



HP0D Full Hotspot for Helium User Manual

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Firmware Version:

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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

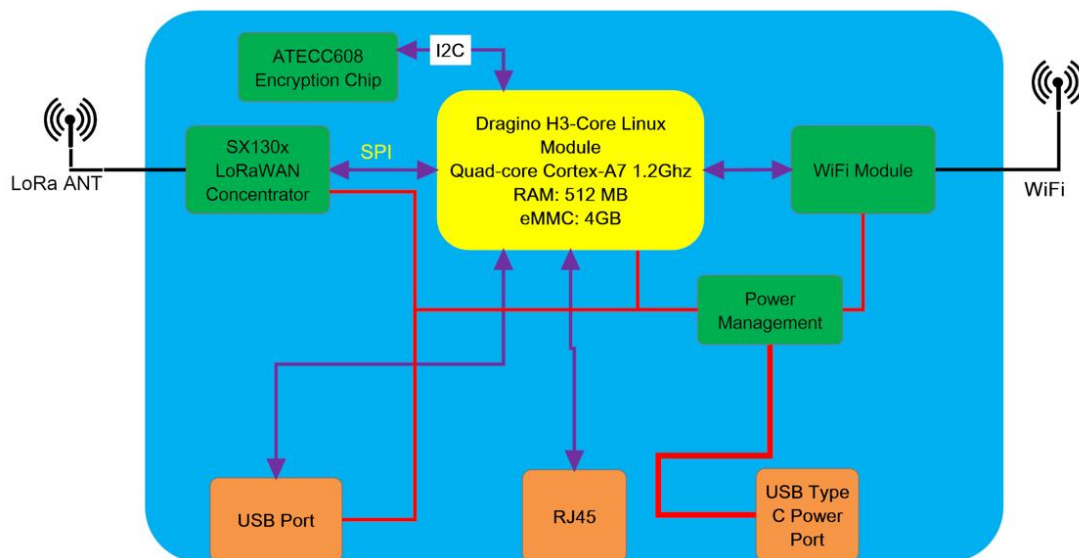
1.3 Features

- ✓ 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

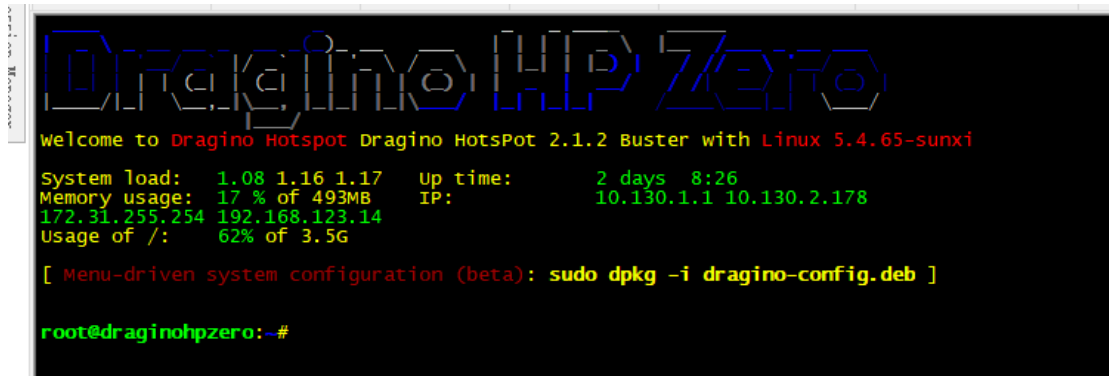
2.1 Get IP Address

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.



```
Dragino HP Zero
welcome to Dragino Hotspot Dragino HotSpot 2.1.2 Buster with Linux 5.4.65-sunxi
System load:  1.08 1.16 1.17   Up time:    2 days  8:26
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
[ Menu-driven system configuration (beta): sudo dpkg -i dragino-config.deb ]
root@draginohpzero:~#
```

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 # Stop draginofwd
./Hopping_Script.sh #Start the hopping script
```

```

Dragino HP Zero
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

[ 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
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
Statr Hopping TX

```

Ctrl + c #Stop the Hopping script

Modify the hopping script

```
nano ./Hopping_Script.sh
```

```

Dragino HP Zero
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
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Start COMMON TX
^CTrasmit at 25, Bandwidth: 250, Spreading Factor: 10, 868.1
Start STD TX
^C
root@draginohpzero:~# nano ./Hopping_Script.sh

```

3 Manufacturer Info

Shenzhen Dragino Technology Development co. LTD

Room 202, Block B, BCT Incubation Bases (BaoChengTai), No.8 CaiYunRoad
LongCheng Street, LongGang District ; Shenzhen 518116,China

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.