



PIC16F716

8-bit Flash-based Microcontroller with A/D Controller and Enhanced Capture/Compare PWM

Microcontroller Core Features:

- High-performance RISC CPU
- Only 35 single-word instructions to learn
 - All single-cycle instructions except for program branches which are two-cycle
- Operating speed: DC – 20 MHz clock input
DC – 200 ns instruction cycle
- Interrupt capability (up to 7 internal/external interrupt sources)
- 8-level deep hardware stack
- Direct, Indirect and Relative Addressing modes

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
- Dual level Brown-out Reset circuitry
 - 2.5 V_{BOR} (Typical)
 - 4.0 V_{BOR} (Typical)
- Programmable code protection
- Power-Saving Sleep mode
- Selectable oscillator options
- Fully static design
- In-Circuit Serial Programming™ (ICSP™)

CMOS Technology:

- Wide operating voltage range:
 - Industrial: 2.0V to 5.5V
 - Extended: 3.0V to 5.5V
- High Sink/Source Current 25/25 mA
- Wide temperature range:
 - Industrial: -40°C to 85°C
 - Extended: -40°C to 125°C

Low-Power Features:

- Standby Current:
 - 100 nA @ 2.0V, typical
- Operating Current:
 - 14 µA @ 32 kHz, 2.0V, typical
 - 120 µA @ 1 MHz, 2.0V, typical
- Watchdog Timer Circuit:
 - 1 µA @ 2.0V, typical
- Timer1 Oscillator Current:
 - 3.0 µA @ 32 kHz, 2.0V, typical

Peripheral Features:

- Timer0: 8-bit timer/counter with 8-bit prescaler
- Timer1: 16-bit timer/counter with prescaler can be incremented during Sleep via external crystal/clock
- Timer2: 8-bit timer/counter with 8-bit period register, prescaler and postscaler
- Enhanced Capture, Compare, PWM module:
 - Capture is 16-bit, max. resolution is 12.5 ns
 - Compare is 16-bit, max. resolution is 200 ns
 - PWM maximum resolution is 10-bit
 - Enhanced PWM:
 - Single, Half-Bridge and Full-Bridge modes
 - Digitally programmable dead-band delay
 - Auto-shutdown/restart
- 8-bit multi-channel Analog-to-Digital Converter
- 13 I/O pins with individual direction control
- Programmable weak pull-ups on PORTB

Device	Memory		I/O	8-bit A/D (ch)	Timers 8/16	PWM (outputs)	V _{DD} Range
	Flash	Data					
PIC16F716	2048 x 14	128 x 8	13	4	2/1	1/2/4	2.0V-5.5V