

GEOSCOPE USER MANUAL

This document aims at describing the different steps to use a Geoscope, which name designs both a device and a software. Software is necessary for two distinct applications :

- Configure a Geoport (Section A)
- Map a radio network (Section B)

STEP 1

Go to the Knowledge Center page to download the Geoscope software by clicking on the “Download Geoscope software” link. Install the software on your computer.

STEP 2 (optional)

If all buttons on the welcome page of the Geoscope software appear grey although a Geoport or a Geocube is correctly plugged to your computer, you should install the correct drivers on your computer to detect both type of devices.

To do so, click on “Download drivers” below the Geoscope picture, in the “Knowledge Center” page.

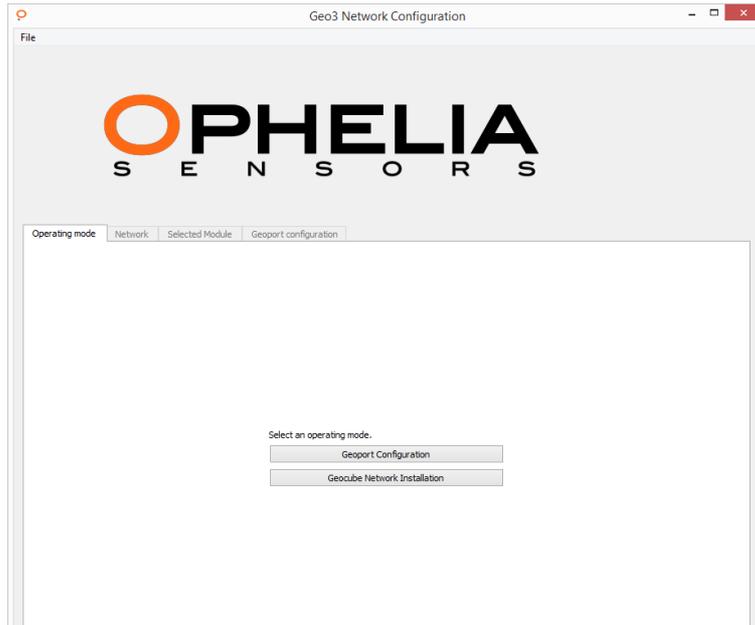
Unzip the drivers and install them on your computer.

STEP A.1

This Section refers to the uses of the Geoscope software to configure a Geoport. For mapping a Geocube radio network, please refer to section B.

Plug in your Geoport to the USB port of your computer. To do so, use the extension marked “Cable Conf Geoport”.

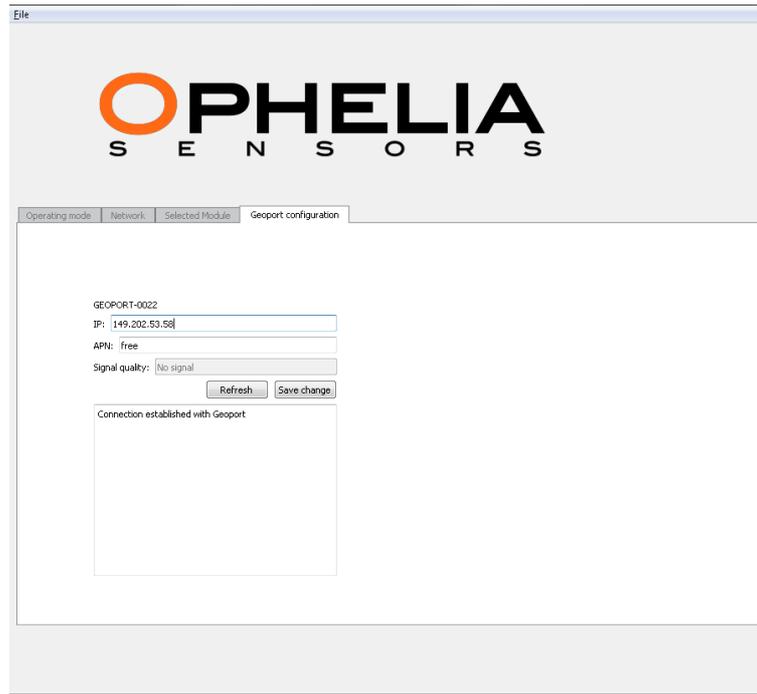
Launch the Geoscope program on your computer.



