LaPage, H. Tiger

Standard and custom-designed microwave antennas and components in coax, waveguide and double-ridge. Single and multi-channel rotary joints. Gain horns, directional couplers, terminations, adapters, detectors, bends, twists, etc.

Dielectric Laboratories, Inc. 329
Cazenovia, NY
R. Baker, P. Kip, D. Lupfer, D. Carter, W. Hautaniemi, S. Kipp

RF/Microwave high-Q, porcelain-fixed capacitors and single-wafer precision parallel-plate fixed ceramic capacitors

with widths to match the circuit stripline width.

Dynatech/UZ, Inc. 911
Venice, CA

N. Renfrow, T. Jamias, M. Okano, R. Klenske, M. Mccarthy, W. Wise

Coaxial switches (SP2T through SP10T) with termination and numerous circuit options available; switching matrices.

Eaton Corp. Elec. Inst. Div. 700
Ronkonkoma, NY
J. Martocci, A. Audia, J. Gaertner, J. Raimie, G. Mccarthy, W. Pastori

Frequency synthesizers, noise generators, spectrum analyzers, broadband linear power amplifiers, EMI instrumentation, AC instrumentation, RF power signal sources, system noise monitors.

Eaton Corp., Microwave Components Div. 901
Sunnyvale, CA
B. Townsend, B. Alper, D. Kirchner

Complete line of isolators, circulators, mixers, switches, diodes, yig tuned filters, oscillators, harmonic generators, STA-LOC products and thin-filmed VCOs.

EEsof 738
Westlake Village, CA.
C. Abronson, W. Childs, C. Holmes, L. DuBois.

"TOUCHSTONE" advanced microwave computer aided engineering software for IBM and compatible PCs featuring: nodal circuit description; graphics; optimization; full-screen editor; "Tune" mode; complete element catalog; mainframe-like speed.

EEV Inc. 918
Elmsford, NY
P. Plurien, T. Soldano, F. Oakes, A. Sayers, G. Noble, V. Smith, D. Taylor, S. Hesselson.

Professional electronic tubes for radar communications and electronic warfare applications, including the MG5272 J-band coaxial magnetron, a range of S-band 1MW tunable magnetrons, I-band airborne magnetron, TWTs and integrated microwave packages.

EIP Microwave Inc. 324
San Jose, CA
R. Bush, R. Loft, H. Lurie, J. Tarvin, K. Thomas.

Microwave/mm-wave frequency counters 10 Hz-110 GHz. Microwave sources to 18.6 GHz.

Electronautics 441
Raymond, ME
P.C. Colombo, N. Diehm, C. Morton.

Lossy dielectric material, microwave absorbers, dummy loads.

Electronic Resources, Inc. 1031
Sunnyvale, CA



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D. Hanes, K. Duras, C. Ikeya.

RF connectors, microwave attenuators, terminations, shielded boxes, semi-rigid cable.

Elettronica SpA, Electron Tube Div. 1024 Rome, Italy

F. Nicolai, P. Galuppi

Broadband, low, medium and high-power pulse and CW TWTs for ECM/radar applications and related subsystems, RF chains, integrated PS/mods and memory loops.

Ellis Ceramtek Inc. 149 Clinton, NJ

G. Ellis, E. Ellis

Custom machined ceramic parts and components.

EMF Systems Inc. 810 State College, PA

John and Joan Chernega

Solid-state oscillators and associated circuitry for both the commercial and military markets.

EPSCO, Inc. 629 Westwood, MA

W. Coffin, J. Langley, J. Shalhoub, J. Majewski, S. Lopuch, J. Dhimos

Solid-state power amplifiers, upwards of 2 GHz and 30 dBm, for EW and telecom applications. High-power CW and pulsed signal sources, cavity oscillators and modulators.

Epsilon Lambda Electronics 434 Geneva, IL

R. Knox

Millimeter Gunn oscillators and modulators, mm broadband filters.

Esco Associates 1031 Sunnyvale, CA

E. Sox, D. Hanes, J. Steward, B. McEthinnery

Representing: CTT, Filtron; Frequency Sources, Semiconductor Div.; Mast Microwave, Narda West, Powercube, Reactel, Statnetics, TRX; Thomson-CSF, Microwave Modules & Devices; Vari-L, Wenzel, Zeta.

EW Communications, Inc. 1018 Palo Alto, CA

J. Jacobs, K. Sund, A. Hoshida, C. Polster, R. Breashears, G. Perkins.

Publishers of: Microwave Systems News (MSN), Defense Electronics magazine, the Microwave Systems Designer's Handbook, The International Countermeasures Handbook.

Exotic Metals Grinding 552 Simi Valley, CA

E. Gray

Grinding and fabricating of ceramic and

ferrite materials to customer specifications.

Farran Technology 143 Farnanes, Cork, Ireland

G. Wrixon, S. Lidholm

A range of products for microwave, mm-wave and sub-mm-wave frequencies, including low-noise Schottky barrier diodes, waveguide mixers and multipliers, corner-cube mixers, complete systems and instrumentation.

Flexco Microwave, Inc. 843 Fort Murray, NJ

R. Tappen, R. Walker, R. Landsman

Flexible coaxial cables for use in RF, microwave, EW and ECM applications. Phase-stable low-loss performance in cable sizes from 1/4" to 1-5/8" for application from DC to 18 GHz.

Florida RF Labs, Inc. 450 Stuart, FL

D. Sampson, G. Fenex

Thin-film resistive products, including resistors, terminations, attenuators, strip-line components, RF coaxial cable assemblies, flexible and semi-rigid assemblies and coaxial delay lines.

Frequency Sources 816 Chelmsford, MA

Frequency Sources, Semi 816 Chelmsford, MA

G. Smith, D. Weinhold, A. Armstrong

Diodes: step recovery varactor, PIN/NIP, avalanche silicon and GaAs Gunn.

F-TEC/Radiall 144 New York, NY

D. Bronson, R. Grace, P. Schlumberger

Coaxial microwave components, including couplers switches/relays, attenuators and terminators.

Fujitsu Microelectronics, Inc. 904 Santa Clara, CA

N. Corpron, J. Cotsworth, S. Erickson, J. Fukaya, M. Fukuta, P. Gardner, B. Hampton, E. Mirabella, Y. Nabeshima, S. Rupp, T. Shintani

Low-noise and high-power GaAs FETs for communications and military applications; 1 to 20 watt power amplifiers.

Gamma-f Corp. 830 Torrance, CA

C. Goss, R. Frazier, L. Alford, R. Terry

Custom-designed electroformed microwave components and assemblies, including filters (bandpass, bandstop, harmonic rejection, interdigital, etc), polarizers, OMTs, diplexers, triplexers, couplers, step twists, lens antennas, and horn arrays.

General Electric Co., 524 Microwave Products Dept. Owensboro, KY

G. Braswell, P. Coomes, C. Crawford, R. Dougall, C. Goodnight, K. Killebrew, M. Lane, R. La Palme, R. Leach, H. Lupton, R. Merriam, J. Olson, S. O'Neill, J. Westman

VCOs; DRSSOs; high-Q oscillators and amplifiers; multi-function circuits, including mixers, PIN switches, filters and couplers; MMIC power amplifiers, multi-bit phase shifters and transmit/receive switches; Gunn diodes; planar triodes, klystrons.

