

Polaris Hobit S1 PRO

User Manual V1.0



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1.Disclaimer and Warning

Polaris Hobit S1 PRO is a comprehensive platform Integrated 2-in-1 Detection and Defense Counter-UAV System that rapidly identifies UAV communication links, gathering information such as flight status, paths, and other information in real-time ("Monitoring Data"). Monitoring Data stream helps users make an informed response as soon as possible. Please note that Monitoring Data does not involve personal data of drone users. (Personal data is any information relating to an identified or identifiable natural person.) Unless pursuant to the requirement or request of any governmental or regulatory agency or court or tribunal of competent jurisdiction to the extent such disclosure is required by any valid laws, regulations, court orders or rules of relevant stock exchange, will not disclose any personal data that collect through Products and Services to third parties.

As a Hobit S1 PRO's end user, you represent and warrant that (a)you are the eligible user of Hobit S1 PRO. Examples of eligible users would be public safety organizations, law enforcement agencies, government agencies, regulatory bodies, and owners or operators of airports, power plants, and prisons; and(b)you will use PS Hobit S1 PRO for monitoring public safety purpose only ("Purpose");and(c)you will comply with any applicable laws concerning the use of PS Hobit S1 PRO within the jurisdiction(s)of operation; and(d) you are solely responsible for the conducts of anyone that use PS Hobit S1 PRO through your account ("Authorized User"), which may include your employees, consultants or contractors, or the employees, consultants or contractors of your affiliates, which are companies or entities that you own, that own you, or that have the same owner or corporate parent as

you.

You acknowledge and agree that (a) do not help you comply with any laws, rules, or regulations that may apply to your use of Hobit S1 PRO, which is solely your responsibility; and (b) shall not be liable for the authenticity of you; and (c) will not be liable for any loss or damage you may cause; and you will defend, indemnify, and hold harmless, its affiliates, and it's or their directors, officers, employees, agents, shareholders, successors and assigns from and against all claims, losses, damages, penalties, liability, and cost, including reasonable legal fees, of any kind or nature that are incurred in connection with or arising out of a third-party claim relating to, or arising from your breach of Purpose.

2.Function Descriptions

2.1 Basic

Function	Descriptions
UAV detection	Detection spectrum bandwidth: 70 MHz - 6GHz, detection focus on the 433Mhz、 900Mhz、 2.4Ghz、 5.2Ghz、 5.8Ghz Simultaneous screening number of UAV: ≥ 150 pcs The lowest detection height: ≤ 0 meters Detection rate: ≥ 99.99 % [NOTE: Hobit S1 Pro+ can be customize with 1Ghz -1.4Ghz & 5.1Ghz - 5.9Ghz FPV Bands]
White and Blacklist	Hobit S1 PRO can identify ≥ 400 different model UAV including DJI series drones , and it has the autonomous learning ability. Hobit S1 PRO can carry on the accurate identification of target, in-depth analysis of UAV signal, the identification of unique ID, and the black and whitelist to distinguish. Whitelist and a blacklist can be set for different targets of the same position, same frequency band, same manufacturer, same type of UAV respectively.
Defensive Interference	PS Hobit S1 PRO has interference capabilities of 900MHz, 433Mhz; 1.5ghz, 2.4ghz, 5.8ghz; 5.2Ghz and other customized frequency bands, and covers most of the UAV communication available in market.
Remote OAM	After turning on the fully self-movable defense, it can enter unattended mode, detect, and strike autonomously. And a variety of OAM features are available when used with the remote server, including firmware updating, resetting, status inquiry, self-testing, parameter configuration, and more.
GPS	Hobit S1 PRO can detect its current position using its built-in GPS.
Networking	Hobit S1 PRO can network multiple devices through the cloud server, observe the online/abnormal status of each device, and control the device remotely through the mobile terminal (mobile phone IPAD), including but not limited to viewing the operating interface of the device system, receiving alarm information, viewing the black and whitelist, and turning on defense functions.
Data security	Use certificate management and data encryption between the equipment and server to ensure data reliability and security.

2.2 Specs

1. Detection range: In an interference-free environment, signal reception range maybe

vary when different antennas are used. the range of detection can up to 10km.

