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Next-Generation of Optical Ethernet PHY Transceivers Deliver Precision Time Protocol and MACsec Encryption for Long-Reach Networking

Microchip's new transceivers are offered at speeds up to 25 Gbps to process more data

CHANDLER, Ariz., Oct. 30, 2025 (GLOBE NEWSWIRE) -- The rise of smart factories, remote monitoring and connected infrastructure are increasing the demand for advanced networking systems that can operate over long distances and in challenging environments. To address the need for reliable and secure connectivity solutions, Microchip Technology (**Nasdaq: MCHP**) today announces its new portfolio of [Optical Ethernet PHY transceivers](#), available in 25 Gbps and 10 Gbps versions, featuring IEEE® 1588 Precision Time Protocol (PTP) and Media Access Control Security (MACsec) encryption.

Microchip's optical Ethernet PHY transceivers provide a secure, deterministic and scalable alternative to traditional copper-based Ethernet solutions. They support link lengths of up to 10 kilometers over single-mode fiber for seamless deployments over dispersed infrastructure such as company and college campuses or warehouses. The integration of PTP time stamping delivers sub-nanosecond (<1ns) synchronization accuracy across distributed nodes. This level of timing precision is essential for time-sensitive applications such as industrial automation, telecommunications and robotics.

"Design engineers are looking for solutions that simplify complex networking systems, adding PTP or MACsec could mean a complete overhaul of an existing design, our solution helps preserve our customers' core-processing investment," said Charlie Forni, corporate vice president of Microchip's networking and connectivity solutions business. "We've integrated these capabilities into our transceivers, enabling bolt-on functionality to help engineers build smarter, more secure and scalable networks."

The new variants support Ethernet speeds ranging from 1 Gbps to 25 Gbps, enabling higher bandwidth for data-intensive applications such as data centers, campus area networks, and robotic / industrial automation. Designers can easily scale their networks by selecting the appropriate data rate and media (Optical or DAC - Direct Attach Copper) to match their application requirements.

To help safeguard sensitive data in connected environments, security is integrated at the silicon level with support for MACsec (IEEE 802.1AE) encryption. This hardware-based implementation protects against network data breaches by encrypting traffic between Ethernet devices. MACsec is designed to thwart common cyberattacks including man-in-the-middle attacks, denial-of-service (DoS), eavesdropping and spoofing, to ensure data integrity across the network.

The new variants of Optical Ethernet PHY Transceivers include:

LAN826x supporting up to 10 Gbps

- **Dual-port**
 - LAN8262-V/3HW: 10 Gbps, Dual-port, MACsec
 - LAN8263-V/3HW: 10 Gbps, Dual-port, PTP
 - LAN8264-V/3HW: 10 Gbps, Dual-port, PTP, MACsec
- **Quad-port**
 - LAN8267-V/3HW: 10 Gbps, Quad-port, PTP
 - LAN8268-V/3HW: 10 Gbps, Quad-port, PTP, MACsec

LAN802x and LAN804x supporting up to 25 Gbps

- **Dual-port**
 - LAN8022-V/3HW: 25 Gbps, Dual-port, MACsec
 - LAN8023-V/3HW: 25 Gbps, Dual-port, PTP
 - LAN8024-V/3HW: 25 Gbps, Dual-port, PTP, MACsec
- **Quad-port**
 - LAN8042-V/3HW: 25 Gbps, Quad-port, MACsec
 - LAN8043-V/3HW: 25 Gbps, Quad-port, PTP
 - LAN8044-V/3HW: 25 Gbps, Quad-port, PTP, MACsec

Microchip's broad portfolio of Ethernet solutions ranges from transceivers to high port-count switches supporting speeds from 10 Mbps to 25 Gbps, including a complete portfolio of Single Pair Ethernet devices, addressing the needs of industrial, automotive and embedded applications. With an array of features such as security, low latency and extended temperature support, Microchip's products enable reliable and scalable connectivity in demanding environments. For more information about Microchip's Ethernet products, visit the [web page](#).

Development Tools

To simplify development, the portfolio of Optical Ethernet PHY Transceivers are supported by the [LAN8044 Evaluation Kit \(part number EA00J09A\)](#) which includes the LAN8044 EDSX Daughter Card (part number EV57U68A) and the EVB-VSC7558TSN EDSX (UNG8415).

Pricing and Availability

The Optical Ethernet PHY Transceivers are now available for purchase in production quantities. You can [purchase](#) directly from Microchip or contact a Microchip [sales representative or authorized worldwide distributor](#).

Resources

High-res images available through Flickr or editorial contact (feel free to publish):

- Application image: www.flickr.com/photos/microchiptechnology/54868309289/sizes/l

About Microchip Technology:

Microchip Technology Inc. is a broadline supplier of semiconductors committed to making innovative design easier through total system solutions that address critical challenges at the intersection of emerging technologies and durable end markets. Its easy-to-use

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