Agri-Pro H20

User manual

V1.0

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, 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. Do not 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. Manufacturer does not accept any liability for the use or misuse of this product.

I.Overview

1. Product Features

(1) Agri-Pro H20 adopts new Qualcomm 6nm, 8-core processor, equipped with Android 13 (64-bit) embedded system, smooth operation, ecological openness, can be installed on the market most of the APP. 2.4/5.8G dual-frequency wireless module with new high-power, high-bandwidth, support for automatic frequency-hopping and MCS independent dynamic adjustment, the figure of the digital transmission distance up to 30KM.

(2) Agri-Pro H20 remote control has a built-in 7-inch high-definition and high-brightness display with a resolution of 1920*1200, and with the camera, it can transmit high-definition images in real time. Built-in dual fans to effectively cool down the temperature, so that the remote control works efficiently at all times.

(3) Agri-Pro H20 supports USB interface, type-c interface. Provide SDK development kit, support video levitation, support mainstream flight control on the ground.

(4) The use of high energy density lithium-ion batteries, fully charged can work for 6 to 8 hours, consistent wilderness survival thinking allows you to the reliability of the device. The consistent wilderness survival thinking makes you have no worries about the reliability of the equipment.

(5) The use of weather silicone, frosted rubber, ABS makes the ultimate feel at the same time, but also to meet the harsh conditions of outdoor use of the drone. Agri-Pro H20 in the fuselage, control switches, each peripheral interface to do dust protection measures to ensure that the equipment in the harsh environment of stable and smooth operation.

2.Main use and application scope

It is used for video image transmission (optional camera is required), data transmission and control of unmanned equipment such as helicopters, fixed-wing, multi-rotor, vehicles and boats.

3. Environment conditions

Pay attention

A) Working temperature:-10°C to +55°C.

B） Storage temperature:-20°C～+50°C.

C） Relative humidity:Not exceed 85%.

D） Atmospheric pressure:86kPa~106kPa.

E) The use of the location does not allow explosive hazardous media, the surrounding medium should not contain corrosive metals and damage the insulation of the gas and conductive media, not allowed to be filled with water vapour and the presence of serious mould.

F)The use of the location should have a defence against rain, snow, wind, sand, ash facilities.

Warning: Do not allow direct sunlight when using.

4. Working conditions

Power supply and precautions

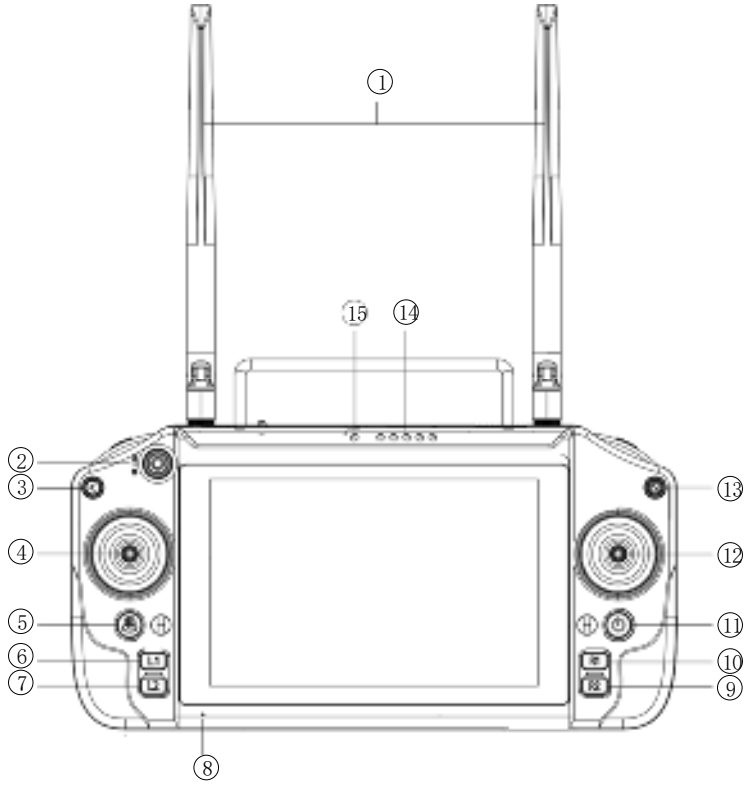
Agri-Pro H20 series ground terminal is built-in integrated rechargeable lithium battery, compatible with the market standard TYPE-C interface, please use the original charger to charge.

