

2020

电气技术实践 综合设计展示

多功能电子秤

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PART 01

功 能 描 述

电子秤功能描述

重量读取

采用应变片电桥采集，经运放放大后输入下一级

超重报警

为保证结构安全及输入限制，用比较器设置安全电压，超过则断开输入并报警

延时关机

采用555定时电路，规定时间内无信号输入则自动关机



模数转换&码制转换

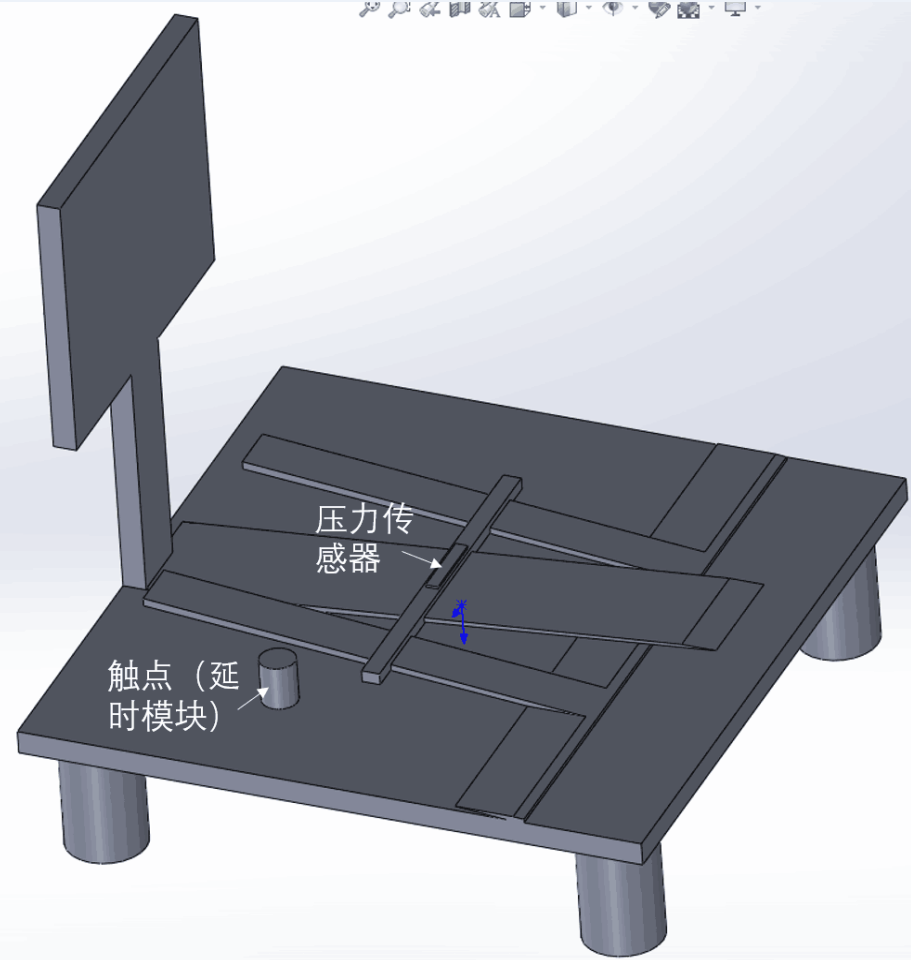
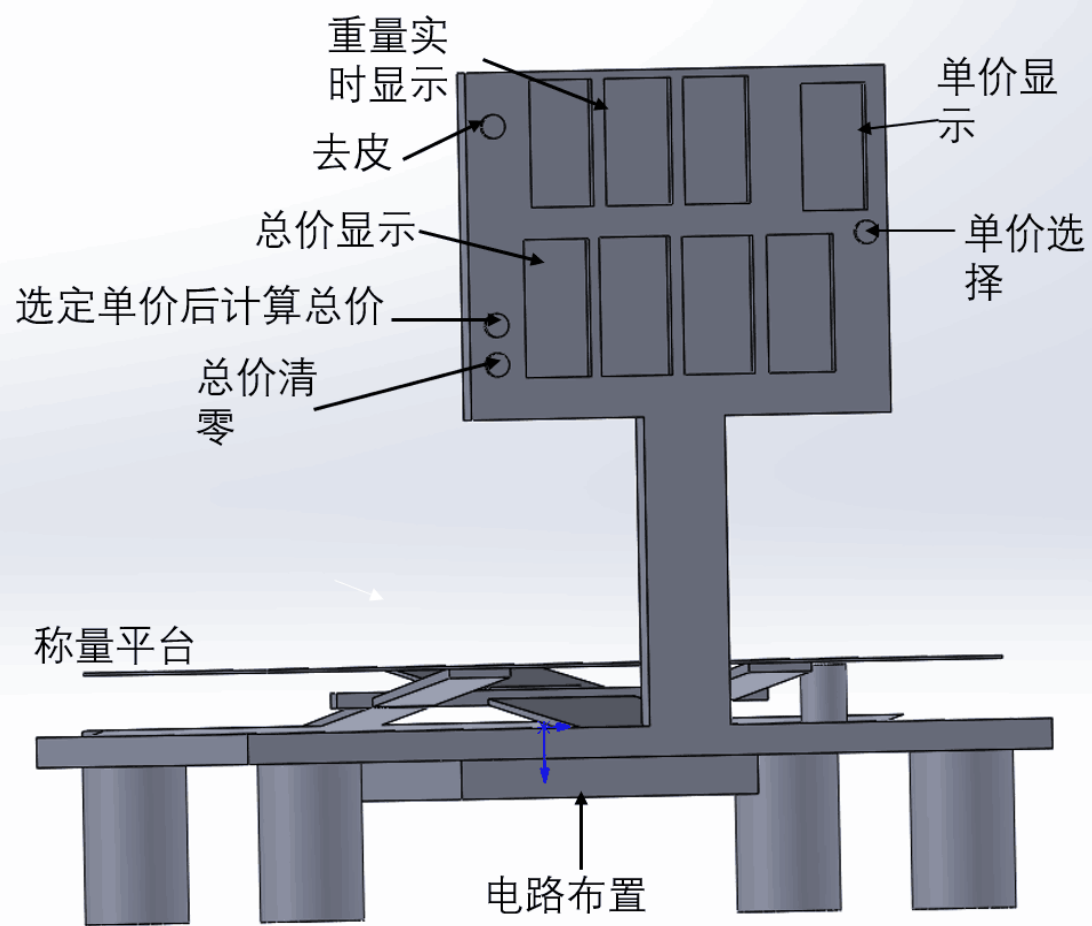
使用模数转换模块与加法器，取合适的频率，使人眼看到无闪烁的数字。

