

# *Contribuyendo al Hardware Libre*

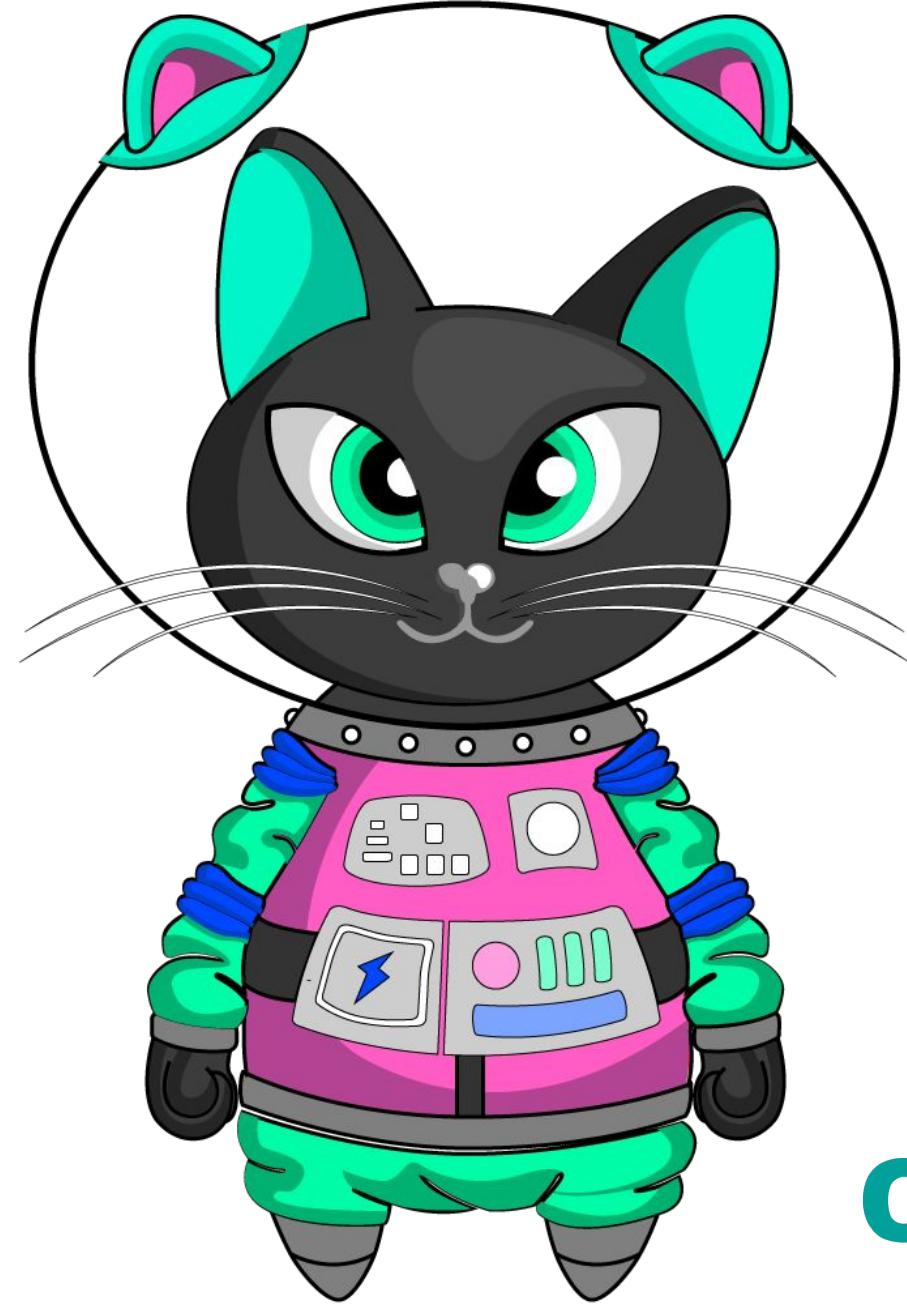
---

**Andres Sabas**  
Director Electronic Cats



CC  SS

*meow  
meow  
amicos!*



CCOSS

# Andrés Sabas

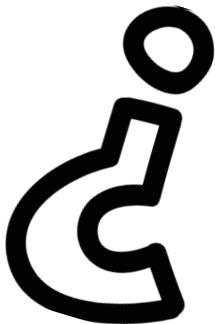
---

- Ingeniero en Electrónica por ITA
- Co-fundador de The Inventor House Hackerspace
- Director General de Electronic Cats
- Tecnologías Raspberry Pi, ARM, LoRa, ESP8266, ESP32



# ¿Por qué hardware libre?

---



open source  
hardware



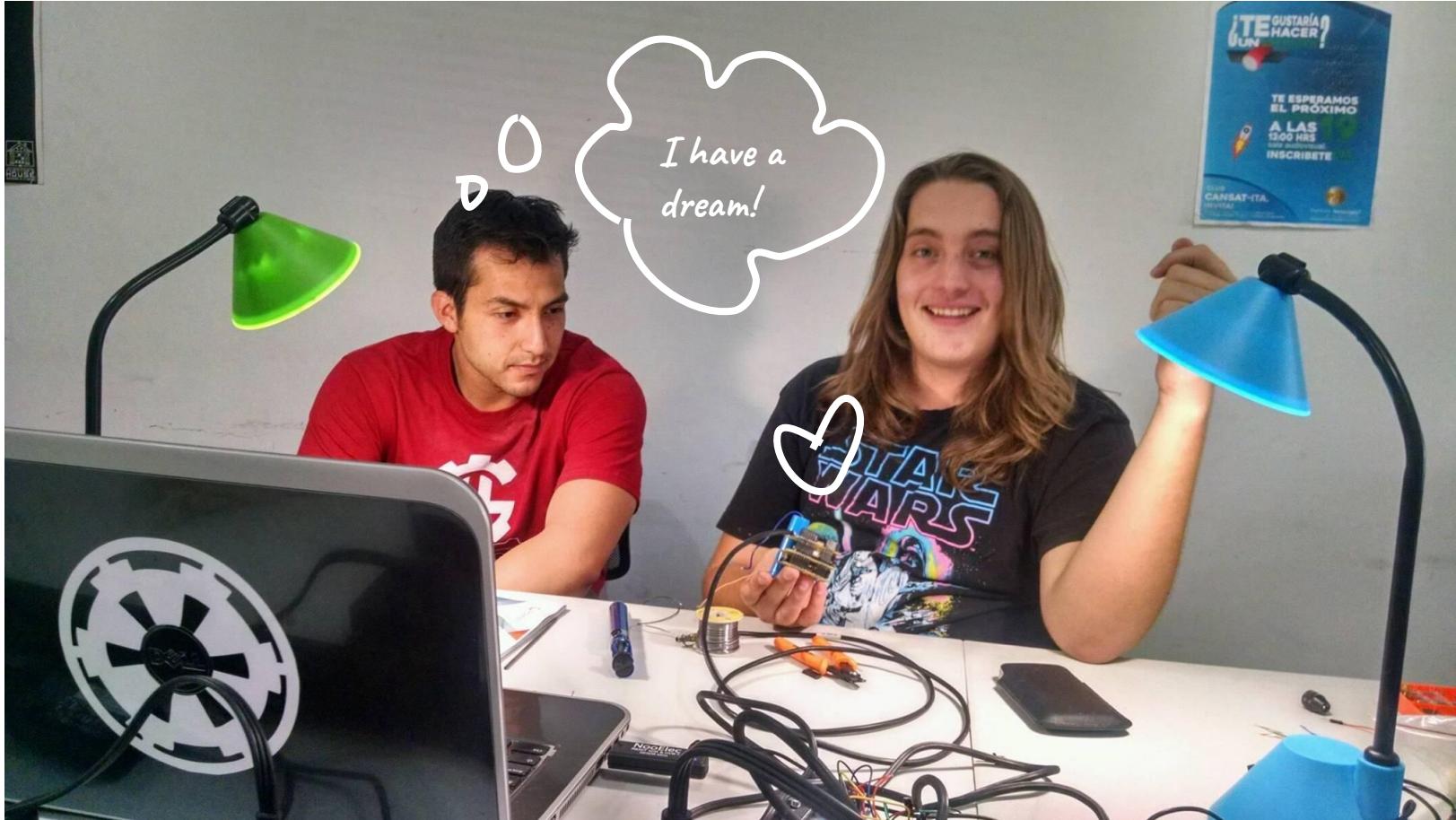
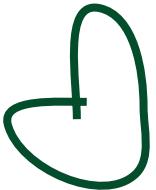
# Arduino, Adafruit, SparkFun...

