11.0   TIMER0 MODULE

The Timer0 module incorporates the following features:

- Software selectable operation as a timer or counter in both 8-bit or 16-bit modes
- Readable and writable registers
- Dedicated 8-bit, software programmable prescaler
- Selectable clock source (internal or external)
- Edge select for external clock
- Interrupt on overflow

The T0CON register (Register 11-1) controls all aspects of the module's operation, including the prescale selection. It is both readable and writable.

A simplified block diagram of the Timer0 module in 8-bit mode is shown in Figure 11-1. Figure 11-2 shows a simplified block diagram of the Timer0 module in 16-bit mode.

REGISTER 11-1:   T0CON: TIMER0 CONTROL REGISTER

R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1
TMR0ON	T08BIT	T0CS	T0SE	PSA	T0PS2	T0PS1	T0PS0
bit 7							bit 0

Legend:		
R = Readable bit	W = Writable bit	U = Unimplemented bit, read as '0'
-n = Value at POR	'1' = Bit is set	'0' = Bit is cleared x = Bit is unknown

bit 7　　　　**TMR0ON:** Timer0 On/Off Control bit

　　　　　　1 = Enables Timer0
　　　　　　0 = Stops Timer0

bit 6　　　　**T08BIT**: Timer0 8-Bit/16-Bit Control bit

　　　　　　1 = Timer0 is configured as an 8-bit timer/counter
　　　　　　0 = Timer0 is configured as a 16-bit timer/counter

bit 5　　　　**T0CS**: Timer0 Clock Source Select bit

　　　　　　1 = Transition on T0CKI pin
　　　　　　0 = Internal instruction cycle clock (CLKO)

bit 4　　　　**T0SE**: Timer0 Source Edge Select bit

　　　　　　1 = Increment on high-to-low transition on T0CKI pin
　　　　　　0 = Increment on low-to-high transition on T0CKI pin

bit 3　　　　**PSA**: Timer0 Prescaler Assignment bit

　　　　　　1 = TImer0 prescaler is NOT assigned. Timer0 clock input bypasses prescaler.
　　　　　　0 = Timer0 prescaler is assigned. Timer0 clock input comes from prescaler output.

bit 2-0　　　**T0PS2:T0PS0**: Timer0 Prescaler Select bits

　　　　　　111 = 1:256 Prescale value
　　　　　　110 = 1:128 Prescale value
　　　　　　101 = 1:64　Prescale value
　　　　　　100 = 1:32　Prescale value
　　　　　　011 = 1:16　Prescale value
　　　　　　010 = 1:8　　Prescale value
　　　　　　001 = 1:4　　Prescale value
　　　　　　000 = 1:2　　Prescale value