



1991 MTT-S Exhibition Guide

The following list is complete as of press time and may not include all companies.

Accumet Engineering Corp. 125
Hudson, MA
C. Haering, H. Muffoletto, L. Voyer
Lapped and polished ceramic, BeO, silica and other dielectric substrates.

Adams Russell 1005
See M/A-Com

Addelco Corp. 808
Anthony RF Products
Microwave Oscillator Corp.
Needham, MA
D. Moreau, W. MacNeil, T. Polayes, M. Polayes, W. Anthony, W. Rischpater

RF and microwave filters, including highpass, lowpass, bandpass and bandreject in both fixed frequency and tunable options. Configurations include miniature lumped component, combline, cavity, helical and tubular construction. Miniature and surface mount options are featured. Phase-locked, free running and voltage-tuned DROs, crystal multipliers and fundamental cavity oscillators.

Advance Reproductions Corp. 119
North Andover, MA

G. Stoll, C. Losanno, S. Alaimo, M. Crowley, I. Nigrelli, P. Nigrelli, D. Rokes, K. Lavin, M. DeBruyckere

High precision photomasks, phototools and services, including circuit and graphic scanning, computer-aided drafting and data conversion, same-day and overnight photoplotting, full reprographic and photomask-making, and custom photoplotting.

Advanced Technology Group Inc. 1519
Rockaway, NJ

L. Tao, F. McIver-Hanus, E. Maier

Glass-to-metal seals, including flat packs, dual-in-line headers, SAW, power and microwave packages, TO-headers, feedthroughs and a wide variety of custom designed packages.

Advantech 405
Montreal, Quebec, Canada

D. Gelerman, D. Brace, S. Gelerman, J. Kusek

Digital and microwave components and subsystems, power amplifiers, both high power and low noise for commercial microwave, terrestrial and satellite systems in military application; bandpass filters; oscillators, including free run and phase-locked loop models; and intermodulation distortion test sets.

Advantest America Inc. 210
Lincolnshire, IL

B. Dentinger, J. Heitman, A. Kintaka, T. Takenaka, P. Bazan

26.5 GHz, 8 GHz and 2.6/3/6 GHz spectrum analyzers, 3.6 GHz network analyzer, signal generators and frequency counters.

AEL Defense Corp. 1310
Lansdale, PA

D. Ritchie, A. Gross

Control products, including switches and attenuators; antennas, including spirals, horns, log periodic, blades, helix and arrays; and log amps, including DLVAs, SDLAs, IF logs, and front-end converters and receivers.

Aerowave Inc. 700
Medford, MA

T. Kozul, M. Kozul, L. Kahn, R. Kahn

Millimeter-wave components in the frequency range of 18 to 325 GHz.

A.J. Tuck Co. 1015
Brookfield, CT

A. Tuck, D. Tuck, L. Hunt

Customized precision electroformed components; waveguide transitions, filters, cavities, polarizers, OMTs, horns, corrugated horns and waveguide, miniature bends, miniature double ridge and mm-wave components, and air dielectric coaxial cables.

Akon Inc. 816
San Jose, CA

F. Brewer, S. Sareen, R. Sanders

Detector log video amplifiers, sequential detection log video amplifiers, IF log amplifiers, compressive amplifiers and IF/video amplifiers and subsystems.

Alan Industries Inc. 1224
Columbus, IN

W. Kennedy, S. Kennedy, B. Kennedy, C. Shofner

Programmable, continuously variable, rotary, fixed cam actuated, toggle switch, rocker switch and push button attenuators; terminations, directional couplers, RF fuses, resistive dividers and impedance matching pads.

Albacom plc 518
Dundee, Scotland

M.J. Wood, B. O'Donnell

Low, medium, high and very high power ferrite circulators, isolators and terminations for radar, communications, industrial microwave heating, accelerator and fusion applications; receiver protectors combining TR cell and solid-state limiters and incorporating STC techniques for radar and communication systems.



Alessi, Inc. 1417
Irvine, CA

D. Miller, T. Reese, E. Brewer, S. Wanger

Manual and semi-automatic microwave probe stations and micropositioners that accommodate Tektronix, Cascade or Design Technique probe heads and address frequencies up to 60 GHz; and the Alessi laser cutter.

Alpha Industries Inc. 915
Components and Subsystems Division
Woburn, MA

R. Hebert, B. Harris, D. Fein, B. Sharkey, D. Emerrick, M. Walsh, R. Cooley, K. Perry

Microwave and mm-wave switches, attenuators, amplifiers, oscillators, antennas, power sources, and multifunction assemblies and systems.

Alpha Industries Inc. 915
Devices Group
Woburn, MA

G. Llewellyn, R. Koons, M. Reid, D. Gallagher, C. Genzabella, D. Barker, A. Sakalarious

RF, microwave and mm-wave products, including PINs, limiters, varactors, GUNNs, point contact and Schottky diodes; MMIC products, including FETs, switches, analog and digital attenuators, mixers and downconverters covering DC to 6 GHz and microwave frequencies.

American Technical Ceramics 608
Huntington Station, NY

D. Davis, J. Wright, K. Levine

Ceramic and porcelain RF/microwave multilayer and single layer capacitors for high performance applications.

Amitron 1515
North Andover, MA

R. Simone, R. Sharkey, H. Sparks, J. Simone, A. Campbell

Thick-film microelectronic circuits; chip resistor components, including microwave chip attenuators; surface mounted assemblies; custom single and multilayer printed, metalized holes and edge metalization.

AML Inc. 1318
Camarillo, CA

Amphenol Corp. 1500
RF Division
Danbury, CT

N. Buonanno, J. Makuch, P. Ladoletta, B. Neill, R. Terrel

RF and microwave coaxial, triaxial and twin-axial connectors and cable assemblies.

Amplica Inc. 810
Newbury Park, CA

Amplidyne Inc. 1607
Belle Mead, NJ

Amplifier Research 1406
Souderton, PA

D. Shepherd, E. Shepherd, L. Pokorny

Broadband 10 kHz to 1 GHz RF power amplifiers and accessories for laboratory and industrial uses, including RF susceptibility testing, wattmeter calibration, NMR/MRI, particle accelerators, EMP simulation, and RF plasma research and heating.

Amplifonix Inc. 422
Philadelphia, PA

A. Riben, R. Dubois, J. Grotzinger, M. Sonstein

Bipolar and GaAs FET amplifiers, MMIC and PIN diode switches, digital attenuators, voltage controlled oscillators and custom hybrid circuits in the frequency range of kHz to 3000 MHz.

Anadigics Inc. 418
Warren, NJ

C. Armour, R. Von Gerichten, C. Huang, J. Patel, R. Rosenzweig, P. Wallace

GaAs integrated circuits for RF, microwave and fiber-optic transceiver applications, such as satellite TV, SONET, HIPPI, FDDI, BISDN, PCN, LAN and wireless, in the commercial and consumer electronics field.

Anderson Software Associates 918
Los Gatos, CA

T. Anderson, H. Stewart

MicroCAD series, including circulator CAD, filter CAD and coupler CAD. Computer-aided design of passive waveguide components from 2.6 to 26.5 GHz.

Anghel Laboratories Inc. 1418
Rockaway, NJ

Anritsu America Inc. 333
Oakland, NJ

Anzac 1005
See M/A-Com

Apollo Microwaves Ltd. 1205
Dorval, Quebec, Canada

N. Vouloumanos, L. Schatt

1 to 60 GHz microwave components and subsystems, including filters, switches, terminations, couplers, circulators, isolators, adaptors, front end assemblies and switching combining, for satellite earth stations, telecommunications and military applications ranging from mW to MW.

Applied Dielectrics Inc. 234
San Francisco, CA

C. Goff, B. Trivelli

Subminiature coaxial connectors and cable assemblies.

Applied Microwave Magazine 1620
Lexington, MA

J. White, E. White, P.J. Barry, K. Barry, E. Angelakis, J. Angelakis, B. Cohen, C. White

Applied Microwave is a quarterly magazine written for professionals in the RF microwave and optical fields with articles and advertising that span the 1 MHz to light frequencies.

Applied Systems Engineering 1036
Fort Worth, TX

B. Jostrand

Microwave amplifiers, transmitters and sub-systems covering the frequency range from 400 MHz to greater than 100 GHz; pulse/CW cavity oscillators, amplifiers and transmitters, helix, ring loop and coupled-cavity TWTs; klystrons; magnetrons; solid-state modulators; and mm-wave amplifiers and transmitters.

ARC Technologies 822
Amesbury, MA

T. Durant, D. Healey, B. Perkins, S. Heitmann

Microwave absorbing materials for the low observable industry and antenna industry that include carbon impregnated honeycomb, lossy plastic open cell foam, magnetic particle loading of silicones, urethane and nitrile sheets and iron loaded epoxy coatings and sheets.

Arlon Inc. 821
Microwave Materials Division
Bear, DE

R. Fuller, M. Carlson, D. Watt, R. LeSage, S. Newton, J. Goheen, N. Wells, K. Husted, T. Tschida, J. Frankosky, P. Sanza

PTFE and specialty composite laminates for low loss, frequency dependent microwave applications, including DiClad® and Cu-Clad®, woven glass/PTFE and ceramic filled/PTFE substrates, and Isoclad, non-woven glass/PTFE and non-woven ceramic filled/PTFE substrate; and a variety of bonding films.

Armtek Inc. 1712
Richardson, TX

H. Lester, D. Deck, E. Williams, R. Beniers, L. Kemp

Customized 100 kHz to 26 GHz amplifiers, DLVAs, threshold detectors and microwave subassemblies; microwave integrated circuits utilizing hybrid chip and wire techniques and the latest MMIC circuits; lumped-element microwave integrated circuits using hybrid and lumped element circuit topologies; and DISCRETE circuits.

Arrowsmith Shelburne 806
Shelburne, VT

R. Stevens, P. Alinovi, K. Rossner

DC to 26.5 GHz RF and microwave switches and RF cable assemblies.

Artech House Inc. 625
Norwood, MA

E. Higgins, R. Warren

Technical books and software on microwave applications and techniques.

Artwork Conversion Software 112
Santa Cruz, CA

S. DiBartolomeo, A. Morawski

CAD translators and postprocessors for microwave and RF photomasks; and translators between major CAD systems.

