SKYDROID 云卓

泉 州 云 卓 科 技 有 限 公 司

Skydroid- G20

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. Skydroid does not accept any liability for the use or misuse of this product.

I.Overview

1. Product Features

(1) G20 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) G20 remote control has a built-in 7-inch high-definition and high-brightness display with a resolution of 1920*1200, and with the Skydroid 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) G20 supports SIM card interface, 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. G20 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

G20 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.

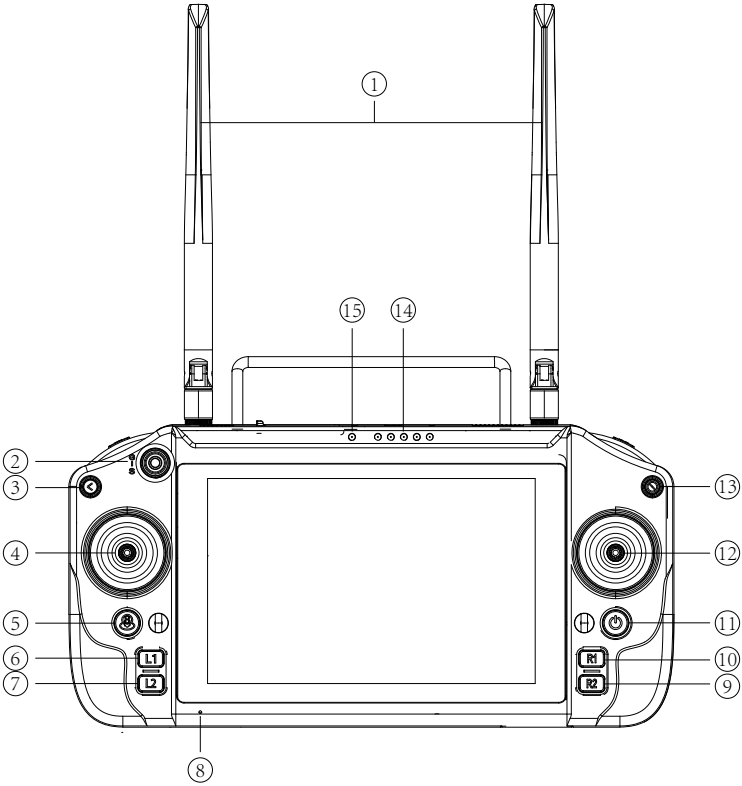
If you encounter smoke, odour or night leakage when charging the ground terminal, please do not continue to charge the ground terminal and return to our factory for maintenance.

Do not charge the product in an area where babies can touch it to avoid the risk of electric shock.

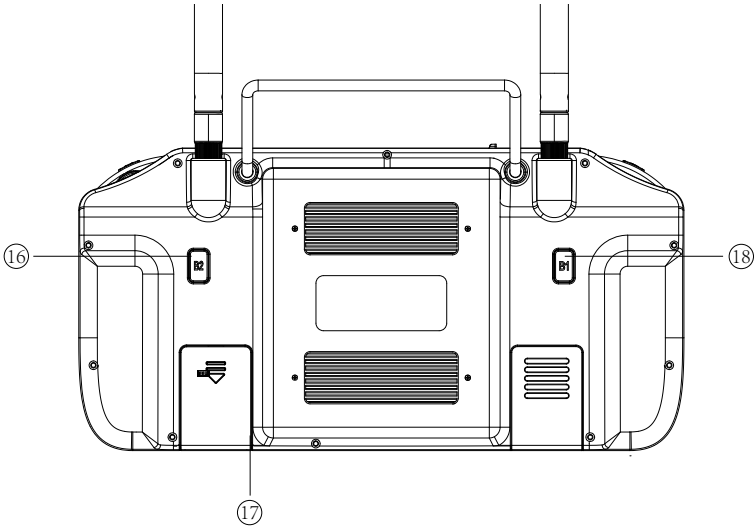
Do not charge the product at temperatures exceeding 60°C.

