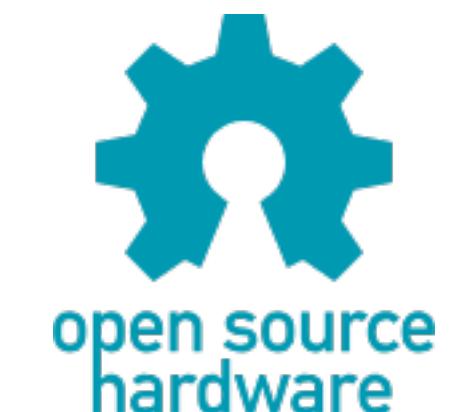




beagleboard.org®

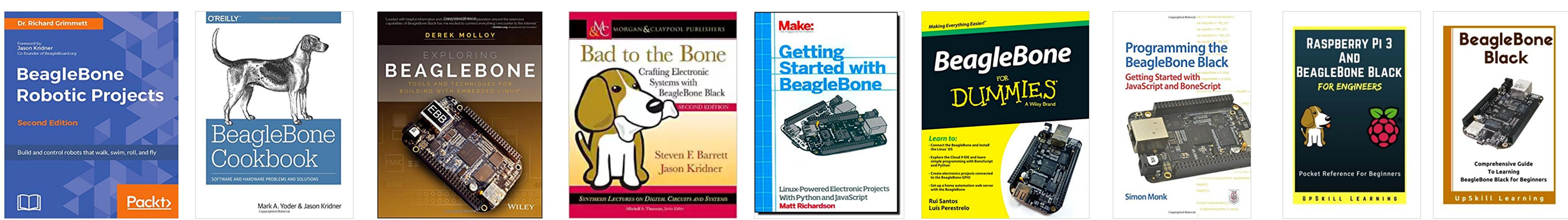
10 years in open hardware

Jason Kridner





# Traveled high and low



# Over 50 books

[bbb.io/books](http://bbb.io/books)

[bbb.io/books](http://bbb.io/books)

# Hundreds of capes

[bbb.io/capes](http://bbb.io/capes)



Thousands given hands-on  
training courses by professionals



[bbb.io/e-ale](http://bbb.io/e-ale)



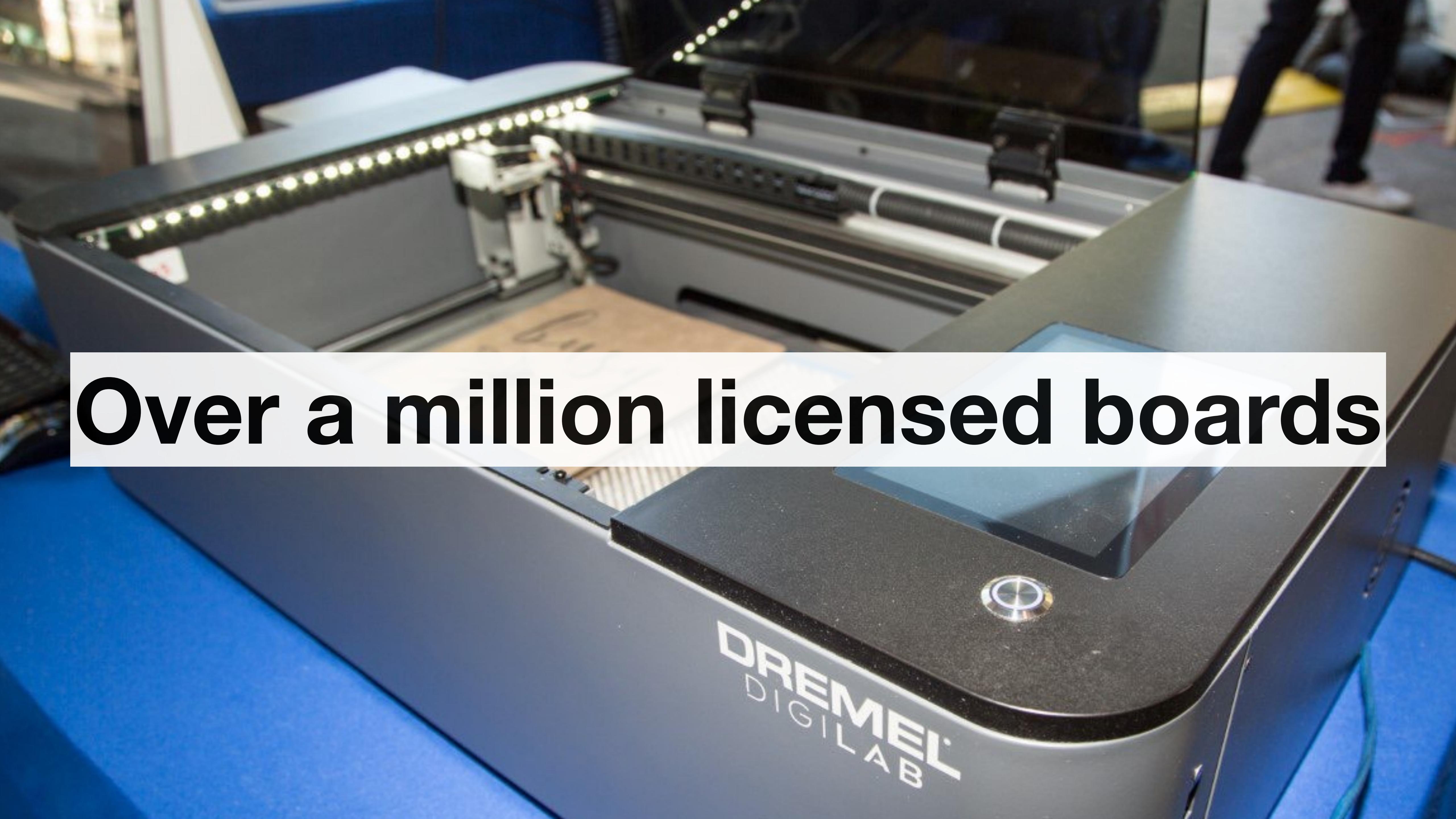
# Tens of thousands of developers

Voice of

**Kevin Hand**

ASTROBIOLOGIST, NASA/JET PROPULSION LABORATORY  
NATIONAL GEOGRAPHIC EMERGING EXPLORER

[bbb.io/jpl](http://bbb.io/jpl)

A close-up photograph of a Dremel Digilab 3D printer in operation. The printer is printing a wooden board, which has a glowing yellow LED strip attached to its perimeter. The printer's extruder is visible, and the build plate is moving. The Dremel Digilab logo is printed on the side of the printer.

