

Group Number: May1725

Project Title: Wireless Energy Measurement System

Advisor: Nathan Neihart

Team Members/Role:

- 1) Joseph Freeland (Co-Lead)
- 2) Milan Patel (Co-Lead)
- 3) Adam Cha (Communications Lead)
- 4) Adam Dau (Webmaster)
- 5) James Tran (Key Concept Holder)
- 6) Wei LinLin (Key Concept Holder)

o **Weekly Summary**

Found equation for converting ADC 12 bit value into a voltage.

$$\text{Voltage} = (3.578e-4) * (\text{ADC 12 bit value})$$

We also created BOM and send it to Lee Harker for part ordering as well as created a prototype on SolidWorks to be our case for our PCB and CC3200 that we will hopefully have 3D printed.

o **Past week accomplishments (please describe as what was done, by whom, when)**

- Adam Cha - Worked on ADC linear line plot with Adam Dau. We found the ADC conversion to be $\text{Voltage} = (3.578e-4) * (\text{ADC 12 bit value})$. Also, worked on SolidWorks 3-D printed case for our PCB and CC3200. Wrote weekly report.
- Adam Dau - Worked on ADC linear line plot with Adam Cha. Found a conversion equation that has very low error.

- Joseph Freeland - Worked on website that presents our data as well as revised software to be able to send out data from the ADC at approximately 2.5 samples/second.
- Wei LinLin - get familiar with the work of the group of the week
- Milan Patel - Worked with James to refine circuit design and met personally with Neihart.
- James Tran - Refined circuit design. Created BOM and send it to Lee Harker for part ordering

o **Pending issues (if applicable)**

- Adam Cha - Need to talk to ME department about 3D printing. Need to figure out how to read AC signals into ADC.
- Adam Dau - None at this time
- Joseph Freeland - Need to have two channels sending out voltage readings from ADC.
- Wei LinLin - None at this time
- Milan Patel - None at this time
- James Tran - PCB trace current rating problem.

o **Individual contributions**

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<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>Hours cumulative</u>
Adam Cha	Worked on ADC linear line plot with Adam Dau. We found the ADC conversion to be $Voltage = (3.578e-4) * (ADC\ 12\ bit\ value)$. Also, worked on SolidWorks 3-D printed case for our PCB and CC3200.	15	63
Adam Dau	Worked on ADC linear plot with Adam Cha. We found an ADC 12 bit value to Voltage equation with very low error.	5	34
Joseph F.	Worked on website that presents our data as well as revised software to be able to send out data from the ADC at approximately 2.5 samples/second.	6	44

Wei LinLin	catch the pace of the group	1	24
Milan Patel	Worked with James to refine circuit design and met personally with Neihart.	3	59
James Tran	Ordered parts from Digikey. Continued working PCB design. Optimized area for CC3200 layout, checked DRC, connectivity, and trace current rating	15	85

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o Comments and extended discussion

None at this time.

o Plan for coming week (please describe as what, who, when)

Adam Cha

Task	Date	Expected outcome
Need to talk to ME department about 3D printing.	2/17/17	Find out more information as far as ordering a 3D printed part
Need to figure out how to read AC signals into ADC.	2/17/17	Be able to start connecting hardware to CC3200

Adam Dau

Task	Date	Expected outcome
Figure out how to read AC signals on cc3200 board.	2/17/17	Be finished up with major tasks of software side.

Joseph Freeland

Task	Date	Expected outcome

Need to have two channels sending out voltage readings from ADC	2/17/17	Be able to start running power calculations.

Wei LinLin

Task	Date	Expected outcome
work on the web application	2/17/17	build the basic web application

Milan Patel

Task	Date	Expected outcome
Get dimensions of board to Adam Cha for 3D printing	2/17/17	Have a more accurate model to be 3D printed

James Tran

Task	Date	Expected outcome
Talk with Lee Harker and finalize PCB design before sending out	2/13/17	Hopefully to send out design by Tuesday (2/14/17)
Investigate analog and digital ground plane	2/13/17	Solve potential noise issue

o Summary of weekly advisor meeting

No meeting this week. We will have a meeting next week.