Select “Geoport Configuration”

STEP A.2

After a few seconds, the current settings of your Geoport appear on the screen :

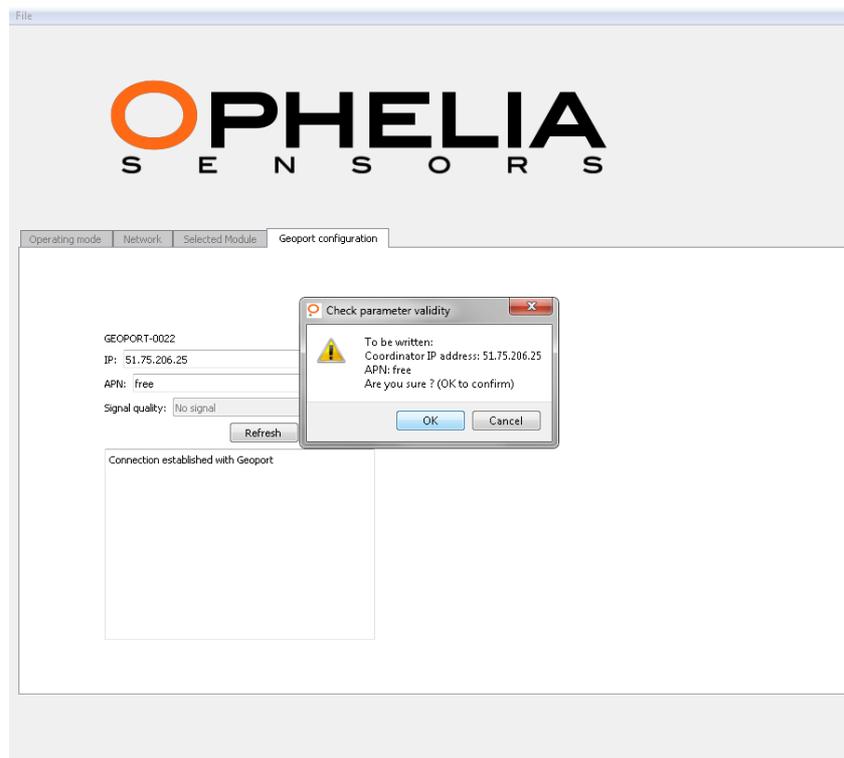


STEP A.3

If you need to change either the server IP to which the Geoport points, simply type in the new IP address.

If you need to change the APN (because you are using a new SIM card from a different provider for example), just type in the correct APN to allow the SIM card to connect through the 3G network. Reminder, if you are inserting a new SIM card, you need to remove the PIN code first.

Press “Save change”



Press "OK"

