

Tech Garage

Miami Ad School

Sebastian Martens, 04.2016

<http://techgarage.lecture.nonstatics.com//>



Tech Garage

Creative Technology - Introduction

Tech Garage

Workshop Days

- Thues, 07.04., 18.00 - 21.00
- Thues, 21.04., 18.00 - 21.00
- Thues, 28.04., 18.00 - 21.00
- Thues, 12.05., 18.00 - 21.00, Face 2 Face Exercise
- Thues, 26.05., 18.00 - 21.00
- Thues, 02.06., 18.00 - 21.00, Face 2 Face

Tech Garage

Face 2 Face

- Face 2 Face task will be given at 12.05.
- Face 2 Face should be done in small groups
- Face 2 Face will be developing an idea **plus** creating an functional prototype
- Face 2 Face need to be documented by a small video

Sebastian Martens

Director Creative Technologies, Fork (fischerAppelt)

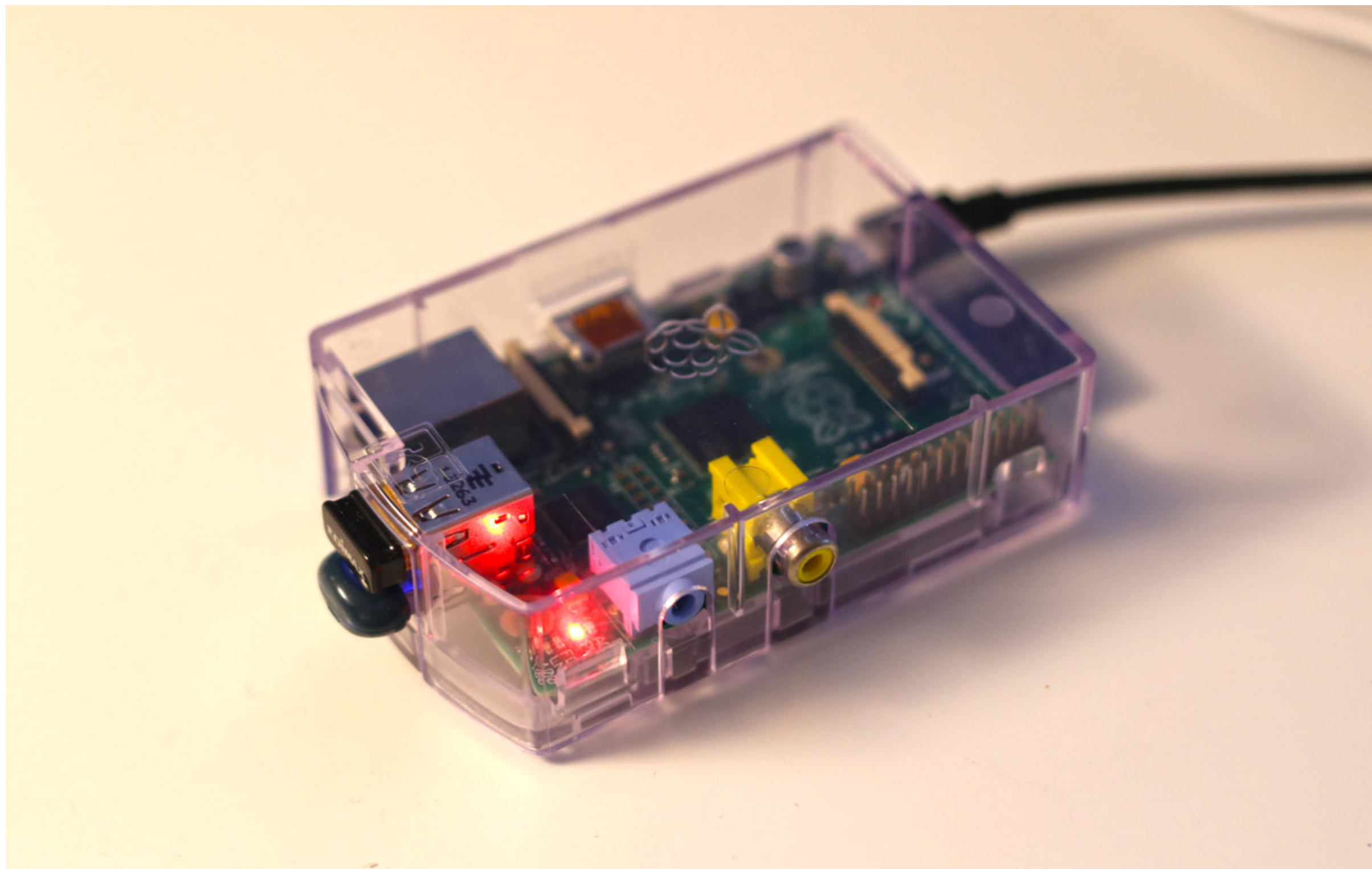
sm@nonstatics.com

Who are you ?
What did you expect ?

