

1990 MTT-S Exhibition Guide

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

Accumet Engineering Corp. 1440
Hudson, MA

Acrian, Inc. 236
San Jose, CA

D. Smith, K. Renwick, D. Wotton, R. Thornton, F. Klaner, B.J. McDaniel, G. Irvine, J. Huiskens, L. Leverich, K. McNamara, T. Moller

Transistors, amplifiers, passive components from 1 MHz to 4 GHz. New products include cellular radio and UHF TV and communications devices in aluminum nitride packages and using new PSAT technology.

Acurrel Inc. 514
Fremont, CA

I. Andres, R. Brown

2 to 20 GHz dynamic range extender; 100 mW YIG-tracking filters, up to 40 GHz; and mm-wave extenders/multipliers up to 40 GHz.

Adams Russell 801
A M/A-COM Company
Burlington, MA

10 MHz to 18 GHz GaAs and silicon semiconductor products, including: varactors, GaAs MMIC control circuits, MMIC custom circuits, GaAs technology development, foundry services and GaAs material and MMIC products; IF, RF, and microwave components, including coaxial/waveguide components, frequency multipliers, amplifiers, logarithmic amplifiers, control components, waveguide filters and cast components; solid-state mixers, detectors, digital attenuators, switches and control components; coaxial connectors, and passive RF and microwave components; broadband antennas for satellite, multifunction, radar and missile seeker applications; and cables for EW, CNI, radar, test and instrumentation.

Advance Reproductions Corp. 535
North Andover, MA

C. Losanno, G. Stoll

High precision photomasks and phototools for the electronics industry; services include Calma GDSII drafting, pattern generation, im-

age repeating, E-line & H-line working plates, PCB panelization and layout drafting, laser photoplotting, complete reprographic and documentation support, data conversion and transfer.

Advantech 410
Montreal, Quebec, Canada

Advantest America Inc. 1337
Lincolnshire, IL

M. Riley, J. Heitman, L. Rhodes, F. Kamei, T. Takenaka, P. Bazan, M. Hirose

23 GHz RF spectrum analyzer, 3.5 GHz RF spectrum analyzer, 3.6 GHz spectrum analyzer with controller card option, plotter, EMI software, FFT servo analyzer.

AEL Defense Corp. 1220
Lansdale, PA

A. Gross, S. Schneider, D. Ritchie, J. Iervolino, M. Kumar, D. Johnson, E. Gertel

Log amps, DLVAs, VCOs, frequency converters, IF strips, SRAs, receivers, antennas, spiral, log periodic and horns.

Aerowave Inc. 1011
Medford, MA

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

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

Airpax Co. 508
Cambridge, MD

C. Tinley, R. Bromwell, J. Jones, M. Judkins, B. Tolleson, M. Wilson, K. Rippy, C. Johnston, R. Noyes, E. Noyes, R. Buckley

Standard microwave housings and closely toleranced custom machined housings incorporating glass-to-metal seals in such materials as kovar, stainless steels and other materials.

A.J. Tuck Co. 816
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.

Alan Industries Inc. 1037
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.

Alessi, Inc. 311
Irvine, CA

D. Miller, G. Hunt, T. Reese

Microwave probe station, which is designed to provide the ideal environment for on wafer microwave measurements, accommodates all brands of microwave probes and is fully planarizable throughout the system including the stage, vacuum chuck, micropositioners and probe mounts.

Alpha Industries Inc. 228
Woburn, MA

M. Reid, D. Gallagher, C. Genzabella, D. Barker, B. Harris, R. Hebert, G. Llewellyn, D. Emerick and L. Hayman

A complete line of devices, components, and materials through mm-wave, including semiconductors, amplifiers, attenuators, switches, oscillators, wafers, ceramics, dielectrics and a complete selection of GaAs circuit configurations. Multifunction assemblies also will be exhibited.

American Micro Components Inc. 817
See Southwest Microwave Electronics

American Technical Ceramics 244
Huntington Station, NY

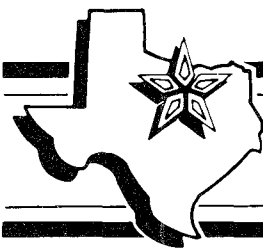
D. Davis

RF/microwave multilayer and single layer capacitors for surface mount applications, including ATC 100 series porcelain Supercaps®, 111 series mm-wavelength Microcaps® and Sta-Tune™ capacitors, the new trimmable surface-mount chip capacitors.

Amitron 1218
North Andover, MA

R. Simone

Thick-film microwave circuits, thick-film standard and custom chip resistors and thick-film chip attenuators.



1990 EXHIBITION GUIDE

- AML Inc.** 715
Camarillo, CA
J. Inbar, E. McAvoy, T. Mazilu, R. Hetzler, C. Navickas
High intercept amplifier products, telemetry tracking components, receiving multicouplers and switch matrix systems.
- AMP Inc.** 120
Harrisburg, PA
L. Caddell, D. Peoples, C. Toy, E. Hauck, B. Fisher, C. Nikoloff
High speed ribbon coax and coaxial cable assemblies; blindmate coax contacts; aerospace and military products; high density connectors; and a wide range of coaxial and triaxial contacts and adapters for flexible and semi-rigid cabling plus fiber optics.
- Amphenol RF Division** 210
Danbury, CT
N. Sladek, N. Buonanno, J. Davis, J. Rizos, M. Rizos, R. Rizos, R. Caldwell, J. Scott, J. Duenkel, S. Fort, C. Henkle, R. McGuire
RF/microwave connectors and cable assemblies for flexible and semi-rigid coaxial, twinaxial and triaxial cables.
- Amplica Inc.** 517
Newbury Park, CA
C. Carnegie, D. Pfau, R. Pizzi, G. Keithley, W. Barrett, T. Lingren, M. Yeo
5 MHz to 22 GHz microwave amplifiers and integrated subassemblies; high gain broadband limiting amplifiers, phase and gain matched amplifiers, drop-in phased-array modules, ultra-low noise amplifiers, ultra-broadband amplifiers, switched amplifiers, and amplifiers, mixers, filters, limiters, and switches integrated on single substrates using coplanar waveguide technology.
- Amplifier Research** 728
Souderton, PA
D. Shepherd, E. Smarz, L. Pokorny
Broadband RF power amplifiers and accessories, 10 KHz to 1 GHz, for laboratory and industrial uses including RF susceptibility testing, wattmeter calibration, NMR/MRI, particle accelerators, EMP simulation, RF plasma research, RF heating and other medical, biological and physical research applications.
- Amplifonix Inc.** 524
Langhorne, PA
A. Riben, R. Dubois, J. Grotzinger, M. Sonstein
Bi-polar and GaAs FET amplifiers, PIN diode and MMIC switches/attenuators.
- Anadigics Inc.** 1422
Warren, NJ
- Andrew Corp.** 100
Orland Park, IL
B. Perelman, P. Sengstock
Helix™ coaxial cables; custom cable assemblies; and 1/2" cable with CATVR rating.
- Anritsu America Inc.** 1301
Oakland, NJ
J. Lidh, H. Felger
RF and microwave instruments, including microwave system analyzers, RF spectrum analyzers, microwave spectrum analyzers and frequency synthesizers.
- Apollo Microwaves Ltd.** 126
St-Laurent, Quebec, Canada
N. Vouloumanos, L. Schatt
Standard and custom engineered components and subsystems for telecommunication, defense and industrial applications up to 60 GHz; combining networks for satellite earth terminals, output assemblies for high power amplifiers, filters, filter diplexers, circulators, isolators, terminations, couplers, power combiners, variable ratio combiners, and adapters.
- Applied Dielectrics Inc.** 323
San Francisco, CA
G. Maurer, J. Fuller, J. Firmin, T. O'Brien, R. Clark
Stripline and microstrip teflon circuit boards and multilayer bonded teflon structures.
- Applied Engineering Products** 441
New Haven, CT
- Applied Microwave Magazine** 214
Lexington, MA
J. White, E. White, C. White, A. Lemay, D. Conti, P. Barry, K. Barry, E. Angelakis, J. Angelakis, H. Kuemmerle, III, R. Vincent, B. Cohen
Applied Microwave is a quarterly subscription magazine with application articles and reports covering 1 MHz to light frequencies, serving the RF, microwave and optical engineering fields.
- Applied Systems Engineering Inc.** 1300
Fort Worth, TX
B. Jostrand, B. Reed, L. Marks, B. Turner, K. Reed, R. Knabe, J. Powell, B. Sokol, T. Kelley
High power microwave amplifiers, transmitters in frequency ranges from 0.5 through 95
- GHz. TWT amplifiers at power levels from 20 W to 50 kW, hard tube modulator driven magnetron transmitters up to 1 MW and solid-state FET modulators for magnetrons and CFAs up to 150 kW.
- ArguMens & GaAs Code** 142
Duisburg/Cambridge, FRG
I. Wolff, P. Ladbrooke, G. Gronau, T. Sporkmann
Octopus, which is a sophisticated CAD-tool for microwave circuit design; Shark, which is a lay-out program for Octopus; test fixtures for passive and active microstrip devices and de-embedding software; Stingray, which is a field theoretical simulation software for multiconductor coupled lines; FETBase/HEMT-Base, which are plan-view oriented, physics-based simulation of FETs and HEMTs; and FETLink, which is a unique physics-based parameter extraction software.
- Arlon Inc.** 633
Microwave Materials Division
Bear, DE
R. Tull, K. Gryger, J. Taylor, M. Carlson, T. Zawislak
CuClad®, DiClad®, and Isoclad® PTFE copper clad laminates, low loss woven and non-woven glass reinforced materials. All laminates are available with thick metal plate backings or cores; temperature-specific bonding films for stripline and other multilayer uses also provided.
- Armatek Inc.** 305
Richardson, TX
S. Wheeler, H. Lester, E. Williams, M. Smith, M. Smith, P. Daughenbaugh, R. Graham, M. Saffian
Microwave amplifiers, components and subsystems.
- Arrow/Smith Shelburne Inc.** 640
Shelburne, VT
- Artech House** 618
Norwood, MA
W.M. Bazy, M. Walsh
Books and software on microwave techniques and applications.
- ASM Software Inc.** 1310
Santa Cruz, CA
S. DiBartolomeo, A. Morawski
CAD postprocessing and translation software for AutoCAD, Hewlett Packard and EESof CAD programs.

Aspe Inc. 134
Towaco, NJ

J. Benedict, R. Sachs, A. Sachs, D McMahon, E. Emery, L. Tureck, K. Pilarz, G. Cole

Standard and custom designed glass-to-metal seals, and machine-sealing-plating services.

Assemblies Inc. 817
See Southwest Microwave Electronics

Astrolab Inc. 1201
Warren, NJ

S. Toma, M. Ceres, J. Toma, N. Iocco

Microwave and RF transmission lines including connectors, adapters, attenuators, cable assemblies and waveguide adapters.

A.T. Wall Co. 614
Warwick, RI

J. Matzen, R. Huntsman, J. Cantwell, S. Sewell, J. Tipton, D. Daley, C. Deinert, C. Gibbs, M. McCaulley, R. Dix

Precision rigid waveguide tubing manufactured from aluminum, copper, brass, copper clad invar, coin silver, copper clad aluminum, and other alloys.