2. Detection spectrum bandwidth: 70 MHz - 6GHz, focus on the 433Mhz、 900Mhz、 2.4Ghz、 5.2Ghz、 5.8Ghz ; **[NOTE: Hobit S1 Pro+ can be customize with 1.0Ghz -1.4Ghz &5.1Ghz – 5.9Ghz FPV Bands]**
 3. Drone location: Locate drones and controller real time, capture home point of the parts of DJI drone within 3 km
 4. Identify Range: LightBridgel, LightBridge2, Ocusync, WIFI and WIFI variant protocols, Zigbee, Bluetooth and other customized protocol of small brand, can identify UAV brands and models;
 5. The trajectory: have the function for tracking flight trajectory.
 6. Accurate recognition: it can accurately identify UAV model and electronic fingerprints (ID), ≥ 400 different uavs models and the corresponding ID (identity) can be identify at the same time.
 7. Detection Angle: 360 °
 8. Detection number of UAV : ≥ 150 pcs
 9. The lowest detection height: ≤ 0 meters
 10. Detection rate: $\geq 99.9\%$
 11. Broadband Jamming: 433Mhz~~W~~800MHz~~W~~900Mhz~~W~~1.5 GHz~~W~~2.4 GHz~~W~~5.1-5.2GHz~~W~~5.8GHz
- [NOTE: Hobit S1 Pro can be customize with 8-10 frequency, Ex: 433Mhz~~W~~800-900 MHz; 1.2Ghz; 1.4Ghz; 1.5 GHz; 2.4 GHz; 5.1-5.2GHz; 5.8GHz]**
12. support at the level of effective interception Angle range in a straight line dive and

turned to flight of UAV, intercept distance: 2km;

13. Take over the function: Parrot AR Drone can take over
14. Jamming power adjustable: five gear adjusting gear, respectively is 10 DBM (0.01), 20 DBM (0.1), 30 DBM (1 w), 37 DBM (5 w), 40 DBM (10 w);
15. power supply mode: 220 V \pm 10V
16. Protection grade: \geq P65
17. Working temperature: - 40 °C ~ + 55 °C

3 . Installation

3.1 Lightning Protection

If Polaris Hobit S1 Pro is not under Polaris Hobit S1 Pro stationary unit system includes surge protection modules in the antenna module, power module, and Ethernet port. Hobit S1 Pro does not include a lightning induction system. It should be installed within the protected region of another lightning induction system. The protected region is calculated using the rolling sphere method.

The protection of the nearest lightning rod, a designated lightning induction system should be designed by a qualified professional.

Finally, be sure to note the following:

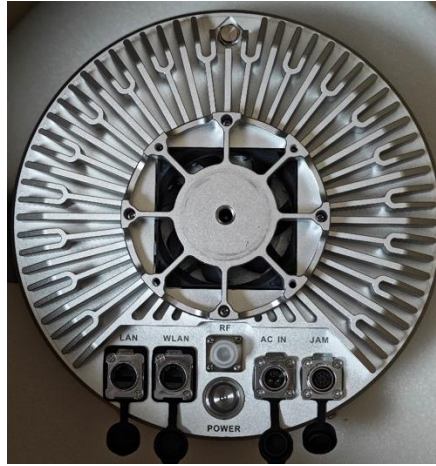
- Ensure that rainwater cannot flow along the Antenna cable into the Hobit S1 PRO.
- If the pole is made of metal; the frame and the pole should be separated using insulation.
- Indoor power outlets must have surge protection.
- Indoor Ethernet outlets must have surge protection.

3.2 Power Supply

Polaris Hobit S1 PRO is designed to operate at 100~240 V, 50/60Hz, 2.5A Max and 50W in detection mode.

Hobit S1 PRO Power Cable is used to connect the PS Hobit S1 PRO stationary unit to a power supply. In addition, it can also use DC power if necessary.

3.3 Detector Set Interface



Below the device, there are a total of five interfaces, each corresponding to:

- LAN Port: Used for local area network (LAN) connection; by default, we insert the network cable into this port.
- WAN Port: Used for accessing the cloud server. Connection to this port must be made through the company's internal network and is not recommended for general use.
- RF: Used for debugging the device by our team. You don't need to use this port.
- AC IN: Power port: Please insert the power cord into this port.
- JAM: Used for connecting the jamming device. Once connected to the jamming box, you can jamming the drones.
- The Power button is the power on/off switch.