If you encounter smoke, odour or night leakage when charging the ground terminal, please do not continue to charge the ground terminal and return to our factory for maintenance.

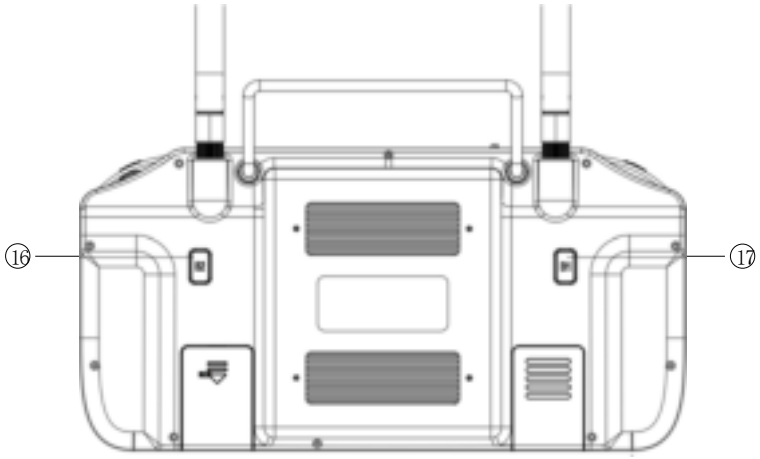
Do not charge the product in an area where babies can touch it to avoid the risk of electric shock.
Do not charge the product at temperatures exceeding 60°C.

II. Component names

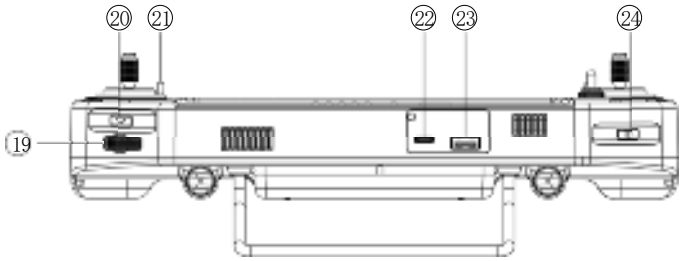
1.Remote Controller



Number	Annotation	Number	Annotation
1	2.4G/5.8G antenna	9	R2 button
2	Three-position switch (flight mode)	10	R1 button
3	Back button	11	Power button
4	Left joystick X1, Y1	12	Right joystick X2, Y2
5	H button	13	Pause button
6	L1 button	14	Charge indicator
7	L2 button	15	Frequency pair indicator
8	Microphone		



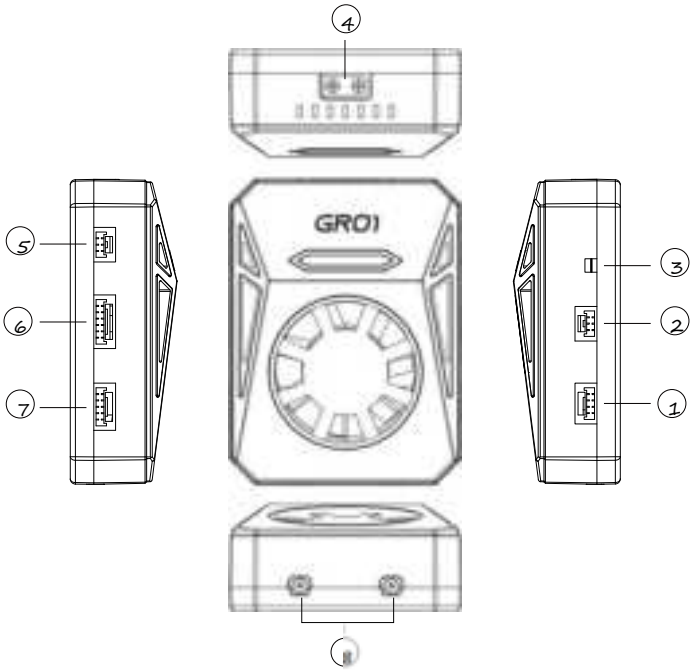
Number	Annotation	Number	Annotation
16	B2 button		
17	B1 button		