Automatic Connector Inc. 309
Commack, NY

H. Kay, R. Hall, J. Brown, C. Dietrich, E. Beaven, W. Ridgley, T. Pressley

RF interconnects, including SMA, PMA, PMMA, SMB, SMC, BNC, TNC, N, and twinax; and UHF, including flexible and semi-rigid cable assemblies.

Automatic Testing & Networking Inc. 304
Woburn, MA

M. Fennelly, V. Zohrabian, V. Adamian, J. Caruso

The NP5 on wafer noise parameter test set, the TS110 high power amplifier test set, the IG-100 impedance generator, and the NP4 noise parameter test set.

Avantek Inc. 1117
Santa Clara, CA

K. Wadors, S. Monroe, K. Cobb, J. Larkins, S. Revert, D. VanDiver

Microwave and mm-wave semiconductors, components and functional subassemblies; YIG-tuned oscillators, amplifiers and the uAVPAK™ hermetic microstrip package, and advanced silicon MMIC modules including a 4.5 GHz divide-by-four, 5 GHz active mixer/IF amplifier, and transimpedance amplifiers.

AVX Corp. 418
Myrtle Beach, SC

D. O'Toole, R. Phillips, A. Templeton, J. Horn

Microwave MLC capacitor; SCDF-S level; SLC; maxi SLC; Accu-F; Accu-P; A Q: MHF, VHF ultra Chip.

Aydin Corp. (West) 812
Vector Division
Newtown, PA

J. Harris, P. Meditz

Standard and custom hybrid amplifiers, high power amplifiers, RF subassemblies and custom microelectronics.

Ball Corp. 809
Efratom Division
Irvine, CA

C. Moyer, E. Yrisarri, B. Tysinger

Rubidium oscillators and crystal oscillators, as well as customized modular systems.

Balo Hermetics Co. 1325
Butler, NJ

E. Rapoza, S. Rapoza, A. Dudas, H. Dudas, J. Gowens, H. Cobb, W. Hoffman

Hi-rel glass-to-metal sealed packages for microelectronic, microwave, fiber optic and power applications; custom machined kovar packages and standard configurations.

Balo Precision 1325
Butler, NJ

E. Rapoza, A. Dudas, H. Dudas, S. Rapoza, J. Paliotta

Hi-rel glass-to-metal sealed packages for microelectronic, microwave, fiber optic and power applications; ceramic/metal packages with 50 ohm strip line feedthroughs, custom machined kovar packages and MIL-STD-883 standard configurations.

Boonton Electronics Corp. 509
Randolph, NJ

Brimrose Corp. of America 1019
Baltimore, MD

R. Snyder, D. Deepa

VHF to C-Band video and telemetry transmitters, microwave components and subsystems, C-band radar simulator; acousto-optic components and systems; Bragg cells, acousto-optic scanner and spectrum analyzer; infrared detectors in the 2 to 12 micron range, IR detector amplifiers; X-ray Darc system; and digital automated rocking curve for analysis of semiconductor material topography.

Buckbee-Mears/St. Paul 301
St. Paul, MN

J. Confer, F. Grimm, P. Meagher, C. Over, B. Cowell, B. Snider, J. Bowgren, J. Currie, P. Beadles, P. Koosmann, T. Stevens

Specialty printed circuit boards, microwave antenna boards, multilayer teflon boards up to 48" x 36"; laser machining and photo etching.

Bullen Ultrasonics Inc. 412
Eaton, OH

M. Moreland, S. Brown, G. Giffen, F. Fent

Ultrasonic machining and ultrasonic impact grinders; prototype and production machining in ceramic, glass, sapphire, silicon and other hard, brittle materials.

Cablewave Systems 133
North Haven, CT

W. Dixon, E. McBride, A. Criscuolo

Microwave parabolic antenna systems, semi-flexible elliptical waveguide, coaxial cable, connectors, pressurization equipment and installation accessories.

Cabot Ceramics Inc. 337
Greenville, RI

S. DiCarlo, P. Bartigian, K. Chakuroff, P. Cannistra

Ceramic packaging for microwave and millimeter microwave applications that include metalized substrates, diodes, transistors, RF and discrete packages.

Cadence Design Systems, Inc. 1408
San Jose, CA

California Eastern Labs Inc. 1223
Santa Clara, CA

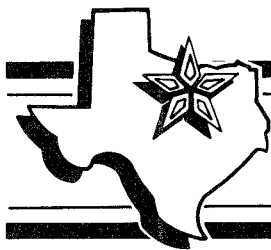
L. Lea, B. Chung, B. Tyson, D. Apte, S. Morris, J. Barry, D. Henoult, K. Ebel, S. Pavlik

A full line of NEC RF and microwave semiconductors, including small signal and power bipolar transistors; GaAs analog and silicon MMICs; digital ICs; GaAs and silicon preamplifiers; low noise and power GaAs FETs; hybrid ICs; silicon PIN diodes; and GaAs and silicon varactor, Schottky and Impatt diodes.

Cardiff Publishing 139
Microwave Systems News
Los Altos, CA

L. Besser, R. Davis, J. Cotsworth, M. Adams, S. Steeves, C. Sherod

Microwave Systems News, a monthly publication that serves OEM systems markets and



1990 EXHIBITION GUIDE

corresponding users in the microwave and communication field.

Cardiff Publishing 139
MSN, RF Design
Englewood, CO

Caro-Line Habigand 1414
Toulouse, France

Cascade Microtech Inc. 518
Beaverton, OR

D. Barnard, T. Burcham, E. Strid, R. Gleason, D. Carlton, D. D'Almeida, J. Ladwig, P. Wilhelmsen, K. Jones, D. Riordan

Manual wafer probe station, DC to 65 GHz wafer probes, noise parameter test set, CAT test executive software, microstrip test fixture and microprobe holders.

Celeritek Inc. 1132
San Jose, CA

R. Jones, G. Koker, T. Herdt, D. Reinholm, S. Fujisaka, C. Wilbanks, R. Newman, G. Payne

GaAs FET amplifiers, subsystems, MMICs and GaAs FETs.

Ceratronics Inc. 204
Westboro, MA

J. Walker, K. Anzai, J. Blum

High thermal conductivity aluminum nitride substrates, including polished, metalized and direct bond copper substrates for maximum circuit density, high power microwave applications.

Circuit Busters Inc. 6
Stone Mountain, GA

R. Rhea, M. Rhea

RF and microwave engineering software for IBM PCs and compatibles; new simulation program, = SuperStar = Professional Extension, including Monte Carlo; user models; microwave line models; and filter and oscillator synthesis software.

Coleman Microwave Co. 803
Edinburg, VA

Communications Techniques Inc. 1113
Whippany, NJ

T. Ede, B. Badami, W. Anthony, L. Miciak

Solid-state microwave signal sources, low phase noise phase-locked oscillators, ultra low noise microwave and VHF synthesizers in discrete bands to 23 GHz; frequency test translators, synthesized STALO/COHO/AFC subsystem to add MTI capability to pulsed magnetron radars, frequency multipliers and cavity oscillators.

Compac Development Corp. 1338
Holbrook, NY

C. Groves, P. Rao, W. Smith

Custom and standard RFI/EMI shielded enclosures; RF connectors, coaxial attenuators, terminations, gasketing, and TSS and TSD switches.

Compact Software 941
Paterson, NJ

Compex Corp. 1420
Medford, NJ

Component General Inc. 1239
Odessa, FL

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

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 Corp. 522
Division of Aeroflex
Plainview, NY

W. Meditz, L. Borow

Fast switching frequency synthesizers with a frequency range of 10 MHz to 18.4 GHz, Xtal and L/C filters, phase lock sources, down-converters and subsystems.

Connecting Devices Inc. 808
Long Beach, CA

C. Wirtz, J. Dunbabin, G. Black, W. Carpenter
Handi-Form™ flexible reformable cable assemblies, Model 5999 phase adjustable SMA connector, 500 series automatic network analyzer test cables, TNC swept right angle in-series adapters, and 7 mm adapters.

Continental Microwave & Tool Co. Inc. 413
Hampton, NH

R. Cicale, D. Wall, J. Ripel, T. Brown

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

Coors Ceramics Co. 308
Electronics Division
Golden, CO

E. Biltz, R. Langman, J. Knight, A. Suppinger

Ceramic substrates, ceramic multilayer packages, crystal carrier and oscillator packages, microwave packages, 50 Ω feed throughs, metallized beryllium and alumina substrates, laser scribing and machining of substrates, SLAM chip carriers.

Cougar Components 636
Santa Clara, CA

D. Cheadle, N. Cheadle, J. Musquez

RF and microwave cascable amplifiers and signal processing components.

Crystal Technology 1428
Palo Alto, CA

CTT Inc. 822
Santa Clara, CA

S. Mussynski, J. Meyers, 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 system.

Daden Associates Inc. 815
Laguna Hills, CA

L. Jones, D. Hook, D. Henry

RF and microwave filters from 1 MHz to 26.5 GHz, including bandpass, bandstop, low-pass, and highpass.

Daico Industries Inc. 1316
Compton, CA

W. Grunau, G. Peck, K. Tubbs

IF/RF switches, attenuators, phase shifters and integrated assemblies.

DB Products Inc. 817
See Southwest Microwave Electronics

Delta Microwave Inc. 302
Camarillo, CA

J. Olsen, R. Reed

Microwave filters, multiplexers, gain equalizers, filter/amplifiers, isolators and integrated assemblies.

Design Technique 112
Chatsworth, CA

D. Fealkoff, J. Marzan, G. Marzan, K. Whitwood

Microwave on-wafer probes, probe stations, microstrip probes and test fixtures.

Dielectric Laboratories Inc. 1111
Cazenovia, NY

N. Iocco, R. Mitchell, B. Semans, J. Stauring, G. Vorlop, G. Kent, M. Ingalls

Low loss ceramic substrates, QPL approved single layer microwave ceramic capacitors, QPL approved ultra high-Q porcelain capacitors, RF power capacitors for NMR applications and low ESR 0.01/0.1 μF capacitors.

Ditom Microwave Inc. 211
San Jose, CA

D. Hassett, T. Weisz, B. Hawkins

Coaxial and waveguide ferrite isolators and circulators.

Dorado Co. 110
Seattle, WA

H. Rutstein, N. Rutstein, M. Lu, E. Sedlik

30 MHz to 1500 GHz microwave and mm-wave devices; 30 MHz to 78 GHz YIG filters; 400 MHz to 150 GHz ferrite isolators/circulators; 26.5 to 325 GHz power meter; 36 to 1500 GHz backward wave oscillators; 10 to 240 GHz passive waveguide devices, including attenuators, bends, couplers, frequency meters, hybrids, loads, shorts, slotted lines, straights, switches, tees, transitions, twists, solid-state devices, detectors, Gunn oscillators, mixers, noise sources, programmable attenuators, phase shifters and coaxial type devices

Dow-Key Microwave Corp. 705
Ventura, CA

E. Kjellberg, J. Dysart, J. Wleklinski, J. Williams, J. Larson, V. Harter

Microwave switches and coaxial RF relays.

Dynatech Microwave Technology 642
Calabasas, CA

W. Reed, M. Long, J. Wenzel

DC to 40 GHz electro-mechanical switches, integrated assemblies, switch matrices, video switches, ldi-reliability and space qualified hardware.