- Aspe Inc.** 1115
Towaco, NJ
Custom power supplies for military and aerospace applications.
See RF Associates Inc.
- Astrolab Inc.** 103
Warren, NJ
J. Toma, M. Ceres, O. Johnson, S. Toma, M. Keating
Microwave components, including cable, cable assemblies, adaptors, connectors, waveguide adaptors, delay lines and antennas.
- ATN Microwave Inc.** 1129
Billerica, MA
V. Adamian, J. Caruso, M. Fennelly, D. Mandrei, C. Woodin, V. Zohrabian
NP5B semiconductor device characterization system, NP6 low cost, high speed transistor noise parameter tester; and DC1 intermodulation vs. impedance tester.
- A.T. Wall Co.** 1707
Warwick, RI
J. Matzen, J. Deinert, B. Diggett, R. Huntsman, C. Gibbs
Precision rigid waveguide tubing manufactured from aluminum, copper, brass, silver, copper clad invar and copper clad aluminum.
- Automatic Connector Inc.** 1211
Commack NY
J. Morelli, D. Lowrey, B. Metcalf, D. Armstrong
RF connectors, adapters, terminations and switches; and SMA BNC, N, TNC, HN, LC LT connector series available in standard and special design configurations.
- Avantek Inc.** 603
Santa Clara, CA
R. Atwater, J. Woods, L. Angelus, B. Angelini, M. Clifford, S. Wichtendahl, M. Corolla
High frequency RF, microwave and mm-wave components and assemblies, including new plastic-packaged transistors and MMICs, surface mount amplifiers and VCOs, VHF oscillators and 2 to 20 GHz YIG-tuned oscillators.
- AVX Corp./Kyocera** 1608
Myrtle Beach, SC
D. O'Toole, R. Phillips, T. Cantine, A. Gray, S. Makl, S. Burg
Microwave MLC capacitor; CDR-S level; SLC; maxi SLC; Accu-F; Accu-P; A Q; MHF, VHF ultra chip.
- Aydin Corp. West** 1715
San Jose, CA
N. Donaldson, J. Harris
500 MHz to 40 GHz thin-film bipolar and GaAs FET amplifiers for commercial and military applications; and solid-state microwave oscillators for commercial and military telecom applications in the 500 to 18 GHz range.
- Babcock Inc.** 1721
Orange, CA
S. Ghandi
- Balo Hermetics Co.** 1512
Butler, NJ
E. Rapoza, M. Byrnes
Hermetic, high rel packages for microwave hybrid applications; glass-to-metal and ceramic-to-metal packages using Kovar, stainless, high strength copper, moly, copper/moly, copper/tungsten and BeO materials, and using high current capacity leads.
- Barnard Microsystems Ltd.** 1635
St. Albans, Herts, UK
J. Barnard, P. Abrie, R. Jansen
Microwave circuit design software, including multimatch for the synthesis of impedance matching networks and wideband amplifier circuit topologies; wavemaker for the layout and schematic capture of MMICs and hybrid microwave circuits; and LINMIC+ for the prediction of electrical response of microwave circuits up to and including mm-wave frequencies.
- Boonton Electronics Corp.** 411
Randolph, NJ
M. O'Donnell, R. Sickles, D. Spencer, B. Spinney, M. Devane, K. O'Connell, K. Dambruck
RF and microwave test and measurement instrumentation; CW and peak power meters, voltmeters, sweep generators, scalar network analyzers, modulation analyzers, meters and signal generators; and audio test and impedance instruments.
- Brush Wellman Ceramics** 1600
Cleveland, OH
M. Anderson, E. Cooke, D. Dewire, G. Chesmar
Beryllia ceramic packaging, including substrates, packages, metallized and machined components.
- Buckbee-Mears/St. Paul** 611
St. Paul, MN
- Cablewave Systems,** 117
Div. of Radio Frequency Systems Inc.
North Haven, CT
A. Criscuolo, F. Weissgerber, D. Tomaszewski, R. Griffin
Turnkey systems that include Flexwell® semi-flexible foam and air dielectric coaxial cables, elliptical waveguide, connectors, installation accessories and pressurization equipment; and precision Flexwell phase-matched and phase-stabilized coaxial cable assemblies.
- Cadence Design Systems, Inc.** 211
San Jose, CA
- California Eastern Labs** 1208
Santa Clara, CA
L. Lea, B. Tyson, S. Rynas, S. Morris, D. Apte, J. Kellelt, G. Clark, N. Liberopoulos, C. Weinhofer, G. Davenport, M. Caulfield, J. D'Agostino
- RF and microwave semiconductors, including small signal and power bipolar transistors; GaAs and silicon MMICs and prescalers; low noise and power GaAs FETs and diodes.
- Cardiff Publishing** 1716, 1718
Englewood, CO
See Defense Electronics and RF Design
- Cascade Microtech Inc.** 818
Beaverton, OR
E. Strid, R. Gleason, D. Carlton, J. Ladwig, T. Burcham, D. D'Almeida, P. Andrews
Summit series probe stations, noise parameter test systems, V-band wafer probes and calibration substrates, and package probe heads and package test fixtures.
- Celeritek Inc.** 924
San Jose, CA
R. Jones, G. Koker, T. Herdt, S. Fujisaka, R. Chou, D. Tuccori, J. Mahler, G. Policky, B. Tucker, E. Chase, B. DeBoo
GaAs FET amplifiers, MMICs, GaAs FETs and converters for commercial communication and VSAT transmitters.
- Cinetic Technologies Inc.** 905
St. Laurent, Quebec, Canada
D. Geller, C. Weldon, B. Coté
Cable manufacturing equipment.
- Coleman Microwave Co.** 805
Edinburg, VA
K. Coleman, Sr., K. Coleman, Jr., J. Coleman, D. Braithwaite, B. Gibson, M. Emwiller, G. Brinkley, N. Coleman, P. Nelson
Microwave filters, duplexers and tunable and fixed-tuned triplexers, featuring direct frequency tape and LED readouts; IEEE-bus compatible programmable filters with accuracy of ± 1 MHz in coaxial and waveguide designs for high power and receiver applications; and rigid and flexible waveguide assemblies, bends, twists, straight sections, terminations and coaxial adapters covering the frequency range from 0.15 to 26 GHz.
- Communications Techniques Inc.** 507
A Dover Technologies Co.
Whippany, NJ
T. Ede, R. Badami, L. Bickley, J. Marino, T. Hammersley, U. Yaniv
7 MHz to 23 GHz RF and microwave signal sources, including phase-locked and free running DROs; VHF and microwave low noise frequency synthesizers; mechanically tunable and automatic phase-locked oscillators; single and multiple crystal oscillators; voltage-controlled and cavity oscillators; and frequency multipliers and synthesized STA-LO-COHO-AFC subsystems for magnetron radars.
- Compac Development Corp.** 300
Holbrook, NY
- Compact Software** 126
Paterson, NJ



L. Angelini, A. Armstrong, J. Driscoll; P. Limberg, B. McGinn, J. McGovern, R. Pengelly, M. Perhacs, U. Rohde, S. Wheelis

Microwave SuccessTM is the system simulator that gives systems engineers the ability to create proposals based on a minimum of information, important measurements and calculations from the other simulators, and performs full nonlinear end-to-end system analysis for design review data packages.

Compex Corp. 718
Medford, NJ

G. Gordon, C. Ennis

Single-layer ceramic microwave chip capacitors with either gold or tin-plated electrodes configure in various patterns, such as split electrode, binary electrode, electrode arrays and safety margin electrodes; and metalized and unmetalized substrates.

Component General Inc. 1538
Odessa, FL

L. Cook, J. Cook, R. Davo, M. Davo, T. Florida

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

Comstron 617
A Division of Aeroflex
Plainview, NY

W. Meditz, S. Rosenfield, L. Borow

Fast switching low noise synthesizers, including the 10 MHz to 18.4 GHz FS2000 series with a guaranteed switching speed of 1 μ s maximum; and filters and system level products.

Conductus Inc. 1618
Sunnyvale, CA

R. Barton, G. Liang

Superconducting thin films for use in resonators, filters and passive signal processing.

Connecting Devices Inc. 406
Long Beach, CA

J. Dunbabin, W. Carpenter

Handi-FormTM flexible reformable cable assemblies, 2.99 mm K connectors featuring unique swept right angle types, phase adjustable SMA connectors, automatic network analyzer test cables, TNC swept right angle in-series adapters and 7 mm adapters.

Continental Microwave & Tool Co. Inc. 1218
Hampton, NH

T. Brown, D. Wall, J. Ripel, F. Kinslow

Flexible and rigid waveguide assemblies, passive components and waveguide antennas; 28 sizes of rectangular and double ridge waveguide in rigid and seamless flexible styles from WR284 to WR22.

Cougar Components 417
Santa Clara, CA

Crystal Technology Inc. 1407
Palo Alto, CA

Z. Palmer, D. Hawkins, A. Comparini

SAW products, including spectral shaping and timing recovery filters, resonators, correlators, delay lines, low loss filters, filters for CATV, satellite receivers, electro-optic modulators and integrated optic components.

CTT Inc. 1523
Santa Clara, CA

S. Mussynski, G. Graham, D. Tai

0.5 to 40 GHz GaAs FET amplifiers and integrated subassemblies, including low noise, medium and high power, up to 40 W, MIL-I 45208 QA systems and MIL-STD-883C-screened amplifiers.

Cuming Corp. 235
South Easton, MA

W. Cuming, L. Watkins, J. Bruun, J. Cuming

Radar absorbers, microwave and dielectric materials, radar reflectors, conductive plastics, adhesives and potting compounds.

Daden Associates Inc. 1027
Laguna Hills, CA

D. Hook, L. Jones, D. Henry

1 MHz to 26.5 GHz RF and microwave band-pass, bandstop, lowpass and highpass filters.

Daico Industries Inc. 322
Compton, CA

B. Grunau, K. Townsend, S. Peck

Control products, including switches, SPIT to SPROT, phase shifters, digital attenuators, voltage variable attenuators, relays, and other parts available in a variety of packages.

David Sarnoff Research Center 914
Princeton, NJ

M. Ettenberg, F. Marlowe, R. Camisa, D. Markman

Microwave power amplifiers, high dynamic range receivers and microwave hybrid components and technologies.

Defense Electronics 1716
Englewood, CO

R. Burkes, L. VanCliet

Free copies of the May and June issues.

Diamond Antenna & Microwave Corp. 1108
Winchester, MA

A. Hovanessian, E. Scollins, H. Trotta

DC to 40 GHz passive microwave components including rotary joints, horns, antennas, adapters, couplers, terminations, and waveguide and coaxial assemblies.

Dielectric Laboratories Inc. 505
Cazenovia, NY

B. Semans, J. Stauring, G. Vorlop

Di-Cap[®] QPL approved single layer microwave ceramic capacitors; QPL approved

porcelain capacitors; Di-MIC[®] metalized ceramic substrates; substrate circuit carriers; and plates for lumped-element filters.

Ditom Microwave Inc. 822
San Jose, CA

D. Hassett, J. Hassett, T. Weisz

Ferrite isolators and circulators.

Dorado Co. 1238
Seattle, WA

H. Rutstein, M. Myerow, P. King, C. Rutstein

Millimeter-wave products from 18 to 200 GHz and beyond, including passive and active devices and instruments; 33 to 1500 GHz oscillators; 200 MHz to 170 GHz ferrite isolators and circulators; and 30 MHz to 78 GHz YIG filters.

Dow-Key Microwave Corp. 1409
Ventura, CA

E. Kjellberg, J. Dysart, N. Pena, J. Larson, W. Worley

Coaxial RF and microwave electromagnetic switches and relays.

Dynatech Microwave Technology 424
Calabasas, CA

Dynawave Inc. 1038
Georgetown, MA

C. Lewis, D. Gartzke, B. McLaughlin, M. Calvetti, A. Scannelli

Precision microwave coaxial connector and cable assemblies, including SMA, SSMA, KTNC type N, blindmate DynamateTM, blindmate DynamiteTM, DynaconTM interconnects, DynasealTM hermetic cable assembly and delay lines.

Eagleware Corp. 511
Stone Mountain, GA

R. Rhea, R. Lefebvre

High speed interactive RF and microwave circuit simulation, tuning, optimization, and Monte Carlo analysis software for IBM PCs; filter, equalizer, oscillator and transmission line synthesis software; and EEpal, a new programmable engineering tool with hundreds of preprogrammed formula and data screens.

East Coast Microwave Distributors 806
Stoneham, MA

B. Cooper, B. Quinn, N. Mills, R. Stevens, K. Rossner

Adapters, attenuators, connectors, cable assemblies, DC blocks, detectors, directional couplers, equalizers, isodapters, power dividers, terminations, instrument test cables, special connectors, waveguide adapters, isolators, circulators, hybrids and EM switches.

EDO Corp. 1315
Barnes Engineering Division
Shelton, CT

R. Stetson, D. Simko, K. Amato

CompuTherm III micro thermal imager and MicroTherm spot temperature infrared microscope for use in semiconductor design, failure analysis and reliability engineering.

EEsof Inc. 1428
Westlake Village, CA

L. McIlquham, J. Bunting, G. Kanaan, D. Leiss, R. Ross, J. Benincasa, A. Brooks, T. Hopple, J. Kapinos

CAE and CAD software for high frequency analog and microwave circuit design, linear and nonlinear circuit and system simulation, filter design and network synthesis, computer-aided test, and layout tools for high frequency printed circuit boards, hybrids and MMICs.

EEV Inc. 809
Elmsford, NY

F. Oakes, A. Markiewicz, A. Sayers, G. Ball, T. Ellis

TWTs, TWT amplifier systems, magnetrons, mm-wave components and microwave devices.

EIP Microwave 1030
Milpitas, CA

D. Mulder, R. Bush, C. McDaniel, J. Khazam

Pulsed and CW microwave and mm-wave frequency counters, signal-profiling test sets and VXIbus RF/microwave stimulus/response test systems.

Electro-Films Inc. 618
Warwick, RI

B. Black, J. Coupal, T. Petit, F. Urrico, G. Erickson, B. Rizza

Thin-film passive microwave components, metalized plates, patterned substrates, metalized through holes and patterned edges, and microwave chip resistors.

Electronic Decisions Inc. 1413
Urbana, IL

The acoustic charge transport signal micro-processor, a programmable analog signal processor capable of performing over 45 B multiply-and-accumulate operations per second, with adaptive equalizer, programmable filter, high speed pattern matcher, interference canceller and signal generator applications.

Electro Technik Industries 201
Clearwater, FL

See Res-Net
See Wavetronix

Elettronica SpA 1731
Rome, Italy

F. Nicolai, C. Lamesa, G. Greenwood, B. Mazonas, P. Rouse

High performance microwave components and subsystems, including cascaded microwave modules; FET and GaAs MMIC amplifiers; PIN switches; DROs and VCOs; and helix TWTs for ECM and radar applications.

