

EE 491 Weekly Report **MAY15-23** **Week 10 (11/3/14-11/9/14)**

Advisors: Daji Qiao

Client: Halil Ceylan

Members (roles): **Brandon Wachtel, Tyler Fish (Team Communicators)**

Mitch Balke (Team Leader)

Brandon Maier, Johnnie Weaver (Web Masters)

Trieu Nguyen, Christofer Sheafe (Key Concept Holders)

Project Title: Wireless Embedded Roadway Health Monitoring

Weekly Summary

Parts have been coming in. We are making final decisions on microcontrollers. We have been designing and making EM coils for magnetic charging testing. Started preliminary testing with EM coils. Parts came in for patch antennas to be created. Worked on our second version of the project plan. We are about to enter the testing phase of the project.

Meeting notes:

Email Professor Song about equipment that we need to use in the lab

Wait for new frequency parts for transceiver

Getting laminate PCB boards for antenna design

Start testing charging circuit when lithium ion batteries come in

Optimize the load in EM charging circuit

Start looking into transmitter designs

10/24/14 Group Meeting with Advisors

Duration: 30 Minutes **Members Present:** All

Purpose and Goals:

All of our advisers were gone this week but we were able to talk to Professor Song about our antenna design. We told him about the design of our patch antennas as well as EM coil design and creation. Gave an update on the status of changing our microcontroller for one with better deep sleep current draw.

Pending issues

Still waiting on parts to come in for prototype design.

Plans for next week

Mitch: I2C communications and ordering parts; assembling parts if received.

Trieu: Continue designing and testing EM charging circuit.

Johnnie: Work on website update; look into getting concrete enclosures for testing purposes.

Brandon W: Continue designing and testing charging circuit; test battery life and charging efficiencies.

Chris and Tyler: Build antennas now that we have received the parts; start looking into transmitter designs.

Brandon M: I2C communications and ordering parts; work on updating website.

Individual Contributions (this week)

Johnnie Weaver: Attended group meeting (1.25hr), attended adviser meeting (0.5hr), tested RF charging through air (1hr), tested RF through concrete (0.25hr), tested EM circuit and got inductive coil from Lee Harker (1.5hr), researched EM charging (0.5hr), brought concrete blocks to Coover for testing (0.25hr), wrote second version of project plan (2.5hr)

Brandon Wachtel: Attended group meeting (0.5hr),

attended adviser meeting (0.5hr), battery research and testing (2hr), wrote second version of project plan (2.5hr), wrote weekly report (0.5hr)

Tyler Fish: Attended group meeting (1.25hr), attended adviser meeting (0.5hr), antenna testing (0.5hr), EM testing (0.5hr), wrote project plan (2.5hr), antenna design (0.5hr), wrote weekly report (0.5hr)

Mitch Balke: Attended group meeting (1hr), attended adviser meeting (0.5hr), wrote project plan (2.5hr)

Brandon Maier: Attended group meeting (1.25hr), attended adviser meeting (0.5hr), created working non-interrupt SPI library for MSP430 (5hr), tested SPI with two MSP430s (2hr), debugged and fixed interrupt SPI library (2hr)

Trieu Nguyen: Attended group meeting (1.25hr), attended adviser meeting (0.5hr), bought wire and equipment and created inductive coils for EM (2hr), tested power transmission of coils through air (1hr)

Christofer Sheafe: Attended group meeting (1.25hr), attended adviser meeting (0.5hr), prototyped EM coils (1hr), asked Lee Harker about PCB material for antennas (0.5hr), inspected and worked on RF transmitter (1hr), researched FR4 materials for patch antenna (1hr), worked on design document (1.25h), researched SMA connectors (1hr), began learning SolidWorks (0.5hr), researched and ordered laminates for PCB antenna (1hr), assisted inductive coil prototyping (1hr)

Total weekly contributions (this week) for the project

Johnnie Weaver: 7.75 Hours

Brandon Wachtel: 6 Hours

Tyler Fish: 6.25 Hours

Mitch Balke: 4 Hours

Brandon Maier: 10.75 Hours

Trieu Nguyen: 4.75 Hours

Christofer Sheafe: 10 Hours

Total contributions for the project

Johnnie Weaver: 39 Hours

Brandon Wachtel: 42.25 Hours

Tyler Fish: 41.75 Hours

Mitch Balke: 43.25 Hours

Brandon Maier: 39 Hours

Trieu Nguyen: 36.25 Hours

Christofer Sheafe: 37.75 Hours