



# GPS Signal Repeater Installation Manual



For RR400/420 and  
**ANDROID** smartphone or tablet

Version **210830**

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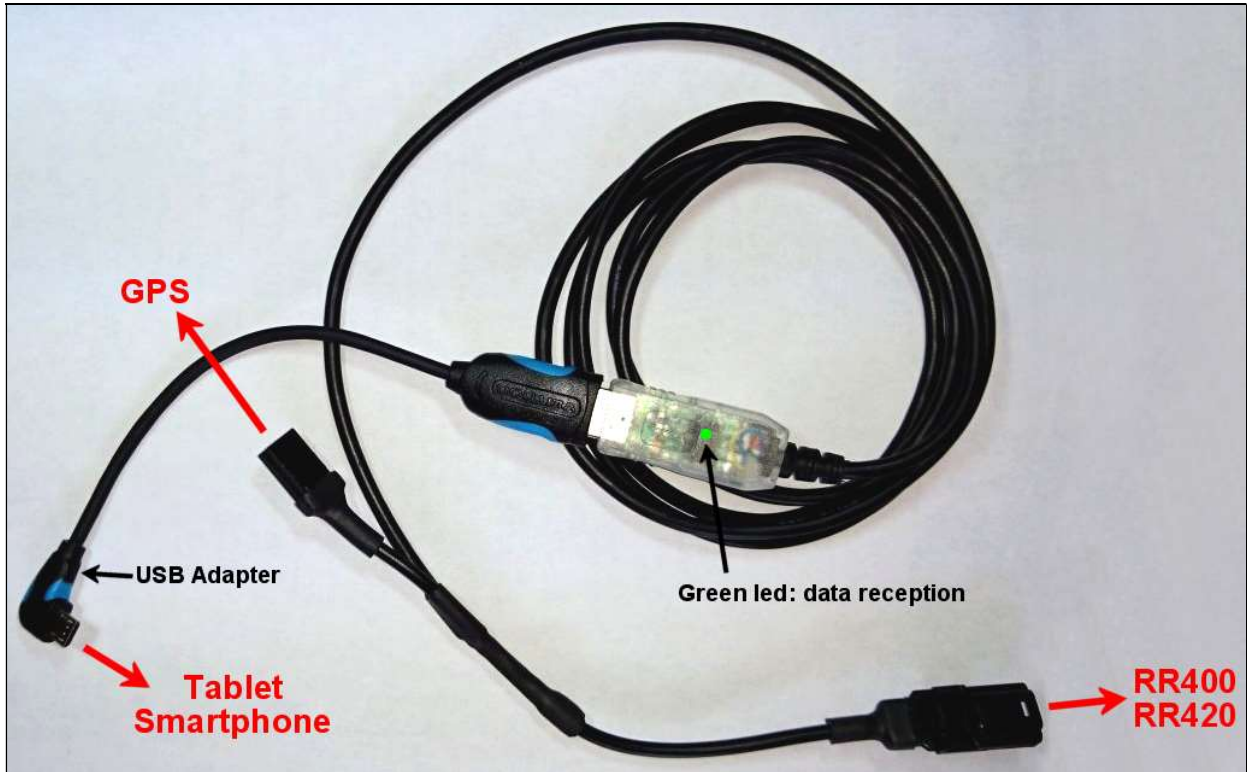
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## 1 Connection

Unplug the RR400/420 GPS receiver. Choose the USB adapter according to the smartphone or tablet:

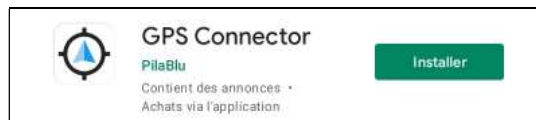
- MicroUSB OTG (not regular MicroUSB) to power the converter and enable the smartphone or tablet to gain control of the GPS receiver,
- USB C.

Then connect as follows:



## 0 Installing / Setting up the GPS Driver

From Android “Store”, install *GPS Connector - PilaBlu*

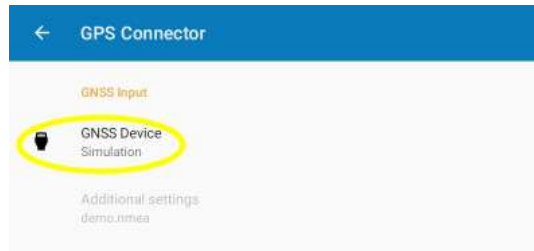


Once installed:

