

BADGEr: E-Paper for the rest of us

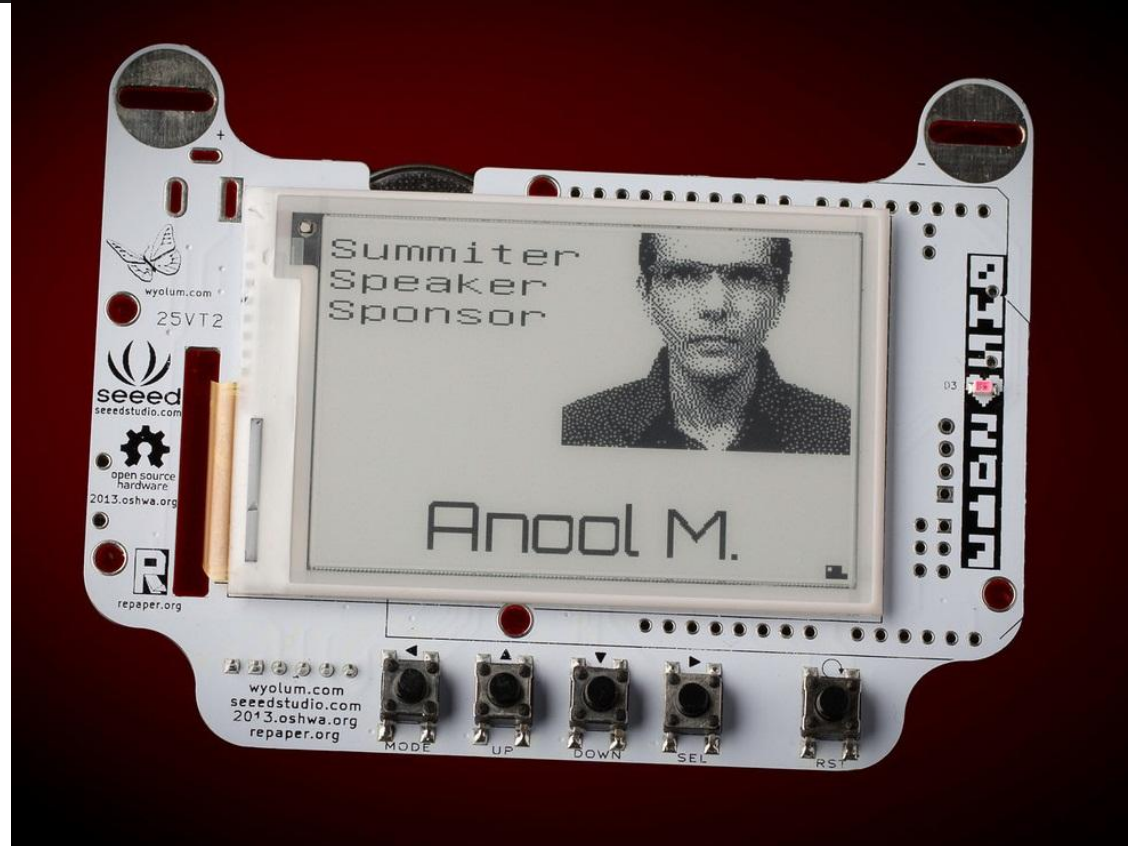
# We're WyoLum Emergents



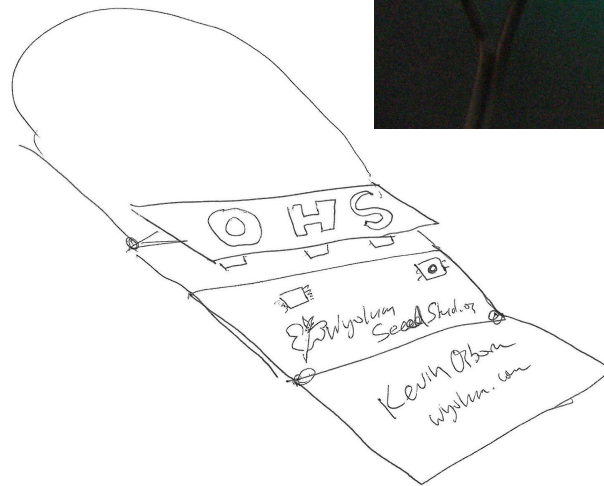
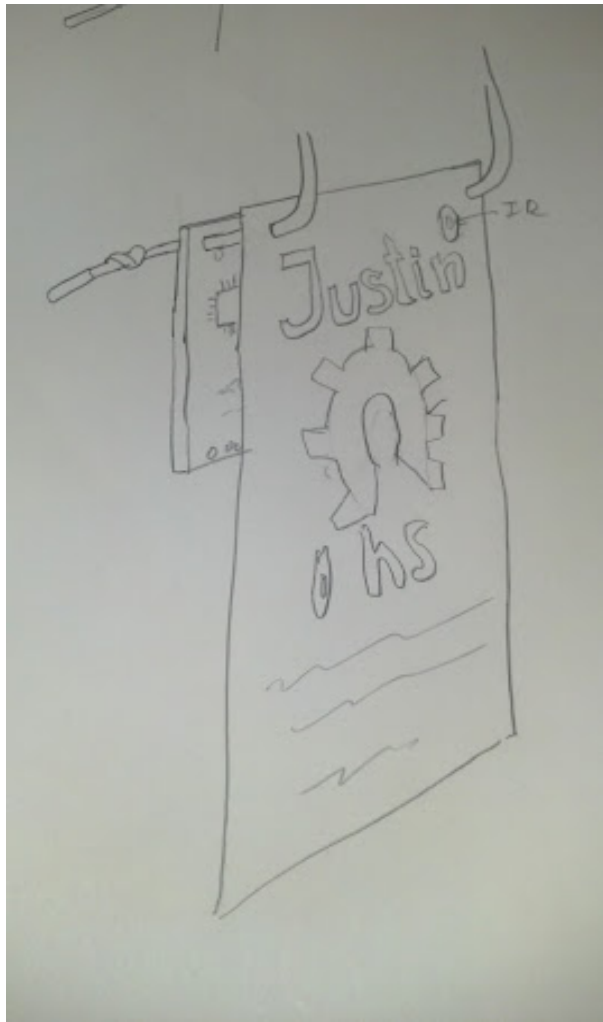


