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Mid-Range FPGAs Reach the Next Power and Performance Milestone for Edge Compute Systems

Microchip's new low-density PolarFire® devices consume half the static power of alternatives while providing world's smallest thermal footprint

CHANDLER, Ariz., Aug. 10, 2021 (GLOBE NEWSWIRE) -- Edge compute systems need compact programmable devices with low power consumption and a small enough thermal footprint to eliminate fans and other heat mitigation while providing robust compute horsepower. Microchip Technology Inc. **(Nasdaq: MCHP)** has solved this challenge by cutting static power consumption for its mid-bandwidth Field Programmable Gate Arrays (FPGAs) and FPGA System-on-Chip (SoC) devices in half and giving them the smallest thermal footprint and best performance and compute horsepower compared to all alternative devices in their class.

"Our new PolarFire FPGAs and FPGA SoCs reduce our customers' system costs while enabling them to solve difficult thermal management challenges without having to forfeit bandwidth," said Bruce Weyer, vice president of Microchip's FPGA business unit. "The award-winning PolarFire FPGA platform already delivered the industry's best combination of power and performance, and now we have reduced power consumption by up to 50 percent or more with the introduction of lower density offerings, while maintaining best-in-class capabilities on these platforms. No other offering in this class can match these capabilities."

With their ultra-low power consumption, Microchip's latest low-density PolarFire FPGAs (**MPF050T**) and PolarFire SoC (**MPFS025T**) additions exceed the performance/power metrics of any low-density FPGA or SoC FPGA alternatives in the market, with fast FPGA fabric and signal processing capabilities, the most capable transceivers and the industry's only hardened application class RISC-V® architecture-based processor complex with 2 megabytes (MB) of L2 cache and Low-Power DDR4 (LPDDR4) memory support. Extending the portfolio with a 25K logic elements multi-core RISC-V SoC and a 50K logic elements FPGA opens new application possibilities. They are ideal for low-power smart embedded vision applications and thermally constrained automotive, industrial automation, communications, defense and IoT systems where neither power nor performance can be compromised.

The new PolarFire devices are complemented by a suite of Microchip devices for complete systems solutions for applications including **smart embedded vision**, **machine learning**, **security**, **aerospace and defense**, and **embedded compute**. They also provide plug-and-play solutions for **power** and **timing** designs. Lead customers are using the PolarFire devices to solve a variety of design challenges.

“As one of the world’s major suppliers of video converter hardware and software, we are always striving to meet demanding market requirements as we work with our customers to enable exciting new use cases,” said Nick Ma, CEO and CTO at Magewell. “Microchip’s PolarFire FPGA solution expands our opportunities to innovate with our USB 3.2 video capture product line. It offers ideal dimensions, industry-low power consumption and a unique combination of mid-range transceivers, logic, DSP and RAM resources.”

“Xenics is a pioneer in infrared imaging technology with a 20-year legacy of delivering a best-in-class portfolio of short-wave, mid-wave and long-wave infrared imagers, cores and cameras. SWaP (Size, Weight and Power) are extremely important considerations while designing a thermal imaging system,” said Frederic Aubrun, CCO of Xenics. “These are key differentiating capabilities for our customers. Microchip’s SmartFusion®2 and PolarFire FPGAs provide us the best balance between small form factor, power efficiency and processing resources required to support embedded algorithms like shutter-less compensation and image enhancement within an extremely low power budget in our current and next-generation product portfolios.”

“Kaya Instruments prides itself in designing industrial-grade, small-form-factor, low-power cameras that are capable of providing the best quality video under most challenging and severe conditions,” said Michael Yamposkly, Founder and CEO of Kaya Instruments. “The PolarFire FPGA-based Iron cameras utilize the FPGA’s small form factor and low-power performance to offer a compact outline that can be fitted into tight spaces while presenting the magnificent quality of the most advanced global-shutter CMOS sensor with excellent low-light performance.”

Availability
Developers can begin designing with Microchip’s PolarFire FPGAs and FPGA SoCs now using the company’s recently released Libero® 2021.2 software tools, which are available on the company’s website. Volume shipment of production silicon is scheduled for the first calendar quarter of 2022. Complete product information is available **here**.

Resources
Application Image: **www.flickr.com/photos/microchiptechnology/51339717174/sizes/l/**

About Microchip Technology
Microchip Technology Inc. is a leading provider of smart, connected and secure embedded control solutions. Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs which reduce risk while lowering total system cost and time to market. The company’s solutions serve more than 120,000 customers across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at **www.microchip.com**.

Editorial Contact:
Brian Thorsen
480-792-7182
brian.thorsen@microchip.com

Reader Inquiries:
1-888-624-7435

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