

Phyphox and Arduino Tutorial

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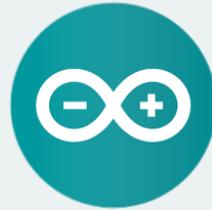
[Physics Reimagined](#)

Laboratory of Solid State Physics
Paris-Saclay University

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1

Download the Arduino IDE



ARDUINO 1.8.13

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software.

This software can be used with any Arduino board. Refer to the [Getting Started](#) page for Installation instructions.

Windows Installer, for Windows 7 and up
Windows ZIP file for non admin install

Windows app Requires Win 8.1 or 10

[Get](#)

Mac OS X 10.10 or newer

Linux 32 bits

Linux 64 bits

Linux ARM 32 bits

Linux ARM 64 bits

[Release Notes](#)

[Source Code](#)

[Checksums \(sha512\)](#)

Download and install the Arduino IDE on [their website](#).

Download our program on [our site](#).

Connect the board to one of your computer's USB ports.

2

← Extraire les dossiers compressés

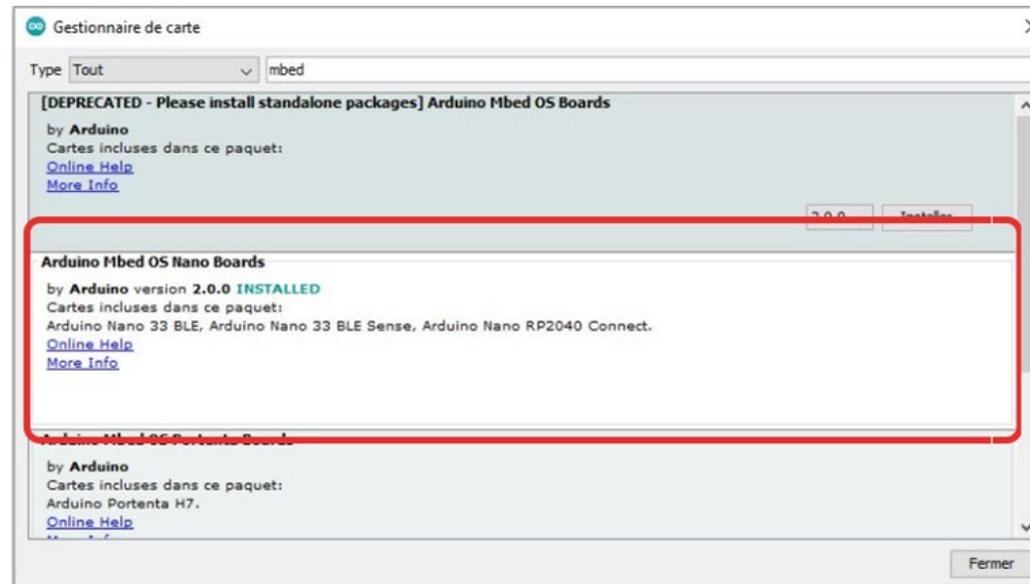
Sélectionner une destination et extraire les fichiers

Les fichiers seront extraits dans ce dossier :

Afficher les dossiers extraits une fois l'opération terminée

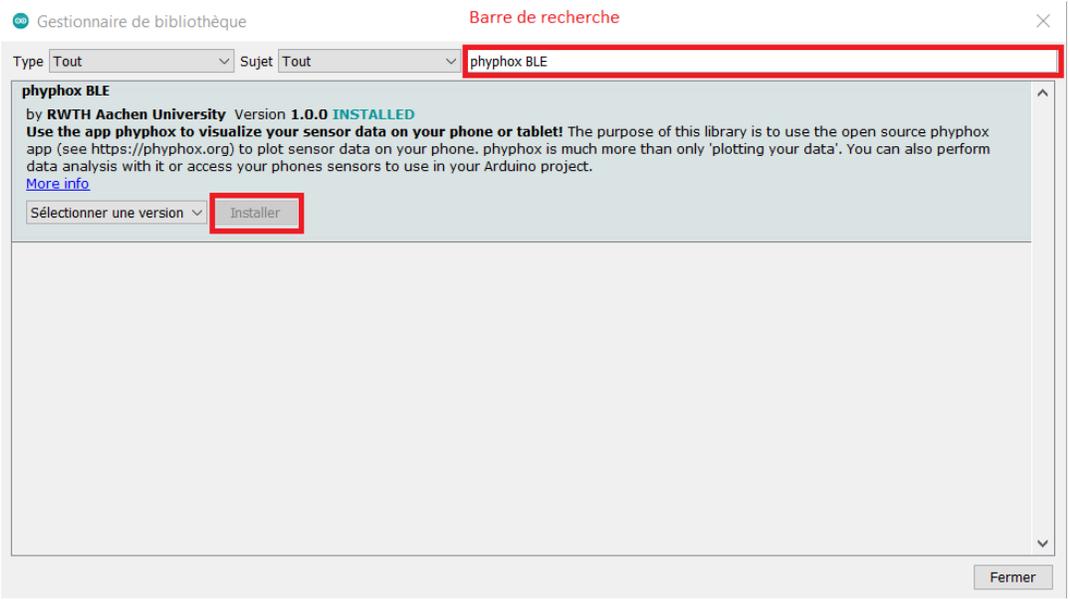
Extract our program (Right click → Extract all) then launch « nano_phyphox_v1.ino ».

