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MaxLinear Introduces Topaz™, One of the Industry's Most Advanced AI-Ready PON HGU Chips for 10G and Beyond

Purpose-built for next-generation PON home gateways, Topaz™ is designed to deliver 10G broadband services today while preparing operators for future network and service requirements with Wi-Fi 8 readiness, AI acceleration, and post-quantum security readiness.

CARLSBAD, Calif.--(BUSINESS WIRE)-- MaxLinear, Inc. (Nasdaq: MXL), a designer and manufacturer of high-speed, mixed-signal integrated circuits (ICs), today announced Topaz™, one of the industry's most advanced PON Home Gateway Unit (HGU) SoC. Designed for 10G broadband deployments and future fiber architectures, Topaz combines fiber access, packet processing, AI/ML acceleration, post-quantum cryptography (PQC) readiness, and intelligent power management into a single, highly integrated SoC. Topaz is designed to minimize market trade-offs—reducing system complexity, lowering bill-of-materials (BOM) costs, and accelerating time-to-market for OEMs and operators worldwide.

This press release features multimedia. View the full release here:
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MaxLinear Introduces Topaz, one of the Industry's Most Advanced AI-Ready PON HGU Chips for 10G and Beyond

Topaz is optimized for PON Fiber Gateways, Ethernet, and Fixed Wireless

Access (FWA) deployments. It provides processing performance, memory bandwidth, and connectivity required for next-generation gateways, including Wi-Fi 8, and AI-enabled services, while enabling upgrades to future multi-gigabit access technologies beyond 10G. Built with a secure-by-design approach, **Topaz** is designed to support compliance with leading cybersecurity frameworks and regulations, including **NIST IR 8425A (U.S.)**, Radio Equipment Directive (**RED**), and the Cyber Resilience Act (**CRA**) (**EU**).

From a technology differentiation perspective **Topaz** combines broadband access, packet processing, AI acceleration, advanced security, intelligent power management, and low-latency networking technologies such as L4S and Dual-Queue AQM into a single highly integrated SoC. This integration reduces system complexity, lowers BOM costs, and accelerates product development while enabling differentiated operator services.

The **Topaz family** provides a scalable portfolio that allows OEMs and operators to optimize system cost and performance for specific applications, ranging from cost-efficient residential gateways to premium multi-gigabit, converged broadband platforms. A common architecture across the family enables extensive hardware and software reuse while preserving flexibility

to address diverse market requirements.

Sharing a common software and hardware foundation with MaxLinear's Puma™ 9 DOCSIS® platform, **Topaz** enables significant code, feature, and development reuse across Cable, Fiber, Ethernet, and FWA product portfolios. This unified platform approach, also known as AnyWAN, shortens software development cycles, simplifies portfolio management, and helps operators rapidly adopt new technologies while reducing engineering investment and long-term support costs.

Platform Architecture & Performance

- **Purpose-Built for 10G PON & Beyond:** Delivers high-efficiency performance for current 10G deployments while establishing a scalable, long-term architecture for next-generation tiers. High-speed 25G and 50G connectivity, DDR5 memory support, and low latency packet processing are designed to provide long-term headroom for network growth.
- **Wi-Fi 8 Ready Infrastructure:** Provides the high processing performance, memory bandwidth, and interconnect speeds required to drive deterministic, ultra-low-latency Wi-Fi 8 wireless networks. Topaz handles dense, multi-gigabit traffic across connected home and business environments while minimizing bottlenecks.
- **All-in-One High-Integration SoC:** Consolidates multi-gigabit fiber access, packet routing, AI/ML acceleration, and advanced security on a single chip. This single-chip design can eliminate the need for separate multi-processor architectures, lowering bill-of-materials (BOM) costs, reducing physical design footprints, and shortening development cycles.
- **Low Power Consumption:** Features integrated PHYs and Dynamic Power Management (DPM) technology that dynamically scales energy use based on real-time traffic loads. The SoC minimizes power during idle periods while maintaining instant line-rate responsiveness, helping operators meet strict ERP mandates and sustainability goals.