---



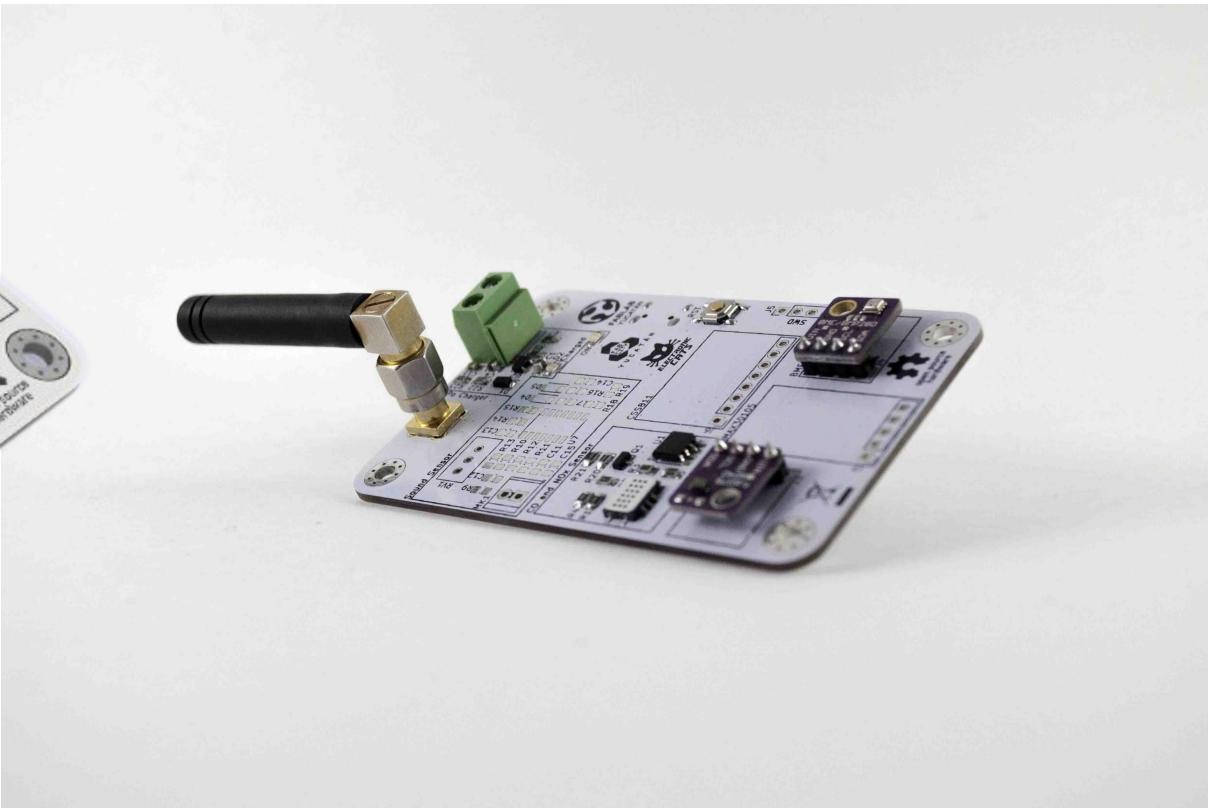
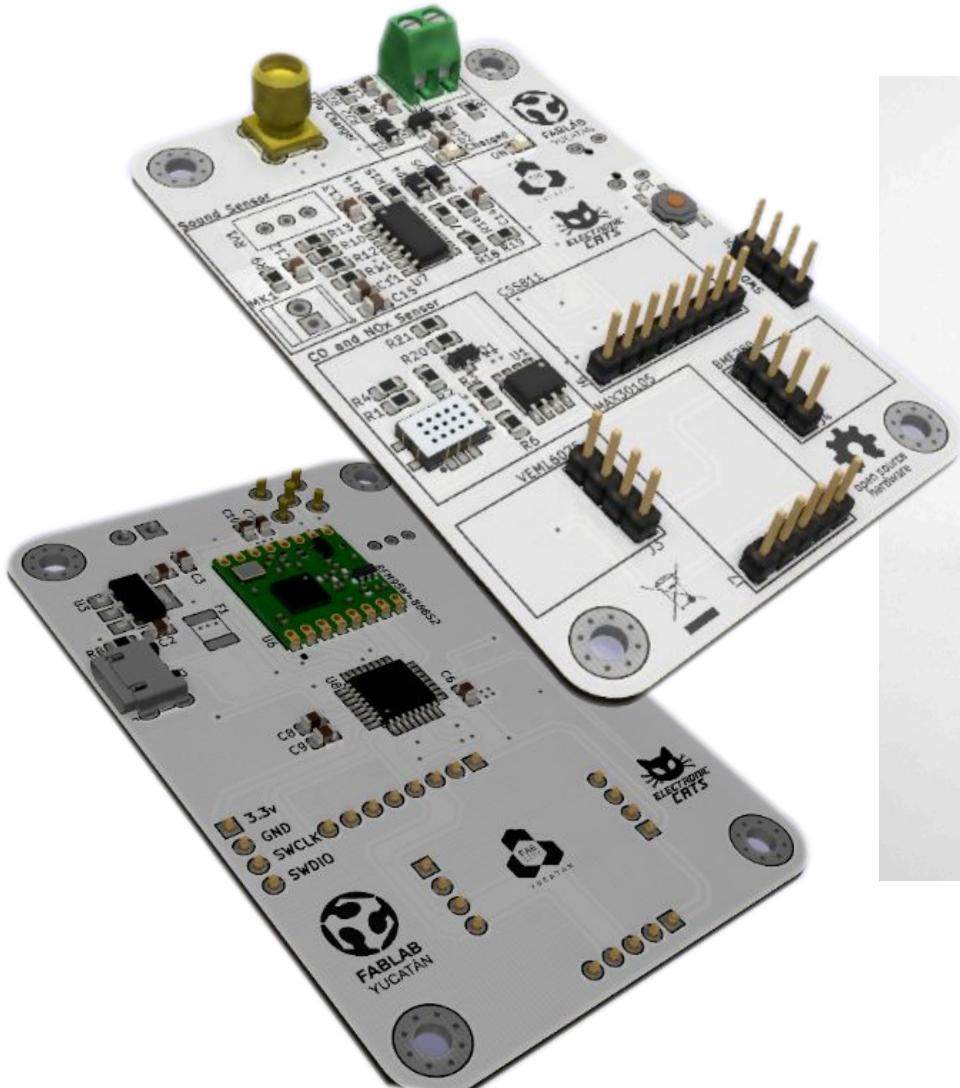
# El inicio

---



# Diseño Mexicano

---



# Software Libre

---



- KiCad
- Arduino
- GCC
- Python
- VisualCode

# Git y Github

---



# Mi primera vez



samyk / magspoof

Watch 183 Star Fork 472

Code Issues 11 Pull requests 2 Projects 0 Wiki Security Insights

## Add Schematic and PCB in Kicad #10

**Merged** samyk merged 1 commit into samyk:master from sabas1080:master on 20 Jan 2016

Conversation 0 Commits 1 Checks 0 Files changed 6 +1,780 -0

sabas1080 commented on 20 Jan 2016  
I added a Schematic and PCB Kicad, CERN Open Hardware Licence 1.2 ( CERN OHL 1.2)

