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Acronyms and Abbreviations Used by the RF/Microwave Industry: Part II

Part two of a two-part list of acronyms and abbreviations used in Microwave Journal and by others in the RF/microwave industry

March 1, 1997

[Frank Bashore](#)

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Acronyms and Abbreviations Used by the RF/Microwave Industry: Part II

Part two of a two-part list of acronyms and abbreviations used in Microwave Journal articles over the past few years follows. Part one appeared in the February issue.

- **GMDSS** Global Maritime Distress Signal System
- **GMSK** Gaussian-filtered minimum-shift keying
- **GPB** general-purpose interface bus
- **GPR** ground-penetrating radar
- **GPRS** General Packet Radio Service
- **GPS** Global Positioning System/Satellite
- **GSM** Global System for Mobile communications
- **GSM-900** Group Speciale Mobile (European GSM)
- **GSO** geostationary orbit
- **G/T** receive antenna gain divided by noise temperature
- **HARM** high speed antiradiation missile
- **HBT** heterojunction bipolar transistor
- **HDSL** high bit-rate digital subscriber line
- **HDTV** high definition television
- **HEMT** high electron mobility transistor
- **HEO** high elliptical orbit (satellite)
- **HFC** hybrid fiber/coax
- **HFET** heterostructure field-effect transistor
- **HGA** high gain antenna
- **HLR** home location register
- **HMIC** hybrid microwave integrated circuit
- **HPA** high power amplifier
- **HTS** high temperature superconductor
- **IBW** instantaneous bandwidth
- **IC** integrated circuit
- **IDECM** integrated defense electronic countermeasures
- **IDFT** inverse discrete Fourier transform
- **IDT** interdigital transducer
- **IEC** International Electrotechnical Commission
- **IF** intermediate frequency
- **IFF** identification friend or foe

- **IFM** instantaneous frequency measurement
- **IGBT** insulated-gate bipolar transistor
- **IGFET** insulated-gate field-effect transistor
- **IM** intermodulation
- **IMD** intermodulation distortion
- **IMDN** Intelligent Mobile Data Network
- **IMEI** international mobile equipment identity
- **IMP** intermodulation products
- **IMPATT** impact avalanche and transit time
- **IMR** intermodulation rejection
- **IMSI** international mobile subscriber identity
- **INMARSAT** International Maritime Satellite (organization)
- **INS** inertial navigation system
- **IPBO** input power backoff
- **IPC** Institute for Interconnecting and Packaging Electronic Circuits
- **IPS** integrated power systems
- **IQ** in phase/quadrature
- **IR** infrared
- **IRA** impulse radiating antennas
- **IS-95** North American cellular standard
- **ISAR** inverse synthetic-aperture radar
- **ISDN** integrated services digital network
- **ISI** intersymbol interference
- **ISM** industrial, scientific and medical (frequency bands)
- **ISO** International Standards Organization
- **ITM-2000** International Mobile Telecommunication 2000
- **ITS** intelligent transportation systems
- **ITU** International Telecommunication Union
- **IVHS** Intelligent Vehicle Highway System
- **JDC** Japanese Digital Cellular
- **JEDEC** Joint Electronic Device Engineering Council
- **JFET** junction field-effect transistor
- **JPEG** Joint Picture Experts Group (compression standard)
- **KGD** known-good die
- **LAN** local area network
- **LAO** LaAlO₃ (substrate)
- **LC** inductor/capacitor
- **LCD** liquid-crystal display
- **LD** laser diode
- **LEC** liquid encapsulated Czochralski (semi-insulating substrate)
- **LEO** low earth orbit (satellite)
- **LHCP** left-hand circular polarization
- **LIDAR** light direction and ranging
- **LMS** location and monitoring services
- **LNA** low noise amplifier

