

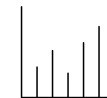
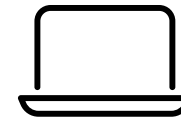
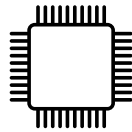


# How To Talk To Sensors

Gilles Callebaut

# My Goal

- Just enough to get you started and **interested**
- Answer the question: How to get data from a sensor to me!

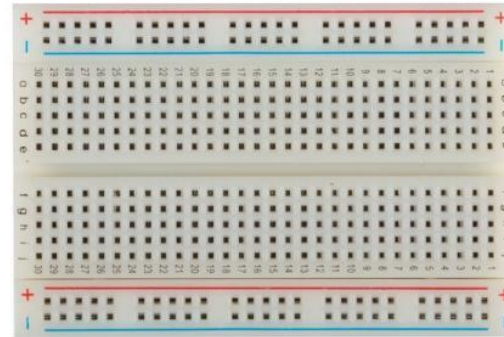
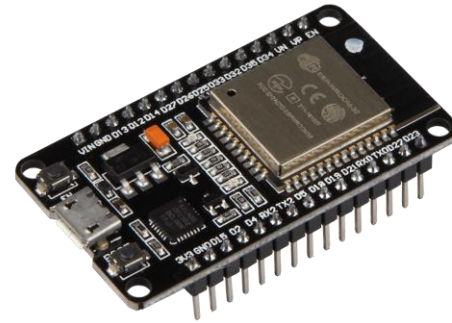


# Before we start...

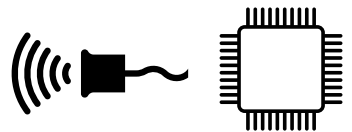
- VSCode + PlatformIO plugin and Arduino IDE needs to be installed.
- Each group gets a box of cool stuff ^^  
you are now responsible for the content.
- If you require another sensor (besides the default in the box), let us know. All sensors are summarized at [github.com/creativevmakers/HowToTalkToSensors](https://github.com/creativevmakers/HowToTalkToSensors). Or if you have a create idea, check [tinytronics.nl](https://tinytronics.nl) and maybe we can order it.