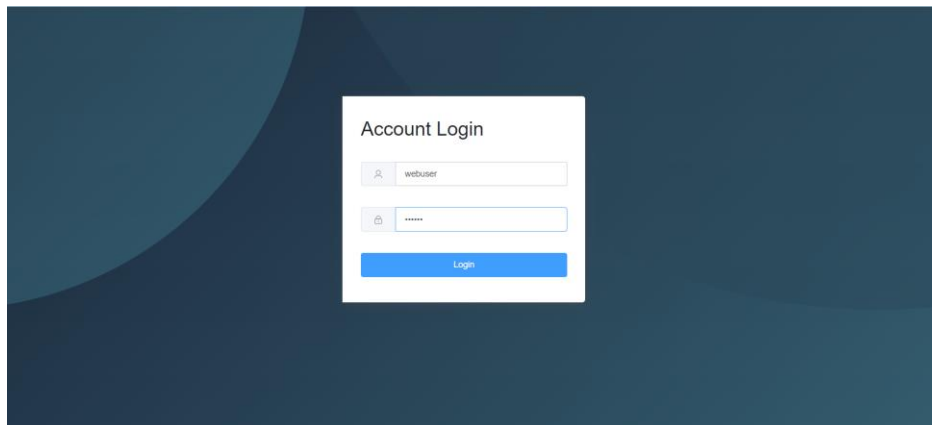
4. Management Platform

4.1 system initialization

Please enter the login URL on your computer browser: <http://169.254.1.1:8081>,

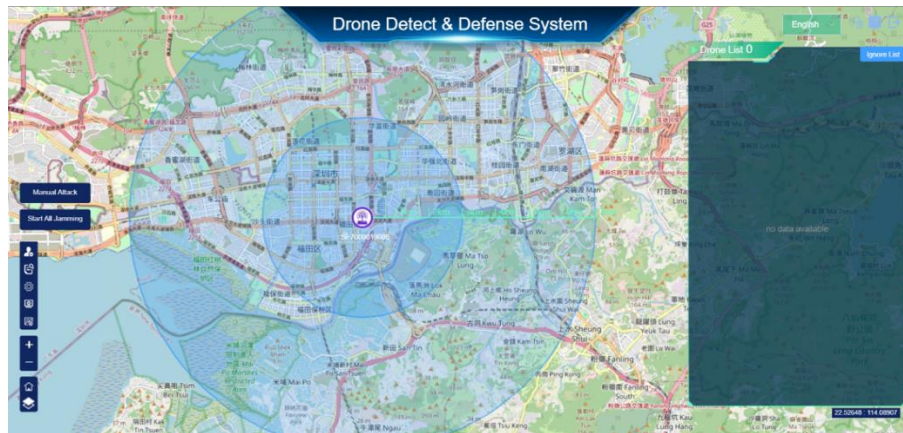
Then, enter your account and password on the website

- Account : webuser
- Password (default) : 123456

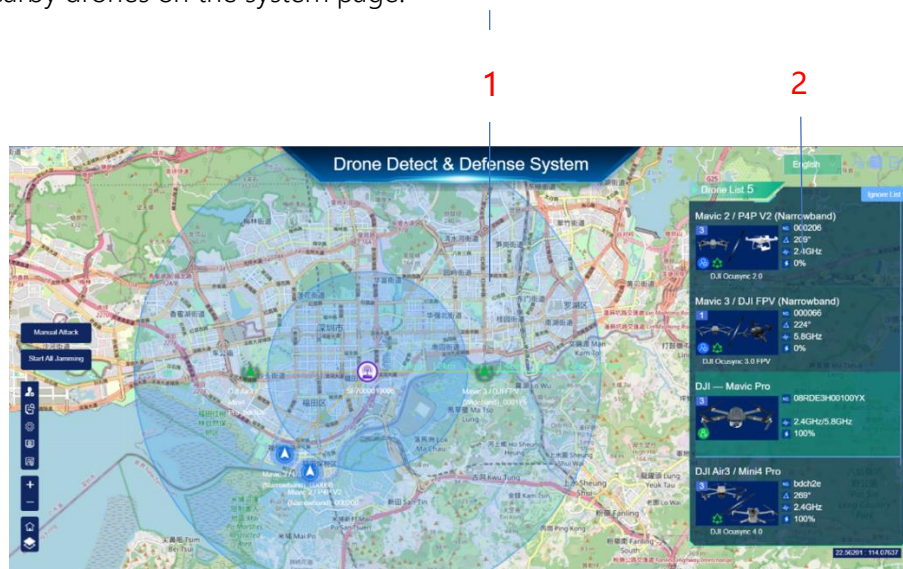


If you are unable to log in, please be patient for 2-3 minutes and checking your network cable is plugged into the "LAN port"

4.2 UAV Detection



When the device detects a drone, it will emit an alert sound and display information about nearby drones on the system page.



