

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

00001

00002 ; PICBASIC PRO(TM) Compiler 2.60, (c) 1998, 2009 microEngineering Labs, Inc. All Rights Reserved.

00000001 00003 _USED EQU 1

00004

00005 INCLUDE "C:\PBP\16F877.INC"

00001 ,*****

00002 ;* 16F877.INC *

00003 ;* *

00004 ;* By : Leonard Zerman, Jeff Schmoyer *

00005 ;* Notice : Copyright (c) 2003 microEngineering Labs, Inc. *

00006 ;* All Rights Reserved *

00007 ;* Date : 11/07/03 *

00008 ;* Version : 2.45 *

00009 ;* Notes : *

00010 ,*****

00019 LIST

00020 LIST P = 16F877, R = DEC, W = -302

00021 INCLUDE "P16F877.INC" ; MPASM Header

00001 LIST

00002 ; P16F877.INC Standard Header File, Version 1.00 Microchip Technology, Inc.

00370 LIST

2007 3F75 00022 __CONFIG_XT_OSC & _WDT_ON & _PWRTE_ON & _LVP_OFF & _CP_OFF

00025 LIST

00006

00007

00008 ; Define statements.

00009 ; C:\PBP\16F877.BAS 00018 DEFINE CODE_SIZE 8

00010 #DEFINE CODE_SIZE 8

00011 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00025 define OSC 20

00012 #DEFINE OSC 20

00013 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00015 DEFINE DT_INTS_VERSION

110

00014 #DEFINE DT_INTS_VERSION 110

00015 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00016 DEFINE INTHAND

INT_ENTRY

00016 #DEFINE INTHAND INT_ENTRY

00017

00000020 00018 RAM_START EQU 00020H

000001EF 00019 RAM_END EQU 001EFH

00000004 00020 RAM_BANKS EQU 00004H

00000020 00021 BANK0_START EQU 00020H

0000007F 00022 BANK0_END EQU 0007FH

000000A0 00023 BANK1_START EQU 000A0H

000000EF 00024 BANK1_END EQU 000EFH

00000110 00025 BANK2_START EQU 00110H

```
0000016F    00026 BANK2_END        EQU    0016FH
00000190    00027 BANK3_START      EQU    00190H
000001EF    00028 BANK3_END        EQU    001EFH
00002100    00029 EEPROM_START     EQU    02100H
000021FF    00030 EEPROM_END       EQU    021FFH
```

```
00031
```

```
00032 ; C:\PBP\PBPPIC14.RAM    00012 A00020 R0  VAR  WORD BANK0 SYSTEM '
System Register
```

```
00000020    00033 R0                EQU    RAM_START + 000H
```

```
00034 ; C:\PBP\PBPPIC14.RAM    00013 A00022 R1  VAR  WORD BANK0 SYSTEM '
System Register
```

```
00000022    00035 R1                EQU    RAM_START + 002H
```

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00036 ; C:\PBP\PBPPIC14.RAM      00014 A00024 R2  VAR  WORD BANK0 SYSTEM '
System Register

00000024      00037 R2              EQU  RAM_START + 004H

00038 ; C:\PBP\PBPPIC14.RAM      00015 A00026 R3  VAR  WORD BANK0 SYSTEM '
System Register

00000026      00039 R3              EQU  RAM_START + 006H

00040 ; C:\PBP\PBPPIC14.RAM      00016 A00028 R4  VAR  WORD BANK0 SYSTEM '
System Register

00000028      00041 R4              EQU  RAM_START + 008H

00042 ; C:\PBP\PBPPIC14.RAM      00017 A0002A R5  VAR  WORD BANK0 SYSTEM
' System Register

0000002A      00043 R5              EQU  RAM_START + 00AH

00044 ; C:\PBP\PBPPIC14.RAM      00018 A0002C R6  VAR  WORD BANK0 SYSTEM
' System Register

0000002C      00045 R6              EQU  RAM_START + 00CH

00046 ; C:\PBP\PBPPIC14.RAM      00019 A0002E R7  VAR  WORD BANK0 SYSTEM '
System Register

0000002E      00047 R7              EQU  RAM_START + 00EH

00048 ; C:\PBP\PBPPIC14.RAM      00020 A00030 R8  VAR  WORD BANK0 SYSTEM '
System Register

00000030      00049 R8              EQU  RAM_START + 010H

00050 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS  00037 A00032 RetAddr  VAR
WORD BANK0
    
```

```

00000032    00051 _RETADDR            EQU    RAM_START + 012H
           00052 ; C:\PBP\PBPPIC14.RAM    00026 A00034 FLAGS VAR    BYTE BANK0 SYSTEM
' Static flags
00000034    00053 FLAGS                EQU    RAM_START + 014H
           00054 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00036 A00035 fsave  VAR BYTE
BANK0 SYSTEM
           ' location for FSR register
00000035    00055 FSAVE                EQU    RAM_START + 015H
           00056 ; C:\PBP\PBPPIC14.RAM    00025 A00036 GOP  VAR    BYTE BANK0 SYSTEM  '
Gen Op Parameter
00000036    00057 GOP                  EQU    RAM_START + 016H
           00058 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00038 A00037 INT_Bits VAR
BYTE BANK0
00000037    00059 _INT_BITS          EQU    RAM_START + 017H
           00060 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00035 A00038 psave  VAR
BYTE BANK0 SYSTEM
           ' location for PCLATH register
00000038    00061 PSAVE                EQU    RAM_START + 018H
           00062 ; C:\PBP\PBPPIC14.RAM    00022 A00039 RM1  VAR    BYTE BANK0 SYSTEM  '
Pin 1 Mask
00000039    00063 RM1                EQU    RAM_START + 019H
           00064 ; C:\PBP\PBPPIC14.RAM    00024 A0003A RM2  VAR    BYTE BANK0 SYSTEM  '
Pin 2 Mask
0000003A    00065 RM2                EQU    RAM_START + 01AH
           00066 ; C:\PBP\PBPPIC14.RAM    00021 A0003B RR1  VAR    BYTE BANK0 SYSTEM  '
Pin 1 Register
0000003B    00067 RR1                EQU    RAM_START + 01BH
           00068 ; C:\PBP\PBPPIC14.RAM    00023 A0003C RR2  VAR    BYTE BANK0 SYSTEM  '
Pin 2 Register

```

```

0000003C    00069 RR2                EQU   RAM_START + 01CH

                00070 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS    00034 A0003D ssave   VAR
BYTE  BANK0 SYSTEM

                ' location for STATUS register

0000003D    00071 SSAVE                EQU   RAM_START + 01DH

                00072 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00001 A0003E
'*****
                *****

0000003E    00073 T1                    EQU   RAM_START + 01EH

                00074 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00120 A00040 timerone var
word

00000040    00075 _TIMERONE            EQU   RAM_START + 020H

                00076 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00042 A00042 STEPCOUNT var
byte

00000042    00077 _STEPSCOUNT         EQU   RAM_START + 022H

                00078 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00027 A00070 wsave   VAR BYTE
$70 SYSTEM '

                alternate save location for W

00000070    00079 WSAVE                EQU   RAM_START + 050H

                00080 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00028 A000A0 wsave1 VAR
BYTE $A0 SYSTEM '

                location for W if in bank1

000000A0    00081 WSAVE1                EQU   RAM_START + 080H

                00082 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00046 A000A1 sineval var
byte[72]

```

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```

000000A1    00083 _SINEVAL            EQU   RAM_START + 081H
           00084 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00029 A00120 wsave2 VAR
BYTE $120 SYSTEM '
           location for W if in bank2

00000120    00085 WSAVE2             EQU   RAM_START + 00100H
           00086 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00030 A001A0 wsave3 VAR
BYTE $1A0 SYSTEM '
           location for W if in bank3

000001A0    00087 WSAVE3            EQU   RAM_START + 00180H
           00088 ; C:\PBP\16F877.BAS          00022 PORTL VAR  PORTB

00000006    00089 _PORTL            EQU   PORTB
           00090 ; C:\PBP\16F877.BAS          00023 PORTH VAR  PORTC

00000007    00091 _PORTH            EQU   PORTC
           00092 ; C:\PBP\16F877.BAS          00024 TRISL VAR  TRISB

00000086    00093 _TRISL            EQU   TRISB
           00094 ; C:\PBP\16F877.BAS          00025 TRISH VAR  TRISC

00000087    00095 _TRISH            EQU   TRISC

00000040    00096 _TIMERONE??BYTE0  EQU   _TIMERONE

00000041    00097 _TIMERONE??BYTE1  EQU   _TIMERONE + 001H

           00098 #DEFINE _SERVICED           _INT_BITS??0
    
```

```

00099 #DEFINE _VARS_SAVED      _INT_BITS??1
00100 #DEFINE _GIE             _INTCON??7
00101 #DEFINE _PEIE            _INTCON??6
00102 #DEFINE _INT_BITS??0     _INT_BITS, 000H
00103 #DEFINE _INT_BITS??1     _INT_BITS, 001H
00104 #DEFINE _INTCON??7       INTCON, 007H
00105 #DEFINE _INTCON??6       INTCON, 006H
00106   INCLUDE "SPWM_T~1.MAC"
00001
00119   LIST
00107   INCLUDE "C:\PBP\PBPPIC14.LIB"
00001 ,*****
00002 ;* PBPPIC14.LIB                      *
00003 ;*                                     *
00004 ;* By      : Leonard Zerman, Jeff Schmoyer      *
00005 ;* Notice  : Copyright (c) 2009 microEngineering Labs, Inc.  *
00006 ;*      All Rights Reserved                      *
00007 ;* Date    : 07/08/09                          *
00008 ;* Version : 2.60                               *
00009 ;* Notes   :                                     *
00010 ,*****
00084 LIST
00085 ; Oscillator is 20MHz
01133 LIST
0000  01134  ORG RESET_ORG      ; Reset vector usually at 0

```



```
01149 LIST
0000 2849    01150    GOTO  INIT      ; Finish initialization
01160 LIST
0004      01161    ORG RESET_ORG + 4      ; Interrupt vector at 4
01168 LIST
01169 ;
01170 ; If device has more than 2K of code space, an interrupt stub to save
01171 ; W, STATUS and PCLATH must be inserted before the jump to the handler.
01172 ; W, STATUS and PCLATH must be restored before returning.
01173 ; wsave, ssave and psave must be defined as shown in the interrupt
```

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01174 ; section of the manual or the readme file.

01175 ;

01176 ; If RESET_ORG is something other than 0 and interrupts are used,

01177 ; the values of W, STATUS and PCLATH must have already been saved

01178 ; to do the jump to the new vector. They cannot be saved again.

01179 ;

01180 IF (RESET_ORG == 0)

0004 00F0 01181 MOVWF WSAVE ; 1 (10) Save the W register

0005 0E03 01182 SWAPF STATUS, W ; 1 Get STATUS to W without wrecking it

0006 0183 01183 CLRF STATUS ; 1 Point to bank 0

0007 00BD 01184 MOVWF SSAVE ; 1 Save the STATUS register

0008 080A 01185 MOVF PCLATH, W ; 1 Save PCLATH

0009 00B8 01186 MOVWF PSAVE ; 1

01187 ELSE

01188 IFDEF PM_USED

01189 ; "Warning: W, STATUS and PCLATH must have been saved to known locations."

01190 ELSE

01191 MESSG "W, STATUS and PCLATH must have been saved to known locations."

01192 ENDIF

01193 ENDIF

000A 3000 01194 MOVLW HIGH (INTHAND) ; 1 Set PCLATH for jump
000B 008A 01195 MOVWF PCLATH ; 1
000C 28F3 01196 GOTO INTHAND ; 2 Goto user interrupt handler

06329 LIST

000D 01A3 06330 PAUSE CLR F R1 + 1
000E 00A2 06331 PAUSEL MOVWF R1
000F 30FF 06332 PAUSELOOP MOVLW -1 ; 1 (9)
0010 07A2 06333 ADDWF R1, F ; 1
0011 1C03 06334 BTFSS STATUS, C ; 1 / 2
0012 07A3 06335 ADDWF R1 + 1, F ; 1 / 0
0013 1C03 06336 BTFSS STATUS, C ; 2
0014 2844 06337 GOTO DONE
0015 3003 06338 MOVLW (PAUSE_DELAY) >> 8 ; 1
0016 00A1 06339 MOVWF R0 + 1 ; 1
0017 30E6 06340 MOVLW LOW (PAUSE_DELAY) ; 1
0018 201B 06341 CALL PAUSEUSL ; -2 (PAUSEUSL gives you 2 less than you ask for)
0019 280F 06342 GOTO PAUSELOOP ; 2

06556 LIST

001A 01A1 06557 PAUSEUS CLR F R0 + 1 ; 1
001B 3EFC 06558 PAUSEUSL ADDLW -4 ; 1 Subtract overhead
001C 00A0 06559 MOVWF R0 ; 1
001D 09A1 06560 COMF R0 + 1, F ; 1
001E 1C03 06561 BTFSS STATUS, C ; 1 / 2
001F 2826 06562 GOTO PAUSEUSH ; 2 / 0

```

0020 30FF      06563 PAUSEUSLOOP0 MOVLW -1      ; 1
0021 0000      06564 PAUSEUSLOOP NOP                ; 1
0022 07A0      06565      ADDWF R0, F                ; 1
0023 1803      06566      BTFSC STATUS, C                ; 1 / 2
0024 2821      06567      GOTO PAUSEUSLOOP                ; 2 / 0
0025 07A0      06568      ADDWF R0, F                ; 1 Do an extra countdown
          06569 PAUSEUSH CLRWDT?NOP      ; 1 Keep Watchdog clear
          M   IFNDEF NO_CLRWDT
0026 0064      M      CLRWDT

```

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M ELSE

M NOP

M ENDIF

0027 0FA1 06570 INCFSZ R0 + 1, F ; 1 / 2

0028 2820 06571 GOTO PAUSEUSLOOP0 ; 2 / 0

0029 0008 06572 RETURN ; 2 + 3 (call + setup)

07090 LIST

002A 1003 07091 SHIFTRLOOP BCF STATUS, C ; Shift in 0 bits

002B 0CA1 07092 RRF R0 + 1, F ; Shift right once

002C 0CA0 07093 RRF R0, F

002D 3EFF 07094 SHIFTR ADDLW -1

002E 1803 07095 BTFSC STATUS, C ; Done?

002F 282A 07096 GOTO SHIFTRLOOP

0030 0820 07097 MOVF R0, W ; Move low part of result to W

0031 2844 07098 GOTO DONE

07370 LIST

0032 00A2 07371 CMPNE MOVWF R1

0033 3005 07372 MOVLW 5 ; Mask for < >

07373 ; goto CMP ; Fall through

07389 LIST

```

0034 00A8    07390 CMP   MOVWF  R4      ; Save compare state
0035 0823    07391  MOVF   R1 + 1, W    ; Flags = MSB(R0) - MSB(R1)
0036 0221    07392  SUBWF  R0 + 1, W
0037 1D03    07393  BTFSS  STATUS, Z    ; If unequal then done
0038 283B    07394  GOTO   CMPNOTEQ
0039 0822    07395  MOVF   R1, W        ; Flags = LSB(R0) - LSB(R1)
003A 0220    07396  SUBWF  R0, W
003B 3004    07397 CMPNOTEQ MOVLW  4      ; W = 4 if R0 < R1
003C 1803    07398  BTFSC  STATUS, C
003D 3001    07399  MOVLW  1            ; W = 1 if R0 > R1
003E 1903    07400  BTFSC  STATUS, Z
003F 3002    07401  MOVLW  2            ; W = 2 if R0 == R1
0040 0528    07402  ANDWF  R4, W        ; Mask for compare state
0041 1D03    07403  BTFSS  STATUS, Z
0042 30FF    07404  MOVLW  -1
0043 2844    07405  GOTO   DONE

```

07766 LIST

```

0044 1383    07767 DONE  BCF   STATUS, IRP  ; 1 Set FSR to bank 0/1
0045 1303    07768  BCF   STATUS, RP1   ; 1 Show direct bank 0
0046 1283    07769  BCF   STATUS, RP0   ; 1

```

```

07770  CLRWDT?NOP      ; 1 Hit Watchdog timer

```

```

M  IFNDEF NO_CLRWDT

```

```

0047 0064      M    CLRWDT

```

```

M  ELSE

```

M NOP

M ENDIF

0048 0008 07771 DONERET RETURN ; 2 Done

07797 LIST

0049 07798 INIT

07836 LIST

0049 07837 MAIN

00108

00109

LOC OBJECT CODE LINE SOURCE TEXT

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```

00110 ; C:\PBP\16F877.BAS      00012  BANK0  $0020, $007F
00111 ; C:\PBP\16F877.BAS      00013  BANK1  $00A0, $00EF
00112 ; C:\PBP\16F877.BAS      00014  BANK2  $0110, $016F
00113 ; C:\PBP\16F877.BAS      00015  BANK3  $0190, $01EF
00114 ; C:\PBP\16F877.BAS      00016  EEPROM $2100, $21FF
00115 ; C:\PBP\16F877.BAS      00017  LIBRARY "PBPPIC14"
00116 ; C:\PBP\16F877.BAS      00018  DEFINE CODE_SIZE 8
00117
00118 ; C:\PBP\16F877.BAS      00020      include "PIC14EXT.BAS"
00119
00120 ; C:\PBP\16F877.BAS      00027      include "PBPPIC14.RAM"
00121 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP  00025  define OSC 20
00122
00123 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP  00032  ADCON0 = %00000000
00124      MOVE?CB 000H, ADCON0
M      CHK?RP ADCON0
M      IF (((ADCON0) & 180H) == 0)
M      IF (PREV_BANK == 1)
M      BCF  STATUS, RPO

```



```
M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
00000000 M PREV_BANK = 0
M   ENDIF
M
M   IF (((ADCON0) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
```

```
M  IF (((ADCON0) & 180H) == 100H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

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```
M    BCF  STATUS, RPO
M    ENDIF
M  PREV_BANK = 2
M    ENDIF
M
M  IF (((ADCON0) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M      BSF  STATUS, RPO
M      BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M      BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M      BSF  STATUS, RPO
M    ENDIF
M  PREV_BANK = 3
M    ENDIF
M  IF (LOW (000H) == 0)
```

0049 019F M CLRf ADCON0

M ELSE

M MOVLW LOW (000H)

M MOVWF ADCON0

M ENDIF

00125

00126 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00033 ADCON1 = %00000000
;all analog output

00127 MOVE?CB 000H, ADCON1

M CHK?RP ADCON1

M IF (((ADCON1) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RP0

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RP0

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((ADCON1) & 180H) == 80H)

M IF (PREV_BANK == 0)

004A 1683 M BSF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BSF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RP1

M ENDIF

LOC OBJECT CODE LINE SOURCE TEXT

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```
00000001      M PREV_BANK = 1
              M   ENDIF
              M
              M   IF (((ADCON1) & 180H) == 100H)
              M     IF (PREV_BANK == 0)
              M       BSF  STATUS, RP1
              M     ENDIF
              M   IF (PREV_BANK == 1)
              M     BCF  STATUS, RPO
              M     BSF  STATUS, RP1
              M   ENDIF
              M   IF (PREV_BANK == 3)
              M     BCF  STATUS, RPO
              M   ENDIF
              M PREV_BANK = 2
              M   ENDIF
              M
              M   IF (((ADCON1) & 180H) == 180H)
              M     IF (PREV_BANK == 0)
```

```

M    BSF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
M    IF (LOW (000H) == 0)
004B 019F    M    CLRF  ADCON1
M    ELSE
M    MOVLW  LOW (000H)
M    MOVWF  ADCON1
M    ENDIF
00128
00129 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00034 trisb = %11111111
;define porta as input
00130    MOVE?CB OFFH, TRISB
M    CHK?RP TRISB
M    IF (((TRISB) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RPO
M    ENDIF

```

```
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

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```

M
M IF (((TRISB) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF (((TRISB) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
```

```
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((TRISB) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (OFFH) == 0)
M    CLRF TRISB
```

```
        M   ELSE
004C 30FF      M   MOVLW  LOW (OFFH)
004D 0086      M   MOVWF  TRISB

        M   ENDIF

00131

00132 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00035 trisc = %11111011 ;make
ccp1/portc.2 an output p

        in

00133      MOVE?CB 0FBH, TRISC

        M   CHK?RP TRISC
```

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VALUE

```
M IF (((TRISC) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF (((TRISC) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
```

```
M    BSF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((TRISC) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((TRISC) & 180H) == 180H)
M    IF (PREV_BANK == 0)
```

```
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```

    M PREV_BANK = 3
    M  ENDIF
    M  IF (LOW (0FBH) == 0)
    M    CLRF  TRISC
    M  ELSE
004E 30FB      M    MOVLW  LOW (0FBH)
004F 0087      M    MOVWF  TRISC
    M  ENDIF
00134
    00135 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00036 trisa = %11111111
;define porta as input
00136    MOVE?CB OFFH, TRISA
    M    CHK?RP TRISA
    M  IF (((TRISA) & 180H) == 0)
    M  IF (PREV_BANK == 1)
    M    BCF  STATUS, RP0
    M  ENDIF
    M  IF (PREV_BANK == 2)
    M    BCF  STATUS, RP1
    M  ENDIF
```

```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((TRISA) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((TRISA) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
```



```
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M
M IF (((TRISA) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (0FFH) == 0)
M CLRF TRISA
M ELSE
0050 30FF M MOVLW LOW (0FFH)
0051 0085 M MOVWF TRISA
```

```

M   ENDIF

00137

00138 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP   00037 TMR2 = 16

00139   MOVE?CB 010H, TMR2

M   CHK?RP TMR2

M   IF (((TMR2) & 180H) == 0)

M   IF (PREV_BANK == 1)

0052 1283   M   BCF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

M   BCF  STATUS, RP1

M   ENDIF

00000000   M PREV_BANK = 0

M   ENDIF

M

M   IF (((TMR2) & 180H) == 80H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

```

```
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((TMR2) & 180H) == 100H)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF (((TMR2) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
```

```

M    BSF    STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 2)

M    BSF    STATUS, RPO

M    ENDIF

M PREV_BANK = 3

M    ENDIF

M    IF (LOW (010H) == 0)

M    CLRF   TMR2

M    ELSE

0053 3010      M    MOVLW  LOW (010H)

0054 0091      M    MOVWF  TMR2

M    ENDIF

00140

00141 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00038 PR2 = 34    ;set for
36Khz HPWM(=72 steps*1

0 times*50hz)

00142      MOVE?CB 022H, PR2

M    CHK?RP PR2

M    IF (((PR2) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF   STATUS, RPO

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF   STATUS, RP1

M    ENDIF

