H30 30KM Portable UAV Ground Control Station

V1.4

User manual

Attention

This product uses the following terms to classify the potential hazards that may be caused by improper operation.

Note: If not follow the instructions, it may cause property damage and minor injuries.

Note: If not follow the instructions, it may cause property damage, major accidents and serious injuries.

Warning: Misuse of this product may result in injury, damage or loss of property. Read the manual carefully before using this product. This item is not a toy. This item is intended for use by professional UAV operators and installers only. Donot use this product if you lack the knowledge and expertise to install and maintain UAV radio equipment. Do not use unapproved or unofficial components with this system. Operators must strictly follow the operation guides set forth in this manual. Foxtech does not accept any liability for the use or misuse of this product.

A. Overview

1、Product Features

（1）The H30 uses the newest Qualcomm Snapdragon 660 8-core processor, equipped with an Android 9 (64bit) embedded system and advanced SDR technology, also with a super protocol stack to make the image clearer, lower latency, longer distance transmission, and stronger anti-interference. Wildly applied for drones, Robots, industrial controlled equipment, etc.

（2）Supports rich interfaces such as HDMI, RJ45, sensor interface, dual serial ports passthrough transmission, SBUS, aerial photography, FPV security, fire protection, power, mapping robot, border control, etc.

（3）Equipped with IP65 waterproof, dust-free structural design, ensuring not only good using feel but also durability.H30 uses 10.1-inch FHD high-brightness IPS LCD screen display, which can be viewed clearly under the sun. The resolution is 1920*1200. Supports 1080P high-definition digital image transmission. The dual-3 frequencies antenna signals complement each other, with super-strong signals and ultra-long transmitting distances, combined with algorithm control and out-of-step frequency hopping algorithms, greatly increasing the ability to communicate with weak signals. So you don't need to worry about the flight distance during flight operations, just explore a wider scenery. Built-in dual speakers, triple frequencies as 800M, 1.4G, 2.4G, WiFi 2.4 & 5G.

（4）Integrated with high energy density lithium ion battery, can work for 5 hours after full charging. The consistent survival thinking in the wilderness allows you to have no concerns about the reliability of our equipment.

（5）H30 supports rich interfaces such as HDMI, SIM card, USB, Type-C, RJ45, PPM and dual serial port passthrough transmission, dual net ports and SBUS for the R30. And supports many brands cameras, pan-tilts, pods and other video equipment. Provide development kit, SDK and technical support, support video suspension, support ground station of mainstream flight control, support QGC and wireless RTSP video stream sharing.

（6）The use of weather silica gel, frosted rubber, stainless steel, and ABS makes the extreme operating feel, and also meets the harsh conditions of outdoor use of drones..H30 is dust-free in the fuselage, control switches, and various peripheral interfaces. Protective measures such as splashing can ensure stable and smooth operation of the equipment in harsh environments.

（7）Rich ground-end interface, RJ45 network interface, long-distance connection to the internal network, Type-C Android high speed USB interface, OTG interface can be connected to U disk and network card, etc., expanded TF card slot.

（8）An independent 2-dimensional gimbal joystick makes the gimbal flying with great facility, like a duck to water.

### 2、Main purpose and scope of application

It is used to remotely operate helicopters, fixed wings, multi-rotors, vehicles, ships, etc. for video image transmission (optional camera), data transmission, and control drone flight.

3、Specifications

Remote Controller Specification			
Model No.	H30	Channels	16
Working voltage	4.2v(Battery built-in)	RF Power	23dBm@CE/FCC
Frequency	800M/1.4G/2.4G	Dynamic FM	supports frequency hopping across frequency bands
Size	346(L)*196.5(W)*89.4(H)mm	Weight	1.5kg
Endurance	5 hours	Battery	20000mA/H
Update way	APP Update online	Charging port	TYPE-C
Run memory	4G	Store memory	64G
Applications	Helicopter, fixed wing, multi-rotor, unmanned vehicle, unmanned boat, etc.		

