

Wio Helium Monitor User Guide

Introduction

The purpose of this product is to monitor your Helium Hotspot on certain technical points. It verify the following points:

- Your Hotspot is continuously reachable from the local network / your lan connection is working.
- Your Hotspot is continuously accessing Internet / Internet connection is working correctly

As an option, if you have a LoRaWAN module (LoRa-E5 chassis or LoRa-E5 grove) and an active Watchium Silver/Gold subscription, it verifies the following point:

- Your Hotspot LoRaWan communication (including Witness) is operational.
- In case of Internet / Lan communication problems, it reports it over LoRaWan, when some other hotspots around are able to receive it.

WioHeliumMonitor connects to your WiFi 2.4GHz networks to test your Hotspot and Internet status. It means that your hotspot needs to be pingable from your WiFi network. Your hotspot can be wired or WiFi connected.

WioHeliumMonitor reports information locally and remotely with the Watchium application. An account on the Watchium application is required. Free Watchium account is good enough for Lan / Internet connection monitoring. The Silver (1HNT) / Gold (3HNT) version is required for the LoRaWan listed options. This option includes all the LoRaWan communications.

Setup

Bundles with LoRa-E5 grove or LoRa-E5 chassis need to be assembled. The LoRa grove can be connected on any of the grove connectors on the Wio Terminal using the provided cable.

You need to plug the WioTerminal to a power source, as the device will stay constantly powered, it is recommended to not use battery pack but USB power adapter.

Switch the power button to the middle position to start the Wio Terminal.

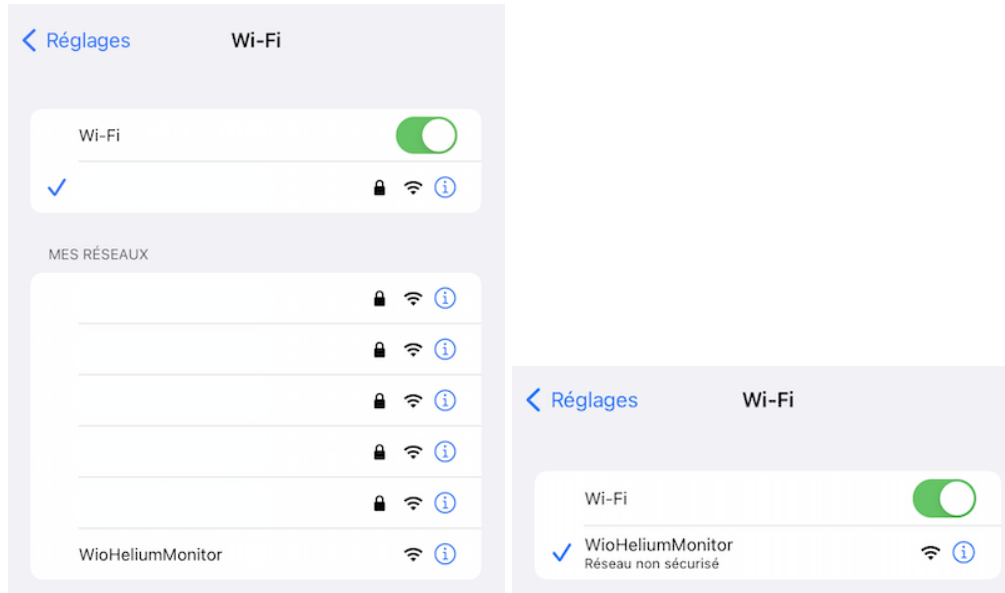


During the first start, you should get such a screen displayed on the WIO. The new version has a QR code also displayed on that screen.

If you don't have this screen or later you need to access the setup, during the boot time, press the button for 5 seconds and release it. The device will enter in setup mode.

Before going further, you need to know the IP address of your Hotspot on your local network. This one can be obtained for your ISP router or from the Helium diagnostic application.

With your smartphone, select the WioTerminal WiFi network “WioHeliumMonitor”



Then you need to open the web page <http://192.168.1.1> you can directly open a browser on this page using your smartphone camera on the displayed QR Code.

Now you need to setup the WioHeliumMonitor:

In this setup screen you need to **select the WiFi network** you want to connect to using the select box. If the WiFi network is hidden, you can type its name on the text box below. No need to type it if you selected it above.

Next you need to enter the WiFi **password** (WPA2 key), this password won't work if it contains UTF-8/Specials characters.

Next fill the **Hotspot IP** with your hotspot IP on your local network like 192.168.0.xxx

The **external IP** does not need to be changed, it will be the IP used to test your Internet connectivity status.

Once configured, click on submit, the Wio Terminal will reboot and connect to your WiFi network and start to monitor it.

In case you made a mistake and the configuration is not working. You can change the configuration back switching back the device to configuration mode, see how at the beginning of this paragraph.

Connect to Watchium application

If you are not using the Watchium application, WioHeliumMonitor will work locally and only display the network information. It will not work with LoRaWan monitoring.

Watchium application is free if you have less than 3 hotspots. Above 3 hotspots you will need to go Silver/Gold to make sure you can associate your hotspot with WioHeliumMonitor. To get benefit of the LoRaWan features you will need a Silver / Gold subscription. Watchium Subscriptions are not provided with the Seed bundles. Silver subscription is 1 HNT for a year of service, renewable.

The Watchium application is also analyzing your hotspot state based on the blockchain information. This status is accessible from the application but it will also be displayed on the WioHeliumMonitor directly ; any problem detected will raise a local alarm (sound).