Welcome to the real World



Raspberry PI



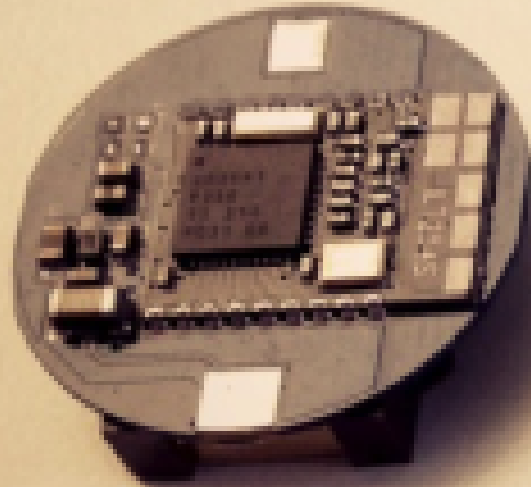


Raspberry Pi

The Raspberry Pi is a credit card-sized single-board computer developed in the UK by the Raspberry Pi Foundation with the intention of promoting the teaching of basic computer science in schools.

- "Full functional computer"
 - Running Linux
 - 20€/pcs
- <http://www.raspberrypi.org/>

iBeacons



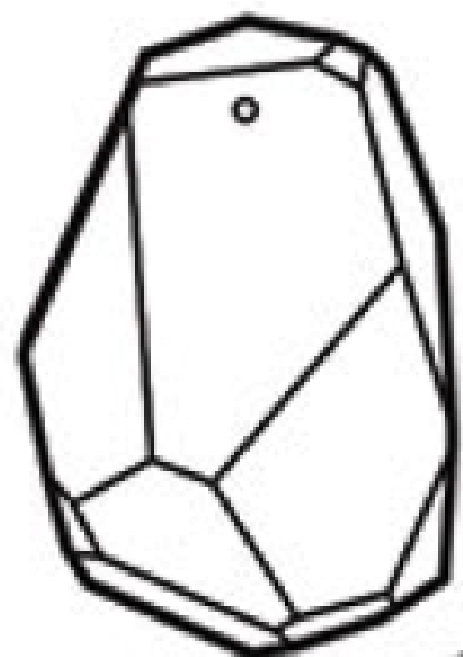


iBeacon

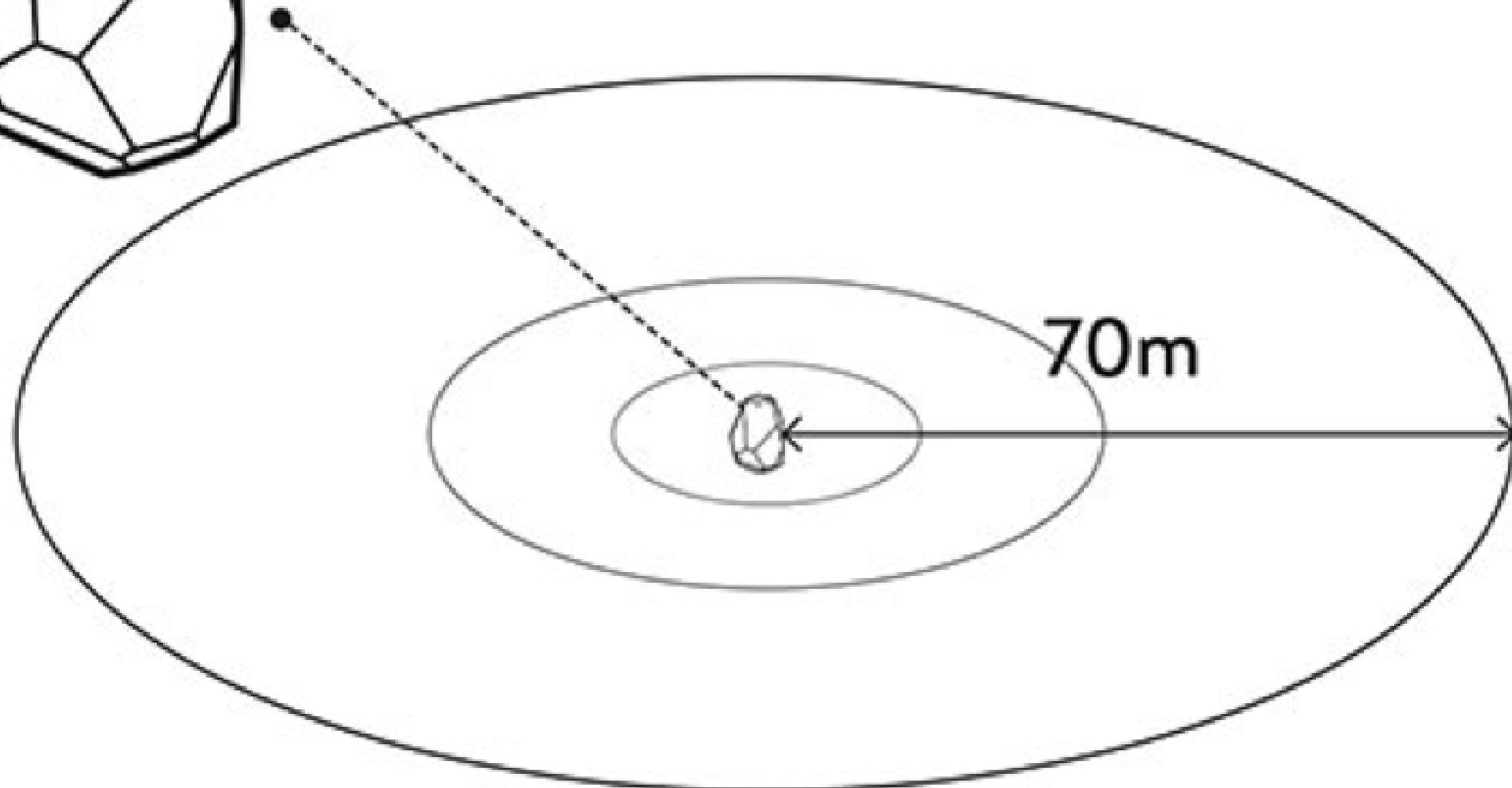
iBeacons (name by Apple, Beacons in general) are small low energy Bluetooth transmitter.