去皮模块

使用存储器存储重量，减法器实现去皮操作

单价-总价显示

计数器与比较器级联反馈调节，通过累加实现乘法计算

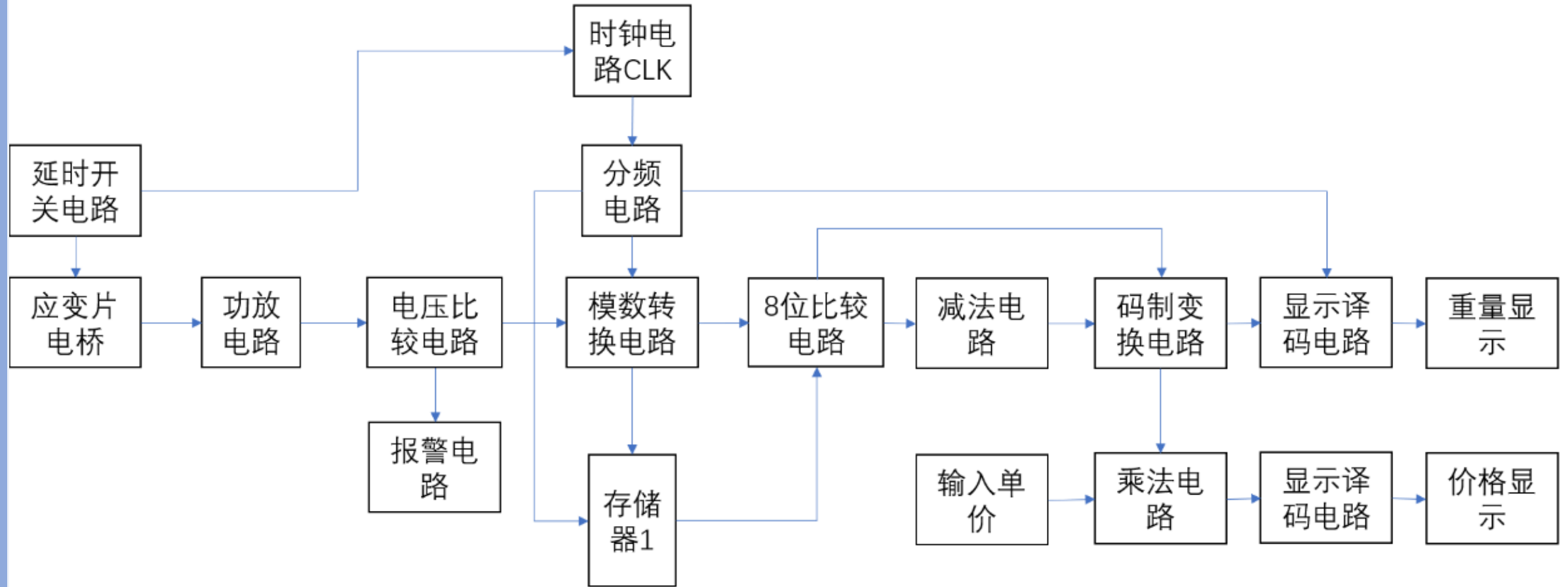


PART 02

流 程 图 及 电 路 设 计

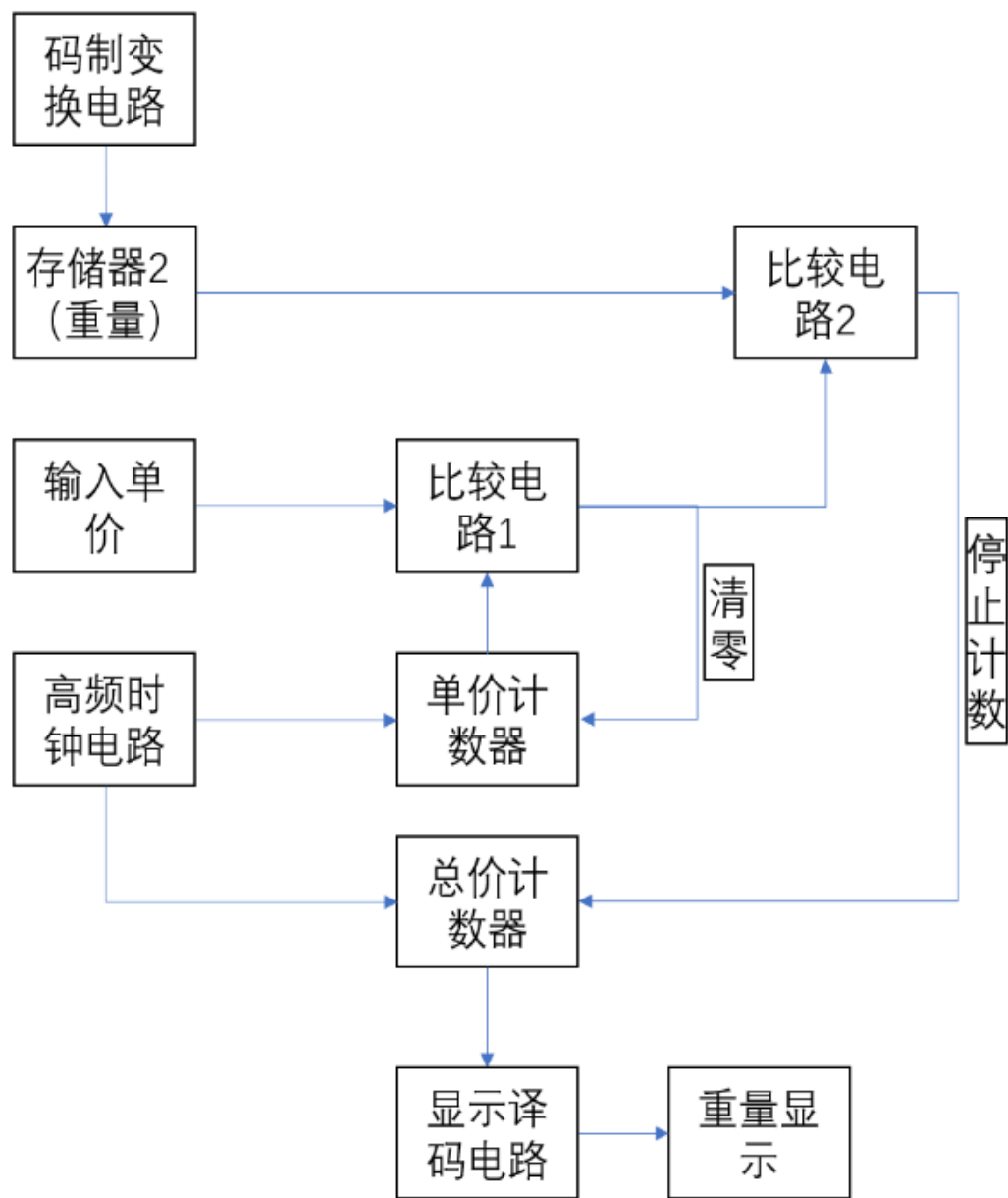
流程图

电子秤整体流程



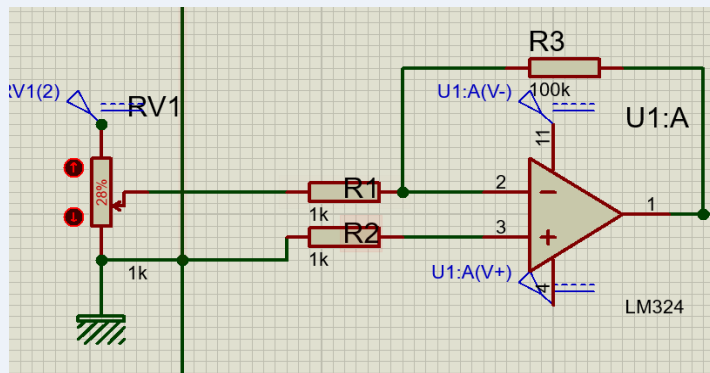
流程图

计价器乘法电路

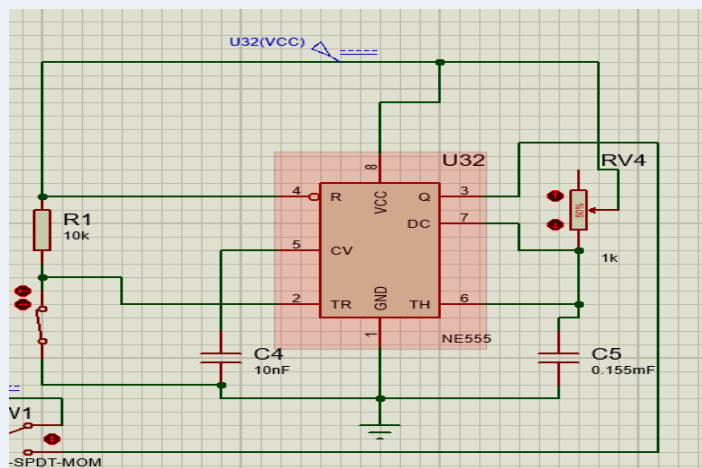


电路图设计

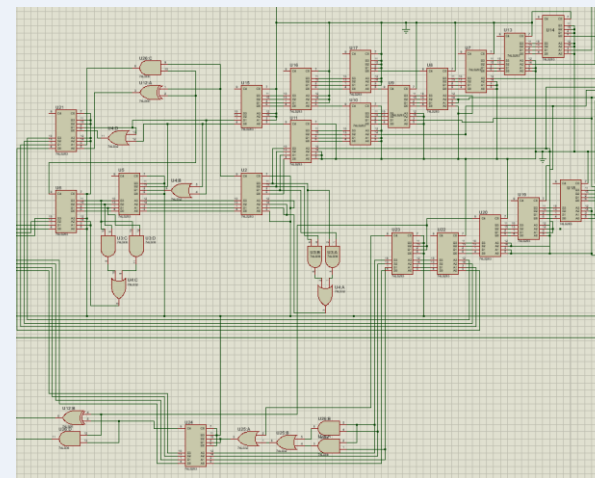
重量读取