Receiver Specification			
Model No.	R30	Channels	16
Working Voltage	7.2V~72V	RF Power	23dBm@CE/FCC
Size	76.4(L)*59(W)*15(H)mm	Weight	65g

4、The composition of the model and its significance
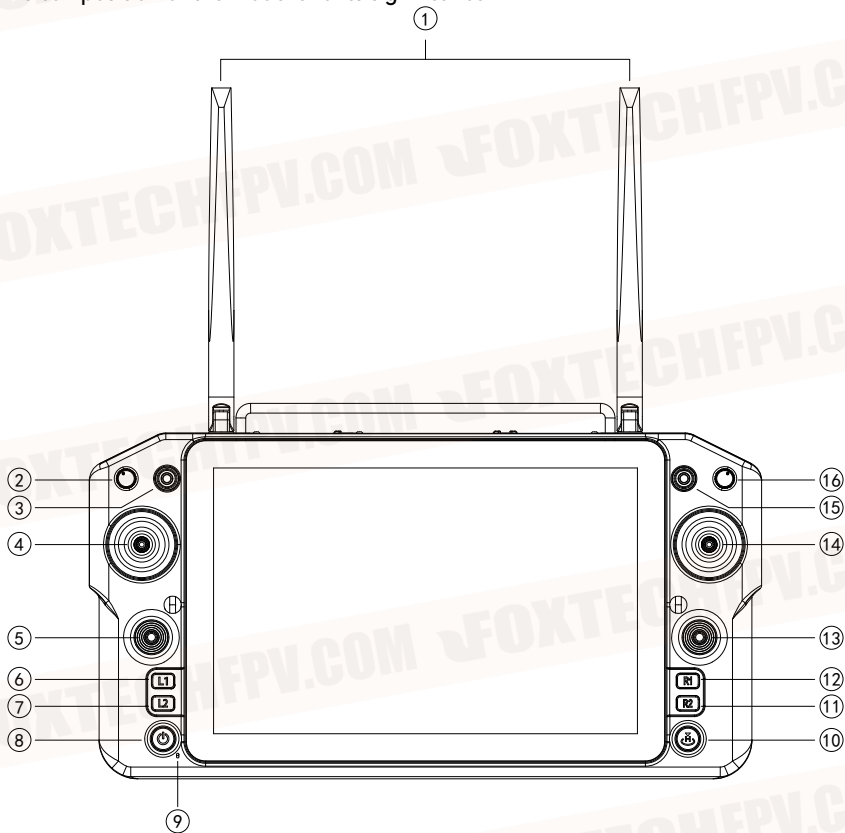
Number	Annotation	Number	Annotation
1	800M/1.4G/2.4G Three working frequencies antenna	9	MIC
2	Knob switch AUX1	10	Key button H
3	Three levers switcher SW1	11	R2 button
4	Left joystick X1、Y1	12	R1 button
5	Small left joystick X3 、Y3	13	Small right joystick X4 、Y4
6	L1 button	14	Right joystick X2、Y2
7	L2 button	15	Three levers switcher SW2
8	Power button	16	Knob switch AUX2
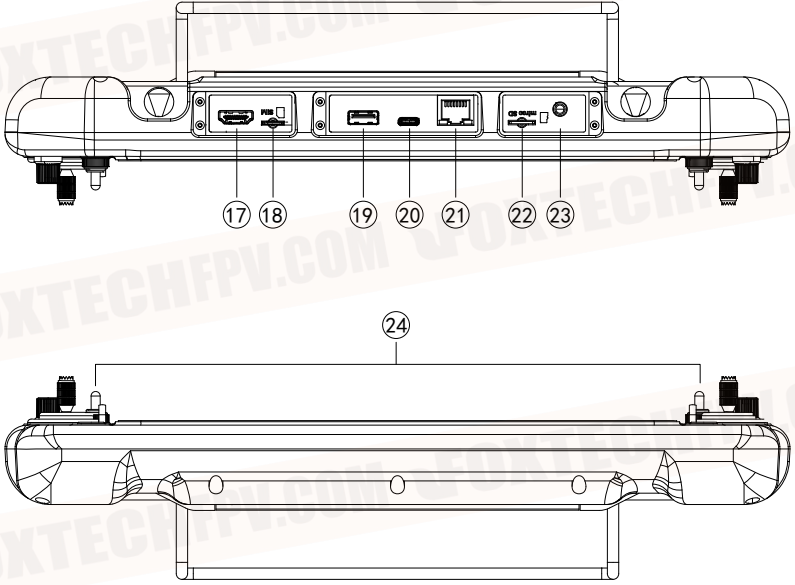
Number	Annotation	Number	Annotation
17	HDMI	21	RJ45
18	SIM card slot	22	TF card slot
19	USB	23	PPM
20	TYPE–C	24	Wrapping connector
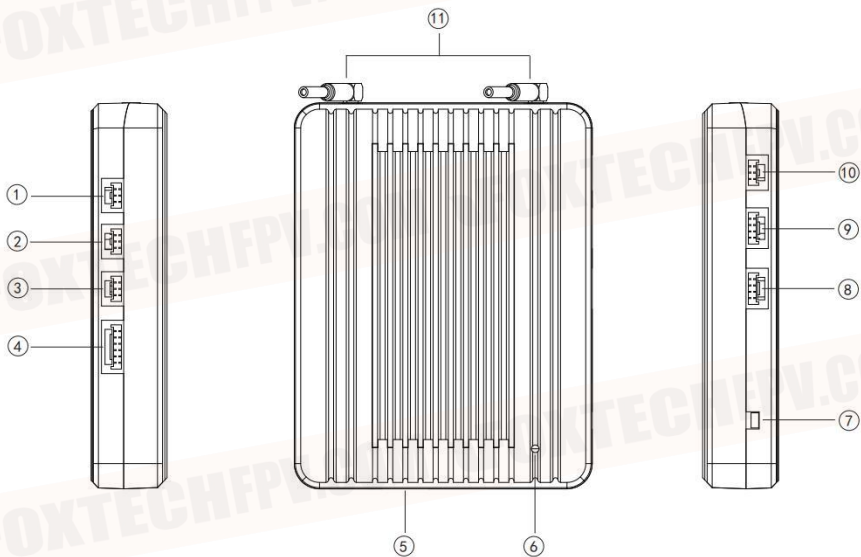
Number	Annotation	Number	Annotation
1	Serial port 0	7	Binding key
2	Serial port 1	8	Network port 0
3	Reserved port (unavailable)	9	Network port 1
4	Power supply 7.2~72v input and SBUS	10	External binding key
5	Type-c	11	MMCX
6	Binding status indicator		

