



Exhibition Guide

The following list represents information available at press time and may not list all companies.

Accumet Engineering Corp. 417 Hudson, MA

J. Snook, C. Haering, L. Voyer, R. Fearnley, A. Schrauwen, J. Stone, F. Halgas, S. Lehrfeld

Lapped and polished ceramic, BeO, silica and other dielectric substrates for the microelectronic industry.

Adams-Russell, 1520 Antenna & Microwave Div. Amesbury, MA

D. Ryan, D. Dixon, H. Leach, R. Guimond

Coaxial cable assemblies, test cables, broadband antennas, high power 3:1 bandwidth and coaxial components.

Adams-Russell, Anzac Div. 1520 Burlington, MA

J. Parker, M. Smith, B. Reardon, J. Berger, J. Windhol, M. Rosenzweig

RF and microwave signal processing components and subassemblies; frequency multipliers, amplifiers, GaAs switches, logarithmic amplifiers, mixers, digital attenuators.

Adams-Russell Brazonics 1520 Amesbury, MA

F. April

Aluminum and other non-ferrous metal fabrication and brazing; custom design, machine and joining of complex aluminum parts in high frequency waveguides, electronic chassis, heat exchangers and aircraft parts; dip and vacuum brazing techniques.

Adams-Russell 1520 Communications Programs Div. Waltham, MA

J. Duncan

Digital signal processing systems. Concept development, simulator, analytical validation, hardware designer and manufacturer, software development system implementation, test and installation and field support.

Adams-Russell 1520 Microwave Products Div. Chatsworth, CA

R. Kaufman, P. Johnson, S. Lalonde, J. Reeves, L. Lemke

Designer and manufacturer of slotted waveguide planar array antennas; waveguide and stripline components; manufacturer of precision mechanical devices and chassis using dip-brazing process.

Adams-Russell, Micro-Tel Div. 1520 Hunt Valley, MD

D. Breville, J. Spero, B. Spector, W. Brandt, B. Biller, W. Trussell

Precision automatic attenuator/signal generator calibrator, 10 MHz to 54 GHz frequency range, over 100 dB dynamic measurement range.

Adams-Russell, Modpak 1520 Burlington, MA

F. Weber

RF shielded enclosures providing access to both sides of PC boards, standard and custom designer and manufacturer

Adams-Russell 1520 RHG Electronics Laboratory Deer Park, NY

S. Wolin, R. Hirsch, D. Weaver, M. Markson
See RHG Electronics Laboratory.

Adams-Russell, 1520 Semiconductor Center Burlington, MA

R. Gold, B. Bedard, J. Parker

Design and fabrication of GaAs MMICs; foundry services, custom designs and production.

Adams-Russell Space Center 1520 Waltham, MA

M. Rosenzweig, J. Parker, J. Duncan

RF and microwave hi-rel components to level "S" qualifications (space qualified).

Advance Reproductions Corp. 122 No. Andover, MA

C. Losanno, J. Karp

Computer-aided drafting and photomask making services for the microwave industry.

AEGIS, Inc. 1709 New Bedford, MA

M. LoFrumento, J. Greenspan, A. Durr

Microcircuit packages for microwave and hybrid applications, microwave substrates.

Aerowave, Inc. 1731 Medford, MA

T.L. Kozul, M.F. Kozul, T.S. Kozul, L. Kahn

Millimeter-wave devices from 18.0 to 325.0 GHz. Manufactured by Ted Kozul and staff, with over 30 years experience in guaranteed reliable M/M products.

Airpax Corp. 1517A Cambridge, MA

W. Wright, J. Favinger

Hybrid microcircuit packages, microwave packages, power packages, fiber-optic TO-

1986 Exhibition Guide



type, dual-in-line, solid sidewall and all metal flat packages.

**Alan Industries, Inc. 1615
Columbus, IN**

B. Mullins, M. Burton, S. Kennedy, B. Kennedy

Attenuators: programmable, continuously variable, rotary, fixed, cam actuated, toggle switch, rocker switch, pushbutton; also terminations, directional couplers, RF fuses, resistive dividers, impedance matching pads.

**Alpha Industries, Inc. 1434
Woburn, MA**

N. Bishop, M. Antell, G. Kariotis, M. Reid, F. Leith, B. Goldwasser, L. Kemp, M. DeGiso

Microwave semiconductor diodes, ceramic materials, solid-state control components, mm-wave components and subsystems.

**Alpha Industries, Inc. 1434
Advanced Technology Div.
Methuen, MA**

N. Bishop, M. Antell, B. Goldwasser, L. Kemp, J. Crossley

Millimeter-wave components and subsystems, antennas, MFAs, GaAs FET amplifiers, GaAs MMICs.

**Alpha Industries, Inc. 1434
Central Microwave Co.
Maryland Heights, MO**

N. Bishop, L. Kemp, B. Goldwasser, B. Ruff, M. DeGiso

High power GaAs FET amplifiers, microwave/millimeter sources, DSOA, VCOA, PLOs, narrowband FET amplifiers.

**Alpha Industries, Inc. 1434
Microelectronics Div.
Hatfield, PA**

C. Kamnitsis, J. Dresso, N. Bishop, L. Kemp, M. Antell

RF/microwave modular amplifiers, RF switches, subassemblies, custom hybrid microcircuits.

**Alpha Industries, Inc. 1434
Microwave Components Div.
Lawrence, MA**

N. Bishop, L. Kemp, D. Barker, M. Reid, M. Antell

PIN diode switches and switch modules. PIN diode limiters and limiter modules.

**Alpha Industries, Inc. 1434
Semiconductor Div.
Woburn, MA**

N. Bishop, L. Kemp, M. Antell, M. DeGiso, B. Touzet, F. Leita

Microwave semiconductor diodes, MIS chip capacitors, motion detectors.

**Alpha Industries, Inc. 1434
Trans-Tech Inc.
Adamstown, MD**

N. Bishop, L. Kemp, A. Blankenship, B. Stiles, R. West

Microwave ferrites, garnets, dielectrics, dielectric resonators, multi-component technical ceramic powders.

**American Electronic Laboratories, Inc. 1623
Lansdale, PA**

D. Ihasz, K. Veith, R. Shillady, G. Jacobs, M. Nussbaum, W. Meyers

Microwave hybrid circuits, single and multiple functional devices, integrated subsystems for sale to prime military contractors for use in the electronic warfare, communications and missile markets.

**American Microwave Corp. 224
Frederick, MD**

R. Sicotte, B. Sicotte, A. Hocking

PIN diode control devices covering 2 MHz to 20 GHz including PIN diode modulators, attenuators (linearized and nonlinearized) Other products include tunnel diode amplifiers, couplers, power dividers and impedance transformers.

**American Technical Ceramics 418
Huntington Station, NY**

R. D. O'Toole, D. Davis, R. Blumkin, K. Dorsty, H. Seaman

Broad multi-layer and single-layer capacitor product line, covering the full RF and microwave frequency range. Capacitors are QPL approved to MIL-C-55681/4 and /5 through failure rate level "S".

**AMP Inc. 1612A
Harrisburg, PA**

R. Mauch, K. Gookin, J. Greene, T. Desso, T. Boucek, F. Skorka, M. Mullen, K. Rock, D. Siwald

Coax, application equipment for SMA, Amplitite, two-piece connectors, filter connectors and programming systems.

**Amperex Electronics Corp. 1408A
Hicksville, NY**

**Amphenol Products 1415
Lisle, IL**

T. Smith, E. Lagarto, G. White, R. Terrell

RF connectors, cables, cable assemblies and related interconnection products.

**Amplica, Inc. 1420
Newbury Park, CA**

M. Botu, D. Leonard, B. Sayles, B. Dunn, B. Barrett, A. Sailor, L. Nevin, G. Keithley, E. Nyiri, M. Yeo.

Solid-state amplifiers operating in the RF and microwave frequency bands for end-item use in communications, radar and ECM applications.

**Amplifier Research 1425
Souderton, PA**

D. Shepherd, D. Roth

Broadband RF power amplifiers, 1 W to 10 kW, 10 kHz to 1 GHz, for RFI susceptibility testing; EMP simulation systems for hardening electronic subsystems; broadband antennas.

**Amplifonix, Inc. 624
Langhorne, PA**

R. Dubois, A. Riben, W. Garner, D. Lucas

Low power, RF hybrid amplifiers that cover the frequency range from kHz to 2.3 MHz.

**Anadigics, Inc. 1609A
Warren, NJ**

S. Bharj, M. Gagnon, C. Huang, R. Rosenzweig, P. Wallace

GaAs ICs, wideband MMIC amplifiers, custom and foundry capabilities, linear devices such as operational amplifiers, special function digital processors.

**Anaren Microwave, Inc. 520
E. Syracuse, NY**

L. Nielsen, P. Nye, T. Sly, R. Stroh, B. Bowler, S. Rehnmark, B. Worden

Microwave components, digital frequency discriminators, phase discriminators, tracking receivers, digital ESM receivers.

**Andersen Laboratories 1000
Bloomfield, CT**

E. Hodur, T. Lewis, D. Lowcaveegee, R. Hsing, C. Erikson

Acoustic signal processing devices and subsystems: IF compressive receiver; bulk acoustic wave devices; delay lines; surface acoustic wave (SAW) filters, oscillators and dispersive delay lines; IMCON dispersive delay lines, filter banks, acousto-optic modulators

1986 Exhibition Guide



Anritsu America, Inc. 722
Oakland, NJ

B. Fullam, J. Curtin, M. Heck, B. Kauffman, A. Freeland, J. Scheich

New 23 GHz microwave spectrum analyzer, microwave system analyzer, microwave power meter, network/spectrum analyzer, RF spectrum analyzer, microwave repeater checker

Applied Engineering Products 305
New Haven, CT

C. Goff, A. Garrett, B. Trivelli, D. Winn, M. Paul

Subminiature coaxial connectors per MIL-C-39012 in series SMA, SMB, SMC, flexible and semi-rigid coaxial cable assemblies.

Aristo Graphics Corp. 609
Randolph, NJ

E. Harthaus, O. Jones, F. X. McWilliams

ARISTOMAT drafting and digitizing systems, MAT100 CAD interactive color graphics design station for precision microwave art masters. Also, 100 and 200 series flatbed plotters featuring high accuracy and speed.

ARRA, Inc. 210
Bay Shore, NY

B. Alimena, M. Geraci

Broad line of microwave components, coaxial waveguide and solid state. Continuously variable attenuators, broadband directional couplers, hybrids and thin-wall ultra-light space-qualified waveguide assemblies.

Artech House 616
Dedham, MA

W. Bazzzy Jr., B. Modelski, W. LaPierre

Artech House publishes advanced books on microwave, radar and telecommunications technology, theory and applications.