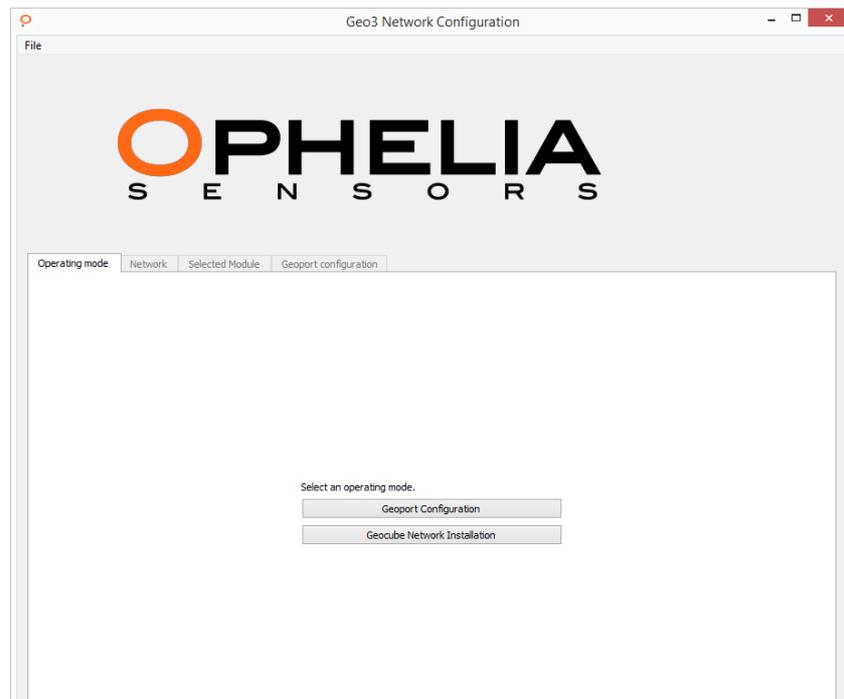


Once all the changes have been made, exit the Geoscope program and unplug your Geoport. It is now fully configured.

STEP B.1

This Section refers to the uses of the Geoscope software to map a Geocube radio network, to configure a Geoport, please refer to section A.

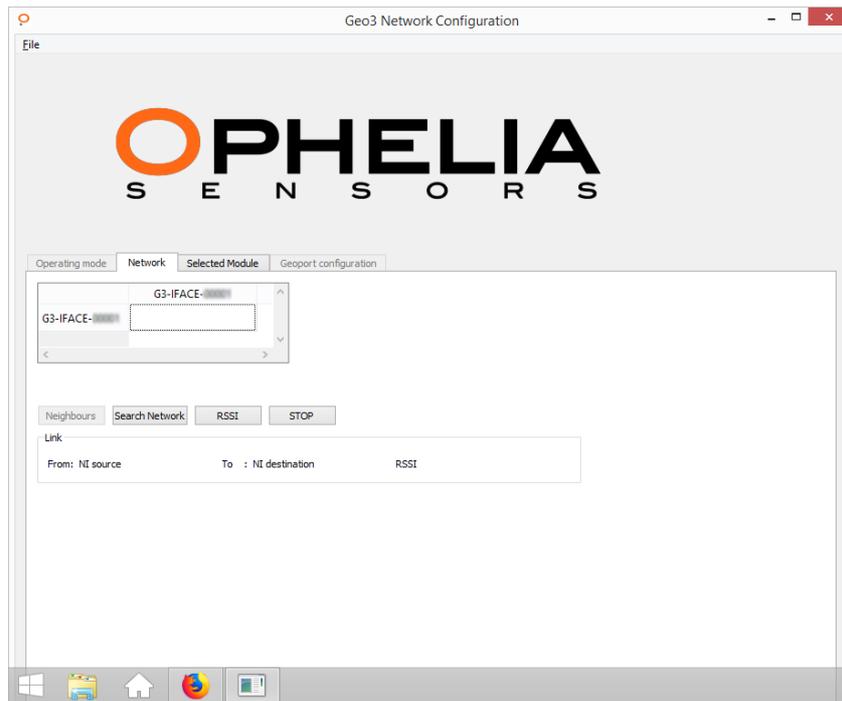
Plug in the Geoscope to your computer and launch the Geoscope program. Home page should look like this :



Select "Geocube Network Installation"

