Team Bumblebee

PROPOSAL PRESENTATION

Spring 2018
Advisor : Dr. Anthony Kuh

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Team Bumblebee Introductions

Kayla Amano
- Senior-496
- Electrical Engineering - Electro Physics

Rebecca Rupley
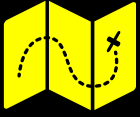- Senior
- Electrical Engineering - Electro Physics

Alex Moore
- Senior-496
- Electrical Engineering - Systems

Alex Wong
- Sophomore-396
- Electrical Engineering - Electro Physics

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Presentation Overview

- ⊙ Motivation/Approach
- ⊙ Project Goals
- ⊙ Gantt Chart
- ⊙ Predicted Problems
- ⊙ Team Progress
- ⊙ Design
- ⊙ Questions

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Motivation/ Approach

The Bumblebee Weatherbox is the second generation communications module designed to relay meteorological data collected by the other weatherboxes. Its purpose is to increase the effective range of the weatherboxes.

Project Goals

Spring 2018

- ◎ Populate PCBs
- ◎ Deploy 2 Bumblebee boxes
- ◎ Do more extensive Xbee field tests

Future Goals

- ◎ A more robust network

Gantt Chart

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Jan-22	Jan-29	Feb-5	Feb-12	Feb-19	Feb-26	Mar-5	Mar-12	Mar-19	Mar-26	Apr-2	Apr-9	Apr-16	Apr-23	Apr-30	May-7
Spring Break										■						
Presentations																
Proposal Presentation		Feb-3														
Preliminary Design Review					Feb-24											
Critical Design Review									Mar 24							
Final Presentation														Apr-28		
VIP poster session																
EE496 Poster Session																
PCB Fabrication/Assembly																
Fabrication Time	■	■	■													
Populating				■	■											
Testing					■	■										
Firmware			■	■	■	■										
Housing																
Design				■	■											
Fabrication						■	■									
Deployment									■							
Final Report													■	■	■	■

Predicted Problems

⊙ Time Management

⊙ Learning Curve

⊙ Debugging

⊙ Populating board

⊙ Networking

Learning Expectations

- ⊙ Work well as a group
- ⊙ Become proficient with EAGLE and other softwares
- ⊙ Get a good understanding of connecting Xbees in a network