# Introducing BADGEr

1. Hardware
2. Software
3. Programming
4. What's next



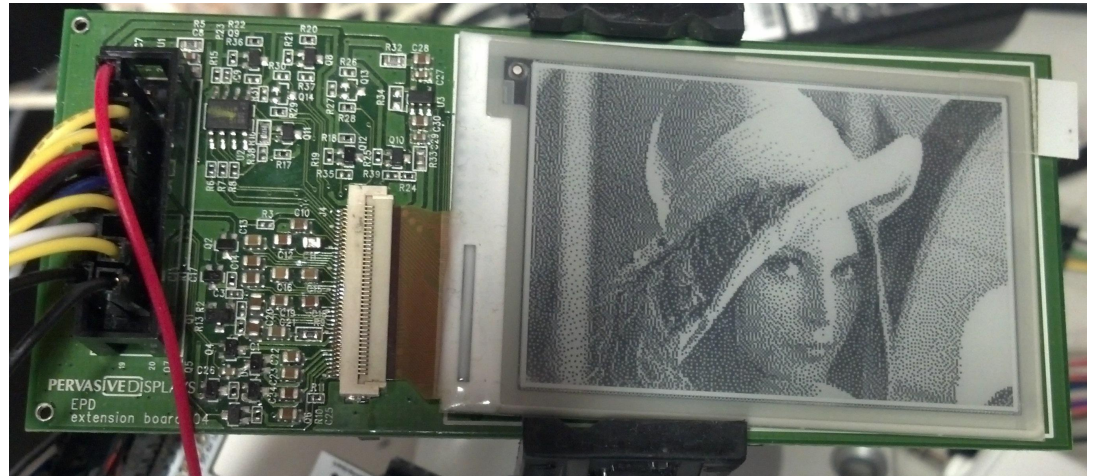
# Initial concepts





# Final selection

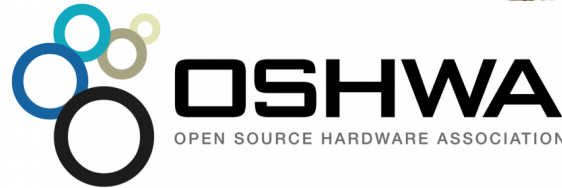
Early prototypes used the development board from rePaper.org.



Your conference badge is a 276x164 pixel display offered by Repaper.org



# Voltron Assemble!



Jan 2013  
A Brilliant Idea...

