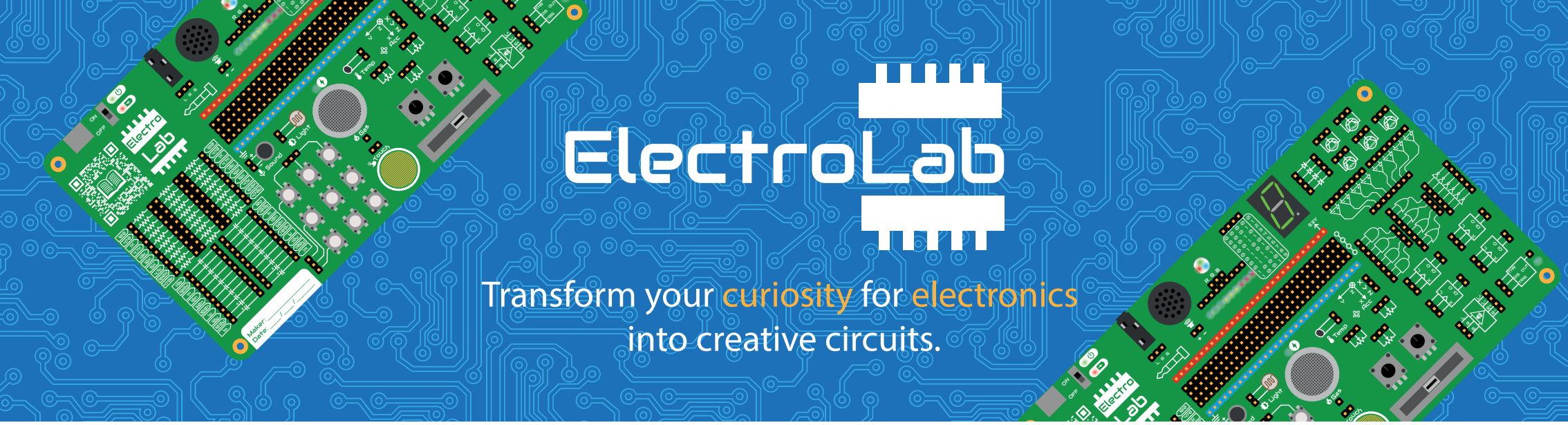



Learning electronics can be overwhelming. Testing your complex circuits might become a nightmare.

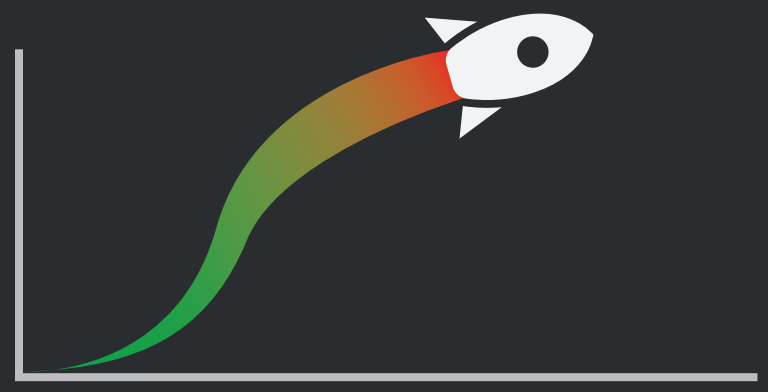
But it doesn't have to be. Meet ElectroLab - an amusing electronic trainer and a platform to test your circuits fast and easy.

It doesn't matter if you are a beginner in the field or if you are an experienced electronic engineer, with ElectroLab you can achieve your goals.

# Learn by making

## Learning electronics has never been easier.

Smooth out the learning curve and enjoy understanding the fundamental principles of electronic systems.