Astrolab, Inc. 822
Warren, NJ

J. Toma, S. Toma, O. Johnson, M. Toma

Astro-Cobra-Flex, flexible semi-rigid cable and assemblies. Astro BOA Flex flexible low loss cable and cable assemblies. 50 ohm connectors and adapters including SMA, TNC, TK, N, 3.5 mm, 7 mm,—all designed for frequencies up to 18 GHz and over.

Automatic Connector, Inc. 1704
Commack, NY

W. Pitcher, W. Thiel, C. Ott

RF coaxial connectors; standard, miniature, subminiature, microminiature and push-on types. Single- and multi-mode biconic fiber-optic products.

Automatic Testing and Networking 1719
Lexington, MA

V. Adamian

NP4 noise parameter test set, VZ16L load-pull test set — both automatic test stations under computer control.

Avantek, Inc. 1320
Santa Clara, CA

David Herron

Solid-state microwave and mm-wave products for military and commercial applications. Low noise and power microwave transistors; silicon monolithic and hybrid IF/RF amplifiers including a 2 – 18 GHz, 9.5 dB NF amplifier, a 43.5 – 45.5 GHz driver amplifier and a 20.2 – 21.2 GHz satellite terminal LNA; a 33 – 50 GHz fundamental-output and other YTOs, and filters; varactor-tuned and dielectrically-stabilized oscillators and oscillator assemblies; double-balanced mixers; PIN diode RF switches; integrated assemblies, such as mixer-preassemblies; and digitally and voltage-tuned oscillator units.

AVX Corp. 1514
Myrtle Beach, SC

R. Phillips, J. Notarangelo, R. Burns, J. Sarvis, Burgin-Kreh Associates, Inc. Reps.

Multi-layer chip capacitors, commercial and military (CDR-11, 12, 13, 14) and a complete line of SLC capacitors.

Aydin Vector Div. 201
Newtown, PA

H. Jastrow, A. Katz, C. Santiago

RF wideband RF hybrid amplifiers, frequency range kHz to 1 GHz. Also, custom microelectronics.

Aydin Microwave Div. 201
San Jose, CA

L. Miller

Low noise, FET, stripline RF amplifier, 2 to 18 GHz.

Balo Precision Parts, Inc. 1334
Franklin Lakes, NJ

E. Rapoza, A. Dudas, H. Dudas

Microwave high frequency hermetic packages; 50 ohm bubble-free feed-throughs, including glass free air launches. Channelized and shielded special packages, hermeticity (1×10^{-8} cc/S He) maintained after exposure to 600°. TIG weldable glass seals. Power hybrid Kovar/copper packages. Meets full requirements of MIL-STD-883.

Balzars Optical Corp. 1506A
Marlborough, MA

J. Sgambato, R. Hoffmann

Thin-film electronic products: metalized

substrates, etched, patterned substrates; chip resistors (high frequency); resistor networks; special microwave metalizations on fused silica, quartz, polished alumina, ferrites, garnets, sapphire and dielectrics.

Barry Industries 1201
Attleboro, MA

H. Smith, C. Baldasaro, R. Barry, D. Shippey, T. McLaughlin, J. Karp

Microwave chip resistors, attenuators, terminations, networks and custom ceramic substrates. Teflon dielectric and bonded aluminum circuit boards and substrates, one- and two-sided with through-holes. Machined housings and plated switch drivers.

Boonton Electronics Corp. 406
Randolph, NJ

S. Elkins, B. Arntz, G. R. Polen, R. Morell, W. Loftus

Model 8200 modulation analyzer, model 4200 RF microwattmeter, model 92EA RF millivoltmeter, model 1120 audio analyzer, model 5110 LCR meter.

Brimrose Corp. of America 1507A
Baltimore, MD

R. Rosemeier, L. Rosemeier, A. Wiltrout, R. Sirian, J. Soos, D. Evans, R. Ananth, W. Rewa

Acousto-optics, laser beam deflectors, infrared detectors, precision crystal optics, x-ray intensifiers, x-ray diffraction analysis.

Buckbee-Mears 1515
St. Paul, MN

F. Grimm, P. Koosmann, N. Barol, B. Wolf, J. Confer, T. Stevens, B. Snider, P. Meagner, E. Over, D. Hervey, R. Beadles

Manufacturer of Teflon-based microwave circuits, including multi-layers.

Bullen Ultrasonics 1604
Eaton, OH

California Amplifier, Inc. 1208
Camarillo, CA

F. Brown, J. Ramsey

GaAs FET amplifiers, .1 to 18 GHz, low noise, medium power, octave, multi-octave for EW, radar and communications. Microwave integrated subsystems, upconverters, downconverters, supercomponents.

California Eastern Laboratories, Inc. 1416
Santa Clara, CA

R. Chou, A. Price, D. Bunnell

Bipolars, GaAs FETs, diodes, hybrid ICs, MMICs.

Cascade Microtech Inc. 1405A
Beaverton, OR

E. Strid, D. Carlton, B. Most, J. Grossarth, K. Noonan

Microwave wafer probing equipment.

1986 Exhibition Guide



Celeritek 1606
San Jose, CA

R. Jones, G. Koker, B. Tucker, S. Cripps
Amplifiers, microwave GaAs FETs.

Cir-Q-Tel, Inc. 1121
Kensington, MD

R. Wainwright, H. Wainwright, D. Alexander, N. Selinger, J. Kociol, J. King

Electric wave filters: DC to 40 GHz, tunable and fixed, tubular, coaxial, interdigital, combine, waveguide SSS, lowpass, high-pass, bandpass, high power to 50 kW.

Coleman Microwave Co. 821
Edinburg, VA

K. Coleman Sr., K. Coleman Jr., J. Coleman, N. Coleman, D. Coleman, G. Brinkley, B. Gibson, D. Braithwaite

Microwave filters from .1 to 26 GHz. Low-pass, highpass, band-reject, bandpass and programmable filters. They are tunable and fixed-tuned in coax and waveguide.,

Com Dev Ltd. 1610
Cambridge, Ontario, Canada

N. Emptage, W. Tang, C. Kudsia

Microwave and mm-wave technology for satellite and defense systems. A 30 GHz, four-channel, space-qualified I/P mux, variable power dividers and combiners, a WRD-750 non-reciprocal phase shifter together with a variety of other mm-wave hardware.

Commonwealth Scientific Corp. 1706
Alexandria, VA

T. Thurman, D. Finn, S. Collins, B. Gross, G. Thompson, W. Hughes

Ion beam milling (dry etching) equipment and services for high resolution gold pattern delineation on ceramic hybrid microwave substrates. Ion sources for in situ precleaning before thin-film deposition.

Communication Techniques, Inc. 915
East Hanover, NJ

J. Payne III, K. Beene, J. Crews

Ultra low noise VHF and microwave frequency synthesizer in bands from 30 MHz to 21 GHz; low profile, low noise, phase-locked oscillator; cavity and voltage-tuned oscillators; mechanically tuned and automatic phase-locked signal sources; microwave frequency synthesizer with various step sizes; radar subsystems.

Communications Consulting Corp. 511
Paterson, NJ

U. Rohde, M. Ball, K. Trezise, K. Eichel, P. Plante

RF and microwave analysis/optimization and synthesis software, including CADEL,

CADEC Plus, PLL/filter/microwave amplifier and oscillator "design kits".

Compac Development Corp. 112
Holbrook, NY

C. Groves, P. Rao

RFI/EMI shielded enclosures, standard and custom; RF connectors; coaxial attenuators; gasketing; RF transfer switches and power relays.

Compact Software 511
Paterson, NJ

U. Rohde, M. Ball, K. Trezise, K. Eichel, P. Plante

RF and microwave analysis and optimization software, including Super Compact, Super Compact PC, Autoart, Autoart PC. For mainframe and IBM-PC compatible environments.

Compex Corp. 330
Medford, NJ

G. Gordon, S. Chen

Single-layer ceramic parallel-plate microwave chip capacitors, available with gold or tin finish. Split-electrode binary arrays and custom electrode configuration available in all dielectrics.

Component General Inc. 803
Tampa, FL

J. Cook, R. Davo

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

Comstron Corp. 800
Freeport, NY

L. Borow, S. Klein, J. Gruber, R. Papaieck, R. Kaminsky

FS-2000 frequency synthesizer with sub-microsecond switching; featuring low phase noise, RF-microwave frequency coverage, high resolution and compact size. Comstron/adret signal generators. Components: RF/microwave filters, oscillators and subassemblies.

Connecting Devices, Inc. 1617
Long Beach, CA

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

Microwave connectors and cable assemblies: radius right angle SMA, SSMA, TNC, N and special connectors; semi-rigid and flexible cable assemblies; adapters, hermetic connectors; assembly and measurement tools.

Continuing Education Institute 408
Los Angeles, CA

J. Orth, A. Trapp

Short courses in high technology educa-

tion, including: Modern Microwave Measurements, Microwave Circuit Design: Linear Circuits, Microwave Circuit Design: Non-Linear Circuits.

Copper & Brass Sales, Inc. 401
Detroit, MI

D. Eberle, B. Doran

OFE copper produced to ASTM-F68, electronic grade cupro nickel produced to ASTM-F96, glass-to-metal sealing material produced to ASTM-F15.

Crane/Polyfon 1714
New Rochelle, NY

T. Beary, J. Ellison, W. LaRusso, M. Lupsa, P. Russo

CuFlon ultra low loss, high Q microwave substrate material, high Q electroplated TFE chip capacitors, high voltage non-magnetic fixed and variable RF capacitors, precision microwave cavities and components.

Crystal Technology 1621
Palo Alto, CA

Z. Snow, A. Comparini, B. Potter, D. Hawkins, C. Mueller

Surface acoustic wave (SAW) products including VHF, UHF bandpass filters and filter banks, satellite receiver and CATV filters. Acousto-optic and electro-optic products including wideband and large time aperture Bragg cells for EW receivers. Optical guided wave components.

Diamond Antenna & Microwave Corp. 222
Winchester, MA

A. Hovannesian, B. LaPage, T. Glaze, W. Maurer

Rotary couplers, single- and multi-channel; antennas; adapters; terminations; bends; twists; transitions; crossguide/directional couplers; detectors; power programmers, phase shifters; various multi-functional waveguide and coaxial assemblies, DC to 40 GHz.

Dielectric Communications 1003
Raymond, ME

R. Olsen, C. Morton, C. Mitchell, P. McCann

Microwave absorbers — electronautic waveguide insert loads and terminations in low, medium and high power versions. (Finished form and application form.) Dehydrators, high power filters, transmission line and waveguide.