- **LNB** low noise block
- **LNBF** low noise block feed
- **LO** local oscillator
- **LOS** line of sight
- **LPE** lowpass equivalent
- **LPF** lowpass filter
- **LPI** low probability of intercept
- **LRRM** line-reflect-reflect-match
- **LSG** large-signal gain
- **LTCC** low temperature cofired ceramic
- **LTP** long-term predictor
- **MAC** medium access control
- **MBA** multibeam antenna
- **MBE** molecular beam epitaxy
- **MCE** manufacturing cycle efficiency
- **MCF** message communication function
- **MCL** microstrip constrained lens
- **MCM** multichip module
- **MCPA** multicarrier power amplifier
- **MCPW** microstrip coplanar waveguide
- **MCT** metal-oxide semiconductor-controlled thyristor
- **MDS** multipoint distribution system
- **MEADS** medium extended air defense system
- **MESFET** metal semiconductor field-effect transistor
- **MEO** medium earth orbit (satellite)
- **MIM** metal-insulator-metal (capacitor)
- **MIMIC** millimeter-wave and microwave integrated circuit (program)
- **MIR** microwave impulse radar
- **MLC** main lobe clutter
- **MLCM** multilevel coded modulation
- **MLDD** matched-line directional divider
- **MMC** metal-matrix composite
- **MMI** man-machine interface
- **MMIC** monolithic microwave integrated circuit
- **MMW** millimeter wave
- **MOCVD** metal-organic chemical vapor deposition
- **MODEM** modulator/demodulator
- **MoM** method of moments
- **MOS** metal-oxide semiconductor
- **MPEG** Motion Picture Experts Group
- **MPIE** mixed potential integral equation
- **MPM** microwave power module
- **MQW** multiquantum well
- **MQW-FP** multiquantum well Fabry-Perot optical transmitter
- **MS** mobile station

- **MSBVW** magnetostatic backward volume waves
- **MSC** mobile switching center
- **MSFVW** magnetostatic forward volume waves
- **MSI** medium-scale integration
- **MSMT** micro surface-mount technology
- **MSOP** mini (micro) small outline package
- **MSS** mobile satellite system
- **MSSW** magnetostatic surface waves
- **MSW** magnetostatic wave
- **MTA** microwave transition analyzer
- **MTBF** mean time between failures
- **MTD** moving-target detection
- **MTI** moving-target indicator
- **MTTF** mean time to failure
- **MU** minimum stability factor
- **MUNDI** multiplexed network for distributed and interactive services (UK)
- **MUX** multiplexer
- **MVDS** multipoint video distribution system
- **NADC** North American Dual-mode (or Digital-mode) Cellular
- **N-AMPS** narrowband Advanced Mobile Phone System/Service
- **NEMA** National Electrical Manufacturers Association
- **NGA** noise gain analyzer
- **NGSO** nongeostationary orbit
- **NIC** network interface card (WLAN)
- **NIST** National Institute of Standards and Technology
- **NMC** network management center
- **NMR** nuclear magnetic resonance
- **NODS** near obstacle detection system
- **NPR** noise power ratio
- **NPRM** notice of proposed rule making
- **NQR** nuclear quadruple resonance
- **NRZ** nonreturn to zero
- **NSSN** National Standards System Network
- **NTSC** National Television Systems Committee
- **OAD** optical admittance diagram
- **OBU** onboard unit
- **OCDMA** orthogonal code-division multiple access
- **OCPAR** optically controlled phased-array radar
- **OCXO** oven-controlled crystal oscillator
- **OEIC** optoelectronic integrated circuit
- **OEM** original equipment manufacturer
- **OFDM** orthogonal frequency-division multiplex
- **OFHC** oxygen-free high conductivity (copper)
- **OFS** operational fixed service
- **OMC** operations and maintenance center