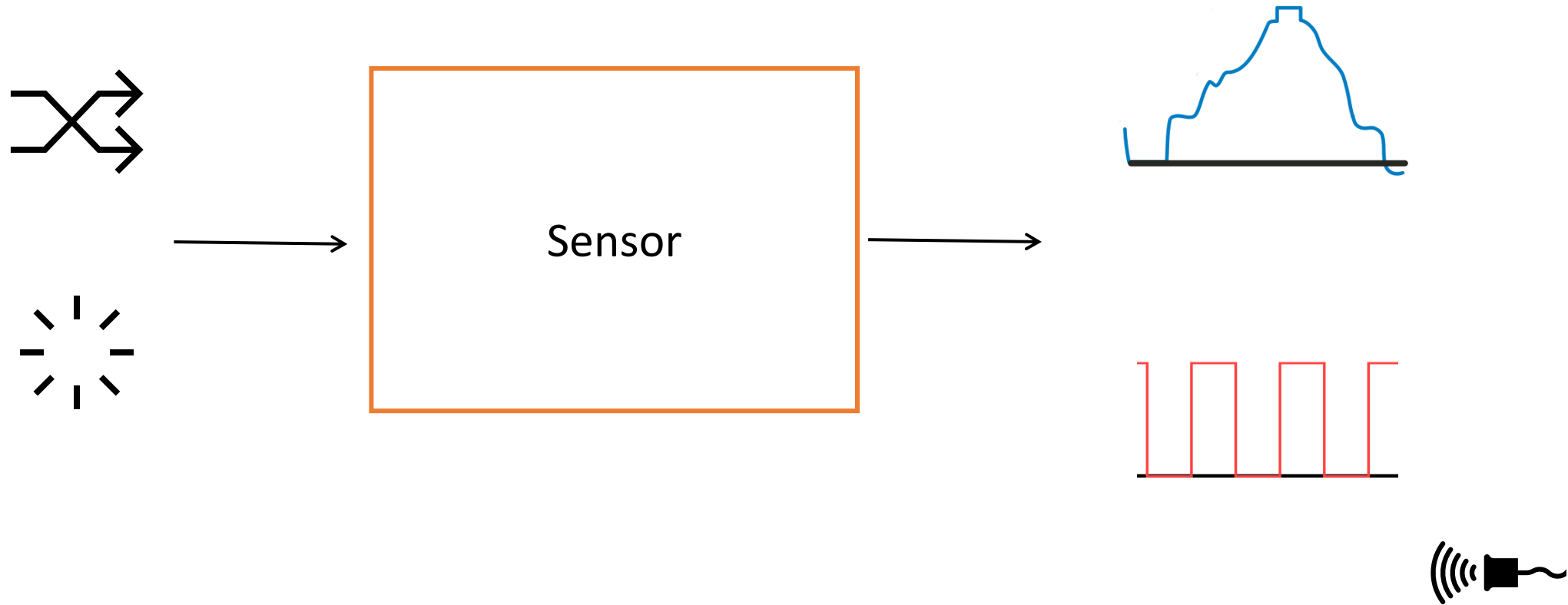
6 x



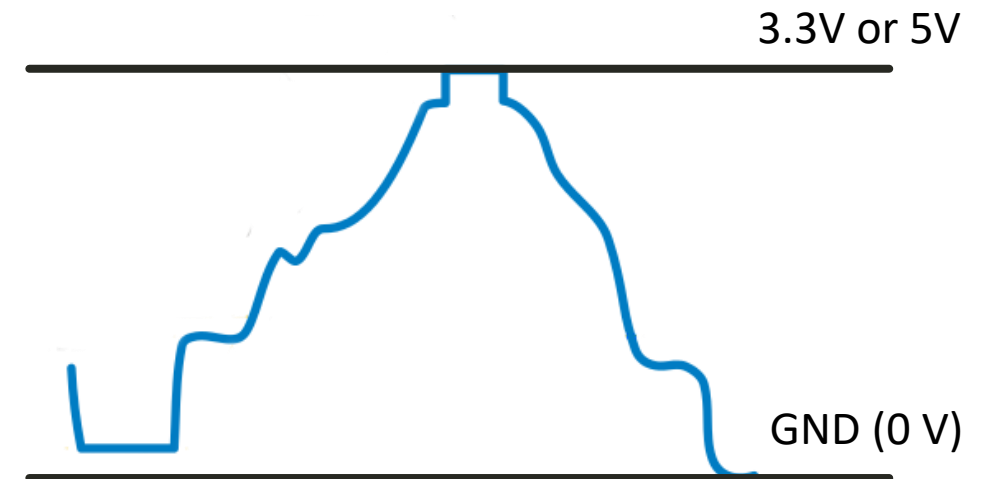
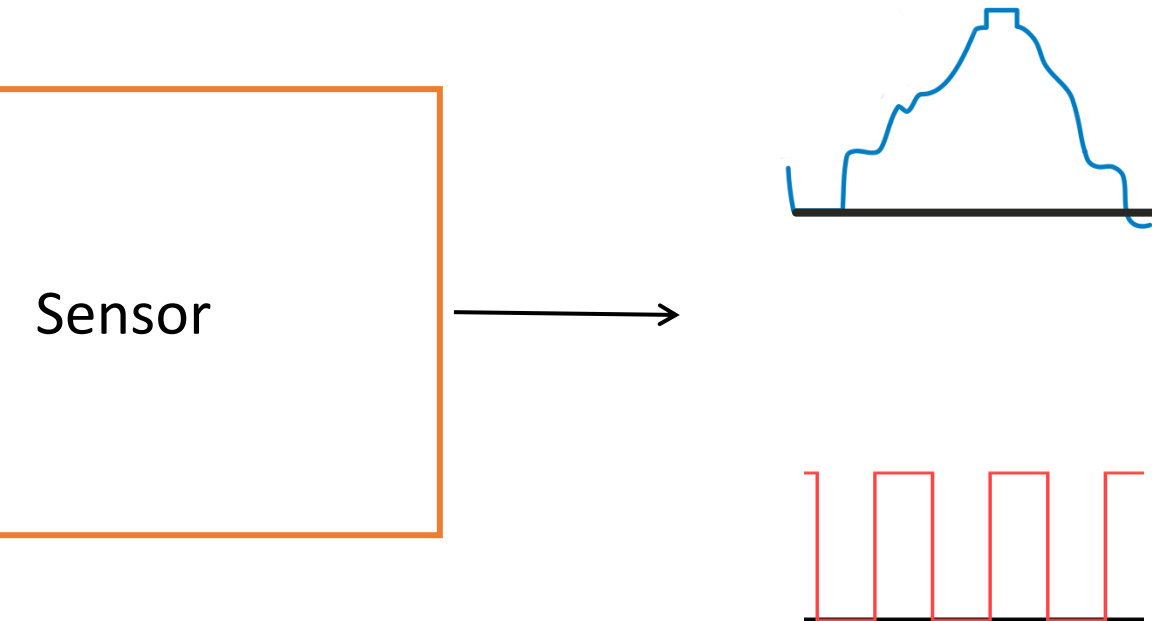
# Before we start...



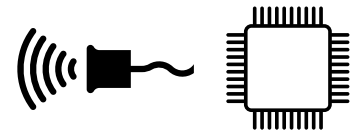
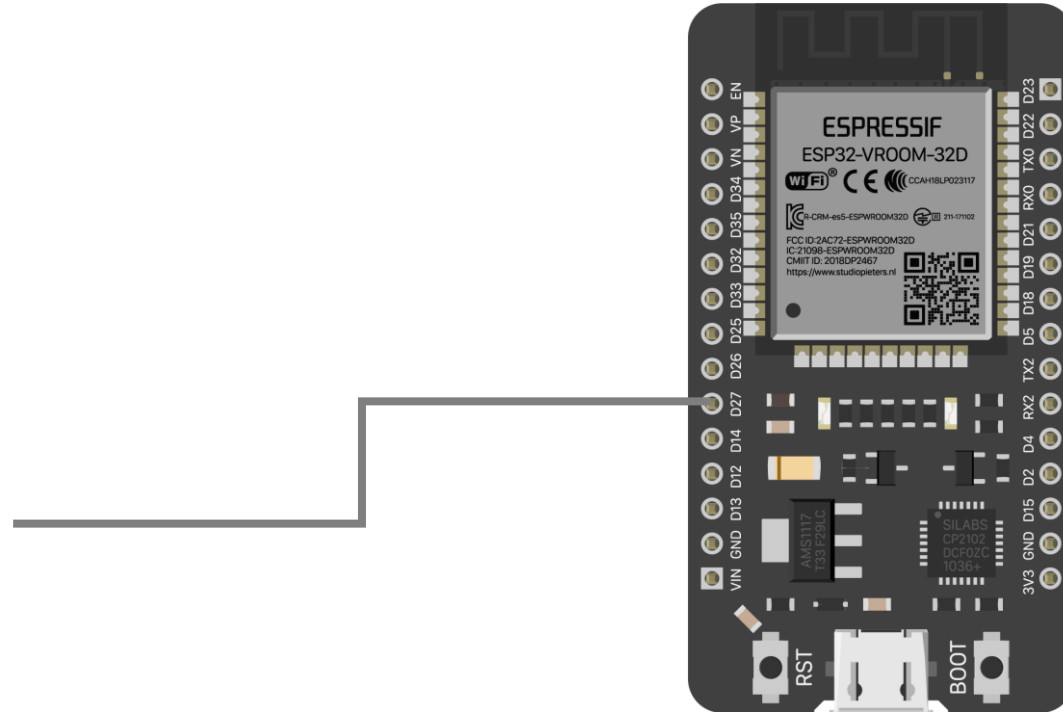
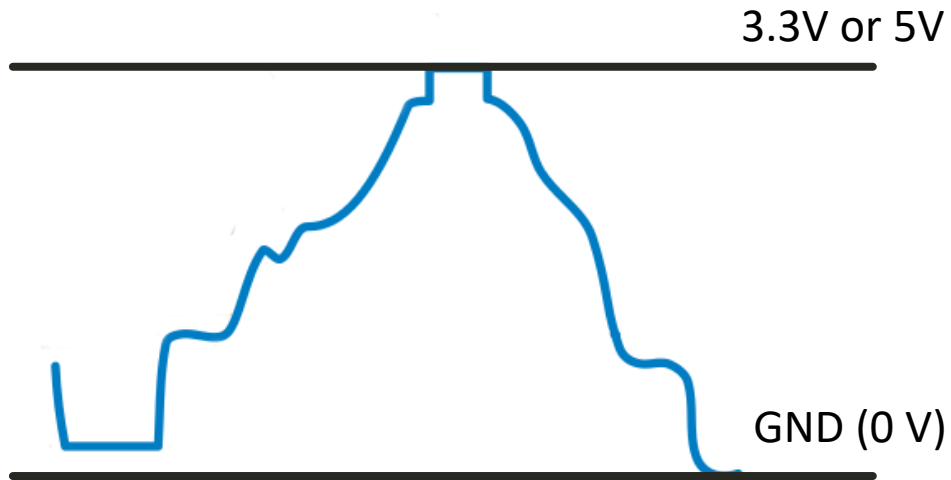
# What is a sensor?



