Team Guava

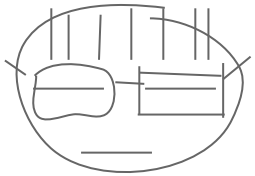
Proposal Presentation

Fall ‘20

Presentation Overview

- Introduction
- Motivation
- Block Diagram
- Guava Progress Spring ‘20
- REV D
- Project Goals
- Learning Expectations
- Progress So Far
- Predicted Problems
- Gantt Chart
- Questions

Team Guava Introductions



Diwen Lin
Senior - 496
4th semester
EE-System

Max Mochizuki
Senior - 496
3rd semester
EE - EP

Riley Sodetani
Senior - 496
2nd Semester
CENG

Blake Wong
Senior - 396
1st Semester
EE - EP

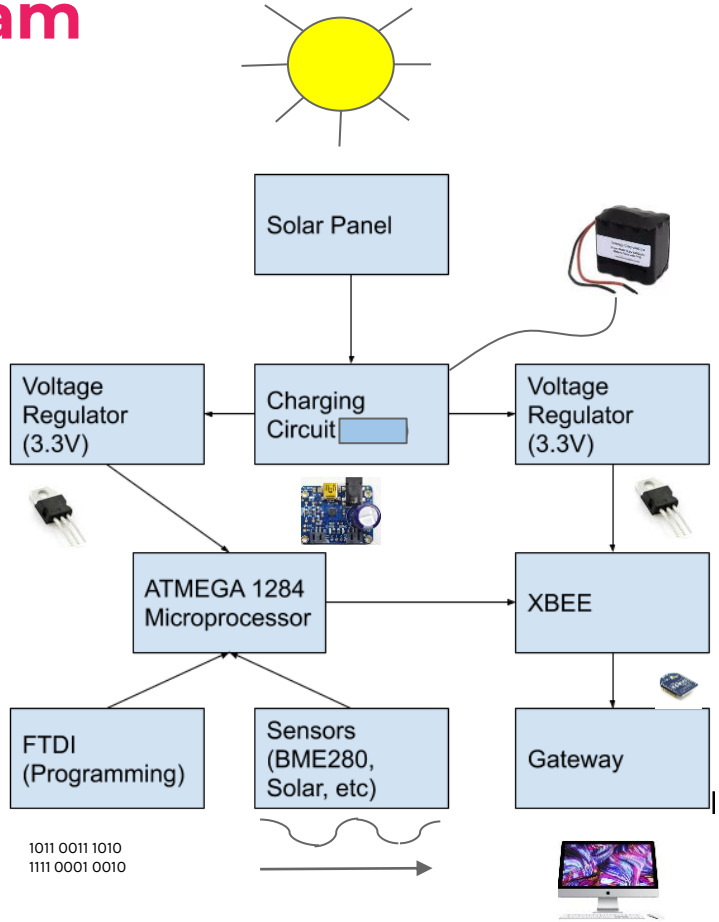
SCEL Motivation

Team Guava is the fifth generation weatherbox team for the Smart Campus Energy Lab.

Team Guava specializes in integrating sensor modules into the board, which will take up less real estate and be better optimized to handle weather data.

We want to allocate the best places to implement renewable energy for the future

Block Diagram



Progress Spring 2020

REV D

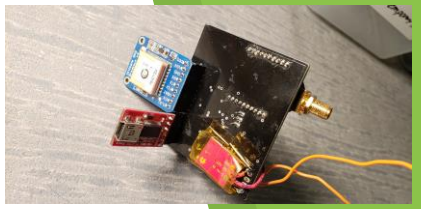
- PCB is ready
- Parts have shipped

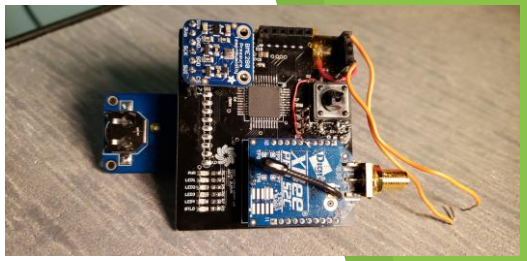
REV C

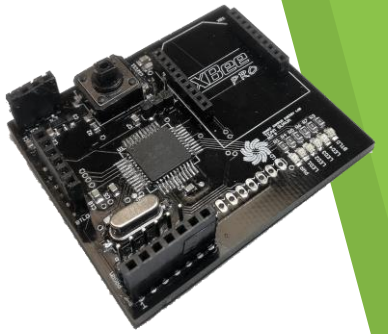
- Boot-loaded and Programmed
- Issue with Xbee communication

