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10 years in open hardware

Jason Kridner

open source hardware

beagleboard.org®

Traveled high and low
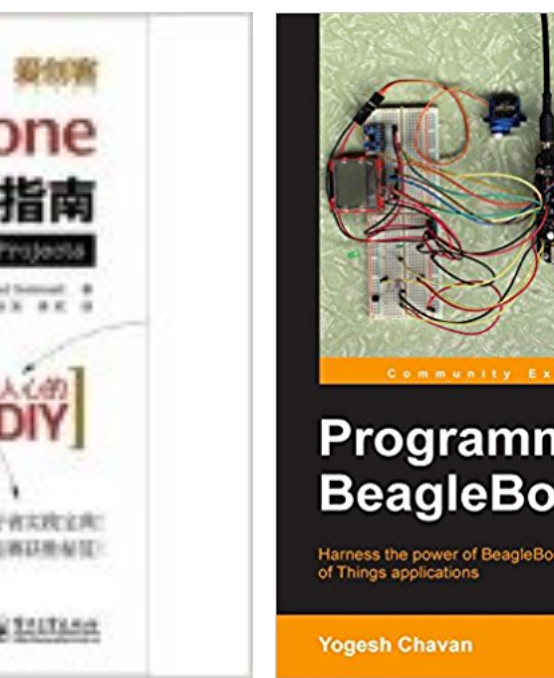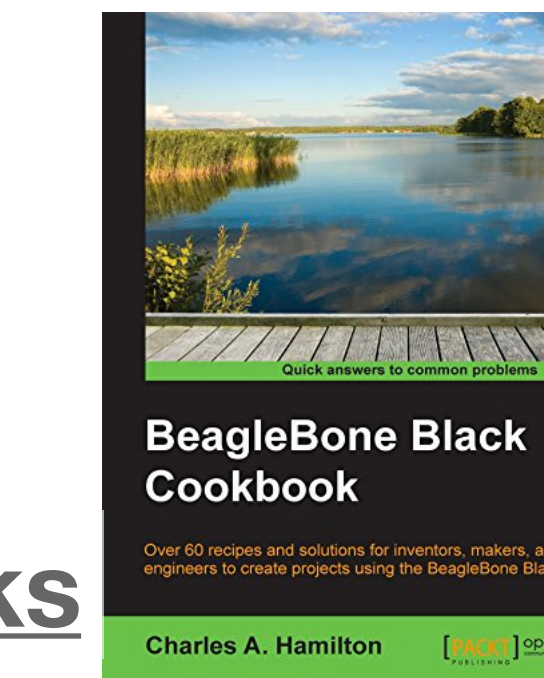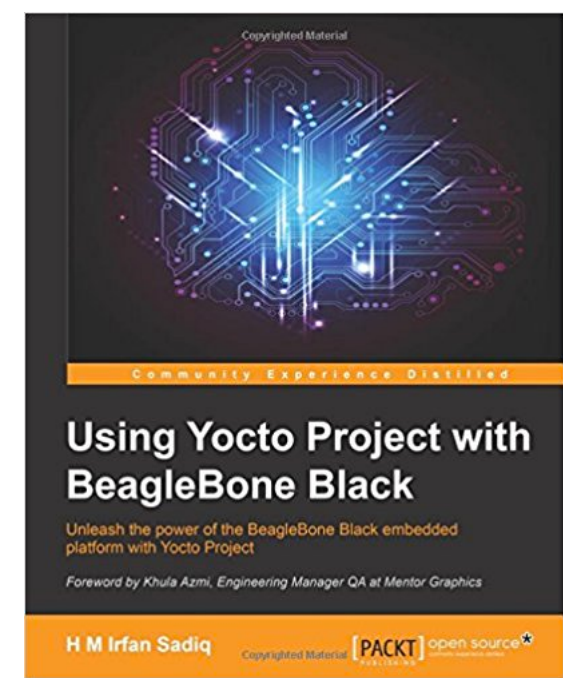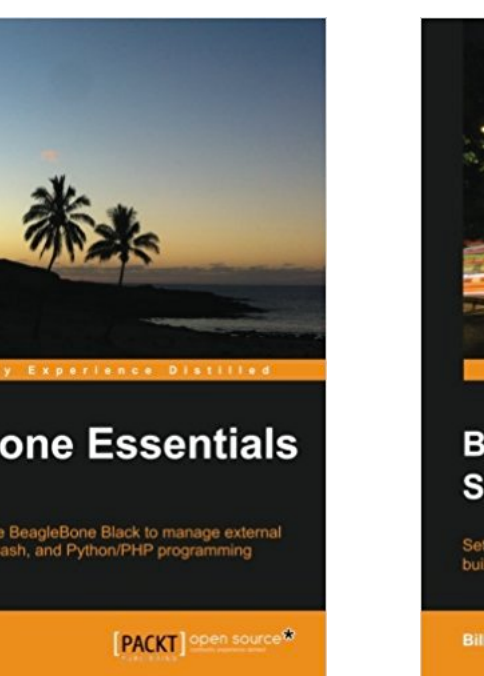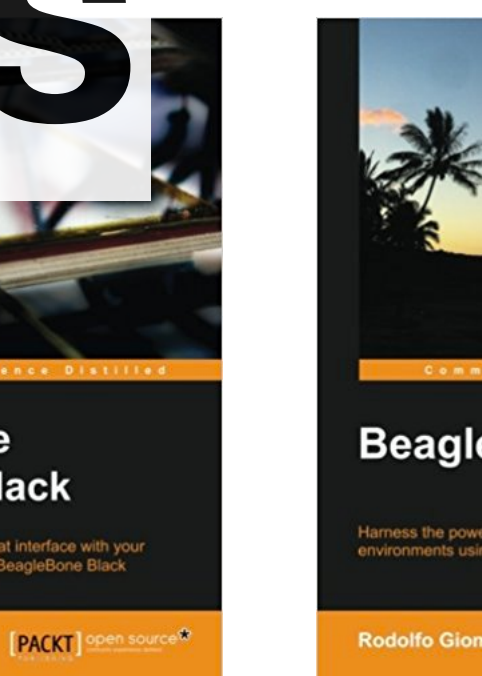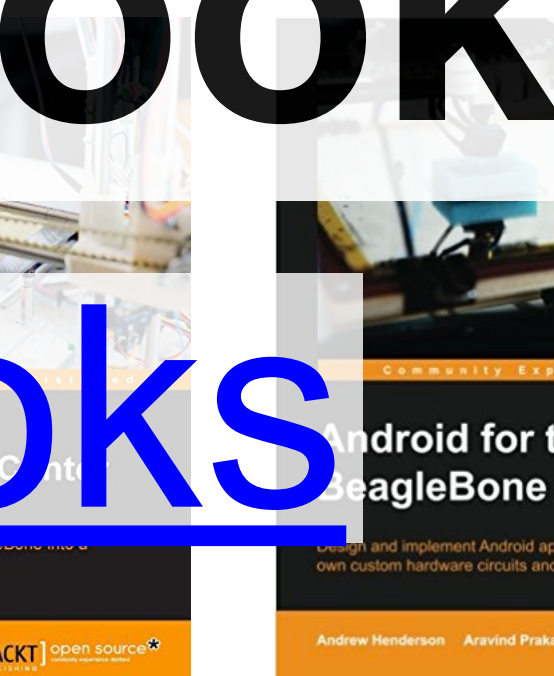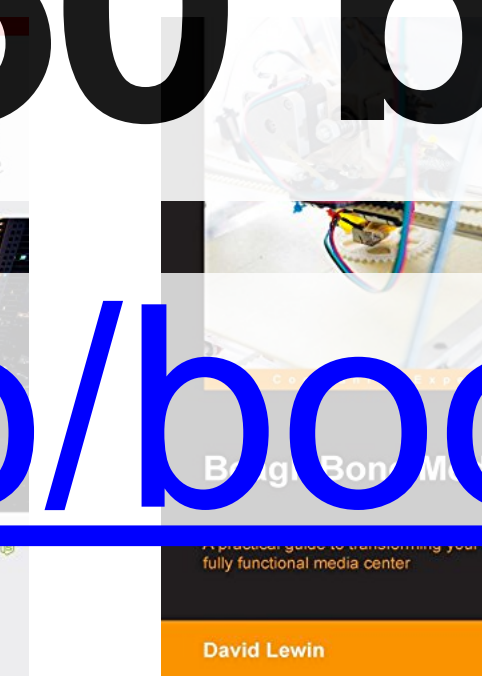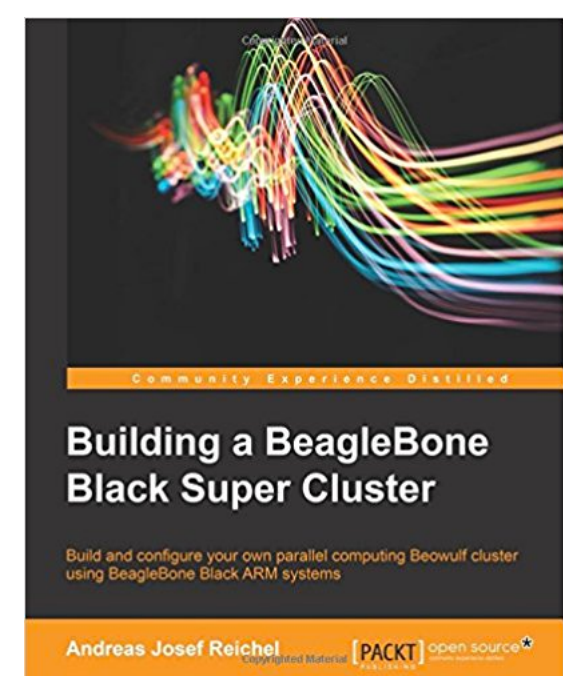