II. Component names

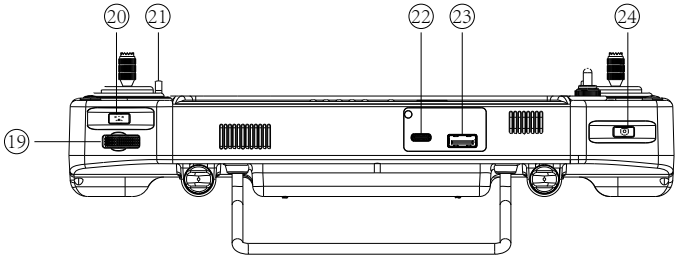
1.Remote Controller



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		



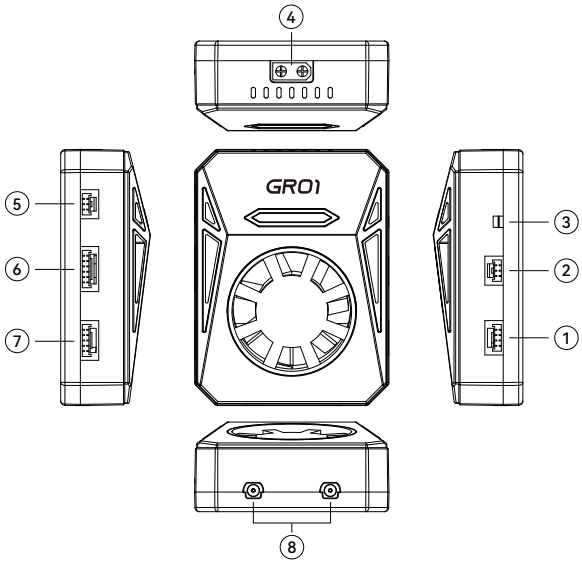
Number	Annotation	Number	Annotation
16	B2 button	18	B1 button
17	SIM card slot		



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)

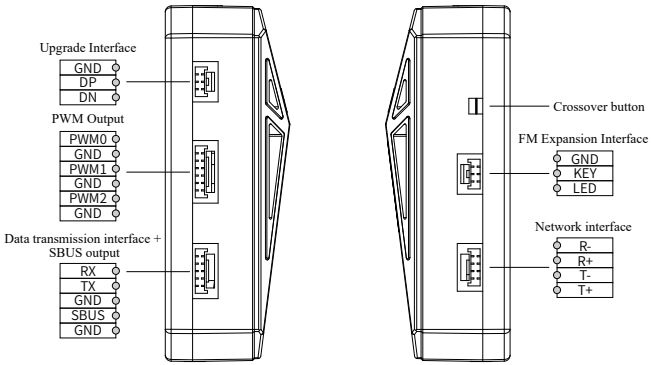
2.Receiver

Receiver 1：GR01



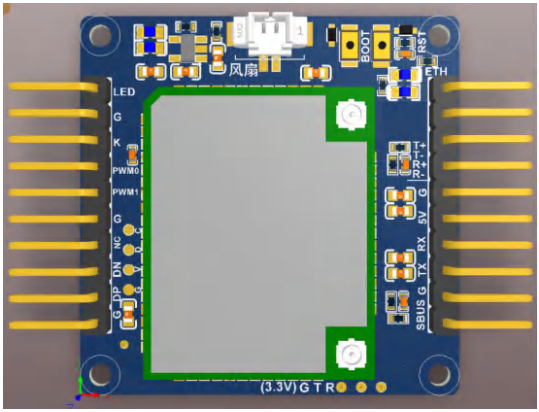
Number	Annotation	Number	Annotation
1	Network interface	5	Upgrade interface
2	FM expansion interface	6	PWM output
3	Crossover button	7	Data transmission interface + SBUS output
4	Power input port (7.2V~72V)	8	Antenna interface

Receiver Interface Definition:



Note: PWM0 - 2 of GR01 correspond to remote control channels 9 - 11.

Receiver 2：G12RX



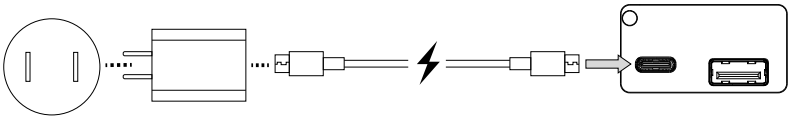
Name	Annotation	Name	Annotation
		ANT	Antenna
LED	Frequency matching indicator light	ETH0_TX+	Network port 0
GND	Ground wire	ETH0_TX-	
KEY	Frequency matching button	ETH0_RX+	
PWM0	PWM0 port	ETH0_RX-	
PWM1	PWM1 port	GND	Power Supply + Data transmission port
GND	Ground wire	5V_IN	
NC	Unconnected Pin	UART_RX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

Note: PWM0 - 1 of GR12RX correspond to remote control channels 9 - 10.

