

# Critical Design Review

Team Apple



Mentor: Tryston Fagarang

Advisor: Dr. Anthony Kuh



# Overview

- Block Diagrams
  - Signal & Power
- Progress Update
- Board Designs
- Problems Encountered
- Upcoming Plans
- Gantt Chart
- Q & A



# Block Diagram



# Signal Block Diagram



# Power Block Diagram



Current Sensor is acting as a short

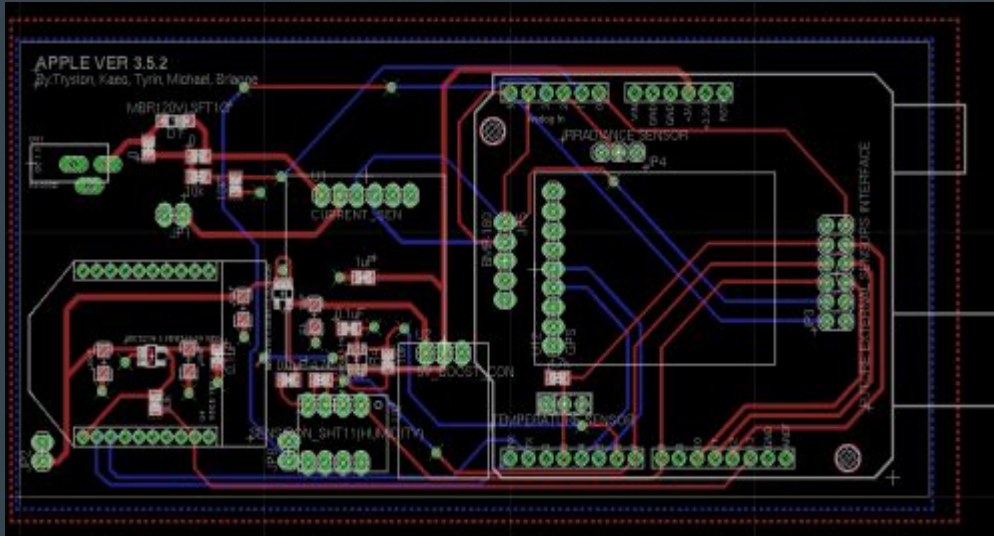


# Team's Progress

- Makamae and Kenny
  - Finished two more boards
    - Soldered / tested to make sure all parts on the PCB are receiving voltages
  - Working to complete mounting and housing parts
  - Started on the Power Budget
- Kyaw
  - Completely rerouted a new design (Version 3.5.4)
  - Dimensions 3.3 x 3.22 in
  - Created a new PCB design for (bare) Arduino



# Version 3.5.3



Dimensions:

5.12in x 2.36 in

Area~12.09in<sup>2</sup>

# Version 3.5.4



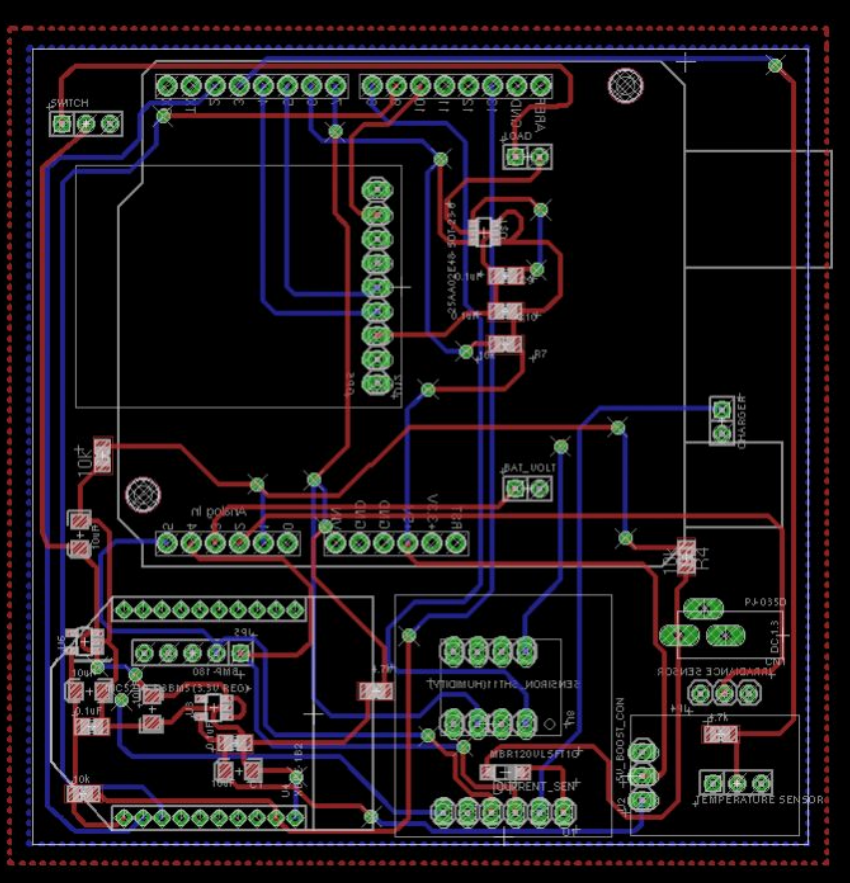
Dimensions:

3.3in x 3.22 in

Area~ 10.63 in<sup>2</sup>

Changes from 3.5.3:

- Complete Redesign of the PCB
- Routed Enable Pin from GPS (for Programming)
- Took out extra 0 Ohm Resistors
- Traced a new route for TX and RX from XBEE
- Added ON/OFF Physical Switch
- Put new package for ON/OFF Sensor Switch