5、Port Definition Diagram
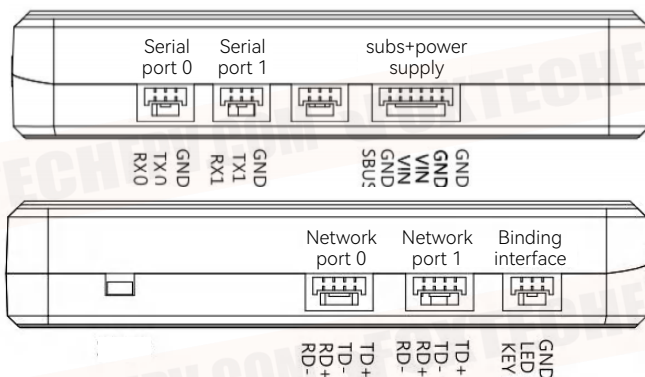
6、Environment conditions

A) Working temperature:-10℃～+55℃。

B) Storage temperature:-25℃～+70℃。

C) Relative humidity:Not exceed 85%。

D) Atmospheric pressure:86kPa~106kPao

E) Working environment should not contain explosive material or any corrosive or harmful gas may cause interference in the operation of the product.

F) Always work under shelter to prevent rain, snow, wind, sand and dust contamination.

7、Working conditions

Power supply and attentions

H30 series uses a built in Li-ion battery. Charging port is compatible with common Type-C (such as cell phone, digital cameras' USB charger).

In case of smoke, heat or unusual smell during charging, please stop charging immediately and return to our company for servicing as soon as possible.

Do not leave the product unattended while charging. Do not leave the product in a place where children can reach. Do not charge when room temperature over 60 ℃.

8、Safety

Warning

Beginners should pay attention for the followings! Please read it carefully!

- ⊘ DO NOT fly under the influence of substances, or when tired!
- ⊘ DO NOT fly in strong wind and or rainy conditions!
- ⊘ DO NOT fly close to electric emission towers, communication stations and crowded area!
- ⊘ DO NOT fly nearby airports and other prohibited areas!
- ⊘ DO NOT fly around people or animals, or in any location where possible to damage property.
- ⚠ Check equipment before every flight and check whether the transceiver system and the aircraft are normal or not.
- ⓘ Please use certified chargers to charge the batteries.
- ⓘ DO NOT put unnecessary force on antennas, joystick and screen since their weakness.