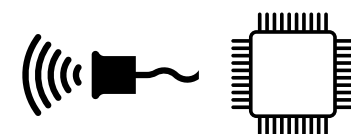
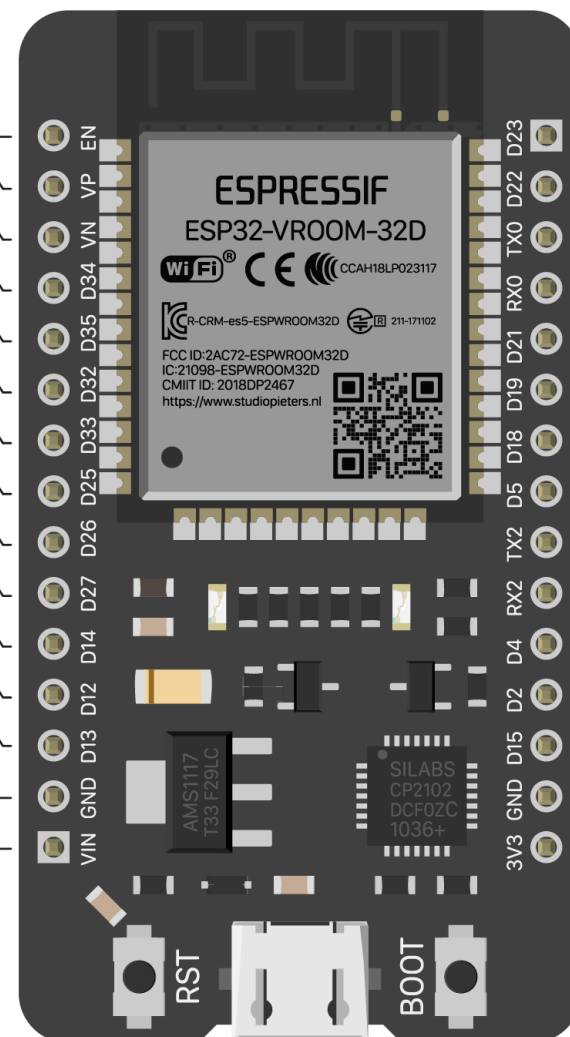
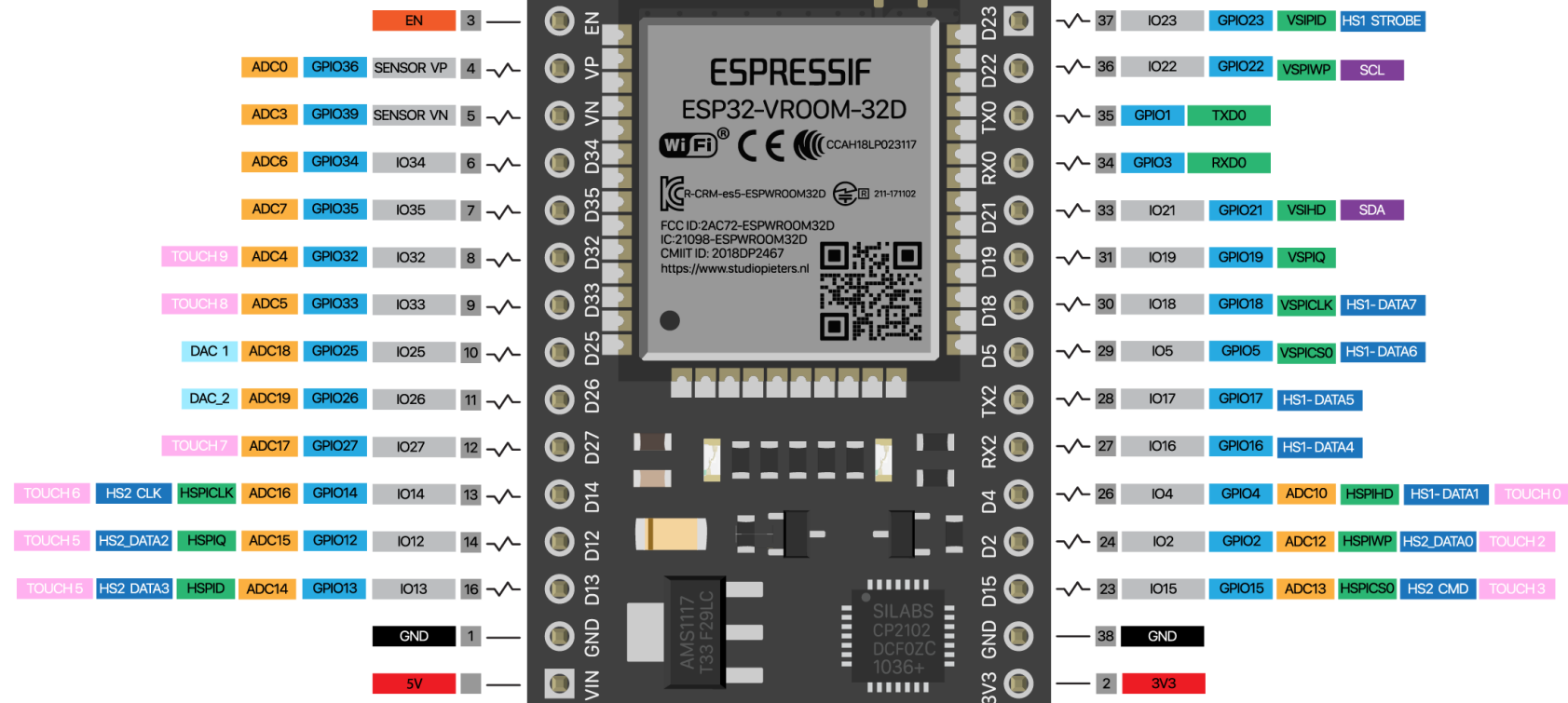
# What is a sensor?

