

MACOM Announces Industry's First Analog CDR-Based PAM-4 Portfolio

- *Portfolio targeted for compliance with the newly formed Open Eye MSA enabling 50 Gbps to 400 Gbps optical modules*
- *Builds on MACOM's pre-eminent position in high-performance CDRs, drivers and TIAs, enabling lower cost, lower power and lower latency data center interconnects*
- *Companion 200G FR4 L-PICs to provide requisite performance at the cost comparable to current 100G CWDM4 solutions*
- *Production Samples available today, enabling a smooth migration to next generation connectivity*

Lowell, Massachusetts, May 7, 2019— [MACOM Technology Solutions Inc.](http://www.macom.com) ("MACOM"), a leading supplier of semiconductor solutions, today announced a complete analog and silicon photonics portfolio for seamless integration in 50 Gbps, 100 Gbps, 200 Gbps and 400 Gbps optical modules targeted for compliance with the newly formed Open Eye Multi-Source Agreement (MSA) www.openeye-msa.org.

Optimized for volume-scale deployment in high-density Cloud Data Center links, MACOM's components will enable faster, lower cost and more power efficient optical modules as defined by the upcoming Open Eye MSA industry standard.

MACOM's end-to-end transmit and receive portfolio features low-cost, low-power extensions to its existing lineup of Clock and Data Recovery (CDRs), drivers and (Transimpedance Amplifiers (TIAs), adding a companion integrated 200G FR4 L-PIC optimized to reduce customers' module costs through dramatically improved ease of assembly, calibration and test. These components are designed to eliminate the need for expensive, power-hungry signal processing and 53 Gbps EMLs, enabling streamlined optical module architectures targeted for 200G and 400G connectivity.

MACOM's full CDR-based and L-PIC-based portfolio comprises the MAOM-38053 four-channel transmit PAM-4 CDR with an integrated driver, and an L-PIC transmitter and on the



receive side, features a MATA-03819 quad TIA, MACOM BSP56B photodetectors and the MASC-38040 four-channel receive PAM-4 CDR. This approach is anticipated to deliver over 25% reduction in power consumption while simultaneously driving the cost per gigabit down as compared to today's CWDM4 and digital signal processing (DSP)-based PAM-4 solutions. Cloud customers can now double their link rate with only minor, incremental power and cost.

"MACOM is proud to be part of an ecosystem that enables seamless component interoperability among a broad group of industry-leading technology providers, including providers of electronics, lasers and optical components," said Preet Virk, Senior Vice President and General Manager, Networks, MACOM. "MACOM is committed to enabling the Open Eye MSA's charter, in part by leveraging our comprehensive portfolio of high-performance analog components and L-PICs to help customers achieve optimal performance, power efficiency and cost structures. We believe that our extensive application expertise and industry leadership in PAM-4 enabling technologies will help to ensure a seamless migration from 100G CWDM4 to industry-standard 200G and 400G PAM-4 module architectures."

The Open Eye MSA group aims to accelerate the adoption of data center interconnects scaling to 50 Gbps, 100 Gbps, 200 Gbps and 400 Gbps by expanding existing standards to enable optical module implementations using multiple technologies including optimized CDR-based architectures in addition to existing DSP architectures.

All of the MACOM products highlighted in this CDR and LPIC-based portfolio are sampling to customers today. For more information about MACOM's Cloud Data Center connectivity components, please visit <https://www.macom.com/data-center>.

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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employee, or, to the extent MACOM's purchase order acknowledgment so indicates, the limited warranty contained in MACOM's standard Terms and Conditions for Quotation of Sale, a copy of which may be found at: <http://www.macom.com/partner-login>.

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