B. Operation

1、Preparation and pre-checking before use
Pay attention
① Check battery level.
② Check position of the antenna to get the best performance .
③ DO NOT operate under the influence of alcohol or drugs.
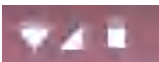
2、Operation

Language setting

① Enter system setting, choose your language and input method

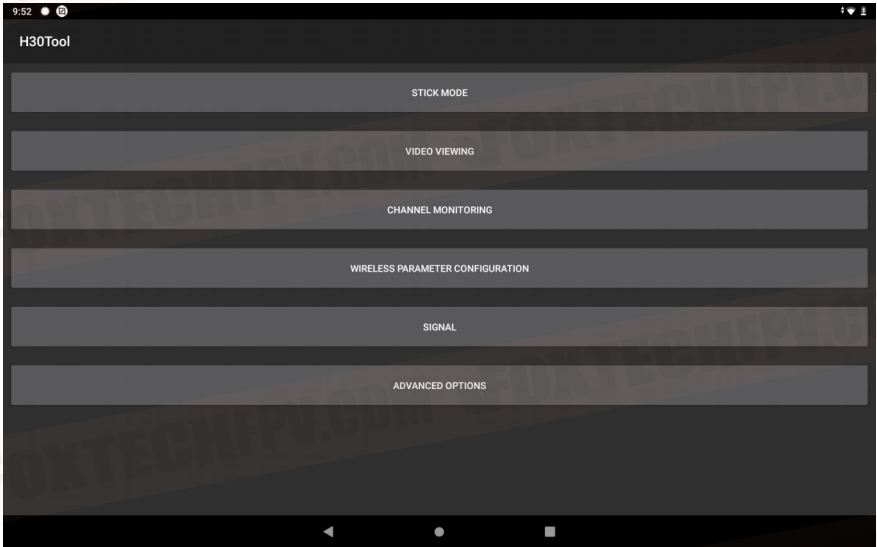② Once entering language and input method choosing, you can add/cancel/choose the language you want

Status bar

① ② ③   ④   ⑤   ⑥

①WIFI connection
②SIM card signal
③Power display
④Return
⑤Home
⑥Background task management

H30 Assistant

①Mode setting: Switch the operating mode of the remote control's joystick (mode type: Mode 1, Mode 2. Default Mode 2), 1. Read 2. Set 3. Save.

②Video viewing: You can view RTSP videos (detailed on the next page)

③Check whether the values of each channel of the remote controller are normal or not

④Wireless parameter configuration. Binding the remote control with other receivers (the binding method is described below: image connection and settings)

⑤Signal viewing (viewing signals)

⑥In the advanced setting, the receiver's serial port baud rate, remote control parameter adjustment, device upgrade, SN, coaching mode (under development), and wireless module upgrade can be adjusted and modified (password: 999, for professional debugging only)

Binding
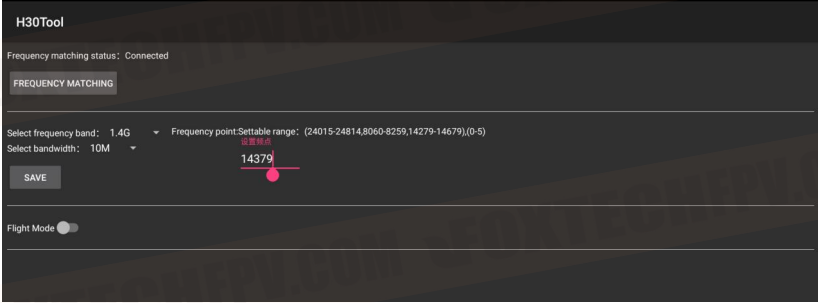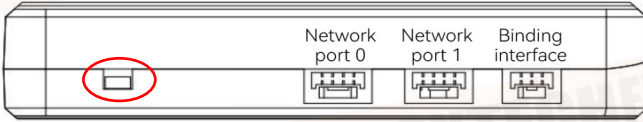
Note： that the complete set of remote controller and receiver is already binding before leaving the factory. You only need to power on and wait for 20 seconds for automatic binding.

①Power on the receiver, the power light – red light is always on. After waiting for 20 seconds, press and hold the receiver SET binding key – the blue light flashes and then release it; Replacement controller or receiver requires a new frequency binding.

②Enter the H30 Assistant APP and click binding. Binding status: on binding... After successful binding, the status will show "Connected" and "Binding succeeded" (the receiver's green light is always on).

