Broadcom and Tencent Partner to Accelerate Commercialization of Co-Packaged Optics Network Switch

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Industry's first 25.6-Tbps CPO switch delivers unprecedented bandwidth density and power efficiency

SAN JOSE, Calif., Aug. 22, 2022 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) and Tencent Holdings Ltd. today announced a strategic partnership to accelerate the adoption of high bandwidth co-packaged optics (CPO) network switches for cloud infrastructure. Under this partnership, Broadcom will provide the 25.6-Tbps Humboldt CPO switch device that features Broadcom's best-in-class StrataXGS ® Tomahawk® 4 switch chip directly coupled and co-packaged with four 3.2-Tbps Silicon Photonics Chiplets In Package (SCIP) optical engines. Tencent has defined the system architecture and worked closely with Broadcom to develop hardware and software for field deployment of the 25.6-Tbps CPO switch system. Ruijie Networks Co., Ltd. will verify the design, manufacture and test the full CPO switch system, and then provide the finished product to Tencent. The jointly developed 25.6-Tbps CPO switch system will be demonstrated at the China International Optoelectronic Exposition (CIOE) in Shenzhen from September 7th to 9th.

25.6-Tbps CPO Switch Product Highlights:

- 2RU system design with high efficiency air cooling to support 4x3.2-Tbps optical CPO interfaces routed to 16 MPO connectors and 32x400G electrical QSFP112 ports
- CPO engine to front-panel routing supports both traditional fiber and flexible printed fiber (FPF) solutions
- System design compatible to support multiple remote laser modules (RLM)
- More than 50% optical interconnect power consumption savings compared to standard pluggable optics solutions
- Production ready for data center deployment

The slowing of Moore's Law coupled with the limitations of copper interconnect at high data rates has prompted the industry to rethink the architecture and deployment of high bandwidth network switches. Furthermore, next generation cloud infrastructure deployments require lower optics cost per bit and power consumption. Broad adoption of CPO solutions is critical to sustaining the rapid growth of bandwidth inside the data center driven by AI/ML, HPC, and networking workloads.

Traditional pluggable optical transceivers require high power to equalize signal impairments incurred on a signal as it traverses long traces and through multiple connector discontinuities in a standard switch system. By eliminating these interfaces and leveraging Broadcom's leading-edge uncooled continuous wave (CW) laser at 1310 nm for silicon photonics, the 25.6-Tbps Humboldt CPO switch delivers unmatched efficiency and performance paving a path for future generations of high bandwidth density CPO solutions.

"We are pleased to announce our strategic partnership with Tencent as we enable the industry's first 25.6-Tbps CPO system for hyperscale data center field deployment," said Near Margalit, Vice President and General Manager, Optical Systems Division, Broadcom. "We expect to continue to innovate and extend our market leadership position with Tencent as we migrate to 51.2-Tbps switch CPOs and next generation 200G/lane PAM-4 applications."

"Customer demands for higher bandwidth have pushed Tencent to perpetually scale our network," said Sage Zou, Vice President of Tencent Cloud. "We are glad to partner with Broadcom on CPO based technology, which will bring not only higher bandwidth for applications such as AI/ML and HPC, but also it could address the power constraints from the acceleration of growth in new workloads."

"Addressing the general trend towards chip-scale optical interconnects versus traditional copper-based implementation, CPO technology combines microelectronics and optoelectronics on silicon-based platforms, which can carry more information and transmit longer distances," said Liu Zhongdong, President and CEO, Ruijie Networks. "CPO switching networks have the advantages of high bandwidth and low power consumption, and Ruijie is glad to participate in the innovation and implementation of this new technology with Tencent & Broadcom."

For more information on Broadcom CPO, please click here.

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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