Dynawave Inc. 220
Georgetown, MA

C. Lewis, D. Gartzke, A. Scannelli

Precision microwave coaxial connector and cable assemblies, including SMA, SSMA, KTN Type N, blindmate Dynamate, blindmate Dynamite, Dynacons interconnects, Dynaseal hermetic cable assembly and delay lines.

Eaton Corp. 222
Electronic Instrumentation Division
Los Angeles, CA

L. Caney, M. Freschi, T. Audia, J. Zack

High performance RF and microwave test and measurement instrumentation, including an ultra fast switching synthesizer with low phase noise and low spurious.

EDO Corp. 104
Barnes Engineering Division
Shelton, CT

R. Stetson, C. Goane, R. Paulson

EDO/Barnes will display the new Compu-Therm III infrared thermal imaging system and RM-2A spot temperature microscope for use in microelectronic design, failure analysis and reliability engineering.

EEsof Inc. 1129
Westlake Village, CA

C. Abronson, T. Reeder, G. Kanaan, W. Best, D. Mutch

CAE software for high frequency analog and

microwave applications; linear/nonlinear circuit and system simulation; electromagnetic simulation; automatic network synthesis; filter design; computer-aided test; and layout tools for high frequency printed circuit boards, hybrids, and MMICs.

EEV Inc. 804
Elmsford, NY

F. Oakes, S. Bliet, A. Sayers, T. Ellis, J. Thorne, D. Barker

TWTs, magnetrons, including a phased-locked magnetron amplifier unit; microwave devices, including a KW-band lightweight integrated microwave package; and mm-wave components.

EIP Microwave Inc. 837
San Jose, CA

L. Johnson, D. Mulder, J. Rogers, J. Khazam

Pulsed and CW microwave and mm-wave 10 Hz to 170 GHz frequency counters, including phase locking counters and CW/pulsed counters.

Electro-Films Inc. 1207
Warwick, RI

B. Black, T. Petit, F. Urrico

Thin-film passive microwave components, metalized plates, patterned and etched substrates, microwave chip resistors, metalized thru holes and patterned wrap-around edges, fine-line couplers to 0.0004" \pm 0.00005"; alumina, BEO, quartz, A1N substrates, TaN and Ni Cr resistors. Ti, TiW, Mo, Cu, Au, Ni, Pd, Cu metalization.

The Electro-Mechanics Corp. 510
Austin, TX

K. Matloubi, G. Watkins, M. Mart

The 1 to 18 GHz broadband isotropic probe system, a non-intrusive system, which uses the latest NIST technology for monitoring field strength in both near and far fields, from up to eight probes simultaneously.

Electronic Decisions Inc. 115
Urbana, IL

D. Fleisch, P. Haag

The PTF, a software-programmable signal processor based on acoustic charge transport (ATC) technology, is used to generate, correlate, and filter signals with bandwidths up to 100 MHz. Applications include electronic warfare, communications, radar and instrumentation.

Electro Rent Corp. 113
Van Nuys, CA

J. Hart, T. Pacey, C. Eckles, G. Landers, R. Garrett, D. Flowers, W. Kosmowski, G. Phillips

Rental of RF & microwave engineering work-

stations, data products, digital design, data acquisition, telecommunications and general purpose test and measurement equipment.

Electro Technik Industries 101
Clearwater, FL

Ellsra Electronic Systems Ltd. 116
Microwave Components Division
Bene Beraq, Israel

J.N. Feldfeber, I. Eliahu, E. Fridman

Filters, low noise and high power amplifiers, solid-state switches and oscillators, mixers, power dividers and couplers, mm-wave components, detectors, limiters, matrices, multicouplers, supercomponents and sub-systems.

EMC Technology Inc. 1208
Cherry Hill, NJ

P. Semitschew, S. Rollin, L. Catalina, B. Hawn

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

Emerson & Cuming Inc. 123
Woburn, MA

D. Turi, L. Byrnes, J. Gear, B. Berardi

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

EMF Systems Inc. 1035
State College, PA

J. Chernega, M. Cleland, J. Chernega

Solid-state microwave oscillators, VCOs, crystal, VCXOs, DROs, phase-locked oscillators, synthesizers, combgenerators, multicouplers, downconverters and special 1 MHz to 18 GHz signal sources.

Epitronics Corp. 919
Phoenix, AZ

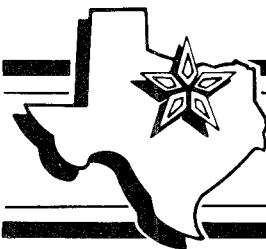
P. Crook, J. Mayne, B. Mills, R. Adams, D. Davito, D. Currie

Custom and semicustom III/V epitaxial structures utilizing MOCVD technology.

Epsilon Lambda Electronics Corp. 818
Geneva, IL

R. Knox, K. Wood, P. Papaevangelou, S. O'Brien

Millimeter-wave components and subsystems for radar and communications applications, including mm-wave GaAs and InP Gunn diode oscillators and VCOs; simplex/duplex mm-wave communications links; and tactical solid-state radar transceivers, including FM CW and high power short pulse types.



1990 EXHIBITION GUIDE

Explosive Fabricators Inc. 137 **Louisville, CO**

H. Mansell, P. Hingorany, W. Sharp

Eftekt™ electronic products, including explosively clad hermetic microwave and power hybrid electronic packages.

FEI Microwave Inc. 400 **Sunnyvale, CA**

P. Clark, P. Thesing, W. Patton, J. Humphrey, B. Christensen, G. Korb, F. Lemmon, B. Bridge, J. Lee, M. Adamo, D. Bush, R. Curby, S. Van Fleteren

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

Ferranti International Computer Systems Ltd. 131 **Manchester, England**

D. James, F. Savage, M. Evanson

Microwave components and subsystems, including standard phase-locked oscillators and multipliers, wideband oscillators and filters; low noise amplifiers, solid-state power amplifiers, including high power greater than 150 W at 6 GHz, microwave common modules and subsystems, including EW receivers, radar altimeters and AVSAT low noise amplifier/duplexers.

Ferranti International Industrial Electronics Ltd. 131 **Manchester, England**

J. Lowe, M. Wood, B. O'Donnell

Ferrite circulators and isolators, receiver protectors incorporating STC facilities, products for particle accelerator systems and TWTs and power supplies.

Ferretec Inc. 514 **Fremont, CA**

A. Rosenzweig, D. Killen, D. Hoekstra, R. Krueger, C. Schiebold, S. Hammond, E. McBride, D. McBride

Broadband YIG-tuned oscillators, YIG-tuned open and closed loop filters, Ferretac® filters, YIG-tuned harmonic generators, and YIG-based integrated receiver front ends/tuners in the 0.5 to 40 GHz frequency range.

Filtran Microcircuits Inc. 401 **Ottawa, Ontario, Canada**

C. Sutton, D. Thomson, K. Ramachandran

High resolution circuits manufactured on teflon and ceramic for commercial and military microwave communications, plated-through hole technology on thin-film ceramic.

Flann Microwave Inc. 817 *See Southwest Microwave Electronics*

Flexco Microwave, Inc. 1112 **Port Murray, NJ**

Florida RF Labs Inc. 512 **Stuart, FL**

D. Sampson, G. Fenex, G. Moore, F. Scalzo, R. Newman, C. Wilbanks, G. Payne, S. Clemens

Microwave thin film resistor products, including flange, chip, threaded power and coaxial terminations; rod stud, chip, power and disc resistors; waveguide vanes, power and film card stripline attenuators; and flexible, semi-rigid, phase matched, delay lines coaxial cable assemblies.

Focus Microwaves Inc. 533 **Pointe Claire, Quebec, Canada**

C. Tsironis, I. Fichtner

Computer-controlled microwave tuners operating with IBM-PC portable computer. The system includes noise parameter, amplifier and oscillator load pull and intermodulation analysis capability. Test frequencies range is from 0.8 to 60 GHz.

FSY Microwave Inc. 1341 **Rockville, MD**

W. Forrestel, J. Yania, F. Behdin

RF and microwave filters, duplexers and multiplexers covering the DC to 26.5 GHz frequency range. Topologies include LC, miniature LC, coaxial combline, cavity, interdigital, microstrip, suspended substrate, and waveguide.

Fujitsu Microelectronics Inc. 700 **Santa Clara, CA**

S. Rupp, B. Utter, G. Medley, R. Maly, J. Fukaya, Y. Hirano

Quarter micron gold gate FETs, both low noise HEMT, and K-band power FETs; 12 and 25 W C-band FETs; medium power and general purpose microwave FETs; and power amplifiers.

Gamma-f Corp. 1002 **Torrance, CA**

D. Deck, L. Alford, F. Hendrickson, G. Peale, M. Stupnik, G. Kasai

Passive microwave components and assem-

blies from WR-229 through WR-8; filters, duplexers, OMTs, power dividers, couplers, transitions, bends and horns.

Gamma Microwave Inc. 503 **Santa Clara, CA**

Gel-Pak Division/Vichem Corp. 1016 **Mountain View, CA**

M. Althouse, S. Graves, F. Walsh

Shipping and handling system for GaAs FETs, MMICs and larger devices such as RF carriers, substrates, modules and packaged devices. Available with ESD protective materials for sensitive devices.

General Microwave Corp. 1217 **Amityville, NY**

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

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

GHz Technologies Inc. 1400 **St. Laurent, Quebec, Canada**

Giga-tronics Inc. 625 **Pleasant Hill, CA**

J. Scheck, H. Mette, R. Loft

The 7000 series multi-band and 6000 series single-band microwave sources; and signal generators and sweepers operating over the frequency range from 10 MHz to 75 GHz.

Harris Microwave Semiconductor 628 **Milpitas, CA**

N. Pressel, K. DeSalvo, S. Hecker, M. Emerson, S. Varaitch, R. Sawires, V. Kovacevic

GaAs FETs, MMICs, and foundry services up to and including class S screening.

Haverhill Cable & Manufacturing Corp. 408 **Haverhill, MA**

T. Kneeland, D. Kneeland

MIL-C-17 semi-rigid coaxial cable in standard types and various sizes and finishes.

Herotek Inc. 229
Sunnyvale, CA
C. Lai, C. Lai, R. O'Connor, J. Wong
 Microwave RF detectors, limiters, harmonics comb generators, multipliers, switches, amplifiers, frequency and phase detectors, MIC products.

Hewlett-Packard Co. 329
Palo Alto, CA

Hittite Microwave Corp. 1021
Woburn, MA
F. Paik, Y. Ayasli
 MMIC chips for amplifiers, oscillators, switches, converters and MMIC-based integrated subsystems.

Holz Industries Inc. 525
San Diego, CA
G. Holz, C. Somach
 DC to 26 GHz custom and off-the-shelf ceramic packages, thin- or thick-film metalized substrates, integrated packages with substrates and components, including capacitors, resistors, filters, multilayer ceramic circuits and integral packages, GaAs and MMIC applications.

Horizon House-Microwave Inc. 620
Norwood, MA
W. Bazy, R. Briden, C. Ayotte, A. Ambrose
Microwave Journal and *Journal of Electronic Defense* publications, and Artech House books.