General Microwave Corp. 323 Farmingdale, NY

S. Rinkel, M. Wind, F. Perry

Model 478 peak power meter, MIC assemblies, RF switches and attenuators, digital and analog phase shifters and frequency translators, phase modulators, RF power meters and radiation hazard meters.

Gentner, Inc. 950 Montreal, Quebec, Canada

R. Gentner, J. Grimard

Microwave components for transmission lines.

Gilbert Engineering Co., Inc. 1001 Glendale, AZ

A. Foss, J. Kubota

SMA, N, TNC, 7 mm, 14 mm connectors & adapters; also 14 mm attenuators, terminations, airlines, slotted line, power-dividers, tees, filters and jumper cables.

W. L. Gore & Associates, Inc. 929 Newark, DE

D. Baechtcl, H. Walling, T. Whitten, R. Kauffman, K. Moll, C. Carroll, E. Fulgham, R. Gibson

Low-loss, flexible microwave cable assemblies, 26.5 and 40 GHz cable assemblies, phase-matched assemblies, gimbal cables, replaceable interface connectors, ruggedized designs, ANA test cables, delay lines and dielectric waveguides through 100 GHz.

Gould Electronics, 723 Dexcel Div., Device Group Santa Clara, CA

L. Han, A. Matthews, J. Herb, J. Rodriguez, R. Lukon, R. Foust, N. Walker, R. Chen, S. Kakhana, C. Ponder, K. Nimiya, P. Lee

GaAs FETs, thin-film substrates, MMIC, digital IC.

Gould Electronics, 723 Dexcel Div., Military Amplifier San Jose, CA

R. Sanders, R. Champlain, S. Toomey, C. Harris, Y. Satoda, R. Fung, P. Martin, E. Cassida, K. O'Connor, P. Harris, B. Artz, T. Landis

Military amplifiers.



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A.I. Grayzel, Inc. 430
Needham, MA

A. Grayzel

Frequency multipliers; phase-locked, crystal-controlled microwave sources; synthesizers; comb generators; varactor upconverters and frequency dividers.

Harris Farinon Ferrites 602
Sunnyvale, CA

C. Salsberry, E. Ulman, L. McCreddin, S. McCreddin

Line of oscillators & circulators for LNA application; new microstrip isolators; waveguide and coax isolators and circulators, isoadaptors, TVRO isolators, custom-designed isolators, microstrip compatible drop-in isolators and circulators.

Harris Microwave Semiconductor Inc. 803
Milpitas, CA

B. Hoffman, L. Becker, V. Kovacevic, R. Lange, M. Harvey, D. Apte, J. Barrera, J. Klug, R. Soshea, T. Strouth, N. Frick, J. deKoning

GaAs digital integrated circuits, high-gain and high-power microwave GaAs FETS, broadband and narrowband GaAs FET amplifiers.

Hermetite Corp. 232
Avon, MA

D. Regan, B. Ottoson, J. Ladge

Glass-to-metal seals for hybrid microelectronics.

Herotek, Inc. 251
Sunnyvale, CA

C. Lai, R. Tousley

Microwave solid-state components, Schottky diode detectors, tunnel diode detectors, PIN diode limiters and switches, SRD multipliers (comb-generators); FET amplifiers, integrated MIC products.

Hewlett-Packard Co. 604
Palo Alto, CA

V. Van Poucke, B. Chung, M. Chandler, L. Lee, J. Mazurek

Linear power transistor chips-HXTR-3001, 3002, 5001, 5002, 7011 high-rel beam lead Schottky diodes.

Hewlett-Packard Co., 604
Lake Stevens Instrument Div.
Palo Alto, CA

HP3577A network analyzer and HP35677A S-parameter test set. A high-performance 5 Hz to 200 MHz network analysis system, featuring error correction, synthesized source, 100 dB receiver, and graphics display.

Hewlett-Packard Co., 604
Network Measurements Div.
Palo Alto, CA

26.5 GHz network analyzer (Cover feature, Microwave Journal, January, 1984) measuring in frequency & time domains; 10 MHz-20 GHz synthesized sweeper; scalar network analyzers demonstrating new, important measurements.

Hewlett-Packard Co., 604
Signal Analysis Div.
Palo Alto, CA

HP8566B microwave and 8568B RF high-performance programmable spectrum analyzers covering 100 Hz to 300 GHz; automatic system for performing MIL-STD and commercial EMI testing.

Hewlett-Packard Co., 604
Stanford Park Div.
Palo Alto, CA

HP 438A Dual Sensor Power Meter, measuring and plotting frequency vs. input power vs. gain contour of microwave amplifier; HP 8673D Synthesized Signal Generator (50 MHz to 26 GHz); HP 117219B Carrier Noise Test Set (5 MHz to 18 GHz).

Hitachi Metals America 833
White Plains, NY

W. Harriman, M. Ogawa, T. Shinohara, R. Whitman

Piezo-electric ceramics, surface acoustic wave devices, single crystals.

Honeywell Inc., 1023
Spacekom Microwave Center
Santa Barbara, CA

R. Davidson, T. Bacon, B. Neiman, K. Pickford, B. Griffith, J. Daly

Microwave and mm-wave components, subassemblies, network analysis test sets, frequency doublers and triplers, integrated assemblies, MMIC components.

Horizon House-Microwave, Inc. 530
Dedham, MA

W. Bazy, R. Briden

Microwave Journal, Telecommunications, Journal of Electronic Defense publications and Artech Books.

Hughes Aircraft Co., EDD 712
Torrance, CA.

L. Mohrfeld, R. McMurrough, R. Martin, K. Ishikawa, H. Yamaski, J. Nichols, J. Schellenberg, C. Ross, P. Gianfortune, E. Watkins, M. Talley

New instrumentation amplifier, mm-wave synthesizer, S-parameter test set.

Innowave, Inc. 237
Morgan Hill, CA

R. Barbara, B. Sekhon, C. Nugent, M. Conway

Isolators/circulators, filters/multiplexers, gain equalizer/harmonic phase shifters.

Insulated Wire 330
Ronkonkoma, NY

A. Nixon

Cable assemblies, high performance wire and cable.

Integra Microwave 515
Santa Clara, CA

W. Schuerch, L. Johnson, D. Bradley, D. Brown, W. Pfund

Auto-tracking YIG filters, panoramic receiver, VCO test set, noise filter.

Integrated Microwave Corp. 437
San Diego, CA

D. Clark, A. Brand, D. Czagany, P. List, W. Palmer

Miniature microwave filters, (all types, including linear phase, max flat group delay, low ringing pulse response); multiplexers, switched filter banks.

Interconics 140
St. Paul, MN

D. McGee, P. Koosman, B. Snider, F. Grimm, B. Wolf, N. Schriefer

Microwave, stripline and microstrip circuit boards.

IR&D Electronics, Inc. 751
Mountain View, CA

R. Rose, R. Rector, D. Redmond, T. Jones, B. Rector

Engineering services for development of components, systems and instrumentation in the RF and microwave area; software for design and test of RF and microwave components. NODAL CAE program for circuit analysis will be demonstrated.

Isotronics, Inc. 508
New Bedford, MA

J. Greenspan, M. LoFrumento, C. Roellig, A. Kirkaldy

High-rel, all-metal microcircuit packages. New products include precision machined custom modules and D microminiature connectors.