Add Schematic and PCB in Kicad 00cc551

samyk added a commit that referenced this pull request on 20 Jan 2016

Merge pull request #10 from sabas1080/master ... ce62415

samyk merged commit ce62415 into samyk:master on 20 Jan 2016 Revert

Reviewers  
No reviews

Assignees  
No one assigned

Labels  
None yet

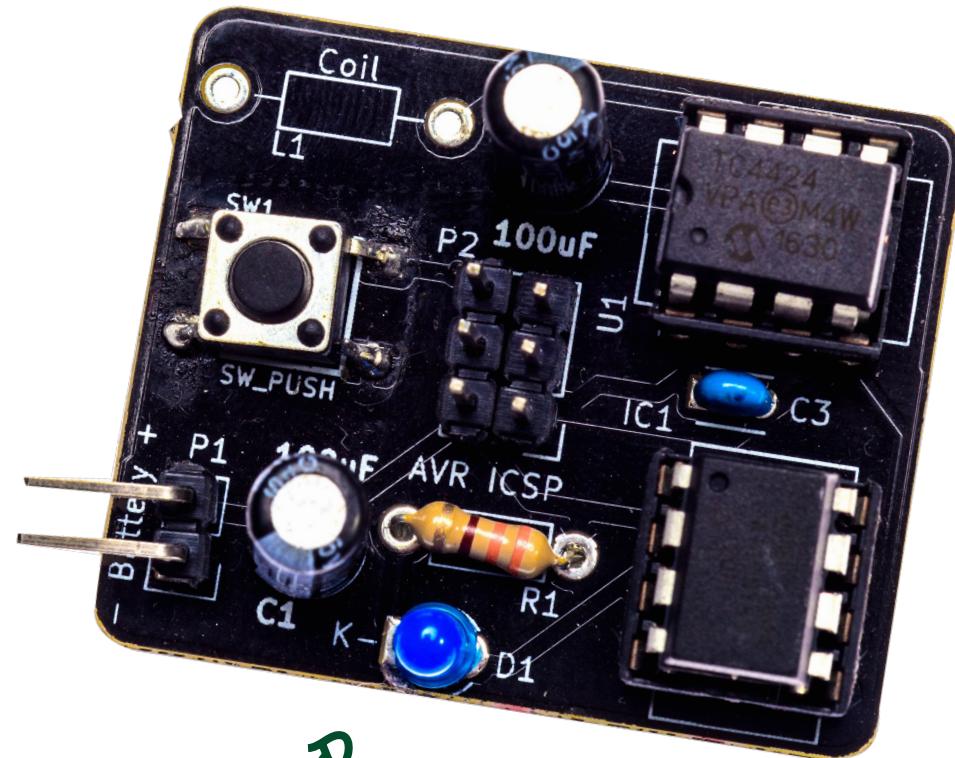
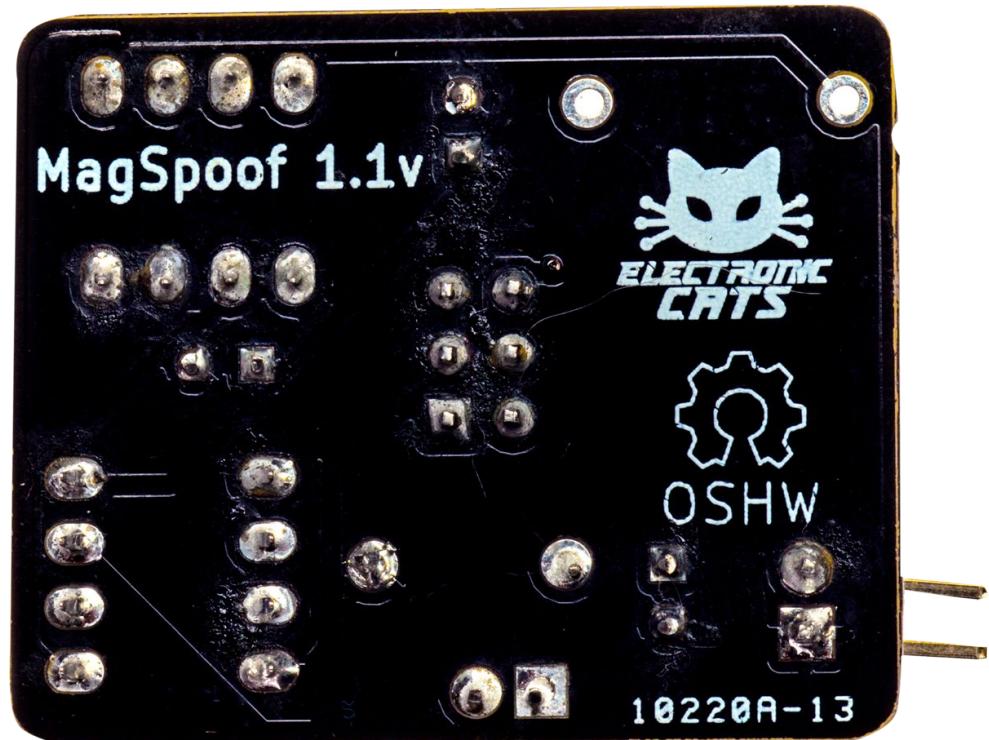
Projects  
None yet

Milestone

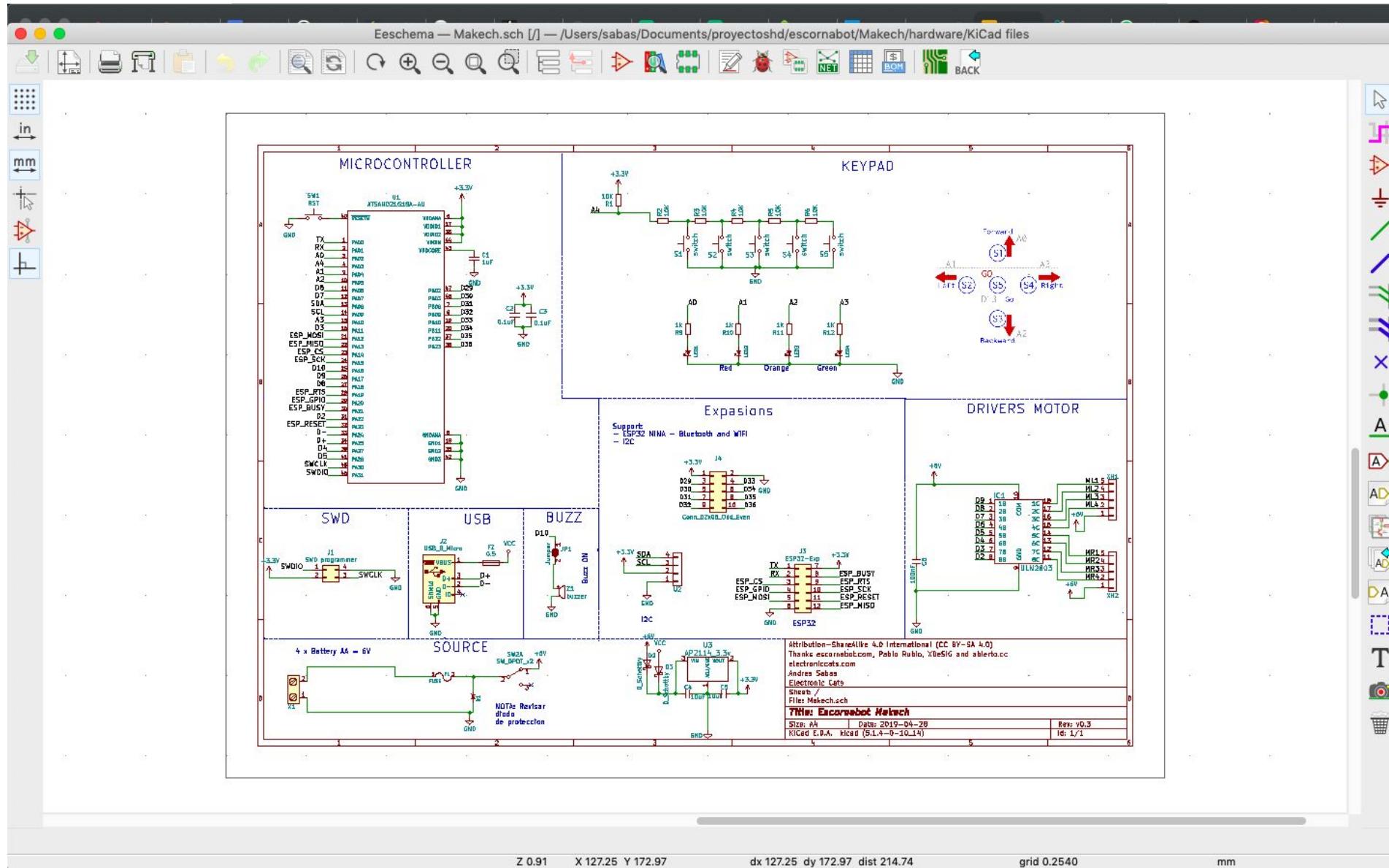


# MagSpoof

---



# El bonito esquemático



# Me lleva la que...!



ElectronicCats / escornabot  
forked from abierto-cc/escornabot

Code Issues Pull requests Wiki Security Insights Settings

### Remove CS tracks to voltage

master

sabas1080 committed on 10 Jun 1 parent 489aa2c commit 553b818f7082f0f615081829c3babfcc4c822ad5

Showing 1 changed file with 555 additions and 558 deletions.

