

Collaborative Mesh Networking

Instructor: Rob Faludi

Introduction

- Collaborative Mesh Networking
 - Collaboration
 - Networking
 - Mesh Networking
- Rob Faludi
 - Background
 - Motivations for this class

Plan for Today

- Introductions
- Syllabus Review
- Warmup
- Math for Mesh
- Ordering XBees
- Readings & Assignments

Introductions

- Name, graduation semester
- What you did this summer
- What you wish you had done this summer
- How you ended up in this class, hopes and plans

Syllabus Review

- Syllabus review
 - Class schedule
 - Assignments
 - Documentation
 - Grading
 - Office Hours
 - Workshops

Warmup

Math for Mesh

- Binary, Decimal, Octal, Hexadecimal
 - Why?
 - Serial communication
 - XBee configuration
 - Programming helper
 - What?
 - It's all notation

Decimal

- Place system
- Powers
- Adding and carries
- Finger counting, but is that base 10?

Binary

- Place system
- Notation: %010 010b 0b10
- Powers
- Adding and carries
- Finger counting!

Octal

- Place system
- Notation **073**
- Powers
- Adding and carries
- Finger counting, not really

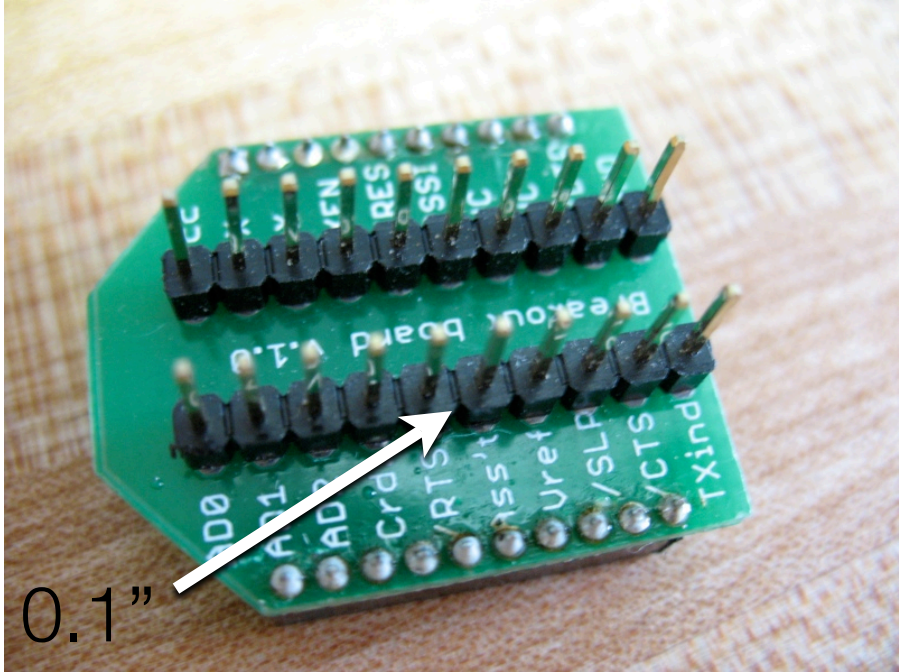
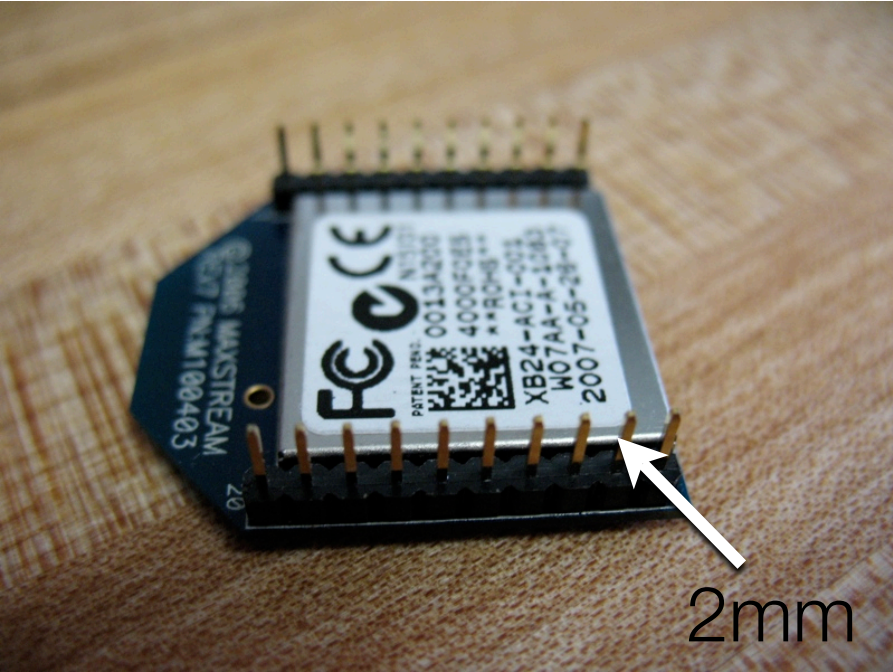
Hexadecimal