```

```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((PR2) & 180H) == 80H)
M    IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
0055 1683      M   BSF  STATUS, RPO
                M   ENDIF
                M   IF (PREV_BANK == 2)
                M   BSF  STATUS, RPO
                M   BCF  STATUS, RP1
                M   ENDIF
                M   IF (PREV_BANK == 3)
                M   BCF  STATUS, RP1
                M   ENDIF
00000001      M PREV_BANK = 1
                M   ENDIF
                M
                M   IF (((PR2) & 180H) == 100H)
                M   IF (PREV_BANK == 0)
                M   BSF  STATUS, RP1
                M   ENDIF
                M   IF (PREV_BANK == 1)
                M   BCF  STATUS, RPO
                M   BSF  STATUS, RP1
```



```

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((PR2) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (022H) == 0)

M   CLRF PR2

M   ELSE

0056 3022   M   MOVLW  LOW (022H)

0057 0092   M   MOVWF  PR2

```

```
    M   ENDIF

00143

00144 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00039 CCP1CON = %000001100
;set to pwm mode

00145     MOVE?CB 00CH, CCP1CON

    M   CHK?RP CCP1CON

    M   IF (((CCP1CON) & 180H) == 0)

    M   IF (PREV_BANK == 1)

0058 1283     M   BCF  STATUS, RPO

    M   ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M ENDIF
M
M IF (((CCP1CON) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```

```
M    BCF  STATUS, RP1

M    ENDIF

M PREV_BANK = 1

M    ENDIF

M

M    IF (((CCP1CON) & 180H) == 100H)

M    IF (PREV_BANK == 0)

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 1)

M    BCF  STATUS, RP0

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF  STATUS, RP0

M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF (((CCP1CON) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF  STATUS, RP0

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 1)
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (00CH) == 0)
M    CLRF   CCP1CON
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M ELSE
0059 300C M MOVLW LOW (00CH)
005A 0097 M MOVWF CCP1CON
M ENDIF
00146
00147 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00040 T2CON=%00000110
;enable timer2 and set t
timer2 prescaler value of 1:4
00148 MOVE?CB 006H, T2CON
M CHK?RP T2CON
M IF ((T2CON) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
```

```

M   ENDIF
00000000    M PREV_BANK = 0
M   ENDIF
M
M   IF (((T2CON) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF (((T2CON) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
```

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((T2CON) & 180H) == 180H)
M   IF (PREV_BANK == 0)
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (006H) == 0)
M    CLRF T2CON
M    ELSE
005B 3006    M    MOVLW  LOW (006H)
005C 0092    M    MOVWF  T2CON
M    ENDIF
00149
00150 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00043 stepcount = 256
```

```

00151    MOVE?CB 00100H, _STEPCOUNT
        M    CHK?RP _STEPCOUNT
        M    IF ((_STEPCOUNT) & 180H) == 0)
        M    IF (PREV_BANK == 1)
        M    BCF  STATUS, RP0
        M    ENDIF
        M    IF (PREV_BANK == 2)
        M    BCF  STATUS, RP1
        M    ENDIF
        M    IF (PREV_BANK == 3)
        M    BCF  STATUS, RP0
        M    BCF  STATUS, RP1
        M    ENDIF
00000000    M PREV_BANK = 0
        M    ENDIF
        M
        M    IF (((_STEPCOUNT) & 180H) == 80H)
        M    IF (PREV_BANK == 0)
        M    BSF  STATUS, RP0
        M    ENDIF
        M    IF (PREV_BANK == 2)
        M    BSF  STATUS, RP0
        M    BCF  STATUS, RP1
        M    ENDIF
        M    IF (PREV_BANK == 3)

```

```
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((_STEPCOUNT) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF (((_STEPCOUNT) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
```

```

M    BSF    STATUS, RPO
M    ENDIF

M    PREV_BANK = 3

M    ENDIF

M    IF (LOW (00100H) == 0)
005D 01C2    M    CLRF    _STEPCOUNT

M    ELSE

M    MOVLW  LOW (00100H)

M    MOVWF  _STEPCOUNT

M    ENDIF

00152

00153 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00047 sineval[1] = 128    ;0
degree

00154    MOVE?CB 080H, _SINEVAL + 00001H

M    CHK?RP _SINEVAL + 00001H

M    IF (((_SINEVAL + 00001H) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF    STATUS, RPO

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF    STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF    STATUS, RPO

M    BCF    STATUS, RP1

M    ENDIF

```

```
M PREV_BANK = 0
M  ENDIF
M
M  IF ((_SINEVAL + 00001H) & 180H) == 80H)
M  IF (PREV_BANK == 0)
005E 1683      M    BSF  STATUS, RPO
M  ENDIF
M  IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00001H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
```

```

M PREV_BANK = 2

M   ENDIF

M

M   IF ((_SINEVAL + 00001H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RPO

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M     BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (080H) == 0)

M     CLRF  _SINEVAL + 00001H

M   ELSE

005F 3080      M     MOVLW  LOW (080H)

0060 00A2      M     MOVWF  _SINEVAL + 00001H

M   ENDIF

00155

00156 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00048 sineval[2] = 137 ;5
degree

00157      MOVE?CB 089H, _SINEVAL + 00002H

```



```
M    CHK?RP _SINEVAL + 00002H
M  IF ((_SINEVAL + 00002H) & 180H) == 0)
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M  ENDIF
M  IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   BCF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M  PREV_BANK = 0
M   ENDIF
M
M  IF ((_SINEVAL + 00002H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001  M  PREV_BANK = 1
M   ENDIF
```

```
M
M IF ((_SINEVAL + 00002H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00002H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
```

```
M    ENDIF

M PREV_BANK = 3

M    ENDIF

M    IF (LOW (089H) == 0)

M        CLRF    _SINEVAL + 00002H

M    ELSE

0061 3089    M    MOVLW  LOW (089H)

0062 00A3    M    MOVWF  _SINEVAL + 00002H

M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

00158

00159 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00049 sineval[3] = 146

00160 MOVE?CB 092H, _SINEVAL + 00003H

M CHK?RP _SINEVAL + 00003H

M IF (((_SINEVAL + 00003H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((_SINEVAL + 00003H) & 180H) == 80H)

```

M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00003H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2

```

```
M   ENDIF
M
M   IF ((_SINEVAL + 00003H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (092H) == 0)
M   CLRF  _SINEVAL + 00003H
M   ELSE
0063 3092      M   MOVLW LOW (092H)
0064 00A4      M   MOVWF  _SINEVAL + 00003H
M   ENDIF
00161
00162 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00050 sineval[4] = 154
00163      MOVE?CB 09AH, _SINEVAL + 00004H
M   CHK?RP _SINEVAL + 00004H
M   IF (((_SINEVAL + 00004H) & 180H) == 0)
M   IF (PREV_BANK == 1)
M   BCF STATUS, RPO
```



```
M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00004H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
```

```
M  IF ((_SINEVAL + 00004H) & 180H) == 100H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 00004H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (09AH) == 0)
```

```

M    CLRF  _SINEVAL + 00004H

M    ELSE

0065 309A    M    MOVLW  LOW (09AH)

0066 00A5    M    MOVWF  _SINEVAL + 00004H

M    ENDIF

00164

00165 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00051  sineval[5] = 163

00166    MOVE?CB 0A3H, _SINEVAL + 00005H

M    CHK?RP  _SINEVAL + 00005H

M    IF (((_SINEVAL + 00005H) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF  STATUS, RPO

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF  STATUS, RPO

M    BCF  STATUS, RP1

M    ENDIF

M PREV_BANK = 0

M    ENDIF

M

M    IF (((_SINEVAL + 00005H) & 180H) == 80H)

M    IF (PREV_BANK == 0)

```

```
M    BSF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00000001      M PREV_BANK = 1
              M   ENDIF
              M
              M   IF (((_SINEVAL + 00005H) & 180H) == 100H)
              M     IF (PREV_BANK == 0)
              M       BSF  STATUS, RP1
              M     ENDIF
              M   IF (PREV_BANK == 1)
              M     BCF  STATUS, RPO
              M     BSF  STATUS, RP1
              M   ENDIF
              M   IF (PREV_BANK == 3)
              M     BCF  STATUS, RPO
              M   ENDIF
              M PREV_BANK = 2
              M   ENDIF
              M
              M   IF (((_SINEVAL + 00005H) & 180H) == 180H)
              M     IF (PREV_BANK == 0)
```

```

M    BSF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
M    IF (LOW (0A3H) == 0)
M    CLRF   _SINEVAL + 00005H
M    ELSE
0067 30A3    M    MOVLW  LOW (0A3H)
0068 00A6    M    MOVWF  _SINEVAL + 00005H
M    ENDIF
00167
00168 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00052 sineval[6] = 171
00169    MOVE?CB 0ABH, _SINEVAL + 00006H
M    CHK?RP _SINEVAL + 00006H
M    IF (((_SINEVAL + 00006H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RPO
M    ENDIF

```

```
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M
M IF ((_SINEVAL + 00006H) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 00006H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
```

```

M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 00006H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (0ABH) == 0)
M   CLRF  _SINEVAL + 00006H

```

```

        M   ELSE
0069 30AB      M   MOVLW  LOW (0ABH)
006A 00A7      M   MOVWF  _SINEVAL + 00006H

        M   ENDIF

00170
00171 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00053  sineval[7] = 179
00172      MOVE?CB 0B3H, _SINEVAL + 00007H
        M   CHK?RP  _SINEVAL + 00007H
        M   IF (((_SINEVAL + 00007H) & 180H) == 0)

```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF ((_SINEVAL + 00007H) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
```

```
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00007H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00007H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (LOW (0B3H) == 0)
M     CLRF  _SINEVAL + 00007H
M   ELSE
006B 30B3      M     MOVLW  LOW (0B3H)
006C 00A8      M     MOVWF  _SINEVAL + 00007H
M   ENDIF

00173
00174 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00054 sineval[8] = 187
00175      MOVE?CB 0BBH, _SINEVAL + 00008H
M     CHK?RP  _SINEVAL + 00008H
M   IF (((_SINEVAL + 00008H) & 180H) == 0)
M     IF (PREV_BANK == 1)
M       BCF  STATUS, RP0
M     ENDIF
M     IF (PREV_BANK == 2)
M       BCF  STATUS, RP1
M     ENDIF
M     IF (PREV_BANK == 3)

```

```

M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF

M PREV_BANK = 0
M    ENDIF

M

M    IF ((_SINEVAL + 00008H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF

M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF

M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF

00000001    M PREV_BANK = 1
M    ENDIF

M

M    IF ((_SINEVAL + 00008H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF

M    IF (PREV_BANK == 1)

```



```
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   IF ((_SINEVAL + 00008H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (0BBH) == 0)
M   CLRF  _SINEVAL + 00008H
M   ELSE
006D 30BB      M   MOVLW  LOW (0BBH)
006E 00A9      M   MOVWF  _SINEVAL + 00008H
M   ENDIF

```

00176

00177 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00055 sineval[9] = 194

00178 MOVE?CB 0C2H, _SINEVAL + 00009H

M CHK?RP _SINEVAL + 00009H

M IF (((_SINEVAL + 00009H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((_SINEVAL + 00009H) & 180H) == 80H)

M IF (PREV_BANK == 0)

M BSF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BSF STATUS, RPO

M BCF STATUS, RP1

```
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 00009H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00009H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
```

```

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF   STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (0C2H) == 0)

M   CLRF  _SINEVAL + 00009H

M   ELSE

006F 30C2      M   MOVLW  LOW (0C2H)

0070 00AA      M   MOVWF  _SINEVAL + 00009H

M   ENDIF

00179

00180 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00056  sineval[10] = 200

00181      MOVE?CB 0C8H, _SINEVAL + 0000AH

M   CHK?RP _SINEVAL + 0000AH

M   IF (((_SINEVAL + 0000AH) & 180H) == 0)

M   IF (PREV_BANK == 1)

M   BCF   STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF   STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF   STATUS, RPO

```

```
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF ((_SINEVAL + 0000AH) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF (((_SINEVAL + 0000AH) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```



```

M    BCF  STATUS, RPO

M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF (((_SINEVAL + 0000AH) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF  STATUS, RPO

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 1)

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 2)

M    BSF  STATUS, RPO

M    ENDIF

M PREV_BANK = 3

M    ENDIF

M    IF (LOW (0C8H) == 0)

M    CLRF  _SINEVAL + 0000AH

M    ELSE

0071 30C8    M    MOVLW  LOW (0C8H)

0072 00AB    M    MOVWF  _SINEVAL + 0000AH

M    ENDIF

00182

```

00183 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00057 sineval[11] = 206

00184 MOVE?CB OCEH, _SINEVAL + 0000BH

M CHK?RP _SINEVAL + 0000BH

M IF (((_SINEVAL + 0000BH) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M     BCF  STATUS, RPO
M     BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 0000BH) & 180H) == 80H)
M     IF (PREV_BANK == 0)
M       BSF  STATUS, RPO
M     ENDIF
M     IF (PREV_BANK == 2)
M       BSF  STATUS, RPO
M       BCF  STATUS, RP1
M     ENDIF
M     IF (PREV_BANK == 3)
M       BCF  STATUS, RP1
M     ENDIF
```

```
00000001      M PREV_BANK = 1

M   ENDIF

M

M   IF ((_SINEVAL + 0000BH) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BCF  STATUS, RPO

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M     BCF  STATUS, RPO

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF ((_SINEVAL + 0000BH) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RPO

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BSF  STATUS, RP1

M   ENDIF
```

```
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (OCEH) == 0)
M    CLRF  _SINEVAL + 0000BH
M    ELSE
0073 30CE    M    MOVLW  LOW (OCEH)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
0074 00AC      M    MOVWF  _SINEVAL + 0000BH
      M    ENDIF
00185
00186 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00058 sineval[12] = 212
00187      MOVE?CB 0D4H, _SINEVAL + 0000CH
      M    CHK?RP  _SINEVAL + 0000CH
      M    IF (((_SINEVAL + 0000CH) & 180H) == 0)
      M    IF (PREV_BANK == 1)
      M    BCF  STATUS, RPO
      M    ENDIF
      M    IF (PREV_BANK == 2)
      M    BCF  STATUS, RP1
      M    ENDIF
      M    IF (PREV_BANK == 3)
      M    BCF  STATUS, RPO
      M    BCF  STATUS, RP1
      M    ENDIF
      M    PREV_BANK = 0
      M    ENDIF
```

```

M
M IF ((_SINEVAL + 0000CH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 0000CH) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO

```

```
M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF ((_SINEVAL + 0000CH) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF    STATUS, RPO

M    BSF    STATUS, RP1

M    ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (0D4H) == 0)
M CLRF _SINEVAL + 0000CH
M ELSE
0075 30D4 M MOVLW LOW (0D4H)
0076 00AD M MOVWF _SINEVAL + 0000CH
M ENDIF
00188
00189 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00059 sineval[13] = 216
00190 MOVE?CB 0D8H, _SINEVAL + 0000DH
M CHK?RP _SINEVAL + 0000DH
M IF (((_SINEVAL + 0000DH) & 180H) == 0)

```

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF (((_SINEVAL + 0000DH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
```

```
00000001 M PREV_BANK = 1
```

```
M   ENDIF
M
M   IF ((_SINEVAL + 0000DH) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M     BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M     BCF  STATUS, RP0
M     BSF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 0000DH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RPO
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RPO
M   ENDIF
M PREV_BANK = 3
```

```

M   ENDIF

M   IF (LOW (0D8H) == 0)

M     CLRF  _SINEVAL + 0000DH

M   ELSE

0077 30D8      M     MOVLW  LOW (0D8H)

0078 00AE      M     MOVWF  _SINEVAL + 0000DH

M   ENDIF

00191

00192 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00060  sineval[14] = 220

00193      MOVE?CB 0DCH, _SINEVAL + 0000EH

M     CHK?RP  _SINEVAL + 0000EH

M   IF (((_SINEVAL + 0000EH) & 180H) == 0)

M     IF (PREV_BANK == 1)

M       BCF  STATUS, RP0

M     ENDIF

M     IF (PREV_BANK == 2)

M       BCF  STATUS, RP1

M     ENDIF

M     IF (PREV_BANK == 3)

M       BCF  STATUS, RP0

M       BCF  STATUS, RP1

M     ENDIF

M   PREV_BANK = 0

M   ENDIF

M

```

```
M  IF ((_SINEVAL + 0000EH) & 180H) == 80H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M  ENDIF
M  IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   BCF  STATUS, RP1
M   ENDIF
00000001  M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 0000EH) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
```

```

M   IF (((_SINEVAL + 0000EH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (0DCH) == 0)
M   CLRF  _SINEVAL + 0000EH
M   ELSE
0079 30DC   M   MOVLW  LOW (0DCH)
007A 00AF   M   MOVWF  _SINEVAL + 0000EH
M   ENDIF
00194
00195 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP   00061  sineval[15] = 224
00196   MOVE?CB 0E0H, _SINEVAL + 0000FH
M   CHK?RP  _SINEVAL + 0000FH
M   IF (((_SINEVAL + 0000FH) & 180H) == 0)
M   IF (PREV_BANK == 1)

```



```
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 0000FH) & 180H) == 80H)
M     IF (PREV_BANK == 0)
M       BSF STATUS, RPO
M     ENDIF
M   IF (PREV_BANK == 2)
M     BSF STATUS, RPO
M     BCF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M     BCF STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 0000FH) & 180H) == 100H)
M     IF (PREV_BANK == 0)
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0000FH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
```

```
M   IF (LOW (0E0H) == 0)
M   CLRF  _SINEVAL + 0000FH
M   ELSE
007B 30E0      M   MOVLW  LOW (0E0H)
007C 00B0      M   MOVWF  _SINEVAL + 0000FH
M   ENDIF
00197
00198 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00062  sineval[16] = 227
00199      MOVE?CB 0E3H, _SINEVAL + 00010H
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M    CHK?RP _SINEVAL + 00010H
M    IF (((_SINEVAL + 00010H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00010H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
```

```

M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001  M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00010H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 00010H) & 180H) == 180H)

```

```
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (0E3H) == 0)
M     CLRF  _SINEVAL + 00010H
M   ELSE
007D 30E3   M     MOVLW  LOW (0E3H)
007E 00B1   M     MOVWF  _SINEVAL + 00010H
M   ENDIF
00200
00201 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP   00063  sineval[17] = 228
00202     MOVE?CB 0E4H, _SINEVAL + 00011H
M     CHK?RP  _SINEVAL + 00011H
M   IF (((_SINEVAL + 00011H) & 180H) == 0)
M     IF (PREV_BANK == 1)
M       BCF  STATUS, RPO
M     ENDIF
M     IF (PREV_BANK == 2)
M       BCF  STATUS, RP1
```



```

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP0

M   BCF  STATUS, RP1

M   ENDIF

M PREV_BANK = 0

M   ENDIF

M

M   IF (((_SINEVAL + 00011H) & 180H) == 80H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP0

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RP0

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP1

M   ENDIF

00000001    M PREV_BANK = 1

M   ENDIF

M

M   IF (((_SINEVAL + 00011H) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M
M   IF (((_SINEVAL + 00011H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RPO
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RPO
M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (0E4H) == 0)
M   CLRF  _SINEVAL + 00011H
M   ELSE
007F 30E4   M   MOVLW LOW (0E4H)
```

```

0080 00B2      M    MOVWF  _SINEVAL + 00011H

      M    ENDIF

00203

00204 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00064  sineval[18] = 229

00205      MOVE?CB 0E5H, _SINEVAL + 00012H

      M    CHK?RP  _SINEVAL + 00012H

      M    IF (((_SINEVAL + 00012H) & 180H) == 0)

      M    IF (PREV_BANK == 1)

      M    BCF  STATUS, RPO

      M    ENDIF

      M    IF (PREV_BANK == 2)

      M    BCF  STATUS, RP1

      M    ENDIF

      M    IF (PREV_BANK == 3)

      M    BCF  STATUS, RPO

      M    BCF  STATUS, RP1

      M    ENDIF

      M    PREV_BANK = 0

      M    ENDIF

      M

      M    IF (((_SINEVAL + 00012H) & 180H) == 80H)

      M    IF (PREV_BANK == 0)

      M    BSF  STATUS, RPO

      M    ENDIF

      M    IF (PREV_BANK == 2)

```

```
M    BSF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF ((_SINEVAL + 00012H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00012H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
```

```

M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0E5H) == 0)
M    CLRF  _SINEVAL + 00012H
M    ELSE
0081 30E5    M    MOVLW  LOW (0E5H)
0082 00B3    M    MOVWF  _SINEVAL + 00012H
M    ENDIF
00206
00207 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00065 sineval[19] = 230 ;90
degree
00208    MOVE?CB 0E6H, _SINEVAL + 00013H
M    CHK?RP  _SINEVAL + 00013H
M    IF (((_SINEVAL + 00013H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF

```

```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00013H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001 M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 00013H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1

```

```

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((_SINEVAL + 00013H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (0E6H) == 0)

M   CLRF  _SINEVAL + 00013H

M   ELSE

0083 30E6   M   MOVLW  LOW (0E6H)

0084 00B4   M   MOVWF  _SINEVAL + 00013H

```

```
M   ENDIF

00209

00210 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00066  sineval[20] = 229

00211     MOVE?CB 0E5H, _SINEVAL + 00014H

M     CHK?RP  _SINEVAL + 00014H

M     IF (((_SINEVAL + 00014H) & 180H) == 0)

M     IF (PREV_BANK == 1)

M     BCF  STATUS, RPO

M     ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF (((_SINEVAL + 00014H) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```

```

M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 00014H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF ((_SINEVAL + 00014H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)

```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0E5H) == 0)
M    CLRF   _SINEVAL + 00014H
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M ELSE
0085 30E5 M MOVLW LOW (0E5H)
0086 00B5 M MOVWF _SINEVAL + 00014H
M ENDIF
00212
00213 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00067 sineval[21] = 228
00214 MOVE?CB 0E4H, _SINEVAL + 00015H
M CHK?RP _SINEVAL + 00015H
M IF ((_SINEVAL + 00015H) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
```

