# PIC16CR65

## 8-Bit ROM-Based Microcontroller Product Brief

| Device | Program Memory | Data Memory | Pins | CCP | SSP | USART | PSP |
|---|---|---|---|---|---|---|---|
| PIC16CR65 | 4K x 14 | 192 x 8 | 40-44 | 2 | Yes | Yes | Yes |

### High Performance RISC CPU:

- Simple instruction set - 35 total
- All single-cycle instructions (200 ns), except for program branches which are two-cycle
- Operating speed:
  - DC - 20 MHz clock input
  - DC - 200 ns instruction cycle
- ★ 4K x 14 on-chip ROM program memory
- 192 x 8 general purpose registers (SRAM)
- Eight levels of hardware stack
- Interrupt capability

### Peripheral Features:

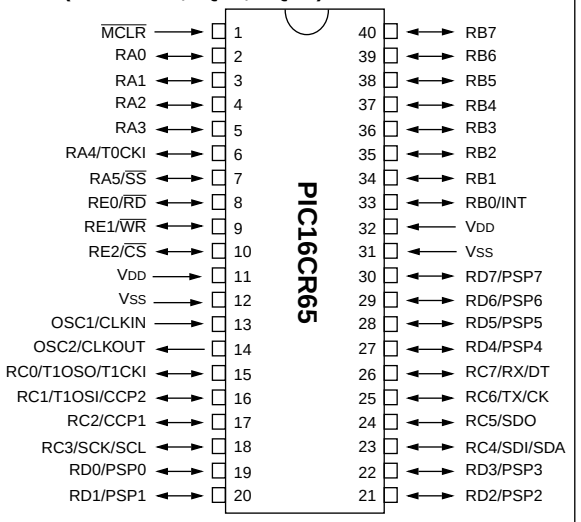
- 33 I/O pins with individual direction control
- High sink/source current 25 mA
- TMR0: 8-bit timer/counter with 8-bit programmable prescaler
- TMR1: 16-bit timer/counter (time-base for capture/compare). TMR1 can be incremented during sleep via external crystal/clock (for real-time clock)
- TMR2: 8-bit timer/counter with 8-bit period register (time-base for PWM), prescaler and postscaler
- ★ Two CCP pins that can be configured as capture input, PWM output, or compare output
  - Capture is 16-bit, max resolution 12.5 ns
  - Compare is 16-bit, max resolution 200 ns
  - PWM resolution is 1- to 10-bit. Maximum PWM frequency @: 8-bit resolution = 80 kHz, 10-bit resolution = 20 kHz
- Synchronous Serial Port (SSP) with two modes of operation:
  - 3-wire SPI™ (Supports all 4 SPI modes)
  - $I^2C$™ slave mode
- ★ USART (supports high and low speed)/SCI
- Parallel Slave Port (PSP), 8-bits wide with external RD, WR, and CS controls

### 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
- Brown-out Reset circuitry

### Pin Diagrams

**PDIP (Also PLCC, TQFP, MQFP)**




### CMOS Technology:

- Low-power, high-speed CMOS ROM technology
- Fully static design
- Wide operating voltage range (2.5V to 5.5V)
- Commercial, industrial and automotive temperature ranges
- Low power consumption
  - < 2.0 mA @ 5.0V, 4.0 MHz
  - 15 µA typical @ 3.0V, 32 kHz
  - < 1.0 µA typical standby current @ 3.0V

$I^2C$ is a trademark of Philips Corporation. SPI is a trademark of Motorola Corporation.

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