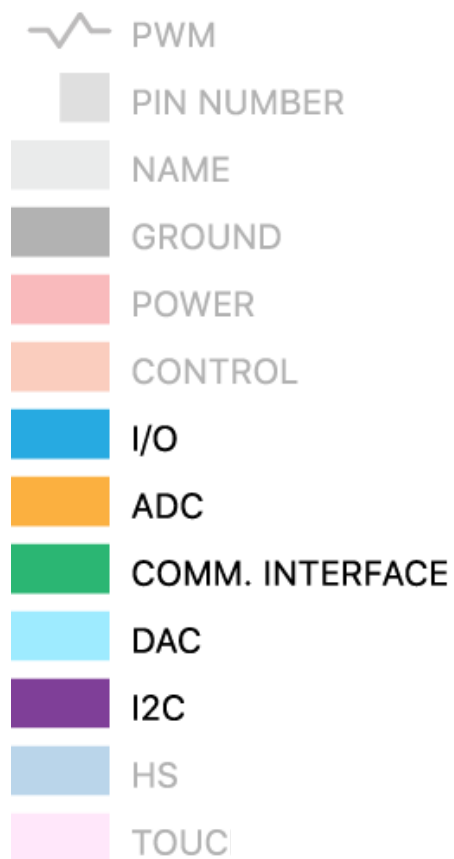


# Sensor to microcontroller

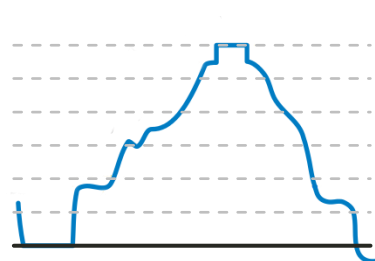




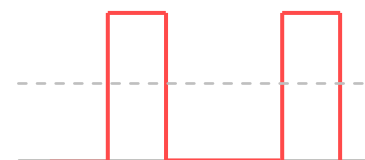




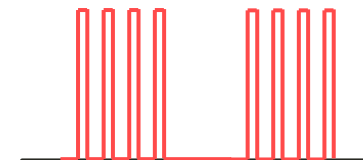
## Analog



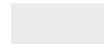








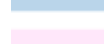



## Digital

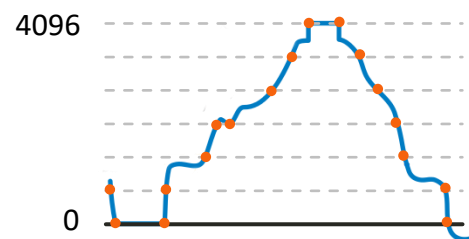
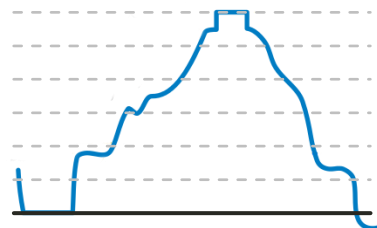