Dielectric Laboratories Inc. 1622
Cazenovia, NY

P. Kip, D. Lupfer, W. Hautaniemi, G. Vorlop

Microwave ceramic capacitors; high Q porcelain capacitors, QPL approved to MIL-C-55681/4; microwave ceramic substrates; binary capacitors; capacitor arrays for GaAs ICs.

Dynatech Integrated Devices 704
Westlake Village, CA

S. Smith, L. Powers, T. Jamias

1986 Exhibition Guide



High speed, 0-180°, wideband bi-phase modulators; 0-90-180-270° octave bandwidth quadrature phase shifters; narrow-band multi-bit phase shifters; wideband directional couplers; 3 dB, 90° hybrid couplers; two-way through six-way power dividers; SP1T thru SP6T PIN diode switches; lowpass, highpass, bandpass and band-reject filters; and integrated components for use in subsystem requirements, custom designed.

Dynatech/UZ, Inc., 704
Matrix Div.
Westlake Village, CA

R. Klenske, T. Jamias

Microwave matrices, DC to 18.6 GHz; common housing and open frame quick disconnect coaxial switch designs.

Dynatech/UZ, Inc. 704
Switch Div.
Venice, CA

B. Wise, M. Okano, E. Kjellberg, T. Ogasawara, N. Renfrow, K. Siengsubcharti

High performance microwave switches; coaxial switches operating up to 40 GHz; total product line of switches for 26.5 GHz. Manufacturer of switches for major missile and airplane applications.

Dynawave Inc. 1101
Georgetown, MA

C. Lewis, D. Gartzke, R. McLaughlin

Designer and manufacturer of precision microwave coaxial connectors and cable assemblies. High frequency MIC hermetic and field-replaceable connectors.

Eastern Instrumentation Corp. 1711
Burtonsville, MD

H. Weinstein, F. Groman, G. Madiou, D. Eddy, S. Wolfe, R. Murdoch, E. Easton, J. Pierce.

Manufacturer's representative — amplifiers, switches, filters, isolators, circulators, attenuators, SAW devices, mixers, VCOs as well as other microwave and RF components.

Eaton Corp., 808
Electronic Instrumentation Div.
Los Angeles, CA

F. Borghetti, P. Ullrich, J. Cacciola, B. Vancata, J. Shahan

Microwave and RF test and measurement instrumentation and systems including frequency synthesizers, spectrum analyzers, noise figure instrumentation, EMT/EMS test systems and broadband linear power amplifiers.

Eaton Corp., 808
Microwave Products Div.
Components & Subsystems Group
Sunnyvale, CA

C. Fraser, J. Barinka, D. Contois, J. Goddout, W. Baxter

Switches, mixers, diodes, isolators, filters.

Eaton Corp., 808
Microwave Products Div.
Subsystems Group
Sunnyvale, CA

E. Bertram, B. Aiken, F. Levien, B. Franke
Microwave components.

EEsof 1125
Westlake Village, CA

C. Abronson, J. Lindauer, B. Childs, S. Hamilton, P. Wilhelmsen, L. Rhodes, C. Boyer, D. Mutch, M. Bush-Weller, L. DuBois, C. Holmes, L. Lemer, C. McGuire, M. Medley, D. Morton, G. Hawishet

Touchstone circuit design, analysis and optimization program; Touchstone 1.4; Touchstone Sr.; Touchstone/VAX Connection; Microwave Spice, which relates active device characteristics to process-related parameters and performs time or frequency-domain analysis in non-linear circuit design; and E-Syn, for the synthesis and design of matching networks, lowpass, highpass, bandpass and bandstop filters and multiplexers. Also, EEsof User's Group's first meeting will be held June 1, the day before the exhibition starts.

EEV Inc. 426
Elmsford, NY

T. Soldano, F. Oakes, P. Plurien, R. Robertshaw, A. Sayers

Electronic tubes for radar communications and EW applications including traveling-wave tubes, magnetrons and integrated microwave packages 14-14.5 GHz, 300 W TWT type N10057; type N10053; 6.5 to 18 GHz, 100 W CW TWT; and a Q-band microwave burst transmitter.

EIP Microwave Inc. 615
San Jose, CA

R. Bush, B. Dentinger, J. Adam, B. Yellin, B. Loft

Frequency counters - CW and pulse to 110 GHz. Sweep generators: 10 MHz to 18.6 GHz.

Electro-Films, Inc. 119
Warwick, RI

F. Urrico, B. DiPanni, M. Sears

Metalized alumina, quartz and beryllia, etched conductor and resistor patterns, Lange couplers and other fine line patterns, microwave chip resistors, MIC substrates

Electroglas 1404A
Santa Clara, CA

R. Gilman, L. Hyatt, R. D'Entremont, G. Edgerton

Electroglas model 2001X automatic wafer prober with Cascade Microtech model 64 top plate allows up to 26 GHz measurements on GaAs wafers.

Electromagnetic Sciences Inc. 523
Norcross, GA

J. Banks, L. Bloom

Satellite beamforming networks, ferrite/diode control devices (phase shifters, switches, variable power dividers, attenuators), low noise/power GaAs FET amplifiers, MIC subsystems and multi-octave subsystems for EW applications. Frequencies: 1.0 to 100 GHz.

EMC Technology, Inc. 1718
Cherry Hill, NJ

P. Semitschew, M. Moore, S. Rollin, M. Steidlitz

Attenuators (surface mount, coaxial, high power, fixed and programmable), terminations (surface mount, coaxial, high power), SMA connectors, microwave resistors, high frequency hybrid circuits.

Emerson & Cuming Inc. 422
Woburn, MA

Microwave absorbers, anechoic chambers, RF attenuation material, absorber for antenna pattern control, surface current attenuation material, RCS reduction materials.

EMF Systems, Inc. 1113
State College, PA

J. Chernega, J. Chernega

Solid-state microwave oscillators and associated circuitry

Engelhard-Millis Corp. 519
Millis, MA

EPSCO, Inc., 1424
Microwave Div.
Westwood, MA

W. Coffin, J. Langley, J. Shalhoub, J. Dhimos, R. Kalvaitis

High power solid-state amplifiers from 2 through 18 GHz and upwards of 30 dBm, high power CW and pulse signal sources, cavity oscillators and TWTAs for EW and telecommunications applications.

EPSCO, Inc., 1424
RF Div.
Westlake Village, CA

R. Posner, R. Frazier

High power, solid-state RF amplifiers and subsystems from 1 MHz through 3 GHz with output power up to 1 kW for EW and telecommunications applications.

Epsilon Lambda-Marconi 923
Geneva, IL

T. Smith (Marconi), J. Evans (Marconi), R. Knox (Epsilon Lambda), W. Cavallo (Epsilon Lambda)

Microwave and mm-wave active and passive components.

EW Components Inc. 402
San Juan Capistrano, CA

A. J. Pina, D. Emerick, M. Wilde, B. Wheeler, J. Fields, A. K. Anderson

1986 Exhibition Guide

Waveguide and coaxial isolators and circulators, ferrite latching switches, isolators, highpass, lowpass, bandpass, band-reject, tunable and notch filters, duplexers, multiplexers and switch filters, waveguide filters, VCOs and VCO subsystems.		
Ferretec, Inc. San Jose, CA <i>A. Rosenzweig, W. Keane</i>	227	
YIG devices, including YIG bandpass and band-reject filters, filters with drivers, self-tracking (closed-loop) FERRETRAC filters, YIG oscillators, and integrated YIG assemblies.		
Filtronic Components Ltd. Shipley, England <i>J. Rhodes, E. Sloan, E. Ferguson, K. Ferguson</i>	500	
Switched multiplexers, switched filter banks; channelizers, AC and DC coupled detector log video amplifiers; digital frequency and amplitude measurement receivers; lowpass, highpass, bandpass and bandstop filters; linear and parabolic equalizers; multiplexers.		
Flann Microwave Inc. Los Angeles, CA <i>B. Fleming, I. Crane, P. Warwick</i>	1715	
Programmable attenuators, phase changers, controllers, mm-wave instruments and components, waveguide metrology products.		
Flexco Microwave Inc. Port Murray, NJ <i>W. Pote, R. Landsman, R. Walker, R. Tappen, J. Negri</i>	723	
RF cable assemblies.		
Florida RF Labs Inc. Stuart, FL <i>D. Sampson, G. Fenex</i>	300	
RF components. Thin-film terminations: flange, chip, power, coaxial and pill shape. Resistors: rod, stud, chip power and disk. Coaxial cable assemblies: YIG, flexible, semi-rigid, phase-matched, delay lines. Attenuators: waveguide vanes, film card.		
Florod Lasers Gardena, CA <i>M. Shiflett, S. Goodman, R. Heilman</i>	1102	
Laser cutter for microwave tuning.		
FM&T Industries, Inc. Shrewsbury, PA	126	
Frequency Sources Chelmsford, MA <i>A. Cardiasmenos, R. Cory, R. Jerome, R. Knowles, L. Player, J. Rabbitt</i>	903	
Oscillators — Gunn, transistor, crystal; digital, voltage or mechanically tuned, or fixed; multipliers; synthesizers and subsystems; control devices — switches, attenuators, et		
al; semiconductors — PIN/NIP, tuning and multiplier varactors.		
Frequency Sources West Santa Clara, CA Fujitsu Microelectronics Inc. Microwave & Optoelectronics Div. Santa Clara, CA <i>S. Rupp, B. Hampton, T. Shintani, Y. Hirano, N. Corpron</i>	903	1126
Microwave low noise and power FETs. Microwave power bipolar transistors; microwave power amplifiers.		
Gamma-f Corp. Torrance, CA <i>C. Goss, G. Peale, F. McClung, F. Hendrickson</i>	521	
Passive microwave components and assemblies from WR-229 through WR-8: filters, duplexers, multiplexers, OMTs, power dividers, couplers, transitions, bends, horns, etc.		
GCA Corp. Andover, MA <i>R. Selzer, M. Powell, D. Ruede, L. Denes</i>	719	
State-of-the-art commercial and government IC capital production equipment. Wafer fabrication equipment for high density MOS and GaAs integrated circuits. Laser based pattern generation systems.		
Gel-Pak Div., Vichem Corp. Stanford, CA <i>V. Althouse, S. Graves; M. Althouse, C. Brodie</i>	716	
Chip trays and carriers for handling and shipping fragile III-V devices, beam-lead diodes, saw devices, substrates, modules and related microelectronic components.		
General Microwave Corp. Amityville, NY <i>S. Rinkel, M. Wind, F. Perry</i>	910	
Microwave components and instrumentation, including attenuators, switches, phase shifters, frequency translators, MICs, peak power meters, average power meters, power monitors and radiation hazard meters.		
GHz Technologies Montreal, Canada <i>Z. Huszar, M. Gendron, W. Reddock, W. Sneller, S. Grappy</i>	1508A	
Microwave passive components, filters, terminations, power divider/combiners, cable assemblies, circulators/isolators, couplers, adapters, coaxial couplers, drop-in isolators/circulators and subsystems.		
Gilbert Engineering Co. Inc. Glendale, AZ <i>J. Kubota, M. Covino, R. Hall</i>	524	
Microwave connectors: SMA, TNC, 7 mm, precision test adapters, between-series adapters, within-series adapters, 0874 and 0900 connectors.		
W. L. Gore and Associates Inc. Newark, DE <i>T. Whitten, L. Gillard, E. Fulgham, G. Walter</i>	409	
Low loss, flexible microwave coaxial assemblies.		
Gould Electronics, Microwave Products Div. San Jose, CA <i>G. McLarnon, G. Jansons, R. Sanders, S. Kakihana, J. Murphy</i>	1221	
GaAs microwave devices, components and subsystems		
Harris/PRD Instruments Westbury, NY <i>P. Schild, J. Levy, G. Iavarone, C. Motlenski, H. Ruschmann</i>	327	
Microwave components and test equipment, power meters. Demonstration of vector voltmeter.		
Harris Microwave Semiconductor Inc. Milpitas, CA <i>B. Hoffman, G. Smith, J. Tenedorio, J. Schappacher, N. Frick, D. Apte, T. Strouth</i>	1314	
GaAs products - GaAs digital and analog ICs, high gain and high power microwave GaAs FETs, broadband and narrowband GaAs FET amplifiers, GaAs semi-custom and custom services.		
Haverhill Cable & Mfg. Corp. Haverhill, MA <i>T. Kneeland, D. Kneeland, F. Kneeland</i>	322	
MIL-C-17 semi-rigid coaxial cable, 12 different sizes and finishes. Performance test data and samples.		
H.E.L. Inc. St. Petersburg, FL <i>J. Walton, L. Larson, C. May, Z. McAtee</i>	125	
Microwave phase bridge, ion pump power supply, 5.4 V power supply at 400 cycle, circuit boards.		
Herley Microwave Systems Inc. Lancaster, PA <i>R. Hess, L. Hilton, E. Mihok</i>	120	
Solid-state devices; VCOs, phase compensators, low noise amplifiers, passive waveguide components, pressure windows, dummy loads, diode switches, high power attenuators.		
Hermetite Corp. Avon, MA <i>J. Ladge, M. Byrnes, R. Nichols</i>	1702	
Metal packages for microwave, hybrid, power and fiber-optic applications.		
Hewlett-Packard Co., Microwave & Communications Group Palo Alto, CA	1302	
Microwave CAE workstations based on HP Vectra PC and HP series 200 and 300 desktop computers. Also, new 2.4 mm coaxial		

