

Hardware Startup Meetup

@tamberg

(New) Hardware Startups

- Connected products
- Prototyping got easier, cheaper
- Maker movement, growing ecosystem
- Crowdfunding enables producing a first batch
- Lean Manufacturing, "Made with China"
- Build products faster, with less resources

Connected Products

- Smaller, cheaper, faster computers (Moore)
- Ubiquitous connectivity (WiFi, 3G, ...)
- Sensors and actuators
- Products become services
- Hardware becomes more like software

Installation

Nest Labs claims that most customers can install the device in 30 minutes or less.

MAIN UNIT

Contains display, sensors and controls. Plugs into the base unit.



BASE UNIT

Mounts on wall and connects to heating and cooling system wiring.



STAINLESS STEEL RING

Used to set the temperature and control the interface.

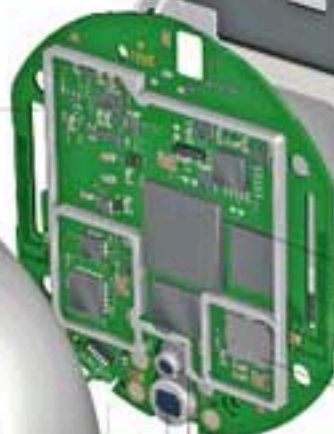
RF SHIELD FRAME

(shield removed to show components)



L.C.D. DISPLAY

SENSOR WINDOW



TEMPERATURE AND HUMIDITY SENSOR

BUBBLE LEVEL
For levelling during installation.

BATTERY

MICROPROCESSOR

WI-FI ANTENNA

RADIO
Connects with home Wi-Fi network

NEAR-FIELD MOTION SENSOR

FAR-FIELD MOTION SENSOR

AMBIENT LIGHT SENSOR

TEMPERATURE SENSOR AND RING
MOTION DETECTOR BOARD

Remote Operation

Mobile apps enable Nest to be operated remotely via Wi-Fi using a smartphone, tablet or laptop. The iPad app is shown below.



A Few Features

AUTO-AWAY uses motion sensors to determine when a house is empty and automatically switches to away temperature.

AUTO-SCHEDULE allows Nest to program itself by monitoring user-made temperature changes for approximately a week.

AIRWAVE saves energy by turning off the air-conditioner a few minutes early, but keeping the fan running.

Visual Cues

The display's background is normally black, but changes to orange when heating and blue when cooling.



CONTROL

The interface is operated by rotating the stainless steel ring and pressing the main unit.



MENU

Brings up various screens including energy history and user settings.



NEST LEAF

Appears on the display when an energy-saving temperature is chosen.



TIME TO TEMPERATURE

Estimates time remaining to reach a manually selected temperature.

CogniToys Leverages Watson's Brain to Befriend, Teach Your Kids

By Evan Ackerman

Posted 20 Feb 2015 | 0:19 GMT

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MIND. BLOWN.