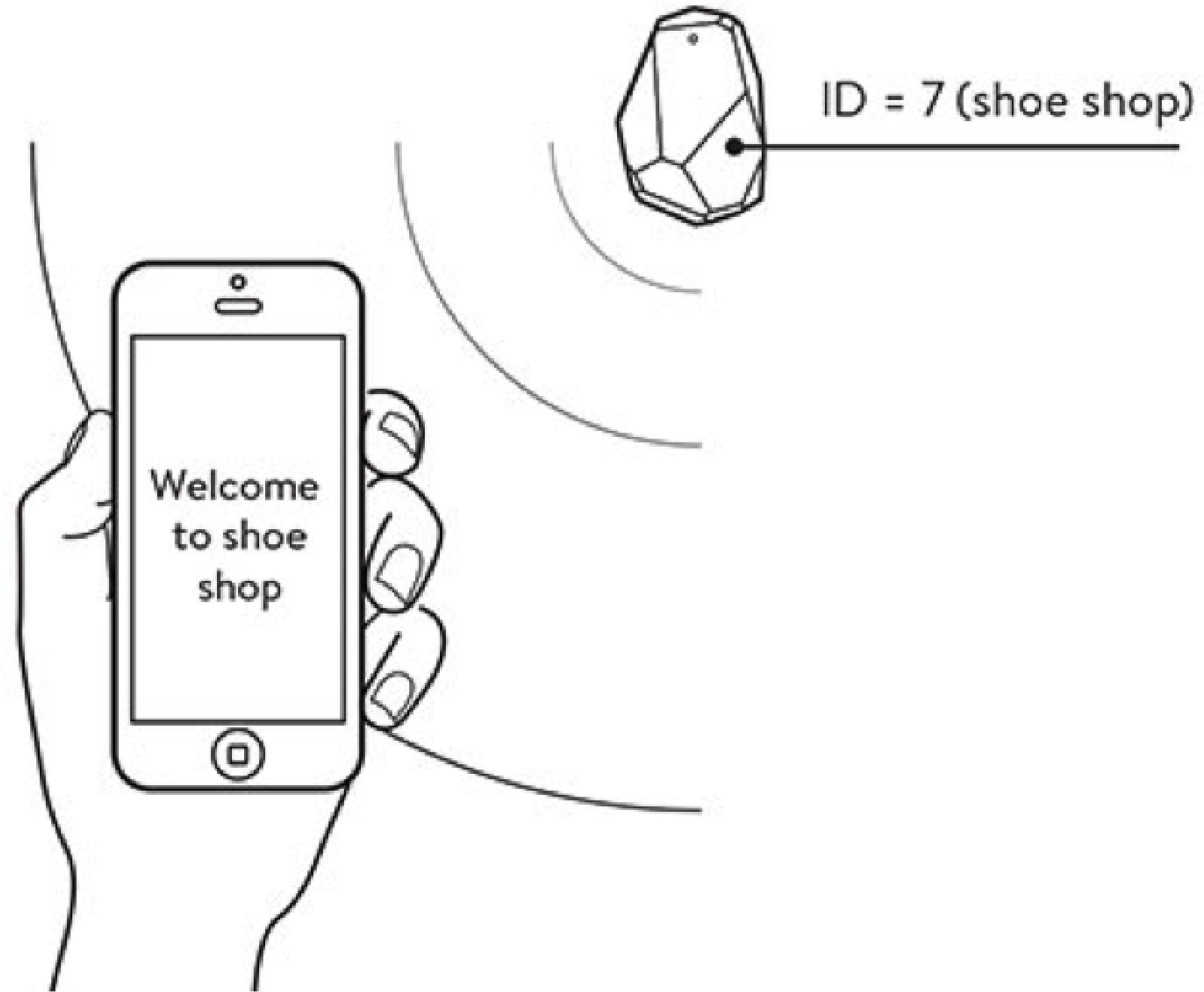
- Bluetooth 4.0 Standard Protocol (by Nokia)
- Low Energy Consumption
- 20€/pcs (decreasing)
- iOS 7+ / Android 4.3+