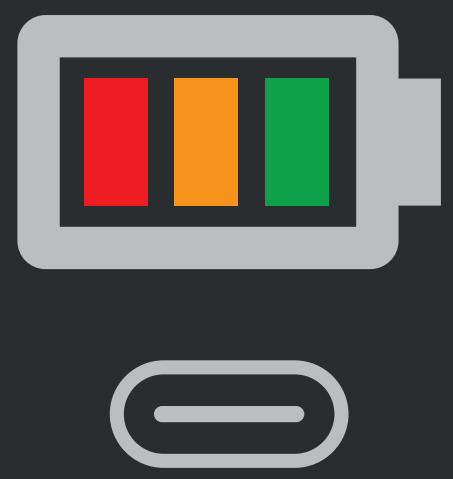


## Discover new sensors and play with them.

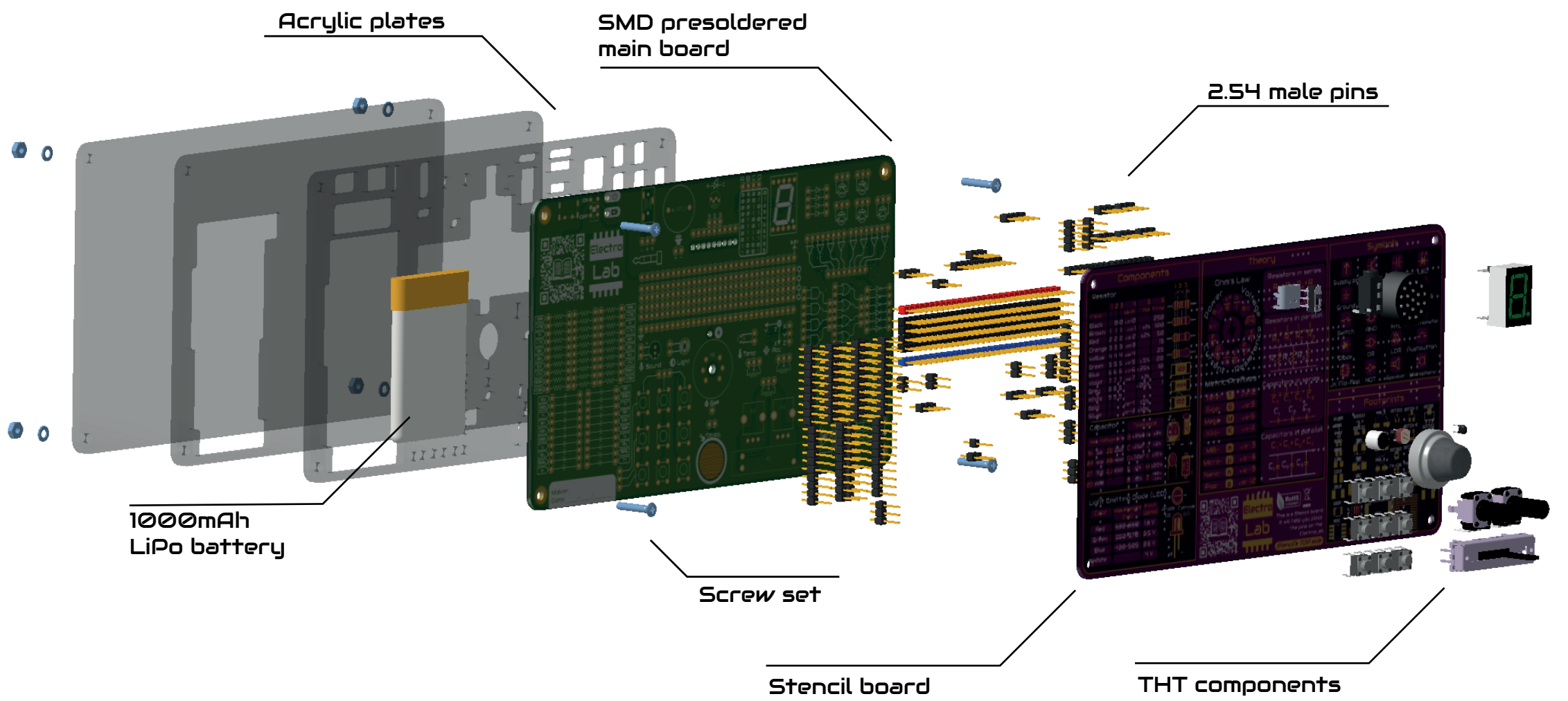
In addition to the multiple integrated electronic components, various sensors provide even more fun when playing with them!

