Adtran Accelerating Broadband Reach with Combo PON, Powered by AMD

Solution Lets Service Providers and Communities Deploy 1G and 10G Connectivity on Same Platform

PARTNER

Adtran

INDUSTRY

Communications; Fiber Access and Transport; Residential and Business Services; 5G

CHALLENGES

Adtran wanted to build a Combo PON solution that was flexible, easy-to-use, and cost effective.

SOLUTION

With the AMD Versal™ adaptive SoC from AMD, Adtran was able to combine GPON MAC and XGS PON MAC into one chip that can fit into its desired form factor.

RESULTS

Adtran is able to deliver high performance and easy-to-use Combo PON solutions.

AMD TECHNOLOGY AT A GLANCE

Versal™ adaptive SoC

Communication service providers use passive optical networks (PONs) to bring high-speed and low-cost fiber optic access to end users. They are often the link that connects the internet and cloud over the last mile to homes and businesses. Over the last few years, service providers and communities had a tough decision to make: Stick with the familiar, but now 15-year-old GPON technology or upgrade to 10 Gbit/s XGS PON.

Adtran is making this decision easy for them by delivering Combo PON technology, powered by AMD. Combo PONs can help service providers transform the landscape of underserved communities by supporting both types of networks in a single solution.

"The concept of a Combo PON is simple and elegant, but it's very rare and compelling in the fiber broadband space," said Ryan McCowan, CTO Americas and AVP Portfolio Strategy at Adtran. "Before, suppliers would have to buy two systems to meet a community's needs or settle on older technology and bite their nails hoping their competitors didn't come into their territory with faster speeds."

"A Combo PON removes this issue because it is very flexible and fully backwards compatible," McCowan continued. "It can deliver both Gigabit PON and 10 Gigabit PON speeds. It's so flexible that you can offer the slower speeds on one side of a street and the faster speeds on the other."

Growing Demand for Connectivity

"The COVID-19 pandemic was a demand catalyst for communities who realized that to sustain it they needed a better network," McCowan said. "It also emphasized the importance of delivering a high-quality, broadband connection to everyone. It was particularly tough on rural America."

"Fiber is the gold standard for delivering high-bandwidth connectivity to homes," he added. "You can't get symmetric upload and download speeds without it."

The PON market growth forecast is massive, thanks to unprecedented subscriber demand. But there is also a growing amount of federal investment going to this industry--specifically for service providers. McCowan said that the U.S. government is providing $99 billion dollars over five years to this industry. That's five- to seven times more annual funding than in previous years.

"You have subscribers demanding Gigabit broadband and a funding vehicle pouring billions of dollars into the industry, allowing service providers to build these networks," McCowan said. "Even municipalities and community leaders can come to a company like Adtran, and we will stand up their entire network."

CHALLENGE

"Some of the problems we were looking to solve with our Combo PON solution were flexibility and ease-of-use,"

McCowan said. “Our Combo PON technology lets service providers offer gigabit- and 10-gigabit networks simultaneously on the same infrastructure: one for residential broadband and another for smart city or other applications, providing a higher return on investment.”

“Another problem we were trying to solve was cost,” McCowan said. “If the Combo PON technology was too expensive, it wouldn't work. We knew we had to be close in cost to existing solutions."

SOLUTION

"The close partnership between Adtran and AMD is one of the main reasons we decided to go with AMD’s Versal™ adaptive computing platform for our solutions," said Javier Lopez, director of product management at Adtran. "Our engineering team has had a long history working with AMD. Today's Combo PON is our latest successful product built on AMD technology, but there are dozens of other similar cases."

"For us to be competitive in this space, we needed a solution that was optimized to meet our heat and size requirements," Lopez said. "With AMD, we were able to combine GPON MAC and XGS PON MAC into one chip that can fit into our desired form factor."

"AMD adaptive computing technology allows us the flexibility to add valuable customer features such as 60km reach and 128 subscribers per PON with simple remote software upgrades," Lopez continued.

"Cost and delivery are also very important to us and our customers," he added, "so having AMD able to work with us on accommodating for our ever-changing forecast was a must. AMD has been a great partner to Adtran, and we look forward to solving real-world problems for years to come."

RESULT

"Adtran’s Combo PON solutions are easy to use," McCowan said. "With just a few keystrokes you can make updates or changes to the network. You don't need people to swap out cards. Much of the control is cloud-based and AI-driven, and this makes it easier for alternate service providers to run the networks without requiring deep technical expertise."

"When we introduced Combo PON, it became the fastest-growing and most successful product launch in our company's 38-year history. Over the last three years, we've doubled our customer base, and now we sell the Combo PON to over 300 customers," he said.

WANT TO LEARN MORE?

About AMD’s Versal Adaptive SoCs

About Adtran

About Adtran

Adtran, Inc., is a leading global provider of open, disaggregated solutions with a vision for the future of fiber networking. The company offers a comprehensive portfolio for providing homes, businesses and 5G infrastructure with scalable, secure, and assured fiber connectivity, paired with cloud-managed Wi-Fi connectivity and SaaS applications. Adtran’s Combo PON solutions, powered by AMD technology, enable communities and service providers to deliver both cost-competitive broadband access to homes and businesses over mature Gigabit PON (GPON) networks, and premium 10G XGS-PON services on the same optical distribution network. Please visit Adtran online at www.adtran.com.

About AMD

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