

PRELIMINARY DESIGN REVIEW

Team Apple

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OVERVIEW

- Block Diagram
 - Signal Block Diagram
 - Power Block Diagram
- Team's Progress
- Problems Encountered
- Deployment
- Upcoming Changes(Board & Housing)
- Gantt Chart



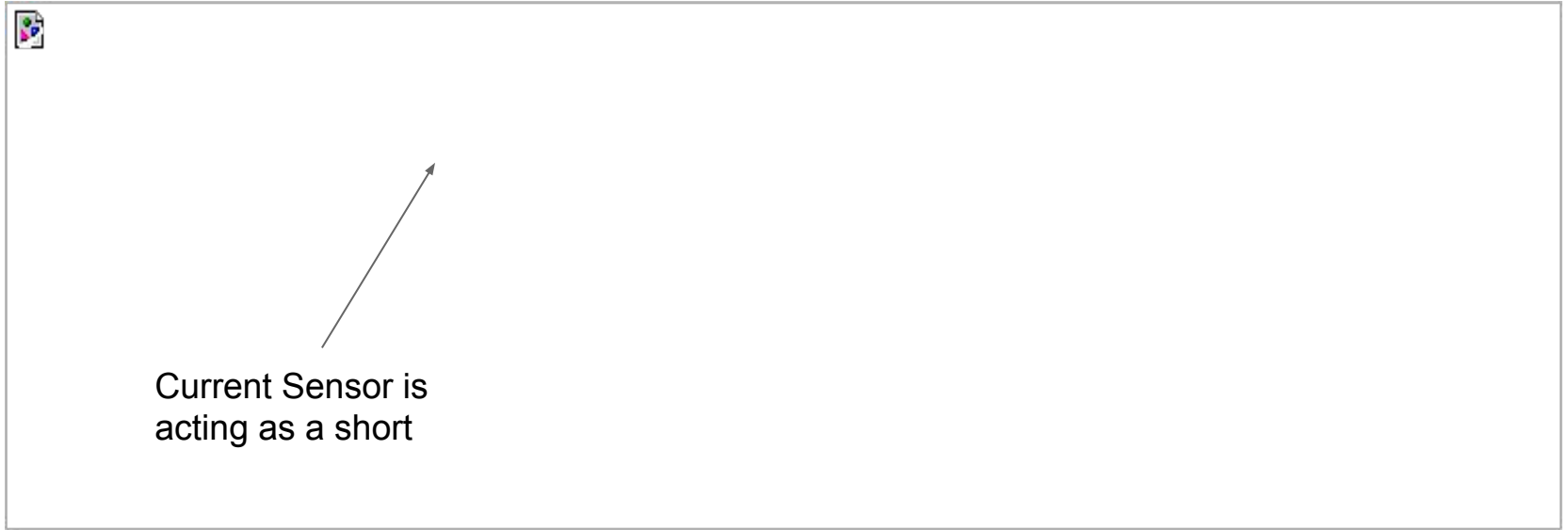
BLOCK DIAGRAM



SIGNAL BLOCK DIAGRAM



POWER BLOCK DIAGRAM



TEAM'S PROGRESS

- Finished first weatherbox
 - All parts tested and problems debugged
 - Deployed Weatherbox on Holmes Hall roof
- Housing
 - Rain simulation tested
 - Designed and printed new Housing mount
- Data Validity Test
 - Met with firmware team to make sure data sent over the Xbee are valid
- Communication Test
 - Local and Rooftop



PROBLEMS ENCOUNTERED

- Small holes in the housing
 - Water was able to leak into housing
- No code for the GPS and Temperature Sensor
 - Couldn't implement
 - Wasting board space and drawing energy
- Shorted BMP180(screeching noise)
 - Unknown problem with one of the boards

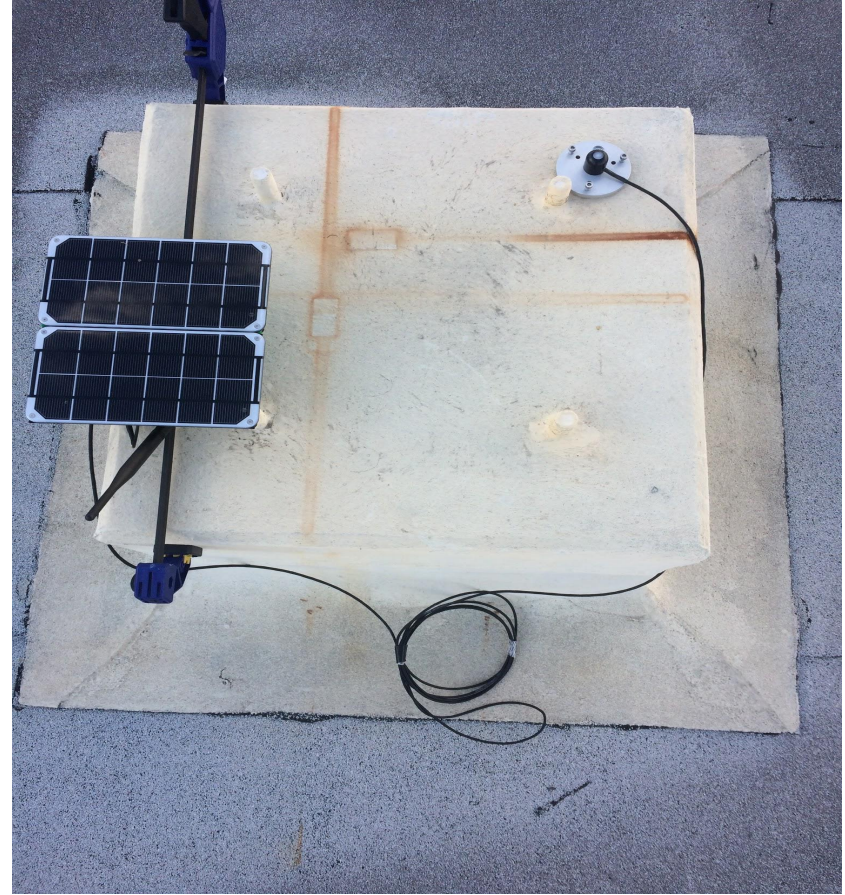


DEPLOYMENT

- Positioning
- Placement

Possible Improvements:

- Move the Weatherbox South and away from obstructions
- Design fixed, free standing structure for our Weatherbox





UPCOMING CHANGES

Board Designs:

Current Apple Version:

- Decrease board size
 - Redesign the PCB layout
- Add and update parts
 - ON/OFF Switch between the battery and the board

Next Apple Version:

- Decrease board size
 - Redesign the PCB layout
 - Arduino Micro
- Add and update parts
 - ON/OFF Switch between the battery and the board
 - Take GPS Sensor out
 - Remove one 3.3 Volt. Regulator



UPCOMING CHANGES

Housing Design:

- No extra holes
 - Prevent water from leaking into housing
- Universal housing and mount
 - So we could implement convenient way to house all of the weatherbox model



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
Presentations																
Proposal																
PDR																
CDR																
Final																
Apple																
Testing/Debugging																
Housing																
Weatherbox																
Redesign PCB and Housing																
Solder the remaining boards																
Reports																
Final Report																

Thanksgiving
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THANKS!
ANY QUESTIONS?