```

M PREV_BANK = 0

M  ENDIF

M

M  IF ((_SINEVAL + 00015H) & 180H) == 80H)

M  IF (PREV_BANK == 0)

M    BSF  STATUS, RPO

M  ENDIF

M  IF (PREV_BANK == 2)

M    BSF  STATUS, RPO

M    BCF  STATUS, RP1

M  ENDIF

M  IF (PREV_BANK == 3)

M    BCF  STATUS, RP1

M  ENDIF

00000001  M PREV_BANK = 1

M  ENDIF

M

M  IF ((_SINEVAL + 00015H) & 180H) == 100H)

M  IF (PREV_BANK == 0)

M    BSF  STATUS, RP1

M  ENDIF

M  IF (PREV_BANK == 1)

M    BCF  STATUS, RPO

M    BSF  STATUS, RP1

M  ENDIF

```



```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00015H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```

M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0E4H) == 0)
M    CLRF  _SINEVAL + 00015H
M    ELSE
0087 30E4    M    MOVLW  LOW (0E4H)
0088 00B6    M    MOVWF  _SINEVAL + 00015H
M    ENDIF
00215
00216 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00068  sineval[22] = 227
00217    MOVE?CB 0E3H, _SINEVAL + 00016H
```

```
M    CHK?RP _SINEVAL + 00016H
M  IF ((_SINEVAL + 00016H) & 180H) == 0)
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M  ENDIF
M  IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M  ENDIF
M PREV_BANK = 0
M  ENDIF
M
M  IF ((_SINEVAL + 00016H) & 180H) == 80H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M  ENDIF
M  IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
```

```

M   ENDIF
00000001   M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 00016H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF   STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 00016H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
```

```

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (0E3H) == 0)

M     CLRF  _SINEVAL + 00016H

M   ELSE

0089 30E3      M     MOVLW  LOW (0E3H)

008A 00B7      M     MOVWF  _SINEVAL + 00016H

M   ENDIF

00218

00219 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00069 sineval[23] = 224

00220      MOVE?CB 0E0H, _SINEVAL + 00017H

M     CHK?RP  _SINEVAL + 00017H

M   IF (((_SINEVAL + 00017H) & 180H) == 0)

M     IF (PREV_BANK == 1)

M       BCF  STATUS, RPO

M     ENDIF

M     IF (PREV_BANK == 2)

M       BCF  STATUS, RP1

M     ENDIF

M     IF (PREV_BANK == 3)

M       BCF  STATUS, RPO

M       BCF  STATUS, RP1

M     ENDIF

M PREV_BANK = 0

```

```
M   ENDIF
M
M   IF ((_SINEVAL + 00017H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF   STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF   STATUS, RPO
M   BCF   STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00017H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF STATUS, RP0
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```



```

M   ENDIF

M

M   IF ((_SINEVAL + 00017H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M   PREV_BANK = 3

M   ENDIF

M   IF (LOW (0E0H) == 0)

M   CLRF  _SINEVAL + 00017H

M   ELSE

008B 30E0      M   MOVLW  LOW (0E0H)

008C 00B8      M   MOVWF  _SINEVAL + 00017H

M   ENDIF

00221

00222 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00070  sineval[24] = 220

00223      MOVE?CB 0DCH, _SINEVAL + 00018H

M   CHK?RP  _SINEVAL + 00018H

```

```
M  IF ((_SINEVAL + 00018H) & 180H) == 0)
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M  ENDIF
M  IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BCF  STATUS, RP1
M    ENDIF
M    PREV_BANK = 0
M    ENDIF
M
M    IF ((_SINEVAL + 00018H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M    PREV_BANK = 1
M    ENDIF
M
```

```
M IF ((_SINEVAL + 00018H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00018H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M ENDIF
```

```
M PREV_BANK = 3
M  ENDIF
M  IF (LOW (0DCH) == 0)
M    CLRF  _SINEVAL + 00018H
M  ELSE
008D 30DC    M    MOVLW  LOW (0DCH)
008E 00B9    M    MOVWF  _SINEVAL + 00018H
M  ENDIF
00224
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00225 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00071 sineval[25] = 216
00226 MOVE?CB 0D8H, _SINEVAL + 00019H
M CHK?RP _SINEVAL + 00019H
M IF (((_SINEVAL + 00019H) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF (((_SINEVAL + 00019H) & 180H) == 80H)
M IF (PREV_BANK == 0)
```

```

M    BSF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00019H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF

```

```
M
M  IF ((_SINEVAL + 00019H) & 180H) == 180H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M  ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0D8H) == 0)
M    CLRF  _SINEVAL + 00019H
M    ELSE
008F 30D8    M    MOVLW  LOW (0D8H)
0090 00BA    M    MOVWF  _SINEVAL + 00019H
M    ENDIF
00227
00228 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00072 sineval[26] = 212
00229    MOVE?CB 0D4H, _SINEVAL + 0001AH
M    CHK?RP _SINEVAL + 0001AH
M    IF (((_SINEVAL + 0001AH) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF

```

```

M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 0001AH) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 0001AH) & 180H) == 100H)

```

```
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 0001AH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (0D4H) == 0)
M   CLRF  _SINEVAL + 0001AH
```

```

M ELSE
0091 30D4 M MOVLW LOW (0D4H)
0092 00BB M MOVWF _SINEVAL + 0001AH
M ENDIF

00230
00231 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00073 sineval[27] = 206
00232 MOVE?CB 0CEH, _SINEVAL + 0001BH
M CHK?RP _SINEVAL + 0001BH
M IF (((_SINEVAL + 0001BH) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF (((_SINEVAL + 0001BH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO

```

```
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M
M   IF (((_SINEVAL + 0001BH) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 0001BH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
```

```

M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
M    IF (LOW (0CEH) == 0)
M    CLRF   _SINEVAL + 0001BH
M    ELSE
0093 30CE    M    MOVLW  LOW (0CEH)
0094 00BC    M    MOVWF  _SINEVAL + 0001BH
M    ENDIF
00233
00234 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00074 sineval[28] = 200
00235    MOVE?CB 0C8H, _SINEVAL + 0001CH
M    CHK?RP _SINEVAL + 0001CH
M    IF (((_SINEVAL + 0001CH) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)

```



```
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF ((_SINEVAL + 0001CH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 0001CH) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
```

```
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0001CH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0C8H) == 0)
M    CLRF  _SINEVAL + 0001CH
M    ELSE
```

0095 30C8 M MOVLW LOW (0C8H)

0096 00BD M MOVWF _SINEVAL + 0001CH

M ENDF

00236

00237 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00075 sineval[29] = 194

00238 MOVE?CB 0C2H, _SINEVAL + 0001DH

M CHK?RP _SINEVAL + 0001DH

M IF (((_SINEVAL + 0001DH) & 180H) == 0)

M IF (PREV_BANK == 1)

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M   BCF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF ((_SINEVAL + 0001DH) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
```

```

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP1

M   ENDIF

00000001    M PREV_BANK = 1

M   ENDIF

M

M   IF (((_SINEVAL + 0001DH) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP0

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((_SINEVAL + 0001DH) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP0

M   BSF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 1)
M     BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M     BSF  STATUS, RP0
M   ENDIF
M PREV_BANK = 3
M   ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (LOW (0C2H) == 0)
M CLR F _SINEVAL + 0001DH
M ELSE
0097 30C2 M MOVLW LOW (0C2H)
0098 00BE M MOVWF _SINEVAL + 0001DH
M ENDIF

00239
00240 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00076 sineval[30] = 187
00241 MOVE?CB 0BBH, _SINEVAL + 0001EH
M CHK?RP _SINEVAL + 0001EH
M IF (((_SINEVAL + 0001EH) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO

```



```
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF ((_SINEVAL + 0001EH) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 0001EH) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0001EH) & 180H) == 180H)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (0BBH) == 0)
M CLRF _SINEVAL + 0001EH
M ELSE
0099 30BB M MOVLW LOW (0BBH)
009A 00BF M MOVWF _SINEVAL + 0001EH
M ENDIF
00242
```

00243 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00077 sineval[31] = 179

00244 MOVE?CB 0B3H, _SINEVAL + 0001FH

M CHK?RP _SINEVAL + 0001FH

M IF (((_SINEVAL + 0001FH) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((_SINEVAL + 0001FH) & 180H) == 80H)

M IF (PREV_BANK == 0)

M BSF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BSF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

```
    M    IF (PREV_BANK == 3)
    M    BCF  STATUS, RP1
    M    ENDIF
00000001    M PREV_BANK = 1
    M    ENDIF
    M
    M    IF (((_SINEVAL + 0001FH) & 180H) == 100H)
    M    IF (PREV_BANK == 0)
    M    BSF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 0001FH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
```

```

M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF

M PREV_BANK = 3
M    ENDIF

M    IF (LOW (0B3H) == 0)
M    CLRF  _SINEVAL + 0001FH
M    ELSE
009B 30B3    M    MOVLW  LOW (0B3H)
009C 00C0    M    MOVWF  _SINEVAL + 0001FH
M    ENDIF

00245
00246 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00078  sineval[32] = 171
00247    MOVE?CB 0ABH, _SINEVAL + 00020H
M    CHK?RP  _SINEVAL + 00020H
M    IF (((_SINEVAL + 00020H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1

```

```
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF ((_SINEVAL + 00020H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001 M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00020H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
```

```

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF ((_SINEVAL + 00020H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RP0

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (0ABH) == 0)

M   CLRF  _SINEVAL + 00020H

M   ELSE

009D 30AB      M   MOVLW  LOW (0ABH)

009E 00C1      M   MOVWF  _SINEVAL + 00020H

M   ENDIF

00248

00249 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00079  sineval[33] = 163

```

```
00250    MOVE?CB 0A3H, _SINEVAL + 00021H
M    CHK?RP _SINEVAL + 00021H
M    IF ((_SINEVAL + 00021H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   IF (PREV_BANK == 3)
M   BCF STATUS, RPO
M   BCF STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00021H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RPO
M   BCF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
```

```
M   ENDIF

M

M   IF (((_SINEVAL + 00021H) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP0

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((_SINEVAL + 00021H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)
```

```
M    BSF    STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0A3H) == 0)
M      CLRF  _SINEVAL + 00021H
M    ELSE
009F 30A3    M    MOVLW  LOW (0A3H)
00A0 00C2    M    MOVWF  _SINEVAL + 00021H
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

M ENDIF

00251

00252 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00080 sineval[34] = 154

00253 MOVE?CB 09AH, _SINEVAL + 00022H

M CHK?RP _SINEVAL + 00022H

M IF (((_SINEVAL + 00022H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

```

M   IF ((_SINEVAL + 00022H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001    M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 00022H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF

```



```
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 00022H) & 180H) == 180H)
M     IF (PREV_BANK == 0)
M       BSF  STATUS, RP0
M       BSF  STATUS, RP1
M     ENDIF
M   IF (PREV_BANK == 1)
```

LOC OBJECT CODE LINE SOURCE TEXT
 VALUE

```

      M   BSF   STATUS, RP1
      M   ENDIF
      M   IF (PREV_BANK == 2)
      M   BSF   STATUS, RPO
      M   ENDIF
      M   PREV_BANK = 3
      M   ENDIF
      M   IF (LOW (09AH) == 0)
      M   CLRF  _SINEVAL + 00022H
      M   ELSE
00A1 309A      M   MOVLW  LOW (09AH)
00A2 00C3      M   MOVWF  _SINEVAL + 00022H
      M   ENDIF
00254
00255 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00081  sineval[35] = 146
00256    MOVE?CB 092H, _SINEVAL + 00023H
      M   CHK?RP _SINEVAL + 00023H
      M   IF (((_SINEVAL + 00023H) & 180H) == 0)
      M   IF (PREV_BANK == 1)

```

```

M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00023H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF

```

```
M
M  IF ((_SINEVAL + 00023H) & 180H) == 100H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 00023H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
```

```

M IF (LOW (092H) == 0)

M CLR F _SINEVAL + 00023H

M ELSE

00A3 3092 M MOVLW LOW (092H)

00A4 00C4 M MOVWF _SINEVAL + 00023H

M ENDIF

00257

00258 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00082 sineval[36] = 137

00259 MOVE?CB 089H, _SINEVAL + 00024H

M CHK?RP _SINEVAL + 00024H

M IF (((_SINEVAL + 00024H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((_SINEVAL + 00024H) & 180H) == 80H)

```

```
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 00024H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF STATUS, RP0
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP0
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 00024H) & 180H) == 180H)
```



```

M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
M    IF (LOW (089H) == 0)
M    CLRF  _SINEVAL + 00024H
M    ELSE
00A5 3089    M    MOVLW  LOW (089H)
00A6 00C5    M    MOVWF  _SINEVAL + 00024H
M    ENDIF
00260
00261 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00083  sineval[37] = 128 ;180
degree
00262    MOVE?CB 080H, _SINEVAL + 00025H
M    CHK?RP  _SINEVAL + 00025H
M    IF (((_SINEVAL + 00025H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO

```

```
M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M
M   IF (((_SINEVAL + 00025H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001  M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00025H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
```

```
M   ENDIF

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP0

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((_SINEVAL + 00025H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RP0

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (080H) == 0)
```

```
    M    CLRF  _SINEVAL + 00025H
    M    ELSE
00A7 3080    M    MOVLW  LOW (080H)
00A8 00C6    M    MOVWF  _SINEVAL + 00025H
    M    ENDIF

00263
00264 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00084  sineval[38] = 119
00265    MOVE?CB 077H, _SINEVAL + 00026H
    M    CHK?RP  _SINEVAL + 00026H
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF ((_SINEVAL + 00026H) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF ((_SINEVAL + 00026H) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
```

```

M    BSF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00026H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00026H) & 180H) == 180H)
M    IF (PREV_BANK == 0)

```

```
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M PREV_BANK = 3
M ENDIF
M IF (LOW (077H) == 0)
M CLR F _SINEVAL + 00026H
M ELSE
00A9 3077 M MOVLW LOW (077H)
00AA 00C7 M MOVWF _SINEVAL + 00026H
M ENDIF
00266
00267 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00085 sineval[39] = 110
00268 MOVE?CB 06EH, _SINEVAL + 00027H
M CHK?RP _SINEVAL + 00027H
M IF (((_SINEVAL + 00027H) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF

```

```

M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF

M PREV_BANK = 0
M    ENDIF

M
M    IF (((_SINEVAL + 00027H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF

00000001    M PREV_BANK = 1
M    ENDIF

M
M    IF (((_SINEVAL + 00027H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF

```

```
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M
M IF ((_SINEVAL + 00027H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (06EH) == 0)
M CLRF _SINEVAL + 00027H
M ELSE
00AB 306E M MOVLW LOW (06EH)
00AC 00C8 M MOVWF _SINEVAL + 00027H
```

```

M   ENDIF

00269

00270 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00086  sineval[40] = 102

00271    MOVE?CB 066H, _SINEVAL + 00028H

M   CHK?RP _SINEVAL + 00028H

M   IF (((_SINEVAL + 00028H) & 180H) == 0)

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

M   BCF  STATUS, RP1

M   ENDIF

M PREV_BANK = 0

M   ENDIF

M

M   IF (((_SINEVAL + 00028H) & 180H) == 80H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

```

```
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00028H) & 180H) == 100H)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00028H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
```

```

M    BSF    STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 2)

M    BSF    STATUS, RP0

M    ENDIF

M PREV_BANK = 3

M    ENDIF

M    IF (LOW (066H) == 0)

M    CLRF   _SINEVAL + 00028H

M    ELSE

00AD 3066      M    MOVLW  LOW (066H)

00AE 00C9      M    MOVWF  _SINEVAL + 00028H

M    ENDIF

00272

00273 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00087 sineval[41] = 93

00274      MOVE?CB 05DH, _SINEVAL + 00029H

M    CHK?RP _SINEVAL + 00029H

M    IF (((_SINEVAL + 00029H) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF   STATUS, RP0

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF   STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

```



```
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00029H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 00029H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
```

```

M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 00029H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (05DH) == 0)
M   CLRF  _SINEVAL + 00029H
M   ELSE
00AF 305D   M   MOVLW  LOW (05DH)
00B0 00CA   M   MOVWF  _SINEVAL + 00029H
M   ENDIF

```

00275

00276 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00088 sineval[42] = 85

00277 MOVE?CB 055H, _SINEVAL + 0002AH

M CHK?RP _SINEVAL + 0002AH

M IF (((_SINEVAL + 0002AH) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 0002AH) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
```

```

M   ENDIF
00000001   M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 0002AH) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 0002AH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 2)
M     BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (055H) == 0)
M     CLRF  _SINEVAL + 0002AH
M   ELSE
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

00B1 3055 M MOVLW LOW (055H)

00B2 00CB M MOVWF _SINEVAL + 0002AH

 M ENDIF

00278

00279 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00089 sineval[43] = 77

00280 MOVE?CB 04DH, _SINEVAL + 0002BH

 M CHK?RP _SINEVAL + 0002BH

 M IF (((_SINEVAL + 0002BH) & 180H) == 0)

 M IF (PREV_BANK == 1)

 M BCF STATUS, RPO

 M ENDIF

 M IF (PREV_BANK == 2)

 M BCF STATUS, RP1

 M ENDIF

 M IF (PREV_BANK == 3)

 M BCF STATUS, RPO

 M BCF STATUS, RP1

 M ENDIF

 M PREV_BANK = 0


```
M   ENDIF

M

M   IF (((_SINEVAL + 0002BH) & 180H) == 80H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP1

M   ENDIF

00000001   M PREV_BANK = 1

M   ENDIF

M

M   IF (((_SINEVAL + 0002BH) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)
```

```
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0002BH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (04DH) == 0)
M   CLRF  _SINEVAL + 0002BH
M   ELSE
00B3 304D   M   MOVLW  LOW (04DH)
00B4 00CC   M   MOVWF  _SINEVAL + 0002BH
M   ENDIF
00281
00282 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00090 sineval[44] = 69
00283   MOVE?CB 045H, _SINEVAL + 0002CH
M   CHK?RP _SINEVAL + 0002CH
```

```
M IF ((_SINEVAL + 0002CH) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF ((_SINEVAL + 0002CH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
```

```
00000001      M PREV_BANK = 1
              M  ENDIF
              M
              M  IF ((_SINEVAL + 0002CH) & 180H) == 100H)
              M  IF (PREV_BANK == 0)
              M    BSF  STATUS, RP1
              M  ENDIF
              M  IF (PREV_BANK == 1)
              M    BCF  STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0002CH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
```

```

M PREV_BANK = 3

M  ENDIF

M  IF (LOW (045H) == 0)

M    CLRF  _SINEVAL + 0002CH

M  ELSE

00B5 3045      M    MOVLW  LOW (045H)
00B6 00CD      M    MOVWF  _SINEVAL + 0002CH

M  ENDIF

00284

00285 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00091  sineval[45] = 62

00286      MOVE?CB 03EH, _SINEVAL + 0002DH

M    CHK?RP  _SINEVAL + 0002DH

M  IF (((_SINEVAL + 0002DH) & 180H) == 0)

M    IF (PREV_BANK == 1)

M      BCF  STATUS, RPO

M    ENDIF

M    IF (PREV_BANK == 2)

M      BCF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M      BCF  STATUS, RPO

M      BCF  STATUS, RP1

M    ENDIF

M PREV_BANK = 0

M  ENDIF

```

```
M
M IF ((_SINEVAL + 0002DH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 0002DH) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
```

```

M
M IF ((_SINEVAL + 0002DH) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (03EH) == 0)
M CLRF _SINEVAL + 0002DH
M ELSE
00B7 303E M MOVLW LOW (03EH)
00B8 00CE M MOVWF _SINEVAL + 0002DH
M ENDIF
00287
00288 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00092 sineval[46] = 56
00289 MOVE?CB 038H, _SINEVAL + 0002EH
M CHK?RP _SINEVAL + 0002EH
M IF ((_SINEVAL + 0002EH) & 180H) == 0)

```

```
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   PREV_BANK = 0
M   ENDIF
M
M   IF ((_SINEVAL + 0002EH) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M   PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 0002EH) & 180H) == 100H)
```

```
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0002EH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
```

```
M   ENDIF

M   IF (LOW (038H) == 0)

M     CLRF  _SINEVAL + 0002EH

M   ELSE

00B9 3038      M     MOVLW  LOW (038H)

00BA 00CF      M     MOVWF  _SINEVAL + 0002EH

M   ENDIF

00290

00291 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00093  sineval[47] = 50
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00292    MOVE?CB 032H, _SINEVAL + 0002FH
M    CHK?RP _SINEVAL + 0002FH
M    IF (((_SINEVAL + 0002FH) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 0002FH) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
```

```
M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RP0

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP1

M   ENDIF

00000001    M PREV_BANK = 1

M   ENDIF

M

M   IF (((_SINEVAL + 0002FH) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP0

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M
```



```
M  IF ((_SINEVAL + 0002FH) & 180H) == 180H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 2)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF    STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
M    IF (LOW (032H) == 0)
M    CLR    _SINEVAL + 0002FH
M    ELSE
00BB 3032    M    MOVLW    LOW (032H)
00BC 00D0    M    MOVWF    _SINEVAL + 0002FH
M    ENDIF
00293
00294 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00094    sineval[48] = 44
00295    MOVE?CB 02CH, _SINEVAL + 00030H
M    CHK?RP    _SINEVAL + 00030H
M    IF (((_SINEVAL + 00030H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
```

```

M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00030H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00030H) & 180H) == 100H)
M    IF (PREV_BANK == 0)

```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 00030H) & 180H) == 180H)
M     IF (PREV_BANK == 0)
M       BSF  STATUS, RPO
M       BSF  STATUS, RP1
M     ENDIF
M     IF (PREV_BANK == 1)
M       BSF  STATUS, RP1
M     ENDIF
M     IF (PREV_BANK == 2)
M       BSF  STATUS, RPO
M     ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (02CH) == 0)
M     CLRF  _SINEVAL + 00030H
M   ELSE
```

```

00BD 302C      M    MOVLW  LOW (02CH)
00BE 00D1      M    MOVWF  _SINEVAL + 00030H

      M    ENDIF

00296

00297 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00095  sineval[49] = 40
00298      MOVE?CB 028H, _SINEVAL + 00031H

