Final (Demonstration) Presentation

Team Asteroid
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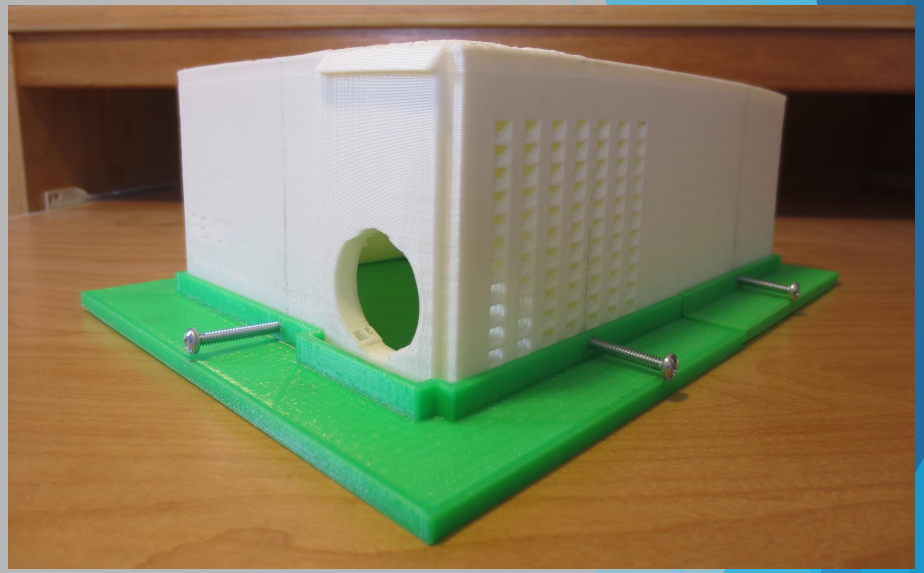
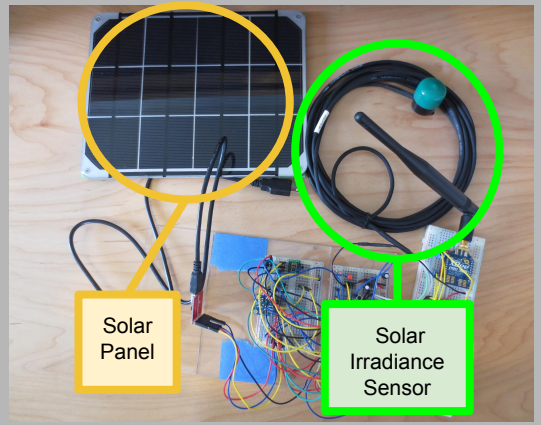
Overview

