



Cranberry

EE396 Critical Design Review



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Overview

- Hardware Block Diagram
- Progress Since PDR
- Current Problems
- Future Work
- Updated Schedule
- Questions

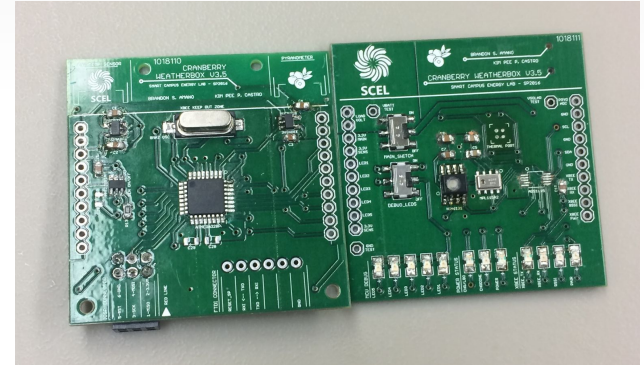


Cranberry v4.0



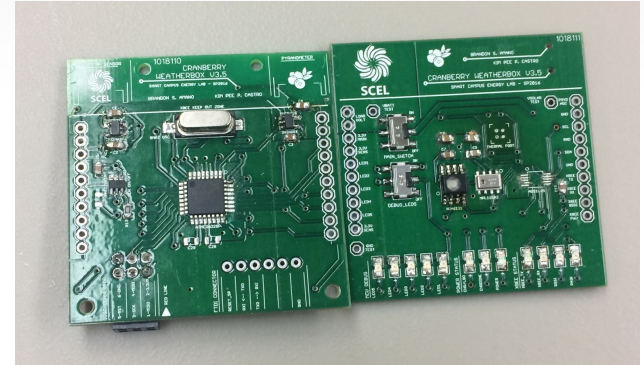
Progress Since PDR

- Made final edits to PCB layout for Cranberry v4.0 Top board
- Completed PCB layout for Cranberry v4.0 Bottom board
- Completed first draft of new housing design



Progress Since PDR

- Finished populating Cranberry v3.5 with the exception of missing parts
- Started populating another Cranberry v3.5
- Updated BOM