REV CIV

- Assembled one board
- Needs to be boot-load and program



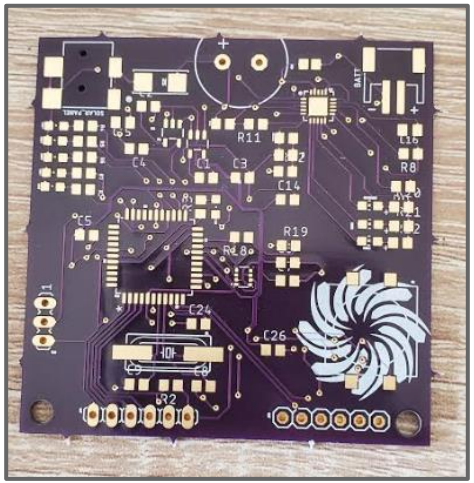


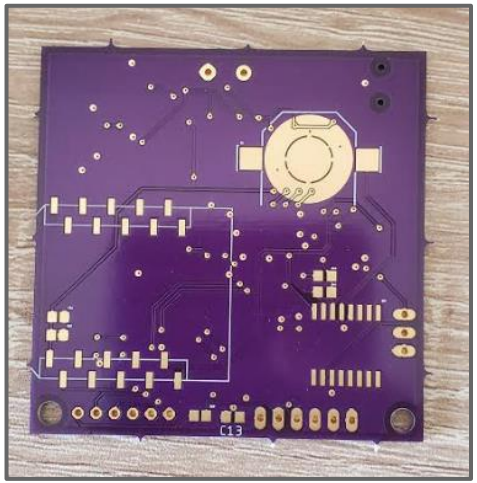


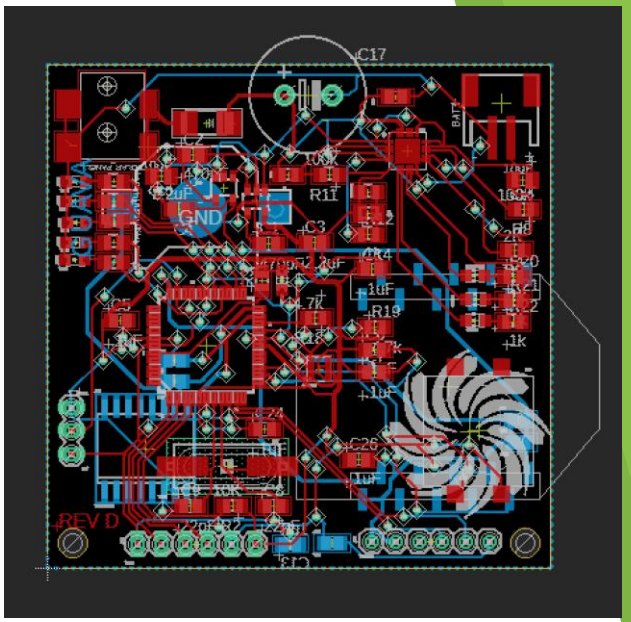
REV D

Found problems with previous revisions

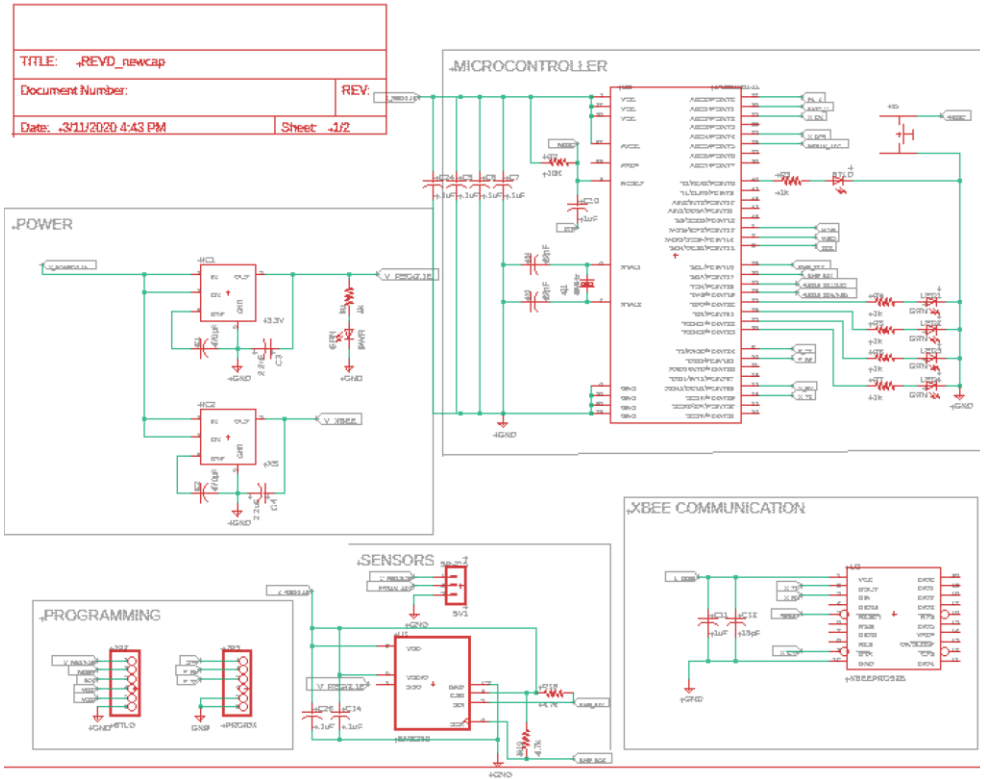
- Solar Charging Chip
- Trace errors

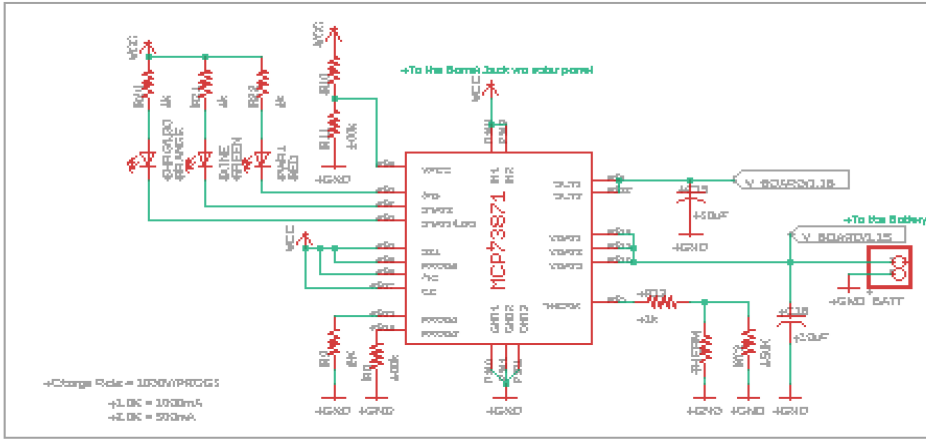




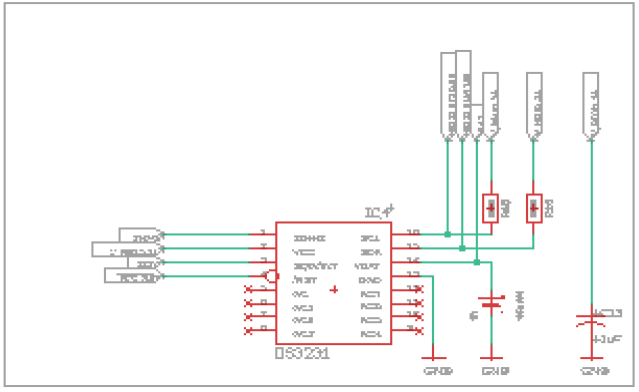


REV D


TITLE: .REVD_newcap
Document Number:
REV:
Date: 3/11/2020 4:43 PM
Sheet .1/2
.MICROCONTROLLER
.POWER
.SENSORS
.PROGRAMMING
.XBEE COMMUNICATION


+To the Barrel Jack via solar panel
MCP73871