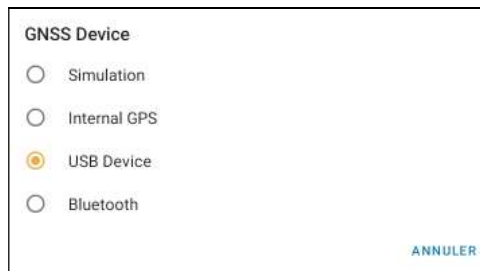
- parameters:



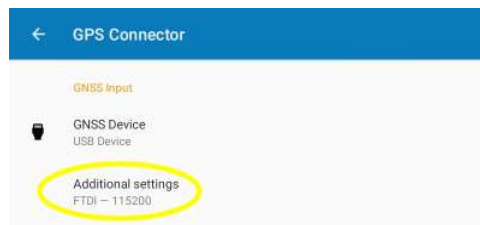
- GNSS Input:



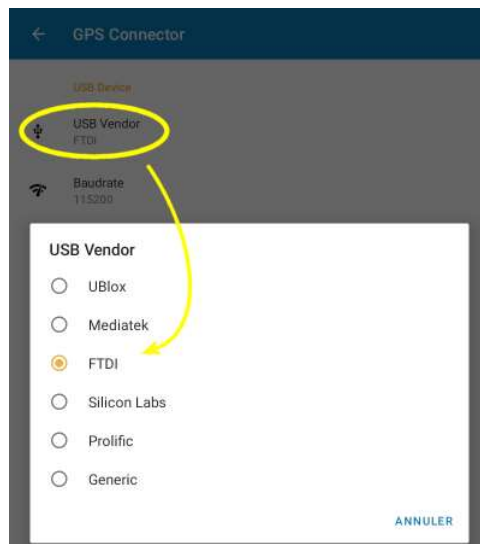
Choose « USB Device »:



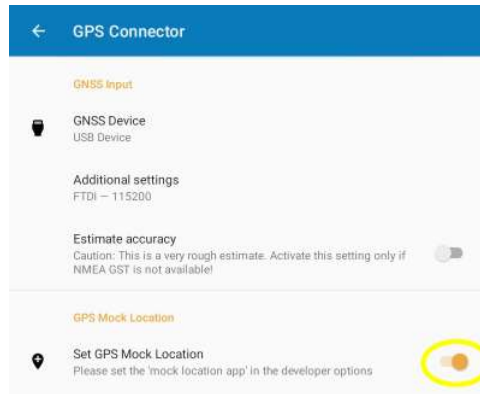
- Additional settings :



Click « USB Vendor » and choose « FTDI »:



- And then Set GPS Mock Location:



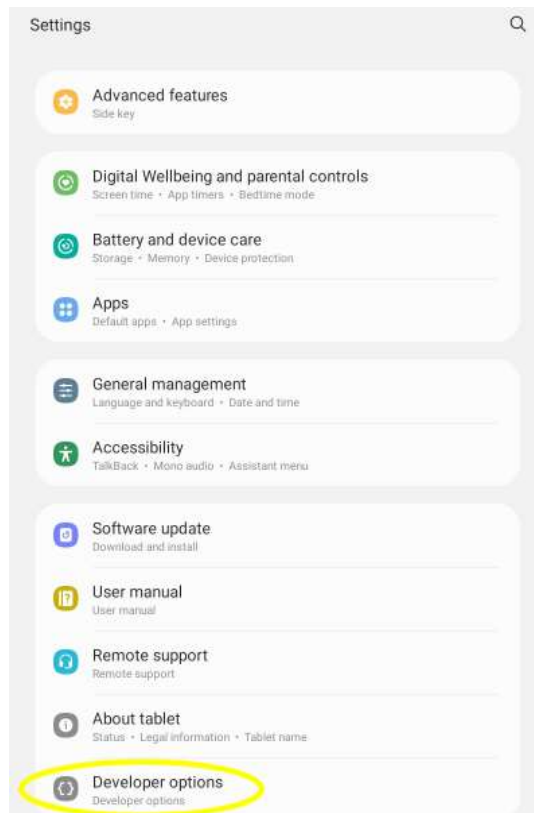
## 0 Allowing the use of an external GPS

Disable the internal GPS in the drop-down list at the top of the screen.

