EE/CprE/SE 492 BIWEEKLY REPORT 04

2/18/18 – 3/3/18

Group number: 11

Project title: RFRD Phase II

Client &/Advisor: Dr. Daji Qiao and Dr. Nathan Neihart

Team Members/Role:

Bailey Akers - Facilitator/RFRD Tag Design/Fabrication Engineer
Colin Sunderman - RFRD Tag Design/Fabrication Engineer
Lyle Bishop - Principal Antenna Engineer
Pengyu Qu – Antenna/Power Harvesting Engineer
Nathan Mulbrook - RFRD Wireless Communications Engineer

o Past two weeks accomplishments

Team Member 1: Bailey Akers

Worked on finishing the PCB for the capacitance measuring circuit and microcontroller and had the PCB ordered

Team Member 2: Colin Sunderman
Worked on finishing the PCB for the capacitance measuring circuit and microcontroller and had the PCB ordered

Team Member 3: Pengyu Qu
Worked on creating a model of the rectifier in ADS

Team Member 4: Lyle Bishop
Worked on creating a model of the rectifier in ADS3

Team Member 5: Nathan Mulbrook
Wrote and debugged most of the code for the microcontroller.

o Biweekly Summary

2/18/18 - Bailey and Colin worked on finishing the initial PCB design.

2/19/18 - The team met for the weekly advisor meeting. Pengyu and Lyle presented on their progress with the rectifier simulations. Dr. Neihart gave them some advice on how to finish the simulations. Nathan discussed his progress on the code for the microcontroller. Bailey and Colin presented their updated design for the PCB.

2/20/18 - Pengyu, Colin, Bailey, and Nathan met and discussed how to combine aspects of the project, such as what common voltage to use.

2/23/18 Pengyu and Lyle met with Dr. Neihart to go over the progress on the rectifier simulations

2/26/18 - Bailey and Colin met with Lee Harker from ETG to review the PCB design. Lee gave them advice on several things to fix.

2/27/18 - Bailey, Pengyu, and Colin met and discussed work that need to be done on the rectifier such as finishing the simulations and begin the PCB for the rectifier and antenna. Lee Harker ordered the capacitance measuring and microcontroller PCB for the team

3/1/18 - Nathan and Colin met to do some initial testing with the microcontroller and the capacitance measuring circuit. They found that there was a linear relationship between period and capacitance, as was expected.

Pengyu and Lyle met with Scott to discuss making further progress with rectifier and antenna simulations and how to make a PCB of the rectifier and antenna.

Last Two Weeks:

NAME	Individual Contributions Summary	Hours 1st week	Hours 2nd week	Hours Cumulative
Bailey Akers	Did simulations and testing for circuit, worked on PCB	6	5	34
Colin Sunderman	Did simulations and testing for circuit, worked on PCB	6	5	38
Pengyu Qu	Worked on simulation for rectifier	6	6	36
Lyle Bishop	Help Pengyu with rectifier simulation	3	3	24
Nathan Mulbrook	Worked on code for microcontroller	2	25	39

***Details of weekly contributions are noted in above Weekly Summary section.**

o Plan for coming week

Goals for next couple weeks:

The capacitance measuring team will solder the PCB together when it is received and do testing with the microcontroller. The rectifier team will make final changes to the rectifier simulations and will extract the Gerber files from ADS so that a PCB can be made. The microcontroller team will edit the code to give the output in a different form and to optimize the code.

o Team Difficulties

The main difficulty for the past two weeks was figuring out aspects of ADS to allow our team to finish the rectifier simulations. The rectifier team is new to ADS and has had some problems getting the proper configuration for the rectifier simulation. They have had some help and learned a significant amount about using ADS. They are planning on having the final simulations finished after break.