JFW Industries, Inc. 1030
Indianapolis, IN

J. Walker

Fixed attenuators, terminations, coaxial switches, variable attenuators, programmable attenuators, analog programmable attenuators.

Johanson Mfg. Corp. 719
Boonton, NJ

E. Fagerlund, T. Slikfin

Variable capacitors: variable air capacitors, high voltage capacitors, thin-trim ceramic capacitors, high voltage quartz capacitors, variable ceramic capacitors, microwave tuning elements, seal-trim capacitors and microwave diode holders.

Kaman Instrumentation 905
Colorado Springs, CO

D. Phillips, S. Perry, R. Callahan, J. Parber



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Coax cable assemblies, mineral insulated semi-rigid, transmission and delay lines.

KDI Electronics, Inc. 707 **Whippany, NJ**

A. Arfin, D. McConnell, C. Schraufnagl, R. Hartwig, H. Engelmann.

Microwave components and subassemblies, including MIC devices, diode switches, attenuators, oscillators, combiners, terminations, mixers, dividers and others for applications up to 26.5 GHz.

Keene Corp., 1005 **Ray Proof Div.** **Norwalk, CT**

R. Barbour, B. Lawrence, K. Makowski.

RF-shielded rooms, modular or welded microwave/mm-wave absorbers, anechoic chamber systems, UL listed power line EMI filters and special purpose filters.

Kevlin Microwave Corp. 802 **Woburn, MA**

E. Lattanzi, J. Riley, L. Riley

RF rotary joints, from single channel to 12 channel and from low to multi-megawatt power levels. Also, high frequency coaxial components, operating up to 50 GHz.

K & L Microwave, Inc. 423 **Salisbury, MD**

R. Bernstein, C. Schaub, W. Anthony, P. Leo, C. Helkowski

RF and microwave filters, including micro-miniature microwave, combine, interdigital, varactor tunable filters, integrated switching filter networks, RF switches, duplexers, multicouplers and integrated subsystems.

K & L Quartztek, Inc. 423 **Phoenix, AZ**

D. Kemper, M. Story

Crystal filters, quartz crystals, high stability quartz oscillators and crystal discriminators.

Krytar, Inc. 511 **Sunnyvale, CA**

T. Russell, C. Gentile.

Extremely broadband directional detectors, directional couplers, crystal detectors and hybrids.

KW Engineering, Inc. 624 **San Diego, CA**

B. Cherot, R. Moubert, M. Henson, W. Lavary and T. Mauk.

Microwave filters, multiplexers, multipliers and integrated subsystems.

Lark Engineering, Inc. 903 **San Juan Capistrano, CA**

A. Tissot, B. Wheeler, F. Baier

RF and microwave filters.

Leighton Electronics 551 **Leighton, PA**

G. White, A. Blew, J. Teresko

Microstrip circuits made from various PTFE dielectrics with plated holes, tight tolerances on conductor spacing and machining of thick aluminum-backed substrates: MIL-P-55110 approved.

Litton Industries, Electron Tube Div. 804 **San Carlos, CA**

S. Mussynski, J. Van Dyke, C. Fay, K. Connell

Microwave tubes and solid-state devices.

Litton Systems, Inc., 804 **Airtron Div.** **Morris Plains, NJ**

M. Grosso, J. Michalski, J. LoSchiavo

Flexible and rigid waveguide assemblies and accessories; high-power circulators, couplers, filters, isolators, loads and switches; planar array and monopulse antennas; high-power RF subsystems.

Locus Inc. 810 **State College, PA**

F. Thompson, W. Coyle

RF and microwave power amplifiers.

Logimetrics, Inc. 544 **Plainview, NY**

M. Feigenbaum, E. Blum, S. Feigenbaum

A line of commercial and military TWT amplifiers covering 0.5 to 18.0 GHz with 1 kW CW and pulsed powers. A line of susceptibility test sets, military EW/EMC systems, and satcom transmitters.

Loral Microwave Companies 816 **New York, NY**

Lorch Electronics Corp. 311 **Englewood, NJ**

J. Lorch, M. Harges, R. Lazzarini, J. McCole, M. McDougall, R. McLaughlin

RF, IF and microwave signal-processing components and subassemblies; amplifiers, digital and variable attenuators, directional couplers, filters, mixers, phase comparators and shifters, power splitters, quadrature hybrids, switches, switch matrices, transformers.

3M/Electronic Products Div. 332 **St. Paul, MN**

R. Bishop, E. Bond, J. Cavanaugh, B. Goff, S. Nodland, T. Nowicki

Precision-tolerance Teflon/woven glass and ceramic-filled, copper-clad substrates with K values from 2.17 to 10. Available in a range of thicknesses and claddings.

M/A-COM Baytron, Inc. 303 **Burlington, MA**

P. Crandell, A. Dobson

Millimeter-wave test components, 18 to 325 GHz.

M/A-COM Components Marketing, Inc. 303 **Burlington, MA**

D. Gallagher, R. Hartung, B. Christensen, S. Foreman, E. Goulart, P. Killen, F. Silva, R. Singleton, M. Staresnick, A. Tobacco, S. Ulett, C. Ducharme

Worldwide field marketing of microwave components.

M/A-COM MDM, Inc. 303 **Chatsworth, CA**

P. Crandell, S. Deen

Flat-plate antennas, waveguide arrays and assemblies and antenna feeds.

M/A-COM 303 **Microwave Circuits, Inc.** **Burlington, MA**

P. Gale, G. Porter, N. Brown, D. Revelotis

Government and commercial radar, ECM and missile systems, diode control devices, mixers and detectors.

M/A-COM 303 **Microwave Components, Inc.** **Burlington, MA**

P. Rutledge, J. Corvino, R. Kalvaitis, T. Rose, J. Boudreaux, M. Field, G. Smith

Waveguide, coax microstrip ferrites, high-power control assemblies, (TR tubes/limiters, diode limiters/switches, duplexers and pressure windows). Waveguide products, (casting/prefab assemblies, W/G filters, mixers, custom RF assemblies). Magnetron tubes and investment castings.

M/A-COM 303 **Microwave Power Devices, Inc.** **Hauppauge, NY**

D. Mazziotta, D. Krautheimer, S. Klein, B. Leidman, P. Kennedy, H. Venicay, P. Sheloff

High-power, solid-state RF and microwave amplifiers, transmitters, subsystems and instruments.

M/A-COM 303 **Millimeter Products, Inc.** **Burlington, MA**

B. Moroney, P. Crandell

Millimeter-wave sources, components and subsystems for communications, ECM, guidance and radar.

M/A-COM 303 **Omni Spectra, Inc.** **Merrimack, NH**

E. DeVita, T. Parker, R. Hale, T. Pina, N. Tucker, S. Spencer, D. Faulks, P. Barnes, R. Fawson, G. Hubbard, M. Caputo, F. Volte, G. Coddington, J. Thomas



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Microwave coaxial connectors and components, OSCC solderless compression crimp connectors and hermetic connectors.

M/A-COM OSW, Inc. 303 **Tempe, AZ**

D. Stelzer, D. Emerick, J. Powell, B. Hucklebury

Low-noise, low-power broadband microwave amplifiers, oscillators and sub-systems.

M/A-COM PHI, Inc. 303 **Torrance, CA**

F. McAdara, D. Roubideaux

RF power transistors, amplifiers and MOSFETs, hybrid integrated amplifiers, specialized RF power products for defense electronics and commercial applications.