Two places will show drones :

- on the map
- Detection listings







Detection introduction including following information:

- Frequency bands in which the drones operate.
- Model of the drone
- Approximate orientation angle of the drone



When the signal is strong enough, the device recognizes the drone's GPS signal and displays it on the Drone List.



- Coordinates of the target drone
- The exact angle of the drone
- Unique identification number for drones
- Distance of the drone from the device
- Frequency bands in which drones operate

Explanation of some of the icons on the map:

-  Indicates detection signal changes ;
-  Indicates that it has been added to the whitelist ,
-  Indicates that it has not been added to the whitelist ;
-  Indicates precise strike ,
-  Indicates that the drone supports precision strikes. No icon indicates that the drone does not support precision strikes ;
-  Indicates that the drone supports adding to the ignore list. No icon indicates that the drone does not support joining the ignore list.


The map will update the location, trajectory and status of the drone in real time, and is linked to the drone list. When you click on the drone icon, the drone will be selected in the list. When an item in the list is selected, the drone will appear on the map.

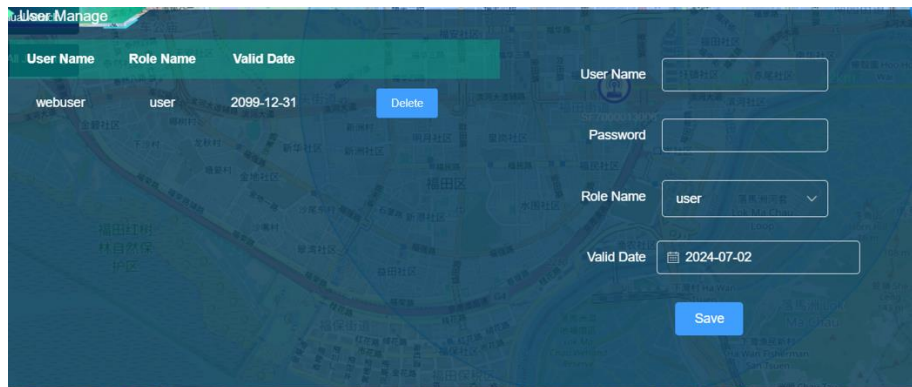
-  Represents a drone detection target
-  Represents the location target (drone has gps location),

-  Represents a fuzzy target ,
-  Indicates that they belong to the white list target (white list)

4.3 Functional module:

4.3.1 User Manage


Click  this bottom to enter System Settings.

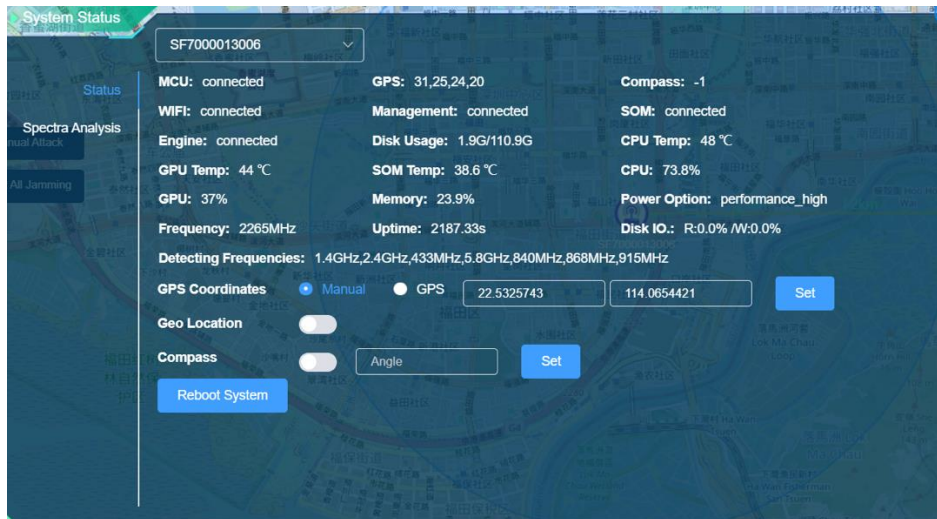


Add user: you can add a new login account and password, giving the corresponding authority level. Among them, super is the highest privilege, admin is the administrator privilege, user is an ordinary user, can only view, can not be operated. Users can change permissions according to their own needs.