- Place system
- Notation: extra digits, 0x10, #FFFFFF
- Powers
- Adding and carries
- Finger counting?
- Switches yes: 0xFF = 1111 1111 and 0x3C = 0011 1100

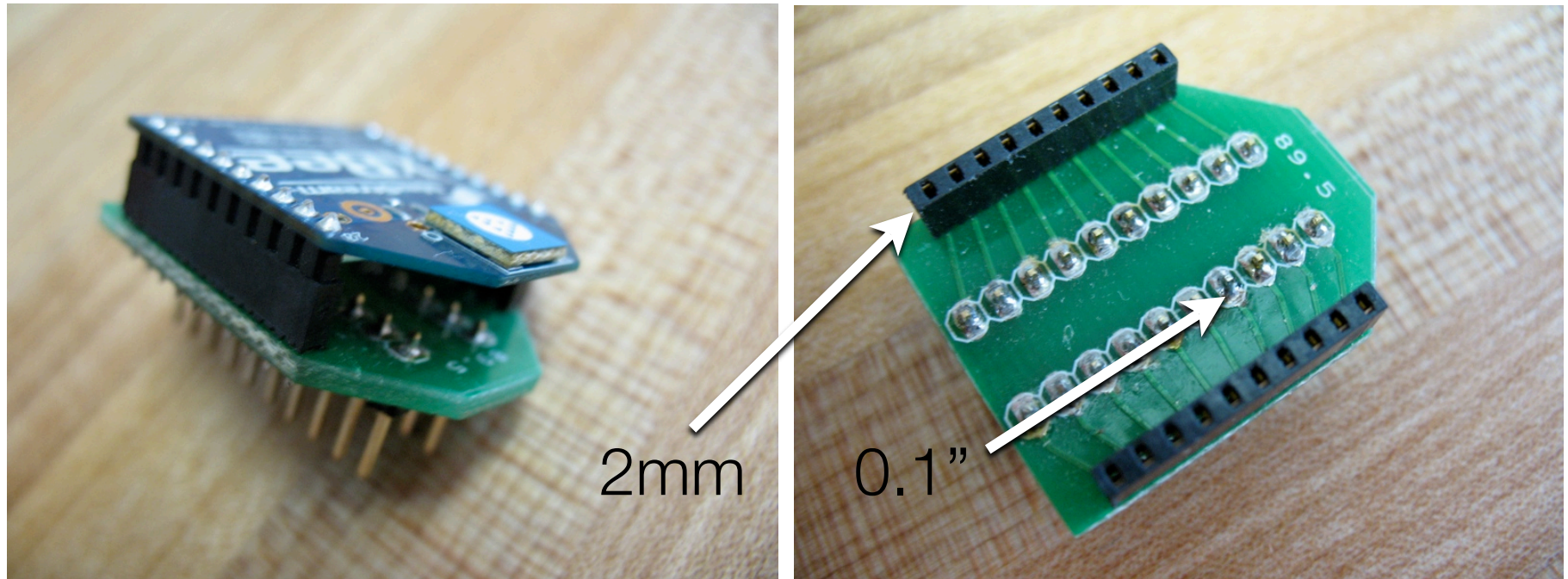
Ordering XBees

- Regular / Pro, XBee Series 2
- Antennas
- Breakout boards, headers
- Dongles
- USB Serial adaptors, Spark Fun, Arduino
- Pick a PAN ID now and document it

