EE / CprE / SE 492

Project title: Small-Form-Factor Solar-Powered Self-Sustainable IoT Sensors with

  Long-Range Wireless Communication

April 2-April 16

Group number: 7

Client &/Advisor: Dr. Cheng Huang and Dr. Meng Lu

Team Members and Roles:

Calvin Condo - Solar Power

Qin Xia - Sensors

Chuxin Chen - Arduino / Sensors

Lun Zhang - Testing/Sensors

Yuchen Zhao - LoRa Wireless module/Arduino

Luke Healy- Testing/Sensors

Where we left off:

We left off with finalizing our designs before putting in an order for the remaining parts and PCB. There has been some difficulty regarding testing, since all the labs are closed. Because of this, we were not able to test our circuit (mainly the power portion) before putting in the order for the PCB. This week's report will go over the final changes we made and what we must do as we near the end of the semester.

Bi-Weekly Summary:

We finalized the two PCB designs (main board and sensor board) and reviewed it with our advisor, Dr. Huang. To reduce cost, we suggested making the sensor board from a perf-board, as it consists of only four components. The main board was made larger to fit the bottom of the solar panel. With this, we can now mount the main PCB to the solar panel. For the power, we opted to go with a Li-Ion battery and charger instead of the super capacitor. With the amount of current required by each component, the super capacitor would not have been enough.

With all these changes, we put in the order to ETG. While we wait for the parts and pcb, we can build the sensor board and prepare for the final assignments. As mentioned earlier, we were not

able to test the circuit before putting in the order. In the case it does not work, we will identify the problem and review it in our final report.

Pending Issues:

No pending issues this week.

Team Contributions

Team Member	Contribution	Hours this Period	Cumulative Hours
Calvin Condo	PCB and ordering	15	87
Chuxin Chen	Light Sensor Testing	11	67
Qin Xia	Peer Review	10	66
Yuchen Zhao	Light Sensor Testing, Sensor Code	11	67
Lun Zhang	Peer Review	12	68
Luke Healy	Sensor Code, Peer Review	14	70