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The Industry's First SoC FPGA Development Kit Based on the RISC-V Instruction Set Architecture is Now Available

Microchip's PolarFire® SoC FPGA Icicle Kit enables the broad RISC-V-based Mi-V ecosystem for the industry's lowest-power FPGA

CHANDLER, Ariz., Sept. 16, 2020 (GLOBE NEWSWIRE) -- The rising adoption of the free and open RISC-V Instruction Set Architecture (ISA) is driving the need for an affordable, standardized development platform that embeds RISC-V technology and leverages the diverse RISC-V ecosystem. To meet this need, Microchip Technology Inc. (**Nasdaq: MCHP**) is offering the industry's first RISC-V-based System-on-Chip (SoC) Field-Programmable Gate Array (FPGA) development kit for PolarFire SoC FPGA—the industry-leading low-power, low-cost, RISC-V-based SoC FPGA. Microchip's **Icicle Development Kit** for PolarFire (SoC) FPGAs brings together numerous Mi-V partners to accelerate customer design deployment and commercial adoption across a variety of industries.

Designers who want to deploy a programmable RISC-V-based SOC FPGA are now able to start development and evaluate the broad network of RISC-V ecosystem products such as Real-Time Operating Systems (RTOS), debuggers, compilers, System On Modules (SOMs) and security solutions. The Mi-V RISC-V Partner Ecosystem is a continuously expanding, comprehensive suite of tools and design resources developed by Microchip and numerous third parties to fully support RISC-V designs.

"Microchip is enabling an unprecedented transformation in processor design as the market embraces RISC-V software and silicon," said Bruce Weyer, vice president of the Field-Programmable Gate Array business unit at Microchip. "We are removing barriers to entry through a low-cost evaluation platform that will give embedded engineers, software designers and hardware developers a vehicle to implement designs that leverage the benefits of the open RISC-V ISA combined with Microchip's best-in-class form factors, thermals and low-power characteristics of PolarFire SoC FPGAs."

"It's exciting to see a low-power RISC-V board for under $500," said David Patterson, vice-chair of the RISC-V International board of directors and 2017 Turing Award winner. "Microchip's Icicle Kit, with an embedded PolarFire SoC, will accelerate advances in the RISC-V software ecosystem and be a boon to applications that need a low-power mid-range SoC FPGA."

Microchip's Icicle Kit for PolarFire SoC and Mi-V ecosystem enables PolarFire SoC FPGAs with:

- RISC-V processor complex from SiFive and embedded trace macro from UltraSoC

- Development tools from Adacore, Green Hills Software, Mentor Graphics and Wind River
- Commercial RTOS solutions such as Nucleus and VxWorks that complement Microchip's Linux® and bare-metal solutions
- Middleware solutions from DornerWorks, Hex Five, Veridify Security and wolfSSL
- SOM and design services from organizations such as Antmicro, ARIES Embedded, Digital Core Technologies, Emdalo Technologies, Sundance DSP, and Trenz Electronic

For the latest list of Mi-V partners, visit Microchip's **Mi-V Partner Ecosystem** web page.

The Icicle Kit is centered around a 250K Logic Element (LE) PolarFire SoC device and includes a PCIe® connector, mikroBUS™ socket, dual RJ45 connector, Micro-USB connector, CAN bus connector, Raspberry Pi® header, JTAG port and SD Card interfaces, which allow developers a full-featured platform for development. The board is supported by Microchip's fully designed, validated and tested power management and clocking devices, an Ethernet PHY (VSC8662XIC), USB controller (USB3340-EZK-TR) and current sensors (PAC1934T-I/JQ).

PolarFire SoC FPGAs deliver up to 50 percent lower total power than competing devices. By using SoC FPGAs, developers also have greater opportunities for customization and differentiation through the devices' inherent upgradability and ability to integrate functions on a single chip. The PolarFire SoC FPGA family is available in a variety of packages and sizes to match the performance and power tradeoffs for the application, enabling customers to implement their solutions in package sizes as small as 11 × 11 mm. Microchip's Icicle Kit for PolarFire SoC FPGAs is ideally suited for smart embedded imaging, IoT, industrial automation, defense, automotive and communication applications.

Availability
Microchip's Icicle Kit for PolarFire SoC FPGAs (MPFS-ICICLE-KIT-ES) is available today starting at $489.00. PolarFire FPGAs are in production today with early samples of the SoC FPGA available today. For additional information, or to purchase the kit, 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/50087885151/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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