      M    CHK?RP  _SINEVAL + 00031H
      M    IF (((_SINEVAL + 00031H) & 180H) == 0)
      M    IF (PREV_BANK == 1)
      M    BCF  STATUS, RPO
      M    ENDIF
      M    IF (PREV_BANK == 2)
      M    BCF  STATUS, RP1
      M    ENDIF
      M    IF (PREV_BANK == 3)
      M    BCF  STATUS, RPO
      M    BCF  STATUS, RP1
      M    ENDIF
      M    PREV_BANK = 0
      M    ENDIF
      M
      M    IF (((_SINEVAL + 00031H) & 180H) == 80H)
      M    IF (PREV_BANK == 0)
      M    BSF  STATUS, RPO
      M    ENDIF

```

```
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M
M IF ((_SINEVAL + 00031H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00031H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
```



```

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RP0

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (028H) == 0)

M   CLRF  _SINEVAL + 00031H

M   ELSE

00BF 3028      M   MOVLW  LOW (028H)

00C0 00D2      M   MOVWF  _SINEVAL + 00031H

M   ENDIF

00299

00300 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00096  sineval[50] = 36

00301      MOVE?CB 024H, _SINEVAL + 00032H

M   CHK?RP  _SINEVAL + 00032H

M   IF (((_SINEVAL + 00032H) & 180H) == 0)

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RP0

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP0
M   BCF STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00032H) & 180H) == 80H)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 00032H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
```

```

M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00032H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (024H) == 0)
M    CLRF  _SINEVAL + 00032H
M    ELSE
00C1 3024    M    MOVLW  LOW (024H)

```

00C2 00D3 M MOVWF _SINEVAL + 00032H

M ENDIF

00302

00303 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00097 sineval[51] = 32

00304 MOVE?CB 020H, _SINEVAL + 00033H

M CHK?RP _SINEVAL + 00033H

M IF (((_SINEVAL + 00033H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 2)
M     BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M     BCF  STATUS, RP0
M     BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00033H) & 180H) == 80H)
M     IF (PREV_BANK == 0)
M       BSF  STATUS, RP0
M     ENDIF
M     IF (PREV_BANK == 2)
M       BSF  STATUS, RP0
M       BCF  STATUS, RP1
M     ENDIF
```

```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00033H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00033H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
```

```
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (020H) == 0)
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

                M    CLRF  _SINEVAL + 00033H
                M    ELSE
00C3 3020      M    MOVLW  LOW (020H)
00C4 00D4      M    MOVWF  _SINEVAL + 00033H
                M    ENDIF

00305
00306 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00098  sineval[52] = 29
00307      MOVE?CB 01DH, _SINEVAL + 00034H
                M    CHK?RP  _SINEVAL + 00034H
                M    IF (((_SINEVAL + 00034H) & 180H) == 0)
                M    IF (PREV_BANK == 1)
                M    BCF  STATUS, RPO
                M    ENDIF
                M    IF (PREV_BANK == 2)
                M    BCF  STATUS, RP1
                M    ENDIF
                M    IF (PREV_BANK == 3)
                M    BCF  STATUS, RPO
                M    BCF  STATUS, RP1
    
```

```

M   ENDIF

M PREV_BANK = 0

M   ENDIF

M

M   IF ((_SINEVAL + 00034H) & 180H) == 80H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RP1

M   ENDIF

00000001    M PREV_BANK = 1

M   ENDIF

M

M   IF ((_SINEVAL + 00034H) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RPO

M   BSF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 00034H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT
 VALUE

```

M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (01DH) == 0)
M    CLRF  _SINEVAL + 00034H
M    ELSE
00C5 301D    M    MOVLW  LOW (01DH)
00C6 00D5    M    MOVWF  _SINEVAL + 00034H
M    ENDIF
00308
00309 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00099  sineval[53] = 28
    
```

```
00310    MOVE?CB 01CH, _SINEVAL + 00035H
M    CHK?RP _SINEVAL + 00035H
M    IF (((_SINEVAL + 00035H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00035H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
```

```
    M    BCF  STATUS, RP1
    M    ENDIF
00000001    M  PREV_BANK = 1
    M    ENDIF
    M
    M    IF ((_SINEVAL + 00035H) & 180H) == 100H)
    M    IF (PREV_BANK == 0)
    M    BSF  STATUS, RP1
    M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF (((_SINEVAL + 00035H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
```

```

M    BSF    STATUS, RPO

M    ENDIF

M PREV_BANK = 3

M    ENDIF

M    IF (LOW (01CH) == 0)

M    CLRF  _SINEVAL + 00035H

M    ELSE

00C7 301C    M    MOVLW  LOW (01CH)

00C8 00D6    M    MOVWF  _SINEVAL + 00035H

M    ENDIF

00311

00312 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00100 sineval[54] = 26

00313    MOVE?CB 01AH, _SINEVAL + 00036H

M    CHK?RP _SINEVAL + 00036H

M    IF (((_SINEVAL + 00036H) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF  STATUS, RPO

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF  STATUS, RPO

M    BCF  STATUS, RP1

M    ENDIF

```



```
M PREV_BANK = 0
M  ENDIF
M
M  IF ((_SINEVAL + 00036H) & 180H) == 80H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M  ENDIF
M  IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```

M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00036H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
```

```

M PREV_BANK = 2

M   ENDIF

M

M   IF ((_SINEVAL + 00036H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RP0

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M     BSF  STATUS, RP0

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (01AH) == 0)

M     CLRF  _SINEVAL + 00036H

M   ELSE

00C9 301A      M     MOVLW  LOW (01AH)

00CA 00D7      M     MOVWF  _SINEVAL + 00036H

M   ENDIF

00314

00315 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00101  sineval[55] = 26

00316      MOVE?CB 01AH, _SINEVAL + 00037H

```

```
M    CHK?RP _SINEVAL + 00037H
M    IF ((_SINEVAL + 00037H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   BCF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M  PREV_BANK = 0
M   ENDIF
M
M  IF ((_SINEVAL + 00037H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001  M  PREV_BANK = 1
M   ENDIF
```

```
M
M IF ((_SINEVAL + 00037H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00037H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
```

```
M    ENDIF

M PREV_BANK = 3

M    ENDIF

M    IF (LOW (01AH) == 0)

M        CLRF    _SINEVAL + 00037H

M    ELSE

00CB 301A    M    MOVLW    LOW (01AH)

00CC 00D8    M    MOVWF    _SINEVAL + 00037H

M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

00317

00318 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00102 sineval[56] = 26

00319 MOVE?CB 01AH, _SINEVAL + 00038H

M CHK?RP _SINEVAL + 00038H

M IF (((_SINEVAL + 00038H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((_SINEVAL + 00038H) & 180H) == 80H)


```

M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 00038H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2

```

```
M   ENDIF
M
M   IF ((_SINEVAL + 00038H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (01AH) == 0)
M   CLRF  _SINEVAL + 00038H
M   ELSE
00CD 301A   M   MOVLW  LOW (01AH)
00CE 00D9   M   MOVWF  _SINEVAL + 00038H
M   ENDIF
00320
00321 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00103 sineval[57] = 28
00322   MOVE?CB 01CH, _SINEVAL + 00039H
M   CHK?RP _SINEVAL + 00039H
M   IF (((_SINEVAL + 00039H) & 180H) == 0)
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
```

```
M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00039H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
```

```
M  IF ((_SINEVAL + 00039H) & 180H) == 100H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   BCF  STATUS, RPO
M   ENDIF
M  PREV_BANK = 2
M   ENDIF
M
M  IF ((_SINEVAL + 00039H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M  PREV_BANK = 3
M   ENDIF
M  IF (LOW (01CH) == 0)
```

```

M    CLRF  _SINEVAL + 00039H

M    ELSE

00CF 301C    M    MOVLW  LOW (01CH)

00D0 00DA    M    MOVWF  _SINEVAL + 00039H

M    ENDIF

00323

00324 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00104  sineval[58] = 29

00325    MOVE?CB 01DH, _SINEVAL + 0003AH

M    CHK?RP  _SINEVAL + 0003AH

M    IF (((_SINEVAL + 0003AH) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF  STATUS, RPO

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF  STATUS, RPO

M    BCF  STATUS, RP1

M    ENDIF

M    PREV_BANK = 0

M    ENDIF

M

M    IF (((_SINEVAL + 0003AH) & 180H) == 80H)

M    IF (PREV_BANK == 0)

```

```
M    BSF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00000001      M PREV_BANK = 1
              M   ENDIF
              M
              M   IF (((_SINEVAL + 0003AH) & 180H) == 100H)
              M     IF (PREV_BANK == 0)
              M       BSF  STATUS, RP1
              M     ENDIF
              M   IF (PREV_BANK == 1)
              M     BCF  STATUS, RPO
              M     BSF  STATUS, RP1
              M   ENDIF
              M   IF (PREV_BANK == 3)
              M     BCF  STATUS, RPO
              M   ENDIF
              M PREV_BANK = 2
              M   ENDIF
              M
              M   IF (((_SINEVAL + 0003AH) & 180H) == 180H)
              M     IF (PREV_BANK == 0)
```

```

M    BSF    STATUS, RPO
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
M    IF (LOW (01DH) == 0)
M    CLRF   _SINEVAL + 0003AH
M    ELSE
00D1 301D    M    MOVLW  LOW (01DH)
00D2 00DB    M    MOVWF  _SINEVAL + 0003AH
M    ENDIF
00326
00327 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00105 sineval[59] = 32
00328    MOVE?CB 020H, _SINEVAL + 0003BH
M    CHK?RP _SINEVAL + 0003BH
M    IF (((_SINEVAL + 0003BH) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF   STATUS, RPO
M    ENDIF

```

```
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M
M IF ((_SINEVAL + 0003BH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 0003BH) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
```

```
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0003BH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (020H) == 0)
M    CLRF  _SINEVAL + 0003BH
```

```
        M   ELSE
00D3 3020      M   MOVLW  LOW (020H)
00D4 00DC      M   MOVWF  _SINEVAL + 0003BH

        M   ENDIF

00329
00330 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00106  sineval[60] = 36
00331      MOVE?CB 024H, _SINEVAL + 0003CH
        M   CHK?RP  _SINEVAL + 0003CH
        M   IF (((_SINEVAL + 0003CH) & 180H) == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF ((_SINEVAL + 0003CH) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
```

```

M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF (((_SINEVAL + 0003CH) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0003CH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0

```



```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (LOW (024H) == 0)
M   CLRF  _SINEVAL + 0003CH
M   ELSE
00D5 3024      M   MOVLW  LOW (024H)
00D6 00DD      M   MOVWF  _SINEVAL + 0003CH
M   ENDIF

00332
00333 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00107 sineval[61] = 40
00334      MOVE?CB 028H, _SINEVAL + 0003DH
M   CHK?RP  _SINEVAL + 0003DH
M   IF (((_SINEVAL + 0003DH) & 180H) == 0)
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)

```

```

M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF ((_SINEVAL + 0003DH) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 0003DH) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)

```

```
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   IF ((_SINEVAL + 0003DH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
M   IF (LOW (028H) == 0)
M   CLRF  _SINEVAL + 0003DH
M   ELSE
00D7 3028      M   MOVLW  LOW (028H)
00D8 00DE      M   MOVWF  _SINEVAL + 0003DH
M   ENDIF

```

00335

00336 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00108 sineval[62] = 44

00337 MOVE?CB 02CH, _SINEVAL + 0003EH

M CHK?RP _SINEVAL + 0003EH

M IF (((_SINEVAL + 0003EH) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

M PREV_BANK = 0

M ENDIF

M

M IF (((_SINEVAL + 0003EH) & 180H) == 80H)

M IF (PREV_BANK == 0)

M BSF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BSF STATUS, RPO

M BCF STATUS, RP1

```
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 0003EH) & 180H) == 100H)
M    IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   BSF   STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF   STATUS, RPO
M   BSF   STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF   STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((_SINEVAL + 0003EH) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF   STATUS, RPO
M   BSF   STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF   STATUS, RP1
```



```

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF   STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (02CH) == 0)

M   CLRF  _SINEVAL + 0003EH

M   ELSE

00D9 302C   M   MOVLW  LOW (02CH)

00DA 00DF   M   MOVWF  _SINEVAL + 0003EH

M   ENDIF

00338

00339 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP   00109 sineval[63] = 50

00340   MOVE?CB 032H, _SINEVAL + 0003FH

M   CHK?RP _SINEVAL + 0003FH

M   IF (((_SINEVAL + 0003FH) & 180H) == 0)

M   IF (PREV_BANK == 1)

M   BCF   STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF   STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF   STATUS, RPO

```

```
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF ((_SINEVAL + 0003FH) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF (((_SINEVAL + 0003FH) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```

```

M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 0003FH) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (032H) == 0)
M    CLRF  _SINEVAL + 0003FH
M    ELSE
00DB 3032    M    MOVLW  LOW (032H)
00DC 00E0    M    MOVWF  _SINEVAL + 0003FH
M    ENDIF
00341

```

00342 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00110 sineval[64] = 56

00343 MOVE?CB 038H, _SINEVAL + 00040H

M CHK?RP _SINEVAL + 00040H

M IF (((_SINEVAL + 00040H) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RPO
M   BCF STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00040H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RPO
M   BCF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP1
M   ENDIF
```

```
00000001      M PREV_BANK = 1

M   ENDIF

M

M   IF ((_SINEVAL + 00040H) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BCF  STATUS, RPO

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M     BCF  STATUS, RPO

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF ((_SINEVAL + 00040H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RPO

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BSF  STATUS, RP1

M   ENDIF
```

```
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (038H) == 0)
M    CLRF  _SINEVAL + 00040H
M    ELSE
00DD 3038    M    MOVLW  LOW (038H)
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00DE 00E1      M   MOVWF  _SINEVAL + 00040H
      M   ENDIF
00344
00345 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00111 sineval[65] = 62
00346      MOVE?CB 03EH, _SINEVAL + 00041H
      M   CHK?RP  _SINEVAL + 00041H
      M   IF (((_SINEVAL + 00041H) & 180H) == 0)
      M   IF (PREV_BANK == 1)
      M   BCF  STATUS, RPO
      M   ENDIF
      M   IF (PREV_BANK == 2)
      M   BCF  STATUS, RP1
      M   ENDIF
      M   IF (PREV_BANK == 3)
      M   BCF  STATUS, RPO
      M   BCF  STATUS, RP1
      M   ENDIF
      M   PREV_BANK = 0
      M   ENDIF
```

```

M
M IF ((_SINEVAL + 00041H) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
00000001 M PREV_BANK = 1
M ENDIF
M
M IF ((_SINEVAL + 00041H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO

```

```
M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF ((_SINEVAL + 00041H) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF    STATUS, RPO

M    BSF    STATUS, RP1

M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT
 VALUE

```

        M   IF (PREV_BANK == 1)
        M   BSF  STATUS, RP1
        M   ENDIF
        M   IF (PREV_BANK == 2)
        M   BSF  STATUS, RPO
        M   ENDIF
        M PREV_BANK = 3
        M   ENDIF
        M   IF (LOW (03EH) == 0)
        M   CLRF  _SINEVAL + 00041H
        M   ELSE
00DF 303E      M   MOVLW  LOW (03EH)
00E0 00E2      M   MOVWF  _SINEVAL + 00041H
        M   ENDIF
00347
00348 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00112 sineval[66] = 69
00349      MOVE?CB 045H, _SINEVAL + 00042H
        M   CHK?RP  _SINEVAL + 00042H
        M   IF (((_SINEVAL + 00042H) & 180H) == 0)
    
```

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 0
M ENDIF
M
M IF (((_SINEVAL + 00042H) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
```

```
00000001 M PREV_BANK = 1
```

```
M   ENDIF
M
M   IF ((_SINEVAL + 00042H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF   STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF   STATUS, RP0
M   BSF   STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 00042H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RPO
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RPO
M   ENDIF
M PREV_BANK = 3
```

```

M   ENDIF

M   IF (LOW (045H) == 0)

M     CLRF  _SINEVAL + 00042H

M   ELSE

00E1 3045      M     MOVLW  LOW (045H)

00E2 00E3      M     MOVWF  _SINEVAL + 00042H

M   ENDIF

00350

00351 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00113  sineval[67] = 77

00352      MOVE?CB 04DH, _SINEVAL + 00043H

M     CHK?RP  _SINEVAL + 00043H

M   IF (((_SINEVAL + 00043H) & 180H) == 0)

M     IF (PREV_BANK == 1)

M       BCF  STATUS, RP0

M     ENDIF

M     IF (PREV_BANK == 2)

M       BCF  STATUS, RP1

M     ENDIF

M     IF (PREV_BANK == 3)

M       BCF  STATUS, RP0

M       BCF  STATUS, RP1

M     ENDIF

M   PREV_BANK = 0

M   ENDIF

M

```



```
M  IF ((_SINEVAL + 00043H) & 180H) == 80H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M  ENDIF
M  IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   BCF  STATUS, RP1
M   ENDIF
00000001  M PREV_BANK = 1
M   ENDIF
M
M   IF ((_SINEVAL + 00043H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
```

```

M   IF (((_SINEVAL + 00043H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (04DH) == 0)
M   CLRF  _SINEVAL + 00043H
M   ELSE
00E3 304D   M   MOVLW  LOW (04DH)
00E4 00E4   M   MOVWF  _SINEVAL + 00043H
M   ENDIF
00353
00354 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP   00114  sineval[68] = 85
00355   MOVE?CB 055H, _SINEVAL + 00044H
M   CHK?RP  _SINEVAL + 00044H
M   IF (((_SINEVAL + 00044H) & 180H) == 0)
M   IF (PREV_BANK == 1)

```

```
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00044H) & 180H) == 80H)
M     IF (PREV_BANK == 0)
M       BSF STATUS, RPO
M     ENDIF
M     IF (PREV_BANK == 2)
M       BSF STATUS, RPO
M       BCF STATUS, RP1
M     ENDIF
M     IF (PREV_BANK == 3)
M       BCF STATUS, RP1
M     ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00044H) & 180H) == 100H)
M     IF (PREV_BANK == 0)
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_SINEVAL + 00044H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
```

```
M   IF (LOW (055H) == 0)
M   CLRF  _SINEVAL + 00044H
M   ELSE
00E5 3055      M   MOVLW  LOW (055H)
00E6 00E5      M   MOVWF  _SINEVAL + 00044H
M   ENDIF
00356
00357 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00115  sineval[69] = 93
00358      MOVE?CB 05DH, _SINEVAL + 00045H
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M    CHK?RP _SINEVAL + 00045H
M    IF (((_SINEVAL + 00045H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00045H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
```



```

M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001  M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00045H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_SINEVAL + 00045H) & 180H) == 180H)

```

```
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (05DH) == 0)
M     CLRF  _SINEVAL + 00045H
M   ELSE
00E7 305D   M     MOVLW  LOW (05DH)
00E8 00E6   M     MOVWF  _SINEVAL + 00045H
M   ENDIF

00359
00360 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP   00116  sineval[70] = 102
00361     MOVE?CB 066H, _SINEVAL + 00046H
M     CHK?RP  _SINEVAL + 00046H
M   IF (((_SINEVAL + 00046H) & 180H) == 0)
M     IF (PREV_BANK == 1)
M       BCF  STATUS, RPO
M     ENDIF
M     IF (PREV_BANK == 2)
M       BCF  STATUS, RP1
```

```

M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 0
M   ENDIF
M
M   IF (((_SINEVAL + 00046H) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
00000001 M PREV_BANK = 1
M   ENDIF
M
M   IF (((_SINEVAL + 00046H) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M
M   IF (((_SINEVAL + 00046H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RP0
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RP0
M   ENDIF
M   PREV_BANK = 3
M   ENDIF
M   IF (LOW (066H) == 0)
M   CLRF  _SINEVAL + 00046H
M   ELSE
00E9 3066      M   MOVLW  LOW (066H)
```

```

00EA 00E7      M    MOVWF  _SINEVAL + 00046H

      M    ENDIF

00362

00363 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00117  sineval[71] = 110

00364      MOVE?CB 06EH, _SINEVAL + 00047H

      M    CHK?RP  _SINEVAL + 00047H

      M    IF (((_SINEVAL + 00047H) & 180H) == 0)

      M    IF (PREV_BANK == 1)

      M    BCF  STATUS, RPO

      M    ENDIF

      M    IF (PREV_BANK == 2)

      M    BCF  STATUS, RP1

      M    ENDIF

      M    IF (PREV_BANK == 3)

      M    BCF  STATUS, RPO

      M    BCF  STATUS, RP1

      M    ENDIF

      M    PREV_BANK = 0

      M    ENDIF

      M

      M    IF (((_SINEVAL + 00047H) & 180H) == 80H)

      M    IF (PREV_BANK == 0)

      M    BSF  STATUS, RPO

      M    ENDIF

      M    IF (PREV_BANK == 2)

```

```
M    BSF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
00000001    M PREV_BANK = 1
M    ENDIF
M
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF ((_SINEVAL + 00047H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_SINEVAL + 00047H) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
```

```

M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (06EH) == 0)
M    CLRF  _SINEVAL + 00047H
M    ELSE
00EB 306E    M    MOVLW  LOW (06EH)
00EC 00E8    M    MOVWF  _SINEVAL + 00047H
M    ENDIF
00365
00366 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00118 sineval[72] =119
00367    MOVE?CB 077H, _SINEVAL + 00048H
M    CHK?RP _SINEVAL + 00048H
M    IF (((_SINEVAL + 00048H) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF

```

```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 0
M    ENDIF
M
M    IF (((_SINEVAL + 00048H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
00000001 M PREV_BANK = 1
M    ENDIF
M
M    IF ((_SINEVAL + 00048H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
```

```

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((_SINEVAL + 00048H) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (077H) == 0)

M   CLRF  _SINEVAL + 00048H

M   ELSE

00ED 3077   M   MOVLW  LOW (077H)

00EE 00E9   M   MOVWF  _SINEVAL + 00048H