Elisra Electronic Systems 1410
Hybrid Microelectronics Division
Bene Beraq, Israel

D. Shlomo, S. Ovadia, Y. Bechor

Detector log video amplifiers; log IF amplifiers, FM discriminators, linear IF amplifiers, TO-8 RF amplifiers, RF switch drivers, SRAM memory modules, LED display modules and custom hybrids.

Elisra Electronic Systems 1410
Microwave Division
Bene Beraq, Israel

R. Perez, O. Dar, I. Barak, U. Friedman, J. Feldfeber

Passive and active microwave and mm-wave components, custom-designed supercomponents (functions); microwave boosters for communications and TWTA retrofit; RF signal distribution matrices; and RF solid-state power amplifiers and transmitters.

EMC Technology Inc. 606
Cherry Hill, NJ

P. Semitschew, L. Catalina, S. Rollin

Detectors, terminations, loads, attenuators, DC blocks, shorts, capacitors, resistors, connectors, programmable attenuators, surface mount devices and custom RF circuits.

Emerson & Cuming Inc. 900
Canton, MA

Microwave absorbers, RF attenuation materials, absorbers for antenna pattern control, surface current attenuation materials, and RCS reduction materials.

EMF Systems Inc. 1021
State College, PA

J. Chernega, M. Cleland, J. Chernega, C. Lorenc

Solid-state microwave oscillators, including VCOs, crystal DROs, phase-locked oscillators and associated circuitry.

ENI 1415
Rochester, NY

E. Maier, C. Costello, J. Gorbald, R. Coco

Broadband power amplifiers to 5 kW and 1 GHz.

Epitaxial Products International 121
St. Mellons, Cardiff, UK

Epitronics Corp. 1022
Phoenix, AZ

Epsilon Lambda Electronics Corp. 1029
Geneva, IL

R. Knox, S. O'Brien

Millimeter-wave transceivers, components and subsystems for radar and communications applications.

Evered & Company Ltd. 209
Smethwick, Westmidlands, UK

Explosive Fabricators Inc. 615
Louisville, CO

P. Hingorany, A. Suppinger, H. Mansell

Explosion-clad materials for microwave and power hybrid hermetic electronic packaging.

Farran Technology Ltd. 920
Ballincollig, Cork, Ireland

D. Vizard

Millimeter-waveguide components and sources, including mixers, detectors, phased-locked sources; Gunn oscillators and multipliers; millimeter and submm-wave Schottky barrier mixers, varactor diodes and radiometer systems; 300 to 3000 GHz quasi-optical components, including corner cube mixers and detectors, harmonic mixers, mirrors, lens, filters and beamsplitters.

See TMR Associates

FEI Microwave Inc. 936
Sunnyvale, CA

J. Allan, D. Bush, B. Byk, P. Clark, R. Curby, J. Lee, F. Lemmon, L. Martire, F. Morese, M. Pardo, W. Patton, P. Thesing, S. Van Fleteren

Microwave diodes, components, vertically integrated assemblies and MMIC devices designed for EW, radar, missile, satellite, test equipment and telecommunications markets.

Ferretec Inc. 203
Fremont, CA

D. Killen, D. Hoekstra, R. Krueger, W. Keane, C. Schiebold, L. Pihl, M. Carroll, J. Guenard

Microwave tunable bandpass and bandreject YIG filters, oscillators, and harmonic generators, and integrated receiver front ends in the 500 MHz to 40 GHz frequency range; and Ferretac,® closed loop filters.

Filtran Microcircuits Inc. 423
Ottawa, Ontario, Canada

C. Sutton, N. Sutton, K. Ramachandran, E. Andrews, D. Thomson

High resolution circuits manufactured on Teflon and ceramic for commercial and military microwave communications.

Flann Microwave Instruments 118
Bodmin, Cornwall, UK

I. Crane, B. Fleming, D. Collier

High performance lens horn antennas up to 140 GHz, including circular, rectangular and sectoral models; waveguide calibration kits for use with 1 to 140 GHz automatic network analyzers; 4 to 140 GHz programmable waveguide attenuators, phase shifters and switches with controllers featuring optional GPIB or RS232 interface; manual and programmable polarizers and polarization analyzers; and 1 to 170 GHz waveguide devices, including rotary vane attenuators, directional couplers, adaptors and terminations.

Flexco Microwave, Inc. 136
Port Murray, NJ

Florida RF Labs Inc. 114
Palm City, FL

D. Sampson, G. Fenex, F. Scalzo, C. Geder, S. Geder, C. Geder, Jr.

Microwave thin-film resistor products, including high power resistors, terminations

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and attenuators; stripline, microstrip, coaxial and waveguide components; RF coaxial cable assemblies, flexible and semi-rigid, phase matched, coaxial delay lines.

Focus Microwaves Inc. 413
Pointe Claire, Quebec, Canada

C. Tsironis, I. Fichtner

Computer-controlled microwave tuners operating with IBM-PC or compatible. The system includes noise parameter, amplifier and oscillator load pull and intermodulation analysis capability. Test frequency range is from 0.6 to 60 GHz.

FSY Microwave Inc. 1628
Rockville, MD

W. Forrestel, J. Yania, J. D'Ostilio, F. Behdin, R. Siushansian

High rel RF and microwave filters and multiplexers from DC to 40 GHz. Topologies include miniature, LC, surface mount, microstrip, coaxial, suspended substrate, comb-line, cavity, interdigital and waveguide.

Fujitsu Microelectronics Inc. 104
San Jose, CA

S. Rupp, T. Shintani, B. Utter, D. Maly, P. Martin, G. Medley, M. Adamo, Y. Nemoto, M. Mathew, Y. Nishio, Y. Hirano, J. Fukaya

Microwave GaAs FET devices and related products, including microwave power amplifiers, power FETs, low noise HEMT devices, GaAs MIC and devices for microwave and cellular radio applications.

GaAsCode Ltd. 131
Cambridge, UK

P. Ladbrooke, J. Bridge, A. Hill, L. Carlin

Physics-based software tools with the application goal of right first-time MMIC design, using FETs and HEMTs; the design approach simulates the responses of complete MMIC chips using device physics to connect the electrical behavior back to the FET technology, also used to pinpoint the source of out-of-spec process faults.

Gamma-f Corp. 306
Torrance, CA

Gamma Microwave Inc. 920
Santa Clara, CA

L. Nielsen, D. Smith, D. Oberndorf

High power microwave components, including waterloads, filters, arc sensors, windows, circulators, isolators, directional couplers, diplexers, integrated assemblies, and focusing electromagnets for klystrons.

See TMR Associates

Gel-Pak Division 409
Vichem Corp.
Mountain View, CA

M. Althouse, S. Graves, S. Feldstein

Shipping and handling system for high value, fragile microelectronic components, including GaAs FETs, MMICs, RF carriers, sub-

strates, modules and packaged devices; available with ESD protective materials for sensitive devices.

General Microwave Corp. 1018
Amityville, NY

S.A. Rinkel, M. Wind, B. Grand, A. Caggiano

Microwave oscillators, including dielectric resonators, voltage-controlled and digitally-tuned; microwave PIN diode control components, including attenuators, modulators, switches, phase shifters, limiters and coaxial mm-wave; and microwave instruments, including, automatic single and dual channel peak power meters, average power monitors and radiation hazard measuring systems.

Getelec Inc. 1721
Goleta, CA

E. Berriman

Standard and custom conductive elastomers and compounds; anti-corrosion gaskets; molded, die-cut, precision laser-cut and extruded gaskets for military, aerospace and industrial applications.

See RF Associates Inc.

GHz Technologies Inc. 905
St. Laurent, Quebec, Canada

Z. Huszar, J. Lindover, J. L'Ecuyer, B. Szendrenyi

Filters, terminations, couplers, circulators, isolators, adapters, subsystems, predistortion alignment test accessory units and waveguide components.

Giga-tronics Inc. 712
Pleasant Hill, CA

R. Loft, R. Chikhani, D. Bogue, P. Edwards

Microwave and mm-wave synthesized sources, signal generators and sweepers; weather radar test sets; and VXI microwave synthesized sources.

Gilbert Engineering Co. Inc. 110
Glendale, AZ

R. D'Entremont, D. Burris, J. Lokken, J. Zorzy

High performance microwave connectors and custom connector products, including GPO, GMS, GSP, SMA, TNC, EWTNC, N, 7 mm and adapters.

W.L. Gore & Associates Inc. 312
Newark, DE

R. Davis, T. Fairchild, B. Mitchell

DC to 50 GHz microwave cable assemblies 26.5 to 125 GHz flexible mm-wave guides, EMI shielding and gasketing materials, TETRA-ETCH® fluoropolymer etchant and etching services.

Harris Microwave Semiconductor 801
Milpitas, CA

S. Hecker, G. Smith, K. DeSalvo, V. Kovacevic
GaAs FETs, MMICs, and foundry services; 2 to 20 GHz discrete FETs in die and packaged form with RF output power up to 1 W; for 0.5 to 3 GHz, 2 to 6 GHz and 6 to 128 GHz MMICs; and foundry services for application-specific MMICs.

Haverhill Cable & Manufacturing Corp. 120
Haverhill, MA

T. Kneeland, D. Kneeland, S. Raucci, F. Kneeland

MIL-C-17 semi-rigid coaxial cables in various sizes, types and finishes.

Herotek Inc. 1324
Sunnyvale, CA

C. Lai, C. Lai, P. Lau, E. Colety

Microwave detectors, limiters, amplifiers, comb generators, switches, harmonic mixers, power monitors and MIC subassemblies.

Hewlett-Packard Co. 730
Santa Clara, CA

Higgins Microwave Co. 822
Brookline, NH

B. Higgins, J. Torrey, M. McConnon

Manufacturer's representatives for RF and microwave components, instrumentation, engineering services, and microwave and antenna measurements and designs.

Hittite Microwave Corp. 1035
Woburn, MA

B. Bedard, F. Paik, M. Shifrin

MMIC chips for amplifiers, oscillators, mixers, switches and integrated multifunction chips; MMIC modules and subsystems.

HK Microwave Inc. 1511
Santa Clara, CA

K. Josefsberg, H. Masuda, B.J. Stookey

Crystal oscillators, phase-locked crystal oscillators, phase-locked DRO/VCOs, synthesized phase-locked DRO and frequency synthesizers.

Holz Industries Inc. 604
San Diego, CA

J. Oenning, C. Trondle, G. Holz, R. Bubb

Stratedge microwave multilayer process that combines thick- and thin-film technology in a ceramic co-fired assembly; and multilayer assemblies with microstrip and stripline techniques for power dividers, couplers, filters, attenuators and delay lines.

Horizon House Publications Inc. 527
Norwood, MA

W. Bazy, R. Briden, C. Ayotte, A. Ambrose, G. Davis, J. Budwey

Microwave Journal, Journal of Electronic Defense, Telecommunications® and C&CN publications, and Artech House books.

Huber & Suhner Inc. 1719
Essex, VT

P. McGivern, G. Pollack, D. Finan, M. Pepi

RF and microwave connectors and cable assemblies; lightning and nuclear EMP protectors; and microwave passive components.

Hughes Aircraft Co. 703
Electron Dynamics Division
Torrance, CA

R. Brownell, J. Paul, M. Smith

1 to 100 GHz coupled-cavity and helix TWTs and instrumentation TWT amplifiers for ECM, radar and communications; and a passive, high power multipactor designed to provide front end protection for radar receivers.

Hughes Aircraft Co. 1016
Microelectronic Circuit Division
Newport Beach, CA

Hughes Aircraft Co. 703
Microwave Products Division
Torrance, CA

J. Nichols, H. Bell, A. Edberg, R. Larson, J. Cadwallader, N. Nicoll, K. Conklin, J. Kuno

20 to 300 GHz mm-wave devices, components, subsystems and instruments; GaAs FET products; GaAs MMICs; and GaAs MMIC design center and foundry services.

IFR Systems Inc. 1320
Wichita, KS

T. Dideum, K. Showalter, F. Hunt, M. Forna, K. Filardo

RF and microwave spectrum analyzers, communication service monitors and avionics test equipment.

Inmet Corp. 806
Ann Arbor, MI

E. Seitter, R. Seitter, T. Solomon

Passive microwave components, including attenuators, terminations, DC blocks, equalizers, adapters and microwave resistors.

