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 **<u>Weekly Summary</u>**

Checked in with 3D Printing lab to check the progress of our case. We still need another week for it to be made. Soldered 12, 1kOhm resistors to create a 12kOhm known load to be tested against the 120V outlet to see if our circuit can accurately detect a 10mA signal. Then we also created a table of data for our error for our measured and theoretical current. Also tested our hardware and software circuit together and confirmed that the output from the ADC is correct.

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

  ● Adam Cha - Checked in with 3D Printing lab to check the progress of our case. We still need another week for it to be made. Soldered 12, 1kOhm resistors to create a 12kOhm known load to be tested against the 120V outlet to see if our circuit can accurately detect a 10mA signal. Then we also created a table of data for our error for our measured and theoretical current. Also tested our hardware and software circuit together and confirmed that the output from the ADC is correct.
  ● Adam Dau - Worked with team during team meetings to record data for our ADC
  ● Joseph Freeland - Finished database, website, and ADC

- Wei LinLin - Worked with team during team meetings to record data for our ADC
- Milan Patel - Ensured Proper functionality of circuit.
- James Tran - Ensured Proper functionality of circuit.

o **Pending issues (if applicable)**
- Adam Cha - Pick up case when finished and start testing it to make sure everything fits right, and then paint the case.
- Adam Dau - Pick up case and paint case with Adam Cha
- Joseph Freeland - none at this time
- Wei LinLin - none at this time
- Milan Patel - Accurate small current measurements.
- James Tran - none at this time

o **Individual contributions**

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!!! ONLY EDIT BLUE COLUMN !!!

NAME	Individual Contributions	Hours this week	Hours cumulative
Adam Cha	Checked in with 3D Printing lab to check the progress of our case. We still need another week for it to be made. Soldered 12, 1kOhm resistors to create a 12kOhm known load to be tested against the 120V outlet to see if our circuit can accurately detect a 10mA signal. Then we also created a table of data for our error for our measured and theoretical current. Also tested our hardware and software circuit together and confirmed that the output from the ADC is correct.	18	125
Adam Dau	Worked with team during team meetings to record data for our ADC	16	70
Joseph F.	Finished database, website, and ADC	15	73
Wei LinLin	Worked with team during team meetings to record data for our ADC	7	45
Milan Patel	Gathered & Analyzed Test Data	35	131

James Tran	""		35	179

o **Comments and extended discussion**

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

Adam Cha

Task	Date	Expected outcome
Pick up case when finished and start testing it to make sure everything fits right	4/12/17	Have working final case for our project
Start painting case	4/15/17	Have a finished, painted case

Adam Dau

Task	Date	Expected outcome
Pick up case and start painting it with Adam Cha	4/12/17	Have a working case for our project

Joseph Freeland

Task	Date	Expected outcome

Wei LinLin

Task	Date	Expected outcome

Milan Patel

Task	Date	Expected outcome
Prepare final documentation	4/16/17	Final Presentation Prepared

James Tran

Task	Date	Expected outcome

- o **Summary of weekly advisor meeting**

Tasks (Due 1-2 Weeks):

1. Make the website look nicer and more labels.
2. Work on zooming and rescaling such that you are able to look at specific data points closely.
3. Increase the font size on the website
4. Needs date on website data points as well
5. Need to test the hardware circuit with an input of less than 100 mA. Use a voltage source and a resistor to generate that low current input.
6. Show the maximum as well for the hardware circuit. (get the biggest power resistor you can!)
7. "Get some big beefy resistors" to measure known current into the hardware circuit.
8. You will have to account for the phase shift in circuit when the ADC is round-robining the data.
9. Need to get accuracy error for our ADC error.
10. Update error in our design doc
11. 3 values for our circuit. Min current, max current, random current. Feed it into microcontroller and see what we get. Then look at what the phase shift is on the ADC from the round-robin. Basically have fully functioning hardware, software, and system integration. Make sure we know what all phase shifts are. RMS algorithm, feed it with a function generator, measure it all with an ADC voltage

meter, then tell what the output are. NEED TO BE DONE BY NEXT WEEK. Wants to see the phase measurement for the voltage and current of the circuit, see the circuit being interfaced with the CC3200 and see what the phase shift on that is. See the voltage and current plotted on top of each other with no correct of the phase, then current and voltage plotted on top of each other with no tuning and see what it is. With no tuning, the voltage and current should be right on top of each other. See the calibrated loads with the 3 calibrated loads.

12. Have screws tie to earth ground for the case.
13. GET A SCHEMATIC

Things To Keep In Mind:

● "Website looks like crap"

Do we need another case for the central hub? NO