- **OOK** on-off keying
- **OPBO** output power backoff
- **OPIP** output power intercept point
- **OPLL** optical phase-locked loop
- **OQPSK** offset-quadrature phase-shift keying
- **OSI** open systems interconnection
- **OTDR** optical time-domain reflectometer
- **OTH** over the horizon
- **PA** power amplifier
- **PAA** phased-array antenna
- **PACS** personal access communications system (US version of PHS)
- **pACT** personal air communications technology
- **PAE** power-added efficiency
- **PAL** programmable array logic
- **PAL** phase-alternation line (video)
- **PAM** pulse amplitude modulation
- **PAN** public-access network
- **PBX** personal branch exchange
- **PCI** peripheral component interconnect
- **PCIA** Personal Communication Industry Association
- **PCM** pulse code modulation
- **PCMCIA** Personal Computer Memory Card International Association
- **PCN** personal communications network
- **PCS** personal communications service
- **PCU** power conditioning unit
- **PD** pulsed Doppler
- **PDC** personal digital cellular
- **PDF** probability distribution function
- **PDH** plesiochronous-digital hierarchy
- **PDIP** plastic dual-in-line package
- **PEBB** power electronic building block
- **PECVD** plasma-enhanced chemical vapor deposition
- **PEEC** partial element equivalent circuit
- **PEP** peak envelope power
- **PEP** primary entry point
- **PHEMT** psuedomorphic high electron mobility transistor
- **PHP** Personal Handyphone, JPHP (Japan, 1895.15 to 1905.15 MHz)
- **PHS** personal handyphone system (Japan)
- **PHY** physical layer (WLAN)
- **PIC** photonic integrated circuit
- **PIM** passive intermodulation
- **PIN** positive-intrinsic-negative (diode junction)
- **PLL** phase-locked loop
- **PLMN** private land mobile network
- **PM** phase modulation

- **PMD** polarization-mode dispersion
- **PMOS** positive metal-oxide semiconductor
- **PMR** private mobile radio
- **PN** pseudorandom noise
- **PNF** planar near field (range)
- **PON** passive optical network
- **POCSAG** Post Office Code Standardization Advisory Group (paging)
- **POFS** private operational fixed service
- **POTS** plain-old telephone service
- **PPM** periodic permanent magnet (focused)
- **PPM** pulse position modulation
- **PQFP** plastic quad flat pack
- **PRBS** pseudorandom binary/bit sequence
- **PRF** pulse repetition frequency
- **PROM** programmable read-only memory
- **PSA** polysilicoelf-aligned (bipolar transistor)
- **PSD** power spectral density
- **PSK** phase-shift keying
- **PSTN** public switched telephone network
- **PTFE** polytetrafluoroethylene
- **PTO** public telecommunications operator
- **PTT** post, telephone and telegraph (Europe)
- **P1dB** 1 dB compression point
- **QAM** quadrature (quaternary) amplitude modulation
- **QIFM** quadrature intermediate frequency mixer
- **QPSK** quadrature phase-shift keying
- **QRNS** quadratic residue number system
- **QWIP** quantum well infrared photodetector
- **QWR** quarter-wave rule
- **RACH** random-access channel
- **RADAR** radio detection and ranging
- **RAM** radar-absorbing material
- **RAM** random-access memory
- **RAP** radar-absorbing paint
- **RAS** radio astronomy synthesis
- **RBER** residual bit error ratio
- **RBW** resolution bandwidth
- **RCS** radar cross section
- **RDS** radio data system
- **RELP** residually excited linear predictive coder
- **RF** radio frequency
- **RFID** radio frequency identification
- **RFMU** radio frequency monitoring unit
- **RFS** radio frequency simulator
- **RHCP** right-hand circular polarization

- **RIN** relative intensity noise
- **RISC** reduced instruction set computing
- **RLL** radio local loop
- **RMS** root mean square
- **ROTHR** relocatable over-the-horizon radar
- **RRC** raised-root cosine
- **RRE** radar range equation
- **RSSI** received signal strength indicator
- **RSU** roadside unit (auto toll collecting)
- **RwoH** reliability without hermeticity
- **RWR** radar-warning receiver
- **RX** receiver/receive
- **SA** selective availability (GPS error introduction/correction)
- **SAR** search and rescue
- **SAR** synthetic aperture radar
- **SAT** supervisory audio tone
- **SATCOM** satellite communications (SATCOM Agency, Department of Defense)
- **SAW** surface acoustic wave
- **SBN** single-sideband phase noise
- **SCFL** source-coupled field-effect transistor logic
- **SCPI** industry-standard commands for programmable instruments
- **SCSI** small computer standard/system interface
- **SDH** synchronous digital hierarchy (European telecommunication)
- **SDLA** successive detection log amplifier
- **SDMA** spatial-division multiple access
- **SEAD** suppression of enemy air defenses
- **SEM** scanning electron microscope
- **SES** severely errored seconds
- **SFDR** spurious-free dynamic range
- **SHF** super high frequency
- **SIGINT** signal intelligence
- **SIM** subscriber identity module
- **SINAD** signal-to-noise and distortion (ratio)
- **SIR** stepped impedance resonator
- **SLM** spatial light modulator
- **SMI** sample matrix inversion
- **SMP** subminiature push-on (connector)
- **SMP** surface-mount package
- **SMR** specialized mobile radio
- **SMS** short message service
- **SMT** surface-mount technology
- **SNA** scalar network analyzer
- **SNR** signal-to-noise ratio
- **SOIC** small-outline integrated circuit
- **SOLT** short-open-load-thru (calibration)