1986 Exhibition Guide



connector products for applications to 50 GHz.

Hewlett-Packard Co., 1302
Microwave & Communication Group
Palo Alto, CA

New microwave CAE workstations based on HP Vectra PC and HP series 200 and 300 desktop computers. Also, new 2.4 mm co-axial connector products for applications to 50 GHz.

Hewlett-Packard Co., 1302
Network Measurements Div.
Palo Alto, CA

HP 8753A RF network analyzer (300 kHz to 3 GHz) with built-in synthesized signal source. It makes error-corrected measurements in frequency and time domains

Hewlett-Packard Co., 1302
Signal Analysis Div.
Palo Alto, CA

HP71000 modular spectrum analyzers for RF, microwave and mm-wave measurements; multi-band millimeter spectrum analyzer; HP8566B microwave spectrum analyzer and HP series 300 computer for automatic spectrum analysis.

Hewlett-Packard Co., 1302
Stanford Park Div.
Palo Alto, CA

HP 8770S arbitrary waveform synthesizer system. It creates totally arbitrary DC to 50 MHz signals digitally. By providing the ideal signal along with noise, distortion and other signals, electronic stress-testing can be done.

Hewlett-Packard Co., 1302
Spokane Div.
Palo Alto, CA

HP8902A measuring receiver, configured to accurately characterize signals and calibrate attenuators to mm-wave frequencies with frequency, modulation and low-level measurements. The controller automates the process.

Hewlett-Packard Co. 319
Microwave Semiconductor Div.
San Jose, CA

L. Welch, J. Auckland, J. Lepoff, B. Myers
Beam-lead Schottky diodes and PIN diodes.

Hexcel Corp. 225
Dublin, CA

C. Wolter, W. Cloyd, B. Kelley, R. Scott

Composite materials for microwave antenna components and structures, including dielectric and radar absorbing materials.

Honeywell Inc., SBMC 1720
Santa Barbara, CA

M. Cronin, D. Sharpe, K. Pickford, L. McTucker, R. Griffith

Mixers, mixer-preamplifiers, network analyzer frequency extenders and Gunn oscillators. These products are available in the

frequency range from 2 to 110 GHz.

Horizon House-Microwave, Inc. 616
Dedham, MA

W. Bazzy, R. Briden

Microwave Journal and *Journal of Electronic Defense* publications and Artech House books.

Hubbard Communications 600
St. Petersburg, FL

B. Henley, A. Jester, T. Kidd, M. Hascall

Lightweight Ku-band transportable systems. Lightweight 14 to 14.5 GHz HPA. Dehydrators and other microwave hardware.

Hughes Aircraft Co., 621
Microwave Products Div.
Torrance, CA

C. Breeze, J. Cadwallader, J. Nichols, R. Larson

Power meter and sensors, S-parameter test sets, FET products, mm-wave synthesizer, precision instruments.

Innowave Inc. 619
Morgan Hill, CA

R. Barbaria, B. Sekhon, N. Garvin

Isolators/circulators, gain equalizers/harmonic phase shifters, filters/multiplexers and integrated components.

Insulated Wire, Inc. 901
Ronkonkoma, NY

A. Nixon, J. Daniel, P. Weigel

High performance flexible and semi-rigid microwave cable assemblies.

Integra Microwave 700
Santa Clara, CA

L. Johnson, S. Wetenkamp, W. Pfund

Sweep generator (2 to 20 GHz), tunable YIG filters (0.5 to 26 GHz), VCO test set, panoramic receiver, wavemeter, current supplies, noise figure measurement.

Ion Beam Milling, Inc., 1706
Manchester, NH

R. Quagan, G. Quagan

Millimeter microelectronics, ion beam milling specialty service.

Isotronics Inc. 420
New Bedford, MA

G. Smith, D. Hanley, J. Ahearn, D. Sheerin, K. Sullivan

Custom machined modules for the microelectronic industry including microwave, fiber-optic and power package applications.

JFW Industries, Inc. 1712
Indianapolis, IN

S. Manka, J. Walker, F. Walker

Attenuators: fixed, variable, relay programmable and solid-state programmable, and solid-state coaxial switches. In addition to catalog items, units can be built to customer requirements.

Johanson Manufacturing Corp. 218
Boonton, NJ

E. Fagerlund, B. Kapner, B. Rowe

Variable capacitors: air, ceramic, glass, quartz, Giga-Trim, Seal-Trim, Thin-Trim, Cera-Trim capacitors. Waveguide tuning elements, Phase-Trim.

Joslyn Defense Systems, Inc. 115
Shelburne, VT

G. Coddington, A. Salvitti, C. Collert, J. Tormie, T. Eyerman

RF and microwave switches and cable assemblies, EMP test equipment and services, interface systems and interface cabling systems and engineering services.

Journal of Electronic Defense 616
Dedham, MA

H. Gershanoff, J. Haystead, M. Clarke

Journal of Electronic Defense magazine: subscription and editorial information.

K & L Microwave 1624
Salisbury, MD

P. Leo, C. Schaub, R. Bernstein, W. Anthony, R. Livingston, K. Jenkins

RF and microwave switches, RF and Microwave filters, multiplexers, switched filter banks, XTAC filters, hybrid oscillators.

Kay Elemetrics 1707
Pine Brook, NJ

V. Hixson

Programmable, continuously variable, rotary and step attenuators and RF switches.

KDI Electronics Inc. 812
Whippany, NJ

D. McConnell, C. Schrautnagl, A. Arfin, R. Hartwig, M. Snyder, H. Engelmann, P. Levine, N. Deoul

RF and microwave components and subassemblies including attenuators, terminations, oscillators, digital attenuators and phase shifters, dividers, couplers, microstrip, stripline, thick- and thin-film microwave integrated circuits, modulators, digital switches.

Keene Corp., 410
Laminates Div.
East Providence, RI

R. Petrick, L. Knight, R. Tull, M. Endy, T. Zawislak

Complete line of high performance, low loss substrates designed for stripline and microstrip circuitry, in addition to other specific applications requiring unique properties of fluorocarbon polymers and constructions. Di-Clad laminates offer controlled dielectric constant and dissipation factor.

Keltec Florida 100
Fort Walton Beach, FL

J. Riches, M. Yount, D. King, V. Pirro

1986 Exhibition Guide



Traveling wave tube amplifiers (TWTAs) covering 1 to 18 GHz in octave bands with output RF power ratings to 200 W CW and 1 kW pulsed. Also, a complete line of satellite communications amplifiers (HPAs) in C, X and Ku bands with output RF power up to 700 W.

Kevlin Microwave Corp. 1124
Woburn, MA

J. Riley, R. Cannistraro, I. Bhawnani, E. Lattanzi

Rotary joints; mm-wave connectors and components including junction circulator/isolators, magic tees, sidewall couplers, broadband power dividers, broadband stripline couplers, differential phase shift circulator; precision cable assemblies operating from DC to 50 GHz.

Kings Electronics 221
Tuckahoe, NY

F. Pack, E. Josephs, S. Jackson

RF SMA coaxial connectors for flexible and semi-rigid cables. Field service kit for termination of .141 and .085 semi-rigid cables.

Krytar 805
Sunnyvale, CA

T. Russell, M. Molley, C. Gentile

Directional couplers, directional detectors, crystal detectors, zero bias Schottky detectors, 90° hybrids, power dividers.

KW Engineering Inc. 817
San Diego, CA

G. Veracka, R. Moubert, R. Levy, J. Frost, A. Collins, R. Wirick, D. Roland, D. Czagany

RF and microwave filters and multiplexers, filters utilizing lumped element, suspended substrate waveguide combine, interdigital techniques. PIN diode switches and switched filter banks, multipliers and integrated subsystems.

