RockPi Indoor Helium Hotspot manual

https://www.passion-radio.com/miners-hotspot/nebra-rockpi-1536.html

The Nebra RockPi Indoor Helium Hotspot is a compact & elegant solution to provide Helium LongFi coverage and start mining HNT with ease.

Quick Specifications

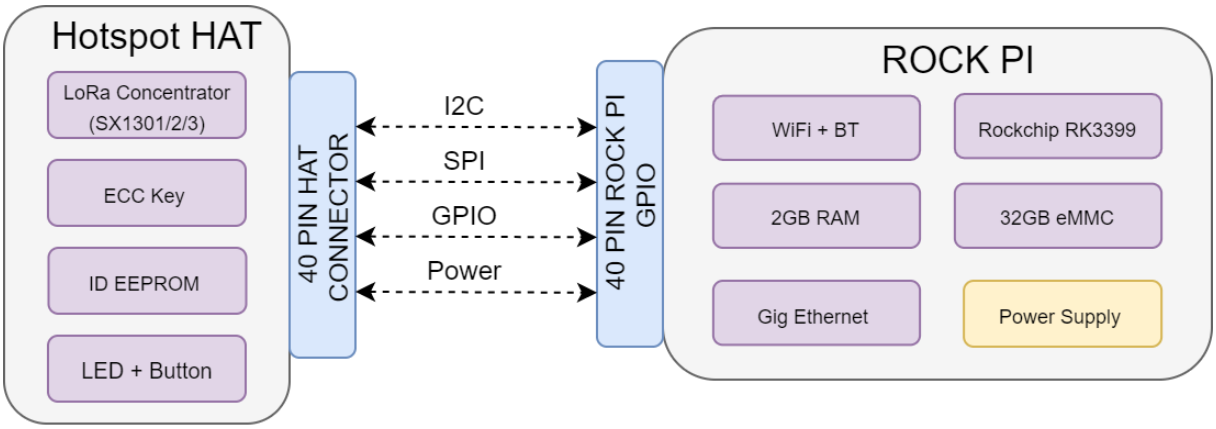
Dimensions	94x70x53 mm (Excluding Antenna)
Weight	353g
Power Requirement	12V 2.5A USB-C
Maximum TX Power	24-27dBm**
Network Connectivity	1GBit Ethernet, 2.4/5GHz 802.ac WiFii
Antenna Connection	RP-SMA Female
Rated Ambient Temperature	20-30°C
Base SOM	ROCK Pi RK3399 Processor
CPU Specification	Dual Core Cortex A72 1.8GHz and Quad Core Cortex A53 1.4GHz
High Endurance Storage	32GB
RAM	2GB

Package Contents

- 1 x Nebra ROCK Pi Miner
- 1 x 3db LoRa Antenna
- 1 x WiFi Antenna
- 1 x Universal Power Supply
- 1 x Ethernet Cable
- 1 x Hotspot $40 On Boarding Fee
- 1 x First $10 Location Assert Fee

Please note the above image is for illustrative purposes only, colours of some parts may change.

Block Diagram



Nebra ROCK PI Gateway Block Diagram

Antenna Specifications

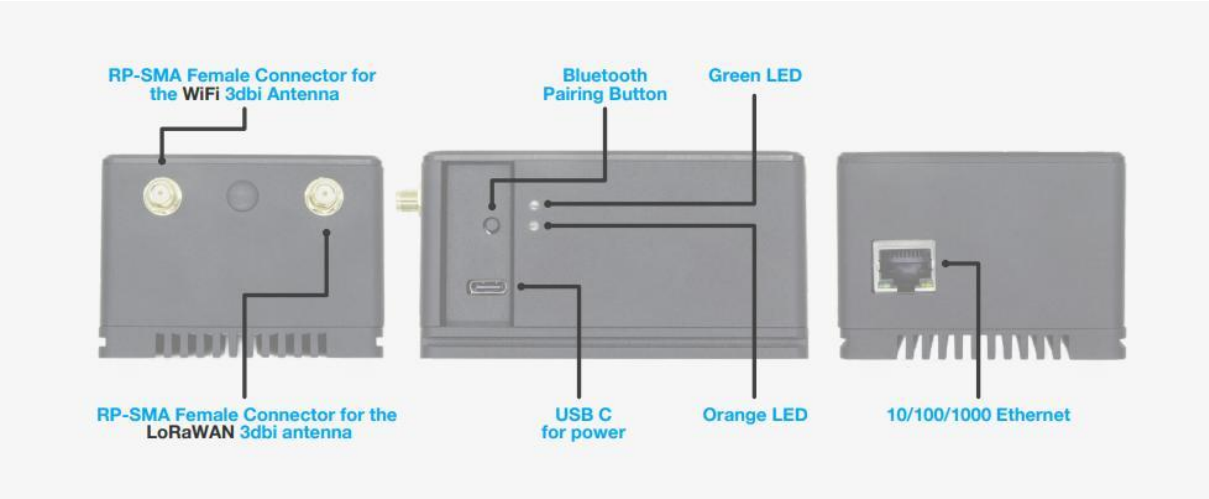
Specification	470Mhz Model	868 & 915Mhz Models
Frequency Range	420-480	860-930 Mhz
Peak Gain	3 dBi	3 dBi
VSWR	< 2.3	< 1.8
Input Impedance	50 Ohms	50 Ohms
Length	17.2CM	20.7CM