Feb 17, 2013  
Seeed/Wyolum  
Agreement

Feb 19, 2013  
OHS approves

Mar 1, 2013  
RePaper Agreement

Apr 26th  
First prototype

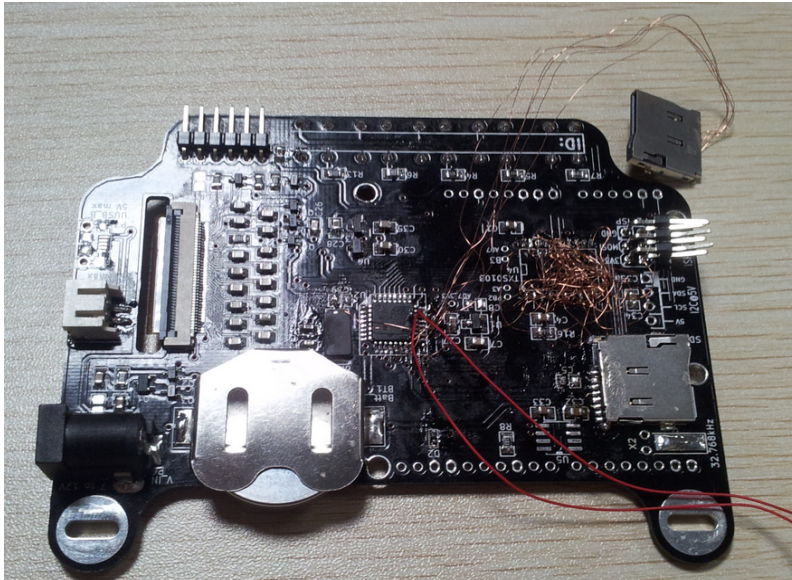
May 1  
Second prototype

July 5th  
Third prototype

@Wheres BADGEr?

Sept 6 OHS!

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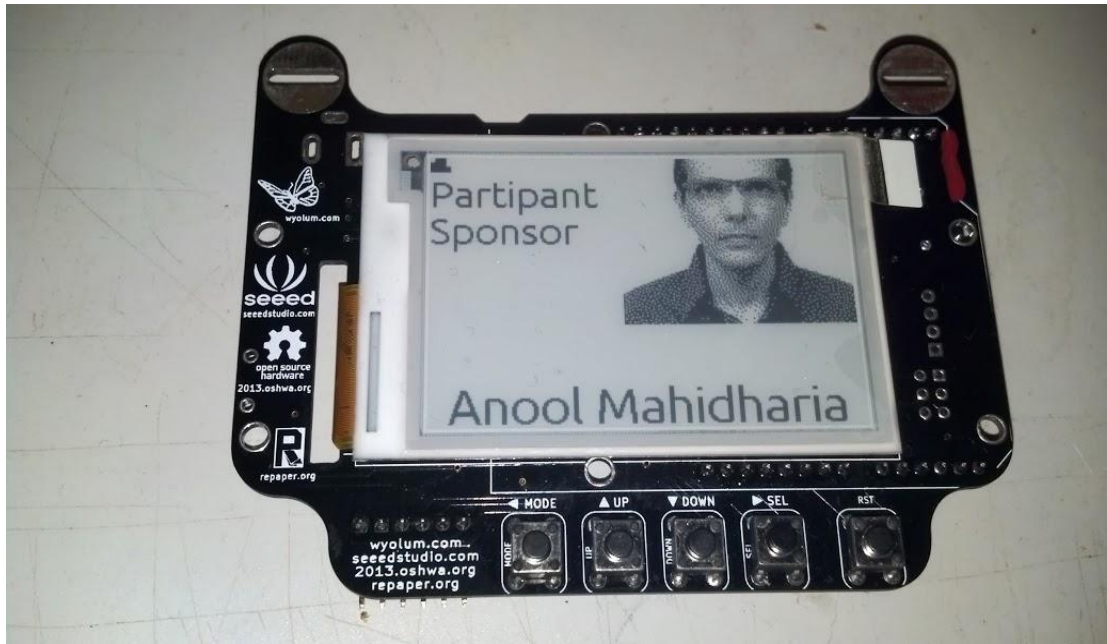
Third prototype

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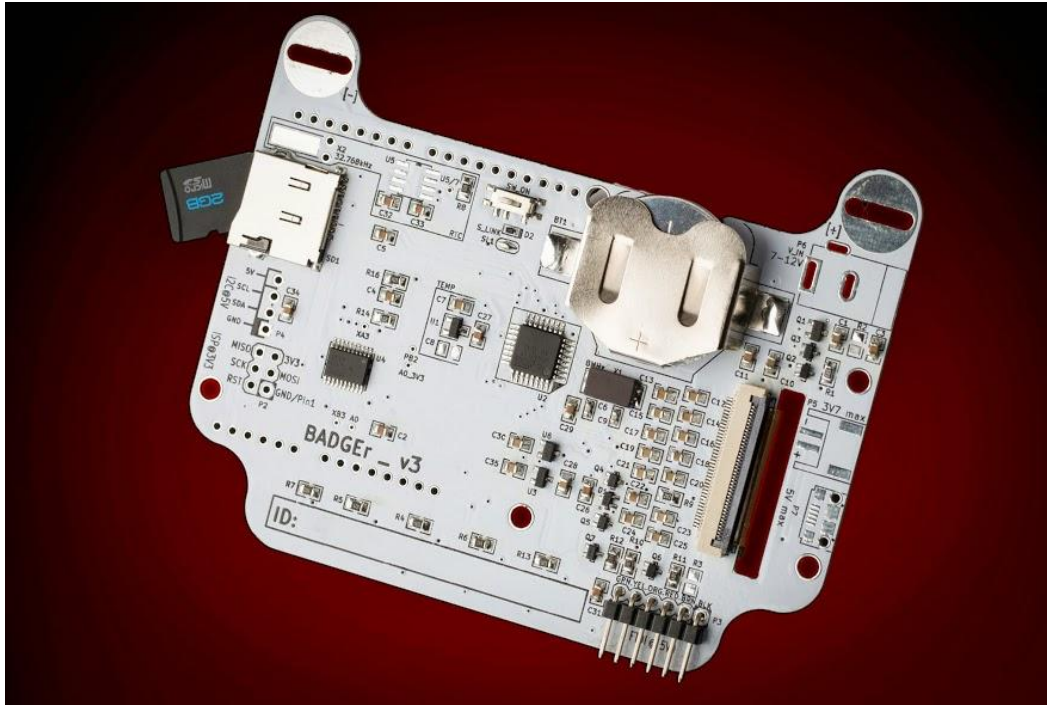
Sept 6 OHS!

