Flash Devices

Microchip Technology released today its family of PIC18FXX2 Flash microcontrollers that combines an abundant peripheral set with a powerful microcontroller core to offer an extremely flexible solution for embedded control applications. The new product family is drop-in compatible with the existing PIC18CXX2 OTP family and also provides a seamless migration path between that product line and the flexible, self-programmable Flash-based platform. With this technology, customers are able to reprogram remotely the Flash memory in socket through the Serial Communication Interface (SCI) hardware module. Microchip's advanced Flash process technology offers industry-leading endurance with up to 1,000,000 erase/write cycles to data memory and 100,000 erase/write cycles to program memory.

Featuring In-Circuit Serial Programming&#153 (ICSP&#153), Microchip's PICmicro&reg Flash devices allow the microcontrollers to be programmed after being placed in a circuit board. This offers tremendous flexibility, reduces development time and manufacturing cycles and improves time to market. ICSP enables reduced cost of field upgrades, system calibration during manufacturing and the addition of unique identification codes to the system and calibration of system in the field. The PIC18FXX2 family also supports self-programming over the operating voltage range so that the user can program the device in-circuit at the user's operating voltage. Requiring only two I/O pins for most devices, Microchip offers the most non-intrusive programming.

The devices offer attractive solutions for applications, such as automotive (remote tire pressure sensor, oil conditioning level/temp sensor, instrument cluster panel controller), consumer (washing machine controller interface, variable speed furnace controller, cordless 2 way phone), industrial (power monitor, capacitive sensor for matrix keypad, industrial motor control fiber optical back plain) and telecommunications (routers, phone line switching card, fiber optic multiplexer) industries.

The PIC18F242, PIC18F252, PIC18F442, and PIC18F452 offer 10 MIPS at 10 MHz performance and an operating range of 2.0-5.5 v. The devices feature up to 32 K bytes of self-programmable Flash memory, 1.5 K bytes of user SRAM and 256 bytes of data EEPROM. Possessing a 10-bit analog-to-digital converter (ADC) with up to 8 input channels, the devices also provide a C compiler-friendly development environment.

Unique features include low voltage programmability, a rich peripheral set with both digital and analog modules and selectable oscillator options (crystal/resonator/external clock, 4x phase lock loop [PLL] for high-frequency oscillators and a 32 KHz secondary oscillator clock input). The self-programmable Flash memory allows the device to be updated in socket by executing its own internal instructions, thereby eliminating the need for external high voltage or additional hardware.

Additional features include a configurable Master Synchronous Serial Port in either SPI&#153 or a 2-wire I2C&#153mode, programmable brown-out detect, programmable low voltage detect, two 10-bit PWMs, a 9-bit addressable USART

interfaces, three 16-bit timers, one 8-bit timer, one Watchdog timer, an 8x8 hardware multiply, as well as Microchip's MPLAB&reg In-Circuit Debugger (ICD) capability.
Microchip's MPLAB ICD development tool is a powerful, low-cost run-time tool that offers cost-effective in-circuit Flash programming and debugging from the graphical user interface of the MPLAB Integrated Development Environment (IDE) tool. This enables a designer to develop and debug source code by watching variables, single-stepping and setting break points. Running at full speed enables testing hardware in real-time. f

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