Dimensions

The Nebra Indoor Hotspot is 94x70x53MM In size when nothing is connected.

Interfaces

Connectors



1. **Type C Connector For Power**
2. **Power and Activity LED Indicators.**
3. **Interface Button**
4. **RP-SMA Female Connector for the WiFi 3dbi antenna**
5. **RP-SMA Female Connector for the LoRaWAN 3dbi antenna**
6. **10/100/1000 Ethernet**

Firmware

The RockPi Indoor Helium Hotspot runs a customizd software to provide high reliability and ensure your units are as up to date as they can be.

Your hotspot will update approximately once a week in an automatic process, we will announce updates via various social media platforms when they happen.

The software is open source and available on our Helium Miner Software repo on GitHub : https://github.com/nebraltd/helium-miner-software

Unit Information

Each unit has a sticker located on the base of the unit.

This includes the following important Information:

- **FREQ**: Frequency of the Unit
- **ETH**: Ethernet MAC address
- **NSER**: Nebra Serial Number
- **RPi**: Raspberry Pi Serial Number

You will require some of this information when linking your unit to our remote management dashboard : https://dashboard.nebra.com/

Indoor Hotspot Quick Start Guide

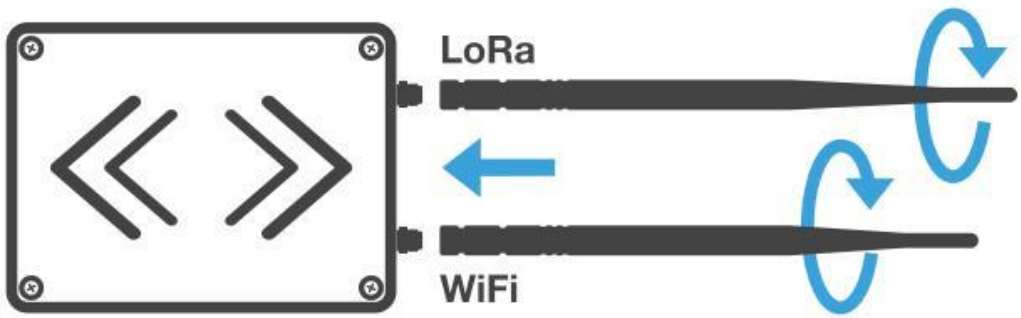
Warnings

Please remember to follow these important warnings when using your Nebra ROCK Pi Indoor Hotspot:

- **Never power on the ROCK Pi Indoor hotspot without it's antenna connected as this may damage the unit.**
- Do not place in direct sunlight or on hot surfaces (e.g a heater).
- The Indoor unit's case is designed to be used indoors, and is not suitable for use outdoor usage.
- **The ROCK Pi Indoor hotspot comes with a 12v power adapter, so don't use that adapter to power any generic Type-C devices like a mobile phone or anything and vice versa, it will damage the device.**