Number	Annotation	Number	Annotation
19	Jog wheel (gimbal pitch)	22	TYPE-C connector
20	Spreading button (SPAY)	23	USB port (upgrade port)
21	Wrapping connector	24	Photo button (camera)

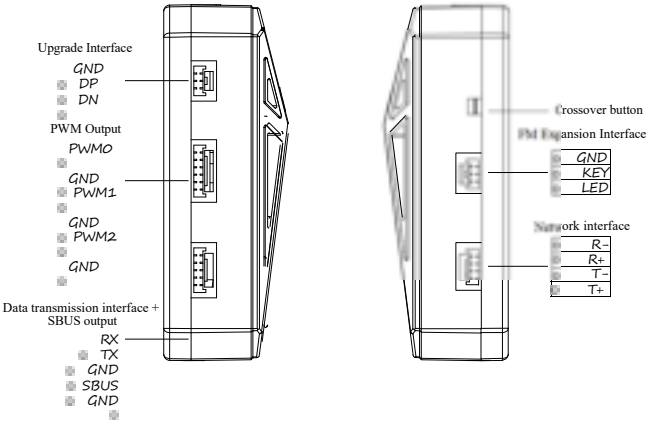
2.Receiver

Receiver 1：GR01

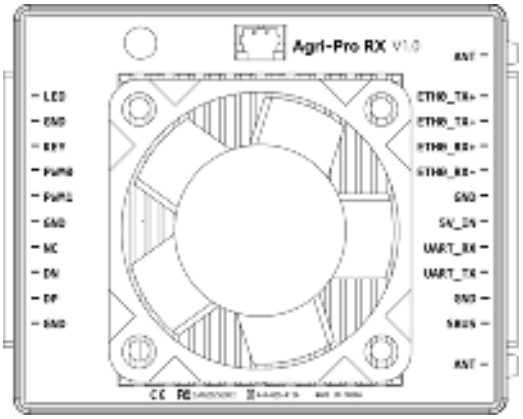


Number	Annotation	Number	Annotation
1	Network interface	5	Upgrade interface
2	FM expansion interface	6	PWM output
3	Crossover button	7	Data transmission interface + SBUS output
4	Power input port (7.2V~72V)	8	Antenna interface

Receiver Interface Definition:



Receiver 2： Agri-Pro RX



Name	Annotation	Name	Annotation
		ANT	Antenna
LED	Frequency matching indicator light	ETH0_TX+	Network port 0
GND	Ground wire	ETH0_TX-	
KEY	Frequency matching button	ETH0_RX+	
PWM0	PWM0 port	ETH0_RX-	
PWM1	PWM1 port	GND	Data transmission port
GND	Ground wire	5V_IN	
NC	Unconnected Pin	UART_RX	
DN	Upgrade port	UART_TX	
DP		GND	SBUS interface
GND		SBUS	
		ANT	Antenna

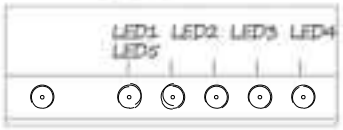
III. Prepare the remote control

1.Remote control charging

About 3-4 hours to fully charge with the original charger.

Please use the original charger to charge, in order to keep the remote control battery in the best condition, please ensure that the battery is fully charged once a month.

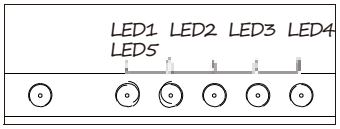
Remote control charging light:



Battery level	LED1	LED2	LED3	LED4	LED5
0%~20%					
21%~40%					
41%~60%					
61%~80%					
81%~99%					
100%					

2. The antenna is opened correctly

3.Remote control charging light:



always on flashing off

Battery level	LED1	LED2	LED3	LED4	LED5
91%~100%					
81%~90%					
71%~80%					
61%~70%					
51%~60%					
41%~50%					
31%~40%					
21%~30%					
11%~20%					
0%~10%					