Huber & Suhner Inc. 403
Woburn, MA
S. Saia, B. Rothman, D. Finan
 Sucoflex microwave cable assemblies; microwave components, including adaptors, attenuators, terminations, power dividers, filters and EMP protectors; RF and microwave connectors; coaxial cable and coaxial cable assemblies

Hughes Aircraft Co. 1100
Electron Dynamics Division
Torrance, CA
A. Edberg, R. Larson, H. Bell, K. Conklin, J. Nichols, M. Smith, R. Brownell, J. Paul
 1 to 220 GHz TWTs and TWT amplifiers.

Hughes Aircraft Co. 209
Microelectronic Circuits Division
Newport Beach, CA

M. Nusbaum, A. Krum, J. Adams, D. Lance, J. Hamilton, B. Campbell, J. Boyer, R. Brown, K. Jones, R. Snow, R. Geiser, K. Lake
 Military/space grade hybrids and a variety of component level products, such as precision quartz crystal, L/C and crystal filters, high stability/low noise crystal oscillators, oven-controlled oscillators and RF modules, such as frequency synthesizers, receivers and exciters.

Hughes Aircraft Co. 1100
Microwave Products Division
Torrance, CA
A. Edberg, R. Larson, H. Bell, K. Conklin, J. Nichols, M. Smith, R. Brownell, J. Paul

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

Inmet Corp. 817
See Southwest Microwave Electronics

Insulated Wire Inc. 712
Danbury, CT
S. Bruno, A. Nixon
 Microwave cable and cable assemblies.

Integrated Microwave 632
San Diego, CA
D. Clark, M. Monte, D. Bree, P. Hannah, D. McMahonill, C. Peacock
 RF/microwave filters, multiplexers, switch-filter banks, low noise filter-amplifier modules, varactor-tuned filters, ISO-filters, limiter detectors, frequency converters and frequency multiplexers.

Inter-Continental Microwave 819
Santa Clara, CA
W. Schuerch, K. Lee, R. Wolfe, S. Law
 Microwave test fixtures for measuring chip transistors, MMICs, packaged transistors, packaged components, microwave circuits and other multiport devices. Test fixture deembedding with TRL, LRL, and TOSL calibration methods. Non-destructive beam lead diode test fixtures.

Ion Beam Milling Inc. 421
Manchester, NH
R. Quagan, G. Quagan, J. McDonnell
 Attenuator pads, networks and chip induc-

tors; thin- and thick-film metalization down to 0.25 mil with 50 μ inch tolerances; and dicing services.

Isotronics Inc. 207
New Bedford, MA

J. Lang, D. Koepke, A. Kirkaldy, A. Davis
 Glass-to-metal seal hybrid microcircuit packaging.

ITT GaAs Technology Center 811
Roanoke, VA

B. Schmitz, J. Grzyb, D. Fisher, I. Bahl, A. Geissberger
 GaAs technology and MMIC foundry service.

ITT Sealelectro 920
Trumbull, CT

RF coaxial connectors, including K connectors to 46 GHz, SMA, SMB, SMC connectors, solderless, precision N and TNC connectors, between series adaptors, and RF coaxial cable assemblies.

JCA Technology 1012
Newbury Park, CA
J. Chao, D. Biddle

Microwave low noise amplifiers, microwave control components and microwave subassemblies.

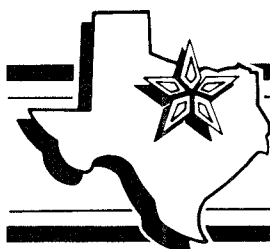
Johanson Dielectrics Inc. 1321
Burbank, CA
J. Marks

High-Q ceramic chip capacitors, single layer ceramic chip capacitors, multilayer ceramic chip capacitors and multiple capacitor arrays.

Johanson Manufacturing Corp. 1321
Boonton, NJ
T. Rowan, B. Rowe, R. Kapner
 Variable capacitors and microwave tuning elements.

John Wiley & Sons Co. 105
New York, NY
S. Nelson, G. Telecki

Publisher of scientific and technical books and journals, including the journal *Microwave & Optical Technology Letters* and Vendelin's *Microwave Circuit Design*, Biernson's *Radar Tracking* and Chang's *Handbook of Microwave & Optical Components*.



1990 EXHIBITION GUIDE

- Journal of Electronic Defense** 620
Norwood, MA
H. Gershanoff, S. Hardy, J. Hinojosa, A. Braun, R. Kaufman, D. Herskovitz, E. Tokarz
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.
- Kaman Instrumentation** 328
Colorado Springs, CO
S. Perry, G. Barney, T. Dillahunty
Semi-flexible cable assemblies, hermetic connectors, and SiO₂ dielectric, coaxial cable assemblies.
- KDI/Triangle Electronics** 1343
East Hanover, NJ
D. McConnell, C. Schraufnagl, B. Hartwig, T. Braviak, H. Shinn
DC to 18 GHz components and subassemblies; resistors, attenuators, terminations, couplers, dividers, switches, oscillators, phase shifters, and digital attenuators that use thin-film, thick-film and softboard technologies.
- Kings Electronics Co. Inc.** 704
Tuckahoe, NY
R. Dock, E. Lagarto, F. Della Iacono, H. Pessah
RF coaxial connectors and related interconnection devices for aerospace, military, telecommunication, computer, aircraft, broadcast applications.
- K&L Microwave Inc.** 1101
Salisbury, MD
N. Cherrix, D. Chambers, C. Schaub, J. Price, J. Tinkler, P. Wiltsey
500 KHz to 40 GHz microwave and RF components, including miniature filters, cavity and waveguide filters, crystal filters, tunable filters, frequency agile and integrated subsystems, integrated subassemblies, coaxial switches to 26.5 GHz and RF switching matrices.
- K&L Microwave Inc.** 1101
K&L Quartztek
Phoenix, AZ
M. Story, P. Lorenz
Quartz crystals and quartz crystal filters.
- K&L Microwave Inc.** 1101
K&L Oscillatek
Olathe, KS
R. Stevens
Crystal oscillators.
- Kopin Corp.** 1307
Taunton, MA
R. Bates, M. Micci, J. Salerno, P. Smith
Silicon-on-insulator wafers manufactured by the isolated silicon epitaxy (ISE™) process; GaAs/AlGaAs epitaxial wafers, including heterojunction bipolar transistors (HBTs), HEMTs and LEDs; and GaAs on silicon wafers up to six-inches in diameter.
- Krytar** 612
Sunnyvale, CA
T. Russell, M. Molley, C. Gentile
Ultra broadband microwave components, including directional detectors, directional couplers, 90° 3 dB hybrids, 180° 3 dB hybrids, zero bias Schottky detectors, coaxial terminations covering 0.01 to 40 GHz.
- KW Microwave** 621
San Diego, CA
P. Cox, D. Peterson, L. Yates, H. Harrison, P. Buckley
Bandpass, highpass and lowpass filters; multipliers; multiplexers; diplexers; switch filters; ferrites; and integrated subsystems, operating over the frequency range from 500 KHz to 40 GHz.
- Kyocera America Inc.** 321
Ceramic Substrate Division
San Diego, CA
L. Gibson, G. Scott
Advanced ceramic TF substrates, LTS lids, insulators, high dielectric constant substrates, solder coated lids, press parts, transparent glass lids and aluminum nitride substrates.
- Kyocera America Inc.** 321
Metallized Division
San Diego, CA
A. Buck, B. Herritage, J. Bartholomew, R. Webb, F. McMahon, D. Hughes
Advanced ceramic RF packages, microwave packages, surface mount amplifier packages, MMIC packages, and alumina and aluminum nitride metallized substrates.
- Lectronic Research Labs Inc.** 531
Camden, NJ
B. Raub, K. Reid, E. Stettinisch, S. Rheuban, J. Diskin
X-band microwave trainer and assorted reconditioned products.
- Lemo rF Inc.** 1314
Huntingdon Valley, PA
J. Finerfrock, M. Moore
Microwave connective products, including a complete line of SMA connectors and custom cable assemblies, and the 10 GHz Quick-Lok connector for high package density applications.
- Litton Airtron** 1022
Morris Plains, NJ
B. Ost, G. Keyes, J. Knapp, J. Michalski, H. Faust
Airborne antennas, waveguide products, high power microwave components and RF subsystems.
- Litton Solid State** 1022
Milpitas, CA
L. Nielsen, L. Newbold, D. Martell, C. Blum, M. Parry, S. Ray
Microwave GaAs FET low noise to medium power, thin-film hybrid substrate for microwave applications, amplifier, oscillator and subsystems.
- Locus Inc.** 1033
State College, PA
E. Brem, T. Steidel
RF and microwave components for the telecommunications industry. Specializing in state-of-the-art amplifiers, image reject mixers, converters, and RF/microwave assemblies.
- LogiMetrics Inc.** 521
Plainview, NY
M. Feigenbaum, E. Feigenbaum, E. Blum, E. Blum
High power TWT amplifiers in frequency ranges from 0.5 to 40 GHz and in power levels from 1 W to 5 kW for use in both military and commercial applications on ground and airborne platforms; Satcom communication amplifiers and radiated susceptibility test sets.
- Loral Microwave** 929
Frequency Sources
Chelmsford, MA
B. Knowles, D. Brown, J. Langevin, T. Blanco, W. Sobie, D. Langan, M. Koechlin, J. Slayton
Custom designed DTO, VCO, stable oscillators, special control devices, multifunction assemblies and microwave semiconductors.

Loral Microwave 929
Narda
Hauppauge, NY

J. Coppola, B. Leibowitz, R. Damiano, R. Koelzer, R. Strickland, V. Chitkara

Mixers, waveguides, and amplifiers, power dividers, couplers, pin switches, attenuators, and DROs, expanded mm-wave and high power components, Smarts, and innovative radiation hazard monitoring instruments.

Loral Microwave 929
Narda West
San Jose, CA

L. Becker, B. Swartz, D. Immekus, L. Miller

Isolators, circulators, GaAs FET amplifiers, filters, multiplexers, gain equalizers, cavity and DRO oscillators, integrated assemblies and polar discrimination.

Loral Microwave 929
Wavecom
Northridge, CA

W. Anderson, G. Etzler, N. Renfrow, M. Okano, H. Clark Bell, W. Harrison

Coaxial and waveguide filters and multiplexers, power dividers and combiners, and electromechanical coaxial switches for commercial, military and space applications.

Lorch Electronics 807
St. Petersburg, FL

C. McCoy, V. Hazners

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

Lucas Aerospace Inc. 604
Communications & Electronics Division
Hopkinton, MA

Lucas EPSCO Inc. 604
Hopkinton, MA

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

GaAs FET narrowband power amplifiers from 2 GHz to 18 GHz and output power levels to 1 W; high power CW and pulse signal sources with cavity oscillator and magnetron plug-in heads; passive waveguide and coaxial components, combiners, dividers, switches, filters, antennas and antenna systems.

Lucas Epsco Inc. 604
Microwave Technologies Division
Mississauga, Ontario, Canada

P. Balodis, P. Mercer, J. Miller

GaAs FET broadband, octave and multi-octave, medium and high power amplifiers from 2 GHz to mm-wave; and coaxial, waveguide and mixed media ferrite components up to 30 GHz.

Lucas Weinschel Inc. 604
Gaithersburg, MD

C. Crews, J. Harris, G. McNamara, L. Pregley

Programmable, variable, step and fixed attenuators, connectors, RF and microwave power measuring instruments.