Video/Image Connection and Settings
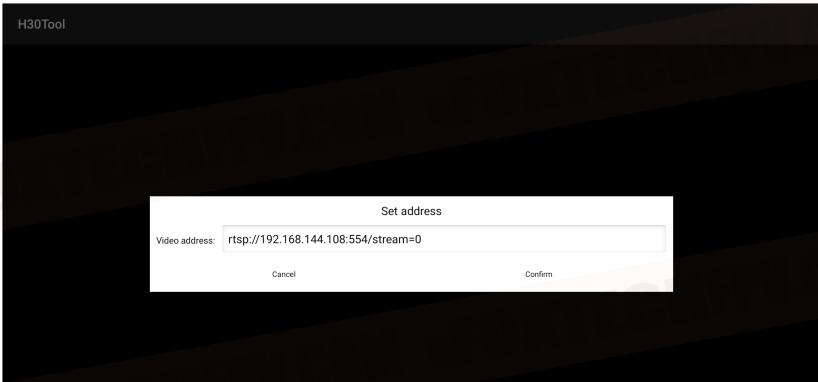
The network segment of the network portal camera needs to be set to 144 network segments (192.168.144.XXX) in advance. The camera connects to the receiver network port 0 or network port 1. For pin definitions, see "I. Overview ->5. Port Definition Diagram" in this article.

Settings: This setting displays the transmission of images through the air unit network port, and displays the C10 three-axis gimbal camera (when C10 is connected)

rtsp://192.168.144.108:554/stream=0 . If want to install a third-party gimbal camera, you need to ask the camera manufacturer for the rtsp address.

How to display telemetry and image transmission on H30's ground station
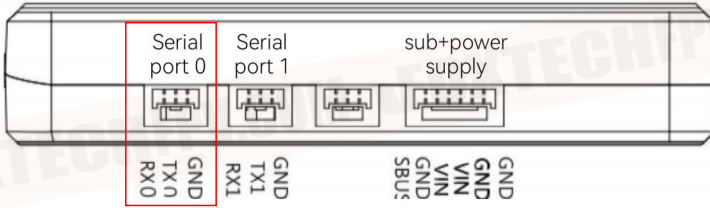
FC's data cable connects to the serial port 0, take Foxtech tower shows telemetry as an example (H30 Assistant should be quit)
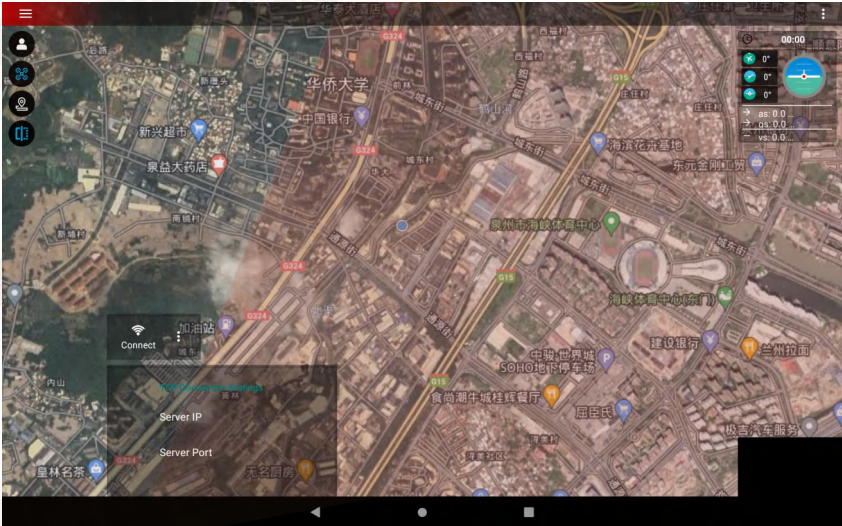
Foxtech **tower:**
Serial port 0: Server IP: 192.168.144.101 Server port: 14550 Click to connect directly.
Serial port 1: Server IP: 192.168.144.101 Server port: 14551 Click to connect directly.
C10 three-axis gimbal connects to network port 0 or network port 1, take Foxtech tower showing video/picture transmission as an example.

☰ ->Common Settings ->Other Settings ->User Interface ->Video Window ->C10 (Display C10 camera) ->Customization (Input RTSP Address to Display Other Cameras)
->C10 (Display C10 camera)

->Customization (Input RTSP Address to Display Other Cameras)
Take QGC in H30 to show video transmission as an example (H30 Assistant should be quit)

Click the Q icon in QGC to enter the settings.

