



Team Pineapple

Final Presentation

Mentor: Kenneth Lauritzen

Advisor: Dr. Anthony Kuh



Overview

- Project Background & Motivation
- Project Goal
- Block Diagrams
- Pseudocode/Algorithm
- Final Project Status
- Remaining Problems
- Future Improvements





Project Background & Motivation

- Design/Develop low cost, reliable environmental sensor module
 - WeatherBox
 - Assist in planning future renewable energy installations
- Help reduce UH Manoa's carbon footprint and tuition costs
- Save Mother Nature





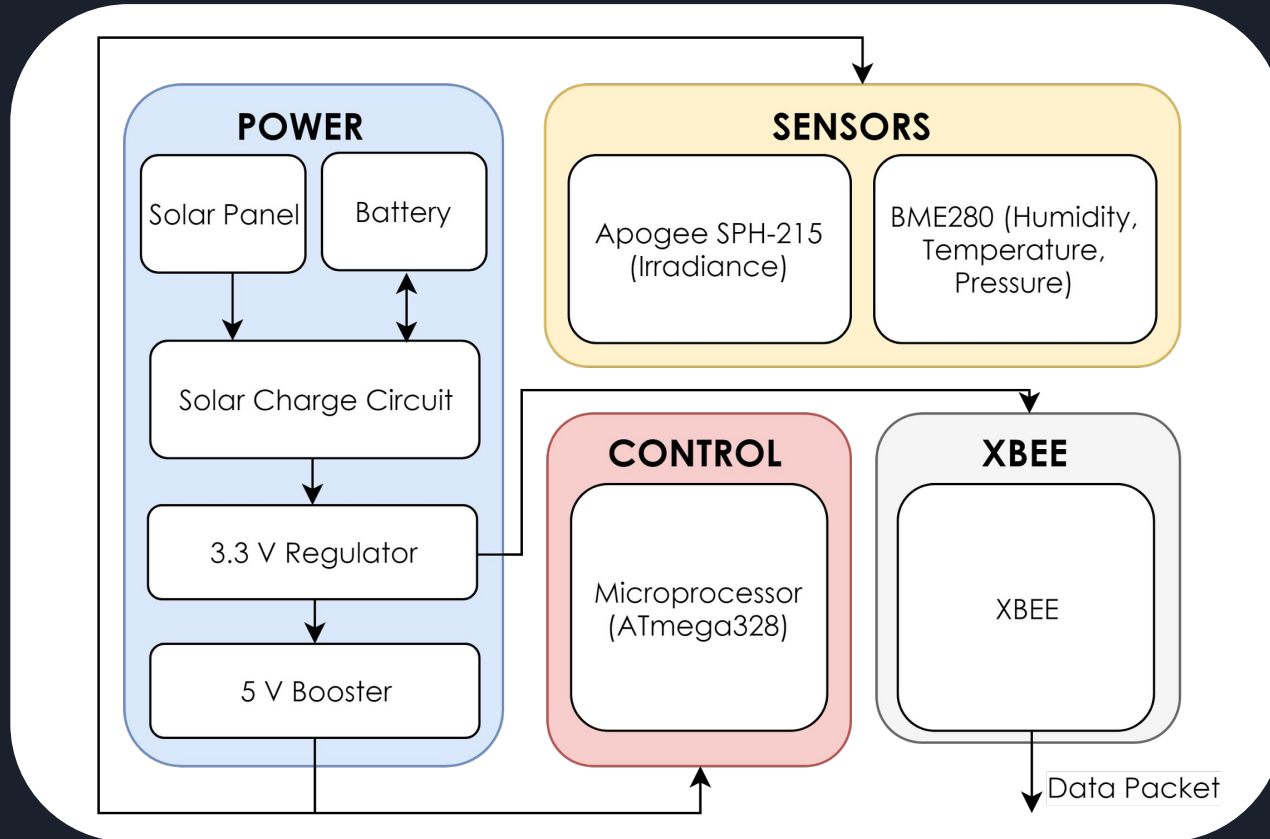
Project Goal

- Make UH Manoa a self sustaining Microgrid
- Measure WeatherBox data for optimal placement and usage of solar energy at UH Manoa