**Over a million licensed boards**



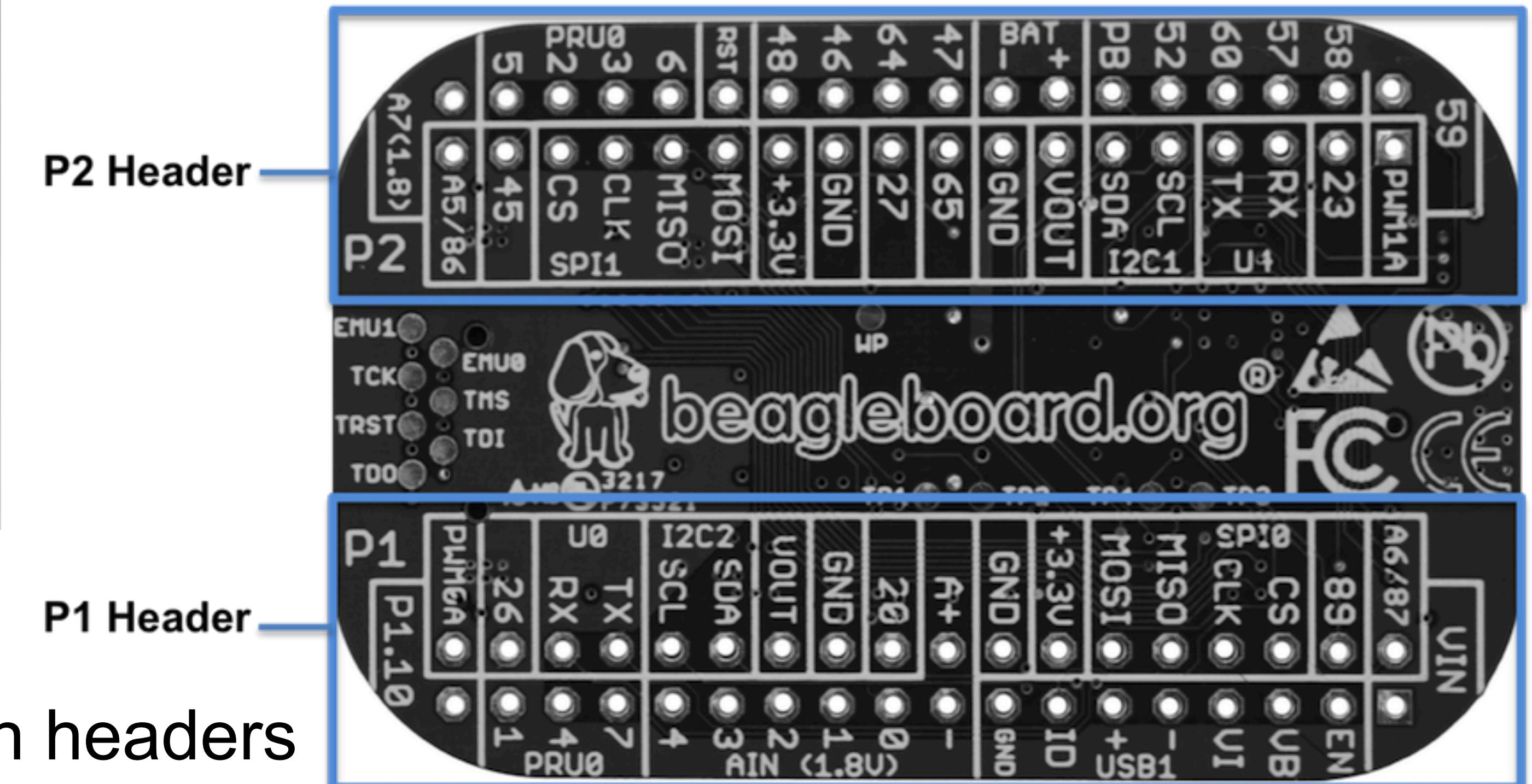
# Simplicity for developers



# 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

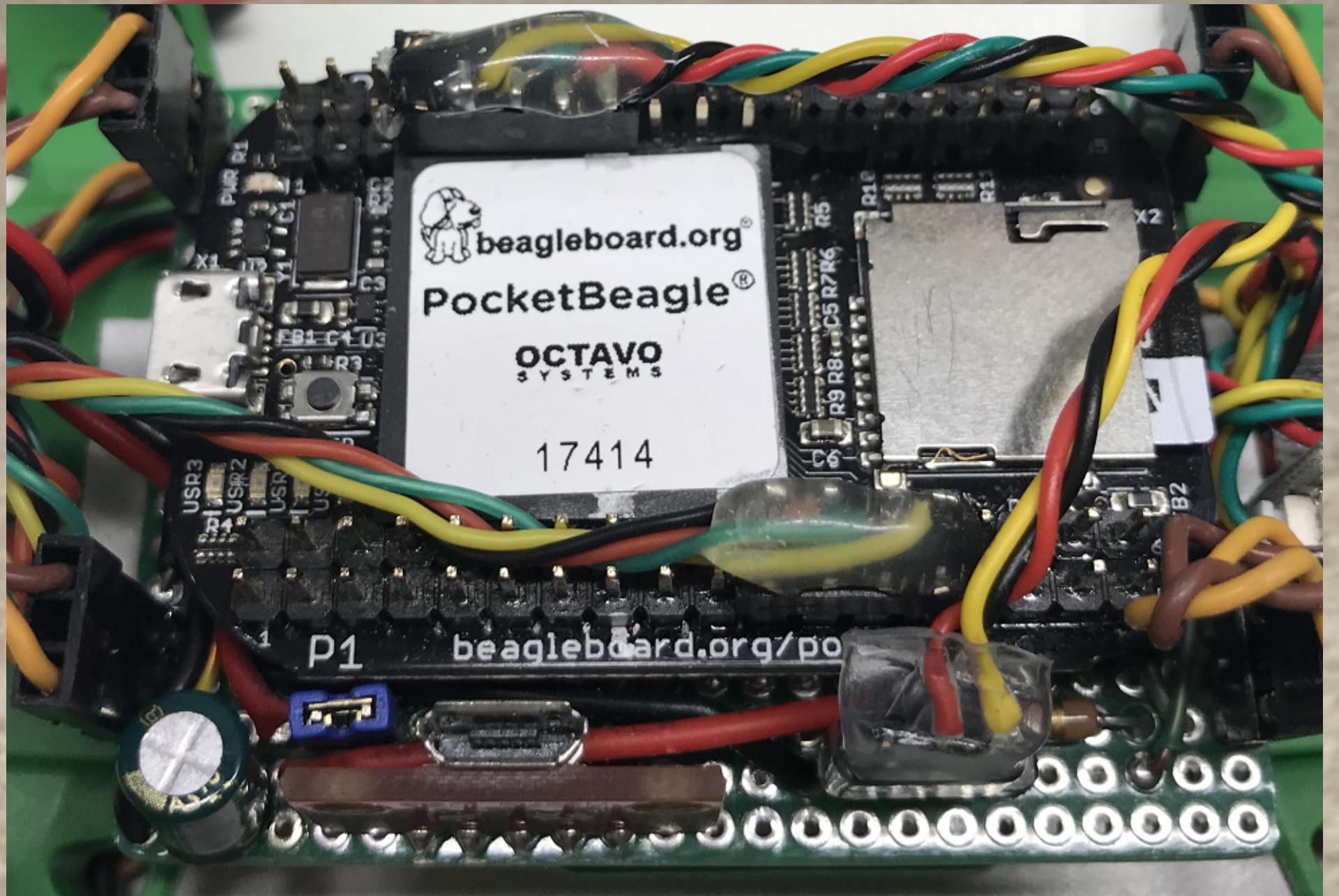


US0083

[bbb.io/bela](https://bbb.io/bela)



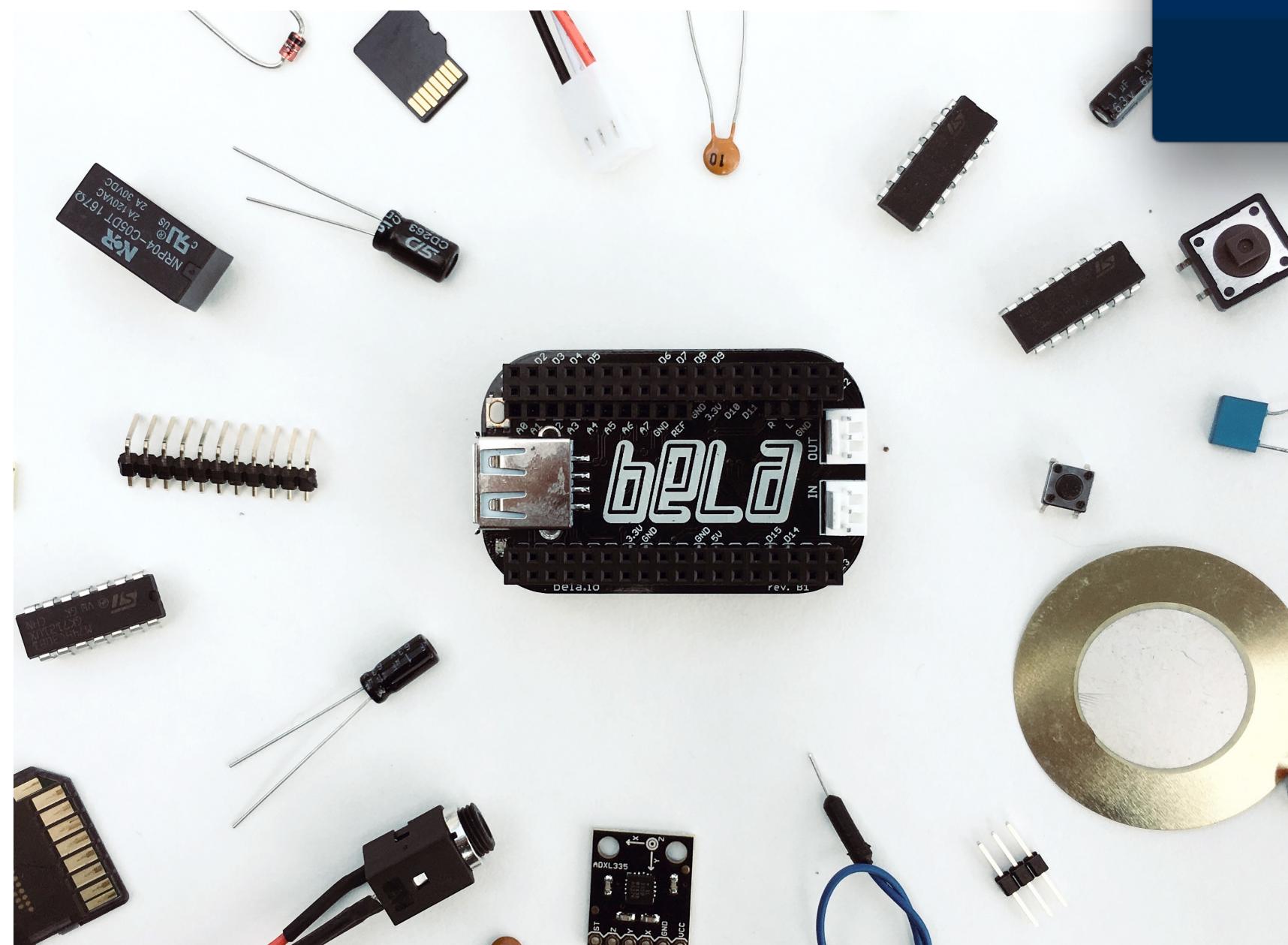
[bbb.io/ppilot](http://bbb.io/ppilot)