+To the Battery
+Charge Rate = 1000V/PROG1
+1.0K = 1000mA
+2.0K = 500mA


+To the CNp
POWER
GROUND
+GROUNDBREAK


DS3231

Project Goals

Produce a self-sustaining environmental sensor module that will collect meteorological data

- Construct REV D
- Test and debug REV D
- Make new revision if needed
- Accomplish all tasks while staying safe

Learning Expectations

PCB Designing and Layout

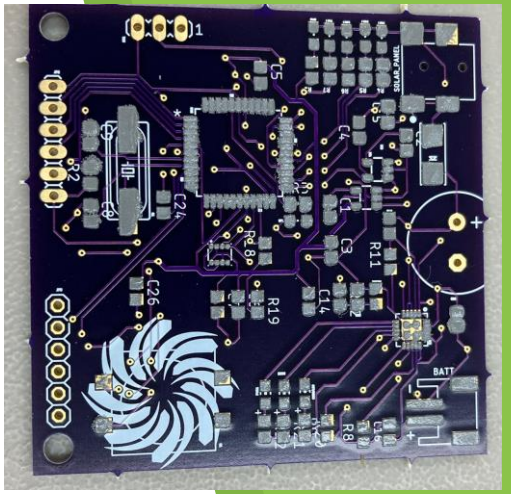
- Part Integration
  - Understand sensor circuits and how to successfully pull data
- Power Consumption
  - Learn ways to reduce power consumption in the design and increase efficiency