- **SONET** synchronous optical network (US telecommunications)
- **SOT** small-outline transistor
- **SP3** third-order suppression
- **SPC** statistical process control
- **SPRE** satellite position reporting equipment
- **SSB** single sideband
- **SSBW** surface-skimming bulk wave
- **SSD** simultaneous signal detection
- **SSG** small-signal gain
- **SSI** small-scale integration
- **SSOP** shrink small outline package
- **SSOT** shrink small outline transistor
- **SSPA** solid-state power amplifier
- **SSR** surface search radar
- **STALO** stable local oscillator
- **STM** synchronous transport module (1 STM = 155 Mbps)
- **STOVL** short takeoff, vertical landing (aircraft)
- **STW** surface transverse wave
- **SWR** standing wave ratio
- **TACAN** tactical air navigation
- **TACS** Total Access Communication System
- **TAG** technical advisory group
- **TARD** towed active radar device
- **TBCCO** thallium barium calcium copper oxide
- **TCH** traffic channel
- **TCM** trellis-coded modulation
- **TCR** temperature coefficient of resistance
- **TCXO** temperature-compensated crystal oscillator
- **TDD** time-division duplex
- **TDD** time-domain duplex
- **TDMA** time-division multiple access
- **TDWR** terminal Doppler weather radar
- **TE** transverse electric
- **TEC** thermal electric cooler
- **TEM** transverse electromagnetic mode
- **TETRA** trans-European trunked radio
- **TFT** thin-film transistor
- **TFTS** terrestrial flight telephone system
- **TM** transverse magnetic
- **TMN** telecommunication management network
- **TOI** third-order intercept (point)
- **T/R** transmit/receive
- **TRAC** Technical Regulations Application Committee (of ETSI)
- **TRAM** transimpedance amplifier
- **TRP** Technology Reinvestment Program (NIST)

- **TRL** thru-reflect-line (calibration)
- **TS** timeslot
- **TSOP** thin small outline package
- **TSS** tangential signal sensitivity
- **TTD** true time delay
- **TTL** transistor-transistor logic
- **TWTA** traveling-wave-tube amplifier
- **TX** transmit/transmitter
- **UAV** unmanned aerial vehicles
- **UFMOP** unintentional frequency modulation on pulse
- **UIM** uniform impedance resonator
- **UM** unintentional modulation
- **UMTS** Universal Mobile Telecom System (Europe)
- **UPT** universal personal telecommunications
- **USAT** ultra-small aperture terminals
- **UWB** ultra-wideband
- **VANA** vector automatic network analyzer
- **VBW** video bandwidth
- **VCO** voltage-controlled oscillator
- **VDU** video display unit
- **VISA** virtual instrument software architecture
- **VLR** visitor location register
- **VLSI** very large-scale integration
- **VMEbus** versa module Eurocard computer bus
- **VNA** vector network analyzer
- **VSAT** very small aperture terminal
- **VSF** vestigial sideband modulation
- **VSWR** voltage standing-wave ratio
- **VXIbus** VMEbus extension for instrumentation
- **WAAS** wide area augmentation system (GPS ground based)
- **WADSP** wideband acquisition/digital signal processing
- **WAN** wide area network
- **WDM** wavelength division multiplexing
- **WDDM** wavelength division demultiplexing
- **WLAN** wireless local area network
- **WLL** wireless local loop
- **XFCB** extra-fast complementary bipolar
- **XPIC** cross-polar interference canceller
- **XPOL** cross-polarization level
- **YBCO** yttrium barium copper oxide
- **YIG** yttrium iron garnet
- **YTO** YIG-tuned oscillator

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RF/Microwave Calculator and Converter Apps

July 7, 2010

I recently came across this very nice microwave toolbox for Android mobile devices that Faust Nijhuis developed (posted on our LinkedIn Community). He has created a free lite version with a few useful calculators and a 1.99 euro version that has 6 calculators and 2 converters for the full toolbox. Below are a couple of sample screen shots from his web site. MW calculator lite is the lite and free version of the microwave tool box with the following tools: PI and T attenuator calculator Reflectometer calculator Mismatch error limits calculator MW calculator is a microwave tool box with...