Lucas Zeta Inc. 604
San Jose, CA

B. Dominguez, A. Leotta, M. Mallinger, J. Spear, N. Stecklein

Microwave signal generation and signal processing components, and DF/intercept subsystems and systems.

Luxtron 136
Mountain View, CA

M/A-COM Inc. 801
Burlington, MA

DC to 110 GHz GaAs and silicon semiconductor products, including varactors, bipolar transistors, GaAs MMIC control circuits, MMIC custom circuits, GaAs technology development, foundry services and GaAs material and MMIC products; IF, RF, microwave and mm-wave components, including coaxial/waveguide ferrite components, frequency multipliers, amplifiers, high power control components, waveguide filters and cast components; solid-state mixers, detectors, VCO, DROs, DTOs, digital attenuators, switches and control components; coaxial connectors, precision cable assemblies, and passive RF and microwave components; broadband antennas; integrated subsystems for radar, communications, EW and missile system applications; oscillator assemblies and synthesizers; and high power, solid-state amplifier products and equipment.

MAC Technology Inc. 634
Klamath Falls, OR

M. Bailey, J. Branigar, M. Egbert

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. 1237
Fremont, CA

H. Fowler, L. Earl, J. Talbot, M. Streitmatter, W. Heichel, J. Lee

RF and microwave mixers, RF and microwave VCOs, dielectric resonator oscillators and integrated assemblies.

Mansol Ceramics Co. 1118
Belleville, NJ

Matcom Inc. 1006
Palo Alto, CA

B. Jones, C. Huynh, B. Hampton, E. deVera, T. Shino, K. Akada

Microwave semiconductors.

Materials Research Corp. 445
Pearl River, NY

T. Stensgard, J. Walker, P. LaTouche, M. Hill, R. Buckley

Thin-film substrates, thin-film metalization, custom etched circuit and custom patterned material.

Maury Microwave Corp. 422
Rancho Cucamonga, CA

M. Maury, Jr., J. Adamson, R. Ramirez, B. Pastori, P. Gianfortune, G. Simpson

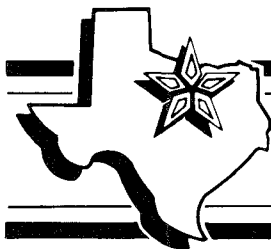
DC to 110 GHz microwave components and instruments, including automated tuner system (ATS), ATS load-source/pull software, ATS controller, metrology grade sliding terminations, connector gages, calibration standards for network analyzer measurements, universal transistor test fixture, coaxial, waveguide and mm-wave calibration kits for vector automatic network analyzers, precision mm-waveguide devices, airline standards, 1.05 max SWR waveguide to coaxial adapters, coax-to-coax adapters and noise calibration equipment.

Maxtech Inc. 720
State College, PA

D. Bunnell, J. Dixon, M. Wharton

Microwave and RF components and subsystems, including LNAs, redundant LNA systems, power amplifiers, power amplifier systems, microwave converters, high performance imageless mixers, ultra broadband quadrature couplers, IF-to-tape converters and custom subsystems.

Menlo Industries, Inc. 814
Fremont, CA



1990 EXHIBITION GUIDE

- | | | |
|---|---|--|
| <p>Merrimac Industries Inc. 240
West Caldwell, NJ
<i>J. Blahosky, W. Joswick, E. Niemiec, T. Ramsden</i>
IF and microwave devices, components and subsystems using lumped-element and stripline designs. Power amplifiers, IF integrated assemblies and hi rel networks.</p> | <p>Microelectronics Technology Inc. 233
Hsinchu, Taiwan, ROC
<i>T. Ho, J. Chin, L.C. Chang, M. Boby, P. Chen, W. Huang, W. Lo</i>
Microwave components and systems for communications applications such as VSAT, INMARSAT, microwave radio, and TVRO/DBS.</p> | <p>filters, detectors, limiters, channelizers, detector modules, filter modules, threshold detector amplifiers, video receivers, channelized receivers, microwave integrated assemblies, solid-state multithrow switches and switch/filter assemblies.</p> |
| <p>Metal Processing Co. 125
Woburn, MA
<i>D. Winn, M. Perry</i>
Custom glass-to-metal sealing, RF and DC feedthroughs, field replace SMA feedthroughs, multi-pin feedthroughs and connectors, kovar housings and stainless steel bodies.</p> | <p>Microlab/FXR 313
Livingston, NJ</p> | <p>Microsonics Inc. 619
Weymouth, MA
<i>B. Baker, J. Crehan, J. Livezey, P. Beesla, J. Pavao, V. Bates, J. Killough</i>
Crystal and LC filters, crystal oscillators including TCXOs, VCXOs, TCVXOs and OCXOs, and delay lines, including discrete, modular, analog, digital and SAW.</p> |
| <p>Metelics Corp. 1116
Sunnyvale, CA
<i>R.M. Dorilag, J. Tatum, J. Godbout, R.C. Dorilag, F. Kwan, R. Medel, S. Fang, A. LaRosa</i>
Microwave diodes, including Schottky, PIN, tunnel, MIS capacitor, SRD and tuning varactor devices.</p> | <p>Micronics Technology Inc. 1018
Glen Cove, NY
<i>P. Basse, R. Herrmann</i>
Precision RF and microwave frequency sources, including frequency synthesizers, phase-lock DROs and multipliers. Custom microwave subassemblies for frequency conversion, generation and signal processing applications; containing mixers, filters, circulators, PIN devices and amplifiers.</p> | <p>Microsource Inc. 1125
Santa Rosa, CA
<i>J. Tavormina, J. Albright, C. Martens, J. Clarke, J. Dean, G. Basawapatna, M. Shandas</i>
Microwave components, subsystems and systems, YIG tuned oscillators, multipliers and bandpass/bandreject filters from 5 to 26.5 GHz; available with analog or digital drivers. Synthesizers up/downconverters integrated front ends, multichannel phase-matched receiver front ends and modular measurement systems products.</p> |
| <p>MH&W International Corp. 1418
Mahwah, NJ</p> | <p>Micro-Now Instrument Co. Inc. 1009
Skokie, IL
<i>C. Arnow, F. Arnow, R. Jania</i>
Millimeter wave instrumentation, mm-wave sweep systems to 170 GHz.</p> | <p>Microtech Inc. 824
Cheshire, CT
<i>J. McGregor, J. Radder, M. Beasley, D. Scotch, L. Dayaratna, L. Kahn</i>
Rectangular and double-ridged waveguide and components from 1.2 to 50 GHz, including catalog and custom flexible and rigid assemblies, directional couplers, waveguide-to-coaxial adaptors, pressure windows and tees. High speed, low phase noise VCO's, high efficiency frequency multipliers and phase-lock oscillators.</p> |
| <p>MIC Technology Corp. 417
Richardson, TX
<i>D. Chapman, L. Ingham, B. Chapman, C. Ristagno, B. Mitchell, K. Walker, R. Tomchif</i>
Thin-film manufacturing services and hermetic packaging, including 30 metalization systems on all dielectric substrates, precision photolithography for conductor and resistor patterns, plated vias, airbridges, and passivation, glass-to-metal sealed plug-in, microwave, and platform modules, as well as glass flatpacks.</p> | <p>Micropac Industries Inc. 216
Garland, TX
<i>B. Wehe, T. Butcher, K. St. Clair</i>
VCO and VCO subsystems in hermetic TO-8 to standard mechanical enclosures, options include dual polarity tuning, low current, buffering, ovenized or regulated in surface mount, flatpack and TO-8.</p> | <p>Microwave Applications Group 539
Santa Maria, CA
<i>W. Hord, D. Prigge, F. Lauriente</i>
Design, fabrication and test of microwave ferrite components and antenna subsystems with related electronic control circuits. Components include reciprocal phase control modules for electronic scanning antennas.</p> |
| <p>MICA Microwave Corp. 1029
San Jose, CA</p> | <p>Micropen Inc. 1319
Pittsford, NY
<i>J. Cox</i>
Micropen™, a computer-controlled direct writing, precision dispensing machine, dispenses materials such as thick-film materials, etch and plating resists, adhesives, solder pastes, solder mask, or any material that is fluid at room temperature, and is used for prototyping thick-film microwave and conventional hybrid circuits.</p> | <p>Microwave Development Co. Inc. 314
North Andover, MA
<i>J. Cook, C. Tomes, M. Slipp, P. Hocknell, M. Crittenden</i>
Passive double ridge and rectangular waveguide and high power coaxial components, including magic tees, directional couplers, adapters, harmonic, bandpass, and lowpass filters, terminations and waveguide assemblies, antennas, custom filters, quartz pressure windows, calibration kits, and high power components.</p> |
| <p>Micro-Chem Inc. 602
Santa Clara, CA
<i>L. Matts, D. Natz, L. Tooker, P. Zukonik, S. Tooker</i>
Stripline, microstrip and rigid groundplane PTFE circuit boards, chemically-milled metal parts and high resolution glass plates for the microwave industry.</p> | <p>Microphase Corp. 714
Norwalk, CT
<i>F. Parin, H. Schumacher, S. Temel, G. Temel, H. Weil, E. McBride, D. McBride</i>
Detector log video amplifiers, multiplexers,</p> | |

Microwave Development Labs Inc. 1121
Natick, MA

R. Tucker, E. Bannister, M. Hale, R. Bubel, A. Rottendurg

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

Microwave Device Technology Corp. 202
Lawrence, MA

T. Ramachandran, M. Ayyagari

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

Microwave Exhibitions
and Publishers Ltd.
Tunbridge Wells, Kent, UK

R. Marriott, M. Napier, J. McPhail, D. Leah

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

Microwave Journal 620
Norwood, MA

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

Microwave Journal magazine subscription and editorial information.

Microwave Printed Circuitry Inc. 1215
Lowell, MA

M. Casper, B. Deitz, C. Webb

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

Microwave Product Digest 103
Hastings on Hudson, NY

P. Lippin, B. Hickey, D. Markhouse, V. LeGendre

Microwave Product Digest, a new product tabloid, serves RF and microwave engineers, working as design, research, development and application engineers, working in both commercial and military installations.

Microwave Solutions Inc. 725
National City, CA

E. Teyssier, R. Hall, J. Colada

Low noise through medium power microwave amplifiers, custom amplifiers and supercomponents through 26 GHz.

Microwave Systems News 139
See Cardiff Publishing Co.

Microwave Technology Inc. 409
Fremont, CA

A. Roberts, W. Wilson, J. Stiles, K. Kawakami, W. Ou, M. Omori

GaAs FETS, GaAs MMICS, high power solid-state tridders, gain modules, microwave amplifiers and multifunction subassemblies, and services, including thin-film circuit processing foundry and laser welding of hermetic assemblies.

Microwaves & RF 541
Hasbrouck Heights, NJ

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

Microwaves & RF focuses on RF, microwave and optical devices used in various applications.

Midwest Microwave 1312
Saline, MI

E. DeVita, D. Hartje, B. Cherot

Microwave component products, including fixed coaxial attenuators, calibrated attenuator sets, step attenuators, between series adapters, RF coaxial connectors, coaxial terminations, gain equalizers, phase shifters, directional couplers, hybrids and power dividers, waveguide-to-coax adapters, coaxial cable assemblies, DC blocks and microwave resistors.