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Team Progress

- ⊙ Have a working breadboard design
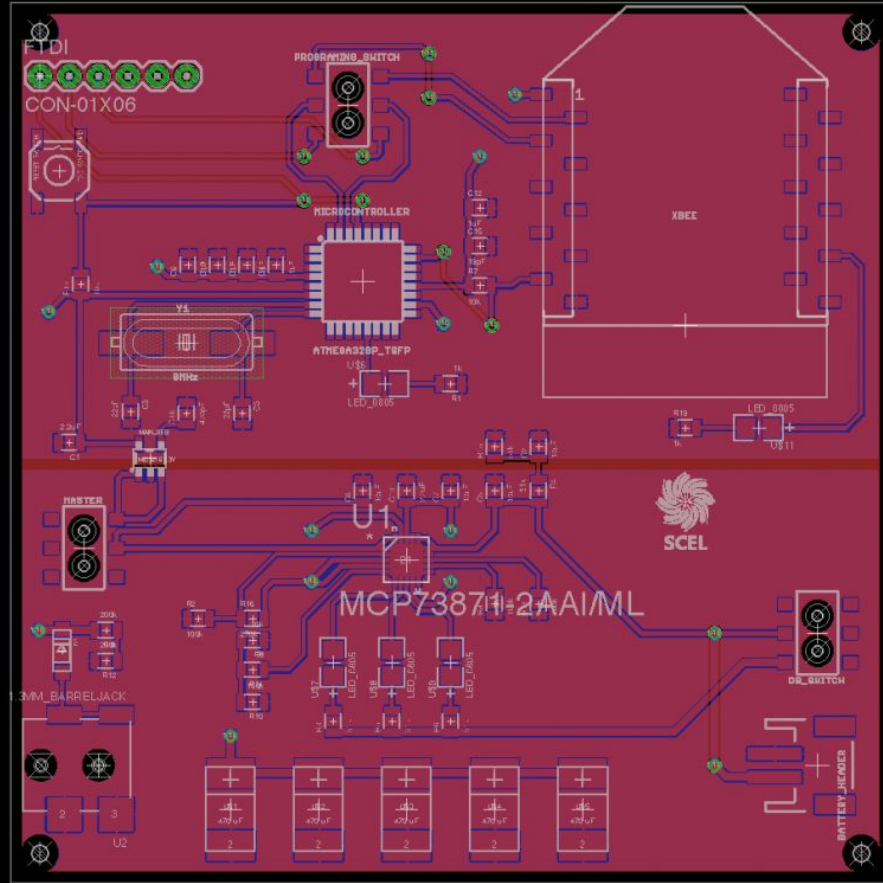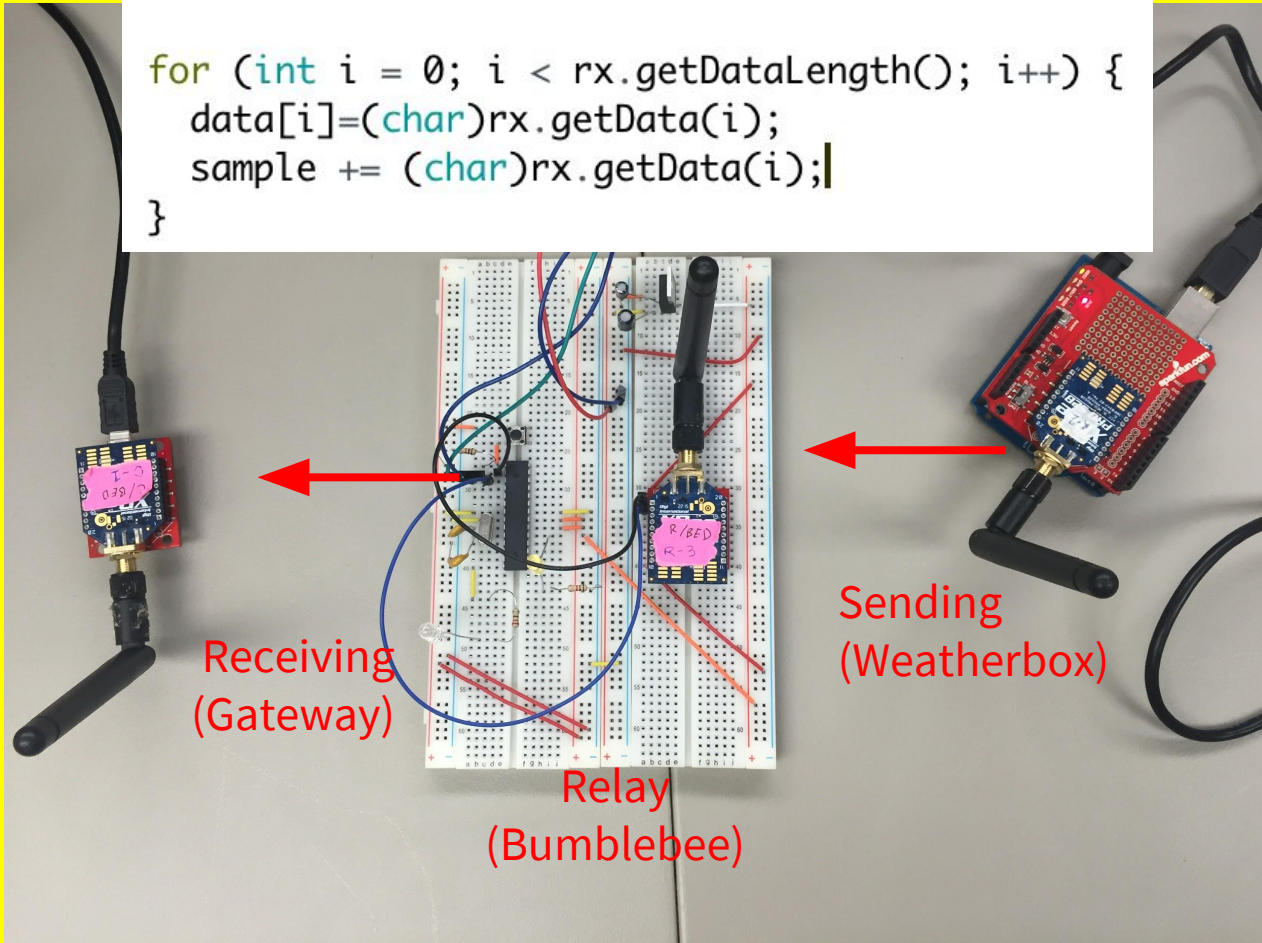- ⊙ Able to relay packets
- ⊙ Finalized PCB design
- ⊙ Ordered PCB

```
for (int i = 0; i < rx.getDataLength(); i++) {
  data[i]=(char)rx.getData(i);
  sample += (char)rx.getData(i);
}
```

Receiving
(Gateway)

Relay
(Bumblebee)

Sending
(Weatherbox)

QUESTIONS?