```

```

    M   ENDIF

00368

00369 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00122  INCLUDE "DT_INTS-
14.bas" ; Base Interrupt Syst

    em

00370 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS  00015  DEFINE DT_INTS_VERSION
110

00371 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS  00016  DEFINE INTHAND
INT_ENTRY

00372

00373 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS  00045  ASM

00374
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00375 ASM?
M RST?RP
M IF ((PREV_BANK & 1) != 0)
00EF 1283 M BCF STATUS, RPO
M ENDIF
M IF ((PREV_BANK & 2) != 0)
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
00376
00377 IFDEF PM_USED ; verify MPASM is the assembler
00378 "ERROR: DT_INTS does not support the PM assembler, USE MPASM"
00379 ENDIF
00380
00381 ;-----
00382 IFDEF REENTERUSED
00383 IFDEF REENTERVERSION
00384 IF (REENTERVERSION < 34)
00385 ERROR "Wrong version of ReEnterPBP.bas - Ver 3.4 or higher required"
```

```
00386   ENDIF
00387   ELSE
00388     ERROR "Wrong version of ReEnterPBP.bas - Ver 3.4 or higher required
00389   ENDIF
00390 ENDIF
00391
00392 ;-----
00393   IF (BANK0_END == 0X7F)
00394     IFDEF BANK1_END
00395       IF (BANK1_END == 0XEF) ; doesn't find 12F683
0001     00396         VARIABLE ACCESSRAM = 1
00397     ELSE
00398         VARIABLE ACCESSRAM = 0
00399     ENDIF
00400   ELSE
00401     VARIABLE ACCESSRAM = 0
00402   ENDIF
00403   ELSE
00404     VARIABLE ACCESSRAM = 0
00405   ENDIF
00406
00407 ;-----
00408 #DEFINE ORCHANGE OR CHANGE TO WSAVE BYTE $70 SYSTEM
00409 ADDWSAVE MACRO B
00410   IF (B == 0)
```



```
00411 IF (ACCESSRAM == 1)
00412 ERROR " Add:" WSAVE VAR BYTE $70 SYSTEM
00413 ELSE
00414 ERROR " Add:" WSAVE VAR BYTE $20 SYSTEM
00415 ENDIF
00416 ENDIF
00417 IF (B == 1)
00418 IF (ACCESSRAM == 1)
00419 ERROR " Add:" WSAVE1 VAR BYTE $A0 SYSTEM, ORCHANGE
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00420 ELSE
00421 ERROR "            Add:"    WSAVE1 VAR BYTE $A0 SYSTEM
00422 ENDIF
00423 ENDIF
00424 IF (B == 2)
00425 IF (ACCESSRAM == 1)
00426 ERROR " Add:"    WSAVE2 VAR BYTE $120 SYSTEM, ORCHANGE
00427 ELSE
00428 ERROR "            Add:"    WSAVE2 VAR BYTE $120 SYSTEM
00429 ENDIF
00430 ENDIF
00431 IF (B == 3)
00432 IF (ACCESSRAM == 1)
00433 ERROR " Add:"    WSAVE3 VAR BYTE $1A0 SYSTEM, ORCHANGE
00434 ELSE
00435 ERROR "            Add:"    WSAVE3 VAR BYTE $1A0 SYSTEM
00436 ENDIF
00437 ENDIF
00438 ENDM
```

```
00439
00440 #DEFINE WSAVEE1(B) CHIP HAS RAM IN BANK#V(B), BUT WSAVE#V(B) WAS NOT
FOUND.
00441 ;#define WsaveE2(B) Uncomment wsave#v(B) in the DT_INTS-14.bas file.
00442 #DEFINE WSAVECOULDBE THIS CHIP HAS ACCESS RAM AT $70
00443
00444 #DEFINE WSAVEERROR(B) ERROR WSAVEE1(B)
00445 #ifndef FSR0L ; not a 16F1
00446 #ifndef WSAVE
00447 ; if (ACCESSRAM == 1)
00448     ERROR WSAVE VARIABLE NOT FOUND,
00449     ADDWSAVE(0)
00450     VARIABLE WSAVE = 0 ; stop further wsave errors
00451 ; else
00452
00453 ; endif
00454 ELSE
00455     IF (WSAVE == 0X70)
00456     IF (ACCESSRAM == 0)
00457         ERROR THIS CHIP DOES NOT HAVE ACCESSRAM AT $70, CHANGE TO WSAVE
VAR BYTE $20 SYSTEM
00458     ENDIF
00459 ELSE
00460     IF (WSAVE != 0X20)
00461         ERROR WSAVE MUST BE EITHER $20 OR $70
00462     ENDIF
```

```
00463   ENDIF
00464   ENDIF
00465   IFDEF BANK1_START
00466       IFNDEF WSAVE1
00467           IFDEF WSAVE
00468               IF (WSAVE != 0X70)
00469                   WSAVEERROR(1)
00470                   ADDWSAVE(1)
00471               ENDIF
00472           ELSE
```

LOC	OBJECT CODE	LINE	SOURCE TEXT
	VALUE		
00473			IF (ACCESSRAM == 1)
00474			IF (WSAVE != 0X70)
00475			WSAVECOULDBE
00476			ENDIF
00477			ENDIF
00478			ENDIF
00479			ENDIF
00480			ENDIF
00481			IFDEF BANK2_START
00482			IFNDEF WSAVE2
00483			IFDEF WSAVE
00484			IF (WSAVE != 0X70)
00485			WSAVEERROR(2)
00486			ADDWSAVE(2)
00487			ENDIF
00488			ENDIF
00489			ENDIF
00490			ENDIF
00491			IFDEF BANK3_START

```
00492  IFNDEF WSAVE3
00493  IFDEF WSAVE
00494  IF (WSAVE != 0X70)
00495  WSAVEERROR(3)
00496  ADDWSAVE(3)
00497  ENDIF
00498  ENDIF
00499  ENDIF
00500  ENDIF
00501
00502
00503  ENDIF
00504
00505
00506  ENDASM?
00507
00508
00509 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00175 ASM
00510
00511  ASM?
M  RST?RP
M  IF ((PREV_BANK & 1) != 0)
M  BCF  STATUS, RPO
M  ENDIF
M  IF ((PREV_BANK & 2) != 0)
```

M BCF STATUS, RP1

M ENDIF

00000000 M PREV_BANK = 0

00512

00000000 00513 ASM = 0

00000000 00514 ASM = 0

00000000 00515 ASM = 0

00000001 00516 PBP = 1

00000001 00517 PBP = 1

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

00000001 00518 PBP = 1

00000001 00519 YES = 1

00000001 00520 YES = 1

00000001 00521 YES = 1

00000000 00522 NO = 0

00000000 00523 NO = 0

00000000 00524 NO = 0

00525

00526

00527 #DEFINE ALL_INT INTCON,GIE, INTCON,GIE ;-- Global Interrupts *

00528 #DEFINE T1GATE_INT PIR1,TMR1GIF, PIE1,TMR1GIE ;-- Timer1 Gate *

00529 #DEFINE INT_INT INTCON,INTF, INTCON,INTE ;-- External INT

00530 #DEFINE GPC_INT INTCON,GPIF, INTCON,GPIE ;-- GPIO Int On Change *

00531 #DEFINE IOC_INT INTCON,IOCIF, INTCON,IOCIE ;-- Int On Change *

00532 #DEFINE RAC_INT INTCON,RAIF, INTCON,RAIE ;-- RA Port Change *

00533 #DEFINE RBC_INT INTCON,RBIF, INTCON,RBIE ;-- RB Port Change

00534 #DEFINE RABC_INT INTCON,RABIF, INTCON,RABIE ;-- RAB Port Change *

00535 IFDEF TOIF

00536 #DEFINE TMRO_INT INTCON,TOIF, INTCON,TOIE ;-- TMRO Overflow


```
00537 ELSE

00538 IFDEF TMR0IF

00539 #DEFINE TMR0_INT INTCON,TMR0IF, INTCON,TMR0IE ;-- TMR0 alternate sym

00540 ENDIF

00541 ENDIF

00542 IFDEF TMR1IF

00543 #DEFINE TMR1_INT PIR1,TMR1IF, PIE1,TMR1IE ;-- TMR1 Overflow

00544 ELSE

00545 IFDEF T1IF

00546 #DEFINE TMR1_INT PIR1,T1IF, PIE1,T1IE ;-- TMR1 alternate sym

00547 ENDIF

00548 ENDIF

00549 IFDEF TMR2IF

00550 #DEFINE TMR2_INT PIR1,TMR2IF, PIE1,TMR2IE ;-- TMR2 - PR2 Match

00551 ELSE

00552 #DEFINE TMR2_INT PIR1,T2IF, PIE1,T2IE ;-- TMR2 - PR2 Match alt

00553 ENDIF

00554 #DEFINE TMR4_INT PIR3,TMR4IF, PIE3,TMR4IE ;-- TMR4 - PR4 Match *

00555 #DEFINE TMR6_INT PIR3,TMR6IF, PIE3,TMR6IE ;-- TMR6 - PR6 Match *

00556 #DEFINE TX_INT PIR1,TXIF, PIE1,TXIE ;-- USART Transmit

00557 #DEFINE RX_INT PIR1,RCIF, PIE1,RCIE ;-- USART Receive

00558

00559 #DEFINE PSP_INT PIR1,PSPIF, PIE1,PSPIE ;-- Parallel Slave Port

00560 #DEFINE AD_INT PIR1,ADIF, PIE1,ADIE ;-- A/D Converter

00561
```

```
00562 IFDEF SSPIF
00563 #DEFINE SSP_INT PIR1,SSPIF, PIE1,SSPIE ;-- (M)SSP module
00564 #DEFINE BUS_INT PIR2,BCLIF, PIE2,BCLIE ;-- Bus Collision
00565 ELSE
00566 IFDEF SSP1IF
00567 #DEFINE SSP_INT PIR1,SSP1IF, PIE1,SSP1IE ;-- (M)SSP module 1 *
00568 #DEFINE SSP1_INT PIR1,SSP1IF, PIE1,SSP1IE ; *
00569 #DEFINE BUS_INT PIR2,BCL1IF, PIE2,BCL1IE ;-- Bus Collision 1 *
00570 #DEFINE BUS1_INT PIR2,BCL1IF, PIE2,BCL1IE ; *
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

00571    ENDF
00572    IFDEF SSP2IF
00573    #DEFINE SSP2_INT PIR4,SSP2IF, PIE4,SSP2IE    ;-- (M)SSP module 2    *
00574    #DEFINE BUS2_INT PIR4,BCL2IF, PIE4,BCL2IE    ;-- Bus Collision 2    *
00575    ENDF
00576    ENDF
00577    #DEFINE CCP1_INT    PIR1,CCP1IF, PIE1,CCP1IE    ;-- CCP1
00578    #DEFINE CCP2_INT    PIR2,CCP2IF, PIE2,CCP2IE    ;-- CCP2
00579    #DEFINE CCP3_INT    PIR3,CCP3IF, PIE3,CCP3IE    ;-- CCP3            *
00580    #DEFINE CCP4_INT    PIR3,CCP4IF, PIE3,CCP4IE    ;-- CCP4            *
00581    #DEFINE CCP5_INT    PIR3,CCP5IF, PIE3,CCP5IE    ;-- CCP5            *
00582
00583    IFDEF CMIF
00584    IFDEF PIR2
00585    #DEFINE CMP_INT    PIR2,CMIF, PIE2,CMIE            ;-- Comparator
00586    ELSE
00587    #DEFINE CMP_INT    PIR1,CMIF, PIE1,CMIE
00588    ENDF
00589    ELSE

```

```

00590  IFDEF C1IF

00591  #DEFINE CMP_INT  PIR2,C1IF, PIE2,C1IE    ;-- Comparator 1    *
00592  #DEFINE CMP1_INT PIR2,C1IF, PIE2,C1IE    ;-- Comparator 1    *

00593  ENDIF

00594  IFDEF C2IF

00595  #DEFINE CMP2_INT PIR2,C2IF, PIE2,C2IE    ;-- Comparator 2    *

00596  ENDIF

00597  ENDIF

00598

00599  IFNDEF PIR2

00600  #DEFINE EE_INT   PIR1,EEIF, PIE1,EEIE
00601  #DEFINE OSCF_INT PIR1,OSFIF, PIE1,OSFIE    ;-- OSC Fail if no PIR2 *
00602  #DEFINE LVD_INT  PIR1,LVDIF, PIE1,LVDIE    ;-- Low-Voltage Detect *

00603  ELSE

00604  #DEFINE EE_INT   PIR2,EEIF, PIE2,EEIE    ;-- EEPROM/FLASH Write
00605  #DEFINE OSCF_INT PIR2,OSFIF, PIE2,OSFIE    ;-- OSC Fail      *
00606  #DEFINE LVD_INT  PIR2,LVDIF, PIE2,LVDIE    ;-- Low-Voltage Detect *

00607  ENDIF

00608

00609  #DEFINE LCD_INT  PIR2,LCDIF, PIE2,LCDIE    ;-- LCD controller  *
00610  #DEFINE CRYPT_INT PIR1,CRIF, PIE1,CRIE    ;-- KeeLoq Cryptographic*
00611  #DEFINE USB_INT  PIR1,USBIF, PIE1,USBIE    ;-- USB 16C745/765 only *

00612

00613

00614  ENDASM?

```

00615

00616

00617 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS 00278 ASM

00618

00619 ASM?

M RST?RP

M IF ((PREV_BANK & 1) != 0)

M BCF STATUS, RPO

M ENDIF

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF ((PREV_BANK & 2) != 0)
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
00620
00621 ;---[Returns the Address of a Label as a Word]-----
00622 GETADDRESS MACRO LABEL, WOUT
00623 CHK?RP WOUT
00624 MOVLW LOW LABEL ; get low byte
00625 MOVWF WOUT
00626 ; movlw High Label ; get high byte MPLAB 8.53 killed high
00627 MOVLW LABEL >> 8 ; get high byte
00628 MOVWF WOUT + 1
00629 ENDM
00630
00631 ;---[find correct bank for a BIT variable]-----
00632 CHKRPT MACRO REG, BIT
00633 CHK?RP REG
00634 ENDM
```

```

00635

00636 ;---[This creates the main Interrupt Service Routine (ISR)]-----
00637 INT_CREATE MACRO
00638 LOCAL OVERCREATE
00639 L?GOTO OVERCREATE
00640
00641 INT_ENTRY
00642 IFNDEF FSR0L
00643 IF (CODE_SIZE <= 2)
00644     MOVWF WSAVE    ; 1 copy W to wsave register
00645     SWAPF STATUS,W ; 2 swap status reg to be saved into W
00646     CLRF STATUS   ; 3 change to bank 0
00647     MOVWF SSAVE   ; 4 save status reg to a bank 0 register
00648     MOVF PCLATH,W ; 5 move PCLATH reg to be saved into W reg
00649     MOVWF PSAVE   ; 6 save PCLATH reg to a bank 0 register
00650 ENDIF
00651     MOVF FSR,W    ; 7 move FSR reg to be saved into W reg
00652     MOVWF FSAVE  ; 8 save FSR reg to a bank 0 register
00653 ELSE
00654     BANKSEL 0    ; BANK 0 for F1 chips
00655 ENDIF
00656 VARIABLE PREV_BANK = 0
00657 MOVE?CT 0, _VARS_SAVED
00658
00659 LIST_START

```

```
00660  IFDEF LOOPWHENSERVICED
00661  MOVE?CT 0, _SERVICED ; indicate nothing has been serviced
00662  ENDIF
00663
00664  INT_LIST           ; Expand the users list of interrupt handlers
00665                  ; INT_LIST macro must be defined in main program
00666
00667  IFDEF LOOPWHENSERVICED
00668  BIT?GOTO 1, _SERVICED, LIST_START
```


LOC OBJECT CODE LINE SOURCE TEXT
 VALUE

```

00669  ENDIF

00670

00671  IFDEF REENTERUSED      ; if ReEnterPBP.bas was included

00672    CHKRP?T _VARS_SAVED

00673    BTFSS  _VARS_SAVED ; if PBP system vars have been saved

00674    GOTO   INT_EXIT

00675    L?GOTO _RESTOREPBP ; Restore PBP system Vars

00676  ENDIF

00677

00678 INT_EXIT

00679  VARIABLE PREV_BANK = 0

00680  IFNDEF FSR0L      ; if chip is not an F1 - restore context

00681    CLRF  STATUS    ; BANK 0

00682    MOVF  FSAVE,W   ; Restore the FSR reg

00683    MOVWF FSR

00684    MOVF  PSAVE,W   ; Restore the PCLATH reg

00685    MOVWF PCLATH

00686    SWAPF SSAVE,W  ; Restore the STATUS reg

00687    MOVWF STATUS
  
```

```

00688  SWAPF  WSAVE,F
00689  SWAPF  WSAVE,W      ; Restore W reg
00690  ENDIF
00691  RETFIE          ; Exit the interrupt routine
00692  ;-----
00693  LABEL?L OVERCREATE
00694  BSF    INTCON, 6    ; Enable Peripheral interrupts
00695  BSF    INTCON, 7    ; Enable Global interrupts
00696  ENDM
00697
00698
00699
00700  ENDASM?
00701
00702
00703 ; E:\4TH YEAR\PROJECT 4\MCS\DT_INTS-14.BAS  00358  ASM
00704
00705  ASM?
      M    RST?RP
      M    IF ((PREV_BANK & 1) != 0)
      M    BCF  STATUS, RP0
      M    ENDIF
      M    IF ((PREV_BANK & 2) != 0)
      M    BCF  STATUS, RP1
      M    ENDIF

```

```
00000000      M PREV_BANK = 0

00706

00707 ;---[Add an Interrupt Source to the user's list of INT Handlers]-----

00708 #INT_HANDLER MACRO FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,
TYPE,RESET

00709 LIST

00710 LOCAL AFTERSAVE, AFTERUSERROUTINE, NOINT

00711 IFDEF FLAGBIT

00712     CHK?RP ENBLEREG

00713     BTFSS ENBLEREG, ENABLEBIT ; if the INT is enabled
```

```

LOC OBJECT CODE  LINE SOURCE TEXT
VALUE

00714  GOTO  NOINT
00715  CHK?RP  FLAGREG
00716  BTFSS  FLAGREG, FLAGBIT      ; and the Flag set?
00717  GOTO  NOINT
00718  IFDEF LOOPWHENSERVICED
00719  MOVE?CT 1, _SERVICED
00720  ENDIF
00721
00722  IF (TYPE == PBP)           ; If INT handler is PBP
00723  IFDEF REENTERUSED
00724  BTFSC  _VARS_SAVED
00725  GOTO  AFTERSAVE
00726  GETADDRESS AFTERSAVE, _RETADDR
00727  L?GOTO _SAVEPBP           ; Save PBP system Vars
00728  LABEL?L AFTERSAVE
00729  ELSE
00730  ERROR REENTERPBP MUST BE INCLUDED TO USE PBP TYPE INTERRUPTS
00731  ENDIF
00732  ENDIF

```

```

00733   GETADDRESS AFTERUSERROUTINE, _RETADDR ; save return address
00734   L?GOTO LABEL ; goto the users INT handler
00735   LABEL?L AFTERUSERROUTINE
00736
00737   IF (RESET == YES)
00738       CHK?RP FLAGREG
00739       BCF FLAGREG, FLAGBIT ; reset flag (if specified)
00740   ENDIF
00741   ELSE
00742       INT_ERROR "INT_Handler"
00743   ENDIF
00744 NOINT
00745   BANKSEL 0
00746 PREV_BANK = 0
00747   ENDM
00748 ;-----
00749 #DEFINE INT_HANDLER(FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,
TYPE,RESET) #INT_HANDLER FLAGREG,FLAGBIT
, ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET
00750 IFNDEF INT_HANDLER
00751 #DEFINE INT_HANDLER(FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,
TYPE,RESET) #INT_HANDLER FLAGREG,FLAGBIT
, ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET
00752 #DEFINE INT_HANDLER(FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,
TYPE,RESET) #INT_HANDLER FLAGREG,FLAGBIT
, ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET

```

```
00753 #DEFINE INT_HANDLER(FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,  
TYPE,RESET) #INT_HANDLER FLAGREG,FLAGBIT
```

```
    , ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET
```

```
00754 #DEFINE INT_HANDLER(FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,  
TYPE,RESET) #INT_HANDLER FLAGREG,FLAGBIT
```

```
    , ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET
```

```
00755 #DEFINE INT_HANDLER(FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL,  
TYPE,RESET) #INT_HANDLER FLAGREG,FLAGBIT
```

```
    , ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET
```

```
00756 ENDIF
```

```
00757
```

```
00758 ;---[Returns from a "goto" subroutine]----- (RetAddr must be set first)---
```

```
00759 #INT_RETURN MACRO
```

```
00760    CHK?RP _RETADDR
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

00761   MOVF   _RETADDR + 1, W ; Set PCLATH with top byte of return address
00762   MOVWF  PCLATH
00763   MOVF   _RETADDR, W ; Go back to where we were
00764   MOVWF  PCL
00765   ENDM
00766 ;_____
00767 #DEFINE INT_RETURN #INT_RETURN
00768 #IFNDEF INT_RETURN
00769 #DEFINE INT_RETURN #INT_RETURN
00770 #DEFINE INT_RETURN #INT_RETURN
00771 #DEFINE INT_RETURN #INT_RETURN
00772 #DEFINE INT_RETURN #INT_RETURN
00773 #DEFINE INT_RETURN #INT_RETURN
00774 #ENDIF
00775
00776 ;---[Display not found error]-----
00777 INT_ERROR MACRO FROM
00778   ERROR FROM - INTERRUPT FLAG ( FLAGREG,FLAGBIT ) NOT FOUND.
00779   ENDM

```

```

00780
00781 ;---[Enable an interrupt source]-----
00782 IFNDEF INT_ENABLECLEARFIRST
00783 #DEFINE INT_ENABLECLEARFIRST 1 ; default to Clear First
00784 ENDIF ; use DEFINE INT_ENABLECLEARFIRST 0 to NOT clear First
00785
00786 #INT_ENABLE MACRO FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT
00787 IFDEF FLAGBIT
00788 IFDEF INT_ENABLECLEARFIRST
00789 IF (INT_ENABLECLEARFIRST == 1) ; if specified
00790 MOVE?CT 0, FLAGREG, FLAGBIT ; clear the flag first
00791 ENDIF
00792 ENDIF
00793 MOVE?CT 1, ENBLEREG, ENABLEBIT ; enable the INT source
00794 ELSE
00795 INT_ERROR "INT_ENABLE"
00796 ENDIF
00797 ENDM
00798 ;_____
00799 #DEFINE INT_ENABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_ENABLE
FLAGREG, FLAGBIT, ENBLEREG, ENABL
EBIT
00800 IFNDEF INT_ENABLE
00801 #DEFINE INT_ENABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_ENABLE
FLAGREG, FLAGBIT, ENBLEREG, ENABL
EBIT

```



