



Industry Leaders Form Open Eye MSA Consortium Targeting High Speed Optical Connectivity Applications

- *Minimizes need for signal processing in optical modules, enabling significantly lower latency, power consumption and cost*
- *Collaboration aims to enable PAM-4 interconnects scaling from 50Gbps to 400Gbps based on CDR architectures*
- *MSA brings together a complementary mix of semiconductor, photonic component and system companies focused on defining interoperable specification*

May 7, 2019 – The Open Eye Consortium today announced the establishment of its Multi-Source Agreement (MSA) outlining its mission to standardize advanced specifications for lower latency, more power efficient and lower cost optical modules targeting 50Gbps, 100Gbps, 200Gbps, and up to 400Gbps optical modules for datacenter interconnects over single-mode and multimode fiber.

The MSA aims to accelerate the adoption of PAM-4 optical interconnects scaling to 50Gbps, 100Gbps, 200Gbps, and 400Gbps by expanding upon existing standards to enable optical module implementations using less complex, lower cost, lower power, and optimized clock and data recovery (CDR) based architectures in addition to existing digital signal processing (DSP) architectures.

Minimizing the need for digital signal processing in optical modules has many advantages including significantly lowering latency, power consumption and cost. The Open Eye industry consortium is committed to investing its collective innovation and engineering resources for the development of an industry-standard optical interconnect that leverages seamless component interoperability among a broad group of industry-leading technology providers, including providers of electronics, lasers and optical components.

“LightCounting forecasts that sales of next-generation Ethernet products will exceed \$500 million in 2020,” said Dale Murray, Principal Analyst at LightCounting. “However, this is only possible if suppliers can meet customer requirements for cost and power consumption. The



new Open Eye MSA addresses both of these critical requirements. Having low latency is an extra bonus that HPC and AI applications will benefit from.”

The Open Eye MSA consortium’s approach is a natural evolution relative to today’s high-volume optical nodes, enabling users to scale to next generation baud rates. The initial Open Eye MSA specification will focus on 53Gbps per lane PAM-4 solutions for 50G SFP, 100G DSFP, 100G SFP-DD, 200G QSFP, and 400G QSFP-DD and OSFP single-mode modules. Subsequent specifications will aim to address multimode and 100Gbps per lane applications.

MACOM and Semtech Corporation initiated the formation of the Open Eye MSA with 19 current members in Promoter and Contributing membership classes.

Promoters include Applied Optoelectronics Inc., Cambridge Industries (CIG), Color Chip, Juniper Networks, Luxshare-ICT, MACOM, Mellanox, Molex and Semtech Corporation.

Contributors include: Accelink, Cloud Light Technology, InnoLight, Keysight Technologies, Maxim Integrated, O-Net, Optomind, Source Photonics and Sumitomo Electric.

The initial specification release is planned for Fall 2019, with product availability to follow later in the year. Companies interested in joining the Open Eye MSA can contact: admin@openeye-msa.org. For more information about the consortium, visit: www.openeye-msa.org.

Commentary from members on the formation of the Open Eye MSA:

“Through its participation in the Open Eye MSA, AOI is leveraging our laser and optical module technology to deliver benefits of low cost, high-speed connectivity to next generation data centers.” David (Chan Chih) Chen, AVP, Strategic Marketing for Transceiver, AOI

“As one of the earliest promoters of this technology, we had a live module demo at OFC2019. With the recent acquisition of Lumentum/Oclaro’s data center product portfolios, CIG is expanding its product offering for both telecom and datacom markets. Our participation in the Open Eye MSA will enable us to apply this expertise to serve our



customers with lower power and lower cost transceivers.” Michael Xin, VP of Sales and Marketing, CIG.

“InnoLight has established itself as a leading provider of optical connectivity for Data Centers. We will closely work with Open Eye MSA to seek any opportunity on low cost and low power optical solution to customers.” Hai Ding, VP Product Management, InnoLight.

“As a leader in switching, routing and optical interconnects, Juniper Networks has a unique perspective into the technology and market dynamics affecting enterprise, cloud and service provider data centers, and the Open Eye MSA provides a forum to apply our insight and expertise on the pathway to 200G and faster connectivity speeds,” Jeffery Maki, Distinguished Engineer II, Juniper Networks

“MACOM continues to drive the industry’s technical requirements towards meeting the demands of Cloud Service Providers. Leveraging our proven leadership in 25G, 50G and 100G analog chipsets and optical components, we co-founded the Open Eye MSA to accelerate the adoption of 200G and 400G PAM optical interconnects. At the same time we are working in parallel to advance the DSP technologies necessary for faster connectivity speeds for future applications.” Preet Virk, Senior Vice President and General Manager, Networks, MACOM.

“Maxim’s long history of delivering advanced analog solutions for optical modules will enable both Open Eye MSA and standards based solutions to benefit from low power and low latency while maintaining high performance and full interoperability.” Dr Andrew Sharratt, Executive Director, Cloud and Data Center BU, Maxim.

“By taking advantage of the inherent benefits of fully analog module architectures enabled by the Open Eye MSA, Mellanox and our industry peers are helping datacenter and High-Performance Computing operators achieve the low latency necessary for latency sensitive computing applications. Low-power and low-cost are two key attributes every transceiver buyer demands. Low-latency feature is critically important in both Mellanox’s Ethernet and InfiniBand product lines for High Performance Computing and Ethernet hyperscale systems. Mellanox has a long history in designing,



fabless manufacturing, and selling analog-based transceiver ICs.” Steen Gundersen, Vice President of LinkXTM cable and transceiver products, Mellanox.

“Molex is excited to support Open Eye MSA efforts to define low power CDR based solution for next generation 100Gbps serial interfaces which will enable 400Gbps and 800 Gbps QSFP and QSFP-DD optical modules.” Scott Sommers, Group Product Manager, Molex.

“Semtech’s long history of innovation and leadership in analog optical architectures is the ideal complement to the Open Eye MSA collaborative effort, and we will help to drive an interoperability specification that enables multiple supply sources.” Gary Beauchamp, Executive Vice President and General Manager, Signal Integrity Products Group, Semtech Corporation.

“Source Photonics is pleased to be a participating member of the Open Eye MSA. Our expertise in lasers and optical modules will enable us to provide our Data Center customers with low cost and low power optical solutions utilizing the Open Eye MSA initiative.” Abhijeet Ardey, Sr. Transceiver Design Engineer, Source Photonics.

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