MSSP I2C Peripheral

SSPCON1 Register	SSP Control Register 1						
Bit 0 - WCOL = 0	Bit 1 - SSPOV = 0	Bit 2 = SSPEN = 1	Bit 3 - CKP	Bit 4 = 1	Bit 5 = 1	Bit 6 = 1	Bit 7 = 0
No collision	No overflow	Enables Serial port	Enable Clock/ Hold clock Low	I2C Peripheral mode			

SSPCON2 Register	SSP Control Register 2						
Bit 0 = 1	Bit 1 - read	Bit 2 = 0	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7 = 1
General Call Interrupt Enabled	Status of Acknowledge	X	X	X	X	X	Enable clock stretch

SSPCON3 Register	SSP Control Register 3		(0-255)				
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
stats bit	Disable stop interrupt	Start interrupt	Disable buffer overwrite	100ns SDA hold time	Disable bus collison interrupt	Disable address holding	Disable Data holding

SSPADD Register	MSSP Address -Peripheral mode						
Bit 0 -	Bit 1	Bit 2	Bit 3 -	Bit 4	Bit 5	Bit 6	Bit 7
X	7 bit address of device = address = 10 hex						

SSPSTAT Register	SSP Status Register						
Bit 0 = Read	Bit 1 - read	Bit 2 = read	Bit 3 read	Bit 4 read	Bit 5 read	Bit 6 = 1	Bit 7 =
Buffer full	X	Read or write =0	Start bit	Stop bit	Data =1 Address = 1	Clock SMP complient	Slew rate at stardard speed (100kHz- 1Mhz)

Interrupt on Change

IOCBP Register	Interrupt on change positive edge Port B Register						
Bit 0 -	Bit 1 -	Bit 2 -	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Positive edge Interrupt on change B0	Positive edge Interrupt on change B1	Positive edge Interrupt on change B2	Positive edge Interrupt on change B3	Disable Positive edge Interrupt on change Rest of port			

IOCNP Register	Interrupt on change positive edge Port B Register						
Bit 0 -	Bit 1 -	Bit 2 -	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Negative edge Interrupt on change B0	Negative edge Interrupt on change B1	Negative edge Interrupt on change B2	Negative edge Interrupt on change B3	Disable negative edge Interrupt on change Rest of port			

Ports

Port A	All Inputs						
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Mode Select	Button input 1	Button input 2	Button input 3	Button input 4	Button input 5	Button input 6	NC

Port B	B0- b3 Inputs	B3- B7 outputs					
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Encoder A input A	Encoder A input B	Encoder B input A	Encoder B input B	LED Indicator -Encoder A Clockwise Turn	LED Indicator -Encoder A Counter Clockwise turn	LED Indicator -Encoder B Clockwise Turn	LED Indicator -Encoder B Counter Clockwise turn

Port C	C0-C2, C5-C7 Outputs, C3 and C4 Inputs						
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Led indactor - button 1 pressed	Led indactor - button 2 pressed	Led indactor - button 3 pressed	I2C - SCL	I2C - SDL	Led indactor - button 4 pressed	Led indactor - button 5 pressed	Led indactor - button 6 pressed

Interrupt

Intcon Register	Interrupt Control Register						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Interrupt on change flag	X	x	Interrupt on change Enabled	Disable external interrupt	disable Timer 0 interrupt	Enable Peripheral interrupts	Enable Global interrupt

PIE1	Peripheral Interrupt enable Register						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
disabled	disabled	disabled	Enable MSSP Interrupt (I2C)	disabled	disabled	disabled	disabled

PIR1	Peripheral Interrupt request Register		Bit 3
			MSSP Interrupt (I2C) Flag

Other registers

Count 1	Stores count of inner loop for delay		255				
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Count of inner nested loop							

Count 2	Stores count of outer loop for delay		243				
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Count of outer nested loop							

Status Save	Saves contents of status register		255				
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Contents of working register							

W Save	Saves contents of working register						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Contents of working register							

Encoders

Encoder A	Sets enables for interrupts on change for encoder A						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Positive interrupt on change input A	Negative interrupt on change input A	Positive interrupt on change input B	Negative interrupt on change input B	X	X	X	X

Input Old A	Stores last input state of encoder A						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
stored value of last input A	stored value of last input B	x	x	x	x	x	x

Encoder B	Sets enables for interrupts on change for encoder B						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Positive interrupt on change input A	Negative interrupt on change input A	Positive interrupt on change input B	Negative interrupt on change input B	X	X	X	X

Input Old B	Stores last input state of encoder B						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
X	X	stored value of last input A	stored value of last input B	x	x	x	x

Command

Command 1stByte	Stores command for each input						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
Input 1 is pressed	input 2 is pressed	button 3 is pressed	button 4 is pressed	encoder A clockwise turne	encoder A counter clockwise turne	Encoder B clockwise turne	Encoder B counter clockwise turne

Command encoder	enable command s for encoder input						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
X	X	X	X	Encoder A turned clockwise	Encoder A turned counter clockwise	Encoder B turned clockwise	Encoder B turned counter clockwise

Transmission

Transmission	Stores transmitted data						
Bit 0 -	Bit 1 -	Bit 2 =	Bit 3 -	Bit 4	Bit 5 =	Bit 6 =	Bit 7 = 0
byte to be transmitted							