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August 4, 2008

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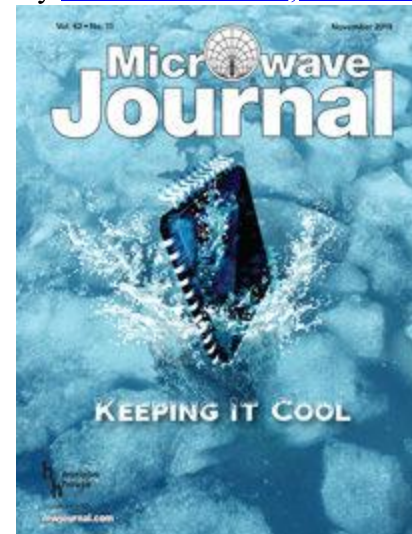
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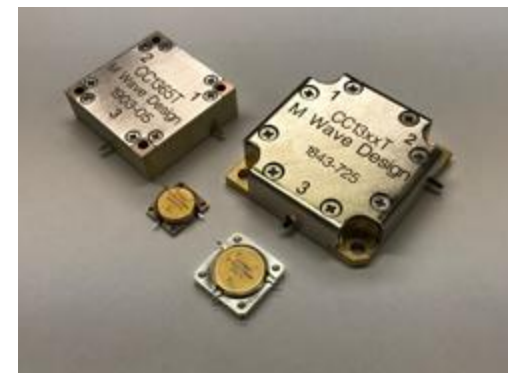
Low Loss Circulators for UHF, L-, S-, C- and X-Band AESAs

June 12, 2019

[M-Wave Design Corp., Simi Valley, Calif.](#)

Active electronically scanned arrays (AESA) have proven to be the superior architecture for airborne, ship and ground-based radar. In addition to improved reliability and dynamic beam steering - with multiple beams at different frequencies - AESAs have low probability of intercept, are resistant to jamming and can simultaneously provide functions beyond radar, such as data links.

Achieving the maximum system performance from an AESA requires the best circulator performance. System engineers are always pushing for higher output power during transmit and better sensitivity during receive, within severely constrained size and weight budgets, and the circulator's insertion loss and power handling are key parameters setting the radar's range and overall system efficiency. As AESA radars typically employ thousands of T/R modules, unit-to-unit variability and low cost are also key criteria.



M Wave Design's engineering team has successfully developed many small, high-power circulators for AESA radar systems. Designed for high-volume manufacturing with minimal assembly labor, they are cost-effective and have repeatable performance, high-power handling and low insertion loss, to help maximize the dynamic range of the radar. M Wave Design's current products cover the common radar bands at UHF, L-, S-, C- and X-Band and achieve a small footprint for the operating frequency band.

AESA circulators are one example of M Wave Design's capabilities. During more than 30 years designing and manufacturing passive waveguide and coaxial components, including high- power ferrite products, M Wave has developed a unique set of tools and heritage to solve challenging technical issues, using some of the most innovative design techniques available.

M Wave Design

Simi Valley, Calif.