Delete User: You can delete a user by clicking the DELETE button in the list.

4.3.2 System Status

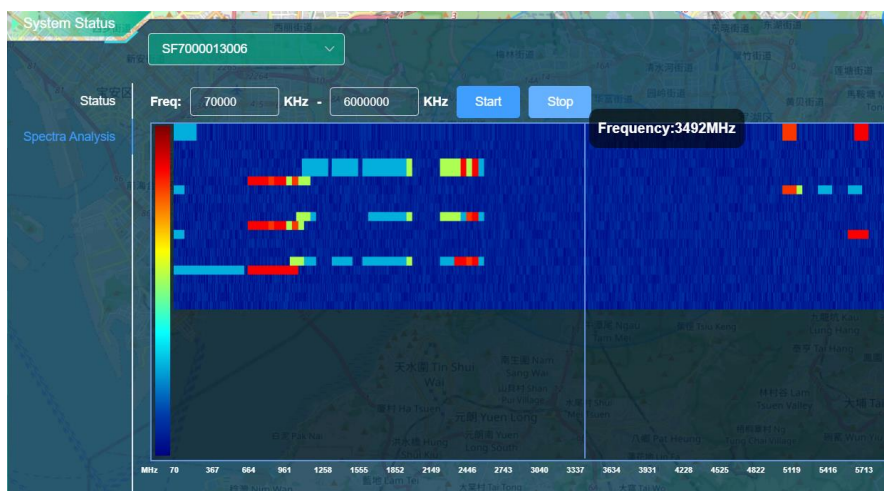
Click  this bottom to enter System Settings.



System status includes status information such as MCU, GPS, Compass, WIFI, Management, SOM, Engine, CPU temperature, GPU temperature, SOM temperature, disk space, detection frequency, etc. of the built-in device.




Geo Location: Switching to the blue state means enabling this function, which can analyze the location, but will lose the detection of some models; switching to the gray state means disabling this function, which can enhance the sensitivity of detecting other models, but cannot analyze the location.

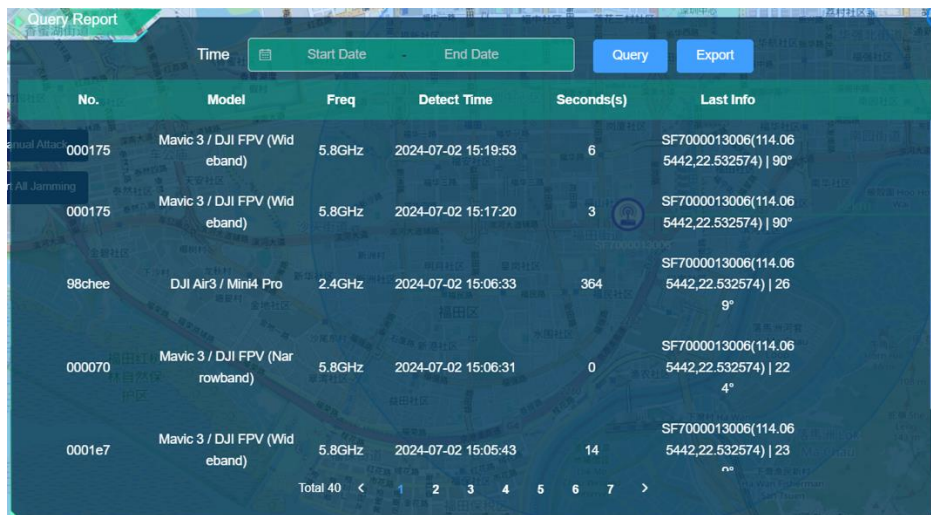


Spectra Analysis mode is used to analyze the surrounding environment, the device

through an independent algorithm should be surrounded by the spectrum of signals.