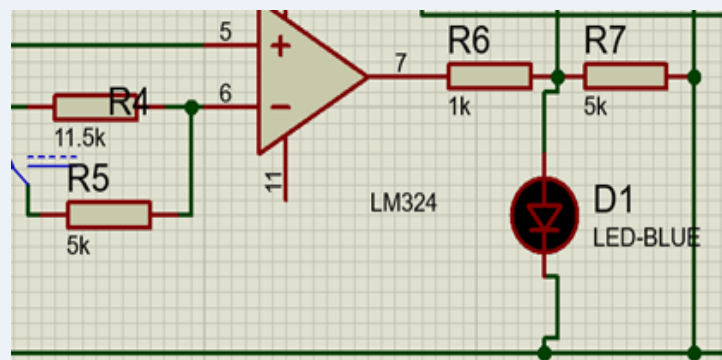
延时关机



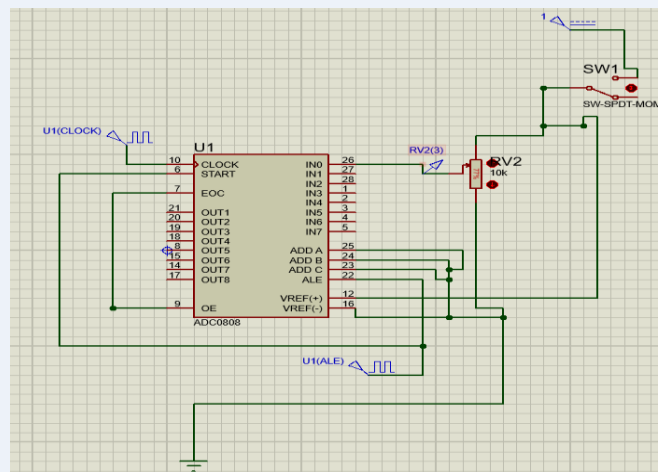
译码模块



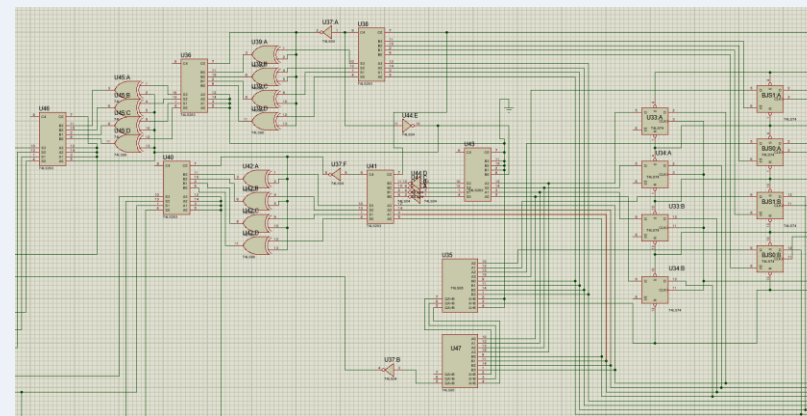
超重报警



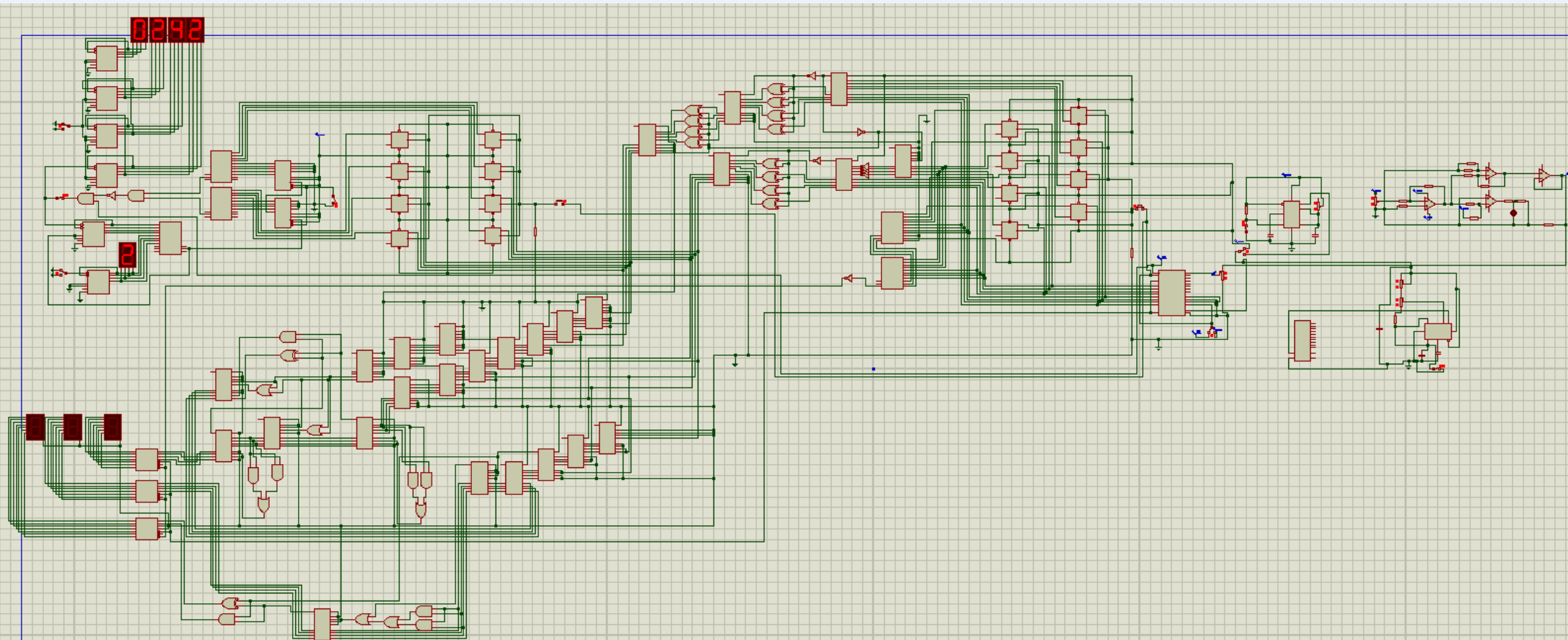
模数转换&码制转换



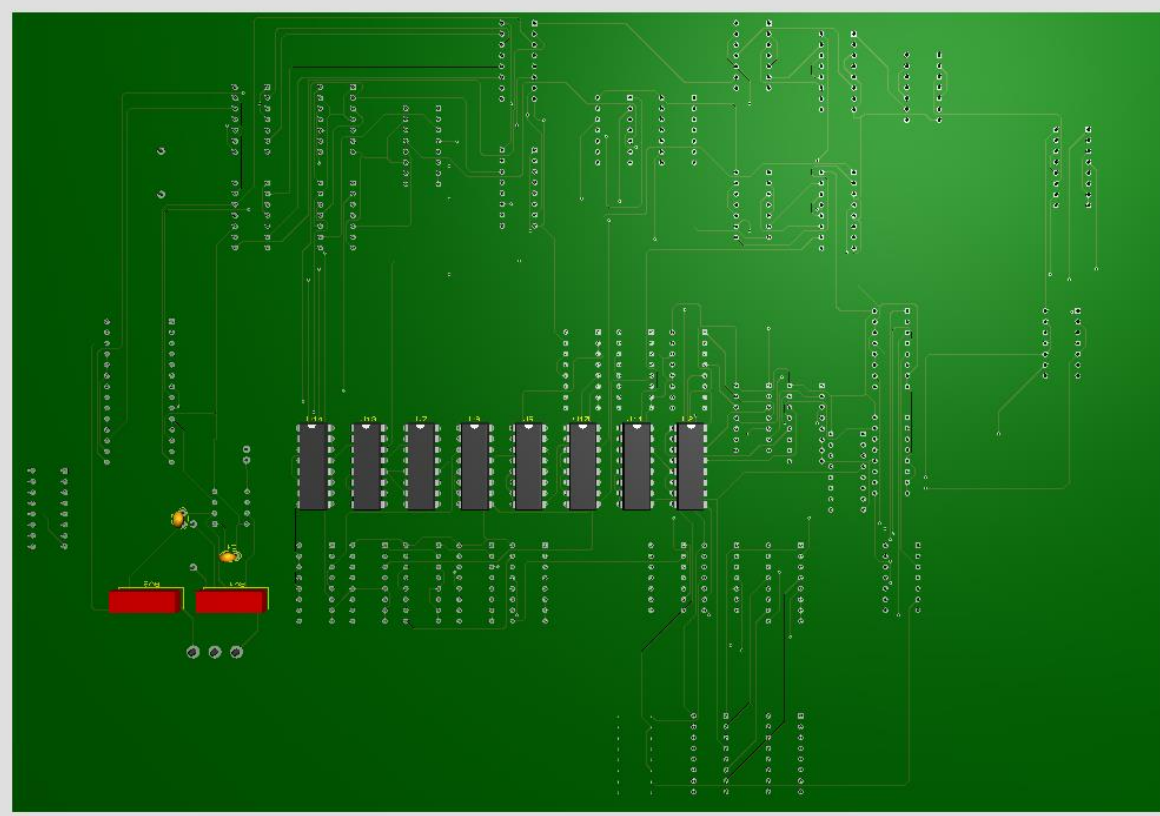
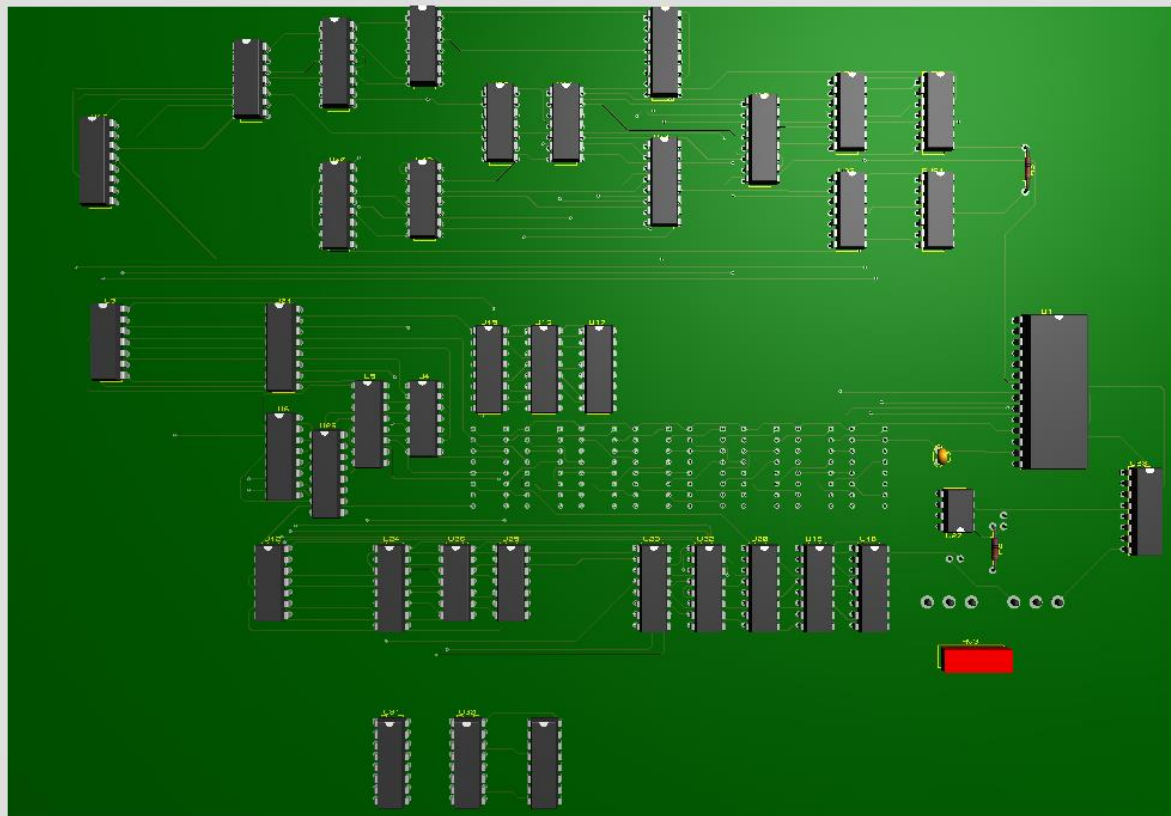
去皮计算



电路图设计

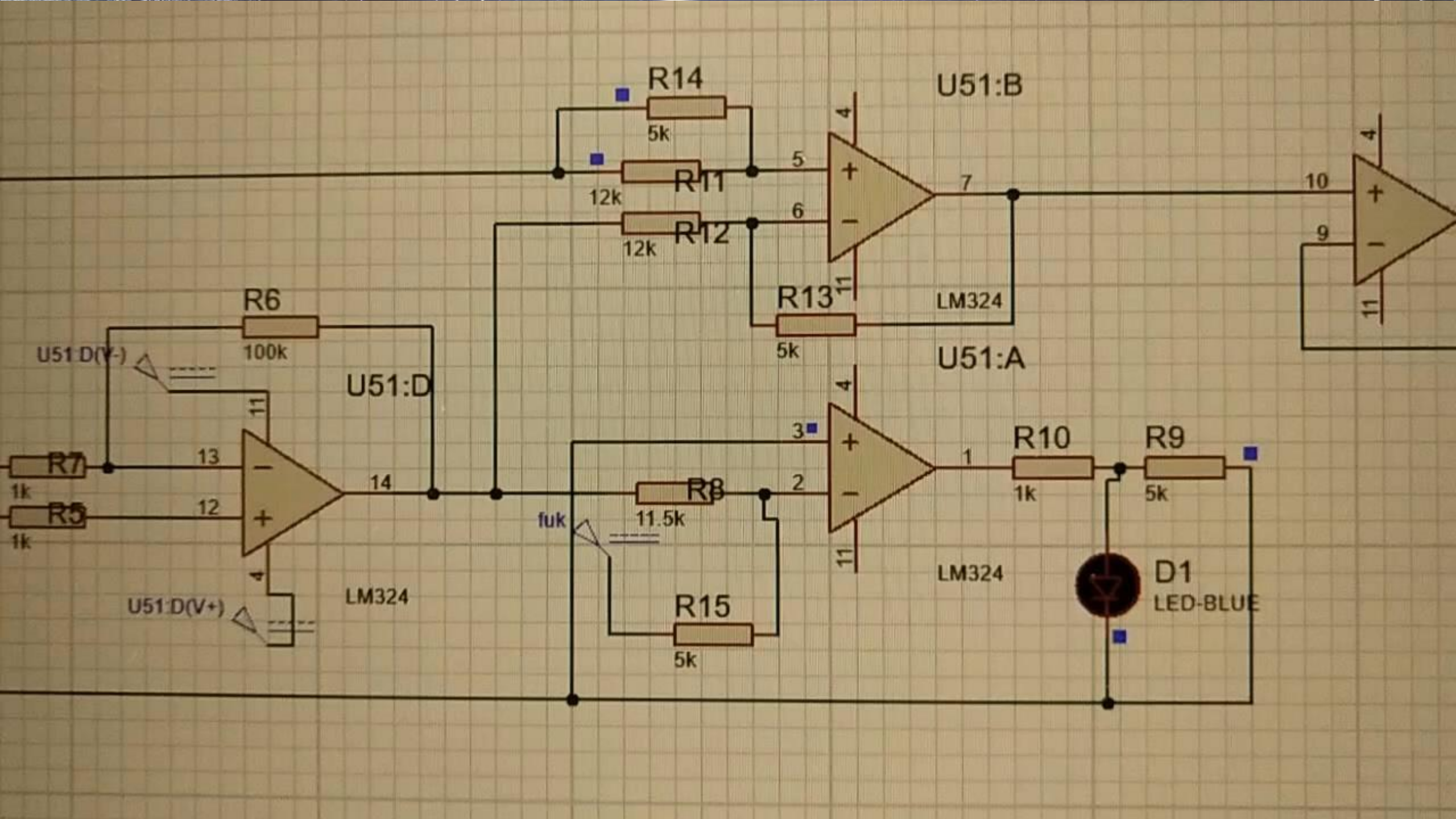


PCB设计(部分)



