

```
//HTG13264-ST7565R-ST7567
//Parallel
//2016.7.18
```

```
#include <reg51.h>
#include <intrins.h>
#define uchar unsigned char
#define uint unsigned int
```

```
/******parallel******/
```

```
sbit    R_S=    P3^5;
sbit    RES=    P3^4;
sbit    W_R=    P3^2;
sbit    R_D=    P3^3;
sbit    C_S=    P3^7;
```

```
uchar Page=0xb0;
void WrateC(uchar cmd);
void WrateD(uchar dat);
void LcdInit();
void Delayms(uchar ms);
void WriteEnglish(uchar col,uchar pag,uchar *ptr);
void Setadd(uchar xl,uchar yl);
```

```
char code Hanzi[]={
0xFF,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,
0X01,
0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,
0X01,
0X01,0X01,0X01,0X01,0X01,0X11,0X61,0X03,0XCD,0X31,0X01,0X21,0XFD,0X21,0X21
,0X21,
0XFD,0X21,0X21,0X01,0X01,0X41,0X45,0X55,0X55,0X55,0XD5,0X7F,0X55,0X55,0XD5
,0X55,
0X55,0X55,0X45,0X41,0X01,0X01,0X01,0X01,0X7D,0X55,0XD5,0X55,0X55,0XD
5,0X55,
0X7D,0X01,0X01,0X01,0X01,0X01,0X41,0X41,0X45,0X45,0X45,0X45,0XC5,0X45,0X45,
0X45,
0X45,0X45,0X41,0X41,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,
0X01,
0X01,
```

0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,0X01,
0X01,
0X01,0X01,0X01,0XFF,0XFF,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X08,0X08,0XFE,0X01,0X04,0X84,
0X64,
0X1F,0X04,0X04,0X0C,0X17,0X64,0XC4,0X04,0X00,0X08,0X48,0X44,0X22,0X25,0X98,
0X08,
0XFF,0X10,0X18,0X25,0X42,0X46,0X0C,0X04,0X00,0X40,0X42,0X44,0X58,0X40,0X7F,
0X40,
0X40,0X40,0X7F,0X50,0X48,0X46,0X40,0X40,0X00,0X20,0X10,0X08,0X06,0X00,0X80,
0X00,
0XFF,0X00,0X00,0X02,0X04,0X18,0X30,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0XFF,0XFF,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X08,0XF8,0X08,0X00,
0X01,
0X08,0XF9,0X08,0X18,0X08,0X08,0XF8,0X08,0X08,0X18,0X01,0X08,0XF8,0XF8,0X00,
0XF8,
0XF8,0X08,0X00,0X01,0X10,0X10,0XF8,0X00,0X00,0X00,0X00,0X00,0X30,0X08,0X88,
0X88,
0X48,0X30,0X00,0X00,0X70,0X08,0X08,0X08,0X88,0X70,0X00,0X00,0XE0,0X10,0X88,
0X88,
0X18,0X00,0X00,0X01,0X00,0XC0,0X20,0X10,0XF8,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0XFF,0XFF,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X20,
0X3F,0X21,0X01,0X01,0X21,0X3F,0X20,0X00,0X00,0X20,0X3F,0X20,0X00,0X00,0X00,
0X20,
0X3F,0X00,0X3F,0X00,0X3F,0X20,0X00,0X00,0X20,0X20,0X3F,0X20,0X20,0X00,0X00,
0X00,

