



MICROCHIP

PIC18CXX2

High-Performance Microcontrollers with 10-Bit A/D

High Performance RISC CPU:

- C-compiler optimized architecture/instruction set
 - Code compatible with Midrange instruction set
- Linear program memory addressing to 2M bytes
- Linear data memory addressing to 4K bytes

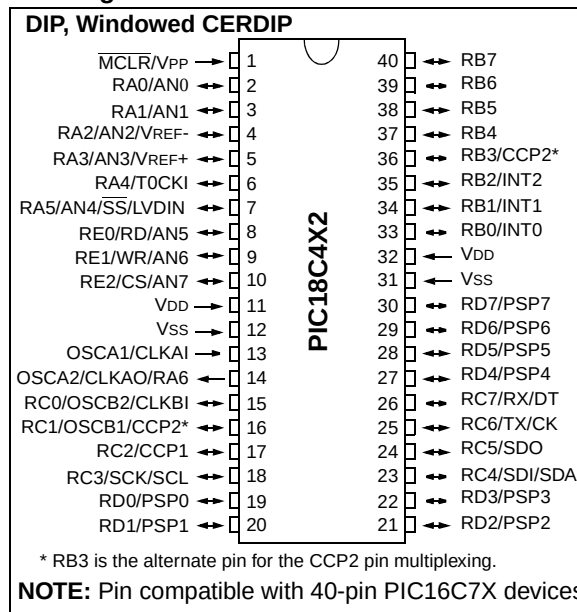
Device	On-Chip Program Memory		On-Chip RAM (bytes)
	EPROM (bytes)	# Single Word Instructions	
PIC18C242	16K	8192	512
PIC18C252	32K	16384	1536
PIC18C442	16K	8192	512
PIC18C452	32K	16384	1536

- Up to 10 MIPS operation:
 - DC - 40 MHz osc./clock input
 - 4 MHz - 10 MHz osc./clock input with PLL active
- 16-bit wide instructions, 8-bit wide data path
- Priority levels for interrupts

Peripheral Features:

- High current sink/source 25 mA/25 mA
- Three external interrupt pins
- **Timer0** module: 8-bit/16-bit timer/counter with 8-bit programmable prescaler
- **Timer1** module: 16-bit timer/counter (time-based for capture/compare). Secondary oscillator as clock input option
- **Timer2** module: 8-bit timer/counter with 8-bit period register (time-based for PWM)
- **Timer3** module: 16-bit timer/counter (alternate time-base for capture/compare). Secondary oscillator as clock input option
- Two **Capture/Compare/PWM (CCP)** modules. CCP pins that can be configured as:
 - Capture input: capture is 16-bit, max. resolution 6.25 ns ($T_{CY}/16$)
 - Compare is 16-bit, max. resolution 100 ns (T_{CY})
 - PWM output: PWM resolution is 1- to 10-bit. Max. PWM freq. @ 8-bit resolution = 156 kHz
10-bit resolution = 39 kHz
- **Master Synchronous Serial Port (MSSP)** module. Two modes of operation:
 - 3-wire SPI™ (supports all 4 SPI modes)
 - I²C™ master and slave mode
- **Addressable USART (AUSART)** module:
 - Supports interrupt on Address bit
- **Parallel Slave Port (PSP)** module

Pin Diagrams



Analog Features:

- **Compatible 10-bit Analog-to-Digital Converter** module (A/D) with:
 - Fast sampling rate
 - Conversion available during sleep
 - DNL = ± 1 LSb, INL = ± 1 LSb
- Programmable **Low-Voltage Detection (LVD)** module
 - Supports interrupt on low voltage detection
- Programmable Brown-out Reset (BOR)

Special Microcontroller Features:

- Power-on Reset (POR), Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Programmable code-protection
- Power saving SLEEP mode
- Selectable oscillator options including:
 - 4X Phase Lock Loop (of primary oscillator)
 - Secondary Oscillator (32 kHz) clock input
- In-Circuit Serial Programming (ICSP™) via two pins

CMOS Technology:

- Low-power, high-speed EPROM technology
- Fully static design
- Wide operating voltage range (2.5V to 5.5V)
- Industrial and Extended temperature ranges
- Low-power consumption



MICROCHIP

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Microchip received ISO 9001 Quality System certification for its worldwide headquarters, design, and wafer fabrication facilities in January, 1997. Our field-programmable PICmicro® 8-bit MCUs, KEELoc® code hopping devices, Serial EEPROMs, related specialty memory products and development systems conform to the stringent quality standards of the International Standard Organization (ISO).

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