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New Functional Safety Ready AVR® DA Microcontroller Family Enables Real-Time Control, Connectivity and HMI Applications

Next-generation AVR MCU family features core independent peripherals, advanced analog and on-chip communications

CHANDLER, Ariz., May 05, 2020 (GLOBE NEWSWIRE) -- As the Internet of Things (IoT) delivers greater connectivity for industrial and home applications and as connected vehicles enhance cabin and operational features, higher-performance microcontrollers are required for better real-time control as well as to enable enhanced human machine interface applications. Microchip Technology Inc. **(Nasdaq: MCHP)** today announced its next generation **AVR® DA family of microcontrollers** (MCUs) – its first Functional Safety Ready AVR MCU family with Peripheral Touch Controller (PTC).

“With this AVR DA family of microcontrollers Microchip builds on our legacy of high performance and high code efficiency devices, now meeting new demand across multiple industries with advanced analog and core independent peripherals, and more capacitive touch channels over existing devices,” said Greg Robinson, associate vice president of marketing, 8-bit microcontroller business unit. “The technology spans applications from connected home security, building automation and sensor systems to automotive and industrial automation, enabling the designs of more robust, accurate and responsive applications.”

Microchip’s **Functional Safety Ready** designation is applied to devices that incorporate the latest safety features and are supported by safety manuals, Failure Modes, Effects, and Diagnostic Analysis (FMEDA) reports, and in some cases, diagnostic software – reducing the time and cost of certifying safety end applications. The AVR DA MCU family includes several integrated safety functions to ensure robust operation – features ensuring a sufficient supply voltage such as power-on reset, brown-out detector and voltage-level monitor. The cyclic redundancy check (CRC) scan ensures the application code in the flash memory is valid. By ensuring code integrity, unintended and potentially unsafe behavior of the application can be avoided.

Microchip’s new AVR DA family of MCUs enables CPU speeds of 24 MHz over the full supply voltage range, memory density of up to 128 KB flash, 16 KB SRAM and 512 bytes of EEPROM, 12-bit differential ADC, 10-bit DAC, analog comparators and zero cross detectors. The PTC enables capacitive touch interface designs supporting buttons, sliders, wheels, touchpads, smaller touch screens as well as gesture controls used in a wide range of consumer and industrial products and vehicles. The AVR DA family of MCUs supports up to 46 self-capacitance and 529 mutual capacitive touch channels and features the latest

generation PTC with Driven Shield+ and boost mode technologies providing enhanced noise immunity, water tolerance, touch sensitivity and response time.

In addition, the AVR DA family of MCUs brings additional value to embedded real-time control systems. The integrated event system enables inter-peripheral communication without involving the CPU. Events are latency free and never lost, providing enhanced real-time performance and predictability for reliable and safe designs. By reducing the time the CPU needs to be active, the overall power consumption of the application is reduced.

The configurable custom logic peripheral enables the setup of logical functions internally, eliminating the need for external components, reducing board space and bill of material costs. With the new advanced analog features like the 12-bit differential ADC, the AVR DA family of MCUs can measure small amplitude signals in noisy environments, making them well suited for sensor node applications in harsh environments.

The AVR DA family of MCUs' high memory density and SRAM-to-flash ratio make it attractive for both wireless and wired connected sensors nodes, as well as other stack-intensive applications.

Development Tools
Microchip's **AVR DA family** of MCUs offers several options for software and hardware support. Software support includes Microchip's MPLAB® X, MPLAB Xpress and Atmel Studio, code configuration tools including MCC and START, and compilers including GCC, XC8 and the IAR Embedded Workbench. A functional safety certified version of the **XC8 compiler** is available via Microchip's Functional Safety Ready program. Hardware support is included in debuggers/programmers including MPLAB PICkit™ 4, MPLAB SNAP, Atmel ICE and the AVR128DA48 Curiosity Nano evaluation kit.

Pricing and Availability
The AVR DA family of MCUs is available in volume production in 10,000 quantities starting at $0.87. For additional information, contact a Microchip sales representative, authorized worldwide distributor, or visit Microchip's website. To purchase products, visit our **purchasing portal** or contact a Microchip authorized distributor.

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

- Application image: **https://www.flickr.com/photos/microchiptechnology/49584374872**
- Block diagram: **https://www.flickr.com/photos/microchiptechnology/49584047206**

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**.

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