

“MSSP” – I²C / SPI (Master Synchronous Serial Port)

COMMUNICATION

SYSTEM

USING

HITECH - PIC - ‘C’



What is MSSP?



- MSSP module is a serial interface useful for communicating with other Peripheral or Microcontroller devices.
- These peripheral devices may be
 - Serial RTCs Interface,
 - EEPROMs,
 - Display drivers,
 - A/D converters, etc.
- Easy 2 or 3 wire Communication Method

What is I²C?



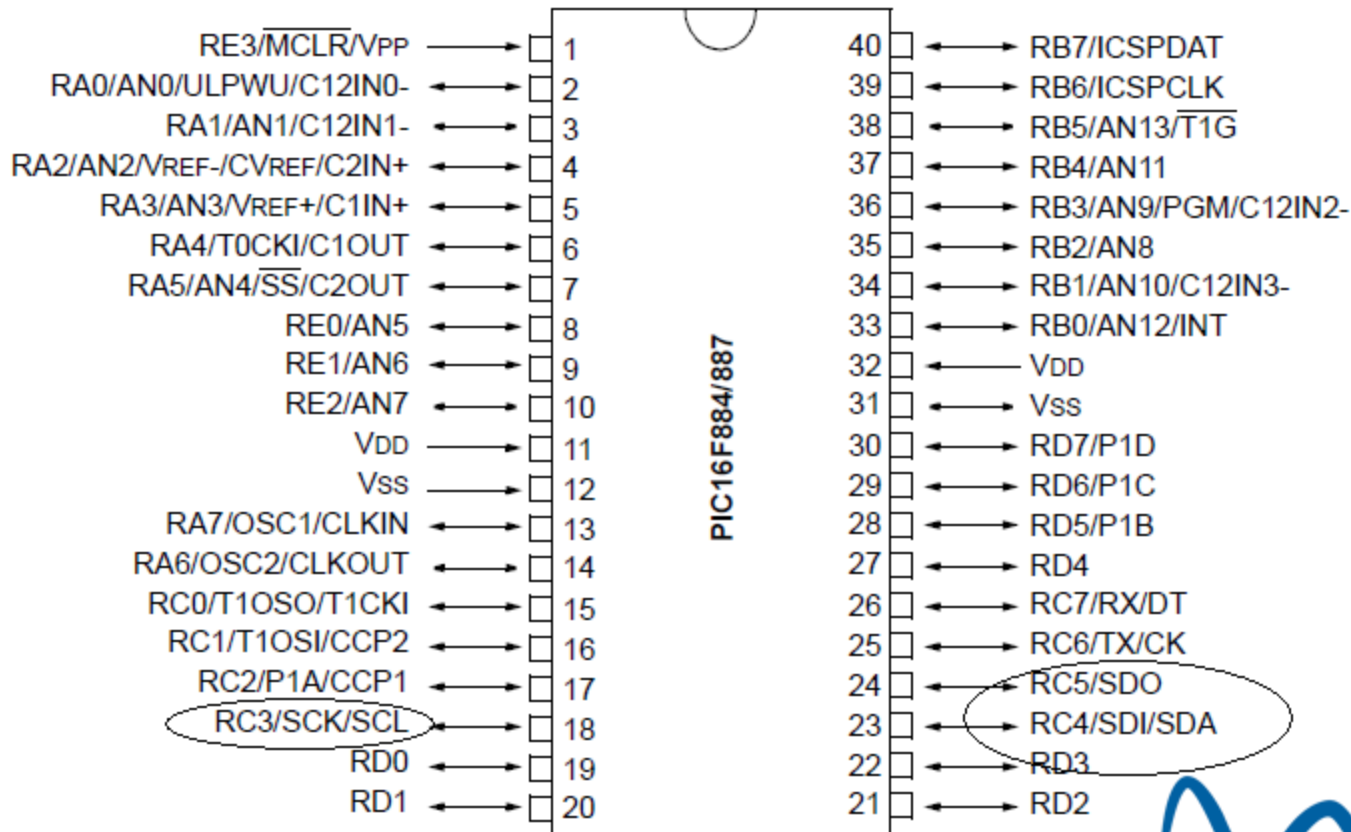
- I²C is a Inter-Integrated Circuit
- The I2C interface supports the following modes in
 - Master mode
 - Multi-Master mode
 - Slave mode.
- Easy 2 wire Communication System

MSSP Registers?