PART 03

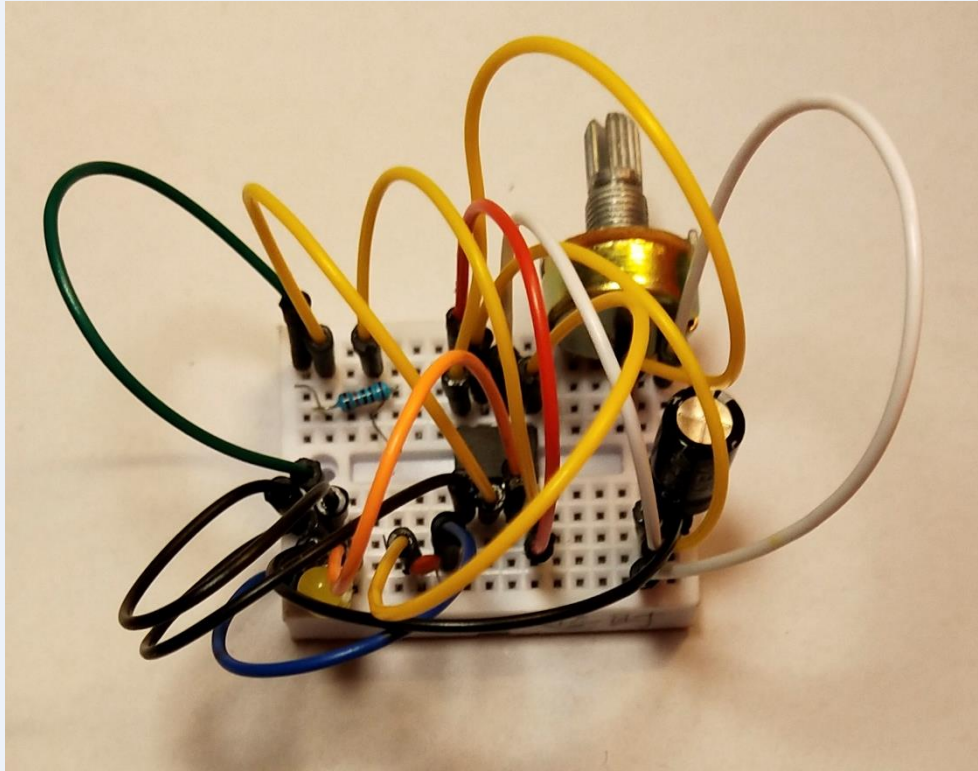
Proteus模拟



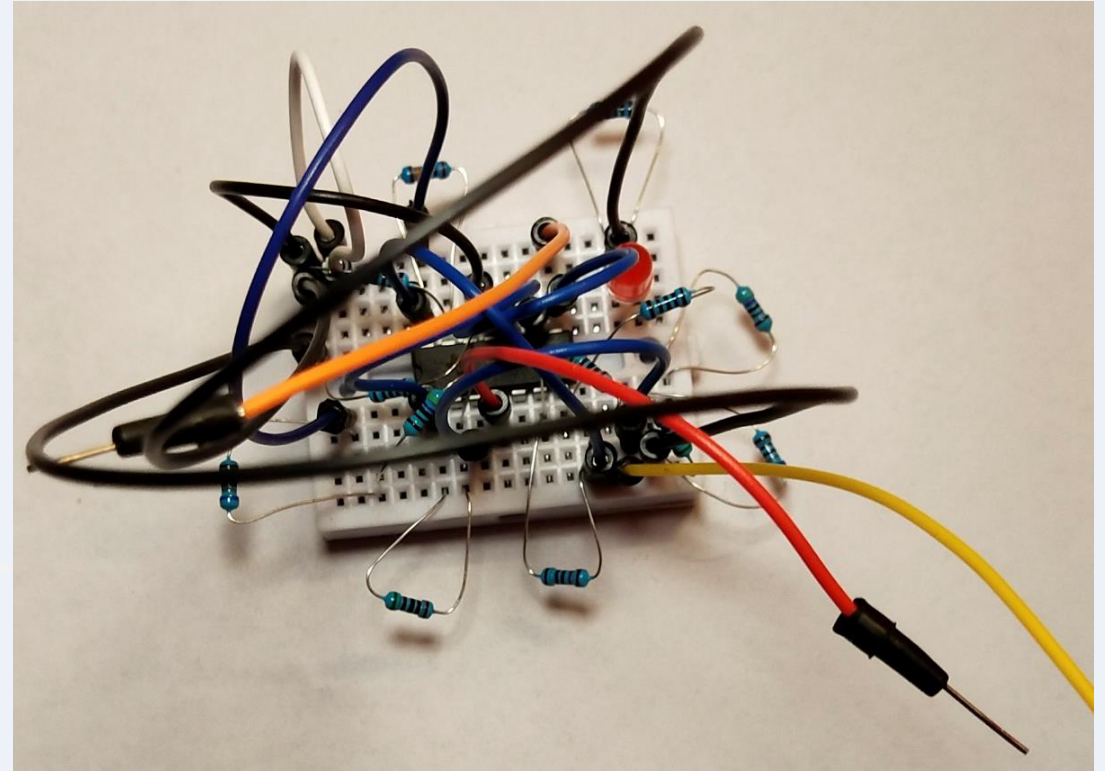
PART 04

电 路 组 装

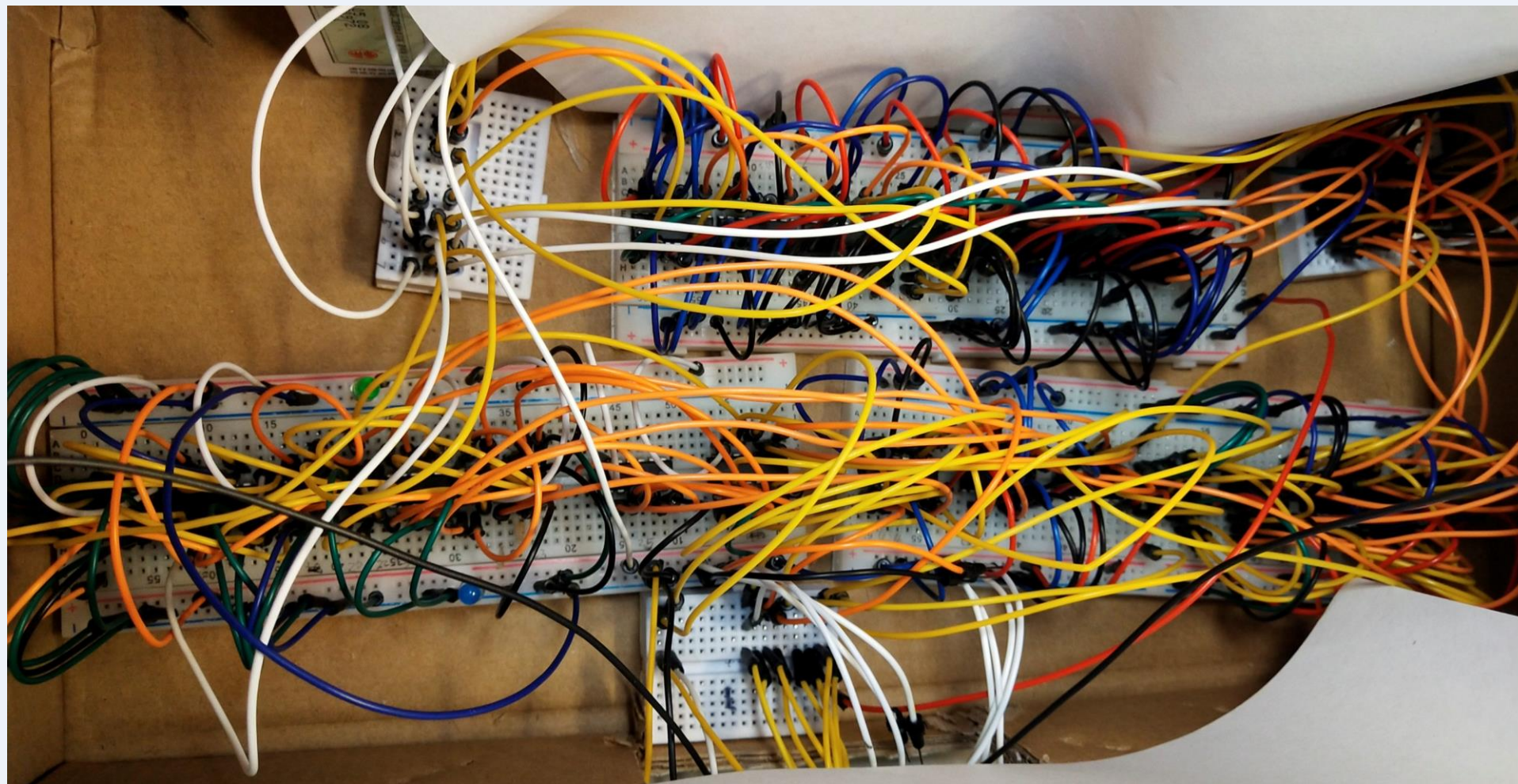
延时关机模块



