

EE/CprE/SE 492 BIWEEKLY REPORT 06

3/18/18 – 3/31/18

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 initial power measurements of PCB. The goal was to find out how low of power the PCB could run at without the microcontroller. Worked on design document.

Team Member 2: Colin Sunderman

Worked on initial power measurements of PCB. The goal was to find out how low of power the PCB could run at without the microcontroller. Wrote weekly report.

Team Member 3: Pengyu Qu

Worked on updating parasitic parameters in rectifier simulation.

Team Member 4: Lyle Bishop

Team Member 5: Nathan Mulbrook

Worked on updating the microcontroller code to allow it to run in low power mode.

o Biweekly Summary

3/19/18 - Weekly advisor meeting. Bailey and Colin presented the capacitance measuring PCB and the initials test results. Pengyu presented the progress he had made on updating the parasitic in the rectifier simulations. Dr. Neihart asked to see information about the power supply rejection ratio in a future meeting and to test the performance of the other copies of the PCB.

3/20/18 - The team met to work on presentation for class.

3/22/18 - The team met for the second PIRM and gave a presentation.

Pengyu met with Scott and made progress on modifying the properties of the ADS simulation of the rectifier. Scott told him he needed to add parasitic for the transmission lines.

3/26/18 - Weekly advisor meeting. The team discussed progress that was made on the design document. Pengyu presented on his simulation with updated parasitic components.

3/27/18 - The team met to discuss plans for the week.

3/30/18 - Bailey and Colin met to measure the PCB power without the microcontroller. They also asked ETG to solder wires to the washers so that it can be used for testing purposes and demonstrations.

Last Two Weeks:

NAME	Individual Contributions Summary	Hours 1 st week	Hours 2 nd week	Hours Cumulative
Bailey Akers	Worked on initial power measurements of PCB. Worked on design document.	4	4	50
Colin Sunderman	Worked on initial power measurements of PCB. Wrote weekly report.	4	4	51
Pengyu Qu	Worked on updating parasitic parameters in rectifier simulation.	6	6	54
Lyle Bishop		0	0	29
Nathan Mulbrook	Worked on updating the microcontroller code to allow it to run in low power mode.	3	4	51

***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 do measurements to find how a varying supply voltage will affect the output of their circuit. The rectifier team will design the PCB for the rectifier and get it built so that testing can be completed. The microcontroller team will edit the code to allow the microcontroller to run in low power mode.

o Team Difficulties

One difficulty the last two weeks is that we have not been able to begin final testing of the system as we had hoped because aspects of the project are not yet ready for final testing. We need to have the PCB for the rectifier so we can test that it will provide the capacitor measuring circuit the enough power. We also need the microcontroller to run in low power

mode so that it can be tested with the rest of the circuit running at as low of power as possible. These aspects of the project need to be done as soon as possible if we are going to have any time to test the final system.