Operation Tempest

Interacting with connected objects

The team

GISTRE - 2016

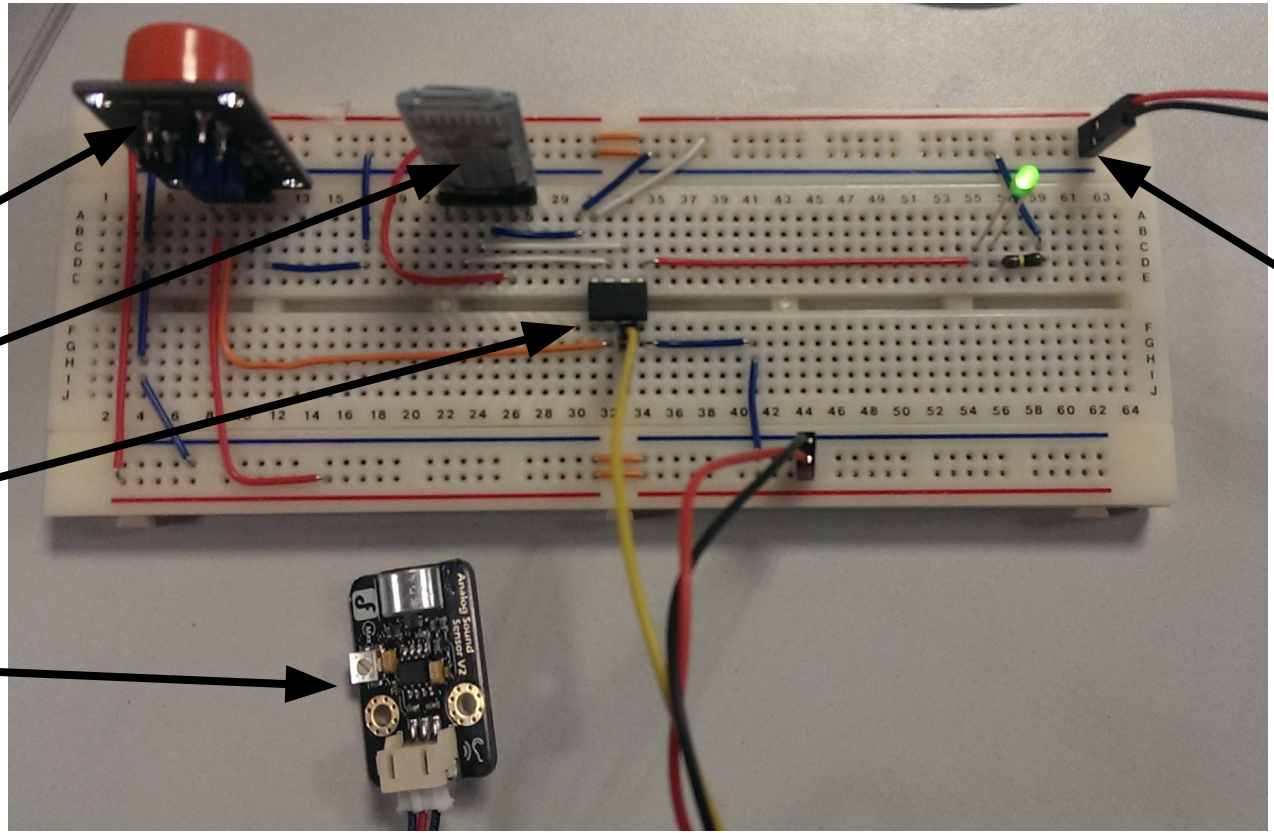
The project

Interacting with connected objects:

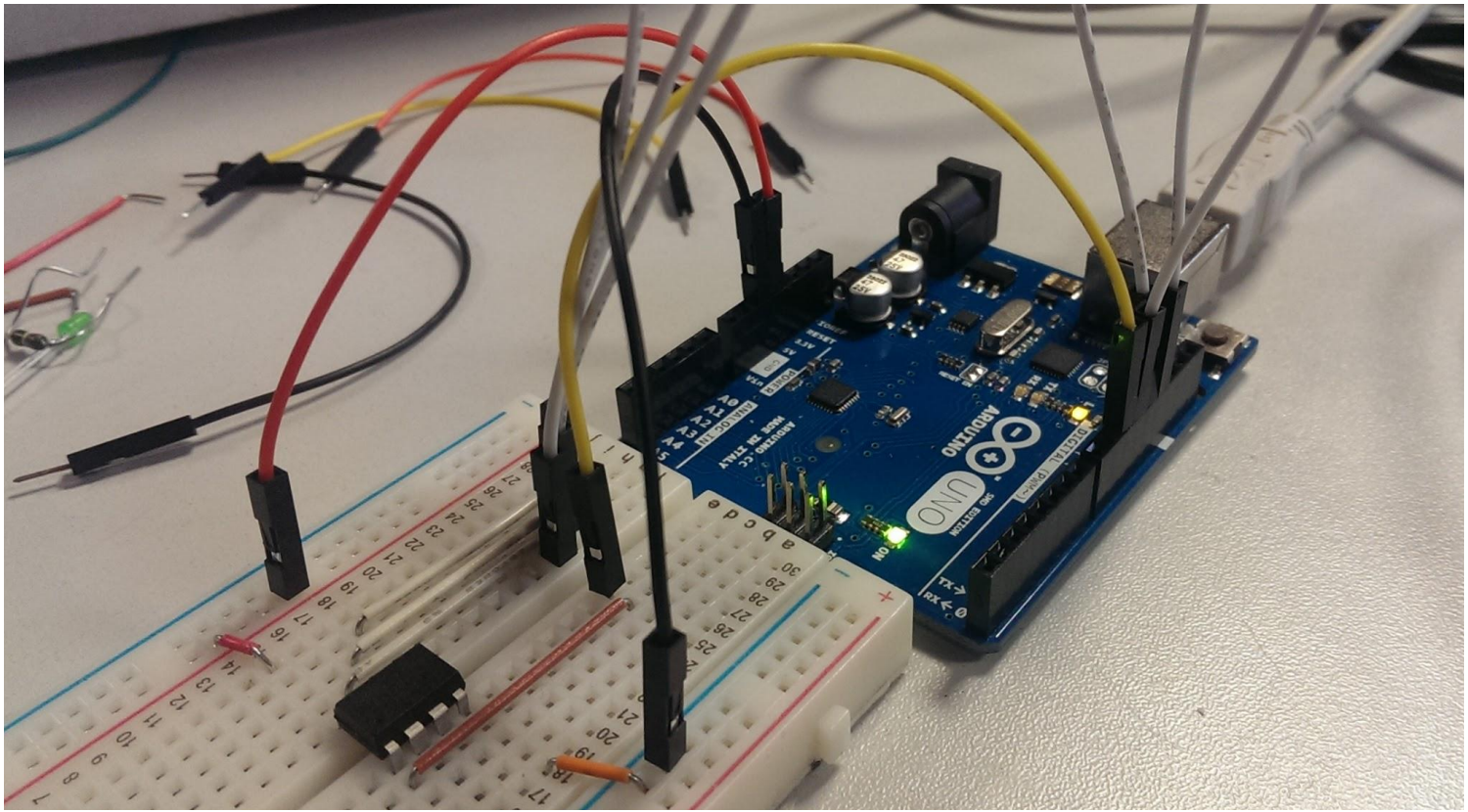
- Arduino Attiny
- Bluetooth RS232 TTL
- Computer (Blue mix, custom soft…)

Objective: sending data in real time, and analyze it.