- SSPSTAT (Status Register)
- SSPCON (Control Register – 1)
- SSPCON2 (Control Register – 2 - I²C Controls)
- SSPBUF (Data / Buffer Register)
- SSPADD ()
- PIR

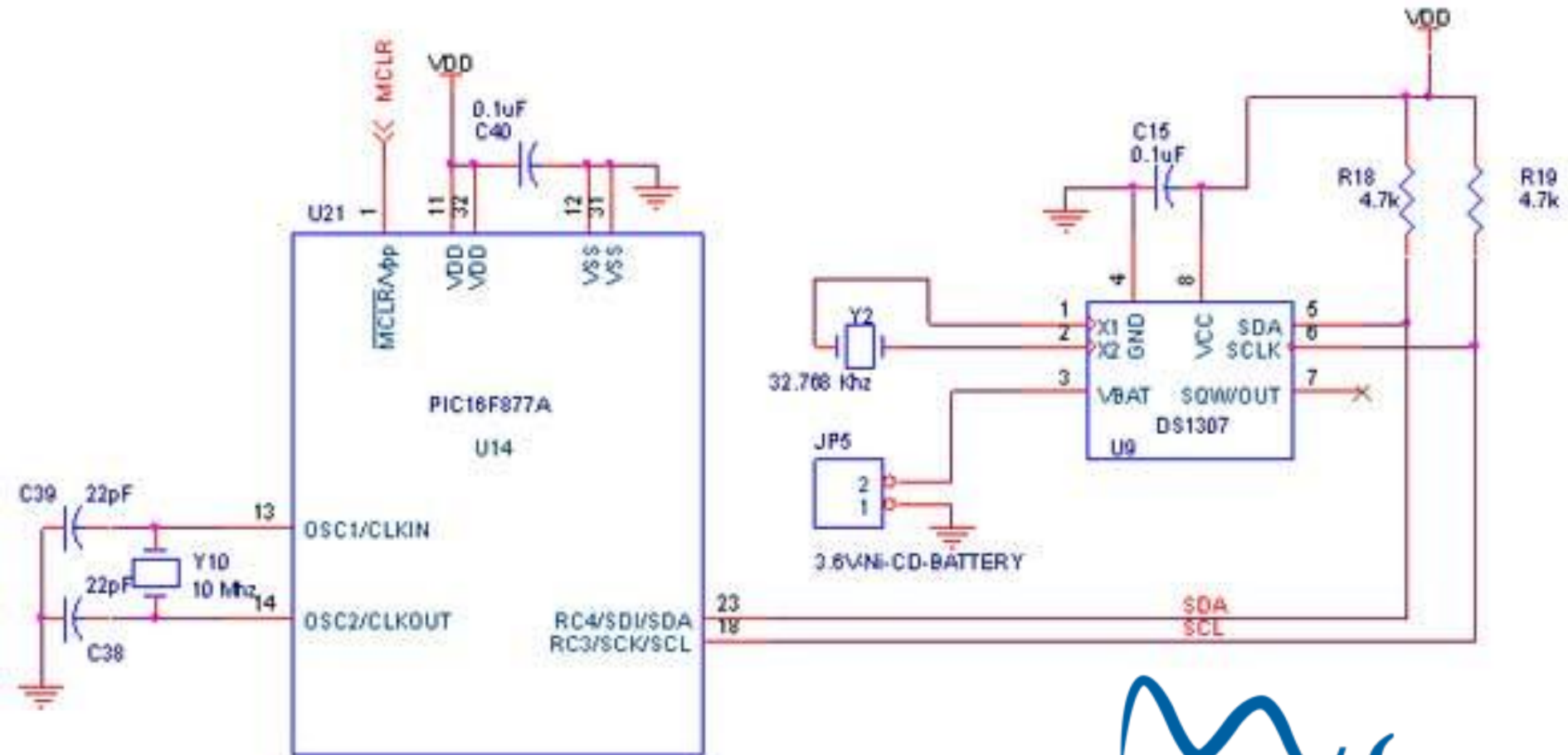
I2C System:



RTC(Real Time Clock)Setup



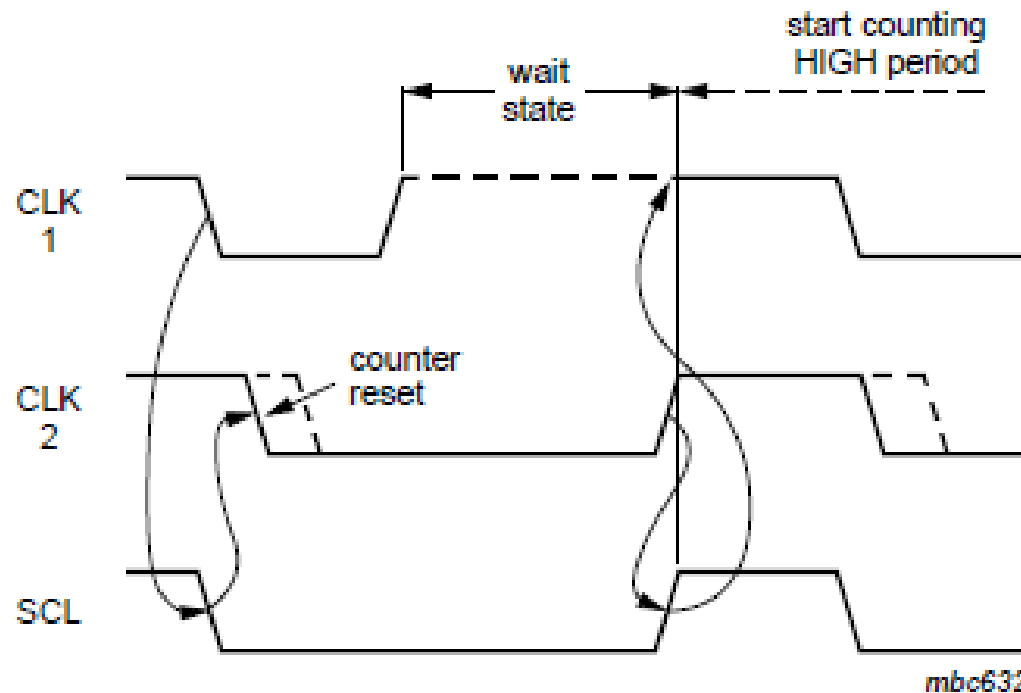
I2C with pic-connection



I2C-Wait function



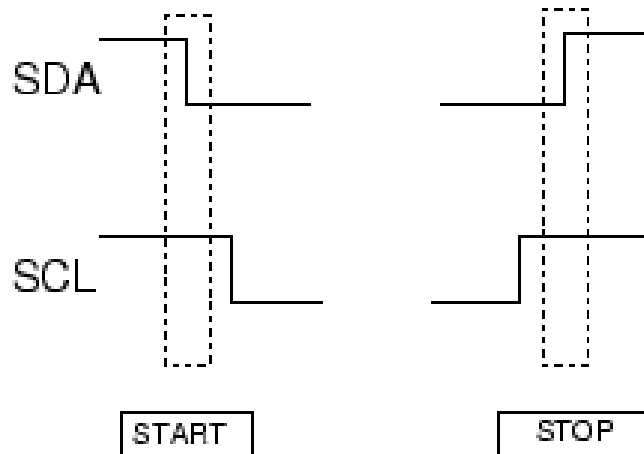
```
while(SSPIF=0);  
SSPIF=0;
```



I2C-Start function



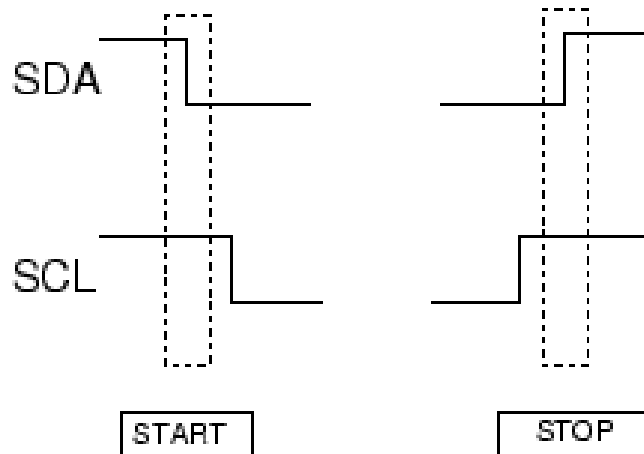