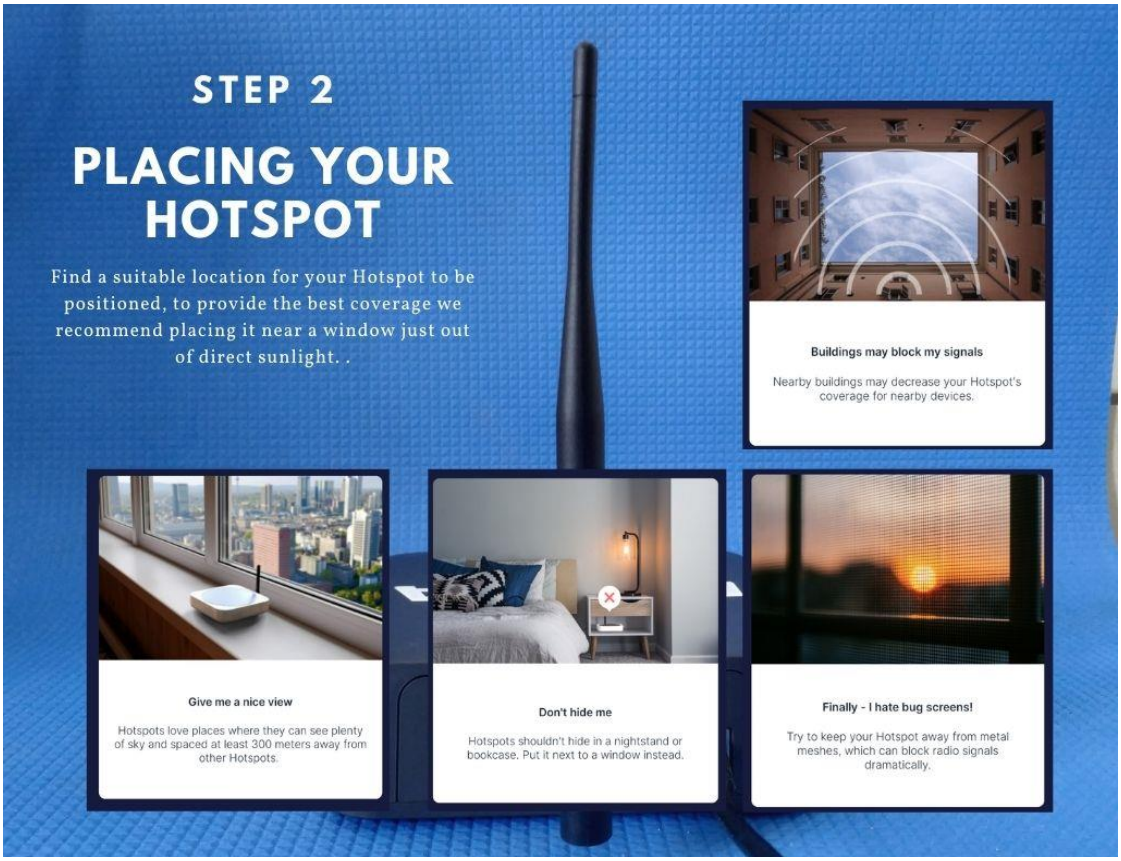
Preparing Nebra ROCK Pi Indoor Hotspot

Step 1: First screw in the included antenna into the connector on the back of the hotspot.



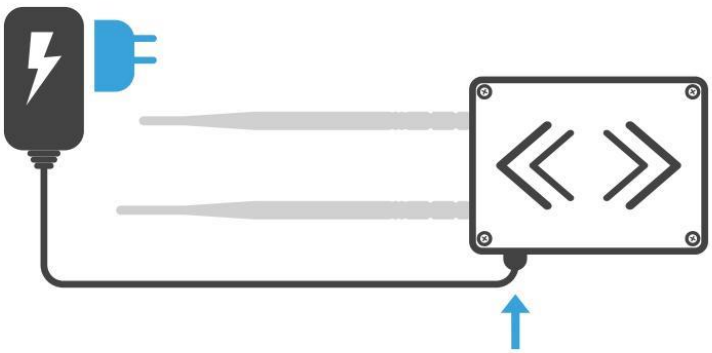
If you are using wired connection, plug an ethernet cable in between a router and the ethernet port on the hotspot.

Step 2: Next find a suitable location for your Hotspot to be positioned, to provide the best coverage we recommend placing it near a window just out of direct sunlight. You'll need to be near a mains power source too.

