Team Mango
PDR Presentation

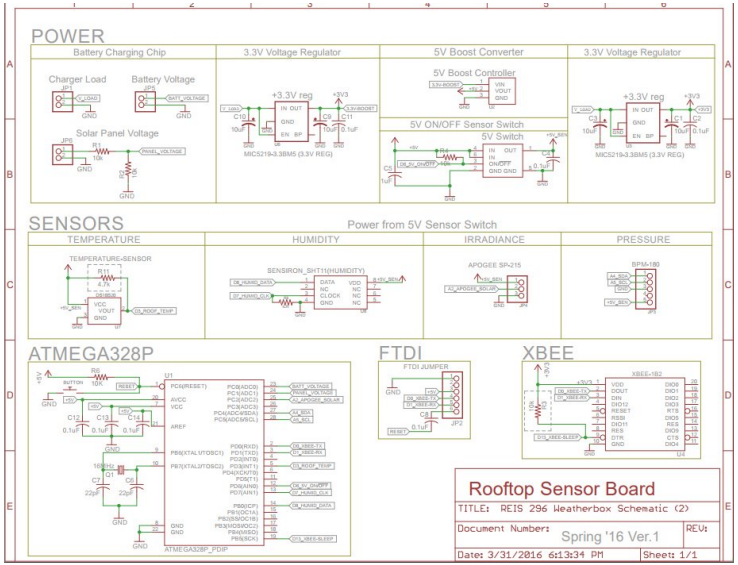
EE296
“Drop Baby Drop”

Overview

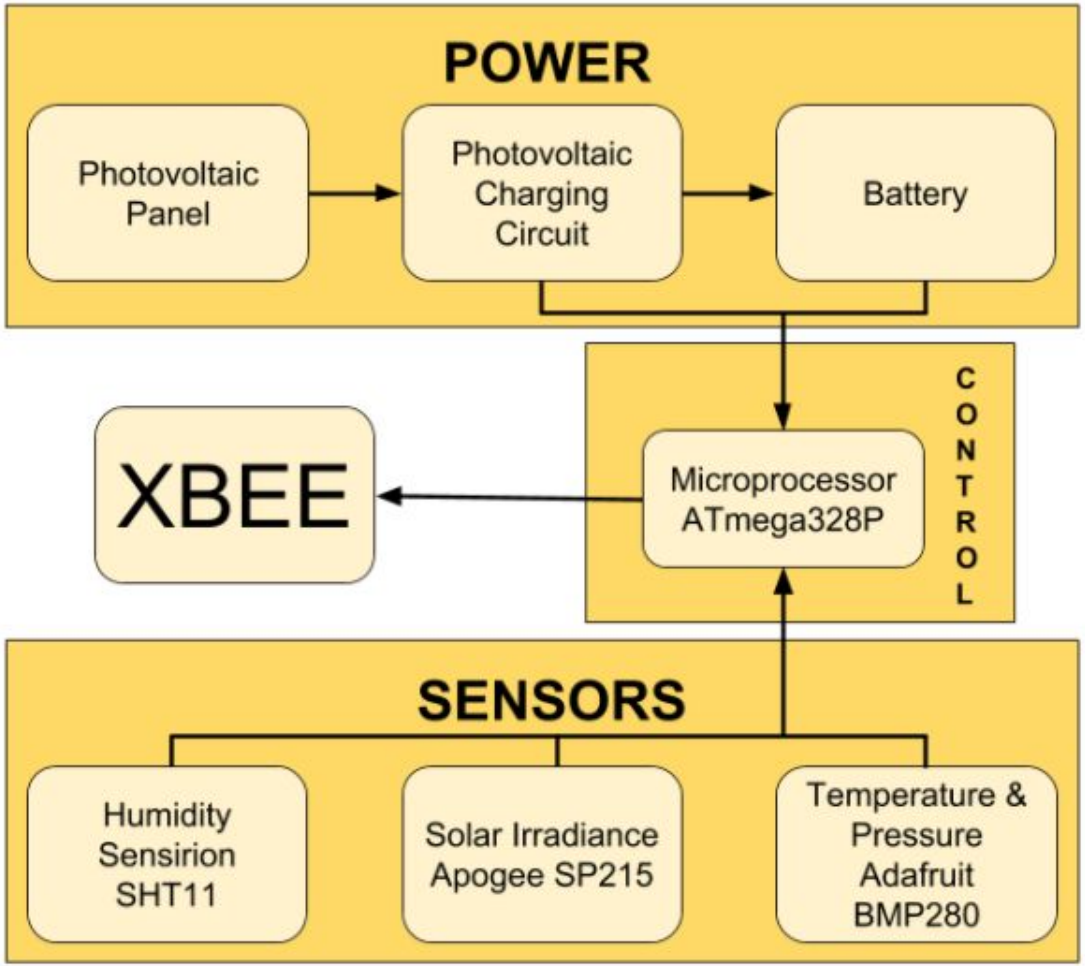
- Parts List
- Progress
  - Block Diagram
  - Schematic Design
  - Work Distribution
- Problems
- Upcoming Tasks
- Timeline