<http://en.wikipedia.org/wiki/IBeacon>

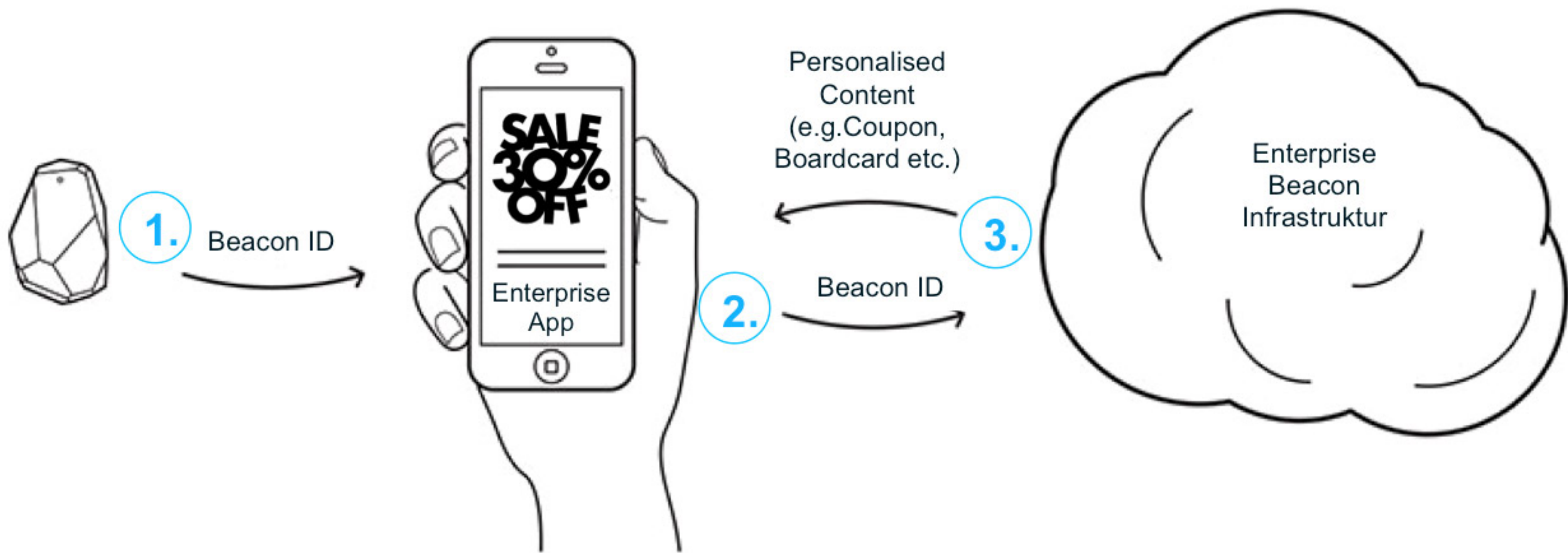


 **Bluetooth[®]**
SMART

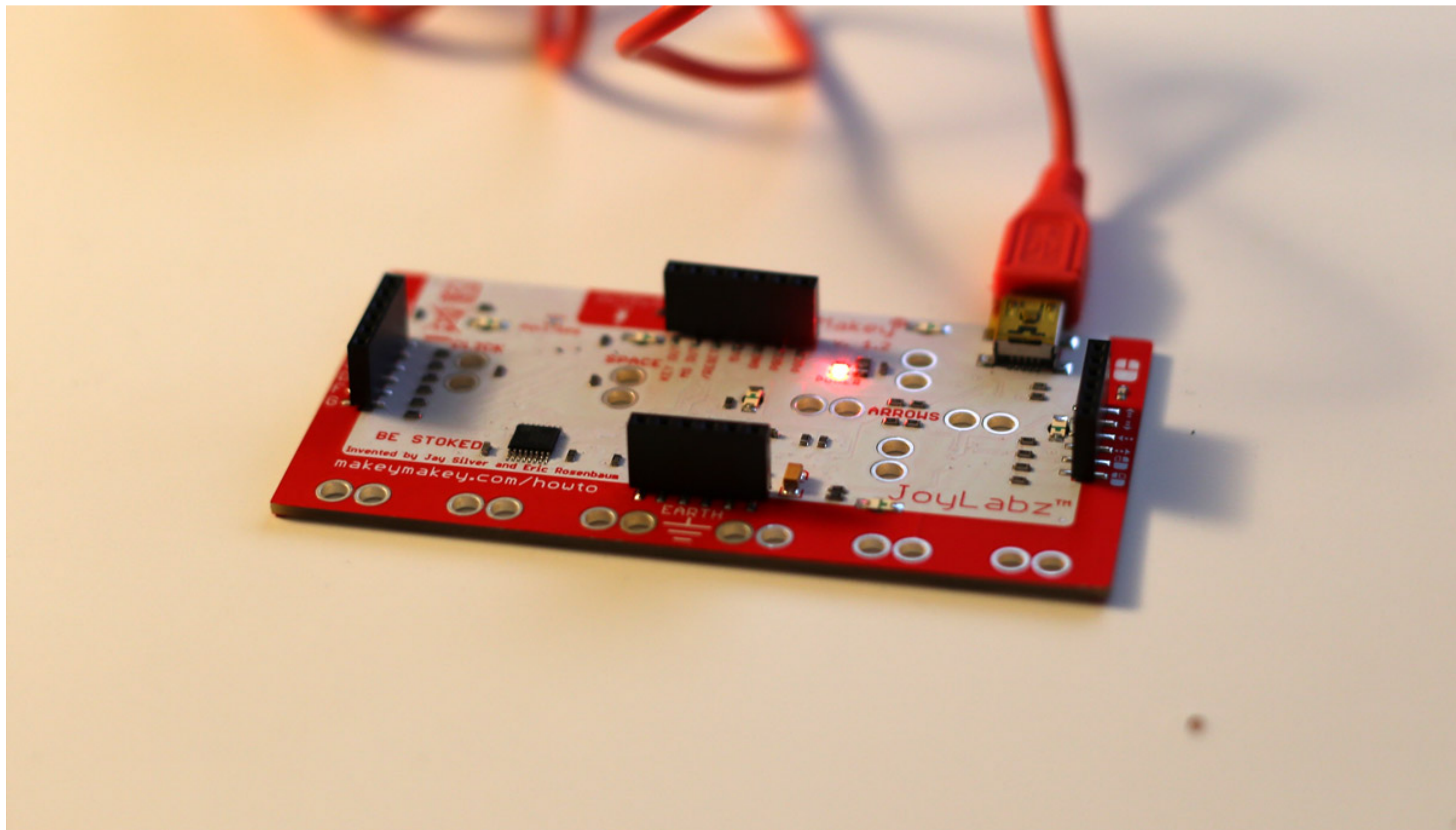


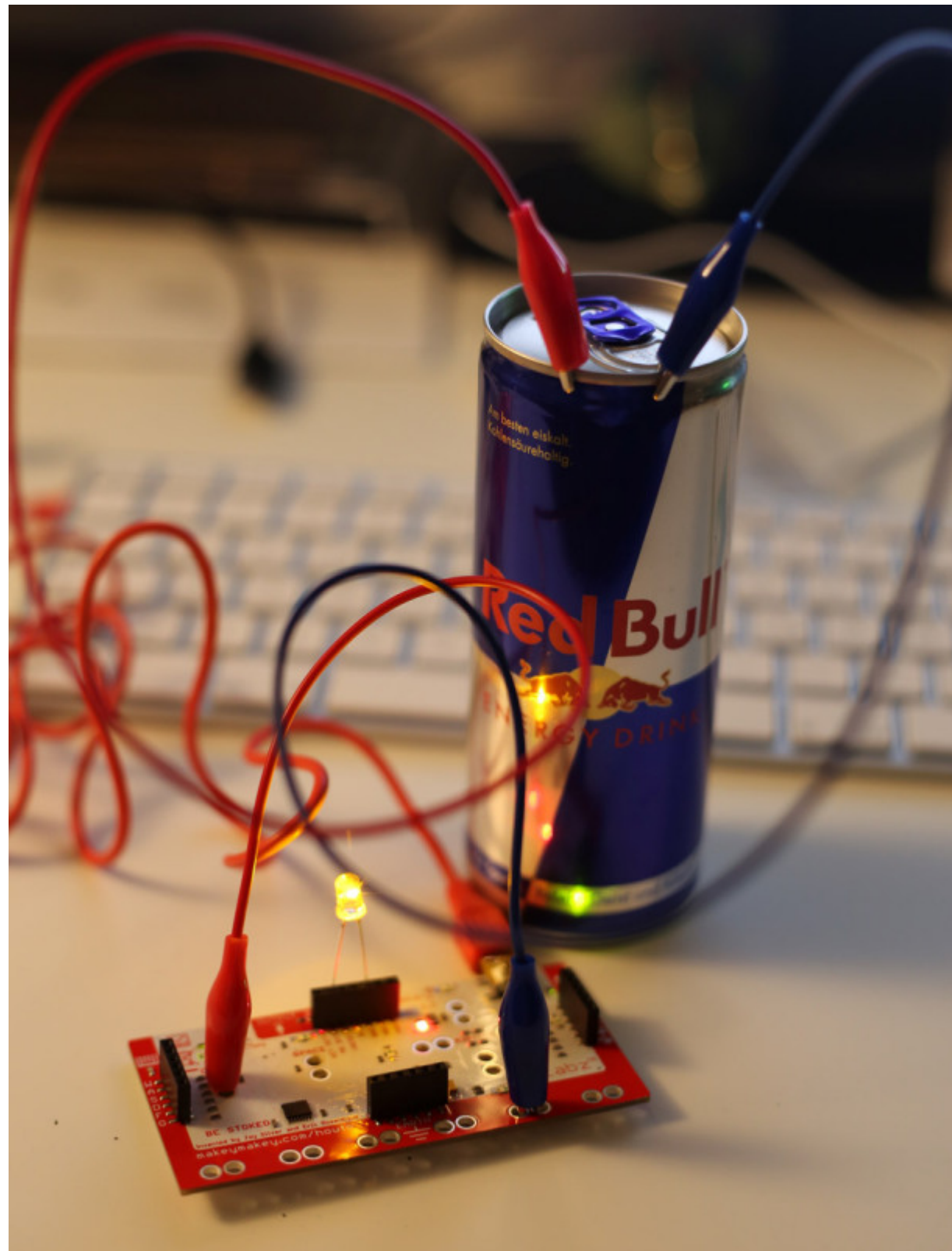


1 1



Makey Makey





Makey Makey

A Makey Makey is a small board interpreting simple electric connections as simple keyboard events (click, arrow up/down/left/right, ...)

