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MaxLinear's 2nd Generation PAM4 DSP Selected by Centera Photonics to Deliver Sub-3.5W 100G Optical Modules for Hyperscale Data Centers

- *The MxL93516, a highly integrated PAM4 DSP, offers superior overall performance, power, and cost enabling Centera's next generation 100G-DR1 optical modules*

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 Centera Photonics Inc., a silicon photonics optical solution provider for high performance interconnects, has selected MaxLinear's Telluride PAM4 DSP (MxL93516) for their next generation 100G-DR1 optical modules.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20200311005273/en/

Telluride PAM4 DSP Enables Sub-3.5W 100G-DR1 Optical Modules (Graphic: Business Wire)

Centera's proprietary silicon optical engine sets a new frontier for next-generation (400GbE and above) optical interconnects in datacenter applications. The Micro-Electro-Mechanical System (MEMS) optical engine platform features a small form factor and supreme signal integrity. It utilizes a high-precision semiconductor process that enables superb thermal management capabilities and ensures high reliability. The optical-electrical (OE) platform is designed to support the next generation I/O requirements of super high-performance silicon photonic ICs (PICs). Centera's Telluride-based PAM4 100G optical interconnects are expected to be commercially available in April.

The MxL93516, MaxLinear's second-generation Telluride DSP, extends the company's PAM4 DSP offering by enabling sub-3.5W QSFP28 and SFP-DD 100G optical modules. Like the first-generation Telluride DSPs, the new device offers a monolithically integrated EA-EML laser driver that significantly reduces the overall optical module BOM cost. The MxL93516 allows companies like Centera to develop a 100Gbps optical interconnect module in a compact form factor for intra-datacenter applications with a transmission distance up to 2 kilometers.

"MaxLinear's second-generation Telluride PAM4 DSP offers best-in-class power and the industry's smallest footprint," said Will Torgerson, Vice President and General Manager of MaxLinear's High-Speed Interconnect Group. "We are pleased to see that these features enabled Centera to develop small form factor 100G optical interconnects to address the massive demand to deploy higher speed networks in next-generation hyperscale data centers."

"MaxLinear's MxL93516 PAM4 DSP with integrated EML driver proved to be the lowest cost path for developing 100G optical modules. By using MaxLinear's MxL93516 we developed a single-lambda PAM4 DSP-based module that requires fewer electrical and optical components, lowering our costs, improving our yields, and increasing module reliability," said Dr. Brian Lan, R&D Director at Centera Photonics Inc. "The MxL93516 PAM4 DSP has enabled us to develop single-lambda 100G optical transceivers that address broader market segments requiring sub-3.5W modules."

Technical Details
The MxL93516 is part of MaxLinear's second-generation Telluride family of low-power, high-performance PAM4 DSP SoCs. The industry leading family consists of the MxL93515 and MxL93516. 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. These PAM4 DSPs 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.

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 MxL93515 and MxL93516 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 MxL93516, visit www.maxlinear.com/MxL93516.

About Centera Photonics
Centera Photonics is an optoelectronic design house specialized in silicon photonic device designs, development and integrations. Centera dedicates on developing integrated solutions for Optical Interconnect via semiconductor MEMS technologies. Centera designs,

manufactures optical interconnect modules for high performance communication. Applications include data-communication, HPC (high performance computing), storage, consumer electronics and specialty market. The company was established in 2010; main office is located in Hsinchu Science Park, Taiwan, R.O.C. For more company information, please visit www.centera-photonics.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.

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 of our products or products incorporating our products, and industry trends and growth opportunities affecting MaxLinear, in particular statements relating to MaxLinear’s MxL93516, 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 MxL93516 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; impacts from public health crises or natural disasters; 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 Annual Report on Form 10-K for the year ended December 31, 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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