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Microchip Announces a Microcontroller Family That Provides Closed Loop Digital Control and Safety Monitoring With Core Independent Peripherals

Increased Peripheral Integration Providing Advanced Functional Control With Hardware PID, Phase Angle Measurement and 100 mA Current Drive

CHANDLER, Ariz.--(BUSINESS WIRE)-- Microchip Technology Inc. (NASDAQ: MCHP), a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions, today announced from Electronica in Germany an expansion of its 8-bit PIC® microcontroller (MCU) portfolio, with the peripheral-rich, low-pin count **PIC16(L)F161X** family. These new MCUs introduce and expand the offering of Microchip's Core Independent Peripherals (CIP), which were designed to reduce interrupt latency, lower-power consumption and increase system efficiency, and safety, while minimizing design time and effort. These peripherals are designed to reduce system complexity by eliminating the need for additional code and external components. Hardware-based peripherals offload timing-critical and core-intensive functions from the CPU, allowing it to focus on other critical tasks within the system.

View a brief presentation: **http://www.microchip.com/PIC16_LF161X-Family-Press-Presentation-111114a**

The PIC16(L)F161X PIC MCUs offer the Math Accelerator (Math ACC) with Proportional Integral Derivative (PID), offering completely Core Independent calculations, with the capability to perform 16-bit math and PID operations. The family also includes the Angular Timer (AngTmr), which is a hardware module that calculates the rotational angle in functions, such as motor control, TRIAC control, or Capacitive Discharge Ignition (CDI) systems. Regardless of speed, the AngTmr allows recurring interrupts at a specific rotational or sinusoidal angle without using the core's computation. The CIPs can be configured to perform a host of given functions that increase execution speeds and decrease software requirements. Offloading these functions frees up the CPU do other tasks, consumes less program memory, and reduces the overall power consumption of the MCU.

In addition to the MATH ACC and AngTmr, the PIC16(L)F161X features several other peripherals designed to ease implementation and add flexibility of various functions. The 24-bit Signal Measurement Timer (SMT) performs high-resolution measurements of digital signal, in hardware, resulting in more precise and accurate measurements. This is ideal for speed control, range finding and RPM indicators. This family also includes the Zero Cross Detect (ZCD) module, which can monitor AC line voltage, and indicate zero crossing activity, simplifying TRIAC control applications, greatly reducing both CPU demand and BOM cost. In combination with the new High-Current I/Os (100 mA) and the proven Configurable Logic Cell (CLC) along with I^2C™, SPI and EUSART for communications, this integration helps speed design, eases implementation and adds flexibility.

This family also supports the implementation of safety standards such as Class B and UL 1998 or fail-safe operations by combining the Windowed Watchdog Timer (WWDT) which monitors proper software operation within predefined limits, improving reliability and Cyclic Redundancy Check with Memory Scan (CRC/SCAN) that detects and scans memory for corrupted data. Along with the Hardware Limit Timers (HLT), which detect hardware fault conditions (stall, stop, etc.), engineers can now enable safety and monitoring functions to their applications with minimum to zero involvement of the CPU. Along with all these features, the family offers low-power XLP technology and is provided in small-form-factor packages, ranging from 8-, 14- and 20- pin packages.

“The expansion of the PIC16F161X family provides a broad mix of Core Independent Peripherals that enable a wide variety of functions including motor control and safety monitoring,” said Steve Drehobl, vice president of Microchip’s MCU8 Division. “These peripherals enable designers to create functions for closed loop control with little to no interaction with the core. This is an asset to any designer, empowering them with the ability to create customizable functions specific to their application, all while minimizing their code development.”

Development Support

The PIC16(L)F161X family is supported by Microchip’s standard suite of world-class development tools, including the **PICkit™ 3** (part # PG164130, $47.95) and **MPLAB® ICD 3** (part # DV164035, $199.95). The **MPLAB® Code Configurator**, which is a plug-in for Microchip’s free MPLAB® X IDE that provides a graphical method to configure 8-bit systems and peripheral features, gets you from concept to prototype in minutes by automatically generating efficient and easily modified C code for your application.

Pricing & Availability

The PIC12(L)F1612 MCUs are available today for sampling and volume production in 8-pin PDIP, SOIC, and 3 mm x 3 mm DFN and UDFN packages. The PIC16(L)F1613 MCUs are also available today in 14-pin PDIP, SOIC, TSSOP, and 4 mm x 4 mm UQFN and QFN packages. The PIC(L)F1614 and PIC(L)F1615 are available now for sampling in 14-pin PDIP, SOIC, TSSOP, and 4 mm x 4 mm UQFN and QFN packages, and volume production is expected in January. The PIC16(L)F1618 and PIC(L)F1619 MCUs are also available today for sampling in 20-pin PDIP, SOIC, TSSOP, and 4 mm x 4 mm UQFN and QFN packages, and volume production is expected in January. Pricing for the family starts at $0.53 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/PIC16_LF161X-Family-Product-Page-111114a**. To purchase products mentioned in this press release, go to **microchipDIRECT** or contact one of Microchip’s authorized distribution partners.

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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/Homepage-111114a**.

Tags / Keywords: **Microcontroller**, **8 bit**, **MCU**, **Windowed Watchdog Timer**, **CRC**, **Timers**, **Zero Cross Detect**, **Motor Control**, **Class B**, **Core Independent Peripherals**, **PID**, **Math**

Microchip Technology Inc.
Editorial Contact:
Terri Thorson, 480-792-4386
terri.thorson@microchip.com
or
Reader Inquiries:
1-888-624-7435
http://www.microchip.com/PIC16_LF161X-Family-Product-Page-111114a

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