Litton, Electron Devices 916
San Carlos, CA

M. Morris, K. Dierker, J. Schoolmeester, R. Boone, P. Skolnick, D. Echo

Solid-state amplifiers and oscillators for radar, EW and other applications, plus high power microwave tubes for decoy applications.

Litton Systems Inc., 916
Airtron Div.
Morris Plains, NJ

E. Strong, M. Grosso, J. Michalski, K. Knapp, J. LoSchiavo, M. Rosenstein, A. Terwilliger

Waveguide, microwave components, RF subsystems, MIC components, planar array antenna, GaAs wafers, YIG films.

Locus Inc./EMF 1113
State College, PA

F. Thompson, W. Coyle, G. Kearness, M. Cleland, S. Dance, J. Chernega, J. Chernega

From Locus: HF amplifiers, X-band power amplifiers, satellite low noise amplifiers. From EMF: oscillators.

LogiMetrics, Inc. 530
Plainview, NY

E. Blum, M. Feigenbaum, J. Deutsch, E. Feigenbaum, F. Deutsch

Traveling-wave tube amplifiers including microprocessor-based A230/A330 series susceptibility test sets to 200 V/M, communications HPAs, boresight test carts, EMI/RFI electronic warfare systems.

Lorch Electronics Corp. 1518
Englewood, NJ

J. Lorch, R. Sproul, J. Harty

RF and IF passive components: mixers and mixer preamplifiers, filters, electronic switches, RF switch matrices, digital phase shifters, digital attenuators, power splitters.

Luxtron Corp. 1402A
Mountain View, CA

W. Shannon, W. Epperly, K. Wickersheim

Fiber-optic temperature measurement system that can be utilized to measure surface temperature of integrated circuits and hybrid circuits while electrically energized. The electrically inert probe provides fast temperature response that can be measured in either contact or remote sensing.

3M Co., 1616
Electronic Products Div.
Austin, TX

S. Miller, T. Tschida, T. Jemphy, S. Nodland

Full line of precision tolerance Teflon/woven glass and ceramic filled copper clad substrates with dielectric values from 2.17 to 10. Available in a wide range of thicknesses and claddings.

M/A-Com MDM, Inc. 1024
Chatsworth, CA

L. Hollis

Antennas/subsystems: flat plate arrays, conformal arrays reflector antennas, feeds.

M/A-Com 1024
Microwave Circuits Inc.
Burlington, MA

P. Chorney, P. Gale, H. Wells

Mixers, diode control devices, EW subsystems, communications subsystems, radar subsystems, missile subsystems.

M/A-Com 1024
Microwave Components Inc.
Burlington, MA

R. Novello, T. Rose

Ferrite components, control assembly components/devices, waveguide products, magnetrons.

M/A-Com 1024
Microwave Power Devices Inc.
Hauppauge, NY

B. Liebman, D. Mazziotta, P. Kennedy

Solid-state RF/microwave power amplifiers and subsystems, defense electronics power amplifiers, telecommunications power amplifiers, laboratory instrumentation/subsystems.

M/A-Com 1024
Millimeter Products, Inc.
Burlington, MA

A. Carlson, D. Wheeler, J. Fallon, P. Crandall

ECM requirements, communications, guidance, radar products; 18 to 325 GHz millimeter waveguide test components.

M/A-Com 1024
Omni Spectra, Inc.
Merrimack, NH

T. Parker, E. DeVita, J. Mann, D. Hale

Microwave connectors, microwave components, cablewave miniature products.

M/A-COM OSW, Inc. 1024
Tempe, AZ

D. Stelzer, J. Powell, D. DeGear, B. Huckleberry

Military amplifiers, military oscillators, military subsystems, telecommunications products, TVRO products.

M/A-COM PHI, Inc. 1024
Torrance, CA

E. Young, D. Roubideaux

RF power transistors, RF power amplifiers, RF power MOSFETs, hybrid integrated amplifiers, specialized RF power products.

M/A-Com 1024
Semiconductor Products Inc.
Burlington, MA

C. Howell, K. Murphy

GaAs field silicon products: Schottky barrier diodes, point contact diodes, power Schottky rectifiers, PIN diodes, TR switches, MNS capacitors, multiplier varactors, tuning varactors, limiter diodes, paramp varactors, bipolar transistors, IMPATT diodes, epitaxial wafers, ceramic packages, resistors, terminations, SOT-23 packaging. GaAs products: Gunn diodes, IMPATT diodes, multiplier varactors, tuning varactors, paramp Gunn varactors, semi-insulating material, epitaxial material.

M/A-Com Advanced 1024
Semiconductor Operations
Lowell, MA

J. Dalton, T. Leonard

GaAs FETs, GaAs monolithic microwave integrated circuits, GaAs IC grade substrates.

MAC Technology, Inc. 1721
Klamath Falls, OR

M. Bailey, J. Branigar, M. Egbert, K. Bardon, D. Maly

1986 Exhibition Guide



High quality, low cost stripline couplers, detectors, power dividers, 90° hybrids, high-power airline couplers. A wide variety of components offered covering 0.5 to 18 GHz range in octave and multi-octave bandwidths.

Magnum Microwave Corp. 416
Freemont, CA

D. Fealkoff, L. Earl, D. Coiner, G. Graham, H. Fowler

Broadband mixers and mixer preamps up to 18 GHz, VCOs from 400 MHz to 13 GHz, integrated subsystems.

Marconi Instruments 127
Allendale, NJ

B. Kliphouse

Model 2380/82 spectrum analyzer; 6310 sweeper that works in conjunction with model 6500; 2955 radio communications test set.

MAST Microwave 1517
Billerica, MA

C. Theophile, F. Cooper, J. Borghetti, R. Flores-Funes, B. Rothman

Rotary joints from DC to 50 GHz, single- and multi-channel, in standard waveguide, coax and double-ridge transmission lines; precision cable assemblies, flexible and semi-rigid; and coaxial connectors.

Matcom Inc. 318
Palo Alto, CA

B. Jones, E. Jones, J. Holmquest, K. Akada, S. Kihara, K. Okano

Toshiba Microwave semiconductor devices.

Materials Research Corp. 1212
Pearl River, NY

I. Drangel, M. Hill, M. Hieronymi

A line of 99.6 percent Al_2O_3 substrates, with thicknesses ranging from 3 to 50 mil, are ideal for microwave integrated assemblies and components. The substrates are coated with high purity metals, then pattern etched using state-of-the-art purity wet chemical processes.

Maury Microwave Corp. 228
Cucamonga, CA

M. Maury Jr., M. Maury, G. Simpson, J. Adamson, D. Payette, L. Willey

Line of devices using the coaxial Q connector (2.4 mm), rated over the DC to 50 GHz frequency range. New inserts for the Universal Transistor Test Fixture, coaxial and waveguide calibration kits for the HP 8510 automatic network analyzer, millimeter waveguide devices, and 1.05 maximum SWR waveguide-to-coaxial end launch adapters.

Merrimac Industries, Inc. 924
West Caldwell, NJ

T. Ramsden, J. Cappucci, J. Blahosky, B. Easton, V. Schiel, R. Pechselder

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

Metelics Corp. 1214
Sunnyvale, CA

R. Dorilag, B. Christensen, E. Pendleton

State-of-the-art beam-lead Schottky diodes, including ring quads, tees, anti-parallel pairs, bridge quads and single diodes, planar Schottkies, PIN, SRD and varactor diodes.

MIC Technology Corp. 128
Richardson, TX

D. Chapman, R. Chapman, C. Shols, D. Pugsley, M. Chmura, L. Ingham, C. Ristagno, R. House

Thin-film etched circuits, thin-film coated substrates and thin-film coating services. Support services include laser resistor trimming and artwork and photomask generation.

Mica Microwave Corp. 518
Santa Clara, CA

A. Campbell, F. Mills

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

Micro-Coax Components Inc. 1018
Collegeville, PA

R. Schafer, L. Deery, D. Snader, E. Woehr

Semi-rigid coaxial cable, cable assemblies, in-a-cable lowpass, bandpass, highpass filters, coaxial waveguide delay lines, connectors, components, adapters, microwave flexible cable assemblies, standard and double-ridge waveguide.

Micro-Dynamics 1705
Woburn, MA

Microelectronics Technology Inc. 801
Taiwan, ROC

C. Hsieh, P. Chen, B. Su, J. Lee

Microwave components and subsystems for telecom and satcom. Applications include cellular radio, TVRO, DBS, bypass area networks and microwave instrumentation.

Microlab/FXR 1123
Livingston, NJ

R. Vincent, M. Bruno, T. Braviak, M. Ferrand, J. Bramick

Passive waveguide and coaxial components, couplers, filters, power dividers, dummy loads and waveguide switches.

Micronetics, Inc. 219
Norwood, NJ

P. Basse

Microwave instruments and components, coaxial switches, noise products.

Micro-Now Instrument Co. Inc. 1216
Skokie, IL

C. Arnow, W. Openlander, R. Hoguet, C. Quesenberry

Six-port vector network analyzer operating at 26 to 40 GHz. Our new synthesized controlled model 706 mm-wave sweep system operating at 94 GHz.

Microphase 321
Norwalk, CT

F. Parin, R. Crocco, K. McCormack, J. Hoffman, G. Badoyannis, H. Schumacher, J. Viadella, R. Cummings, J. Chaipetta, R. Ferri, S. Temel

Detector log video amplifiers, multiplexers, filters, detectors, channelizers, detector modules, limiters, threshold detector amplifiers, video receivers, pseudo suspended substrate filters and multiplexers, combine filters and multiplexers

Microsonics, Inc. 815
Weymouth, MA

F. Manning, J. Pavao, J. Morton, P. Beesla, B. Renner

Frequency control components consisting of delay lines (bulk wave and LC), filters (discrete crystal and LC), oscillators (ovenized, TCXO and VCXO). Custom hi rel designs for space, airborne, shipboard and surface applications with in-house crystal capability.

Microsource, Inc. 1627
Santa Rosa, CA

M. Lampenfield, G. Basawapatna, L. Basawapatna, T. Brinkoetter

YIG-tuned components and subsystems from .5 to 26.5 GHz. Oscillators with low phase noise. Compact YFOs with -40 dBc harmonics. Microcube family of YIG oscillators and filters in 1" and 1.25" cube packages.

Microtech, Inc. 1332
Cheshire, CT

J. McGregor, J. Radder, A. Bitzarakis, D. MacFadyen

Flexible and rigid waveguide assemblies, adapters, directional couplers, pressure windows. Active component line of VCOs, phase-locked oscillators, frequency multipliers for commercial and military applications.