III. Prepare the remote control

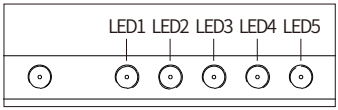
1.Remote control charging

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:

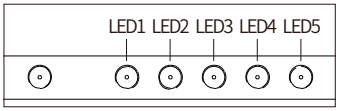


always on flashing off

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:



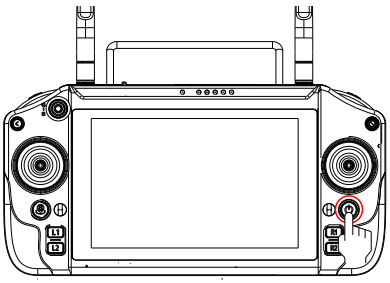
always on flashing off

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%	✳	○	○	○	○

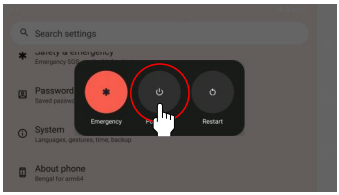
IV. Use, operation

1. Remote control on and off

Long press the power button for 3 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.

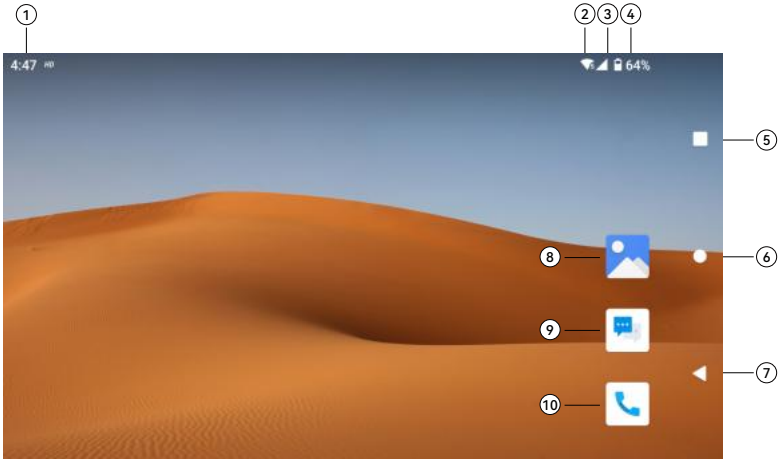


switch on



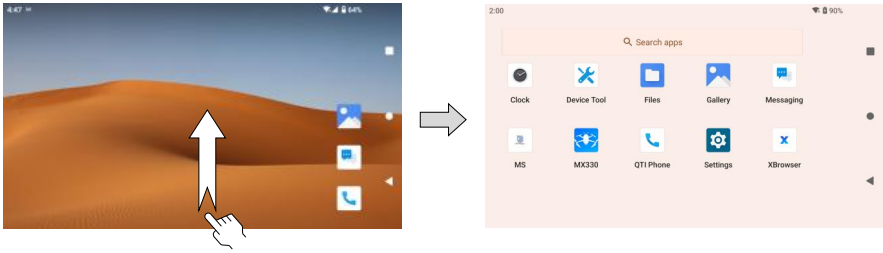
off

2. System Desktop



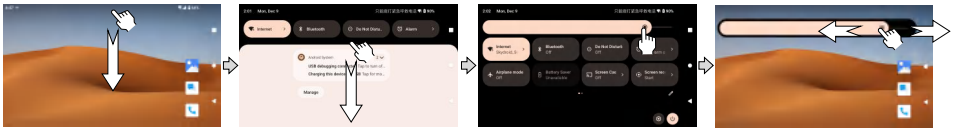
Number	Annotation	Number	Annotation
1	Time	6	Back to desktop
2	WIFI signal status display	7	Back to operations
3	SIM card status display	8	Gallery
4	Battery level display	9	SMS
5	Task Centre	10	Phone

