



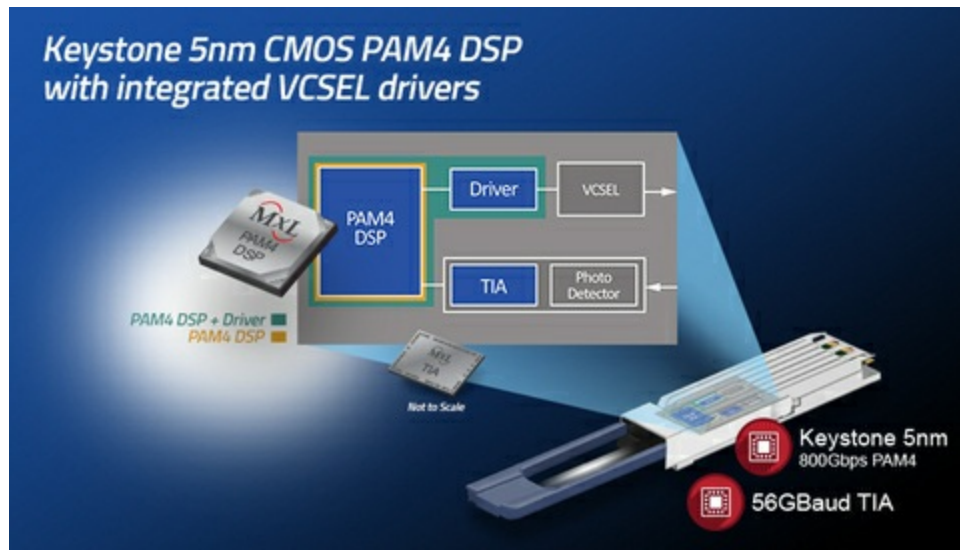
MaxLinear announces 5nm CMOS PAM4 DSP with integrated VCSEL drivers for 800G and 400G Multimode short-reach optical modules and Active Optical Cables (AOC)

- *Providing cost-optimized, best-in-class power consumption of <10W for 800G short reach links in datacenters and AI/ML cluster applications.*
- *The active optical cable market is projected to be \$19 billion by 2030.*

CARLSBAD, Calif.--(BUSINESS WIRE)-- [MaxLinear, Inc.](https://www.maxlinear.com) (Nasdaq: MXL), a leading provider of high-speed interconnect ICs enabling data center, metro, and wireless transport networks, today announced a new member of its Keystone 5nm PAM4 DSP family (KeystoneMM – MxL93684). The announced KeystoneMM variant monolithically integrates VCSEL drivers with the DSP supporting best-in-class power consumption, high-performance, and reduced cost for AOCs and multimode links. KeystoneMM is available to sample to key customers and will be released to full production in Q1 2024.

This press release features multimedia. View the full release here:

<https://www.businesswire.com/news/home/20230928189259/en/>



MaxLinear announces 5nm CMOS PAM4 DSP with integrated VCSEL drivers for 800G and 400G Multimode short-reach optical modules and Active Optical Cables (AOC) (Graphic: Business Wire)

Multimode fiber is a type of low-cost optical fiber used for active optical cables or connecting short-reach optical modules in data centers, AI and Machine Learning platforms, and high-performance computing applications. Multimode Fiber is extensively deployed in short reach applications such as fiber-optic cable

infrastructure in data centers and other large networks— for example, between individual servers, within racks, or within rows. Multimode optical links prove to be the more economical option compared to single-mode optical solutions for short reach applications. These shorter reach links dominate the interconnect volume for most AI/ML deployments.

According to Straits Research, the active optical cable market was valued at \$2.3 billion in 2021 and is anticipated to generate \$19 billion by 2030, with market growth at a CAGR of 28% over this period. Applications include data center, high-performance computing, personal computing, digital signage, consumer electronics, and others. The data center segment held the largest market share, with an anticipated value of \$9.4 billion by 2030.

“With the explosion in deployments of AI clusters, the demand for multimode transceivers and AOCs continues to accelerate for 100G/lane 400G and 800G interconnects. These applications needed integrated, low-power, high-performance, cost-effective solutions to support the massive scale of these networks,” said Drew Guckenberger, Vice President of High Speed Interconnect at MaxLinear. “Our 5nm Keystone PAM4 DSP with integrated VCSEL drivers addresses the demands of this key market, enabling best-in-class power consumption of <10W for 800G short reach optical transceivers and AOCs.”

MaxLinear will be exhibiting at the European Conference on Optical Fiber Communication (ECOC) in Glasgow, Scotland October 2-4. Please visit us in booth 776 for more information.

About MaxLinear’s Keystone Family

The Keystone 5nm DSP family has been designed to address both 400G and 800G applications and is the first generation to provide 106.25Gbps host side electrical I/O to match the line side 106.25Gbps interface rate. Variants supporting single mode optics (EML and SiPh), multimode optics (VCSEL transceivers and AOCs), and Active Electrical Cables (AECs) are all available and can be paired with companion TIAs to provide complete solutions.

The Keystone family’s host side interfaces support 25G, 50G, and 100G per lane ethernet rates over C2M, MR and LR host channels. The line side interfaces also support the same rates and are targeted for 100G/λ DR, FR, and LR applications. All devices provide extensive DSP functionality, including line-side transmitter digital pre-distortion (DPD), transmit pre-emphasis (TX FIR), receiver feed forward equalization (FFE) and decision feedback equalization (DFE).

These DSPs offer exceptional performance and signal integrity in a compact (12mm x 13mm) footprint suitable for next generation optical module form-factors such as QSFP-DD800 and OSFP800 and are also offered as Known Good Die (KGD) for higher density applications, such as OSFP-XD.

About MaxLinear, Inc.

MaxLinear, Inc. (Nasdaq: 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 Keystone family of DSPs, including but not limited to the size and growth of the active optical cable market and data center segment, potential market opportunities and the demand for such products, functionality, availability and the benefits of use of such products and statements by MaxLinear’s Vice President of High-Speed Interconnect. 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: the effect of intense and increasing competition; impacts of a global economic conditions; the cyclical nature of the semiconductor industry; a significant variance in our operating results and impact on volatility in our stock price, and our ability to sustain our current level of revenue, which has declined, and/or manage future growth effectively, and the impact of excess inventory in the channel on our customers’ expected demand for certain of our products; the political and economic conditions of the countries in which we conduct business and other factors related to our international operations; increased tariffs or imposition of other trade barriers; our ability to obtain or retain government authorization to export certain of our products or technology; risks related to international geopolitical conflicts; risks related to the loss of, or a significant reduction in orders from major customers; a decrease in the average selling prices of our products; failure to penetrate new applications and markets; development delays and consolidation trends in our industry; inability to make substantial research and development investments; claims of intellectual property infringement; our ability to protect our intellectual property; and a failure to manage our relationships with, or negative impacts from, third parties. 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, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, as applicable. 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.

Market Information

This press release contains statistical data, estimates, and forecasts that are based on independent industry publications or other publicly available information. This information involves many assumptions and limitations, and you are cautioned not to give undue weight to such information. We have not independently verified the accuracy or completeness of the information contained in the industry publications and other publicly available information. Accordingly, we make no representations as to the accuracy or completeness of that information nor do we undertake to update such information after the date of this press release.

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MaxLinear, Inc. Press Contact:

Matthew Lea

Head of Public Relations

Tel: +1 760.415.2529

mlea@maxlinear.com

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