# Voltron Assemble!

WyoLum

seed studio  
An Open Hardware Facilitation Company

OSHWA  
OPEN SOURCE HARDWARE ASSOCIATION



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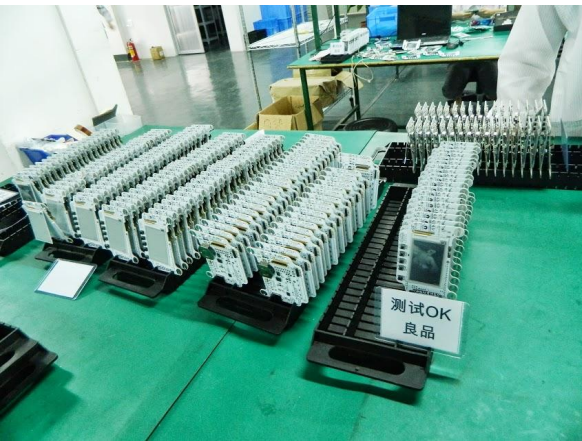
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Sept 6 OHS!



# Manufacture





# Voltron Assemble!



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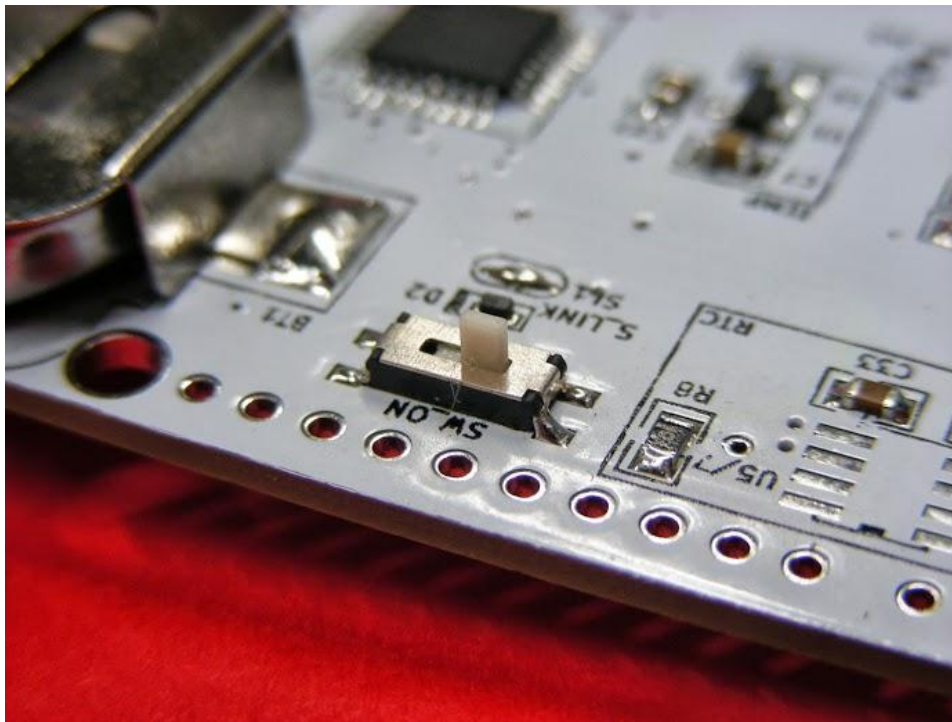
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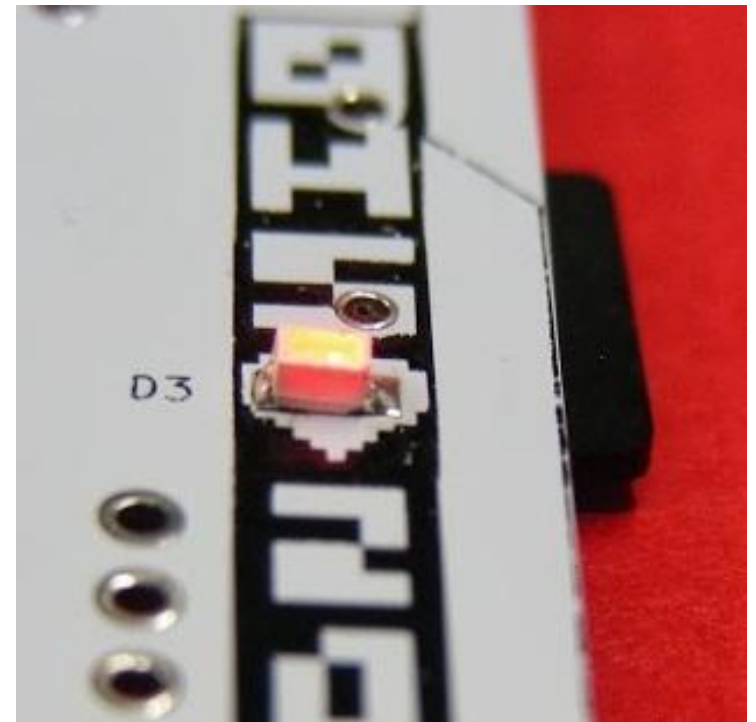
@Wheres BADGEr?