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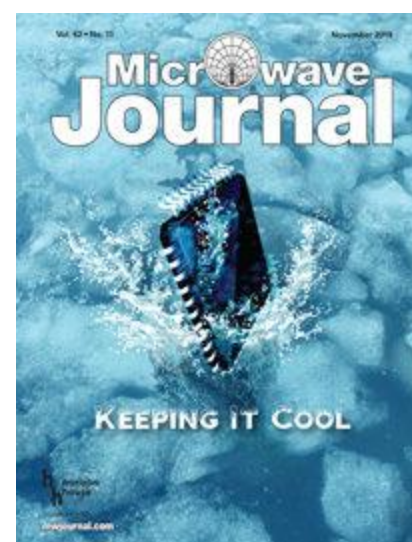
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Around The Circuit

August 4, 2008
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Tensolite, a division of Carlisle Companies Incorporated, announced that it has changed its name to **Carlisle Interconnect Technologies**. The name change comes on the heels of Tensolite's recent acquisition of Carlyle Inc., a manufacturer of custom wire and cable harnesses, rack and panels and cable assemblies for in-flight entertainment systems and specialty avionics applications. By combining their staffs, technologies and products, Tensolite and Carlyle Inc. have created Carlisle Interconnect Technologies, a vertically integrated supplier of complete interconnect solutions.

Giga-tronics Inc. and **CAP Wireless Inc.** announced a joint technology, marketing and support agreement in which Giga-tronics will incorporate CAP's unique Spatium™ spatial combining technology into its GT-1000A microwave power amplifier. The GT-1000A rack-mount broadband power amplifier, combined with the Spatium engine, delivers outstanding performance and exceptional value for electromagnetic interference/compatibility (EMI/EMC) test, semiconductor evaluation, load pull, antenna range and microwave laboratory applications.

Cascade Microtech announced a new initiative to develop integrated measurement systems for on-wafer semiconductor device characterization and process development. This approach results in increased performance and accuracy as well as better, faster service and support, and renders obsolete the traditional practice of bolting together system elements from multiple vendors. Because each system is designed from the ground up to optimize measurement capability, Cascade Microtech's integrated measurement systems offer certified measurement accuracy. The first such system, also being announced, is the EDGE Flicker Noise Measurement System.

AWR® and **United Monolithic Semiconductors (UMS)** introduced an advanced process design kit (PDK) for the UMS PPH25X GaAs pseudomorphic high electron mobility transistor (PHEMT) foundry process. The UMS PPH25X process is dedicated to the design of microwave monolithic integrated circuits (MMIC) at frequencies up to 35 GHz. The PDK lets users take advantage of the fabrication capabilities of UMS together with AWR's Microwave Office® design suite.

Shared Spectrum Co. (SSC) successfully demonstrated the company's Dynamic Spectrum Access (DSA) technology, proving its capabilities on multiple hardware platforms in harsh military mobile radio environments. The field demonstration, conducted at the Army's Yuma Proving Ground in the Arizona desert, was the latest large-scale field test of SSC's technology as part of the NeXt Generation (XG) radio program of the Defense Advanced Research Projects Agency (DARPA). The tests were witnessed by command and combat personnel from the US Army and the US Marine Corps looking for better ways to manage and access crowded radio spectrum resources.

Talley Communications Corp., a distributor of wireless communications infrastructure and mobile products, announced the opening of a new warehouse in New Braunfels, TX. This facility follows Talley's Dallas facility, which opened in early March. The focus of this location is to service the wireless contractors and carriers in central and southern Texas. The Dallas facility is located at: 263 Lucinda Drive, New Braunfels, TX 78130. The direct phone number is (830) 608-1123, or e-mail sales@talleycom.com.

Orient Microwave has doubled the size of its headquarters with the construction of a second building alongside the original in Higashiomi City, Shiga, Japan. The new facility houses a new anechoic chamber and clean room, which complements the company's test and measurement instruments, design simulators and environmental equipment that includes constant temperature ovens and a constant temperature, constant humidity helium leak detector. The expansion has also increased the workforce at the headquarters to 93.

Antenna design and manufacturing company **mWAVE Industries LLC** has recently moved its operation to a newly constructed, larger, more modern facility located adjacent to the mWAVE outdoor antenna test range located in the town of Windham, ME. This new facility provides mWAVE with the needed space to efficiently increase antenna production capacity and expand its antenna design capability into new antenna markets. The new address is: 33R Main Street, Unit 1, Windham, ME 04062. The new phone number is: (207) 892-0011.

Hittite Microwave Corp. announced it has received its AS9100 B certification for the design and manufacture of MMIC and MMIC assemblies for RF and microwave applications for the aerospace industry. In addition to receiving this new certification, the company was recertified to the ISO 9001:2000 standard, which it has maintained since 1997. The company was audited and certified by TÜV SÜD America Inc.