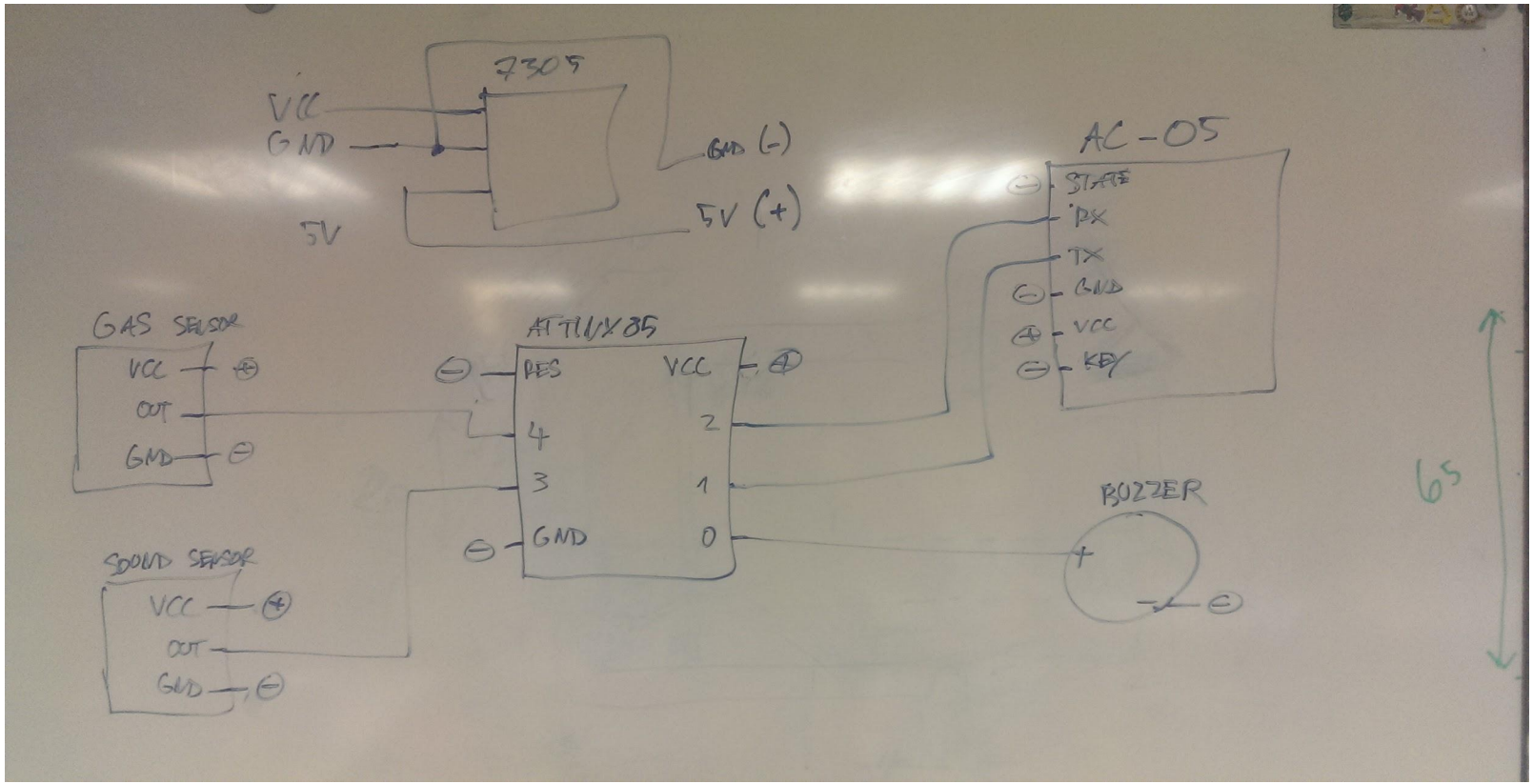
Testing the peripherals



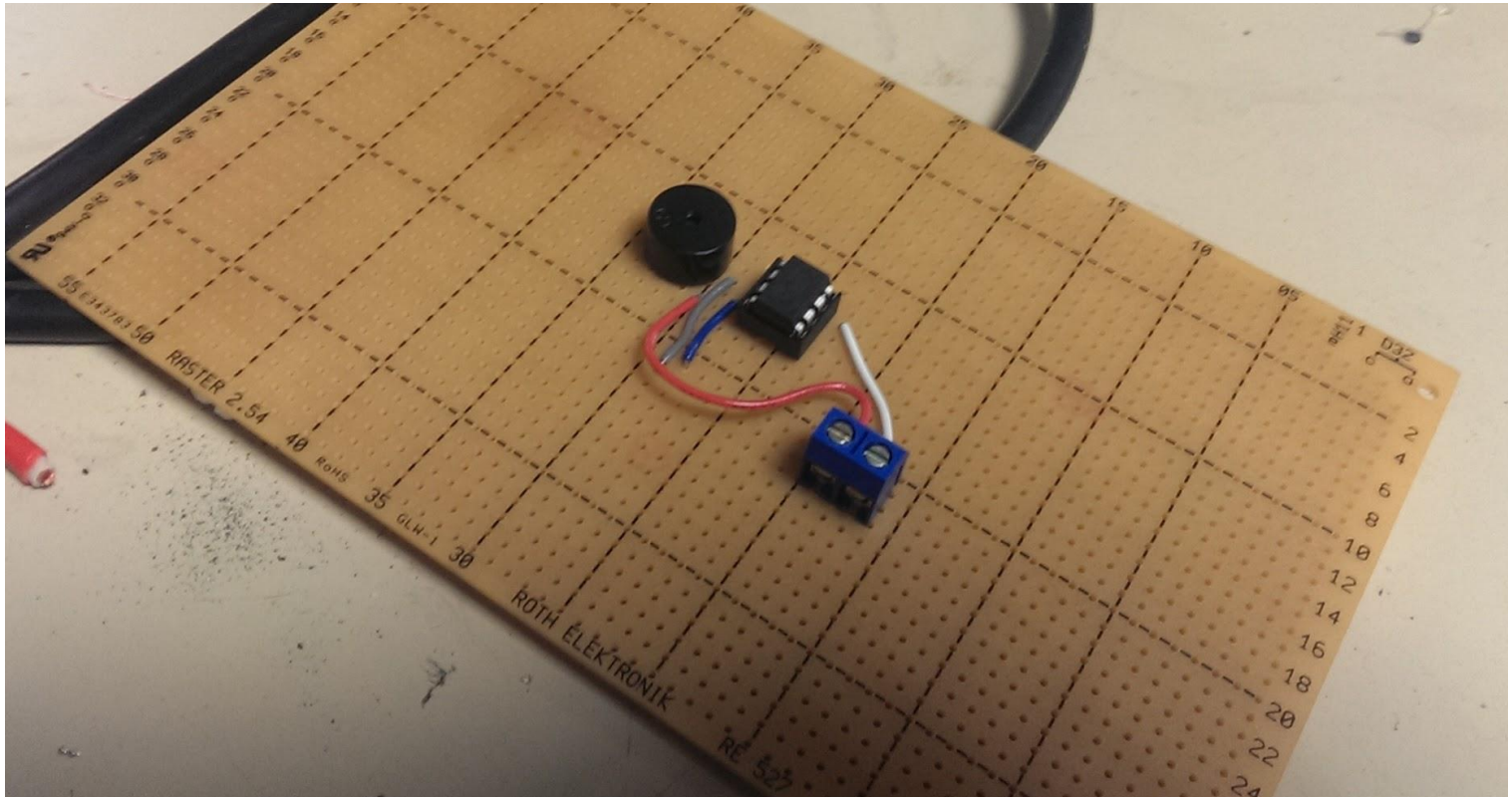