M/A-COM Semiconductor 303 **Products, Inc.** **Burlington, MA**

T. Leonard, J. Locke

Schottky, point-contact, PIN and varactor tuning diodes; varactor multiplier and microwave PARAMP Gunn diodes; IMPATT diodes; bipolar and FET transistors; chip capacitors; high-power microwave terminations; microwave diode packages; silicon epitaxial wafers.

Magnum Microwave Corp. 933 **Mountain View, CA**

G. Graham, D. Fealkoff, S. Davis, S. Hostetler

RF and microwave (to 18 GHz) mixers, VCOs from 0.6 to 6.0 GHz; microwave low noise front-ends for TVRO applications and microwave and fiber-optic communications systems.

Marconi Electronic 432 **Devices Ltd.** **Lincoln, England**

J. Evans, E. Smith, T. Oxley, R. Warren

Millimeter-wave semiconductors and modules: mixers, oscillators, circulators, switches; SAW oscillators and filters.

Marconi Instruments 316 **Northvale, NJ**

H. Felger, K. Harrison, J. Robinson

RF power meters, scalar analyzer, microwave counter.

Mark V Associates 205 **Mountain View, CA**

A. Anderson, J. Sexton, L. Tolliver

Representing: Alan Industries, ARRA Inc., Cir-Q-Tel Inc., DB Products, Epsco Microwave, Flann Microwave, Micro-Now Instrument Co., Micro-Tel Corp., Millitech Corp., SPC Electronics Corp. and Storm Products, Inc.

MAST Microwave 639 **Billerica, MA 01821**

F. Cooper, D. Gartzke, C. Lewis, A. Pellerin, C. Theophile

Standard and customer designed microwave rotary joints, double ridge components for operation in the frequency of DC-40 GHz frequency range; MIC field-replaceable SMA connector (DC - 26.5 GHz), SMA (DC-40 GHz), cable connectors and precision cable assembly.

MATCOM Inc. 451 **Palo Alto, CA**

B. Jones, E. Jones, D. Tuccori, K. Akada, M. Kihara, B. Fleming

Representing Flann, Ltd., microwave and mm-wave components and instruments.

Materials Research Corp. 234 **Orangeburg, NY**

I. Drangel, T. Pappas, T. Stensgard, N. Ott, F. Lavelle, V. Borase, N. Akridge, R. Frankland

99.6% alumina substrates (SUPER-STRATES™); uncoated and sputter-coated; pattern-etched substrates; laser scribing services; high-purity thin-film sputtering targets.

Maury Microwave Corp. 603 **Cucamonga, CA**

Mario Maury, Jr., Mark Maury, G. Simpson, F. Bennet, D. Payette, L. Willey, Mario Maury, III

Maury will be exhibiting their complete line of microwave components and instruments including a transistor test fixture, automatic network analyzer, waveguide calibration kits, calibration and verification devices, waveguide adapters, and waveguide isolators.

Merrimac Industries, Inc. 523 **West Caldwell, NJ**

E. Niemiec, J. Blahosky, J. Cappucci, R. Koelzer, G. Tahlmore

IF & microwave signal-processing components & subsystems; Hi-rel networks; image-reject mixers, 2-4 GHz; I & Q networks, 10-500 MHz; Hi-rel power-dividers in miniature flatpacks; fully integrated MIC military receivers; up & downconverters covering UHF through Ku band.

Metelics 420 **Sunnyvale, CA**

R. Dorilag, B. Clarke, E. Pendleton

Schottky, PIN, SRD and varactor microwave diodes.

Mica Microwave Corp. 750 **Santa Clara, CA**

A. Campbell, F. Mills

Microwave components: ferrite circulators and isolators; octave-plus, octave, and narrowband. Stripline devices available connectorized or as drop-in components.

Michro-Chem, Inc. 643 **Santa Clara, CA**

V. Todaro, J. Kerner, L. Matts

Chemical milling (lead-frames, circulators, springs, flexures); microwave circuit boards, (couplers, striplines); prototype circuit boards, high-resolution photography and precision artwork.

Microguide 101 **Tel Aviv, Israel**

Microlab/FXR 916 **Livingston, NJ**

R. Vincent, M. Bruno, J. Bramick, J. Mermis, D. Hernandax, G. Mann

Microwave waveguide and coaxial loads; attenuators, couplers, switches, filters, power-dividers, bends, etc.

Micro-Now 207 **Instrument Co., Inc.** **Skokie, IL**

C. Arnow, W. Openlander, A. Anderson, J. Sexton

The model 706 solid-state sweep system (using a varactor-tuned Gunn oscillator), with a six-port network analyzer for the 42-46 GHz MILSTAR band; also, the model 705B mm-wave sweep system, locked to an EIP counter.

Micronetics, Inc. 733 **Norwood, NJ**

G. Simonyan, K. Stern, G. Keskinian, L. McCreddin, S. McCreddin

Solid-state noise sources (DC to 50 GHz), coaxial and waveguide switches, high-power dummy loads, crystal detectors, bolometers.

Micropac Industries, Inc. 851 **Garland, TX**

R. Wehe, R. Huber, R. Schlueter

Wideband VCOs of hybrid and conventional designs; custom hybrid circuits and thin-film custom products and services.

Micropass, Inc. 346 **Newbury Park, CA**

B. Ford, H. Jenkins, S. Smith

Ultrafast phase modulators, multi-bit phase shifters, dielectric stabilized oscillators, PIN diode switch.

Microphase Corp. 516 **Norwalk, CT**

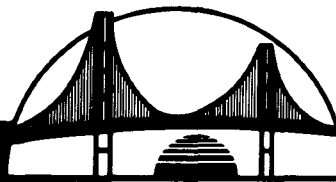
F. Parin, H. Schumacher, J. Filakovsky, H. Weil, H. Christie

Hybridized DC-coupled detector log video amplifier, series DLH with fast rise-time; size: 3 cu. in. (2.9" x 2.3" x 0.45"); suitable for airborne applications.

Microsource, Inc. 809 **Santa Rosa, CA**

G. Basawapatna, M. Lampenfeld, C. Maker, D. Shah

YIG-tuned components, including oscillators, bandpass and band-reject filters, multipliers and subsystems, available with



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standard or digital drivers, commercial or mil-spec.

Microtech 331
Cheshire, CT

W. Hallock, J. McGregor

Flexible and rigid waveguide assemblies and passive microwave components from 1.12 GHz to 40 GHz.

Microwave Applications Group 801
Santa Maria, CA

D. Prigge, T. Janzen, B. Snow, C. Boyd.

Design, fabrication and test of microwave ferrite components along related electronic drive circuits. Specific components include reciprocal phase control modules for electronic scanning antennas.

Microwave Components, Inc. 908
Lowell, MA

P. Smith, D. McCarthy

RF air coil inductors, gold, copper and alloy wires from .001" diameter. Applications include bias tees, filters, switches.

Microwave Development 443
Co., Inc.
Lawrence, MA

V. Cook, C. Tomes, O. Cook, P. Tomes

A line of double-ridged and rectangular waveguide components, custom designed components and assemblies, including couplers, hybrids, high-power terminations, adapters, transitions, filters and Magic Tees.