```
00802 #DEFINE INT_ENABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_ENABLE
FLAGREG, FLAGBIT, ENBLEREG, ENABL
```

```
EBIT
```

```
00803 #DEFINE INT_ENABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_ENABLE
FLAGREG, FLAGBIT, ENBLEREG, ENABL
```

```
EBIT
```

```
00804 #DEFINE INT_ENABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_ENABLE
FLAGREG, FLAGBIT, ENBLEREG, ENABL
```

```
EBIT
```

```
00805 #DEFINE INT_ENABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_ENABLE
FLAGREG, FLAGBIT, ENBLEREG, ENABL
```

```
EBIT
```

```
00806 ENDIF
```

```
00807
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00808 ;---[Disable an interrupt source]-----
00809 #INT_DISABLE MACRO FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT
00810     IFDEF FLAGBIT
00811         MOVE?CT 0, ENBLEREG, ENABLEBIT     ; disable the INT source
00812     ELSE
00813         INT_ERROR "INT_DISABLE"
00814     ENDIF
00815 ENDM
00816 ;_____
00817 #DEFINE INT_DISABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_DISABLE
FLAGREG, FLAGBIT, ENBLEREG, ENA
    BLEBIT
00818 IFNDEF INT_DISABLE
00819 #DEFINE INT_DISABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_DISABLE
FLAGREG, FLAGBIT, ENBLEREG, ENA
    BLEBIT
00820 #DEFINE INT_DISABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_DISABLE
FLAGREG, FLAGBIT, ENBLEREG, ENA
    BLEBIT
00821 #DEFINE INT_DISABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_DISABLE
FLAGREG, FLAGBIT, ENBLEREG, ENA
```

```

BLEBIT

00822 #DEFINE INT_DISABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_DISABLE
FLAGREG, FLAGBIT, ENBLEREG, ENA

BLEBIT

00823 #DEFINE INT_DISABLE(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_DISABLE
FLAGREG, FLAGBIT, ENBLEREG, ENA

BLEBIT

00824 ENDIF

00825

00826 ;---[Clear an interrupt Flag]-----
00827 #INT_CLEAR MACRO FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT
00828     IFDEF FLAGBIT
00829         MOVE?CT 0, FLAGREG, FLAGBIT        ; clear the flag
00830     ELSE
00831         INT_ERROR "INT_CLEAR"
00832     ENDIF
00833 ENDM
00834 ;_____

00835 #DEFINE INT_CLEAR(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_CLEAR
FLAGREG, FLAGBIT, ENBLEREG, ENABLEB

IT

00836 IFNDEF INT_CLEAR

00837 #DEFINE INT_CLEAR(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_CLEAR
FLAGREG, FLAGBIT, ENBLEREG, ENABLEB

IT

00838 #DEFINE INT_CLEAR(FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_CLEAR
FLAGREG, FLAGBIT, ENBLEREG, ENABLEB

```

IT

00839 #DEFINE INT_CLEAR(FLAGSREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_CLEAR
FLAGSREG, FLAGBIT, ENBLEREG, ENABLEB

IT

00840 #DEFINE INT_CLEAR(FLAGSREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_CLEAR
FLAGSREG, FLAGBIT, ENBLEREG, ENABLEB

IT

00841 #DEFINE INT_CLEAR(FLAGSREG, FLAGBIT, ENBLEREG, ENABLEBIT) #INT_CLEAR
FLAGSREG, FLAGBIT, ENBLEREG, ENABLEB

IT

00842 ENDIF

00843

00844

00845 ENDASM?

00846

00847

00848 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00124 ASM

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00849
00850   ASM?
      M   RST?RP
      M   IF ((PREV_BANK & 1) != 0)
      M   BCF  STATUS, RPO
      M   ENDIF
      M   IF ((PREV_BANK & 2) != 0)
      M   BCF  STATUS, RP1
      M   ENDIF
00000000   M PREV_BANK = 0
00851
00852
00853 INT_LIST MACRO   ; IntSource,   Label, Type, ResetFlag?
00854   INT_HANDLER TMR1_INT, _SINE, ASM, YES
00855 ENDM
00856 INT_CREATE       ; Creates the interrupt processor
0000   M LOCAL OVERCREATE
      M   L?GOTO OVERCREATE
      M   IFDEF USE_LINKER
```

```

M    CLRWDT?
M  ELSE
M    IF ($ == (_181OVERCREATE))
M    CLRWDT?
M    ENDIF
M  ENDIF
M
M    RST?RP
M  IF ((PREV_BANK & 1) != 0)
M    BCF  STATUS, RPO
M  ENDIF
M  IF ((PREV_BANK & 2) != 0)
M    BCF  STATUS, RP1
M  ENDIF
00000000    M PREV_BANK = 0
M
M  IFDEF USE_LINKER
M    IF (CODE_SIZE > 2)
M    PAGESEL _181OVERCREATE
M    ENDIF
M  ELSE
M    IF ((_181OVERCREATE) < 1)
M    IF (CODE_SIZE > 2)
M    IF (((_181OVERCREATE) & 800H) == 0)
M    BCF  PCLATH, 3

```

```
M    ELSE
M    BSF    PCLATH, 3
M    ENDIF
M    ENDIF
M    IF (CODE_SIZE > 4)
M    IF (((_181OVERCREATE) & 1000H) == 0)
M    BCF    PCLATH, 4
M    ELSE
M    BSF    PCLATH, 4
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

                M    ENDIF
                M    ENDIF
                M    ELSE
                M    IF ((_181OVERCREATE) > $)
                M    IF (CODE_SIZE > 2)
                M    IF (((_181OVERCREATE) & 800H) == 0)
00F0 118A      M    BCF  PCLATH, 3
                M    ELSE
                M    BSF  PCLATH, 3
                M    ENDIF
                M    ENDIF
                M    IF (CODE_SIZE > 4)
                M    IF (((_181OVERCREATE) & 1000H) == 0)
00F1 120A      M    BCF  PCLATH, 4
                M    ELSE
                M    BSF  PCLATH, 4
                M    ENDIF
                M    ENDIF
                M    ELSE

```



```

M      IF (CODE_SIZE > 2)
M      IF (((_181OVERCREATE) & 1800H) == 0)
M      CLRF  PCLATH
M      ELSE
M      IF (((_181OVERCREATE) & 800H) == 0)
M      BCF  PCLATH, 3
M      ELSE
M      BSF  PCLATH, 3
M      ENDIF
M      IF (CODE_SIZE > 4)
M      IF (((_181OVERCREATE) & 1000H) == 0)
M      BCF  PCLATH, 4
M      ELSE
M      BSF  PCLATH, 4
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      GOTO  _181OVERCREATE
M
00F2 2902      M      GOTO  _181OVERCREATE
M
00F3          M INT_ENTRY

```

```
M  IFNDEF FSR0L
M  IF (CODE_SIZE <= 2)
M    MOVWF WSAVE    ; 1 copy W to wsave register
M    SWAPF STATUS,W ; 2 swap status reg to be saved into W
M    CLRF  STATUS   ; 3 change to bank 0
M    MOVWF SSAVE    ; 4 save status reg to a bank 0 register
M    MOVF  PCLATH,W ; 5 move PCLATH reg to be saved into W reg
M    MOVWF PSAVE    ; 6 save PCLATH reg to a bank 0 register
M  ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

00F3 0804 M MOVF FSR,W ; 7 move FSR reg to be saved into W reg

00F4 00B5 M MOVWF FSAVE ; 8 save FSR reg to a bank 0 register

M ELSE

M BANKSEL 0 ; BANK 0 for F1 chips

M ENDIF

0000 M VARIABLE PREV_BANK = 0

M MOVE?CT 0, _VARS_SAVED

M CHK?RP _INT_BITS

M IF ((_INT_BITS) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RP0

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RP0

M BCF STATUS, RP1

M ENDIF

```
00000000      M PREV_BANK = 0

M   ENDIF

M

M   IF (((_INT_BITS) & 180H) == 80H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M     BSF  STATUS, RPO

M     BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M     BCF  STATUS, RP1

M   ENDIF

M PREV_BANK = 1

M   ENDIF

M

M   IF (((_INT_BITS) & 180H) == 100H)

M   IF (PREV_BANK == 0)

M     BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M     BCF  STATUS, RPO

M     BSF  STATUS, RP1

M   ENDIF
```

```
M    IF (PREV_BANK == 3)
M    BCF STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_INT_BITS) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (((0) & 1) == 1)
M    BSF    _INT_BITS, 001H
M    ELSE
00F5 10B7    M    BCF    _INT_BITS, 001H
M    ENDIF
M
00F6        M LIST_START
M    IFDEF LOOPWHENSERVICED
M    MOVE?CT 0, _SERVICED ; indicate nothing has been serviced
```

```

M   ENDIF

M

M   INT_LIST           ; Expand the users list of interrupt handlers

M   INT_HANDLER TMR1_INT, _SINE, ASM, YES

M LIST

0000   M   LOCAL AFTERSAVE, AFTERUSERROUTINE, NOINT

M   IFDEF FLAGBIT

M   CHK?RP PIE1

M   BTFSS PIE1, TMR1IE ; if the INT is enabled

M   GOTO NOINT

M   CHK?RP PIR1

M   BTFSS PIR1, TMR1IF ; and the Flag set?

M   GOTO NOINT

M   IFDEF LOOPWHENSERVICED

M   MOVE?CT 1, _SERVICED

M   ENDIF

M

M   IF (ASM == PBP) ; If INT handler is PBP

M   IFDEF REENTERUSED

M   BTFSC _VARS_SAVED

M   GOTO AFTERSAVE

M   GETADDRESS AFTERSAVE, _RETADDR

M   L?GOTO _SAVEPBP ; Save PBP system Vars

M   LABEL?L AFTERSAVE

M   ELSE

```

```
M      ERROR REENTERPBP MUST BE INCLUDED TO USE PBP ASM INTERRUPTS
M      ENDIF
M      ENDIF
M      GETADDRESS AFTERUSERROUTINE, _RETADDR ; save return address
M      L?GOTO _SINE ; goto the users INT handler
M      LABEL?L AFTERUSERROUTINE
M
M      IF (YES == YES)
M      CHK?RP PIR1
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

M BCF PIR1, TMR1IF ; reset flag (if specified)

M ENDIF

M ELSE

M INT_ERROR "INT_Handler"

Error[101] : ERROR: ("INT_Handler" - INTERRUPT FLAG (PIR1,TMR1IF) NOT FOUND.)

M ERROR "INT_Handler" - INTERRUPT FLAG (PIR1,TMR1IF) NOT FOUND.

M ENDIF

00F6 M NOINT

00F6 1283 1303 M BANKSEL 0

00000000 M PREV_BANK = 0

M ; INT_LIST macro must be defined in main program

M

M IFDEF LOOPWHENSERVICED

M BIT?GOTO 1, _SERVICED, LIST_START

M ENDIF

M

M IFDEF REENTERUSED ; if ReEnterPBP.bas was included

M CHKRPT _VARS_SAVED

M BTFSS _VARS_SAVED ; if PBP system vars have been saved

```

M    GOTO    INT_EXIT

M    L?GOTO  _RESTOREPBP ; Restore PBP system Vars

M    ENDIF

M

00F8      M INT_EXIT

0000      M  VARIABLE PREV_BANK = 0

M    IFNDEF FSR0L      ; if chip is not an F1 - restore context

00F8 0183    M    CLRF  STATUS      ; BANK 0

00F9 0835    M    MOVF  FSAVE,W      ; Restore the FSR reg

00FA 0084    M    MOVWF FSR

00FB 0838    M    MOVF  PSAVE,W      ; Restore the PCLATH reg

00FC 008A    M    MOVWF PCLATH

00FD 0E3D    M    SWAPF SSAVE,W      ; Restore the STATUS reg

00FE 0083    M    MOVWF STATUS

00FF 0EF0    M    SWAPF WSAVE,F

0100 0E70    M    SWAPF WSAVE,W      ; Restore W reg

M    ENDIF

0101 0009    M    RETFIE      ; Exit the interrupt routine

M ;-----

M LABEL?L OVERCREATE

M    RST?RP

M    IF ((PREV_BANK & 1) != 0)

M    BCF  STATUS, RPO

M    ENDIF

M    IF ((PREV_BANK & 2) != 0)

```

```

M    BCF    STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    IFDEF PM_USED
M    LALL
M_181OVERCREATE
M    XALL
M    ELSE
0102    M_181OVERCREATE
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

                M   ENDIF
0102 170B      M   BSF   INTCON, 6   ; Enable Peripheral interrupts
0103 178B      M   BSF   INTCON, 7   ; Enable Global interrupts
00857
00858
00859      ENDASM?
00860
00861
00862 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00132 T1CON = $31
00863      MOVE?CB 031H, T1CON
                M   CHK?RP T1CON
                M   IF (((T1CON) & 180H) == 0)
                M   IF (PREV_BANK == 1)
                M   BCF   STATUS, RP0
                M   ENDIF
                M   IF (PREV_BANK == 2)
                M   BCF   STATUS, RP1
                M   ENDIF
                M   IF (PREV_BANK == 3)
```

```
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    ENDIF
M
M    IF (((T1CON) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((T1CON) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
```

```
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (((T1CON) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (031H) == 0)
M CLRF T1CON
M ELSE
0104 3031 M MOVLW LOW (031H)
0105 0090 M MOVWF T1CON
M ENDIF
```

00864

00865 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00133 TMR1L = 255 ; Prescaler
= 8, TMR1ON

00866 MOVE?CB OFFH, TMR1L

M CHK?RP TMR1L

M IF (((TMR1L) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

00000000 M PREV_BANK = 0

M ENDIF

M

M IF (((TMR1L) & 180H) == 80H)

M IF (PREV_BANK == 0)

M BSF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BSF STATUS, RPO

M BCF STATUS, RP1


```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF (((TMR1L) & 180H) == 100H)
M   IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((TMR1L) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
```

```

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (OFFH) == 0)

M   CLRF TMR1L

M   ELSE

0106 30FF      M   MOVLW  LOW (OFFH)

0107 008E      M   MOVWF  TMR1L

M   ENDIF

00867

00868 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00134 TMR1H = 254

00869      MOVE?CB OFEH, TMR1H

M   CHK?RP TMR1H

M   IF (((TMR1H) & 180H) == 0)

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RPO

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

```

```
    M    BCF  STATUS, RP1
    M    ENDIF
00000000    M  PREV_BANK = 0
    M    ENDIF
    M
    M    IF ((TMR1H) & 180H) == 80H)
    M    IF (PREV_BANK == 0)
    M    BSF  STATUS, RPO
    M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 1
M ENDIF
M
M IF (((TMR1H) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```

```

M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((TMR1H) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (0FEH) == 0)
M    CLRF TMR1H
M    ELSE
0108 30FE    M    MOVLW  LOW (0FEH)
0109 008F    M    MOVWF  TMR1H
M    ENDIF
00870

```

00871 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00135 @ INT_ENABLE
TMR1_INT ; Enable Timer 1 Inte

rrupts

00872

00873 ASM?

M RST?RP

M IF ((PREV_BANK & 1) != 0)

M BCF STATUS, RPO

M ENDIF

M IF ((PREV_BANK & 2) != 0)

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

M BCF STATUS, RP1

M ENDIF

00000000 M PREV_BANK = 0

00874 INT_ENABLE TMR1_INT ; Enable Timer 1 Interrupts

M IFDEF FLAGBIT

M IFDEF INT_ENABLECLEARFIRST

M IF (INT_ENABLECLEARFIRST == 1) ; if specified

M MOVE?CT 0, PIR1, TMR1IF ; clear the flag first

M ENDIF

M ENDIF

M MOVE?CT 1, PIE1, TMR1IE ; enable the INT source

M ELSE

M INT_ERROR "INT_ENABLE"

Error[101] : ERROR: ("INT_ENABLE" - INTERRUPT FLAG (PIR1,TMR1IF) NOT FOUND.)

M ERROR "INT_ENABLE" - INTERRUPT FLAG (PIR1,TMR1IF) NOT FOUND.

M ENDIF

00875

00876 ENDASM?

00877

00878

00879 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00136 timerone = \$FD00
;gives about 50 hz

sine

00880 MOVE?CW OFD00H, _TIMERONE

M IFDEF USE_LINKER

M CHK?RP _TIMERONE

M MOVLW LOW (OFD00H)

M MOVWF _TIMERONE

M MOVLW HIGH (OFD00H)

M MOVWF (_TIMERONE) + 1

M ELSE

M MOVE?CB LOW (OFD00H), _TIMERONE

M CHK?RP _TIMERONE

M IF (((_TIMERONE) & 180H) == 0)

M IF (PREV_BANK == 1)

M BCF STATUS, RPO

M ENDIF

M IF (PREV_BANK == 2)

M BCF STATUS, RP1

M ENDIF

M IF (PREV_BANK == 3)

M BCF STATUS, RPO

M BCF STATUS, RP1

M ENDIF

00000000 M PREV_BANK = 0

```
M   ENDIF
M
M   IF ((_TIMERONE) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF   STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF   STATUS, RPO
M   BCF   STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF (((_TIMERONE) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```

```

M   ENDIF

M

M   IF (((_TIMERONE) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M   PREV_BANK = 3

M   ENDIF

M   IF (LOW (LOW (0FD00H)) == 0)

010A 01C0      M   CLRF  _TIMERONE

M   ELSE

M   MOVLW  LOW (LOW (0FD00H))

M   MOVWF  _TIMERONE

M   ENDIF

M   MOVE?CB HIGH (0FD00H), (_TIMERONE) + 1

M   CHK?RP (_TIMERONE) + 1

M   IF (((_TIMERONE) + 1) & 180H) == 0)

M   IF (PREV_BANK == 1)

```

```
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00000000      M PREV_BANK = 0
              M   ENDIF
              M
              M   IF (((_TIMERONE) + 1) & 180H) == 80H)
              M     IF (PREV_BANK == 0)
              M       BSF  STATUS, RPO
              M     ENDIF
              M   IF (PREV_BANK == 2)
              M     BSF  STATUS, RPO
              M     BCF  STATUS, RP1
              M   ENDIF
              M   IF (PREV_BANK == 3)
              M     BCF  STATUS, RP1
              M   ENDIF
              M PREV_BANK = 1
              M   ENDIF
              M
              M   IF (((_TIMERONE) + 1) & 180H) == 100H)
              M     IF (PREV_BANK == 0)
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((_TIMERONE) + 1) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
```

```
    M   IF (LOW (HIGH (0FD00H)) == 0)
    M   CLR   (_TIMERONE) + 1
    M   ELSE
010B 30FD    M   MOVLW  LOW (HIGH (0FD00H))
010C 00C1    M   MOVWF  (_TIMERONE) + 1
    M   ENDIF
    M   ENDIF
```

00881

00882 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00137 Main:

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00883
00884 LABEL?L_MAIN
M RST?RP
M IF ((PREV_BANK & 1) != 0)
M BCF STATUS, RP0
M ENDIF
M IF ((PREV_BANK & 2) != 0)
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M IFDEF PM_USED
M LALL
M_MAIN
M XALL
M ELSE
010D M_MAIN
M ENDIF
00885
00886 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00138 pause 5
```

```

00887    PAUSE?C 005H
        M    IF (((005H) >> 8) == 0)
        M    MOVE?CA 005H
010D 3005    M    MOVLW  LOW (005H)
        M    L?CALL PAUSE
        M    RST?RP
        M    IF ((PREV_BANK & 1) != 0)
        M    BCF  STATUS, RP0
        M    ENDIF
        M    IF ((PREV_BANK & 2) != 0)
        M    BCF  STATUS, RP1
        M    ENDIF
00000000    M    PREV_BANK = 0
        M
        M    IFDEF USE_LINKER
        M    IF (CODE_SIZE > 2)
        M    PAGESEL PAUSE
        M    ENDIF
        M    ELSE
        M    IF ((PAUSE) < 1)
        M    IF (CODE_SIZE > 2)
        M    IF (((PAUSE) & 800H) == 0)
        M    BCF  PCLATH, 3
        M    ELSE
        M    BSF  PCLATH, 3

```

```
M   ENDIF
M   ENDIF
M   IF (CODE_SIZE > 4)
M     IF (((PAUSE) & 1000H) == 0)
M       BCF  PCLATH, 4
M     ELSE
M       BSF  PCLATH, 4
M     ENDIF
M   ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M ELSE
M IF ((PAUSE) > $)
M IF (CODE_SIZE > 2)
M IF (((PAUSE) & 800H) == 0)
M BCF PCLATH, 3
M ELSE
M BSF PCLATH, 3
M ENDIF
M ENDIF
M IF (CODE_SIZE > 4)
M IF (((PAUSE) & 1000H) == 0)
M BCF PCLATH, 4
M ELSE
M BSF PCLATH, 4
M ENDIF
M ENDIF
M ELSE
M IF (CODE_SIZE > 2)
M IF (((PAUSE) & 1800H) == 0)
```

```

010E 018A      M    CLRF  PCLATH
                M    ELSE
                M    IF (((PAUSE) & 800H) == 0)
                M    BCF  PCLATH, 3
                M    ELSE
                M    BSF  PCLATH, 3
                M    ENDIF
                M    IF (CODE_SIZE > 4)
                M    IF (((PAUSE) & 1000H) == 0)
                M    BCF  PCLATH, 4
                M    ELSE
                M    BSF  PCLATH, 4
                M    ENDIF
                M    ENDIF
                M    ENDIF
                M    ENDIF
                M    ENDIF
                M    ENDIF
                M    ENDIF
                M    ENDIF
                M
010F 200D      M    CALL  PAUSE
                M    ELSE
                M    MOVE?CB (005H) >> 8, R1 + 1
                M    MOVE?CA LOW (005H)
                M    L?CALL PAUSEL

```

M ENDIF

00888

00889 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00139 if timerone = \$F9FF
then timerone = \$FF00

00890 CMPNE?WCL _TIMERONE, 0F9FFH, L00001

M IF (((0F9FFH) > -10000H) & ((0F9FFH) < 10000H))

M MOVE?CW 0F9FFH, R0

M IFDEF USE_LINKER

M CHK?RP R0

M MOVLW LOW (0F9FFH)

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M    MOVWF  R0
M    MOVLW  HIGH (0F9FFH)
M    MOVWF  (R0) + 1
M    ELSE
M    MOVE?CB LOW (0F9FFH), R0
M    CHK?RP R0
M    IF (((R0) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
00000000 M PREV_BANK = 0
M    ENDIF
```

```
M
M IF (((R0) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 1
M ENDIF
M
M IF (((R0) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
```



```
M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF (((R0) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF    STATUS, RPO

M    BSF    STATUS, RP1

M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (LOW (0F9FFH)) == 0)
M CLRF R0
M ELSE
0110 30FF M MOVLW LOW (LOW (0F9FFH))
0111 00A0 M MOVWF R0
M ENDIF
M MOVE?CB HIGH (0F9FFH), (R0) + 1
M CHK?RP (R0) + 1
M IF (((R0) + 1) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RP0

