


```

sfr DPH = 0x83; //Data Pointer High Byte                                0000,0000
//-----
//??? 1T 8051?? ??????????????
//          7 6 5 4 3 2 1 0 Reset Value
sfr PCON = 0x87; //Power Control    SMOD SMOD0 LVDF POF GF1  GF0 PD IDL  0001,0000
//          7 6 5 4 3 2 1 0 Reset Value
sfr AUXR = 0x8E; //Auxiliary Register T0x12 T1x12 UART_M0x6 BRTR S2SMOD BRTx12 EXTRAM S1BRS
0000,0000
//-----
sfr AUXR1 = 0xA2; //Auxiliary Register 1 - PCA_P4 SPI_P4 S2_P4 GF2  ADRJ -  DPS 0000,0000
/*
PCA_P4:
  0, ??PCA ?P1 ?
  1?PCA/PWM ?P1 ???P4 ?: ECI ?P1.2 ???P4.1 ??
                    PCA0/PWM0 ?P1.3 ???P4.2 ?
                    PCA1/PWM1 ?P1.4 ???P4.3 ?
SPI_P4:
  0, ??SPI ?P1 ?
  1?SPI ?P1 ???P4 ?: SPICLK ?P1.7 ???P4.3 ?
                    MISO ?P1.6 ???P4.2 ?
                    MOSI ?P1.5 ???P4.1 ?
                    SS ?P1.4 ???P4.0 ?
S2_P4:
  0, ??UART2 ?P1 ?
  1?UART2 ?P1 ???P4 ?: TxD2 ?P1.3 ???P4.3 ?
                    RxD2 ?P1.2 ???P4.2 ?
GF2: ??????

ADRJ:
  0, 10 ?A/D ??????8 ???ADC_RES ???, ?2 ???ADC_RESL ???
  1?10 ?A/D ??????2 ???ADC_RES ??????2 ?, ?8 ???ADC_RESL ???

DPS: 0, ????????DPTR0
      1?????????DPTR1
*/
//-----
sfr WAKE_CLKO = 0x8F; //??? SFR WAK1_CLKO
/*
  7      6      5      4      3      2      1      0      Reset Value
PCAWAKEUP RXD_PIN_IE T1_PIN_IE T0_PIN_IE LVD_WAKE  _ T1CLKO T0CLKO  0000,0000B

b7 - PCAWAKEUP : PCA ????? powerdown?
b6 - RXD_PIN_IE : ? P3.0(RXD) ????? RI ??? powerdown(????????)?
b5 - T1_PIN_IE : ? T1 ????? T1 ????? powerdown(????????)?
b4 - T0_PIN_IE : ? T0 ????? T0 ????? powerdown(????????)?
b3 - LVD_WAKE : ? CMPIN ????? LVD ????? powerdown(????????)?
b2 -
b1 - T1CLKO : ?? T1CKO(P3.5) ??? T1 ?????Fck1 = 1/2 T1 ???
b0 - T0CLKO : ?? T0CKO(P3.4) ??? T0 ?????Fck0 = 1/2 T1 ???
*/

```

```
//-----
sfr CLK_DIV = 0x97; //Clock Divder      - - - - - CLKS2 CLKS1 CLKS0 xxxx,x000
//-----
sfr BUS_SPEED = 0xA1; //Stretch register - - ALES1 ALES0 - RWS2 RWS1 RWS0 xx10,x011
/*
```

ALES1 and ALES0:

00 : The P0 address setup time and hold time to ALE negative edge is one clock cycle
 01 : The P0 address setup time and hold time to ALE negative edge is two clock cycles.
 10 : The P0 address setup time and hold time to ALE negative edge is three clock cycles. (default)
 11 : The P0 address setup time and hold time to ALE negative edge is four clock cycles.