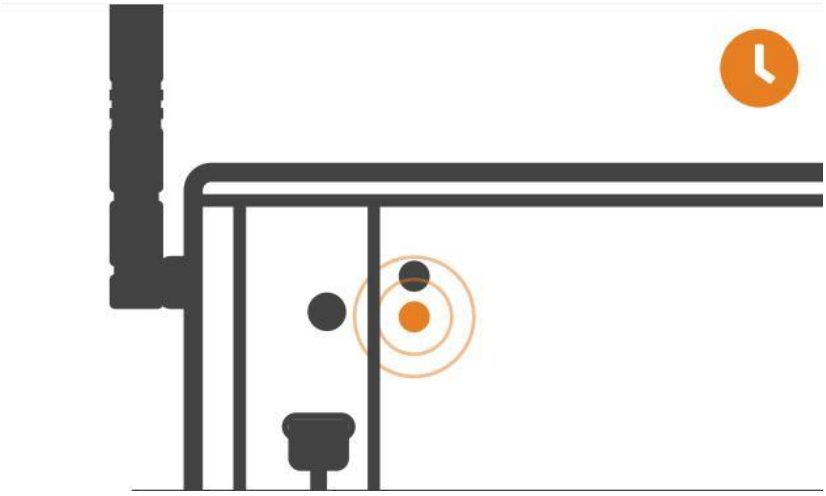


Please check "Ideal Hotspot Placement" Guide : https://github.com/NebraLtd/Helium-Guides/blob/main/docs/handy-guides/hotspot-ideal-location.md

Step 3: Assemble the appropriate adapter for country onto the universal power supply, plug into mains power and insert power cable into the hotspot.



Step 5: When the hotspot is powered up, the lower orange LED will be on. It will take up to 5 minutes to configure after the first boot.



This process may take slightly longer as it'll also perform firmware updates as soon as it gets a connection to the internet. Once it's done you can see the Green light led is turned on.

Configuring Nebra ROCK Pi Indoor Hotspot

To configure your Hotspot, you will require the Helium Network application installed on a Mobile Phone, and for you to have gone through the account setup process to continue.

For the best results, Nebra Hotspots require some ports to be port forwarded on your network. Please check our security and port forwarding pages for more details.

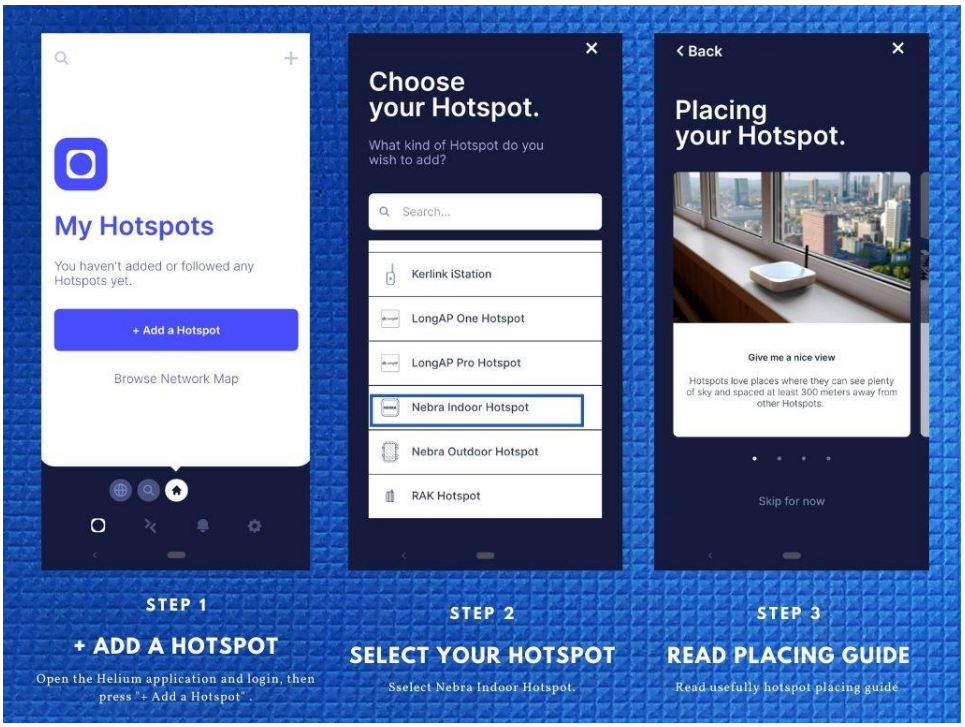
Prerequisites

- Ready to connect nebra hotspot
- Helium application with account.