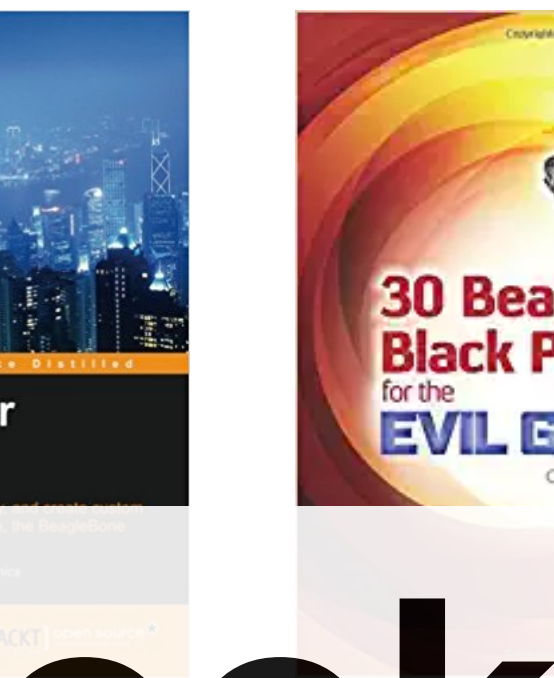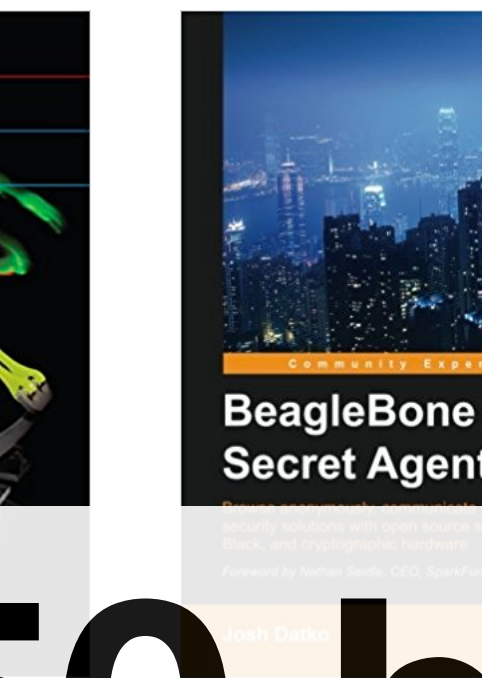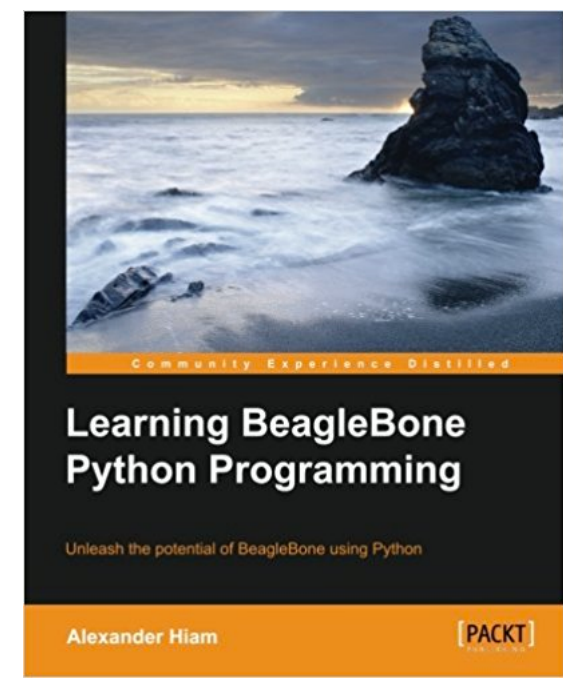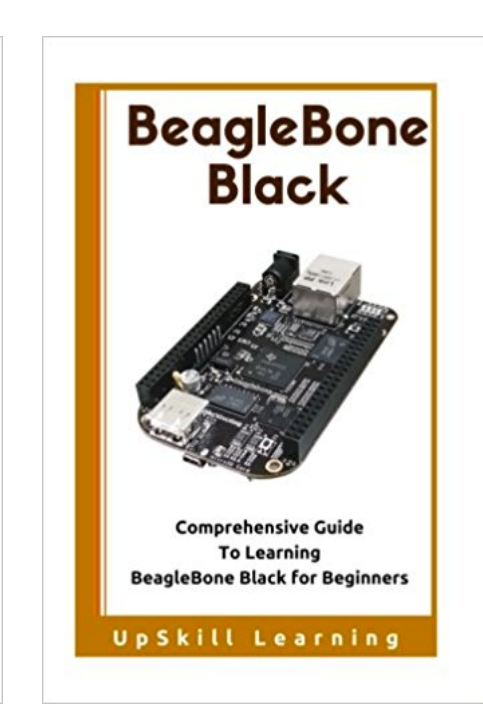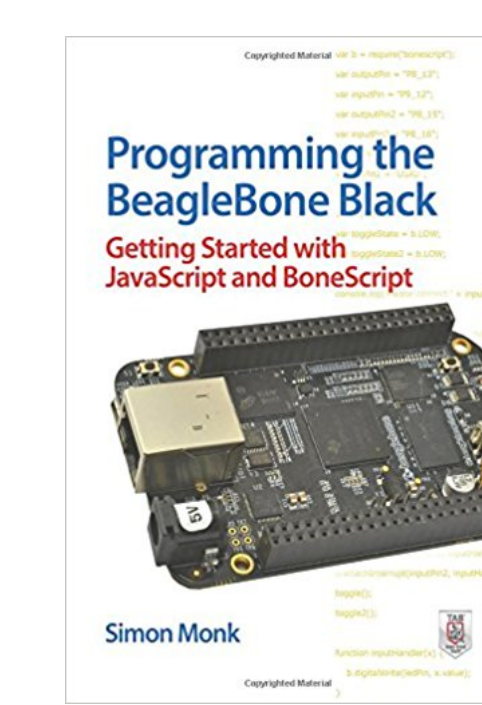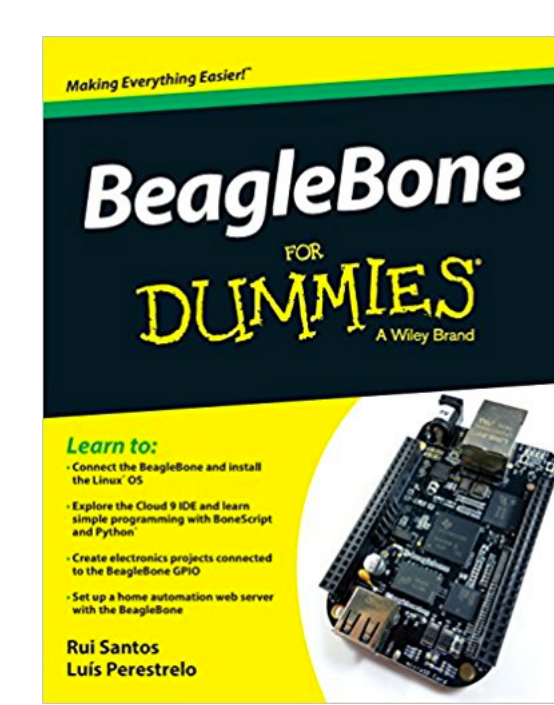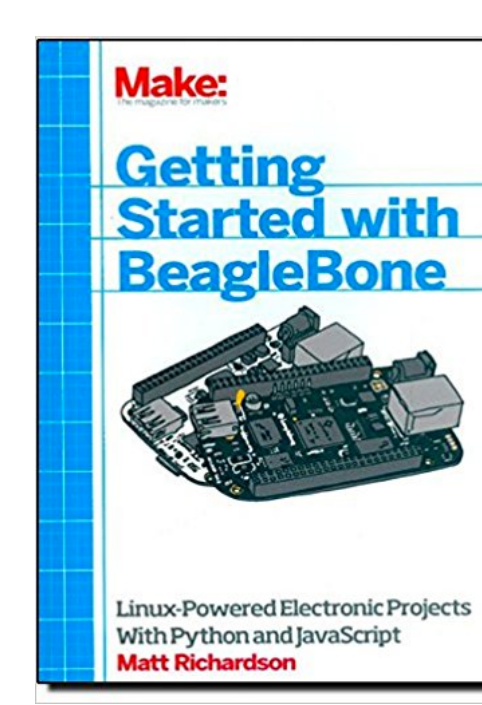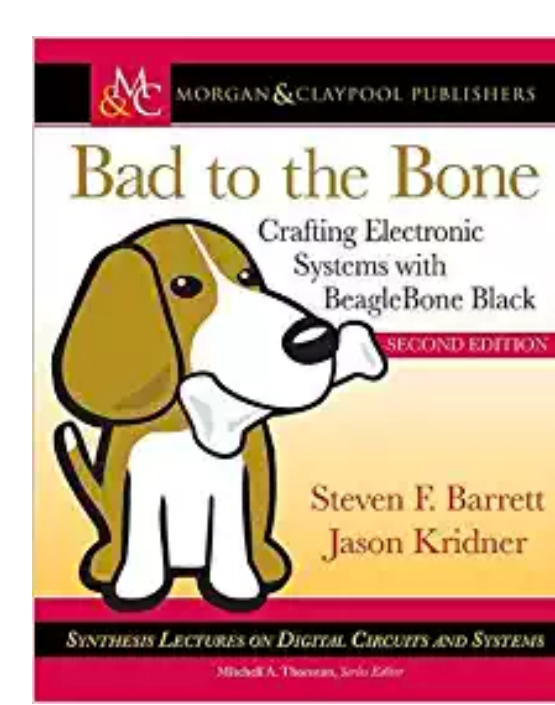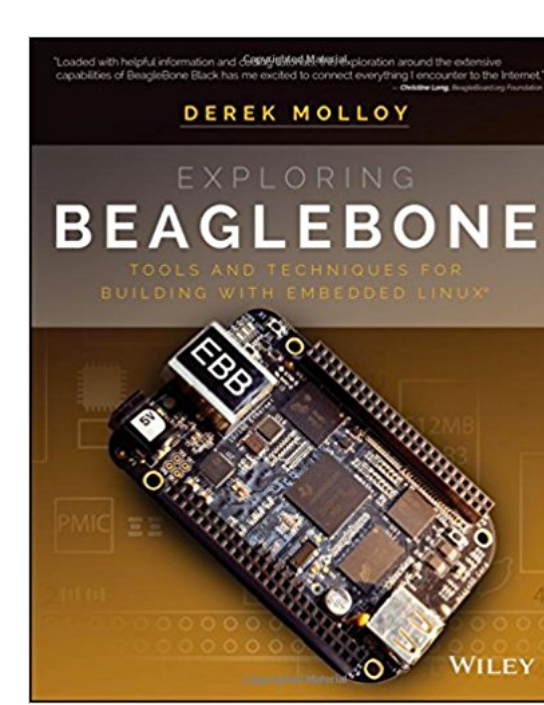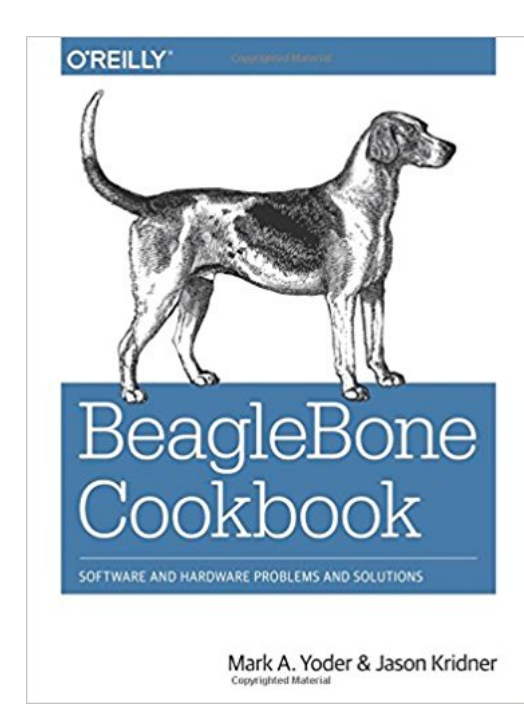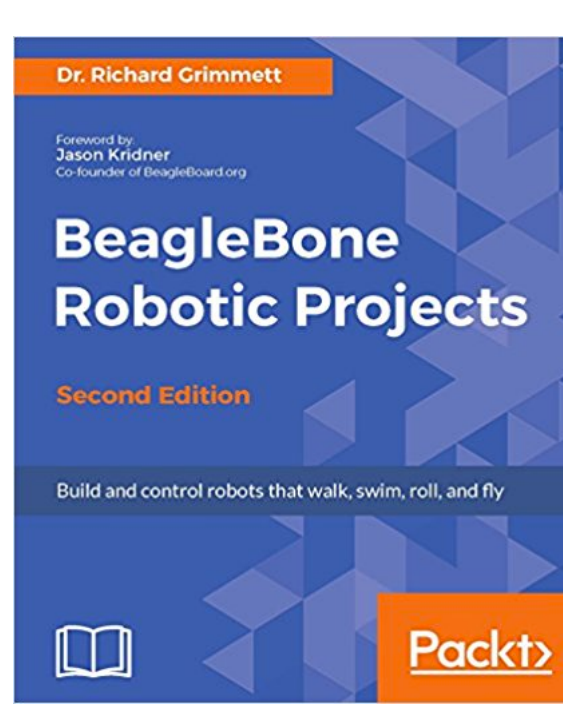
Over 50 books