①Click on General

②Change the Source to RTSP Video Stresm

③Fill in the RTSP URL with the RTSP address of the network camera and the image of the C10 three-axis gimbal (which needs to be connected to C10) RTSP address

rtsp://192.168.144.108:554/stream=0
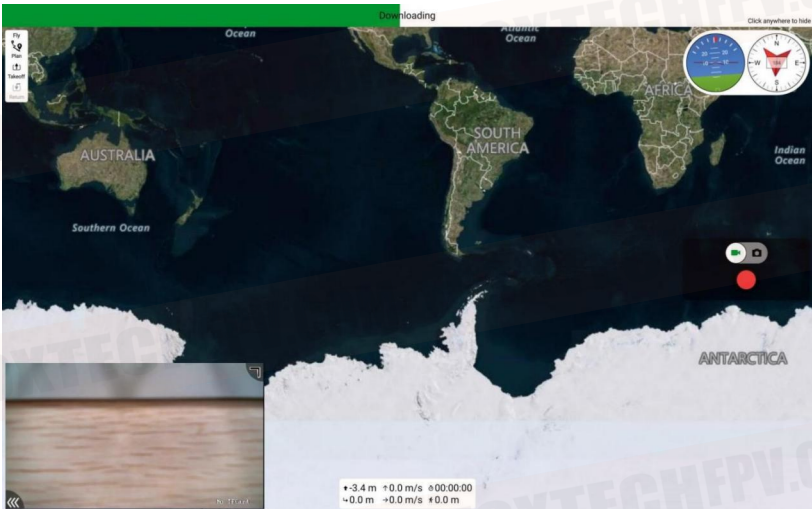
Take QGC in H30 to show telemetry as an example

①Click on Comm Links
②Click ADD to change the Type to TCP and name it as Name.
③Serial port 0: Server Address changed to 192.168.144.101 Port listening port changed to 14550
　Serial port 1: Server Address changed to 192.168.144.101 Port Listening port changed to 14551
④Click OK to save

How to connect the internet

The remote control can be connected to the Internet in three ways:
(1) connected to 5G wifi network
(2) connected to the RJ45 port of the remote control
(3) inset a SIM card

## How to share internet, video/image transmission and data/telemetry transmission


1.Sharing telemetry
(1) The remote controller is connected to the computer network port through a network cable.
**Note:** The remote control ground station should be disconnected!
(2) Open "setting" in the PC, click on the "adapter", select Ethernet, select the IPV4 protocol, select a custom IP address, enter according to the method in the figure, and click "OK".
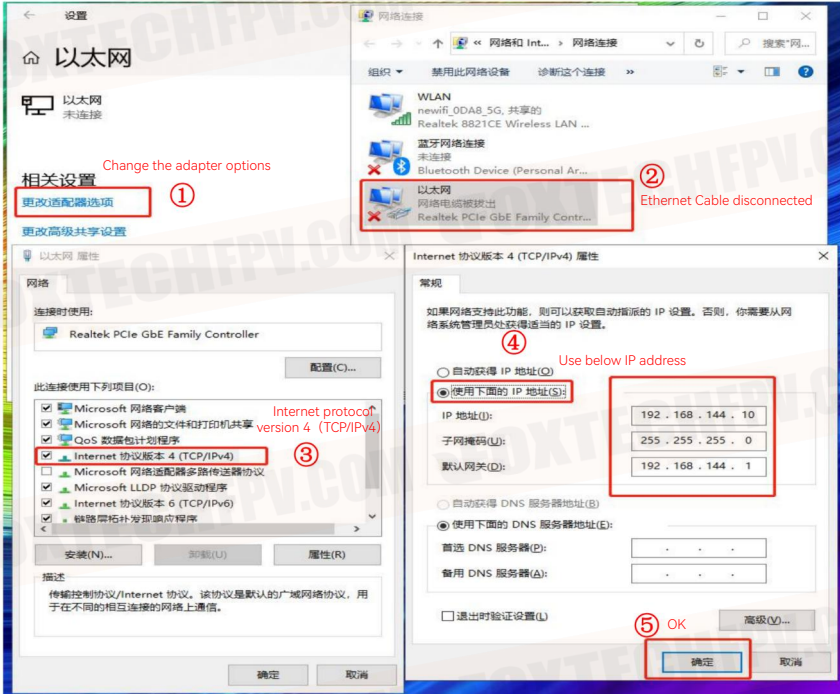
(3) Open the Mission Planner in computer and select TCP as the connection way.
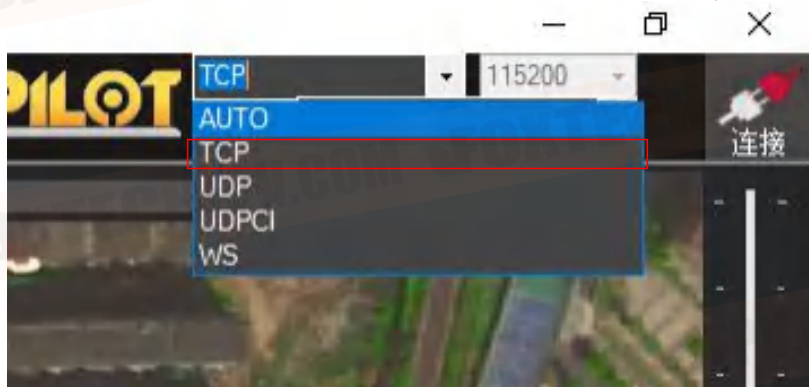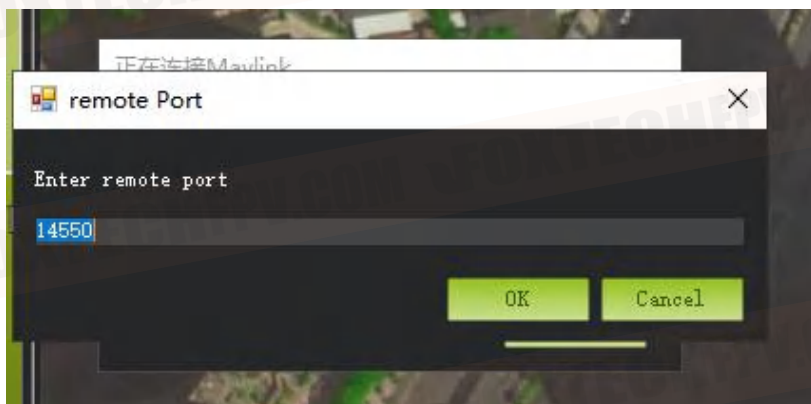

