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Microchip Announces New 8-, 14- and 20-pin Enhanced Mid-Range PIC(R) Microcontrollers (MCUs)

Peripheral-Rich MCUs Achieve Less Than 50 uA/MHz Active Current and Extremely Low Sleep Currents



CHANDLER, Ariz., Mar 02, 2010 (BUSINESS WIRE) -- Microchip Technology Inc. ([MCHP](#) **26.82**, **-0.18**, **-0.68%**) , a leading provider of microcontroller and analog semiconductors, today unveiled several new, peripheral-rich 8-bit PIC(R) microcontrollers (MCUs) with active currents of less than 50 uA/MHz and extremely low sleep currents. The PIC12F182X and PIC16F182X (PIC1XF182X) MCUs extend Microchip's Enhanced Mid-range 8-bit core product line into the 8-pin segment, bringing the total number of Enhanced 8-bit core PIC MCUs to 16, in packages ranging from 8 to 64 pins. With their extreme low power and high levels of integration, including mTouch(TM) capacitive touch-sensing and multiple communications peripherals, the general-purpose PIC12F182X and PIC16F182X MCUs are well suited for a wide range of applications in the appliance (e.g. coffee makers, blenders, dishwashers); consumer (e.g. vacuum cleaners, printers, remote controls); and automotive markets (e.g. LED lighting, keyless entry, body electronics), among others. A video demonstrating the PIC16LF1823 MCU's low active current is available through editorial contact or YouTube (feel free to embed on your Web site):

<http://www.microchip.com/get/2F0J>.

nanoWatt XLP technology remains the standard for battery-friendly MCUs, and, when combined with extremely low active-current consumption of less than 50 uA/MHz, improves overall energy efficiency in a wide variety of applications. Microchip's Enhanced Mid-range 8-bit architecture provides an up to 50% increase in performance, and 14 new instructions that result in up to 40% better code execution over previous-generation 8-bit PIC16 MCUs. Microchip's Enhanced 8-bit architecture provides a 50% increase in performance, and 14 new instructions that result in up to 40% better C-code efficie

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-bit PIC16 MCUs. The PIC1XF182X MCUs include dual I(2)C(TM)/SPI interfaces, more PWM outputs with independent time bases, and a Data Signal Modulator that enables designers to combine many functions into a single MCU.

"With active current of less than 50 uA per MHz, Microchip has set the new industry benchmark for low-power microcontrollers," said Tony Massimini, chief of technology with Semico Research Corporation. "These low active currents, plus sleep currents down to 20 nA and the industry-leading number of peripherals integrated onto the PIC12F182X, PIC16F182X and PIC16F19XX MCUs, enable engineers to create battery-friendly designs that also incorporate capacitive touch sensing, LCD, communications and other functions, which will help differentiate their products in the marketplace."

"Microchip further solidifies its leadership in low-power operation with the introduction of the PIC1XF182X family of microcontrollers," said Steve Drehobl, vice president of Microchip's Security, Microcontroller and Technology Development Division. "These new microcontrollers also feature several new or enhanced peripherals including mTouch capacitive touch sensing, dual I(2)C/SPI interfaces, 32-level built-in voltage reference, and Data Signal Modulator along with the efficiency gains due to our enhanced Mid-Range 8-bit architecture."

PIC1XF182X MCU Features

The following table summarizes key features of the PIC1XF182X MCUs.

Feature	PIC1XF182X MCUs
Max. Frequency	32 MHz
Internal Oscillator	31.25 kHz to 32 MHz, Software Selectable
Program Memory	Up to 14 KB Flash
Data EEPROM	256 Bytes
Data Memory	Up to 1 KB
Timers	Up to 4 x 8-bit, 1 x 16-bit, with Real-Time Clock Support
Communication	Up to 2 x MI(2)C/SPI 1 x EUSART
Analog-to-Digital Converter	Up to 12 x 10-bit
Comparators	Up to 2 x with Rail-to-Rail Inputs
PWM Channels	Up to 4 with Independent Time Bases
Operating Voltage	1.8 - 5.5V (including full analog peripheral operation)
Standby Current	20 nA @ 1.8V, Typical
mTouch	Up to 12 Channels
Capacitive Touch Sensing	
Other Capabilities	Data Signal Modulator

Development Tool Support

Microchip's PICDEM(TM) Lab Development Kit (part # DM163035) can be used with the PIC1XF182X MCUs. The kit comes complete with a development board containing five popular 8-bit PIC MCUs; a bag of discrete components; a debugger/programmer and a CD containing a User's Guide, labs and application examples. The kit can be purchased for \$124.99 today at microchipDIRECT (<http://www.microchip.com/get/7KL8>).

Designers can also use Microchip's complete suite of standard development tools with the new MCUs, including the user-friendly and free MPLAB(R) IDE, along with the HI-TECH C (R) compiler for PIC16 MCUs. The HI-TECH C Lite edition is a completely free, fully functional compiler with no time limitations. For applications with limited program space, the Standard and PRO editions offer denser code and improved



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is a variety of debugging hardware, from the popular PICKit 3 In-Circuit Debugger/Programmer (\$44.95), to the MPLAB ICD 3 In-Circuit Debugger (\$189.99), MPLAB PM3 Universal Device Programmer (\$895), and MPLAB REAL ICE(TM) In-Circuit Emulator (\$499.98). All of these tools can be purchased today at microchipDIRECT (<http://www.microchip.com/get/7KL8>). More information on Microchip development tools is available at <http://www.microchip.com/get/B9KG>.

Packaging, Pricing and Availability

The PIC12F182X and PIC16F182X MCUs are available in DFN, PDIP, QFN, SOIC, and TSSOP packages of varying sizes, from 8 to 20 pins, starting at \$0.69 each, in 10,000-unit quantities. PIC12F1822 and PIC16F1823 samples are available today. Volume production is expected to begin in Q2 2010. For further information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's Web site at <http://www.microchip.com/get/66JV>.

About Microchip Technology

Microchip Technology Inc. (MCHP 26.82, -0.18, -0.68%) is a leading provider of microcontroller and analog semiconductors, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. Headquartered in Chandler, Ariz., Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at <http://www.microchip.com/get/HN81>.

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Video demonstrating the PIC16LF1823 MCU's low active current available through editorial contact or YouTube (feel free to embed on your Web site): <http://www.youtube.com/watch?v=q2Tc4WkwavU>

Photos and Block Diagrams available through editorial contact, or Flickr (feel free to publish):

PIC12F1822 Block Diagram <http://www.microchip.com/get/0S3T>

PIC16F182X Block Diagram <http://www.microchip.com/get/48BC>

PIC12F182X & PIC16F182X Photo <http://www.microchip.com/get/LWM2>

PICDEM(TM) Lab Development Kit <http://www.microchip.com/get/7T0F>

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