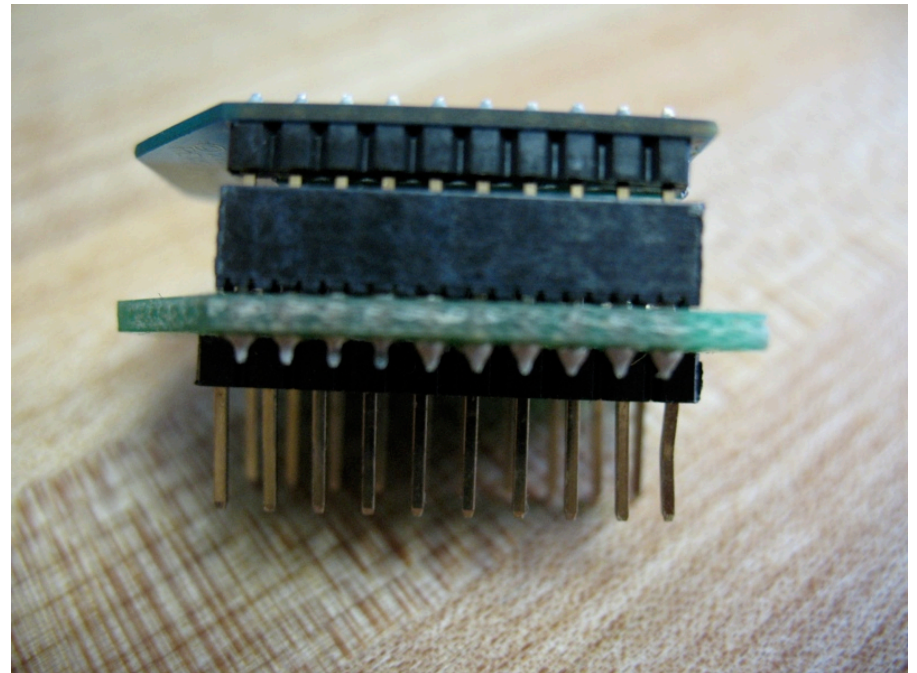
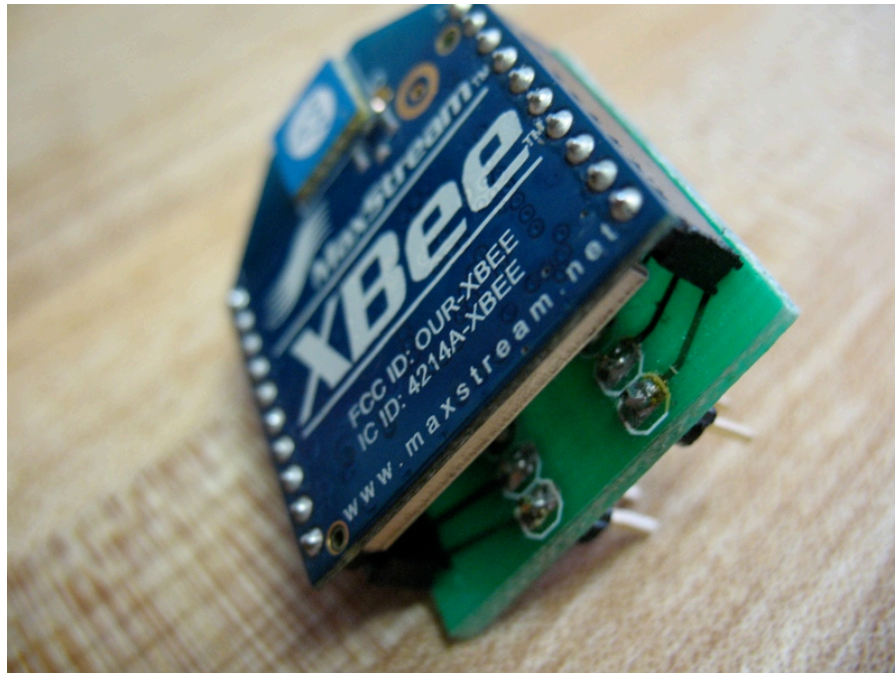
Soldering Breakout Boards: pin spacing



Soldering Breakout Boards: headers



Soldering Breakout Boards: finished



Readings and Assignments

- Readings
 - List 'em
- Assignment
 - Find & Fix
- First student sidebar