Sept 6 OHS!

# Let's have a play

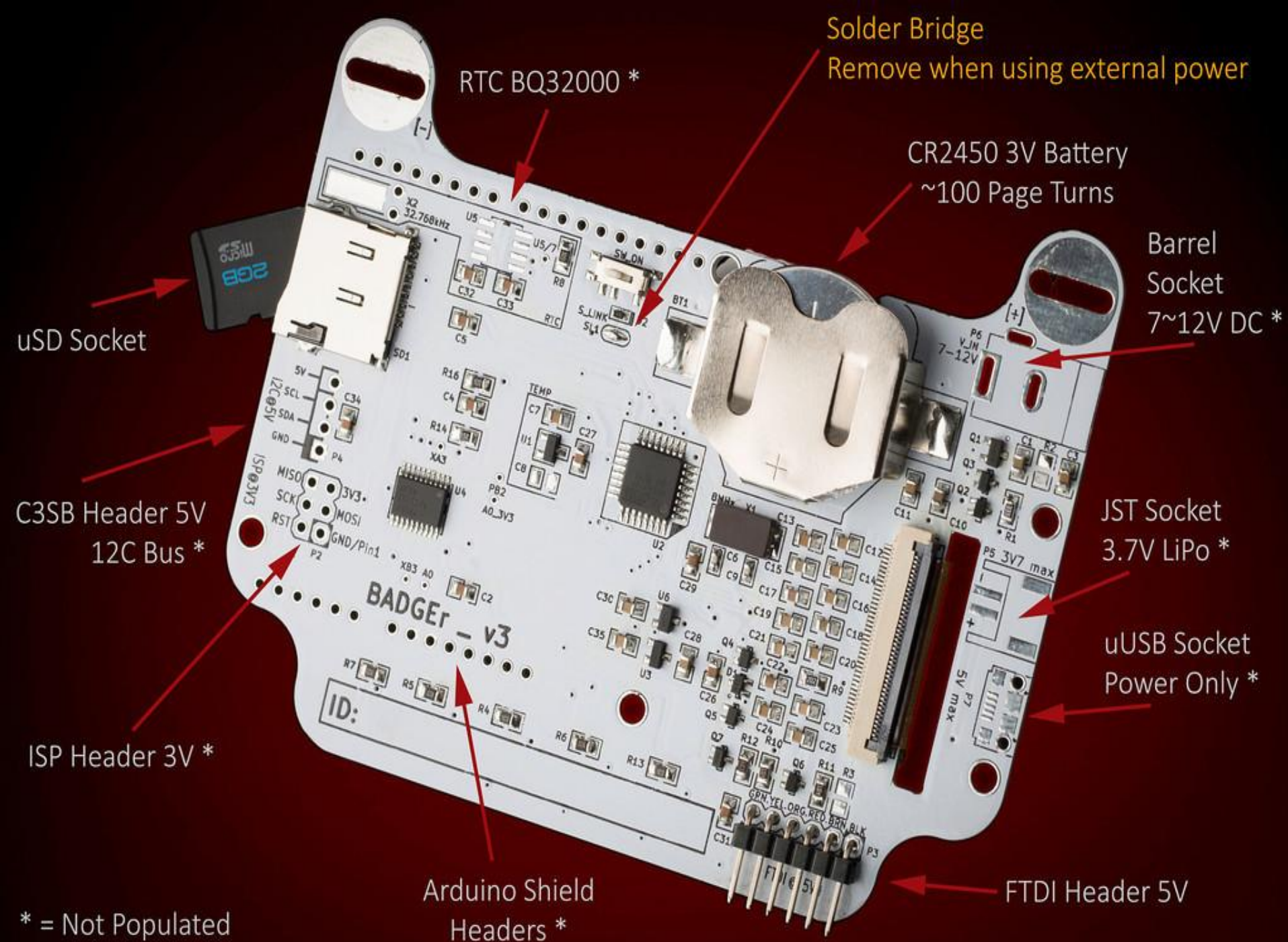


Power switch on the back switches your BADGER on



The red LED on the front indicates when power is on





\* = Not Populated



# Album.ino Badge Map

ALBUM/

Your personal  
information

A/

OHS♥2013

Speaker  
Sponsor  
Volunteer  
Demo  
Poster  
WYOLUM



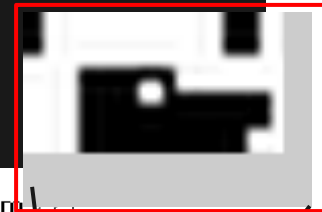
OHS♥2013

Speaker  
Sponsor  
Volunteer  
Demo  
Poster  
WYOLUM



OHS♥2013 WyoLum

Speaker  
Sponsor  
Volunteer  
Demo  
Poster  
WYOLUM



What's this?

Kevin Osborn Kevin Osborn Kevin Osborn

A.WIF

B.WIF

C.WIF

Sponsors

B/



adafruit . Visgence . Dangerous  
Prototypes . Tiny Circuits  
Artisan's ASYLUM . Blinkverse  
MITERS . Phenoptix . Element14  
Lasersaur . The Cupress . The Amp  
Hour . circuito . beagleboard  
minnowboard . Axiom . cooking  
hacks . Cluja . bonfire  
Engineer by night . Multiologica  
SOLARBOTITS . OSH Stencils  
DA VANTURES

A.WIF

B.WIF

C.WIF

...

Schedule

C/

8:00 Doors Open. Registration. Breakfast.  
Poster and demo set up.  
9:10 Opening Remarks! Addie Hasenknecht  
9:15 Keynote Eben Morlen + Community  
Plenary Session  
11:15 Break with snacks and refreshments  
11:30 Collective Innovations and Open  
Ecologies Plenary Session  
1:00 PM Lunch (included)! Poster and demo  
areas Open  
2:00 Democratizing Knowledge Plenary  
Session  
4:00 Break with snacks and refreshments  
4:15 Panel Implications of Open Source  
Business: Forking and Attribution +  
Audience Questions  
5:50 Closing Remarks  
6:00 Herd Out Time! Demos and Posters Open.  
Food, desserts, and drinks.

Innovation and Revolution  
Jeffrey Warren. Building a community one kit  