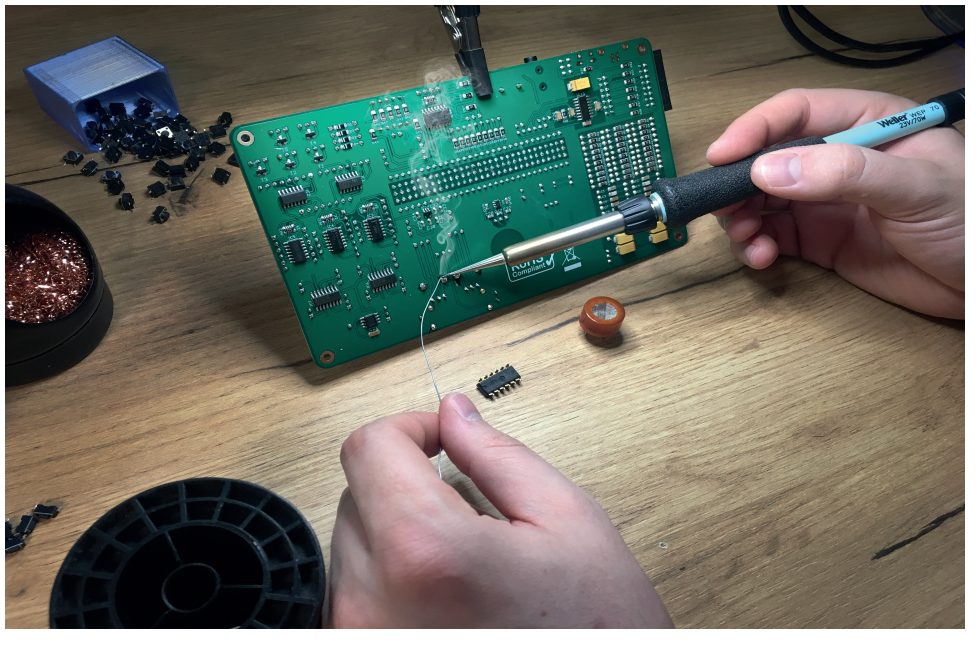
## Light, portable and battery powered.

Take ElectroLab with you wherever you want, with the integrated battery, the fun will always be with you. Plus, it can be charged with a standard USB-C



# Assemble your kit



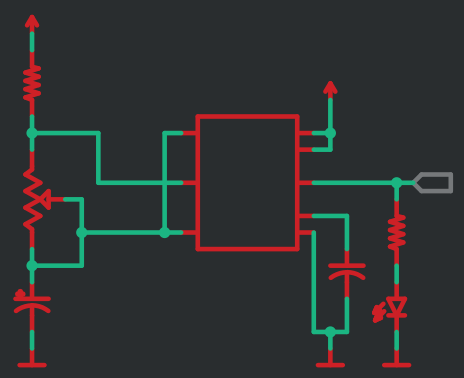



## Included on the kit, you will find:

- 1x ElectroLab SMD preassembled board
- 1x ElectroLab Stencil PCB
- 3x different transparent acrylic plates
- 1x 1000mAh LiPo battery
- 4x Screw set (screw + washer + nut)
- 1x THT components set
- 40x Female-to-female jumper wires

*Before acquiring the ElectroLab kit, consult the assembly section in the documentation*

# How it works?



## Analyze the schematic.

Before building up any circuit, analyze the schematic to gain a better understanding on what you will be building

## Make all the connections.

Before proceeding, make sure the ElectroLab is off. Then interconnect the components by using the female-to-female jumper wires.

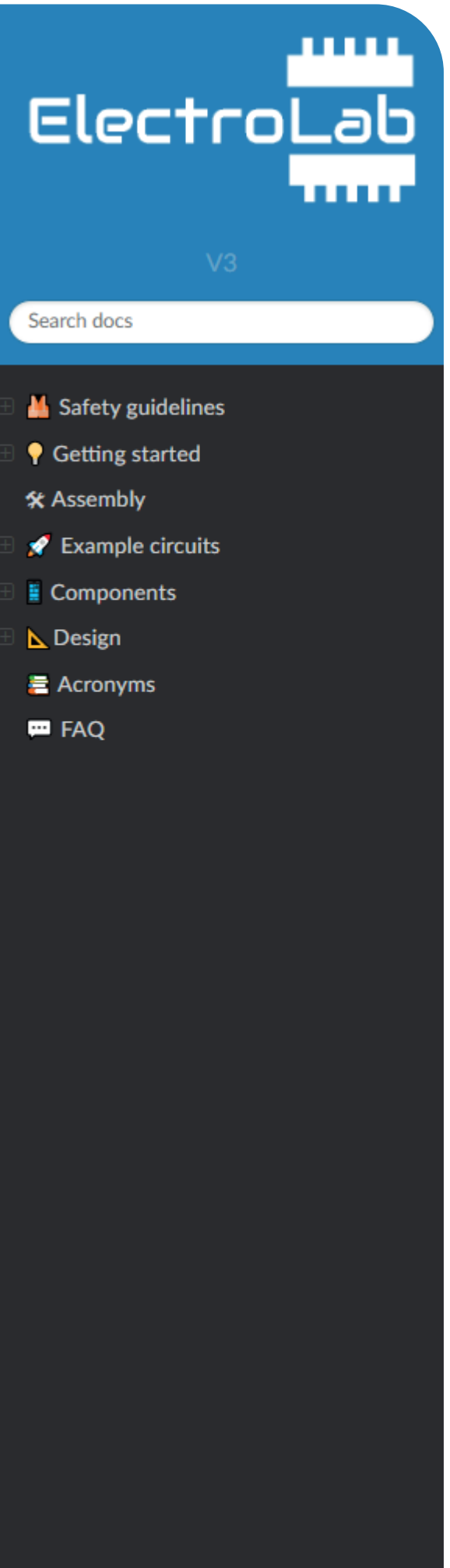
## Check the wires.