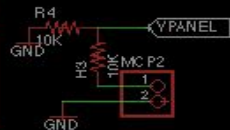
Overall Block Diagram



BATTERY VOLTAGE HEADER



SOLAR VOLTAGE HEADER



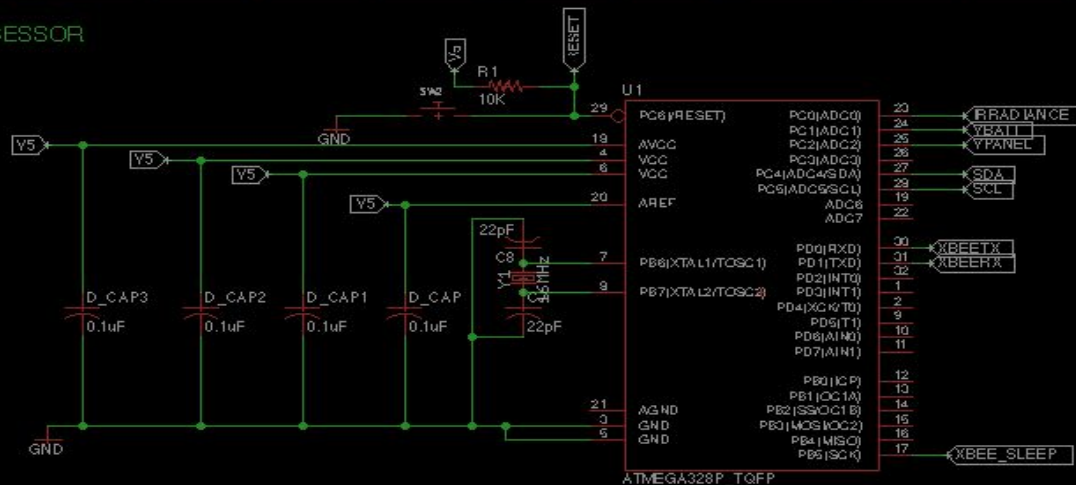
PIRANOMETER



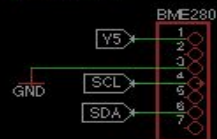
SOLAR CHARGER



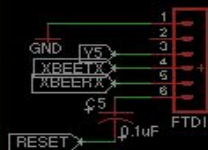
MICROPROCESSOR