IV. Use, operation

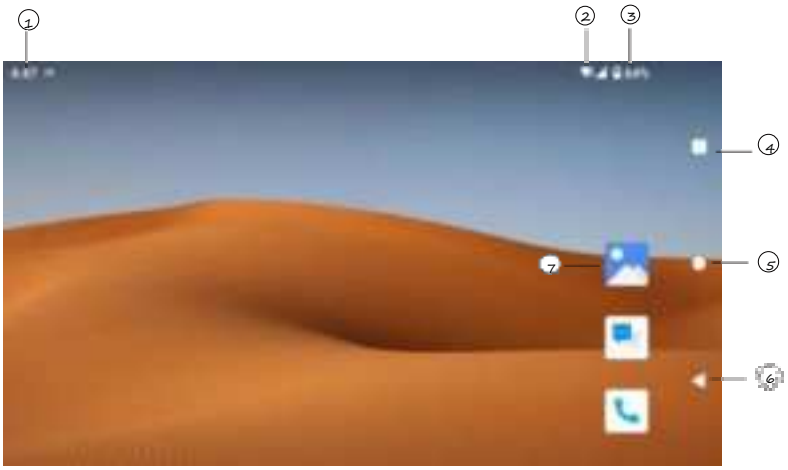
1. Remote control on and off

Long press the power button for 2 seconds to turn on the remote control, long press the power button for 2 seconds, and then tap the screen to turn off the remote control.

switch on

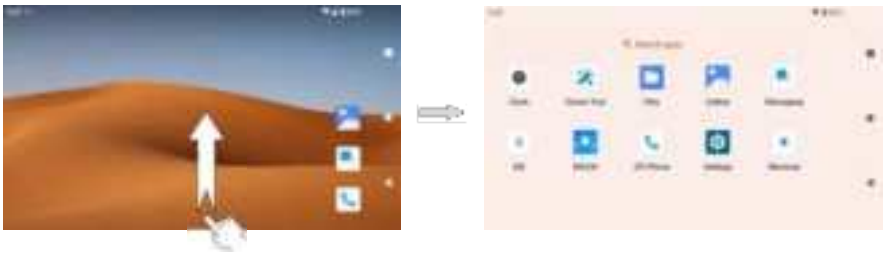
off

2. System Desktop



Number	Annotation	Number	Annotation
1	Time	6	Back to operations
2	WIFI signal status display	7	Gallery
3	Battery level display	8	
4	Task Centre	9	
5	Back to desktop	10	

Swipe up from the bottom edge of the screen to access the Apps screen.



3.Adjust Brightness

Swipe down from the top of the screen to enter the control centre, drag the slider to adjust the screen brightness.

① ② ③ ④

4.Adjust Volume

Enter the app interface, tap Settings, find the Sound&vibration, drag the slider to adjust the volume level.

① ② ③

5.Language Settings

Click Settings > select System > select Language&Input > click Languages > select Add a language > drag the language you want to set to the first place to modify the system language.

① ② ③ ④ ⑤ ⑥

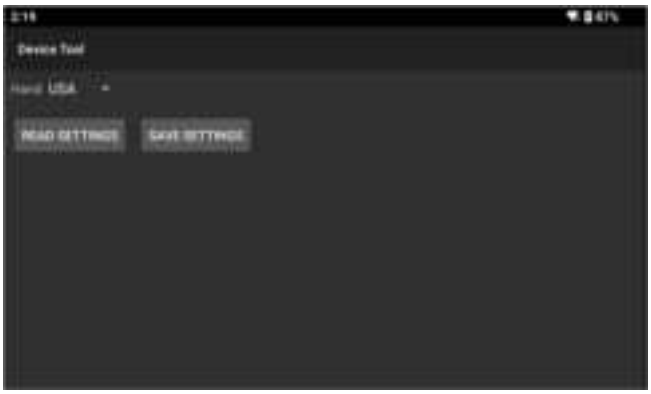
6.Transfer files with computer

Connect the remote control to your computer using the type-c port, enter the control centre and click view more, select Charging this device via USB, select File Transfer.