Microwave Development 104
Laboratories, Inc.
Natick, MA

E. Bannister, R. Tucker, E. Scollins, H. Krauss, R. Levy, R. Riblet, R. Grove.

Passive microwave components and assemblies in waveguide, coaxial and stripline media; coaxial devices, including rotary joints, hybrids and a line of coaxial filters and multiplexers constructed in solid-line coaxial and suspended substrates. Linear phase filters.

Microwave Distributors Co. 510
Commack, NY

D. Leiman, A. Leiman, J. Puderbach, S. Schanker

Coaxial couplers, hybrids, detectors, isolators, circulators, attenuators, terminations, adapters. Cross reference all microwave connector manufacturers. 96% of products are shipped within 24 hours of receipt of order.

Microwave Journal 530
Dedham, MA

W. Bazy, B. Bossard, R. Briden, A. Chiaviello, C. Donohue, H. Ellowitz, L. Powers, K. Stankard

Microwave Journal magazine: subscription and editorial information.

Microwave Printed Circuitry 908
Lowell, MA

M.P. Casper, D. McCarthy, S. Newbegin, M. D. Casper, C. Casper

Circuit fabrication: stripline and microstrip; laminated assemblies with PTH and edges. Precision etching, plating, drilling, bonding and machining, to MIL-P-55110. Thin-film ceramics; Uniform sputtering, high adhesion, fine line etching.

Microwave Semiconductor Corp. 409
Somerset, NJ

J. Holmquest, R. Nikiel, C. Lump

Microwave semiconductor products and components, including GaAs power FETS, silicon bipolar power transistors, GaAs FET amplifiers, Si bipolar power amplifiers and noise sources. Matched K-band power FETS.

Microwave Techniques 538
Raymond, ME

D. Smith, W. Brackett, D. Starbird, L. Grooves, R. Thorpe

A line of high-power passive components in both waveguide & EIA type coax; some water-cooled units for megawatt applications.

Microwave Technology 245
Freemont, CA

T. Baruch, J. Cochrane, D. Gray

GaAs FET amplifiers with a frequency range of 0.5-18 GHz.

Microwave Training Institute 149
Mountain View, CA

M. Lowe, A. Scott, D. Murphy

Educational classes: Training in new technicians to meet industry needs; seminars for engineers and managers; customized training for microwave industry employees.

Microwaves & RF 108
Hasbrouck Heights, NJ

S. V. Bearse, W.J. Bojsza, J. Novellino, J. Browne, B. Manz, M. Kachmar

Microwaves and RF magazine, microwaves and RF product data directory.

Millis Corp. 1011
Millis, MA

T. Davis, D. Ersman, R. Visser

Thin-film precision products, microwave integrated patterned substrates.

Millitech Corp. 208
Amherst, MA

R. Huguenin, D. Loger, P. Goldsmith, W. Pleasant

Millimeter and submillimeter components and subassemblies used in defense electronics systems and in research, communications and instrumentation applications.

Mitec Electronics Ltd. 724
Montreal, Quebec, Canada

M. Bentob, J.D. Robinson, T.J. Robinson.

C-band and Ku-band combining networks for satcom; microwave subsystems, filters, diplexers, ferrites, flexible waveguide and other waveguide components.

MITEQ, Inc. 419
Hauppauge, NY

A. Faverio, H. Kiiss

Solid-state microwave components, subsystems and systems, including low-noise and medium-power amplifiers to 18 GHz, signal sources, low phase noise synthesizers for communications applications, image-reject mixers, mixer/preamplifiers, upconverters, downconverters and receivers.

Mitsubishi Electronics 1002
America, Inc.
Sunnyvale, CA

W. Bechtold, D. Quibell, K. McLeod, J. Iizuka, T. Suzuki, K. Kusunoki, J. Talbot

Microwave semiconductors and modules, including GaAs FETs and GaAs FET modules, low-noise, medium-power, high-power and internally matched FETs and oscillators, receiver and Doppler modules.

Murata Erie North America 748
Marietta, GA

M. Blickstein, J. Driscoll, K. Shabata

Ceramic dielectric resonators, porcelain microwave chip capacitors, microwave trimming capacitors, dielectric resonator filters.

Narda Microwave Corp. 816
Hauppauge, NY

A. LeMay, B. Leibowitz, J. Coppola

Microwave electronic components, subsystems, test equipment and EM radiation monitoring devices.

Narda Microwave Corp., 816
Western Operations
Sacramento, CA

D. Immekus

Isolators, iso-filters, equalizers.

Narda Microwave Corp., 816
Western Operations
San Jose, CA

G. Gianatasio, R. Leier

GaAs FET amplifiers, filters, multiplexers, integrated assemblies, limiters/detectors, TDAs.

New England Microwave Corp. 145
Hudson, NH

R. Doherty, R. Robbins

PIN diodes, limiters, tuning varactors, step-recovery an multiplier diodes; solid-state switches and attenuators in module and connectorized form; switch drivers for ultra-high speed and multi-throw applications.