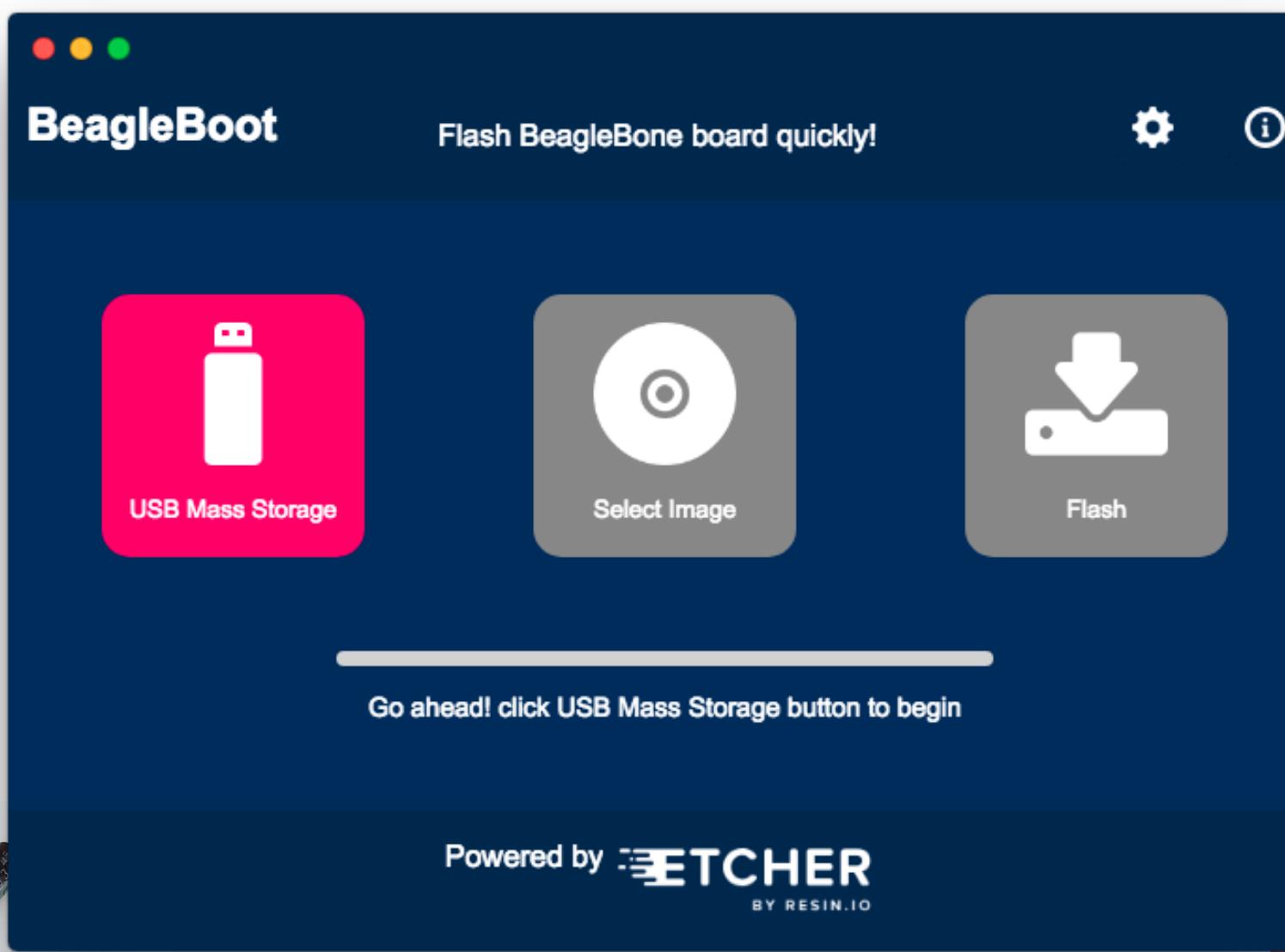
# Why is it critical to learn PocketBeagle and Linux?



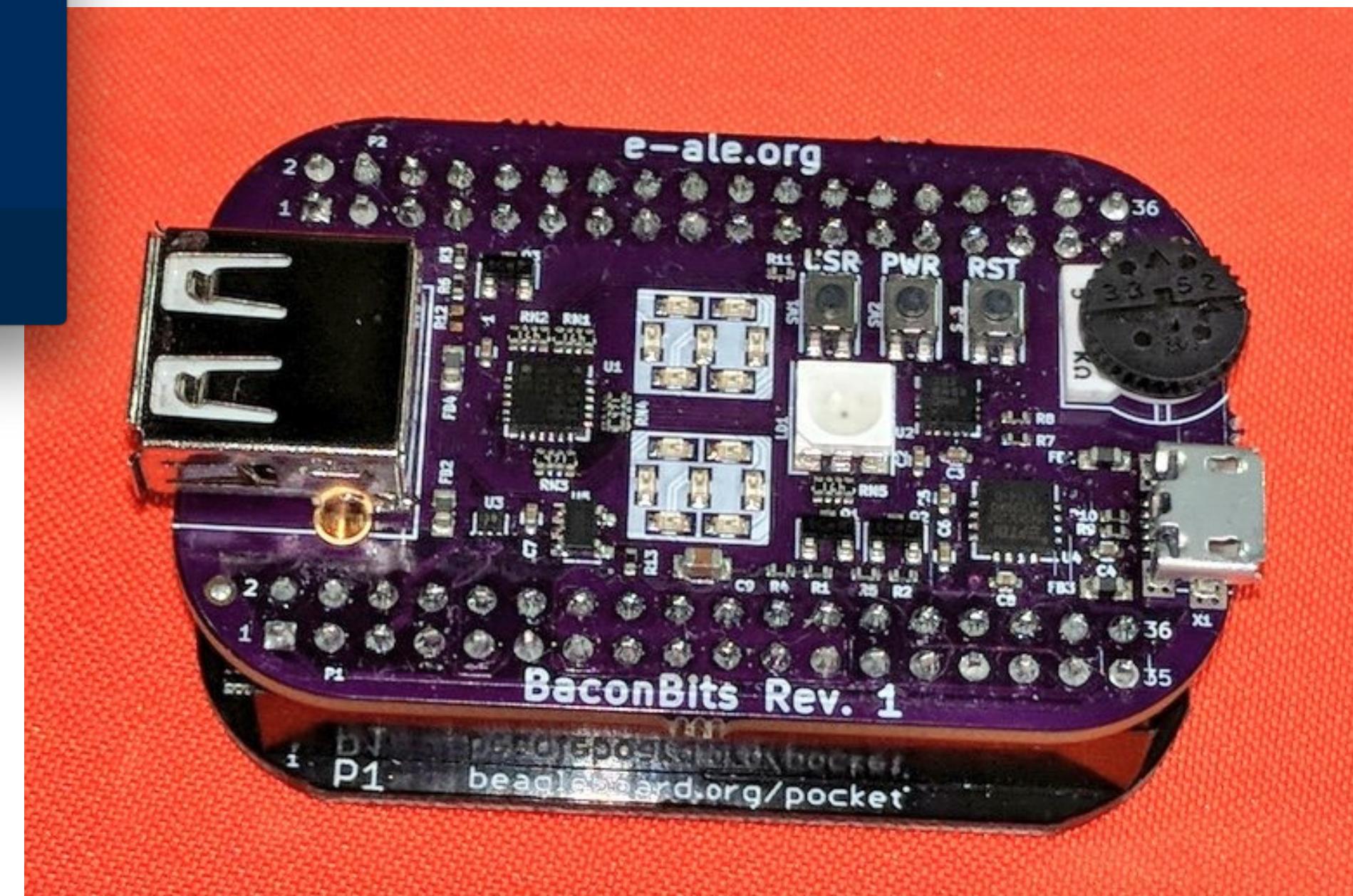
Programming is a human endeavor where we learn from history