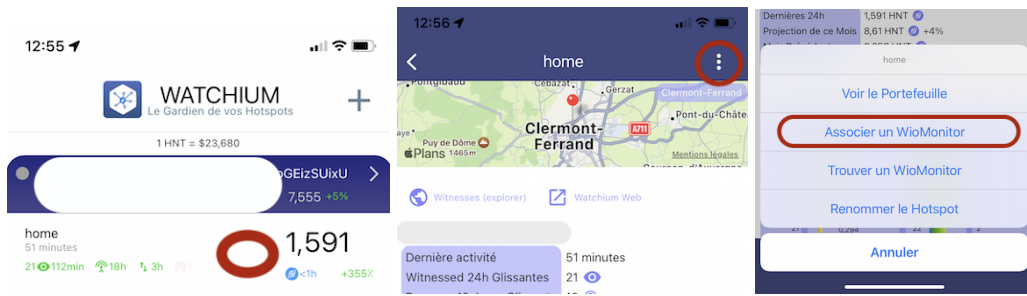
- 1) Create your Watchium account (if you are already using Watchium, you don't need to follow this step)

Go to <https://watchium.disk91.com/> you can register from the web page or you will find the links to the mobile applications.

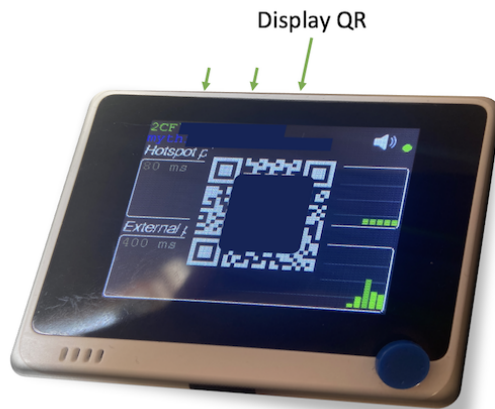
When signing up, you need to enter an email, password and a subscription code, if you go for a Silver / Gold, follow the process and you will get it through email. If you go for the free account, use the following code: **WATCHIUM_FREE**

- 2) Once connected to the application, search for one of your Hotspot to add your wallet into Watchium. The synchronization process is starting and all your hotspots will be in sync after a few times. Just hold...
- 3) Once you see the hotspot you want to monitor in your hotspot list (just remind that the Free Subscription will only display 3 of your hotspot when you have more, if the monitored hotspot is not in the list of 3 you will need to go to silver).

Click on your hotspot entry, then on the hotspot page, click on the burger menu on the right and select **“Associate a WioMonitor”** in the menu

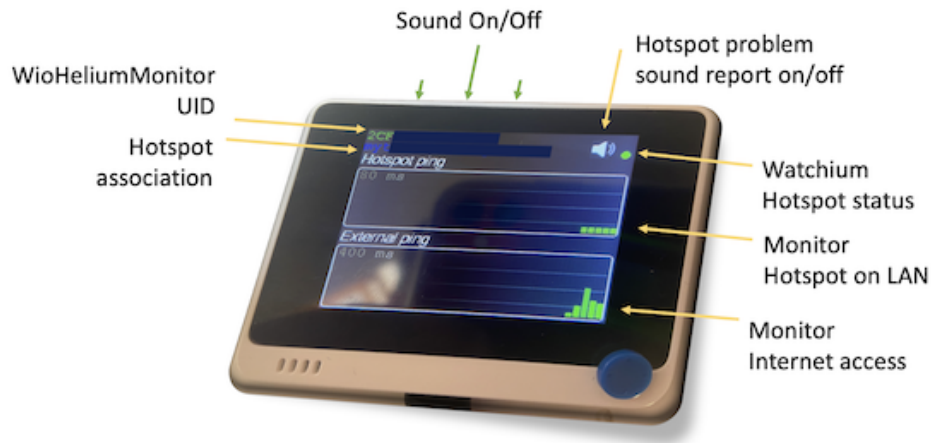


A popup will ask you for the WioHeliumMonitor identifier, this one is printed in green on the top of the Wio Terminal screen. You can also display it as a QR code by clicking on the Wio Terminal button indicated above. The mobile application will soon manage this option to type the ID.



Once this is done, you WioHeliumMonitor is connected to the Watchium application and, after a little time, you will see the monitored hotspot name on the WioHeliumMonitor in blue.

Use the WioHeliumMonitor



On the WioHeliumMonitor screen, you see the following main informations:

- The top graph is indicating the ping response time of the helium hotspot on the local network. If you see a **x** on the line, it means that the Hotspot has not been reachable.
- The bottom graph is indicating the ping response time of the Internet. If you see a **x** it means that the Internet is not reachable.
- The Sound Icon is indicating that a local alert sound will be made in case a problem is detected. You can disable the sound generation by using the Sound On/Off button. The icon will change.
- The bullet on the right is indicating the Hostspot status as calculated by Watchium application, Green is good, Orange needs attention, Red means to be verified. The Watchium application gives more details about what's wrong.



From the left to the right, the icons are indicating the following informations:

- number of witness for last 24h + Last Witness age
- last beacon age
- last WioHeliumMonitor ping success
- last LoRaWan communication (displayed when using LoRAWan module)
- last reward received
- variation of the reward compared to previous day

The status green / orange / red depends on the average values on the previous days to alert you when a trend is changing.

What is displayed on the WioHeliumMonitor is calculated from these different insights.

Troubleshooting

- Please note that if your WiFi is disconnecting, the WioHeliumMonitor will not automatically reconnect. You need to switch it OFF / ON to reconnect.