

MSSP Part 2

I²C Serial Port

I²C

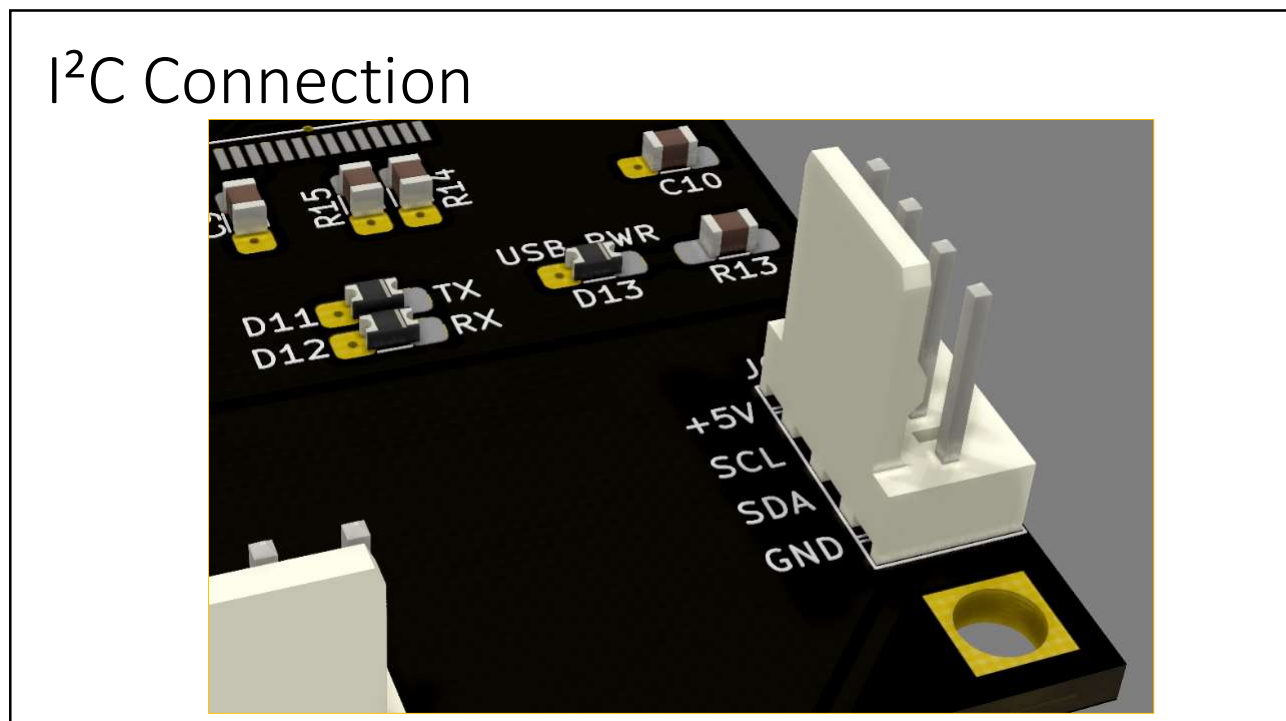
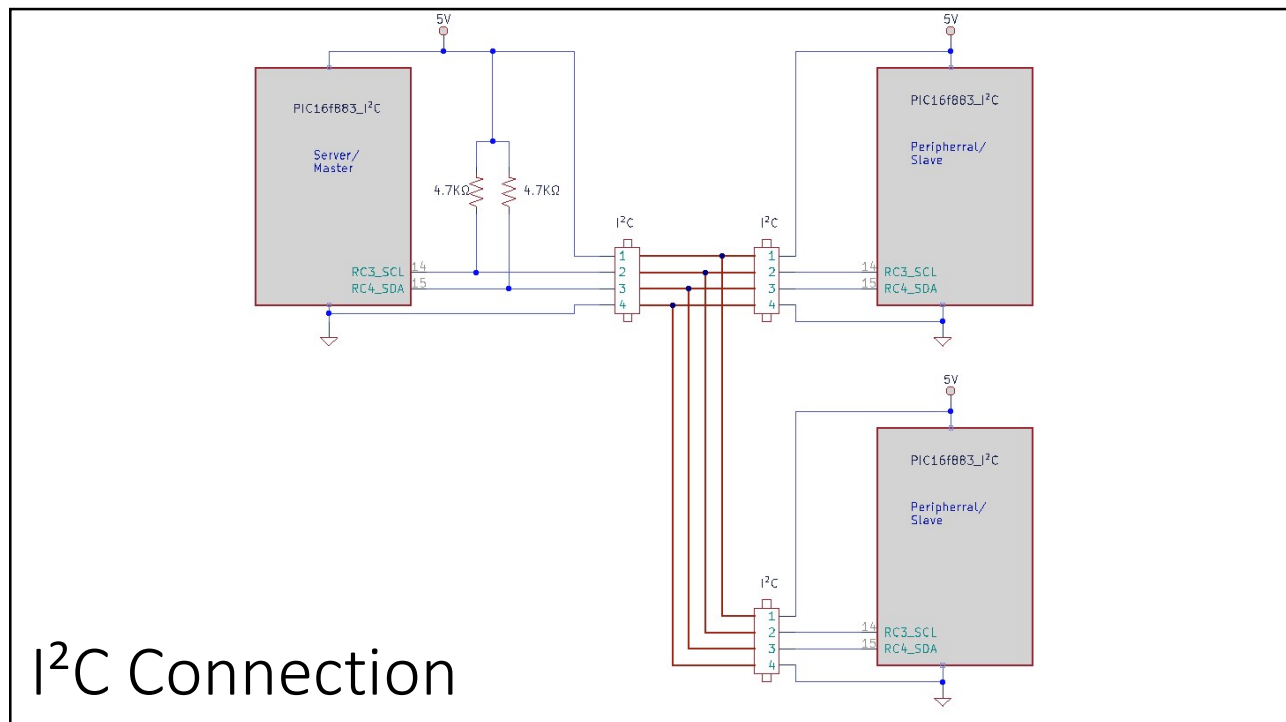
Function as Server or Peripheral Device

