

TWEN Bit must be set "1" To enable TWI interface, TWSTA Put "1" To send START signal, TWINT Put "1" Cleared

TWINT Flag. TWI State detection module bus, when the bus is idle transmitted immediately START signal. When sending the START

After the hardware is set TWINT Flag while updating TWSR The status code 0x08 .

In order to enter the host receive mode must be sent SLA + R . This can be accomplished by the following operation. First to the TWDR Write register SLA + R , Then go TWINT Write bit "1" Clear TWINT Flag to continue the transmission, that is to TWCR Transmitting register write the following values SLA + R :

TWINT	TWEA	TWSTA	TWSTO	TWWC	TWEN	-	TWIE
1	x	0	0	x	1	0	x

when SLA + R Send completed and received the response signal, TWINT It has been set, at the same time TWSR The status code update. Possible status code 0x38 , 0x40 or 0x48 . In response to each state will be described in detail in the appropriate code status code table.

when SLA + R After successful transmission you can begin receiving data packets. Go through TWINT Write bit "1" Clear TWINT Flag to continue to receive.

That is to TWCR Register write start receiving the following values:

TWINT	TWEA	TWSTA	TWSTO	TWWC	TWEN	-	TWIE
1	x	0	0	x	1	0	x

When the received data packet and the transmission completion response signal, TWINT It has been set, at the same time TWSR The status code update.

Possible status code 0x50 or 0x58 . In response to each state will be described in detail in the appropriate code status code table.

When the data is successfully received, you can continue to receive packets. This process is repeated until the last byte been received. After the host receives the last byte must be sent NACK Response signal to the slave transmitter. The master generates STOP Signal or REPEATED START The entire signal is received until the end.

Go through TWCR Register write to emit following values STOP signal:

TWINT	TWEA	TWSTA	TWSTO	TWWC	TWEN	-	TWIE
1	x	0	1	x	1	0	x

Go through TWCR Register write to emit following values REPEATED START signal:

TWINT	TWEA	TWSTA	TWSTO	TWWC	TWEN	-	TWIE
1	x	1	0	x	1	0	x

In sending REPEATED START (Status code 0x10)after that, TWI Interface can be accessed again the same host, or visit the new host without sending a STOP signal. REPEATED START That may be different from the host machine, switching between the host and the host receiving the transmission mode without losing control of the bus.

Status code in the master reception mode and a corresponding operation in the following table:

Status of the host reception mode code table

status code Bus and hard Member state	Response application software	Hardware next move				
			Read / Write TWDR	Correct TWCR Operations		
				STA	STO	TWINT TWEA
0x08	START Has been sent	load SLA + R	0	0	1	x Will send SLA + R ; The reception ACK or NACK
0x10	REPEATED START Already	load SLA + R	0	0	1	x Will send SLA + R ; The reception ACK or NACK