- Power via USB Connection
 - Super Simple Use
 - 45€/pcs
- <http://www.makeymakey.com>





Leap Motion



Leap Motion

The Leap Motion controller is a small USB peripheral device. Using two monochromatic IR cameras and three infrared LEDs, the device observes a roughly hemispherical area. The LEDs generate a 3D pattern of dots of IR light analyzed by the Leap Motion controller software synthesizing 3D position data by comparing the 2D frames generated by the two cameras.

- Powerful API
- Precise 3D geometrics on close distance
- 95€/pcs

<https://developer.leapmotion.com/leapjs/welcome>

Arduino

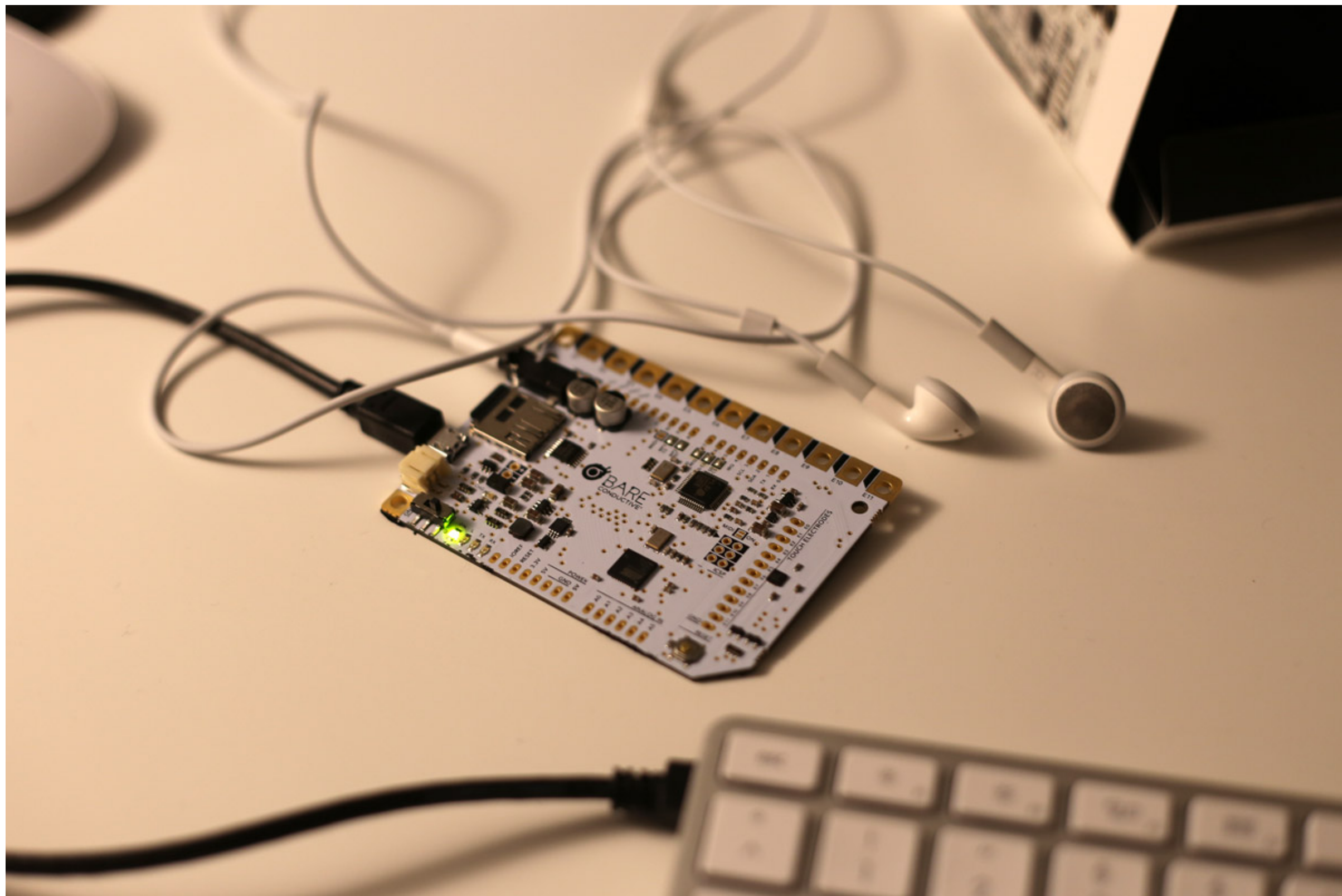


Arduino

Arduino is a family of single-board microcontrollers, intended to make it easier to build interactive objects or environments.[1] The hardware consists of an open-source hardware board designed around an 8-bit Atmel AVR microcontroller or a 32-bit Atmel ARM. Current models feature a USB interface together with six analog input pins and 14 digital I/O pins that can accommodate various extension boards.

- Open Source Hardware Standard
 - Wide range of accessories
 - starting 20€/pcs
- <http://www.arduino.cc/>

Bare Conductive Touch



Bare Conductive - Touch Board

The touch board by Bare Conductive is a Arduino based board, specialised on sounds. It easily connects simple touch or electric connections with sound plays.

