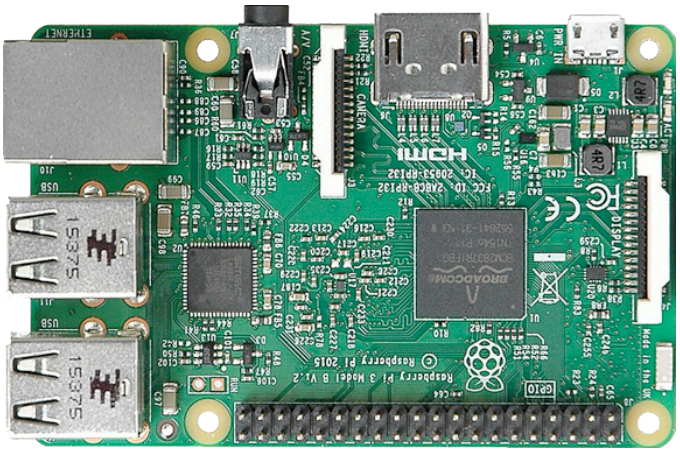
# Low-cost LoRa IoT platform part list

last update November 6th, 2016

## TO BUILD THE GATEWAY

- Raspberry: take either the RPI2 or RPI3 (RPI3 better for WiFi and Bluetooth)



You also need an 8GB SD card

RPI3 has built-in WiFi and Bluetooth 4.0,

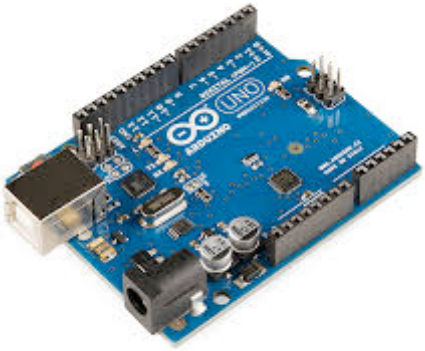
if you get or already have the RPI2 and want WiFi and Bluetooth, get dongles, but it is not mandatory. Dongles that have been tested successfully are:

WiFi: TP-LINK TL-WL725N

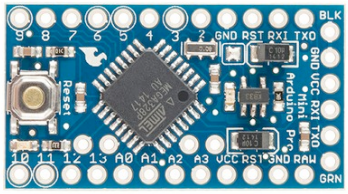

Bluetooth 4.0: CSR dongle or Konig dongle

## TO BUILD THE IOT DEVICE

- For prototyping and development tests Arduino Uno/MEGA2560



- For integration phase: Arduino Pro Mini (take the 3.3v, 8MHz version). Original version is from Sparkfun



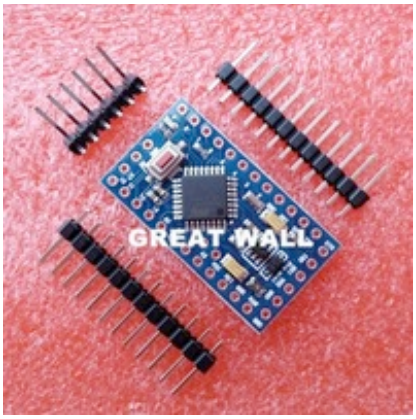
3.3v and 8MHz version

Can be bought as low as 1.5€ from Chinese manufacturers

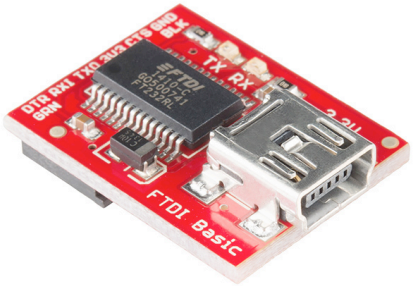
http://www.aliexpress.com/popular/arduino-pro-mini-328.html

We tested this one:

https://fr.aliexpress.com/store/product/Free-Shipping-1pcs-pro-mini-atmega328-Pro-Mini-328-Mini-ATMEGA328-3-3V-8MHz-for-Arduino/731260_32340942669.html?spm=2114.12010608.0.0.4LfFx2



You will also need the FTDI breakout (3.3v version) to program the board. You need only one to program all your boards. Original product from Sparkfun is here: https://www.sparkfun.com/products/9873




We tested this Chinese one that can be set either at 5v or 3.3v.