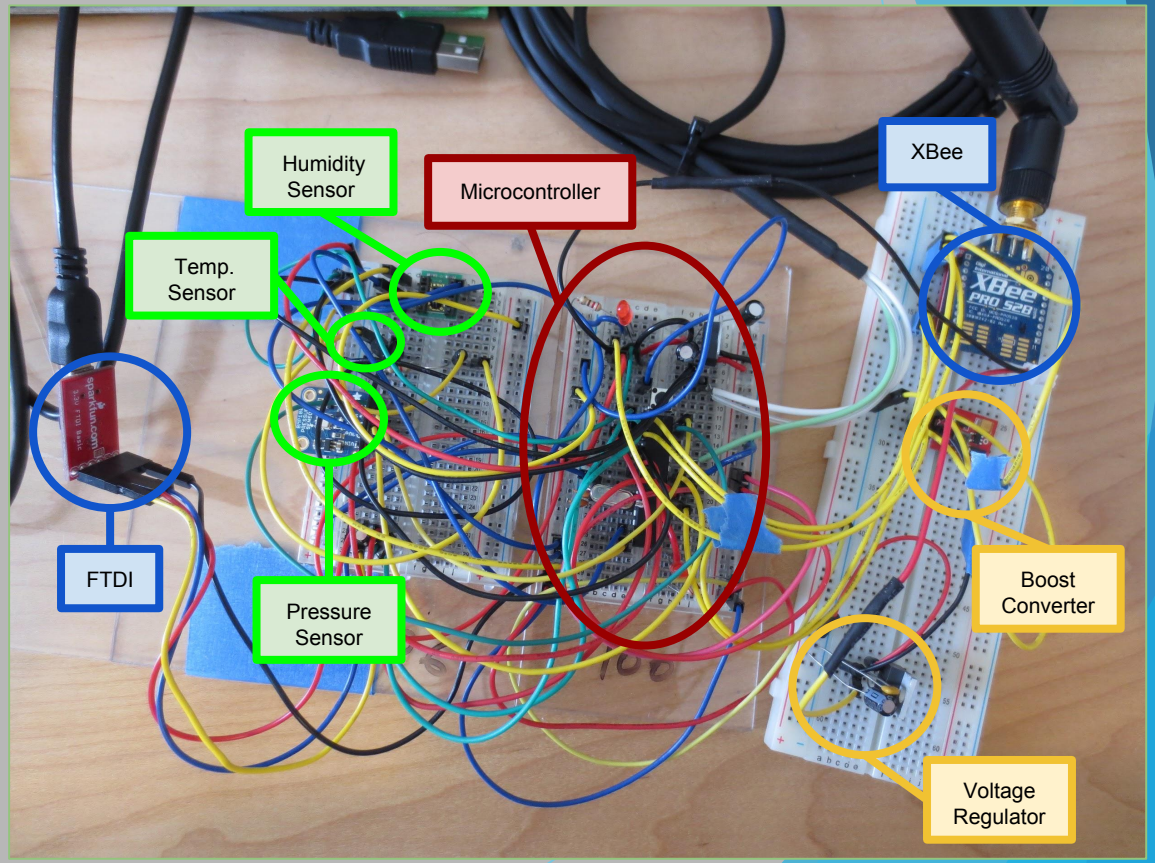
1) Weatherbox Components
2) Insight to Design Choices
3) Improvements



[2]

Weatherbox Components





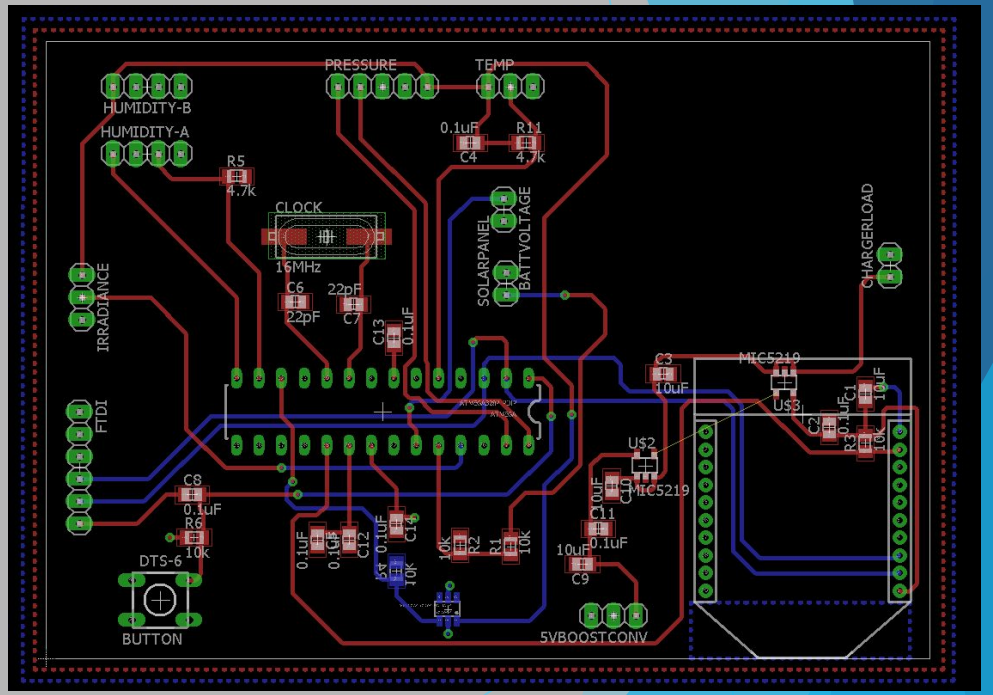
[3]