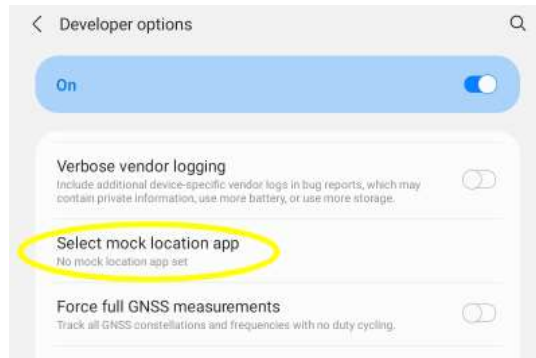
*Android* defaults to its internal GPS. In order to allow the use of an external GPS, enable “Google Developer Mode” on the device. Depending on the *Android* version and overlay, the steps can slightly differ. Tutorials are available online; for example:

<https://www.androidexplained.com/enable-developer-mode/>

Once in developer mode, in main Settings, click on “Developer options”:

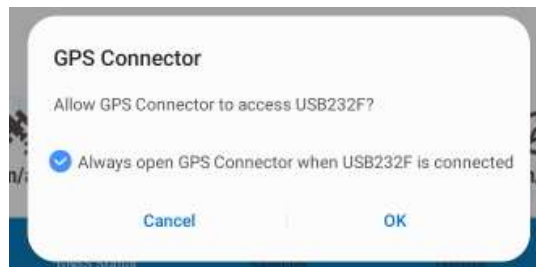


In the long options list search for “Select mock location app”:



And select *GPS Connector*.

When the harness is connected (first time) a popup window opens:



Click “Always open...”, then “OK”.

Please note: on some devices, connecting a USB device is not detected automatically. Click on “Detect USB device” in the drop-down menu (at the top of the screen with Wi-Fi, Bluetooth, airplane mode, etc.)

The RR400/420 must be powered to provide power to the GPS receiver,

Once the USB device is detected, the green LED of the USB adapter should flash at 10 Hz (ten times per second).

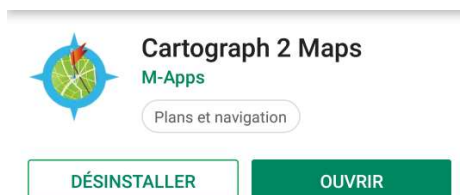
## 0 The mapping software

### 0.0 Software installation

There are many mapping software choices for *Android*. We recommend downloading Cartograph 2 Maps, a low-cost application which includes all the needed functions:

- display a GPX or KML path,
- refresh the screen at 10 Hz,
- use an external GPS,
- display the map in the direction of travel.

(Note: this program may require some time to get familiarized with but is remarkably stable and accurate with our application)



## 0.0 Installing maps

The Cartograph 2 Maps developer advises using “Open Street” maps. These are detailed vector maps, and precise when zooming in. They are intended for bicyclists but very well suited to use in rallies:

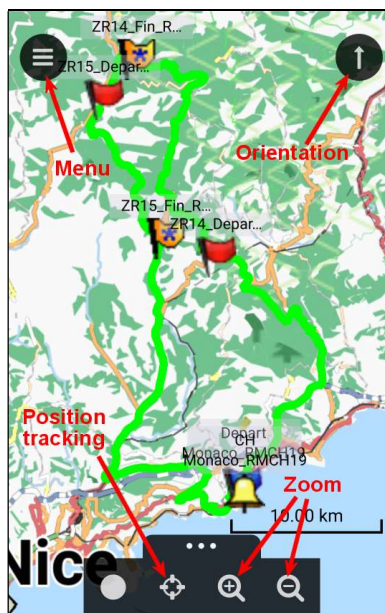
<https://www.openandromaps.org/en/downloads/europe>

A map of France is available in two 1 Gb files (North and South). These maps are usable as such with Cartograph.

They can be downloaded and unzipped on a computer and transferred into a file on the mobile device via cable. It is also possible to download them directly to the mobile via Wi-Fi.

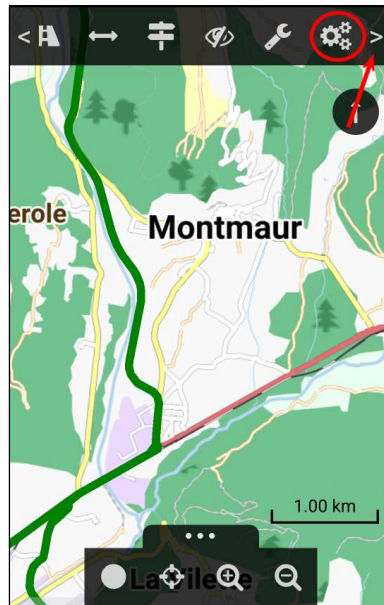
There is an “Offline Maps” directory in the Cartograph Pro directory, but the file can also be copied on an SD card.

