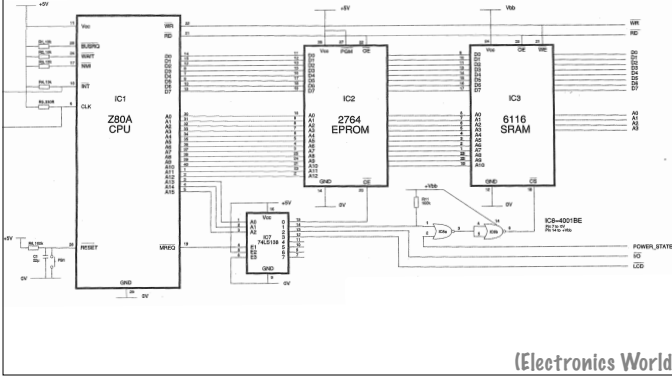
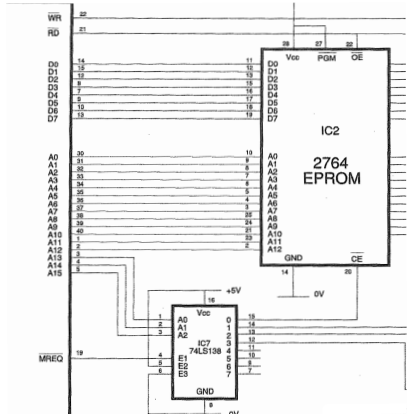


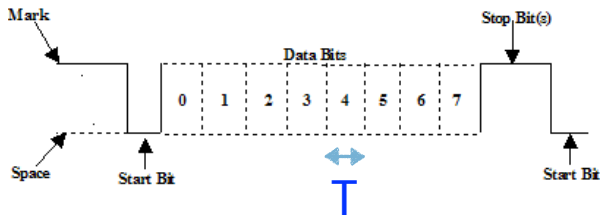
## Parallell "buss"



## Parallell "buss"



## RS232



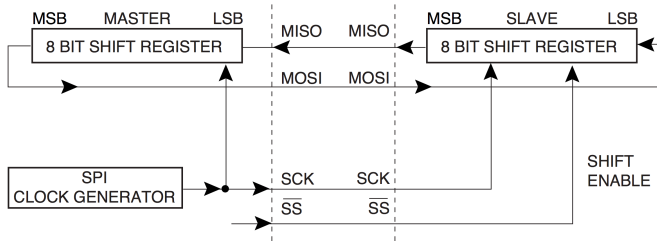
Baud rate =  $1/T$

(wcsenet.com)

## RS232 – ATMEga16A

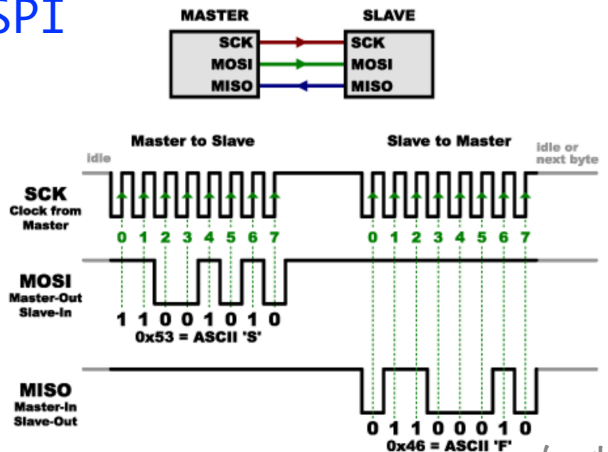
XTAL1	□	13
(RXD) PD0	□	14
(TXD) PD1	□	15
(INT0) PD2	□	16

## SPI – Serial Peripheral Interface



(atmel.com)

