

Microchip Technology Debuts World's Lowest Power Large-memory 16-bit USB Microcontroller Family; Only 16-bit MCU With OTG

12-Member PIC24FJ256GB1 Family's Integrated USB 2.0 OTG, Host and Device Functionality is Optimized for Embedded Applications and Ease of Use

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Microchip Technology Inc., a leading provider of microcontroller and analog semiconductors, today announced the 12-member PIC24FJ256GB1 microcontroller (MCU) family, which is the lowest power (100 nA standby current) large-memory (up to 256 KB Flash and 16 KB RAM) 16-bit USB microcontroller family in the world. As the only 16-bit microcontroller family with integrated USB 2.0 device, embedded-host, dual-role and On-the-Go (OTG) functionality, the PIC24FJ256GB1 makes it cost effective and easy to add advanced USB features to embedded designs. Additionally, the integrated Charge Time Measurement Unit (CTMU) peripheral—along with the royalty-free mTouch™; Sensing Solution software development kit—enables designers to add a capacitive-touch user interface without any external components. When combined with Microchip's free Graphics Software Library, engineers have access to a complete, USB-enabled and cost-effective user interface solution.

USB embedded host functionality and capacitive-touch interfaces have become critical elements for a large number of embedded designs, driven by the demand for increased user friendliness, upgradeability and expandability. Now, applications that previously required a high-end chip can utilize the cost-effective, low-power 16-bit PIC24FJ256GB1 family to easily incorporate both advanced USB OTG and capacitive-touch functionality. Additionally, Microchip provides complete software support, via free USB class drivers and USB applications. And, the PIC24FJ256GB1 has ample code space for these advanced applications, while providing up to four UARTs, three SPI ports and three I2C™; ports to expand control capabilities and eliminate the space and cost of support chips.

'Not only does Microchip provide the lowest power large-memory USB 16-bit microcontrollers, but we have the only 16-bit option for adding OTG,' said Mitch Obolsky, vice president of Microchip's Advanced Microcontroller Architecture Division.

Obolsky continued, 'Add to that an integrated capacitive-touch peripheral, the free USB software to get up and running, QVGA graphics support and the industry's only seamless 8-/16-/32-bit toolchain, and it's easy to see why Microchip has become synonymous with MCUs among embedded designers across the globe.'

Rarely are designers working on point applications, but rather complete portfolios of end products. To provide the flexibility that this design approach requires, the PIC24FJ256GB1 maintains pin, peripheral and software compatibility with Microchip's 32-bit USB microcontroller family. To further ease migration and protect tool investments, Microchip's is the only complete portfolio of 8-, 16- and 32-bit devices to be supported by a single IDE—the free MPLAB® IDE.

Applications such as reading and writing to Flash drives, interfacing to wireless networks, and system updates are all enabled through this complete, cost-effective USB microcontroller family. Other example applications include: **Industrial** (manufacturing tools, data loggers, scanners, smart

displays, gambling-machine peripherals, RFID readers, POS terminals, robot-controller interfaces, industrial timers, gas-flow analyzers, cable-test fixtures); **Medical** (portable patient-monitoring equipment, analysis equipment, research-equipment automation, glucose meters); **Automotive** (bus diagnostic tools, vehicle trace recorders [black boxes], ultrasonic sensors, audio and entertainment equipment); **Battery-Powered** (sensors, portable meters and measurement equipment, security applications, remote controls, home automation); **Consumer** (business-card scanners, printers, white-board digitizers, voice recorders, uninterruptible power-supply systems, MP3 players, fire alarms, exercise equipment, home security systems, universal remote controls).

Key Features: USB Implementers Forum certified for Peripheral and Embedded-Host functionality
USB 2.0 OTG—supports device, embedded host, dual role and OTG
Low power—standby current of 100 nA
Peripheral Pin Select flexible pin mapping
CTMU peripheral for capacitive touch
Expanded peripherals—4 UARTs, 3 SPI, 3 I2C ports
23 independent timers

Development Tools

All PIC24F family members are supported by Microchip's world-class development tools, including the MPLAB IDE, the MPLAB C30 C compiler, the MPLAB REAL ICE™ emulation system, the MPLAB ICD 2 in-circuit debugger, and the MPLAB PM3 universal device programmer. Owners of the Explorer 16 development board can purchase a \$25 USB OTG PIC24F plug-in module (part # MA240014) and a \$60.00 USB PICtail™ Plus Daughter Board (part # AC164131). Both are available today at <http://www.microchipdirect.com/>.

The MPLAB Starter Kit for PIC24F comes complete with everything that developers need to get started, including the USB-powered MCU board, the MPLAB IDE and MPLAB C30 C compiler, documentation, sample projects with tutorials, schematics, and 16-bit compatible peripheral libraries. Microchip also provides free source code for USB software stacks and class drivers to enable designers to get a head start on the development of their USB applications. Microchip's free USB Host Stack, Device Stack, USB OTG Stack, Class Drivers (HID, MSD, CDC, Custom), and File Management software are available now at www.microchip.com/USB. The MPLAB Starter Kit for PIC24F (part # DM240011) is expected to be available in April for \$59.98 at <http://www.microchipdirect.com/>.

Availability & Pricing

The 12-member PIC24FJ256GB1 family is offered in 64-, 80-, or 100-pin TQFP package options, and all are available now for general sampling with volume production expected in May 2008. Pricing starts at \$3.47 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 www.microchip.com/usb.

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