Unified Split

View on CADLAB.io

1,113 Makech/hardware/KiCad files/Makech.kicad\_pcb

```
@@ -3,10 +3,10 @@
 3 (general
 4 (thickness 1.6)
 5 (drawings 50)
 6 - (tracks 1205)
 7 (zones 0)
 8 (modules 54)
 9 - (nets 68)
10 )
11
12 (page A4)
@@ -175,6 +175,7 @@
175 (net 65 /D32)
176 (net 66 /D36)
177 (net 67 /ESP_RESET)
178 + (net 68 /ESP_CS)
179 (net_class Default "This is the default net class."
180 (clearance 0.2)
@@ -208,6 +209,7 @@

```



# Cadlab.io

Escornabot Makech - Circuit

d1e89661 [View History](#) [Create Account](#) or [Sign In](#)

16 layers | 13 items | Newer d1e89661 [Older](#) 6bb413ca

Change List Annotations

- Board properties
- Module Connector\_PinHeader\_...
- Zone (diff-32)
- Zone (diff-54)
- Text (diff-77)
- Text (diff-78)
- Text (diff-79)
- Text (diff-80)
- Text (diff-81)
- Text (diff-82)
- Text (diff-83)
- Text (diff-84)
- Text (diff-85)

The screenshot shows a PCB layout for the Escornabot Makech. The board is yellow with a black solder mask. It features various components, traces, and pads. Dimension lines indicate the following overall dimensions: width 21.590 mm, height 55 mm, and thickness 1.6 mm. Internal dimensions include a central vertical column of 35.5 mm, a top horizontal section of 43 mm, and a bottom horizontal section of 18.5 mm. There are also side sections of 24 mm and 31.5 mm. A green module connector is located at the top left. The interface includes a sidebar with icons for file operations, search, and help, along with dropdown menus for layers and items. A status bar at the bottom provides attribution information.

Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)  
Eduardo Contreras  
Joe  
Andrés Sabas  
Electronic Cats  
escornabot