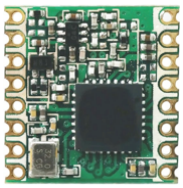
https://fr.aliexpress.com/store/product/Free-shipping-FT232RL-FT232-FTDI-USB-3-3V-5-5V-to-TTL-Serial-Adapter-Module-Mini/1735233_32648254875.html?spm=2114.12010608.0.0.PizHXM

## LORA RADIO MODULES

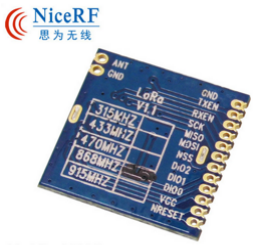
- take the Modtronix inAir9 with 6mm pin header already soldered (see the available option on the modtronix web page); and the 868MHz whip antenna

http://modtronix.com/inair9.html http://modtronix.com/ant-f105-868.html


- other radio modules are possible but require more soldering work



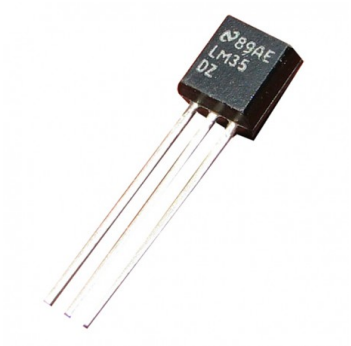
HopeRF
RFM92W/95W




LoRa1276
NiceRF LoRa1276

## SIMPLE PHYSICAL SENSOR FOR TEST AND DEMONSTRATION

- Simple temperature sensor: take a simple LM35DZ




from electronic stores

## WIRES, CASING, AND VARIOUS ADDITIONAL PARTS

- Breadboard cables: need both M-F and F-F

M-F

F-F

take those that are about 10cm to 20cm maximum.

- Out-door cases: electric out-door cases for instance

or any water-proof casing you can find suitable from your local hardware/electric stores

- 4-AA battery couplers for the IoT device

- Some standoffs/spacer and associated screws for the gateway

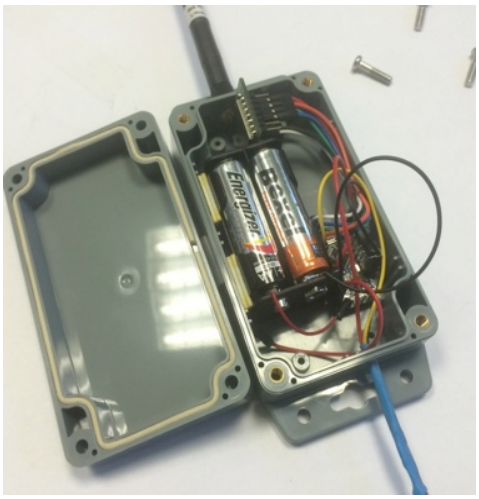
take 10mm to 20mm maximum

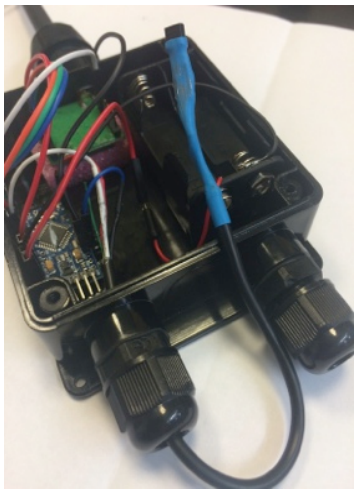
**SOLDERING MATERIALS THAT ARE NOT MANDATORY BUT ARE ALWAYS GOOD TO HAVE!**

- A simple soldering station with not too thick solder wire

- A set of heat-shrink tubes to isolate wires / silicon for joints

**RESULTS:**





Enjoy!

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