

2.2.2.2 OPTION_REG REGISTER

The OPTION_REG Register is a readable and writable register, which contains various control bits to configure the TMR0 prescaler/WDT postscaler (single assignable register known also as the prescaler), the External INT Interrupt, TMR0 and the weak pull-ups on PORTB.

Note: To achieve a 1:1 prescaler assignment for the TMR0 register, assign the prescaler to the Watchdog Timer.

REGISTER 2-2: OPTION_REG REGISTER (ADDRESS 81h, 181h)

R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1
$\overline{\text{RBP}}\text{U}$	INTEDG	T0CS	T0SE	PSA	PS2	PS1	PS0
bit7							bit0

R = Readable bit
 W = Writable bit
 U = Unimplemented bit, read as '0'
 - n= Value at POR reset

bit 7: **$\overline{\text{RBP}}\text{U}$: PORTB Pull-up Enable bit**
 1 = PORTB pull-ups are disabled
 0 = PORTB pull-ups are enabled by individual port latch values

bit 6: **INTEDG**: Interrupt Edge Select bit
 1 = Interrupt on rising edge of RB0/INT pin
 0 = Interrupt on falling edge of RB0/INT pin

bit 5: **T0CS**: TMR0 Clock Source Select bit
 1 = Transition on RA4/T0CKI pin
 0 = Internal instruction cycle clock (CLKOUT)

bit 4: **T0SE**: TMR0 Source Edge Select bit
 1 = Increment on high-to-low transition on RA4/T0CKI pin
 0 = Increment on low-to-high transition on RA4/T0CKI pin

bit 3: **PSA**: Prescaler Assignment bit
 1 = Prescaler is assigned to the WDT
 0 = Prescaler is assigned to the Timer0 module

bit 2-0: **PS2:PS0**: Prescaler Rate Select bits

Bit Value	TMR0 Rate	WDT Rate
000	1 : 2	1 : 1
001	1 : 4	1 : 2
010	1 : 8	1 : 4
011	1 : 16	1 : 8
100	1 : 32	1 : 16
101	1 : 64	1 : 32
110	1 : 128	1 : 64
111	1 : 256	1 : 128

Note: When using low voltage ICSP programming (LVP) and the pull-ups on PORTB are enabled, bit 3 in the TRISB register must be cleared to disable the pull-up on RB3 and ensure the proper operation of the device.