Marvell Demonstrates Industry's First 200G 3D Silicon Photonics Engine To Scale Accelerated Infrastructure

- *Marvell 3D Silicon Photonics Engine is designed to enable higher density, lower power optical interconnects for next-generation AI clusters and cloud data centers.*
- *The industry's first SiPho Engine with 200 Gbps electrical and optical interfaces, the device delivers 2x the bandwidth and 30% lower power per bit versus comparable devices with 100 Gbps electrical and optical interfaces.*
- *The SiPho Engine leverages advanced 3D packaging and other Marvell technologies to integrate hundreds of components into a single device.*

SANTA CLARA, Calif., March 25, 2024 /PRNewswire/ -- Marvell Technology, Inc. (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions, will demonstrate its 3D Silicon Photonics (SiPho) Engine this week, the industry's first highly integrated SiPho engine featuring 32 channels of 200G electrical and optical interfaces for connecting next-generation AI clusters and cloud data centers at multi-terabit speeds.

The Marvell 3D SiPho engine combines hundreds of components such as waveguides and modulators, photodetectors, modulator drivers, trans-impedance amplifiers, microcontrollers, and a host of other passive components into a single, unified device to dramatically boost the performance, bandwidth, and energy efficiency of optical interconnects. The 200 Gbps device delivers 2x the bandwidth, 2x the input/output (I/O) bandwidth density, and 30% lower power per bit versus comparable devices with 100 Gbps electrical and optical interfaces[1].

Device integration and greater bandwidth input/output (I/O) density provide a pathway for producing a wide spectrum of optical interconnects optimized for different use cases and form factors ranging from pluggable modules to future co-packaged optics (CPO).

"Silicon photonics has been gaining momentum in coherent optical transceivers for connecting data centers over long distances," said Vlad Kozlov, CEO and founder of LightCounting. "In its next phase of development, we expect the technology to become more prevalent inside data centers and AI clusters. Our current forecast is for annual growth in shipments to approach 40% through 2028."

"Advances in optical interconnect technology are necessary to realize the promise of AI and accelerated infrastructure," said Dr. Loi Nguyen, executive vice president and general manager of Cloud Optics at Marvell. "Our 3D SiPho engine is designed to enable higher bandwidth, higher I/O density, and lower power optical interconnects that scale cloud service providers' infrastructure to meet the growing bandwidth needs of emerging AI services and applications."

The demonstration will take place at OFC 2024 this week in San Diego, California.

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.

- Marvell estimates.

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