Step 1: Open the Helium application and login, then press **+ Add a Hotspot**.

Step 2: Next click Set up Hotspot, from here you will want to select Nebra Indoor Hotspot.

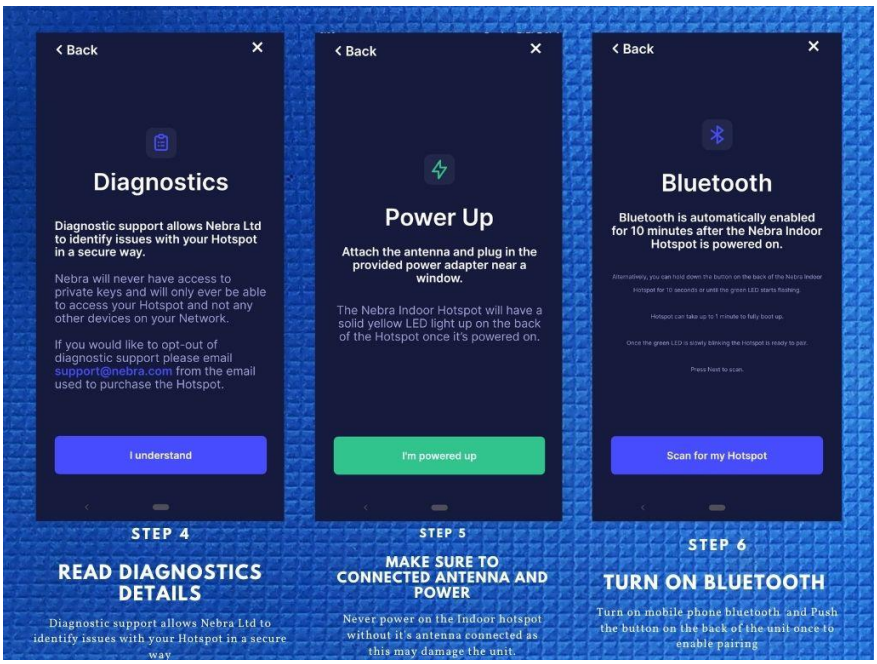
Step 3: Place your hotspot in appropriate location, please reffer Ideal Hotspot Placement



Step 4: Accept diagnostics permission , This will allow **Nebra Ltd** to identify issues with your Hotspot in a secure way

Step 5: Power Up the Nebra hotspot, and please note that never power on the Indoor/Outdoor hotspot without it's antenna connected as this may damage the unit.

Step 6: Turn on mobile phone bluetooth and Push the button on the back of the unit once to enable pairing



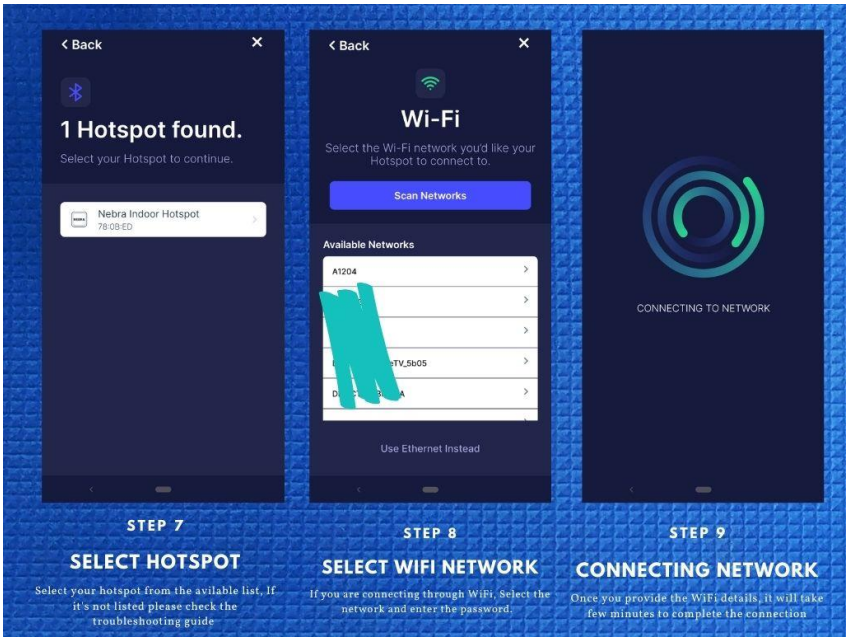
Step 7: Select your hotspot in the app, you can check it is the correct one by matching the last 6 characters shown in the application with the last 6 characters of the mac address printed on the sticker on the bottom of the hotspot.