```

```

M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP0
M   BCF STATUS, RP1
M   ENDIF
00000000 M PREV_BANK = 0
M   ENDIF
M
M   IF (((RO) + 1) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RP0
M   BCF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M

```

```
M  IF (((RO) + 1) & 180H) == 100H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((R0) + 1) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
M    IF (LOW (HIGH (0F9FFH)) == 0)
```

```

M    CLRF  (R0) + 1
M    ELSE
0112 30F9    M    MOVLW  LOW (HIGH (0F9FFH))
0113 00A1    M    MOVWF  (R0) + 1
M    ENDIF
M    ENDIF
M    MOVE?WWA _TIMERONE, R1
M    MOVE?BB (_TIMERONE) + 1, (R1) + 1
M    CHK?RP (_TIMERONE) + 1
M    IF (((_TIMERONE) + 1) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
00000000    M    PREV_BANK = 0
M    ENDIF
M
M    IF (((_TIMERONE) + 1) & 180H) == 80H)
M    IF (PREV_BANK == 0)

```

```
M    BSF    STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RPO
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M PREV_BANK = 1
M   ENDIF
M
M   IF (((_TIMERONE) + 1) & 180H) == 100H)
M     IF (PREV_BANK == 0)
M       BSF  STATUS, RP1
M     ENDIF
M   IF (PREV_BANK == 1)
M     BCF  STATUS, RPO
M     BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M     BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_TIMERONE) + 1) & 180H) == 180H)
M     IF (PREV_BANK == 0)
```



```

M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
0114 0841    M    MOVF    (_TIMERONE) + 1, W
M    CHK?RP (R1) + 1
M    IF (((R1) + 1) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
00000000    M    PREV_BANK = 0

```

```
M   ENDIF
M
M   IF (((R1) + 1) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF (((R1) + 1) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```

```

M   ENDIF

M

M   IF (((R1) + 1) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RP0

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RP0

M   ENDIF

M PREV_BANK = 3

M   ENDIF

0115 00A3      M   MOVWF (R1) + 1

M   MOVE?BA_TIMERONE

M   CHK?RP_TIMERONE

M   IF ((_TIMERONE) & 180H) == 0)

M   IF (PREV_BANK == 1)

M   BCF  STATUS, RP0

M   ENDIF

M   IF (PREV_BANK == 2)

M   BCF  STATUS, RP1

M   ENDIF

```

```
    M    IF (PREV_BANK == 3)
    M    BCF  STATUS, RP0
    M    BCF  STATUS, RP1
    M    ENDIF
00000000    M PREV_BANK = 0
    M    ENDIF
    M
    M    IF (((_TIMERONE) & 180H) == 80H)
    M    IF (PREV_BANK == 0)
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF ((_TIMERONE) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
```

```

M   ENDIF

M   IF (PREV_BANK == 3)

M   BCF  STATUS, RPO

M   ENDIF

M PREV_BANK = 2

M   ENDIF

M

M   IF (((_TIMERONE) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

0116 0840      M   MOVF  _TIMERONE, W

M   L?CALL CMPNE

M   RST?RP

M   IF ((PREV_BANK & 1) != 0)

M   BCF  STATUS, RPO

```

```
M   ENDIF
M   IF ((PREV_BANK & 2) != 0)
M     BCF  STATUS, RP1
M   ENDIF
00000000    M PREV_BANK = 0
M
M   IFDEF USE_LINKER
M     IF (CODE_SIZE > 2)
M       PAGESEL CMPNE
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   ELSE
M   IF ((CMPNE) < 1)
M   IF (CODE_SIZE > 2)
M   IF (((CMPNE) & 800H) == 0)
M   BCF  PCLATH, 3
M   ELSE
M   BSF  PCLATH, 3
M   ENDIF
M   ENDIF
M   IF (CODE_SIZE > 4)
M   IF (((CMPNE) & 1000H) == 0)
M   BCF  PCLATH, 4
M   ELSE
M   BSF  PCLATH, 4
M   ENDIF
M   ENDIF
M   ELSE
M   IF ((CMPNE) > $)
```

```

M    IF (CODE_SIZE > 2)
M    IF (((CMPNE) & 800H) == 0)
M    BCF  PCLATH, 3
M    ELSE
M    BSF  PCLATH, 3
M    ENDF
M    ENDF
M    IF (CODE_SIZE > 4)
M    IF (((CMPNE) & 1000H) == 0)
M    BCF  PCLATH, 4
M    ELSE
M    BSF  PCLATH, 4
M    ENDF
M    ENDF
M    ELSE
M    IF (CODE_SIZE > 2)
M    IF (((CMPNE) & 1800H) == 0)
0117 018A    M    CLRF PCLATH
M    ELSE
M    IF (((CMPNE) & 800H) == 0)
M    BCF  PCLATH, 3
M    ELSE
M    BSF  PCLATH, 3
M    ENDF
M    IF (CODE_SIZE > 4)

```

```
M      IF (((CMPNE) & 1000H) == 0)
M  BCF  PCLATH, 4
M      ELSE
M  BSF  PCLATH, 4
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   ENDIF
M
0118 2032      M   CALL  CMPNE
M   BIT?GOTO 0, STATUS, Z, L00001
M   IFDEF USE_LINKER
M   CLRWDT?
M   ELSE
M   IF ($ == (L00001))
M   CLRWDT?
M   ENDIF
M   ENDIF
M
M   IFDEF USE_LINKER
M   IF (CODE_SIZE > 2)
M   PAGESEL L00001
M   ENDIF
M   ELSE
M   IF (CODE_SIZE > 2)

```

```

M    IF (((L00001) & 800H) == 0)
0119 118A    M    BCF  PCLATH, 3
M    ELSE
M    BSF  PCLATH, 3
M    ENDIF
M    ENDIF
M    IF (CODE_SIZE > 4)
M    IF (((L00001) & 1000H) == 0)
011A 120A    M    BCF  PCLATH, 4
M    ELSE
M    BSF  PCLATH, 4
M    ENDIF
M    ENDIF
M    ENDIF
M
M    IF (((STATUS) & 0FF80H) != 0)
M    CHK?RP STATUS
M    BCF  STATUS, DC
M    IF ((0) == 0)
M    BTFSS STATUS, Z
M    ELSE
M    BTFSC STATUS, Z
M    ENDIF
M    BSF  STATUS, DC
M    RST?RP

```

```
M    BTFSC STATUS, DC
M ELSE
M    RST?RP
M IF ((PREV_BANK & 1) != 0)
M    BCF STATUS, RP0
M ENDIF
M IF ((PREV_BANK & 2) != 0)
M    BCF STATUS, RP1
M ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00000000      M PREV_BANK = 0
              M IF ((0) == 0)
011B 1D03      M BTFSS STATUS, Z
              M ELSE
              M BTFSC STATUS, Z
              M ENDIF
              M ENDIF
              M
011C 2920      M GOTO L00001
              M ELSE
              M L?GOTO L00001
              M ENDIF
00891      MOVE?CW OFF00H, _TIMERONE
              M IFDEF USE_LINKER
              M CHK?RP _TIMERONE
              M MOVLW LOW (OFF00H)
              M MOVWF _TIMERONE
              M MOVLW HIGH (OFF00H)
              M MOVWF (_TIMERONE) + 1
```

```

M ELSE
M MOVE?CB LOW (OFF00H), _TIMERONE
M CHK?RP _TIMERONE
M IF ((_TIMERONE) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M ENDIF
M
M IF ((_TIMERONE) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M BCF STATUS, RP1
M ENDIF

```



```
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((_TIMERONE) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF (((_TIMERONE) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
```

```

M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDF

M PREV_BANK = 3
M   ENDF

M   IF (LOW (LOW (OFF00H)) == 0)
011D 01C0   M   CLRF  _TIMERONE
M   ELSE
M   MOVLW  LOW (LOW (OFF00H))
M   MOVWF  _TIMERONE
M   ENDF

M   MOVE?CB HIGH (OFF00H), (_TIMERONE) + 1
M   CHK?RP (_TIMERONE) + 1
M   IF (((_TIMERONE) + 1) & 180H) == 0)
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RPO
M   ENDF
M   IF (PREV_BANK == 2)
M   BCF  STATUS, RP1
M   ENDF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   BCF  STATUS, RP1
M   ENDF

00000000   M PREV_BANK = 0

```

```
M   ENDIF
M
M   IF (((_TIMERONE) + 1) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   BCF  STATUS, RP1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF (((_TIMERONE) + 1) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```

```

M   ENDIF

M

M   IF (((_TIMERONE) + 1) & 180H) == 180H)

M   IF (PREV_BANK == 0)

M   BSF  STATUS, RPO

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 1)

M   BSF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 2)

M   BSF  STATUS, RPO

M   ENDIF

M PREV_BANK = 3

M   ENDIF

M   IF (LOW (HIGH (OFF00H)) == 0)

M   CLRF  (_TIMERONE) + 1

M   ELSE

011E 30FF      M   MOVLW  LOW (HIGH (OFF00H))

011F 00C1      M   MOVWF  (_TIMERONE) + 1

M   ENDIF

M   ENDIF

00892 LABEL?L L00001

M   RST?RP

M   IF ((PREV_BANK & 1) != 0)

```

```
M    BCF  STATUS, RP0
M  ENDIF
M  IF ((PREV_BANK & 2) != 0)
M    BCF  STATUS, RP1
M  ENDIF
00000000    M PREV_BANK = 0
M  IFDEF PM_USED
M    LALL
M L00001
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    XALL
M    ELSE
0120    M L00001
M    ENDIF
00893
00894 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00141 GOTO Main
00895    GOTO?L _MAIN
M    L?GOTO _MAIN
M    IFDEF USE_LINKER
M    CLRWDT?
M    ELSE
M    IF ($ == (_MAIN))
M    CLRWDT?
M    ENDIF
M    ENDIF
M
M    RST?RP
M    IF ((PREV_BANK & 1) != 0)
M    BCF STATUS, RPO
```



```

M   ENDIF

M   IF ((PREV_BANK & 2) != 0)

M       BCF   STATUS, RP1

M   ENDIF

00000000    M PREV_BANK = 0

M

M   IFDEF USE_LINKER

M       IF (CODE_SIZE > 2)

M           PAGESEL _MAIN

M       ENDIF

M   ELSE

M       IF ((_MAIN) < 1)

M           IF (CODE_SIZE > 2)

M               IF (((_MAIN) & 800H) == 0)

M                   BCF   PCLATH, 3

M               ELSE

M                   BSF   PCLATH, 3

M               ENDIF

M           ENDIF

M       IF (CODE_SIZE > 4)

M           IF (((_MAIN) & 1000H) == 0)

M               BCF   PCLATH, 4

M           ELSE

M               BSF   PCLATH, 4

M           ENDIF

M       ENDIF

```

```
M    ENDIF
M    ELSE
M    IF ((_MAIN) > $)
M    IF (CODE_SIZE > 2)
M    IF (((_MAIN) & 800H) == 0)
M    BCF  PCLATH, 3
M    ELSE
M    BSF  PCLATH, 3
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M      ENDIF
M      IF (CODE_SIZE > 4)
M      IF (((_MAIN) & 1000H) == 0)
M      BCF  PCLATH, 4
M      ELSE
M      BSF  PCLATH, 4
M      ENDIF
M      ENDIF
M      ELSE
M      IF (CODE_SIZE > 2)
M      IF (((_MAIN) & 1800H) == 0)
0120 018A      M      CLRF  PCLATH
M      ELSE
M      IF (((_MAIN) & 800H) == 0)
M      BCF  PCLATH, 3
M      ELSE
M      BSF  PCLATH, 3
M      ENDIF
M      IF (CODE_SIZE > 4)

```

```

M      IF (((_MAIN) & 1000H) == 0)
M      BCF  PCLATH, 4
M      ELSE
M      BSF  PCLATH, 4
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M      ENDIF
M
0121 290D      M      GOTO  _MAIN
00896
00897 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00145 sine:
00898
00899      LABEL?L_SINE
M      RST?RP
M      IF ((PREV_BANK & 1) != 0)
M      BCF  STATUS, RP0
M      ENDIF
M      IF ((PREV_BANK & 2) != 0)
M      BCF  STATUS, RP1
M      ENDIF
00000000      M      PREV_BANK = 0

```

```
M  IFDEF PM_USED
M  LALL
M_SINE
M  XALL
M  ELSE
0122      M_SINE
M  ENDIF
00900
00901 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00146    TMR1L =
timerone.byte0
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
00902    MOVE?BB _TIMERONE??BYTE0, TMR1L
        M    CHK?RP _TIMERONE??BYTE0
        M    IF (((_TIMERONE??BYTE0) & 180H) == 0)
        M    IF (PREV_BANK == 1)
        M    BCF  STATUS, RP0
        M    ENDIF
        M    IF (PREV_BANK == 2)
        M    BCF  STATUS, RP1
        M    ENDIF
        M    IF (PREV_BANK == 3)
        M    BCF  STATUS, RP0
        M    BCF  STATUS, RP1
        M    ENDIF
00000000    M PREV_BANK = 0
        M    ENDIF
        M
        M    IF (((_TIMERONE??BYTE0) & 180H) == 80H)
        M    IF (PREV_BANK == 0)
        M    BSF  STATUS, RP0
```

```
M   ENDIF

M   IF (PREV_BANK == 2)

M     BSF  STATUS, RP0

M     BCF  STATUS, RP1

M   ENDIF

M   IF (PREV_BANK == 3)

M     BCF  STATUS, RP1

M   ENDIF

M PREV_BANK = 1

M   ENDIF

M

M   IF (((_TIMERONE??BYTE0) & 180H) == 100H)

M     IF (PREV_BANK == 0)

M       BSF  STATUS, RP1

M     ENDIF

M     IF (PREV_BANK == 1)

M       BCF  STATUS, RP0

M       BSF  STATUS, RP1

M     ENDIF

M     IF (PREV_BANK == 3)

M       BCF  STATUS, RP0

M     ENDIF

M PREV_BANK = 2

M   ENDIF

M
```

```
M  IF ((_TIMERONE??BYTE0) & 180H) == 180H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 2)
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
0122 0840      M    MOVF  _TIMERONE??BYTE0, W
M    CHK?RP TMR1L
M    IF (((TMR1L) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
00000000      M PREV_BANK = 0
M    ENDIF
```

```
M
M IF (((TMR1L) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 1
M ENDIF
M
M IF (((TMR1L) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
```

```
M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF (((TMR1L) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF    STATUS, RPO

M    BSF    STATUS, RP1

M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT
 VALUE

```

        M   IF (PREV_BANK == 1)
        M   BSF  STATUS, RP1
        M   ENDIF
        M   IF (PREV_BANK == 2)
        M   BSF  STATUS, RPO
        M   ENDIF
        M   PREV_BANK = 3
        M   ENDIF
0123 008E      M   MOVWF TMR1L
           00903
           00904 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00147   TMR1H =
timerone.byte1
           00905   MOVE?BB _TIMERONE??BYTE1, TMR1H
           M   CHK?RP _TIMERONE??BYTE1
           M   IF (((_TIMERONE??BYTE1) & 180H) == 0)
           M   IF (PREV_BANK == 1)
           M   BCF  STATUS, RPO
           M   ENDIF
           M   IF (PREV_BANK == 2)
           M   BCF  STATUS, RP1
    
```

```

M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
00000000 M PREV_BANK = 0
M   ENDIF
M
M   IF (((_TIMERONE??BYTE1) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RP0
M   BCF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF
M PREV_BANK = 1
M   ENDIF
M
M   IF (((_TIMERONE??BYTE1) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1

```

```
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF
M PREV_BANK = 2
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M
M   IF (((_TIMERONE??BYTE1) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RP0
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RP0
M   ENDIF
M   PREV_BANK = 3
M   ENDIF
0124 0841   M   MOVF _TIMERONE??BYTE1, W
M   CHK?RP TMR1H
M   IF (((TMR1H) & 180H) == 0)
M   IF (PREV_BANK == 1)
```

```
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    ENDIF
M
M    IF (((TMR1H) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
```



```
M
M  IF (((TMR1H) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M      BSF  STATUS, RP1
M    ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    BSF  STATUS, RP1
M  ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RPO
M   ENDIF
M PREV_BANK = 2
M   ENDIF
M
M   IF ((TMR1H) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RPO
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF  STATUS, RPO
M   ENDIF
M PREV_BANK = 3
M   ENDIF
```

```

0125 008F      M    MOVWF TMR1H

00906

00907 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP      00148      CCPR1L =
sineval[STEPCOUNT]>>1

00908      AOUT?BBB      _SINEVAL, _STEPCOUNT, T1

M    MOVE?BA _STEPCOUNT

M    CHK?RP _STEPCOUNT

M    IF (((_STEPCOUNT) & 180H) == 0)

M    IF (PREV_BANK == 1)

M    BCF  STATUS, RP0

M    ENDIF

M    IF (PREV_BANK == 2)

M    BCF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF  STATUS, RP0

M    BCF  STATUS, RP1

M    ENDIF

00000000      M PREV_BANK = 0

M    ENDIF

M

M    IF (((_STEPCOUNT) & 180H) == 80H)

M    IF (PREV_BANK == 0)

M    BSF  STATUS, RP0

M    ENDIF

M    IF (PREV_BANK == 2)

```

```
M    BSF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF ((_STEPCOUNT) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF ((_STEPCOUNT) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
```

```

M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
0126 0842    M    MOVF  _STEPCOUNT, W
0127 3EA1    M    ADDLW LOW (_SINEVAL)
0128 0084    M    MOVWF FSR
M    IF ((_SINEVAL) > 255)
M    BSF  STATUS, IRP
M    ENDIF
M    MOVE?BB INDF, T1
M    CHK?RP INDF
M    IF (((INDF) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0

```

```

M    BCF  STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    ENDIF
M
M    IF (((INDF) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 1
M ENDIF
M
M IF (((INDF) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```



```

M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((INDF) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
0129 0800    M    MOVF  INDF, W
M    CHK?RP T1
M    IF (((T1) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)

```

```
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
M IF (((T1) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP1
M ENDIF
M PREV_BANK = 1
M ENDIF
M
M IF (((T1) & 180H) == 100H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
```

```

M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((T1) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
012A 00BE    M    MOVWF T1
M    IF ((_SINEVAL) > 255)
M    BCF  STATUS, IRP

```

```
    M   ENDIF
00909   SHIFTR?BCB   T1, 001H, CCPR1L
    M   IF ((001H) == 1)
012B 1003   M   BCF   STATUS, C
    M   IF ((CCPR1L) == (T1))
    M   CHK?RP CCPR1L
    M   RRF   CCPR1L, F
    M   ELSE
    M   CHK?RP T1
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (((T1) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M ENDIF
M
M IF (((T1) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M ENDIF
M IF (PREV_BANK == 2)
```

```
M    BSF    STATUS, RP0
M    BCF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((T1) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BCF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF    STATUS, RP0
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
M    IF (((T1) & 180H) == 180H)
M    IF (PREV_BANK == 0)
```

```
M    BSF    STATUS, RP0
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M PREV_BANK = 3
M ENDIF
012C 0C3E M RRF T1, W
M MOVE?AB CCPR1L
M CHK?RP CCPR1L
M IF ((CCPR1L) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M ENDIF
M
```

```
M  IF (((CCPR1L) & 180H) == 80H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M  ENDIF
M  IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M  ENDIF
M PREV_BANK = 1
M  ENDIF
M
M  IF (((CCPR1L) & 180H) == 100H)
M  IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M  ENDIF
M  IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M  ENDIF
```

```
M PREV_BANK = 2
M  ENDIF
M
M  IF (((CCPR1L) & 180H) == 180H)
M    IF (PREV_BANK == 0)
M      BSF  STATUS, RP0
M      BSF  STATUS, RP1
M    ENDIF
M  IF (PREV_BANK == 1)
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```

M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    ENDIF
M PREV_BANK = 3
M    ENDIF
012D 0095    M    MOVWF CCPR1L
M    ENDIF
M    ELSE
M    MOVE?BW T1, R0
M    MOVLW 001H
M    L?CALL SHIFTR
M    MOVE?AB CCPR1L
M    ENDIF
00910
00911 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00149  stepcount = stepcount -
1
00912    SUB?BCB _STEPCOUNT, 001H, _STEPCOUNT
M    IF ((_STEPCOUNT) == (_STEPCOUNT))
```

```
M    IF ((001H) == 1)
M    CHK?RP _STEPCOUNT
M    IF (((_STEPCOUNT) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    ENDIF
M
M    IF (((_STEPCOUNT) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP0
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
```

```
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((_STEPCOUNT) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT
VALUE

```
M IF (PREV_BANK == 1)
M BCF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RPO
M ENDIF
M PREV_BANK = 2
M ENDIF
M
M IF (((_STEPCOUNT) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RPO
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
```

```

M    BSF    STATUS, RPO
M    ENDIF
M    PREV_BANK = 3
M    ENDIF
012E 03C2    M    DECF    _STEPCOUNT, F
M    ELSE
M    MOVLW  001H
M    CHK?RP _STEPCOUNT
M    SUBWF  _STEPCOUNT, F
M    ENDIF
M    ELSE
M    IF ((001H) == 1)
M    CHK?RP _STEPCOUNT
M    DECF  _STEPCOUNT, W
M    ELSE
M    MOVLW  001H
M    CHK?RP _STEPCOUNT
M    SUBWF  _STEPCOUNT, W
M    ENDIF
M    MOVE?AB _STEPCOUNT
M    ENDIF
00913
00914 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP    00150    if stepcount = 0 then
stepcount = 72
00915    CMPNE?BCL    _STEPCOUNT, 000H, L00003
M    IF (((000H) > -100H) & ((000H) < 100H))

```