Innowave 920
Morgan Hill, CA

S. Virk, B. Sekhon, R. Barbaria

Isolators, circulators, gain equalizers, harmonic phase shifters, detectors, limiters and integrated multifunction modules.
See TMR Associates

Insulated Wire Inc. 716
Danbury, CT

A. Nixon, S. Bruno

Flexible, high performance, low loss microwave cable and cable assemblies up to 60 GHz, and internally ruggedized cable assemblies with improved crush resistance and tighter bend radii.

Integrated Microwave 1119
San Diego, CA

D. Clark

DC to 26.5 GHz RF/IF, microwave filters, multiplexers and integrated components.

Inter-Continental Microwave 305
Santa Clara, CA

P. Seaman, J. Martin, J. Tatum, B. Tatum, W. Schuerch, D. Hevesy

RF and microwave automatic network analyzers, TRL/LRM calibration kits, test fixtures for chip, MMIC and packaged devices, universal test fixtures, time domain reflectometer

test fixtures, and DC to 50 GHz optical microwave test fixtures.

Ion Beam Milling Inc. 334
Manchester, NH

R. Quagan, G. Quagan, J. McDonnell, J. Kelley, W. Alexander

Thin-film microwave integrated circuits, including custom planar chip inductors, capacitors and attenuators; and prototype and production circuits with line and space dimensions down to 1 μ m.

ITS Electronics 515
Concord, Ontario, Canada

I. Tchaplja, B. Dell, K.V.S. Rao

Microwave components and subsystems; solid-state power amplifiers and sources; dielectric resonator oscillators; integrated sub-assemblies; HEMT low noise amplifiers; and microwave solid-state power amplifiers for form, fit and function system retrofit.

ITT GaAs Technology Center 921
Roanoke, VA

J. Grzyb, B. Schmitz, I. Bahl

GaAs MMIC and digital technology, and foundry services.

ITT Sealectro 1613
New Britain, CT

K. McLaughlin, T. Worroll, W. Brooks, R. Champi, G. Hubbard, D. Reed, J. Cabrera

RF and microwave SMB, SMC, slide-on, SSMB, SSMC, precision N, TNC, K, solderless, blindmate, slide-ons, adaptors and special configurations coaxial connectors, and flexible, conformable and semi-rigid cable assemblies.

JCA Technology 214
Newbury Park, CA

J. Chao, C. Davis

0.5 to 22 GHz microwave amplifiers.

JFW Industries Inc. 1714
Indianapolis, IN

K. Weber, C. Glover

Attenuators, terminations, fuses and coaxial switches.

Johanson Dielectrics Inc. 814
Burbank, CA

New MemoryGuard decoupling capacitors, multilayer ceramic chip capacitors, high-Q ceramic chip capacitors, single-layer chip capacitors and multiple layer capacitor arrays.

Johanson Manufacturing Corp. 814
Boonton, NJ

Variable capacitors and microwave tuning elements.

John Wiley & Sons Co. 1616
New York, NY

S. Nelson, G. Telecki

Publisher of scientific and technical books and journals, including the now-complete

four-volume *Handbook of Microwave and Optical Components*, and the new *International Journal of Microwave and Millimeter Wave Computer Engineering*.

Journal of Electronic Defense 527
Norwood, MA

H. Gershanoff, S. Hardy, D. Gehly, A. Braun, R. Kaufman, D. Herskovitz,

The monthly publication of the Association of Old Crows (AOC) focuses on electronic warfare; command, control, communications and intelligence; avionics; military computing and other military electronics technologies.

KDI/triangle Electronics Inc. 932
East Hanover, NJ

D. McConnell, C. Schraufnagl, R. Hartwig, P. Levine, E. Landau, V. Caruso, T. Braviak, M. Snyder, M. Masterson

DC to 18 GHz components and subassemblies; resistors, attenuators, terminations, couplers, dividers, switches, oscillators, phase shifters and digital attenuators.

Kings Electronics Co. 1303
Tuckahoe, NY

R. Dock, E. Lagarto, F. Dellalocono, H. Pessah, J. Murphy, F. Dallago

RF coaxial connectors; flexible and semi-rigid cable assemblies; RF coaxial connectors and switches for TCAS systems; and standard and 75 Ω BNC and SMA connectors.

K&L Microwave Inc. 504
Salisbury, MD

C. Schaub, J. Price, C. Carmean, M. Giarratano, G. Ardis, P. Wiltsey

500 kHz to 40 GHz microwave and RF components, including miniature filters, cavity and waveguide filters, tunable filters, frequency agile and integrated subsystems, and sub-assemblies, coaxial switches to 26.5 GHz and RF switching matrices.

Kopin Corp. 315
Taunton, MA

M. Micci, J. Salerno

High performance semiconductor wafers for electronic and optoelectronic applications, including silicon-on-insulator wafers manufactured with the isolated silicon epitaxy (ISE™) process; GaAs/AlGaAs epitaxial wafers, including HBTs, HFETs and PINs; and GaAs-on-silicon wafers up to six inches in diameter.

KW Microwave 1609
San Diego, CA

J. M. Fournier, D. Kothari, S. Tantod

Ultra miniature lumped-element filters and multiplexers, combline, interdigital, waveguide and suspended substrate filters from 10 MHz to 26.5 GHz; subsystem integration utilizing the full spectrum of in-house filter, solid-state switch, discrete or hybrid devices and amplifier capability; and switch filters, multipliers, up and down converters, pre-amplifiers and power dividers.

1991 EXHIBITION GUIDE



Kyocera America Inc. 428 **San Diego, CA**

A. Buck, D. Hughes, F. McMahon, B. Gatta, R. Webb

Metalized products, including ceramic packages for microwave applications such as low noise transistor, microwave power FET, metal sealed, silicon power transistor, monolithic microwave, GaAs IC and diode package, ceramic lids and windows, and metalized substrates.

Kyocera Industrial Ceramics Corp. 428 **San Diego, CA**

L. Gibson, J. Mastrogiacomio

Ceramic substrates for hybrids, thin-film substrates, ceramic lids with low temperature sealant, hermetic solder coated lids, high dielectric substrates, ceramic insulators and multiform glass insulators.

Litton Airtron 1023 **Morris Plains, NJ**

R. Lagno, R. Ost, J. Knapp, B. Sellitto, N. Hansen, H. Faust

Microwave and RF subsystems, antennas, isolators, circulators, filters, couplers, loads, stripline, and rectangular and double ridge waveguide.

Litton Solid State 1023 **Miplitas, CA**

F. Olsen, D. Merkley, B. Quinn, H. Wilson, R. Hamilton, W. Ou, M. Kopeck

Epi and custom chip foundry MESFET and HEMT MMICs, GaAs InP diode products, 1 to 110 GHz amplifiers, DRO and Gunn sources, mm-wave subsystems, MMIC technology, including MMIC narrowband 94 GHz LNA and 5 to 100 GHz InP MMIC amplifier chips.

Locus Inc. 1019 **State College, PA**

E. Brem, D. Richards, J. Callahan

RF and microwave amplifiers, converters and thin-film assemblies.

LogiMetrics Inc. 512 **Plainview, NY**

M. Feigenbaum, S. Abrams, J. Deutsch, E. Feigenbaum, V. Abrams, F. Deutsch

High power TWT amplifiers in frequency ranges from 0.5 to 40 GHz and in power levels from 1 W to 5 kW for military and commercial applications on ground and airborne platforms; SATCOM communication amplifiers; radiated susceptibility and high power test sets; jamming systems; threat simulators; and antenna boresight test chambers.

Loral Microwave 520 **Frequency Sources** **Chelmsford, MA**

B. Knowles, D. Brown, T. Blanco, W. Sobie, D. Langan

Low noise VCOs and DTOs, frequency multipliers, switches, cavity oscillators, crystal oscillators, microwave semiconductors and multifunction assemblies.

Loral Microwave 520 **Narda** **Hauppauge, NY**

B. Leibowitz, J. Coppola, J. Kirch, R. Damiano
Nardalert™ a personal monitor; super-slim switches, mixer products, DROs, high power passive components; and radiation hazard products for personal, area and direct detection of potentially hazardous areas.

Loral Microwave 520 **Wavecom** **Northridge, CA**

W. Anderson, N. Renfrow, G. Etzler, G. Jacques

Passive microwave filters, multiplexers, dividers, combiners and RF electromechanical switches.

Lorch Electronics 706 **St. Petersburg, FL**

C. McCoy, V. Hazners, M. McWhorter

RF and IF signal processing components, including mixers, microwave filters, electronic switches, switch matrices, digital phase shifters, digital attenuators, phase detectors/comparators/shifters/modulators, couplers, hybrids, integrated modules and surface mount components.

Lucas Aerospace Inc. 215 **Communications & Electronics Inc.** **Hopkinton, MA**

Lucas Epsco Division 215 **Hopkinton, MA**

W. Coffin, J. Dhimos, J. Langley, R. Ranslow, J. Shalhoub, G. Smith, C. Warrington

High power, narrowband GaAs FET amplifiers from 2 to 18 GHz and output power levels to 1 W; custom waveguide and coaxial components, antennas and antenna systems; and high power CW and pulse signal sources.

Lucas Aerospace Inc. 215 **Microwave Technologies Division** **Mississauga, Ontario, Canada**

P. Balodis, J. Leizerowicz, P. Mercer

GaAs FET multi-octave and narrowband amplifiers and amplifier based integrated assemblies from 0.1 to 40 GHz for defense and commercial applications; and waveguide and coaxial circulators, isolators and isodapters for volume Telecom and Satcom applications.

Lucas Weinschel Division 215 **Gaithersburg, MD**

C. Crews, J. Dholoo, B. Knill, D. Kuhn, C. McNamara, R. Mugg, L. Pregley, R. Stephens

RF and microwave coaxial components; fixed, variable, step, binary and programmable attenuators and connectors; terminations and adapters; and microwave test and meas-

urement instruments, including power standards, frequency synthesizers, power and attenuation calibration systems.

Lucas Zeta Division 215 **San Jose, CA**

B. Dominguez, A. Leotta, J. Rolling, N. Stecklein, R. Wood

Microwave frequency sources; high power RF amplifier modules and systems; and signal intercept and direction finding systems.

M/A-COM Inc. 1005 **Burlington, MA**

DC to 100 GHz GaAs and silicon semiconductor devices, MMIC switches, mixers, PIN, Gunn, Schottky, IMPATT diodes, GaAs MMIC circuits, GaAs foundry service, GaAs silicon material, bipolar transistors and MOSFETs; 5 MHz to 110 GHz passive and control components, including ferrite isolators and circulators, detectors, filters, attenuators, couplers, receiver protectors and low noise amplifiers; rotary joints, casting, pressure windows, connectors, adaptors, coaxial and fiber optic cable assemblies; integrated subsystems for radar, communications, EW and missile system applications; oscillator assemblies and synthesizers; high power solid-state amplifiers; and filter-based subsystems, including switched multiplexers, DLVA, digital discriminators and receiving equipment.

MAC Technology Inc. 1228 **Klamath Falls, OR**

M. Bailey, J. Branigar

0.5 to 18 GHz stripline couplers, power dividers, directional couplers, 90° hybrids and high power airline couplers in octave and multioctave bandwidths.

Magnum Microwave Corp. 630 **Fremont, CA**

J. Lee, G. Wehrfritz, H. Fowler, M. Streitmatter, R. Bridge, R. Todd

RF mixers, VCOs, dielectric resonator oscillators, cavity oscillators, microwave components and subassemblies.

Mast Microwave 719 **Billerica, MA**

C. Theophile, P. Burton, P. Christian

Rotary joints, double-ridge components, RF connectors and cable assemblies.

Matcom Inc. 204 **Palo Alto, CA**

B. Jones, S. Canning, C. Huynh, B. Hampton, T. Shino, M. Harrita, K. Akada

Toshiba microwave semiconductors.

Matrix Corp. 1335 **Sunnyvale, CA**

L. Earl, R. Pangan, S. Mendoza, B. Quinby

Contract assembly of microwave/RF components and assemblies, including assembly, seal, testing, marking and full turn-key services.

Maury Microwave Corp. 725
Rancho Cucamonga, CA

M. Maury, Jr., J. Adamson, R. Ramirez, J. Pierce, W. Pastori, G. Simpson

DC to 110 GHz microwave components and instruments, including the automated tuner system (ATS), the ATS load-source/pull software, the ATS controller, low noise microwave amplifier and amplifier converter, universal transistor test fixture, transistor bias supply, metrology grade sliding terminations, connector gauges, calibration standards for network analyzer measurements, coaxial, waveguide and mm-wave calibration kits for vector automatic network analyzers, mm-waveguide devices, airline standards, waveguide-to-coaxial and coaxial-to-coaxial adapters, and noise calibration equipment.

