**;I2C Master Setup**

BANKSEL TRISC

MOVLW B’00011000’ ;SET SDA AND SCL AS INPUTS

MOVWF TRISC

;------ SSPADD REGISTER --------------------------------------

BANKSEL SSPADD

MOVLW D'49’ ;SET TO (FOSC / (4 \* BAUD) -1) 100K = 49

MOVWF SSPADD ;MASTER MODE CLOCK/SLAVE MODE ADDRESS

;------ END SSPADD REGISTER ----------------------------------

;------ SSPCON1 REGISTER -------------------------------------

BANKSEL SSPCON

BCF SSPCON, SSPM0 ;1000 SPI MASTER MODE, CLOCK = FOSC/(4 \* (SSPADD +1))

BCF SSPCON, SSPM1 ;--/

BCF SSPCON, SSPM2 ;-/

BSF SSPCON, SSPM3 ;/

BCF SSPCON, CKP ;IDLE STATE FOR CLOCK IS A LOW LEVEL

BSF SSPCON, SSPEN ;ENABLE SERIAL PORT FOR I2C

;------ END SSPCON1 REGISTER ---------------------------------

;------ SSPCON2 REGISTER -------------------------------------

BANKSEL SSPCON2

BCF SSPCON2, GCEN ;GENERAL CALL DISABLE BIT

;------ END SSPCON2 REGISTER ---------------------------------

;------ SSPSTAT REGISTER --------------------------------------

BANKSEL SSPSTAT

BSF SSPSTAT,SMP ;SET SLEW RATE TO 100K FOR I2C

BSF SSPSTAT,CKE ;ENABLE SMBUS SPECIFIC INPUTS

BCF SSPSTAT,2

;------ END SSPSTAT REGISTER ----------------------------------

**;I2C Master Main Subroutine**

I2CWRITE

CALL I2CIDLE ;ENSURE I2C MODUKE IS IDLE

BANKSEL SSPCON2

BSF SSPCON2,0 ;GENERATE A START CONDITION

LOOP1 BTFSC SSPCON2,0 ;WAIT UNTIL START CONDITION IS COMPLETED

GOTO LOOP1 ;“

BANKSEL ADDRESS

MOVFW ADDRESS ;SEND OUT GENERAL ADDRESS BYTE

BANKSEL SSPBUF

MOVWF SSPBUF ;“

BANKSEL SSPSTAT

LOOP2 BTFSC SSPSTAT,BF ;WAIT UNTIL 8 BITS HAVE BEEN SHIFTED OUT

GOTO LOOP2

CALL I2CIDLE ;ENSURE IC2 MODULE IS IDLE

BANKSEL SSPCON2

BTFSC SSPCON2,ACKSTAT ;CHECK ACK BIT

GOTO BAD1 ;RECEIVE NACK

BANKSEL DATATRANS

MOVFW DATATRANS ;SEND DATA

BANKSEL SSPBUF

MOVWF SSPBUF ;LOAD BUFF

BANKSEL SSPSTAT

LOOP3 BTFSC SSPSTAT,BF ;WAIT UNTIL 8 BITS HAVE BEEN SHIFTED OUT

GOTO LOOP3

CALL I2CIDLE ;ENSURE IC2 MODULE IS IDLE

BANKSEL SSPCON2

BTFSC SSPCON2,ACKSTAT ;CHECK ACK BIT

GOTO BAD1 ;RECEIVE NACK

BANKSEL SSPCON2

BSF SSPCON2,PEN ;GENERATE A STOP CONDITION

LOOP4 BTFSC SSPCON2,PEN ;WAIT UNTIL STOP CONDITION IS COMPLETE

GOTO LOOP4 ;“

MOVLW 0X00 ;SET RETURN CODE 0

RETURN 0 ;"