



## Broadcom Accelerates the AI Era with the Industry's First End-to-End 50G PON Edge AI Portfolio

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PALO ALTO, Calif., May 26, 2026 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO), a global technology leader that designs, develops, and supplies semiconductor and infrastructure software solutions, today announced the BCM68850, the industry's first 50G ITU-PON home gateway SoC featuring an integrated neural processing unit (NPU) and native Wi-Fi 8 compatibility. This launch completes the industry's most advanced wireless broadband portfolio, pairing 50G PON with a durable Wi-Fi 8 foundation established across four successive waves of market-leading innovation. This milestone underscores Broadcom's commitment to architectural consistency at the intelligent edge, offering a comprehensive range of NPU-accelerated solutions across cable, PON, Wi-Fi, and set-top box platforms to ensure a stable and resilient infrastructure for AI offloading and high-efficiency multi-gigabit workloads.

The transition to 50G PON delivers the massive network headroom and deterministic latency required for the next era of broadband. As homes evolve into highly active, always on, edge-compute nodes, residential traffic will increasingly consist of massive, instantaneous micro-bursts of data. A 50G PON gateway processes and transmits these high-density payloads in a fraction of a millisecond before instantly freeing the channel for the next payload. This rapid execution and increased bandwidth is essential for data-heavy tasks like synchronizing autonomous AI agents and managing multi-stream ultra-high-definition telepresence. This ultra-fast "burst and release" capability guarantees near zero-jitter performance essential for latency-critical applications, while protecting the shared fiber strand from node congestion. Ultimately, deploying 50G CPEs today equips operators to absorb explosive traffic and maximize their hardware lifecycle through the entire Wi-Fi 8 generation.

### BCM68850 – 50G PON Edge AI Gateway SoC

The BCM68850 is a standalone 50G PON Gateway SoC that provides an industry-standard ITU-T path for operators to future-proof their networks. The device features:

- **High-Performance Application Engine:** A dedicated CPU for third-party and operator applications leveraging industry available middleware.
- **Integrated Neural Engine:** A dedicated NPU that accelerates Edge AI inference, reducing cloud latency and enhancing data privacy by keeping sensitive information on premises.
- **Symmetric 50G Performance:** Delivers full 50G throughput to meet the insatiable appetite for reliable, multi-gigabit bandwidth.
- **Wi-Fi 8 Ready:** Native compatibility with Wi-Fi 8 standards to ensure the highest reliability and real-world consistency at the broadband edge.
- **Intelligent Self-Healing:** Enables operators to implement real-time anomaly detection and predictive bandwidth optimization, reducing OpEx and improving ARPU.
- **Advanced Security:** Incorporates enhanced security algorithms, including Post-Quantum Cryptography (PQC).

"The BCM68850 is a defining milestone for global fiber networks; we are reshaping the broadband edge as the central intelligence hub of the home," said Philip Radtke, vice president of product marketing for Broadcom's Wireless and Broadband Communications Division. "This flagship SoC joins our established lineup of NPU-accelerated fiber, cable, set-top box, and Wi-Fi solutions, ensuring operators can efficiently deploy edge-intelligent broadband regardless of the access medium and extend that intelligence all the way to the edge."

"With ever increasing consumer and enterprise demand for bandwidth and ultra-reliable connectivity, operators are upgrading the Central Office and End Points with 50G PON capability. Next-generation solutions such as Broadcom's BCM68850 SoC are critical to unlocking the value of this investment by future-proofing the network edge and ensuring high service levels at every node and premise," said Jaimie Lenderman, practice leader for Optical, IP, and Broadband Infrastructure market research at Omdia. "By establishing a true end-to-end 50G pipe, operators can deliver the massive capacity and deterministic low latency required to support the rigors of the imminent Wi-Fi 8 deployment cycle."

### Industry-Leading Integration and Performance

This end-to-end 50G offering completes the path from Broadcom's BCM68660 OLT to the edge, providing a seamless and technically robust ecosystem comprising the BCM55050 ONT or the BCM68850 CPE gateway. This architecture introduces a new level of efficiency by optimizing CPU and memory resources for the AI era, ensuring that the home gateway can handle the massive data pipes required for the next decade of digital innovation.

### Availability

Broadcom is currently sampling the [BCM68850](#) and [BCM55050](#) 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 technology leader that designs, develops, and supplies semiconductors and infrastructure software for global organizations' complex, mission-critical needs. Broadcom combines long-term R&D investment with superb execution to deliver the best technology, at scale. Broadcom is a Delaware corporation headquartered in Palo Alto, CA. For more information, visit [www.broadcom.com](http://www.broadcom.com).

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