Attiny85: Programming setup



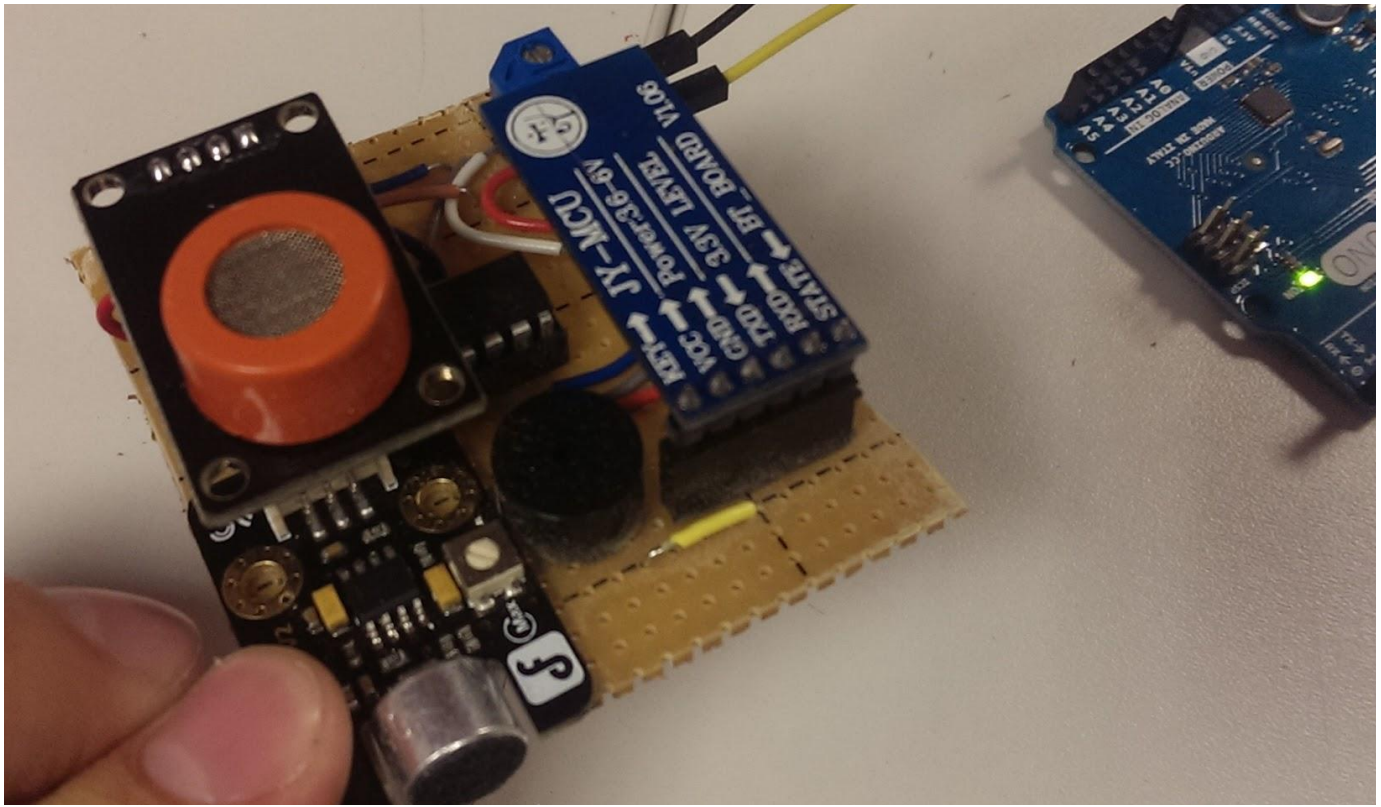
Electronic diagram



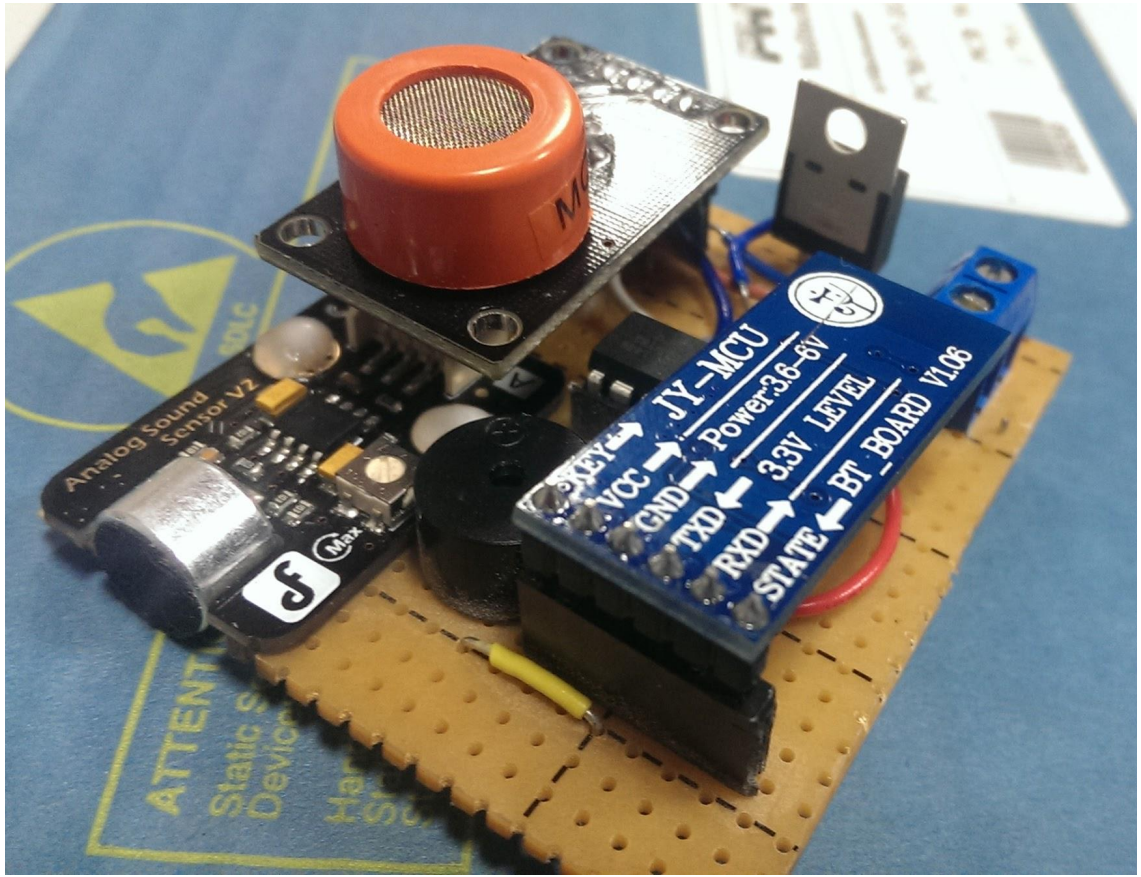