Documentation and Workflow

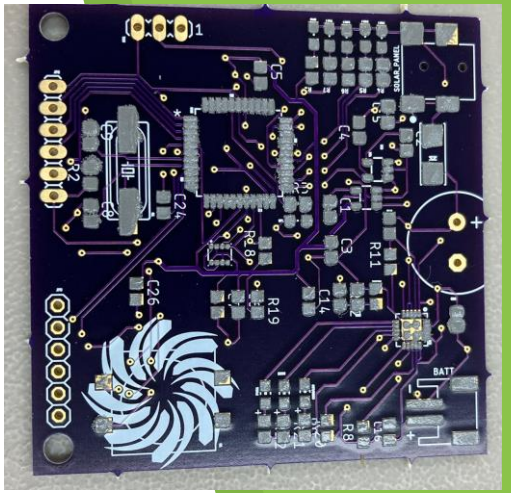
- Git and GitHub

Progress So Far

- Caught Blake up with last semester's progress
  - Went over PCB
  - Explained bootloading
  - Reviewed problems from last semester
  - Started Bare Guava and tutorials
- Reviewed code on Github
- Received parts from Ron Ho Fund
- Researching tutorials on using reflow oven
- Applied soldering paste onto board



Predicted Problems



Board Behavior

- Trace Errors (Design and/or manufacturing)
- New solar charging wiring
- Unfamiliar with stenciling
- Reflow oven

Other

- COVID-19 has affected our ability to work in the lab.
- New member

🕐 Predicted Problems

Board Behavior

- Trace Errors (Design and/or manufacturing)
- New solar charging wiring
- Unfamiliar with stenciling
- Reflow oven

Other

- COVID-19 has affected our ability to work in the lab.
- New member

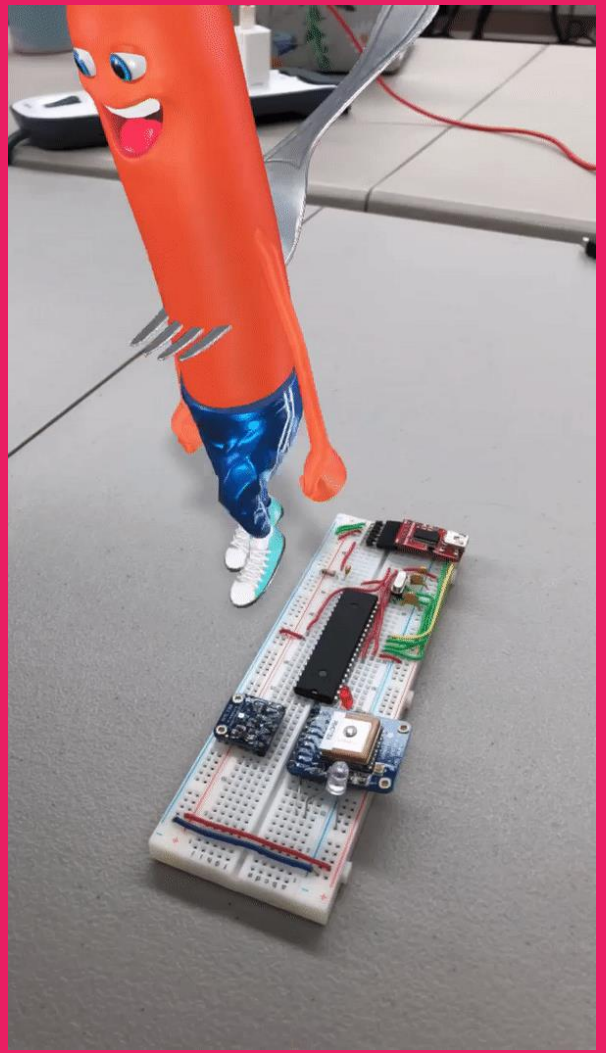
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Date	8/30 - 9/5	9/6 - 9/12	9/13 - 9/19	9/20 - 9/26	9/27 - 10/3	10/4 - 10/10	10/11 - 10/17	10/18 - 10/24	10/25 - 10/31	11/1 - 11/7	11/8 - 11/14	11/15 - 11/21	11/22 - 11/28	11/29 - 12/5	12/6 - 12/12
Introduction															
Proposal															
PDR															
CDR															
Final															
Review															
Development															
Deploy															
Test & Debug															
Parts Order and Billing															
Build															
Research															
Documentation															
Final Report															

Gantt Chart

Fall 2020

Thank you!

Any Questions?



Credits

We used the following free online resources:

- Presentation template by SlidesCarnival
- Snapchat