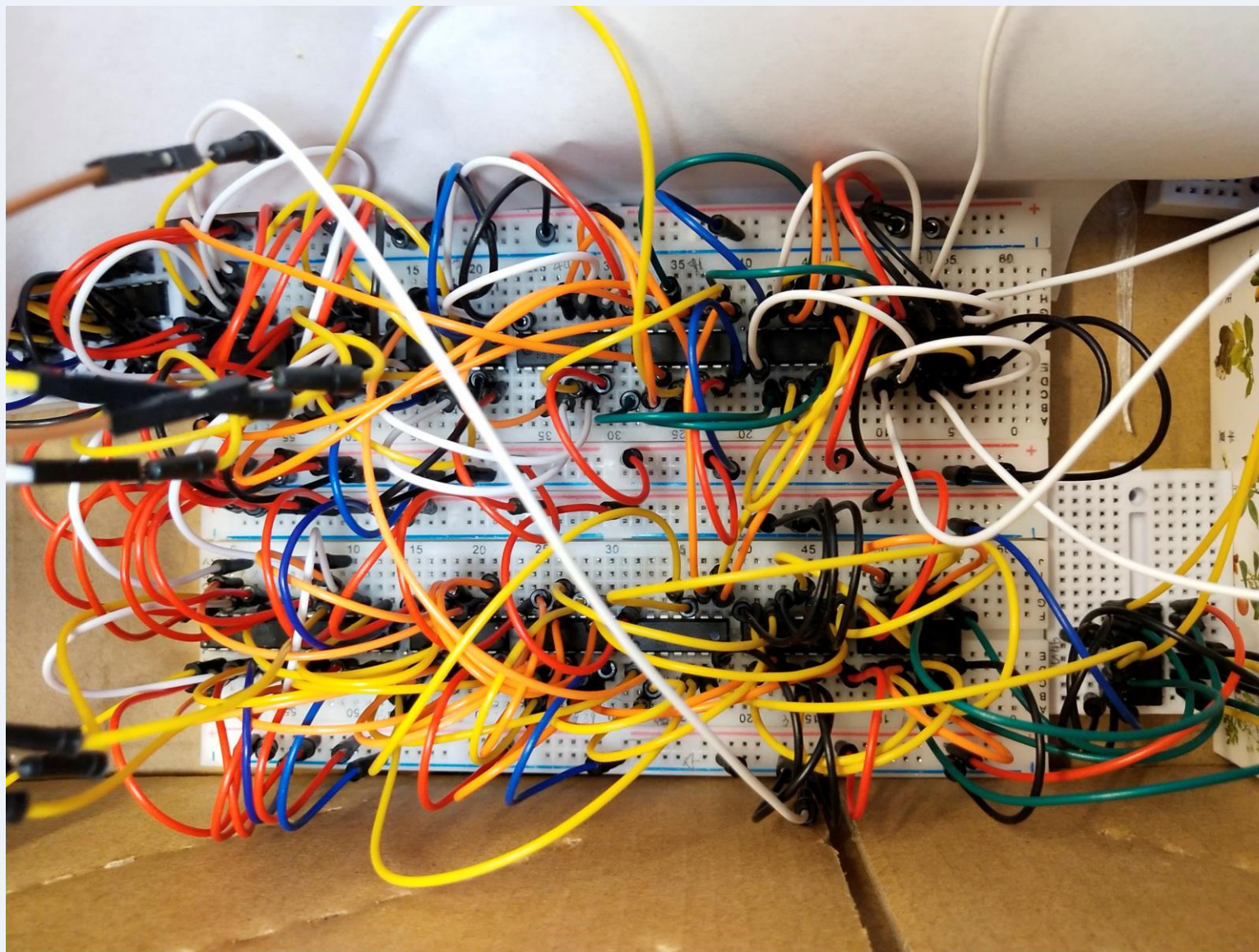
信号放大&超重报警



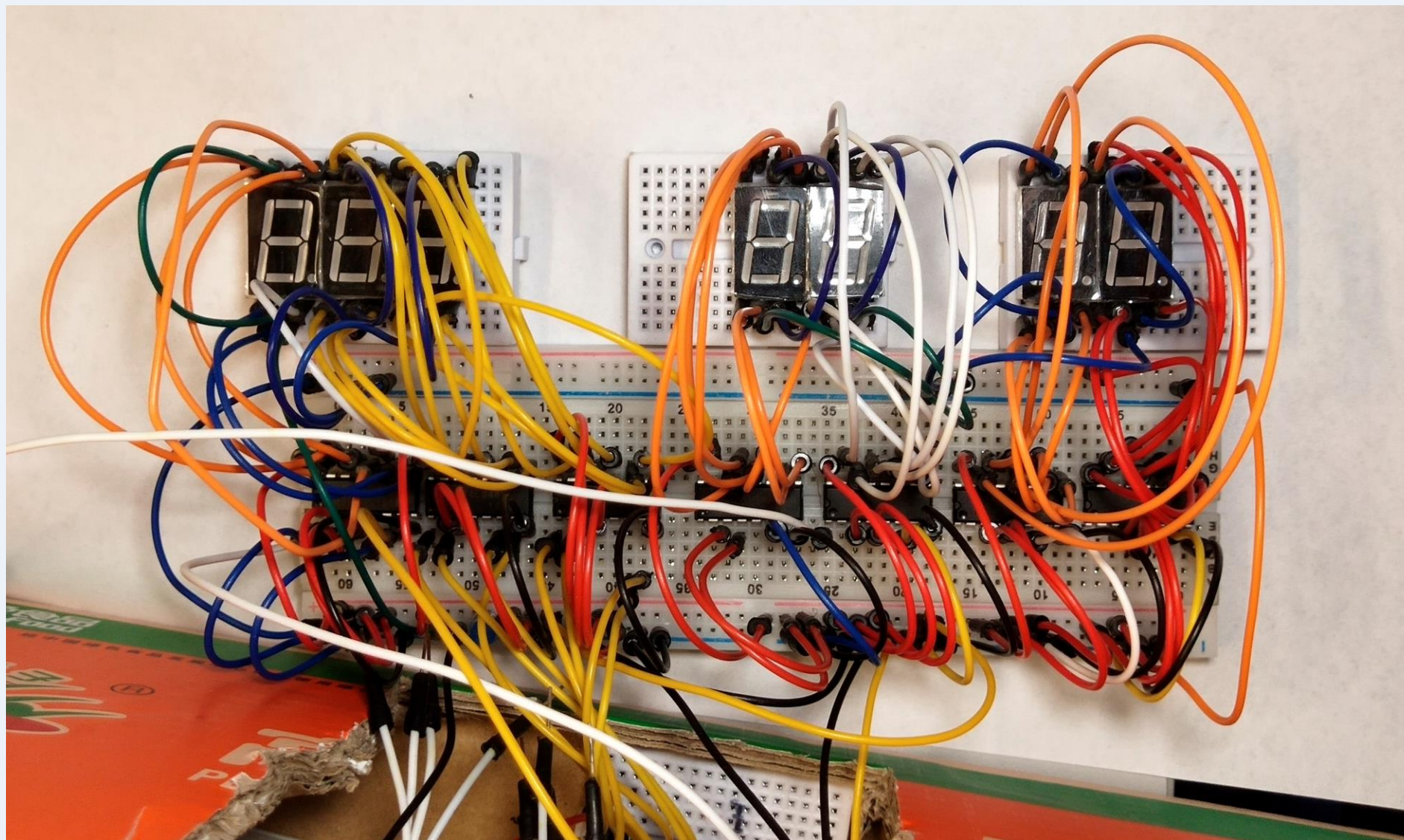
进制转换



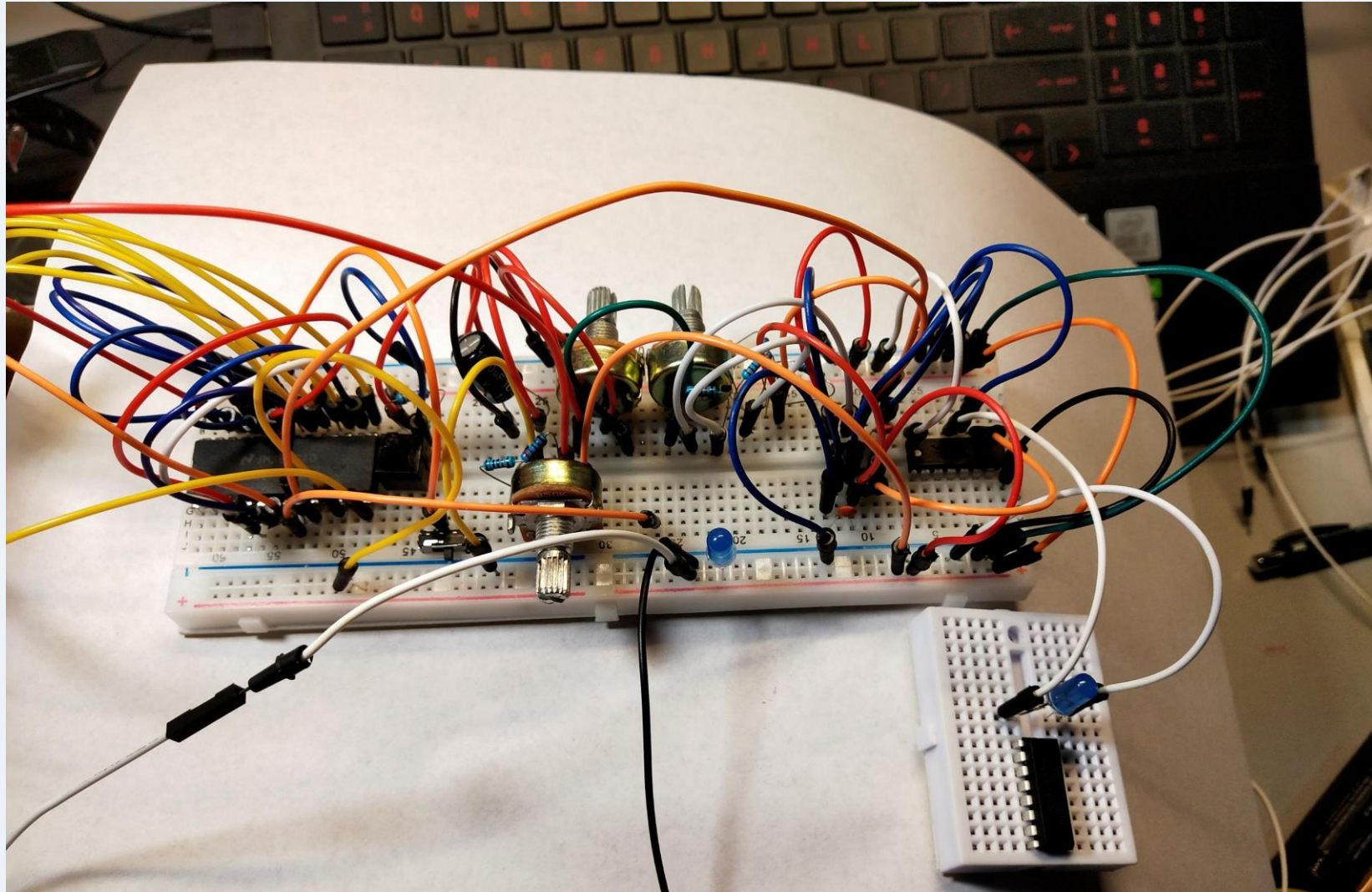
去皮电路