3



Go to Tools → Board → Boards Manager, then use the search bar to find and install the last version of Arduino Mbed OS Nano Boards by Arduino.

4



Go to Tools → Manage Libraries, then use the search bar to find and install the last versions of these 5 libraries:

- phyphox BLE by RWTH Aachen University
- Arduino_LSM9DS1 by Arduino
- Arduino_LPS22HB by Arduino
- Arduino_HTS221 by Arduino
- Arduino_APDS9960 by Arduino

Go to Tools → Port and choose the port COMX to which an Arduino Nano 33 BLE is connected.

5

```
#include <phyphoxBle.h>
#include <Arduino_LSM9DS1.h>
#include <Arduino_LPS22HB.h>
#include <Arduino_HTS221.h>
#include <Arduino_APDS9960.h>

char board_name[] = "Phyphox1"; // to change the name displayed by the board
float choice = 0.0;
float accx, accy, accz, acc;
--
```

If needed, change the name displayed by the board (mostly useful if there are several boards in the same room).

6



Click on Upload ("→" icon under File and Edit).

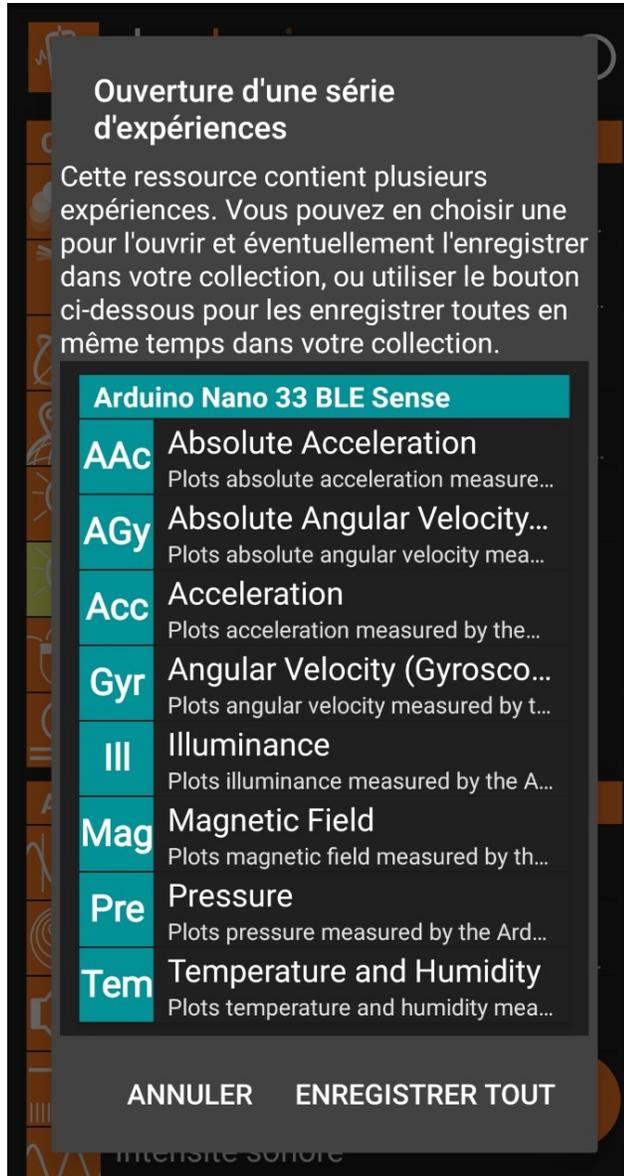
Wait for the end of the loading, which will be indicated by "Done uploading" at the bottom of the window.



Download the phyphox app by RWTH Aachen on Google Play or App-Store.