## 0.0 Cartograph configuration



### 0.0.0 General configuration

At the first installation, the configuration button is located to the far right of the top button bar, scroll to the right, depending on the size and resolution of the screen:



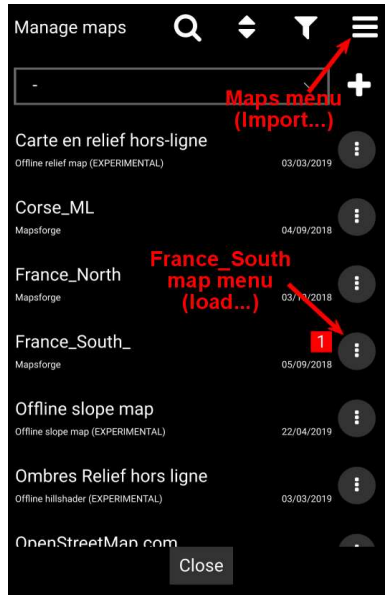
The software detects the language automatically. If not:

- menu
- scroll to the bottom and select “Settings”
- scroll to Language and choose “English”
- restart the program for the change of language to be effective.

Recommended general configuration:

- menu
- scroll to the bottom and select “Settings”
- check “Keep screen on”
- check “Map scalebar”
- check “Compass”
- check “Show bottom toolbar handle”
- check “Enable map popup”
- check “Show waypoints names”
- “default track width”: 7
- default track color: green
- check “Use plain Garmin symbols”
- “Waypoint marker size” = 30 to 35, depending on the size and resolution of the screen
- “Waypoint text size” = 12 to 15, depending on the size and resolution of the screen
- “Screen scaling factor” can be increased a little (1.1 to 1.4) to have bigger buttons, easier to use by car, depending on the size and resolution of the screen

### 4.3.2 Selecting and displaying the map



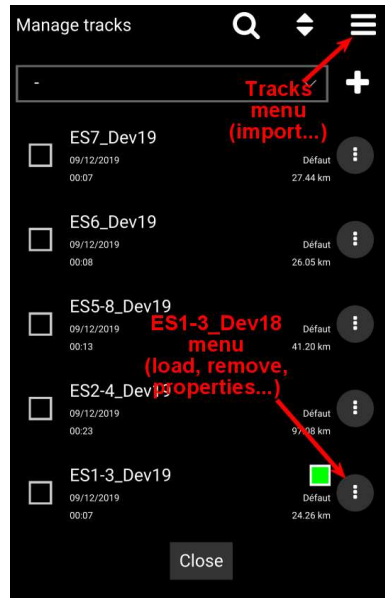
- menu
- at the top: “Manage maps”
- menu at the top right: “+ Import offline map”
- look for the downloaded map

Once the map is imported, it appears in the list.

Click on the menu for the relevant map, then on “Load current position”. Only one map is loaded at a time.

### Selecting and displaying tracks

- copy GPX tracks on the device, There is no dedicated directory.
- menu, “Tracks” “Manage tracks”:



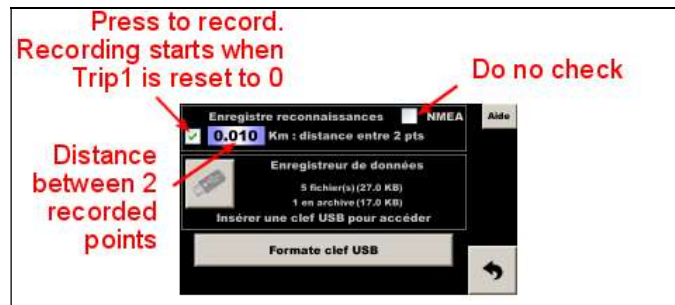
- in the Tracks menu “+ Import Tracks”, then “Internal file picker”
- select the track(s) to import
- for each track, via its own menu, it is possible to:
  - o show it on the map with “Load as track”
  - o “Remove from map”
  - o delete from the list keep it on the mobile device



- modify its properties, especially the color. By default the color can be grey, to go back to the color defined in the general settings, uncheck “Custom styling”

## 1 Preparing tracks

On the timer, record the tracks, with a point every 10 m. :



To extract them, insert the USB drive and press the right button.

This results in files whose name begins with "scout" and ends with the date and time. The extension is ".CSV".

To convert them to GPX file, open site: <https://www.gpsvisualizer.com/>

In the middle, select your "scout ... csv" file in "browse, then select" GPX file "then press" Convert it ":



Be careful, there may be some scam advertisements around!

Next page, click on download and rename the file because it has taken the name of the date and time of the conversion...

### GPS Visualizer output

**Your data has been converted to GPX.** If something doesn't look like you expected it to, please [send an email to bugs-10+20210702093440-12165@gpsvisualizer.com](mailto:bugs-10+20210702093440-12165@gpsvisualizer.com).

Right-click on the [following link](#) to download the file to your hard drive; you may want to give it a more sensible name.

[Download 20210702093440-12165-data.gpx](#)