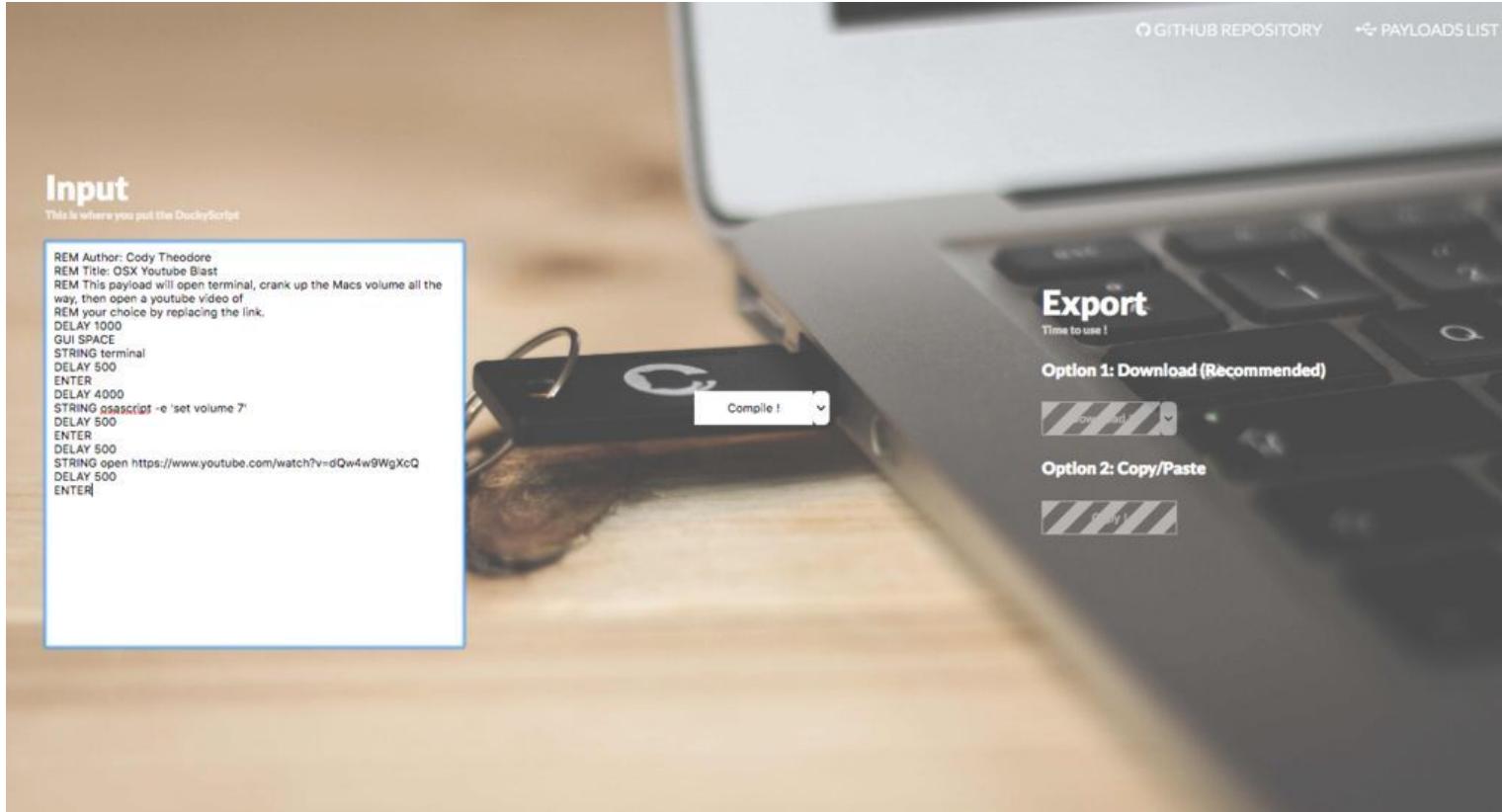
Report a bug





# Rubber Cat

---



<https://www.instructables.com/id/Rubber-Cat-BadUSB-With-Meow-Meow/>

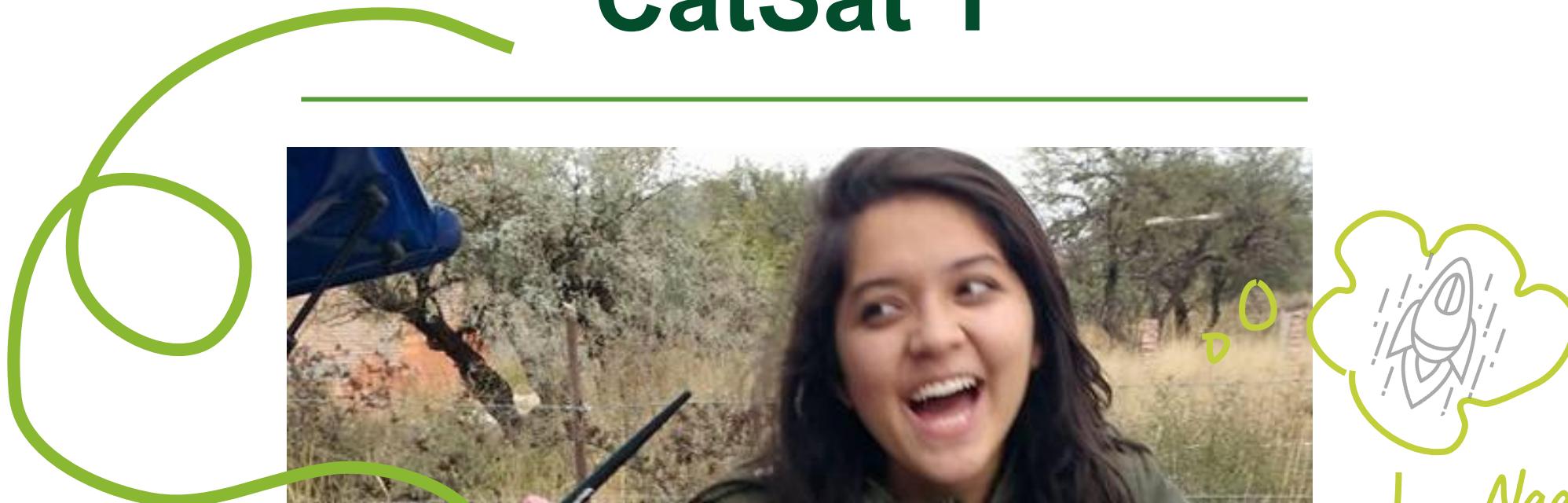


# CatSat 1

---



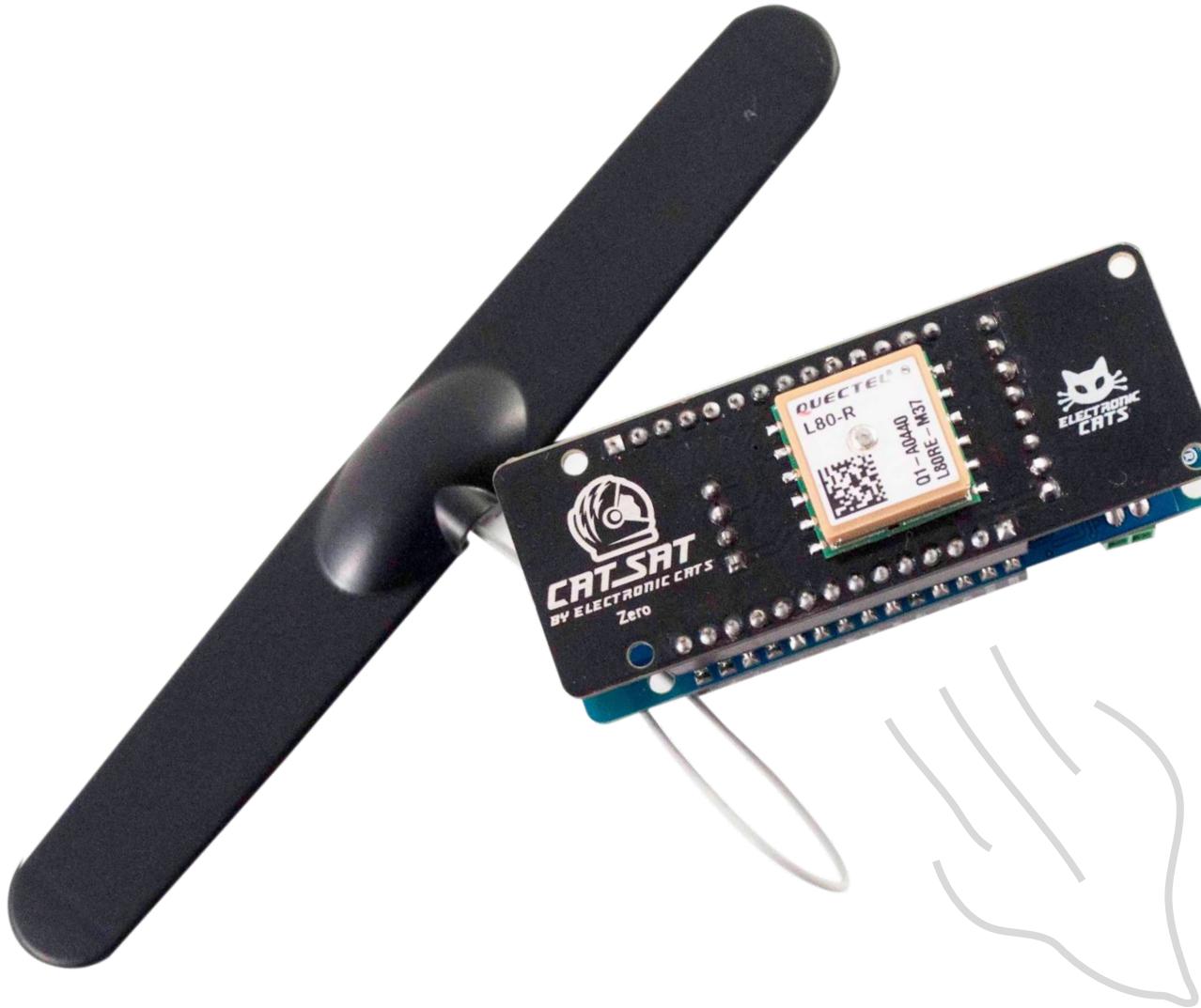
# CatSat 1



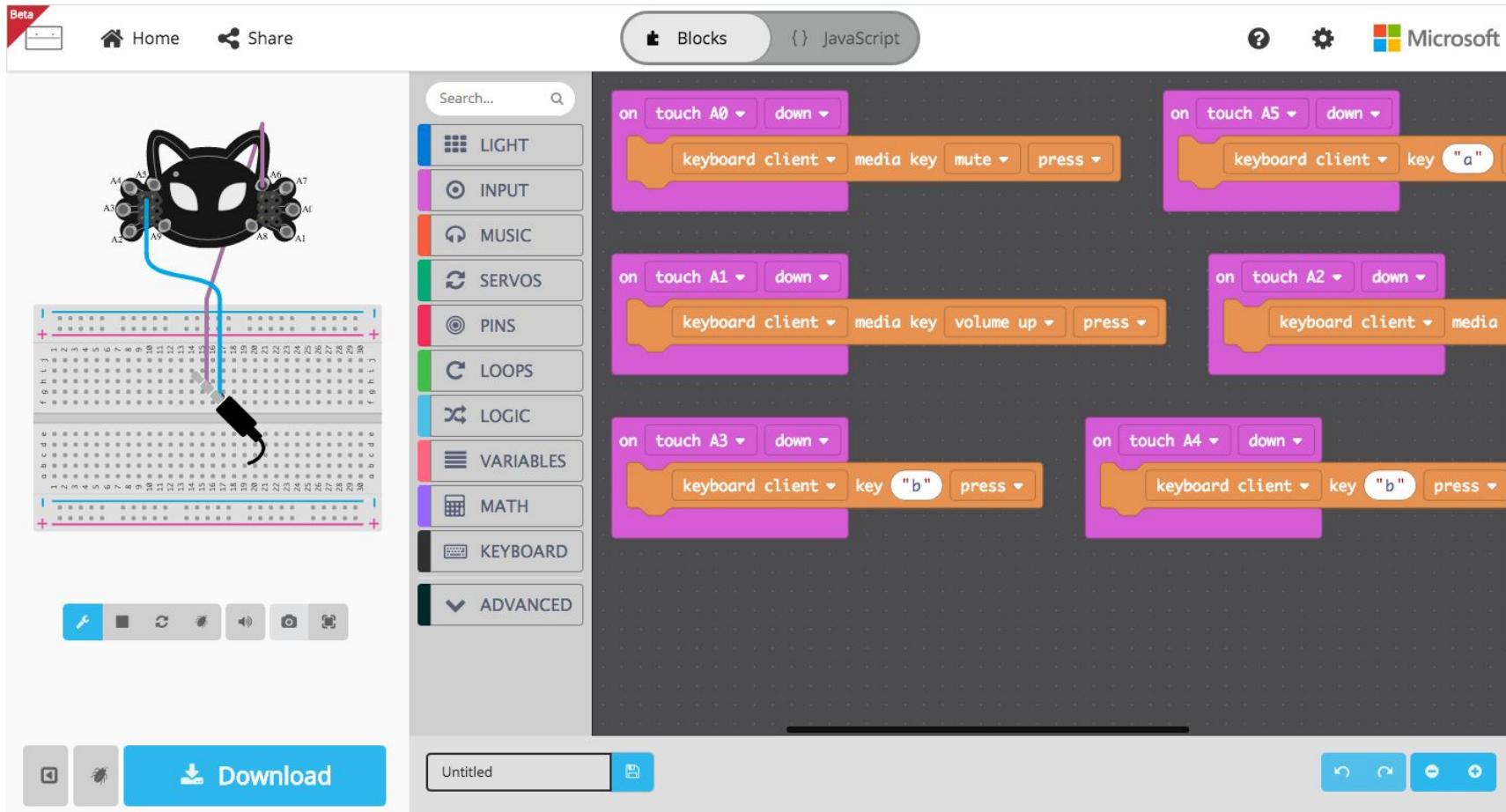
Naah!