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



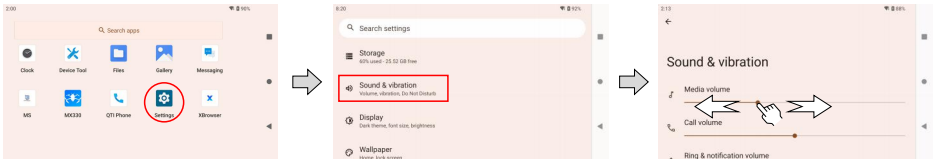
3. Adjust Brightness

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



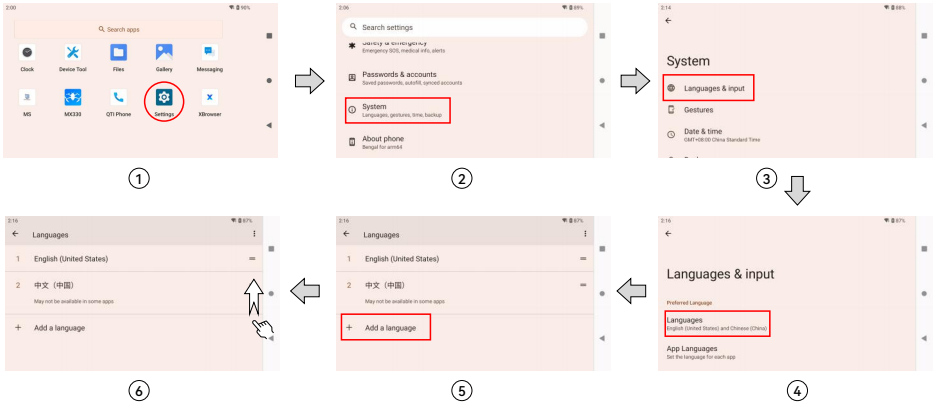
4.Adjust Volume

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



5.Language Settings

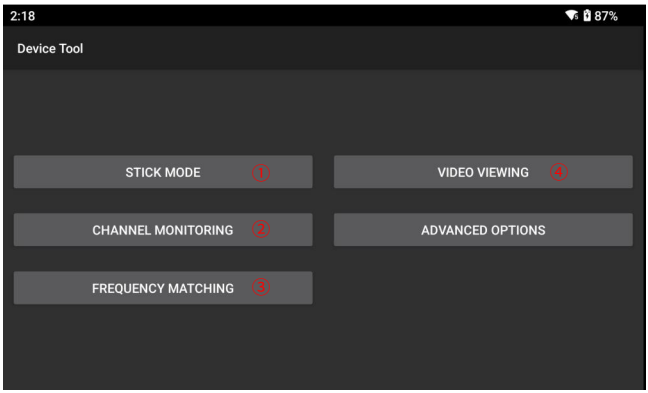
Click Settings > select System > select Language&Input > click Languages > select Add a language > drag the language you want to set to the first place to modify the system language.



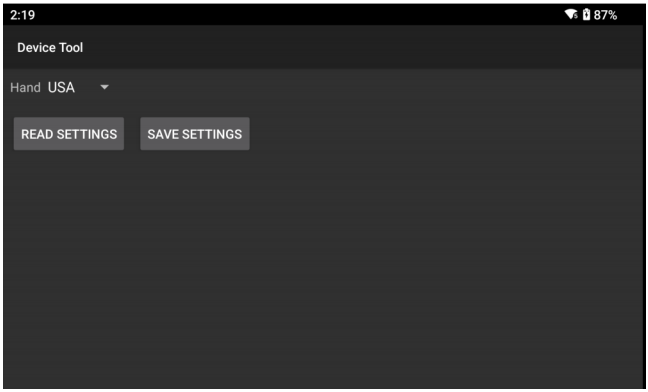
6.Transfer files with computer

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.

7.Device Tool introduction

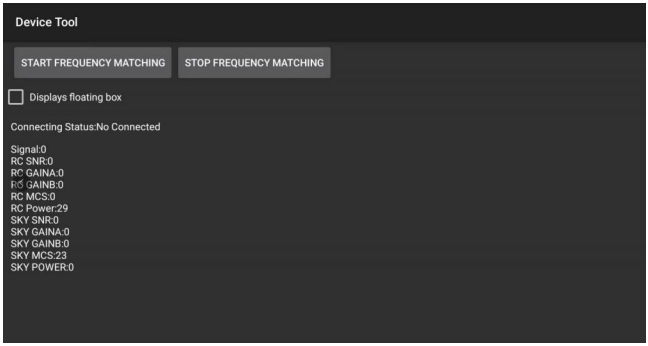


①STICK MODE: you can set the hand shape of the remote control, default USA hand.



