

设计简介：

本设计是基于单片机的太阳能LED交通警示板的设计，主要实现以下功能：

实现通过光照强度传感器检测当前光照强度

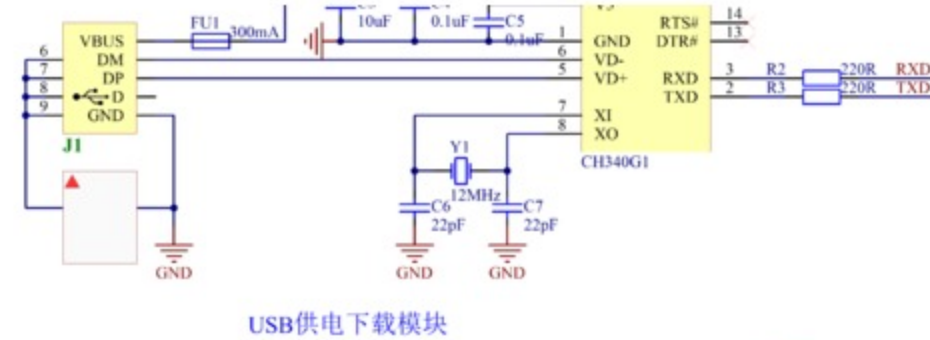
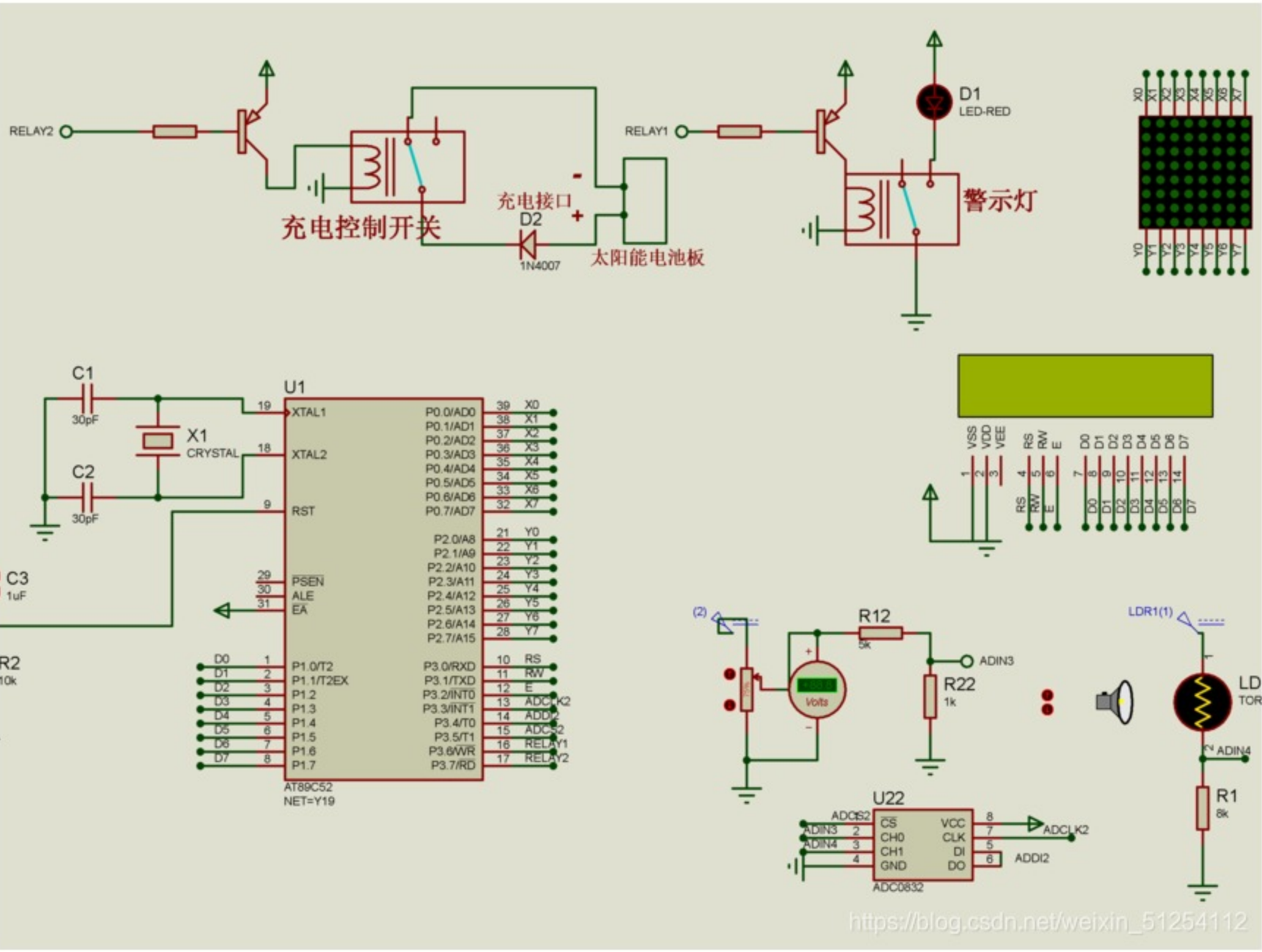
实现通过电压检测模块检测太阳能电池板电压