STEP B.2

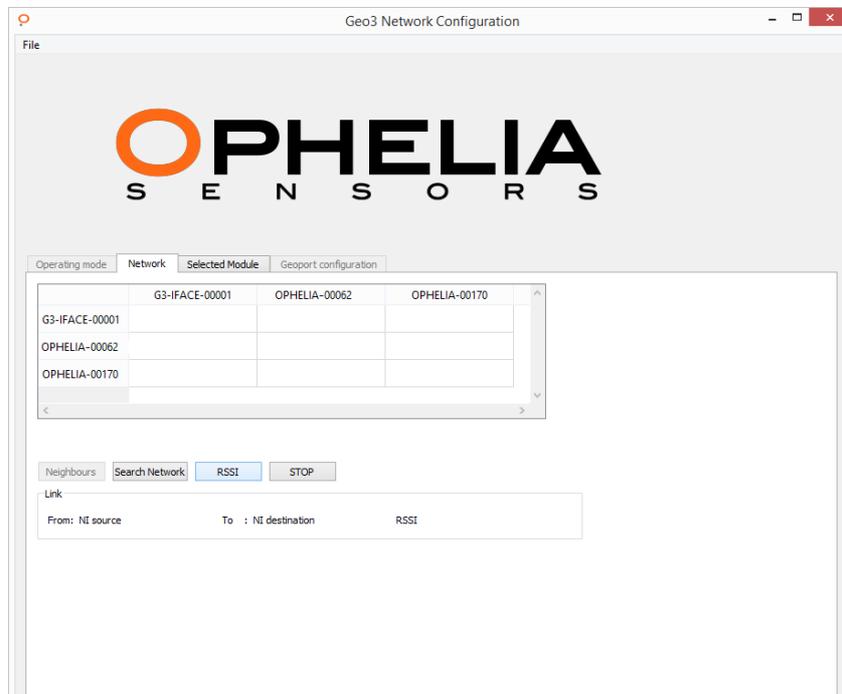
Screen should look as follows :



The name of your Geocube will appear on both sides of the chart.

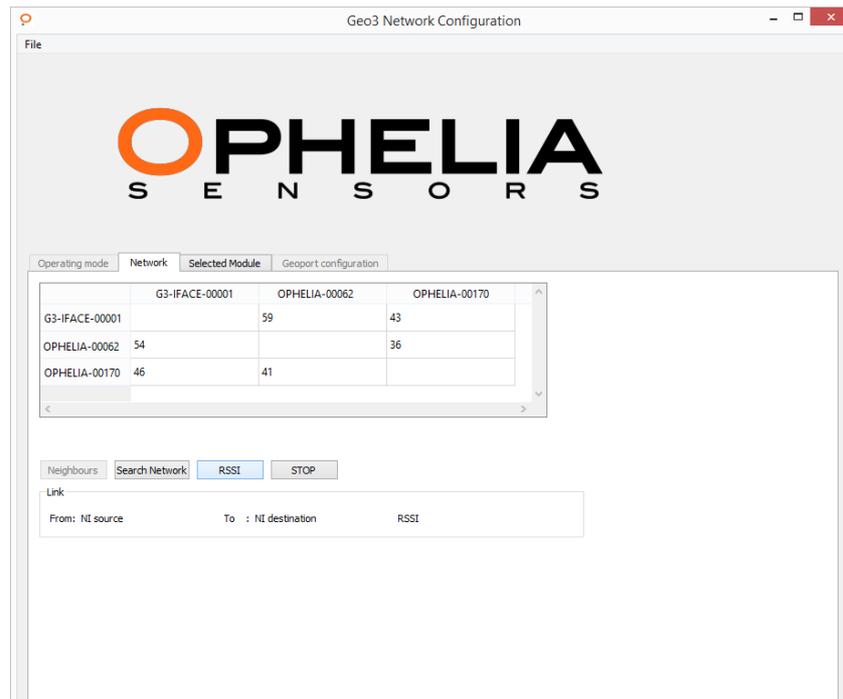
STEP B.3

Click on “Search Network” to discover all surrounding devices (Geocubes, Geoports, Geocoord). This process can take up to one minute.



STEP B.4

To map the connections between all your devices, simply click on “RSSI”. The Geoscope will gradually fill the chart with the strength of the signal between two devices. If two devices do not have a direct radio link, the corresponding cells will remain blank.



