

# EE/ CprE / SE 491 - sddec20-25

Automated Battery Characterizer

Week 10 Report

3/1/20 - 3/15/20

Client: Solar Car

Faculty Advisor: Nathan Neihart

## Team Member Roles

- **Kyle Czubak:** Scribe
- **Ben Kenkel:** Meeting Facilitator
- **Joe DeFrancisco:** Chief Engineer & Team Lead
- **Ryan Willman:** Safety Manager
- **Bryan Kalkhoff:** Report Manager
- **Connor Luedtke:** Test Engineer

## Weekly Summary

In the last week several technical goals have been accomplished. We found several options for power bricks that will provide enough current for each module to easily complete the charging requirements. A Texas Instruments part was specced for the current and voltage measurement that will have enough ADC precision to make the internal resistance calculations accurate. On the software side, the Pi and screen for the user interface has been selected. High level planning of the user interface has been largely completed and implementation will begin soon

## Past Week Team Accomplishments:

- Power Supply
- Temperature measurement
- Current Measurement
- Voltage Measurement

## Pending Issues:

- Online Communication

## Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Bryan Kalkhoff	Narrowed down microcontrollers	12	48
Kyle Czubak	Looked at displays for raspberry pi and started working on schema for	10	46

	database		
Ben Kenkel	Began CAN database	9	39
Ryan Willman	Finalized temperature component	10	42
Joe DeFrancisco	Specped INA3221 for current and voltage measurement. Researched requirements for internal resistance measurement	12	47
Connor Luedtke	Power Circuitry	10	45

## Upcoming Plans

### Joe DeFrancisco

- Create a schematic project in Altium.
- Design constant current load.

### Connor Luedtke

- Complete power circuitry diagram and BOM
- Begin charging circuit

### Ryan Willman

- Start sketching board layout

### Ben Kenkel

- Continue planning CAN database and UI work.

### Bryan Kalkhoff

- Finalize microcontroller selection.
- Start block layout for microcontroller

### Kyle Czubak

- Order raspberry pi and display
- Start creating database

## Summary of Weekly Advisor Meeting

The main todos from the meeting were to create a detailed system block diagram and discuss communication protocols. We will also be moving forward with a raspberry pi to host the database and be the main controller of the test program.