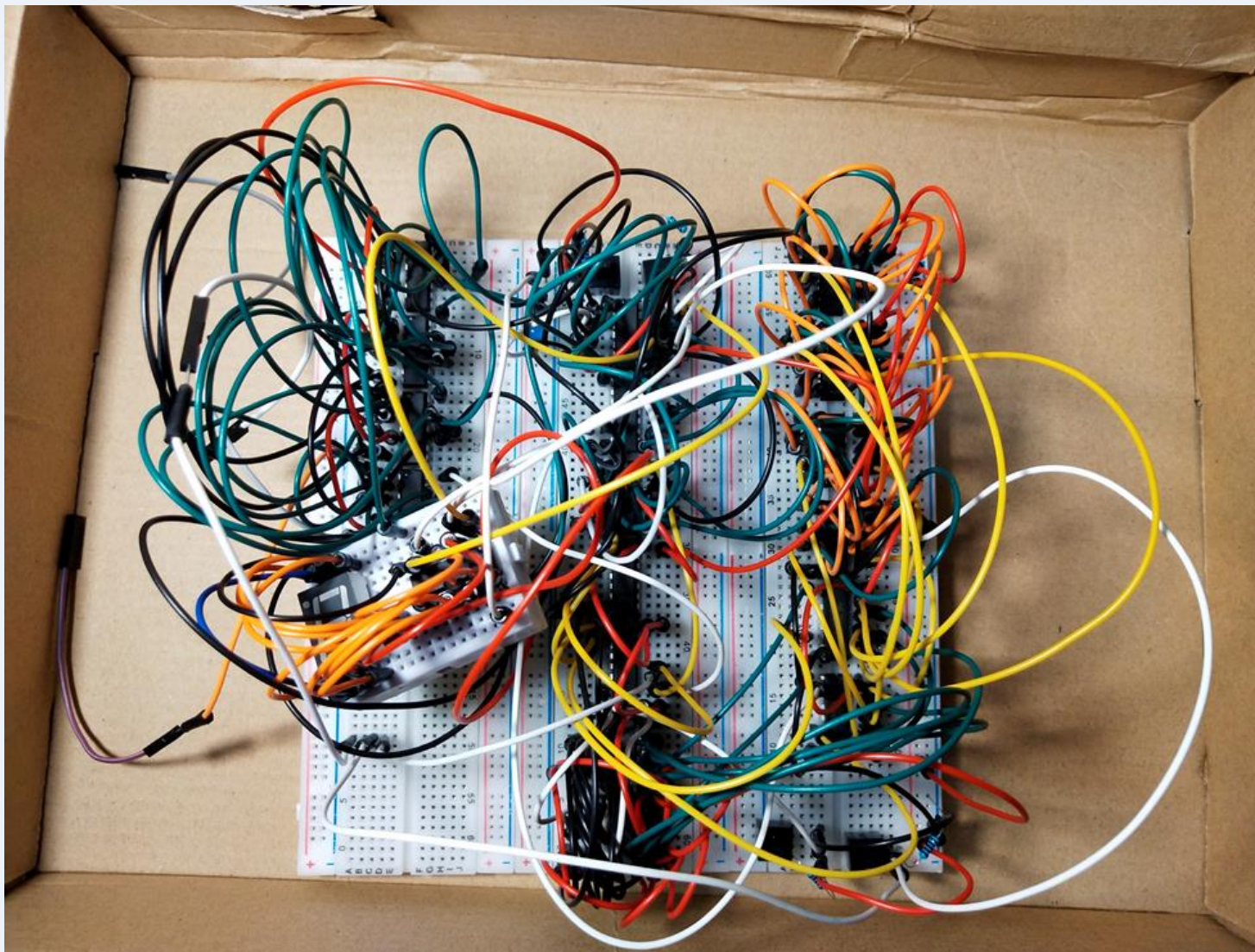
显示模块



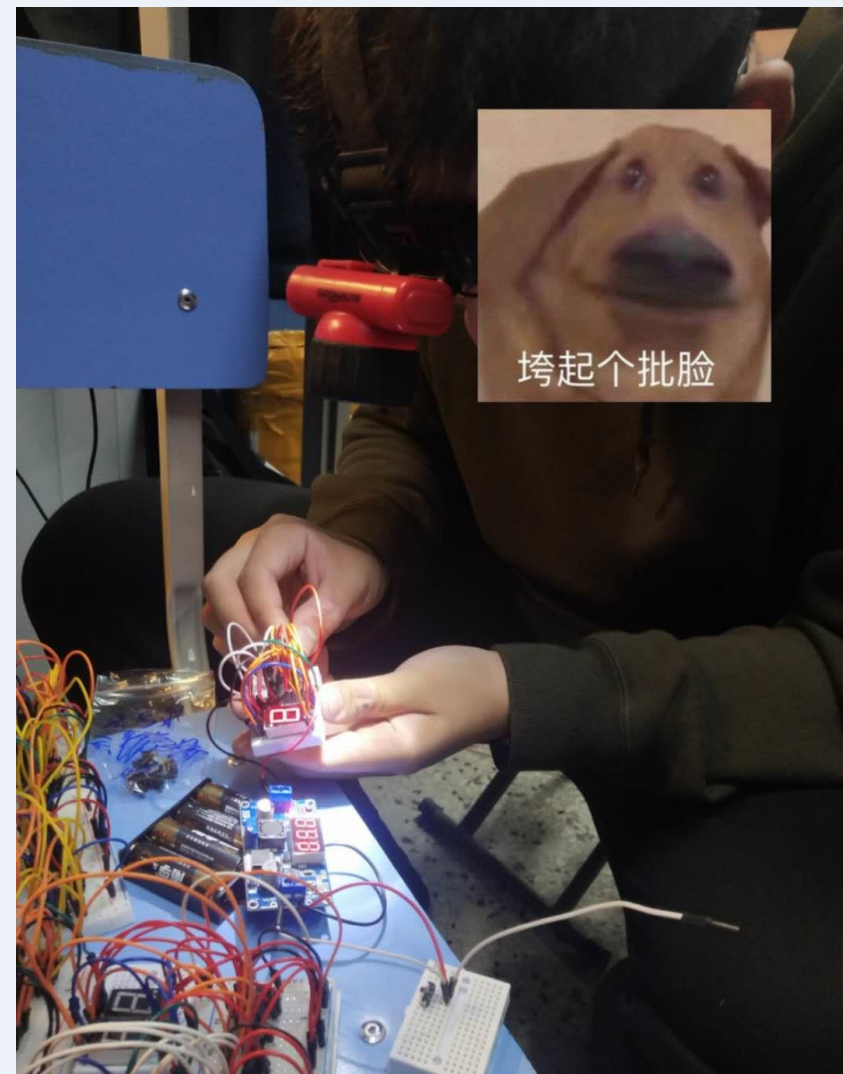
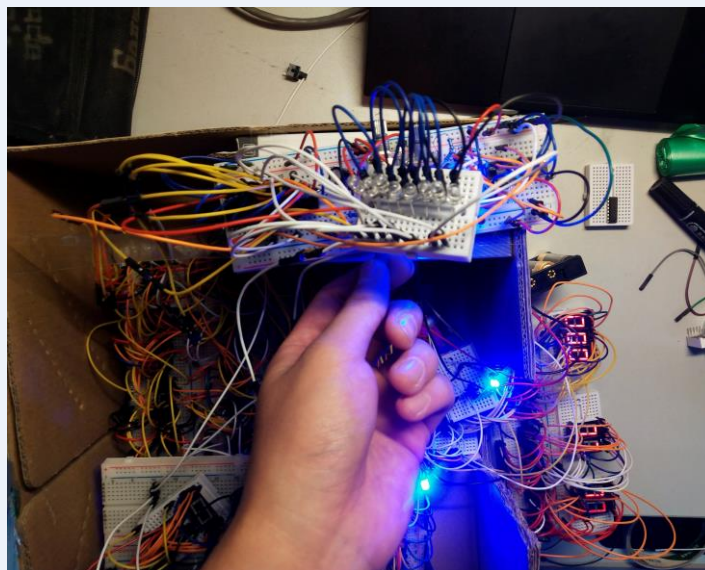
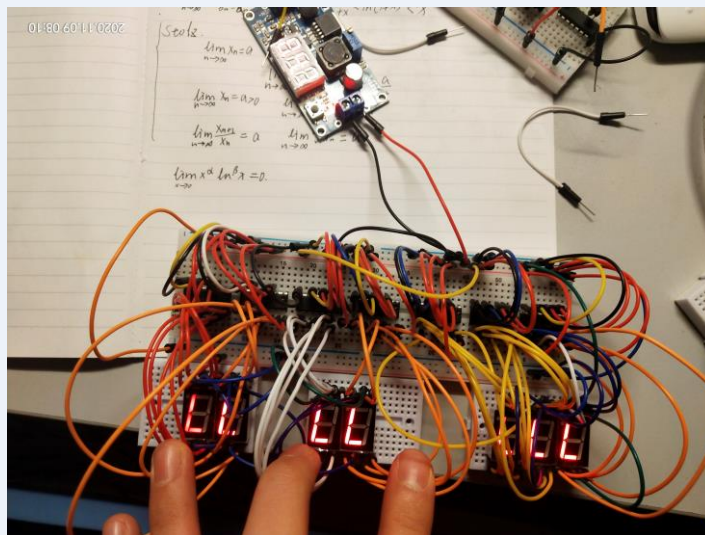
模数转换&时钟电路



