AT89S52 FLOWCHART

Init\_uart()

Ports\_init()

“count” value based on timer

No

Timer Interrupt

void timer0\_isr() interrupt 1 {

TH0 = 0x4B;

TL0 = 0xFD;

count++;

}

count>=10

RX\_Index != 0

Delay(10)

Transmit\_Data()

count = 0

Yes

Yes

No

Yes

“RX\_Index” value based on uart interrupt

Received\_Data()

RX\_Index = 0

memset(RX\_Data, '\0', 7 \* sizeof(char))

Yes

Received\_Data()

if (RX\_Data[0] == IDENTITY\_BYTE) {

if (RX\_Data[1] == START\_BYTE) {

unsigned char temp = RX\_CHECKSUM(RX\_Data[2], RX\_Data[3], RX\_Data[4]);

if ((RX\_Data[5] == temp) && (RX\_Data[6] == END\_BYTE)) {

Rx\_012Bit(&RX\_Data[2]);

Rx\_345Bit(&RX\_Data[2]);

if(RX\_Data[4]>=3)

(PORT3\_PIN4=0);

else

(PORT3\_PIN4=1);

}

}

}

}

Transmit\_Data()

TX\_Data[0] = IDENTITY\_BYTE;

TX\_Data[1] = START\_BYTE;

TX\_Data[2] = ~P0;

TX\_Data[3] = ~P2;

TX\_Data[4] = TX\_CHECKSUM(TX\_Data[2], TX\_Data[3]);

TX\_Data[5] = END\_BYTE;

Tx\_char(TX\_Data[0]);

Tx\_char(TX\_Data[1]);

Tx\_char(TX\_Data[2]);

Tx\_char(TX\_Data[3]);

Tx\_char(TX\_Data[4]);

Tx\_char(TX\_Data[5]);

Uart Interrupt

void serial\_isr() interrupt 4 {

unsigned char receivedChar;

if (RI == 1) {

RI = 0; // Clear the Receive interrupt flag

receivedChar = SBUF;

//if (RX\_Index >= 6) RX\_Index=0;

//RX\_Data[RX\_Index++] = receivedChar;

if (RX\_Index >= RST\_RX\_Index) RX\_Index = 0;

else {

RX\_Data[RX\_Index++] = receivedChar;

if (RX\_Data[0] != 0xA5) RX\_Index = 0;

}

}

}