RWS2,RWS1,RWS0:

000 : The MOVX read/write pulse is 1 clock cycle.
 001 : The MOVX read/write pulse is 2 clock cycles.
 010 : The MOVX read/write pulse is 3 clock cycles.
 011 : The MOVX read/write pulse is 4 clock cycles. (default)
 100 : The MOVX read/write pulse is 5 clock cycles.
 101 : The MOVX read/write pulse is 6 clock cycles.
 110 : The MOVX read/write pulse is 7 clock cycles.
 111 : The MOVX read/write pulse is 8 clock cycles.

```
*/
//-----
//??? 1T 8051?? ?????????????
//????????????????????????????????????????????
//???????????????????? ??? 1T 8051?? ???????
//
//          7 6 5 4 3 2 1 0 Reset Value
sfr IE = 0xA8; //????????? EA ELVD EADC ES ET1 EX1 ET0 EX0 0x00,0000
//-----
```

```
sbit EA = IE^7;
sbit ELVD = IE^6; //?????????
sbit EADC = IE^5; //ADC ??????
sbit ES = IE^4;
sbit ET1 = IE^3;
sbit EX1 = IE^2;
sbit ET0 = IE^1;
sbit EX0 = IE^0;
```

```
//-----
sfr IE2 = 0xAF; //Auxiliary Interrupt - - - - - ESPI ES2 0000,0000B
//-----
```

```
//          7 6 5 4 3 2 1 0 Reset Value
sfr IP = 0xB8; //????????? PPCA PLVD PADC PS PT1 PX1 PT0 PX0 0000,0000
//-----
```

```
sbit PPCA = IP^7; //PCA ???????
sbit PLVD = IP^6; //?????????
sbit PADC = IP^5; //ADC ??????
sbit PS = IP^4;
sbit PT1 = IP^3;
sbit PX1 = IP^2;
sbit PT0 = IP^1;
sbit PX0 = IP^0;
```

```

//-----
//
//          7  6  5  4  3  2  1  0  Reset Value
sfr IPH = 0xB7; //???????  PPSAH PLVDH PADCH PSH PT1H PX1H PT0H PX0H 0000,0000
sfr IP2 = 0xB5; //          -  -  -  -  -  -  -  -  PSPI PS2 xxxx,xx00
sfr IPH2 = 0xB6; //          -  -  -  -  -  -  -  -  PSPIH PS2H xxxx,xx00
//-----
//??? 1T 8051?? ???I/O ????????
//          7  6  5  4  3  2  1  0  Reset Value
sfr P0 = 0x80; //8 bitPort0  P0.7 P0.6 P0.5 P0.4 P0.3 P0.2 P0.1 P0.0 1111,1111
sfr P0M0 = 0x94; //          0000,0000
sfr P0M1 = 0x93; //          0000,0000
sfr P1 = 0x90; //8 bitPort1  P1.7 P1.6 P1.5 P1.4 P1.3 P1.2 P1.1 P1.0 1111,1111
sfr P1M0 = 0x92; //          0000,0000
sfr P1M1 = 0x91; //          0000,0000
sfr P1ASF = 0x9D; //P1 analog special function
sfr P2 = 0xA0; //8 bitPort2  P2.7 P2.6 P2.5 P2.4 P2.3 P2.2 P2.1 P2.0 1111,1111
sfr P2M0 = 0x96; //          0000,0000
sfr P2M1 = 0x95; //          0000,0000
sfr P3 = 0xB0; //8 bitPort3  P3.7 P3.6 P3.5 P3.4 P3.3 P3.2 P3.1 P3.0 1111,1111
sfr P3M0 = 0xB2; //          0000,0000
sfr P3M1 = 0xB1; //          0000,0000
sfr P4 = 0xC0; //8 bitPort4  P4.7 P4.6 P4.5 P4.4 P4.3 P4.2 P4.1 P4.0 1111,1111
sfr P4M0 = 0xB4; //          0000,0000
sfr P4M1 = 0xB3; //          0000,0000
//          7  6  5  4  3  2  1  0  Reset Value
sfr P4SW = 0xBB; //Port-4 switch  -  LVD_P4.6 ALE_P4.5 NA_P4.4 -  -  -  -  x000,xxxx

sfr P5 = 0xC8; //8 bitPort5  -  -  -  -  P5.3 P5.2 P5.1 P5.0 xxxx,1111
sfr P5M0 = 0xCA; //          0000,0000
sfr P5M1 = 0xC9; //          0000,0000
//-----
//??? 1T 8051?? ??????????????
//          7  6  5  4  3  2  1  0  Reset Value
sfr TCON = 0x88; //T0/T1 Control  TF1 TR1 TF0 TR0 IE1 IT1 IE0 IT0 0000,0000
//-----
sbit TF1 = TCON^7;
sbit TR1 = TCON^6;
sbit TF0 = TCON^5;
sbit TR0 = TCON^4;
sbit IE1 = TCON^3;
sbit IT1 = TCON^2;
sbit IE0 = TCON^1;
sbit IT0 = TCON^0;
//-----
sfr TMOD = 0x89; //T0/T1 Modes  GATE1 C/T1 M1_1 M1_0 GATE0 C/T0 M0_1 M0_0 0000,0000
sfr TL0 = 0x8A; //T0 Low Byte          0000,0000
sfr TH0 = 0x8C; //T0 High Byte         0000,0000
sfr TL1 = 0x8B; //T1 Low Byte          0000,0000
sfr TH1 = 0x8D; //T1 High Byte         0000,0000
//-----