I²C Addressing

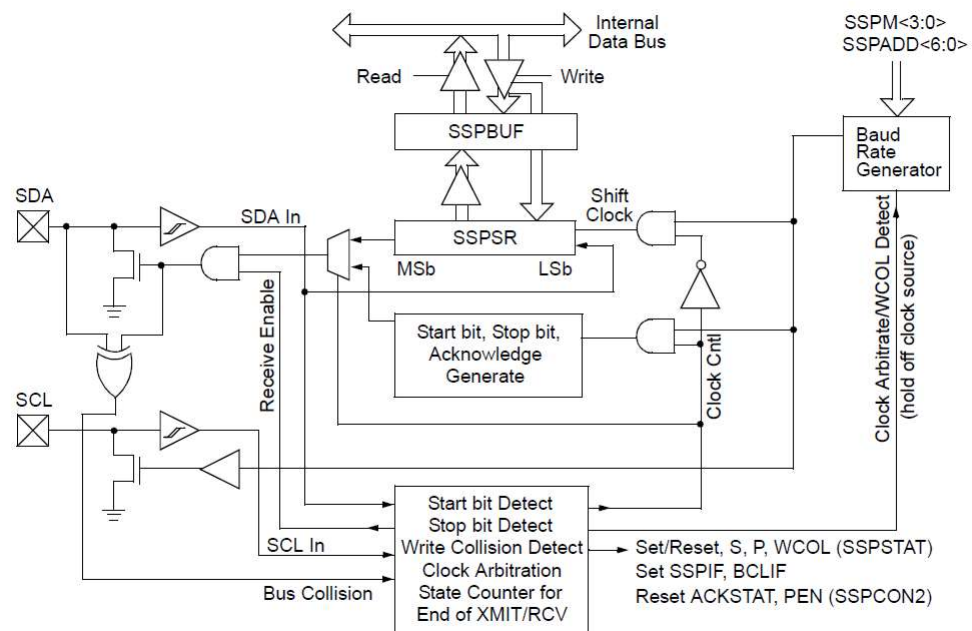
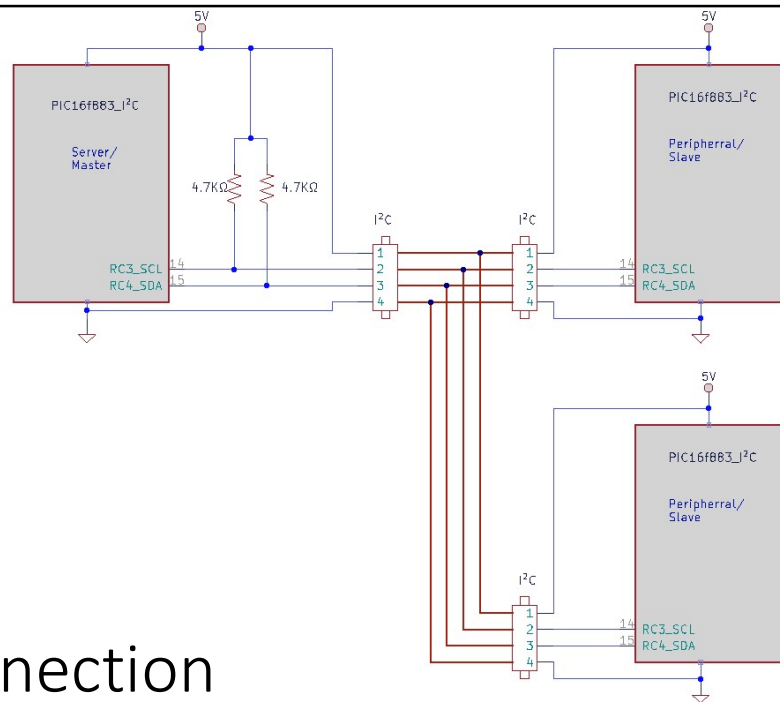
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Add MSB	-	-	-	-	-	Add LSB	R/W