① ② ③ ④

7.Device Tool introduction

①STICK MODE: you can set the hand shape of the remote control, default USA hand.



② CHANNEL MONITORING: you can view the real-time rudder value of each channel of the remote control.

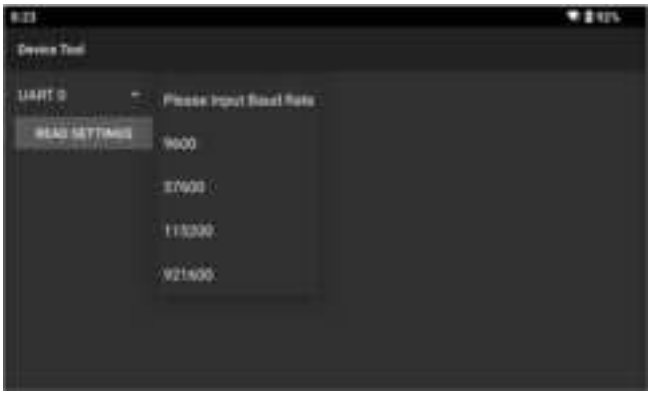
③FREQUENCY MATCHING: you can view the frequency matching status and frequency matching information.

④VIDEO VIEWING: you can view the video returned by the camera.

8.Device Tool-Advanced options (password 999)

①ADJUST PARAMETERS: You can customize the key channel, set the Reverse and modify the maximum and minimum values of the rudder.

②SET THE BAUD RATE: modify the receiver serial port baud rate.



③UPDATE DEVICE:upgrade MCU firmware and wireless module firmware.

④ SN: remote control to view SN.

9. Remote control frequency matching

Receiver 1: GR01

①The remote control is switched on, the receiver is powered on, the green light is always on after power on, the blue light flashes intermittently and the fan rotates intermittently.

② Long press the receiver frequency button until the blue light flashes rapidly and then release.

③Open the Device Tool on the remote control, click frequency matching->start frequency matching, confirm the frequency matching, and wait for the display to show successful frequency matching.

④The receiver indicator light will be blue and the remote control frequency matching indicator light will be blue when the frequency matching is successful.

Note: Please keep the remote control and receiver within 50cm when frequency matching.

Receiver 2: Agri-Pro RX

①The remote control is switched on, the receiver is powered on, the red light is always on after powering on, the green light flashes intermittently.

② Short the GND and KEY pins of the receiver until the green light blinks rapidly and then release it.

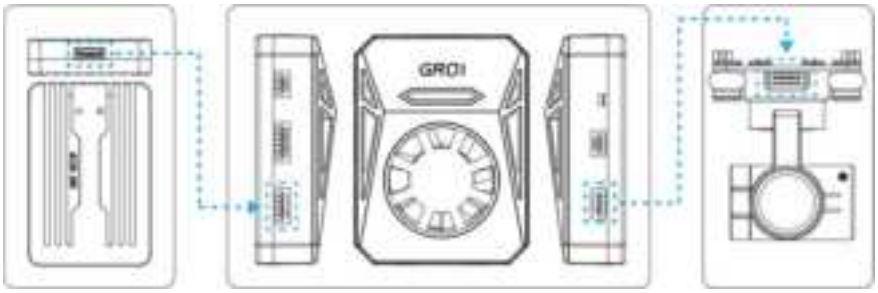
③Open the Device Tool on the remote control, click frequency matching->start frequency matching, confirm the frequency matching, and wait for the display to show successful frequency matching.

④The receiver indicator light will be green and the remote control frequency matching indicator light will be green when the frequency matching is successful.

Note: Please keep the remote control and receiver within 50cm when frequency matching.

10. Digital transmission connection

Receiver 1: GR01



Flight Control SBUS+Digital Transmission Camera Net-port

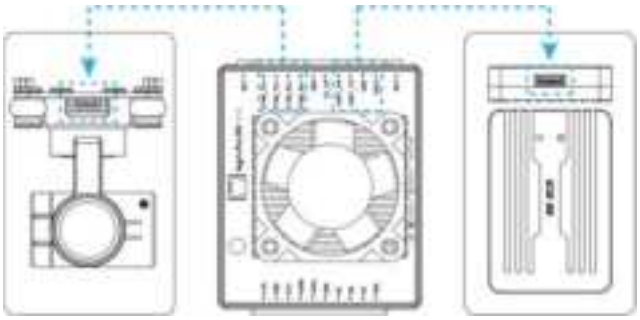
SBUS+Digital Transmission Interface

Net-port

Camera Net-port

According to the wiring diagram above, the receiver's SBUS+ data-com interface connects to the flight control SBUS+ data-com interface, and the receiver's net port connects to the camera net port.