Unique real-time capabilities



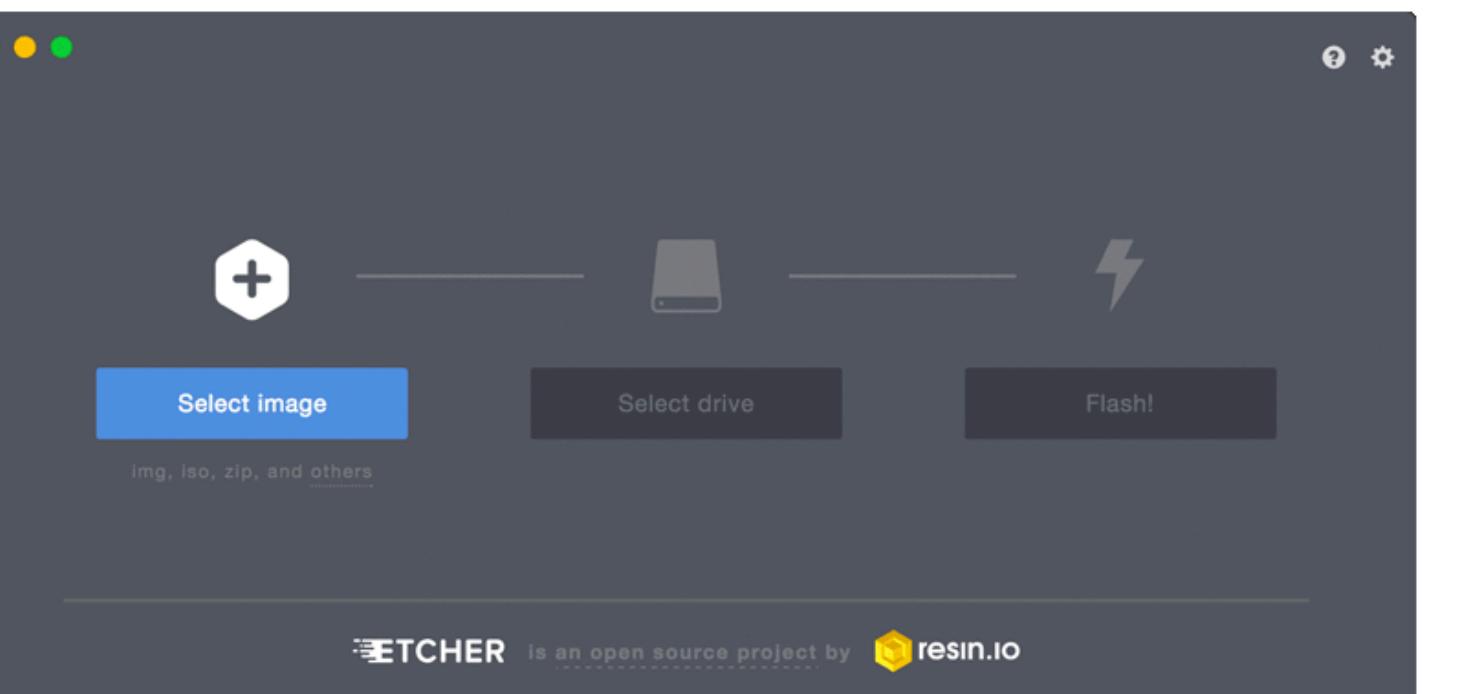
Collaboration, not cut-and-paste



Same tools as the pros

# Getting started

## 1) Boot the board



[bbb.io/pb-start](http://bbb.io/pb-start)

# Getting started



## 2) Get to the editor and command line

The screenshot shows a web-based setup guide for a BeagleBoard. At the top, there's a navigation bar with a back arrow and a search bar containing '192.168.6.2:3000'. Below it, a sidebar lists steps: 'Step 1: Power and boot' (green), 'Step 2: Enable a network connection' (orange, currently selected), 'Step 3: Browse to web server on Beagle' (red). A blue arrow points from the sidebar to a table below. The main content area is titled 'Step 2 Enable a network connection'. It contains text about network connections via USB or WiFi, and a table summarizing typical addresses:

IP Address	Connection Type	Operating System(s)	Status
192.168.7.2	USB	Windows	Inactive
192.168.6.2	USB	Mac OS X, Linux	Active
192.168.8.1	WiFi	all	Inactive
beaglebone.local	all	mDNS enabled	Active
beaglebone-2.local	all	mDNS enabled	Inactive

The screenshot shows the Cloud9 IDE interface. At the top, a browser window displays '192.168.7.2:3000/ide.html'. The main workspace shows a 'Welcome' screen with a large '9' in a cloud and the text 'Welcome to Cloud9. Use this welcome screen to tweak the look & feel of the Cloud9 user interface.' On the left, a vertical toolbar has 'Workspace' selected. The terminal window at the bottom shows a Debian prompt: 'debian@beaglebone:~\$'. The status bar at the bottom right shows the date and time: '6:31 PM 12/14/2017'.

<http://192.168.7.2:3000>

[linuxcommand.org](http://linuxcommand.org)

