Mack Hall, Jorian Bruslind, and Zach Bendt

ECE 342

1/18/19

Prof. Shuman

Technical Guidance Meeting Write Up

Since the last meeting with our client, a good deal of progress has been made. The schematic has been finalized (for the most part), PCBs have been designed, ordered, and are currently in the process of being tested and debugged. At the moment, the custom PCB has all of the surface mounted parts soldered on, and the UART to USB bridge allows custom code to be uploaded to the microcontroller. The project case has also begun the prototyping phase, with major changes being held off on until the PCB design is finalized. Furthermore, the app has begun rudimentary development.

Our strategy for building the board is to build each block incrementally, as to test each subsystem before trying to run the final product all at once. One issue we’ve been having so far with building our board is an inability to be able to easily test the tripping threshold of our fuse. Our fuse is rated for 5A, however according to the data sheet, it may trip anywhere from 4.7A to 5.3A depending on external factors and tolerances. However, the sources found in the Dearborn labs can only supply 3A. This means that there is no reliable way to test exactly at which amperage our fuse will trip. In the meantime, we’ve been in contact with OSU’s Dr. Brekken, who plans to put us in contact with a lab supervisor who will be able to supply a powerful enough power supply. Also, the board will draw a small amount of nominal current to run its components, which could theoretically allow the board to draw more than 5A from the wall under full load. This has the lead the group to consider switching to an alternative fuse with a lower tripping threshold in order to circumvent this potential issue.

Before our next meeting in week 5, our group plans to fully debug our current PCB, successfully test each block of the internals of our project, and potentially order another revision of our PCB, as well as another round of our surface-mounted components.