4.3.3 Query Report

Click  this bottom to enter Query Report




The screenshot displays a 'Query Report' interface with a table of drone detection records. The table has columns for No., Model, Freq, Detect Time, Seconds(s), and Last Info. The records are as follows:

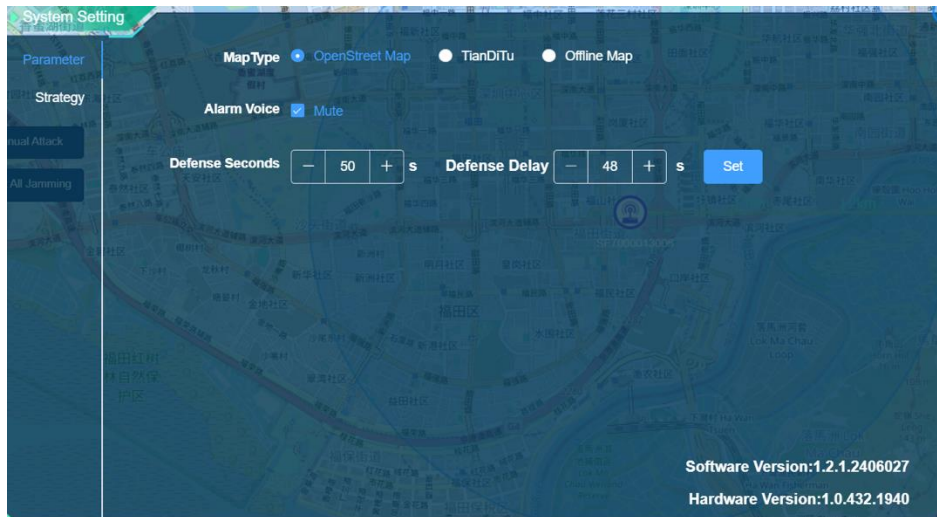
No.	Model	Freq	Detect Time	Seconds(s)	Last Info
000175	Mavic 3 / DJI FPV (Wideband)	5.8GHz	2024-07-02 15:19:53	6	SF7000013006(114.06 5442,22.532574) 90°
000175	Mavic 3 / DJI FPV (Wideband)	5.8GHz	2024-07-02 15:17:20	3	SF7000013006(114.06 5442,22.532574) 90°
98chee	DJI Air3 / Mini4 Pro	2.4GHz	2024-07-02 15:06:33	364	SF7000013006(114.06 5442,22.532574) 269°
000070	Mavic 3 / DJI FPV (Narrowband)	5.8GHz	2024-07-02 15:06:31	0	SF7000013006(114.06 5442,22.532574) 224°
0001e7	Mavic 3 / DJI FPV (Wideband)	5.8GHz	2024-07-02 15:05:43	14	SF7000013006(114.06 5442,22.532574) 23°

At the bottom of the table, it shows 'Total 40' and a pagination control with numbers 1 through 7.

In the report, you can see the detection count of the device, review each entry, and access data analysis charts. Similarly, you can also view the number of drone defense instances.

4.3.4 System Settings


Click  this bottom to enter System Settings.



In this mode, you can switch the map type and adjust the alarm sound on/off.

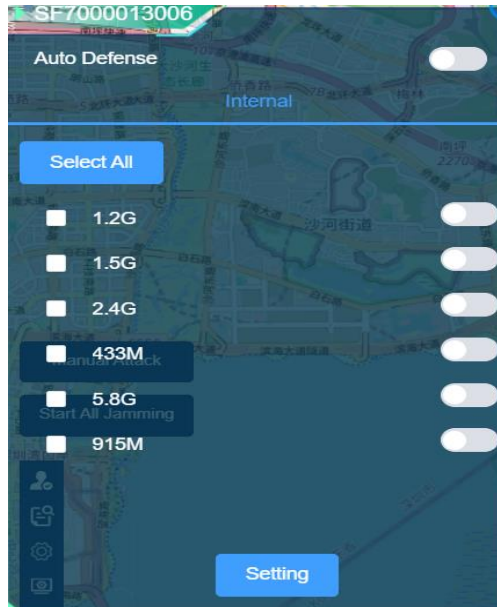
4.3.5 User Config:



Click on the top right corner  button to open the user configuration interface, where you can modify the system title and logo. Click the "Reset" button to reset the title and logo to the default values. By selecting the Freq item, change the Freq display value, and click the "Save" button to pop up a prompt whether to restart the device. Generally, the device is restarted after all changes are completed.