(4) After clicking on the connection, enter IP: 192.168.144.101, and then click OK.
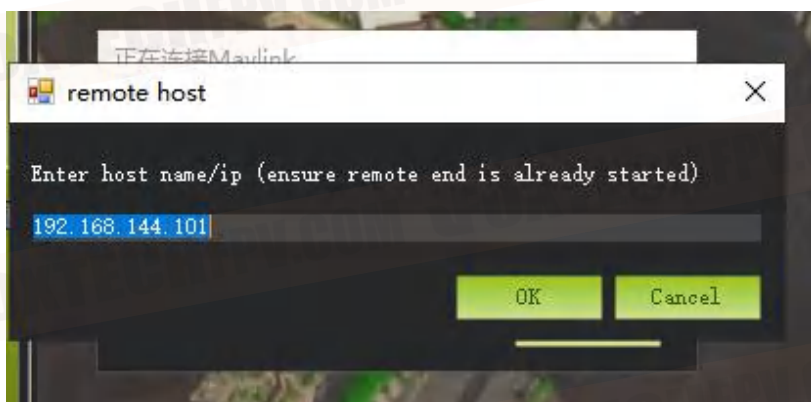
(5) Select 14550 as the port number on serial port 0, and click OK to connect (see the figure below).

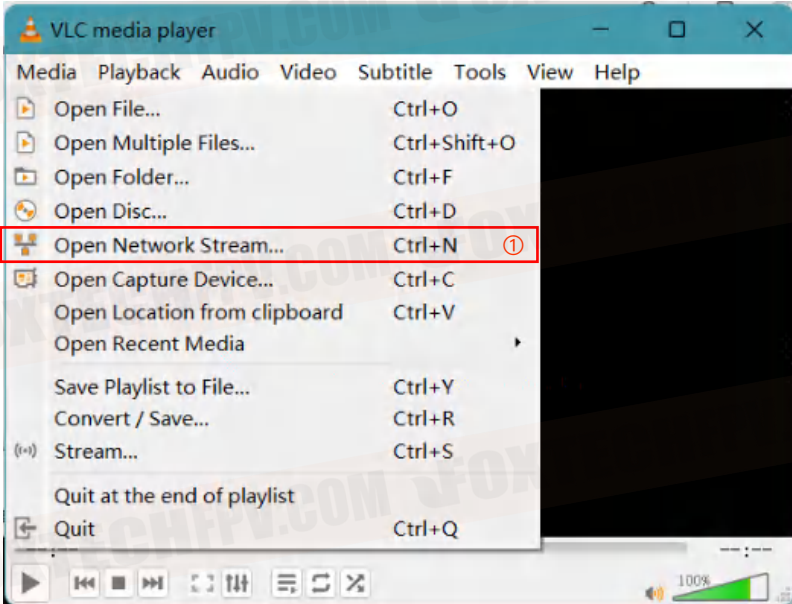(6) Select 14551 as the port number on serial port 1 and click OK.