Parts List

- IC REG BOOST 5V 0.13A 5TSOP (5V Boost)
  - Package: SOT-23-5 Thin, TSOT-23-5
- CRYSTAL 16.0000MHZ 18PF SMD (Clock)
  - Package : HC49
- BREAKOUT BOARD FOR XBEE MODULE (Breakout Board)
  - Part Number: BOB-08276
- CAP CER 22PF 50V C0G/NP0 0805 (22pF Capacitor)
  - Package: 0805
- SENSIRON_SHT11(Humidity)
- SP-215: Amplified 0-5 Volt Pyranometer (Irradiance)
- BMP-280 (Pressure)
- ATMEGA328P_PDIP

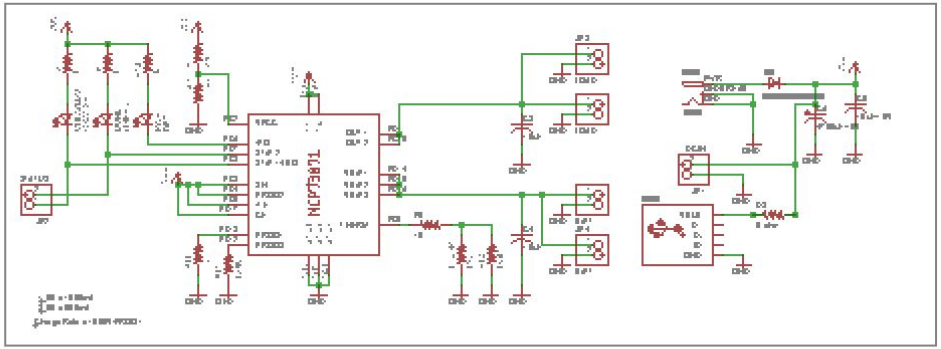


Block Diagram

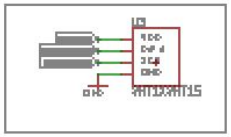


Schematic Design

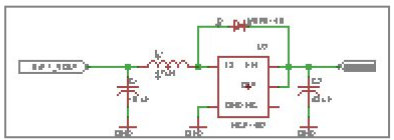
CHARGING CIRCUIT



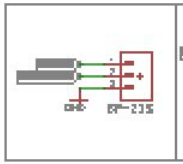
HUMIDITY



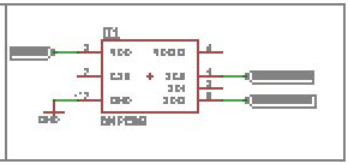
5V VOLTAGE REGULATOR



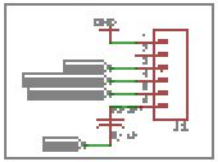
IRRADIANCE



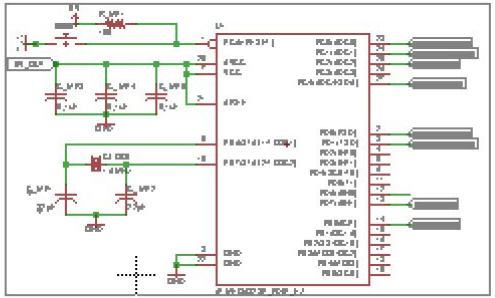
TEMPERATURE & PRESSURE



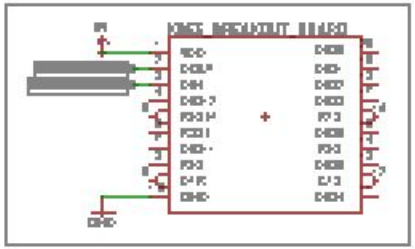
FTDI



MICROPROCESSOR



XBEE



Work Distribution

Mostly working together to get experience with everything.

Josh Claudio

- Software Lead

Mark Cacal

- Housing Lead

Emily Kane

- Board Design Lead

Problems Encountered

Finding libraries (Arduino and Eagle)

- Gather files and links into our github for future 296 reference

Sensors were not functioning properly

- Humidity SHT 11: Fixed with **wiring** (s/o to Andrew)
- Solar Irradiance: Replaced SP 212 with **SP 215**
- Pressure: Replaced BME 280 with **BMP 280**

Upcoming Tasks

- Board layout design
  - Each member will design their own board layout
- Housing Design
  - Pick best Google Sketch-up design
- XBEE Testing

Gantt Chart

Mark Cacal, Josh Claudio, Emily Kane	Team Mango																											
Week	1		2		3		4		5		6		7		8		9		10		11		12		13		14	
Day	9/6	9/8	9/11	9/13	9/18	9/20	9/25	9/27	10/2	10/4	10/9	10/11	10/16	10/18	10/23	10/25	10/30	11/1	11/6	11/8	11/13	11/15	11/20	11/22	11/27	11/29	12/4	12/6
Tutorials																												
Arduino																												
Github																												
Eagle																												
Presentations																												
Proposal Presentation						09/23/17																						
Preliminary Design Review												10/14/17																
Critical Review																				11/10/17								
Final Presentation																										12/02/17		
Modules																												
Pressure Sensor																												
Humidity Sensor																												
Solar Irradiance Senor																												
Microprocessor																												
Transciever																												
Antenna																												
Charging Circuit																												
Battery																												
Solar Panel																												
Build																												
Eagle Schematic Design																												
Design/Print PCB																												
Housing																												
Testing																												
Debug																												
Final Report																												

Questions/Comments