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Microchip Technology Releases Tools for Motor Control Designs That Improve Efficiency and Performance While Reducing Development Time

CHANDLER, Ariz.--(BUSINESS WIRE)-- Microchip Technology Inc. (NASDAQ:MCHP), a leading provider of microcontroller and analog semiconductors, today announced two new low-cost development systems, one for the control of high-voltage motors and another for stepper motors. Along with related applications notes and free source-code software, these development tools enable rapid designs using dsPIC(R) digital signal controllers (DSCs).

The new dsPICDEM(TM) MCHV Development System is the industry's only development tool for the rapid evaluation and design of a wide variety of high-voltage, closed-loop motor control applications using AC Induction Motors (ACIMs), Brushless DC (BLDC) motors or Permanent Magnet Synchronous Motors (PMSMs). The board includes in-circuit debugging circuitry, eliminating the need for a separate debugger for development with Microchip's dsPIC33 Motor Control DSC families. Additionally, this tool combines a proven motor-control system and Power Factor Correction (PFC) for regulatory requirements.

Watch a video demonstration of the dsPICDEM MCHV at: http://www.microchip.com/get/PCJT.

The new dsPICDEM MCSM Development Board is the industry's most cost-effective tool for creating unipolar and bipolar stepper motor applications. This board enables the rapid development of both open-loop and current-closed-loop microstepping routines using Microchip's dsPIC33 Motor Control families. This development tool also provides engineers with a control GUI, which allows them to focus on integrating the other application features and fine-tuning the motor's operation.

"These development tools jumpstart our customers' advanced high-voltage motor control and stepper motor control designs, and brings the benefits of high-efficiency control to their products quickly," said Sumit Mitra, vice president of Microchip's High Performance Microcontroller Division. "Both development boards feature the flexible dsPIC33F "MC" DSC families, which integrate leading-edge motor control features. Together, this offers our customers a winning combination of price, features and reduced time to market for their motor control applications."

Software Tools and Libraries

Five royalty- and license-free software application notes with source code are being released for development, five with the dsPICDEM MCHV and one with the dsPICDEM MCSM. Designers can utilize Microchip's proven, optimized and efficient code to produce reliable results, while reducing software creation and debug time:

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--  AN957 Sensored BLDC Motor Control Using dsPIC30F2010
--  AN984 An Introduction to AC Induction Motor Control Using the
    dsPIC30F/dsPIC33F DSCs
--  AN1078 FOC Sensorless PMSM with SMO Estimator, Field Weakening and Dual
    Shunts
--  AN1160 Sensorless BLDC Control with Back-EMF Filtering Using a Majority
    Function
--  AN1299 FOC Sensorless PMSM with SMO Estimator, Field Weakening and
    Single-Shunt
--  AN1307 Stepper Motor Control with dsPIC(R) DSCs
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Microchip's free Field Oriented Control (FOC) software libraries enable the development of green motor-based systems. By using these libraries, the engineer can run motors at their peak efficiency and generate the maximum torque using the minimum amount of energy.

Microchip's stepper motor control library enables the development of high-speed stepper motor control applications with variable micro-stepping down to 1/64 of a step. By using closed-loop current control, stepper motors can be run several times faster than their rated speeds with high torque and very-low-noise operation.

Included with Microchip's free MPLAB(R) IDE integrated development environment is an application called the Data Monitoring and Control Interface (DMCI). Using this GUI with a USB cable for communications to the target board via the included Real Time Data Monitoring (RTDM) protocol promotes rapid parameter tuning for different motors. Unlike Microchip, other competitor systems require that the motor be stopped, the source code modified, recompiled, downloaded and the DSC or MCU reprogrammed to see the effect of a control parameter change.

Pricing and Availability

Both tools are available today for purchase from microchipDIRECT.com or any authorized worldwide distributor. The dsPICDEM MCHV Development System (part # DM330023) is $650. The dsPICDEM MCSM Development Board (part # DM330022) is $129.99, and is also available as the dsPICDEM(TM) MCSM Development Kit (part # DV330021, $269.99), which includes a stepper motor and 24-volt power supply. For a complete overview of Microchip's dsPIC DSC motor control solutions, please visit http://www.microchip.com/get/SVSE.

About Microchip Technology

Microchip Technology Inc. (NASDAQ: MCHP) 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, 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/QJB6.

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