

本项目设计是基于51单片机的时钟+温湿度+PM2.5+12864B液晶屏DIY制作的毕业设计，也可以应用于室内环境检测仪。该室内环境检测系统，时间采用专门的DS1302时钟芯片，温湿度采用DHT22模块，比dht11要好。pm2.5采用激光pm2.5检测传感器。51单片机室内环境检测仪成品实物截图：

说明：

没有采用简单的模块堆积，除了激光pm2.5检测传感器以外其他均与电路板一体化设计，同时还增加了时间校准界面，预留了串口调试接口。左侧从上到下依次为PM2.5传感器接口、电源指示灯、电源开关。右侧为四个侧边按键，第一个按键为进入时间校准界面和确定界面，第二个按键为向上按键，第三个按键为向下按键，第四个为返回按键，可以调整年月日时分秒和星期。内置一颗CR2032电池，可以保证断电情况下时间不会中断。为了好看，我自己做了一个亚克力板外壳。很多同学问我pcb的问题，该pcb设计是为了方便做手工pcb打洞，过孔做的小了一些，如果要在网上打样，把过孔调到正常大小。

- 室内环境检测仪完整代码
- 室内环境检测仪完整pcb图和原理图
- 相关芯片传感器数据资料
- 相关参考文献及文献格式



```
1 void showtime();
2 void showweek();
3 void showweek1();
4 void showTH();
5 void showPM();
6 void Usartinit();
7 unsigned char Read_SensorData(void);
8 unsigned char Read_Sensor(void);
9 void Delay_N10us(unsigned char t);
10 void Delay_N1ms(unsigned int t);
11 void form1();
12 void form2();
13 void data1();
14 void clearping();
15 void Hgarden(int x); // 空心圆
16 void Sgarden(int x); // 实心圆
17 void timesetting(int x);
18
19
20 /*****
21 界面文字显示
22 *****/
23 //第1界面显示
24 unsigned char code CharCode[13]="0123456789.-:";
25 unsigned char code Temperature[]="温度:";
26 unsigned char code Tsign[]="°C";
27 unsigned char code Humidity[]="湿度:";
28 unsigned char code Hsign[]="RH";
29 unsigned char code PM1[]="PM2.5:";
30 unsigned char code TPM1[]="ug/m3";
31
32 //第2界面显示
33 unsigned char code year1[]="年";
34 unsigned char code mouth1[]="月";
35 unsigned char code day1[]="日";
36 unsigned char code hour1[]="时";
37 unsigned char code minute1[]="分";
38 unsigned char code second1[]="秒";
39 unsigned char code week3[]="周";
40 unsigned char code week1[]="星期";
41
42 //清屏
43 unsigned char code clear[]="          ";
44
45 unsigned char code week2_0[]="日";
46 unsigned char code week2_1[]="一";
47 unsigned char code week2_2[]="二";
48 unsigned char code week2_3[]="三";
49 unsigned char code week2_4[]="四";
50 unsigned char code week2_5[]="五";
51 unsigned char code week2_6[]="六";
52 unsigned int flagkeyup_down=1;
53 unsigned int page=1;
54 unsigned int i,j,m;
55 unsigned int flag2,flag3;
56
57 uchar UART_Upload[9];
58 uchar UARTnum[11]={ "0123456789."};
59 uchar UARTdata[5];
60 uint pm_rateH,pm_rateL,pm_particle,pm_density; // 低脉冲率高位。低脉冲率低位， 比率，颗粒，浓度
61 uchar accord,pm_URV=20,temp_pM; //PM_URV pm上限值
```