Work in progress



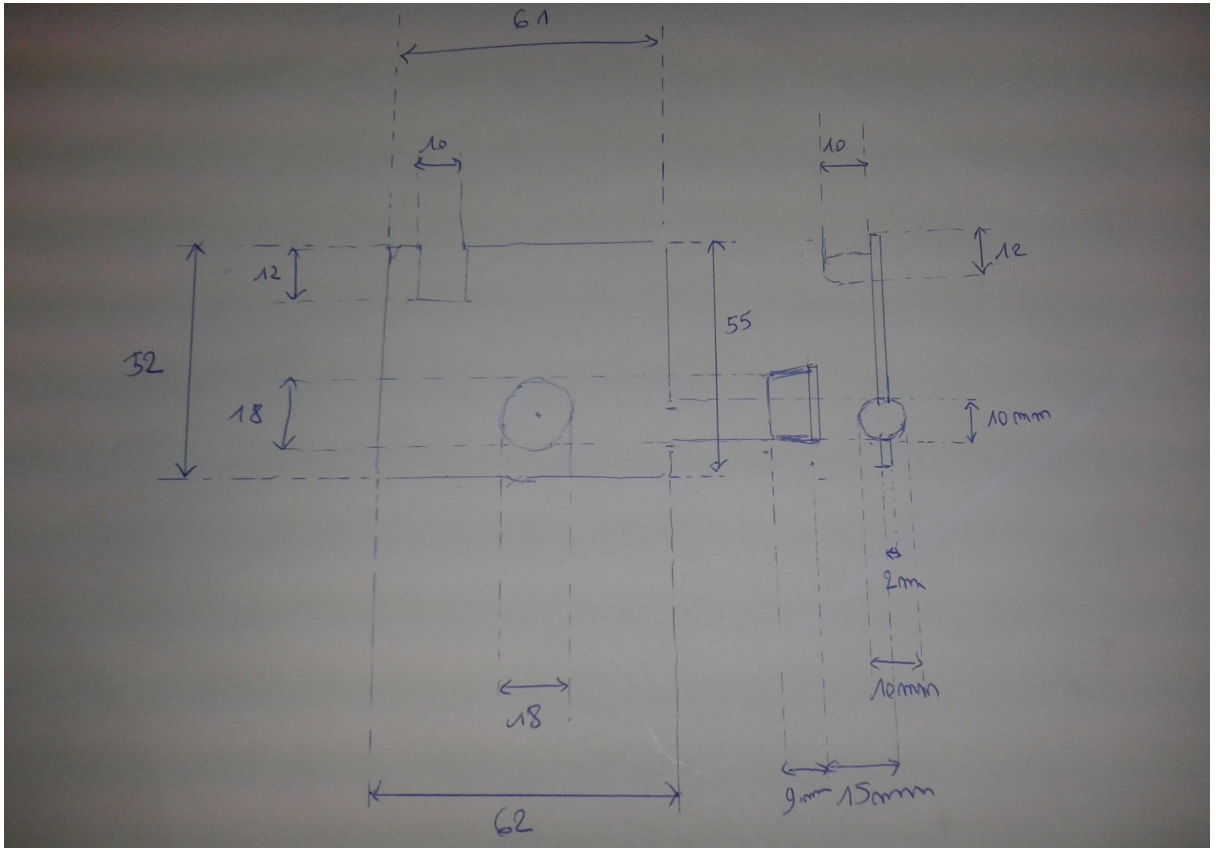
Work in progress



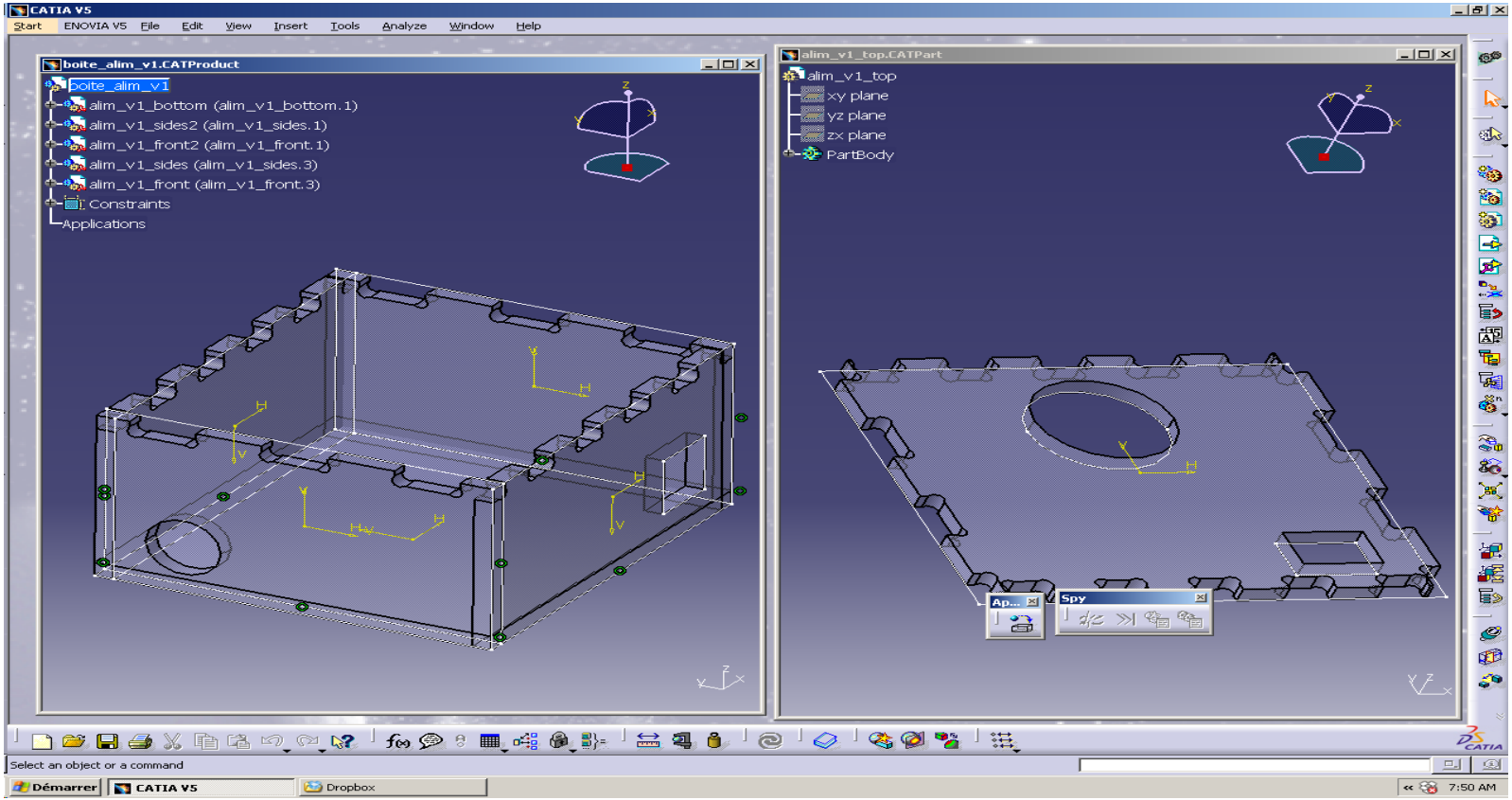
We’re done!


Analog Sound Sensor V2
JY-MCU
Power3.6-6V
3.3V LEVEL
BT_BOARD V1.06
VCC
GND
TXD
RXD
STATE

