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MACOM to Showcase Extensive RF and Microwave Capabilities and Foundry Services at IMS2024

Lowell, MA, June 13, 2024 -- MACOM Technology Solutions Inc. ("MACOM"), a leading supplier of semiconductor products, will showcase its latest RF, microwave and millimeter wave products at **Booth #921** and its enhanced foundry services at **Booth #744** at the IEEE MTT-S International Microwave Symposium (IMS) in Washington, DC from June 18 to 20, 2024.

MACOM will be highlighting more than 14 technology demonstrations at the show, spanning its various product lines, including Diodes, RF Power, MMIC and Linear Modules and Subsystems. The booth will feature the latest new product additions to the company's broad product portfolio. MACOM will also be highlighting its expanded Foundry services offerings at the show. Customers and attendees will have the opportunity to engage with MACOM's design engineering, product management and applications engineering teams who will provide in-depth explanations of MACOM's solutions and benefits.

IMS2024 demonstrations and new product announcements will include:

- **GaN-on-SiC MMIC Ka-Band Power Amplifier:** This demonstration showcases a 6 W driver and a 10 W PA operating in the 33 to 37 GHz band. These parts are fabricated using MACOM's 140 nm GaN-on-SiC technology.

- **300 W X-Band GaN-on-SiC Matched Power Amplifier:** A new addition to the MACOM RF product portfolio, this amplifier is fully matched to 50 ohms at both input and output ports. Ideal for pulsed radar applications such as marine, defense and weather radar, it provides an ideal combination of output power, signal gain and drain efficiency in a small form factor at 9 GHz.

- **C-Band 100 W GaN-on-SiC Power Amplifier with 57% Power Added Efficiency (PAE):** This GaN Power Amplifier combines high gain and high efficiency for pulsed power applications within a small footprint (7 x 7 mm). This demonstration also features MACOM's XP1044 driver amplifier and MACP-011113 surface mount directional coupler.

- **250 W 2.4 to 2.5 GHz High Power GaN Pallet:** This two-stage GaN Amplifier Pallet, part of MACOM's recently expanded range of RF solutions, is tailored for Industrial, Scientific and Medical (ISM) applications. This turnkey solution features the industry's most efficient microwave CW transistor in a plastic package, enhancing cost effectiveness.

- **GaN-on-Si MMIC Low Noise Amplifier (LNA) with Fast Recovery Time:** By utilizing MACOM's proprietary 100 nm GaN-on-Si technology, MACOM delivers robust low noise LNAs with industry-leading recovery time. This combination of ruggedness, low noise figure and fast recovery time make these LNAs ideal for radar and electronic warfare (EW) applications.

- **GaN Switch:** This demonstration displays MACOM GaN-on-Si switch solutions highlighting a C-Band GaN switch with a P0.1dB of greater than 50 W. In addition, the company's latest high frequency GaN-on-Si switch offerings will be on display.

- **Linearized Q-Band GaN PA MMIC for SATCOM:** This demonstration highlights MACOM linearizer technology. Combining a Q-Band GaN-on-Si amplifier, designed for satellite communications, with a wideband analog linearizer, MACOM will show how it is possible to simultaneously achieve optimal linearity, PAE and output power for SATCOM.

- **Quad L-Band to Ka-Band Block Upconverter:** This integrated solution offers excellent phase noise performance, an analog or digital interface and low sensitivity to microphonics. It simplifies system linearity and provides benefits in terms of cost, size, mass and complexity.

- **X-Band T/R Module (TRM) with 42% PAE:** Designed for X-Band aerospace/defense applications, this demonstration highlights MACOM's WSM5100S multi-chip module which integrates a high power GaN Switch, GaAs Limiter-LNA and GaN PA into a 7x7 mm QFN. This TRM delivers 5 W Output Power with industry-leading efficiency.

- **High Power Reflective SP2T Surface Mount Switch:** Ideal for applications requiring high RF power and surface mount capability, this switch operates between 30 MHz and 5 GHz. It offers high CW power handling up to 200 W along with excellent insertion loss and switching speed, all within a compact package.

- **Broadband High Power Limiter:** With an operating frequency of 2 to 18 GHz and peak power handling up to 1 kW, this RF limiter provides exemplary frequency, insertion loss and high power performance to meet the necessary requirements for receiver protection as well as ship and airborne radar applications.

- **High Power SOI Switch:** This switch features low insertion loss and a symmetric topology, along with excellent linearity, making it perfectly suited for high performance communications systems. The demonstration utilizes a CMPA2060040D1 amplifier as a driver stage and a MACP-011113 surface mount directional coupler to highlight the SOI switch's high compression level.

- **Integrated Filter Technology/Switched Filter Bank:** This demonstration showcases MACOM's various filter technologies and MACOM's capability to integrate filters with other functions (in this case switches) to created switchable filter banks. This demonstration shows bulk acoustic wave (BAW), GaAs and Laminate filters highlighting the strengths of each technology and the potential integration options offered by MACOM.

- **Space and Hi-Rel Products:** MACOM will exhibit a wide range of space and high reliability (Hi-Rel) components and capabilities for free space optics (FSO) systems, including lasers, laser drivers, various photodiodes and transimpedance amplifiers (TIAs). In addition, the MACOM team will present examples of various RF-over-fiber analog photonic subsystems used in high performance satellite communication applications.

In addition to the product showcase, attendees can learn more about MACOM's enhanced foundry services at Booth #744. As a global leader in GaAs and GaN MMIC technology, MACOM offers a wide range of services including research and development, design assistance, custom packaging, testing and support from initial development through production manufacturing. With over 70 years of heritage in RF and microwave and three advanced semiconductor fabrication facilities worldwide, MACOM can help meet customer needs with high first pass design success and demonstrated process reliability.

MACOM Presentations During IMS2024:

Topic: *"Characterization and Design of High-Power GaN-on-SiC Devices Through the Utilization of Application-Oriented Signals and a Comprehensive Segmented Modeling Approach"*
Presenter: Zulhazmi Mokhti, Senior Principal Engineer
Date: 8:00 a.m. on Monday, June 17
Location: 146B

KEYNOTE: *"Stability Analysis Methods for Microwave Power Amplifiers: A Modern Perspective"*
Presenter: Dr. Thomas Winslow, Distinguished Fellow
Date: 1:30 p.m. on Wednesday, June 19

Topic: *"HF Through UHF Techniques and Applications"*
Presenter: Christopher Tenev, Senior Electronic Design Engineer, Linear Modules and Subystems
Date: 11:30 a.m. on Thursday, June 20
Location: Room 145AB

Show Information:
Walter E. Washington Convention Center, Washington, D.C.
Tuesday, June 18: 9:30 a.m. – 5:00 p.m. EDT
Wednesday, June 19: 9:30 a.m. – 6:00 p.m. EDT
Thursday, June 20: 9:30 a.m. – 3:00 p.m. EDT

For more information about IMS2024, visit https://ims-ieee.org.

About MACOM
MACOM designs and manufactures high-performance semiconductor products for the Telecommunications, Industrial and Defense, and Data Center industries. MACOM services over 6,000 customers annually with a broad product portfolio that incorporates RF, Microwave, Analog and Mixed Signal and Optical semiconductor technologies. MACOM has achieved certification to the IATF16949 automotive standard, the AS9100D aerospace standard, the ISO9001 international quality standard and the ISO14001 environmental management standard. MACOM operates facilities across the United States, Europe, Asia and is headquartered in Lowell, Massachusetts. To learn more, visit www.macom.com.

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