单价-总价计算



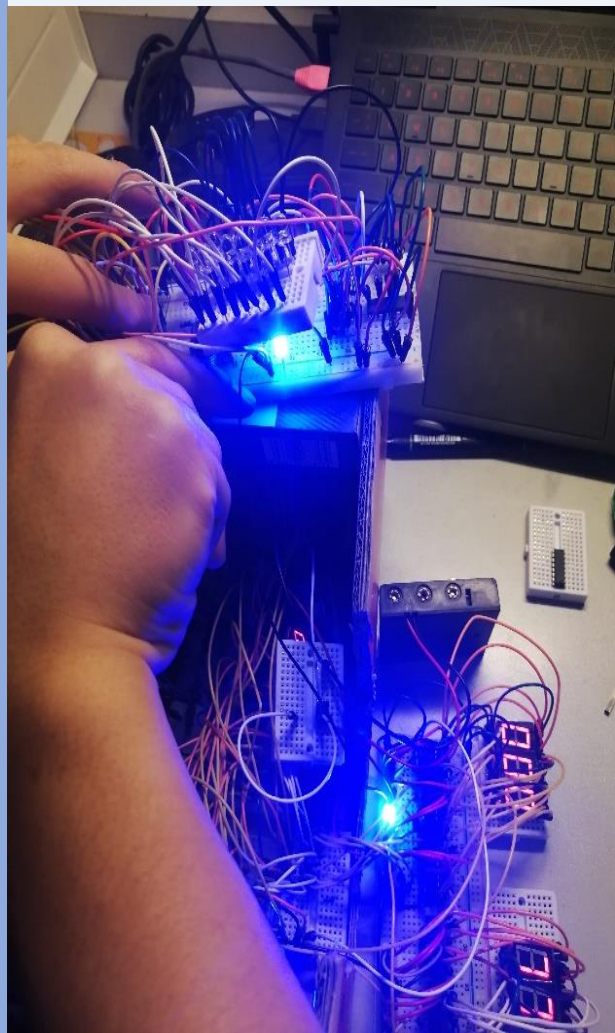
制作过程



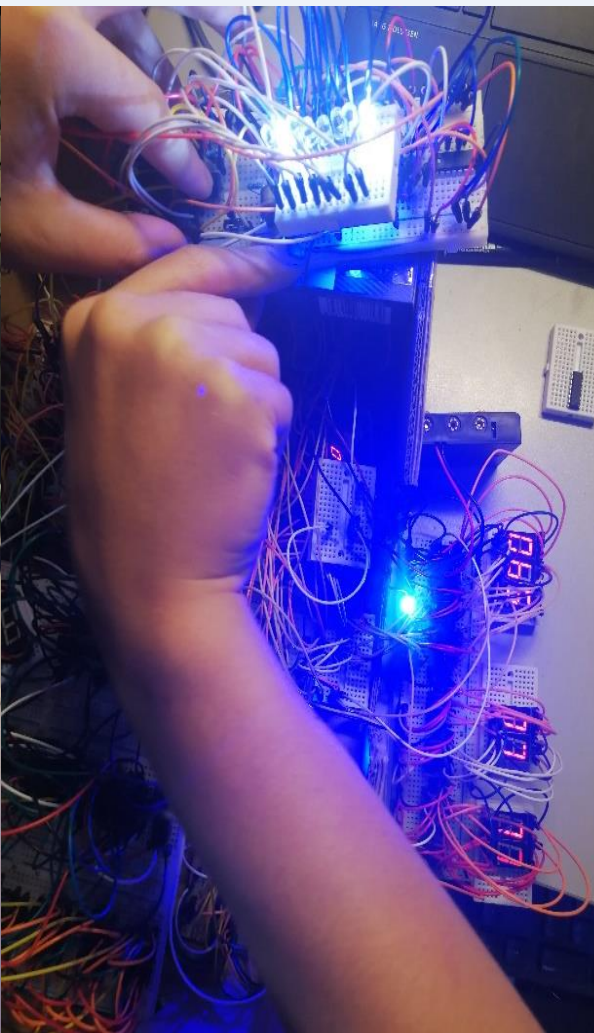
PART 05

实 际 电 路
测 试 调 试

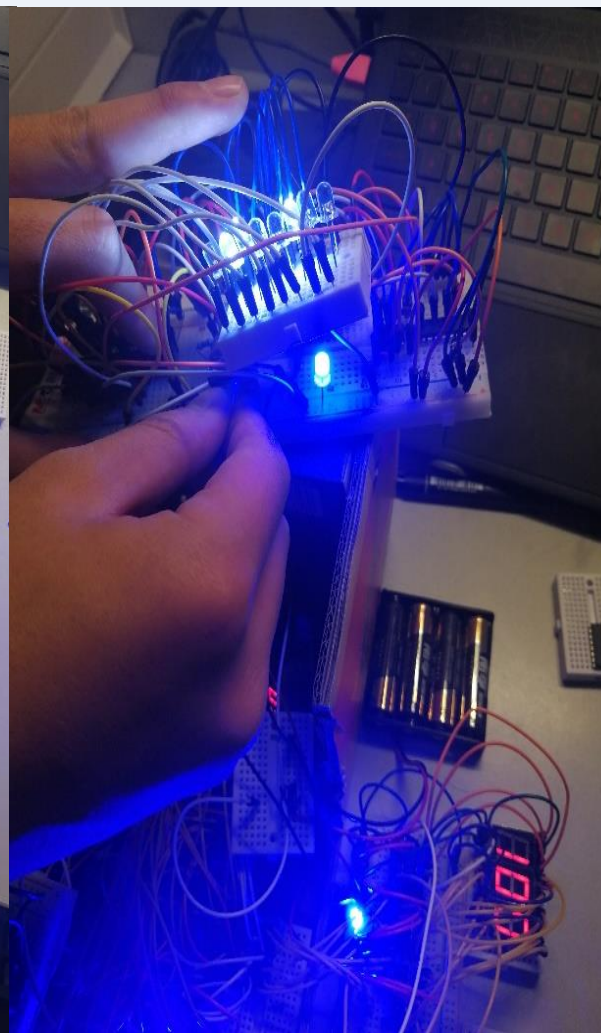
重量显示测试



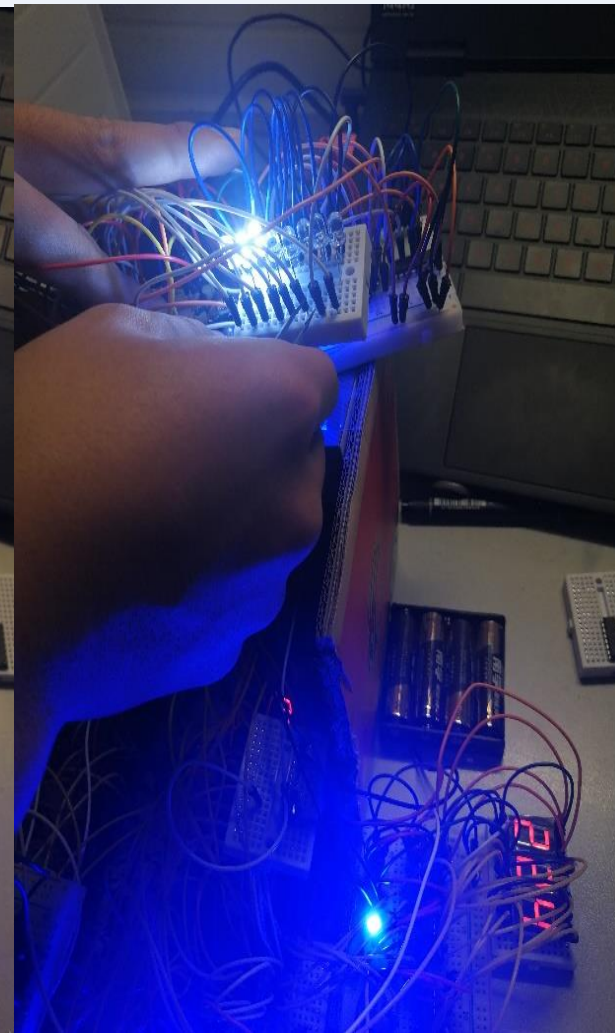
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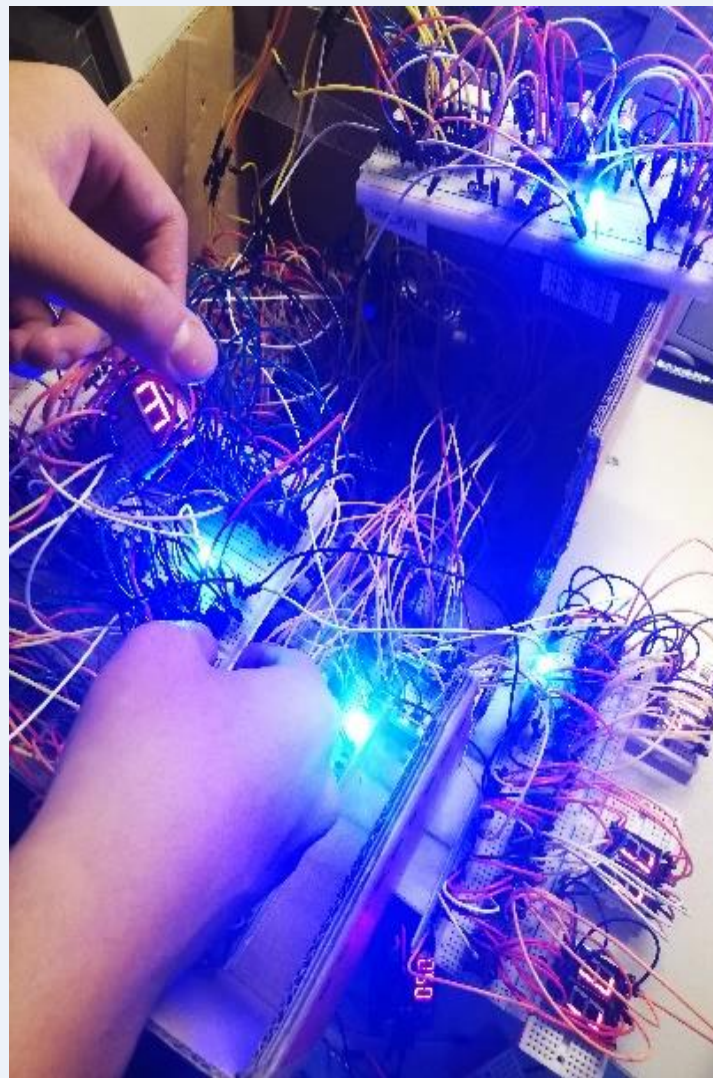


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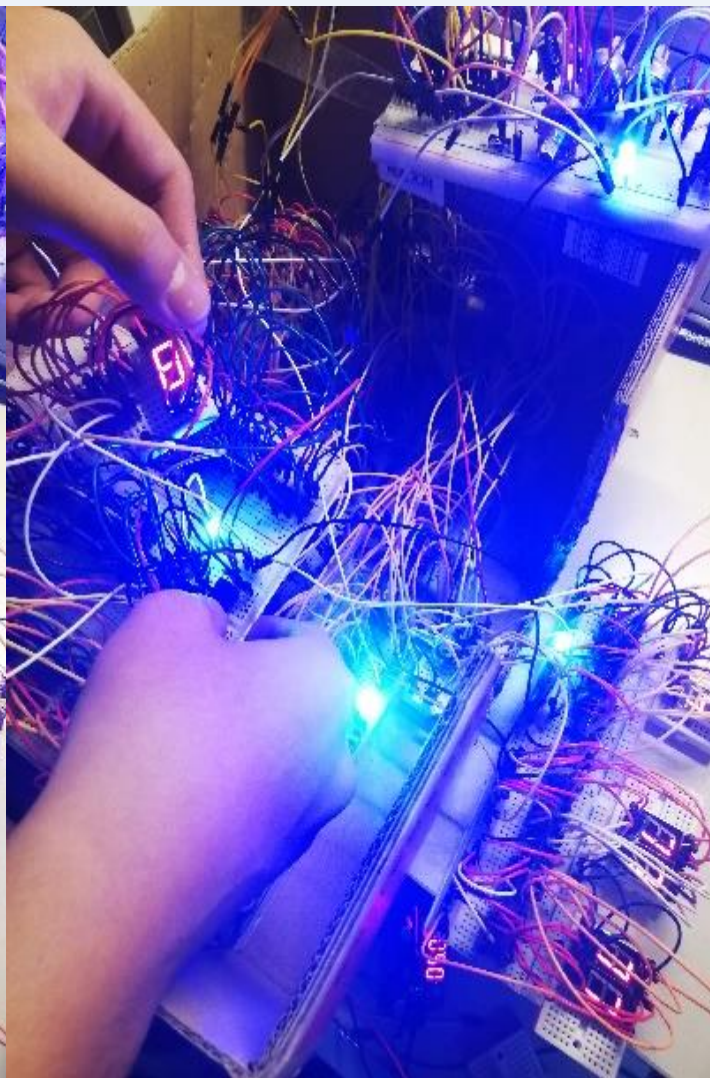