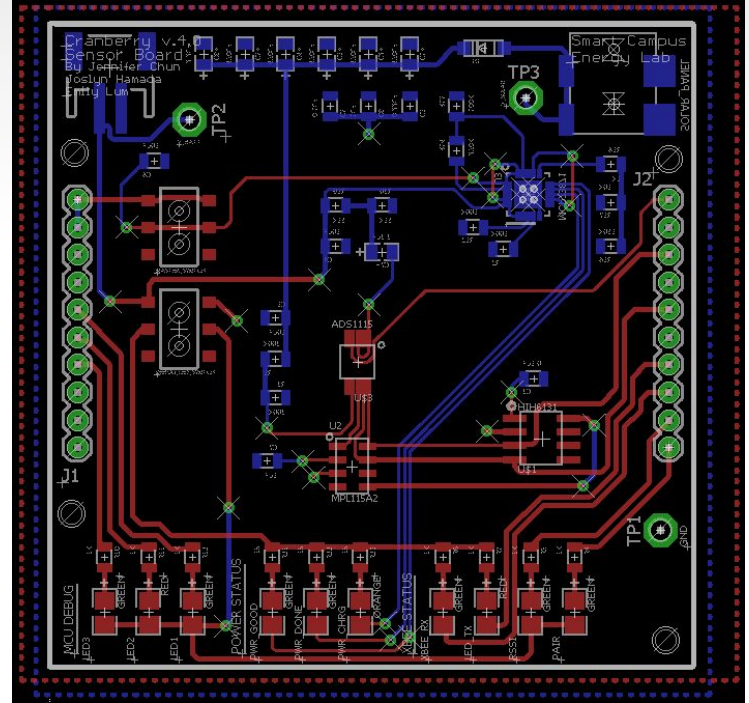
Bill of Materials

#	Part Name	Unit Cost	Quantity	Sub-Total
1	Solar Irradiance Sensor	\$235.00	1	\$235.00
2	PCB Manufacturing Costs	\$30.00	2	\$60.00
3	6V Solar Panel	\$59.00	1	\$59.00
4	Solar Irradiance Leveling Plate	\$35.00	1	\$35.00
5	3.7V Lithium Ion battery	\$29.00	1	\$29.50
6	XBee Pro S2B	\$29.00	1	\$29.00
7	Humidity Sensor	\$15.13	1	\$15.13
8	Polarized 470 uF Decoupling Capacitors	\$2.26	5	\$11.30
9	External Temperature Sensor	\$9.95	1	\$9.95
10	Solar Irradiance ADC	\$6.51	1	\$6.51
11	Barometer Sensor	\$5.10	1	\$5.10
12	Status and Debugging LEDs	\$0.38	12	\$4.55
13	ATMEGA328P MCU	\$3.70	1	\$3.70
14	XBee Pin Headers	\$1.48	2	\$2.96
15	Polarized 2.2uF Decoupling Capacitors	\$0.69	4	\$2.76
16	Mechanical Sliding Switches	\$1.37	2	\$2.74
17	Miscellaneous Discrete Components			\$17.74
18	Adafruit Ultimate GPS Breakout	\$15.95	1	\$15.95
19	RTC Module	\$14.95	1	\$14.95
Cranberry v4.0 Total Cost				\$545.89



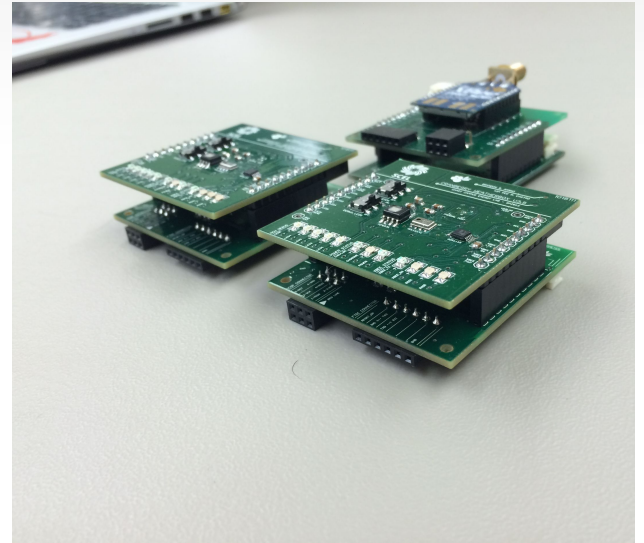
Current Problems

- Parts order delay
 - Cannot finish populating Cranberry v3.5
- PCB order delay
 - Cranberry v4.0 cannot be populated until then



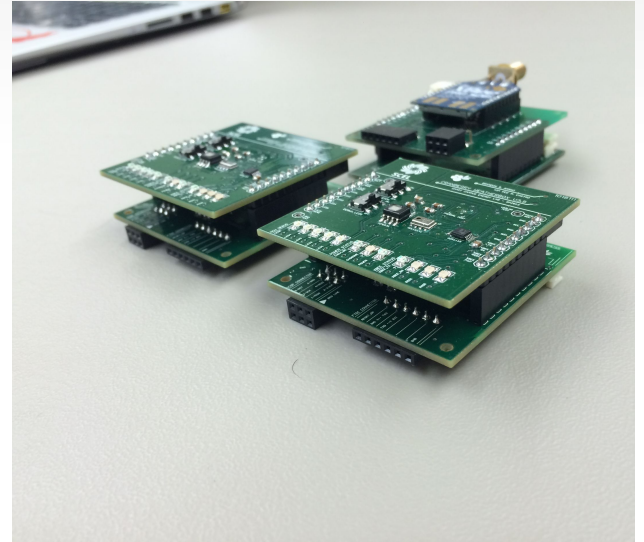
Future Work

- Finish populating second Cranberry v3.5
- Populate Cranberry v4.0
- Finalize housing design
- Print and test new housing



Future Work

- Work with software team to design GPS and RTC device drivers
- Create actual power budget once v4.0 is deployed



Updated Schedule

Cranberry Spring 2017 Gantt Chart																		
	1/16	1/23	1/30	2/6	2/13	2/20	2/27	3/6	3/13	3/20	3/27	4/3	4/10	4/17	4/24	5/1	5/8	Future
GPS Decision/Eagle Part	X	X									S							
Redeploy ver. 3.5		X									P							
Design 2nd Pg. Schematic		X	X	X							R							
PCB Layout				X	X	X	X	X	X		I							
Send out PCB by:											N							
Populate 3.5 Boards											G							
Redesign/Print Housing																		
Debugging 3.5											B							
Populate 4.0 Board											R							
396 Paper											E							
Debugging 4.0											A							
Deploy ver. 4.0											K							



Any
Questions?

