
MACOM Debuts New Ultra Low Phase Noise Amplifier

- *The MAAL-011151 delivers wideband performance versatility from 2 to 18 GHz for test and measurement, EW, ECM, and radar applications*
- *The MAAL-011151 enables superior signal generation and receiver sensitivity, integrating with high-performance MACOM comb generators and mixers*
- *MACOM's new low phase noise amplifier is sampling to customers today in bare-die and packaged formats*

Lowell, Massachusetts, December 19, 2018– [MACOM Technology Solutions](#)

[Inc.](#) (“MACOM”), today announced the first entries in its new portfolio of wideband, ultra low phase noise amplifiers. Available in 2.8 x 1.73 x 0.1 mm bare-die and 5x5mm, 32-lead AQFN packaged formats, the new [MAAL-011151](#) is ideally suited for use as a low phase noise amplifier stage for signal generation applications spanning a host of system designs targeting test and measurement (T&M), EW, ECM, and radar.

Phase noise is a critical specification in defining the frequency stability of a signal source, with significant implications for receiver sensitivity performance. MACOM's MAAL-011151 minimizes phase noise contribution in providing LO signal gain, enhancing spectral integrity for T&M and communications systems, target acquisition for radar, and aerospace and defense (A&D) applications.

The MAAL-011151 will provide 16 dB of linear gain across the 2 to 18 GHz frequency band, 17.5 dBm of P1dB and 5 dB of noise figure at 10 GHz with input and outputs that are fully matched to 50 Ω and are DC blocked. Amplifier control is available through the use of a control circuit or by direct bias injection. The MAAL-011151 is fabricated using a low phase noise HBT process which features full passivation for enhanced reliability.

“With the introduction of MACOM's new MAAL-011151 ultra low phase noise amplifiers, we're investing in a growing portfolio of signal generation components that encompasses high-performance [comb generators](#), [mixers](#), and more,” said Graham Board, Senior Director of Product Marketing, MACOM. “As we expand this portfolio to include additional discrete amplifiers covering additional frequencies, and integrated low phase noise LO modules, system designers will benefit from seamless device compatibility and exceptional performance across the signal chain, with decades of MACOM application expertise to help them achieve their aggressive design goals.”

Typical MAAL-011151-DIE Performance:

Parameter	Units	MAAL-011151-DIE
Frequency	GHz	2-18
Gain (10 GHz)	dB	16
Noise Figure (10 GHz)	dB	5
P1dB (10 GHz)	dBm	17.5
Phase Noise (12 GHz +3dBm, 1 KHz Offset)	dBC/Hz	-150
Bias	V/mA	5/60
Die Dimensions	mm	2.8 x 1.73 x 0.1

For over 60 years, MACOM’s design and applications experts have spearheaded innovation in the RF, microwave and millimeterwave domain, developing the industry’s broadest portfolio of MMICs and components spanning the entire RF signal chain. Leveraging advanced, proprietary technologies, MACOM’s heterogeneous semiconductor and packaging strategy ensures that each individual RF system function is fully optimized to deliver maximum performance at the appropriate cost. MACOM remains firmly committed to delivering true competitive advantage to our customers, providing superior technology, expertise, cost structures and supply chains – with no compromises.

MACOM’s MAAL-011151 ultra low phase noise amplifiers are sampling to customers today in bare-die and packaged formats. For assistance identifying MACOM products optimized to substitute or replace offerings from other vendors, visit MACOM’s Cross Reference tool. For more information about the MAAL-011151, please visit: <https://www.macom.com/products/product-detail/MAAL-011151>

ABOUT MACOM:

MACOM enables a better-connected and safer world by delivering breakthrough semiconductor technologies for optical, wireless and satellite networks that satisfy society’s insatiable demand for information.

Today, MACOM powers the infrastructure that millions of lives and livelihoods depend on every minute to communicate, transact business, travel, stay informed and be entertained. Our technology increases the speed and coverage of the mobile Internet and enables fiber optic networks to carry previously unimaginable volumes of traffic to businesses, homes and datacenters.

Keeping us all safe, MACOM technology enables next-generation radars for air traffic control and weather forecasting, as well as mission success on the modern networked battlefield. MACOM is the partner of choice to the world’s leading communications infrastructure, aerospace and defense companies, helping solve their most complex challenges in areas including network capacity, signal coverage, energy efficiency and field reliability, through its

best-in-class team and broad portfolio of analog RF, microwave, millimeterwave and photonic semiconductor products.

MACOM is a pillar of the semiconductor industry, thriving for more than 60 years of daring to change the world for the better, through bold technological strokes that deliver true competitive advantage to customers and superior value to investors.

Headquartered in Lowell, Massachusetts, MACOM is certified to the ISO9001 international quality standard and ISO14001 environmental management standard. MACOM has design centers and sales offices throughout North America, Europe and Asia.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS:

This press release contains forward-looking statements based on MACOM's beliefs and assumptions and on information currently available to MACOM. These forward-looking statements reflect MACOM's current views about future events and are subject to risks, uncertainties, assumptions and changes in circumstances that may cause those events or our actual activities or results to differ materially from those expressed in any forward-looking statement. Although MACOM believes that the expectations reflected in the forward-looking statements are reasonable, it cannot and does not guarantee future events, results, actions, levels of activity, performance or achievements. Readers are cautioned not to place undue reliance on these forward-looking statements. A number of important factors could cause actual results to differ materially from those indicated by the forward-looking statements, including, but not limited to, those factors described in "Risk Factors" in MACOM's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and other filings with the Securities and Exchange Commission. MACOM undertakes no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

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Quotation of Sale, a copy of which may be found at: <https://www.macom.com/partner-login>

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