After you are done with the wiring check that no shorcircuits have been made by seeing the power led after switching on the ElectroLab

## Interact with your circuit.

Most of your circuits output will depend on the inputs you give: sensors, signals, potentiometers, etc.
Have fun while discovering how it works!

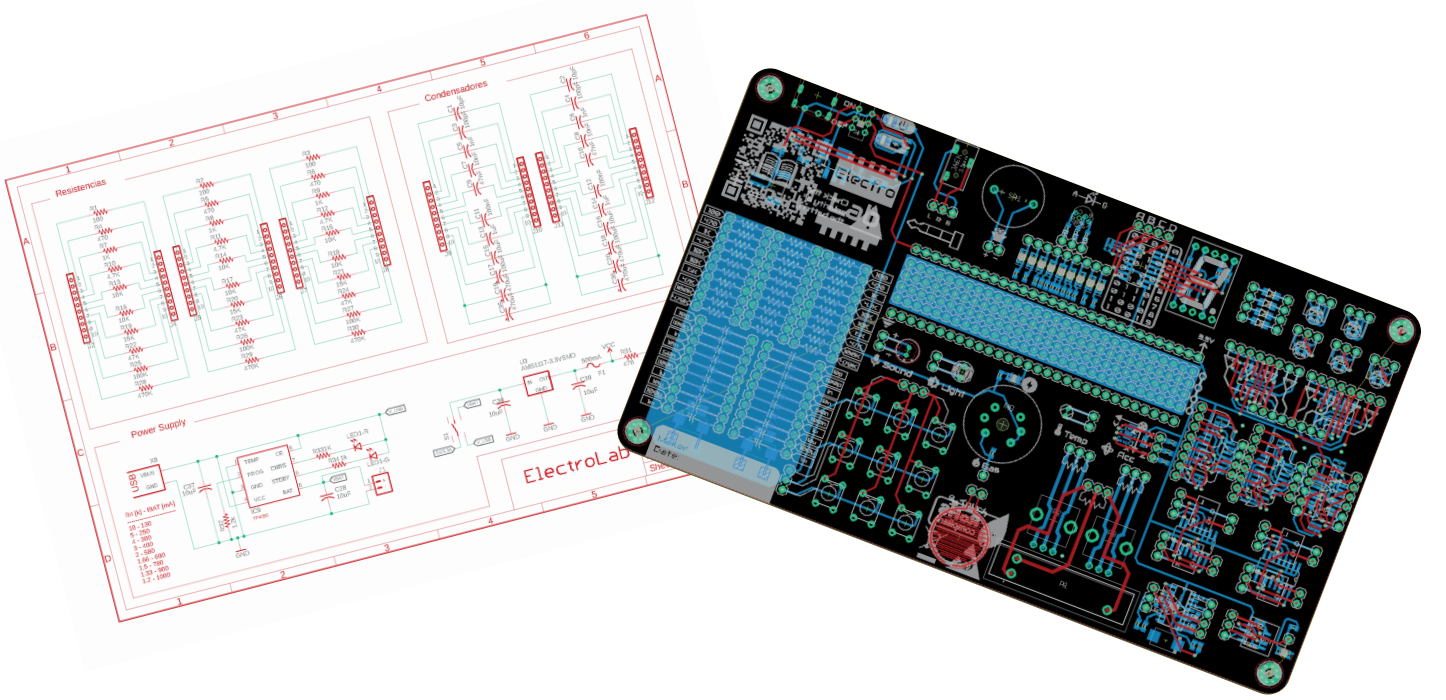
# Openly documented



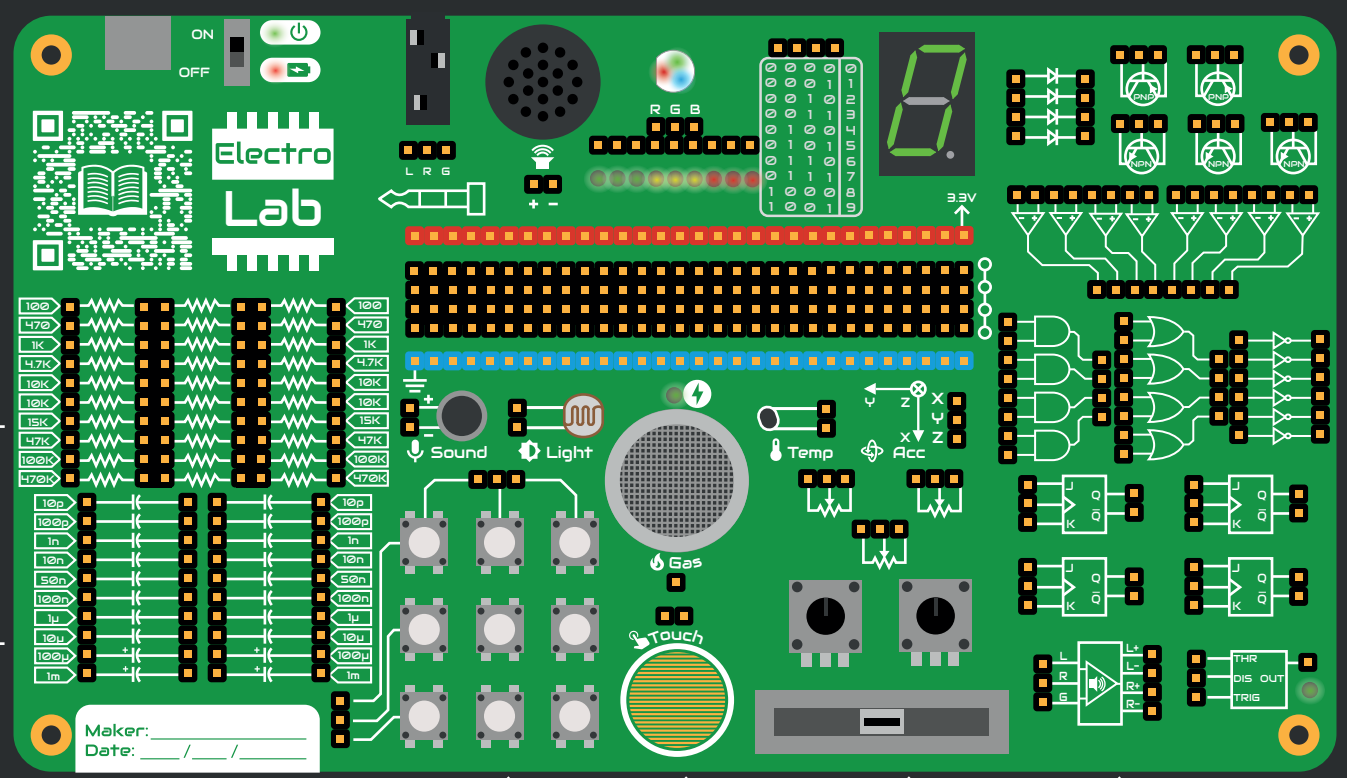

Find all the datasheets, safety guidelines, assembly instructions, component descriptions and even example circuits, directly on the official documentatation:

https://electrolab.readthedocs.io

Explore the github's repo to find the design files, including schematics and layouts for a better understanding of how it works!



# Components on board




| | | | | |
|---|---|---|---|---|