# Getting started



## 3) Blink an LED

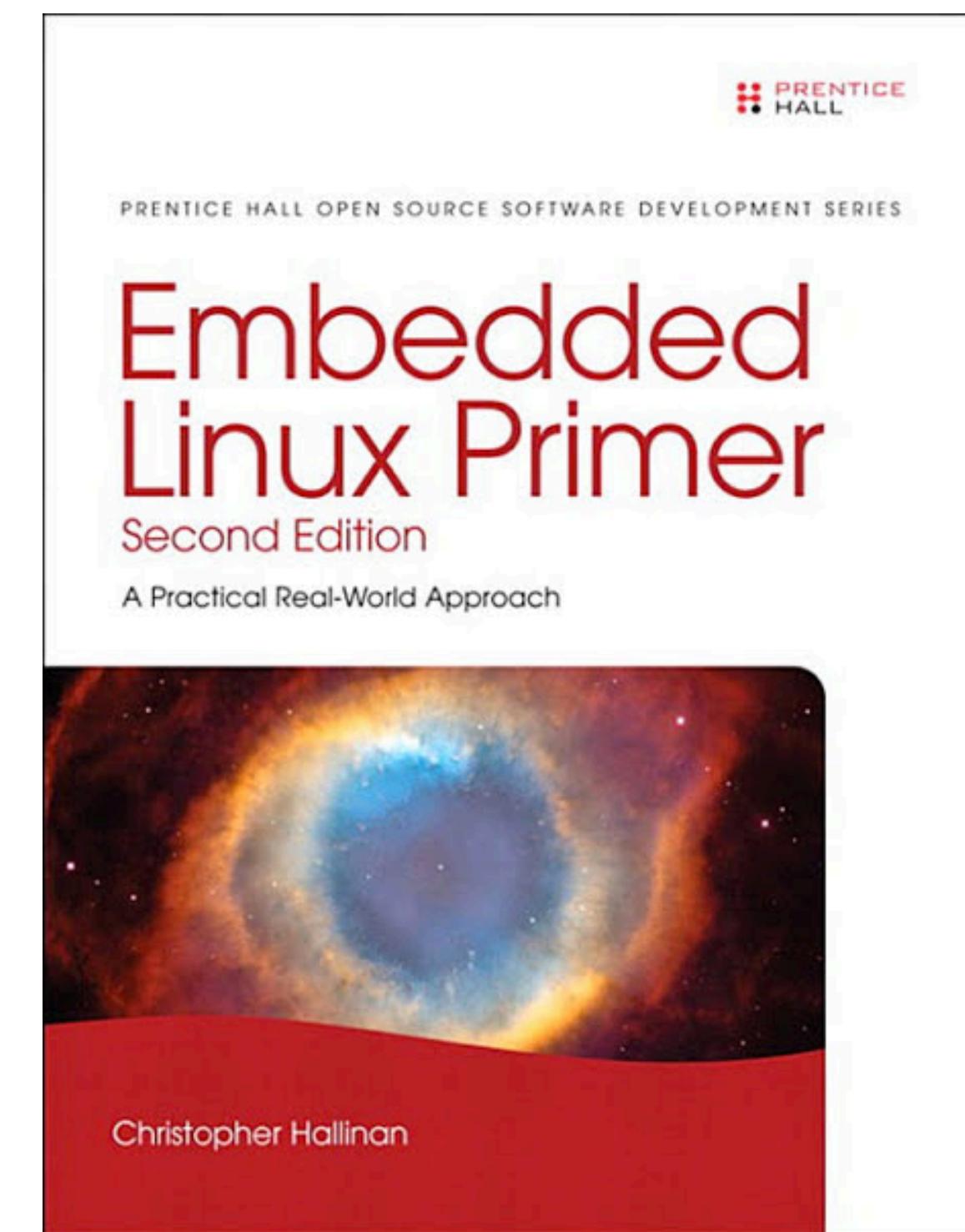
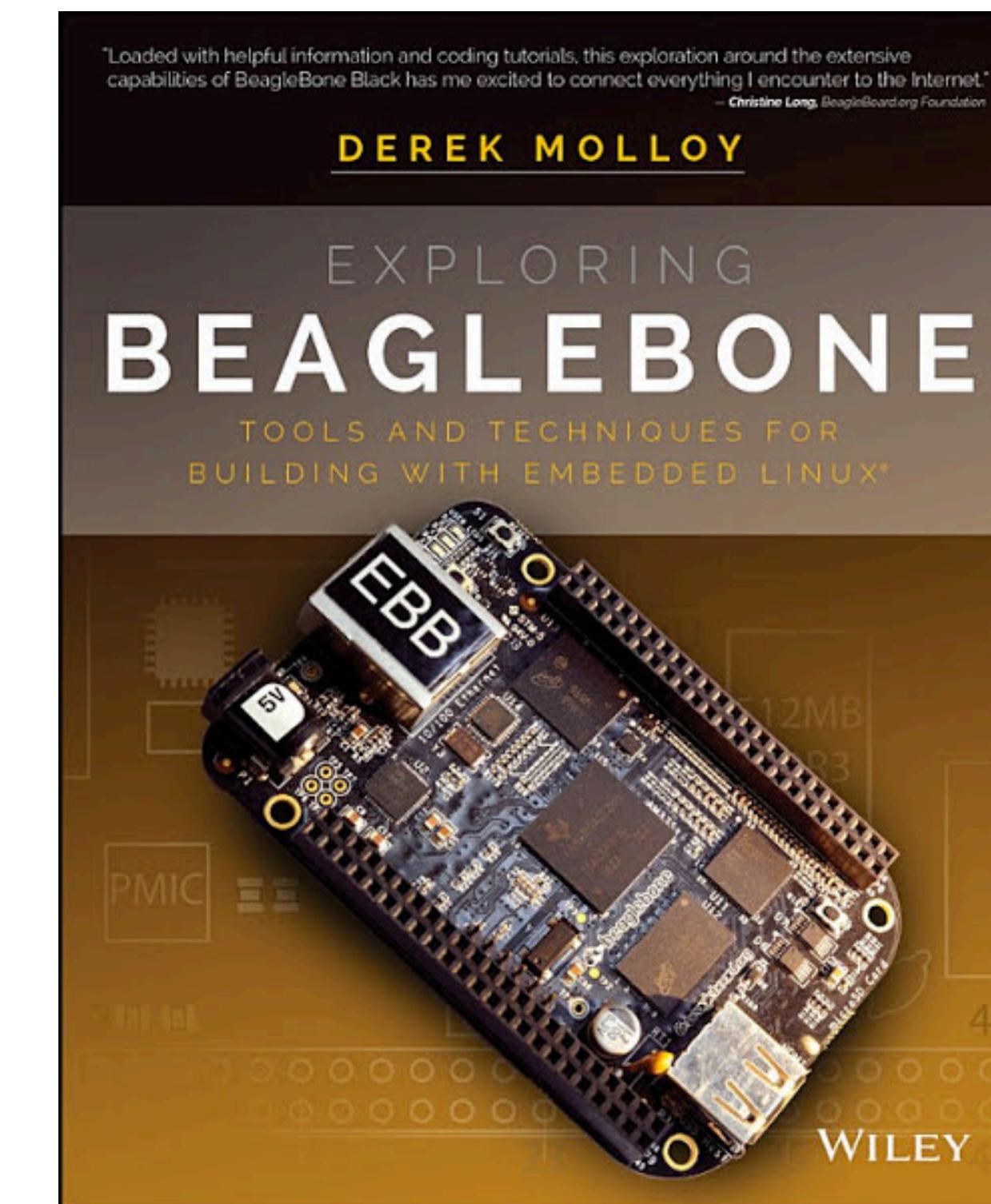
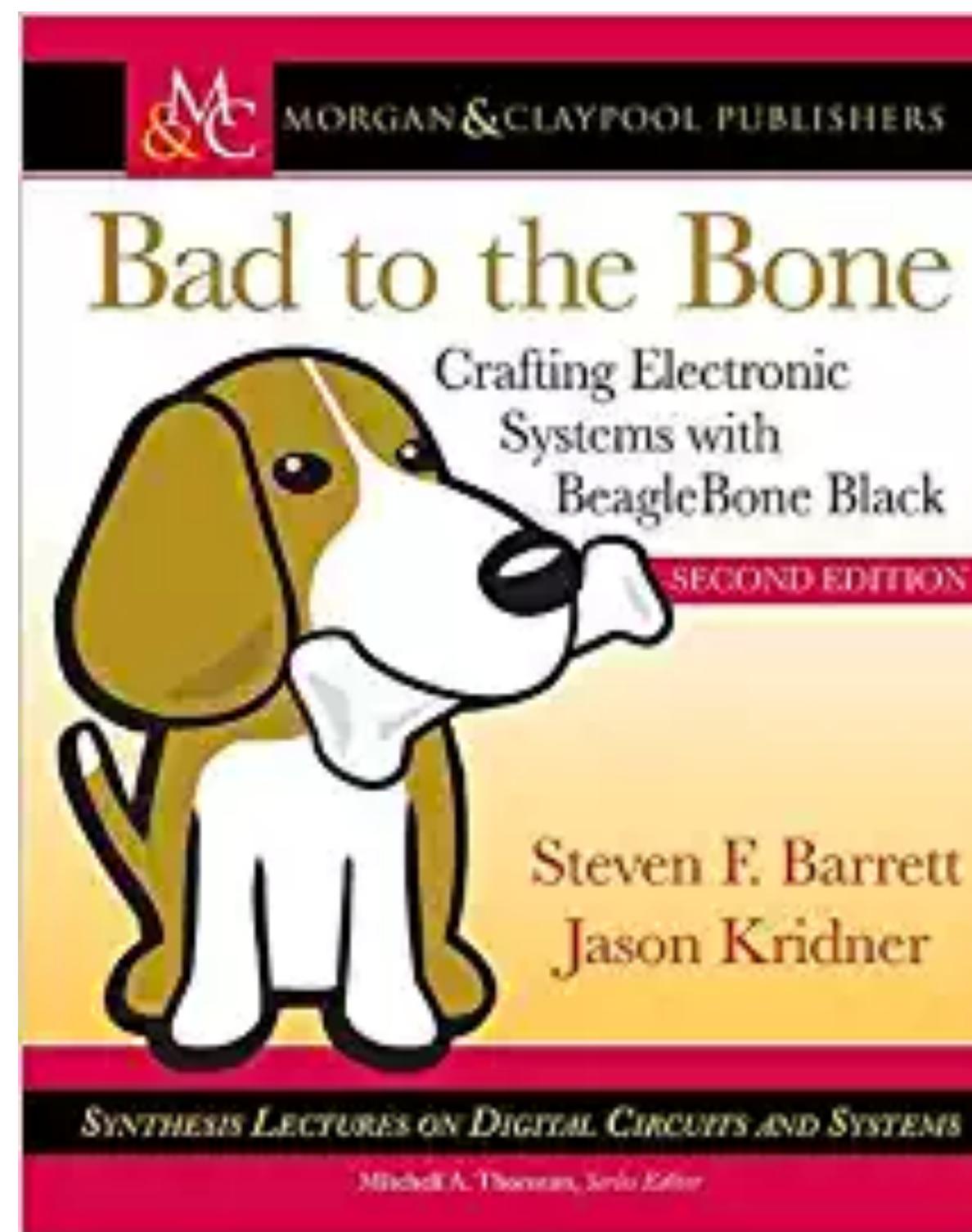
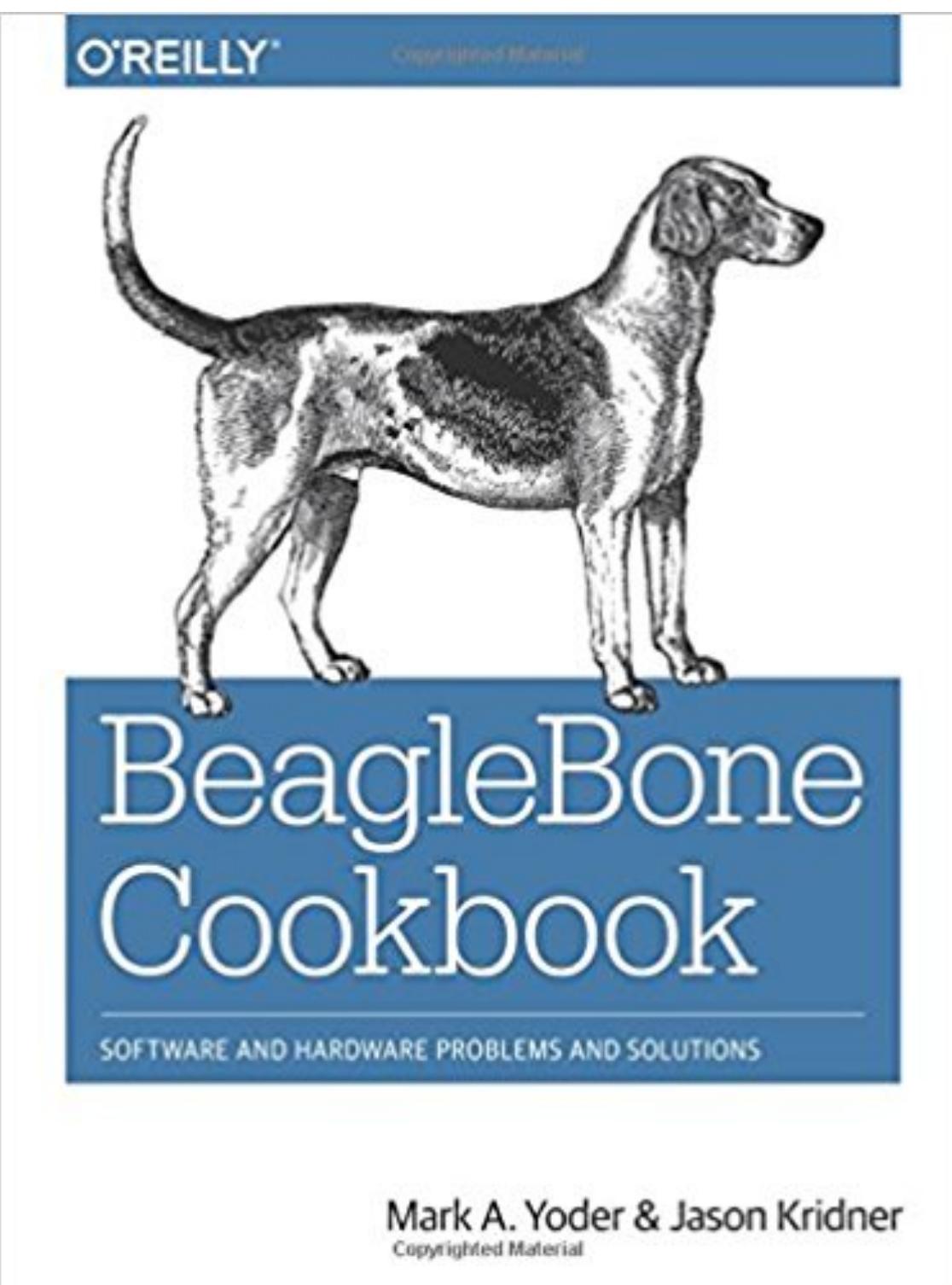
```
1. var b = require('bonescript');
2. var state = b.LOW;
3. b.pinMode("USR3", b.OUTPUT);
4. setInterval(toggle, 250); // toggle 4 times a second, every 250ms
5. function toggle() {
6.     if(state == b.LOW) state = b.HIGH;
7.     else state = b.LOW;
8.     b.digitalWrite("USR3", state);
9. }
```