bbb.io/books

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Hundreds of capes

bbb.io/capes

Thousands given hands-on training courses by professionals

e-ale.org

BaconBits Rev. 1

beagleboard.org/pocket

bbb.io/e-ale

Tens of thousands of developers

Voice of
Kevin Hand
ASTROBIOLOGIST, NASA/JET PROPULSION LABORATORY
NATIONAL GEOGRAPHIC EMERGING EXPLORER

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0:06 / 1:54

Over a million licensed boards

Simplicity for developers

What is PocketBeagle and how is it special?
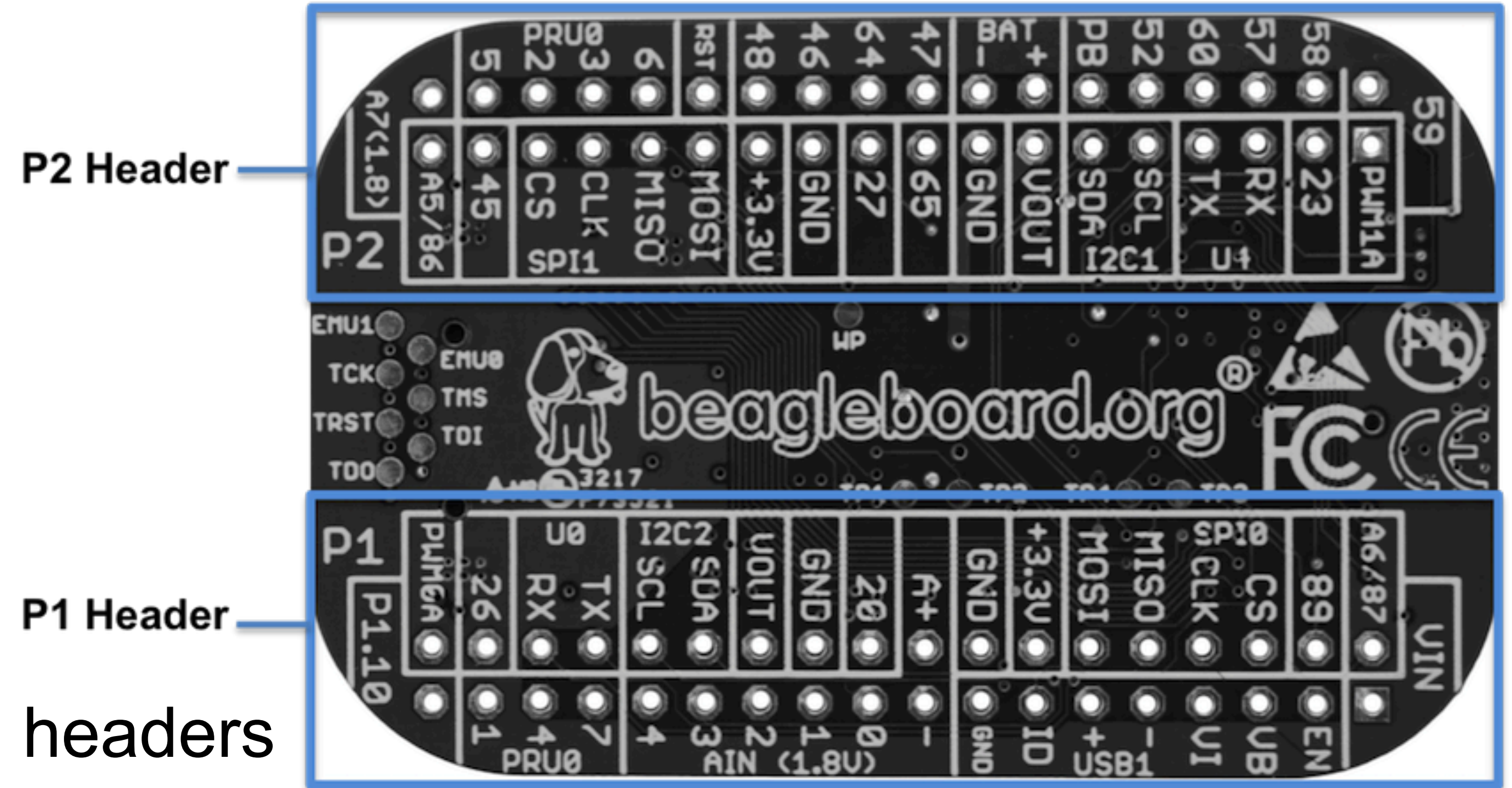
$25 1GHz tiny Linux computer
USB powered with host/client and on headers
Lots of expansion
Same processor as BeagleBone Black including PRUs

bbb.io/bela
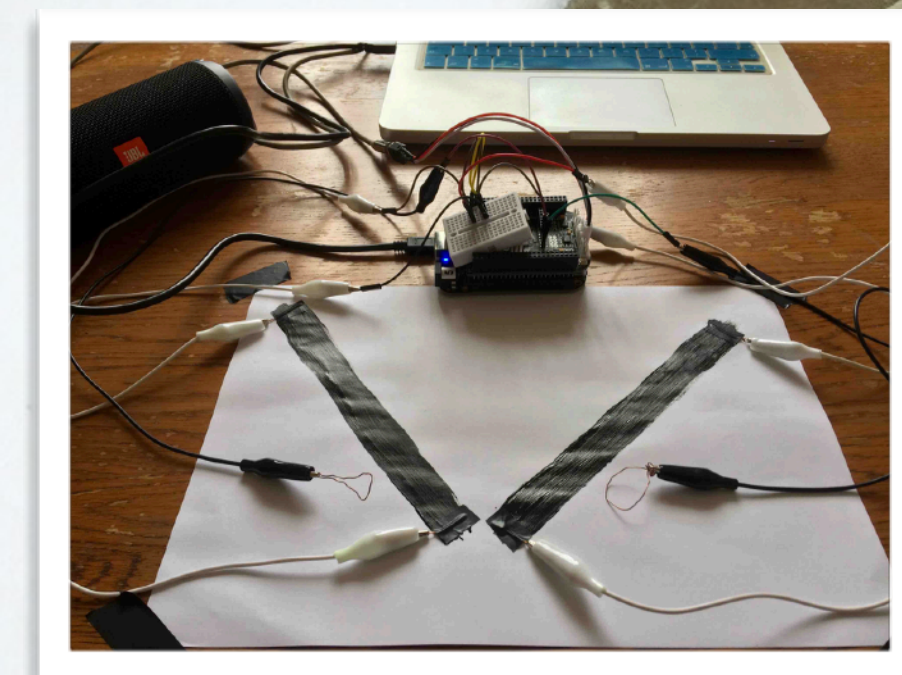
bbb.io/ppilot

Why is it critical to learn PocketBeagle and Linux?

