



PIC18F6520/8520

64/80-pin High Performance, 256 Kbit Enhanced FLASH Microcontrollers with A/D Product Brief

High Performance RISC CPU:

- Linear program memory addressing to 32 Kbytes
- Linear data memory addressing to 2048 bytes
- 1 Kbyte of data EEPROM
- 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
- 31-level, software accessible hardware stack
- 8 x 8 Single Cycle Hardware Multiplier
- Pinout compatible to the PIC18F6620/6720/8620/8720

External Memory Interface (PIC18F8520 Devices Only):

- Address capability of up to 2 Mbytes
- 16-bit interface

Peripheral Features:

- High current sink/source 25 mA/25 mA
- Four external interrupt pins
- Timer0 module: 8-bit/16-bit timer/counter
- Timer1 module: 16-bit timer/counter
- Timer2 module: 8-bit timer/counter
- Timer3 module: 16-bit timer/counter
- Timer4 module: 8-bit timer/counter
- Secondary oscillator clock option - Timer1/Timer3
- Five Capture/Compare/PWM (CCP) modules:
 - 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
- Master Synchronous Serial Port (MSSP) module with two modes of operation:
 - 3-wire SPI™ (supports all 4 SPI modes)
 - I²C™ Master and Slave mode
- Two Addressable USART modules:
 - Supports RS-485 and RS-232
- Parallel Slave Port (PSP) module

Analog Features:

- 10-bit, up to 16-channel Analog-to-Digital Converter (A/D)
 - Conversion available during SLEEP
- Programmable 16-level Low Voltage Detection (LVD) module
 - Supports interrupt on Low Voltage Detection
- Programmable Brown-out Reset (BOR)
- Dual analog comparators
 - Programmable input/output configuration

Special Microcontroller Features:

- 100,000 erase/write cycle Enhanced FLASH program memory typical
- 1,000,000 erase/write cycle Data EEPROM memory typical
- 1 second programming time
- FLASH/Data EEPROM Retention: > 40 years
- Self-reprogrammable under software control
- 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
- MPLAB® In-Circuit Debug (ICD) via two pins

CMOS Technology:

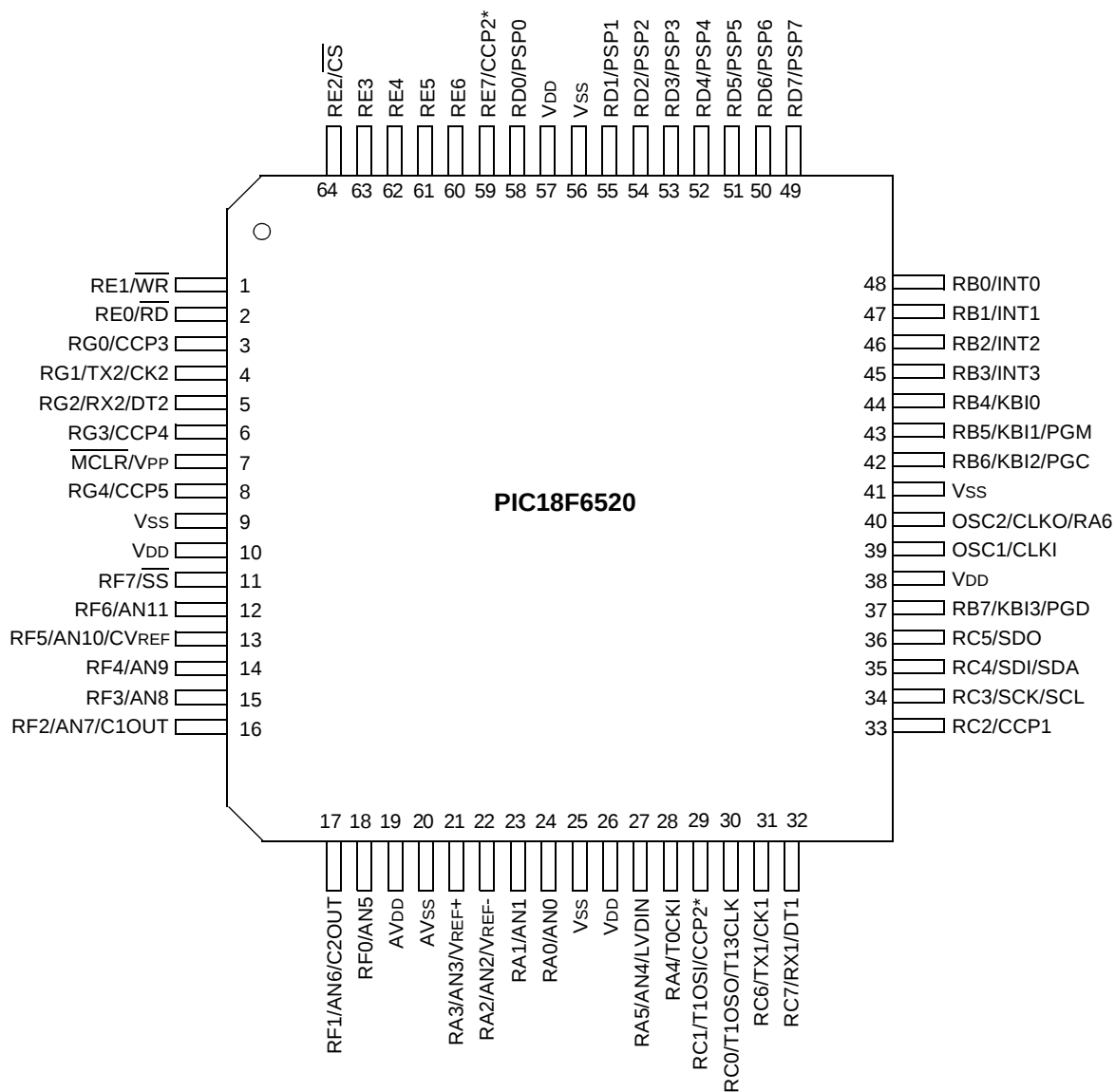
- Low power, high speed FLASH technology
- Fully static design
- Wide operating voltage range (2.0V to 5.5V)
- Industrial and Extended temperature ranges

Device	Program Memory		Data Memory		I/O	10-bit A/D (ch)	CCP (PWM)	MSSP		USART	Timers 8-bit/16-bit	Ext Bus
	Bytes	# Single Word Instructions	SRAM (bytes)	EEPROM (bytes)				SPI	Master I²C			
PIC18F6520	32K	16384	2048	1024	52	12	5	Y	Y	2	2/3	N
PIC18F8520	32K	16384	2048	1024	68	16	5	Y	Y	2	2/3	Y