## Digital Protocol

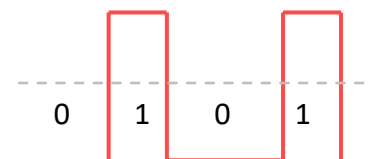


-  PWM
-  PIN NUMBER
-  NAME
-  GROUND
-  POWER
-  CONTROL
-  I/O
-  ADC
-  COMM. INTERFACE
-  DAC
-  I2C
-  HS
-  TOUC

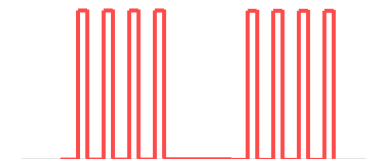
## Analog



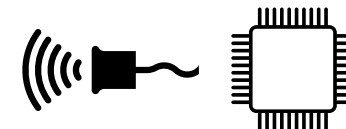
## Digital



## Digital Protocol

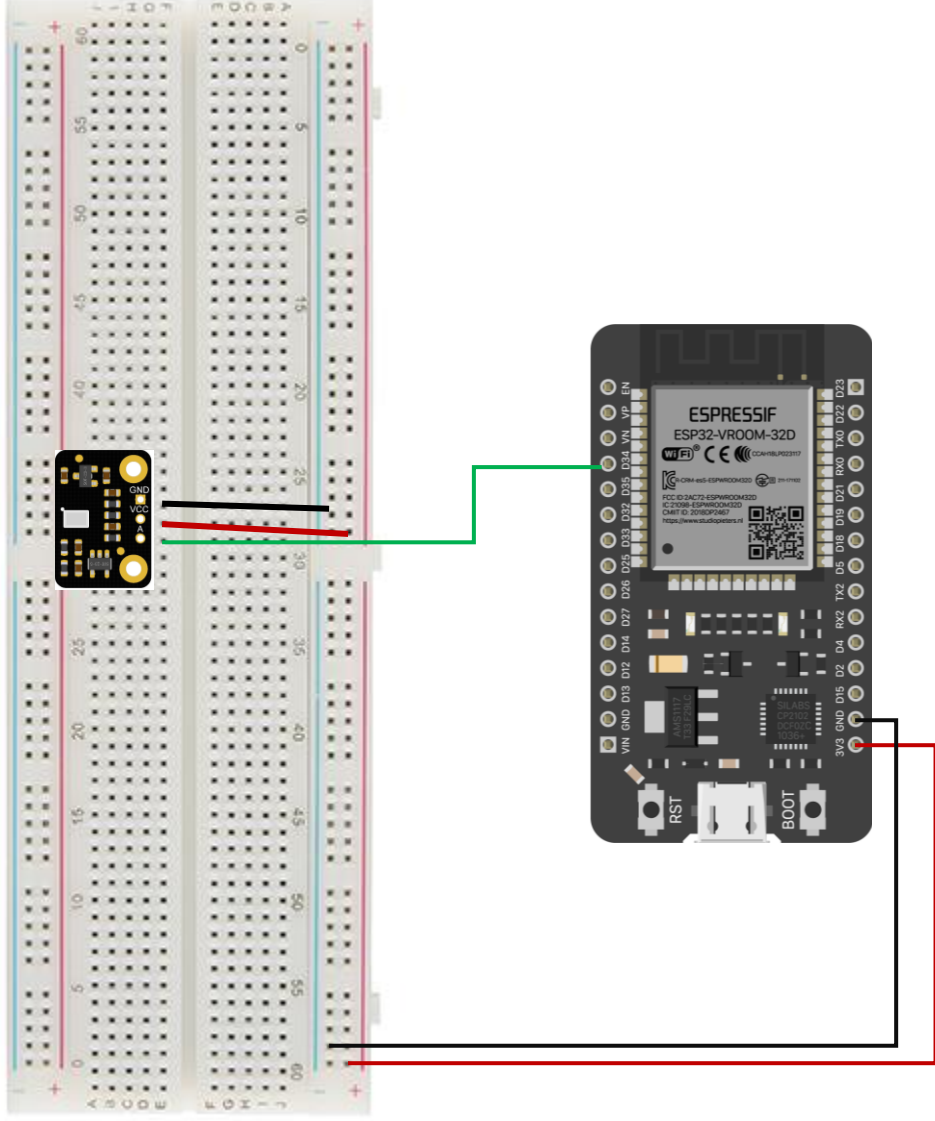


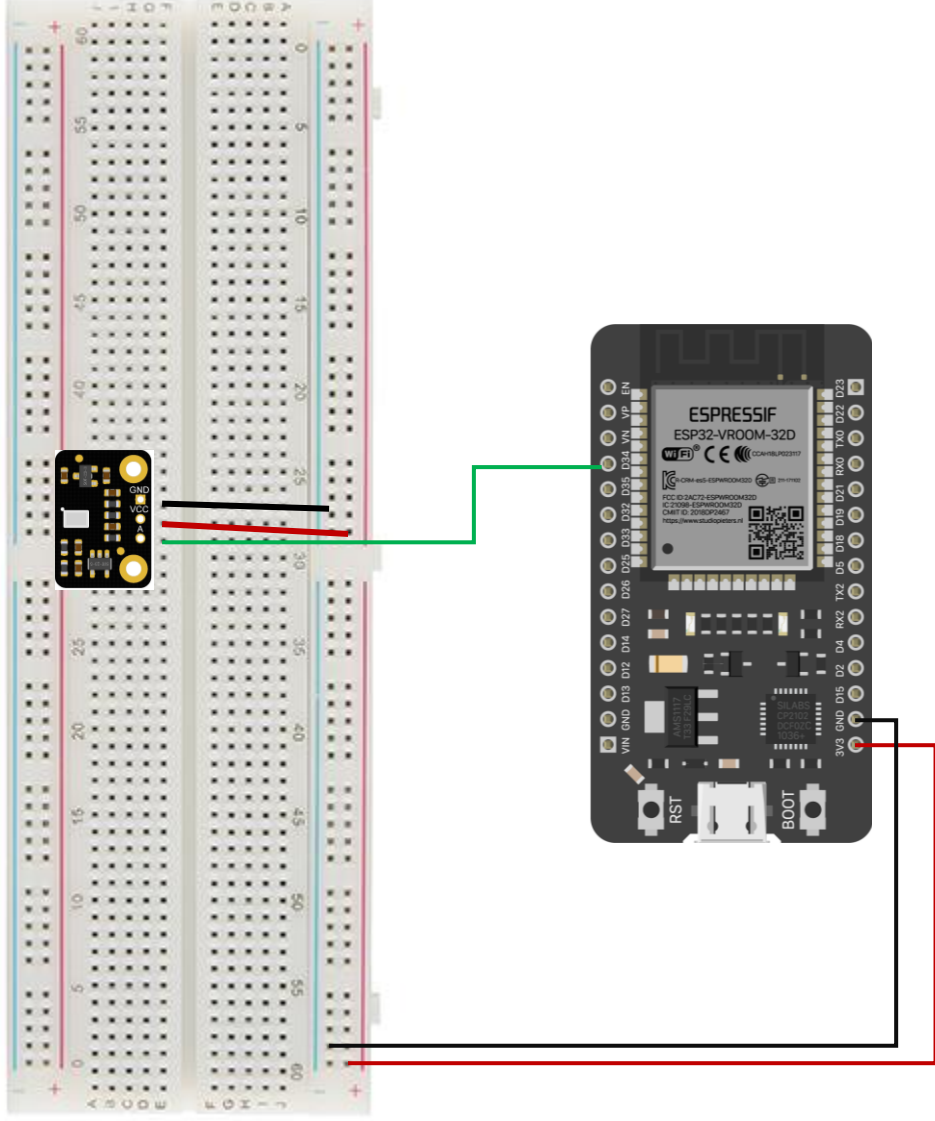
...Hjcuj655435...



A young boy with light brown hair and rosy cheeks is shown from the chest up against a solid orange background. He is wearing a white t-shirt. His eyes are closed, and he has a slight smile. A thick layer of brown chocolate spread is smeared on his right index finger, which he is holding up towards his face. In his left hand, he holds a clear glass jar filled with the same brown spread. The text "Time to get our hands dirty!" is overlaid in white on a black rectangular background across the middle of his face.

