Broadcom Announces Industry’s First Merchant Silicon 50G PON Solution with AI/ML Capabilities

October 7, 2024

Advanced multi-speed OLT-ONU platform enables operators to run mission-critical AI applications at the edge while providing the most cost-effective and power-efficient upgrade path for current GPON and 10G PON networks

PALO ALTO, Calif., Oct. 07, 2024 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the general availability of the BCM68660 and BCM55050, the industry’s first merchant silicon 50G PON Optical Line Terminal-Optical Network Unit (OLT-ONU) devices with an embedded neural processing unit (NPU), designed to accelerate artificial intelligence (AI) and machine learning (ML) at the edge and enable telecom operators to drive new applications on 50G fiber broadband networks. The BCM68660 standalone 50G PON OLT SoC interoperates with the BCM55050 50G PON ONU and other available ITU standards-based 50G ONUs, providing telecom operators a complete end-to-end 50G PON ecosystem of solutions for 50G fiber broadband.

While the migration from GPON to XGS-PON is in full swing, fiber broadband networks also continue to keep pace with growing bandwidth needs, while supporting emerging AI applications and improving performance and power efficiency. Backed by the International Telecommunication Union Telecommunication Standardization Sector (ITU-T), 50G PON stands as the next standards-based technology that best addresses these criteria and has all the fundamental elements needed to future-proof existing GPON and XGS-PON networks. Further, 50G PON coexists on the same optical distribution network as GPON and XGS-PON, allowing flexible options and seamless migration to higher speeds to support high bandwidth applications.

Broadcom’s 50G PON solution delivers 40x speed and lower latency than current gigabit solutions, significantly enhancing consumer broadband experience such as smoother video calls, better live streaming, and faster gaming responsiveness. The greater bandwidth empowers new applications including 5G small cell for autonomous driving and network slicing for capacity optimization in enterprises. With a high level of integration in low power 7nm technology, the BCM68660 and BCM55050 deliver significantly lower power than current solutions, addressing the relentless drive for more efficient energy consumption operators are pursuing.

The embedded NPU that is integral to the Broadcom 50G PON solution will help operators increase operational efficiency and improve network security and reliability. AI/ML algorithms running at the edge reduce latency and cloud storage cost. Edge AI/ML keeps consumers’ data private by retaining it on premise rather than exposing it to interception in the network. Further, edge AI/ML algorithms can provide intrusion detection from hackers, as well as identify and resolve Wi-Fi and IoT issues in the home, reducing technical support costs for operators. In addition, these algorithms benefit operators by enabling anomaly detection and network self-healing, facilitating predictive power management, and providing network pattern detection, classification and optimization.

“Delivering dramatic cost and power savings, Broadcom’s 50G PON solution enables telcos worldwide to future-proof their networks and cost-effectively deploy 50G fiber broadband to drive the next generation of applications,” said Rich Nelson, senior vice president and general manager of the Broadband Video Group at Broadcom. “The edge AI/ML capabilities of the BCM68660 and BCM55050 ably complement their broadband feature set to bring a transformative broadband experience to the consumer with enhanced privacy protection and cyber security.”

"As fiber PON technology evolves to meet growing demands, it’s becoming more versatile, unlocking applications and use cases for AI/ML beyond traditional residential use,” said Jaimie Lenderman, principal analyst and research manager at Omdia. "50G PON with AI/ML capabilities is further advancing access networks into a new era—one that goes beyond speed, enabling next-generation connections across a broad range of subscribers and industries.”

Solution Highlights

- Embedded AI/ML, packet processing and traffic management cores
- Supports symmetric 50G ITU PON/XGS-PON/GPON
- 40x higher speed and lower latency
- Delivers power savings of 35-40% over existing solutions (BCM68660)
- Daisy chaining support for larger OLTs (BCM68660)

Product Showcase at Network X 2024

Broadcom will showcase an end-to-end 50G PON OLT-ONU connection using the BCM68660 and BCM55050. Adtran and Sagemcom will showcase the same end-to-end 50G PON OLT-ONU connection in the Sagemcom booth at the Network X 2024 exhibition in Paris, France from October 8th to 10th.

Availability

Broadcom is currently sampling the BCM68660 and BCM55050 devices 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, enterprise software and security solutions. Broadcom's category-leading product portfolio serves critical markets including cloud, data center, networking, broadband, wireless, storage, industrial, and enterprise software. Our solutions include service provider and enterprise networking and storage, mobile device and broadband connectivity, mainframe, cybersecurity, and private and hybrid cloud infrastructure. Broadcom is a Delaware corporation headquartered in Palo Alto, CA. For more information, go to www.broadcom.com.

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

Source: Broadcom Inc.