-

# Getting started



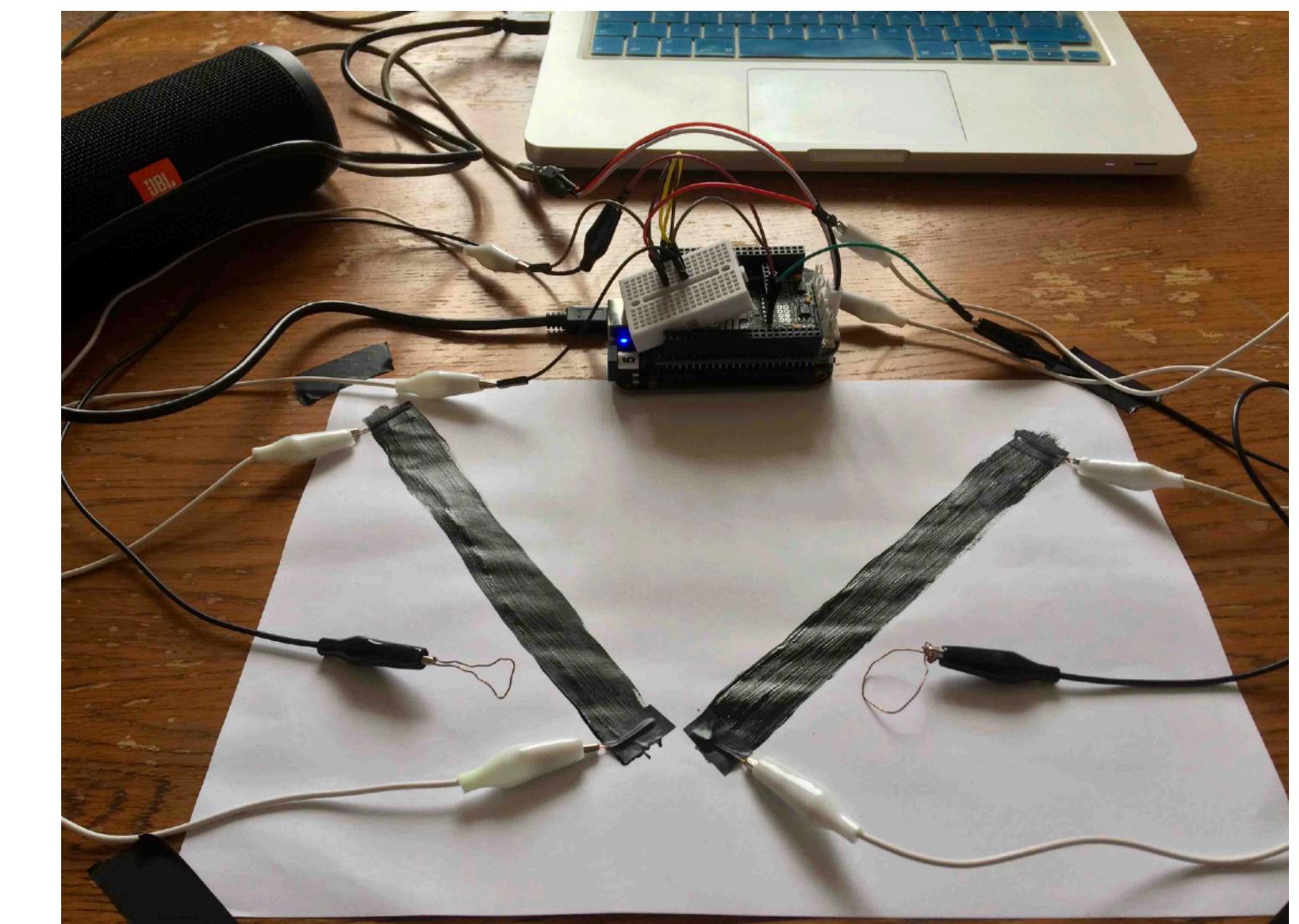
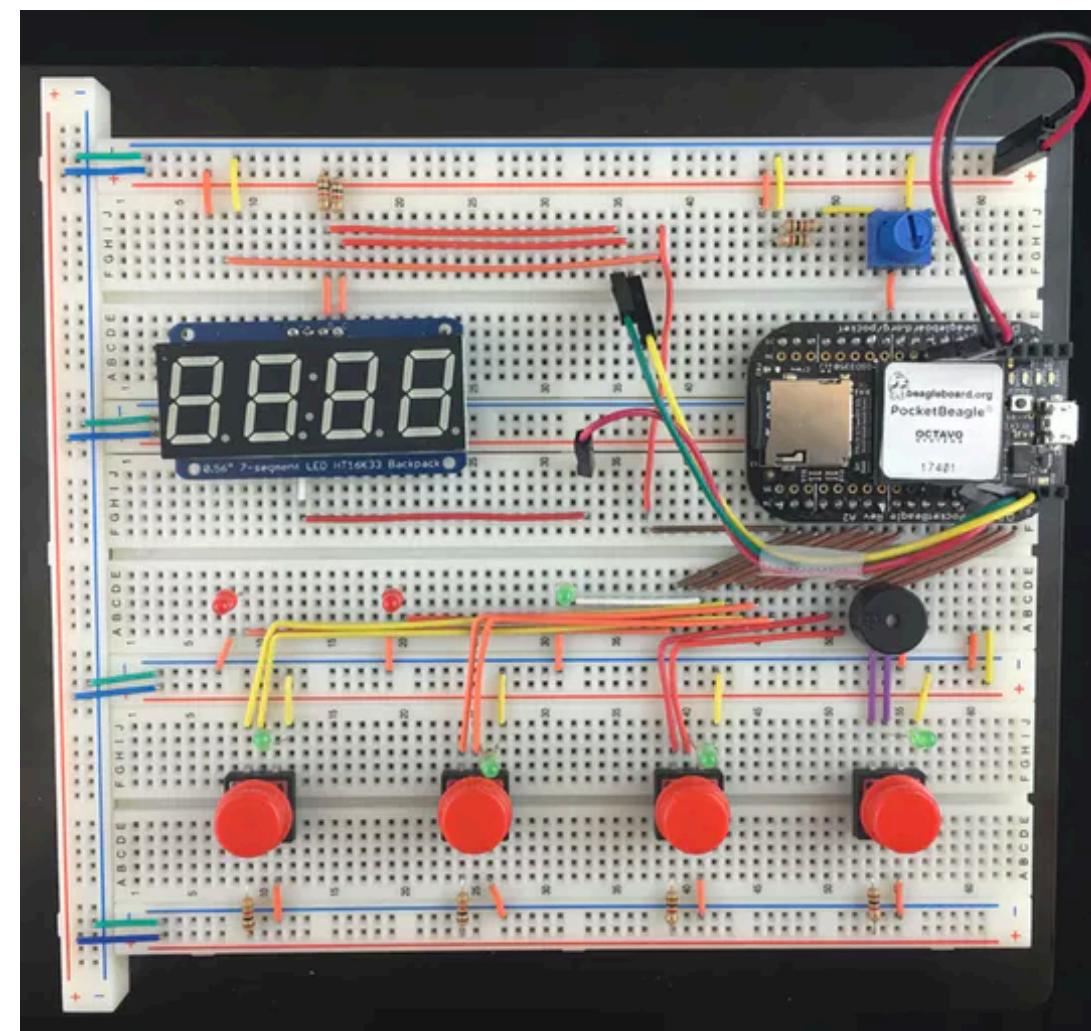
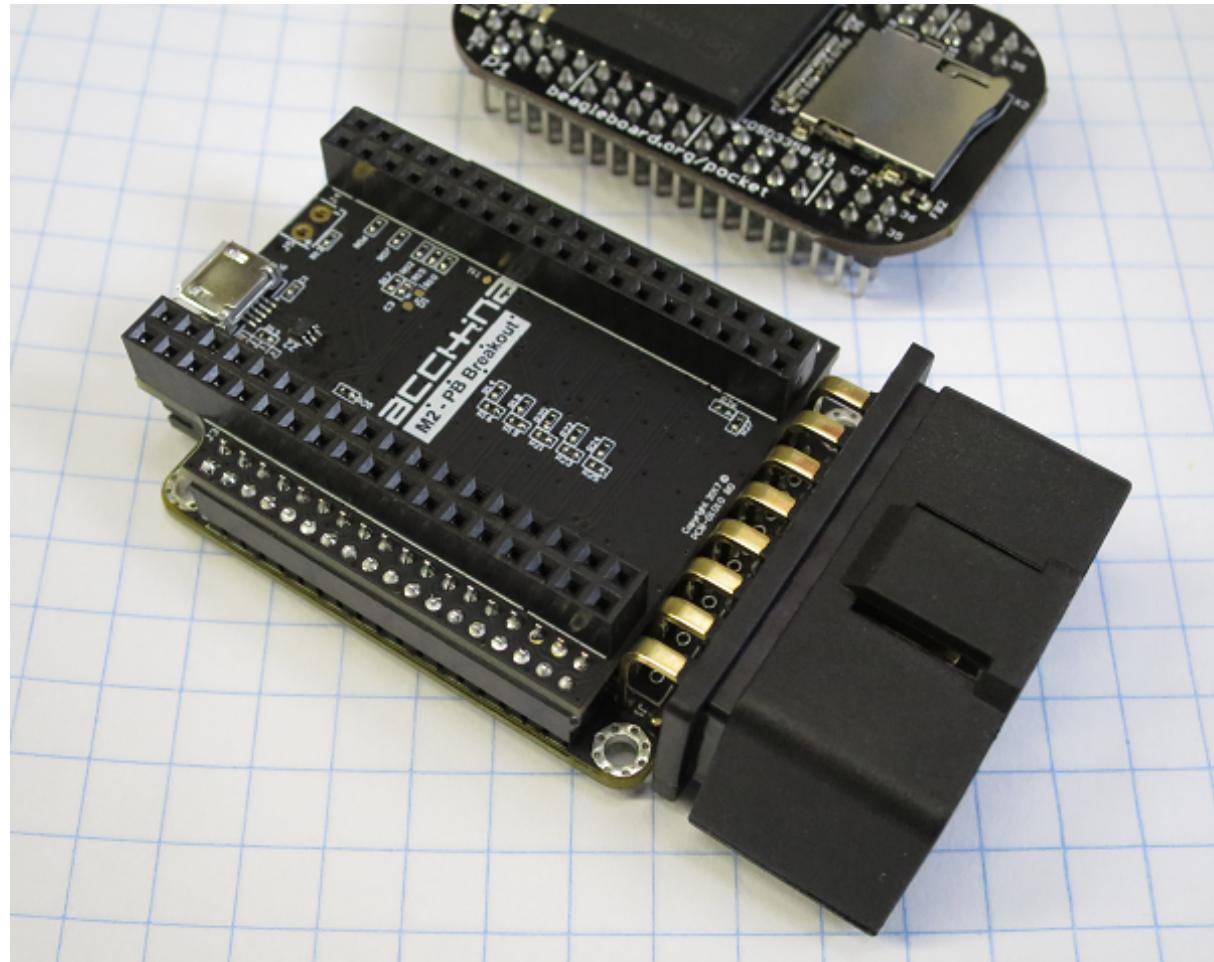
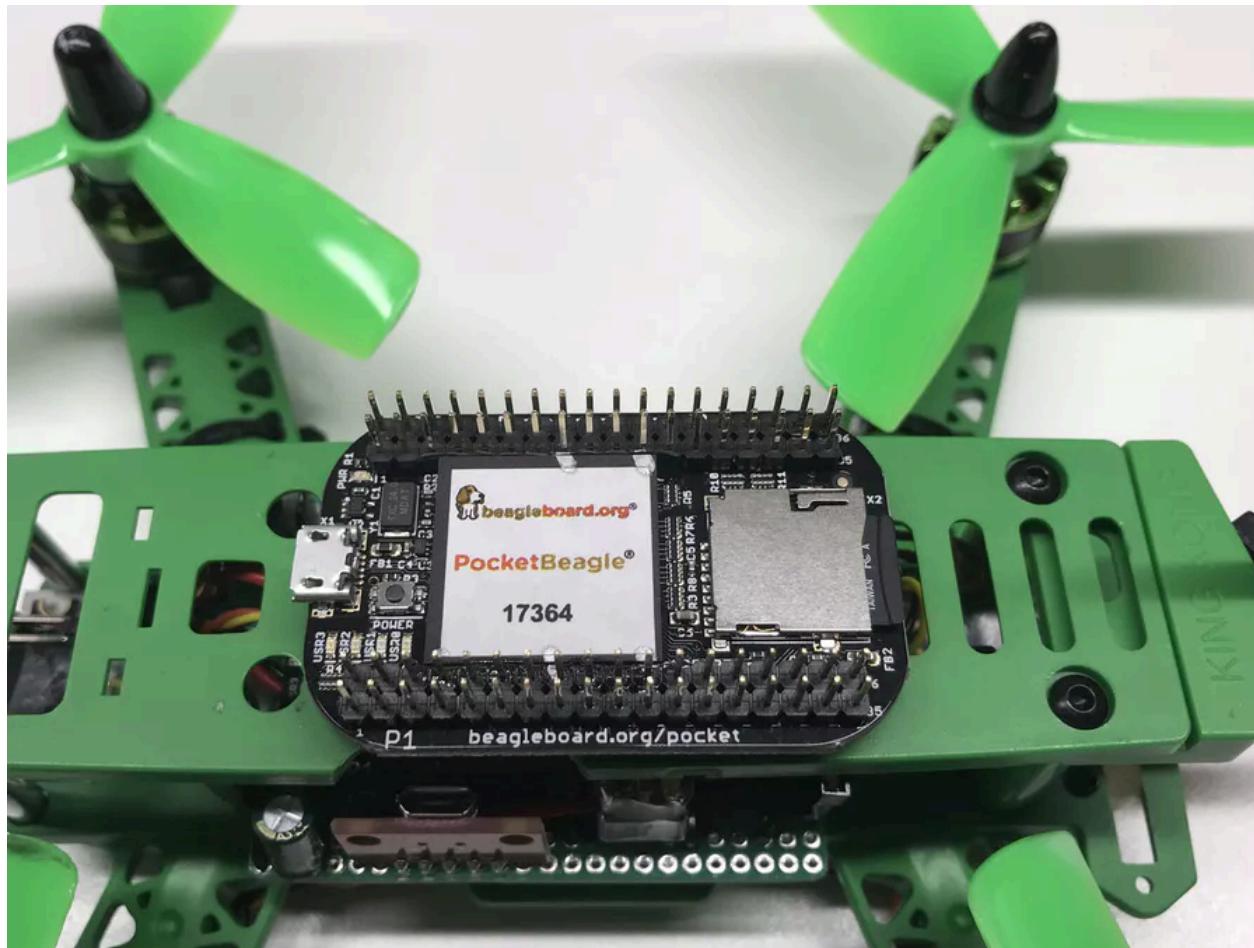
## 4) Explore some books