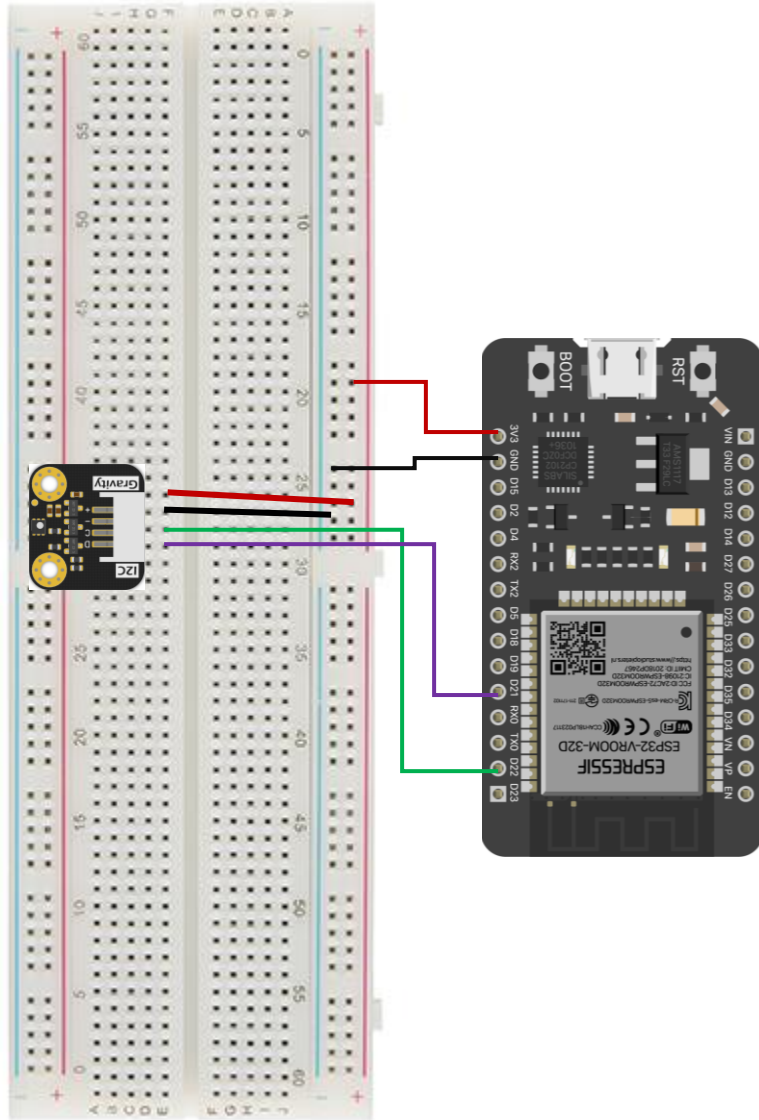
Time to get our hands dirty!