Contracts

Elcom Technologies Inc. announced that it has received two orders totaling \$1 M for very high frequency and ultra high frequency (VHF/UHF) receivers from an international defense customer. The Elcom SIR 3000 receiver series cover the frequency range of 20 to 3000 MHz and IF output bandwidths of up to 80 MHz. Industry leading scanning speed and a flexible Software Defined Radio (SDR) architecture are some of the contributions the SIR 3000 series makes to the COMINT/SIGINT market. It also provides state-of-the-art RF DSP resulting in exceptional spurious performance.

TRAK Microwave Corp., a Smiths Interconnect business, announced that it has been selected by the **General Dynamics-Lockheed Martin** team for the US Army's Warfighter Information Network – Tactical (WIN-T) program to supply Model 9000S Selective Availability Anti-Spoofing Module (SAASM) Modular Time Code Processors and other support equipment. The processors will provide SAASM precision time code and frequency synchronization for WIN-T, the Army's transformational battlefield communications network.

Auriga Measurement Systems LLC announced that it has signed a multi-year contract with **Government Sales Force** (GSF), McLean, VA, to lead the company's sales effort for design services and RF microwave and millimeter-wave module products in the federal sector.

Financial News

Ansoft Corp. reports sales of \$33.9 M for the fourth quarter of fiscal 2008 ended April 30, 2008, compared to \$28.6 M for the same period in 2007. Net income for the quarter was \$10.7 M (\$0.43/per diluted share), compared to a net income of \$8.7 M (\$0.33/per diluted share) for the fourth quarter of last year.

Merrimac Industries Inc. reports sales of \$5.8 M for the first quarter ended April 30, 2008, compared to \$4.5 for the same period in 2007. Net loss for the quarter was \$372,000 (\$0.13/per share), compared to a net loss of \$1.3 M (\$0.41/per share) for the first quarter of last year.

Personnel



Ducommun Technologies announced that **Daniel Avina** has joined Ducommun Technologies as sales representative. Avina will be responsible for working with customers to promote Ducommun parts and ensure selection of the right components for their individual requirement. Prior to joining Ducommun Technologies, Avina was with Maury Microwave.

Astron Wireless Technologies Inc. announced the addition of **Angel "A.J." Garcia** to its team as business development manager of the defense division. Garcia comes to Astron with an extensive background providing IT and communications products and services to the federal government. His previous positions include



management of business development programs and support operations for two technology firms based in northern Virginia. A US Army veteran, Garcia served 21 years throughout Europe, Asia and South America.



Smiths Interconnect, part of the global technology business Smiths Group, announced the addition of **Dave Hoover** to its sales and marketing staff as western regional sales manager. Hoover brings over 20 years experience in OEM sales and product marketing management primarily within the connector industry.

Most recently, Hoover was the business development manager with a major military connector manufacturer, Deutsch. Hoover will reside out of Phoenix, AZ and be focused on business development, market expansion and major account management for the western region of the US. He can be reached at (520) 568-5405 or e-mail: dhoover@sabritec.com.

Stephen F. Adam passed peacefully with his family by his side on June 4, 2008. He was born in Budapest, Hungary, and then immigrated to the United States in 1956. He became a citizen in 1962. A long time resident of Santa Clara County for over 52

years, he helped shape the valley success of Hewlett Packard in the area of microwave instrumentation. He was a pioneer in the field of microwave theory and technique. He made significant contributions as an inventor (over 15 patents), an author (multiple books) and an instructor (Foothill College). Adam's loved being able to further the field of engineering, where he spent his life learning and contributing. He was a past president of IEEE, and active board member. He was president of Adam Microwave Consulting Inc., which he started in 1981.

Rep Appointments

Digi-Key Corp. and **TriQuint Semiconductor Inc.** announced that the companies have entered into a global distribution agreement. TriQuint Semiconductor supplies high-performance modules and components for communications companies worldwide and is a leader in market diversity across wireless handsets, base stations, broadband communications, space and military products. TriQuint products stocked by Digi-Key are available for purchase directly from Digi-Key. The terms of this distribution agreement will enable Digi-Key to fulfill both the engineering and production quantity needs of its diverse customer base.