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Pin Diagrams

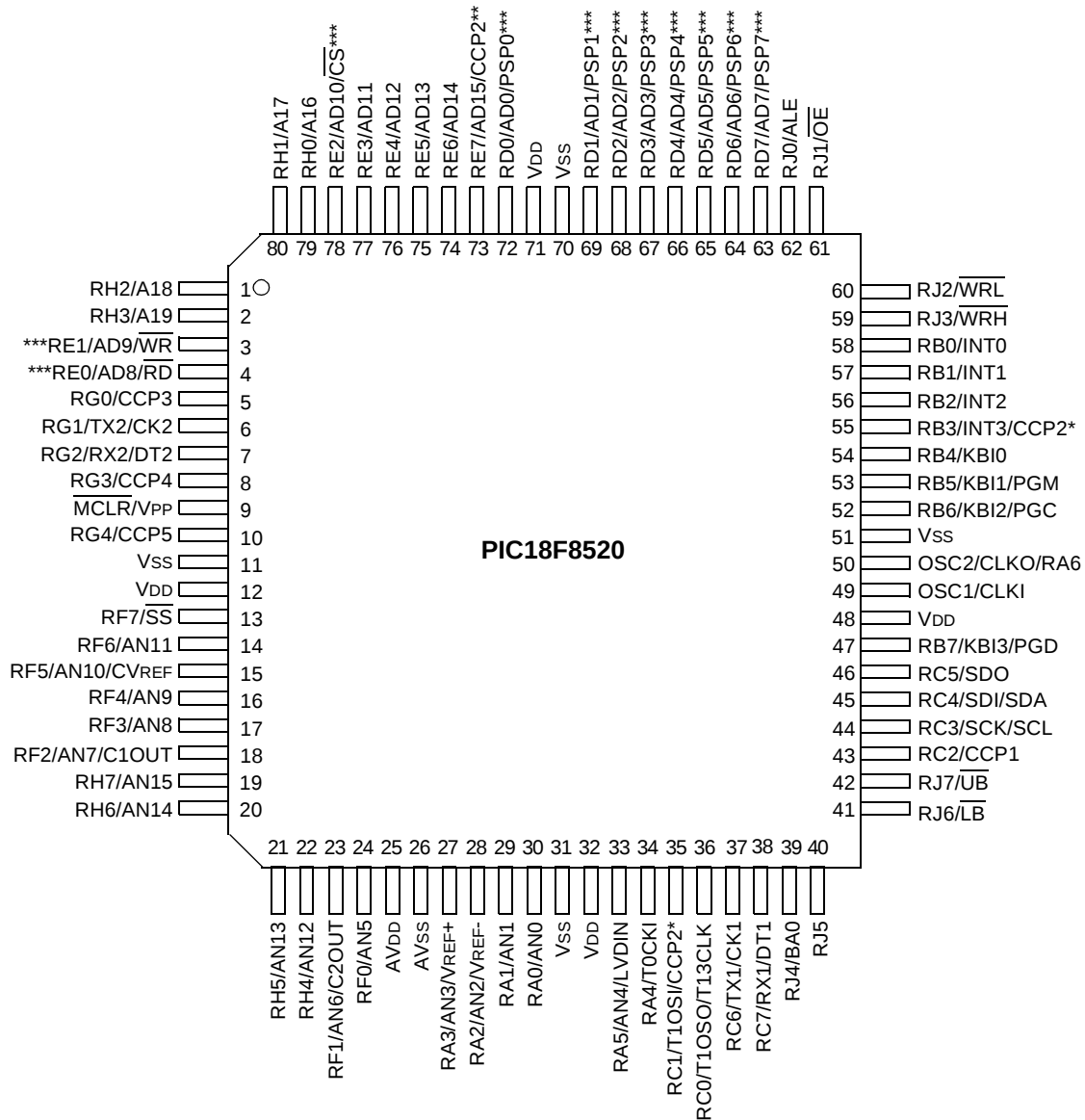
64-pin TQFP



* CCP2 is multiplexed with RC1 when CCP2MX is set.

Pin Diagrams (Cont.'d)

80-pin TQFP



* CCP2 is multiplexed with RC1 when CCP2MX is set.

** CCP2 is multiplexed by default with RE7 when the device is configured in Microcontroller mode.

*** PSP is available only in Microcontroller mode.

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NOTES:

Note the following details of the code protection feature on PICmicro® MCUs.

- The PICmicro family meets the specifications contained in the Microchip Data Sheet.
- Microchip believes that its family of PICmicro microcontrollers is one of the most secure products of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the PICmicro microcontroller in a manner outside the operating specifications contained in the data sheet. The person doing so may be engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as “unbreakable”.
- Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our product.

If you have any further questions about this matter, please contact the local sales office nearest to you.

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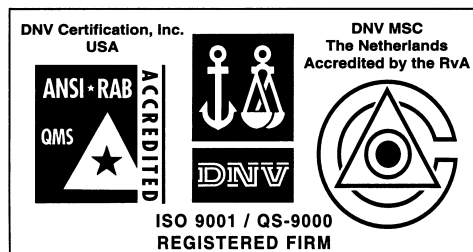
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