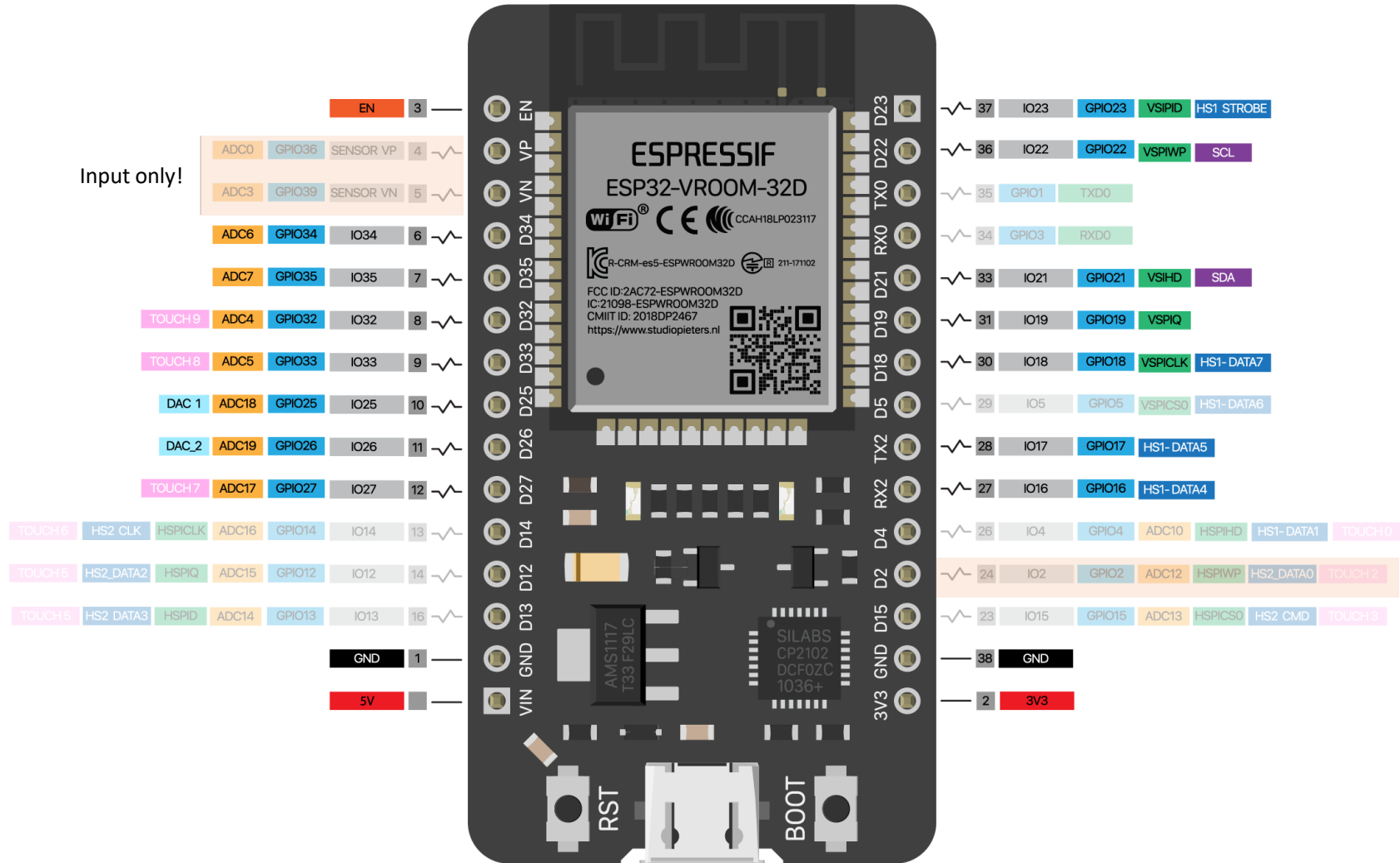






I2C Address: 0x59





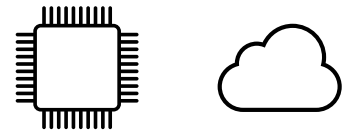
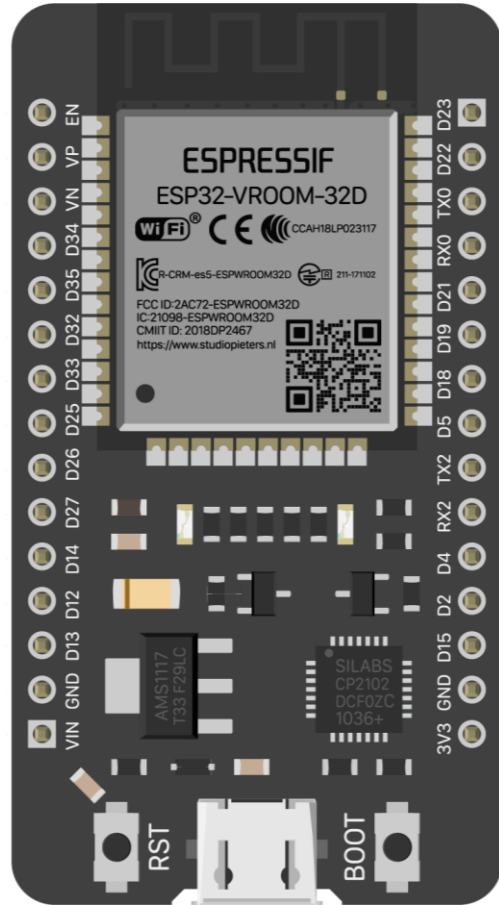
On-board LED