## SPI

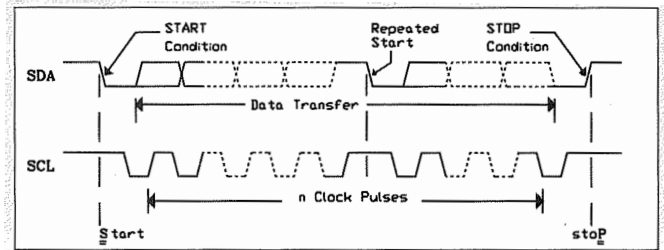


## SPI - ATmega16A

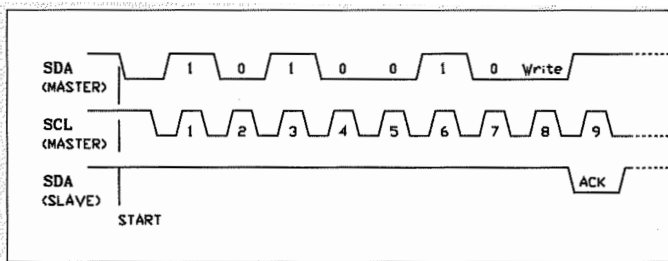
(INT2/AIN0)	PB2	<input type="checkbox"/>	3
(OC0/AIN1)	PB3	<input type="checkbox"/>	4
(SS)	PB4	<input type="checkbox"/>	5
(MOSI)	PB5	<input type="checkbox"/>	6
(MISO)	PB6	<input type="checkbox"/>	7
(SCK)	PB7	<input type="checkbox"/>	8
RESET		<input type="checkbox"/>	9
VCC		<input type="checkbox"/>	10
GND		<input type="checkbox"/>	11

SlaveSelect

## I2C/TWI - Two Wire Interface

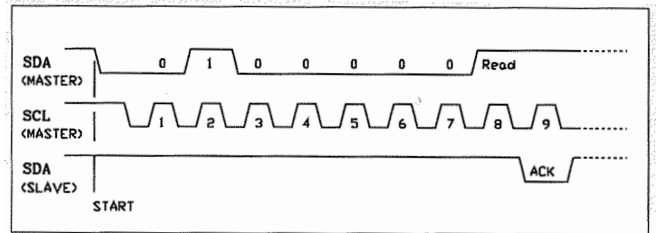


Start and stop conditions shows the relationship of the start, repeated start and stop conditions on the SDA lead with reference to the SCL Lead. The repeated start condition is used when a master needs to retain control of the bus during a combined write/read transfer, for example, when accessing a memory device. (Electronics World)



Addressing a slave receiver. Shows waveform to write to slave address A0. (Eprom PCF8582). Note that the SDA lead is low (write) during the 8th SCL clock pulse. The ACK signal, during the 9th SCL clock pulse is generated by the slave.

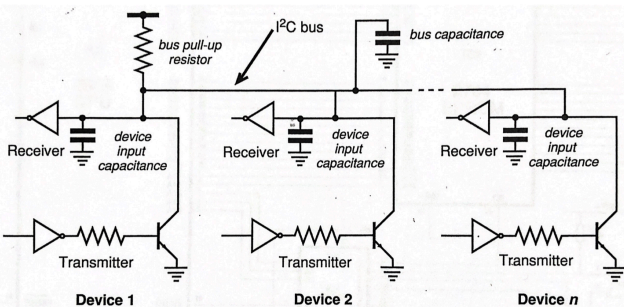
(Electronics World)



Addressing a slave transmitter. Shows waveform to read from slave address 40 (8-bit I/O PCF8574). Note that the SDA lead is high (read) during the 8th SCL clock pulse.

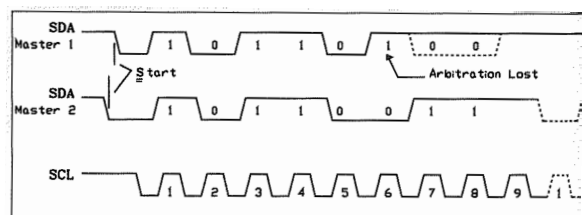
(Electronics World)

## I2C/TWI - Elektriskt



(Electronics World)

## I2C/TWI - Bus Arbitration



(Electronics World)

## I2C/TWI - ATmega16A

25	<input type="checkbox"/>	PC3 (TMS)
24	<input type="checkbox"/>	PC2 (TCK)
23	<input type="checkbox"/>	PC1 (SDA)
22	<input type="checkbox"/>	PC0 (SCL)
21	<input type="checkbox"/>	PD7 (OC2)