Code Structure Choices

- Divided code into two modules
  - Sensor and Transmit
- Incrementally built modules
  - Isolated sensors
  - Isolated Xbee
  - Ensured packets constructed and transmitted correctly
- Combined modules

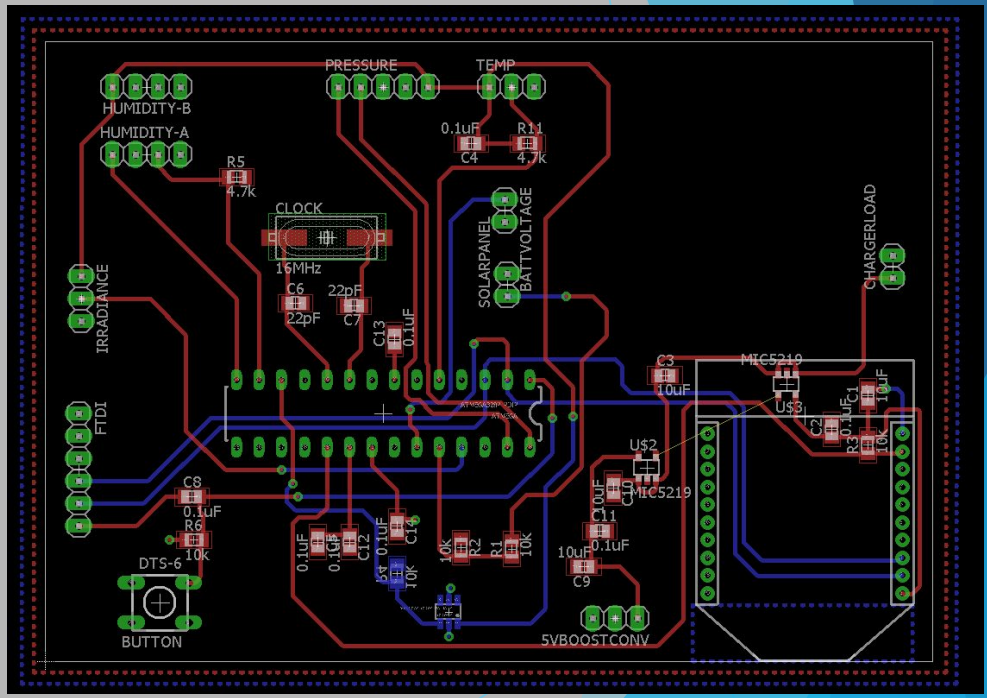
PCB Design Choices

- Placements
  - Sensors
  - Top & Bottom Layer
  - Charging Chip
  - Xbee
  - Microcontroller
- Dimensions
  - Decreased length
  - 3.149606 in -> 2.749606 in



