



Broadcom Delivers Industry's Broadest Portfolio of Fiber Optics, PHY and Switch Solutions for 100/200/400/800G Data Center Connectivity

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Proven 100G EML and VCSEL optics and 112G Direct-Drive PAM-4 PHYs facilitate large-scale deployments and drive the next evolution of high bandwidth network connectivity

SAN JOSE, Calif., June 03, 2021 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the availability of its expanded portfolio of 100Gb, 200Gb, 400Gb and 800Gb electro-optics platform solutions for data center and cloud networks. Introducing the industry's first 100Gb PAM-4 VCSEL and multi-mode kit, proven 112Gb PAM-4 PHY with direct-drive technology, and uncooled 100Gb PAM-4 EML capability, the portfolio provides customers with a complete set of solutions to solve the industry's growing networking bandwidth requirements, including those based on Broadcom's 12.8-Tbps Tomahawk® 3 and 25.6-Tbps Tomahawk® 4 switch platforms. With Broadcom's full line of end-to-end solutions, data center operators and cloud providers can cost-effectively deploy 100Gb, 200Gb, 400Gb and 800Gb links to expand their network capacity and support growing bandwidth demands.

100G PAM-4 VCSEL Kit and Uncooled EML

- More than 10M channels of 50Gb VCSEL deployed in cloud data centers
- Complete 100Gb MMF kit including VCSEL, PD, driver, and TIA addressing fast growing cloud demand
- Expanding production of uncooled 100Gb EML to meet low power dissipation and system cost requirements for hyper-scale applications
- Advanced 200Gb EML optics available in second half of 2021 to address cost and power consumption challenges for next generation 800Gb and 1.6Tb data center applications
- New optical components for 4x100Gb MMF kit targeting 400Gb and 800Gb applications:
 - VCSEL: AFCD-V84LP
 - PD: BPD3056-4
 - Driver: AFSI-N94C4S2
 - TIA: AFSI-R94C4S2
- New optical components for 100Gb/lane SMF kits:
 - EML: 283QT1xx for 100/200/400/800Gb application
 - TOSA: TX-E1x112-SU131 for 100Gb DR1 application

112Gb/56Gb PAM-4 PHY

- Industry leading DSP performance and power efficiency enabling MMF and SMF optical transceivers to meet IEEE and all optical module MSA specifications
- Client-side interoperability with Broadcom merchant switch devices using proven industry leading 28-Gbaud and 56-Gbaud SerDes architecture and flexibility to support either 56-Gb/s or 112-Gb/s PAM-4 physical lanes
- Option to support direct drive capability from the PHY for 50-Gb/s per lane and 100-Gb/s per lane eliminating the need for an external laser driver
- Key PHY product families
 - BCM874xx/871xx -- Centenario family with 50-Gb/s per lane client side to 100-Gb/s per lane for optical line side interfaces
 - BCM878xx -- Portofino family with 100-Gb/s per lane client side and 100-Gb/s per lane for optical line side interfaces
 - BCM875xx -- Estoque family with 50-Gb/s per lane client side and 50-Gb/s per lane for optical line side interfaces

Broadcom will demonstrate multiple products based on 112Gb PAM-4 PHY with 100Gb PAM-4 EML and 100Gb PAM-4 VCSEL technologies running on Broadcom's Tomahawk switch platform at the 2021 Optical Fiber Communication Conference and Exhibition (OFC) from June 7th to 11th. Additionally, Broadcom is showcasing its latest 100Gb, 200Gb, 400Gb and 800Gb electro-optics platform solutions in the [Broadcom OFC Virtual Exhibit](#).

"Broadcom offers a complete line of PAM-4 PHYs with direct drive capability that reduce power and cost while enhancing the ease of deployment," said Vijay Janapaty, vice president and general manager of the Physical Layer Products Division at Broadcom. "Broadcom's portfolio of optimized solutions for a wide range of optical and line card applications at both 50G/lane and 100G/lane enable customers to rapidly deploy leadership networking solutions to meet the demanding growth of hyperscale cloud datacenters."

"Broadcom's ability to bring 100G VCSELs and uncooled 100G EMLs to market will enable our customers to address two of the most important challenges facing hyperscale operators - power consumption and bandwidth density," said Alexis Bjorlin, senior vice president and general manager of the Optical Systems Division at Broadcom. "We are expanding our fab capacities and are continuing to innovate with increased investments in next generation technologies to meet the growing requirements for energy efficient optical interconnects."

"Growth in demand for optical connectivity in hyperscale datacenters exceeded all expectations. It increased by 80x over the last decade: from 10G in 2010 to 800G by the end of 2020," commented Dr. Vladimir Kozlov, CEO and founder of LightCounting Market Research. "Broadcom is one of the key suppliers enabling this incredible ramp in speed and complexity of optical interconnects. Their new products, including first 100G VCSELs, 200G EMLs and 112G Direct-Drive PAM-4 PHYs, confirm the company's commitment to innovation in optical and electronic components supporting the industry."

Availability

The Portofino PHYs are sampling now, and the Centenario and Estoque PHYs are production released. Additionally, Broadcom has begun sampling its 100G MMF and 100G SMF kits to qualified customers. Please contact your local Broadcom sales representative for samples and pricing.

Further product information on Broadcom's 100Gb, 200Gb, 400Gb and 800Gb electro-optics platform solutions can be found online at:

<https://www.broadcom.com/blog/switch-phy-and-electro-optics-solutions-accelerate-100g-200g-400g-800g-deployments>

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 www.broadcom.com.

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