In this example, the strength of the radio signal between the Geocube Ophelia-00062 and the Geocube Ophelia-00170 is -36 dBm, whilst the strength of the radio signal between the Geoscope and the Geocube Ophelia-00062 is -59 dBm, which is weaker.

As a reminder :

- 30 dBm to -60 dBm : strong signal
- 60 dBm to -75 dBm : medium
- 75 dBm to -85 dBm : poor
- Below -85 dBm : very poor, should be improved for long term operations

By using the chart, you will be able to map how the information flows in your Geocube system and if all your Geocubes can connect to your Geoport/Geocoord, whether it be directly or by using other Geocubes as relays. If you detect problematic weak links (one Geocube being linked to no other device or very weakly so, for example), you can try one of the following :

- Change orientation of antennas
- Change the type of antenna (omnidirectional for a directional antenna for example)
- If operationally possible, change slightly the location of the problematic Geocube

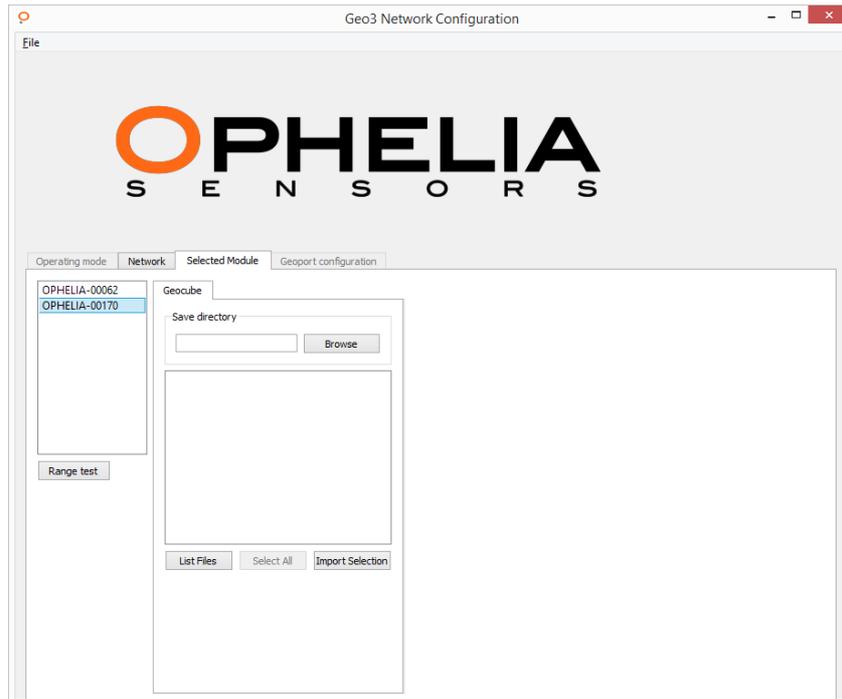
To restart the device detection and RSSI mapping, simply click on “New network” under the File menu on the top left corner.

You can also save the chart for later uses by clicking on “Save network” under the same File menu.

