Broadcom Delivers Industry's First Complete 7nm PAM-4 Optical Platform for Hyper-Scale Data Center and Cloud Infrastructure

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Comprehensive portfolio of 100G DR/FR and 400G DR4/FR4 transceiver solutions accelerate 400GbE deployments and lay foundation for next generation networks

SAN JOSE, Calif., March 05, 2019 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the immediate availability of its 7nm 100G PAM-4 PHY device, the BCM87106, designed for hyper-scale data center and cloud networks. Leveraging Broadcom's proven 7nm Centenario™ 112G PAM-4 technology and 100G single-lambda optics, the device completes the 7nm PAM-4 optical platform for addressing 100G DR, 100G FR, 400G DR4 and 400G FR4 transceiver applications. The platform provides unprecedented performance and power efficiency, enabling the industry to transition to 400G Ethernet.

400GbE deployments are ramping in hyper-scale data center and cloud networks as the adoption of Broadcom's 12.8-Tbps Tomahawk® 3 switch chip is accelerating. Effective deployment of 400G networks also requires backward compatibility to legacy 3.2-Tbps and 6.4-Tbps switches, such as Broadcom's Tomahawk 1 and Tomahawk 2, currently deployed with 100-Gbps optical modules. With the availability of both 7nm 100G and 400G PAM-4 PHY devices, the BCM87106 and BCM87400, respectively, data center operators and cloud providers can now deploy the highest performance, lowest power 100G and 400G links to expand their network capacity and support the growing bandwidth demands.

The introduction of BCM87106 in 7nm CMOS allows for increased performance margin and flexibility to support multi-vendor interoperability while reducing power within dense hyper-scale and cloud network deployments. Broadcom's 7nm 100G PHY solution delivers more than 30% power savings compared to existing 16nm PHY solutions. Furthermore, the BCM87106 enables transceiver manufacturers to produce a lower cost QSFP28 solution using a single 100-Gbps transmit and receive path, as opposed to the current PSM4 and CWDM4 solutions which require four linear drivers, four lasers, four photodetectors and four TIAs. The BCM87106 enables superior performance, lower power and lower cost 100G transceiver solutions, making it ideal for large-scale 100GbE DR deployments. Broadcom's 7nm PHY solution is complemented by a full suite of electro-absorption modulated lasers (EMLs), PIN photodetectors and PMD driver and TIA ICs, creating an industry leading one-stop shop portfolio for transceiver manufacturers.

7nm 100G/400G PAM-4 PHY

- Industry leading DSP performance and power efficiency enabling DR/FR/LR/DR4/FR4/LR4 optical modules including QSFP-DD/OSFP/QSFP28 to meet IEEE and MSA specifications
- Proven client-side interop with Broadcom switch ASICs and ASSPs using proven industry leading 28Gbaud PAM-4 and NRZ SerDes architecture and flexibility to support 100GbE with either 4x25G NRZ or 2x50G PAM-4 physical lanes
- PAM-4 client-side interface compliance to CEI-28G/56G medium reach (MR) specification supporting MR channels
- 802.3bs standard-compliant KP4, KR4, and end-to-end FEC bypass operation supporting DR4-DR1 break-out and longer distance links
- Advanced API based PHY firmware with direct compatibility for both BCM87400 and BCM87106 leveraging platform 100G/400G designs for faster time to market

100G Single-Lambda Optics & PMD

- Highly differentiated III-V optical components including EMLs (283Q), EMLs on Carrier (729Q) and PIN photodetectors (118K35) for 100G and 400G long reach applications
- Highly integrated PMD devices including linear laser drivers (AFSI-N91C4L1/2) and TIAs (AFSI-R91C4L, AFSI-R94C4L) for 100G and 400G applications

Further information on Broadcom's 7nm PAM-4 optical platform is available online at https://www.broadcom.com/blog/7nm-pam4-optical-platform-accelerates-400gbe-deployments

"With the addition of our 7nm 100G PAM-4 PHY, Broadcom now offers the complete 7nm PAM-4 optical platform to fully enable the industry to transition to 400G Ethernet while laying the foundation for next generation networks," said Lorenzo Longo, senior vice president and general manager of the Physical Layer Products Division at Broadcom. "With the increasing demand for more network bandwidth, especially in hyper-scale data center and cloud networks, we continue to broaden our 7nm PAM-4 product line and we are well positioned to address new technical challenges and power concerns for future networks."

"Most of the early deployment of 400GbE modules will be used to create dense, high-radix 100GbE switch fabrics using 12.8Tbps switches such Broadcom's Tomahawk 3," said Dale Murray, principal analyst at LightCounting Market Research. "Broadcom makes this possible with complete PHY and optical component solutions to support 4-way breakout from 400G-DR4/FR4 modules to individual 100GDR/FR modules using low-power 7nm CMOS technology."

Demo Showcase at OFC 2019

Broadcom will showcase a broad array of state-of-the-art data center solutions, including 7nm 100G and 400G PAM-4 PHY devices and leading edge single-mode fiber (SMF) and multi-mode fiber (MMF) optics with complementary PMD devices. The demonstration and new product showcase will be in the Broadcom Booth 6500 at the Optical Fiber Communication (OFC) 2019 exhibition in San Diego, California from March 5th to 7th.

Availability

Broadcom has begun shipping the 7nm PAM-4 PHY devices and optical components for 100G DR/FR and 400G DR4/FR4 transceiver applications and is currently accepting orders for these products. 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 and mainframe software focused on automation, monitoring and security, smartphone components, telecoms and factory automation. For more information, go to www.broadcom.com.

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Press Contact:
Khanh Lam
Corporate Communications
press.relations@broadcom.com
Telephone: +1 408 433 8649

Broadcom Ltd Logo Red

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