I²C

ADDRESS	Function
0	General Call
1	C-Bus Address
2	Reserved
3	Reserved
4	HS Mode Master
5	
6	
7	
120	10-Bit Address Upper Byte
121	
122	
123	
124	Reserved
125	
126	
127	



I²C Connection



SSPSTAT

SMP(7)	I ² C Mode – Slew Rate Control: 1 for 100KHz & 1MHz, 0 for 400KHz
D / \bar{A} (5)	1 = Last byte received was data, 0 = Last byte received was address
P (4)	(Stop Bit) 1 = Stop bit was detected
S (3)	(Start Bit) 1 = Start bit was detected
R / \bar{W} (2)	Peripheral Mode {1 = Read, 0 = Write} Server Mode { 1 = Transmission In Progress, 0 = Not Transmitting (may not be Idle)}
UA (1)	1 = Update Address is needed – 10 Bit mode only
BF (0)	Receive Mode (1= SSPBUF is full), Transmit Mode (1 = Transmit in Progress)

SSPCON

WCOL (7)	Server Mode – 1 Attempted write to SSPBUF when not ready Peripheral Mode – 1 SSPBUF Written while still transmitting (must be cleared in Software)
SSPOV(6)	Buffer Overflow Indicator: SSPBUF Must be read to prevent overflow
SSPEN(5)	Synchronous Serial Port Enable – Configures SDA and SCL for I ² C
CKP (4)	Server Mode Not used Peripheral – 0 Holds clock while data is setup
SSPM (3:0)	I ² C Mode of Operation

SSPMSK: SSP Mask Register

Used to mask-off SSPSR Bits; 0 = Don't Care

SSPCON2

GCEN (7)	Peripheral Mode Only – 1 Enable General Call interrupt
ACKSTAT(6)	Server Receive Mode Only – 0 = Specific Peripheral acknowledged
ACKDT(5)	Server Receive Mode Only – 0 = Initiate Acknowledge After Receive
ACKEN(4)	Server Receive Mode Only – 0 = Enable Acknowledge Sequence
RCEN(3)	Server Mode Only – 0 = Enable Receive Mode
PEN(2)	Server Mode Only – 1 = Initiate Start Condition
RSEN(1)	Server Mode Only – 0 = Initiate Repeated Start Condition
SEN(0)	Server Mode – 1 = Initiate Start Condition Peripheral Mode – 1 Enables Clock Stretching