



# HP0D Full Hotspot for Helium User Manual

# Document Version: 0.1

Firmware Version:

Version	Description	Date
0.1	Draft	2022-Feb-8



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## 1 Introduction

#### 1.1 What is HPOC

The HPOC is a light hotspot for Helium. User can connect their sensors to Helium network via HPOC.

#### 1.2 Specifications

#### Hardware System:

Linux Part:

Orange Pi 4

#### Interface:

- > 10M/100M RJ45 Ports x 1
- LoRaWAN Wireless

#### **Operating Condition:**

- Work Temperature: -20 ~ 65° C
- Storage Temperature: -20 ~ 65° C
- Power Input: 5V 2A, DC

#### 1.3 Features

- ✓ Open Source Debian system
- ✓ Remote access with Reverse-SSH
- ✓ Emulates 49x LoRa demodulators
- ✓ LoRaWAN Gateway
- ✓ 10 programmable parallel demodulation paths
- ✓ Pre-configure to support different LoRaWAN regional settings.
- ✓ Allow to customize LoRaWAN regional parameters.
- ✓ Support Local decode ABP end node info and transfer to MQTT server
- ✓ Support different level log in.

World Widely. Include US and EU



#### 1.4 Block Diagram



# HP0C LoRaWAN Gateway System Overview:



#### 2 How to use

#### 2.1 Get IP Address

Connect the HPOD Ethernet port to your router and HPOD will obtain an IP address from your router. In the router's management portal, you should be able to find what IP address the router has assigned to the HPOD. You can use this IP to connect the WEB UI or SSH access of HPOD.

#### 2.2 SSH Access for Linux console

IP address:	IP address of HPOC
Port:	22
User Name:	root
Password:	dragino (default)

After logging in, you will be in the Linux console and can enter commands as shown below.



#### 2.3 Location of global\_conf.json file.

/etc/lora/local\_conf.json /etc/lora/global\_conf.json

#### 2.4 Location of Semtech packet forwarder.

draginofwd --> /usr/bin/fwd\_sx1302

#### 2.5 Start / stop pkt fwd

This is to stop/ start / restart the Semtech UDP packet forwarder:

service draginofwd start service draginofwd stop service draginofwd restart



## 2.6 Start Hopping script

systemctl stop draginofwd	<mark># Stop draginofwd</mark>
./Hopping_Script.sh	#Start the hopping script
welcome to Dragino Hotspot Dragi	D HOTSPOT 2.1.2 Buster with Linux 5.4.65-sunxi
System load: 1.26 1.22 1.19 Nemory usage: 17 % of 493MB 172.31.255.254 192.168.123.14 Usage of /: 62% of 3.56	Up time: 2 days 8:34 IP: 10.130.1.1 10.130.2.178
[ Menu-driven system configurati	on (beta): sudo dpkg -i dragino-config.deb ]
Last login: Mon Jan 24 09:17:01	2022 from 10.130.2.184
root@draginohpzero: systemct1 root@draginohpzero:/Hopping_ Statr Hopping TX 868.1 Trasmit at 25, Bandwidth: 125, S	stop draginofwd Script.sh preading Factor: 10, 868.1
Trasmit at 25, Bandwidth: 250, S	preading Factor: 10, 868.1
start STD TX Trasmit at 25, Bandwidth: 250, S Statr Hopping TX	preading Factor: 10, 868.1

Ctrl + c **#Stop the Hopping script** 

# Modify the hopping script

nano ./Hopping Scr	ipt.sh
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Welcome to Dragino Hotspot Dragino HotsPot 2.1.2 Buster with Linux 5.4.65-sunxi
System load: 1.26 1.22 1.19 Up time: 2 days 8:34   Memory usage: 17 % of 493MB IP: 10.130.1.1 10.130.2.178   172.31.255.254 192.168.123.14 Usage of /: 62% of 3.5G 10.130.1.1 10.130.2.178
[ Menu-driven system configuration (beta): sudo dpkg -i dragino-config.deb ]
Last login: Mon Jan 24 09:17:01 2022 from 10.130.2.184
<pre>root@draginohpzero:-# systemctl stop draginofwd root@draginohpzero:-# ./Hopping_script.sh Statr Hopping TX 868.1 Trasmit at 25, Bandwidth: 125, Spreading Factor: 10, 868.1 Start COMMON TX Trasmit at 25, Bandwidth: 250, Spreading Factor: 10, 868.1 Start STD TX Trasmit at 25, Bandwidth: 250, Spreading Factor: 10, 868.1 Start Hopping TX 868.1 Trasmit at 25, Bandwidth: 125, Spreading Factor: 10, 868.1 Start COMMON TX Actrasmit at 25, Bandwidth: 250, Spreading Factor: 10, 868.1 Start COMMON TX Actrasmit at 25, Bandwidth: 250, Spreading Factor: 10, 868.1 Start STD TX Actrasmit at 25, Bandwidth: 250, Spreading Factor: 10, 868.1</pre>
rocedragmonpzero



## 3 Manufacturer Info

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## **4 FCC Warning**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- -- Reorient or relocate the receiving antenna.
- -- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help. To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.