

40-Pin *Enhanced* FLASH Microcontroller with Full Speed USB and 10-bit A/D Product Brief

High Performance RISC CPU:

- C-compiler optimized architecture/instruction set:
 - Source code compatible with the PIC18CXXX instruction set
- Linear program memory addressing to 32 Kbytes
Linear data memory addressing to 1.5 Kbytes
- 256 bytes of EEPROM data memory
- Up to 12 MIPS operation:
 - DC - 48 MHz clock
 - 4 MHz - 12 MHz clock with PLL active
- 16-bit wide instructions, 8-bit wide data path
- Priority levels for interrupts
- 8 x 8 Single Cycle Hardware Multiplier
- Pinout compatible with PIC16C765 (USB)

Peripheral Features:

- High current sink/source 25 mA/25 mA
- Three external interrupt pins
- Three 16-bit timer/counters
- One 8-bit timer/counter
- Secondary oscillator clock option - Timer1/Timer3
- Two Capture/Compare/PWM (CCP) modules
- USART

Analog Features:

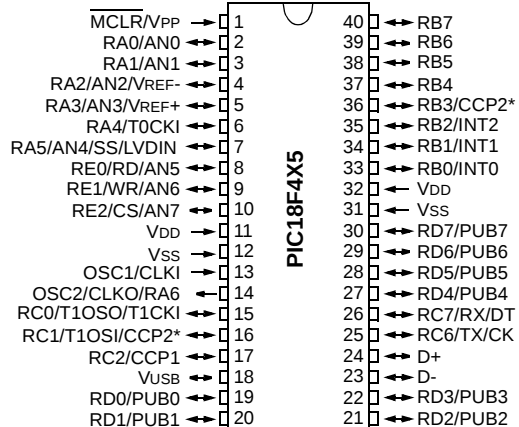
- 8-ch 10-bit Analog-to-Digital Converter (A/D)
- Low Voltage Detection (PLVD) module
- Programmable Brown-out Reset (PBOR)

USB Features:

- Meets USB1.1 full speed specification (12 Mb per second)
- 8 endpoints
- 128 byte dual port buffer
- 512 byte single port buffer
- Integrated Transceiver
- Firmware control of attach/detach
- Full speed unbuffered parallel streaming port

Pin Diagram:

PDIP, PLCC, TQFP



* RB3 is the alternate pin for the CCP2 pin multiplexing.

Special Microcontroller Features:

- 1,000 erase/write cycle *Enhanced* FLASH program memory
- 100,000 erase/write cycle data EEPROM memory
- Data EEPROM Retention > 40 years
- Self re-programmable under software control
- In-Circuit Serial Programming (ICSP™) via two pins
- Single supply 5V In-Circuit Serial Programming
- 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 Debug (ICD) via two pins

CMOS Technology:

- Low power, high speed FLASH/EEPROM technology
- Fully static design
- USB operating voltage range - 4.35V to 5.25V (3.3V detached)
- Industrial temperature ranges
- Low power consumption

Device	Program Memory		Data SRAM (Bytes)	EEPROM (Bytes)	I/O	10-bit A/D (ch)	CCP (PWM)	USART	Timers 8-bit/16-bit
	Bytes	# Single Word Instructions							
PIC18F445	16K	8192	1536	256	34	8	2	Yes	1 / 3
PIC18F455	32K	16384	1536	256	34	8	2	Yes	1 / 3



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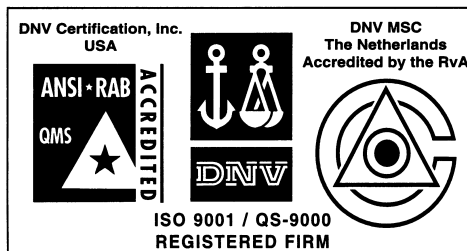
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