



Cranberry

EE496 Preliminary Design Review



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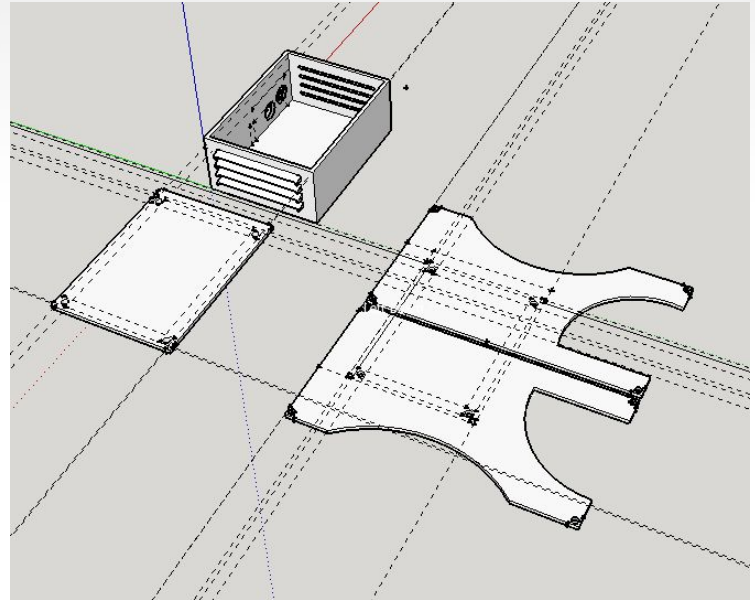
Overview

- Cranberry Overview
- Block Diagram
- Progress
- Problems
- Remaining Work
- Questions

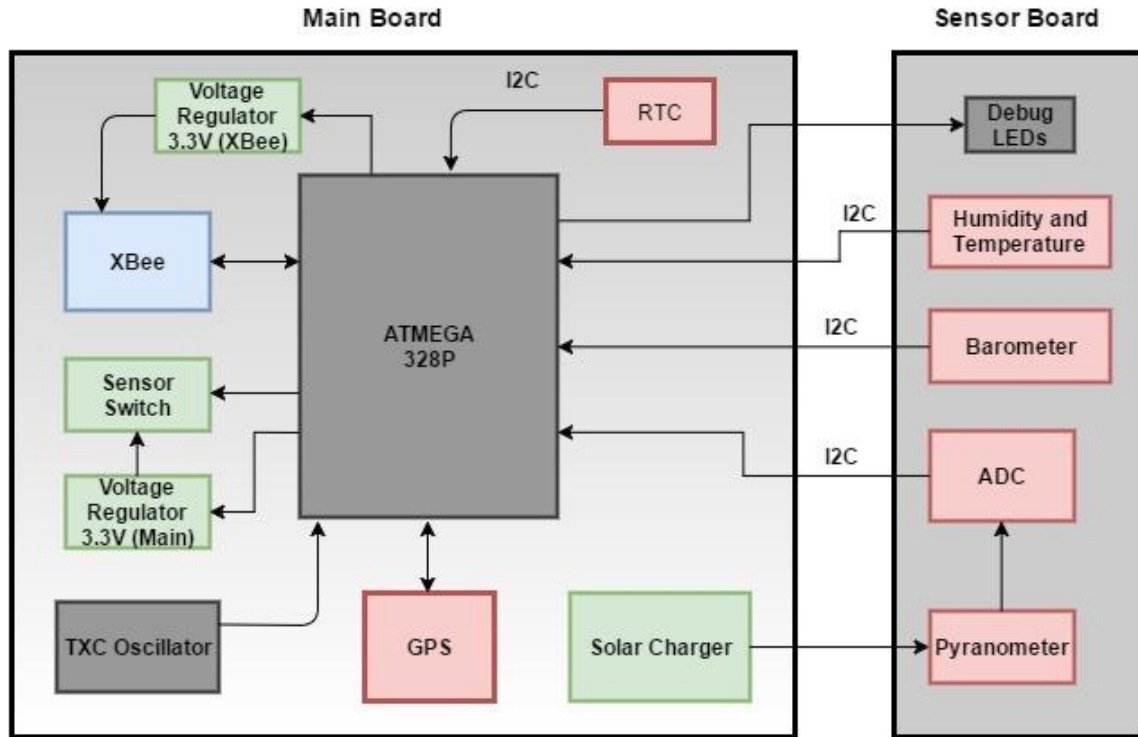


Cranberry Design Overview

- 2.25" X 2.25" stacked boards
- Top: Sensor Board (3.3v)
- Bottom: Main Board (3.3v)
- Sensors:
 - Solar Irradiance, humidity, temperature, pressure
 - Version 4.0: GPS, real time clock
- Housing Design
 - Two main parts: box and panels
 - Mounting piece