# Getting started

5) Build a project

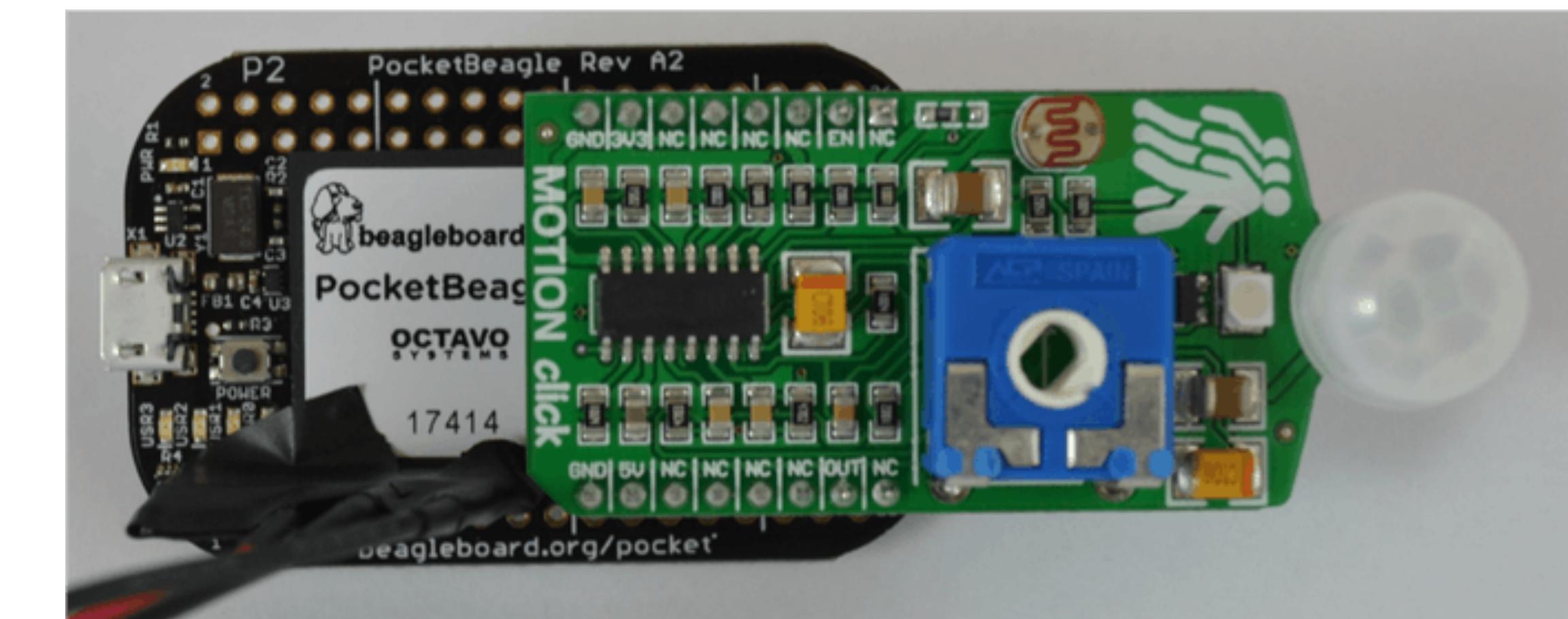
[bbb.io/p-pocket](http://bbb.io/p-pocket)



# 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



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](http://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](http://bbb.io/classroom)

# Thanks!

**beagleboard.org/newsletter**

**beagleboard.org/discuss**

**beagleboard.org/chat**