5 Days. 50 Events.
May 27-31, New York City

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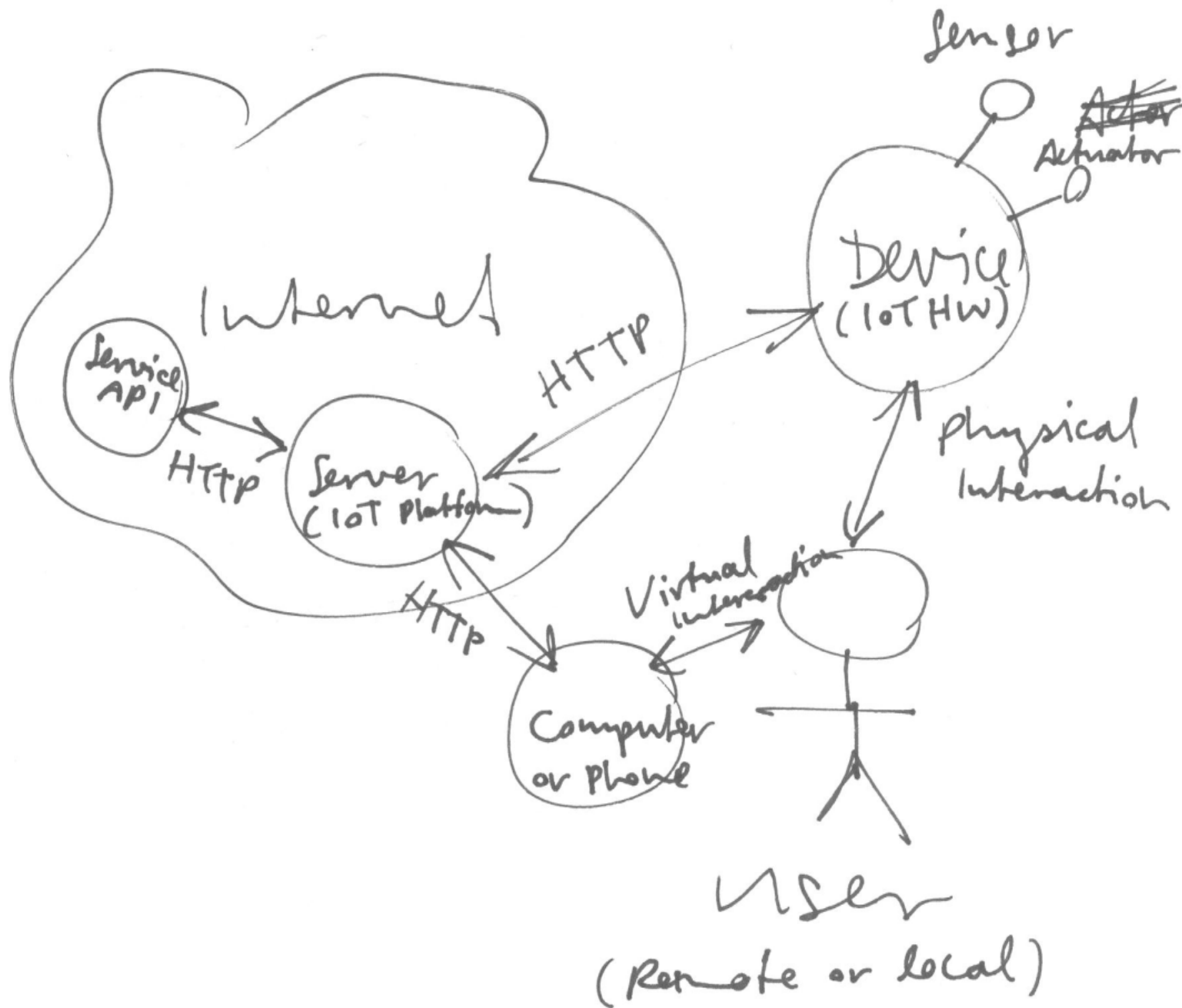


Tech Talk

IEEE Spectrum's general technology blog, featuring news, analysis, and opinions about engineering, consumer electronics, and technology and society, from the editorial staff and freelance contributors.

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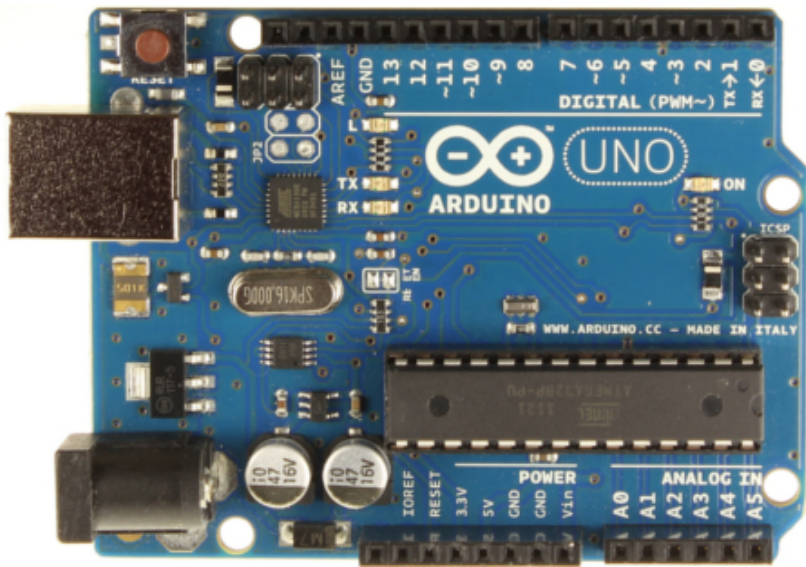
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Prototyping

