

*Group number: 18*

*Project title: Radio Frequency Readout Device (RFRD)*

*Client &/Advisor: Dr. Qiao*

*Team Members/Role: Brandon Baxter/Team Leader, Vaughn Dorsey/Team Webmaster, Luke Myers/Team Communication Leader, Kurt Turner/Team Key Concept Holder, Aaron Haywood, Robert Buckley, Mehdy Faik, Kellen Yoder, Michael Miller*

### **o Weekly Summary**

This week several members made good progress on our PCB schematic design for the integrated circuit. Other work included work on capacitance charging logic, devising a schema layout for the database of the user interface, work on the reader amplifier, and beginning to update the design document for this semester.

### **o Past week accomplishments**

- Brandon Baxter: Worked on PCB Schematic
- Vaughn Dorsey: Began devising a schema layout for the database to store data in.
- Luke Myers: Began work on the updated version of the design document for this semester.
- Kurt Turner: Worked on PCB Schematic.
- Aaron Haywood: Redesigned Amplifier to work for higher frequency
- Robert Buckley: Started work on the capacitance charging logic, but found out that the clock does not work (bit 4 is set high one clock cycle bit 3 and drops with bit 3). Working on getting it fixed.
- Mehdy Faik: Administrative - emailing Nystrom and trying to mess around with NX Client. Currently looks like I have a way in to use HFSS.
- Kellen Yoder: Worked on pcb
- Michael Miller: Worked on PCB parts

### **o Pending issues**

- Brandon Baxter:
- Vaughn Dorsey: Need to figure out how to store the data for each set of bolts for a

particular light.

- Luke Myers:
- Kurt Turner: Multisim doesn't have all the parts we are using.
- Aaron Haywood: Need parts
- Robert Buckley: I have no idea how to fix the clock because it was generated in RTL synthesis.
- Mehdy Faik: Administrative - just need to access HFSS to get the antenna dimensions.
- Kellen Yoder:
- Michael Miller:

**o Individual contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b>	<b><u>Hours this week</u></b>	<b><u>HOURS cumulative</u></b>
Brandon Baxter	Group meetings PCB design	3.5	15.5
Vaughn Dorsey	Database Design Met with Team and Advisor	1.5	16
Luke Myers	E-mailed Dr. Kim to discuss modulator/demodulator and worked on design document	2	17.5
Kurt Turner	PCB Schematic	5.5	23
Aaron Haywood	Amplifier	5	18
Robert Buckley	Create capacitance charging logic. Fixing clock.	4	26
Mehdy Faik	Administrative - emailing Nystrom and trying to mess around with NX Client	1	35.25
Kellen	group meeting	3	17

Yoder	Pcb		
Michael Miller	PCB Parts	4	18

**o Comments and extended discussion**

**o Plan for coming week**

- Brandon Baxter: Finish PCB and send off to get fabricated
- Vaughn Dorsey: Work on tying interface to database and get data sending back and forth. Additionally, assist with preparations for the midterm presentation.
- Luke Myers: Speak with Dr. Kim about the modulator/demodulator and begin preparations for our midterm presentation.
- Kurt Turner: Finish PCB Schematic ASAP
- Aaron Haywood: Put together a layout for the amplifier and filter
- Robert Buckley: Fix the clock and get logic for capacitance charging/discharging working. Connect circuit to bonding pad.
- Mehdy Faik: Access antenna dimensions, generate some type drawing file, get someone to make it or cut it out of copper sheet all mah self. Send rectifier information to Kurt.
- Kellen Yoder: help reader team and begin layout of poster
- Michael Miller:

**o Summary of weekly advisor meeting**

Dr. Song present, nine members present

We discussed the current state of the PCB design. The goal is to have the PCB design completed and ordered by our next meeting.

Robert said that he has his simulation and schematic for the IC chip completed in Cadence.

We need a resistor to be placed at test points so that we can measure voltage and get the current.

Mehdy sent the production files from his Eagle rectifier design to Lee and got the parts list to him as well. His board will allow for an output to anything that takes a DC source. Takes in signal from signal generator to simulate. Then it will be modified to match with the antenna that he has designed.

Aaron has been working on the amplifier and filter for the reader end.

The oscillator circuit we have won't drive a load more than a mA.

Mehdy and Kurt discussed integrating their designs of the IC and the rectifier in simulation.