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MaxLinear Unveils Jeju™ Custom PMIC, Engineered for Peak Efficiency with 1.6T Optical DSPs

- *Custom multiphase architecture delivers up to 95% peak efficiency at the low-voltage, high-current loads of 1.6T optical DSPs*

CARLSBAD, Calif.--(BUSINESS WIRE)-- MaxLinear, Inc. (Nasdaq: MXL), a leader in high-speed connectivity, mixed-signal and power-management semiconductor solutions, today introduced Jeju™ (MxL77904), a highly integrated, custom multiphase power management IC (PMIC) designed for maximum efficiency in DSP-based 1.6T pluggable optical modules used in AI infrastructure networks.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20261109662336/en/

MaxLinear's Jeju™ PMIC delivers high-efficiency power management for next-generation 1.6T optical modules.

Purpose-built for advanced 3nm and 4nm CMOS Optical PAM4 DSPs, Jeju is designed to deliver industry-leading peak power efficiency of up to 95% and power savings of up to 0.5W per 1.6T PAM4 DSP versus conventional PMICs. Due to its strong power-efficiency performance, Jeju is designed to reduce both module power consumption and heat dissipation, helping lower thermal management costs and improve overall module manufacturing yield. Jeju is optimized for MaxLinear's Rushmore 1.6T PAM4 DSP and supports DSP-based 1.6T module designs across the industry.

As 1.6T and higher speed DSPs move to advanced 2nm, 3nm and 4nm CMOS process nodes, operating voltages continue to decline below 1V while current requirements increase rapidly. Conventional PMICs typically operate outside their optimal power-efficiency range and deliver poorer peak power-efficiency under the low-voltage and high-current operation requirements of advanced DSPs. This increases power loss and thermal burden within the constrained power budgets and space limits of OSFP and QSFP-DD optical modules. Jeju is specifically optimized for these requirements.

"At 1.6T and 3.2T, every watt matters. We expect combined 800G and 1.6T optical module volumes to approach 200 million units in 2026, making power efficiency increasingly critical. Jeju is purpose-built for the low-voltage, high-current requirements of advanced optical DSPs, delivering up to 0.5W savings per DSP in a 1.6T optical module. Combined with MaxLinear's Rushmore 1.6T PAM4 DSP, Jeju is designed to help optical module makers reduce power, thermal load, and design complexity. We are engaging with lead optical-

module customers to support early evaluation and platform development," said Amit D. Bavisi, Ph.D., Senior Vice President and General Manager of MaxLinear's Analog Mixed-Signal Business Unit.

Custom-Designed for the Power Profile of 1.6T Optical DSPs

MxL77904 incorporates MaxLinear's proprietary Constant On-Time (COT) power controller architecture, delivering fast transient response using conventional ceramic output capacitors without requiring external loop compensation. This enables tight voltage regulation with lower output capacitance, which can reduce component count, board area, and BOM cost.

Dynamic Voltage Scaling (DVS), controlled through I²C registers or GPIO interfaces, allows optical module designers to optimize power consumption and thermal load across operating states. Flexible 4+0, 3+1, 2+1+1 and 1+1+1+1 configurations, with up to 5A per phase, support a wide range of DSP, optical component, and module power architectures.

Key Benefits

- **Maximum efficiency at 1.6T DSP load points:** Saves up to 0.5W per DSP compared with existing PMICs and delivers up to 95% peak conversion efficiency on low-voltage, high-current DSP core rails. Automatic phase shedding and phase adding, combined with Auto-PFM operation, reduce heat generation in thermally constrained modules.
- **Fast transient response with lower output capacitance:** Maintains tight DSP rail regulation during dynamic load transients while reducing the required output capacitance and board area.
- **High DC and AC power accuracy to reduce dynamic power:**Jeju's 0.5% typical DC output-voltage accuracy, its high-resolution tracking output voltage steps, and tight control of overshoot and undershoot during load transients help reduce module-level operating voltage margin requirements and DSP dynamic power consumption.
- **Low-noise power delivery:** Low-impedance integrated MOSFETs, programmable 600kHz to 4MHz switching frequency range, and remote voltage sensing support sensitive PAM4 DSP and optical analog circuitry.
- **Compact integration:** Small 54-ball WLCSP package supports high-density QSFP-DD, OSFP, and future pluggable module designs.
- **Integrated protection:** On-chip over-voltage, under-voltage, over-current, negative-current, short-circuit and over-temperature protection support the reliability requirements of data center optics.

Expanding MaxLinear's Optical-Module Platform BOM

The MxL77904 builds on MaxLinear's heritage of custom power-management solutions for complex SoCs, including multi-rail, multiphase power architectures for broadband and connectivity platforms. Designed to broadly support DSP-based 1.6T modules, the MxL77904 expands MaxLinear's data center component portfolio for optical modules beyond signal processing into optimized power delivery. Together with the Rushmore 1.6T PAM4 DSP, it brings MaxLinear's expertise in signal processing, optical connectivity and power management to next-generation optical modules.

"Efficient power delivery is now essential for meeting 1.6T module power targets," said Rajneesh Gaur, Senior Vice President and General Manager of MaxLinear's Data Center

Connectivity Business Unit. “Pairing Jeju with our Rushmore DSP gives module partners a combined signal-processing and power-management solution that is designed to simplify integration, lower module power, and accelerate time to market for next-generation AI data center optics.”