- Easy to use electronics (Arduino, Raspberry Pi)
- Online Shops (Adafruit, Sparkfun, AliExpress)
- 3D Printing (at home, Fablab or as a service)
- Laser-cutting, CNC milling (at local Fablab)
- PCB production, Pick-n-place (local or China)
- Open licenses enable reuse





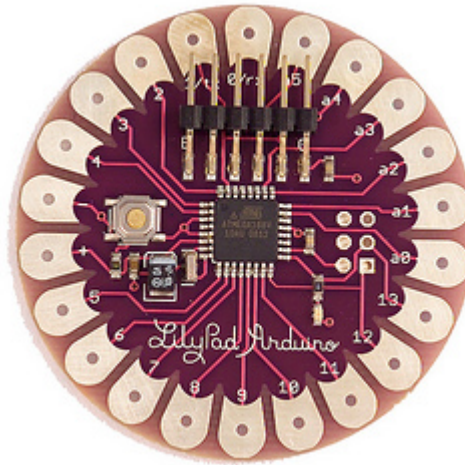
arduino.cc/en/Main/arduinoBoardUno



jeelabs.com/products/jeenode



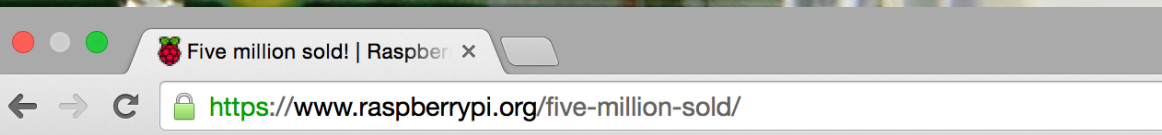
hlt.media.mit.edu/?p=2182



arduino.cc/en/Main/ArduinoBoardLilyPad



tiny-circuits.com/products/tinyduino



BLOG

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FIVE MILLION SOLD!





fabtronics.tumblr.com



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Images

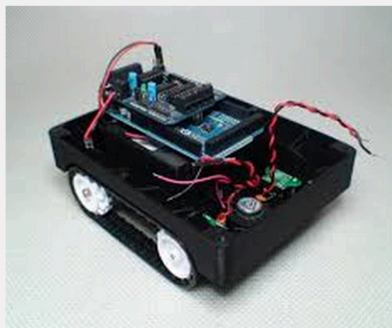
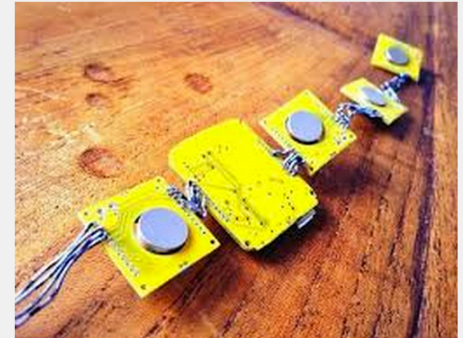
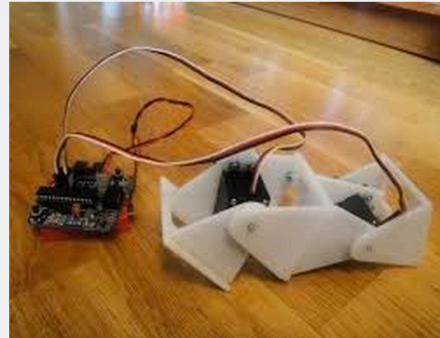
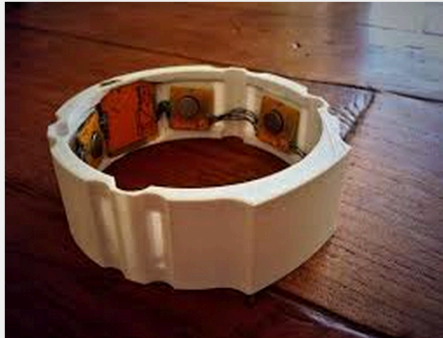
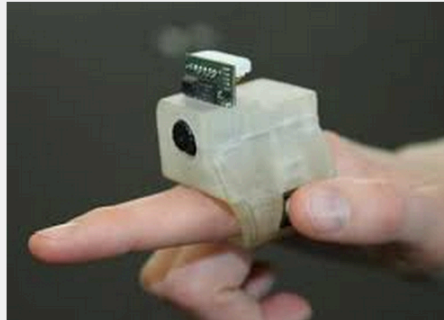
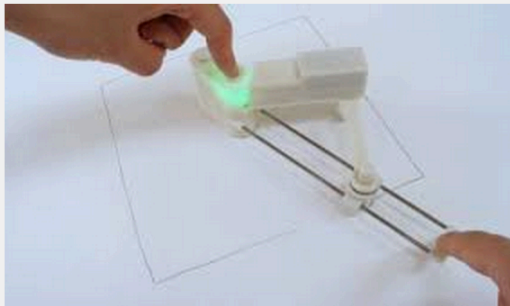
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laser cutter prototyping



