

## ***EE/CprE/SE 492 BIWEEKLY REPORT 03***

***2/4/18 – 2/17/18***

***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

Performed test on the capacitance measuring circuit to find power as a function of voltage and to find period as a function of capacitance, worked on creating a PCB of the capacitance measuring circuit

Team Member 2: Colin Sunderman

Performed test on the capacitance measuring circuit to find power as a function of voltage and to find period as a function of capacitance, worked on creating a PCB of the capacitance measuring circuit, wrote biweekly report

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 ADS

Team Member 5: Nathan Mulbrook

Worked on creating a program for the microcontroller to use with the capacitor measuring circuit

### **o Biweekly Summary**

2/5/18 - Bailey and Colin met to perform tests on capacitance measuring circuit.

Bailey, Colin, and Pengyu met with advisors. Bailey and Colin presented on the results of the capacitance measuring circuit tests. It was decided that there were several additional tests that need to be performed and that they can work on a PCB design. Pengyu presented on the progress

of the rectifier simulations. Dr. Neihart gave him several suggestions to help him finish the simulations.

2/6/18 - Lyle, Pengyu, Colin, and Bailey met to discuss plans for making progress the remainder of the week

2/12/18 - The team met for the weekly advisor meeting. Nathan presented on progress with the microcontroller. Pengyu and Lyle presented progress with the rectifier simulations. The team decided to make a schedule that will plan out further progress for the semester and that it would be presented at the next meeting

2/13/18 - The team met to create a plan for the remainder of the semester

2/15/18 - Lyle and Pengyu met with Scott to discuss the rectifier simulations

2/16/18 - Colin and Bailey met to work on a PCB for the capacitance measuring circuit

**Last Two Weeks:**

NAME	Individual Contributions Summary	Hours 1 <sup>st</sup> week	Hours 2 <sup>nd</sup> week	Hours Cumulative
Bailey Akers	Did simulations and testing for circuit, worked on PCB	4	6	23
Colin Sunderman	Did simulations and testing for circuit, worked on PCB	6	6	27
Pengyu Qu	Worked on simulation for rectifier	6	6	24
Lyle Bishop	Help Pengyu with rectifier simulation	6	6	18
Nathan Mulbrook	Worked on code for microcontroller	3	2	17

**\*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 is going to work on a PCB. The antenna team will complete the ADS simulations for the rectifier and find an antenna that can be made or bought. The communications team will have the code wrote for the microcontroller.

**o Team Difficulties**

The main difficulties the past two weeks has been planning how we are going to integrate the different parts of this project together. We are nearing the end of the semester and we

need to find the best way to complete each project, combine the parts, and begin testing of the final project.