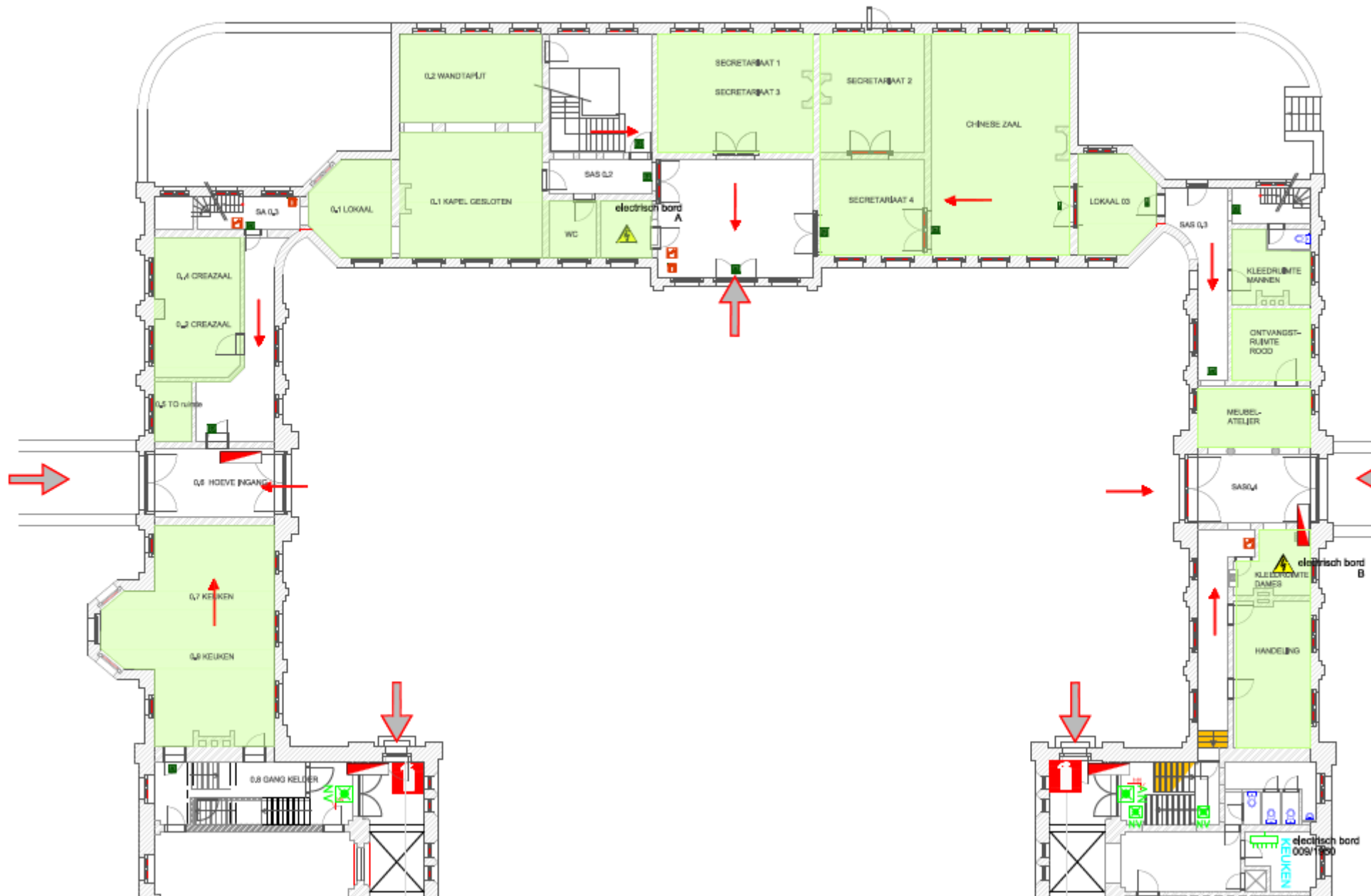


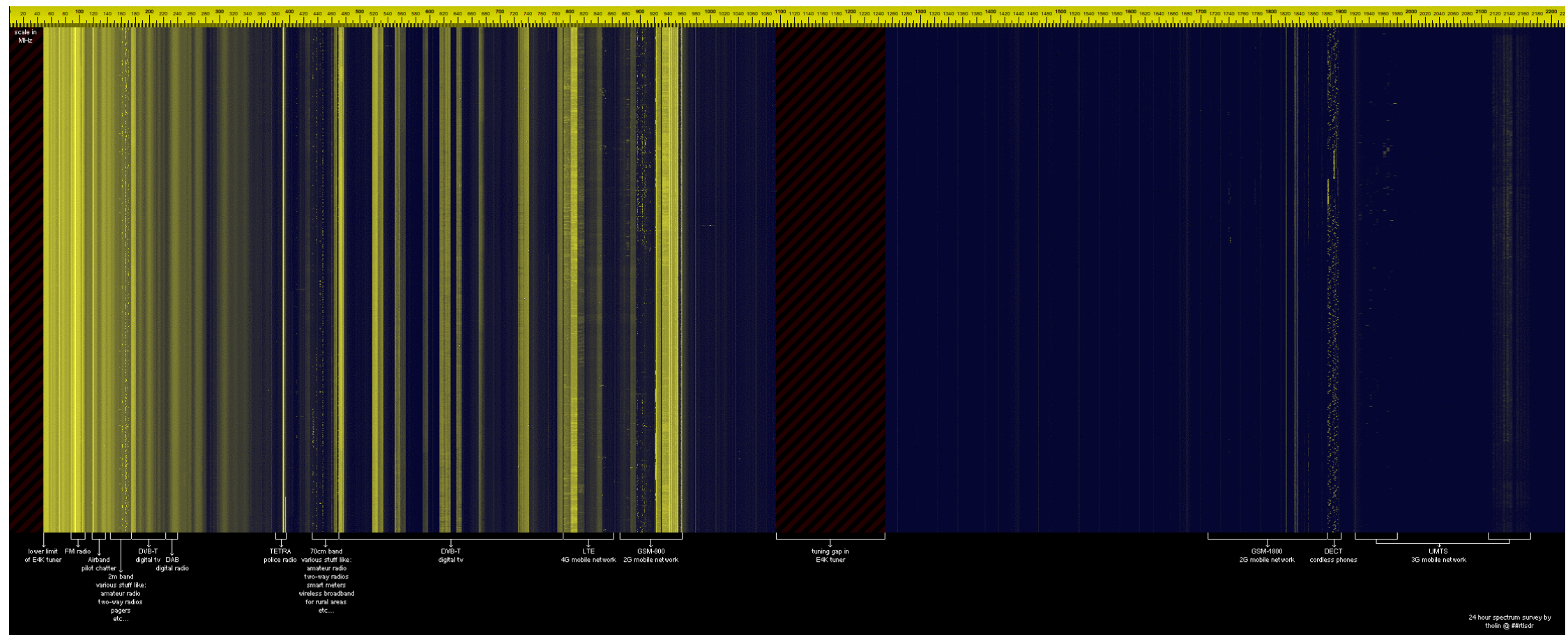


Reaching for the clouds

# Wireless Communication Protocols @ESP32







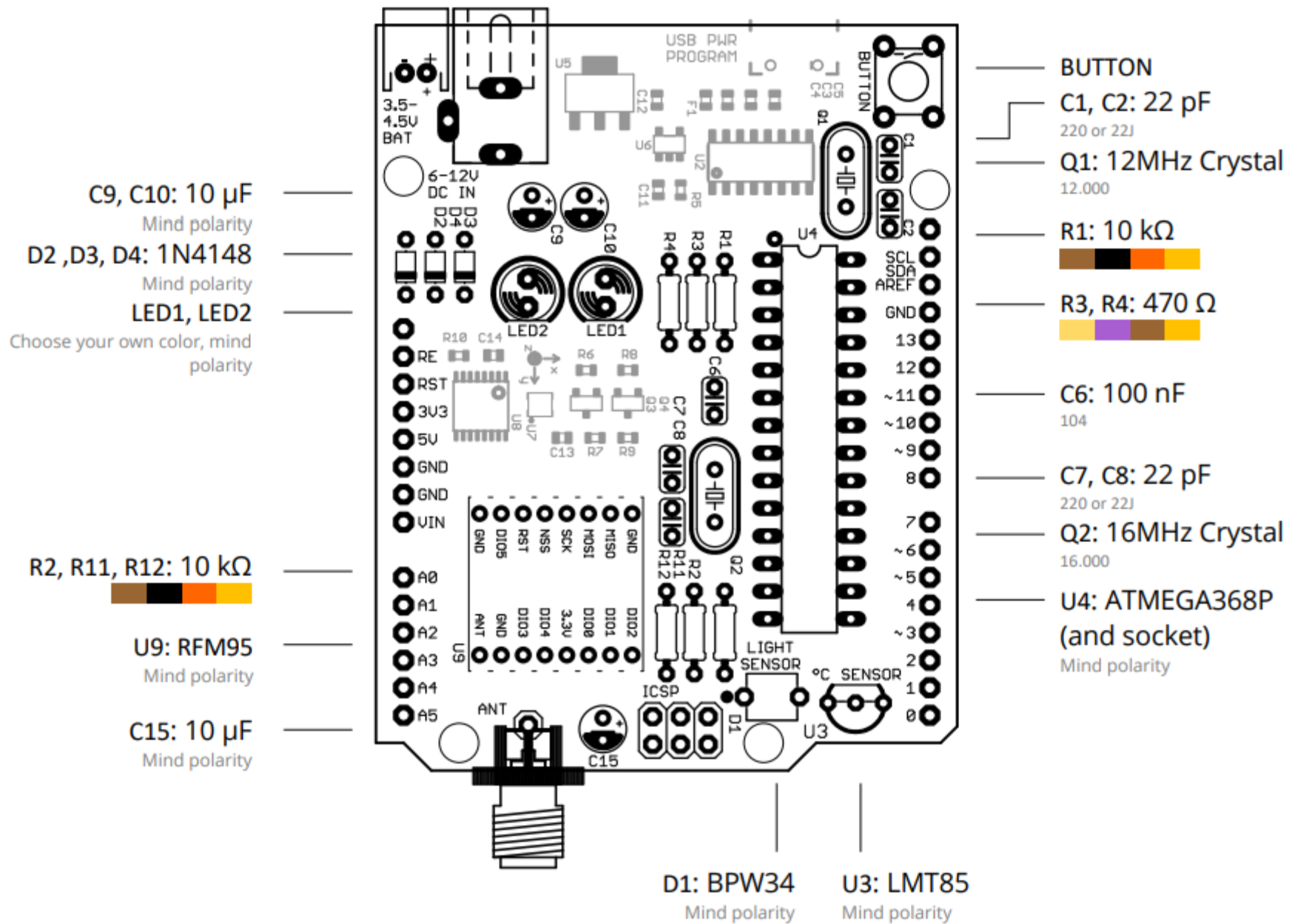
<http://kmkeen.com/rtl-power/>



DND-LAB-TCGent-5G\*








<https://dramco.be/projects/dramco-uno/>





Explore and be creative!