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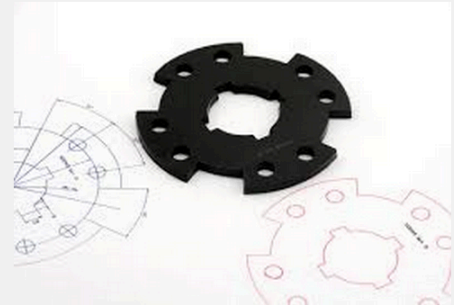
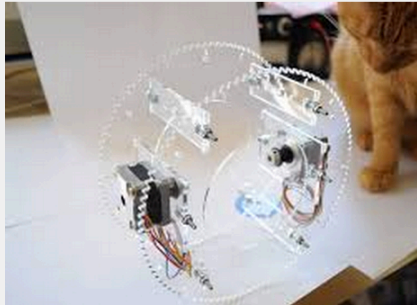
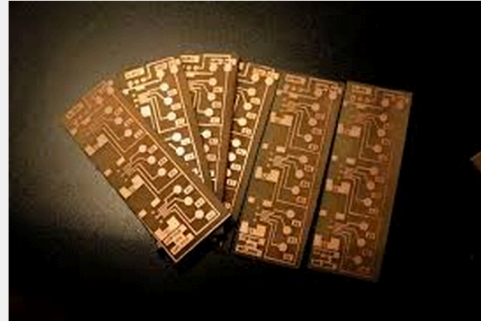
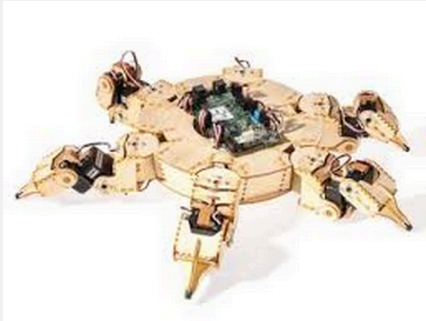
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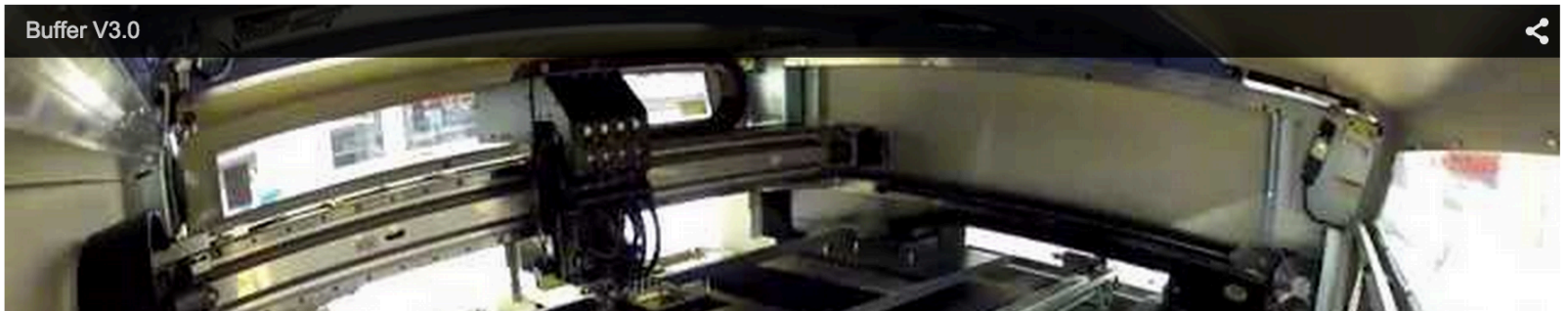
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Search tools





Buffer V3.0



Maker Movement

- Blogs (Hackaday, Lifehacker, Make)
- Online tutorials (Instructables, Adafruit)
- Hackerspaces (SGMK MechArtLab, Dock18)
- Fablabs (Zürich, Luzern, Bern, Neuchatel)
- Meetups (IoT, 3D Printing, Hacking Health)
- Maker Faires (Maker Faire Rome, 90k Visitors)
- Make, Learn, Share!