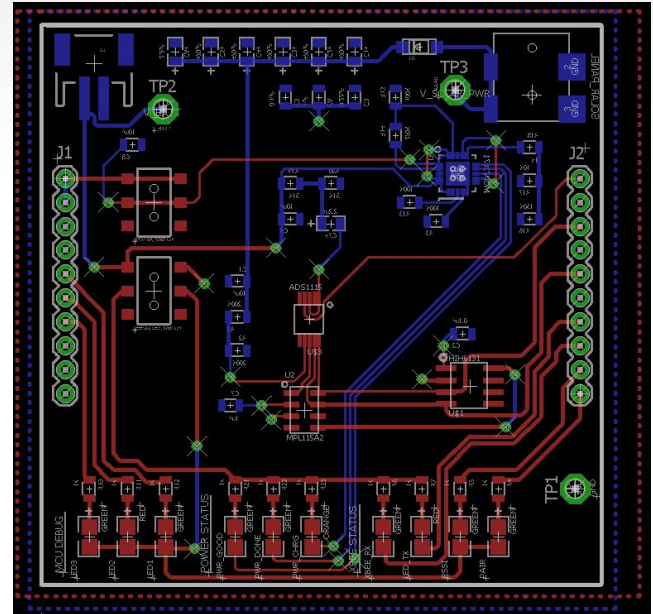


Block Diagram



Team Progress

- Completed soldering 1 set of main and sensor boards
- Began redesign of Cranberry 4.0



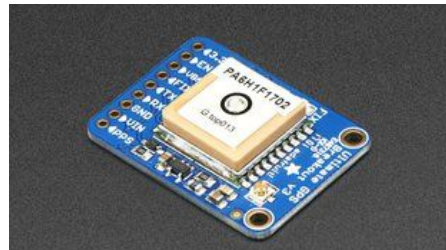
Problems & Solutions

- Trouble soldering several components
 - Solar charger & pressure sensor
 - Solution: Reflow station (Kyle)
- Several PCB errors
 1. Solar panel voltage not tied to VCC
 - Solution: Manually routed a wire from solar_power to a VCC test point
 2. Wrong capacitor packages
 - Solution: Used an equivalent capacitance value using different capacitors



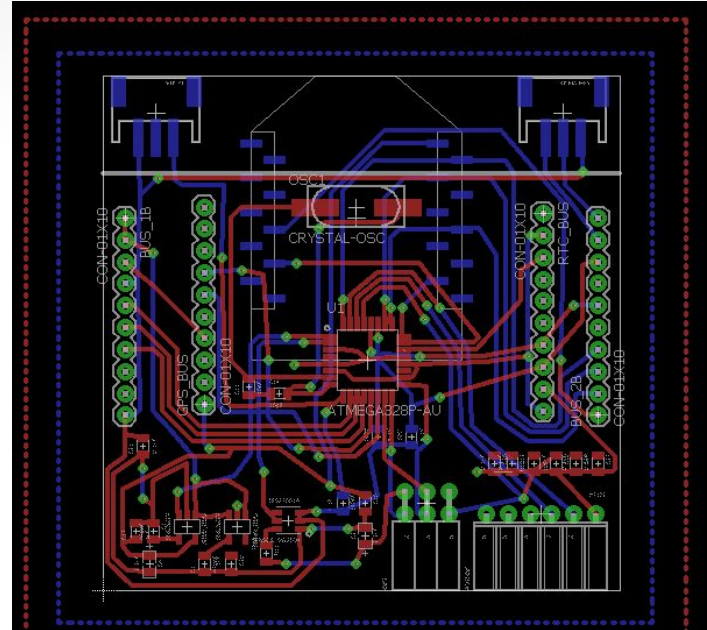
Cranberry V. 4.1

- Dimensions: 2.35'' by 2.35''
- Fixes
 - Capacitor package, solar_power to VCC
- Changes
 - Put a SMD RTC on sensor board
 - Put a 9 pin header for GPS on Main Board

