

```
'-----Title-----
' File.....16F877A_hpwm2.pbp
' Started....1/17/08
' Microcontroller used:  Microchip Technology 16F877A
'                          microchip.com
' PicBasic Pro Code:  micro-Engineering Labs, Inc.
'                          melabs.com

'-----Program Description-----
' Uses HPWM command to change the motor speeds.

'-----Schematic-----
' See schematic at:
' http://www.cornerstonerobotics.org/schematics/pic16f877a\_hpwm2.pdf

'-----Related Lesson-----
' hpwm1.pbp (the 16F88 program) is used in
' the lesson MOTOR CONTROL WITH PWM at:
' http://www.cornerstonerobotics.org/curriculum/lessons\_year2/erii21\_motor\_control\_pwm.pdf

'-----Comments-----
' The HPWM Channel 1 (CCP1) for the PIC16F877A is RC2.
' The HPWM Channel 2 (CCP2) for the PIC16F877A is RC1.

'-----Variables-----
p0  VAR BYTE          ' Byte to store Dutyicycle variable

'-----Initialization-----
TRISB = %00000000    ' Sets all pins of PORTB as outputs
ADCON1 = %00000110  ' Changes PORTE and PORTA analog bits to
                    ' digital operation since not using ADC
                    ' (Analog to Digital Converter)

'-----Main Code-----
start:
p0 = 90              ' Sets Dutyicycle variable to 90
GOSUB motorhpwm     ' Jumps to subroutine motorhpwm
p0 = 255            ' Sets Dutyicycle variable to 255
GOSUB motorhpwm     ' Jumps to subroutine motorhpwm
p0 = 0              ' Sets Dutyicycle variable to 0
GOSUB motorhpwm     ' Jumps to subroutine motorhpwm
GOTO start          ' Jump to loop label and start all over
END
```

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motorhpwm:           ' Subroutine motorhpwm
                      '
                      ' Motor is driver by Channel 1, (RB0) on
                      ' the PIC16F88. The Dutycycle is set at
                      ' the value of p0.
                      ' The frequency is set for 245 Hz.
                      '
                      ' Pauses 2000 mS or 2 sec.
HPWM 2,p0,245      '
                      '
PAUSE 2000        '
RETURN           ' Returns to next program statement after
                      ' the GOSUB command.
```