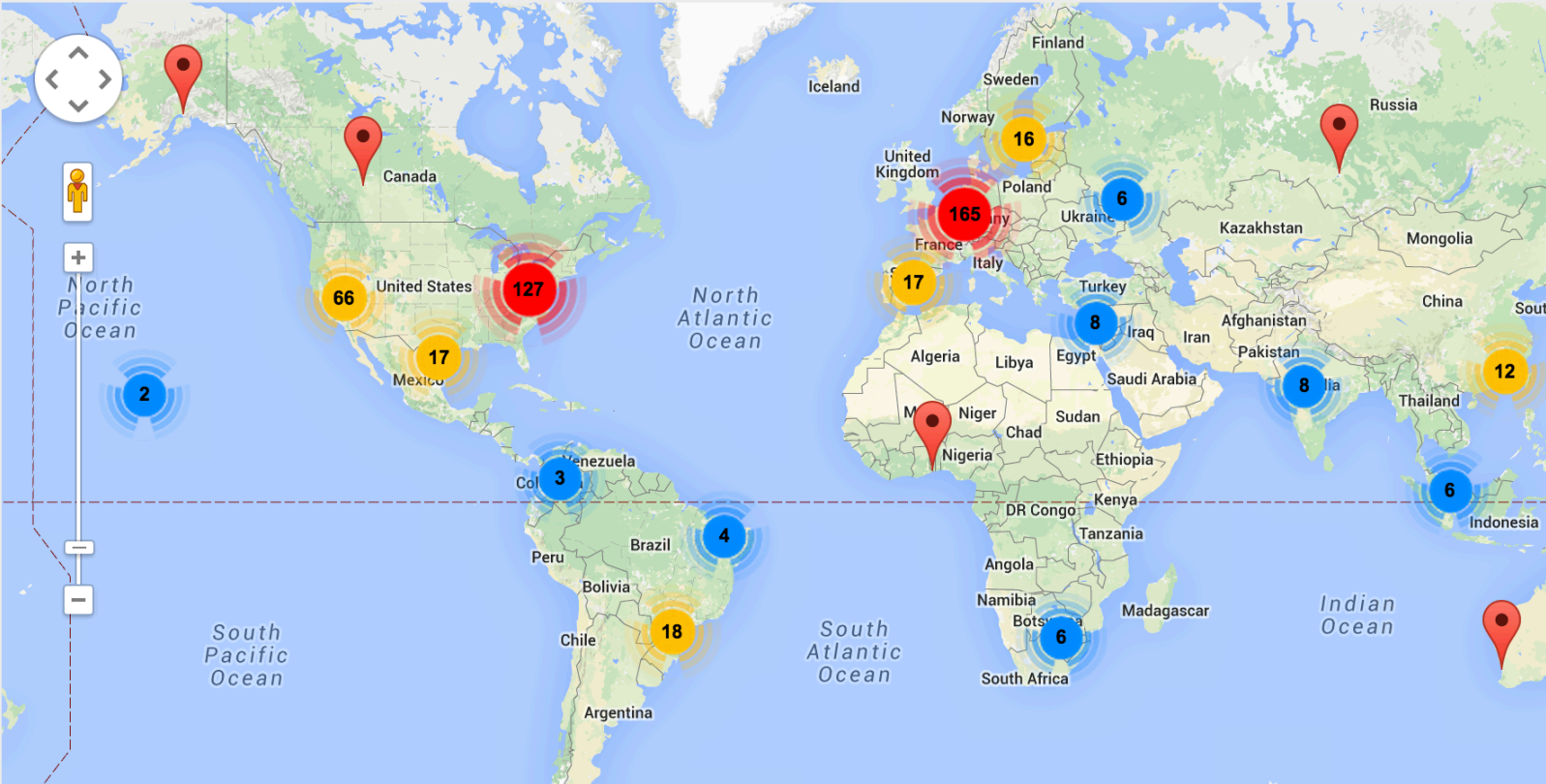
- Hackerspaces
- Communication
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- ALL hackerspaces
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List of Hacker Spaces

This is a comprehensive, user-maintained list of all active hackerspaces throughout the world.