Receiver 2: Agri-Pro RX



Camera Net-port

Flight Control
SBUS+Digital Transmission

According to the wiring diagram above, the receiver's SBUS+Digital Transmission interface connects to the SBUS+Digital Transmission interface of the flight control, and the receiver's network port connects to the camera's network port.

1. Mapping

Take C10Pro as an example, the camera is powered and connected to the receiver's network port, open the gimbal FPV to see the mapping screen;

If you use a third-party camera, the camera network segment needs to be set to the 144 network segment (192.168.144.XXX), open the Device Tool - video viewing

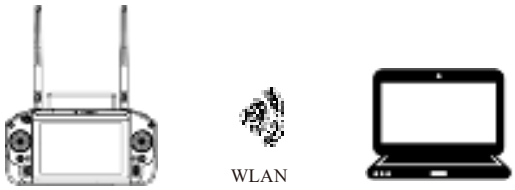
--click the setup button below - video stream address - customize, and enter the RTSP streaming address of the camera.

Note: Third party camera RTSP address need to ask the manufacturer for it.

If FLY GCS is used, then in the Common Settings - Other Settings - User Interface - Video Window - C10

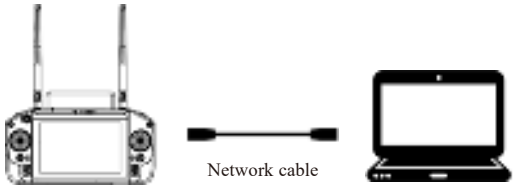
Way 1: Open Settings -> Network and Internet -> Hot-spot and Network Sharing -> WLAN Hot-spot -> Turn on 'Use WLAN Hot-spot' .

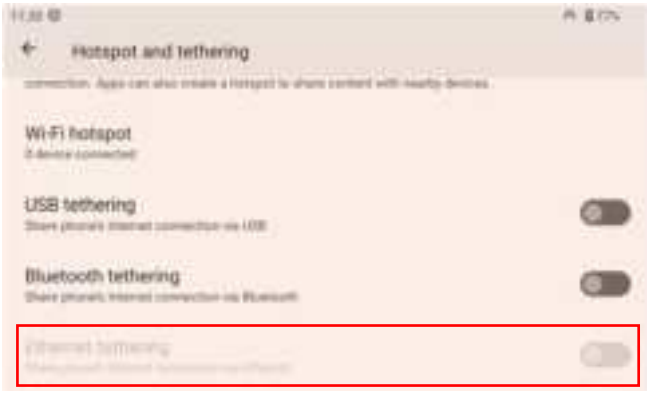
Shared telemetry



Connect to the hot-spot of the remote control through your computer, and then start the VLC player on your computer. Select 'Open Network Streaming' in the media menu, and then enter the stream address of the camera, as in Figure 1, so that you can achieve the picture sharing.

Way 2: Open Settings -> Network and Internet -> Hot-spot and Network Sharing -> Turn on ‘Ethernet Sharing’.





Connect your computer to the TYPE-C port of the remote control via a network cable, and then start the VLC player on your computer. Select ‘Open Network Streaming’ in the media menu, and then enter the camera's stream address, as shown in Figure 1, to achieve the picture sharing. (Requires C port to network port)

