

PIC16F630/676 Microcontroller Family

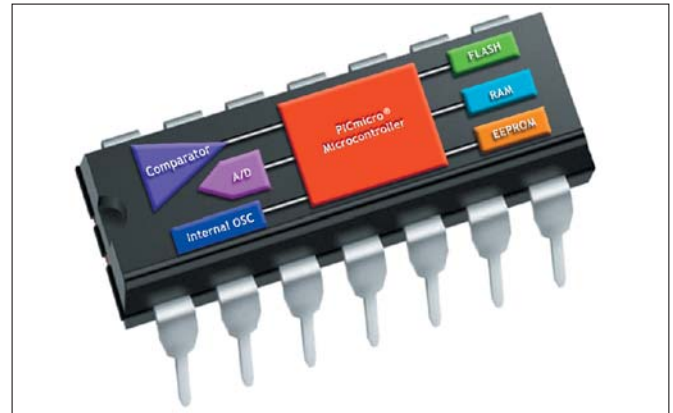
The PIC16F630/676 microcontroller products merge all the advantages of the mid-range x14 architecture and the flexibility of Flash program memory into a 14-pin package. The PIC16F6XX devices feature a 14-bit instruction set, small footprint package, and a wide operating voltage of 2.0-5.5 volts. In addition, these devices offer an internal programmable 4 MHz oscillator, on-board EEPROM data memory, on-chip voltage reference, and up to 8 channels of 10-bit A/D. These 14-pin microcontrollers provide the features and intelligence not previously available due to cost and board space limitations. With the flexibility of Flash and an excellent development tool suite including a low cost In-Circuit Debugger (ICD), In-Circuit Serial Programming™ (ICSP™) and full ICE 2000 emulation, these devices are ideal for just about any embedded control application.

High-Performance RISC CPU:

- Only 35 single word instructions to learn
- All single cycle instructions except program branches, which are two-cycle
- Operating Speed: DC - 20 MHz oscillator/clock input
DC - 200 ns instruction cycle
- Memory:
 - 1024 x 14 words of Flash Program Memory
 - 64 x 8 bytes of Data Memory (SRAM)
 - 128 x 8 bytes of EEPROM Data Memory
- 8-level deep stack
- Direct, Indirect, and Relative Addressing modes for data and instructions

Peripheral Features:

- High current sink/source: 25 mA
- 12 I/O pins with individual direction control
- Programmable interrupt-on-pin change
- Programmable pull-ups on input pins
- Timer0 module: 8-bit timer/counter with 8-bit prescaler
- Timer1 module: 16-bit timer/counter with prescaler, can be incremented during Sleep via external crystal/clock



Advanced Analog Features:

- Analog-to-Digital Converter A/D with:
 - 10-bit resolution
 - Programmable 8-channel input
 - Voltage reference input
- Analog Comparator module with 1 comparator:
 - Programmable On-Chip Voltage Reference (CVREF) module
 - Programmable input multiplexing from device inputs
 - Comparator output is externally accessible

Special Microcontroller Features:

- 100,000 erase/write cycle Flash program memory
- 1,000,000 erase/write cycle data EEPROM memory
- Low-power Brown-out Reset (BOR)
- Low-power Power-on Reset (POR)
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Programmable code protection
- Power saving Sleep mode
- Internal 4 MHz oscillator
- In-Circuit Serial Programming™ (ICSP™) via two pins
- Low cost MPLAB® In-Circuit Debugger (ICD)

CMOS Technology:

- Low-power, high-speed Flash technology
- Fully static design
- Wide operating voltage range (2.0V to 5.5V)
- Industrial and Extended temperature ranges
- Low-power consumption



Additional Information:

- Microchip's web site: www.microchip.com
- Microchip's Technical Library CD-ROM, Order No. DS00148
- *Application Notes are available in:*
 - Embedded Control Handbook, Order No. DS00092
 - Embedded Control Handbook Update 2000, Order No. DS00711
- *Microchip's Quality Systems and Customer Interface System, Order No. DS00169*

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Device	Flash Program Memory Bytes	Data RAM Bytes	EEPROM Data Bytes	I/O Pins	ADC 10 bits	Comparator	BOR	Timers	ICSP™	Comments
PIC16F630	1792	64	128	12	–	1	Yes	1x8-bit, 1x16-bit, 1-WDT	Yes	4 MHz Internal Oscillator, ICD*
PIC16F676	1792	64	128	12	8	1	Yes	1x8-bit, 1x16-bit, 1-WDT	Yes	4 MHz Internal Oscillator, ICD*

* Requires purchase of separate adapter module.

Abbreviation: ADC = Analog-to-Digital Converter ICSP™ = In-Circuit Serial Programming ICD = In-Circuit Debugger
 WDT = Watchdog Timer BOR = Brown-out Reset

Development Tools from Microchip

MPLAB® IDE	Integrated Development Environment (IDE) (Hardware/Software Project Manager)
MPASM™ Assembler	Universal PICmicro® Macro-assembler Software
MPLINK™ Object Linker	Linker Software
MPLIB™ Object Librarian	Librarian Software
MPLAB SIM Simulator	Software Simulator
MPLAB ICE 2000	Full-featured Modular in-circuit Emulator
PICSTART® Plus Programmer	Entry-level Program Loader and Development Kit
PRO MATE® II Device Programmer	Full-featured, Modular Device Programmer
MPLAB ICD2	In-Circuit Debugger
AC162052	Header Adapter for ICD2

Americas		Asia/Pacific		Europe	
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Microchip Technology Inc. • 2355 W. Chandler Blvd. • Chandler, AZ 85224-6199 • (480) 792-7200 • Fax (480) 792-9210

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