There are currently 1902 hackerspaces listed in this wiki, 1150 of them are marked as active and 349 as planned. We have also a [list of planned hackerspaces](#) as well as a [list of ALL hackerspaces](#) around the globe - including those still in building process - or already closed. Realtime data of some active hackerspaces is provided by the [Space API](#) project.

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Official Register of Fab Labs in Switzerland

These labs are officially recognized Fab Labs in Switzerland:

- Fab Lab Luzern, <http://luzern.fablab.ch>
- Fab Lab Neuchatel, <http://neuch.fablab.ch>
- Fab Lab Lugano, <http://fablab.supsi.ch/>
- Fab Lab Zürich, <http://zurich.fablab.ch>
- Fab Lab Bern, <http://fablab-bern.ch>
- Fab Lab Chêne 20 / Renens, <http://www.fablab-chene20.ch>
- Fab Lab La Côte, <http://www.fablab-lacote.ch>
- Fab Lab Fribourg, <http://fablab-fribourg.ch/>

There are a number of Fab Lab initiatives:

- Funlab in Zürich, <http://funlab.ch/>
- Fab Lab Geneva, <https://fablab-ge.ch>
- Fab Lab Basel, <http://www.starship-factory.ch>
- Fab Lab Winti, <http://www.fablabwinti.ch/>



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Crowdfunding & Accelerators

- Kickstarter, Indiegogo, CrowdSupply, WeMakelt
- Hax.co, Highway1.io, Hardware.co, Bolt.io
- Quirky

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The Program

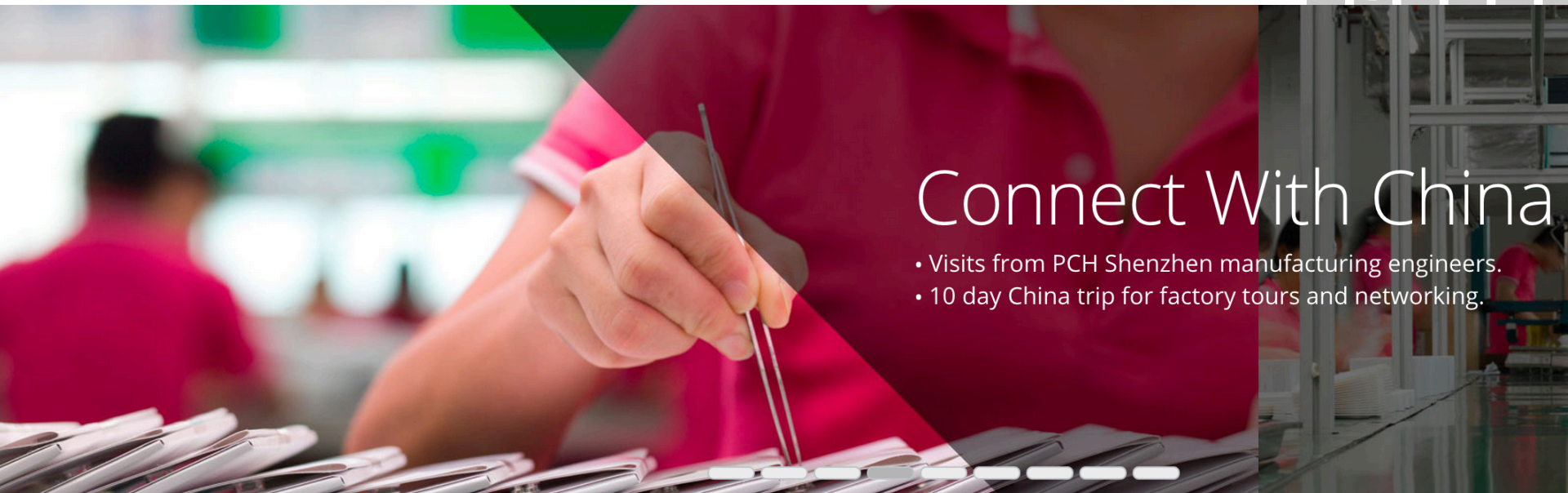
Startups

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You've got a prototype. We've got a roadmap.

