EE/CprE/SE/CYBE 492 BIWEEKLY REPORT 02

9/17/2022 - 9/27/2022
Group: 07
Project: Wireless Energy Harvesting
Client: Dr. Jiming Song
Team: Benjamin Brown, Christopher Marting, Greg Schmitt, Jacob Walczak, Sam Runkel, Tanner Garity

Biweekly Summary:
In the past week and a half we had our parts order come in. Our 6 and 10 awg wire arrived and our coaxial cables also arrived. We started the construction of our first antenna using a 3D printed housing. We ran into a few hiccups along the way but were working to fix them and get some advice from Dr. Song later this week. We also decided to scrap the idea of making our own energy harvesting board because we ran out of time to get it done.

Bi-Weekly Accomplishments:
Benjamin Brown - Met with the team for 3 hours working on our first prototype for the Yagi-Uda antenna. During construction we had some difficulties with our design so we plan on doing another attempt once we get some feedback from our advisor Dr. Song.

Christopher Marting - Met with the team to start construction on our first iteration of the Yagi-Uda antenna. Tweaks will need to be made but we are waiting to talk to Dr. Song on 9/28 to see what he thinks and if he has any ideas on improvements.

Sam Runkel - Spent a large amount of time setting up my 3D printer and getting it tuned properly so that we could get consistent 3D prints. Modeled a new housing for our antenna and tried printing it. The first go around failed halfway through the printing process so I had to make some adjustments to the model and then reprint it. We also began construction of our Yagi Uda antenna and ran into some problems along the way with the housing I made. We are going to talk with Dr. Song and get his advice and I also have some ideas about things I could change as well.

Jacob Walczak - Met with the team to construct the first prototype of the Yagi-Uda antenna. We need to update the design of the housing. We need to discuss changes with Dr. Song during our next meeting.

Tanner Garity- Further refined RF generation circuit research and created a hand drawn schematic diagram of the potential prototype. Searched for microwave and MF tuning documentation in order to propagate the desired power waves. Aided my fellow team members in creating Yagi Uda #1.

Greg Schmitt - Met with the team in the senior design lab to discuss plans for the upcoming week, as well as construct the first revision of our Yagi-Uda antenna. Certain components, such as the RF coax cable, proved to be an issue when trying to connect to the copper line of the antenna. Our preliminary solution is to strip the cable's protective sheath, separate the positive lead from the braided ground and solder them directly to the copper.

Plans for upcoming week:

- Advisor meeting with Dr. Song
- Get advice on changes we can make to our housing
- Remodel and reprint housing
- Construct new antenna
- Begin testing

Individual contributions:

Name	Individual Contributions	Hours this week	Hours cumulative
Benjamin	• Team meeting & Yagi Uda prototype construction - 3hrs	3	31
Jacob Walczak	• Team meeting and first prototype constructions. - 3 hrs	3	30.5
Greg Schmitt	• Team meeting and antenna construction	2.5	30
Christopher Marting	• Team meeting and antenna construction - 3hrs	3	43
Sam Runkel	• Team meeting and antenna construction - 3hrs • 3D printer setup and configuration - 3hrs • 3D modeling, slicing, and redesigning - 4 hours	10	41.5
Tanner Garity	• RF Generation research -2.5hrs • Tuning and Microwave propagation -3.5 hrs • Team Workshop 1 hour	7	36