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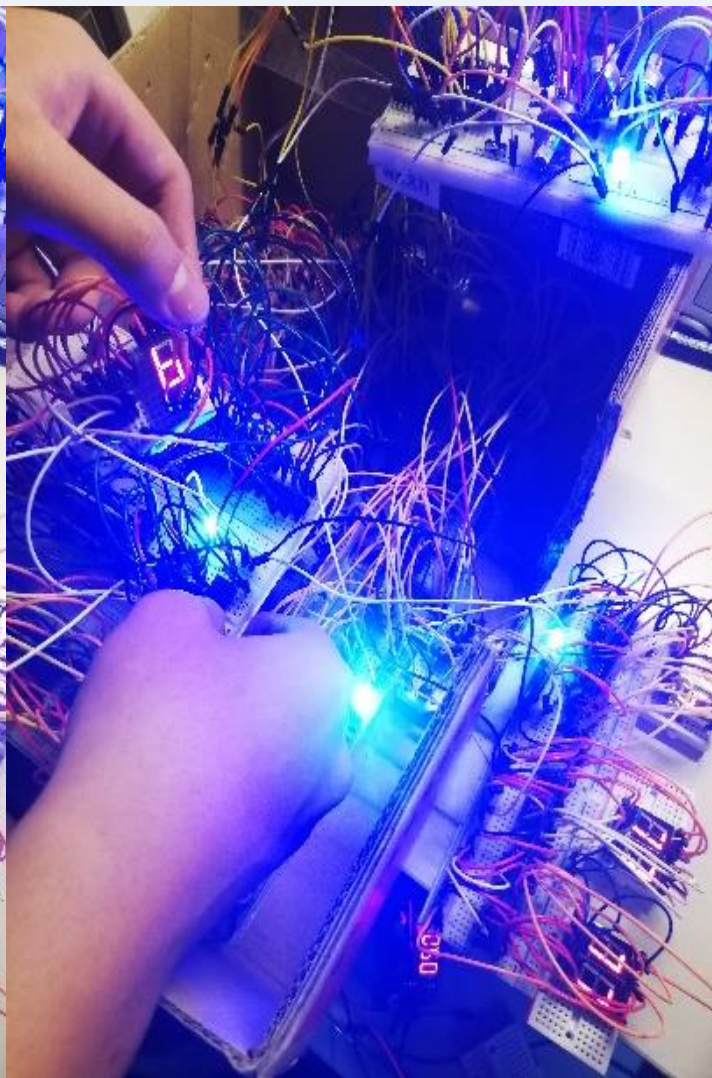
单价显示测试



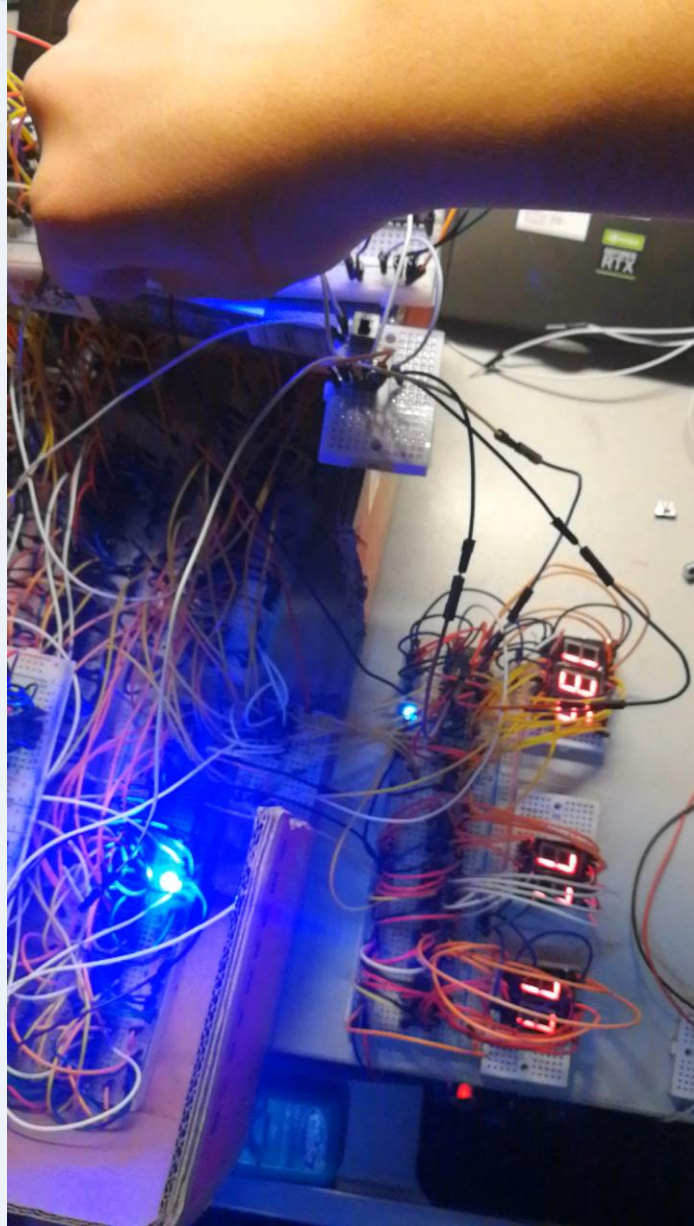
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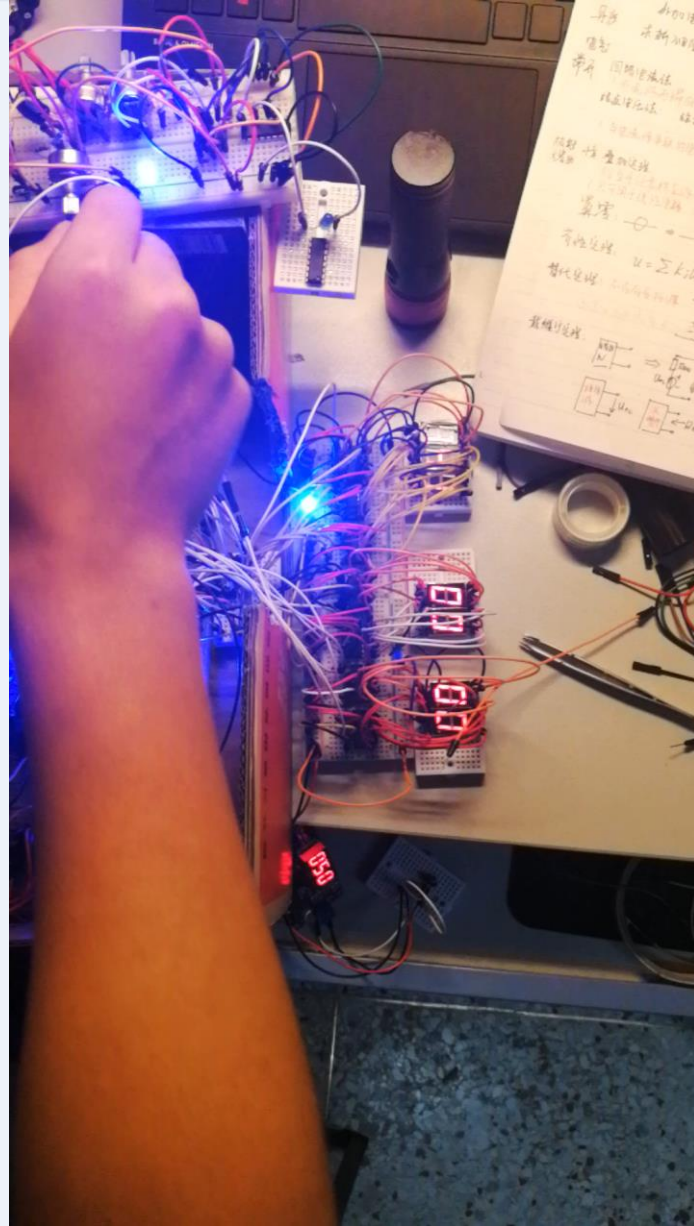
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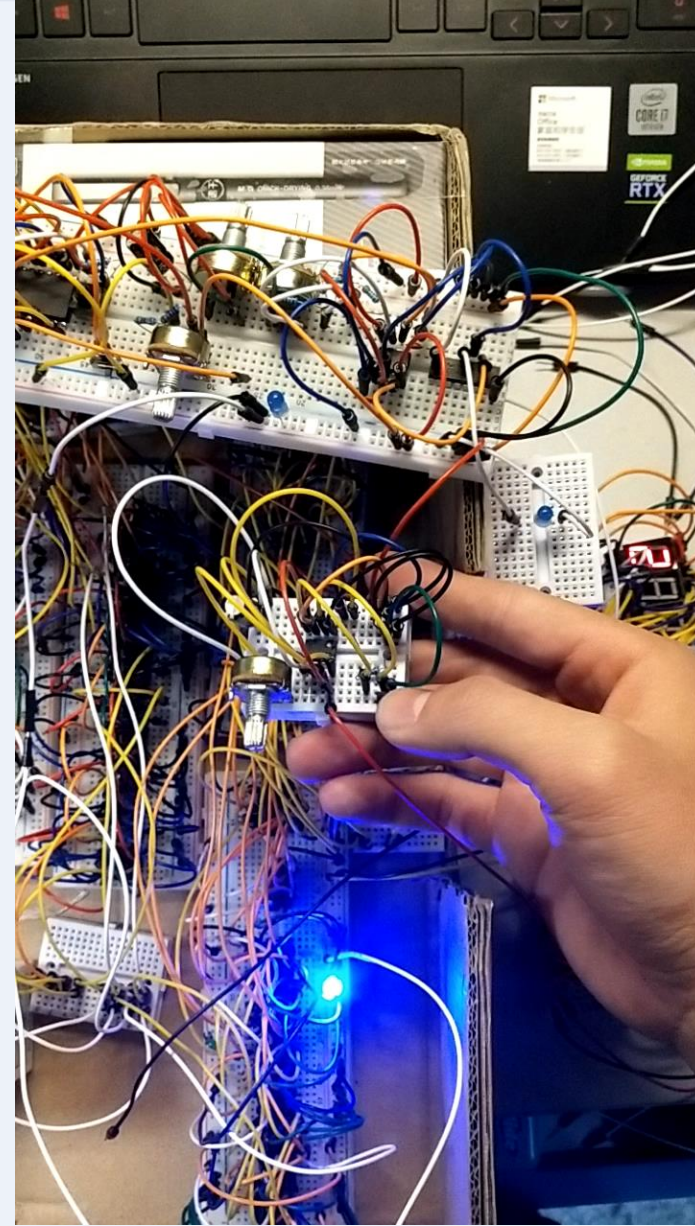
6



去皮测试



计价测试



延时关机测试

感谢您的倾听！