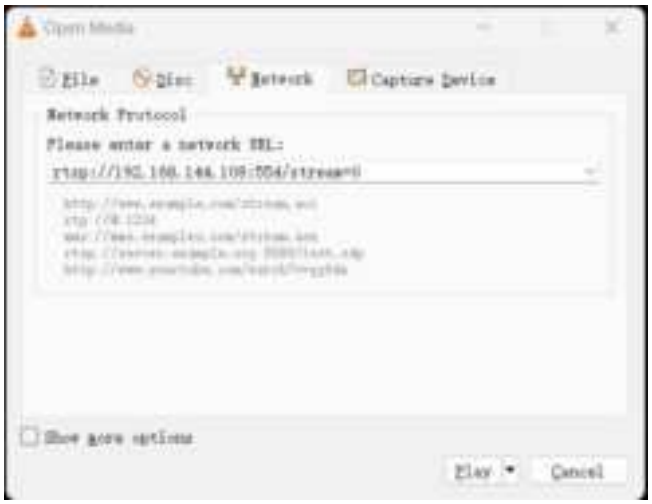


Figure 1

Note: The camera stream IP must be set to 192.168.144.XXX (XXX is an arbitrary number) and the gateway needs to be set to 192.168.144.11 to share the image transfer.

2.Data Transmission

Take FLY GCS as an example. Enter the ground station, click on the upper left corner, and then enter the Switch Connection interface.

Select the combination of S2 + Agri-Pro H20 and click to enter it, and then click "Connect".

Note: If the connection is unsuccessful, please check the following:

①Whether the serial port baud rate of the receiver is consistent with that of the flight controller's data transmission port;

Agri-Pro H20 Remote Control Parameters			
Display	7 inch industrial touch screen + vision viewable screen	Resolution	1920*1200
Processor	Qualcomm 6nm processor	Computer Type	Android 13
Size	277(L)*138(W)*96(H)mm	Weight	1.2kg
Battery	20000mA/H	Endurance	6~8hours
Operating Memory	8G	System Storage Memory	128G
Operating Frequency Band	2.4G/5.8G	Channels Number	16
Dynamic FM	Automatic frequency hopping	RF Power	23dBm@CE/FCC
Remote Control Distance	5-30KM(ground-to-air, visual）	Operating Temperature	-10℃~55℃
Charging Interface	TYPE-C	External Interface	USB port,TYPE-C

GR01 receiver parameters			
Frequency Band	2.4G/5.8G	Serial Baud Rate	57600/115200/921600
Supply Voltage	7.2-72V(XT30)	Operating Current	12V/300mA
Data Transmission Port	1 channel	Empty Port Rate	200Kbps~160Mbps
Network Port	1 channel	Dimension	45.5(L)*60(W)*21.5(H)mm
SBUS Output	1 channel	Weight	37g
PWM Interface	3 channels	Operating Temperature	-10℃~60℃
RF Power	23dBm@CE/FCC	Channel Bandwidth	1.25MHz/2.5MHz/5MHz/ 10MHz/20MHz/40MHz

Agri-Pro RX receiver parameters			
Frequency Band	2.4G/5.8G	Serial Baud Rate	57600/115200/921600
Supply Voltage	7.2V~72V(XT30)	Operating Current	12V/300mA
Data Transmission Port	1 channel	Empty Port Rate	200Kbps~160Mbps
Network Port	1 channel	Dimension	51(L)*40.8(W)*23.3(H)mm
SBUS Output	1 channel	Weight	45g
PWM Interface	2 channels	Operating Temperature	-10℃~60℃
RF Power	23dBm@CE/FCC	Channel Bandwidth	1.25MHz/2.5MHz/5MHz/ 10MHz/20MHz/40MHz

V. Maintenance and servicing

Storage for not using certain period

Store the remote control in a dry and ventilated place with less direct sunlight to prevent the battery from overheating. If you need to store the remote control for more than three months, the recommended storage temperature range is 22 ℃ to 28 ℃. Do not store the batteries at temperatures below -20 ℃ or above 45 ℃.

VI. Transport, storage

WARNING

To avoid possible injury and damage, be sure to observe the following items:

Always keep children away from the parts of the remote control as the wires and small parts may pose a danger to them.

CAUTION

1) Do not immerse the remote control in water. If it is immersed in water, wipe it promptly with a soft dry cloth and switch off the power immediately.

2) Do not mechanically hit, crush, or puncture the battery, or drop the battery.

This device 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 device 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 device does cause harmful interference to radio or television reception, which can be determined by turning the device 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 device and receiver.

--Connect the device 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.