Broadcom Delivers Industry Leading 200G/lane DSP for Gen AI Infrastructure

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Broadcom Sian Family of DSPs Enable Best-in-Class 800G and 1.6T Optical Transceivers

PALO ALTO, Calif., Sept. 23, 2024 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the general availability of Sian ™2, 200 Gbps per lane (200G/lane) PAM-4 DSP PHY. Sian2 features 200G/lane electrical and optical interfaces to augment the Sian DSP that supports 100 Gbps electrical and 200Gbps optical interfaces. Sian and Sian2 DSPs enable pluggable modules with 200G/lane interfaces that are foundational to connect next generation AI clusters.

AI cluster sizes and cluster performance needs are growing dramatically to support exploding AI model sizes. High performance, low latency, and resilient connectivity are vital for the scale-up and scale-out of next generation AI clusters. For these networks, customers demand reliable optical network connectivity with higher bandwidth, lower power, lower latency and lower cost. This necessitates the migration from the 400G/800G links with 100G/lane optics being used in AI clusters today to 800G/1.6T links with 200G/lane optics that Sian2 enables. Broadcom's Sian2 and Sian DSPs are optimized for 800G and 1.6T optical module platforms and deliver unmatched performance by doubling the bandwidth with lower power, lower latency and lower cost per bit to facilitate AI data center scale.

"200G/lane DSP is foundational to high-speed optical links for next generation scale-up and scale-out networks in the AI infrastructure," said Vijay Janapaty, vice president and general manager of the Physical Layer Products Division at Broadcom. "The Sian family of products reinforces Broadcom's leadership in optical DSP PHYs and enables our AI data center customers to deploy high-performance 800G and 1.6T links."

Further, the combination of Sian2 and Sian PHY and Broadcom's leading-edge 200G/lane optics, including electro-absorption modulated laser (EML) and continuous wave laser (CWL), provides the best-in-class performance and power consumption enabling data center operators to cost-effectively scale AI workloads.

"AI market leaders will start ramping optical modules using 200G/lane in 2025," commented Dr. Vlad Kozlov, CEO and Chief Analyst at LightCounting. "There is a race for dominance in AI fueling a demand for delivery in excess of 1M units of 1.6T optical transceivers within the first 12 months. We have never seen new products ramping at such rate."

Sian2 Product Highlights:

- Low power 5nm 200G/lane DSP solution enabling sub-28W 1.6T transceivers
- Supports 800G and 1.6T pluggable modules
- Support for both 212.5-Gb/s and 226.875-Gb/s data rates for InfiniBand and Ethernet applications
- Support for multiple FEC options including Bypass, Segmented and Concatenated FEC
- Built-in low-swing and high-swing laser driver for both SiP and EML based optical modules
- Sub-80ns roundtrip (Ingress + Egress) latency for AI/ML applications
- Crossbar support for ease of transceiver design

Demo Showcase at ECOC 2024

Broadcom Sian2 PHY and 200G/lane optics inside 1.6T DR8 optical modules will be demonstrated in the Innolight Booth B81 and Eoptolink Booth D60 taking place at ECOC Exhibition 2024, in Frankfurt, Germany from September 23-25. Attendees will see live transmit eye performance and end-to-end pre-FEC & post-FEC performance with IEEE compliant KP4 FEC.

"Sian2 enables the design of high-speed optical transceivers for next generation switches, network interface cards and accelerators with 200G SerDes interfaces," said Richard Huang, CEO, Eoptolink Technology. "The Broadcom Sian2 DSP and Eoptolink's innovative transceiver design approach results in performance leading 1.6T pluggable optical transceivers. Combined with Eoptolink's high volume manufacturing capability, this ensures the supply for the growing bandwidth in AI networks."

"InnoLight is leading the industry's transition to 1.6T with the lowest power transceiver solutions, leveraging Broadcom's Sian2 DSP," said Hai Ding, VP of Marketing, InnoLight Technology. "As engineering pioneers, we're redefining optical networking with our cutting-edge innovations, and helping accelerate the deployments of 200G/lane pluggables for next generation AI workloads."

Availability

Broadcom is currently sampling the Sian2 BCM8582X device to its early access customers and partners. Please contact your local Broadcom sales representative for samples and pricing.

For more information on Broadcom's 200G/lane optical solutions, please click here.

About Broadcom

Broadcom Inc. (NASDAQ: AVGO) is a global technology leader that designs, develops, and supplies a broad range of semiconductor, enterprise software and security solutions. Broadcom's category-leading product portfolio serves critical markets including cloud, data center, networking, broadband, wireless, storage, industrial, and enterprise software. Our solutions include service provider and enterprise networking and storage, mobile device and broadband connectivity, mainframe, cybersecurity, and private and hybrid cloud infrastructure. Broadcom is a Delaware corporation headquartered in Palo Alto, CA. For more information, go to www.broadcom.com.

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