at a time  
Marcin Jakubowski The Open Source Industrial  
Revolution  
Phoenix Perry Embodied play design and  
building a female developer community  
Harris Kyriakou, Steven Englehardt, and  
Jeffrey U. Nickerson. Traces of Innovation  
in Thingiverse  
Charles Gracey and David Carrier. Developing  
a processor with open source hardware  
Bilal Ghaliq What?  
Andreas Olofsson. Parallella Democratizing  
access to supercomputing through open  
hardware  
Paulo Blikstein and Arnan Sipitakiat How  
open hardware can revolutionize education  
(or how we might fail miserably)

Democratizing Knowledge  
Justin Shaw, Anool Mahadira and Kevin  
Osborn. BRIDGE: E-Paper for the rest of us  
Ryan Fobel DronBot: an open-source platform  
for lab automation  
J. Simmons. Export Controls and Open Source  
Hardware  
Julius Baxter. Open Chip Development: What  
there is to gain, and is it possible?  
Becky Stern. Wearables at the intersection  
of electronics and craft  
Josef Prusa. State of the RepRap  
Stefan Hechenberger The Lasersaur Project.  
What's next?

Collective Innovations  
Michael Weinberg. Open Hardware Licenses  
DonEAST Matter  
Alice Kinn. Open Source Funding  
Randa MBZ Collective Innovation #A8 Enjoy  
The Mess  
Ken Burns. Launching an Open Source Hardware  
Business with Crowdfunding  
Nathalie Berchon. The State of Open Hardware  
Entrepreneurship in 2015  
Ted Hayes. The State of (the Internet of)  
Things  
Pablo Garcia and Golan Levin. NeoLucida  
Jean-Luc Ninert Desafio: 100km 1liter Open  
Hardware can race

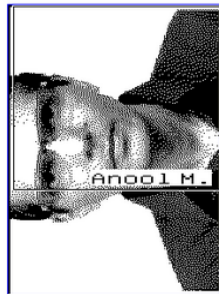
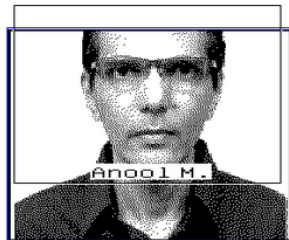
A.WIF

B.WIF

C.WIF

...