Microwave Applications Group 118
Santa Maria, CA

D. Prigge, T. Janzen, W. Hord, C. Boyd

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

Microwave Components Inc. 1023
South Chelmsford, MA

D. McCarthy, S. Smith, P. Smith

1986 Exhibition Guide



Air coils for microelectronics, inductances from 3 to 1000 nH, available in gold, copper and alloy. Applications include bias tees, switches, filters, amplifiers, detectors and limiters.

Microwave Development Co. Inc. 423 North Andover, MA

J. Cook, C. Tomes, P. Hocknell

A line of double-ridge and rectangular waveguide components, custom-designed components and assemblies, many of which are state-of-the-art designs of 3.6:1 bandwidth, including couplers, hybrids and high power terminations.

Microwave Development Labs 1217 Natick, MA

E. Bannister, R. Tucker, M. Hale, W. Berry, R. Riblet, H. Krauss, M. Lader, W. Connison, Zielke, J. Muller, C. Muller

Adapters, attenuators, bends and twists, circulators and isolators, couplers-hybrids, directional, monopulse crystal-holders and mixers, diplexers, filters, power dividers, phase shifters, pressure windows, rotary switches, rotary joints, terminations, transducers and tees, waveguide, double-ridged components.

Microwave Distributors 309 Commack, NY

D. Leiman, J. Glass

Isolators and circulators, attenuators, couplers, connectors and adapters, attenuators, terminations from Midisco, Coaxicom, Solitron and Amphenol.

Microwave Exhibitions and Publishers, Ltd. 104 Kent, England

R.C. Marriott, N. Carter, L. Barker

As organizers of the European Microwave and Military Microwaves series of conventions, full details of both events, including conference programs, will be available from the booth. Also, details of conference proceedings and reprint volumes will be available.

Microwave Journal 616 Dedham, MA

W. Bazy, B. Bossard, R. Briden, H. Ellowitz, E. Johnson, W. Cook, M. Stiglitz, D. Sprague, C. Donohue, A. Gordon, K. Feltmate

Microwave Journal magazine: subscription and editorial information.

Microwave Printed Circuitry Inc. 1023 Lowell, MA

M. Casper, D. McCarthy, S. Newbegin, M. Casper Jr.

Microstrip and stripline fabrication. Thin-film and soft substrates. Precision etching, machining, drilling, laminating, plating and sputtering. PTH, multi-layer, single and double-sided.

Microwave Research & Mfg. Inc. 1519A Hopedale, MA

D. Mitchell, B. Gaucher, S. Arnow, J. Gillis
DSOs, 2 to 20 GHz phase-locked oscillators, broadband amplifiers.

Microwave Semiconductor Corp. 1019 Somerset, NJ

C. Lump, R. Riccui, G. Gastelli, J. Herman, A. Arbuckle, K. Townsend, W. Poole, A. O'Neill, D. Frey

Upright GaAs power FETs, GaAs MMICs, silicon bipolar power transistors, power amplifiers and subsystems, GaAs FET amplifiers and solid-state noise sources.

Microwave Systems, Inc. 1728 Syracuse, NY

M. Busse, K. Stanton, J. Digiovanni, D. Thibado, D. Conklin

Frequency synthesizers and sources, integrated microwave assemblies (supercomponent), T & E training simulators, microwave instrumentation.

Microwave Systems News & Communications Technology 116 (MSN & CT) Palo Alto, CA

M. Napier, K. Gould

Publisher of *Microwave Systems News & Communications Technology*, *Microwave Systems Designer's Handbook*, *Defense Electronics Magazine*, *C³ Handbook* and the *International Countermeasures Handbook*.

Microwave Technology 626 Fremont, CA

Microwaves & RF 302 Hasbrouck Heights, NJ

Millitech Corp. 1213 South Deerfield, MA

D. Fein, G. Goldberg, G. Hugenin, R. Phaneuf, W. Pleasant

Millimeter and sub-millimeter components, instruments and subsystems. Antennas, front-ends, mixers, detectors, oscillators, phase-locked sources. Millimeter and sub-millimeter subsystems for applications in communications, EW, ELINT, radar and remote sensing.

Mitec Electronics Ltd. 1432 Montreal, Quebec, Canada

M. Bentob, G. Cappelli, N. Sebag, D. Holloway

Coaxial and waveguide components, subsystems, and switching/combining networks for telecommunications and defense systems and earth satellite stations.

MITEQ Inc. 526 Hauppauge, NY

A. Faverio, H. Kliss, S. Eisenmesser, P. Kalisiak, J. Siddiqui

Ultra low noise octave band amplifiers; miniaturized, low phase noise, phase-locked oscillators; low phase noise, high performance frequency synthesizers; dielectric resonator oscillators; active frequency doublers; low noise RF front-ends, miniaturized image-reject mixers; miniaturized mixer/preamplifiers.

Mitsubishi Electronics America 1417A Sunnyvale, CA

MLC Technologies, 113 Div. of Miltope Corp. Melville, NY

S. Willrb, V. Capozzi, H. Searight, L. Speed, R. Maciel

Hi-rel multi-layer ceramic chip capacitors for use in low frequency and microwave applications using Bx, NPO and P90 ceramics materials.

Modular Components, Inc. 114 Waltham, MA

E. Guazdauskas, T. Calf

Microwave circuits, metal clad microwave laminates, custom housings, waveguides, transitions, edge plating and plated through-hole processes.

MSI/Satellite Systems Inc. 1728 Syracuse, NY

J. Fannetti

Engineering and consulting services with respect to TVRO, SMATV, DBS, TI, microwave and satellite communication systems.

Murata Erie North America, Inc. 607 Smyrna, GA

M. Blickstein, M. Coalson, L. Hufnagle, T. Krahling

MA series products, CLA series products, dielectric resonators, DROs and VCOs, resonator base filters, microwave and machine ceramics, power capacitors.

Narda Microwave Corp. 903 Hauppauge, NY

B. Leibowitz, J. Coppola, R. Damiano

Microwave electronic components, including a line of terminations and attenuators to 26 GHz and several products. Expanded coupler and PIN switch line to 40 GHz; test equipment and electromagnetic radiation monitoring devices.

Narda Western Operations 903 San Jose, CA

Neico Microwave Co. 214 Hopkinton, MA

E. Beers, R. Ranslow, D. Stahl, W. Call, C. Warrington, G. Smith

Antennas, passive waveguide and coaxial components, variable ratio power combiners, millimeter and double-ridge waveguide components.

1986 Exhibition Guide



New England Microwave Corp. 108 Hudson, NH

R. Robbins, K. Benz, R. Raso, W. Wagner, J. Lawless, C. Beck, K. Buchanan, S. Farland, M. McGivern

Miniature single-throw and multi-throw switches, PIN diode drivers, diodes, capacitors, attenuators.

Noise Com Inc. 1719 Hackensack, NJ

G. Simonyan, K. Stern

Solid-state noise diodes, amplified noise modules, precision coaxial and waveguide noise sources, broadband noise generating instruments (manual and IEEE-488 (GPIB) bus compatible).

Norsal Industries Inc. 425 Central Islip, NY

N. Spector, M. Spector, L. Kent, L. Lipset, A. Margulis, S. Margulis

Microwave components and subsystems. Passive components: power dividers, directional couplers. Frequency devices: mixers, single-sideband modulators. Amplitude control devices: diode switches, attenuators. Available through 26 GHz.

North Hills Electronics 718 Glen Cove, NY

D. Ljungquist, J. Mruz, H. Marx, R. Herrmann

Precision stripline components (filters, power dividers), evanescent mode filters, high gain directional antennas, custom precision receiver front-end subassemblies.

Northern Scientific Laboratory 1608 Fairfield, NJ

K. Stevenson, W. Sullivan, R. Von Gerichten, J. Roth, H. Kessous

EW subsystems for hi-rel military applications. Instantaneous frequency measurement modules, digital frequency discriminators and complete receiver systems.

Norton Performance Plastics 1607A Wayne, NJ

M. Dandurand, M. Woldanski, R. Hilblom

High performance films, tapes and laminates; radomes.

Nurad, Inc. 310 Baltimore, MD

G. Neuberth, G. Rappaport, B. Jones, C. Jacobs, L. Czirjak

ECM/EW horn antennas and radomes, tracking antennas, data and video antennas, flush mounted antennas. Frequencies from .5 to 40 GHz; polarizations are linear, circular, dual; high power handling.

Olektron Corp. 813 Webster, MA

B. Baker, W. Beauregard, L. Foshay, M. McWhorter

Attenuators, directional couplers, hybrids, mixers, modulators, phase comparators,

phase shifters, power dividers, switches, transformers, complex phaser modulators, digital attenuators.

Ortel Corp. 1603A Alhambra, CA

I. Ury, W. Selders, B. Ware, K. Lau, B. Jacobsen

Semiconductor laser diode transmitters and receivers for fiber-optic and free space communication, including lasers with modulation bandwidths to 10 GHz and photodiodes having bandwidths to 15 GHz.

Pacific Monolithics 1409A Sunnyvale, CA

D. Bond, A. Podell, P. Ho, F. Russell, E. Wilson, D. Lockie

Design, packaging and delivery of monolithic GaAs integrated circuits. Microwave subsystems, including converters at 1 to 3, 3 to 6 and 5 to 8 GHz, amplifiers from 2 to 6 GHz.

P.C. Dynamics Corp. 1606A Frisco, TX

C. Anderson, B. Dertz, G. Maurer

Microwave circuit board fabrication facilities. High reliability stripline and microstrip circuits. Autoclave bonding of multi-layer circuits. Specialists in metal backed soft substrate circuits using press fit pins.

Piezo Crystal Co. 622 Carlisle, PA

C. Jensik, L. Heishman, G. Kurzenknabe, R. Zeigler

Quartz crystals and crystal oscillators for military, aerospace and space applications requiring high performance and reliability.

Plessey Microwave 200 San Diego, CA

R. Johnson, D. Wrappe, R. Coleman (Plessey US), P. Higgs, H. Luxton, R. Evans, J. Arnold (Plessey UK)

Radar absorbing materials (RAM), RF test screens, GaAs FET amplifiers, Gunn oscillators, horn antennas, Doppler modules, detectors, GaAs FETs.

P/M Industries Inc. 900 Portland, OR

P. Parks Jr.

Contract laser resistor trimming and substrate scribing and drilling.

PMF, Inc. 1207 Stratford, CT

G. Martin, B. Dunleavy

Rack and small piece part plating to MIL-STD-G45204B. All small piece parts are plated in state-of-the-art vibratory equipment to maximize even distribution of plated metal.