Finition: thinking it up

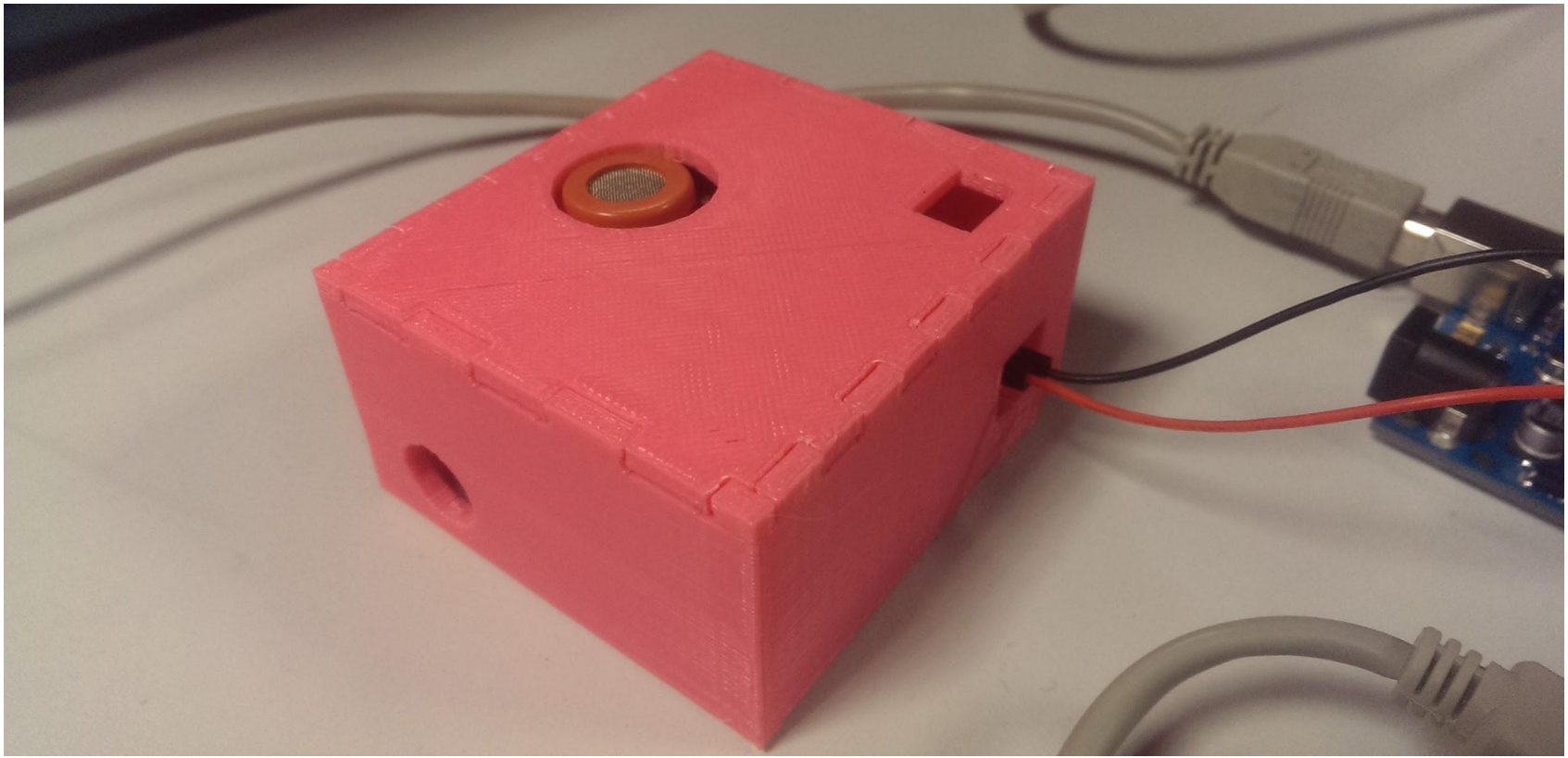


Finition: drawing it up

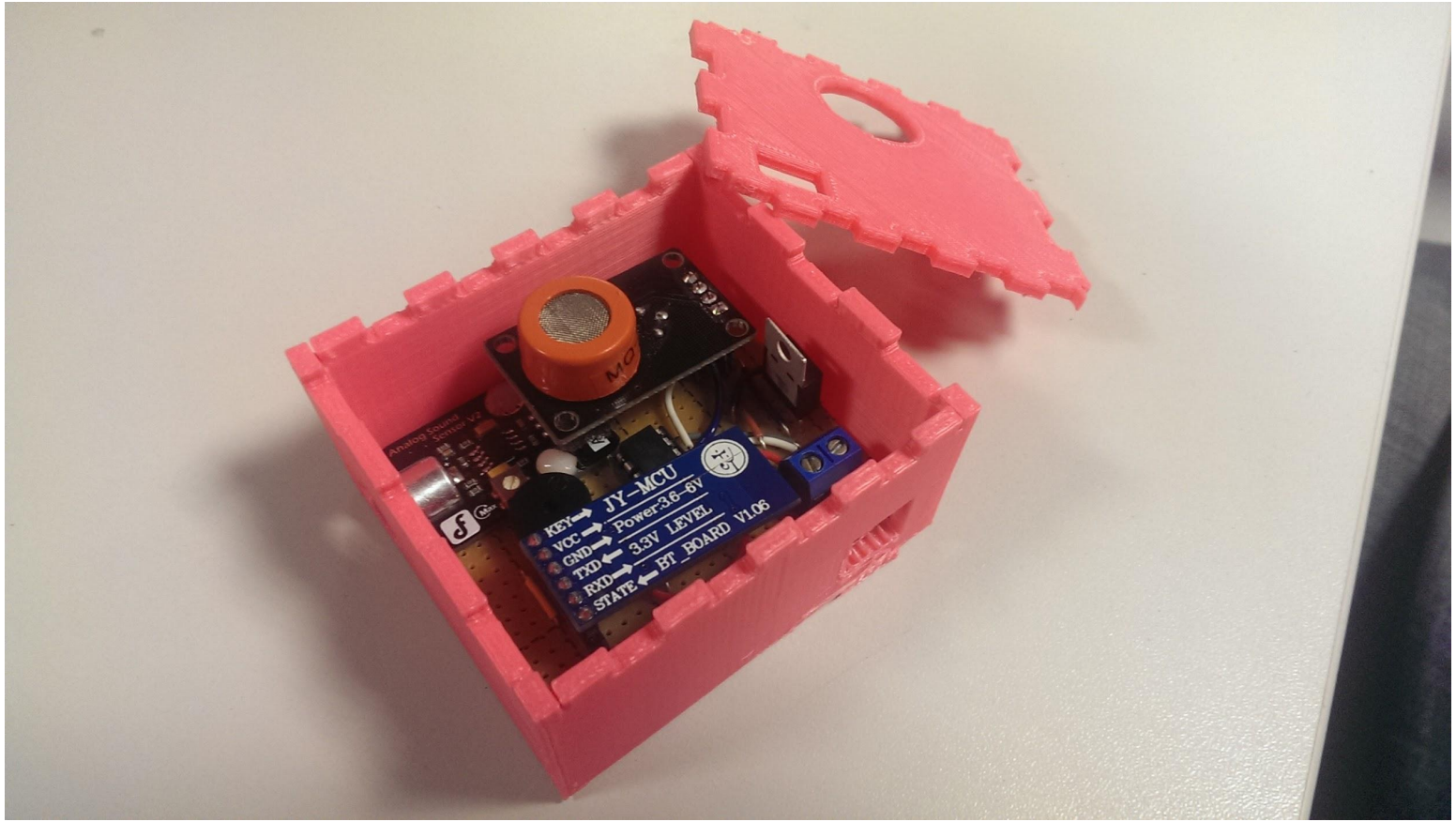


3D printing in action

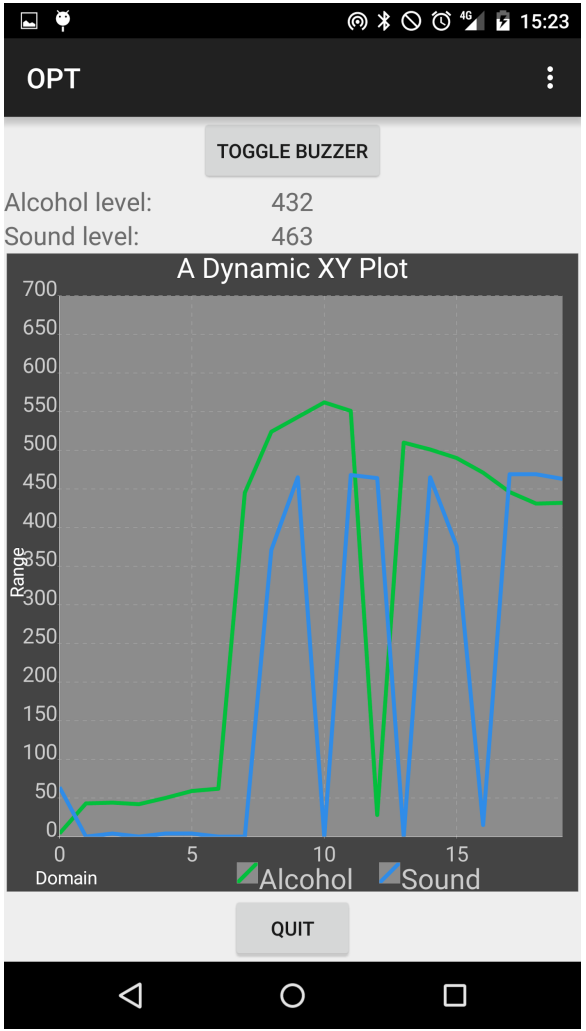
The final product



Final product: a sneak peak



Demonstration!



Questions?

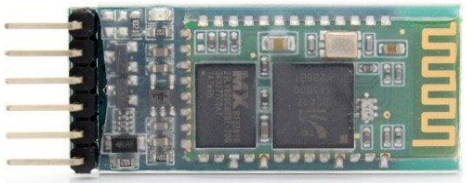
Problems: the bluetooth

- Cannot get the module working
- Tests were done with an oscilloscope
- It appears to be a problem with a diode on the module, blocking data transit in one way

This is probably due to the poor quality of the product (Made in China)

Bluetooth: Characteristics

- Price: $8
- 3.6 to 6V
- Bluetooth V3

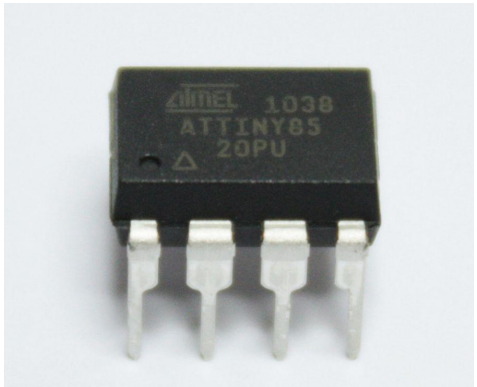


- Not yet functional
- Requires computer app to interact with.

