



Press Release

MaxLinear's PAM4 DSP Selected by uSenlight to Deliver Sub-3.5W 100G Optical Modules for Hyperscale Data Centers and Wireless Fronthaul Applications

- *The highly integrated MxL93516 offers the industry's lowest power consumption as well as superior overall performance and cost, making it ideal for DR1 optical modules*

CARLSBAD, CA – June 8, 2021 – [MaxLinear, Inc.](#) (NYSE: MXL), a leading provider of radio frequency (RF), analog, digital and mixed-signal integrated circuits, today announced that uSenlight Corporation, a key ODM developing high-speed, high-performance, reliable integrated optical modules for datacenter, FTTx, optical networking and CPRI/LTE applications, has selected the MxL93516 PAM4 DSP to develop sub-3.5 watt 100G single lambda DR optical modules.

MxL93516

PAM4 DSP enables uSenlight to deliver sub-3.5W 100G Optical Modules



The MxL93516, MaxLinear's second-generation Snowmass DSP, enables sub-3.5W QSFP28 and SFP-DD 100G optical modules. Like the first-generation, the MxL93516 offers a monolithically integrated EA-EML laser driver that significantly reduces the overall optical module BOM cost.

uSenlight's new optical modules build upon the success of the company's current product offerings of 100G QSFP28 PSM4 and 100G QSFP28 CWDM4 modules for data center connectivity. uSenlight's experience in data center transceiver design and its manufacturing capabilities enable them to meet the growing demands of hyperscale data center and wireless fronthaul customers.



“We are excited to see the adoption of our 100G PAM4 DSP by uSenlight for their DR1 QSFP28 transceiver modules,” said Drew Guckenberger, Vice President of MaxLinear’s Optical Interconnect Group. “The low power, high level of integration and performance of Snowmass DSPs enable companies like uSenlight to develop low power, small form factor, 100G optical interconnects for next-generation hyperscale data centers and wireless fronthaul applications”.

“MaxLinear’s MxL93516 PAM4 DSP with integrated EML driver offers the highest level of integration and superior link-margin performance in a low-power SoC,” said Dr. Charles Wu, President of uSenlight Corporation. “The integration and performance of the MxL93516 PAM4 DSP have enabled us to expand our portfolio by developing 100Gbps optical interconnects for hyperscale datacenters and wireless fronthaul applications.”

Technical Details

The MxL93516 is part of MaxLinear’s second-generation Snowmass 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 peak-to-peak single-ended 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 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.

About MaxLinear, Inc.

MaxLinear, Inc. (NYSE: MXL) is a leading provider of radio frequency (RF), analog, digital and mixed-signal integrated circuits for the connectivity and access, 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 of our products or products incorporating our products, and industry trends and growth opportunities affecting MaxLinear, in particular statements relating to MaxLinear’s Snowmass family of PAM4 DSPs, including the MxL93515 and MxL93516, including but not limited to potential market opportunities, including with uSenlight Corporation, functionality, integration, performance, 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 these new or existing 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,” “expect,” “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; and uncertainties concerning how end user markets for our products will develop. Other risks potentially affecting our business include risks relating to acquisition integration; 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 such as the Covid-19 pandemic 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 arising from other factors affecting the business, operating results, and financial condition of MaxLinear, including those set forth in MaxLinear’s most recent Annual Report on Form 10-K for the year ended December 31, 2020 and Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, in each case as filed with the Securities and Exchange Commission. 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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