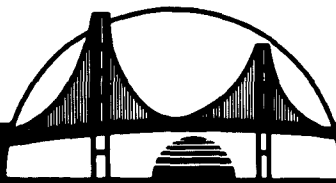
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|--|-------------|--|---|
| New Japan Radio Co., Ltd.
Mountain View, CA
<i>K. Iijima, I. Sakurai, T. Nishizaki.</i>
LNA, Cathode, MIC. | 353 | subsystems for radar, Fourier transformers and spectrum analyzer subsystems. | detectors and attenuators. |
| Norsal Industries, Inc.
Central Islip, NY
<i>R. Donahue, A. Margulis, N. Spector</i>
Microwave Components and subsystems: passive components - power dividers, directional couplers. Frequency translation devices - mixers, single sideband modulators. Amplitude Control Devices - diode switches, attenuators. Available in the Microwave region through 26 GHz. | 533 | Plessey
San Diego, CA
<i>P. Higgs, R. Johnson</i>
Microwave components, including Gunn diodes, GaAs FETs, oscillators, IMPATT devices, power amplifiers, microwave absorbers. | Raytheon Co.,
Microwave & Power Tube Div.
Waltham, MA
<i>R. Mattson, W. Berwick, A. Vacaro, J. Hieber, R. Roberts, T. White</i>
Microwave components, including tubes, MICs, ferrite devices, GaAs FETS. |
| Nurad
Baltimore, MD
<i>L. Czirjak, D.O. Fairley, R. Korb, J.G. Neubert</i>
Antenna and radome systems for frequencies between .5 MHz and 40 GHz; mm-wave and dual polarized antennas and an automatic antenna system controlled by Loran-Z. | 1015 | PMH, Inc.
Salisbury, MD
<i>C. Schaub, P. Leo</i>
Precision machined housings and enclosures, RF and EMI sealed packages, hermetic sealed enclosures, mill plating and fabrication to nine standard packages or custom requirements. | Reactel
Rockville, MD
<i>M. Assurian</i>
Tubular filters, cavity filters, miniature LC filters and waveguide filters. |
| Olektron Corp.
Webster, MA
<i>B. Baker, B. Beauregard, J. Canty, L. Foshay, P. Hurney</i>
RF components and subsystems for the control of RF in EW, radar, communications; receiving antenna systems and signal processing. | 711 | Polarad Electronics, Inc.
Lake Success, NY
<i>R. Ramirez, E. Kushner, J. Schindler, L. Estin</i>
The 300 Series microwave synthesizer, EMI/EMC receivers spectrum analyzers, vector voltmeter/network analyzers, RF synthesizers and sweepers to 2.5 GHz, transceiver test equipment, klystron signal generators. | Remec Components Engineering
San Diego, CA
<i>R. Ragland, C. Somak, J. Giles, D. Morgan</i>
Products use a "lumped element" design and include miniature filters, equalizers, equalized filters, multiplexers (contiguous and non-contiguous), frequency multipliers, switched filters and integrated supercomponents, from 1 MHz to 18 GHz. |
| Ortel Corp.
Alhambra, CA
<i>B. Ware, I. Ury</i>
High speed laser diodes, photodiodes, power supply, lasers and detectors in open heatsink, optical and fiber pigtail mounts. | 142 | Powercube
BillERICA, MA
<i>L. Sampson, J. Ward</i>
Modular power supplies, military power supplies and ruggedized miniature supplies. | Republic Electronics Corp.
Paterson, NJ
<i>W. Eisenberger, L. Eisenberger</i>
Ceramic capacitors, broadband through 50 GHz; parallel plates for stripline applications; high-Q multilayer microwave capacitors, approved to MIL-C-55681, BP & BG requirements. Also, QPL to MIL-C-20 "R" level. |
| Penn Microwave Devices
Lancaster, PA
<i>R. Hess, J. Shea, C. Hall, L. Blatt</i>
Waveguide components, including terminations, filters, diplexers, windows. | 800 | Precision Tube Co., Inc.
North Wales, PA
<i>G. Passmore, A. West, B. McNeil</i>
Semi-rigid cable, conventional and hand-formable, solid, foam and air dielectrics; cable assemblies, delay lines, cable-end preparation machines, coaxitube and accustrip. | Resin Systems Corp.
Amherst, NH
<i>F. Harrington</i>
Custom cast poly-iron loads and absorbers produced to tolerances as close as $\pm .001$ in any specified size or design. Meets all USWR and attenuation requirements. Military, industrial and commercial specifications. |
| Piezo Crystal
Carlisle, PA
<i>G. Kurzenknabe, C. Jensik</i>
Quartz crystals, crystal oscillators and crystal filters for aerospace and defense systems. | 1020 | Q-Bit Corp.
Palm Bay, FL
<i>M. Rogers, G. Callaway, H. Mead, M. Martin</i>
High reverse isolation RF amplifiers from .5 to 1300 MHz in a variety of packages including TO-8, flatpacks and connectorized units, screened or qualified to military requirements. | RF Component Sources, Inc.
Bayshore, NY
<i>K. Bardon</i>
Distributor of microwave components. |
| Phonon Corp.
Simsbury, CT
<i>T. Martin, R. Fraley</i>
SAW products, including bandpass filters, dispersive and non-dispersive delay lines, RACs, convolvers, low phase noise oscillators, SAW VCOs, pulse compression | 1006 | Racom Corp.
Milpitas, CA
<i>D. Archibald, S. Graef, K. Dreyer, S. Block</i>
Compline and cavity microwave filters, multiplexers, SP1T through SP7T and .01 to 26 GHz switches and integrated components, incorporating filters, switches, isolators, couplers, splitters, combiners, | RF Design
Englewood, CO
<i>M. Morong, K. Aldrich, L. Brewster</i>
1,000 issues of RF Design's May/June publication. Media and editorial information. |
| | | | RFD, Inc.
Tampa, FL
<i>S. Bailey, J. Gonzalez, C. Ochenrider, T. Sacer, P. Spence, J. Wood</i>
Phase locked oscillators, dielectric resina-tors, dielectric resonator oscillators, solid state power amplifiers, J. Tibs receivers, IEE receivers and transmitters. |



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RF Micro-Techniques 823 (MSI Electronics) Woodside, NY	Surface acoustic wave bandpass filters, delay lines, resonators and oscillators.	Statnetics 1031 San Diego, CA
<i>M. Bloom, A. Lederman, D. Scaringella, K. Kohlmoos, M. Lederman, J. Coffey, H. Coffey, J. Bloom</i> Voltage-controlled amplifiers, alternators; low-noise amplifiers.	SDI, Inc., Diode Div. 338 Billerica, MA <i>J. Caruso, D. Morris, P. Huyck, R. Cayer</i> Microwave diodes and control devices, including PINs, Schottky barrier diodes, tuning varactor SRDs, beam-lead devices and switches, integrated packages, limiters, both modular and connectorized.	<i>S. Bennix</i> Chip capacitors.
RHG Electronics Laboratory, Inc. 407 Deer Park, NY <i>S. Wolin, R. Hirsch, D. Weaver</i> MIC microwave and IF/RF products, including ultraminiature log amplifier and series of dielectric stabilized oscillators.	Sealectro Corp. 252 Mamaroneck, NY <i>S. Lucci, J. Flanagan</i> Line of RF coaxial connectors, including SMA, SMB, SMC, nanohex and between-series adapters.	Jay Stone & Associates 416 Los Altos, CA <i>J. Stone, D. Doty, H. Crittenden</i> Representing: Ferretec, Monolithic Microsystems, Herotek, Virtech, Integra, Time Microwave, Metelics and Microwave Technology.
RLC Electronics, Inc. 520 Mt. Kisco, NY <i>P. Wright, D. Borck, D. Rausch, H. Lenfesty</i> Passive microwave components, including coaxial and transfer switches, low-pass, highpass, bandpass filters; attenuators, couplers, detectors and power-dividers	Seven Associates 832 Sunnyvale, CA <i>H. Smith, S. Smith</i> Semi rigid cable tooling and cable assemblies.	Storm Products Co. 212 Hinsdale, IL <i>B. Holland, R. Gibbons, J. Holland</i> Semi-rigid and flexible precision microwave cables, delay lines, interchangeable microwave connectors.
Rogers Corp. 825 Chandler, AZ <i>G. Archer, M. Norris, R. Cole, E. Sandor, R. Jansen, J. Dobrick, R. Desilets, G. Traut</i> RT/duroid® 5500, 6006 and other microwave substrates, including metal-clad laminates.	S.G.C., Inc. 552 Simi Valley, CA <i>M. Cherubin</i> Microwave passive components: low-loss isolators and circulators, broadband components, 2- 4- and 8-way power-dividers, narrow & broadband terminations, DC insertion blocks, DC blocks, circulators for LNAs, module-type isolators.	Stout Industries, Inc. 907 Los Altos, CA <i>R. Stout, K. Hollingshead</i> Representing: Accumet Engineering, Dynatech-UZ, EMC Technology, Fujitsu Microelectronics, Kaman Instrumentation, Lark Engineering, Micropass, Microwave Printed Circuitry, RFD Inc., Sedco.
RS Microwave 216 Butler, NJ <i>R. Snyder, M. Snyder, E. Rinker, L. Earl, H. Schoendube</i> Microwave and RF filters, multiplexers and equalizers, 10 MHz to 40 GHz.	Judson A. Smith 746 Div., A.T. Wall Co. Boyertown, PA <i>G. Gibbs, R. Huntsman, C. Deinert</i> Small tubing and miniature tubular parts made from a variety of metals.	Struthers Electronics Corp. 312 Farmingdale, NY <i>A. Fischer, H. Keiles, J. Occhiuto, J. Mayer</i> Passive microwave components and sub-systems for satellite earth stations, radar and ECM systems. RF power measurement equipment including ATDMA peak power meter.
Sage Laboratories, Inc. 503 Natick, MA <i>T. Cieri, C. Marguerite, S. Pekunece, J. Lawrence, J. Pilger, B. Stookey</i> Passive components: Attenuators, couplers, filters, hybrids, mixers, phase-shifters, power-dividers, rotary joints, switches, video detectors, terminations, crystal holders, Wireline and Wirepac 3-dB quadrature hybrids and couplers.	Soladyne 540 San Diego, CA <i>N. Anderson, P. Taparuskas, R. Paine</i> Microstrip and stripline circuit boards for microwave applications.	Synergy Microwave 619 Fairfield, NJ <i>H. Levine, U. Rohde, A. Moore</i> Mixers, power-dividers, quadrature hybrids, BPSK and QPSK modulators, transformers.
Sanders, Microwave Div. 752 Manchester, NH <i>J. Schack, K. Leppanen, R. Bedard, D. Bond, N. Van Dine, R. Wood, J. Muse, C. Laning, W. Bradley</i> Various system/subsystem microwave integrated modules, including antenna arrays, RF power-monitoring detectors, switch matrices, receiver front-ends, digitized instantaneous frequency measurement discriminators and space-qualified hardware.	SPC Electronics Corp. 206 Santa Ana, CA <i>S. Tagawa, T. Okamoto</i> Rotary joints, calorimetric power meters (94 GHz), standard measuring equipment (180 GHz), noise figure and gain analyzer, mm-wave power meter, GaAs FET amplifier.	Systems for Automatic Test 107 Sunnyvale, CA <i>H. Pardula, B. Klauer, C. Rulofson, R. Irwin, D. Lawrence, A. Rogers, J. Collins, S. Sadtler, D. Weibel, G. Combs</i> SUGAR: A microwave circuit analysis and optimization package for HP200 series computers, featuring "user considerate" menu-driven interface.
Sawtek, Inc. 1014 Orlando, FL <i>B. Fortin, S. Miller, R. Hays</i>	Stable Energy Sources, Inc. 800 Lancaster, PA <i>R. Hess, J. Shea, C. Hall, L. Blatt</i> Hermetically sealed solid-state oscillators, amplifiers; low-noise, narrowband, 1-18 GHz complex integrated assemblies.	Systron Donner Corp., Instrument Div. 546 Concord, CA <i>A. Abboud, G. Dishong, D. Herbert, C. Nash, D. Sprague, R. Sullivan</i> Microwave counters, frequency counters, signal sources, programmable power supplies.
	Stantel Components 742 Schaumburg, IL <i>S. Fried, W. Cavallo</i> TWTs, TWT amplifiers, SHF radio and microwave sub-assemblies.	Systron Donner Corp., M/W Div. 647 Van Nuys, CA <i>R. Valleroy, J. Koss, A. Madni, L. Wan</i>



