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Microchip Advances Neural Network Implementation with VectorBlox™ 3.0 Accelerator SDK

Latest release leverages sparse neural networks to improve performance and enable more efficient edge AI on PolarFire® FPGAs and SoCs

CHANDLER, Ariz., July 14, 2026 (GLOBE NEWSWIRE) -- Deploying AI inference in power-constrained and mission-critical environments such as aerospace and defense systems requires solutions that balance performance, efficiency, reliability and ease of development. To better manage these challenges, Microchip Technology **(Nasdaq: MCHP)** has released the **VectorBlox™ 3.0** Accelerator Software Development Kit (SDK) to help simplify FPGA-based AI implementation and speed time-to-market. Offered to developers free of charge, VectorBlox 3.0 SDK and associated CoreVectorBlox IP is designed as an integrated toolchain that streamlines optimization, compilation and deployment of convolutional neural network (CNN) models on PolarFire® FPGA and SoC-based platforms. Because the accelerator scales efficiently across model sizes and supports multiple AI workloads on a single device, customers can consolidate various vision or sensor-based AI functions on a single low power FPGA.

“As AI models continue to grow in complexity, compression is becoming essential for deploying intelligence at the edge,” said Shakeel Peera, corporate vice president and GM of Microchip’s FPGA business unit. “With VectorBlox 3.0, we’re leveraging sparsity-based model compression from our Neuronix acquisition to reduce compute demands while preserving accuracy.”

With support for sparse neural networks, VectorBlox 3.0 helps enable efficient execution of vision-based CNN models by skipping zero-valued operations. This capability helps developers accelerate inference performance while reducing power consumption, an important advantage for always-on edge AI applications that must balance responsiveness with energy efficiency. Enabling sparsity-based model compression is designed to reduce compute and memory demands, while preserving accuracy.

“Leveraging VectorBlox acceleration on Microchip’s PolarFire SoC enabled us to efficiently deploy advanced onboard AI pipelines for low-latency payload operations in orbit,” said Vito Fortunato, SPACEDGE™ services line manager at Planetek Italia. “The platform allowed us to validate real-time Earth Observation processing capabilities including object detection, semantic scene analysis and edge-generated actionable information products on top of the AI-eXpress-1 satellite, deployed in 2025, while providing the radiation resilience and operational reliability required for continuous Low Earth Orbit operations.”

Additionally, Spacecraft Pose Network v2 (SPNv2), a neural network designed to estimate position and orientation using vision data, enables autonomous navigation and proximity operations in space for applications such as autonomous rendezvous and docking, space

debris removal, satellite inspection and formation flying. Built on mid-range, power-efficient, single-event-upset (SEU) immune PolarFire FPGAs and SoCs, the solution delivers secure boot, anti-tamper protection and high reliability for harsh environments. These features are necessary for mission-critical defense, aerospace and industrial deployments where long operational life, data protection and system resilience are essential.

"The combination of PolarFire SoC and VectorBlox creates a powerful synergy for deploying AI-powered autonomy solutions directly in orbit," said Federico Fontana, Head of Hardware Engineering at AIKO. "We validated this through the deployment of our clear_CHARLES suite, which provides onboard cloud and ship detection for adaptive and autonomous payload operations on power-efficient platforms, making a further step toward increasingly autonomous, responsive and software-defined space systems."

VectorBlox SDK v3.0 is supported by Microchip's Libero® SoC Design Suite and integrates with CoreVectorBlox IP. Visit the website to learn more about the company's full portfolio of **FPGAs and design resources.**

Pricing and Availability
VectorBlox SDK v3.0 and CoreVectorBlox IP are available to customers at no charge. To learn more, 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/vA4q2m043t**
- Free Webinar: Achieve Two Times Faster CNN Inference with Sparsity-Aware AI Acceleration on PolarFire® SoC FPGAs, July 16, 2026 and on demand after the live session **https://event.on24.com/wcc/r/5321721/8209CC908EDAAE48CA01408C805BFA9F?partnerref=PR**

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