Step 8: The app will show the available Wi-Fi networks within range of your Hotspot.

Step 9: Once you provide the WiFi details, it will take few minutes to complete the connection

If you are using Ethernet, tap Use Ethernet Instead and skip to Step 10.

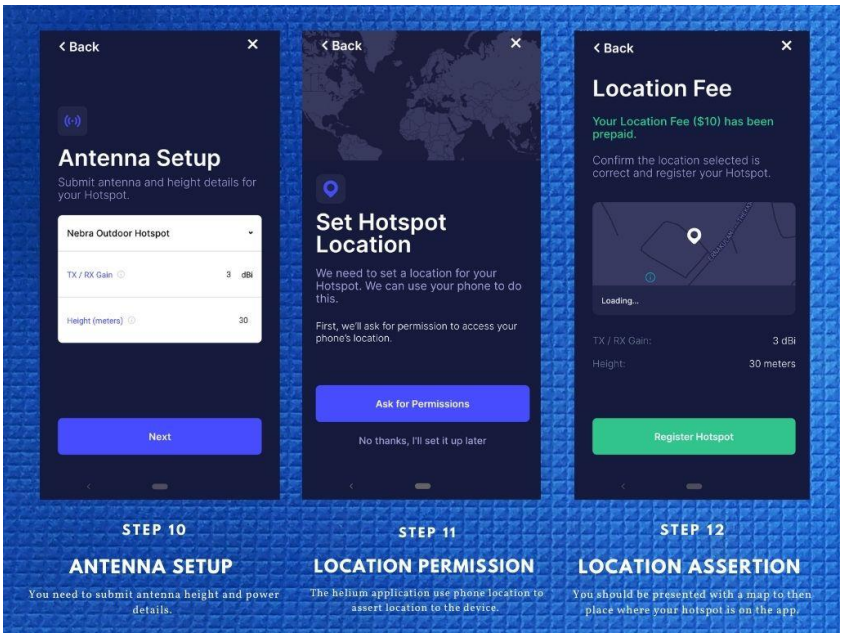
If using Wi-Fi, tap on the name of your Wi-Fi network on the app which will bring you to the following screen.



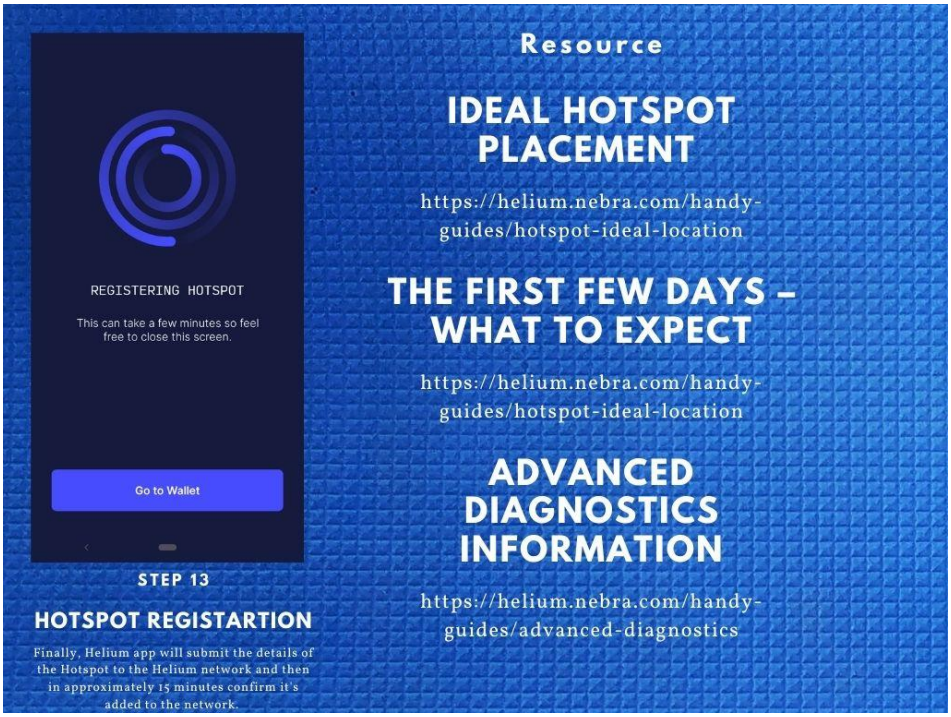
Step 10: Next you need to submit antenna height and power details.