# Educación y nuevas oportunidades

---



# MakeCode



<https://maker.makecode.com>



# Nuestras Contribuciones

---

Paquete de Makecode para LoRa

<https://github.com/ElectronicCats/pxt-lora>

Paquete de Makecode para GPS

<https://github.com/ElectronicCats/pxt-gps>

Paquete de Makecode para Calidad del Aire

<https://github.com/ElectronicCats/pxt-airQuality>

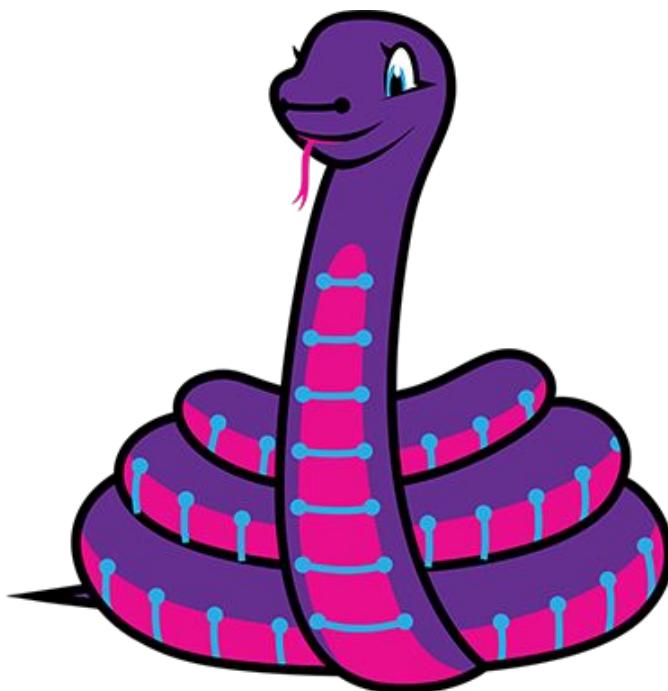
Paquete de Makecode para BME280

<https://github.com/ElectronicCats/pxt-bme280>



# CircuitPython

---



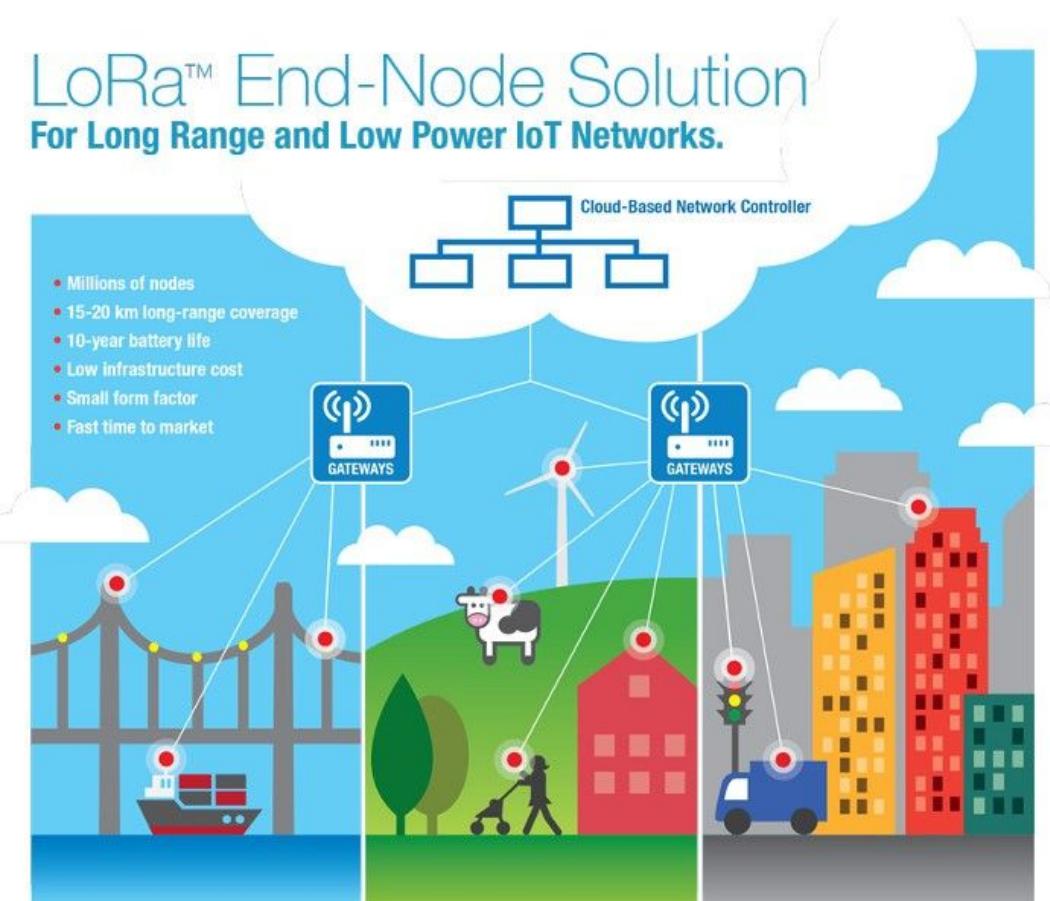
*circuit*  
**python**

**Aportaciones:**  
Traducción al Español  
Tarjetas de Electronic Cats  
<https://github.com/adafruit/circuitpython>



# LoRaWAN

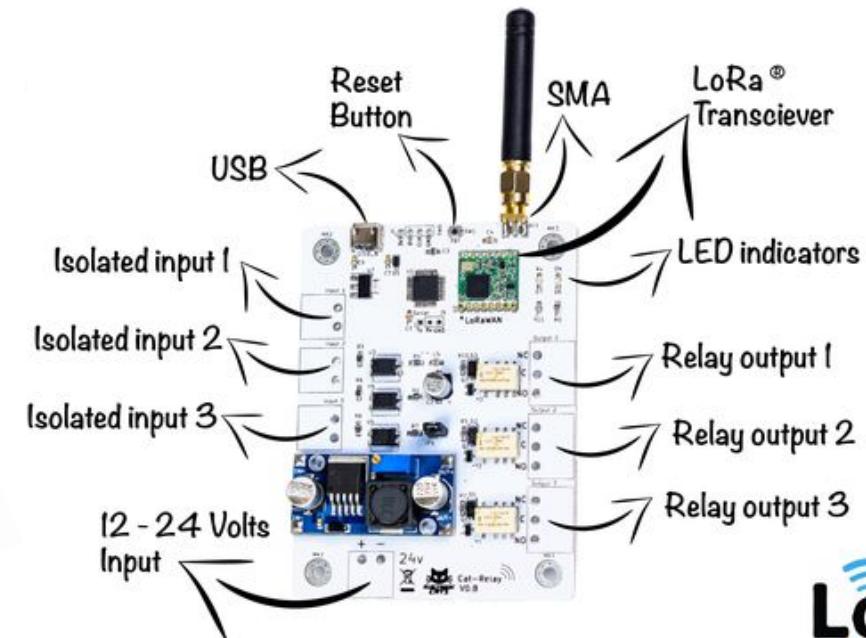
---



- Red de Internet de las Cosas
- Largo Alcance
- Bajo Consumo
- 244 bytes
- Encriptacion AES128

# CatWAN

---



LoRa<sup>®</sup>



# Library Arduino

---

Biblioteca de Arduino para LoRaWAN

<https://github.com/BeelanMX/arduino-LoRaWAN>

Biblioteca de Arduino para redes de bajo consumo

<https://github.com/ElectronicCats/CayenneLPP>

Biblioteca de Arduino para sensor MPU6050

<https://github.com/ElectronicCats/mpu6050>



# Certificación

---



<https://www.oshwa.org/>

## Mexico

Mexico has also produced a range of certified open source hardware. A recent certification is the [Meow Meow](#), a capacitive touch interface from [Electronic Cats](#). Meow Meow makes it easy to use a wide range of objects —bananas are always a favorite—as controllers for your computer.