Programming is a human endeavor where we learn from history

Predictable and low-cost

Same tools as the pros

Unique real-time capabilities

Collaboration, not cut-and-paste
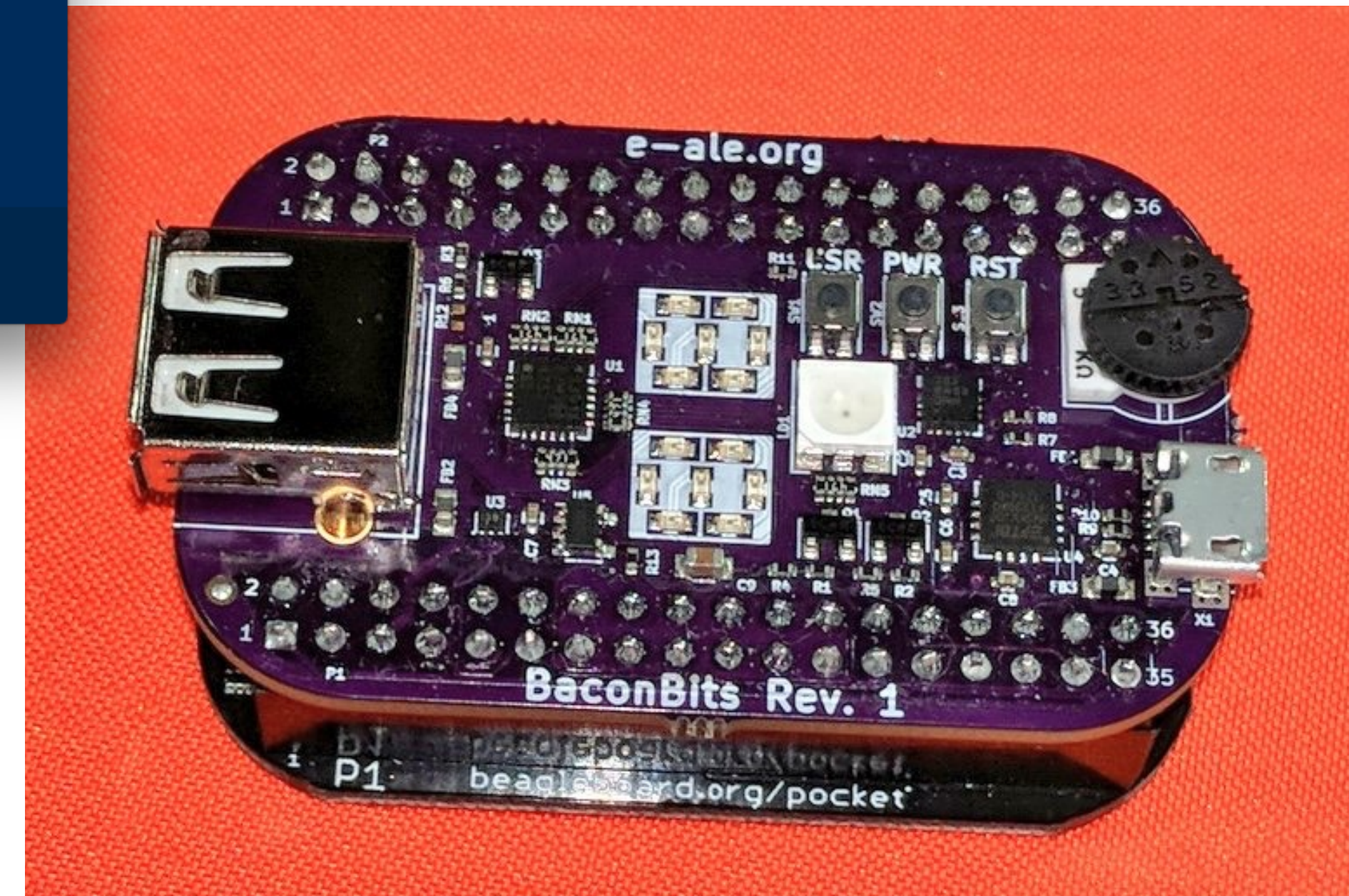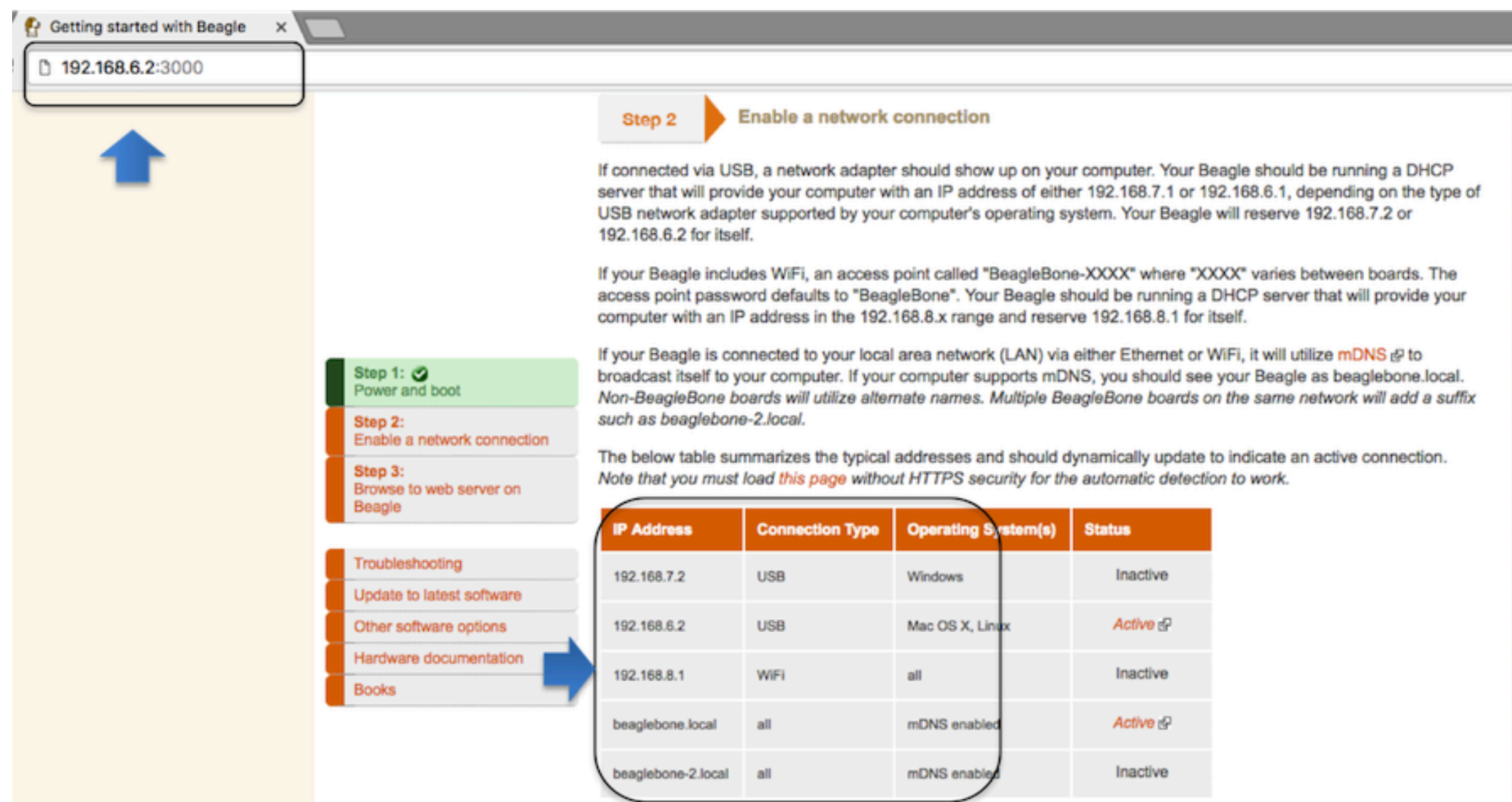
Getting started