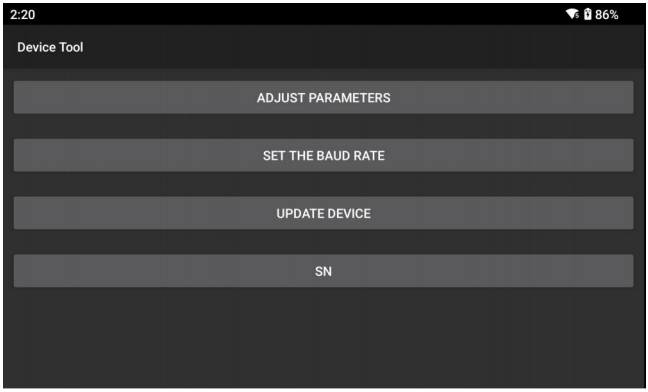
② CHANNEL MONITORING: you can view the real-time rudder value of each channel of the remote control.

③FREQUENCY PAIRING: You can view the frequency pairing status and information. It supports one-to-multiple pairing function. The frequency pairing time is 30 seconds, and you can press the "Stop Frequency Matching" button to end the frequency pairing in advance.

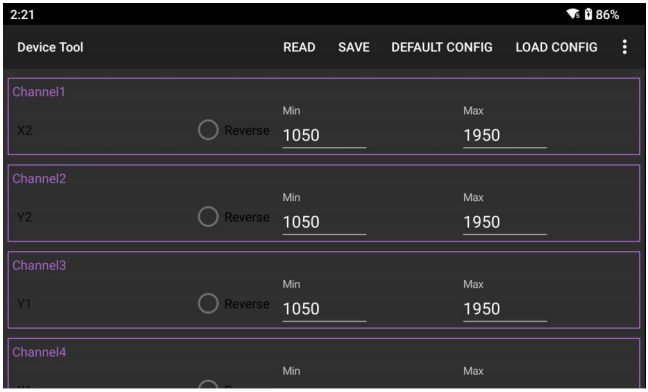


④VIDEO VIEWING: you can view the video returned by the camera.

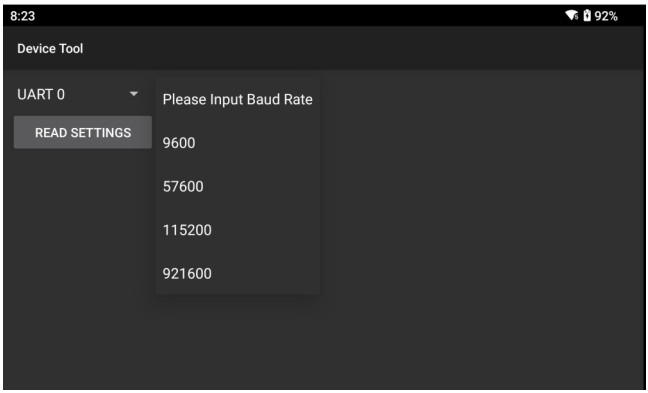
8.Device Tool-Advanced options (password 999)



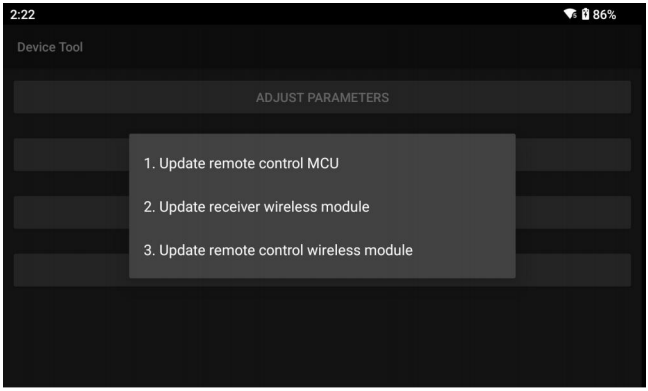
①ADJUST PARAMETERS: You can customize the key channel, set the Reverse and modify the maximum and minimum values of the rudder.



