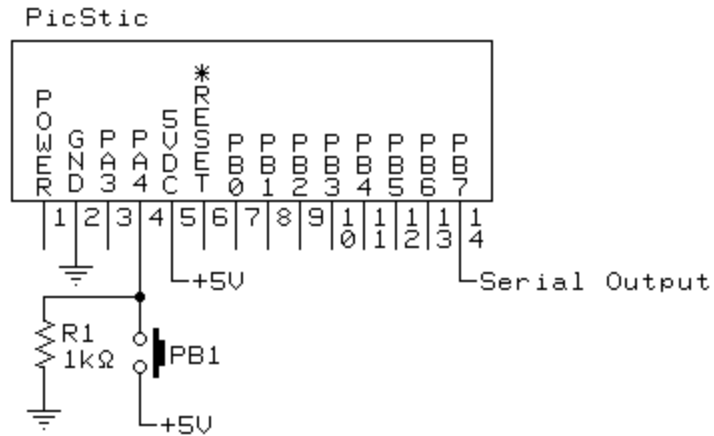
	Application Note
	Product: PicStic 1-4
Using the Hardware Counter on PA4.	Date: 8/14/00
<p>Introduction: This application note demonstrates how to use the counter located on PA4 of the PicStic 1, 2, 3, and 4.</p> <p>Background: Using PicBasic makes it easier to create programs for the PicStic, however PicBasic doesn't have a direct command to access the timer/counter on PA4. Using the POKE command the PicStic's registers can be set up to enable the counter. Using the PEEK command the timer/counter register can be read.</p> <p>The two registers that are written to are the OPTION_REG register and the TMR0 register. Both registers are eight bits wide. Each bit in the OPTION_REG register has a specific function.</p> <p>OPTION_REG Register (Address 81h)</p> <p>bit 7: *RBPU: PORTB Pull-up Enable bit 1 = PORTB pull-ups are disabled 0 = PORTB pull-ups are enabled (by individual port latch values)</p> <p>bit 6: INTEDG: Interrupt Edge Select bit 1 = Interrupt on rising edge of PB0/INT pin 0 = Interrupt on falling edge of PB0/INT pin</p> <p>bit 5: T0CS: TMR0 Clock Source Select bit 1 = Transition on PA4/T0CKI pin 0 = Internal instruction cycle clock (CLKOUT)</p> <p>bit 4: T0SE: TMR0 Source Edge Select bit 1 = Increment on high-to-low transition on PA4/T0CKI pin 0 = Increment on low-to-high transition on PA4/T0CKI pin</p> <p>bit 3: PSA: Prescaler Assignment bit 1 = Prescaler assigned to the Watchdog Timer 0 = Prescaler assigned to TMR0</p> <p>bit 2-0: PS2:PS0: Prescaler Rate Select bits Please refer to the PIC16F84's data sheet.</p> <p>The TMR0 register is where the counters count is held. The only time it is written to is to clear the count.</p>	
<p>How it works: The PicBasic program listed below sets up the counter and transmits the count out of PB7. The push button on PA4 increments the counter by 1 every time it is pressed.</p>	



Program Listing:

```
' This program demonstrates how to use the timer/counter
' on the PicStic 1,2,3, and 4's PA4 pin.

'Define the registers
Symbol  OPTION=$81          'Define options register
Symbol  TMR=$01             'Define timer/counter register

'Set up the counter using POKE
      Poke OPTION, %11101111      'Clear bit 4 to select rising edge

Clear:  Poke TMR,$00              'Set the counter to 0
Begin:  Peek TMR,B0              'Read the counter
      Pause 1000
      serout 7,N9600,(#B0,13,10) 'Print the count out PB7
      If B0>=100 Then Clear      'Clear the counter if it reaches 100
      Goto Begin                'Start the procedure over again
```