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Next-Generation 100/1000BASE-T1 Single Pair Ethernet PHYs Integrate MACsec Security, Time Sensitive Networking and Functional Safety

Microchip's LAN878x and LAN888x PHY families enable secure, scalable and deterministic Ethernet connectivity for automotive and industrial systems

CHANDLER, Ariz., May 07, 2026 (GLOBE NEWSWIRE) -- As automotive and industrial designers adopt Single Pair Ethernet (SPE) and all-Ethernet architectures to support Software-Defined Vehicles (SDVs) and complex industrial networks, demand is growing for secure, scalable connectivity. Microchip Technology (**Nasdaq: MCHP**) today announces the [LAN878x and LAN888x](#) families of Single Pair Ethernet (SPE) PHY transceivers, available in 100BASE-T1, 1000BASE-T1 and dual-speed 100/1000BASE-T1, designed to deliver secure, reliable and scalable Ethernet connectivity for automotive and other mission-critical applications.

The LAN878x and LAN888x PHYs integrate hardware-based MACsec security compliant with IEEE® 802.1AE-2018, providing frame-level confidentiality, data integrity and replay protection without adding system latency or software complexity. Native Time-Sensitive Networking (TSN) support enables deterministic, low-latency communication required for ADAS, zonal gateways and safety-critical control networks.

The LAN878x and LAN888x families go beyond security and performance by delivering enhanced functional safety engineered for ISO 26262 ASIL-B systems. Advanced on-chip diagnostics and link monitoring increase visibility, accelerate fault detection and support stronger system-level safety mechanisms than traditional SPE PHY solutions.

To simplify platform scalability and design reuse, the LAN878x and LAN888x families offer pin-compatible SKUs across 100BASE-T1 and 1000BASE-T1 variants, as well as SGMII and RGMII host interfaces. This compatibility allows designers to reuse existing hardware designs while scaling network bandwidth to meet evolving performance requirements.

"OEMs need a clear and efficient path to scale Ethernet performance as vehicle networks evolve," said Charlie Forni, corporate vice president of Microchip's networking and connectivity business unit. "The LAN878x and LAN888x families allow teams to reuse designs while supporting higher data rates and stronger security. By integrating MACsec directly in the PHY, we help designers enhance network protection without added system complexities."

The LAN878x family includes LAN8781, LAN8781M, LAN8782 and LAN8782M, while the LAN888x family includes LAN8881, LAN8881M, LAN8882, LAN8882M, LAN8883, LAN8883M, LAN8884 and LAN8884M. Devices with the “M” suffix support MACsec security. All devices are designed for high reliability, with a maximum junction temperature of 150°C, supporting Automotive Grade 1 operating conditions (-40°C to +125°C).

Beyond automotive, the LAN878x and LAN888x families also support a wide range of industrial and mission-critical applications, including industrial automation, robotics, avionics and other systems that require deterministic Ethernet communication.

Development Tools

The LAN878x and LAN888x PHY transceivers are supported by comprehensive hardware evaluation platforms; SGMII, USB and PCIe[®] plug-in boards and Linux[®] software drivers.

Pricing and Availability

The LAN878x and LAN888x families are available in limited sampling. To learn more, please [contact a Microchip sales representative](#).

Resources

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

- Application image: www.flickr.com/photos/microchiptechnology/55205569200/sizes/l

About Microchip Technology:

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Editorial Contact:

Kim Dutton

480-792-4386

kim.dutton@microchip.com



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