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Marvell Demonstrates Industry's First End-to-end PCIe Gen 6 Over Optics for Accelerated Infrastructure at OFC 2025

Protocol-level PCIe Gen 6 Over 10m Optical Cable and PCIe Gen 7 SerDes Over Optics in Collaboration with TeraHop for AI Server Scale Up

SANTA CLARA, Calif., March 27, 2025 /PRNewswire/ -- [Marvell Technology, Inc.](#) (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions, today announced in collaboration with TeraHop, a global optical solutions provider for AI driven data centers, the demonstration of the industry's first end-to-end PCIe Gen 6 over optics in the Marvell booth #2129 at OFC 2025. The demonstration will showcase the extension of PCIe reach beyond traditional electrical limits to enable low-latency, standards-based AI scale-up infrastructure.

As AI workloads drive exponential data growth, PCIe connectivity must evolve to support higher bandwidth and longer reach. The Marvell® Alaska® P PCIe Gen 6 retimer and its PCIe Gen 7 SerDes technology enable low-latency, low bit-error-rate transmission over optical fiber, delivering the scalability, power efficiency, and high performance required for next-generation accelerated infrastructure. With PCIe over optics, system designers will be able to take advantage of longer links between devices that feature the low latency of PCIe technology.

Marvell and TeraHop will demonstrate the industry's first successful transmission of PCIe Gen 6 signals between the root complex and endpoint across 10 meters of TeraHop OSFP-XD active optical cable using the Alaska P PCIe Gen 6 retimer integrated into a TeraHop-developed PCIe Gen 6 retimed riser card. By retiming and converting PCIe Gen 6 electrical signals into optical data, this solution ensures reliable high-speed connectivity between AI accelerators, CPUs, CXL-pooled memory, SSDs, and NICs, unlocking new possibilities for AI-driven data centers.

Driven by an ever-increasing demand for AI, the industry is expecting the PCIe Gen 7 standard to be finalized this year. The companies will also demonstrate PCIe Gen 7 SerDes running at 128 GT/s transmitting signals through the TeraHop linear-drive pluggable optical (LPO) module providing a migration path to standard-based low-latency and high-performance connectivity solution.

"As a leader in high-speed optical interconnects, TeraHop has established a long-standing collaboration with Marvell that continues to drive industry adoption of cutting-edge, high-speed connectivity solutions," said Rang-Chen Yu, Vice President of Marketing, TeraHop. "This breakthrough demonstration of PCIe Gen 6 over optics highlights the potential of optical interconnects in AI and hyperscale infrastructure."

"Marvell continues to lead the industry with the first end-to-end PCIe Gen 6 over optics solution, delivering the critical interconnect technology needed to scale up AI infrastructure,"

said Xi Wang, vice president and general manager, Connectivity Business Unit at Marvell. "With our strong leadership in PAM technology, generational expertise in PCIe progression, and custom accelerated infrastructure silicon, we enable hyperscalers to optimize their AI architectures for maximum performance, efficiency, and scalability."

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 25 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, automotive, and carrier architectures transform—for the better.

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