1) Boot the board

bbb.io/pb-start

Getting started

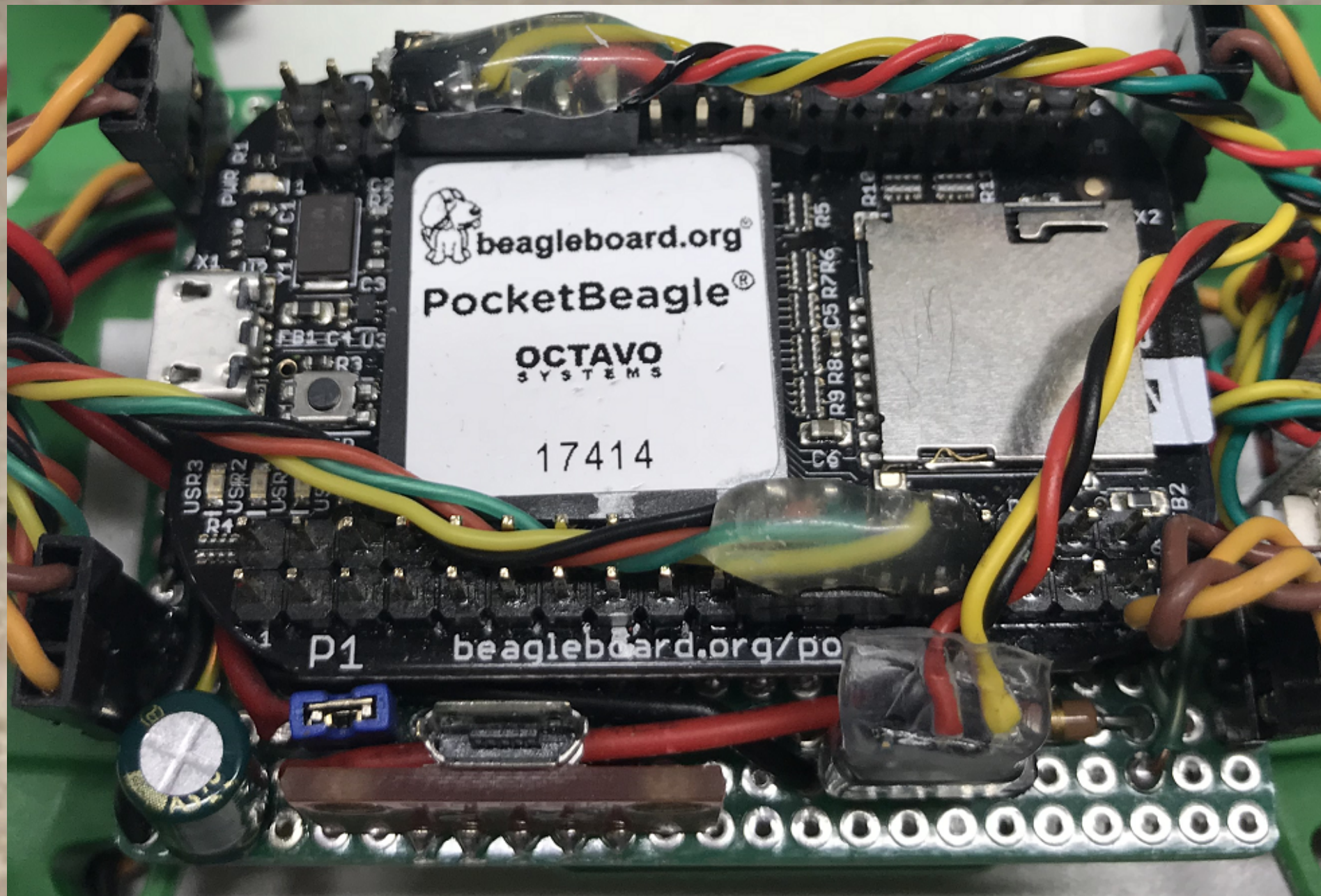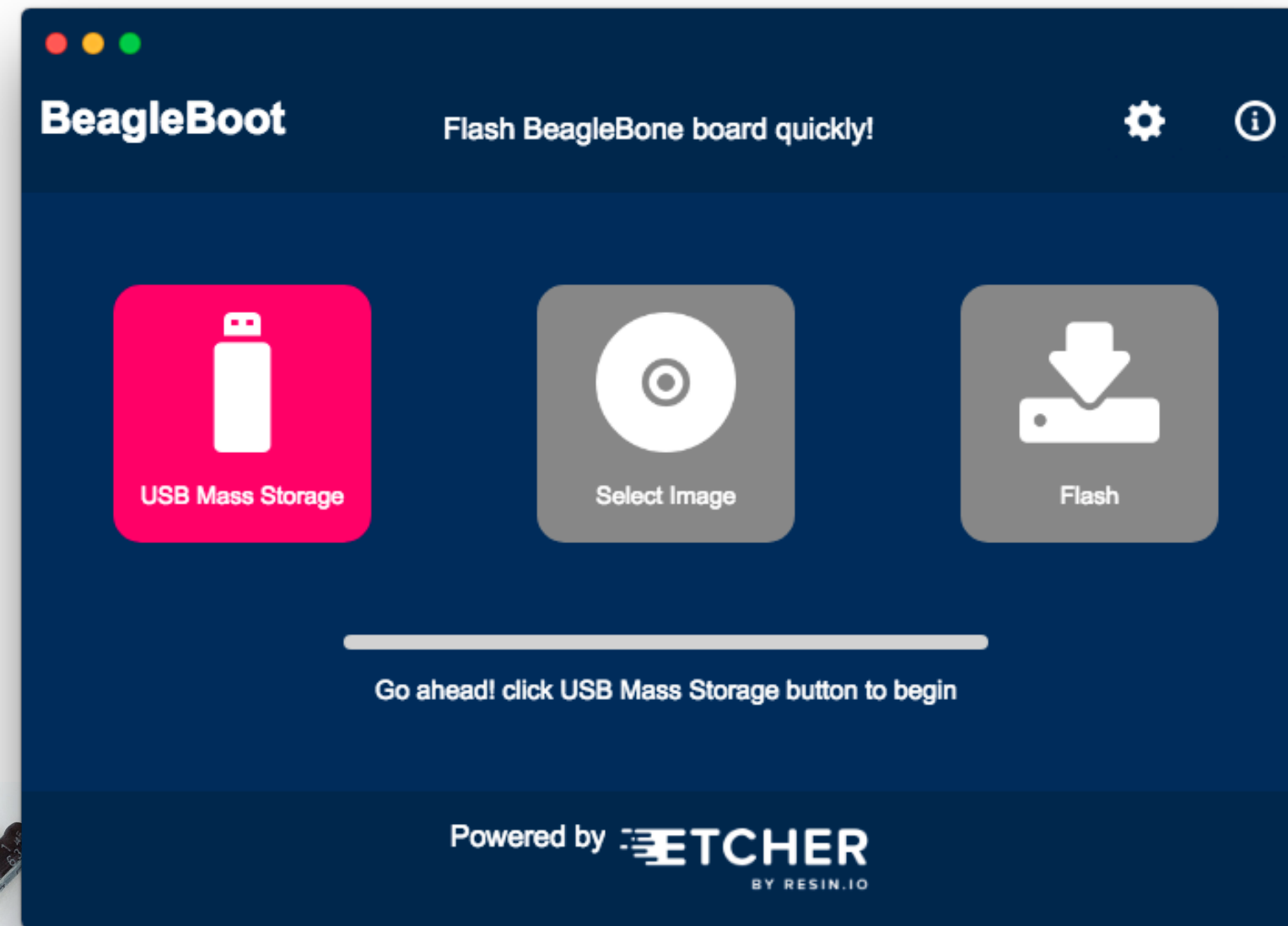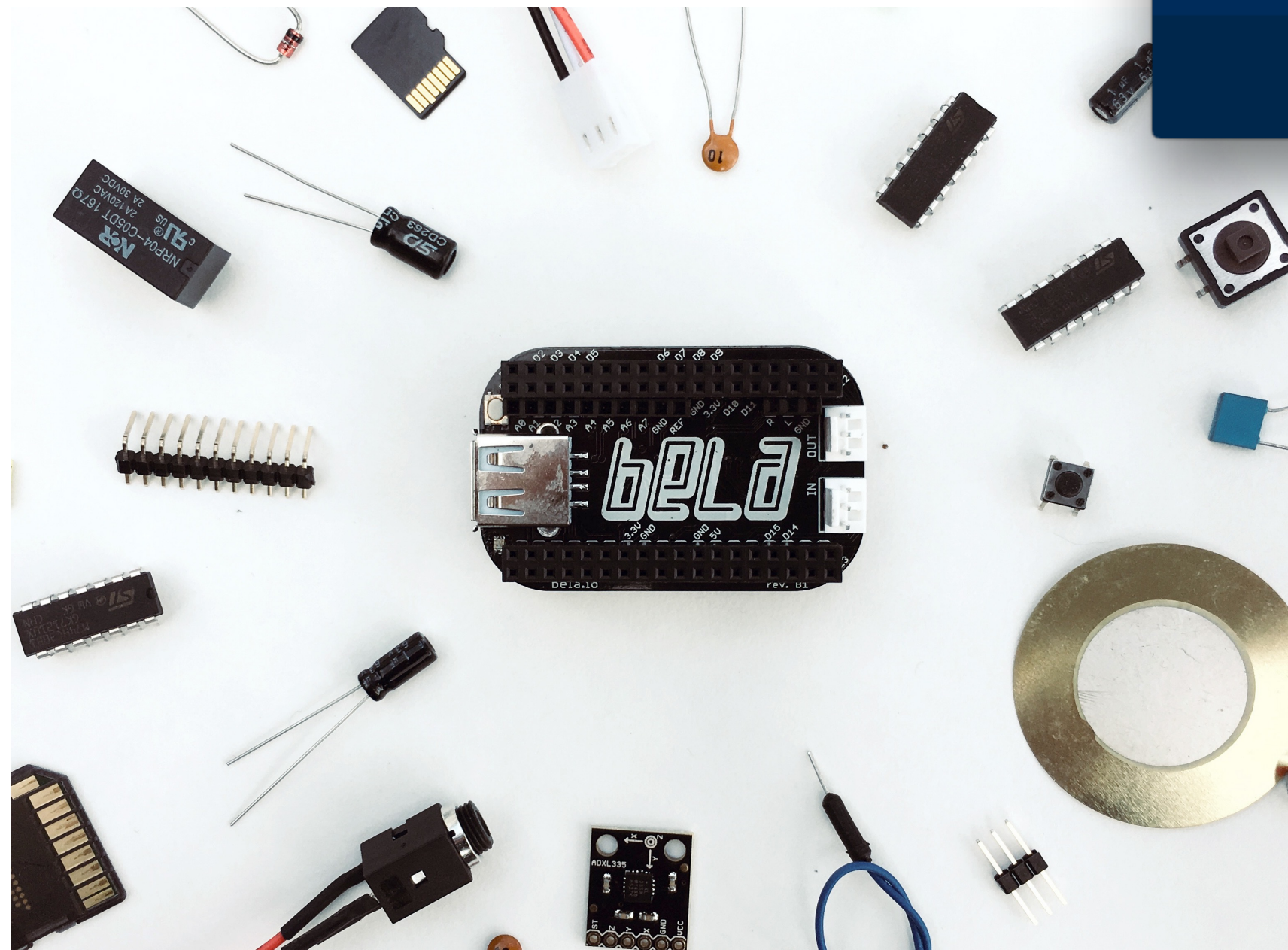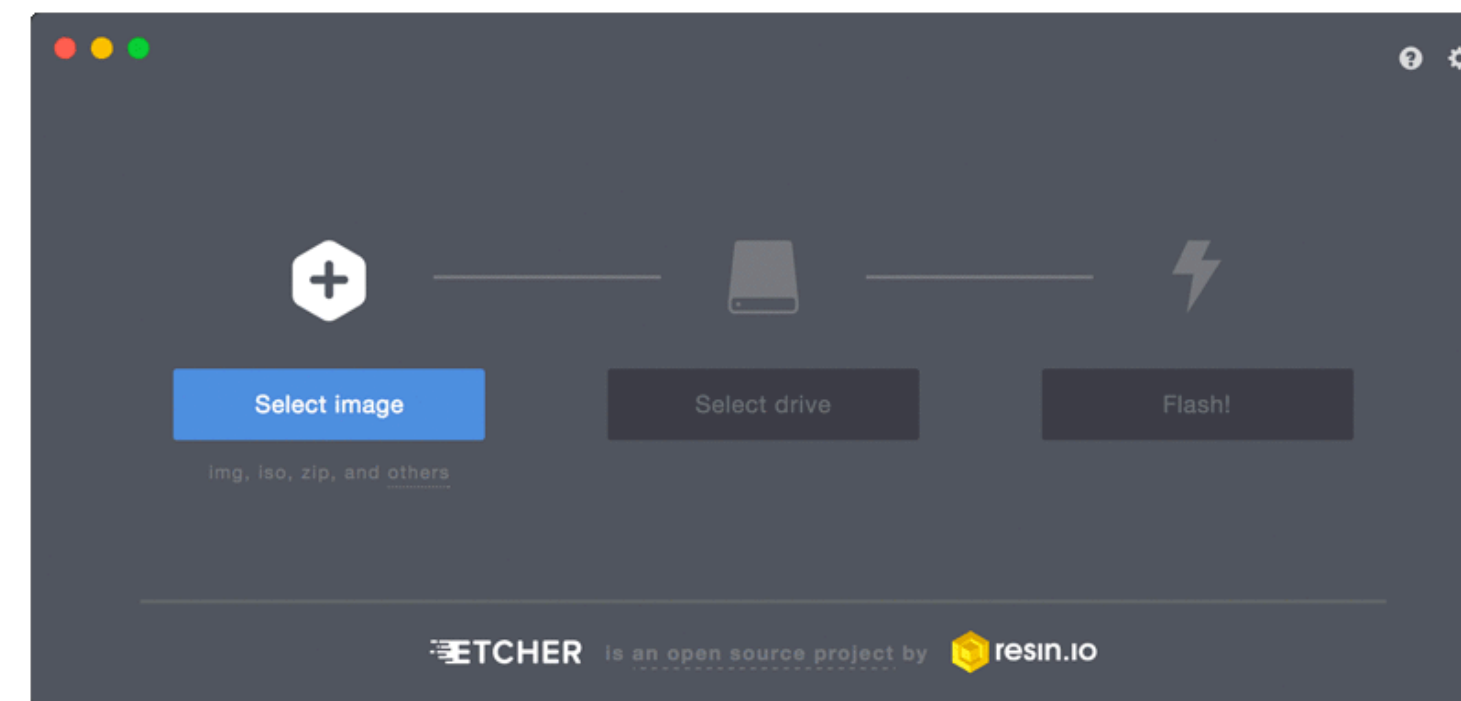## 2) Get to the editor and command line

http://192.168.7.2:3000

linuxcommand.org

3) Blink an LED

```
1. var b = require('bonescript');
2. var state = b.LOW;
3. b.pinMode("USR3", b.OUTPUT);
4. setInterval(toggle, 250);  // toggle 4 times a second, every 250ms
5. function toggle() {
6.     if(state == b.LOW) state = b.HIGH;
7.     else state = b.LOW;
8.     b.digitalWrite("USR3", state);
9. }
```