Highway1, a division of PCH, is a hardware startup accelerator located in San Francisco looking for great hardware startups with exciting business ideas and compelling prototypes. We help you design products that deliver real value to customers, are delightful to use, and can be manufactured at scale. [Learn more.](#)

Check out the [preview video](#) for our January 2014 demo day earlier this year.



Highway1 is featured in Episode 9 of Incubated from TechCrunch TV. [Watch here.](#)

Made with China

- ~~Cheap knock-offs~~ Best products
- Design for Manufacturing
- Testing and Shipping
- Seeed Studio
- "is in the Bay Area"
- "your portal to Shenzen"

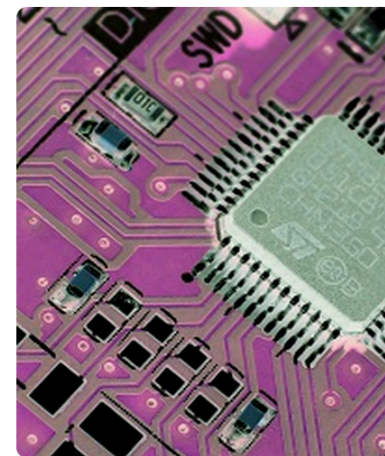


Open Parts Library recommendation

OPL is a package of 500+ kinds of components which are commonly-used, DFM friendly and sufficient stock. Also, we share their eagle library to download, which can greatly increase the development efficiency and accelerate the engineering/manufacturing speed. OPL is highly recommended and common in the open source community, including IC, resistor, capacitor, inductor, diode, crystal, oscillator, connector and fuse, etc. [Learn more about OPL](#)

DFM (Design for Manufacture)

DFM leads to enormous benefits including reduction of assemble costs, better quality, shorter lead time, among many others. We will output DFM review report to our customers for modification. Within our DFM review report, we focus on reviewing production files including Gerber, BOM, Mechanical Drawing, Test requirement and manufacturability etc.



NPI (New Product Introduction)

Upon introducing a new product, we set up a standard process for introduction, including performing DFM analysis to ensure product manufacturability, cross checking production files (BOM, Gerber, test plan, sample), inputting manufacturing requirements, establishing quality control plan. By the end of a trial production, we will