```

```

//??? 1T 8051?? ??????????????
//
//          7 6 5 4 3 2 1 0 Reset Value
sfr SCON = 0x98; //Serial Control SM0/FE SM1 SM2 REN TB8 RB8 TI RI 0000,0000
//-----
sbit SM0 = SCON^7; //SM0/FE
sbit SM1 = SCON^6;
sbit SM2 = SCON^5;
sbit REN = SCON^4;
sbit TB8 = SCON^3;
sbit RB8 = SCON^2;
sbit TI = SCON^1;
sbit RI = SCON^0;
//-----
sfr SBUF = 0x99; //Serial Data Buffer          xxxx,xxxx
sfr SADEN = 0xB9; //Slave Address Mask          0000,0000
sfr SADDR = 0xA9; //Slave Address          0000,0000
//-----
//          7 6 5 4 3 2 1 0 Reset Value
sfr S2CON = 0x9A; //S2 Control S2SM0 S2SM1 S2SM2 S2REN S2TB8 S2RB8 S2TI S2RI 00000000B
sfr S2BUF = 0x9B; //S2 Serial Buffer          xxxx,xxxx
sfr BRT = 0x9C; //S2 Baud-Rate Timer          0000,0000
//-----
//??? 1T 8051?? ??????????????
sfr WDT_CONTR = 0xC1; //Watch-Dog-Timer Control register
//          7 6 5 4 3 2 1 0 Reset Value
//          WDT_FLAG - EN_WDT CLR_WDT IDLE_WDT PS2 PS1 PS0  xx00,0000
//-----

//-----
//??? 1T 8051?? ???PCA/PWM ???????
//          7 6 5 4 3 2 1 0 Reset Value
sfr CCON = 0xD8; //PCA ?????? CF CR - - - CCF1 CCF0 00xx,xx00
//-----
sbit CF = CCON^7; //PCA?????,??????,??????0?
sbit CR = CCON^6; //1:?? PCA ?????, ??????0?
//
//
sbit CCF1 = CCON^1; //PCA ??1 ????, ?????, ??????0?
sbit CCF0 = CCON^0; //PCA ??0 ????, ?????, ??????0?
//-----
sfr CMOD = 0xD9; //PCA ??????? CIDL - - - CPS2 CPS1 CPS0 ECF 0xxx,x000
/*
CIDL: idle ??? PCA ?????????, 0: ????, 1: ?????

CPS2: PCA ????????? 2?
CPS1: PCA ????????? 1?
CPS0: PCA ????????? 0?
CPS2 CPS1 CPS0
0 0 0 ?????? fosc/12?
0 0 1 ?????? fosc/2?