Maxtech Inc. 320
State College, PA

D. Bunnell, J. Dixon

Telecommunication components and subsystems, including LNAs, redundant LNA systems, power amplifiers, power amplifier systems, microwave and RF converters, ultra broadband quadrature couplers, imageless mixers and other custom components.

Menlo Industries, Inc. 1100
Fremont, CA

D. Adams, L. Wagoner, S. Kakihana, J. Chang

Low noise, wideband and narrowband amplifiers, detector log video amplifiers and successive detector log video amplifiers, nonfermium tunnel diode detectors and quick turn-around thin-film foundry service.

Merrimac Industries Inc. 607
West Caldwell, NJ

E.W. Niemiec, J. Blahosky, W. Joswick, T. Ramsden

IF and microwave devices, components and subsystems using lumped-element and stripline designs; power amplifiers, IF integrated assemblies and hi-rel networks.

Metal Processing Co. 1311
Woburn, MA

D. Winn, M. Perry

Custom hermetic glass-to-metal seals, RF and DC feedthroughs, direct sealing to Kovar modules and stainless steel bodies.

Metelics Corp. 1713
Sunnyvale, CA

F. Kwan, J. Godbout, C. McAllister

Microwave diodes, including Schottky barriers, PINs, SRDs, MIS capacitors, sampling phase detectors, tunnel diodes and microwave subassemblies.

MH&W International Corp. 1206
see TDK Corp.

MICA Microwave Corp. 1113
San Jose, CA

L. Cortez, F. Mills, A. Campbell, J. Patel, M. Starkey

Microwave detectors, including tunnel, biased Schottky and zero bias Schottky; PIN diode limiters; ferrite devices; coaxial isolators; drop-ins MICRO[®]PAC surface mount ferrite series; standard isodapters; waveguide circulators; and custom components for space, EW and commercial applications.

Micro-Chem Inc. 207
Santa Clara, CA

L. Matts, E. Bond, E. Bond, L. Tooker, S. Tooker

Stripline, microwave and rigid groundplane PTFE circuit boards, chemically-milled metal parts and high resolution glass plates.

Micro-Coax Components Inc. 724
Collegeville, PA

F. Decker, M. Neiman, R. Souders, B. Ash, B. Gleghorn

Standard and nonstandard semi-rigid cable, cable assemblies and delay lines, high performance flexible microwave cable to 40 GHz; 200 MHz to 30 GHz lowpass, highpass and bandpass filters.

Micro-Dynamics 804
Woburn, MA

Microelectronics Technology Inc. 122
Hsinchu, Taiwan, ROC

P. Chen, W. Huang, J. Chang, L.C. Chang, T. Ho, S. Yang, E. Tseng

SATCOM and TELECOM components and subsystems; VSAT products, including C- and Ku-band stabilized LNRs, commercial LNRs, LNCs, LNAs, power amplifiers and odus and INMARSAT products, including power amplifiers, LNAs, PLOs and RF transceiver units.

Micronetics Inc. 817
Electronic Division
Hudson, NH

Z. Turski, R. St. Laurent, K. Comtois

10 MHz to 18 GHz RF and microwave components for applications in commercial, communications and cellular networks.

Micronetics Inc. 817
Microwave Division
Hudson, NH

Z. Turski, R. St. Laurent, K. Comtois

Noise sources and instruments for performance evaluation of sophisticated electronic warfare and communication systems; and electromechanical coaxial and waveguide switches and termination (dummy loads) for signal processing and test in terrestrial and satellite transceivers and radar.

Micronetics Inc. 817
NEM Division
Hudson, NH

Z. Turski, R. St. Laurent, K. Comtois

10 MHz to 18 GHz solid-state control components; high reliability switches, attenuators, phase shifters for electronic warfare and communications systems, such as radars and C³; and microwave integrated circuits, high reliability, multifunction subsystems with applications in electronic warfare, C³, such as passive and active detection systems, RWR.

Micronics Technology Inc. 621
Glen Cove, NY

Micro-Now Instrument Co. Inc. 701
Skokie, IL

C. Arnow, R. Janyia, F. Arnow

The model 716 500 MHz to 110 GHz wide range, mm-wave, solid-state sweeper/source; the model 715 mm-wave sweep system, which uses BWOs to provide full waveguide sweep to 170 GHz; and 2.45 GHz sources, stabilizers, klystron power supplies and mm-wave noise sources.

Micropen Inc. 1610
Pittsford, NY

J. Stoia, J. Cox, W. Mathias

A CAD and CAM direct writing system capable of producing microwave circuits directly from its own design system, or linkup with external CAD systems. It uses an additive or subtractive process for prototyping or production; thick film directly on ceramic, etched thin-film on ceramic, or etched copper on soft substrates.

Microphase Corp. 1319
Norwalk, CT

F.S. Parin, R.J. Crocco, J.A. Hoffman, H. Schumacher, A. Schumacher, S. Temel, G. Temel, M. Goldman, R. Ferri, J. Chiappetta, F. Groman, H. M. Weil, R. Smith, J. Filakovsky, L. Stille

Detector log video amplifiers, multiplexers, thin-line multiplexers, filters, miniature lumped-element filters, detectors, limiters, channelizers, detector modules, filter modules, threshold detector amplifiers, video receivers, channelized receivers, microwave integrated assemblies, solid-state multithrow switches, switch and filter assemblies and switch filter preselectors.

Microprecision 1603
St. Laurent, Ontario, Canada

Microsonics Inc. 521
Weymouth, MA

Microsource Inc. 1316
Santa Rosa, CA

G. Basawapatna, J. Albright, J. Clarke, H. Burkhardt, J. Tavormina, M. Shandas

YIG-tuned components, subsystems and systems, including oscillators, bandpass and bandreject filters, multipliers, upconvertors, downconvertors, synthesizers and receiver subsystems.



Microtech Inc. 1204
Cheshire, CT

J. Radder, J. McGregor, T. MacCallum, C.M. Jones, S. Lovely

1.2 to 50 GHz rectangular and double-ridged waveguide and components, including catalog and custom flexible and rigid assemblies, waveguide and coaxial directional couplers, filters, waveguide-to-coaxial adapters, pressure windows and tees.

Microwave Applications Group 123
Santa Maria, CA

D. Prigge, W. Hord, R. Hord, C. Boyd, P. Boyd

Microwave ferrite components, including reciprocal phase control modules for electronic scanning antenna and antenna subsystems with related electronic control circuits.

Microwave Communications Labs 1130
Spotswood, NJ

T. Nguyen, T. Nguyen, V. Nguyen, T. Lam

Power dividers, couplers, hybrids, VCAs, filters, switches and subsystem assemblies.

Microwave Development Co. Inc. 115
North Andover, MA

J. Cook, C. Tomes, P. Hocknell, M. Slipp, M. Crittenden

0.5 to 60 GHz passive waveguide and high power coaxial components, including band-pass, lowpass and harmonic absorptive filters, power combiners, terminations, magic tees, calibration kits, waveguide assemblies, adapters, pressure windows, high power directional couplers, high power terminations and coaxial harmonic absorptive and coaxial interdigital filters.

Microwave Development Labs Inc. 326
Natick, MA

R. Tucker, E. Bannister, M. Hale

Adapters, assemblies, attenuators, bends, twists, corporate feeds, couplers, crystal holders, circulators, diplexers, filters, flanges, gaskets, SSB generators, hybrids, isolators, mixers, mixer duplexers, monopulse comparators, rotary joints, double ridge, phase shifters, power dividers, rotary switches, tees, terminations, transitions, waveguide tubing, windows and suspended substrates.

Microwave Device Technology Corp. 108
Lawrence, MA

T. B. Ramachandran, M. Ayyagari, A. Vitale, M. McCann, C. Foose, K. Ohearn, J. Delap

Gunn diodes in C-, X-, Ku-, K- and mm-wave bands, GaAs pulsed and CW IMPATT diodes, GaAs abrupt and hyperabrupt tuning varactors diodes, multipliers, GaAs PIN diodes and ISIS multiplier diodes.

Microwave Engineering Corp. 1611
N. Andover, MA

C. Ober, M. Aghion, J. Herrmann

Microwave and mm-wave passive components, including double-ridge waveguides and in-house waveguide bending and forming.

Microwave Engineering Europe 1729
London, UK

J. Bidlake, R. Michael, P. Jackson, K. Smith, G. Moss, R. Kirstine

A magazine specially designed for European readers involved in the microwave and RF industry.

Microwave Exhibitions & Publishers Ltd. 1727
Tunbridge Wells, Kent, UK

R. Marriott, J. Baron, D. Leah

Conference proceedings of the Military Microwaves and European Microwave Conferences; conference proceedings and reprint volumes.

Microwave Journal 527
Norwood, MA

H. Howe, H. Ellowitz, E. Johnson, C. Sheffres, W. Cook, R. Walby, M. Stiglitz, A. Braun, J. Long, C. Blanchard, J. Callahan, R. Hammerton

Microwave Journal magazine subscription and editorial information.

Microwave Printed Circuitry Inc. 824
Lowell, MA

M. Casper, B. Deitz, P. Beaulieu, C. Casper, T. Frotton

Microstrip and stripline circuits, metal backed circuits using PTFE materials, bonded antenna assemblies and RF testing of bonded filters, splitters and combiners.

Microwave Product Digest 1734
Hastings on Hudson, NY

D. Markhorse, W. Hickey, P. Lippin, R. Ranahan, T. Greney

Microwave Product Digest, a new product tabloid, for clients and prospects of manufacturers serving the microwave product industry, individuals engaged in the original equipment market and users of systems.

Microwave Resources Inc. 1513
Chino, CA

M. Hassan Arain

Microwave and mm-wave ferrite products, such as full band waveguide circulators and isolators.

Microwave Technology Inc. 1617
Fremont, CA

A. Rosenzweig, R. Christensen, A. Roberts, K. Renwick

GaAs FET devices, including chips, MMICs and packaged devices; GaAs FET drop-in amplifier modules, including gain stages, temperature compensation modules and voltage regulators; and 1 to 26 GHz microwave amplifiers.

Microwaves & RF 1722
Hasbrouck Heights, NJ

J. Carroll, J. Browne, M. Carey, M. Spector, M. Bandfield, G. Roberts, J. Reppas, R. Schneiderman

Microwaves & RF magazine serves engineering and engineering management involved with RF, microwave and optical devices used in a broad spectrum of applications.

MIC Technology Corp. 1414
Richardson, TX

D. Chapman, B. Mitchell, L. Ingham

Thin-film systems, components, high complexity etched circuits, and glass-sealed hermetic packaging; metalization systems for coated substrates and single or multilayer thin-film circuits; and fully integrated circuits, including resistors, capacitors, filled vias and conductive crossovers.

Midwest Microwave 1214
Saline, MI

B. Cherot, E. DeVita, D. Hartje, R. Fawson, S. Newbegin

Coaxial, step attenuators and QPL per M3933 attenuators; calibration kits; coaxial terminations and adapters; gain equalizers; phase shifters; directional couplers; hybrids and power dividers; DC blocks; RF, blind mate, microminiature and SMA QPL per M39012 connectors; cable assemblies; and waveguide-to-coaxial adapters

Millitech Corp. 928
South Deerfield, MA

R. Huguenin, D. Dixon, D. Greenman, C. Gupta, L. Tower, T. Spears

Millimeter-wave and submm-wave active components, including oscillators, mixers, multipliers, detectors; and isolators; antennas, subassemblies, Gaussian optics components, frequency extension units for mm-wave test applications, block downconverters and wideband receiving subsystems.

Min-E-Con 1721
Costa Mesa, CA

M. Macy

High density microminiature connection devices, plastic and metal shells mate industry standard micro D style, up to 100 contacts on 0.5" centers and qualified MIL-C-83513, and cable assembly capabilities.
See RF Associates Inc.

Mini Circuits 1516
Brooklyn, NY

H. Kaylie, G. Kaylie, R. Kaylie, A. Kaylie

RF signal processing components.

Mini-Systems Inc. 925
Electronic Components
North Attleboro, MA

R. Normandin, R. Cartier, S. Senra, S. Olster, G. Robertson, C. Stoddard, T. Mundy

Thick- and thin-film chip resistors, glass sidewall and all metal packages, and custom hybrid circuits.

Mini-Systems Inc. 925
Electronic Packaging Division
Plainville, MA

R. Duff, H. Edwards

Thick- and thin-film chip resistors, glass sidewall and all metal packages, and custom hybrid circuits.