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Transmission-line analyzer, microwave subsystems, micro-integrated subsystems and microwave components; subassembly, passive microwave components, complex missile guidance systems requiring MIC thin-film technology

Tektronix, Inc. 829
Beaverton, OR

B. Bousquet, K. Dawson, L. Garrett, D. Hammed, K. Keeler

Spectrum analyzers with a mm-wave set up and two VHF-UHF set-ups.

Teledyne Microwave 504
Mountain View, CA

B. Roy, B. Zeiser, P. Gruver, M. Lee, P. Lee, B. Hickey, J. McPherson

Ferrite isolators and circulators, electro-mechanical coaxial switches, switch matrices, filters and multiplexers, VCOs, MIC subsystems, amplifiers, acoustic delay devices. Solid-state GaAs FET amplifiers, bulk acoustic wave delay lines, Bragg cells.

Tele-Tech Corp. 705
Bozeman, MT

J. Duncan, M. Duncan, C. Curtis, A. Olson

Custom components and subassemblies, low-cost components, RF and microwave signal-processing components and sub-assemblies for communications, navigation and instrumentation applications.

Test Equipment Corp. 807
Mountain View, CA

J. Fisher, L. O'Dell, T. Anderson, R. Blair

Rental, sale and lease of microwave equipment: sweepers, counters, analyzers, oscilloscopes, etc., by Marconi, Tektronix, Wiltron, Hewlett-Packard, and EIP Microwave.

Test & Measurement 250
World/Interfield Publishing Co.
Boston, MA

Test & Measurement World, a monthly publication for managers and engineers who make decisions about purchasing, implementing and upgrading test, measurement and inspection equipment for various electronic applications.

Texscan Instruments 220
Indianapolis, IN

M. Richardson, D. Whitehouse, A. Whitlock

Spectrum analyzers, sweep generator, synthesized signal generators, RF millivoltmeter, attenuators, bandpass/lowpass filters and oscillators.

Thin Film Technology, Inc. 243
Buelltton, CA

F. Bittle, P. Nosser, M. Jacobsmeier, J. Wafer

Employing evaporative and sputtering techniques, a vacuum coating service encompassing substrate preparation, depo-

sition, photolithography, and measurement and analysis of thin films.

Thomson-CSF Components Corp. 302
Rutherford, NJ

J. Apruzzese, M. Poirier, H. Sandager

Space-qualified components, ferrite and dielectric resonator materials, Si and GaAs diodes, VCOs, laser diodes, isolators, circulators, 94 GHz components.

Thomson CSF 302
Components Corp.,
Semiconductor Div.
Montgomeryville, PA

D. Kupinewicz, E. Gdowik, R. Tyson, D. London

RF and microwave power semiconductors for civilian and military use in CW and pulsed applications.

Thomson CSF, 302
Electron Tube Div.
Rutherford, NJ

A. Laconti, S. Barthelmes, R. Kolts, C. Bourhis, M. Maggiar

Satcom klystrons and TWTs for C- and Ku-band and DBS applications. TWTs for link applications, mm-wave passive components and BWOs to 1000 GHz.

Thomson CSF, 302
Microwave Modules & Devices
Sunnyvale, CA

J. Johnson, D. Wisherd

Custom, modular, solid-state amplifiers.

Time Microwave 519
Santa Clara, CA

P. LaTourrette, M. Maesel, M. Midwin, P. Nelson, E. Romero, D. Sheldon, L. Underkoffler

Mixer Products to 26.5 GHz: double-balanced, harmonic and image-reject mixers, single-sideband upconverters, doublers, mixer/preamps and image enhancement mixer/preamps. Filter/multiplexer products to 26.5 GHz: bandpass, band-reject, lowpass, and highpass filters; low-profile multiplexers using suspended substrate MIC; switch-filter assemblies.

Trak Microwave Corp. 424
Tampa, FL

T. Gant, G. Pate, R. Sloan, T. Roberts, J. Wadkowski

Oscillators, (dielectrically stabilized, crystal controlled, voltage controlled, YIG-tuned), GaAs FET amplifiers, IF amplifiers, bipolar transistor power amplifiers, frequency multipliers, comb generators, YIG filters, isolators/circulators (micro-strip, coaxial and waveguide).

Transco Products, Inc. 932
Marina del Rey, CA

R. Williams, T. Katter, B. Toffelmier, A. Kwon, B. Ridill, M. Robinson, J. Walker

Horn, spiral blade antennas, coaxial waveguide switches, combiners, dividers, filters and integrated RF assemblies.