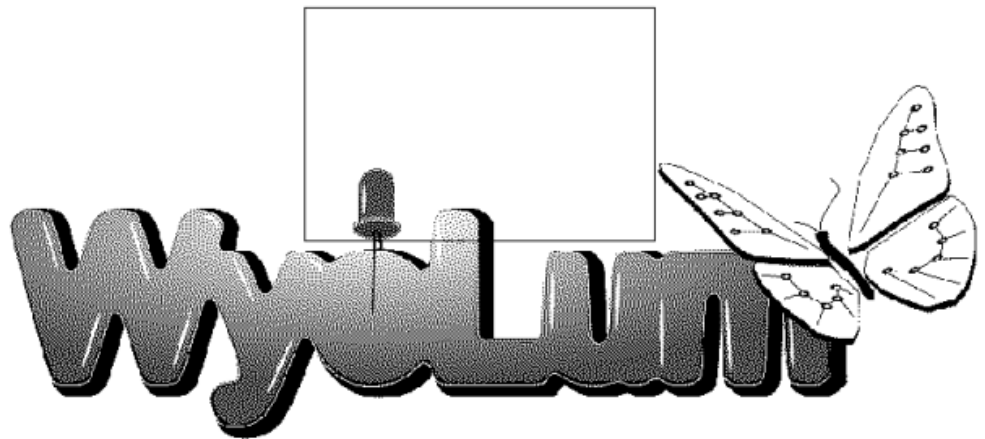
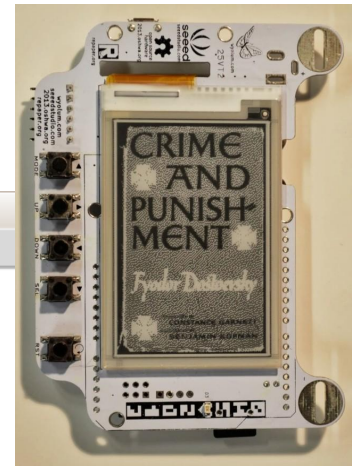
# Image Hacking



我們愛種子工作室！

WyoLum Image Format!

File Size Insert



<http://wyolum.com/installing-wifit-py-on-linux/>  
<http://wyolum.com/installing-wifit-py-on-windows/>  
Prefer Mac? We need your help.

Prev

Contrast  
1.00

Brightness  
1.00

Next

# Programming BADGEr

Load new images onto SD card

Photobooth

wifit.py

Program via FTDI header, or ISP

EReader Arduino library

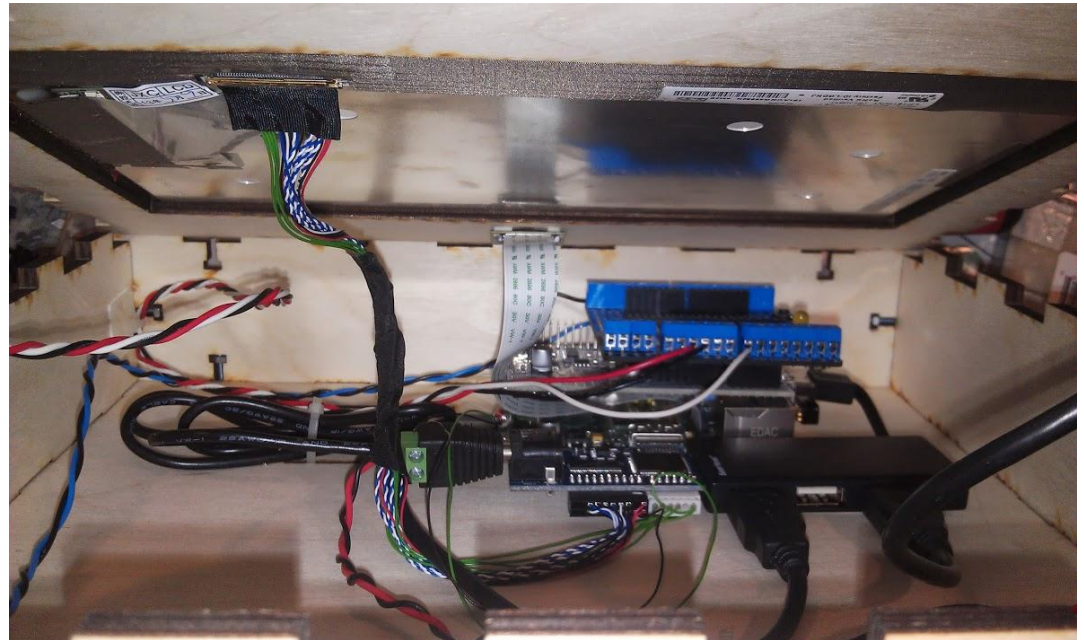
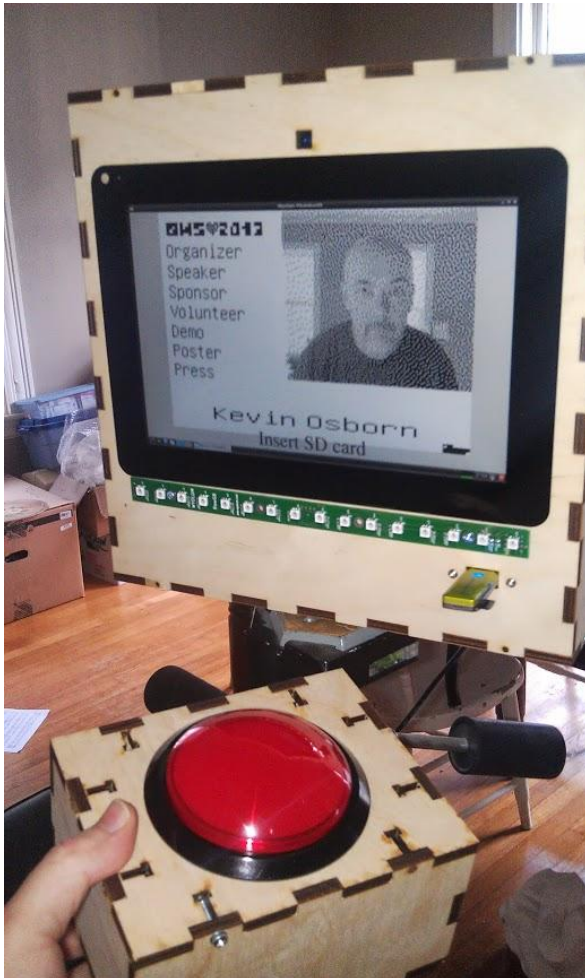
<http://wyolum.com/downloads/ereader.zip>

