Broadcom Introduces Industry's First 5nm 100G/lane Optical PAM-4 DSP PHY with Integrated TIA and Laser Driver

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Monolithic fully integrated 800G PAM-4 PHY delivers best-in-class performance and efficiency for pluggable transceiver modules

SAN JOSE, Calif., March 06, 2023 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the availability of its 5nm 100G/lane optical PAM-4 DSP PHY with integrated transimpedance amplifier (TIA) and laser driver, the BCM85812, optimized for 800G DR8, 2x400G FR4 and 800G AOC module applications. Built on Broadcom's proven 5nm 112G PAM-4 DSP platform, this fully integrated DSP PHY delivers superior performance and efficiency and drives the overall system power down to unprecedented levels for hyperscale data center and cloud providers.

BCM85812 Product Highlights

- Monolithic 5nm 800G PAM-4 PHY with integrated TIA and high-swing laser driver
- Delivers best-in-class module performance in BER and power consumption.
- Drives down 800G module power for SMF solutions to sub 11W and MMF solutions to sub 10W.
- Compliant to all applicable IEEE and OIF standards, capable of supporting MR links on the chip to module interface.
- Fully compliant with OIF 3.2T Co-Packaged Optical Module Specs
- Capable of supporting optical modules from 800G to 3.2T

Demo Showcases at OFC 2023

Broadcom will demonstrate the BCM85812 in an end-to-end link connecting two Tomahawk 5 (TH5) switches using Eoptolink's 800G DR8 optical modules. Attendees will see live traffic stream of 800GbE data running between two TH5 switches. Broadcom will showcase various 800G DR8, 2x400G FR4, 2x400G DR4, 800G SR8, and 800G AOC solutions from third party transceiver vendors that interoperate with each other, all using Broadcom's DSP solutions. Following are module vendors that will be participating in a multi-vendor interop plug-fest on the latest Tomahawk 5 switch platform: Eoptolink, Intel, Molex, Innolight, Source Photonics, Cloud Light Technology Limited and Hisense Broadband.

Additionally, Broadcom in collaboration with Semtech and Keysight will demonstrate a 200G per lane (200G/lane) optical transmission link leveraging Broadcom's latest SerDes, DSP and laser technology. These demonstrations will be in Broadcom Booth 6425 at the Optical Fiber Communication (OFC) 2023 exhibition in San Diego, California from March 7th to 9th.

"This first-to-market highly integrated 5nm 100G/lane DSP PHY extends Broadcom's optical PHY leadership and demonstrates our commitment to addressing the stringent low power requirements from hyperscale data center and cloud providers," said Vijay Janapaty, vice president and general manager of the Physical Layer Products Division at Broadcom. "With our advancement in 200G/lane, Broadcom continues to lead the industry in developing next generation solutions for 51.2T and 102.T switch platforms."

"By 2028, optical transceivers are projected to account for up to 8% of total power consumption in cloud data centers," said Bob Wheeler, principal analyst at Wheeler's Network. "The integration of TIA and driver functions in DSP PHYs is an important step in reducing this energy consumption, and Broadcom is leading the innovation charge in next-generation 51.2T cloud switching platforms while also demonstrating a strong commitment to Capex savings."

Availability

Broadcom has begun shipping samples of the BCM85812 to its early access customers and partners. Please contact your local Broadcom sales representative for samples and pricing.

About Broadcom

Broadcom Inc. (NASDAQ: AVGO) is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Broadcom's category-leading product portfolio serves critical markets including data center, networking, enterprise software, broadband, wireless, storage and industrial. Our solutions include data center networking and storage, enterprise, mainframe and cyber security software focused on automation, monitoring and security, smartphone components, telecoms and factory automation. For more information, go to https://www.broadcom.com.

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