

# Microchip Brings Advanced Control to Cost-Sensitive Designs



Microchip Technology announced a new series of 16-bit PIC microcontrollers (MCUs) and dsPIC Digital Signal Controllers (DSCs) that bring advanced control to cost-sensitive general-purpose and motor-control designs. The new devices enable low-cost, sensorless motor-control designs, with support for a wide range of motor-control algorithms, and include an on-chip Charge Time Measurement Unit (CTMU), and 10-bit Analog-to-Digital Converter (ADC), to enable intelligent sensor applications, and mTouch capacitive touch sensing. The devices are supported by three new Plug-In Modules (PIMs) and a single-board motor-control starter kit that includes cap-touch sliders and an onboard BLDC motor, making it easy for designers to create high-performance applications in the appliance (e.g. washing machines), medical (e.g. infusion pumps) and industrial (e.g. AC-induction motors) markets, among others.

Today's designers are challenged to create higher-performing products at lower costs. With specialized features and peripherals optimized for general-purpose and motor-control applications, at prices near \$1.00 each in high-volume quantities, the dsPIC33FJ16 "GP," dsPIC33FJ16 and PIC24FJ16 "MC" devices meet these needs. In addition to their on-chip CTMU and ADC peripherals, the general-purpose dsPIC33FJ16 "GP" devices include a Real-Time Clock/Calendar and up to 21 general-purpose output pins, making them ideal for driving intelligent sensors. The dsPIC33FJ16 and PIC24FJ16 "MC" devices include a 6-channel Pulse-Width Modulation (PWM) peripheral with synchronized outputs for 3-phase operation, enabling support for a wide range of motor-control algorithms and applications, from simple sensed motors, to advanced Sinusoidal Field-Oriented Control (FOC), Brushless DC (BLDC), Permanent Magnet, and Synchronous AC-Induction Motors (ACIMs).

"Customers are always looking for ways to incorporate more features and functionality into their designs without increasing costs," said Sumit Mitra, vice

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Published on Electronic Component News (<http://www.ecnmag.com>)

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president of Microchip's High-Performance Microcontroller Division. "The dsPIC33FJ16 DSCs and PIC24FJ16 MCUs meet these needs, with the 'MC' versions enabling customers to enjoy the benefits of advanced motor control, such as higher efficiency, quieter operation, smoother torque and higher reliability."

### Development Tool Support

Microchip announced several new development tools to help designers to get started using the new devices. The Motor Control Starter Kit With mTouch Sensing (part # DM330015, \$89.99) contains a single board with a BLDC motor, capacitive-touch sliders and a built-in debugger. The dsPIC33FJ16GP102, PIC24FJ16MC102, and dsPIC33FJ16MC102 PIMs are available, and work with the Explorer 16 (part # DM240001, \$129.99) and dsPICDEM™ MCLV (part # DM330021, \$150) development boards. All of these tools are available for purchase today, at microchipDIRECT (<http://www.microchip.com/get/BTDH> [1]).

### Packaging, Pricing & Availability

The dsPIC33FJ16GP101 DSC is available in 18-pin PDIP and SOIC packages, as well as a 20-pin SSOP packages. The dsPIC33FJ16GP102 and dsPIC33FJ16MC102 DSCs, and PIC24FJ16MC102 MCU, are available in 28-pin QFN-S, SDIP, SOIC, and SSOP packages, as well as a 36-pin VLAP package. The dsPIC33FJ16MC101 DSC and PIC24FJ16MC101 MCU are available in 20-pin PDIP, SOIC and SSOP packages. All of the devices are priced near \$1.00 each, in high-volume quantities.

For further information, please visit [www.microchip.com](http://www.microchip.com) [2]

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