

gPod Accessible Blood Glucose Meter

Week 10
March 27- April 1
Matthew Bularzik

Work Completed

This week was spent mainly on the finalizing the PCB board layout and finishing the circuit. Dave finished the major parts of the circuit early in the week so I started laying out the leads on the PCB board. This PCB board can be seen below in Figure 2. Figure 1 below, shows the circuit schematic.

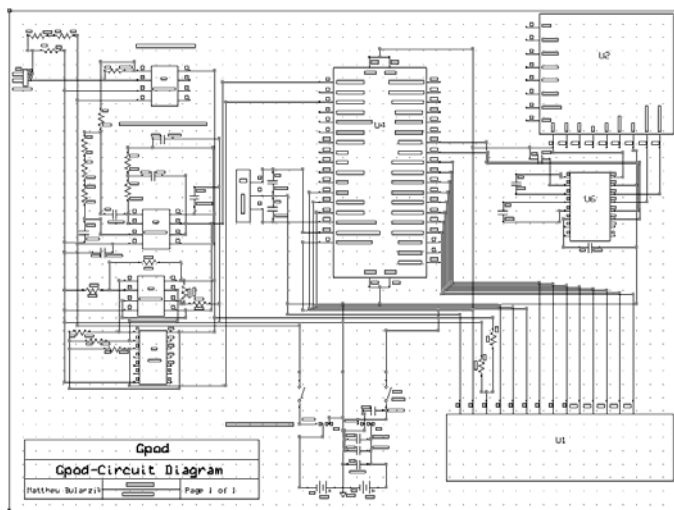


Figure 1: Circuit Schematic

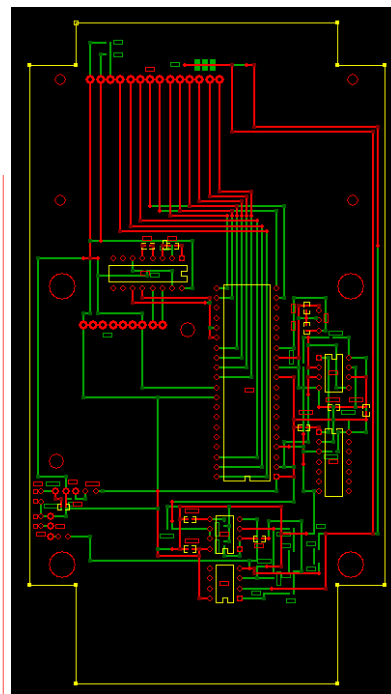


Figure 2: PCB Diagram

The changes that were made to the circuit from the previous design were:

- Voltage divider added to pin 5 of the microprocessor
- Voltage divider added to pin 3 of the LCD
- Another LM358 was added as a comparator along with a 7486 and/or gate with associated resistors.

Out free MAX663 and MAX664 samples from Maxim came in and tested in our circuit. They were over heating and our circuit was not working. It was then realized that the current output from these chips were only 40mA. This current was way to low for the circuit and therefore it would not work. Then the 7805 and 7905 voltage regulators were tried and were also overheating and introducing a lot of noise into the circuit.

The new LCD screen and OKW casing also arrived. The new screen was added in place of the old screen and worked. The OKW order that arrived was not quite right. The wrong size handheld case was delivered and the 9V leads were backordered. I called them and the right case was sent right out along with one of the leads.

Began thinking about how to mount the SP03 module in the case. Thought about mounting it straight to the case but the problem was how to mount it. There was no PCB mounts close enough on the bottom of the case so I decided to mount the module straight to the PCB board. A large enough space was needed to be made. Also, the 9V batteries are not secure in the batter compartment and the will rattle around. I tried to figure out how to put in the 9V leads that were ordered which didn't fit. A 9V holder should work once modified since on their own they won't fit in the case.

The final thing that I did was to compile a final parts order list.

Future Work

This week I will finalize the PCB board layout when the voltage regulators finished. If the vial scanner circuitry gets finished I will added it to the PCB board. The main portion of the week will be spent on the casing layout and modification. The battery compartment needs to be worked on to make the batteries fit. The spot for the switch and the strip insert has to be measured and marked also.

Project Review

Continued troubles with the circuit have lead to the delaying of the PCB board again. Hopefully the PCB board will be ordered by Tuesday along with the final parts order. With the circuitry problems now solved next week should be just assembling and troubleshooting the final design. The case will also have to be modified. Total costs to date are \$985.67.

Hours Worked

Hours worked on the project: 37 Hours