Mini-Systems Inc. 925
Sunbelt Microwave
Deltona, FL

D. Batts, S. Hess

Thick- and thin-film chip resistors, glass sidewall and all metal packages, and custom hybrid circuits.

Mini-Systems Inc. 925
Thin-Film Division
N. Attleboro, MA

K. Barlow, R. Lamarre, F. Santilli

Thick- and thin-film chip resistors, glass sidewall and all metal packages, and custom hybrid circuits.

Mitec Electronics Ltd. 1514
Pointe Claire, Quebec, Canada

M. Monzon, J. Robinson, G. Simays, M. Geraci, M. Bentob

1 to 60 GHz microwave components, subsystems and integrated networks for use in telecommunications and defense systems.

MITEQ Inc. 1327
Hauapauge, NY

S. Eisenmesser, P. Kalisiak, A. Kiiss, H. Kiiss, H. E. Kiiss, F. Maqbool, R. Pflieger, N. Shaikh, J. Siddiqui

Low noise amplifiers operating over the frequency range from 1 MHz to 40 GHz in moderate and ultrawide bandwidths; frequency sources, including cavity-tuned oscillators, VCOs, DROs, phase-locked cavities and DROs; signal processing components, including mixers, mixer-preamplifiers, image-reject mixers, limiters, discriminators, log amplifiers and multifunction assemblies.

Mitsubishi Electronics 1436
Sunnyvale, CA

Modular Components National Inc. 1505
Forest Hill, MD

M. Creighton, P. Burian, M. Ostendorf, I. Zazulak

Teflon/duroid laminates, including single-sided, double-sided and multilayer, plated through holes on unsupported and metal clad material; fine line etching, precision machining and selective precious metal plating.

Motorola Inc. 425
RF Products Division
Phoenix, AZ

N. Dye, S. O'Shea, B. Hunter, D. Murray, M. Williams

RF and microwave discrete silicon bipolar and FET transistors to 4 GHz; low noise and power devices in a wide range of packages; and complete amplifier assemblies to 100 W 2 GHz.

MPD Inc. 414
Owensboro, KY

C. Larson, J. Olson, M. Stevenson

1 to 40 GHz microwave transmitters and receivers for military and commercial applications; DRO, Gunn diode, planar triode based designs and MIC capabilities.

M-Pulse Microwave 514
San Jose, CA

B. Long, E. Pendleton, J. Richards, R. Sahjani, W. Sander, P. Ierardi, B. Brann

Microwave Schottky, PIN, NIP, SRD, planar tunnel and tuning varactor diodes, and MNOS capacitors, available in chip, beam, lead, monolithic, surface mount or packaged from and screened through S-level of MIL-S-19500.

M-Square Microtek Inc. 920
Hayward, CA

D. Simmons, K. Floyd, B. Webb

Microwave tube and tube amplifiers for use in military avionics and subsystems. See TMR Associates

Murata Erie North America 813
Smyrna, GA

B. Allen, B. Doherty, S. Dresel, R. Goad, J. Hamlett, B. Helms, A. Hook, M. Kawashima, J. Marano, J. McGaril, M. McGrail, M. O'Brien, T. Steidel, M. Yamaguchi

Discs, multilayer, microwave and trimmer capacitors, RF microwave filters, resistor networks, potentiometers, piezo alarms, RFI and EMI filters, resonators, oscillators, flyback transformers, posistors, sensors and associated electronic components.

Nearfield Systems Inc. 1216
Carson, CA

G. Hindman, J. Way

Turn-key nearfield and farfield antenna measurement systems varying from small, low cost portable systems to large, high accuracy systems; and its portable nearfield antenna measurement system that provides rapid data acquisition, farfield processing and aperture diagnostics for antennas.

Nedrud Data Systems 1031
Las Vegas, NV

B. Nedrud, C. Nedrud

DragonWave, a full featured microwave circuit design program, combines schematic capture and optimization with interactive display functions, has an element library with 2-, 3- and 4-port blocks, microstrip and stripline discontinuities and coupled lines, and calculates S-parameters, group delay, NF, stability circles; XY plots and Smith charts have markers and tune function.

Newport Electro-Optics Systems 1630
Melbourne, FL

R.V. Belfatto, E. Young, F. Sanzone, G. Georgioudis

The NEOS microwave laser photo plotter system, which plots a microwave mask from an AutoCAD® drawing file in less than one-half hour with no post processing; and the NEOS AutoCAT software, which automates production or laboratory tests by interfacing with measuring instruments through IEEE-488 or RS-232 ports and controls these instruments to manufacturers specifications.

Noise Com Inc./NCI 1033
Paramus, NJ

A. Leidner, B. Hessen-Schmidt, S. Geder

DC to 110 GHz solid-state noise sources, modules and instruments; variable frequency and bandwidth noise subsystems and systems for jamming; microwave synthesizers and digitally tuned oscillators.

Norplex Oak Inc. 1135
LaCrosse, WI

NTK Technical Ceramics 1313
Mount Prospect, IL

M. Ota, C. Ito, T. Omura, R. Hanson, B. Hirano, M. Sato, P. DiPaolo

Microwave dielectric components, including resonators, substrates and stripline filters.

Olektron Corp. 519
Webster, MA

J. Canty, K. Lambert, J. Jakubowski, M. Smith, T. Zinkowsky, T. Kalis, B. Rffleman, T. Coppola

Attenuators, phase comparators, directional couplers, hybrids, mixers, modulators, phase shifters, power dividers, power sensors, switches, time delays, transformers and integrated assemblies.

Olin Aegis 1230
New Bedford, MA

S. Benisatto, D. Medeiros, C. Leedecke, J. Greenspan, M. Medeiros

Microelectronic packages.

Omni Spectra 1005
See M/A-Com

Optimization Systems Associates 1037
Dundas, Ontario, Canada

J. Bandler, R. Biernacki, S. Chen, G. Simpson, Q. Cai, J. Song, S. Ye, B. Budd, Z. Bandler, Q. Zhang

Harpe™, a user-friendly package for device simulation, parameter extraction and statistical modeling; OSA90™, a software system for customization-oriented microwave CAE featuring Datapipe™ for high speed data connection to the user's executable programs, optimizers, statistics and expression processors.

1991 EXHIBITION GUIDE



Optotek Ltd. 1236 Ottawa, Ontario, Canada

R. Meierer, S. Dindo

MMICAD, a general purpose linear analysis and optimization program for both active and passive electronic circuits, incorporate a complete nodal analysis, including nodal noise calculations using correlation matrix techniques and allows for user-defined models to be inserted directly into the circuit file; networks may be simultaneously analyzed for noise and other linear performance goals as a function of frequency or parameter variation.

Oscillatek 510 Olathe, KS

J. Passiglia

Quartz crystal oscillators, military, commercial and custom design QPL clock, TCXO, ovenized and clock, VCXO, and engineering and manufacturing capabilities.

Pacific Amplifier Corp. 920 Newbury Park, CA

F. Bloomberg

High performance RF power amplifiers from 100 kHz to 2 GHz and beyond, in power levels from 1 W to several kW in module, rack mount and bench top configurations; and multitone, low noise, high ICP, high efficiency, octave and decade bandwidth amplifiers. See TMR Associates

Pacific Monolithics 1331 Sunnyvale, CA

S. Layton, F. Russell, D. Bond, D. Jones

GaAs MMIC products, including 0.01 to 18 GHz amplifiers, DC to 17 GHz frequency converters, DC to 12 GHz switches and attenuators; DC to 18 GHz VCOs, DROs and PLOs; and GaAs subsystems.

Panasonic Industrial Co. 1209 Secaucus, NJ

N. Watanabe, O. Uwano, T. Nakamura, S. Mizuma, S. Inai, J. Vona, J. Higuchi, M. Honma, D. Matefy

Radio frequency modules, voltage-controlled oscillators, bandpass filters and duplexers.

Pascall Electronics Inc. 1123 Basking Ridge, NJ

A. Cox, R. Burman, N. Macey, N. Melas, D. James, D. Dalglish

IF/RF signal processing components, logarithmic IF amplifiers, constant-phase limiters, delay-line discriminators, I&Q phase detector subsystems, selective power meter SATCOM carrier monitor, SATCOM solid-state power amplifiers and military power conversion modules.

PC Dynamics 111 Frisco, TX

L. Eslinger, J. Holbrook, T. Kern, C. Malone, L. Harvey, S. Churchman

Teflon PWBs, including metal-backed, microstrip and stripline substrates and multilayered assemblies; etching, plating, machining, PTHs and autoclave lamination.

Phase II Corp. 1212 San Bruno, CA

Philips Components 410 Discrete Products Division Riviera Beach, FL

RF & microwave power transistors and modules.

Phoenix Co. of Chicago 523 Wood Dale, IL

M. Machura, D. Pierce, W. Walthall, H. Niver, P. Petti, L. Roffer, D. Roffer

PKZ blind mate coaxial connectors, combination D subminiatures, RF and microwave cable assemblies, audio connectors, and SMB, SMC, BNC, SMA, TNC and N connectors.

Picogiga Inc. 803 Oxnard, CA

A. Carlsson, J. Rochette

GaAs and heterostructure epiwafers.

Picosecond Pulse Labs 415 Boulder, CO

J. Andrews, J. Andrews, M. VanPelt

Programmable (GPIB) picosecond pulse generators; broadband coaxial components, including bias tees, transformers, DC blocks, attenuators, signal probes and delay lines.

P/M Industries, Inc. 1308 Portland, OR

P. Parks, C. Parks

Custom lapping and polishing services; HYPERFINE substrates, which are free from abrasive damage, virtually free of pull outs and measure less than 0.5 μ inch surface finish; laser drill substrates; and contract laser resistor trimming.

Poly Circuits 819 Bensenville, IL

J. Dryer, J. Turek, B. Beckwith

Stripline and microstrip Teflon substrate circuit boards, multilayer, double-sided and heat sink backed for communications, antennas, radar, satellite tracking, commercial and military aviation applications.

Polyflon Co. 1314 New Rochelle, NY

W. LaRusso, J. Seminoro, M. McConnon, R. Higgins

High voltage, high-Q, nonmagnetic fixed, variable and trimmer capacitors, CuFlon® ultra low loss substrate material and circuit boards, electroplated PTFE components, custom manufactured NMR/MRI probes and/or coils and antennas.

Power Systems Technology Inc. 1201 Hauppauge, NY

W. Liebman, R. Sheloff, C. Gerbino, T. Dowling, R. Vitkovich

400 to 1000 MHz model BHED4819-1000 class AB amplifier that produces 1000 W of output power with IEEE-488 interface for remote control and monitoring and the 1 to 2 GHz model AR1929-20 class A amplifier with a power output of 20 W.

Precision Tube Co. Inc. 624 North Wales, PA

G. Passmore, W. McNeil, A. West, S. Frobese

MIL-C-17 semi-rigid coaxial cables; soft-form, mini-loss, air articulated and cryogenic cables; semi-rigid and flexible cable assemblies and pre-assembled right angle assemblies; and custom and pre-packaged coaxial delay lines.

Qualcomm Inc. 721 San Diego, CAFL

J. Madsen, S. Anderson

1.6 GHz single-chip PLL with -150 dBc noise floor; direct digital synthesizers (DDS) with full FM, PM capabilities; DDS evaluation board; 900 to 1600 MHz PLO synthesizer system; and Ku-Band transceiver for VSAT and DES applications.

Quality Microwave 303 Wilmington, MA

P. Tusini, R. Pendergast, J. Kerrigan

Microwave coaxial cable assemblies, coaxial cable, coaxial connectors and attachment tools.

Queen Screw & Manufacturing Inc. 1423 Waltham, MA

P. Babigian, M. DeJulio

Custom machined, MIL-I-45208A, MIL-STO-105 and MIL-STO-45662 approved, microwave component parts, including primary parts of teflon, deltin, G-10 nylon, brass, beryllium copper, aluminum, stainless and customized prototypes; small quantities welcomed.

Radial Inc. 1102 Stratford, CT

B. Pitcher, P. Dionisio, H. Burr, C. Dreyer

Over 30 different series of DC to 46 GHz RF connectors; rack and panel connectors for commercial and military avionics, and weapons systems; Arinc 400 and 600; microwave terminations, attenuators, couplers, detectors, switches, relays, phase shifters and rotary joints; flexible and semi-rigid cable assemblies; and fiber optic connectors for multimode and single-mode fibers.

Raytheon Co. 1336 Microwave and Power Tube Division Waltham, MA

M. Zelsermyer, M. Lewis, A. White, M. Zilberstein

Ferrite and solid-state devices; MICs, RF sources and signal processors; infrared devices; hybrid electronic microcircuits; microwave tubes, including CFAs, TWTs and klystrons; and automated test equipment.