Precision Tube Co. Inc. 314 North Wales, PA

B. McNeil, A. West, B. Nash

Standard semi-rigid cables, high performance semi-rigid cables, cable assemblies/linear delay lines

Q-bit Corp. 212 Palm Bay, FL

M. Rogers, G. Callaway, S. Larkin, H. Mead, F. Halgas

High reverse isolation, low noise figure, unconditionally stable hybrid microelectronic TO-8, flatpack and discrete RF and IF amplifiers for commercial and military applications.

Radial Inc. 1604A Melville, NY

Rantec 1509A Calabasas, CA

L. Sikora, R. Phillips, B. Carberry, J. Page, T. Tobias, V. Kerness, C. Kretschmer, R. Yamine

Microwave antennas, mm-wave antennas, slotted array antennas, electronic scanning antennas, anechoic chambers, RF shielding, DC low and high voltage power supplies, TWT power supplies, TWT amplifiers.

Raytheon Co., 1508 Microwave & Power Tube Div. Waltham, MA

J. Hieber, M. Rubin, B. Silberman, F. Regalado, J. Stabile, P. Fitzgerald, R. Mason

Microwave components including tubes, ferrite devices, GaAs FETs, microwave integrated circuits, SAW devices.

Raytheon Laser Products 1727 Burlington, MA

D. Hoffman, T. Naugler

Laser systems for hermetic sealing, hybrid microelectronics packages, scribing ceramics and soldering.

RCA Laboratories 1505A Princeton, NJ

K. Sivek, J. Schepps, B. Perlman, J. Stranix, D. Rhodes

A programmable microwave tuner (PMT) system that automatically determines gain, bias voltages and currents, efficiencies, constant power contours and noise characteristics of a device under test (DUT).

REMEC, Inc. 130 San Diego, CA

R. Ragland, G. Somach, K. Simpson, J. Giles, E. Ekaireb, G. Margard

Filters (lumped element and combline), equalizers, switched filters, switches (coaxial and drop-in), multiplexers, multipliers, multiplexer-detector arrays, integrated subsystems.

Republic Electronics 1109 Paterson, NJ

P. Nelson, W. Eisenberger, L. Eisenberger

Ceramic capacitors, broadband through 50

1986 Exhibition Guide



GHz; parallel plates for stripline applications; high-2 multi-layer microwave capacitors, approved to MIL-C-55681, BP and BG characteristics. Also, QPL to MIL-C-20 "R" level.

Resin Systems Corp. 419 **Amherst, NH**

F. Harrington, N. Diehm

Lossy dielectric material, custom "cast" poly-iron low power loads and absorbers (rigid and flexible). High power ceramic loads and terminations. Any specified size or design. Meets SWR and customer specifications.

RF Design Magazine 1205 **Englewood, CO**

K. Aldrich, J. MacDonald, G. Breed, D. Markhouse

The June issue of magazine.

RFD, Inc. 1620 **Tampa, FL**

S. Bailey, R. Frizzell, C. Ochenrider, R. Ochenrider, L. Bailey

Phase-locked and dielectric oscillators, .2 to 12.4 GHz; L-band power amplifiers; transmitter and receiver systems.

RF Products 1608A **Camden, NJ**

T. Riley, D. Adams, S. Minke, F. Arlotta, T. Salkin, T. Keffer

Filters and multicouplers for air, sea and ground based aerospace and EW/ECM applications.

RHG Electronics Laboratory 1520 **Deer Park, NY**

S. Wolin, R. Hirsch, D. Weaver, M. Markson

The QDD4-26, a digitally-driven SSB modulator; DCM4-26 coplanar/microstrip compatible mixer; and DBL/DBLX series miniature starved LO double-balanced mixer. Small, fast ISM limiting amplifier, ILM log amplifier, 1 GHz ICLWX1C log amp and ICDX1000 delay line discriminator.

Richardson Electronics Ltd. 1002 **LaFox, IL**

J. Levine, S. Ochs

RF power transistors, microwave transistors, transmitting tubes, magnetrons, microwave tubes, high power SCRs, ignitrons, thyatrons. All used in RF power and fusion applications.

RLC Electronics 331 **Mt. Kisco, NY**

A. Borck, D. Borck, P. Wright, G. Fike, S. Muntean, B. Parker

Passive microwave components including RF switches, passive microwave filters, fixed, variable and step attenuators, crystal detector, power dividers, directional couplers and hybrid couplers.

Rogers Corp., 1013 **Bolriet Technologies, Inc.** **Ontario, Canada**

R. White, M. Leitner, R. Vahldiek

Microwave integrated circuits on PTFE substrates using proprietary thin-film processes. MICs are produced to MIL standard 883 and its derivatives.

Rogers Corp., 1013 **Microwave Materials Div.** **Chandler, AZ**

G. Archer, R. Jansen, R. Cole, T. Cirillo, Z. Katinszky, E. Sandor, J. Dobrick, D. Boulanger, A. Hassell

Non-woven glass microfiber-reinforced PTFE structure used in microstrip and stripline applications.

Rogers Corp., Soladyne Div. 1013 **San Diego, CA**

D. Reed, W. Swansen, P. Taparauskas

Fabricators of precision microwave printed circuit boards on PTFE-based substrates.

Rohde & Schwarz-Polarad 1410 **Lake Success, NY**

J. Schindler, A. Caggiano, M. Gomez, V. Riedel, S. Abrams

CMT radiocommunications tester, 0.1 to 1000 MHz; PCA5 process controller, NAP power reflection meter, models 308 and 309 microwave signal generators, ZPV vector analyzer, SWP sweep generator, SMPD signal generator, URV5 RF-DC millivoltmeter, PUD3 universal ink-jet printer.

Rosenberger Microwave Corp. 106 **Westlake Village, CA**

H. Rosenberger, R. Gulrajani, B. Rosenberger

Coaxial connectors, microwave components and cable assemblies.

RS Microwave 421 **Butler, NJ**

R. Snyder, R. Snyder Sr., M. Snyder, C. Nunziata

RF and microwave filters, 10 MHz to 40 GHz, including bandpass, bandstop, highpass, lowpass, high and low power. Drop-in multiplexers, switched filters.

SAES Getters 1602A **Colorado Springs, CO**

Sage Laboratories Inc. 928 **Natick, MA**

T. Saad, A. Cieri, C. Marguerite, S. Pekunec, R. Mahoney, H. Chapell

Passive microwave components, attenuators, couplers, filters, hybrids, mixers, phase shifters, power dividers, rotary joints, switches, video detectors, terminations, crystal holders, Wireline and Wirepac (3 dB quadrature hybrids and couplers).

Salisbury Engineering 301 **Salisbury, MD**

R. Barbely, J. Price, R. Malone, W. Barbely, R. Newberry

RF and microwave filters. Models include highpass, lowpass, bandpass and band-reject. Miniature lumped element, combine and interdigital cavity structures, diplexers, triplexers and waveguide.

Sanders Microwave 1521A **Manchester, NH**

J. Schack, J. Korcuba, R. Jacobs, W. Bradley, N. Van Dine, F. Kushi

Various systems/subsystems, microwave integrated modules such as digital instantaneous frequency measurement devices, amplifiers, antennas, sources (DTO, DSO, DRO, VCO) and control devices.

Sawtek, Inc. 1724 **Orlando, FL**

I. Brown, M. Buckley, R. Hays, T. O'Shea, M. Lewis, J. Schlegel

SAW devices for both low and high volume programs in satellite communications, modems and information networks, radar, electronic warfare, cable television, security systems, and other signal processing applications. Bandpass filters, delay lines, low loss filters, oscillators, pulse expanders and compressors, resonator products.

Scientific Communications Inc. 129 **Garland, TX**

R. Wehe, K. Maples

Voltage-controlled oscillators up to 26 GHz, low noise amplifiers, downconverters, parametric amplifiers, custom oscillator subsystems.

SDI, Inc. 919 **North Billerica, MA**

J. Caruso, C. Bucci, G. DeGon, S. Dawe, R. Cayer, R. Preston

Microwave diodes featuring beam-lead PINs and including tuning varactor and SRDs, Schottky barrier diodes. Control components featuring high power limiters and ultra fast switches, both modular and connectorized.

Sealelectro-BICC 311 **Trumbull, CT**

T. Ede, D. Peoples, J. Flanagan

Microwave and RF coaxial connectors and components operating over a frequency range from DC to 46 GHz. The K connector, SMA, SMB, SMC series, BNC, Twinax, DIN inserts, adapters, terminations, cable assemblies.

Sierra Microwave Technology 226 **Rancho Cordova, CA**

J. Mitchell, T. Rodriguez

Isolators including stripline and microstrip

1986 Exhibition Guide



drop-in style; filters, diplexers and multiplexers using combline and suspended substrate technology; switchable filters.

SPC Electronics Corp. 1511A
Tokyo, Japan

J. Terry, S. Tagawa, A. Okabe, K. Sasaki, M. Hakahira, T. Inoue, K. Ishizuka

Microwave/mm-wave parts and components: GaAs FET amplifier, diode switch, ceramic resonator, optical space transmission system, 800 MHz band antenna combiner, optical signal generator, DLTS analyzer.

SPEFCO Software 121
Stony Brook, NY

S. Sussman-Fort, J. Fort

Circuit analysis and optimization software for personal computers.

Sprague-Goodman Electronics 1716
Garden City Park, NY

J. Goodman, J. Nichols

Trimmer capacitors, RF inductors.

Steinbrecher Corp. 1120
Woburn, MA

D. Steinbrecher, D. Peterson, M. Kosmicki, D. Giglio

Millimeter-wave IMPATT diode power amplifiers and varactor diode frequency multipliers, wideband mm-wave ferrite isolator, circulators and hybrids, high power EHF solid-state transmitter, HF broadband PA-RAMIXERS.

Storm Products Co. 717
Hinsdale, IL

B. Holland, J. Holland, E. Hellemann, W. Carnes, P. Bissett

Flexible and semi-rigid microwave cables and assemblies, phase matched, phase stable, low loss, high power delay lines.

Summit Technology 1406A
Los Gatos, CA

A. Bettner, C. Stephan

OPTI-MIC, a low cost, high performance software package for optimization of microwave and RF circuits. OPTI-MIC features nodal analysis, gradient optimization and interactive graphics on the IBM-PC and Apple II series of computers.

Synergy Microwave 511
Paterson, NJ

H. Levine, V. Rohde

DC to 3 GHz signal processing components, including SMD mixers, power dividers, modulators, phase shifters, directional couplers, frequency doublers.

Systron Donner Corp., 1122
Microwave Div.
Van Nuys, CA

A. Sheth, K. Polk

Microwave systems, subsystems and instrumentation, including upconverters, exciters, synthesizers, signal generators, downconverters, monopulse receivers, phase modulators, frequency translators, passive waveguide components, flexible and double-ridged waveguide.