```
SEN=1;  
wait();
```



I2C: Stop function



```
PEN=1;  
wait();
```



I2C: data send function



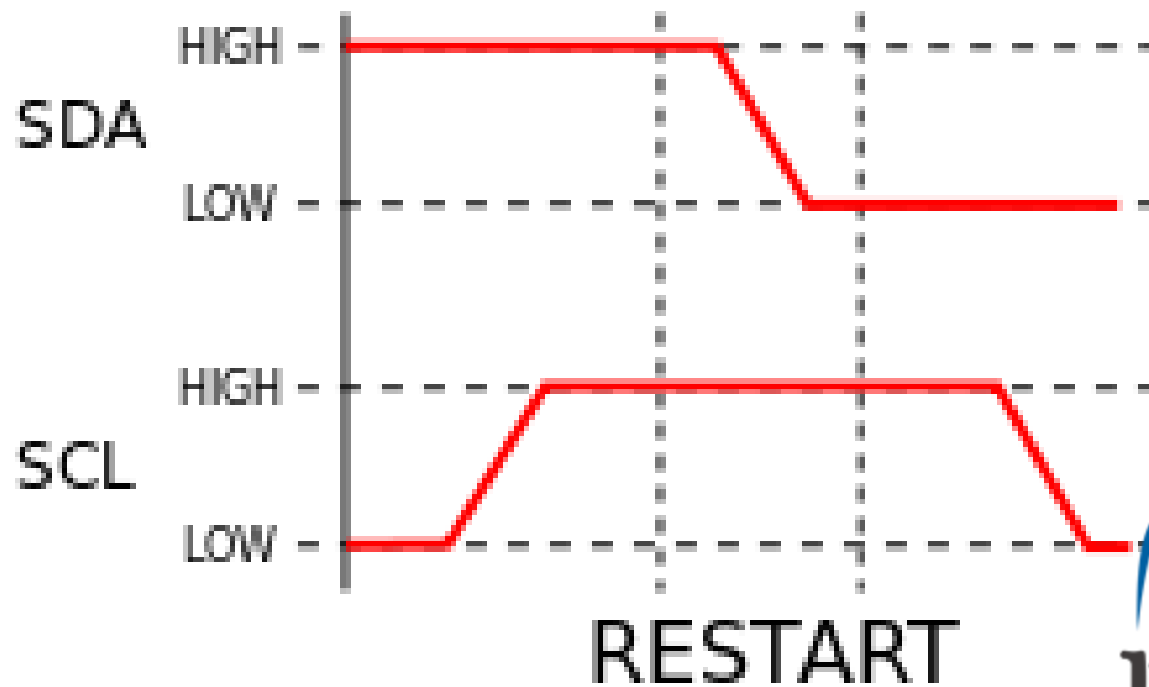
```
void I2C_Send(unsigned char
send)
{
    ACKSTAT=1;
    SSPBUF=send;
    while(ACKSTAT==0);

    wait();
}
```