4) Explore some books
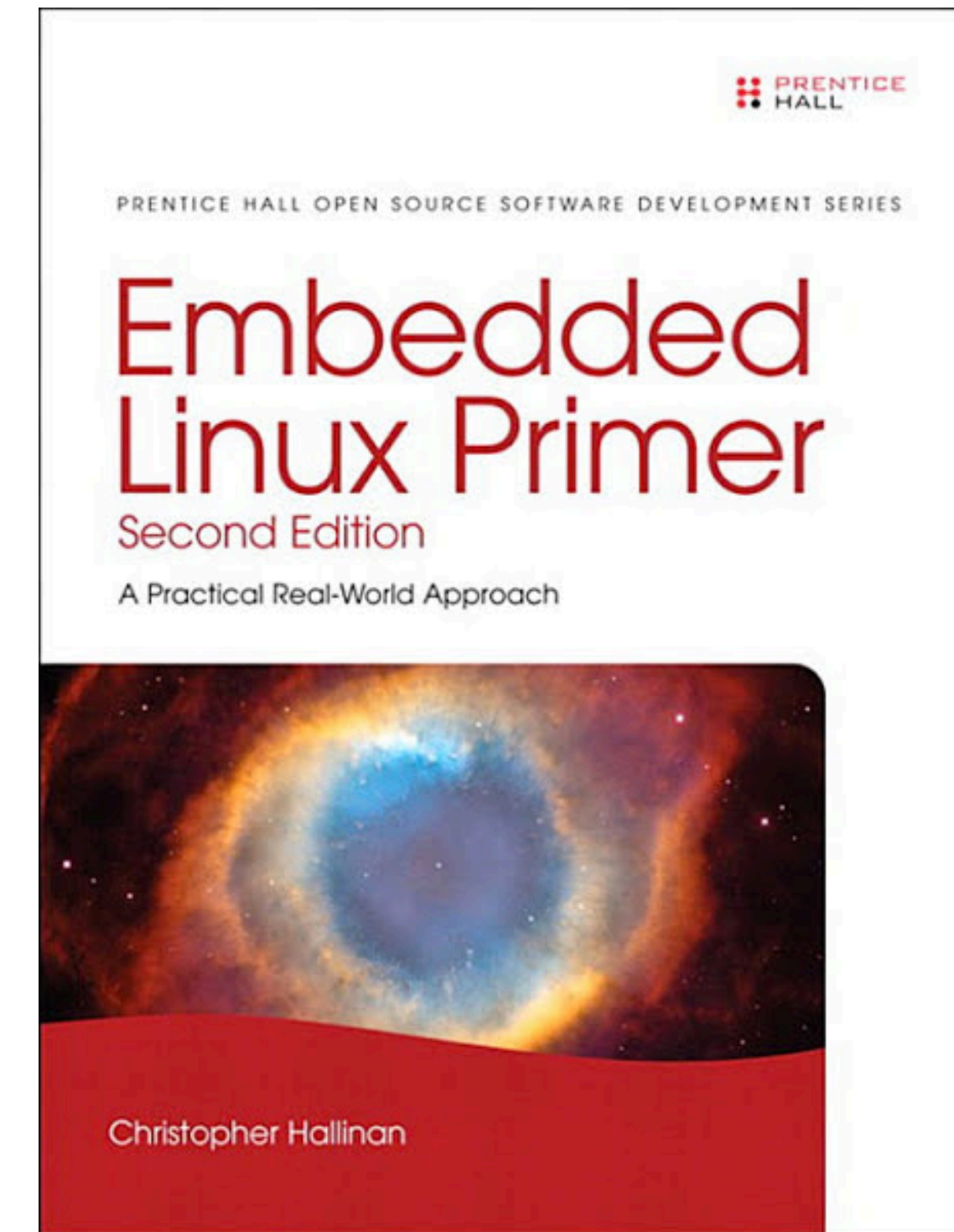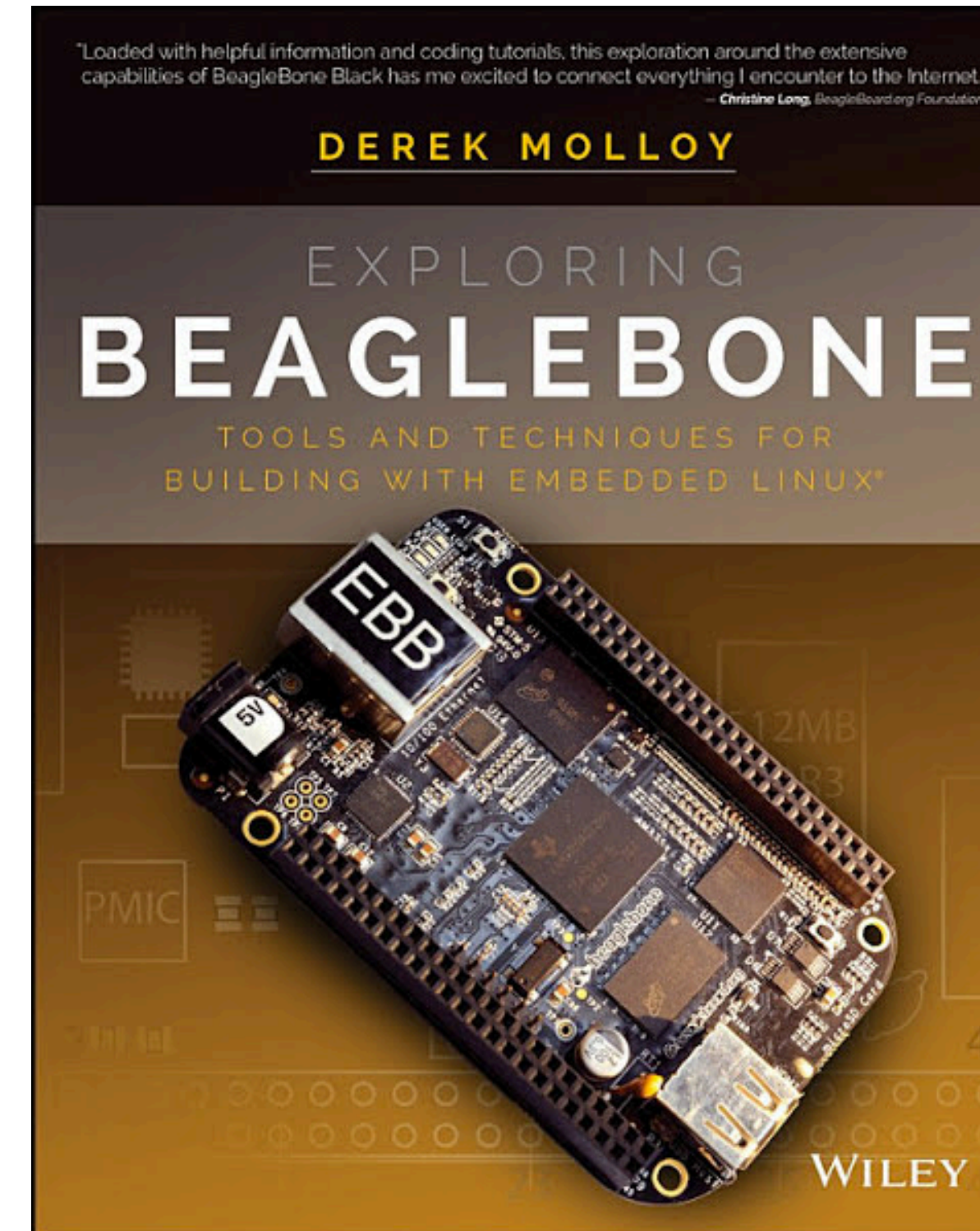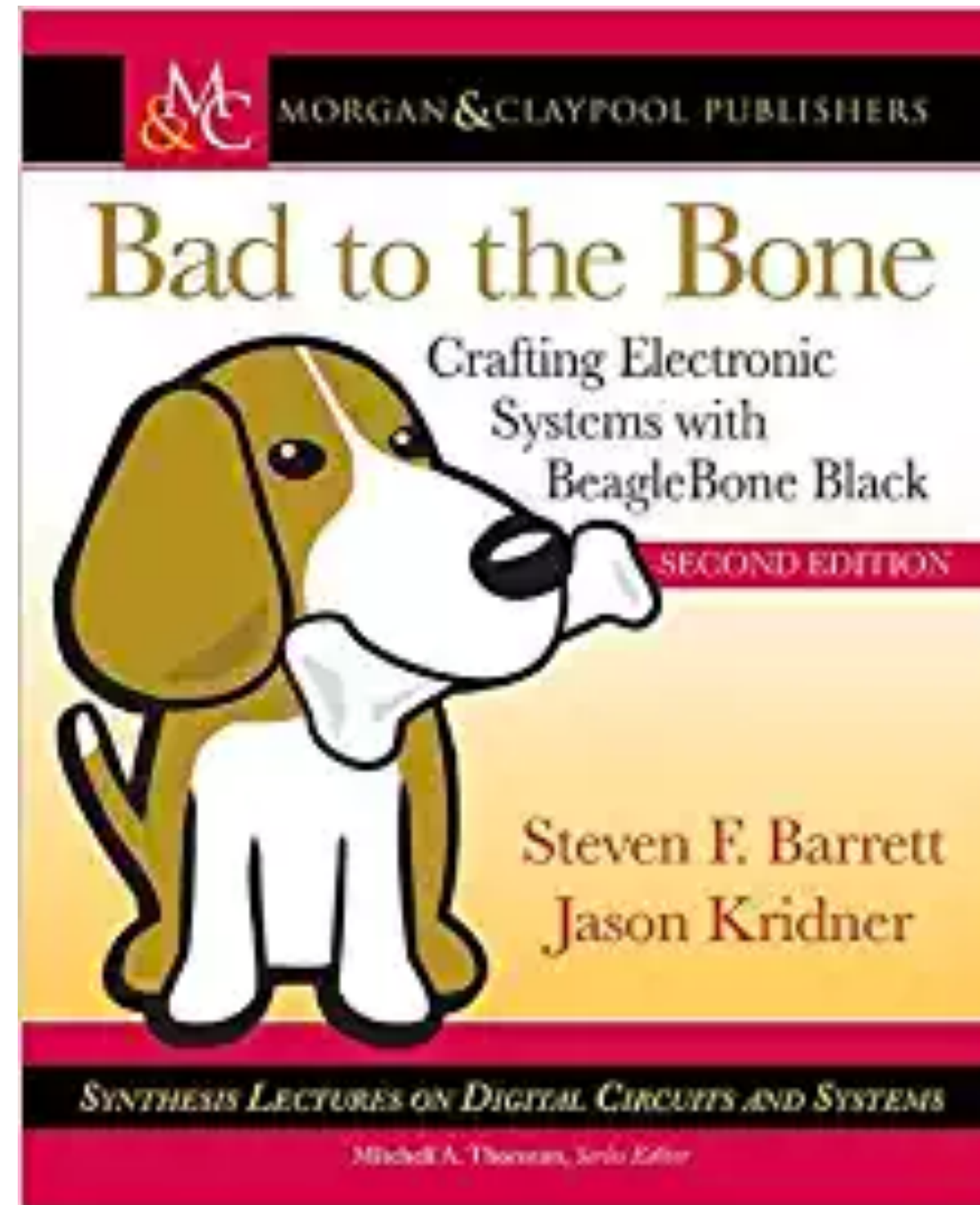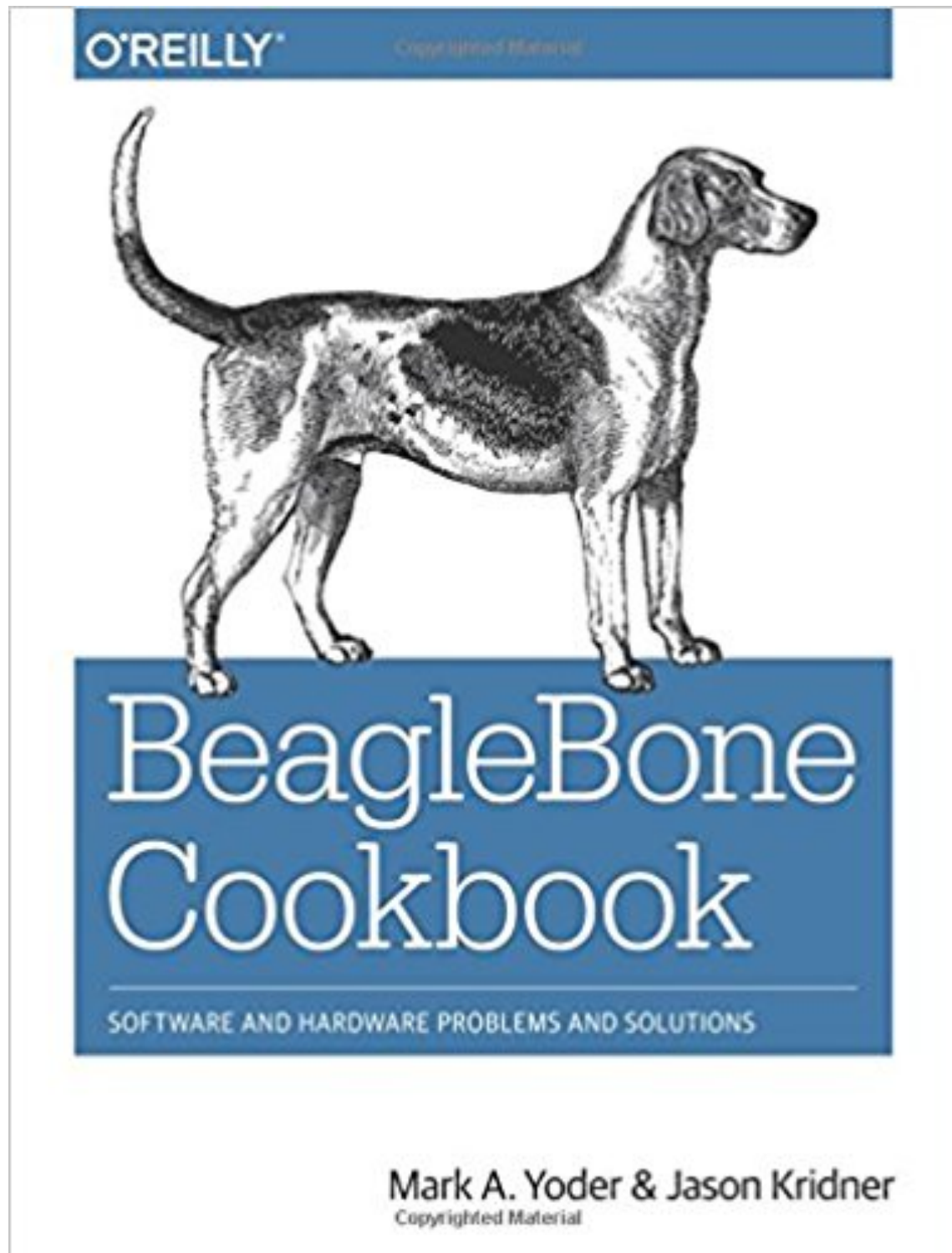
5) Build a project