TRW Microwave 615
Sunnyvale, CA

R. Bridge, S. Hammond, G. Layne, M. Morris, W. Patton, R. Shubin, J. Tatum, P. Thesing, P. Trock, D. Wright

Microwave semiconductor devices, components and subsystems with EW, radar, missile, satellite, telemetry, test equipment and telecom applications.

TRW RF Devices Div. 615
Lawndale, CA

F. Meyer, W. Sebastian, R. Hunter, M. Williams, G. Schreyer, R. Lace, C. Nixon, M. Gordillo, M. McCombs, D. Brayton and D. Faigenblat

Small and large signal RF transistors (bipolar) to 4.3 GHz, pulsed, linear and class C types, RF linear hybrid amplifier modules to 1.0 GHz, 80W for military and industrial applications, mobile transistors and hybrid modules in all bands.

TRX, Inc. 100
Attleboro, MA

R. Barry, D. Morrissey

Microwave chip resistors, chip terminations and chip attenuators.

A.J. Tuck Co. 315
Brookfield, CT

A. Tuck, D. Tuck, L. Hunt

Custom fabrication by electroforming of close-tolerance microwave components such as WG transitions, filters, horns, cavities, polarizers, orthomode transitions and millimeter components. No in-house product line.

Uniform Tubes, Inc. 410
Collegeville, PA

L. Deery, R. Schafer, D. Snader

Semi-Rigid Coaxial Cable, Cable Assemblies, In-A-Cable Low-Pass and Band Pass Filters, Millimeter Waveguide, Microwave Flexible Cable, Connectors, Adapters, Components, Flexible Cable and Fiber Optics.

Valbar 100
Attleboro, MA

R. Barry and D. Morrissey

Complete Microwave circuit board manufacturing including drilling, stamping, routing and plated through holes using a wide variety of materials produced by Rogers, Keane and Oak to name a few.

Varian Associates, 704
Beverly Microwave Div.
Palo Alto, CA

M. Smith, E. Schmidt

HCL-4 log amplifiers ICI-5 log amplifiers, Iclm-4 constant phase limiters, ten-channel source, AN/ALQ 156 STAMO,



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VSC 9755 mixer.

Varian Associates, 704
Microwave Equipment Division
Palo Alto, CA

H. Fowler, J. Fuller, R. Klein, C. Oleson, W. Warden

YIG oscillators, digi-stable oscillators, standard drop-in type amplifiers, standard high-band and low-band amplifiers, dielectric resonator oscillator.

Varian Associates, 704
Microwave Tube Div.
Palo Alto, CA

D. Ruiz

Millimeter-wave BWOs, 20-watt TWTs, VTU 6290 100 watt TWTs.

Vari-L Company 542
Denver, CO

C. Kiser, B. Morris, K. Orstrom

RF and microwave signal-processing components, including double-balanced mixers, dividers, phase detectors, switches, RF transformers, hybrids, variable inductors and RF chokes.

Vectronics Microwave Corp. 352
Middlesex, NJ

J. Vogler, T. Vogler

Microwave integrated circuits, microstrip components, digital phase-shifters, frequency translators, attenuators, PSK & QPSK modulators/demodulators, mono-pulse converters, integrated front-ends.

Vichem Corp., Gel-Pak Div. 201
Stanford, CA

V. Althouse, B. Benjamin, P. Ravenscroft

Chip trays for handling fragile microwave devices through various processing and shipping operations. Used for beam-lead devices, GaAs FETs and other sensitive die.

Voltronics Corp. 445
East Hanover, NJ

S. Newman, W. Newman

Precision trimmer capacitors, glass, quartz, air and teflon dielectrics, and multi-turn, sealed, non-rotating pistons. MIL QPL for most styles.

A.T. Wall Co. 746
Warwick, RI

C. Gibbs, R. Huntsman, C. Deinert

Waveguide tubing manufactured from aluminum, copper, brass, copper-coated invar, coin silver and other specialty alloys, as well as other tubular products.

Watkins-Johnson Co. 730
Palo Alto, CA

B. Hoglund, B. Corner, S. Fujisaka, A. Isaacs, W. Smith, T. Martin, R. Collier, G. Koker, J. Rowley, J. Nelson, V. Varenhorst, F. Haynie, L. Zulaica, R. Thurow, J. Lightsey, J. Stevick, G. Walker, L. Jones

Microwave amplifiers, oscillators, filters, mixers, switches, transformers, converters, integrated subsystems, sources and test equipment.

WAVECOM 816
Northridge, CA

D. Colletta, W. Anderson, G. Etzler

Passive microwave devices for ECM, communications, radar applications; high-reliability aerospace programs; filters, multiplexers, precision couplers and integrated assemblies for high and low power applications.

Waveline, Inc. 717
Fairfield, NJ

R. Koenig, J. McCrea, R. Powell, E. Fodor

New products, including a standard line of components in WR-22 and double-ridge waveguide. An operational setup will demonstrate WR-22 capability.

Wavetek Rockland Scientific Inc. 317
Rockleigh, NJ

P. Feinberg

Frequency synthesizers.

Wavetek Pacific Measurements 317
Sunnyvale, CA

E. Mendel, B. Nicklin, D. Armann, R. Pettengill

Automatic scalar analysis systems covering 10MHz to 40 GHz; RF/microwave power meters for CW and pulsed applications.

Wavetek RF Components 317
Beech Grove, IN

B. Malcolm, R. Binninger, M. Linton, J. Connors

Filters: lowpass, bandpass, highpass, including miniature Ultramin, tubular, L.C., tunable, and waveguide. Attenuators, including programmable, rotary step, T05 fixed pads, BNC and SMA fixed pads. Custom component design discriminators, delay lines, R.F. switches.

Wavetek San Diego, Inc. 317
San Diego, CA

J. Ewing, C. Foster

900 series solid-state signal generators features two models, 904 (3.7 to 7.6 GHz) and the 907A (7.0 to 12.4 GHz). 950 series microsource covers 1 to 18 GHz in four models: 952, 1 to 4 GHz; 954, 3.7 to 7.6 GHz; 955, 7.5 to 12.4 GHz; and 957, 12 to 18 GHz.

Weinschel Engineering 507
Galthersburg, MD

H. Banning, G. McNamara, J. Maffett, A. Belski

RF and microwave coaxial components; VM-24 signal generator calibrator, frequency, power meter; System II automatic power meter calibration system and pre-

cision power meter; 1810A dual-channel stabilized RF ratio meter

Western Microwave Inc. 1003
Sunnyvale, CA

J. Lautermilch, K. Schoniger, A.M. St. John-Brooks

GaAs FET amplifiers, mixers, integrated RF subassemblies, DLVAs, drop-in microstrip units, stack 4-port isolators, combine bandpass filters, suspended substrate filters, channelizers.

Wiltron Co. 403
Mountain View, CA

A. Hart, I. Andres, J. Tarver

Automated scalar network analyzer measurement system (10 MHz to 40 GHz), 46 GHz coaxial connectors, instruments and components for measurement to 40 GHz.

Xtalonix Products Inc. 552
Columbus, OH

J. Chabria, J. Shannon

Microwave materials: garnets, ferrites, dielectric, substrate polishing metallization.

Zeta Laboratories 1029
Santa Clara, CA

C. Frank

Synthesizers, oscillators, multipliers, Doppler simulators, subsystems, Com Generators, voltage tunable filters.