Meow Meow



# ¿Qué se requiere?

---

- Datos basicos (Nombre, Empresa, Direccion...).
- Nombre de Proyecto y versión.
- Descripción del proyecto
- Repositorio o link:
  - Esquemáticos disponibles para todos.
  - Archivos bajo una licencia de hardware libre.
  - Tipo de proyecto
  - Licencia de software
- Decir la verdad :v

# Lo privado puede financiar lo abierto

---



# Skimmers

---



## ATM Skimming

Skimming is an illegal activity that involves the installation of a device, usually undetectable by ATM users, that secretly records bank account data when the user inserts an ATM card into the machine. Criminals can then encode the stolen data onto a blank card and use it to loot the customer's bank account.

### ① Hidden camera

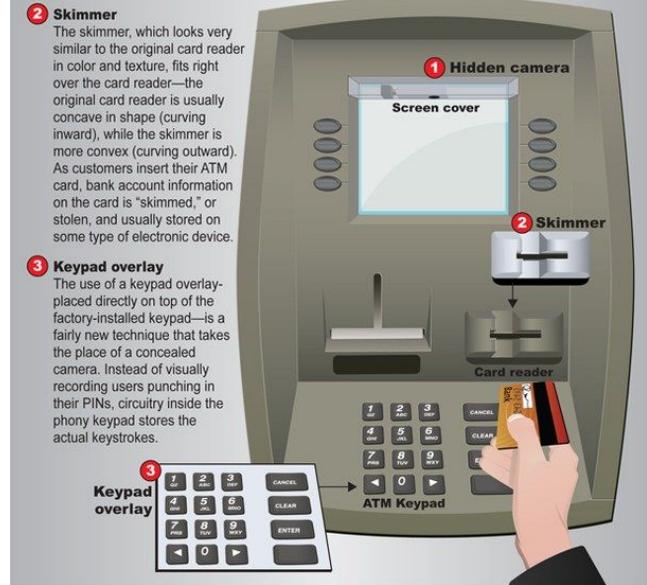
A concealed camera is typically used in conjunction with the skimming device in order to record customers typing their PIN into the ATM keypad. Cameras are usually concealed somewhere on the front of the ATM—in this example, just above the screen in a phony ATM part—or somewhere nearby (like a light fixture).

### ② Skimmer

The skimmer, which looks very similar to the original card reader in color and texture, fits right over the card reader—the original card reader is usually concave in shape (curving inward), while the skimmer is more convex (curving outward). As customers insert their ATM card, bank account information on the card is “skimmed,” or stolen, and usually stored on some type of electronic device.

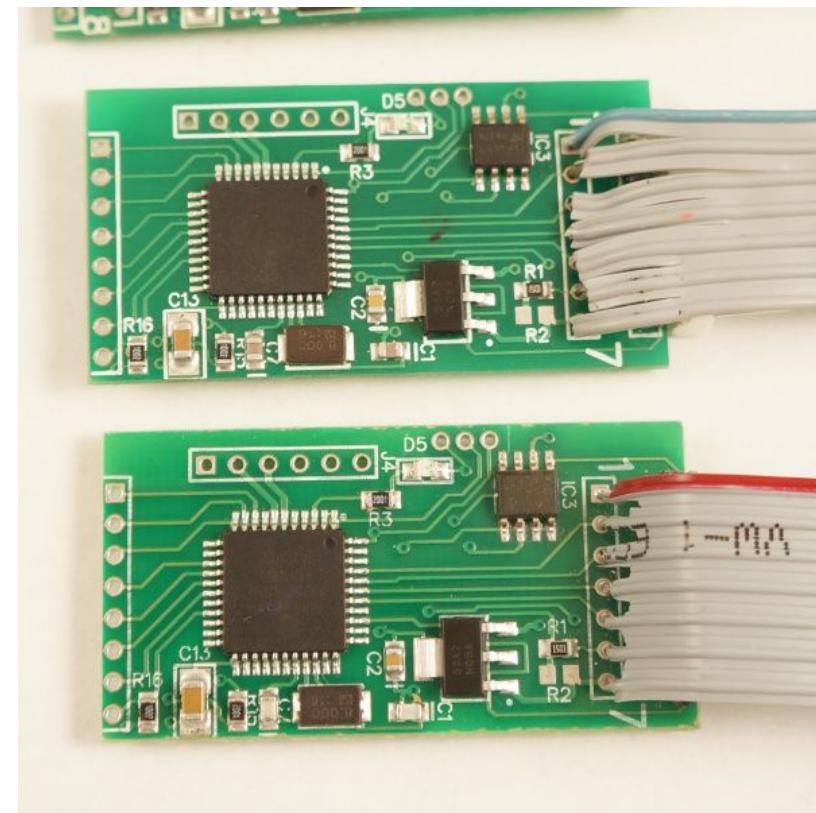
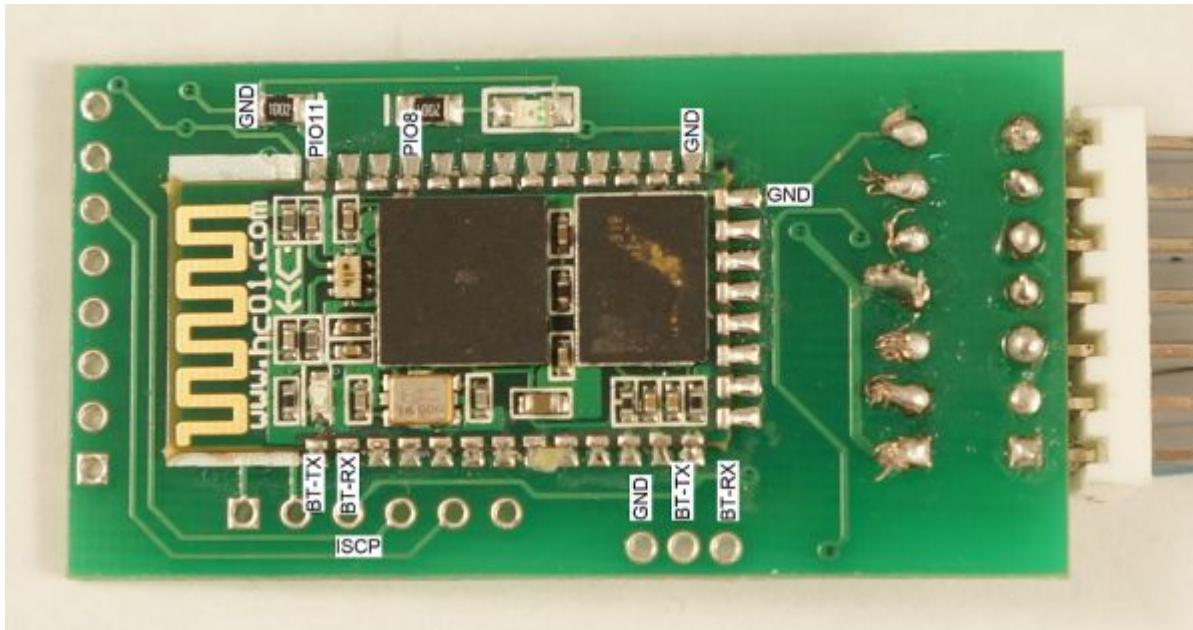
### ③ Keypad overlay

The use of a keypad overlay—placed directly on top of the factory-installed keypad—is a fairly new technique that takes the place of a concealed camera. Instead of visually recording users punching in their PINs, circuitry inside the phony keypad stores the actual keystrokes.



