



Broadcom Delivers Industry's First 16nm Nx56G PAM-4 PHYs for Wired Network Infrastructure

March 2, 2017

Comprehensive Portfolio of Nx56G PAM-4 PHYs for 50GbE, 100GbE, 200GbE and 400GbE Interfaces for Line Card, Backplane, and Module Applications

SAN JOSE, Calif., and SINGAPORE, March 02, 2017 (GLOBE NEWSWIRE) -- Broadcom Limited (NASDAQ:AVGO), a leading designer, developer and global supplier of a broad range of digital and analog semiconductor connectivity solutions, today announced a comprehensive portfolio of Nx56G PAM-4 PHY devices enabling 50GbE, 100GbE, 200GbE and 400GbE connectivity for wired network infrastructure that includes enterprise, cloud-scale data center, and service provider networks. Leveraging Broadcom's industry-leading DSP-based PAM-4 technology, the new PHY devices deliver best-in-class performance with integrated FEC and equalization while offering unprecedented power efficiency. Complementing latest switch processor chips with 56G PAM-4 interfaces, the new PHY portfolio fully enables end-to-end PAM-4 connections between network switches, expanding the bandwidth capacity of the wired network.

16nm Nx56G PAM-4 PHY Highlights

- Long-reach performance capable of compensating for >30dB of insertion loss at 56 Gb/s
 - Enables low power Nx56G PAM-4 PHYs with high performance DSP-based equalization to address both copper and optical cabling systems including multi-mode fiber (MMF) and single-mode fiber (SMF)
 - IEEE 802.3bs compliant FEC capability
 - Proprietary Super-FEC (S-FEC) with 9.4dB coding gain, extended burst error correction capability, and low latency for extended reach
- Protocol agnostic supporting various interconnect interfaces:
 - IEEE 802.3bs/cd 50/100/200/400GbE for backplane & copper cabling
 - CDAUI-8 chip-to-module & chip-to-chip
 - OIF 56G-LR-PAM-4 for PCB & cabled backplane
- System side interface options and compatibility to support both legacy 28Gbps NRZ I/Os and next generation 56Gbps PAM-4 I/Os on standard product Switch chips and ASICs
- Guaranteed interoperability with Broadcom's standard product Switch chips and ASICs

"Doubling the per lane data rate from 28 Gb/s to 56 Gb/s is critical to meeting the rapidly increasing bandwidth requirements in today's cloud computing and hyper-scale data center environments," said Lorenzo Longo, senior vice president and general manager of the Physical Layer Products Division at Broadcom. "Our third generation PAM-4 PHYs provide the highest performance and lowest power solutions in the industry, drive faster time to market for our customers, and expand bandwidth capacity of next generation networks."

"PAM-4 is fast becoming a standard for 50-400G networking and data center connections," said Simon Stanley, founder and principal consultant at Earlswood Marketing Ltd and analyst at large with Heavy Reading. "With its established position in the Ethernet switching and optical networking, the latest 16nm PAM-4 PHY portfolio from Broadcom provides a comprehensive solution that will accelerate the deployment of 50-400G networks."

Portfolio Overview

- BCM81330 -- 8x56G PAM-4 PHY for network backplanes
- BCM81328 -- 8x56G PAM-4 PHY for line cards
- BCM81188 -- 8x56G PAM-4 PHY for pluggable transceiver modules (i.e., CFP8)
- BCM81141 -- 4x56G PAM-4 PHY for pluggable transceiver modules (i.e., QSFP56)
- BCM81128 -- 2x56G PAM-4 PHY for pluggable transceiver modules (i.e., QSFP28)
- BCM81118 -- 1x56G PAM-4 PHY for pluggable transceiver modules (i.e., SFP56)

Further information on Broadcom's latest 16nm PAM-4 PHY portfolio is available online at <https://www.broadcom.com/blog/16nm-pam4-phy-technology>

Broadcom will showcase multiple PHY products based on its latest 16nm 56G PAM-4 technology and demonstrate operation up to 400 Gb/s. The demonstration and new product showcase will be in the Broadcom Booth 2873 at the Optical Fiber Communication (OFC) 2017 exhibition in Los Angeles, California from March 21st to 23rd.

Availability

Broadcom has begun shipping the 16nm PAM-4 PHY devices and is currently accepting orders for these products. Please contact your local Broadcom sales representative for samples and pricing.

About Broadcom Limited

Broadcom Limited is a leading designer, developer and global supplier of a broad range of digital and analog semiconductor connectivity solutions. Broadcom Limited's extensive product portfolio serves four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & other. Applications for our products in these end markets include: data center networking, home connectivity, set-top box, broadband

access, telecommunications equipment, smartphones and base stations, data center servers and storage, factory automation, power generation and alternative energy systems, and electronic displays. For more information, go to www.broadcom.com.

Broadcom, the pulse logo, Connecting everything, and Avago Technologies are among the trademarks of Broadcom. The term "Broadcom" refers to Broadcom Limited and/or its subsidiaries. Other trademarks are the property of their respective owners.

Press Contact:

Khanh Lam

Corporate Communications

press.relations@broadcom.com

Telephone: +1 408 433 8649

 [Primary Logo](#)

Broadcom Corporation