4.3.6 Jamming mode

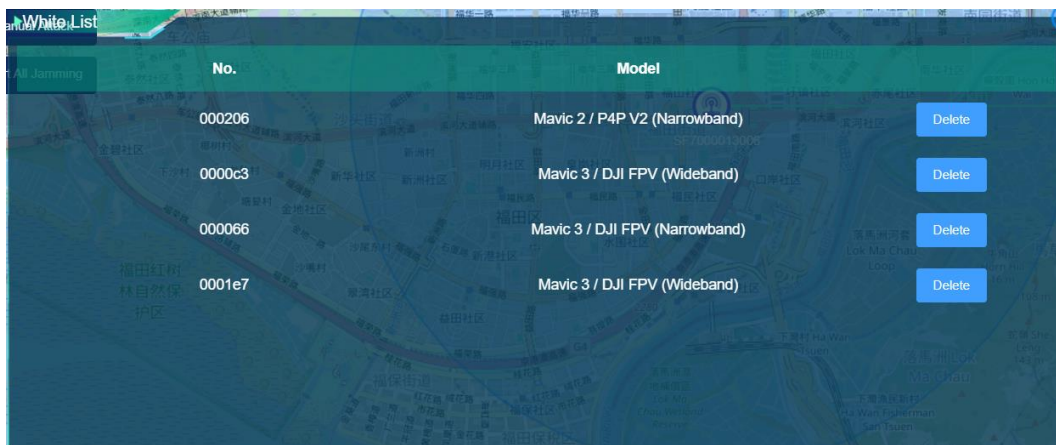
Click on the device icon  on the map to enter strike mode



The jamming mode includes can supported jamming frequency bands, and you can freely choose and combine them. You can also enable the Auto Defense function (unmanned guard) here.

4.3.7 WHITE LIST

Click  this bottom to enter white list.



You can add your own drone to the whitelist so that devices won't warn you about your

device. The whitelist list mainly shows the drone number and model, and you can delete the whitelist in the list by clicking the Delete button in the list.

5. Packing List

- Hobit S1 Pro Detection part x 1
- Hobit S1 Pro Jamming Part x 1
- Jammer Mounting Screws pack x 1
- Jamming antenna x 4pcs
- Tripod x 1
- Data connection cable x 1
- Power cable x 1
- Net cable x 1

6. Warranty and Service

1. We promise to ensure that the products provided are brand new and meet the factory standards. Its quality and specifications comply with the technical performance indicators of the product.
2. Warranty period: From the date of product delivery, we provide 1-year free hardware maintenance guarantee service. Damage caused by improper use and storage is excluded.

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3. The product should be used in accordance with the original manufacturer's use requirements, strictly in accordance with the product use requirements and relevant laws and regulations. If the product cannot be used normally due to illegal use or storage, poor maintenance, etc., the applicable room shall bear the relevant consequences.
 4. Warranty scope: If there is a quality problem with this product, it needs to be sent back to the country for repair work or to the location designated for repair. During the warranty period, the purchaser shall pay for the round-trip international logistics costs of the equipment.
 5. Regularly check whether the antenna and antenna interface connection is normal. When the device is running for a long time, restart the device once month.
 6. For the interface that is not in use temporarily, please use the supporting equipment .
 7. Regularly remove dust; Recommended storage environment for the device: normal temperature, dry environment.

7.FAQ

1. Q: Logged-in users are forced to log out of the system.
 - ◆ A: The software license of the system is invalid, please contact our after-sales personnel to re-register the software license.
2. Q: Cannot detect.
 - ◆ A: Log in with an account with superuser privileges.
3. Q: Device won't boot
 - ◆ A: Check that the power cord is properly installed.
4. Q: unable to access normally.
 - ◆ A: Check whether the network connection is normal.
5. Q: The device can not be located automatically.
 - ◆ A: Check whether the GPS antenna is properly installed.
6. Q: Poor detection.
 - ◆ A: Check whether the antenna is properly installed or not installed correctly.
 - ◆ Choose an environment with less electromagnetic interference as much as possible. If there are metal buildings, shelters, and places with complex electromagnetic environments around the test, it will cause the detection distance to be too short or lost. It is recommended to find a clear and clean environment for testing; it is best to choose the highest point in urban areas to obtain the maximum coverage. Please follow the professional guidance of our company or partners.