bbb.io/p-pocket
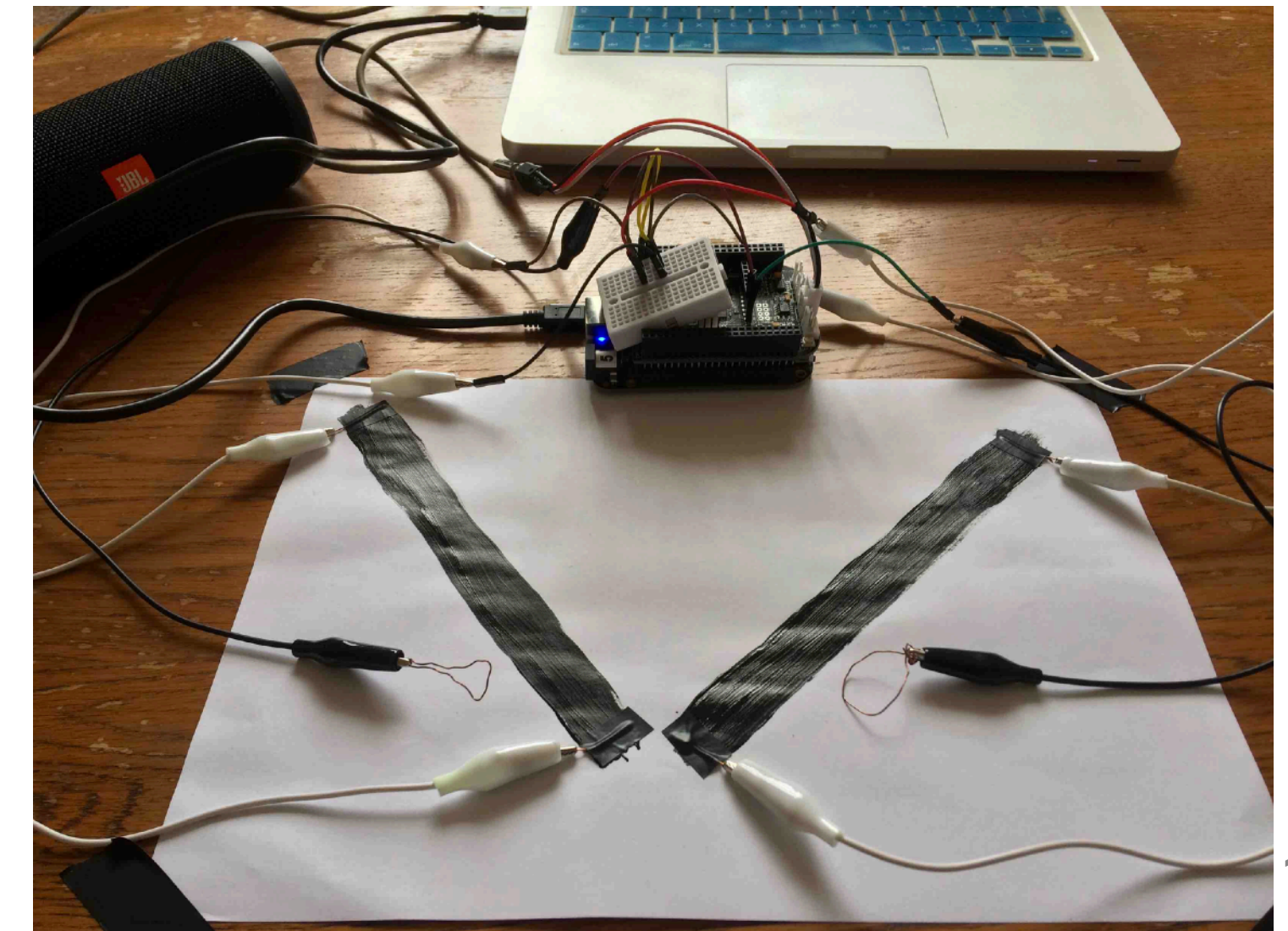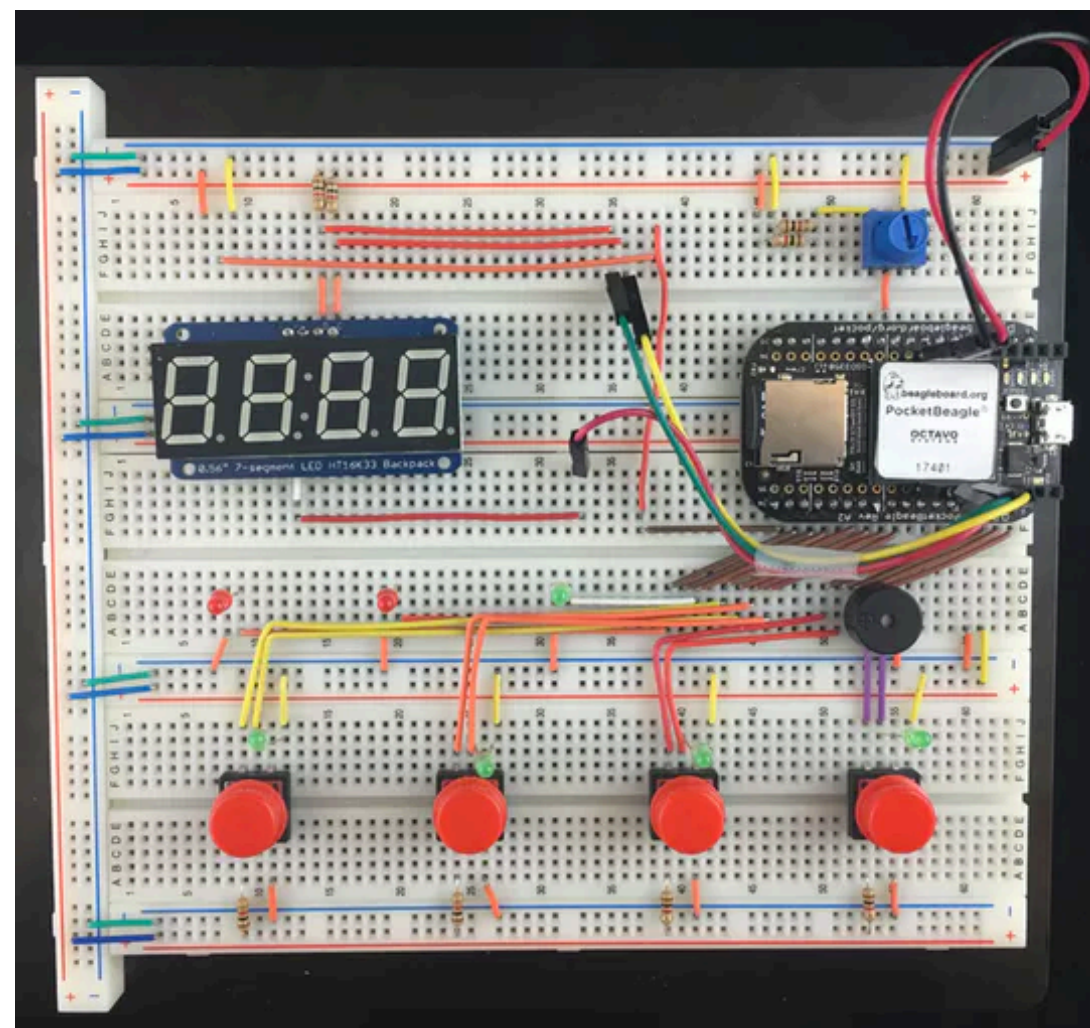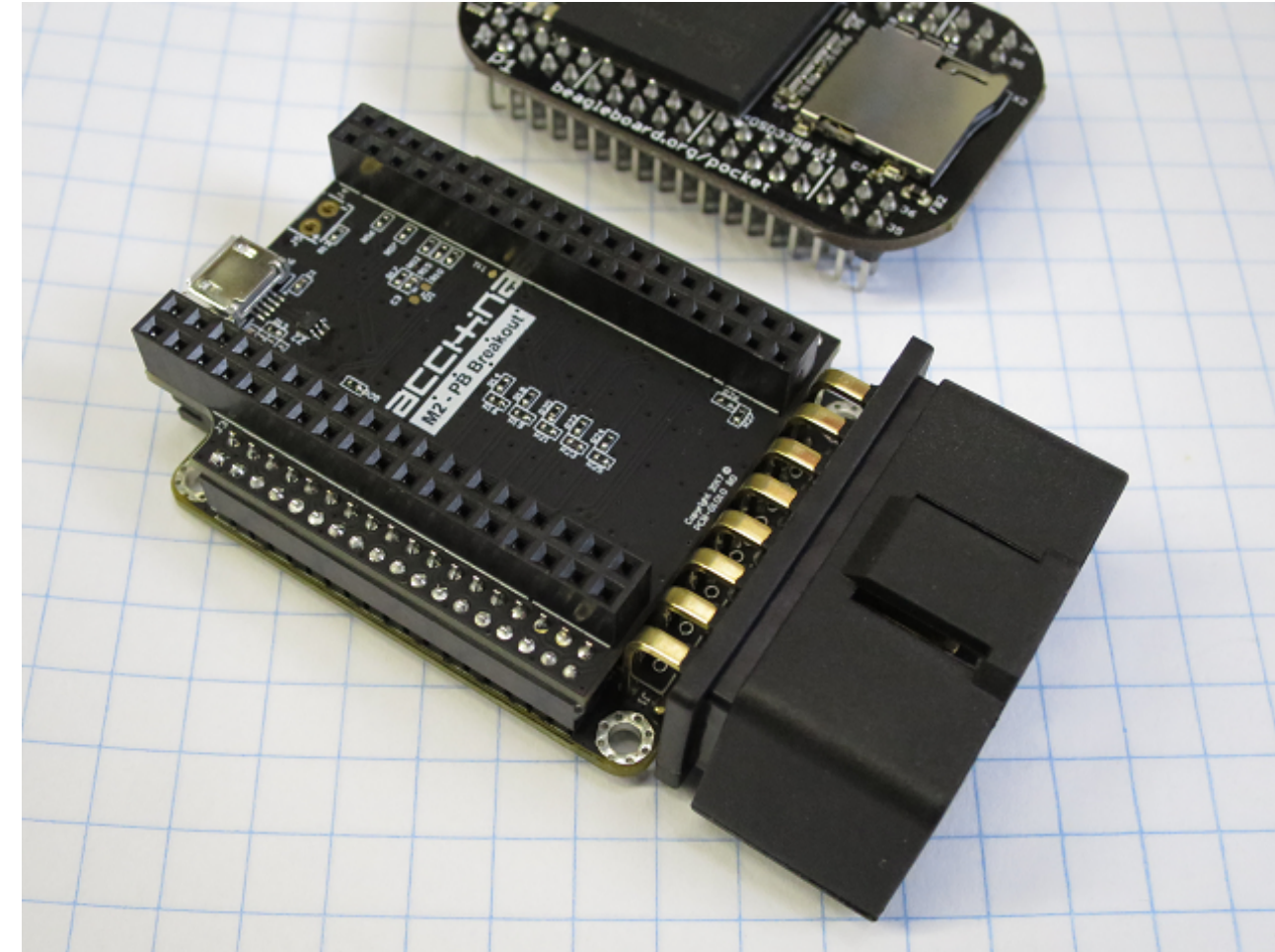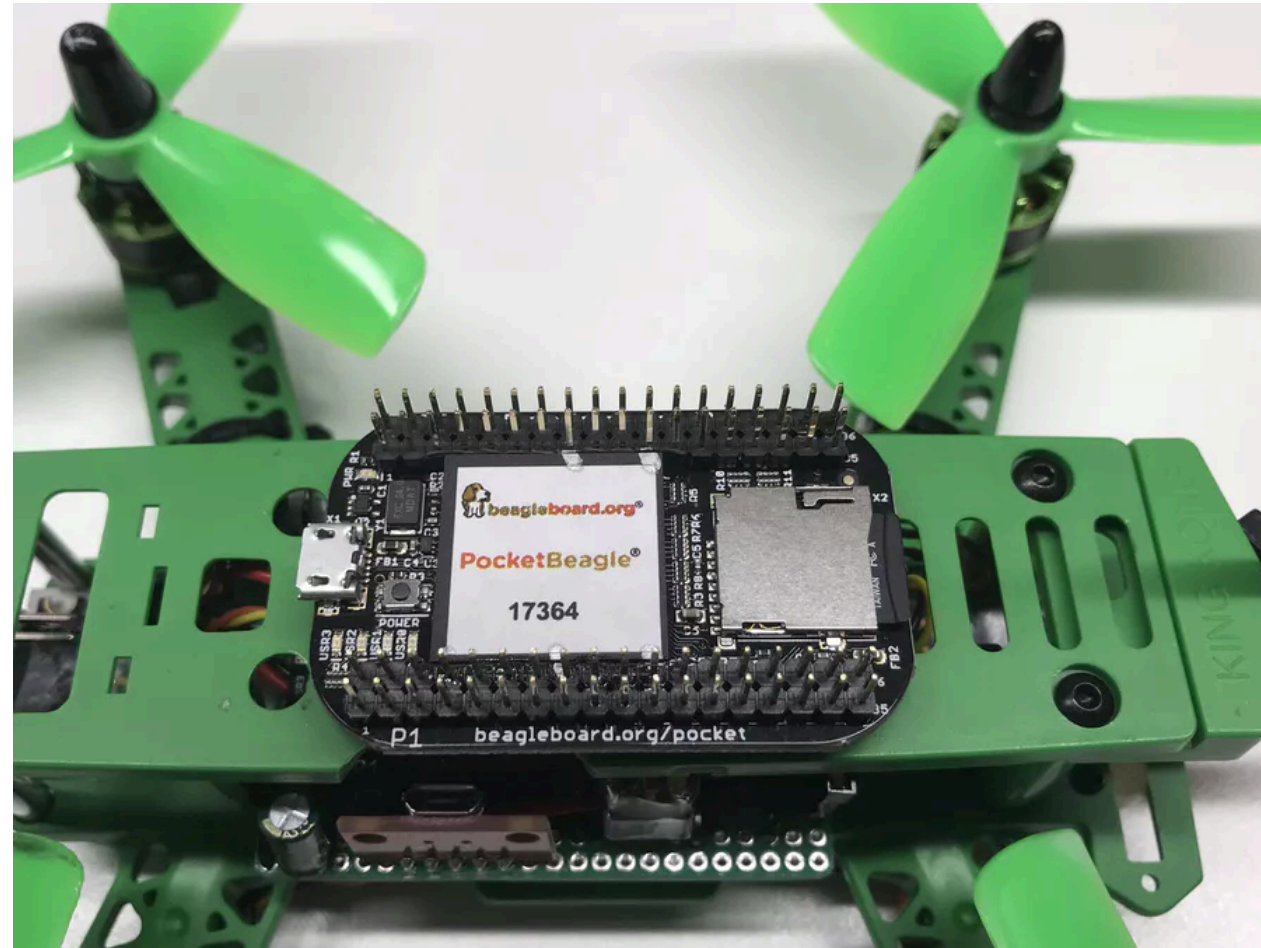
Expand with 500+ Click Boards™