实现LED点阵显示“出入平安”

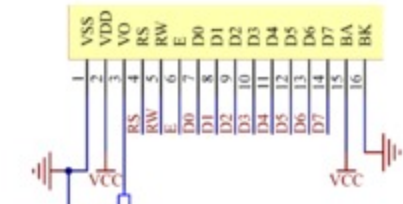
实现自动打开或关闭电池充电

实现电池电压异常，打开警示灯

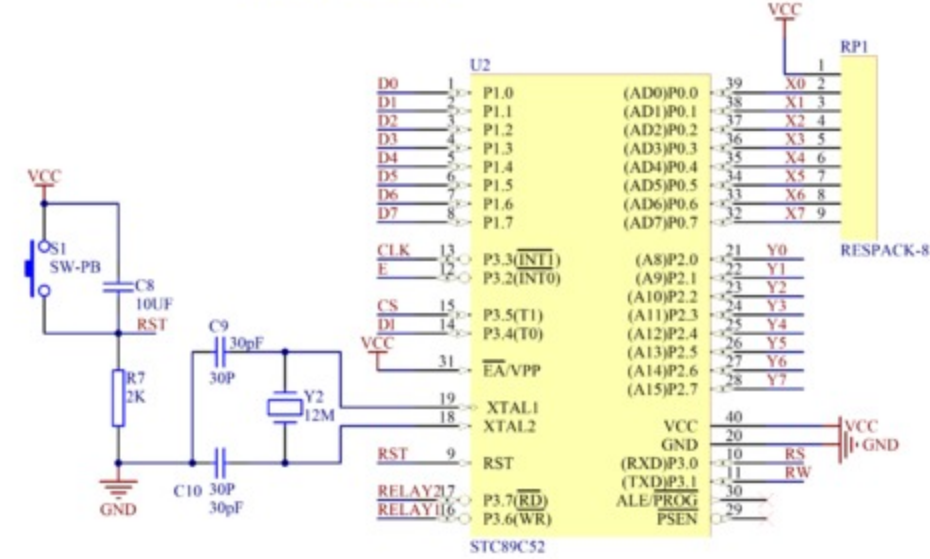
实现通过LCD1602显示当前电池电压值和光照强度值



USB供电下载模块



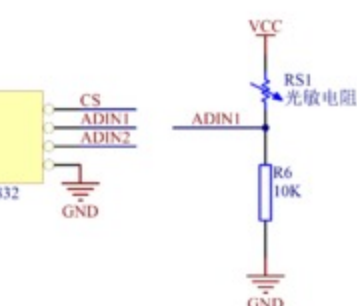
显示屏LCD1602模块



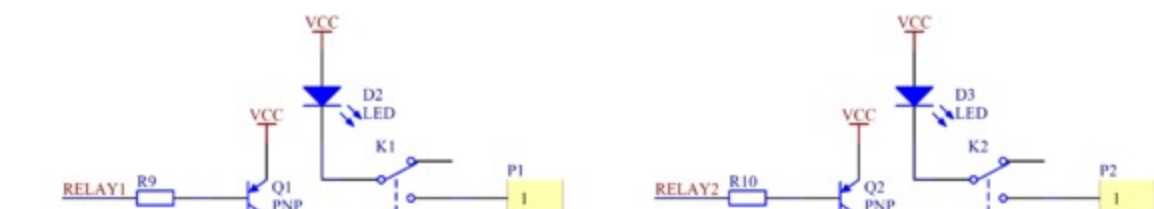
单片机最小系统



电压检测模块



光照强度检测模块



```
1  uchar code zifux[]="0123456789abcdef";
2  uchar code zifu0[]="BAT:24.0v le:00 ";
3  uchar code zifu1[]=" input :00.0v ";
4  //点阵显示
5  unsigned char code taba[]={0xfe,0xfd,0xfb,0xf7,0xef,0xdf,0xbf,0x7f}; //行选
6  unsigned char code tabb[]={0x08,0x49,0x49,0x7f,0x08,0x49,0x49,0x7f}; //选列"出"
7  unsigned char code tabc[]={0x00,0x02,0x04,0x08,0x18,0x24,0x42,0x81}; //"入"
8  unsigned char code tabd[]={0xFF,0x4A,0x2A,0x1C,0xFF,0x08,0x08,0x08}; //"平"
9  unsigned char code tabe[]={0x08,0xFF,0x89,0x04,0x7f,0x14,0x1C,0x63}; //"安"
10 unsigned char i,j;
11
12 //负载
13 sbit out=P3^6;
14 //PWM输出
15 sbit pwm=P3^7;
16 uint jishu2;
17 uint zhan=50;
18 //充电电压和电流
19 ulong u1=0;
20 ulong ub=0;
21 //被充电电压和电流
22 ulong u2=0;
23 ulong i2=0;
24
25 void delay(void)//延时5ms
26 {
27     unsigned char i,j;
28     for(i=10;i>0;i--)
29         for(j=248;j>0;j--);
30 }
31
32 void delay1(void)//延时10ms
33 {
34     unsigned char i,j,k;
35     for(k=10;k>0;k--)
36         for(i=20;i>0;i--)
37             for(j=248;j>0;j--);
38 }
39 }
40
41 void dotdisplay()
42 {
```