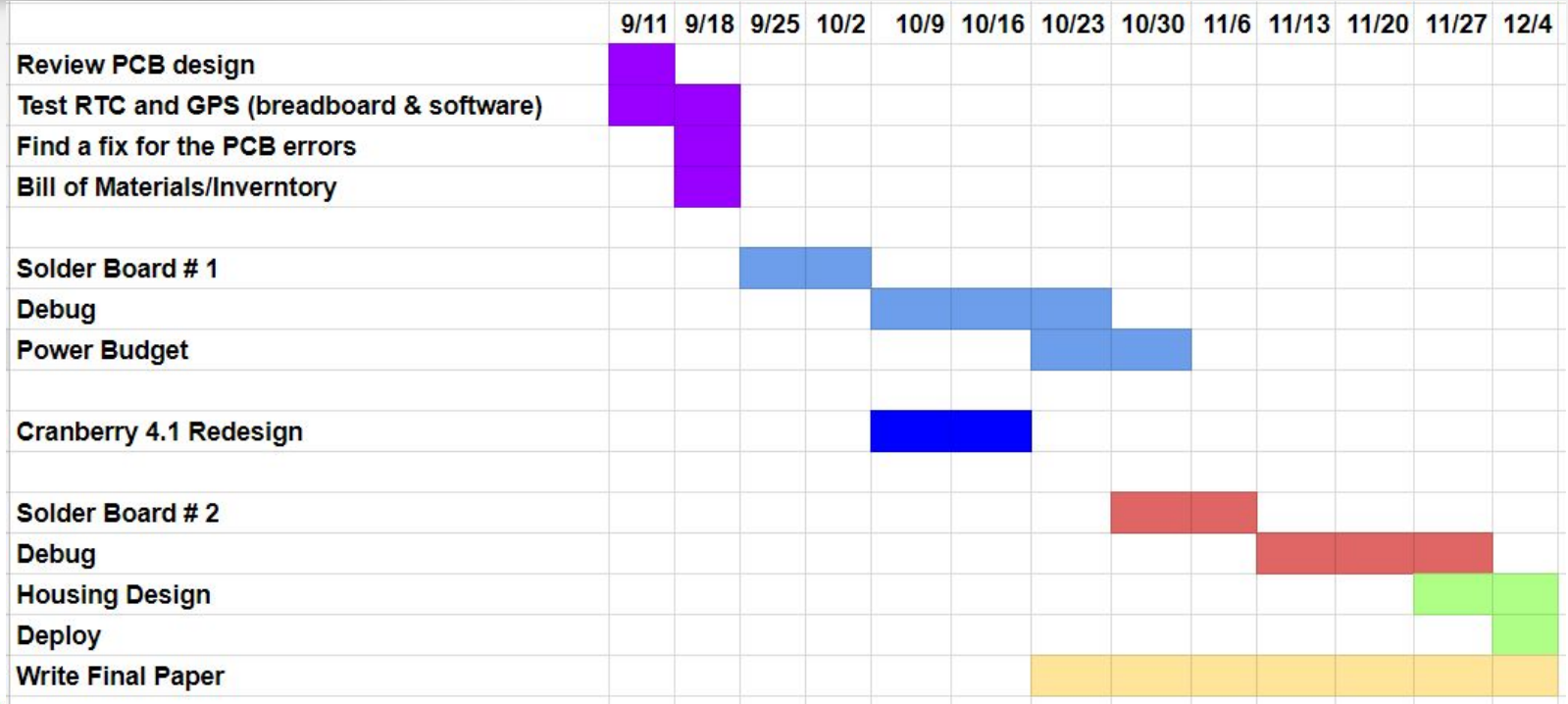


Remaining Work

- Complete Cranberry 4.1 PCB redesign by 10/20
- Complete programming and testing of soldered 4.0
 - Give to software team
- Deploy 1 Cranberry 4.0 board by the end of the semester



Gantt Chart



Any
Questions?