0X18,0X20,0X20,0X20,0X11,0X0E,0X00,0X00,0X30,0X28,0X24,0X22,0X21,0X30,0X00,
0X00,
0X0F,0X11,0X20,0X20,0X11,0X0E,0X00,0X00,0X07,0X04,0X24,0X24,0X3F,0X24,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0XFF,
0XFF,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X08,0XF8,0X08,0X08,
0X08,
0X10,0XE0,0X00,0XE0,0X10,0X08,0X08,0X08,0X10,0XE0,0X00,0X18,0X08,0X08,0XF8,
0X08,
0X08,0X18,0X00,0X00,0X70,0X88,0X08,0X08,0X08,0X38,0X00,0X00,0X10,0X10,0XF8,
0X00,
0X00,0X00,0X00,0X00,0X30,0X08,0X88,0X88,0X48,0X30,0X00,0X00,0X70,0X08,0X08,
0X08,
0X88,0X70,0X00,0X00,0X80,0X80,0X00,0X80,0X80,0X80,0X00,0X00,0XE0,0X10,0X88,
0X88,
0X18,0X00,0X00,0X00,0X00,0XC0,0X20,0X10,0XF8,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0XFF,0XFF,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X20,
0X3F,0X20,0X20,0X20,0X10,0X0F,0X00,0X0F,0X10,0X20,0X20,0X20,0X10,0X0F,0X00,
0X00,
0X00,0X20,0X3F,0X20,0X00,0X00,0X00,0X00,0X38,0X20,0X21,0X21,0X22,0X1C,0X00,
0X00,
0X20,0X20,0X3F,0X20,0X20,0X00,0X00,0X00,0X18,0X20,0X20,0X20,0X11,0X0E,0X00,
0X00,
0X30,0X28,0X24,0X22,0X21,0X30,0X00,0X00,0X20,0X31,0X2E,0X0E,0X31,0X20,0X00,
0X00,
0X0F,0X11,0X20,0X20,0X11,0X0E,0X00,0X00,0X07,0X04,0X24,0X24,0X3F,0X24,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0XFF,0XFF,0X00,0X00,0XE0,0X10,0X08,0X08,
0X10,
0XE0,0X00,0X00,0X10,0X10,0XF8,0X00,0X00,0X00,0X00,0X00,0X70,0X08,0X08,0X08,
0X88,

```
0X70,0X00,0X00,0X30,0X08,0X88,0X88,0X48,0X30,0X00,0X00,0X00,0XC0,0X20,0X10,
0XF8,
0X00,0X00,0X00,0XF8,0X08,0X88,0X88,0X08,0X08,0X00,0X00,0XE0,0X10,0X88,0X88,
0X18,
0X00,0X00,0X00,0X38,0X08,0X08,0XC8,0X38,0X08,0X00,0X00,0X70,0X88,0X08,0X08,
0X88,
0X70,0X00,0X00,0XE0,0X10,0X08,0X08,0X10,0XE0,0X00,0X00,0XE0,0X10,0X08,0X08,
0X10,
0XE0,0X00,0X00,0X10,0X10,0XF8,0X00,0X00,0X00,0X00,0X00,0X70,0X08,0X08,0X08,
0X88,
0X70,0X00,0X00,0X30,0X08,0X88,0X88,0X48,0X30,0X00,0X00,0X00,0XC0,0X20,0X10,
0XF8,
0X00,0X00,0X00,0XF8,0X08,0X88,0X88,0X08,0X08,0X00,0X00,0XFF,0XFF,0X80,0X80,
0X8F,
0X90,0XA0,0XA0,0X90,0X8F,0X80,0X80,0XA0,0XA0,0XBF,0XA0,0XA0,0X80,0X80,0X8
0,0XB0,
0XA8,0XA4,0XA2,0XA1,0XB0,0X80,0X80,0X98,0XA0,0XA0,0XA0,0X91,0X8E,0X80,0X8
0,0X87,
0X84,0XA4,0XA4,0XBF,0XA4,0X80,0X80,0X99,0XA1,0XA0,0XA0,0X91,0X8E,0X80,0X8
0,0X8F,
0X91,0XA0,0XA0,0X91,0X8E,0X80,0X80,0X80,0X80,0XBF,0X80,0X80,0X80,0X80,0X80,
0X9C,
0XA2,0XA1,0XA1,0XA2,0X9C,0X80,0X80,0X80,0XB1,0XA2,0XA2,0X91,0X8F,0X80,0X8
0,0X8F,
0X90,0XA0,0XA0,0X90,0X8F,0X80,0X80,0XA0,0XA0,0XBF,0XA0,0XA0,0X80,0X80,0X8
0,0XB0,
0XA8,0XA4,0XA2,0XA1,0XB0,0X80,0X80,0X98,0XA0,0XA0,0XA0,0X91,0X8E,0X80,0X8
0,0X87,
0X84,0XA4,0XA4,0XBF,0XA4,0X80,0X80,0X99,0XA1,0XA0,0XA0,0X91,0X8E,0X80,0X8
0,0XFF,
```

```
};
//-----
// Delay Routine
//-----
```

```
void delay(uint m)
{
    uint j;
    uint i;

    for(i=0; i<m; i++)
        for(j=0; j<109; j++)
            _nop_();_nop_();
}
```

```
}
```

```
void Clear()
```

```
{  
    unsigned char i,j,m=0;  
    for(i=0;i<8;i++)  
    {  
        Setadd(0,i);  
        for(j=0;j<128;j++)  
            WrateD(0x00);  
    }  
}
```

```
//initialize
```

```
void LcdInit()
```

```
{  
    RES=0;  
    delay(50);  
    RES=1;  
    delay(20);  
    WrateC(0xe2);  
    WrateC(0xA2);  
    WrateC(0xA0);  
    WrateC(0xc0);  
    WrateC(0x2c);  
    WrateC(0x2e);  
    WrateC(0x2F);  
    WrateC(0x81);  
    WrateC(0x15);  
    WrateC(0x25);  
    WrateC(0xAF);  
    WrateC(0x40);  
    Clear();  
}
```

```
void Hanzi_Disp(void)
```

```
{  
    unsigned char i,j,k=0;  
    WrateC(0x40);  
    for(i=0;i<8;i++)  
    {  
        Setadd(0,i);  
        for(j=0;j<132;j++)  
            WrateD(Hanzi[i*132+j]);  
    }  
}
```

```

        }
    }

void Display(unsigned char sda,unsigned char sda1)
{
    unsigned char i,j;
    for(i=0;i<8;i++)
    {
        WrateC(Page+i);
        WrateC(0x10);
        WrateC(0x00);
        for(j=0;j<66;j++)
        { WrateD(sda);
          WrateD(sda1);
        }
    }
}

```

```

void main()
{
    while(1)
    {
        LcdInit();

        Display(0xFF,0xFF);
        delay(1000);

        Display(0x00,0x00);
        delay(1000);

        Display(0x55,0xAA);
        delay(1000);

        Display(0xAA,0x55);
        delay(1000);

        Display(0xFF,0x00);
        delay(1000);

        Display(0x00,0xFF);
        delay(1000);

        Hanzi_Disp();
    }
}

```

```

        delay(1000);
        Clear();

    }
}

void Setadd(uchar xl,uchar yl)
{
    uchar i;
    i=(xl+0)&0x0f; //SEG0~SEG127
    xl=(xl>>4)+0x10;
    WrateC(0xb0+yl);
    WrateC(xl);
    WrateC(i);
}

```

```

void WrateC(uchar cmd)
{
    R_S=0;
    C_S=0;
    W_R=0;
    R_D=1;
    P1=cmd;
    W_R=1;
    C_S=1;
}

```

```

void WrateD(uchar dat)
{
    R_S=1;
    C_S=0;
    W_R=0;
    R_D=1;
    P1=dat;
    W_R=1;
    C_S=1;
}

```