Attiny85: Characteristics

- Price: $3
- 2 AnalogOut (TX, Buzzer)
- 3 AnalogIn (Sound, Rx, Breath)

- Requires special wiring for programmation



Sound sensor: Characteristics

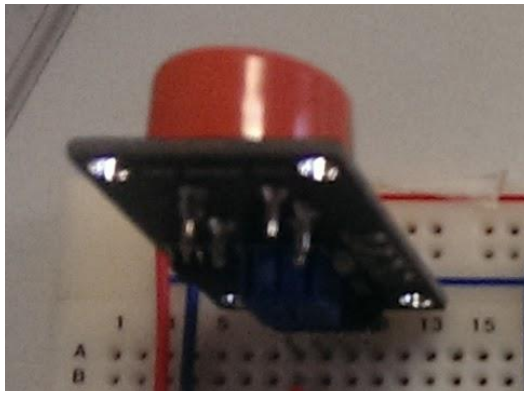
- Price: $8
- 3.3V to 5V

- Easy to program
- Not sensitive at high distances

Breath Analyzer: Addition

We thought it would be a great idea to add a breath analyzer to help people decide whether or not to take the wheel after a bit of drinking.

- Price: $5
- Only remotely accurate
- 3.3V to 5V



Sharp IR Sensor: Removed

We gave up on the Sharp IR sensor mainly because of its price, but also because it is not as useful in our setup as the breath analyzer is.

The breath analyzer and sound sensor complete each other.