EE/CprE/SE/CYBE 491 WEEKLY REPORT 07

3/7/2022 - 3/13/2022
Group: 07
Project: Wireless Energy Harvesting
Client: Dr. Jiming Song
Team: Benjamin Brown, Christopher Marting, Greg Schmitt, Jacob Walczak, Sam Runkel, Tanner Garity

Weekly Summary:
Had our bi-weekly meeting with our advisor Dr. Song where we discussed the arrival of our test board from ETG. Board was much smaller than our initial estimates and we were unsure if our store-bought antenna would fit but it did. We also had a team meeting where we discussed how we would put the board and antenna to the test with some ideas given to us by Dr. Song. We plan on performing our first initial tests this week using the antenna and board near a wireless access point and a microwave to see if it can power an LED.

Weekly Accomplishments:
Benjamin Brown - Met with our Advisor Dr. Song to talk about our testing board and discussed what our future plans are for the semester. Additionally, we had a team meeting where we discussed how we could implement testing procedures for the testing board to see if we are getting a DC output.

Christopher Marting - Had both team and advisor meetings, found my own dipole antenna to bring to the team meeting so we could see if it connects to the test board.

Sam Runkel - Had meetings with both our advisor and the team to discuss our progress since before spring break which wasn't a lot but we did receive our test board from ETG. I also performed a very basic initial test of the board at my apartment. I was able to obtain an open circuit voltage of around 10mV by placing the antenna directly next to my router and fiddling with the orientation.

Jacob Walczak - Met with Dr. Song to discuss progress and what direction we are heading in. We also discussed some testing ideas and procedures during the team meeting.

Tanner Garity- Caught up on the research conducted by my other team members. Refreshed my understanding of radar signals and antennas. Explored the theory behind Yagi-Uda calculations. Revisited Yagi-Uda design specifications and simulation techniques. Since our team settled on a board to purchase I commenced to enter part parameters in cadence virtuoso in order to begin simulating the results.

Greg Schmitt - Met with Dr. Song to discuss progress after spring break, as well as consider testing procedures for initial testboard and antenna setup, demonstrating with an IR receiver next to a regular microwave oven. Team meeting covered brainstorming additional tests that could be used to determine viability of the energy harvesting system.

Plans for upcoming week:

1. Meeting with Dr. Song
2. Begin initial testing of board with store-bought antenna

Individual contributions:

Name	Individual Contributions	Hours this week	Hours cumulative
Benjamin Brown	● Advisor meeting with Dr. Song - 0.5hr ● Team meeting to discuss testing board - hr	1.5	20
Jacob Walczak	● Meeting with Dr. Song - 0.5 hrs ● Team meeting to discuss testing the board - 1 hr	1.5	20
Greg Schmitt	● Advisor meeting - 0.5 hrs ● Team meeting covering testing procedures - 1 hr	1.5	19
Christopher Marting	● Advisor Meeting - 0.5 hrs ● Team Meeting - 1 hr	1.5	20.5
Sam Runkel	● Meeting with Dr. Song to discuss arrival of test board - 0.5 hrs ● Team meeting discussing board, and future testing ideas such as using near WAP, or microwave with LEDs or simple resistors - 1 hr ● Brief initial test at my apartment to see the kind of open circuit voltage we could get and was able to achieve around 10mV right next to my router - 1hr	2.5	20
Tanner Garity	● Explored Yagi-Uda calculations and design/simulations	2.5	20.5

	strategies - 1.5 hrs ● Started the preliminary steps of simulation - 1 hrs		