2.Sharing video/image transmission

Connect the network cable as described above, share telemetry ->set a fixed Ethernet IP address.
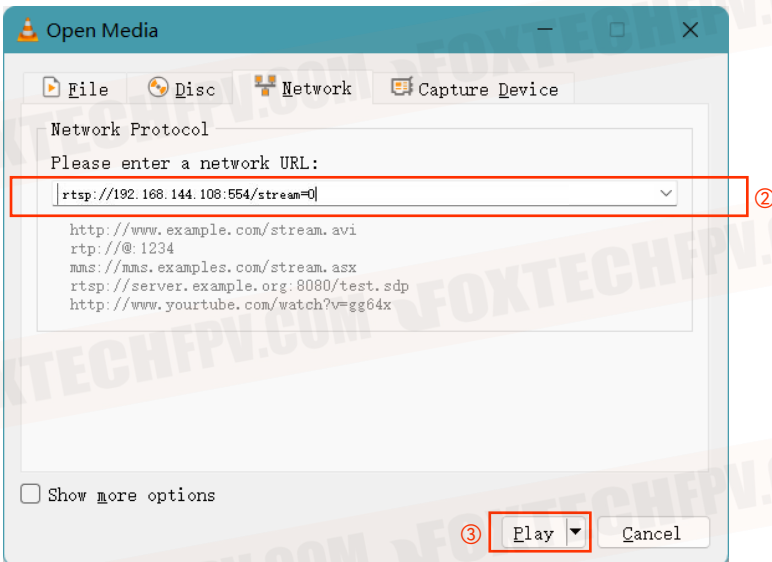
Download VLC exe. to show video/image

① Open VLC and choose network streaming

② Enter "rtsp://192.168.144.108:554/stream=0" to URL and click "play"

Q & A

1、1.Can the remote control install other apps?

The permissions of the remote control are all open, and there is no special software or restricted software installation and uninstallation.

2、How to obtain RTSP address using a third-party webcam

The network segment of the webcam needs to be set to 144 network segments in advance (ip192.168.144.XXX, gateway 192.168.144.10). The camera connects to the receiver network port 0 or network port 1. For pin definitions, please see "I. Overview ->5. Port Definition Diagram" in this article. You can connect the network camera to the computer first, and use the computer VLC to pull the RTSP of the 144 network segment first. The RTSP address needs to be inquired from the network camera manufacturer before accessing the receiver.

Open the H30 assistant, open the video view, click Settings (virtual key), click the video stream address, and enter the link at the beginning of the RTSP input from the computer VLC.

3、Telemetry cannot be connected

The FC'S data transmission cable connects to the serial port 0, and the correct connection method is RX to TX, TX to RX is required for the flight control RX TX to receiver.

Check whether the ground station APP is a TCP type to connect to the remote controller, and whether the address is 192.168.144.101. and the listening port is 14550. Check whether the baud rate is the same as the flight control.

4、Unable to share telemetry or image transmission

Please check whether the network cable is connected to the remote controller, whether the Ethernet has a static IP address set, and whether the webcam gateway is 192.168.144.10

5、How does the remote control enter the fast charge mode?

dedicated charger to enter the fast charging mode.

C. Maintenance, servicing

Storage for not using certain period

Put H30 in a dry and ventilated area. No direct sun light to prevent harm to the internal li-ion battery. If store it over one months, it is highly recommended to put room temperature between 22℃ to 28℃ while need keeping the battery around 70%~80%. DO NOT put it below 20 ℃ or higher than 45℃.

D. Transportation and storage

Warning

In order to prevent lost or getting hurt, please strictly follow the rules of operation:

Keep small parts or wire away from children can reach. DO NOT let children touch the small parts of the H30.

Attention

1） DO NOT put H30 into water. If it does, please switch off the power and dry it at once!

2） DO NOT crash the H30 or break the battery is prohibited.

E. Others