November 18, 2013

Microchip's PIC32MZ 32-bit MCUs Have Class-Leading Performance of 330 DMIPS and 3.28 CoreMarks™/MHz; 30% Better Code Density

New 24-Member Family Integrates 2 MB Flash, 512 KB RAM, 28 Msps ADC, Crypto Engine, Hi-Speed USB, 10/100 Ethernet, CAN and Many Serial Channels

CHANDLER, Ariz.--(BUSINESS WIRE)-- Microchip Technology Inc. (NASDAQ: MCHP), a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions, today announced the new 24-member **PIC32MZ Embedded Connectivity (EC) family** of **32-bit MCUs**. It provides class-leading performance of 330 DMIPS and 3.28 CoreMarks™/MHz, along with dual-panel, live-update Flash (up to 2 MB), large RAM (512 KB) and the connectivity peripherals—including a 10/100 Ethernet MAC, Hi-Speed USB MAC/PHY (a first for PIC® MCUs) and dual CAN ports—needed to support today's demanding applications. The PIC32MZ also has class-leading code density that is 30% better than competitors, along with a 28 Msps ADC that offers one of the best throughput rates for 32-bit MCUs. Rounding out this family's high level of integration is a full-featured hardware crypto engine with a random number generator for high-throughput data encryption/decryption and authentication (e.g., AES, 3DES, SHA, MD5 and HMAC), as well as the first SQI interface on a Microchip MCU and the PIC32's highest number of serial channels.

View a brief presentation: **http://www.microchip.com/get/1WEC**

Embedded designers are faced with ever-increasing demands for additional features that require more MCU performance and memory. At the same time, they are looking to lower cost and complexity by utilizing fewer MCUs. The PIC32MZ family provides 3x the performance and 4x the memory over the previous-generation PIC32MX families, along with a high level of advanced peripheral integration. For applications requiring embedded connectivity, the family includes Hi-Speed USB, Ethernet and CAN, along with a broad set of wired and wireless protocol stacks. Many embedded applications are adding better graphics displays, and the PIC32MZ can support up to a WQVGA display without any external graphics chips. Streaming/digital audio applications can take advantage of this family's 159 DSP instructions, large memory, peripherals such as I^2S, and available software.

Field updates are another growing challenge for design engineers and managers. The PIC32MZ's 2 MB of internal Flash enables live updates via dual independent panels that provide a fail-safe way to conduct field updates while operating at full speed.

"Our new PIC32MZ family was designed for high-end and next-generation embedded applications that require high levels of performance, memory and advanced-peripheral integration," said Rod Drake, director of Microchip's MCU32 Division. "The PIC32MZ

enables designers to add features such as improved graphics displays, faster real-time performance and increased security with a single MCU, lowering both cost and complexity."

The PIC32MZ is Microchip's first MCU to employ Imagination's MIPS microAptiv™ core, which adds 159 new DSP instructions that enable the execution of DSP algorithms at up to 75% fewer cycles than the PIC32MX families. This core also provides the microMIPS® instruction-set architecture, which improves code density while operating at near full rate, instruction and data cache, and its 200 MHz/330 DMIPS offers 3x the performance of the PIC32MX.

"Microchip is a flag-bearer for the MIPS architecture in microcontrollers, having created its performance-leading PIC32 line around MIPS. Additionally, Microchip was a valued partner in defining the feature set for the new MIPS microAptiv CPU, which is designed to fulfill next-generation application demands for increased performance and functionality," said Tony King-Smith, EVP Marketing, Imagination Technologies. "With its new microAptiv-based PIC32MZ family, Microchip is again taking MCU performance and feature innovation to new levels. Imagination is delighted with this latest achievement of our strategic relationship with Microchip to address ever-evolving market needs."

Development Support

Microchip is making four new PIC32MZ development tools available today. The complete, turn-key PIC32MZ EC Starter Kit costs $119, and comes in two flavors to support family members with the integrated crypto engine (Part # DM320006-C) and those without (Part # DM320006). The Multimedia Expansion Board II (Part # DM320005-2), which is available at the introductory rate of $299 for the first six months and can be used with either Starter Kit to develop graphics HMI, connectivity and audio applications. The 168-pin to132-pin Starter Kit Adapter (Part # AC320006, $59) enables development with Microchip's extensive portfolio of application-specific daughter boards. The PIC32MZ2048EC Plug-in Module (Part # MA320012, $25) is available for existing users of the Explorer 16 Modular Development Board. For more information and to purchase these tools, visit **http://www.microchip.com/get/JDVB**.

Pricing and Availability

The first 12 members of the PIC32MZ family are expected starting in December for sampling and volume production, while the remaining 12, along with additional package options, are expected to become available at various dates through May 2014. The crypto engine is integrated into eight of the PIC32MZ MCUs, and there is an even split of 12 MCUs with 1 MB of Flash and 12 MCUs with 2 MB of Flash. Pricing starts at $6.68 each in 10,000-unit quantities. The superset family members and their package options are the 64-pin QFN (9x9 mm) and TQFP (9x9 mm) for the PIC32MZ2048ECH064; 100-pin TQFP (12x12 and 14x14 mm) for the PIC32MZ2048ECH100; 124-pin VTLA (9x9 mm) for the PIC32MZ2048ECH124; and 144-pin TQFP (16x16 mm) and LQFP (20x20 mm) for the PIC32MZ2048ECH144. The superset versions with an integrated crypto engine are the PIC32MZ2048ECM064, PIC32MZ2048ECM100, PIC32MZ2048ECM124 and PIC32MZ2048ECM144.

For more information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's Web site at **http://www.microchip.com/get/ESJG**. To purchase products mentioned in this press release, go to **microchipDIRECT** or contact one of Microchip's authorized distributors.

Resources

High-res Images Available Through Flickr or Editorial Contact (feel free to publish):

- Chip Graphic: **http://www.microchip.com/get/BA47**
- Block Diagram: **http://www.microchip.com/get/6SEK**
- PIC32MZ EC Starter Kit: **http://www.microchip.com/get/K7AJ**
- Multimedia Expansion Board II: **http://www.microchip.com/get/GBSW**

Follow Microchip:

- RSS Feed for Microchip Product News: **http://www.microchip.com/get/E09A**
- Twitter: **http://www.microchip.com/get/VR8V**
- Facebook: **http://www.microchip.com/get/H7DH**
- YouTube: **http://www.microchip.com/get/KMKU**

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 **http://www.microchip.com/get/P5NR**.

Note: The Microchip name and logo, and PIC 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.

Tags / Keywords: 32 bit MCU, High Performance MCU, Highest CoreMark MCU, Large Flash memory MCU, Large RAM Memory MCU, USB, Ethernet MCU, Industrial MCU, Graphics MCU, CAN Controller, Hi-Speed USB, 32 bit MCU with DSP, MIPS microAptiv

Microchip Technology Inc.
Editorial Contact:
Eric Lawson
480-792-7182
eric.lawson@microchip.com
or
Reader Inquiries:
1-888-624-7435
http://www.microchip.com/get/ESJG

Source: Microchip Technology Inc.