- Arduino based
- Very simple to use
- 60€/pcs

<http://www.bareconductive.com/>

IFTTT

Create a Recipe

if this then that

Choose Trigger Channel step 1 of 7

Showing Channels that provide at least one Trigger. [View all Channels](#)

500px



Adafruit



Amazon Alexa



Android Battery



Android Device



Android Location



Android Phone Call



Android Photos



Android SMS



Android Wear



App.net



AppZapp



Automatic



Beeminder



Best Buy



bitly



Blogger



Boxoh Package Tracking



Btn



Buffer



BuzzFeed



Camio



Campfire



Chain



Craigslis



Dailymotion



Dash



Date & Time



Deezer



Delicious



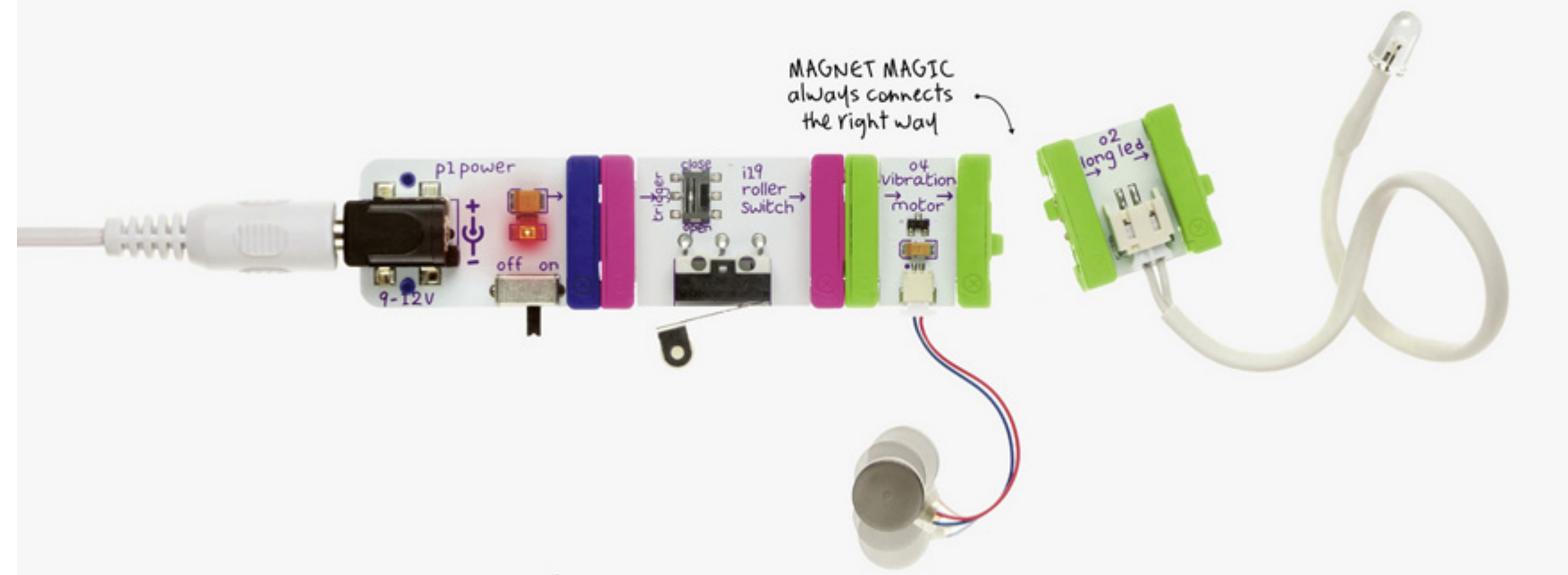
IFTTT

Super simple web client for connecting different web services and creating application chains.

