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Microchip Advances Edge AI Sensor Connectivity with Rev 2.0 PolarFire® FPGA Ethernet Sensor Bridge

Smaller, multi-camera platform enables scalable Ethernet architectures for NVIDIA Edge AI systems while lowering power, cost and integration complexity

CHANDLER, Ariz., Aug. 11, 2026 (GLOBE NEWSWIRE) -- The shift toward compact, high-performance edge AI systems is redefining sensor connectivity, pushing developers to deliver power- and space-efficient architectures that remain secure, scalable and future-ready. To address these challenges, Microchip Technology (**Nasdaq: MCHP**) has released [Revision 2.0 of its PolarFire® FPGA Ethernet Sensor Bridge](#), a significantly smaller, production-ready board for standardized sensor integration leveraging [NVIDIA Holoscan Sensor Bridge \(HSB\)](#) technology.

The Rev 2.0 HSB-enabled board delivers a 60 percent smaller form factor, supports twice the number of cameras, is USB-C powered for streamlined rack deployment and is being offered at a lower price point than the first generation. These enhancements enable designers to replace complex, multi-interface sensor connections with scalable, power-efficient 10Gb Ethernet-based architectures reducing overall system cost and bill-of-materials complexity. These benefits are essential for AI driven medical, industrial and humanoid robotics applications powered by NVIDIA edge computing platforms like NVIDIA Jetson and IGX.

Built on PolarFire FPGA technology, the updated design supports up to four cameras, features camera connector that's compatible with [NVIDIA Jetson](#) and includes on-board optical latency measurement circuitry. This helps enable end-to-end latency validation—from sensor capture to AI inference—using [NVIDIA Latency Display Analysis Tool](#).

The board features an FPGA Mezzanine Card (FMC) expansion connector that supports future feature growth and supports interfaces including MIPI® CSI-2®, I²C®, UART and GPIO. The flexible design allows support for multiple sensor and video interfaces such as SLVS-EC™ 2.0, 12G-SDI, HDMI® and DisplayPort™, without requiring a redesign of the core platform. A standard PMOD connector further enhances system extensibility.

“Developers want to spend their time building high-value edge AI applications, not stitching together proprietary sensor interfaces,” said Shakeel Peera, vice president of Microchip’s FPGA business unit. “With low power PolarFire FPGA technology at its core, this second-generation Ethernet sensor bridge delivers a power-efficient, secure foundation in a significantly reduced form factor to help teams move faster from development to deployment in edge AI systems.”

Leveraging the power-efficiency, security and reliability of PolarFire FPGAs, the HSB-enabled board delivers real-time, multi-sensor data processing over Ethernet in compact, power-constrained edge environments. Built-in security and safety features help protect edge AI devices and support reliable long-term deployment. Integration with the [NVIDIA Holoscan SDK](#) helps accelerate development with optimized libraries, AI models and reference applications.

The offering includes cameras, cables, a reference design, board schematics and design collateral with RTL development supported by Libero[®] SoC Design Suite. Integrated Microchip timing and power-management ICs, including the [MCP16701 PMIC](#), are validated for PolarFire FPGAs, helping enable production-ready power and clocking while reducing third-party integration risk. The integrated approach helps reduce system integration risk, shorten development cycles and lower total cost of ownership for Ethernet-based AI inferencing at the edge. It is especially valuable in robotics and industrial automation applications where power efficiency, deterministic latency and compact form factors are critical.

Visit the website to learn more about Microchip's full portfolio of [PolarFire](#) devices.

Pricing and Availability

The Rev 2.0 PolarFire FPGA Ethernet sensor bridge can be [purchased](#) 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: <https://www.flickr.com/gp/microchiptechnology/NoeJ74z0r9>

About Microchip Technology:

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