Arduino Headers



# OHS Photobooth

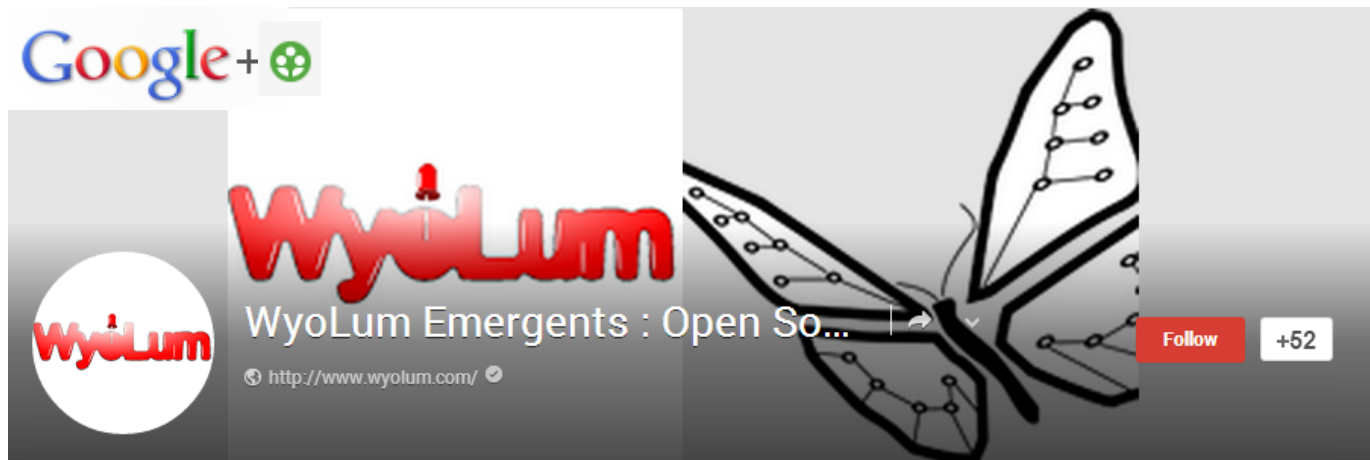
Personal Details merged  
from/ALBUM/A/person.csv



Raspberry Pi, Raspberry Pi camera, Alamode, Chalk-elec display, USB hub, RowGB LED strip, Big red button

# Share your hacks!

WyoLum Emergents -> BADGEr Hacks



WyoLum on Facebook/Twitter

# What's next?

SD Ram for faster page updates

5V, 16 MHz

Offer complete conference solution



# Thanks to our sponsors



Justin Shaw  
Anool Mahidharia  
Kevin Osborn  
Brian Krontz  
David Pincus



Sean Moss-Pultz  
Charming Su



Nana Chou 周秦娜  
Eric Pan  
Jin Shiqin 靳世钦

# OHS2014 Badges?