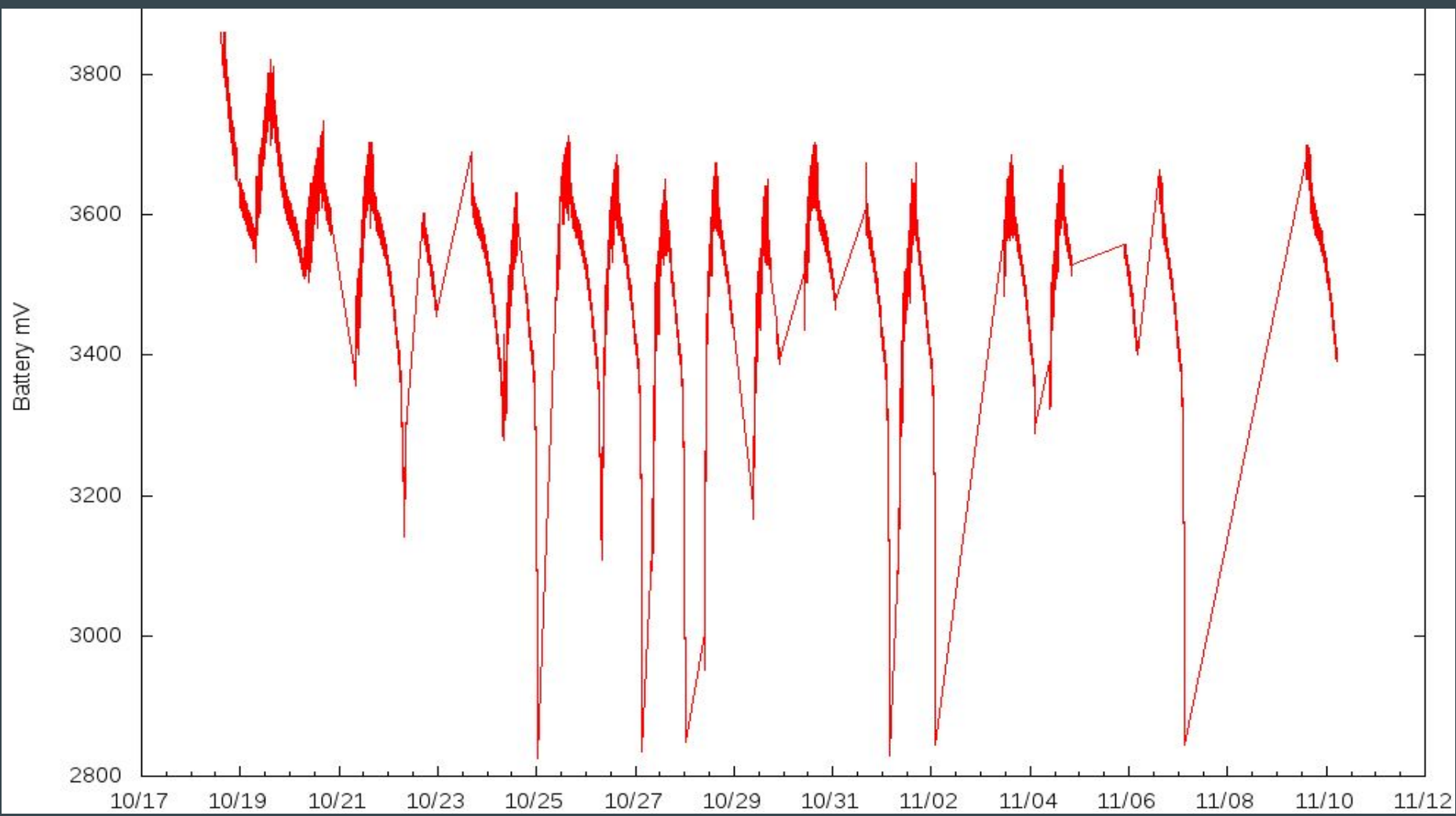




# Problems Encountered

- Power Problem due to the GPS
- 3D printer
  - Not working
- Different clamps for our weatherbox
  - Clamps are much bigger
  - Did not account for it when making mounting pieces
  - Had to redesign mounting part to fit new clamps
- Power budget
  - Had a hard time taking current measurements into sensors
- Finding correct packages for devices





# Upcoming Plans

- Deploy two more weather boxes
- Assemble bare Arduino and test to make sure it programs and runs
- Complete power budget
- Create new housing design for latest Apple version 3.5.4
- Begin on the Final Report
- Brainstorming Future Designs



# Gantt Chart

Team Apple Weatherbox Project																
(Gantt Chart)																
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Date	8/29/2016	9/5/2016	9/12/2016	9/19/2016	9/26/2016	10/3/2016	10/10/2016	10/17/2016	10/24/2016	10/31/2016	11/7/2016	11/14/2016	11/21/2016	11/28/2016	12/5/2016	12/12/2016
<b>Presentations</b>																
Proposal																
PDR																
CDR																
Final																
<b>Apple</b>																
Testing/Debugging																
Housing																
Weatherbox																
Redesign PCB and Housing																
Solder the remaining boards																
<b>Reports</b>																
Final Report																

Thanksgiving !



# Gantt Chart



Week	12	13	14	15	16
Date	11/14/2016	11/21/2016	11/28/2016	12/5/2016	12/12/2016
<b>Presentations</b>		Thanksgiving !			
Proposal					
PDR					
CDR					
Final					
<b>Apple</b>					
Testing/Debugging					
Housing					
Weatherbox					
Redesign PCB and Housing					
Solder the remaining boards					
<b>Reports</b>					
Final Report					

**Thanks!**  
**Any questions?**