# Bluetooth

---



<https://learn.sparkfun.com/tutorials/gas-pump-skimmers>



*Best skimmer hunter*

# Skimmers Cozumel Tour!

---

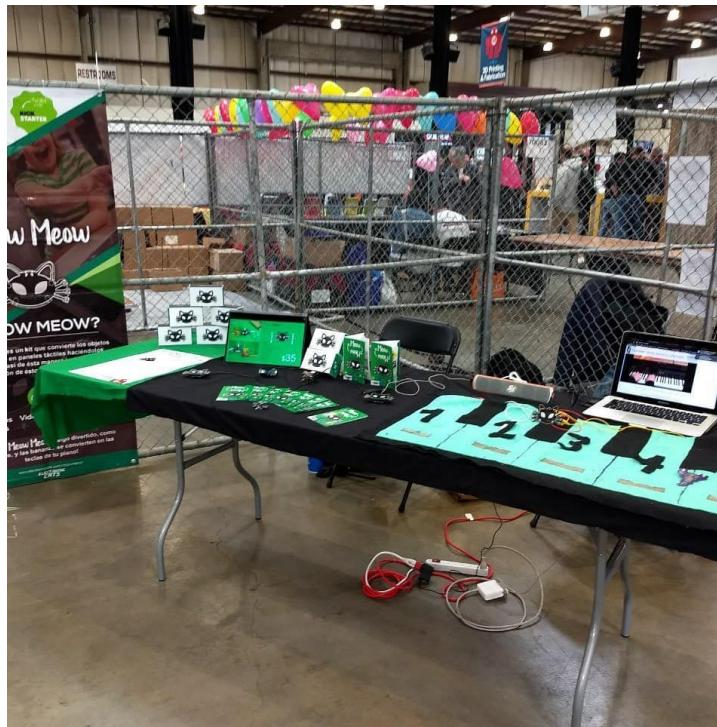
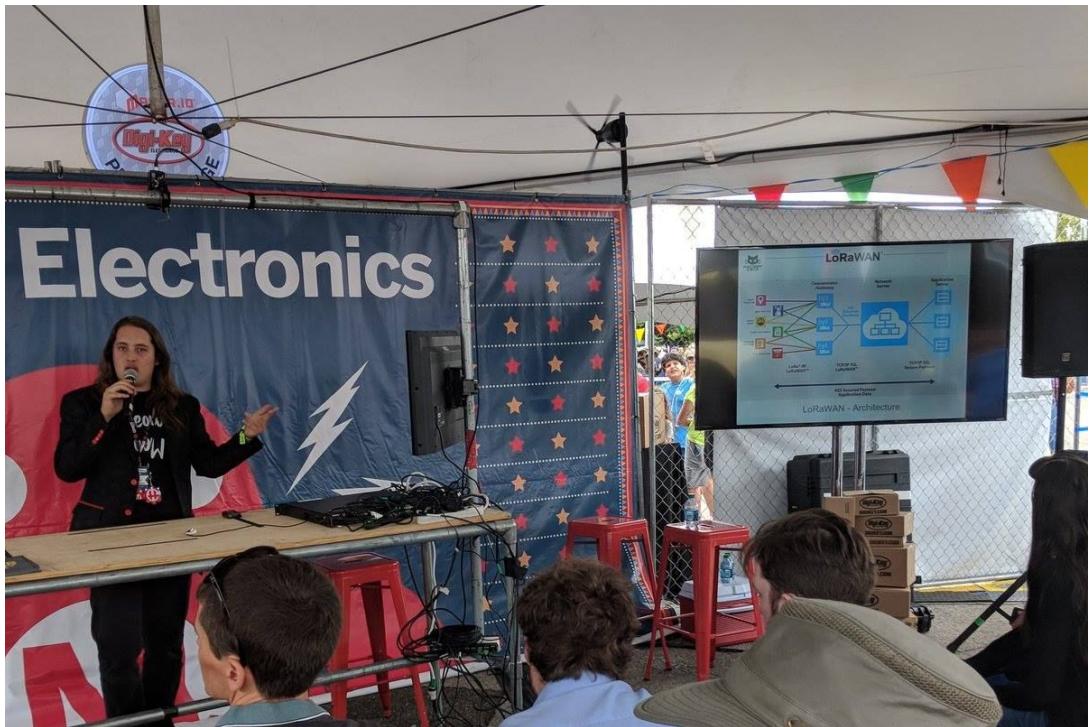


# No señor policiaaaa!

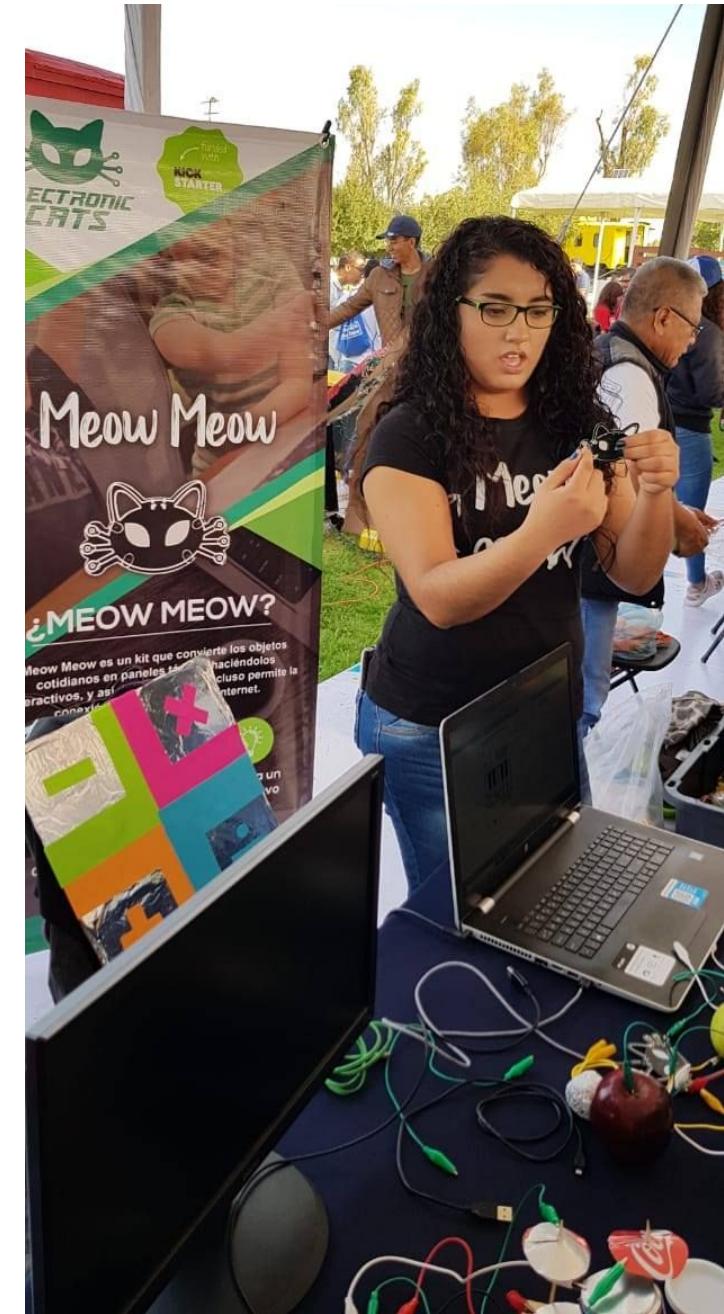


# Eventos

---



- Maker Faire New York
- Maker Faire Roma
- Maker Faire San Francisco
- Maker Faire León
- Talent Land, Guadalajara
- KicadCON Chicago
- Bett Londres
- CCOSS!!
- Maker Jalisco



# Comunidad

---



# Hardware Para Internet de las Cosas



Contáctanos

[hola@electroniccats.com](mailto:hola@electroniccats.com)  
[www.electroniccats.com](http://www.electroniccats.com)



Electroniccats



Electroniccats



Electroniccats