

28-Pin 8-Bit ROM-Based Microcontroller Product Brief

Features:

ROM Program	RAM Data	I/O	A/D Channel	PWM
2K x 14	128 x 8	22	5	Yes

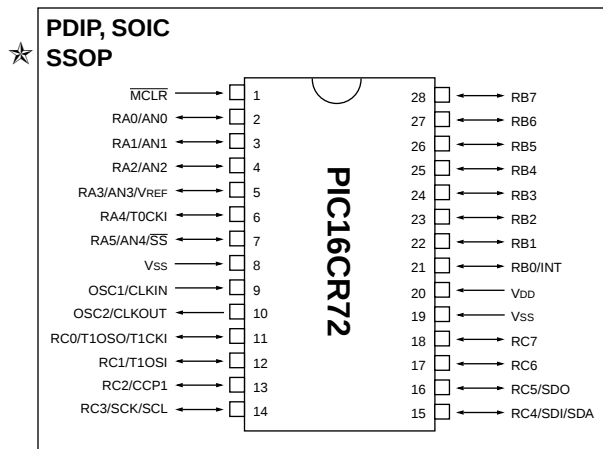
High-Performance RISC-like CPU:

- Only 35 single word instructions to learn
- All single cycle instructions (200 ns) except for program branches which are two-cycle
- Operating speed:
 - DC to 20 MHz clock input
 - DC to 200 ns instruction cycle
- 2048 x 14 on-chip ROM program memory
- 128 x 8 general purpose registers (SRAM)
- Eight levels deep hardware stack
- Interrupt capability

Peripheral Features:

- High sink/source current 25 mA
- TMR0: 8-bit timer/counter with 8-bit programmable prescaler
- TMR1: 16-bit timer/counter (time-base for capture/compare). TMR1 can be incremented during sleep via external crystal/clock (for real-time clock)
- TMR2: 8-bit timer/counter with 8-bit period register (time-base for PWM), prescaler and postscaler
- ★ • One CCP pin that can be configured as capture input, PWM output, or compare output
 - 16-bit Capture, max resolution 12.5 ns (typ)
 - 16-bit Compare, max resolution 200 ns
 - 1 to 10-bit PWM resolution. Maximum PWM frequency @: 8-bit resolution = 80 kHz
10-bit resolution = 20 kHz
- ★ • 8-Bit Analog to Digital Converter (A/D) with high speed conversion rate (25 μ s). Can also operate during sleep.
- Synchronous Serial Port (SSP) with two modes of operation:
 - 3-wire SPI™ (Supports all 4 SPI modes)
 - I²C™ slave mode

Pin Diagram



Special Microcontroller Features:

- ★ • Mixed Signal Microcontroller
- Power-on Reset (POR)
- Power-up Timer (PWRT)
- 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
- Brown-out protection

CMOS Technology:

- ★ • Low-power, high-speed CMOS ROM technology
- Fully static design
- ★ • Wide-operating voltage range (2.5 V to 5.5 V)
- Commercial, Industrial and Automotive Temperature Ranges
- Low-power consumption
 - <2.0 mA @ 5.0 V, 4 MHz
 - 15 μ A typical @ 3.0 V, 32 kHz
 - <1.0 μ A typical standby current @ 3.0 V



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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, 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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