I2C: Restart Function



```
RSEN=1;  
wait();
```



I2C: Read Function



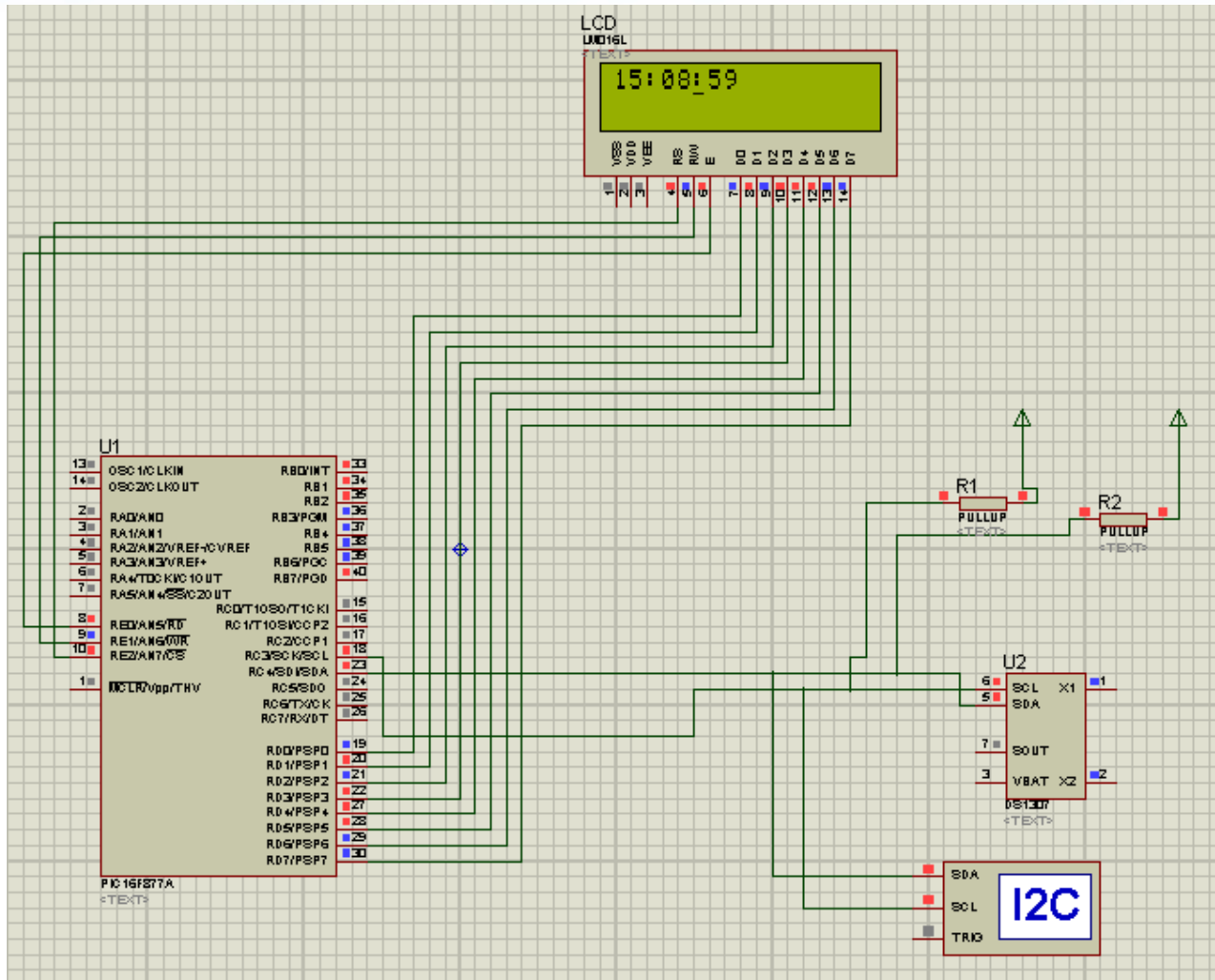
```
I2C_Read(unsigned char i)
{
    unsigned char read;
    if(i==2)
        ACKDT=1;
    else
        ACKDT=0;
    while(BF==0);
    read=SSPBUF;
    SSPOV=0;
    SSPIF=0;
    ACKEN=1;
    return(read);
}
```




- `TRISE=0x00;`
- `TRISD=0X00;`
- `ADCON1=0XFF;`
- `PORTE=0x00;`
- `PORTD=0x00;`

- `SMP=1;`
- `SSPCON=0x28;`
- `SSPCON2=0b00000000;`

RS232 Receive Block:



QUERIES??



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