Republic Electronics Corp. 1142
Wilkes-Barre, PA

L. Eisenberger

Hi-Q (P90) and Hi-Q (NP0) QPL to MIL-C-55681, CDR11 to 12, 14 to 25 ceramic capacitors; and single-layer capacitors for use up to 50 GHz.

Res-Net Microwave Inc. 201
Clearwater, FL

M. Giacalone, R. Mayo, J. Bolus, G. Neumann, C. Decater

Precision RF and microwave components, including conduction and convention cooled terminations, attenuators and resistors ranging in power from 0.25 to 1000 W for commercial and military applications.

Resin Systems Corp. 704
Amherst, NH

D. Prawdzik, S. Mcaninch, S. Campbell

Microwave loads, absorbers and terminations in low, medium and high power; loads and terminations in low (polyiron) and high (ceramic) power designed for the complete range of waveguide sizes; pourable casting compound, rod, plate and square stock in the complete range of formulations.

RF Associates Inc. 1721
Topsfield, MA 01983

S. Marc-Aurele

Manufacturers' representative for Babcock Inc., Getelec Inc., Min-E-Con, Tele-Tech, TRX, Valbar and Vanguard Electronics.

RF Design 1718
Englewood, CO

K. Walsh, G. Breed, B. Pettit

Free copies of the June issue.

RLC Electronics Inc. 913
Mt. Kisco, NY

A. Borck, P. Wright, D. Borck, J. Norelli, D. Duris

DC to 40 GHz passive microwave components, including filters, mechanical switches, attenuators, power dividers, couplers and detectors.

Robinson Laboratories Inc. 628
Nashua, NH

B. Baker, R. Jarcz, F. Holt, T. Cole, B. Robinson

Control components, receiver products, broadband mixers, PIN diode switches, limiters, detectors, digital and analog attenuators, switch matrices and integrated assemblies.

Rockwell International-Ferocom 1121
San Jose, CA

B. Forsberg, M. Kyser, M. Swift, T. Nguyen

132 MHz to 26.5 GHz isolators, circulators, isoladapters and terminations in waveguide, coaxial and drop-in configurations.

Rogers Corp. 909
Microwave Division
Chandler, AZ

R. Hodges, R. Cole, R. Jansen, M. Norris, C. Santiago, C. Becker, D. Boulanger, G. Bull, E. Sandor, J. Dobrick, C. Ogden, S. Aspden, A. Hassell, G. Traut, A. Aguayo

RT/duroid® microwave materials, TTM temperature stable microwave laminates, ISO-CORE™ coaxial cable, ULTRALAM® microwave laminates and precision microwave circuits.

Rohde & Schwarz 1111
Lanham, MD

S. Elkins, R. Thornton

Spectrum analyzers, power meters, signal generators, radio monitoring/field strength receivers, true RMS voltmeters and vector analyzers.

ROHM Co. Ltd. 1207
ROHM Research Corp.
Westlake Village, CA

R. Lee, R. Beaubien, M. Miller, K. Kikuchi, M. Tsumori

Heterostructure InGaAs HFET ultra low noise transistor for DBS receivers; GaAs frequency divider IC (128/129 prescaler) for frequency synthesizers; and GaAs wideband low noise amplifier IC for IF applications, including TV, CATV and DBS.

Rollet 1517
London, UK

H. Medlicott, P. Prior, E. Medlicott, N. Connor

Very high precision 1 to 220 GHz waveguide and microwave components, including bends, twists and slotted arrays.

Sage Laboratories Inc. 1405
Natick, MA

A.J. Cieri, C.A. Marguerite, P. Alfano, H. Chapell, T.S. Saad, J. Majewski

DC to 40 GHz passive microwave components, including couplers, power dividers, phase shifters, switches, hybrids, filters, rotary joints, terminations, wireline and wirepac, detectors, mixers and subsystems, and high reliability components for space applications.

Salisbury Engineering Inc. 1536
Salisbury, MD

W. Barbely, R. Newberry

1 MHz to 20 GHz RF and microwave filters.

Satellink Inc. 1502
Garland, TX

S. Kenton, D. Luiken, R. Goodrich, E. Webb, D. Lambert, J. Liu

RF and microwave products, including low noise amplifiers, up and down frequency converters, special receiving equipment and microprocessor-based controller firmware and software.

Sawtek Inc. 1421
Apopka, FL

S. Miller, G. Monetti, J. Schlegel, R. Kindell

SAW devices, including bandpass filters, low loss filters, resonator filters, oscillators, delay

lines, pulse expanders/compressors and custom subsystems that use SAW components; technical assistance for new design and production requirements from 10 MHz to 2 GHz.

Scientific-Atlanta Inc. 1107
Atlanta, GA

J. Huff, C. Brechin, M. Caldwell, J. Pape, D. Woods, S. Wood, B. Chapman

The model 2096 S-parameter test station, which offers dramatic reduction in the time required to complete production testing of multistate devices, such as programmable phase shifters, attenuators and radar transmit and receive modules, and is easily initiated by an operator using friendly, on-screen menu guides and a computer mouse.

Scientific Microwave Corp. 1419
Mississauga, Ontario, Canada

A. Saad, G. Saad, M. Saad

Passive microwave and mm-wave components, including filters, duplexers, circulators, hybrids, couplers, transitions and terminations for military, space and commercial applications; evanescent-mode ridge waveguide and planar structures covering narrowband, wideband, low power and high power; and custom production and consulting services.

Sciteq Electronics Inc. 1017
San Diego, CA

H. Eisenson, C. Myrick, M. Hagins, P. Feinberg, R. Moubert

Frequency synthesizers using DDS, including third generation GaAs chirp/LFM generators and a one-chip multimode synthesizer/modulator; PLL, including products for crystal replacement units and LOs for SatCom; direct-analog and combination designs that exploit multiple underlying technologies; and RF subsystems, including commercial or military OEM radios.

Seavey Engineering Associates Inc. 1632
Cohasset, MA

J. Seavey, M. Emanuella, P. Rice

Antennas and microwave components for commercial microwave systems.

SGS-Thomson Microelectronics 1307
Montgomeryville, PA

C.J. Lump, J. Walsh, D. Mitten, G. Ditty, W. Koehn, W. Henderson

2 MHz to 4 GHz RF and microwave power transistors, RF and microwave power modules, amplifiers and subsystems; silicon MMICs; and solid-state noise sources.

Sierra Microwave Technology 1306
Rancho Cordova, CA

J. Mitchell, J. Kominitsky, J. Rosenberg

Microwave components up to 50 GHz, including isolators, circulators, filters, switches, equalizers, integrated components and amplifiers.

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SOGO Electronics Inc. 1732
Nagayama, Tama-shi, Tokyo, Japan

S. Kazama

PIN switches (SPST-SP32T), DLVAs, up and downconverters and attenuators.

Soladyne 909
Division of Rogers Corp.
San Diego, CA

D. Reed, R. Farris

Stripline and microstrip circuits on PTFE-based substrates.

Sonic-Mill® Albuquerque 1708
Albuquerque, NM

C. Treadwell, M. Armijo, W. Meagher

Automatic and manual Sonic-mill® processing equipment that machines quality holes and slots into substrates; and contract work.

Sonnet Software Inc. 1106
Liverpool, NY

J. Rautio, K. Schroeder

Full-wave, fast electromagnetic analysis of predominantly planar circuits, such as MICs and MMICs, available on 17 different UNIX workstations.

SPC Electronics Corp. 1726
Tokyo, Japan

S. Tagawa, T. Nunotani, K. Ishizuka, H. Suzuki

Satellite and terrestrial communication equipment, and MIC and waveguide products.

SSPA Microwave Corp. 622
Mississauga, Ontario, Canada

T.C. Cheng, A. Leung, M. Cheng

1.3 to 18 GHz microwave solid-state power amplifiers with output power up to 100 W at 5.85 to 6.45 GHz and 30 W at 14 to 14.5 GHz.

STC Components Inc. 720
Microwave Products
Schaumburg, IL

C. Fay

TWTs and TWTAs for commercial satellite terrestrial microwave and military ground and airborne applications; and the 18 to 40 GHz single TWT.

STC Components Inc. 720
Quartz Products
Schaumburg, IL

R. Pearson

High frequency fundamental surface mountable precision TCXO and SAW devices for the military and microwave systems market.

Steinbrecher 1300
Woburn, MA

J. Stone, R. Green, R. Shute, D. Steinbrecher, D. Peterson, M. Kosmicki, R. Cyr, J. Nazarian

RF, microwave and mm-wave subsystems for advanced signal acquisition applications; and X-band to W-band power multiplier with 1 W of output power at 94 GHz, for use in high performance communications and seeker designs.

Stellar Industries Corp. 920
Leominster, MA

J. Snook, R. Visser, J. Kingston, Jr.

Thermal management materials; materials and metalizing of alumina, beryllium oxide and aluminum nitride; and direct bonded copper (DBCu) on alumina and beryllium oxide.

See *TRM Associates*

Storm Products 127
Hinsdale, IL

B. Holland, B. Barrath

Flexible and semi-rigid microwave and RF cables and assemblies; standard teflon and polyethylene dielectrics as well as microporous types utilized.

ST Microwave 517
Sunnyvale, CA

Superconductor Technologies 1132
Santa Barbara, CA

J. Bybokas, M. Schmidt, B. Hammond, J. Long, H. Dwight

Thin-film resonators with $Q > 20,000$, superconducting bandpass and bandreject filters, low loss delay lines and a cryo-cooled superconducting oscillator.

Synergy Microwave Corp. 1614
Paterson, NJ

T. Almeida, M. Rohde, T. Buhlinger, J. De Raffe

Mixers, power dividers, directional and bidirectional couplers, filters, phase shifters, attenuators, 90° hybrids, 180° hybrids, phase detectors, modulators, amplifiers, switches and subsystems.

Systron Donner 419
Instrument Division
Sylmar, CA

D. McKenzie, B. Geddes, A. Sheth, J. Kennedy, A. Madni

High performance RF/microwave synthesizers with exceptional low phase noise and high phase stability up to 26.5 GHz; frequency counters to 110 GHz; and ATE DC power systems.

Systron Donner 419
Microwave Division
Sylmar, CA

A. Madni, J. Vu, B. Carpenter

Microwave subsystems for EW, radar and communications systems, including velocity deception jammers, monopulse receivers, exciters, up and down converters, transmission line analyzers, thin-film GaAs FET amplifiers and waveguide components.

Taconic Plastics Ltd. 1337
Petersburg, NY

B. Smith, S. Seymour, I. Brooks

Copper clad, PTFE/woven glass dielectrics for microwave printed circuit board applications; and dielectric constants from 2.15 to 2.65 available with tolerances of ± 0.02 and thicknesses from 0.003 to 0.5".

Taylor Microwave Inc. 1717
Hoboken, NJ

B. Sastre, B. Occhipinti

10 to 18000 MHz RF/microwave oscillators and components, including attenuators, switches, phase shifters, power dividers and assemblies.

TDK Corp. 1206
MH&W International Corp.
Mahwah, NJ

E. Hozeny, R. Kiernan, J. O'Keefe, J. O'Keefe, Jr., D. O'Keefe, R. Nitzl, K. Shimosawa, T. Iwata, T. Yanagida

Connector type circulators and isolators; stripline type and ferrite substrate type; waveguide isolators and circulators, terminations, mixers and combiners.

Tecdia Inc. 525
Mountain View, CA

N. Aguilar, C. Mata, K. Koyama, N. Kawamoto

Single-layer parallel plate chip capacitors, and custom-designed and etched alumina substrates.

Tech-Ceram Corp. 1117
TDI
Amesbury, MA

W. Burnham, W. Dinardo, W. DeJean, J. Silverstein, S. Nelson

Microwave and RF ceramic packages, thick-film alumina/BeO/AlN substrates, ceramic feed-throughs, surface mount packages, desiccator cabinets, pulse DC ionization and tweezers.

Tech Systems 313
Division of Daltron Inc.
Thomaston, CT

Tegmen Corp. 1600
Syracuse, NY

M. Anderson, J. Karker, J. Dickson

Direct copper bonded ceramics and thick-film hybrid circuits on ceramic, specializing in beryllia and alumina.