Millitech Corp. 734
South Deerfield, MA

R. Huguenin, D. Dixon, N. Deo, D. Wheeler, J. Plimpton

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

Mini-Systems Inc. 820
North Attleboro, MA

W. Glick, C. Barlow, R. Normandin, G. Lee

Thick- and thin-film chip resistors, electronic packages, and custom hybrid circuits.

Mirage Systems 711
Sunnyvale, CA

Mitec Electronics Ltd. 300
Pointe Claire, Quebec, Canada

M. Bentob, R. Monzon, J. Robinson

Microwave components and subsystems for telecommunications, satellite communications and military applications with frequency range and test equipment capabilities of 1 to 60 GHz; microwave subsystems and networks for uplink and downlink assemblies for satellite earth stations, transmit and receive multiplexing for communications equipment, transmit and receive front ends for radar equipment.

MITEQ Inc. 1128
Hauppauge, NY

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

1 MHz to 30 GHz low noise amplifiers 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 237
Sunnyvale, CA

S. Child, J. Dreyfuss, R. Ramchandani, J. Berger, B. O'Bryant

Microwave GaAs FETs and devices, including low noise, medium and high power discrete devices, and high power internally matched devices and MMICs.

Modular Components National Inc. 1315
Forest Hill, MD

I. Zazulak, P. Burian, M. Creighton

Microwave printed circuit boards; microstrip, bonded stripline and metal clad circuit boards; and in-house plating and plating through holes services.

Motorola Semiconductor Products 500
Phoenix, AZ

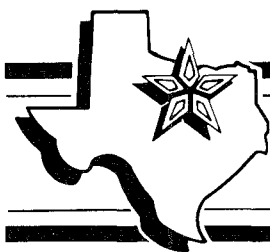
N. Dye, S. O'Shea, P. Hartig, B. Hunter, D. Murray, M. Williams

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

MPD Inc. 1204
Owensboro, KY

R. Dutkosky, F. Perry, D. Bowlds

High power RF and microwave amplifiers and



1990 EXHIBITION GUIDE

sources for missile and avionics applications, medical and research applications.

M-Pulse Microwave 1003 **San Jose, CA**

B. Long, E. Pendleton, J. Richards, W. Sander
Microwave and RF diodes and capacitors, including Schottkys, PINs, NIPs, SRDs, varactors, tunnels and MNOS capacitors for mixers, detectors, modulators, attenuators, switches, frequency multipliers, voltage-tuned oscillators, amplifiers, products are available as chips, beam leads, surface mount monolithics and packaged, screening available for commercial, JTX equivalent and space level applications.

MSN, RF Design 139 *See Cardiff Publishing*

M-Square Microtek Inc. 713 **Hayward, CA**

J. Driscoll, K. Floyd, C. Hudson, H. Powers, B. Scott, B. Webb, S. Thurmond
Traveling-wave tubes and power supplies.

Murata Erie North America Inc. 316 **Smyrna, GA**

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

Nearfield Systems Inc. 1020 **Carson, CA**

G. Hindman, D. Slater

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

NEC 1223 *See California Eastern Labs*

Nedrud Data Systems 540 **Las Vegas, NV**

B. Nedrud, C. Nedrud

Microwave analysis software for the Macintosh computer, including integrated schematic capture, graphics, full nodal noise analysis, compatability with major non-Macintosh programs, user-defined models, limitless block nesting, elements, open windows, multiple substrates, sweeps, variables and equations, and customized reports.

New England Micronetics 121 **Hudson, NH**

Norplex Oak Inc. 1122 **La Crosse, WI**

D. Krumenauer, R. Triune, R. Pangier
PTFE/woven substrate materials (laminates) for high frequency, low loss microwave applications.

Northern Scientific Laboratory 817 *See Southwest Microwave Electronics*

NTK Technical Ceramics 1333 **Mount Prospect, IL**

M. Ota, K. Ito, R. Hanson, B. Hirano, P. Diapolo
Microwave dielectric materials, including dielectric substrates and resonators.

Nurad 1200 **Baltimore, MD**

J. Gillis, B. Korb, C. Yablon

Antennas, radomes and associated subsystems for defense applications, submersible radomes, commercial aviation radomes and advanced composite radomes, high power horn antennas, data link antennas and conformal flush-mounted antennas.

Olektron 617 **Webster, MA**

Olin Aegis 1305 **New Bedford, MA**

M. Lofrumento, J. Greenspan, C. Roellig, J. Pinac

Microcircuit packages and housings for microwave and microelectronic application.

Optimax Inc. 517 **Hatfield, PA**

F. McDonnell, S. Smola, B. Shillady, T. Dolan, A. Bauer, J. Quinn, T. Musto, K. Evans, J. Mogel, J. Hickey, J. Rauchut, C. O'Brien, S. Kantor

Thick-film RF components, including log IF amplifiers, limiting amplifiers, control products, multifunction assemblies and switch drivers.

Optimization Systems Associates Inc. 1323 **Dundas, Ontario, Canada**

J. Bandler, L. Bandler, R. Biernacki, S. Chen, Q. Zhang

Integrated large signal and small signal DC computer-aided engineering software for microwave circuit simulation and design, and

device modeling and characterization, including HarPETTM, CAE consulting services, specializing in statistical modeling and yield optimization.

Optotek Limited 910 **Kanata, Ontario, Canada**

R. North, S. Dindo, R. Meierer

MMICAD, a linear microwave analysis and optimization program; GaAs foundry services.

Pacific Monolithics 1329 **Sunnyvale, CA**

S. Layton, E. Russell, R. Bay-Ramyon, D. Lockie, A. Podell, E. Wilson, D. Bond

GaAs MMIC-based microwave subsystems and components operating over the frequency range of 20 MHz to 18 GHz, including receivers, transponders, phase-shifter networks, amplifiers, oscillators, switches and attenuators.

Panasonic Industrial Co. 416 **Secaucus, NJ**

N. Watanabe, E. Small, T. Rhodes, S. Inai, T. Uwano, T. Nakamura, M. Yoshioka

Dielectric microwave resonators, bandpass filters, voltage-controlled oscillators, dielectric microwave devices for wireless equipments and microwave modules

Pascall Electronics Inc. 923 **Basking Ridge, NJ**

A. Cox, R. Burman, N. Macey, N. Melas, S. Chiplin

IF signal processing supercomponents, logarithmic IF amplifiers, constant-phase limiters, delay-line discriminators, I&Q phase detector subsystems, selective power meter (carrier monitor), and military power supplies.

PC Dynamics 201 **Frisco, TX**

L. Eslinger, J. Holbrook, M. Coutu, P. Rackley, D. Fross, A. Tupper, C. Anderson

Teflon PWBs, including plating, etching, bonding and machining of metal-backs, stripline and laminated assemblies.

Penn Engineering Components 218 **N. Hollywood, CA**

Philips Components 511 **Discrete Products Division** **Riviera Beach, FL**

T. Hendrix, M. Pradiue

Microwave transistors, RF power transistors,

transmitting modules, wideband transistors and CATV modules.

Phoenix Co. of Chicago 138
Wood Dale, IL

Picogiga Inc. 717
Oxnard, CA

A. Carlsson, J. Rochette

GaAs and heterostructure epiwafers.

Picosecond Pulse Labs 710
Boulder, CO

J. Andrews

Ultrafast pulse generators with rise times from 20 ps to 300 ps and amplitudes up to 50 V, and 10 KHz to 18 GHz broadband coaxial components.

P/M Industries Inc. 1209
Portland, OR

P. Hartman, C. Parks, R. Gorton, P. Parks

Advanced laser cutting applications for scribing, hole drilling and machining of 96%, 99.6% alumina; beryllia and aluminum nitride; lapped and polished substrates for microwave applications and laser trimming of thin-film resistor networks.

Poly Circuits 1007
Bensenville, IL

J. Dryer, J. Turek, R. Harazin

Printed circuit boards.

Polyflon Co. 221
New Rochelle, NY

W. LaRusso, J. Seminoro

High voltage, high-Q, non-magnetic 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. 616
Hauppauge, NY

R. Sheloff, W. Liebman, T. Dowling, B. Vitkovich

Class A, AB and C 1 MHz to 4000 MHz solid-state power amplifiers for ECM, avionics, communications and radar applications, as well as EMI/RFI laboratory instruments and radar range testing.

Precision Tube Co. Inc. 1320
North Wales, PA

G. Passmore, A. West, W. McNeil

Semi-rigid coaxial cables, RF/microwave cable assemblies, prepackaged and custom

delay lines and preassembled right angle cable assemblies.

Q-bit Corp. 1309
Palm Bay, FL

G. Callaway, H. Mead, M. Rogers, D. Meeks, C. Rice

Power feedback 0.1 to 3 GHz amplifiers, hybrid microelectronic and coaxial packaging.

Qualcomm Inc. 537
San Diego, CA

Quality Microwave Interconnects Inc. 924
Tewksbury, MA

P. Tusini, R. Pendergast, P. Grandmaisson, J. Kerrigan

Microwave coaxial cable assemblies.

Radiall Inc. 545
Stratford, CT

G. Pollack, C. Dreyer, W. Pitcher

RF connectors from DC to 46 GHz; rack and panel connectors for commercial and military avionics and weapons systems, including ARNIC 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 multi-mode and single mode fibers.

Radian Technology 723
Santa Clara, CA

J. Mongillo, L. Johnson, J. Arsenault

VCOs, DTOs, synthesizers, multiplexers and switch filters for EW and space applications.

Raytheon Co. 737
Microwave and Power Tube Division
Waltham, MA

W. Boyd, J. Hieber, W. Berwick

Ferrite and solid-state devices, including GaAs FETs; MICs, RF sources and signal processors, infrared devices, hybrid electronic microcircuits, CRTs, lasers, and microwave tubes, including CFAs, TWTs and klystrons for use in early warning, ECM and communications systems.

Republic Electronics Corp. 407
Wilkes-Barre, PA

L. Eisenberger, W. Eisenberger

Military microwave chip capacitors and single plate capacitors for use up to 50 GHz.

Resin Systems Corp. 1001
Amherst, NH

D. Prawdzik

Microwave loads, absorbers and termina-

tions in low, medium and high power; catalogued loads and terminations in low (poly-iron) 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.

RFD Inc. 128
St. Petersburg, FL

M. Wilson, R. Frizzell, C. Torrey, L. Tyson, W. Feick

Phase-locked oscillators, DRO's, solid-state transmitters, high power amplifiers, indirect synthesizers, receivers and custom subsystems.

RF Monolithics Inc. 1317
Dallas, TX

F. Perkins, C. Baker, G. Andersen, A. Coon, R. Hertenberger, L. Cecil, W. Spurgeon, T. Hinkle, C. Grace, H. Brian, V. Simpson, D. Ash, M. Robinson, B. Potter, H. Vollers

UHF SAW technology, including low loss SAW filters, SAW resonators, SAW frequency sources, transmitter and receiver modules and OEM RF subassemblies.

RLC Electronics Inc. 708
Mt. Kisco, NY

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

Passive microwave components operating over the frequency range from DC to 40 GHz; including mechanical switches, filters, attenuators, couplers and power dividers.

Rockwell Ferrocom 1311
San Jose, CA

B. Forsberg, M. Kyser, M. Swift, B. Fuller, M. Pitchell

132 MHz to 26.5 GHz isolators and circulators in coaxial stripline, waveguide, isoadapter, and stripline drop-in packages.