```

```

0 1 0 Timer0 ???
0 1 1 ? ECI/P3.4 ???????????? fosc/2?
1 0 0 ??????? Fosc/1
1 0 1 ???????/4?Fosc/4
1 1 0 ???????/6?Fosc/6
1 1 1 ???????/8?Fosc/8

```

ECF: PCA??????????, 1--?? CF(CCON.7) ?????

```

*/
//-----
sfr CL = 0xE9; //PCA ????? 0000,0000
sfr CH = 0xF9; //PCA ????? 0000,0000
//-----
//          7 6 5 4 3 2 1 0 Reset Value
sfr CCAPM0 = 0xDA; //PCA ??0 PWM ??? - ECOM0 CAPP0 CAPN0 MAT0 TOG0 PWM0 ECCF0 x000,0000
sfr CCAPM1 = 0xDB; //PCA ??1 PWM ??? - ECOM1 CAPP1 CAPN1 MAT1 TOG1 PWM1 ECCF1 x000,0000

```

```

//ECOMn = 1:???????
//CAPPn = 1:????????????
//CAPNn = 1:????????????
//MATn = 1:????????, ?? CCON ?? CCFn ???
//TOGn = 1:????????, CEXn ???
//PWMn = 1:? CEXn ??? PWM ???
//ECCFn = 1:?? CCON ?? CCFn ?????

```

```

//ECOMn CAPPn CAPNn MATn TOGn PWMn ECCFn
// 0 0 0 0 0 0 0 0x00 ???????
// x 1 0 0 0 0 x 0x21 16?CEXn????????
// x 0 1 0 0 0 x 0x11 16?CEXn????????
// x 1 1 0 0 0 x 0x31 16?CEXn??(????)????
// 1 0 0 1 0 0 x 0x49 16????
// 1 0 0 1 1 0 x 0x4d 16????
// 1 0 0 0 0 1 0 0x42 8? PWM?

```

```

//ECOMn CAPPn CAPNn MATn TOGn PWMn ECCFn
// 0 0 0 0 0 0 0 0x00 ???
// 1 0 0 0 0 1 0 0x42 ??8?PWM, ???
// 1 1 0 0 0 1 1 0x63 PWM????????
// 1 0 1 0 0 1 1 0x53 PWM????????
// 1 1 1 0 0 1 1 0x73 PWM????????????????

```

```

//-----
sfr CCAP0L = 0xEA; //PCA ?? 0 ???/????? 8 ?? 0000,0000
sfr CCAP0H = 0xFA; //PCA ?? 0 ???/????? 8 ?? 0000,0000
sfr CCAP1L = 0xEB; //PCA ?? 1 ???/????? 8 ?? 0000,0000
sfr CCAP1H = 0xFB; //PCA ?? 1 ???/????? 8 ?? 0000,0000
//-----

```

```

//          7 6 5 4 3 2 1 0 Reset Value
sfr PCA_PWM0 = 0xF2; //PCA ??0 PWM ??? - - - - - EPC0H EPC0L xxxx,xx00
sfr PCA_PWM1 = 0xF3; //PCA ??1 PWM ??? - - - - - EPC1H EPC1L xxxx,xx00