- Breadboarding an LED or a button can build a good intuition
- mikroElectronica Click Boards™ boards can connect directly to PocketBeagle and provide hundreds of sensors and actuators
- Getting to more interesting sensors quickly builds motivation
- Linux drivers provide a better opportunity to learn the "right" way to do things from the community
- Abstractions make the software easy

Click Boards™ is a trademark of MikroElectronika

bbb.io/click

Call for PocketBeagles-for-your-classroom participation
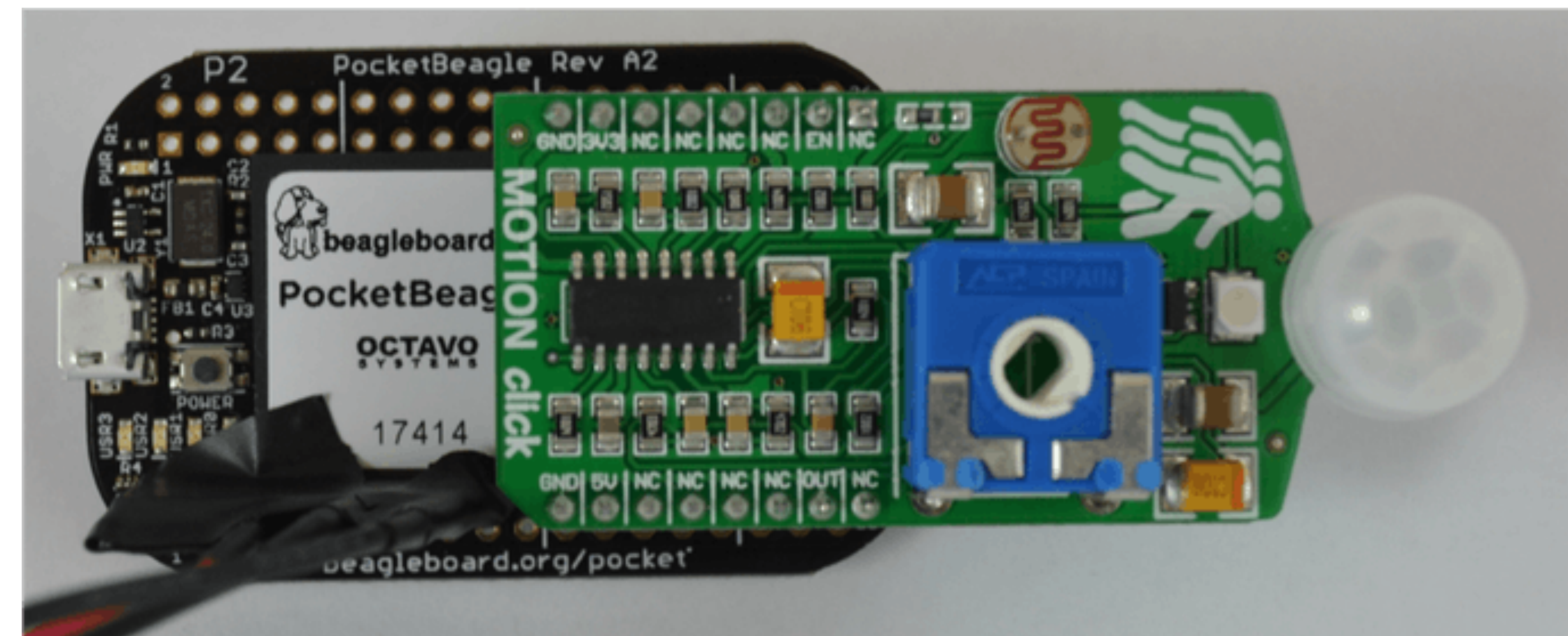
Apply for up to 30 PocketBeagle boards
for your classroom or makerspace by contributing a project

- Must submit a repeatable project for your students on beagleboard.org/p

- Document your procedures, learning outcomes & advice on how to integrate into a bigger classroom/course experience

- Projects must be well-documented, open source and available for reuse by the BeagleBoard.org Foundation

- Projects evaluated on:
  - Documentation quality in both appearance and understanding
  - Personal and educational value of lessons learned by students
  - Applicability across broad age range and skill levels

- Planned evaluation dates: Nov 29, 2018 & Feb 28, 2019

Get started today! Contact us at bbb.io/classroom

Thanks!

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