Tekelec Microwave 708
Montreuil, France

J.L. Etienne, M. Beghin, G. Martin, S. Rassoulain

Microwave silicon diodes, including Schottky, PIN, multiplier and tuning varactors and high voltage PIN diode up to 3000 V; MOS capacitors; ferrite circulators and isolators, includ-

ing 30 MHz to 94 GHz waveguide, coaxial and drop-in; microwave ferrite and dielectric ceramics; absorbing powders; RF modules, including mixers, power dividers, couplers, transformers and frequency doublers; and microwave subsystems.

Tektronix Inc. 1522
Components Division
Beaverton, OR

J. Hepell, S. Annas, E. French, G. Lehman-Lamer

High frequency electronic interconnect and packaging, including multilayer polyimide and ceramics, teflon and flexible PCBs, and elastomer connectors.

Tektronix Inc. 1522
Digital Signal Processing Division
Beaverton, OR

D. Goodman

The 3052 digital signal processing system, which includes new 0.125 Hz frequency resolution capability, an alternative to specialized blackboxes for difficult signal analysis applications, performs 1024 point complex frequency transforms every 250 μ s and is translatable into the microwave frequency range.

Tektronix Inc. 1522
Microwave and RF Instruments Division
Beaverton, OR

T. Richen, J. Harris, H. Elowitz, K. Dawson

The 2782 microwave spectrum analyzer with a coaxial frequency range of 100 Hz to 33 GHz; the lightweight, portable 2712 spectrum analyzer; and the 494AP and 2756P spectrum analyzers.

Teledyne Microelectronics 715
Los Angeles, CA

P. Galletta, D. German, M. Fink, B. Kilgariff, Y. Rubin, C. Parkinson

Custom MIL-spec RF/microwave hybrids from 50 MHz to 26 GHz focusing on complex custom multifunction modules; single function devices, including medium power and low noise amplifiers, oscillators, switch/attenuator networks, frequency doublers and single arm SDLAs; multifunction devices, including frequency synthesizers, up and down converters, detector video log amplifiers, receivers, transmitters; and multifunction designs required for military and communications applications.

Teledyne Microwave 1709
Mountain View, CA

M. Lee, M. Daniel, D. Godsey, R. Ando, P. Kovacich, K. Gong, E. Kirchner, D. Krudop
 MARATHON Series 25,000,000 cycle coaxial switches, HYPERMODE ultra-broadband isolators, filters and multiplexers, bulk acoustic wave delay devices, circulators, gain amplitude equalizers, oscillators, amplifiers and integrated subsystems.

Telephonics/PRD Instruments 623
Huntington, NY

J. Levy, T. Giambra, R. Freedman, H. Ruschmann

Microwave components, electronic test equipment and thin-wall waveguide components and space-qualified assemblies.

Teleplex Inc. 1720
Alford Division
Woburn, MA

T.L. Fitch, L. Fitch, F. Abel, A. Alford, J. McSweeney, M. Kamat

Millimeter-wave and microwave components and test equipment, including slotted lines, high power bias tees, microwave tuners, precision coax adapters, precision terminations, network analyzer calibration standards and broadband antennas.

Tele-Tech 1721
Bozeman, MT

J. Peca

Mixers, frequency doublers, switches, power divider and hybrids, transformers, custom integrated assemblies and custom assemblies. See *RF Associates Inc.*

Test & Measurement World Magazine 1234
Newton, MA

Sample issues and free subscription applications of *Test & Measurement World*, a test, measurement and inspection magazine serving the electronics industry.

Texas Brazing Inc. 1502
Forney, TX

R. Irwin, D. Luiken

Aluminum dip brazing and machine fabrication services, waveguide assemblies, complex electronic enclosures and EMI/RFI housings.

Texas Instruments 1328
Dallas, TX

J. Barnett, G. Haas, J. Harbus, T. Kilgo, S. Lazar, T. McCaffrey, D. Mize, S. Nelson, J. Nuttall, P. Schurr, R. Toole

GaAs microwave and RF devices and foundry services.

Texcel Inc. 1416
Westfield, MA

L. Derose, R. Lalli, J. Lovotti, R. Dickson

Laser welding of high reliability products for the military and aerospace industries, including the TXL-9000 ESD protected, glovebox laser sealing system, 400 W Nd:YAG laser, vacuum bake oven, process control software, and gross and fine leak checks, lid manufacturing services and engineering support of package design.

Thomson Composants Microondes 612
Orsay, France

V. Piazzini, H. Charlin, O. de Saint Leger, H. Sandager

Si and III-V diodes, including Gunn, Impatt, Schottky and varactors; GaAs FETs; GaAs ICs and foundry, including analog, digital and MMIC; subsystems, including oscillators and YIG, DRO and VCO sources, PLL, synthesizers, phase shifters, wideband amplifiers, LNA and PA.

Thomson-ICS Corp. 616
Southwick, MA

M. Fox, P. Dufilie, C. Marliac, E. Psaila

SAW, BAW, AO and integrated optics, low loss and bandpass filters, BAW microwave, dispersive and nondispersive delay lines, phase coded correlators, convolvers, pulse compression subsystems and SAW spectrum analyzers.

Thunderline-Z 105
Hampstead, NH

H. Cunningham, J. Zanello, F. Manning, J. Halloran

DC and RF, 0 to 71.8 GHz hermetic feed-throughs; and hermetic housings made from cold rolled steel, stainless steel, copper, aluminum, brass and Kovar.

Times Microwave Systems 1220
Wallingford, CT

J. Mescan, J. Lewis, J. Riter, R. Krimsier, A. Torpie

High performance broadband microwave cable assemblies for airborne, shipboard, ground-based, radar, communications, missile and test systems; low smoke/zero halogen specialty engineered cables and assemblies; and MIL-C-17 coaxial cable.

TMR Associates 920
Groton, MA

L. Pihl, J. Guenard, C. Faiola, P. Evirs, M. Carroll, J. Moore

Manufacturers representative for New England providing sales and promotion of RF, microwave and mm-wave components and subassemblies. Particular emphasis on military program oriented sales and recent penetration into commercial and microwave medical industries.

Toshiba America Electronic Components Inc. 1605
Advanced Materials Division
Westboro, MA

J. Walker, J. Blum, C. Hiruta, K. Anzai, R. Prunier

High thermal conductivity aluminum nitride substrates for high power applications.

TRAK Microwave Corp. 1504
Tampa, FL

S. Kier, H. Schoenborn, T. Roberts, G. Pate

Oscillators, including XCOs, OCXOs, TCXOs, VCXOs, VCOs, DSOs, DTOs and phase-locked; frequency multipliers; comb generators and multipliers; IF amplifiers; ferrite isolators and circulators; frequency synthesiz-



ers and multifunction assemblies; and GPS precise time and frequency systems.

Transco Products Inc. 319
Camarillo, CA

A. Kwon, P. Williams, L. Neeley, R. Bishop

High power passive components, subassemblies, coaxial and waveguide switches, and airborne antennas.

Trans-Tech Inc. 915
A subsidiary of Alpha Industries Inc.
Adamstown, MD

J. Alherici, R. West, E. Hokanson

Advanced oxide ceramic-ferrites, garnets and dielectrics, including dielectric disc/coaxial resonators, substrates and metallization, ferrite configurations for circulators, isolators and phase shifters; and technical ceramic powders.

Trilithic Inc. 1203
Indianapolis, IN

Trim-Tronics Inc. 723
Cazenovia, NY

J. Dowd, M. Tronser

Air plate variable trimmer capacitors, sapphire trimmers, microwave tuning elements and air tubular trimmer capacitors.

TriQuint Semiconductor 619
Beaverton, OR

L. Pengue, D. Powers, M. Kilgore, B. Fournier, D. Criss, D. Kruger

GaAs ICs, GaAs ASIC fabrication, custom and semicustom products and factory designed turnkey solutions.

TRM Inc. 713
Manchester, NH

A. Butts, A. Tirollo, H. Gagne, M. Fredericksen

DC to 26 GHz couplers, power dividers, hybrids and custom components, utilizing strip-line and lumped-element designs to meet custom requirements for optimization of package and frequency configuration.

Trontech Inc. 513
Eatontown, NJ

A. Arbuckle

1 kHz to 6 GHz RF and microwave amplifiers, including low noise amplifiers, broadband medium power and high power to 20 W, class A, 500 W class C.

TRX 1721
Attleboro, MA

D. Barry, J. Barry

Thick-film chip resistors and terminations, and attenuators for surface mount applications.

See RF Associates Inc.

TTE Inc. 1138
Los Angeles, CA

D. Zavac, S. Sodaro

Passive electrical wave filters, including anti-aliasing delay equalized video, sine x/x correction and IF bandpass filters; filter systems; and DC to 500 duplexers and diplexers.

United Glass to Metal Sealing Inc. 116
N. Billerica, MA

P. Sullivan, R. Darwin, K. Darwin, E. Lundber, R. Whitney

Hermetic glass sealing for electronics, custom Kovar package design and custom 50 Ω or DC feedthroughs.

US Microwave 317
Tucson, AZ

UTE Microwave Inc. 620
Asbury Park, NJ

L. Nilson, O. Cook, B. Kent, W. Richman, J. Harty, C. Quesenberry

300 MHz to 20 GHz, communication and broadband, low and high power ferrite circulators, isolators, iso-adaptors, terminations, iso-filters, waveguide circulators, isolators and subassemblies.

Valbar 1721
Attleboro, MA

M. Gregory

Complete microwave and RF circuit board fabrication on PTFE materials, such as duroid.

See RF Associates Inc.

Vanguard Electronics 1721
Gardena, CA

H. Orr

RF and microwave inductive components for hi-rel military and telecommunication applications; leadless surface mount, products and leaded, fully encapsulated packages.

See RF Associates Inc.

Varian Associates
Microwave Equipment Product Division
Santa Clara, CA

Vari-L Co. Inc. 1232
Denver, CO

C. Kiser, J. Carnahan, B. Reynolds, E. Spainhower

Doubly balanced mixers, impedance matched transformers, frequency doublers, power dividers, RF solid-state switches, PIN diode and Schottky switches, multifunction subassemblies, customer designed hybrids, quadrature modulators and VCOs.

Vectron Laboratories Inc. 908
Norwalk, CT

A. Camhi, L. Jawitz, B. Peters, L. Rowe, J. Herrick

Crystal and noncrystal controlled oscillators from 0.1 Hz to 2 GHz, sinewave, TTL, CMOS and ECL, including XO's TCXOs, TC/VCOs, VCXOs, VCOs, and OCXOs.

Voltronics Corp. 301
E. Hanover, NJ

R. Newman, S. Newman, N. Perrella, J. McClay, R. Grant

Sealed piston trimmer capacitors and non-magnetic capacitors with dielectrics of glass, quartz, air, sapphire and teflon; and hermetically sealed and standard DRO and microwave cavity tuners.

Wandel & Goltermann Inc. 702
Morrisville, NC

S. Gupta, B. Handrahan, M. Combs

Spectrum and network analyzers with ranges to 22 GHz; related software, including a package that measures and compiles crystal equivalent circuit parameters; a radio link measuring setup; fiber optics test set, and a fading simulator and signature test.

Watkins-Johnson Company 1420
Palo Alto, CA

J. Spear, R. Thurow, M. Lin, S. Witmer, T. Burkhard, L. Dessert, D. Luce

Microwave semiconductor devices, microwave integrated circuits, RF signal processing components and subsystems, mm-wave components, YIG oscillators and filters, voltage-controlled and digitally tuned oscillators and MMIC components.

Wavetek Corp. 1507
San Diego, CA

Wavetronix Inc. 201
Sanford, FL

R. Mayo, D. Mayo, F. Decater

Semi-rigid coaxial cable; semi-rigid and flexible cable assemblies; low loss semi-rigid and flexible coaxial cable; delay lines; baluns; RF connectors; and wire harnesses.

West-Bond Inc. 926
Anaheim, CA

V. Bezjian, R. Bailey

Microelectronic assembly equipment, including wire and die bonders, and wire bond testers.

Wiltron Co. 226
Morgan Hill, CA

W. Baxter, B. Austin, R. Thorburn

Pulsed CW VNA system, noise figure VNA, W-band mm-wave VNA, 6769 swept frequency synthesizer, 5600 SNA, 6400 RF/analyzer, 60 GHz VNA and components.

XL Microwave Inc. 330
Oakland, CA

ZAX Millimeter Wave Corp. 903
San Dimas, CA

D. Zacharias, S. Rigdon

44 to 350 GHz mm-wave components and systems, including antennas, polarizers, orthogonal transducers, detectors cryogenic mixers, subharmonic and balanced mixers; fixed frequency, mechanically tuned and varactor-tuned Gunn oscillators; frequency multiplexers; calibration loads and radars and radiometers.