Future-Proof Security & Innovation

- **Hardware-Grade Post-Quantum Cryptography (PQC) Readiness:** Optimized for the long deployment lifecycles associated with fiber infrastructure investments, Topaz incorporates advanced hardware-based security technologies and readiness for post-quantum cryptography (PQC). The platform helps operators address emerging cyber threats, evolving security regulations, and requirements such as the European Cyber Resilience Act (CRA).
- **Open Ecosystem & Unified Software:** Designed around open standards, especially those championed by the prpl Foundation's prplWare, as well as supporting RDK, Topaz provides maximum application portability. Sharing a common architecture with MaxLinear's Puma 9 DOCSIS® platform, the device allows operators and OEMs to unify cable and fiber gateway codebases.
- **AI & Next-Gen Service Acceleration:** Integrates local compute and AI/ML engines to power intelligent edge services allowing both local as well as hybrid solutions together with extended cloud processing. AI-assisted home network diagnostics including preemptive analysis, pre-processed and compressed network statistics as well as AI-enabled security and QoS optimize the operators' network operations and provide improved customer quality of experience.

- **Optimized for Low Latency:** The upgraded packet processing engine is optimized to minimize packet delay inside the gateway. The accelerated data path now also includes a hardware-based dual-queue AQM implementation for L4S, bridging the gap between new L4S-enabled services and the network infrastructure.

Executive Quote

*“Operators can’t afford to wait years to upgrade their network infrastructure to meet demands of the AI-driven broadband home,” said **Puneet Sethi, Senior Vice President and General Manager, Network Infrastructure and Carrier, at MaxLinear.** “Customers want smart, AI-powered applications for home and business services, but they don’t want to pay a premium for inflated power bills or monthly service fees to make it happen. With Topaz, we are solving for both. Our latest platform not only delivers affordable 10G PON connectivity today, it’s also flexible enough to accelerate operators into the future – without compromising on power efficiency.”*

Partner Quotes

*“The broadband gateway market continues to demand greater performance, lower power consumption, and faster product development cycles,” said **Robert Lin, CEO Askey.** “Topaz combines advanced fiber connectivity, AI acceleration, and future-ready networking capabilities within a highly integrated architecture. We believe this platform has the potential to help OEMs deliver innovative gateway solutions while reducing complexity and development costs. We are happy to be early access partner for Topaz and looking forward to incorporating Topaz in our roadmap as industry transitions to AI-enabled broadband services.”*

*“The convergence of multi-gigabit fiber access, advanced Wi-Fi, and AI-driven services is creating new requirements for broadband gateway platforms,” said **James Lee, CEO, Gemtek Technology Co., Ltd.** “The Topaz platform is built to provide the processing performance, security, memory bandwidth, and integration needed to support next-generation broadband and Wi-Fi deployments and differentiated operator services. We are excited to work with MaxLinear and leverage Topaz to accelerate innovation for our global customers.”*

Select OEMs are already designing next-generation gateways with Topaz. By consolidating key broadband, Wi-Fi, security, and processing functions into a single highly integrated platform, Topaz enables operators to deliver superior subscriber experiences while reducing system complexity, lowering power consumption, and improving overall cost efficiency.

MaxLinear will be attending Network X 2026 in Vienna, Austria. Visit us at **Booth D21** to see the debut of Topaz, our next-generation PON home gateway platform, and learn how we're enabling the future of broadband connectivity.

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 Statement Regarding 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. Forward-looking statements include, among others, statements relating to MaxLinear's Topaz product family and technology and the functionality, performance, benefits, availability, and future capabilities of such products and technology; statements regarding Topaz's support for, readiness for, or ability to comply with current and future standards, technologies, and regulatory frameworks; statements regarding current and anticipated customer and OEM adoption, evaluation, and design activity relating to Topaz; statements regarding the market opportunity for Topaz; and statements attributed to MaxLinear's Senior Vice President and General Manager, Network Infrastructure and Carrier, and to MaxLinear's partners and customers. 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 MaxLinear's Topaz technology; risks related to the markets for Topaz not developing or growing; 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, and the impact of excess inventory in the channel on our customers' expected demand for certain of our products and on our revenue; 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; and other risks and uncertainties indicated from time to time in MaxLinear's filings with the Securities and Exchange Commission, including its Annual Report on Form 10-K and its Quarterly Reports on Form 10-Q, and those disclosures under the "Risk Factors" sections therein. The foregoing list of factors is not exhaustive.

In addition to these risks and uncertainties, investors should review the risks and uncertainties contained in the filings of MaxLinear with the Securities and Exchange Commission, including our Current Reports on Form 8-K, as well as the information to be set forth under the caption "Risk Factors" in MaxLinear's Quarterly Report on Form 10-Q for the quarter ended June 30, 2026. All forward-looking statements are based on the estimates, projections and assumptions of management as of the date of this press 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.

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