```
M    CLRWDT?
M    IFNDEF NO_CLRWDT
012F 0064    M    CLRWDT
M    ENDIF
M    MOVE?BA _STEPCOUNT
M    CHK?RP _STEPCOUNT
M    IF (((_STEPCOUNT) & 180H) == 0)
M    IF (PREV_BANK == 1)
M    BCF  STATUS, RPO
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M   ENDIF
M   IF (PREV_BANK == 2)
M   BCF STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF STATUS, RP0
M   BCF STATUS, RP1
M   ENDIF
00000000 M PREV_BANK = 0
M   ENDIF
M
M   IF (((_STEPCOUNT) & 180H) == 80H)
M   IF (PREV_BANK == 0)
M   BSF STATUS, RP0
M   ENDIF
M   IF (PREV_BANK == 2)
M   BSF STATUS, RP0
M   BCF STATUS, RP1
M   ENDIF
```

```
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP1
M   ENDIF

M PREV_BANK = 1
M   ENDIF

M

M   IF (((_STEPCOUNT) & 180H) == 100H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 1)
M   BCF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
M   IF (PREV_BANK == 3)
M   BCF  STATUS, RP0
M   ENDIF

M PREV_BANK = 2
M   ENDIF

M

M   IF (((_STEPCOUNT) & 180H) == 180H)
M   IF (PREV_BANK == 0)
M   BSF  STATUS, RP0
M   BSF  STATUS, RP1
M   ENDIF
```

```
M    IF (PREV_BANK == 1)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
0130 0842    M    MOVF  _STEPCOUNT, W
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```
0131 3C00      M   SUBLW  000H
                M   BIT?GOTO 0, STATUS, Z, L00003
                M   IFDEF USE_LINKER
                M   CLRWDT?
                M   ELSE
                M   IF ($ == (L00003))
                M   CLRWDT?
                M   ENDIF
                M   ENDIF
                M
                M   IFDEF USE_LINKER
                M   IF (CODE_SIZE > 2)
                M   PAGESEL L00003
                M   ENDIF
                M   ELSE
                M   IF (CODE_SIZE > 2)
                M   IF (((L00003) & 800H) == 0)
0132 118A      M   BCF   PCLATH, 3
                M   ELSE
```

```

M    BSF  PCLATH, 3
M    ENDIF
M    ENDIF
M    IF (CODE_SIZE > 4)
M    IF (((L00003) & 1000H) == 0)
0133 120A    M    BCF  PCLATH, 4
M    ELSE
M    BSF  PCLATH, 4
M    ENDIF
M    ENDIF
M    ENDIF
M
M    IF (((STATUS) & 0FF80H) != 0)
M    CHK?RP STATUS
M    BCF  STATUS, DC
M    IF ((0) == 0)
M    BTFSS STATUS, Z
M    ELSE
M    BTFSC STATUS, Z
M    ENDIF
M    BSF  STATUS, DC
M    RST?RP
M    BTFSC STATUS, DC
M    ELSE
M    RST?RP

```

```
M IF ((PREV_BANK & 1) != 0)
M   BCF STATUS, RP0
M   ENDF
M IF ((PREV_BANK & 2) != 0)
M   BCF STATUS, RP1
M   ENDF
00000000 M PREV_BANK = 0
M IF ((0) == 0)
0134 1D03 M   BTFSS STATUS, Z
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M ELSE
M BTFSC STATUS, Z
M ENDIF
M ENDIF
M
0135 2938 M GOTO L00003
M ELSE
M L?GOTO L00003
M ENDIF
00916 MOVE?CB 048H, _STEPCOUNT
M CHK?RP _STEPCOUNT
M IF (((_STEPCOUNT) & 180H) == 0)
M IF (PREV_BANK == 1)
M BCF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```



```
M    BCF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
00000000    M PREV_BANK = 0
M    ENDIF
M
M    IF (((_STEPCOUNT) & 180H) == 80H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RPO
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF  STATUS, RPO
M    BCF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RP1
M    ENDIF
M PREV_BANK = 1
M    ENDIF
M
M    IF (((_STEPCOUNT) & 180H) == 100H)
M    IF (PREV_BANK == 0)
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 1)
```

```
M    BCF  STATUS, RPO
M    BSF  STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 3)
M    BCF  STATUS, RPO
M    ENDIF
M PREV_BANK = 2
M    ENDIF
M
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (((_STEPCOUNT) & 180H) == 180H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 1)
M BSF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M ENDIF
M PREV_BANK = 3
M ENDIF
M IF (LOW (048H) == 0)
M CLRF _STEPCOUNT
M ELSE
0136 3048 M MOVLW LOW (048H)
0137 00C2 M MOVWF _STEPCOUNT
M ENDIF
```

```

00917 LABEL?L L00003
M RST?RP
M IF ((PREV_BANK & 1) != 0)
M BCF STATUS, RPO
M ENDIF
M IF ((PREV_BANK & 2) != 0)
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M IFDEF PM_USED
M LALL
M L00003
M XALL
M ELSE
0138 M L00003
M ENDIF
00918
00919 ; E:\4TH YEAR\PROJECT 4\MCS\SPWM_T~1.PBP 00151 @ INT_RETURN
00920
00921 ASM?
M RST?RP
M IF ((PREV_BANK & 1) != 0)
M BCF STATUS, RPO
M ENDIF
M IF ((PREV_BANK & 2) != 0)

```

```
        M    BCF  STATUS, RP1
        M  ENDIF
00000000    M  PREV_BANK = 0
00922  INT_RETURN
        M  CHK?RP _RETADDR
        M  IF (((_RETADDR) & 180H) == 0)
        M  IF (PREV_BANK == 1)
        M    BCF  STATUS, RP0
        M  ENDIF
```

LOC OBJECT CODE LINE SOURCE TEXT

VALUE

```

M IF (PREV_BANK == 2)
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
M BCF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
00000000 M PREV_BANK = 0
M ENDIF
M
M IF (((_RETADDR) & 180H) == 80H)
M IF (PREV_BANK == 0)
M BSF STATUS, RP0
M ENDIF
M IF (PREV_BANK == 2)
M BSF STATUS, RP0
M BCF STATUS, RP1
M ENDIF
M IF (PREV_BANK == 3)
```

```
M    BCF  STATUS, RP1

M    ENDIF

M PREV_BANK = 1

M    ENDIF

M

M    IF (((_RETADDR) & 180H) == 100H)

M    IF (PREV_BANK == 0)

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 1)

M    BCF  STATUS, RP0

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 3)

M    BCF  STATUS, RP0

M    ENDIF

M PREV_BANK = 2

M    ENDIF

M

M    IF (((_RETADDR) & 180H) == 180H)

M    IF (PREV_BANK == 0)

M    BSF  STATUS, RP0

M    BSF  STATUS, RP1

M    ENDIF

M    IF (PREV_BANK == 1)
```

```
M    BSF    STATUS, RP1
M    ENDIF
M    IF (PREV_BANK == 2)
M    BSF    STATUS, RP0
M    ENDIF
M PREV_BANK = 3
M    ENDIF
0138 0833    M    MOVF    _RETADDR + 1, W ; Set PCLATH with top byte of return address
0139 008A    M    MOVWF   PCLATH
```


LOC OBJECT CODE LINE SOURCE TEXT

VALUE

013A 0832 M MOVF _RETADDR, W ; Go back to where we were

013B 0082 M MOVWF PCL

00923

00924 ENDASM?

00925

00926

00927 END

SYMBOL TABLE

LABEL	VALUE
#INT_CLEAR	
#INT_DISABLE	
#INT_ENABLE	
#INT_HANDLER	
#INT_RETURN	
ACCESSRAM	00000001
ACKDT	00000005
ACKEN	00000004
ACKSTAT	00000006
ADCON0	0000001F
ADCON1	0000009F
ADCS0	00000006
ADCS1	00000007
ADC_BITS	00000008
ADC_CLOCK	00000003
ADC_SAMPLEUS	00000032
ADDEN	00000003
ADDWSAVE	
ADFM	00000005

ADIE	00000006
ADIF	00000006
ADON	00000000
ADRESH	0000001E
ADRESL	0000009E
AD_INT	PIR1,ADIF, PIE1,ADIE
ALL_INT	INTCON,GIE, INTCON,GIE
AOUT?BBB	
ASM	00000000
ASM?	
BANK0_END	0000007F
BANK0_START	00000020
BANK1_END	000000EF
BANK1_START	000000A0
BANK2_END	0000016F
BANK2_START	00000110
BANK3_END	000001EF
BANK3_START	00000190
BCLIE	00000003
BCLIF	00000003
BF	00000000
BIT?FLIP	
BIT?FW	
BIT?GOTO	
BIT?R1	

BIT?R2	
BIT?W	
BRGH	00000002
BUS_INT	PIR2,BCLIF, PIE2,BCLIE
BUTTON_PAUSE	0000000A
C	00000000
CCP1CON	00000017
CCP1IE	00000002
CCP1IF	00000002

SYMBOL TABLE

LABEL	VALUE
CCP1M0	00000000
CCP1M1	00000001
CCP1M2	00000002
CCP1M3	00000003
CCP1X	00000005
CCP1Y	00000004
CCP1_BIT	00000002
CCP1_INT	PIR1,CCP1IF, PIE1,CCP1IE
CCP1_REG	00000007
CCP2CON	0000001D
CCP2IE	00000000
CCP2IF	00000000
CCP2M0	00000000
CCP2M1	00000001
CCP2M2	00000002
CCP2M3	00000003
CCP2X	00000005
CCP2Y	00000004
CCP2_BIT	00000001

CCP2_INT	PIR2,CCP2IF, PIE2,CCP2IE
CCP2_REG	00000007
CCP3_INT	PIR3,CCP3IF, PIE3,CCP3IE
CCP4_INT	PIR3,CCP4IF, PIE3,CCP4IE
CCP5_INT	PIR3,CCP5IF, PIE3,CCP5IE
CCPR1H	00000016
CCPR1L	00000015
CCPR2H	0000001C
CCPR2L	0000001B
CHK?RP	
CHKRP?T	
CHS0	00000003
CHS1	00000004
CHS2	00000005
CHS3	00000001
CKE	00000006
CKP	00000004
CLRWDT?	
CLRWDT?NOP	
CMP	00000034
CMPNE	00000032
CMPNE?BCL	
CMPNE?WCL	
CMPNE_USED	00000001
CMPNOTEQ	0000003B

CMP_USED	00000001
CODE_SIZE	8
CREN	00000004
CRYPT_INT	PIR1,CRIF, PIE1,CRIE
CSRC	00000007
D	00000005
DATA_ADDRESS	00000005
DC	00000001
DEBUGIN_BIT	00000000

SYMBOL TABLE

LABEL	VALUE
DEBUGIN_MODE	00000001
DEBUGIN_REG	00000006
DEBUG_BAUD	00000960
DEBUG_BIT	00000000
DEBUG_DELAY	0000019E
DEBUG_MODE	00000001
DEBUG_REG	00000006
DONE	00000044
DONERET	00000048
DONE_USED	00000001
DT_INTS_VERSION	110
D_A	00000005
EEADR	0000010D
EEADRH	0000010F
EECON1	0000018C
EECON2	0000018D
EEDATA	0000010C
EEDATH	0000010E
EEIE	00000004

EEIF	00000004
EEPGD	00000007
EEPROM_END	000021FF
EEPROM_START	00002100
EE_INT	PIR2,EEIF, PIE2,EEIE
ENDASM?	
F	00000001
FERR	00000002
FLAGS	00000034
FSAVE	00000035
FSR	00000004
GCEN	00000007
GETADDRESS	
GIE	00000007
GO	00000002
GOP	00000036
GOTO?L	
GO_DONE	00000002
GPC_INT	INTCON,GPIF, INTCON,GPIE
HSER_BAUD	00000960
HSER_BITS	00000008
HSER_RCSTA	00000090
HSER_SPBRG	00000081
HSER_TXSTA	00000020
I2CFIRSTFLAG	FLAGS, 2

I2CREADFLAG	FLAGS, 3
I2CSTOPFLAG	FLAGS, 5
I2CSTOPSTRFLAG	FLAGS, 6
I2CWRITEFLAG	FLAGS, 4
I2C_DATA	00000005
I2C_READ	00000002
I2C_START	00000003
I2C_STOP	00000004
IBF	00000007

SYMBOL TABLE

LABEL	VALUE
IBOV	00000005
INDF	00000000
INIT	00000049
INTCON	0000000B
INTE	00000004
INTEDG	00000006
INTF	00000001
INTHAND	INT_ENTRY
INT_CLEAR	#INT_CLEAR FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT
INT_CREATE	
INT_DISABLE	#INT_DISABLE FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT
INT_ENABLE	#INT_ENABLE FLAGREG, FLAGBIT, ENBLEREG, ENABLEBIT
INT_ENABLECLEARFIRST	1
INT_ENTRY	000000F3
INT_ERROR	
INT_EXIT	000000F8
INT_HANDLER	#INT_HANDLER FLAGREG,FLAGBIT, ENBLEREG,ENABLEBIT, LABEL, TYPE,RESET
INT_INT	INTCON,INTF, INTCON,INTE
INT_LIST	

INT_RETURN	#INT_RETURN
IOC_INT	INTCON,IOCIF, INTCON,IOCIE
IRP	00000007
L00001	00000120
L00003	00000138
L?CALL	
L?GOTO	
LABEL?L	
LDCDFLAG	FLAGS, 0
LCDINITFLAG	FLAGS, 1
LCD_BITS	00000004
LCD_COMMANDUS	000007D0
LCD_DATAUS	00000032
LCD_DBIT	00000000
LCD_DREG	00000005
LCD_EBIT	00000003
LCD_EREGL	00000006
LCD_INT	PIR2,LCDIF, PIE2,LCDIE
LCD_LINES	00000002
LCD_RSBIT	00000004
LCD_RSREG	00000005
LCD_RWBIT	00000004
LCD_RWREG	00000005
LIST_START	000000F6
LVD_INT	PIR2,LVDIF, PIE2,LVDIE

MAIN 00000049

MOVE?AB

MOVE?AT

MOVE?AW

MOVE?AWW

MOVE?BA

MOVE?BB

MOVE?BT

MOVE?BW

SYMBOL TABLE

LABEL	VALUE
MOVE?CA	
MOVE?CB	
MOVE?CT	
MOVE?CW	
MOVE?TA	
MOVE?TB	
MOVE?TT	
MOVE?TW	
MOVE?WA	
MOVE?WB	
MOVE?WT	
MOVE?WW	
MOVE?WWA	
NO	00000000
NOT_A	00000005
NOT_ADDRESS	00000005
NOT_BO	00000000
NOT_BOR	00000000
NOT_DONE	00000002

NOT_PD	00000003
NOT_POR	00000001
NOT_RBPU	00000007
NOT_RC8	00000006
NOT_T1SYNC	00000002
NOT_TO	00000004
NOT_TX8	00000006
NOT_W	00000002
NOT_WRITE	00000002
OBF	00000006
OERR	00000001
OPTION_REG	00000081
ORCHANGE	OR CHANGE TO WSAVE BYTE \$70 SYSTEM
OSC	20
OSCF_INT	PIR2,OSFIF, PIE2,OSFIE
OSC_VALID	00000001
P	00000004
PAUSE	0000000D
PAUSE?C	
PAUSEL	0000000E
PAUSELOOP	0000000F
PAUSEUS	0000001A
PAUSEUSH	00000026
PAUSEUSL	0000001B
PAUSEUSLOOP	00000021

PAUSEUSLOOP0	00000020
PAUSEUS_USED	00000001
PAUSE_DELAY	000003E6
PAUSE_USED	00000001
PBP	00000001
PCFG0	00000000
PCFG1	00000001
PCFG2	00000002
PCFG3	00000003

SYMBOL TABLE

LABEL	VALUE
PCL	00000002
PCLATH	0000000A
PCON	0000008E
PEIE	00000006
PEN	00000002
PIE1	0000008C
PIE2	0000008D
PIR1	0000000C
PIR2	0000000D
PORTA	00000005
PORTB	00000006
PORTC	00000007
PORTD	00000008
PORTE	00000009
PR2	00000092
PREV_BANK	00000000
PS0	00000000
PS1	00000001
PS2	00000002

PSA	00000003
PSAVE	00000038
PSPIE	00000007
PSPIF	00000007
PSPMODE	00000004
PSP_INT	PIR1,PSPIF, PIE1,PSPIE
R	00000002
R0	00000020
R1	00000022
R2	00000024
R3	00000026
R4	00000028
R5	0000002A
R6	0000002C
R7	0000002E
R8	00000030
RABC_INT	INTCON,RABIF, INTCON,RABIE
RAC_INT	INTCON,RAIF, INTCON,RAIE
RAM_BANKS	00000004
RAM_END	000001EF
RAM_START	00000020
RBC_INT	INTCON,RBIF, INTCON,RBIE
RBIE	00000003
RBIF	00000000
RC8_9	00000006

RC9	00000006
RCD8	00000000
RCEN	00000003
RCIE	00000005
RCIF	00000005
RCREG	0000001A
RCSTA	00000018
RD	00000000
READ_WRITE	00000002

SYMBOL TABLE

LABEL	VALUE
RESET_ORG	00000000
RM1	00000039
RM2	0000003A
RP0	00000005
RP1	00000006
RR1	0000003B
RR2	0000003C
RSEN	00000001
RST?RP	
RX9	00000006
RX9D	00000000
RX_INT	PIR1,RCIF, PIE1,RCIE
R_W	00000002
S	00000003
SEN	00000000
SHIFTR	0000002D
SHIFTR?BCB	
SHIFTRLOOP	0000002A
SHIFTR_USED	00000001

SMP	00000007
SPBRG	00000099
SPEN	00000007
SREN	00000005
SSAVE	0000003D
SSPADD	00000093
SSPBUF	00000013
SSPCON	00000014
SSPCON2	00000091
SSPEN	00000005
SSPIE	00000003
SSPIF	00000003
SSPM0	00000000
SSPM1	00000001
SSPM2	00000002
SSPM3	00000003
SSPOV	00000006
SSPSTAT	00000094
SSP_INT	PIR1,SSPIF, PIE1,SSPIE
STATUS	00000003
SUB?BCB	
SYNC	00000004
TOCS	00000005
TOIE	00000005
TOIF	00000002

TOSE	00000004
T1	0000003E
T1CKPS0	00000004
T1CKPS1	00000005
T1CON	00000010
T1GATE_INT	PIR1,TMR1GIF, PIE1,TMR1GIE
T1INSYNC	00000002
T1OSCEN	00000003
T2CKPS0	00000000

SYMBOL TABLE

LABEL	VALUE
T2CKPS1	00000001
T2CON	00000012
TMR0	00000001
TMR0_INT	INTCON,TOIF, INTCON,TOIE
TMR1CS	00000001
TMR1H	0000000F
TMR1IE	00000000
TMR1IF	00000000
TMR1L	0000000E
TMR1ON	00000000
TMR1_INT	PIR1,TMR1IF, PIE1,TMR1IE
TMR2	00000011
TMR2IE	00000001
TMR2IF	00000001
TMR2ON	00000002
TMR2_INT	PIR1,TMR2IF, PIE1,TMR2IE
TMR4_INT	PIR3,TMR4IF, PIE3,TMR4IE
TMR6_INT	PIR3,TMR6IF, PIE3,TMR6IE
TOUTPS0	00000003

TOUTPS1	00000004
TOUTPS2	00000005
TOUTPS3	00000006
TRISA	00000085
TRISB	00000086
TRISC	00000087
TRISD	00000088
TRISE	00000089
TRISE0	00000000
TRISE1	00000001
TRISE2	00000002
TRMT	00000001
TX8_9	00000006
TX9	00000006
TX9D	00000000
TXD8	00000000
TXEN	00000005
TXIE	00000004
TXIF	00000004
TXREG	00000019
TXSTA	00000098
TX_INT	PIR1, TXIF, PIE1, TXIE
UA	00000001
USB_INT	PIR1, USBIF, PIE1, USBIE
W	00000000

WCOL 00000007

WR 00000001

WREN 00000002

WRERR 00000003

WSAVE 00000070

WSAVE1 000000A0

WSAVE2 00000120

WSAVE3 000001A0

WSAVECOULDBE THIS CHIP HAS ACCESS RAM AT \$70

SYMBOL TABLE

LABEL	VALUE
WSAVEE1	CHIP HAS RAM IN BANK#v(B), BUT WSAVE#v(B) WAS NOT FOUND.
WSAVEERROR	ERROR WSAVEE1(B)
YES	00000001
Z	00000002
_BODEN_OFF	00003FBF
_BODEN_ON	00003FFF
_CPD_OFF	00003FFF
_CPD_ON	00003EFF
_CP_ALL	00000FCF
_CP_HALF	00001FDF
_CP_OFF	00003FFF
_CP_UPPER_256	00002FEF
_DEBUG_OFF	00003FFF
_DEBUG_ON	000037FF
_GIE	_INTCON??7
_HS_OSC	00003FFE
_INTCON??6	INTCON, 006H
_INTCON??7	INTCON, 007H
_INT_BITS	00000037

_INT_BITS??0	_INT_BITS, 000H
_INT_BITS??1	_INT_BITS, 001H
_LP_OSC	00003FFC
_LVP_OFF	00003F7F
_LVP_ON	00003FFF
_MAIN	0000010D
_PEIE	_INTCON??6
_PORTH	00000007
_PORTL	00000006
_PWRTE_OFF	00003FFF
_PWRTE_ON	00003FF7
_RC_OSC	00003FFF
_RETADDR	00000032
_SERVICED	_INT_BITS??0
_SINE	00000122
_SINEVAL	000000A1
_STEPCOUNT	00000042
_TIMERONE	00000040
_TIMERONE??BYTE0	00000040
_TIMERONE??BYTE1	00000041
_TRISH	00000087
_TRISL	00000086
_USED	00000001
_VARS_SAVED	_INT_BITS??1
_WDT_OFF	00003FFB

_WDT_ON	00003FFF
_WRT_ENABLE_OFF	00003DFF
_WRT_ENABLE_ON	00003FFF
_XT_OSC	00003FFD
__16F877	00000001

MEMORY USAGE MAP ('X' = Used, '-' = Unused)

```
0000 : X---XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX
0040 : XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX
0080 : XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX
00C0 : XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX
0100 : XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX---
2000 : -----X----- -----
```

All other memory blocks unused.

Program Memory Words Used: 313

Program Memory Words Free: 7879

Errors : 2

Warnings : 0 reported, 0 suppressed

Messages : 0 reported, 77 suppressed