- Super easy
 - Super powerful
 - Super connectiv
- <https://ifttt.com/>

Little Bits

1. START WITH A CIRCUIT

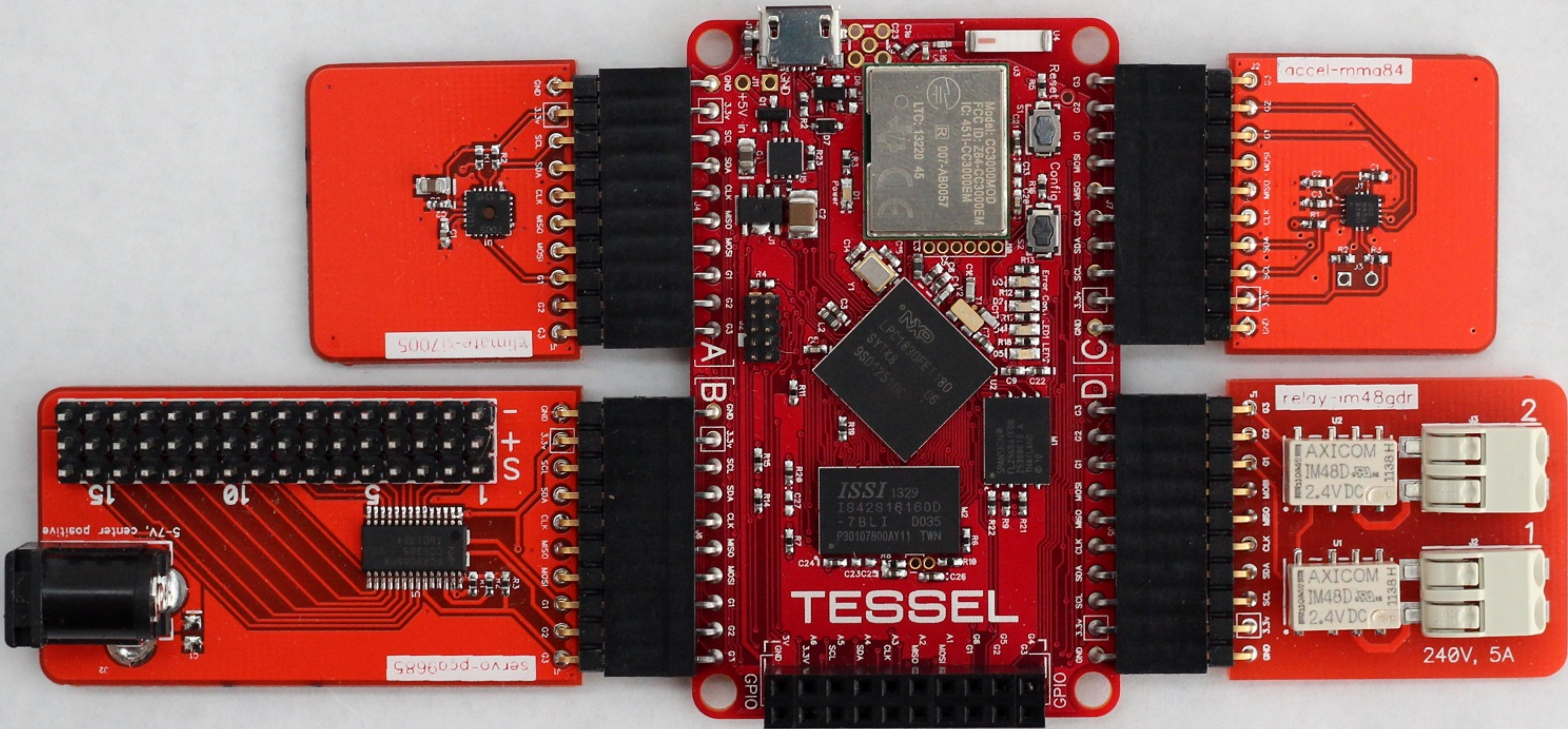


Little Bits

Little Bits are very simple building blocks for mostly educative use.

- Simple kits start at 150€
 - Simple connection
 - Easy start
- <http://littlebits.cc>

Tessel



Tessel

Tessel is a simple hardware platform, which is programable by Node.js code.

- affordable basic module (35\$, extensions 10-50\$)
 - Easy API by very common Node.js
 - Simple examples and modules
- <https://tessel.io/>

MindWave



MindWave

The Neurosky is a very simplified Brainwave detector which tracks the alpha, beta, gamma and delta brainwaves. It is connected via bluetooth and allows the connection via variable APIs.

- Cheap Brainwave detection (~100€)
- Easy API
- Simple Connection

<http://store.neurosky.com/products/mindwave-1>

MindWave

Examples

- <http://localhost:8888/JFWP/bin-debug/JFWP.html> (local)
- <http://blog.sebastian-martens.de/gedankenmusik>
 - <http://n.onst.at/ics/mome1>
 - <http://n.onst.at/ics/mom2>

Lego Mindstorms

WiiMote

blink(1)



blink(1) mk2

Node-RED

Node-RED interface showing a workflow for processing PubNub data and publishing messages.

Workflow:

- Subscribe:**
 - PubNub raw data (green node)
 - json (yellow node)
 - Filter Messages (yellow node)
- Publish:**
 - inject (blue node) with payload: `{"news": "Hello World, from Node-RED"}`
 - inject (blue node) with payload: `{"command": "lights_off"}`
 - inject (blue node) with payload: `{"command": "lights_on"}`
 - inject (blue node) with payload: `{"command": "disco"}`
 - internetoflego.com (blue node)
 - Tweet mention: InternetOfLego (green node)
- Output:**
 - mongodb (orange node)
 - weather data (green node)
 - news data (green node)
 - command data (green node)
 - motion data (green node)
 - Tweet "Somebody's Home" (blue node)
 - traffic signal data (orange node)
 - other data (green node)
 - iol (grey node) - published

Debug Console:

```

10/28/2015, 7:20:15 PM [news data]
[msg.payload] : string
{"news": "Hello World, from Node-RED"}

10/28/2015, 7:20:16 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":2}

10/28/2015, 7:20:22 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":3}

10/28/2015, 7:20:24 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":0}

10/28/2015, 7:20:25 PM [news data]
[msg.payload] : string
{"news": "WordPress is connected!"}

10/28/2015, 7:20:25 PM [news data]
[msg.payload] : string
{"news": "Disco Party!"}

10/28/2015, 7:20:30 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":1}

10/28/2015, 7:20:32 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":2}

10/28/2015, 7:20:38 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":3}

10/28/2015, 7:20:40 PM [traffic signal data]
[msg.payload] : string
{"trafficSignalState":0}

```

Questions ?

Homework

Please download and install the Code Editor for the next class: <http://brackets.io/>

Next Session

Thursday, Apr. 21th, 18h

Thanks !

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Revision: #136

