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Marvell Extends ZR/ZR+ Leadership with Industry-first 1.6T ZR/ZR+ Pluggable and 2nm Coherent DSPs for Secure AI Scale-across Interconnects

Multi-generational ZR/ZR+ Technology with Integrated MACsec and High-volume Manufacturing Capacity to Meet Surging AI Data Center Demand

SANTA CLARA, Calif.--(BUSINESS WIRE)-- [Marvell Technology, Inc.](#) (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions, today announced the expansion of its multi-generational ZR/ZR+ and coherent DSP technology portfolio, introducing the industry's first 1.6T ZR/ZR+ data center interconnect (DCI) pluggable and 2nm coherent DSPs featuring media access control security (MACsec) to securely scale AI data center connectivity.

The Marvell® COLORZ® 1600 is the industry's first 1.6T ZR/ZR+ pluggable, powered by Marvell Electra, the industry's first 2nm 1.6T ZR/ZR+ coherent DSP. Marvell also introduced Libra, the industry's first 2nm 800G ZR/ZR+ coherent DSP, which enables a lower-power, second-generation COLORZ 800 pluggable. The new products, now with MACsec, expand the company's extensive coherent DSP and COLORZ pluggable portfolios, delivering efficient, high-performance and secure optical transmission for hyperscale AI and cloud data center networks worldwide.

As distributed AI workloads accelerate traffic between data centers, ZR/ZR+ connectivity has become essential for scaling networks that require high bandwidth, low power and built-in security. Coherent pluggable demand is expected to surge through 2030, yet this specialized technology requires deep expertise and the ability to rapidly scale manufacturing. Marvell is well-positioned to meet this demand, leveraging its increased pluggable manufacturing capacity to enable the high-volume yields required to equip global AI hyperscale and cloud data center infrastructure.

"Marvell, in close collaboration with hyperscale customers, introduced the first ZR pluggable nearly a decade ago and has continued to set the pace for every generation of coherent technology," said Russ Esmacher, senior vice president and general manager, Data Center Interconnect at Marvell. "However, technology leadership is only one part of the equation. Meeting the global needs of AI-driven data centers requires proven, large-scale manufacturing strength, from resource planning to test capacity. We are expanding our pluggable manufacturing capacity to help customers rapidly deploy the latest disruptive technologies to scale their networks."

"The size of the pluggable coherent market is massive but increasingly competitive. Maintaining leadership requires power efficiency, critical features and high-volume manufacturability," said Scott Wilkinson, lead analyst at Cignal AI. "Marvell has a proven

track record of consistently delivering first-to-market advancements across multiple generations of coherent DSPs, and the company's move to 2nm solutions underscores its commitment to density, performance and power."

COLORZ 1600: First 1.6T ZR/ZR+ Pluggable with MACsec

Marvell COLORZ 1600, with the Electra coherent DSP, connects campus (20km), metro (120km) and regional (1,000km) data centers at 1.6T. It supports in-chip MACsec security, full interoperability across OIF, OpenZR+ and OpenROADM modes, and C and L bands in the OSFP form factor while significantly reducing power per bit compared to existing solutions.

COLORZ 800: First 800G ZR/ZR+ Pluggable with MACsec and Full Interoperability

Powered by the new Libra coherent DSP, COLORZ 800 now enables cloud operators to secure scale-across interconnects between metro data centers up to 1,000km apart at 800G, and between regional data centers up to 2,000km apart at 600G and up to 3,000km apart at 400G. Supporting full interoperability across OIF, OpenZR+ and OpenROADM modes, and available for both C and L bands in QSFP-DD or OSFP form factors, COLORZ 800 significantly reduces DCI capital costs compared to traditional systems.

Marvell has set the pace for industry-first innovations across multiple generations, from developing the first ZR pluggable to pioneering 400G and 800G deployments—and now leading at 1.6T. In addition, Marvell offers the most comprehensive end-to-end, hyperscale-optimized coherent pluggable and DSP portfolio spanning coherent-lite, campus and DCI applications, along with a world-class manufacturing capability.

Availability

Marvell Electra and Libra coherent DSPs and COLORZ 1600 and the Libra DSP-enabled COLORZ 800 pluggables are expected to begin sampling to customers in the second half of 2026.

Marvell will showcase its end-to-end connectivity portfolio including its current-generation ZR/ZR+ coherent solutions at OFC 2026, March 15–19, at the Los Angeles Convention Center in Los Angeles, California. Visit the Marvell booth #1600 to learn how the company is driving the next generation of AI data center infrastructure.

About Marvell

To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for over 30 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud and carrier architectures transform—for the better.

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