Systron Donner 1723
Instrument & Microwave Div.
Van Nuys, CA

G. Dishong, I. Andres

Electronic test equipment, frequency counters, sources, power supplies, synthesizers, transmission line analyzers, microwave components and subsystems.

Taconic Plastics Ltd., 110
Microwave Dielectric Div.
Petersburg, NY

B. Smith, D. Bowerfind

Copper clad PTFE/woven fiberglass dielectric substrates for high frequency circuit boards per MIL-P-13949F.

Tecdia Inc. 1605A
Mountain View, CA

K. Koyama, A. Liguori

Microwave chip capacitors and resistors, diamond sawblade for cutting calcium aluminide, Al₂O₃ substrate for MICs.

Technical Components Inc. 124
Warwick, RI

P. Schumacher, P. Hamer, R. DeAngelis, L. Bivona

Ceramic microwave packages, hermetic diode and transistor packages, glass-to-metal seals, feedthroughs to packages, RF and amplifier packages, glass and ceramic.

Techtrol Cyclonetics Inc. 328
New Cumberland, PA

P. Bates, R. Nemeth

Low noise sources, synthesizers and multipliers.

Tektronix, Inc. 920
Beaverton, OR

T. Burcham, B. Thacker, H. Mayo, L. Cecil, K. Umberger

Spectrum analyzers, portable and lab/bench microwave instruments and a portable VHF/UHF unit, all featuring automatic bandwidth mode, pulse signal processing and markers accurate to 10 ppm.

Teledyne Microwave 816
Mountain View, CA

D. Merkley, P. Lee, M. Lee, J. Barnard, G. Korb

Ferrite isolators and circulators, filters and multiplexers, coaxial switches, voltage-controlled oscillators, MIC thin-film subsystems, GaAs FET amplifiers, equalizers, bulk acoustic wave delay devices.

Teledyne Pines 1411A
Aurora, IL

R. Kuhn, P. Streetman, F. DuMez, K. Stewart, J. Zabinski, R. Bennett

The CX-10 numerically controlled bending machine for semi-rigid coaxial cable assemblies. Completely automatic, available with interface to line printer and IBM PC, cutoff, and dual floppy storage.

Telemus Electronic Systems 1504A
Nepean, Ottawa, Canada

R. Kemp, B. Cornish, M. Gale, D. Wong, P. Langner

The 2200-T microwave pulse counter, a lightweight, low cost counter for ATE, built-in test equipment and dedicated monitoring of radar systems. Can be used as a CW counter.

Test & Measurement World 123
Newton, MA

Test & Measurement World is a monthly publication for managers and engineers concerned with making the right decisions about purchasing, implementing and upgrading test, measurement and inspection equipment for electro-optical or electronics applications.

Thomson-CSF Components Corp. 525

H. Sandager, M. Poirer, C. Lacour, C. Band

TO-8 modules (VCOs, amplifiers), ferrite components, ferrites/dielectric materials, microwave diodes, GaAs FETs, GaAs FET amplifiers, fiber-optic components, GaAs ICs.

Time Microwave 1022
Santa Clara, CA

M. Maesel, C. Martens, M. Midwin, L. Underkoller

Octave and multi-octave double-balanced mixers, mixer/preamplifiers, image recovery/image-reject mixers, frequency doublers, suspended substrate filters and multiplexers, machined combline filters, lumped element filters and multiplexers, polar discriminators.

Times Fiber Communications Inc. 324
Wallingford, CT

D. Dubuc, R. Krimsier, M. Lewis, P. Page

Broadband RF cable assemblies, flexible over semi-rigid coaxial cable, multi-conductor cable, fiber-optic cable, connectors and microwave components.

TRAK Microwave Corp. 1509
Tampa, FL

R. Sloan, T. Roberts, G. Pate, J. Krastel, S. Altimari, T. Gant, R. Parker

Oscillators (dielectrically stabilized, crystal controlled, voltage-controlled), GaAs FET amplifiers, IF amplifiers, bipolar transistor power amplifiers, frequency multipliers, comb generators, isolator/circulators (mi-

1986 Exhibition Guide



crostrip, coaxial and waveguide), frequency synthesizers, upconverters, downconverters, subsystems, YIG-tuned oscillators, YIG filters.

Transco Products Inc. 1510A **Camarillo and Marina Del Rey, CA**

C. Woodhouse, C. Queen, R. Williams, B. Toffelmier, R. Reineke, J. Underhill, A. Kwon, G. Nicklaus, R. McNeil, R. Blake

Coaxial and waveguide switches, microwave antennas for ECM, navigation and communications, microwave components.

TriQuint Semiconductor 1703 **Beaverton, OR**

D. Powers, T. Reeder, G. Barta, A. Patz, D. Criss, B. Rosario

GaAs custom IC foundry services. Semi-custom Q-chip configurable cell arrays, Q-logic series of standard digital components, and the Micro-S series of surface-mounted MMICs.

TRW Microwave 712 **Sunnyvale, CA**

R. Bridge, F. Lemmon, K. Lyon, W. Patton, R. Roy, P. Thesing

Vertically integrated assemblies and microwave components for the EW, radar, missile, satellite, telemetry, test equipment and telecommunications markets.

TRW RF Devices 712 **Lawndale, CA**

R. Mehrmann, M. Williams, L. Wilson, R. Hunter

Low noise small signal transistors, 12.5 V HF through UHF transistors. Microwave power transistors, RF hybrid amplifiers, CRT discrete and hybrid amplifiers. 1 MHz to 1 GHz military communications and EW devices.

A. J. Tuck Co. 315 **Brookfield, CT**

A. Tuck IV, D. Tuck, L. Hunt

Precision electroformed components built to customer requirements. Waveguide transitions, filters, cavities, polarizers, OMTs, horns, corrugated horns and waveguide, miniature bends, miniature double-ridge and mm-wave components

UTE Microwave Inc. 1632 **Asbury Park, NJ**

L. Nilson, C. Quesenberry, W. Richman

Coaxial ferrite circulators, isolators, iso-adapters, iso-filters; also, waveguide junction isolators and circulators.

Varian Associates, 707 **Beverly Microwave Div.** **Beverly, MA**

E. Schmidt, D. Williams

Receiver processing components, log amplifiers, constant phase limiters and frequency discriminators. Phase detection subassemblies as well as single- and multi-frequency stable sources.

Varian Associates, 707 **Microwave Tube Div.** **Palo Alto, CA**

D. Ruiz

Backward wave oscillators.

Varian Associates, 707 **Solid State Microwave Div.** **& III/V Device Center** **Santa Clara, CA**

M. Kopec

GaAs and InP oscillators and amplifiers from X band to 100 GHz, mm-wave subsystems.

Vectron Laboratories, Inc. 1100 **Norwalk, CT**

E. Selig, L. Jawitz

Crystal oscillators: clocks, TXCOs, OCXOs, VCXOs, VCOs, frequency standards; commercial, MIL and hi-rel; 1 Hz to 1 GHz; sine and logic outputs; discrete and hybrids.

Voltronics Corp. 605 **East Hanover, NJ**

R. Newman, S. Newman

Precision trimmer capacitors; air, sapphire, quartz, glass and Teflon. MIL-C-14409; 0.1 to 250 pF; to 5 GHz; sealed, multi-turn, non-rotating piston; surface mount; sealed MIL small sapphire line.

A. T. Wall Co. 326 **Warwick, RI**

C. Gibbs, R. Huntsman, S. McCaulley, M. McCaulley, F. Frost

Range of precision waveguide tubing, manufactured from aluminum, copper, brass, copper-coated Invar, coin silver, stainless steel and many other alloys. Also, special sections quoted to print.

Watkins-Johnson Co. 211 **Palo Alto, CA**

B. Hoglund, J. Stevick, R. Hindes, R. Lassen, S. Kurtz, D. Butler, V. Castellano, M. Miller, C. Larson

Microwave electronic systems, electron devices and related equipment.

Wavecom 903 **Northridge, CA**

C. Rutherford, W. Anderson, C. Bell, D. Kolletta, G. Collins, G. Etzler, W. Harrison, J. Hoffman

Electromechanical RF switches, filters, power combiner, multiplexers, isolator assembly, antenna coupler.

Waveline Inc. 819 **Fairfield, NJ**

D. Morsillo, J. McCrea, C. Schumann, E. Fodor, J. McGregor, R. Koenig

Microwave components and test equipment. Attenuators (coaxial and waveguide), waveguide-to-coaxial adapters, switches, couplers, terminations, isolator/circulators

and custom designs. WR-22 and ridged waveguide components.

Wavetek Corp. 1116 **San Diego, CA**

J. Connors, B. Malcolm, D. Whisler, D. Distler, J. Rogers, B. Hynes, D. Brockway, V. Wildman, R. Coleman, G. Lisk

Microwave and RF components including tunable filters; programmable, turret and fixed attenuators; RF detectors; DC blocks; matching pads; and programmable switches. Microwave signal sources including signal generators, sweep generators, synthesizer signal generators and frequency synthesizers. Microwave scalar network analyzers. Peak and CW power meters.

Weinschel Engineering 427 **Gaithersburg, MD**

J. Maffett, A. Belski, R. Ramirez, L. Pregley, D. DeJulis, C. Crews, C. Hancock, R. Bastien

RF and microwave test and measurement equipment including the VM-4B attenuator and signal generator calibrator.

Western Microwave Inc. 603 **Sunnyvale, CA**

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

GaAs FET amplifiers, microwave mixers and integrated RF subassemblies, DLVAs, microwave ferrite devices including drop-in microstrip units, suspended substrate filters and RF channelizer assemblies.

Whittaker Corp., 1318 **Electronic Resources Div.** **Burbank, CA**

J. Houck, B. Miller, K. Stoker, T. Saia, C. Berg, W. Palmisciano

Stainless steel jacketed, silicon dioxide dielectric, hermetically sealed ultra hi-rel RF microwave cable assemblies, delay lines, nuclear safety instrumentation cable systems.

Wiltron Co. 1419 **Morgan Hill, CA**

E. Mendel, E. Heywood, D. Patton, B. Faust, D. Briganti, R. Schmid, J. Caylor, C. Verget, A. Schwitzer, E. Birochak

Programmable sweep generators, network analyzers, RF analyzer systems, automated test systems, precision microwave components, K connectors and precision K components, products covering the 1 MHz to 60 GHz frequency range.

Zeta Laboratories Inc. 111 **Santa Clara, CA**

M. Rogers, C. Frank, R. Smith, R. Martin, M. Law, J. Spear

RF and microwave components and subsystems for signal generation, simulation and processing applications, including frequency synthesizers, VCOs, DSOs, FET amplifiers, multipliers and crystal oscillators. ■