March 31, 2014

Microchip Introduces Cost-Effective 8-bit PIC® Microcontroller Family With Intelligent Analog and Core Independent Peripherals

PIC16F170X/171X MCUs Reduce Design Complexity and System BOM Cost With Integrated Op Amps, Zero Cross Detect and Peripheral Pin Select

CHANDLER, Ariz.--(BUSINESS WIRE)-- Microchip Technology Inc. (NASDAQ: MCHP), a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions, today announced from EE Live! and the Embedded Systems Conference in San Jose the **PIC16(L)F170X** and **PIC16(L)F171X** family of 8-bit microcontrollers (MCUs), which combine a rich set of intelligent analog and core independent peripherals, along with cost-effective pricing and **eXtreme Low Power (XLP)** technology. Available in 14-, 20-, 28-, and 40/44-pin packages, the 11-member PIC16F170X/171X family of MCUs integrates two Op Amps to drive analog control loops, sensor amplification and basic signal conditioning, while reducing system cost and board space. These new devices also offer built-in Zero Cross Detect (ZCD) to simplify TRIAC control and minimize the EMI caused by switching transients. Additionally, these are the first PIC16 MCUs with Peripheral Pin Select, a pin-mapping feature that gives designers the flexibility to designate the pinout of many peripheral functions. The PIC16F170X/171X are general-purpose MCUs that are ideal for a broad range of applications, such as consumer (home appliances, power tools, electric razors), portable medical (blood-pressure meters, blood-glucose meters, pedometers), LED lighting, battery charging, power supplies and motor control.

Watch a brief video on these new MCUs: **http://www.microchip.com/get/6DM3**

View a short presentation: **http://www.microchip.com/get/7TNV**

The PIC16F170X/171X family features Core Independent Peripherals, such as the Configurable Logic Cell (CLC), Complementary Output Generator (COG) and Numerically Controlled Oscillator (NCO). These “self-sustaining” peripherals take 8-bit PIC® MCU performance to a new level, as they are designed to handle tasks with no code or supervision from the CPU to maintain operation. As a result, they simplify the implementation of complex control systems and give designers the flexibility to innovate. The CLC peripheral allows designers to create custom logic and interconnections specific to their application, thereby reducing external components, saving code space and adding functionality. The COG peripheral is a powerful waveform generator that can generate complementary waveforms with fine control of key parameters, such as phase, dead-band, blanking, emergency shut-down states and error-recovery strategies. It provides a cost-effective solution, saving both board space and component cost when driving FETs in half- and full-bridge drivers for control and power-conversion applications, for example. The NCO is a programmable precision linear frequency generator, ranging from <1 Hz to 500 kHz+. It

offers a step up in performance, while simplifying designs requiring precise linear frequency control, such as lighting control, tone generators, radio-tuning circuitry and fluorescent ballasts.

The new MCUs feature up to 28 KB of self-read/write Flash program memory, up to 2 KB of RAM, a 10-bit ADC, a 5-/8-bit DAC, Capture-Compare PWM modules, stand-alone 10-bit PWM modules and high-speed comparators (60 ns typical response), along with EUSART, I^2C™ and SPI interface peripherals. They also feature XLP technology for typical active and sleep currents of just 35 µA/MHz and 30 nA, respectively, helping to extend battery life and reduce standby current consumption.

“The PIC16F170X/171X MCUs deliver a rich set of analog and digital peripherals, along with XLP performance at cost-effective price points,” said Steve Drehobl, vice president of Microchip’s MCU8 Division. “With features such as internal Op Amps, ZCD, Peripheral Pin Select, CLC, COG and NCO, these MCUs reduce design complexity and cost for a wide variety of general-purpose applications.”

Development Support

The PIC16F170X/171X family is supported by Microchip’s standard suite of world-class development tools, including the **PICkit™ 3** (part # PG164130, $44.95), **MPLAB® ICD 3** (part # DV164035, $189.99), **PICkit 3 Low Pin Count Demo Board** (part # DM164130-9, $25.99), **PICDEM™ Lab Development Kit** (part # DM163045, $134.99) and **PICDEM 2 Plus** (part # DM163022-1, $99.99). The **MPLAB Code Configurator** is a free tool that generates seamless, easy-to-understand C code that is inserted into your project. It currently supports the PIC16F1704/08, and is expected to support the PIC16F1713/16 in April, along with all remaining MCUs in this family soon thereafter.

Microchip also has several online design centers that provide resources for working with the **Core Independent Peripherals** and **Intelligent Analog** integrated on these **8-bit Microcontrollers**. Microchip also offers online design centers to assist in the creation of **Intelligent Lighting** and **Home Appliance** applications. Additionally, Microchip’s engineers wrote tech briefs to help designers get the most out of the **Zero Cross Detect** and **Peripheral Pin Select** features on these MCUs.

Pricing & Availability

The PIC16(L)F1703/1704/1705 MCUs are available now for sampling and production in 14-pin PDIP, TSSOP, SOIC and QFN (4 x 4 x 0.9 mm) packages. The PIC16F1707/1708/1709 MCUs are available now for sampling and production in 20-pin PDIP, SSOP, SOIC and QFN (4 x 4 x 0.9 mm) packages. The PIC16F1713/16 MCUs are available now for sampling and production in 28-pin PDIP, SSOP, SOIC, QFN (6 x 6 x 0.9 mm) and UQFN (4 x 4 x 0.5 mm) packages. The PIC16F1718 MCUs are expected to be available for sampling and production in May 2014, in 28-pin PDIP, SSOP, SOIC, QFN (6 x 6 x 0.9 mm) and UQFN (4 x 4 x 0.5 mm) packages. The PIC16F1717/19 MCUs are expected to be available for sampling and production in May 2014, in 40/44-pin PDIP, TQFP and UQFN (5 x 5 x 0.5 mm). Pricing starts at $0.59 each, in 10,000-unit quantities.

For additional information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip’s Web site at **http://www.microchip.com/get/H4FJ** and **http://www.microchip.com/get/4FJP**. To purchase products mentioned in this press

release, go to **microchipDIRECT** or contact one of Microchip's authorized distribution partners.

Resources

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

- Chip Graphic: **http://www.microchip.com/get/140E**
- Block Diagram: **http://www.microchip.com/get/7M4N**

Follow Microchip:

- RSS Feed for Microchip Product News: **http://www.microchip.com/get/TVLN**
- Twitter: **http://www.microchip.com/get/KWPX**
- Facebook: **http://www.microchip.com/get/VMTN**
- YouTube: **http://www.microchip.com/get/NB97**

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/JBCP**.

Tags / Keywords: **Operation Amplifiers**, **Op Amps**, **Microcontroller**, **8 bit**, **Analog**, **MCU**, **Zero Cross Detect**, **Peripheral Pin Select**, **CLC**, **NCO**, **COG**, **Core Independent Peripherals**

Editorial Contact:
Terri Thorson, 480-792-4386
terri.thorson@microchip.com
or
Reader Inquiries:
1-888-624-7435
http://www.microchip.com/get/H4FJ
http://www.microchip.com/get/4FJP

Source: Microchip Technology Inc.