| **Battery**<br>1000mAh<br>rechargable | **NPN transistor**<br>3x<br>MBT2222 | **JK Flip Flops**<br>4x<br>MC74HC112 | **7s display**<br>1x<br>Common Cath. | **Microphone**<br>1x<br>Electrec 64dB |
| **Resistors**<br>30x<br>9 values | **Op. amplifiers**<br>8x<br>LM324 | **Audio amplifier**<br>1x<br>PAM8403 | **Speaker**<br>1x<br>8 Ohm | **Phototresistor**<br>1x<br>5mm LDR 10kΩ |
| **Capacitors**<br>20x<br>10 values | **AND gates**<br>4x<br>74HC08 | **Signal gen.**<br>1x<br>TLC555CDR | **Pushbuttons**<br>9x<br>6x6mm | **Gas sensor**<br>1x<br>MQ-2 |
| **Diodes**<br>4x<br>LL4148 | **OR gates**<br>4x<br>74HC32 | **LED array**<br>9x<br>G/Y/R | **Rotary potenc.**<br>2x<br>RK09K 10kΩ | **Thermoresistor**<br>1x<br>NTC 10kΩ |
| **PNP transistor**<br>2x<br>MBT5401 | **NOT gates**<br>6x<br>74HC04 | **RGB LED**<br>1x<br>Common Cath. | **Linear potenc.**<br>1x<br>RS2011 10kΩ | **Accelerometer**<br>1x<br>3-axis ADXL335 |