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Marvell Announces Availability of Active Electrical Cables Powered by Its Industry-Leading PAM4 DSP Technology

Leading Cable Manufacturers Deliver Cloud-Optimized Interconnects to Address Soaring Data Center Bandwidth Demand

SANTA CLARA, Calif., Oct. 20, 2022 /PRNewswire/ -- Marvell Technology, Inc. (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions, today announced that leading cable manufacturers are sampling to cloud data center operators their 100G/lane active electrical cables (AECs) powered by Marvell® Alaska® A PAM4 DSPs. At these speeds, the physical reach achievable with passive direct attach cables (DACs) falls short of the distance requirements for server-to-ToR (top of rack) and switch-to-switch interconnects. For cloud operators to continue their routine data center bandwidth doubling, most of these interconnects must transition from DAC to AEC. The Alaska A PAM4 DSP family enables cable manufacturers to deliver optimized AEC solutions that meet the unique and diverse requirements of leading cloud data center operators. The emerging AEC interconnect product category expands Marvell's addressable market for high-speed DSP technology.

The new AECs enable next-generation 400G, 800G and 1.6T server-to-switch and switch-to-switch interconnects that require 100G serial I/Os for data-intensive artificial intelligence, machine learning and high-performance computing workloads. Marvell's industry-leading PAM4 SerDes technology and Ethernet IP in the Alaska A family underpin the performance of the new interconnects, complemented by the power and speed advantages of a cutting-edge process node.

Marvell's Alaska A family further applies advanced DSP equalization techniques and flexible firmware-based implementation to optimally compensate for the impairments introduced by the cable on the high-speed 100G PAM4 signal. This provides the ability to deploy thin cables that address the reach and flexibility needs of next-generation data center architectures.

"Alaska A DSPs are foundational to 100G/lane serial-based connectivity and have extended Marvell's PAM4 DSP portfolio to short-reach interconnects in cloud data centers," said Venu Balasubramonian, vice president of product marketing, High Speed Connectivity and PHY Business Unit at Marvell. "The availability of these high-performance AECs by leading cable providers is an important milestone in addressing the 100G/lane architectures that are set to be the next data center inflection point."

"Amphenol's AEC interconnect products incorporating Marvell's Alaska A DSPs enable us to offer an advanced solution with the performance needed for next-generation infrastructure architectures," said Brian Kirk, CTO at Amphenol. "The delivery of these AEC interconnects to our customers underscores the critical performance and reliability requirements they meet for 100G/lane connectivity."

"Our data center customers are looking to extend link reach at higher data rates as speeds continue to rise and cable functionality continues to become increasingly important to cloud infrastructure," said Brian Hauge, vice president and general manager, Copper Solutions, Molex. "Our latest AEC portfolio shipping with Marvell's Alaska A DSPs brings a compelling solution to our customers for their high-performance interconnect architectures."

"Next-generation data centers with 100G/lane Ethernet will require advanced cabling solutions to meet the reach, flexibility and power requirements," said Mike Tryson, CTO and vice president of Engineering at TE Connectivity. "The combination of Marvell's Alaska A DSP with TE's advanced 100G cabling capability will enable a portfolio of AEC solutions for mission-critical data center applications."

"A data center is only as strong as its weakest link. We anticipate AEC adoption to occur rapidly with shipments of AEC chips growing by 10x to nearly 25 million units per year by 2026," said Alan Weckel, co-founder of the 650 Group. "AEC cables will play a pivotal role in server to Top-of-Rack switching in the data center as server speeds increase to 100 Gbps and beyond. AI/ML-based servers are already pushing the limits of current cable technology."

Availability

Active electrical cables powered by Marvell Alaska A PAM4 DSPs are sampling now from Amphenol, Molex and TE Connectivity.

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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