

New Digital Signal Controller (DSC) Accelerates DSP Performance for Time- Critical Control Applications

dsPIC33CK is Microchip's highest performance single-core DSC in an ultra-small package

CHANDLER, Ariz., Sept. 25, 2018 (GLOBE NEWSWIRE) -- System designers looking for digital signal processing power with the design simplicity of a microcontroller (MCU) can now utilize a new family of 16-bit Digital Signal Controllers (DSCs) from Microchip Technology Inc. (**Nasdaq: MCHP**). Designed to deliver faster deterministic performance in time-critical control applications, the new **dsPIC33CK DSCs** have expanded context selected registers to reduce interrupt latency and new, faster instruction execution to accelerate Digital Signal Processor (DSP) routines. This dsPIC33CK single-core family complements the recently announced dsPIC33CH dual-core family based on the same core.

With 100 MIPS performance, the core delivers almost double the performance of previous single-core dsPIC[®] DSCs, making it ideally suited for motor control, digital power and other applications requiring sophisticated algorithms such as automotive sensors and industrial automation. It has been designed specifically for controlling multiple sensorless, brushless motors running field-oriented control algorithms and power factor correction.

The new DSCs are also designed to ease functional safety certification required by many automotive, medical and appliance applications where safe operation and shutdown in failure situations are critical. The devices include integrated functional safety features for safety-critical designs such as: RAM Built-In Self-Test (BIST) for checking RAM health and functionality; Deadman Timer for monitoring the health of application software through periodic timer interrupts within a specified timing window; Dual Watchdog Timers (WDT); Flash Error Correction Code (ECC); Brown Out Reset (BOR); Power On Reset (POR); and Fail Safe Clock Monitor (FSCM).

"Microchip's 16-bit DSCs are highly efficient with minimal delay or latency into the system, and this new core is our best yet," said Joe Thomsen, vice president of Microchip's MCU16 business unit. "The feature set and performance make the dsPIC33CK family ideal for time-critical functions such as controlling the precise speed or rotation of a motor, as well as safety-critical functions to ease functional safety certification and ensure dependable operation."

The dsPIC33CK family features a CAN-FD communication bus to support new automotive communication standards. It comes with a high level of analog integration including high-speed ADCs (3.5 Msps), analog comparators with DACs, and operational amplifiers, enabling motor control applications with smaller footprints and lower bill of material costs. The DSCs include a 250 ps resolution PWM which is ideal for advanced digital power

topologies. Live update of firmware (with up to 2 × 128 KB blocks) is also offered to support high-availability systems, especially important for digital power supplies.

For additional information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's website. To purchase products mentioned in this press release, go to Microchip's full-service channel [microchipDIRECT](#) or contact one of Microchip's authorized distribution partners.

Development Support

The dsPIC33CK is supported by Microchip's MPLAB® development ecosystem including Microchip's free, downloadable and award-winning MPLAB X Integrated Development Environment (IDE), MPLAB Code Configurator, MPLAB XC16 C Compiler tool chain and MPLAB in-circuit debugger/programmer tools.

The dsPIC33CK Curiosity development board (DM330030) is a cost-effective and flexible platform enabling customers to rapidly create a feature-rich prototype. Motor control PIMs are available with internal (MA330041-2) and external (MA330041-1) op amps for use with for Microchip's MCLV-2 and MCHV-2/3 systems. The dsPIC33CK PIM for general purpose platforms (MA330042) is available for the Explorer 16/32 Development Board (DM240001-2). The Digital Power Starter Kit (DPSK-3, DM330017-3) is being updated to feature the dsPIC33CK256MP508.

Pricing and Availability

The dsPIC33CK is available in eight package variants. The 28-pin dsPIC33CK32MP202 is priced at \$1.34 each in high volume. Variants include packages from 28 to 80 pins and as small as 5 x 5 mm. Memory sizes range from 32 to 256 KB of Flash.

The dsPIC33CK Curiosity development board will be available in November for \$39.99 each. The dsPIC33CK PIMs for the MCLV-2 and MCHV-2/3 motor control development platforms are available now for \$25.00 each.

The dsPIC33CK PIM for use with Explorer 16/32 boards is available now for \$25.00 each. The Digital Power Starter Kit will be available in October for \$129.99.

Resources

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

- Application image: www.flickr.com/photos/microchiptechnology/44625762781/sizes/l
- Chip graphic: www.flickr.com/photos/microchiptechnology/42815130540/sizes/l
- Block diagram: www.flickr.com/photos/microchiptechnology/29686955957/sizes/l

About Microchip Technology

Microchip Technology Inc. (NASDAQ: MCHP) is a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. 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.

Note: The Microchip name and logo, the Microchip logo, dsPIC and MPLAB are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are the property of their respective companies.

Editorial Contact:

Brian Thorsen

480-792-7182

brian.thorsen@microchip.com



Reader Inquiries:

1-888-624-7435

Source: Microchip Technology Incorporated