Rogers Corp. 1137
Microwave Division
Chandler, AZ

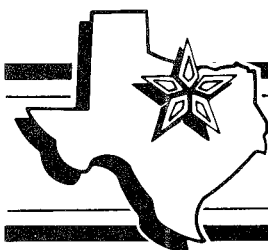
Z. Katinsky, J. Dobrick, E. Sandor, K. Takasumi, C. Santiago, D. Boulanger, R. Desilets, R. Cole, R. Jansen, M. Norris, R. Bonfield, C. Becker, G. Bull, A. Boulia, R. Belfay

RT/duroid® microwave laminates for stripline and microstrip applications and Iso-core™ coaxial cables.

H. Rollet & Co. Ltd. 118
London, England

H. Medlicott

Very high precision waveguide and microwave components including bends, twists



1990 EXHIBITION GUIDE

and slotted arrays, covering the frequency range from 1 to 220 GHz.

Rosenberger/Micro-Coax 722 **Collegeville, PA**

J. Lewis, B. Ash, F. Decker, R. Schafer

DC to 65 GHz RF coaxial connectors; DC to 40 GHz microwave assemblies, lowpass, bandpass and highpass filters; semi-rigid coaxial cable and assemblies, including phase stable low loss cable; related transmission line components, including waveguide, delay lines and attenuators.

Sage Laboratories Inc. 325 **Natick, MA**

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

Passive microwave components operating from DC to 40 GHz including, attenuators, couplers, filters, hybrids, mixers, switches, phase shifters, power dividers, rotary joints, terminations, video detectors, crystal holders, wireline and wirepac (3 dB quadrature hybrids and couplers).

Salisbury Engineering Inc. 119 **Salisbury, MD**

W. Barbely, R. Newberry

RF and microwave components.

Sarnoff Research Center 1302 **Princeton, NJ**

Sawtek Inc. 332 **Orlando, FL**

E. Frix, S. Miller, G. Monetti

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.

Schleuniger USA Inc. 544 **Manchester, NH**

L. Roth, C. Burns

Semi-rigid coaxial cable stripper, semi-rigid coaxial cable cutoff saw, heavy coaxial cable stripper and flexible coaxial cable stripper.

Scientific Atlanta 109 **Atlanta, GA**

Scientific Microwave Corp. 107 **Mississauga, Ontario, Canada**

G. Saad, M. Saad, A. Saad

Passive microwave and mm-wave compo-

nents, including filters, diplexers, 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; custom production and consulting services.

Sciteq Electronics Inc. 1136 **San Diego, CA**

Seven Associates 206 **Sonora, CA**

H. Smith, D. Smith, S. Smith, C. Smith, R. Stahl

Semi-rigid cable assembly production line tooling; portable RF induction heating equipment; and custom subcontract type cable assembly.

SGS-Thomson Microelectronics 1203 **Montgomeryville, PA/Somerset, NJ**

R. Blaskvitch, D. Kupinewicz, C. Lump, J. Walsh, W. Henderson, G. Oliver

RF and microwave power transistors, amplifiers and subsystems; silicon MMIC's; and solid-state noise sources.

Shason Microwave 1436 **Houston, TX**

Sierra Microwave Technology 501 **Rancho Cordova, CA**

J. Mitchell, T. Rodriguez

Microwave components, including isolators, circulators, filters, equalizers, switches and integrated assemblies.

Soladyne 1137 **Division of Rogers Corp.** **San Diego, CA**

D. Reed, C. Ogden, A. Hassell, J. Eckholt, R. Farris

Stripline and microstrip circuits on PTFE-based substrates.

Sonnet Software Inc. 507 **Liverpool, NY**

J. Rautio, K. Schroeder

Full-wave electromagnetic analysis software for arbitrary microstrip circuits that is designed to interface with and enhance your existing CAE software.

Southwest Microwave 1324 **Tempe, AZ**

J. Kubota, J. Rawlins, R. Zelichowski, L. Scheneman, E. Foley, J. Cheal, V. McHenry

Super SMA, TNC, N, SSMA and customer special designs of microwave connectors; and a full range of adapters, including 7 mm, SMA, TNC, N, 3.5 mm and SC.

Southwest Microwave Electronics 817 **American Micro Components Inc.** **Milpitas, CA**

M. Beasley, D. Scotch, C. Beasley

Custom thin-film networks.

Southwest Microwave Electronics 817 **Assemblies Inc.** **Warner Robins, GA**

M. Beasley, D. Scotch, C. Beasley, J. Daniel

Low loss flexible coaxial cable assemblies and semi-rigid coaxial cable assemblies.

Southwest Microwave Electronics 817 **DB Products Inc.** **Pasadena, CA**

M. Beasley, D. Scotch, C. Beasley

Electromechanical microwave switches.

Southwest Microwave Electronics 817 **Flann Microwave Inc.** **Cambridge, MA**

M. Beasley, D. Scotch, C. Beasley

Rotary wave attenuators, metrology grade waveguide calibration kits, mm-wave network analyzers, programmable attenuators and phase shifters, waveguide slotted lines and short circuits, waveguide PIN modules and waveguide three-way power splitters.

Southwest Microwave Electronics 817 **Inmet Corp.** **Ann Arbor, MI**

M. Beasley, D. Scotch, C. Beasley

Coaxial attenuators, coaxial adapters, coaxial terminations, DC block connectors, custom equalizers and frequency dependent attenuators.

Southwest Microwave Electronics 817 **Northern Scientific Laboratory** **Livingston, NJ**

M. Beasley, D. Scotch, C. Beasley

Instantaneous frequency and phase measurement receivers, and digital frequency discriminators.

Space Machine & Engineering 515
St. Petersburg, FL

J. Archbold, S. Sewell, J. Cantwell, A. Loyd, E. Loyd, K. Zions, P. Chandler, J. Harty

Waveguide components and precision machined parts.

Spectrum Materials Inc. 1430
Norcross, GA

SSPA Microwave Corp. 917
Mississauga, Ontario, Canada

T. Cheng, A. Leung, M. Cheng

Microwave solid-state power amplifiers operating over the frequency range from 1.3 to 18 GHz, with output power up to 100 W at 5.85 to 6.45 GHz and 20 W at 14 to 14.5 GHz.

ST Microwave Corp. 621
Sunnyvale, CA

P. Cox, D. Peterson, L. Yates, H. Harrison, P. Buckley

Voltage- and digitally-tuned oscillators, YIG-tuned filters and oscillators, semi-rigid coaxial cables, bandpass filters, switches, double-balanced mixers, multifunctional components, filters, diplexers, multiplexers, circulators, isolators and gain equalizers, harmonic generators in communications, radar warning, ECM and missile systems.

STC Components 322
Quartz Crystal Division
Schaumburg, IL

B. Pearson

High frequency fundamental surface mountable precision TCXO and SAW devices.

STC Electron Tubes 322
Schaumburg, IL

C. Fay

TWTs, including an 18 to 40 GHz TWT, and TWTAs for commercial satellite, terrestrial, microwave and military ground and airborne applications.

Steinbrecher Corp. 414
Woburn, MA

P. Butler, D. Steinbrecher, R.D. Shute, D. Peterson

High dynamic range mm-wave, microwave, and RF subsystems and components for advanced communications and high speed signal acquisition applications.

Stellar Industries Corp. 1221
Leominster, MA

J. Snook, R. Visser, J. Kingston, S. Lehrfeld, F. Halgas, C. Stout, H. Stout

Thermal management, including lapping;

polishing; dicing; thick-film; thin-film; refractory and direct bonded copper (DBCu) on AlN, BeO, Al₂O₃.

Storm Products Co. 1313
Hinsdale, IL

B. Holland, B. Barrath

Flexible and semi-rigid lowloss, phase stable, high power cable assemblies; low density dielectric cables for space applications, and delay lines and connectors.

Superconductor Technologies 542
Santa Barbara, CA

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

High temperature superconducting (HTSC) materials and devices for microwave and electronic applications, including thin-film superconductors on substrates; custom, patterned films; high-Q microwave resonators; low loss delay lines; microwave filters; testing service for HTSC thin-films; and custom superconducting components.

Synergy Microwave Corp. 615
Paterson, NJ

A. Almeida, T. Buhlinger

Double-balanced mixers, power dividers, directional and bi-directional couplers, filters, phase shifters, attenuators, 90° hybrids, 180° hybrids and phase detectors.

Systron Donner 1210
Instrument & Microwave Divisions
Sylmar, CA

S. Brock, B. Geddes, D. McKenzie, B. Carpenter, A. Sheth, A. Madni, I. Wan

Taconic Plastics Ltd. 406
Petersburg, NY

B. Smith, I. Brooks, R. Quintus, S. Seymour

PTFE/woven glass substrates for military and commercial microwave circuit boards.

Taylor Microwave Inc. 709
Hoboken, NJ

B. Sastre, D. Sastre

0.01 to 20 GHz RF/microwave sources and stripline/microstrip components; DROs; PLOs; VCOs; switches; phase shifters; attenuators; and integrated assemblies.

Tecdia Inc. 1216
Mountain View, CA

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

Single layer and ceramic micro chip capacitors for microwave applications up to 40 GHz.

Tech-Ceram Corp. 108
Amesbury, MA

W. Dinardo, W. Burnham, W. DeJean, H. Merino, J. Silverstein

Microwave and RF ceramic packages, thick-film alumina/BeO substrates and 50 Ω ceramic feed-throughs.

Tech-Ceram Corp. 108
TDI
Amesbury, MA

W. Dinardo, W. Burnham, W. DeJean, H. Merino, J. Silverstein

Dessicator cabinets, pulse DC ionization and tweezers.

Tech Systems 404
Division of Datron Inc.
Thomaston, CT

J. Moore, S. Litt, G. Smith, A. Pia, S. Ammirati

Waveguide and microwave components, flexible waveguide, double ridge waveguide and components, rigid waveguide, custom waveguide assemblies, and specialized plating services.

Technical Components/Xeram 1014
Warwick, RI

B. Coyle

Single and multi-layer ceramic packages up to 20 GHz, TO-5, TO-8, dual-in-line metal packages, machined modules, FET and transistor packages, co-fired multilayer ceramic boards.

Tekelec Microwave 205
Montreuil, France

E. Paillard, M. Beghin, G. Martin

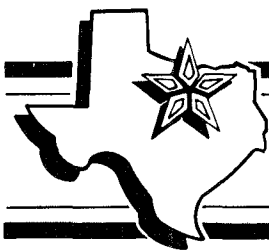
Microwave silicon diodes, including Schottky, PIN, multiplier and tuning varactors, and high voltage PIN diodes up to 3000 V; MOS capacitors, ferrite circulators and circulators, including waveguide, coaxial and drop-in from 30 MHz up to 94 GHz; microwave ferrite and dielectric ceramics; absorbing powders; RF modules, including mixers, power dividers, couplers, transformers and frequency doublers; and microwave subsystems.

Tektronix Inc. 701
Beaverton, OR

CSA 803 communication signal analyzer for the development, design, and manufacture of high speed communication components, modules and links; and the 11800 series 40 GHz programmable digital sampling oscilloscopes.

Tektronix Inc. 701
Digital Signal Processing Division
Beaverton, OR

High speed, wide bandwidth signal analysis systems for difficult radar and satellite measurements.