Launch the phyphox app, click on "+" then "Add an experiment with a QR code".
Flash the following QR code.
(Alternatively, you can go to our site and click on "Phyphox experiments" under Tutorials and program.)

7



8

Select Save all.

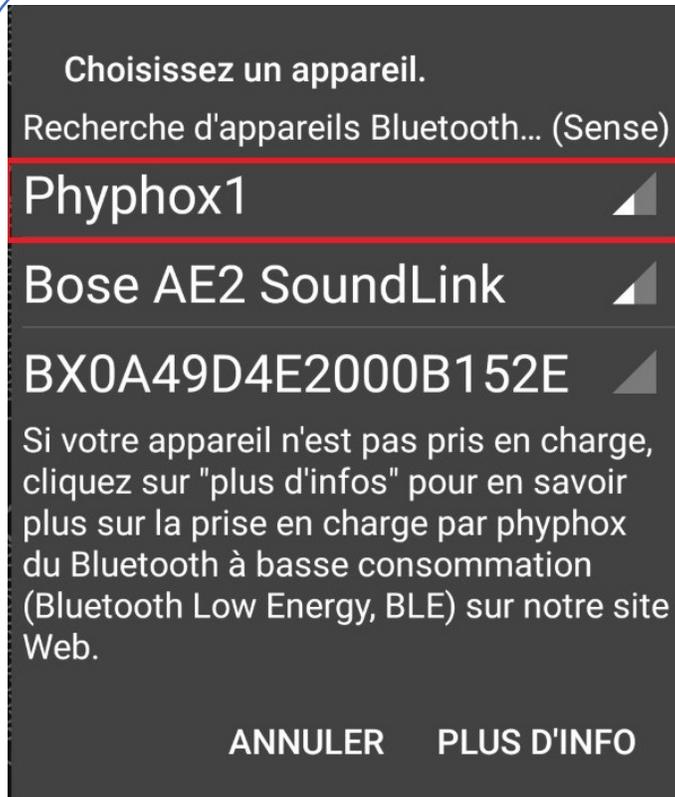
In the list of phyphox experiments, ours are now available under "Arduino Nano 33 BLE Sense".

Acc	Acceleration Plots acceleration measured by the Arduin...
Pre	Analog Input Plots A0 analog input.
Gyr	Angular Velocity (Gyroscope) Plots angular velocity measured by the Ard...
Ill	Illuminance Plots illuminance measured by the Arduino...
Mag	Magnetic Field Plots magnetic field measured by the Ardu...
Pre	Pressure Plots pressure measured by the Arduino c...
Tem	Temperature and Humidity Plots temperature and humidity measured...

To start using the experiments, power your board, and activate Bluetooth and GPS on your smartphone.

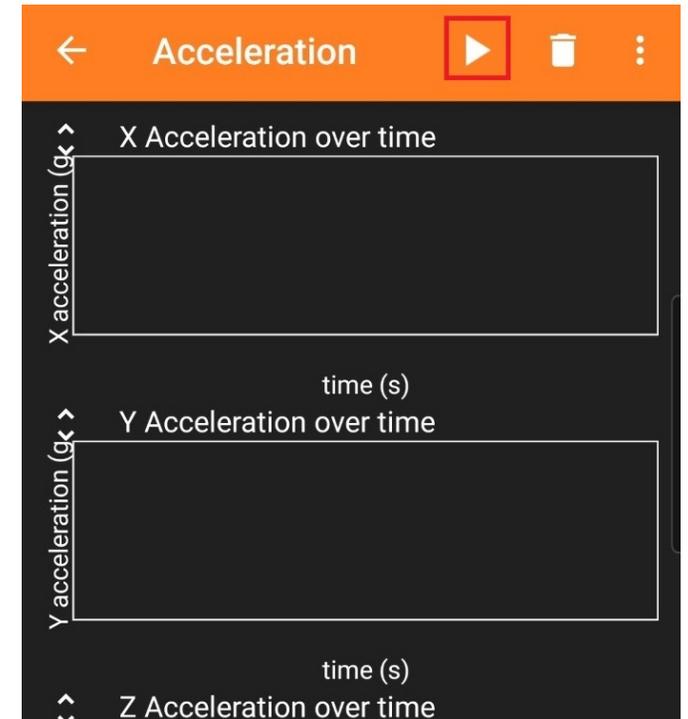
Launch phyphox and select an experiment under Arduino Nano 33 BLE Sense.

9



Select the board to which the smartphone should connect (Phyphox1 here).

10



Run the experiment.

11