Richardson Electronics Ltd. announced it has signed a global distribution agreement with **HVVi Semiconductors Inc.**, Phoenix, AZ, to distribute its RF power transistors, based on HVVi's innovative, new HVVFET™ architecture. HVVi recently announced the first major advance in silicon RF power transistor design in more than 15 years. Based on the world's first High Voltage Vertical Field Effect Transistor (HVVFET), this new architecture delivers frequency bandwidth, voltage and power levels to radar and avionic applications with improved performance, reducing overall part count and enhancing cost efficiencies.

ClearComm Technologies LLC announced the appointment of **MicroCom Sales** headquartered in Midland Park, NJ. MicroCom will cover the entire states of New York and New Jersey, eastern Pennsylvania and Fairfield County, Connecticut. This group brings broad experience and complimentary products to ClearComm. ClearComm is a manufacturer of filters, duplexers, diplexers and RF assemblies covering the frequency range from 10 MHz to 18 GHz. Contact MicroCom sales main office at (201) 669-7599 or e-mail: info@microcomsales.com or contact ClearComm Technologies at (410) 860-0500 or email: sales@clearcommtech.com.

AnaPico AG has selected **Saelig Co. Inc.** of Pittsford, NY, as its US distributor. AnaPico is a Swill RF and microwave company focused on products for the test and measurement industry, offering high-performance compact Signal sources, packaged key components and modules. It is becoming well-know in Europe for its economical portable RF signal generators and the agreement with Saelig signals its intentions to expand its US business. Saelig is a rapidly growing importing electronics distributor, with a 20-year history of providing in-depth technical Support as well as sales services to manufacturers world- wide.

Lorch Microwave announced the appointment of **NWN Inc.** of San Jose, CA, as the exclusive sales representative for northern California. In addition, **RF Alliance** Has been appointed the exclusive representative for Pennsylvania, New Jersey and metropolitan New York and Long Island.

Agilent Technologies Inc. has appointed **OTC Ireland** as a new distributor for its test and measurement products in Ireland. The agreement will cover the company's range of data acquisition, connectivity solutions, basic power supplies, bench-top and handheld digital multimeters and oscilloscopes, including the latest InfiniiVision 7000 Series oscilloscopes. OTC Ireland is the second distributor appointed to be responsible for sales of Agilent products within Ireland. Farnell will continue to operate as the company's Pan-European distributor. The new appointment is intended to further strengthen Agilent's sales channel in Europe, especially for the company's expanding range of low cost basic instruments.

LadyBug Technologies LLC recently announced that the company has expanded its sales and distribution network to accommodate a dramatic 2008 increase in both sales inquiries and orders. **Jay Stone Associates** will be responsible for northern California and can be contacted at (408) 428-2500 or e-mail: sales@jsarep.com; **Hi-Tech Sales** will handle the New England states and can be reached at (603) 938-2992 or e-mail: jlalla@htssales.com; **Sertech** will cover the mid-atlantic states and can be contacted at (215) 628-8085 or e-mail: info@sertech.info; and LadyBug sales will handle all other states and can be reached at (866) 789-7111 or e-mail; sales@ladybug-tech.com. LadyBug Sales will also handle Canada and can be contacted at (707) 546-1050 or e-mail: sales@ladybug-tech.com.

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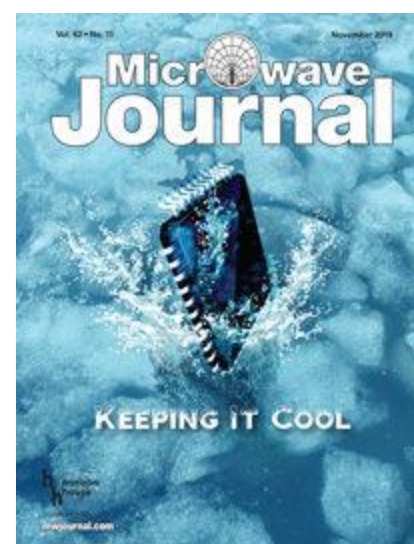
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