Step 11: Provide location permission: The helium application use phone location to assert location to the device.

Step 12: Finally, you can confirm the location of your hotspot. Click continue and you should be presented with a map to then place where your hotspot is on the app. This requires $10 and it's already paid by Nebra LTD.



Step 13: The setup should now be complete, it'll submit the details of the Hotspot to the Helium network and then in approximately 15 minutes confirm it's added to the network.



You can move device to another location, However every time you move your hotspot to a new location you will need to pay the $10 location assert fee again.

Onboarding Video

You can also watch this video to learn how to onboard the hotspot. This is using the Nebra Indoor Hotspot on Android, but the process is very similar for the Outdoor Hotspot and using iOS devices:
https://www.youtube.com/embed/6pSKwtGAwDg

Indoor ROCK Pi Hotspot Troubleshooting

If you are having trouble with setting up your hotspot or you have got a query, the following tips may help.

How to access the diagnostics

On the Nebra Helium Hotspots, we have two local diagnostics tools that can help you to find any issues with your miners.

Please take a look at the dedicated local diagnostics page for more information :
https://github.com/NebraLtd/Helium-Guides/blob/main/docs/handy-guides/local-diagnostics.md

No lights are turning on

You should see the lower light (Amber light) on the side of the unit turn on as soon as power is applied. If this is the case, ensure the power supply is firmly plugged into the wall outlet, the power jack is plugged into the unit and that the wall outlet is switched on.

To Do

- Power adapater is connected correctly
- Try a different power adaptor if available (12V 2.5A USB-C Power Adapter)

Upon power up the lower LED (yellow) should light up instantly. Approximately after a minute the top LED (green) should then start blinking.

Green activity light is off

The Green light is the acivity light and it should turn on solid in normal oppertaion.

Approximately after a minute the top LED (green) should then start blinking. If not, contact customer support with hotspot details.

The Green LED is blinking rapidly with few seconds intervall

The upper light on the back of the unit blinks rapidly with a few seconds interval. This is expected behaviour. If this is the case, use your web browser to access the diagnostic page of the hotspot. If the diagnostic page does not show any error, everything is fine.

Hotspot is not showing in the Helium App

It can sometimes take 1-3 minute from turning the power on for the Hotspot to show in the App.

To Do

- Wait for the hotspot to boot up before pairing (Wait 5 minutes)
- Re-scanning a few times can then find the hotspot.
- Ensure Bluetooth is turned on as this is how the application communicates with your Hotspot.

Please note: You will need to grant location permissions for the Application to access Bluetooth services correctly.

Hotspot is not detecting Wi-Fi networks

You may find that sometimes your Wi-Fi network will not show in the application if the signal is poor where the Hotspot is located.

Please note, Nebra Indoor hotspot only support **2.4G Wifi network.**

To Do

- Check local diagnostics page and confirm wifi MAC address is listed : https://github.com/NebraLtd/Helium-Guides/blob/main/docs/handy-guides/local-diagnostics.md
- Remove special characters and emoticons from wifi name/SSID
- Check WiFi have good coverage where you placed the hotspot.
- Try different WiFi network.

Updating Nebra Hotspot Firmware

If after completing the initial troubleshooting steps above, you are still having issues, you may find your issues can be resolved by ensuring it is running the latest up-to-date software.

Nebra Hotspots automatically update once connected to the internet, if you are using an Ethernet connection leaving the hotspot for around half an hour should ensure all updates are downloaded.

If you are having difficulties connecting your Hotspot to Wi-Fi, then it would be recommended to move it to a location where you can plug it into an Ethernet connection for half an hour to let it perform updates. Then move it back to the normal location and re-try setup.

