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Marvell Introduces Industry's First 800G Multimode Electro-Optics Platform for Cloud Data Centers

AI, ML and HPC Applications Drive Cloud-Optimized 800G PAM4 Interconnects

SANTA CLARA, Calif., March 2, 2022 /PRNewswire/ -- Marvell (NASDAQ: MRVL) today announced the industry's first 800Gbps or 8 x 100Gbps multimode platform solution, that enables data center infrastructure to achieve dramatically higher speeds for short-reach optical modules and Active Optical Cable (AOC) applications. As artificial intelligence (AI), machine learning (ML) and high-performance computing (HPC) applications continue to drive greater bandwidth requirements, cloud-optimized solutions are needed that can bring lower power, latency and cost to short-range data center interconnections. The new 800G platform, which includes Marvell's PAM4 DSP with a multimode transimpedance amplifier (TIA) and Driver, enables faster data center speeds scaling to 800Gbps, using conventional cost-effective vertical-cavity surface-emitting laser (VCSEL) technology while accelerating time-to-market with plug-and-play deployment.

Today's data centers are packed with equipment utilizing optical modules or AOCs connected by multimode optical fiber optimized for communication over short distances within data centers. This 100G per lane multimode fiber provides cost-effective, low-power, short-reach connectivity. To support multi-gigabit transmissions, multimode architectures often use VCSEL transmitters, which offer the cost benefits of reliability, power efficiency and easy deployment.

To increase interconnect speeds required by today's data center operators, they must upgrade their equipment while minimizing the cost and complexity of multimode fiber replacement. With the introduction of the industry's first 800G multimode platform solution data centers can double the data rate to achieve 800G speeds using the same multimode fiber. The new Marvell platform is an easy plug-and-play option for optical modules and AOC used in routers and switches, enabling faster, more cost-effective upgrades without overhauling fiber networks.

"As a pioneer in PAM4 DSP technology for data centers, Marvell is the first in the industry to offer a cost-effective, plug-and-play platform solution that supports 800G speeds using VCSEL technology and multimode fiber," said Lian Qin, associate vice president, Optical and Copper Connectivity Group, Marvell. "With this industry-first 800G multimode platform solution, we are transforming today's data centers to deliver the required bandwidth to support the data centers of tomorrow."

"The demand for high-speed optical interconnects in data centers continues to exceed expectations, increasing 80x over the past decade to reach 800G," said Vlad Kozlov,

founder and CEO, LightCounting Market Research. "We predict continued strong demand for short-reach, low-cost multimode technology, and Marvell's 800G multimode platform is the first solution to address this market need. The platform delivers a highly integrated, cost-effective and easy-to-deploy approach that's optimized to drive massive data center growth in the coming years."

Marvell is addressing a variety of options in the data center as each cloud is unique, requiring varying distances for its interconnects and optimal technologies to support its infrastructure — often a mix of different interconnect types. By fostering an open ecosystem of interoperable solutions, Marvell is enabling the delivery of cloud-optimized solutions to the world's largest carrier and data center networks.

PAM4 DSPs
The Marvell® Spica™ PAM4 DSP is the industry's first 800Gbps or 8x100Gbps PAM4 DSP to support 800G optical modules in QSFP-DD800 and OSFP form factors. Spica is a field-proven, low-power, high-performance PAM4 DSP, optimized for optical transceiver modules applications, with various package options for all major module form factors. Spica DSPs are optimized for both multimode and single-mode applications.

Multimode Driver
The Marvell IN5614DV is a 56GBaud low power VCSEL linear driver for PAM4 optical modules or Active Optical Cables. The TIA is optimized for routing with a channel pitch aligned to the VCSEL optics driving over multimode fiber.

Multimode TIA
The Marvell IN5669TA is a 56GBaud low power VCSEL TIA for PAM4 optical modules. It features a wide dynamic range to meet the different performance and link requirements for optical applications and excellent signal integrity necessary for PAM4 modulation schemes.

Marvell is showcasing its new 800G multimode platform solution alongside its comprehensive portfolio of cloud-optimized electro-optics PAM DSP, Coherent DSP, DCI modules, switch and PHY solutions at OFC in San Diego, Calif. (booth #2301) March 8-10, 2022.

Availability
The Marvell chipset is available now and sampling to leading customers. Additional resources can be found on the media kit page.

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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