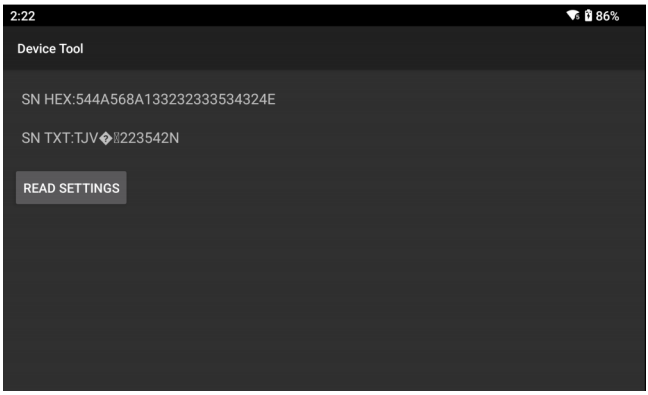
②SET THE BAUD RATE: modify the receiver serial port baud rate.



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



④ SN: remote control to view SN.



9. Remote control frequency matching

Receiver 1: GR01

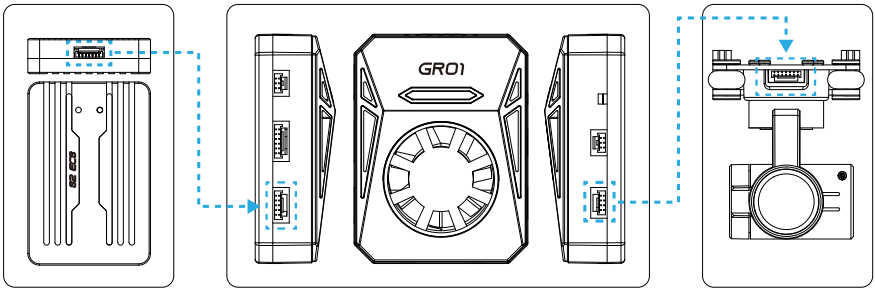
①The remote control is switched on, the receiver is powered on, the green light is always on after power on, the blue light flashes intermittently and the fan rotates intermittently.
② Long press the receiver frequency button until the blue light flashes rapidly and then release.
③Open the Device Tool 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: G12 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.

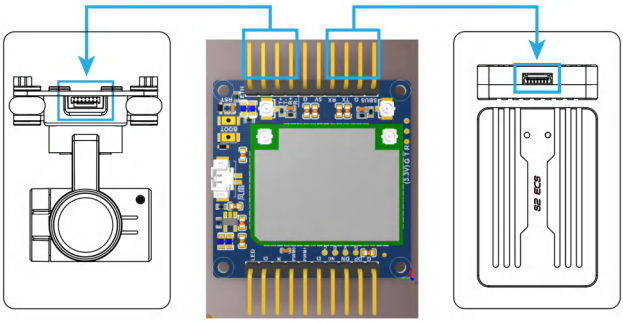
10. Digital transmission connection

Receiver 1: GR01



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: G12 RX

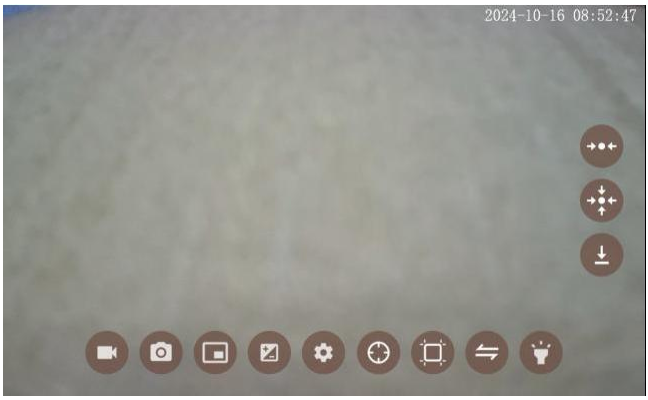


Camera Net-port

Flight Control
SBUS+Digital Transmission

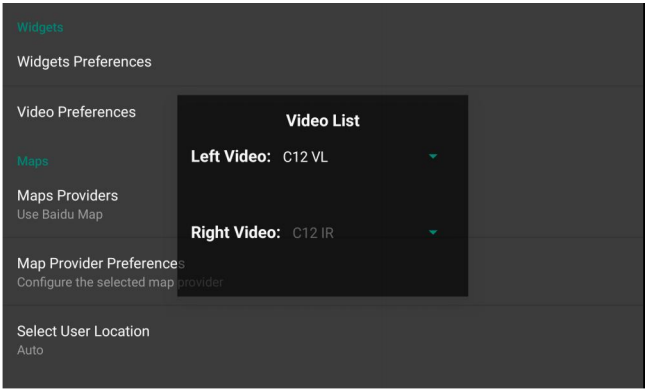
According to the wiring diagram above, the receiver's SBUS+Digital Transmission interface connects to the SBUS+Digital Transmission interface of the flight control, and the receiver's network port connects to the camera's network port.

