June 12, 2007

Microchip Technology Provides Free Field Oriented Control Algorithm for Sensorless Control of Permanent Magnet Synchronous Motors

Free Algorithm and dsPIC33FJ12MC Family Offers Platform for Field Oriented Control; Enables Energy Efficiency, Quieter Operation, Longer Life and Excellent Torque Control

CHANDLER, Ariz.--(BUSINESS WIRE)--

Microchip Technology Inc. (NASDAQ:MCHP), a leading provider of microcontroller and analog semiconductors, today announced that it is providing free source code for the sensorless Field Oriented Control (FOC) of Permanent Magnet Synchronous Motors (PMSMs), which can operate on any of Microchip's Motor Control dsPIC(R) Digital Signal Controllers (DSCs)--including the new dsPIC33FJ12MC family of DSCs. The 40 MIPS dsPIC33FJ12MC family includes Microchip's lowest-cost motor control DSCs, with prices starting at $1.99 each in 10,000-unit quantities. Using this FOC platform, with downloadable code available at www.microchip.com/motor, motor-driven applications such as appliances and automobiles, can cost-effectively reduce energy consumption by replacing expensive optical or hall-effect encoders with inexpensive shunt resistors.

With electric motors consuming, by some estimates, over half of the energy generated in the United States, juxtaposed against increasingly stringent energy regulations, FOC of PMSM motors is emerging as the strategy of choice for achieving energy efficiency with excellent torque control, while satisfying consumer demands for quieter operation and longer life. Microchip provides a free and extraordinarily efficient FOC motor control algorithm, in combination with a cost-effective DSC family, which can help solve the economic conundrum faced by appliance manufacturers as they seek to achieve regulatory compliance while maintaining economic momentum.

"The Appliance industry is caught in the crossfire between controlling product cost and improving product efficiency," said Sumit Mitra, vice president of Microchip's Digital Signal Controller Division. "Microchip is solving this challenge with advanced motor control DSCs at the industry's lowest price point and free complex algorithms--enabling our customers to achieve rapid product deployment."

The 40 MIPS dsPIC33FJ12MC family cost-effectively provides the DSP functionality required for sensorless FOC, while maintaining the attributes familiar to microcontroller designers, such as deterministic operation and effective interrupt handling. System costs are further reduced by the fact that FOC only requires two current sensors (the third is computed).

```
Key features of Microchip's FOC algorithm include:

--  Only two current sensors are needed

--  Source code provides for maximum design flexibility

--  FOC Application Note AN1078 fully describes concepts and
    supporting algorithms

--  FOC transformation blocks, control functions and estimation
    subroutines optimized for speed

--  Motor start-up subroutine is included

--  Phase advance is available to operate motor above speed limit

--  Internal variable buffering for Data Monitoring and Control
    Interface (DMCI) debugging

--  Program code size: 7 Kbytes of Flash memory

--  Required RAM size: 400 bytes of data RAM memory

--  Requires 11 MIPS performance--leaving 75% of available dsPIC
    DSC MIPS for other functions

Related Development Tools
```

Microchip's FOC algorithm can be evaluated using the dsPICDEM(TM) MC1 Motor Control Development Board (part # DM300020) and the dsPICDEM MC1H 3-Phase High Voltage Power Module (part # DM300021). Debugging/programming can be accomplished with the MPLAB ICD 2 In-Circuit Debugger and Device Programmer (part # DV164005).

The MPLAB IDE contains a Data Monitoring and Control Interface (DMCI) to speed product development of FOC applications. DMCI provides dynamic access and control of software variables, and is useful for tuning application parameters and viewing run-time application data graphically. Software parameter changes are updated at run-time, and no recompiling is required between debug sessions.

Availability

The free FOC algorithm is available now for downloading, as part of application note AN1078, at www.microchip.com/motor. Both members of the dsPIC33FJ12MC family are available today for general sampling and volume production, with prices starting at $1.99 each in 10,000-unit quantities. The dsPIC33FJ12MC201 is available in 20-pin SOIC and SDIP packages. The dsPIC33FJ12MC202 is available in 28-pin QFN, SOIC and SDIP packages.

For additional information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's Web site at www.microchip.com/motor.

```
Microchip Provides Free FOC Algorithm

Microchip Customer Support
```

Microchip is committed to supporting its customers by helping design engineers develop products faster and more efficiently. Customers can access four main service areas at

www.microchip.com. The Support area provides a fast way to get questions answered; the Sample area offers free evaluation samples of any Microchip device; microchipDIRECT provides 24-hour pricing, ordering, inventory and credit for convenient purchasing of all Microchip devices and development tools; finally, the Training area educates customers through webinars, sign-ups for local seminar and workshop courses, and information about the annual MASTERs events held throughout the world.

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 www.microchip.com.

Source: Microchip Technology Inc.