1990 EXHIBITION GUIDE

Tektronix Inc. 140
ICO Division
Beaverton, OR

B. Bradford, D. Bernel, J. Murphy, D. Stroberger, A. Waterman

Bipolar, TEKSPICE™ circuit simulator, and QuickKic schematic capture/layout editor/DRC software tools; Microlithography, and tooling for GaAs, optical and acoustic waveguides and reticles.

Tektronix Inc. 701
Microwave and RF Instruments Division
Beaverton, OR

The 2782 microwave spectrum analyzer operating over the frequency range from 100 Hz to 33 GHz; the 492PGM spectrum analyzer, operating over the frequency coverage from 10 kHz to 21 GHz; and the 497P quasi-microwave spectrum analyzers operating over the frequency range from 100 Hz to 7.1 GHz.

Tektronix Inc. 701
Microwave Technology Organization
Beaverton, OR

The DC to 40 GHz TMP9000 microwave probes; the DC to 60 GHz, DC to 33 GHz and DC to 40 GHz microwave probing test systems for network analysis, spectrum analysis, and TDR and device characterization measurements, respectively.

Tektronix Inc. 701
SAW Technology
Beaverton, OR

E. Sang

Surface acoustic wave (SAW) resonators/oscillators, filters and subsystems, and a 1 GHz SAW resonator oscillator.

Teddyne Microelectronics 1015
Los Angeles, CA

C. Parkinson, P. Galletta, D. German, Y. Rubin, D. Woods

Custom microcircuits, including analog, digital, memories, microprocessors, signal converters, decoders, RF microwave modules; hi-rel medical electronics, information display modules, fiber-optic/lightwave modules, chip-carrier/PCB assemblies, and ultra low to high power designs and packaging for severe environments.

Teddyne Pines 913
Aurora, IL

A.K. Stewart, F.M. DuMez, D. Waskow, R.W. Kuhn, S. Graupman

The model CXC-10 numerically-controlled semi-rigid coaxial cable bending machine.

Telephonics/PRD Instruments 312
Huntington, NY

R. Freedman, J. Levy, H. Ruschmann

Microwave components and test equipment.

Texas Instruments 729
Dallas, TX

P. Schurr, T. Kilgo, R. Toole, D. Mize, D. Tupman, S. Nelson, T. McCaffrey, S. Lazar

Microwave military components and foundry services for custom designs, standard MMICs and custom components covering frequencies from 110 MHz to 20 GHz.

Texcel Inc. 1306
Westfield, MA

R. Lalli

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

Thermocarbon Inc. 219
Casselberry, FL

F. Wada

Dicing blades for die separation of micro-electronic circuits; dicing services and research and development on dicing applications.

Thin Film Technology 1308
Buellton, CA

J. Wafer, K. Wafer

Custom thin-film circuits; custom services, including metalization and custom patterning of alumina, aluminum nitride, beryllia, ferrite, fused quartz and silicon substrates using etchback, liftoff and pattern plating techniques with plated through via holes.

Thomson Composants Microondes 315
Massy, France

V. Piazzini, J. Magarshack, H. Charlin, C. Delattre

MMICs, FETs, DSPs, diodes, MMIC foundry, MHMIC foundry, amplifiers, microwave sources, phase-locked loops, phase shifters, frequency synthesizers, and modular functions, including T-PAK®.

THOMSON-ICS 319
Southwick, MA

D. Kleim, P. Dufillie, C. Marliac, G. Walter, H. Gautier

SAW and BAW devices, acousto-optic components, modules and subsystems. SAW filters, dispersive delay lines, low loss filters, pulse compressors, BAW delay lines and modules.

Times Microwave Systems 215
Wallingford, CT

P. Page, J. Palasciano, J. Riter, Jr.

High performance broadband microwave ca-

ble assemblies for airborne, shipboard, ground-based, radar, communications, and missile systems; specialty engineered cables and MIL-C-7 coaxial cable.

TRAK Microwave 436
Tampa, FL

T. Roberts, J. Krastel, S. Altimari, G. Pate

MIC shielded circulators; frequency synthesizers; dielectrically-stabilized, crystal-controlled, voltage-controlled and YIG-tuned oscillators; GaAs FET, IF and bipolar transistor power amplifiers; frequency multipliers; comb generators; YIG filters; microstrip, coaxial and waveguide isolators/circulators; directional couplers; 3 dB hybrids and power dividers.

Transco Products Inc. 912
Camarillo, CA

J. Fricke, L. Neeley, J. Underhill

Coaxial and waveguide RF/microwave antennas, switches, components and assemblies.

Trilithic Inc. 129
Indianapolis, IN

B. Malcom, B. Binninger, D. Distler

Filters to 18 GHz including miniature, L/C, cavity, tubular, and waveguide; attenuators including fixed pad, programmable, and variable; ATE equipment including matrix and RF switches; 1 GHz test equipment including spectrum analyzer, sweep generator, and comparator; test components, including SWR bridges, calibrated mismatches, detectors, feed through terminations, DC blocks, and matching pads.

Trim-Tronics Inc. 732
Cazenovia, NY

J. Dowd, M. Tronser, D. Hamilton

Air variable capacitor, sapphire variable capacitors and microwave tuning elements.

TriQuint Semiconductors Inc. 601
Beaverton, OR

D. Powers, M. Kilgore, B. Fournier, L. Pengue, P. Snow

GHz digital, linear and microwave GaAs IC products for use in the communication, computer, instrumentation and military/aerospace fields in the development and manufacturing of both custom and semicustom GaAs IC components.

TRM Inc. 1134
Manchester, NH

A. Butts, A. Tirollo, R. St. Laurent

Directional couplers, power dividers, hybrids and custom components operating from DC to 26 GHz.

Trontech Inc. 1120 Neptune, NJ <i>A. Arbuckle, C. Brand, P. Mi</i> 1 KHz to 6 GHz RF and microwave amplifiers, including low noise amplifiers, broadband medium and high power to 20 W class A, 100 W class C.	HEMT MMICs, GaAs and 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.	ators; microwave scalar analyzers and peak power meters; and RF components.
TTE Inc. 916 Kirkland, WA <i>D. Zavad, S. Sodaro</i> Active and passive electrical wave filters, including anti-aliasing filters, delay equalized video filters, sin x/x correction filters, IF bandpass filters, telemetering bandpass filters, ansi bandpass filters, programmable filters and filter systems, covering the frequency range of 0.1 Hz to 500 MHz.	Vari-L Co. 318 Denver, CO	Wavetek Microwave Inc. 719 <i>See Wavetek Corp.</i>
United Glass to Metal Sealing Inc. 911 Chelmsford, MA	Vectron Laboratories Inc. 420 Norwalk, CT <i>R.J. Peters, M. Scinto, D. Stewart</i> Crystal and non-crystal controlled oscillators from 0.1 Hz to 1 GHz, including sinewave and all logic outputs; XOs TCXOs, TC/VCXOs, VCXOs, VCOs, and OCXOs.	Wavetek RF Products Inc. 719 <i>See Wavetek Corp.</i>
UTE Microwave Inc. 921 Asbury Park, NJ <i>L. Nilson, B. Scammel, J. Simms, J. Greenwood</i> Ferrite circulators, waveguide and coaxial isolators, iso-adaptors, iso-filters, waveguide low power loads, filters and subassemblies.	Vectronics Microwave Corporation 1214 Middlesex, NJ <i>J. Vogler, T. Vogler, S. Dec, J. Papalski</i> Microstrip digital phase shifters, frequency translators, digital and analog attenuators, vector modulators, monoprobe converters and networks, PSK/QPSK modulators and passive microstrip components.	West-Bond Inc 638 Anaheim, CA <i>I. Malcolm, V. Bezjian, S. Kirby, M. Chrasteky</i> Tweezer die attach machine for extremely delicate chips such as super-thin GaAs FETs.
Varian Associates 1041 Canada Microwave Division Georgetown, Ontario, Canada <i>N. Emptage</i> High power klystrons for communications and radar applications; high power extended interaction klystrons in both oscillator and amplifier forms for CW and pulse applications from 30 GHz to 280 GHz; and integrated mm-wave transmitters for radar and communications systems.	Voltronics Corp. 1336 E. Hanover, NJ <i>S. Newman, W. Smith</i> Precision trimmer capacitors in glass, quartz, air, sapphire and teflon dielectrics; non-rotating piston and internal o-ring seal; non-magnetic trimmers, DRO and cavity tuners.	Western Microwave Inc. 600 Sunnyvale, CA <i>F. Oliveri, J. Lautermilch, F. Marki, A. St. John-Brooks</i> GaAs FET amplifiers: microwave mixers and integrated RF subassemblies, LVAs, and microwave ferrite devices, including drop-in microstrip units, filters and RF channelizer assemblies.
Varian Associates 1041 RF Subsystems Division Beverly, MA <i>C. Davis, J. Renner, P. Murston</i> IF signal processing components and subsystems, including monolithic log amplifiers, log amplifiers, limiting amplifiers, frequency discriminators, phase detectors and phase detection subsystems for applications in EW and ESM.	Wandel & Goltermann, Inc. 1412 Morrisville, NC	Wiltron Co. 829 Morgan Hill, CA <i>B. Bathiany, M. Grace, W. Baxter, F. Torrellio, D. Kindblom, R. Thornburn, B. Wiedemann, J. Niehues, R. Beers, T. Kitbourne.</i> RF and microwave and test instrumentation, including vector network analyzers, scalar network analyzers, swept frequency synthesizers, precision measurement components; pulsed RF vector analysis and universal fixture for testing of microstrip circuits capabilities.
Varian Associates 1041 Solid-State Microwave Division and III-V Device Center Santa Clara, CA <i>M. Kopeck, B. Quinn, R. Hamilton, W. Ou, G. Bechtel, D. Merkley, F. Olsen, W. Day</i> Epi and custom chip foundry MESFET and	Watkins-Johnson Company 223 Palo Alto, CA <i>S. Algeri, T. Blaney, J. Cochrane, J. de Leon, L. Dessert, B. Hoglund, J. Hyde, A. Isaacs, N. Nelson, J. Schram, J. Spear, T. Wilson, S. Witmer, B. Gardner, T. Burkhard</i> 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.	W.L. Gore & Associates 641 Flagstaff, AZ
	Wavetek Corp. 719 San Diego, CA <i>L. Dolan, B. Hynes, J. White, H. Stitt, K. Anderson, T. Whitacre, D. Armann, S. Fox, S. Musmann, D. Morikawa</i> RF and microwave signal and sweep gener-	XL Microwave Inc. 529 Oakland, CA <i>R. Swift, D. Thornton, D. Nipper, B. Blay, B. Lawrence, J. Engel, M. Ikard, D. Tarver, W. Artz, R. Kieft</i> Microwave counter from 10 MHz to 20 GHz, 1 z resolution, and microwave CW counters to 3 GHz, 8 GHz, 12.4 GHz and 20 GHz.
		ZAX Millimeter Wave Corp. 1224 San Dimas, CA <i>D. Zacharias, R. Moreno, S. Rigdon</i> 44 to 350 GHz mm-wave components and systems, including antennas, detectors, cryogenic mixer, subharmonic and balanced mixers; fixed frequency, mechanically-tuned and varactor-tuned Gunn oscillators; frequency multipliers; calibration loads; radars and radiometers.