Syncing Issues

The Helium Syncing Process sometimes takes some time. Some customers report that the hotspot takes multiple days to sync properly. This is not so much an issue with Nebra, rather an issue with the Helium blockchain itself. Please allow the hotspot to take some time, especially during the 90% mark. If you are still having trouble, feel free to contact support below. If you are not familiar with Nebra's diagnostics page, we highly recommend connecting to your hotspot directly using the local IP address in combination with a web browser. This will provide more insight between the device, and the Helium blockchain.

Please note, Nebra will provide an instant sync feature that download a new snapshot on startup and If you ever find your hotspot more than 300 blocks behind according to the local IP diagnostics you should reboot the hotspot.

Onboarding key is missing error

Please contact our tech support via sales@nebra.com and provide your MAC address. We will update the onboarding key for you.

Hotspot not witnessing

Hotspot will not get witness with various reasons from device loation to device relayed.

To Do

- check your antenna connector/ cable and make sure everything connected well.
- Improve the antenna placement/ place it as high as possible - check our Ideal Hotspot Placement : https://github.com/NebraLtd/Helium-Guides/blob/main/docs/handy-guides/hotspot-ideal-location.md

Still having trouble ?

If the above tips haven't been able to resolve your issue then get in touch at **https://helium.nebra.com/#/support** and include the following information. We'll work on resolving your issue. But be sure to please perform the steps above to perform the update process.

- **Model of unit?**
- **Mac address of the unit** (Shown as ETH on sticker)?
- **Frequency of the unit** (Shown as Freq on sticker)?
- **How are you connecting it to internet?** (Ethernet, Wi-Fi, Cellular)?
- **How are you powering the unit?** (included adaptor, PoE, third party adaptor)

If the issue relates to initial setup of the hotspot, please also include:

- **What make & model of phone are you using?**
- **What version of the Helium App are you using?**
- **Do you have any screenshots of any error codes?**

Indoor ROCK Pi Hotspot FAQs

What is the antenna connector on the Hotspot?

The indoor unit has a **RP-SMA Female** Connector on.

Can I add 4G connectivity to my Indoor Hotspot?

No, the indoor unit does not have the ability to have a 4G Modem added, you could use a solution like a MiFi or 4G to Ethernet module to achieve the same result.

How much internet data per month does the Hotspot use?

Currently we are roughly estimating 30-50GB per month.

The actual usage may be slightly less or more and will be something we up-date over time as we start measuring more units.

Once all hotspots become "light hotspots" this data usage will reduce.

What antenna is included with the Hotspot?

A 3dBi Omni-directional antenna is included with the Nebra Indoor Hotspot, specifications can be found in this manual

Upgraded antennas can be purchased separately from our website: https://www.passion-radio.com/hnt-antennas/196

Can I use PoE with the Indoor Hotspot?

If you wish to use PoE with the Indoor Hotspot you will require an active PoE splitter that outputs 12V to the unit. Alternatively you can use passive PoE adapters as long as the power provided to the unit is between 9 and 16 Volts and can provide 15W of power.

How long does it take for my Hotspot to sync with the network?

This can vary depending on your internet connection speed. However, in our testing it takes approximately 24-48 hours for the initial synchronisation to be completed.

I have an issue but not listed here?

If your issues cannot be resolved with information from this FAQs page or the troubleshooting page then please email sales@nebra.com and include the following information:
https://github.com/NebraLtd/Helium-Guides/blob/main/docs/handy-guides/troubleshooting.md

- **Model of unit?**
- **Mac address of the unit** (Shown as ETH on sticker)?
- **Frequency of the uni**t (Shown as Freq on sticker)?
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If the issue relates to initial setup of the hotspot, please also include:

- **What make & model of phone are you using?**
- **What version of the Helium App are you using?**
- **Do you have any screenshots of any error codes?**

Alternatively, you can get in touch using any of the methods listed on our support page and we'll work on resolving your issue : https://github.com/NebraLtd/Helium-Guides/blob/main/docs/support.md

Support / Help

Complete nebra RockPi documentation: https://helium.nebra.com/#/indoor-rockpi-hotspot/overview

Official NEBRA RockPi support: https://helium.nebra.com/#/support

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This material complies with the CE RED, FCC and RoHS standards, the CE certificate is available on our website:
https://www.passion-radio.com/miners-hotspot/nebra-rockpi-1536.html