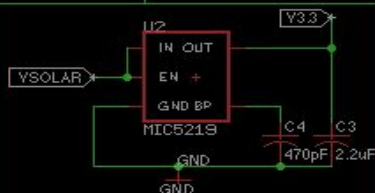
PRESSURE, TEMPERATURE, HUMIDITY



FTDI



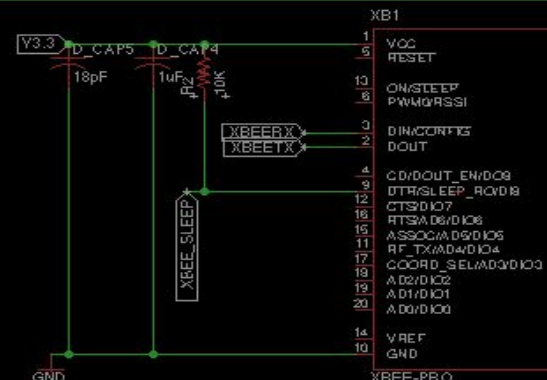
3.3V REGULATOR



5V BOOST CONVERTER



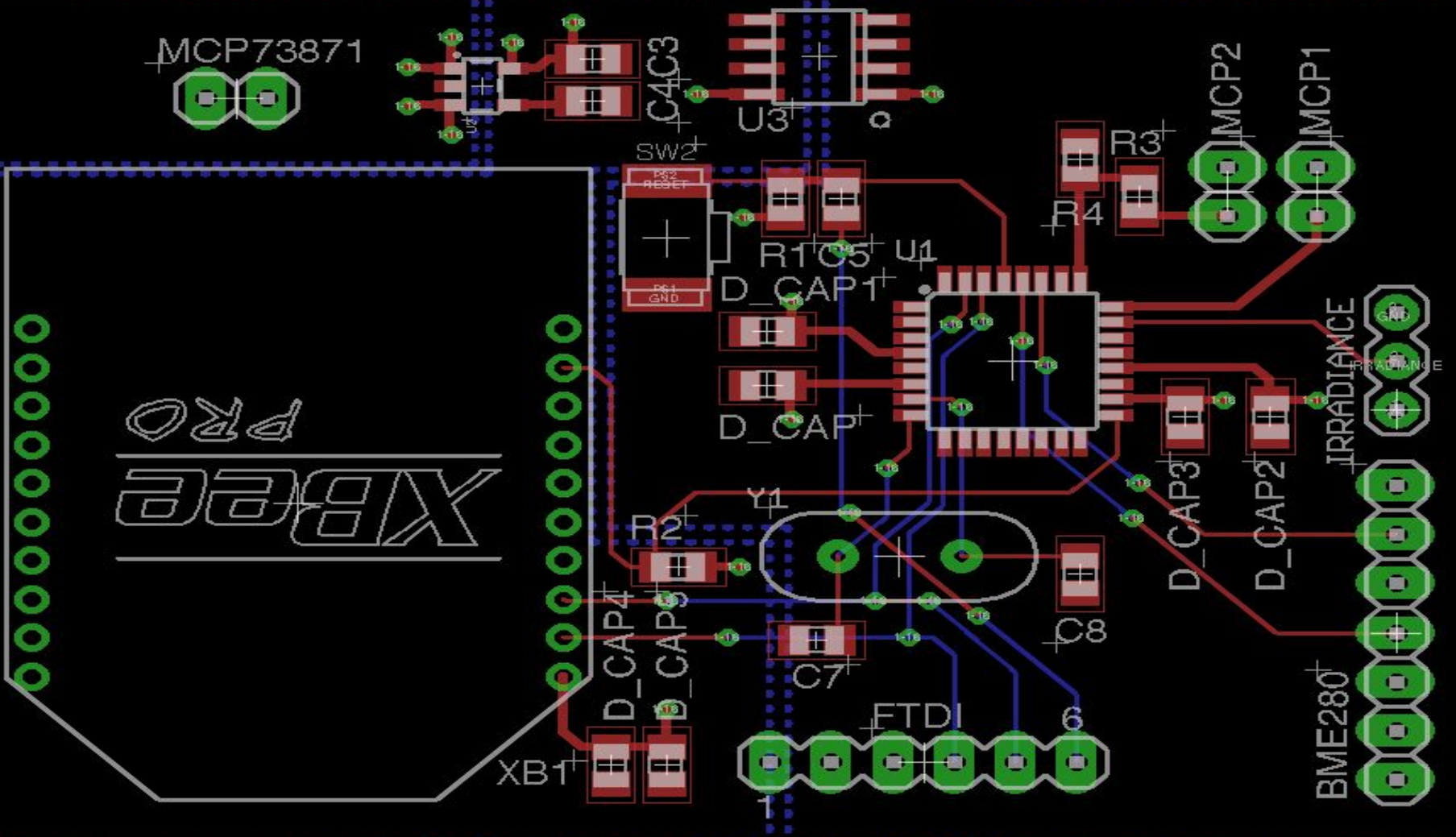
FTDI



>CNAME		
Team Pineapple EE296		
11/12/17 4:34 PM	>DESIGNER	
Sheet: 1/1	Rev:>CREVISION	