Availability

Jeju™ (MxL77904) is expected to sample to customers in February 2027.

For further information, visit: www.maxlinear.com/MxL77904.

For more information on MaxLinear’s complete portfolio of optical connectivity and power-management solutions, visit www.maxlinear.com.

About MaxLinear, Inc.

MaxLinear, Inc. (Nasdaq: MXL) is a leading provider of radio frequency (RF), analog, digital and mixed-signal integrated circuits for access and connectivity, wired and wireless infrastructure, and industrial and multi-market 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 Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that are intended to be covered by the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can often be identified by words such as “aim,” “anticipate,” “believe,” “could,” “designed to,” “expect,” “intend,” “may,” “plan,” “potential,” “will” and similar expressions, although not all forward-looking statements contain these words. Forward-looking statements include, among others, statements relating to MaxLinear’s products and technology and the anticipated functionality, capabilities, performance, commercial availability, benefits and market opportunities of such products and technology, including Jeju; statements regarding trends in AI infrastructure and the demand for, and growth of, 800G, 1.6T and higher-speed optical modules; and statements by MaxLinear’s Senior Vice President and General Manager, Analog Mixed-Signal Business Unit, and Senior Vice President and General Manager, Data Center Connectivity Business Unit. These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause actual results to be materially different from any future results expressed or implied by the forward-looking statements and our future financial performance and operating results forecasts generally. Forward-looking statements are based on management’s current, preliminary expectations and are subject to various risks and uncertainties. In particular, our future operating results are substantially dependent on our assumptions about market trends and conditions. Additional risks and uncertainties affecting MaxLinear’s business, future operating results and financial condition include, without limitation, risks relating to: the development, testing, and commercial introduction of new products and product functionalities and the capabilities of MaxLinear’s technology, including Jeju; the risk that Jeju may not sample or become commercially available on the anticipated timeline, or at all; the risk that the benefits of Jeju described in

this press release may not be achieved; the risk that optical module customers may not select, qualify or adopt Jeju; the risk that adoption, program timing, qualification, or demand for AI and data center infrastructure does not develop or continue as anticipated, including risks related to the sustainability of current AI-related capital expenditure levels; risks that the market for MaxLinear's products may not develop and grow at the rate or scale anticipated, or at all; risks related to the development, use and regulation of artificial intelligence technologies; our terminated merger with Silicon Motion and related arbitration and class action complaint and the risks related to potential payment of damages; the effect of intense and increasing competition; increased tariffs, export controls or imposition of additional trade barriers; impacts of 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 previously declined, and/or manage future growth effectively; escalating trade wars, military conflicts and other geopolitical and economic tensions among the countries in which we conduct business; international geopolitical and military conflicts; our ability to obtain or retain government authorization to export certain of our products or technology; the loss of, or a significant reduction in orders from major customers; legal proceedings or potential violations of regulations; information technology failures; 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 and productive research and development investments; delays or expenses caused by undetected defects or bugs in our products; substantial quarterly and annual fluctuations in our revenue and operating results; failure to timely develop and introduce new or enhanced products; order and shipment uncertainties and differences between our estimates of customer demand and product mix and our actual results; failure to accurately predict our future revenue and appropriately budget expenses; lengthy and expensive customer qualification processes; customer product plan cancellations; failure to maintain compliance with government regulations; failure to attract and retain qualified personnel; any adverse impact of rising interest rates on us, our customers, and our distributors and related demand; risks related to compliance with privacy, data protection and cybersecurity laws and regulations; risks related to conforming our products to industry standards; risks related to business acquisitions and investments; claims of intellectual property infringement; our ability to protect our intellectual property; security vulnerabilities of our products; use of open source software in our products; failure to manage our relationships with, or negative impacts from, third parties; and future decisions relating to our stock repurchase program. In addition to these risks and uncertainties, investors should review the risks and uncertainties contained in our filings with the Securities and Exchange Commission (SEC), including the "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, as updated in our subsequent Quarterly Reports on Form 10-Q, including our Quarterly Report on Form 10-Q for the quarter ended September 30, 2026, and our Current Reports on Form 8-K. All forward-looking statements are based on the estimates, projections and assumptions of management as of the date of this release and MaxLinear is under no obligation (and expressly disclaims any such obligation) to update or revise any forward-looking statements whether as a result of new information, future events, or otherwise.

Market and Industry Data

This press release contains statistical data, estimates, and forecasts concerning MaxLinear's industry and market that are based on independent industry publications, reports by market research firms, other published independent sources and/or MaxLinear's own internal estimates and research based on such data. Industry publications, surveys, and studies generally state that they have obtained information from sources believed to be reliable, but do not guarantee the accuracy or completeness of such information. MaxLinear has not independently verified the data obtained from these third-party sources and cannot assure you of its accuracy or completeness. Statements as to MaxLinear's market position are based on management estimates using such third-party data together with MaxLinear's internal data. In addition, projections, assumptions, and estimates of the future performance of the industry in which MaxLinear operates, and MaxLinear's future performance, are necessarily subject to uncertainty and risk due to a variety of factors, including those described under "Cautionary Note About Forward-Looking Statements" above. These and other factors could cause actual results to differ materially from those expressed in, or implied by, the estimates made by independent parties and by MaxLinear.

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