STEP B.5

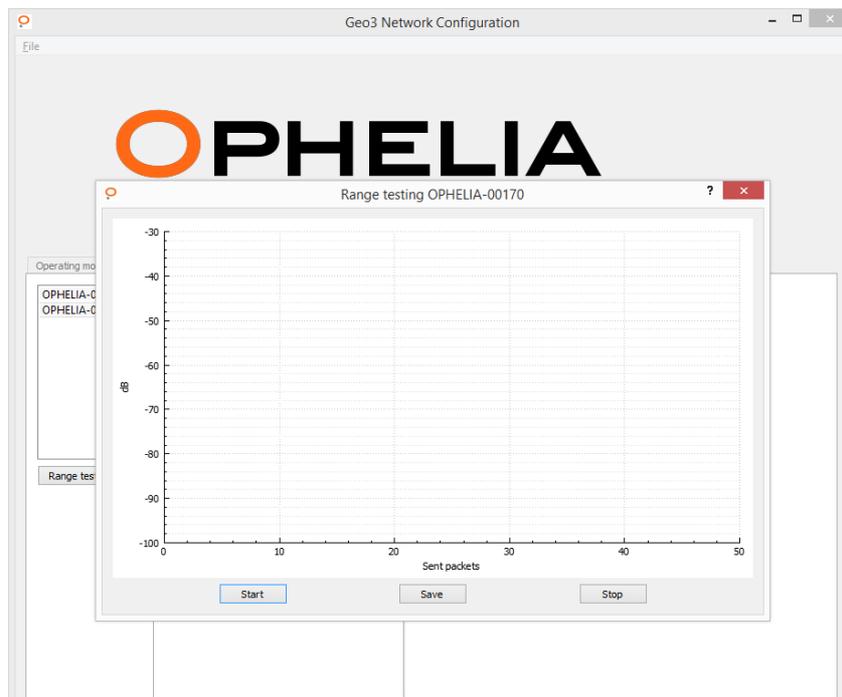
The Geoscope program can also be used to dynamically test the strength of a radio link between any given device and the Geoscope.

To do so, click on the “Selected Module” tab.



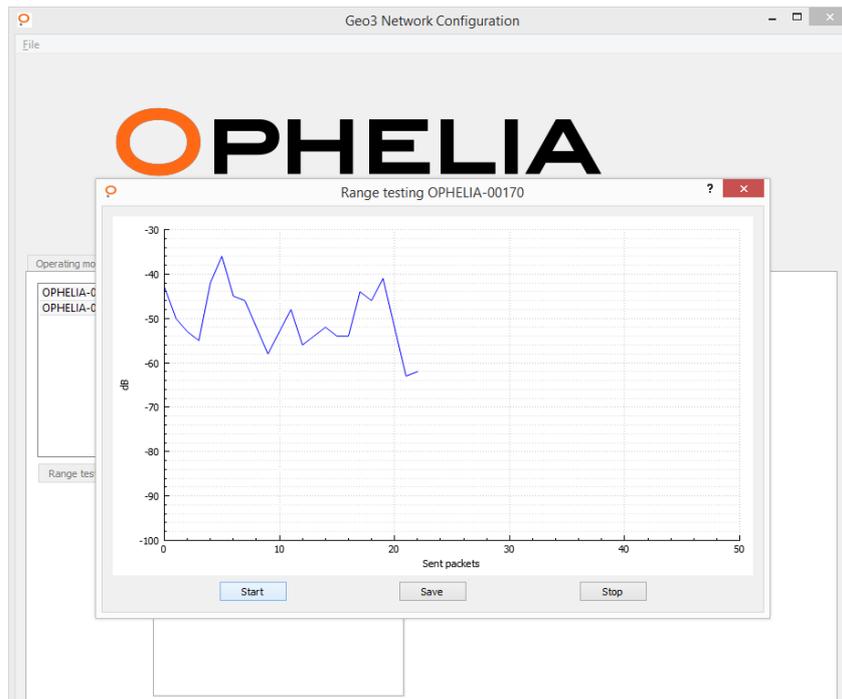
STEP B.6

Select the device you wish to test and press “Range test”. A test page pops up.



STEP B.7

Launch the range test by pressing “Start”. A curve will appear on the chart, giving the instant strength of the radio signal between the considered Geocube/Geoport/Geocoord and the Geoscope. By moving the antenna of the selected device or moving directly the device, you will see the effects of these movements on the strength of the radio link. You can therefore improve the link strength which you will be able to monitor in real time and therefore select the best position.



If you want to monitor the signal between a Geoport and a Geocube for example, you can plug the antenna of the Geoport in the Geoscope. You will therefore be able to pair both devices efficiently by moving the Geoport antenna and/or the Geocube antenna (if any). Once you have reached the best position, simply, in this case, plug the Geoport antenna back in the Geoport.