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Products **3**

Sort By: New Arrivals Best S



BLE-Shield v2.0.0 based on Bluegiga's
BLE112 Module
SKU: 830023001
\$69.00



BLEBee v1.0.0
SKU: 803001001
\$39.00

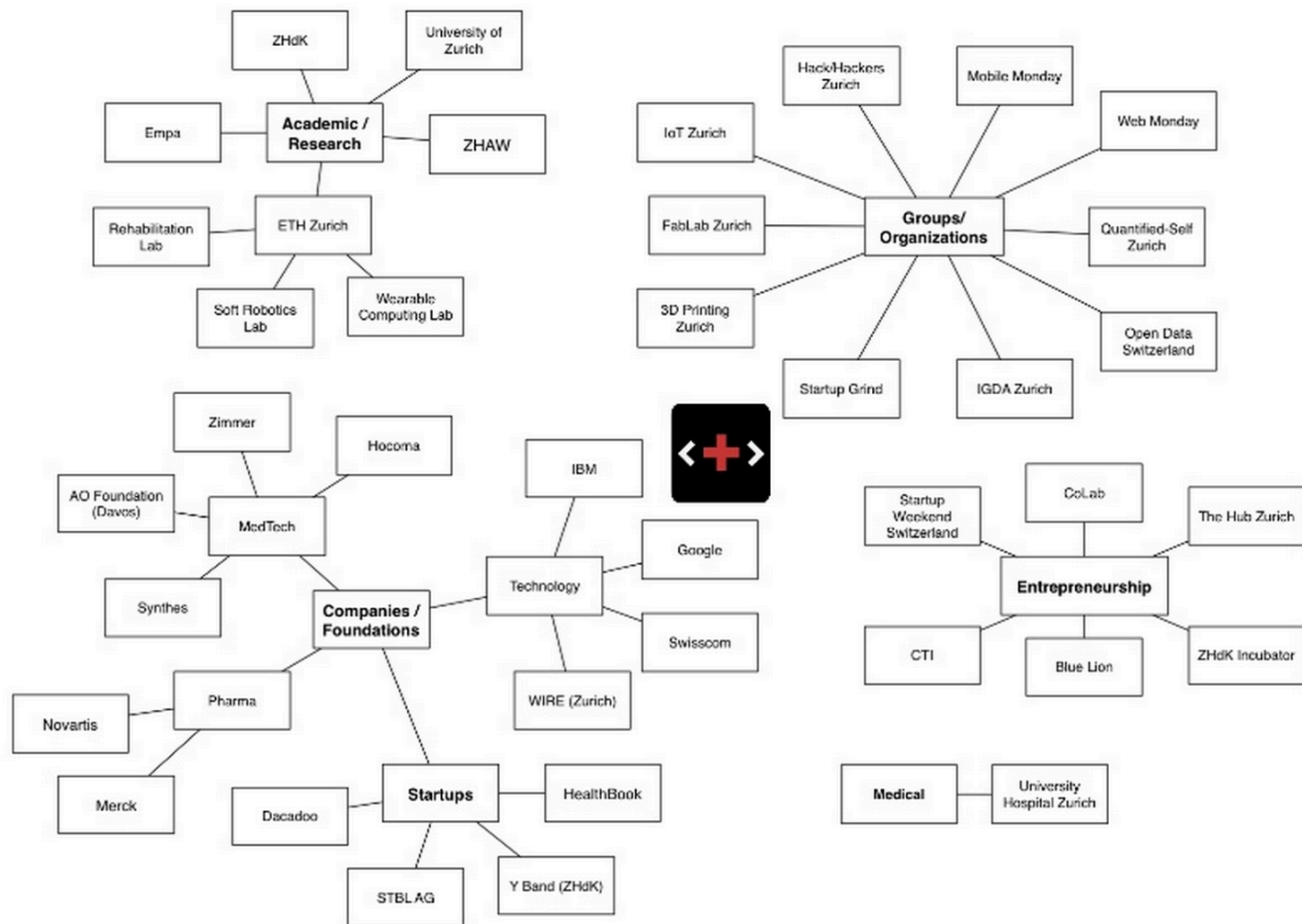


BLE-Shield based on Bluegiga's BLE112
Module
SKU: SLD02011M
\$69.00

Zürich "Innovation Ecosystem"

- Grass-roots: Fablab, Meetups, Hackerspaces
- Academic research: University, ETH, FHs
- Entrepreneurship: Impact Hub, BlueLion
- BigCos: Google, IBM, Swisscom
- SMEs: R2Prototyping, Art of Technology
- Startups: Koubachi, Kaddz, Neeo, ...

ZURICH ECOSYSTEM



Meetups in Zürich

- IoT Meetup
- 3D Printing Meetup
- Lean Startup Meetup
- Hacking Health Meetup
- Machine Learning Meetup
- (Many) Programming Meetups

- Why yet another Meetup?

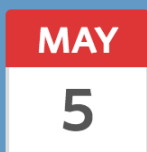


Find
a Meetup Group

Start
a Meetup Group



Your Next Meetup



Hardware Startup Zürich Meetup

Kick-off meeting at Impact Hub Zürich

Tuesday, May 5 at 6:30 PM | 9 Comments

25

Meetups in your group

476

Meetups nearby

All Meetups



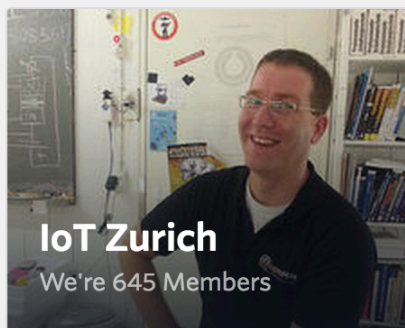
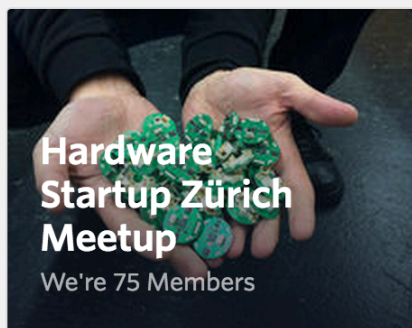
within 50 miles of Zürich, CH

Groups

Calendar

Your Meetups

Sort by Recommended



Hardware Startup Meetup

- Bring people together
- See what happens elsewhere
- Visit local makers, labs and companies
- Open up existing resources and knowledge
- What do you think?