

# EE 491 Weekly Report    **MAY15-23**    **Week 9 (10/26/14-11/2/14)**

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**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**

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## Weekly Summary

Mitch Balke's components have come in for the microcontroller. Mitch discovered that the microcontroller that we were using was consuming too much power and decided to go with a new one that only uses 0.1uA in sleep mode. We are continuing to order parts. We hope to get our lithium battery within a week. The prototype board came in for the charging chip and Brandon Wachtel made the charging circuit for the prototype. Chris and Tyler are waiting on the metal to be cut to start putting together antennas for testing. Johnnie bought some cinder blocks for testing the charging circuit.

## Meeting notes:

We switched the microcontroller due to too much current draw

Crystals have come in

Currently looking for an I2C sensor to save on pin-outs

Patch antenna parts are waiting to be cut

Discussed charging through air with PowerCast

Try to get working prototype, at least simulation of communication for presentation

Maier and Balke will be working on getting the Real Time Clock working for next week

Daji and Jeramie will be out of town next week

## 10/24/14    Group Meeting with Advisors

**Duration:** 1.25 Hours    **Members Present:** *Brandon Wachtel, Brandon Maier, Trieu, Johnnie, Chris, Mitch*

### Purpose and Goals:

Inform our advisers of our progress and to see if there were any additional items that they would want us to prioritize over others. Advisers want us to try to have a working prototype of the communications between sensors working for our presentation.

## Pending issues

Waiting for components to come in for prototyping and testing

Waiting for PCB design to be fabricated and shipped for communication transceiver

## Plans for next week

Mitch and Brandon Maier: Work on getting Real Time Clock working

Brandon Wachtel: Solder Charging circuit, wait on battery to come in

Johnnie and Trieu: Begin concrete testing of charging circuitry

Chris and Tyler: Work on antenna design and start building antennas when parts are done being cut

## Individual Contributions (this week)

Johnnie Weaver: Attended group meeting (1hr), attended advisor meeting (1.25hr), wrote design document (0.5h), purchased concrete for testing (0.5hr)

Brandon Wachtel: Attended group meeting (1hr), attended advisor meeting (1.25hr), purchasing concrete for testing (0.5hr), designing and

constructing prototype charging circuit (4hr),  
writing weekly report (0.5hr)

Tyler Fish: creating design document (2.5hr), antenna  
design (1hr), writing weekly report (0.5hr)

Mitch Balke: Attended group meeting (1.25hr), attended  
advisor meeting (1.25hr), low power testing of  
microcontroller (0.5hr), working on software to  
interface with RTC via I2C comms (1hr)

Brandon Maier: Attended group meeting (1.25hr), attended  
advisor meeting (1.25hr)

Trieu Nguyen: Attended group meeting (0.5hr), attended  
advisor meeting (1.25hr), prepared concrete for testing  
(1hr), purchased concrete for testing (0.5hr), made  
inductive coils for EM testing (2hr)

Christofer Sheafe: Attended group meeting (0.5hr), attended  
advisor meeting (1.25hr)

### **Total weekly contributions (this week) for the project**

Johnnie Weaver: 3.25 Hours

Brandon Wachtel: 7.25 Hours

Tyler Fish: 4 Hours

Mitch Balke: 4 Hours

Brandon Maier: 2.5 Hours

Trieu Nguyen: 5.25 Hours

Christofer Sheafe: 1.75 Hours

### **Total contributions for the project**

Johnnie Weaver: 31.25 Hours

Brandon Wachtel: 36.25 Hours

Tyler Fish: 35.5 Hours

Mitch Balke: 39.25 Hours

Brandon Maier: 28.25 Hours

Trieu Nguyen: 31.5 Hours

Christofer Sheafe: 27.75 Hours