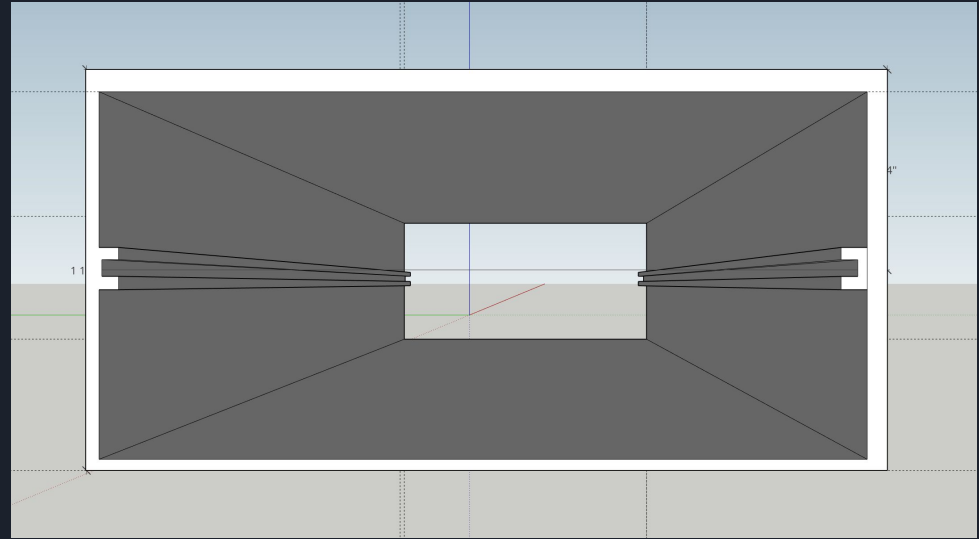
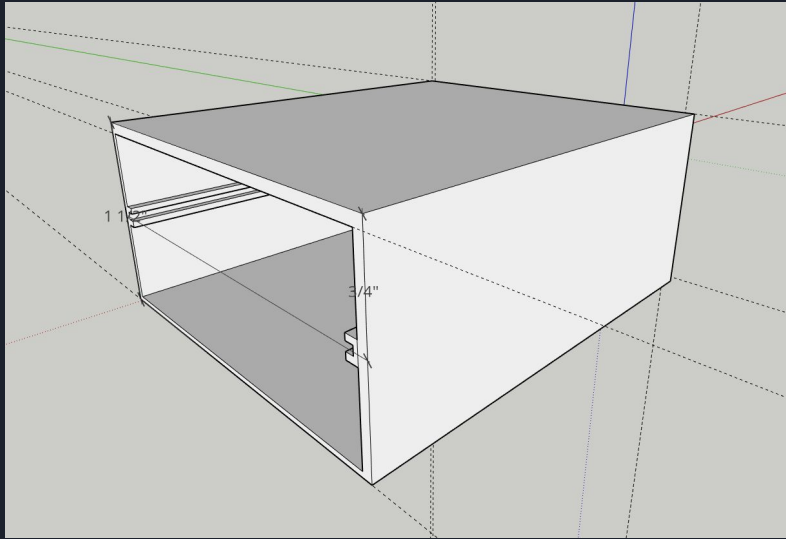
XBee PRO

MCP73871





Housing Prototype





Pseudocode / Algorithm

```
setup():  
configure pins;  
Serial.begin(9600);
```

```
construct_Packet():  
sensors.begin();  
collect_data();  
store_data();
```

```
loop():  
construct_Packet();  
transmit_Packet();  
clear_Packet();  
delay(delayTime);
```

```
clear_Packet():  
clear_data();
```

```
transmit_Packet():  
sizeof(payload);  
memset();  
memcpy();  
xbee.send(zbTx);
```



Project Schedule





Final Project Status

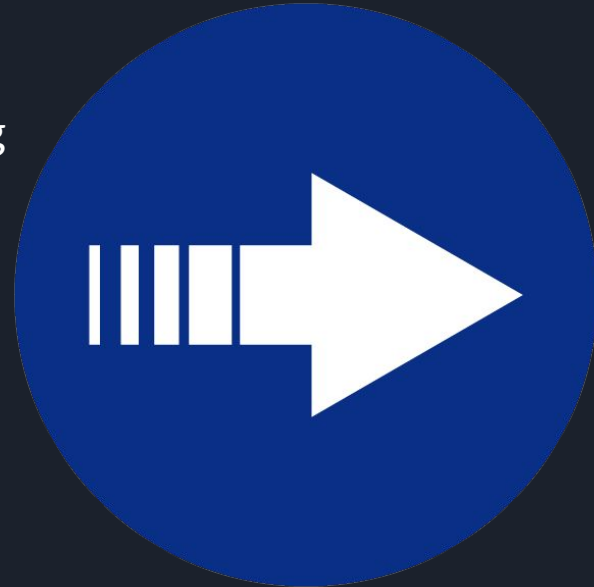
- Parts Order Completed
- Board Schematic Completed
- PCB Layout Completed
- Code Integration Completed
- Code Debugging Completed
- Housing Draft Completed





Future Improvements

- Complete Final Draft of Housing
- Soldering PCB Layout
- Ask for Help when Needed





Questions?