```

```
//PCA_PWMn: 7 6 5 4 3 2 1 0
// - - - - - EPCnH EPCnL
//B7-B2: ??
//B1(EPCnH): ? PWM ????? CCAPnH ?? 9 ???
//B0(EPCnL): ? PWM ????? CCAPnL ?? 9 ???
//-----
//??? 1T 8051?? ??? ADC ???????
//          7 6 5 4 3 2 1 0 Reset Value
sfr ADC_CONTR = 0xBC; //A/D ?????? ADC_POWER SPEED1 SPEED0 ADC_FLAG ADC_START CHS2 CHS1
CHS0 0000,0000
sfr ADC_RES = 0xBD; //A/D ?????? ADCV.9 ADCV.8 ADCV.7 ADCV.6 ADCV.5 ADCV.4 ADCV.3 ADCV.2
0000,0000
sfr ADC_RESL = 0xBE; //A/D ?????? ADCV.1 ADCV.0 0000,0000
//-----
//??? 1T 8051?? ??? SPI ???????
//          7 6 5 4 3 2 1 0 Reset Value
sfr SPCTL = 0xCE; //SPI Control Register SSIG SPEN DORD MSTR CPOL CPHA SPR1 SPRO 0000,0100
sfr SPSTAT = 0xCD; //SPI Status Register SPIF WCOL - - - - - 00xx,xxxx
sfr SPDAT = 0xCF; //SPI Data Register 0000,0000
//-----
//??? 1T 8051?? ??? IAP/ISP ???????
sfr IAP_DATA = 0xC2;
sfr IAP_ADDRH = 0xC3;
sfr IAP_ADDRL = 0xC4;
//          7 6 5 4 3 2 1 0 Reset Value
sfr IAP_CMD = 0xC5; //IAP Mode Table 0 - - - - MS1 MS0 0xxx,xx00
sfr IAP_TRIG = 0xC6;
sfr IAP_CONTR = 0xC7; //IAP Control Register IAPEN SWBS SWRST CFAIL - WT2 WT1 WT0 0000,x000
//-----
#endif
```

```
?????/*
/*****
?????
?? ??? ?? ??
0XFF 1 1 0XFF
?????
??? ?? ??
0X00 0X01 ??
0X00 0X02 ??
0X00 0X03 ??
0X00 0X04 ??
0X00 0X00 ??
0X01 0X01 ???
```

```

0X01  0X02  ???
0X02  0X01  ???
0X02  0X02  ???
0X03  ???  ?????
***** /
?????
WIFI????-???????????? www.wifi-robots.com
????????????????????????????????????????????????????????????????
By WIFI????-?????????
*/
#include "uart.h"
#include <stdio.h>
#include "motor.h"
#include "steer.h"

extern uint16 se_timer[5];
uint8 buffer[3];
uint8 rec_flag=0;  //??0???? ?1????

void UART_init(void)
{
    PCON |= 0x80;    //????????SMOD
    SCON = 0x50;    //8???,????
    BRT = RELOAD_COUNT;  //????????????
    AUXR |= 0x04;    //????????????Fosc,?1T
    AUXR |= 0x01;    //??1????????????????
    AUXR |= 0x10;    //????????
    ES   = 1;  //????
    EA   = 1;  //????
    TI   = 1;
}

void UART_send_byte(uint8 byte)
{
    ES   = 0; //????
    TI   = 0; //????????????
    SBUF = byte;
    while(TI ==0); //????
    TI   = 1; //????????????
    ES   = 1; //????
}

void UART_send(uint8 *Buffer, uint8 Length)
{
    while(Length != 0)
    {
        UART_send_byte(*Buffer);
        Buffer++;
    }
}

```



```

    Length--;
}
}

void Communication_Decode(void)
{
    if(buffer[0]==0x00)
    {
        switch(buffer[1])
        {
            case 0x01:MOTOR_GO_FORWARD; return;
            case 0x02:MOTOR_GO_BACK; return;
            case 0x03:MOTOR_GO_LEFT; return;
            case 0x04:MOTOR_GO_RIGHT; return;
            case 0x00:MOTOR_GO_STOP; return;
            default: return;
        }
    }
    else if(buffer[0]==0x01)
    {
        if(buffer[2]>180)
            return;
        switch(buffer[1])
        {
            case 0x01:se_timer[0]=buffer[2]; return;
            case 0x02:se_timer[1]=buffer[2]; return;
            case 0x03:se_timer[2]=buffer[2]; return;
            case 0x04:se_timer[3]=buffer[2]; return;
            case 0x05:se_timer[4]=buffer[2]; return;
            default : return;
        }
    }
    else
    {
        return;
    }
}

```

```

void UART_Interrupt_Receive(void) interrupt 4
{
    static uint8 i;

    if(RI==1)
    {
        RI = 0;
        if(rec_flag==0)
        {
            if(SBUF==0xff)
            {

```

```
        rec_flag=1;
        i=0;
    }
}
else
{
    if(SBUF==0xff)
    {
        rec_flag=0;
        if(i==3)
        {
            Communication_Decode();
        }
        i=0;
    }
    else
    {
        buffer[i]=SBUF;
        i++;
    }
}
else
{
    TI = 0;
}
}
```