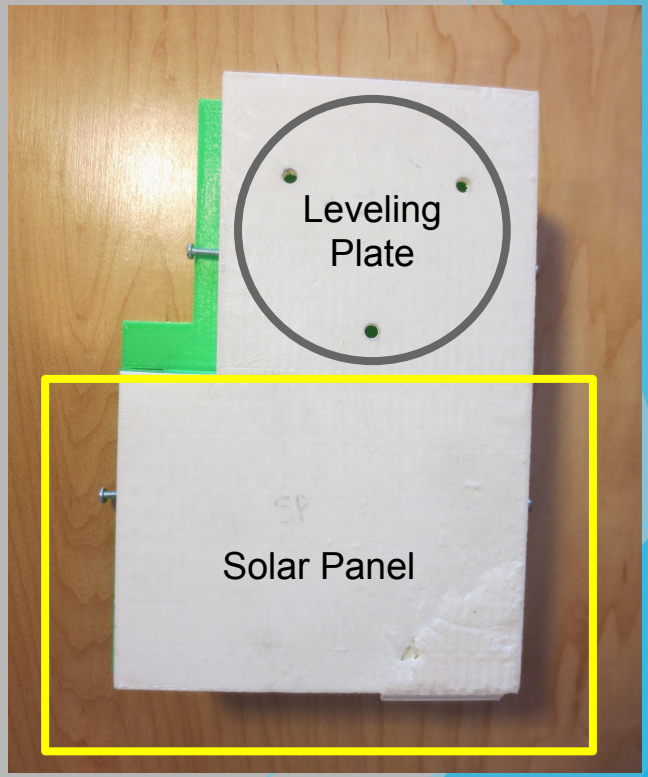
PCB Improvements

- PCB dimensions
  - Decrease overall size
  - Current dimensions:
  - width = 3.937008 in
  - length = 2.749606 in
- Placement
  - Group related parts together
- Traces
  - Account for high voltages
  - Decrease trace lengths



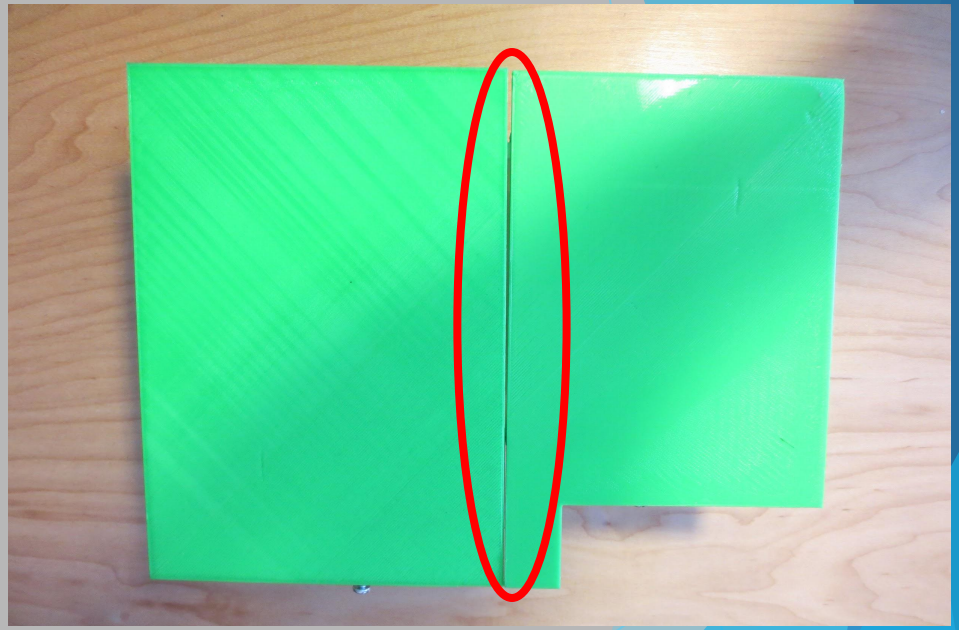
Housing Design Choices

- Large
  - Excess room
- Leveling plate on roof
  - Sensor stable
  - Accurate sensor readings
- Base boarder
  - Mount on rooftops
- Solar panel offset
  - Covers exposed areas



Housing Improvements

- Base
  - Expand wall space
  - Increase wall height
- Holes
  - Print instead of drilling



Special Thanks

- Advisor: Dr. Anthony Kuh
- Mentor: Brian Chan
- Micromouse Lab
- Leadership Team
- All REIS Project Teams
- REIS Sponsors

Questions?

Image Sources

1. http://cdni.wired.co.uk/620x413/s_v/shutterstock_126987932.jpg
2. Housing and PCB Pictures by Kevin