



MaxLinear's 2nd Generation PAM4 DSPs Enable Delta Electronics Inc. to Deliver Sub-3.5W 100G Optical Modules for Hyperscale Data Centers and Wireless Fronthaul

- *New transceiver modules developed by Delta Electronics, Inc. will be on display during ECOC at MaxLinear's booth 609*

CARLSBAD, Calif.--(BUSINESS WIRE)-- MaxLinear, Inc. (NYSE: MXL), a leading provider of radio frequency (RF), analog and mixed-signal integrated circuits for the connected home, wired and wireless infrastructure, and industrial and multimarket applications, today announced that Delta Electronics, Inc., a global leader in power and thermal management solutions, has selected MaxLinear's second-generation Telluride PAM4 DSPs to develop sub-3.5 watt 100G single lambda DR, FR, and LR optical modules.

This press release features multimedia. View the full release here:
<https://www.businesswire.com/news/home/20190919005238/en/>



MxL93516 Enables Sub-3.5W Optical Module (Graphic: Business Wire)

The second-generation Telluride family (MxL93515 and MxL93516) extends MaxLinear's PAM4 DSP offering, by enabling sub-3.5W QSFP28 and SFP-DD 100G optical modules. With support for extended operating temperature, the new Telluride DSPs are also ideally suited for the wireless fronthaul

market transition to single lambda 100G optics with reaches up to 10km. Like the first-generation Telluride DSPs, the new devices offer a monolithically integrated EA-EML laser driver that significantly reduces the overall optical module BOM cost.

The industry-leading low power consumption of the new optical modules extend Delta Electronics, Inc.'s broad offering of data center and wireless fronthaul connectivity products. Its proprietary single mode TOSA/ROSA design and package technology can be extended to DR1/DR4 single lambda optical modules. Delta Electronics, Inc.'s experience in data center and wireless fronthaul transceiver design and its manufacturing capabilities enable the company to meet the growing demands of its customers.

"Building upon the success of our first-generation Telluride PAM4 DSPs, our newest devices enable revolutionary 100 Gbps QSFP28 and SFP-DD modules with sub-3.5W power consumption," said Will Torgerson, Vice President and General Manager of MaxLinear's High-Speed Interconnect Group. "We are excited to see the adoption of our latest generation Telluride product family by Delta Electronics, Inc. for its industry leading low power optical modules."

"By leveraging MaxLinear's initial Telluride DSPs and engineering expertise, we were able to sample modules meeting our customer requirements in record time," said Ted Kuo, Senior Director of Optical Transceiver Products at Delta Electronics, Inc. "We look forward to sampling our second-generation optical transceivers to address broader market segments requiring sub-3.5W modules."

Technical Details

The second-generation Telluride family of low-power, high-performance PAM4 DSP SoCs enable 100Gbps QSFP28 optical modules using 4*25G NRZ host interface to 1*100G PAM4 optical interface and SFP-DD optical modules using 2*50G PAM4 host interface to 1*100G PAM4 optical interface. The MxL93516 100G PAM4 DSP integrates an EA-EML driver with 1.8V PP SE swing. The MxL93515 offers a differential 800mV peak-to-peak swing for non EA-EML-based optics.

MaxLinear has engineered a very high-performance DSP engine in both the transmit and receive data paths. The resulting superior link-margin enables single-lane 100Gbps optical wavelength technology by mitigating many of the limitations of mass production optical components.

The devices feature a comprehensive digital pre-distortion (DPD) engine in the transmit direction to compensate for laser non-linearity and to cancel packaging limitations that cause reflections and bandwidth degradation at these extremely high signal frequencies. On the receive path, the DSP includes an auto-adaptive signal enhancement engine, which integrates a continuous time linear equalizer (CTLE), automatic gain control (AGC), a feed forward equalizer (FFE), and a decision feedback equalizer (DFE).

For additional information on the MxL93515 and MxL93516, visit www.maxlinear.com/MxL93515 and www.maxlinear.com/MxL93516.

The Telluride powered, sub-3.5W Delta Electronics, Inc. optical module will be on display at MaxLinear's booth (609) at the ECOC Conference in Dublin, Ireland on September 23-25, 2019. For an appointment, please contact MaxLinear sales at sales@maxlinear.com.

About MaxLinear, Inc.

MaxLinear, Inc. (NYSE: MXL) is a leading provider of radio frequency (RF), analog and mixed-signal integrated circuits for the connected home, wired and wireless infrastructure, and industrial and multimarket applications. MaxLinear is headquartered in Carlsbad, California. For more information, please visit www.maxlinear.com.

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Cautionary Note About Forward-Looking Statements

This press release contains “forward-looking” statements within the meaning of federal securities laws. Forward-looking statements include, among others, statements concerning or implying future financial performance, anticipated product performance and functionality, and industry trends and growth opportunities affecting MaxLinear, in particular statements relating to MaxLinear’s Telluride family of products, including but not limited to potential market opportunities, functionality, and the benefits of use of such products. These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from any future results expressed or implied by these forward-looking statements. We cannot predict whether or to what extent the availability of our Telluride family of products will affect our future revenues or financial performance. Forward-looking statements are based on management’s current, preliminary expectations and are subject to various risks and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. Forward-looking statements may contain words such as “will be,” “will,” “expected,” “anticipate,” “continue,” or similar expressions and include the assumptions that underlie such statements. The following factors, among others, could cause actual results to differ materially from those described in the forward-looking statements: intense competition in our industry and product markets; risks relating to the development, testing, and commercial introduction of new products and product functionalities; the ability of our customers to cancel or reduce orders; uncertainties concerning how end user markets for our products will develop; our lack of long-term supply contracts and dependence on limited sources of supply; potential decreases in average selling prices for our products; and the potential for intellectual property litigation, which is prevalent in our industry. In addition to these risks and uncertainties, investors should review the risks and uncertainties contained in MaxLinear’s filings with the United States Securities and Exchange Commission, including risks and uncertainties identified in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2019. All forward-looking statements are qualified in their entirety by this cautionary statement. MaxLinear is providing this information as of the date of this release and does not undertake any obligation to update any forward-looking statements contained in this release as a result of new information, future events, or otherwise.

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