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’.

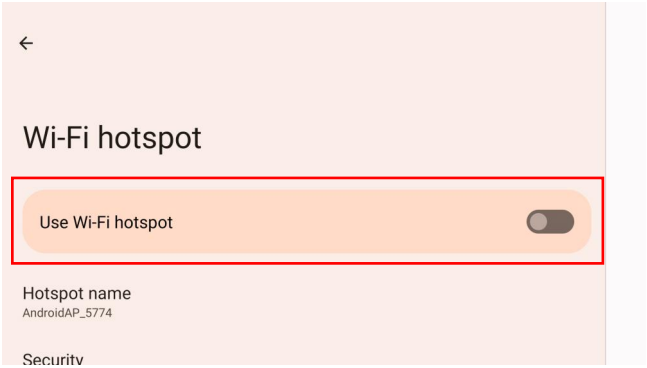
2.Data Transmission

Taking Skydroid FLY GCS as an example, enter the GCS, click on the upper left corner to enter the Switch Connection interface.

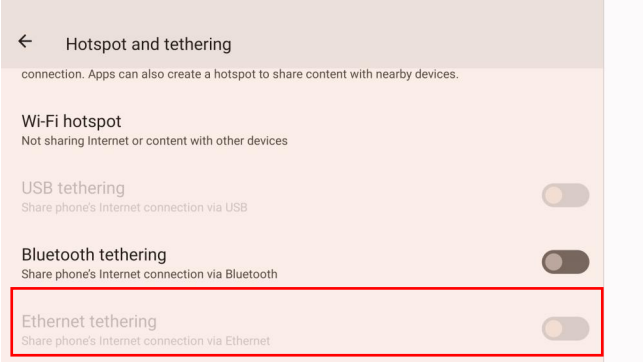
Select the S2+G20 combination, click to enter, and then click "Connect".

Note: If the connection fails, please check:
①Whether the baud rate of the receiver's serial port is the same as that of the flight controller's data transmission port;
② Whether the wiring definition of the data transmission is correct (RX is connected to TX).

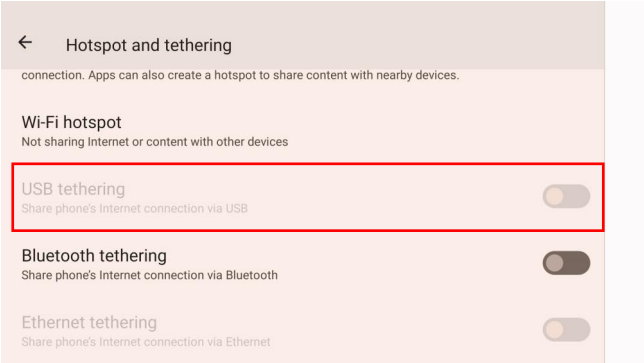
Remote Controller Hotspot Sharing for Image Transmission and Data Transmission
The steps to turn on the hotspot of the remote controller are as follows:
Method 1: Open "Settings" -> "Network & Internet" -> "Hotspot & Network Sharing" -> "WLAN Hotspot" -> Turn on "Use WLAN Hotspot", and connect the computer to the hotspot of the remote controller.



Method 2: Open "Settings" -> "Network & Internet" -> "Hotspot & Network Sharing" -> Turn on "Ethernet Network Sharing", and connect the network port of the computer to the TYPE-C port of the remote controller with a network cable.

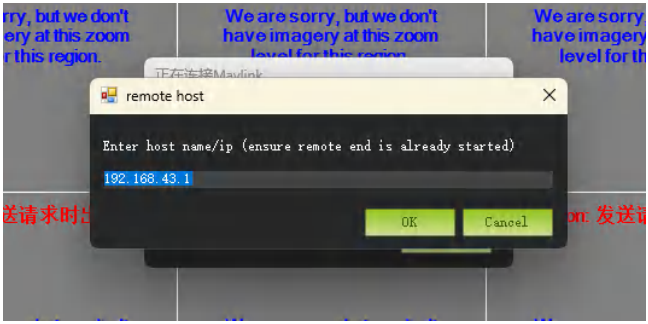


Method 3: Open "Settings" -> "Network & Internet" -> "Hotspot & Network Sharing" -> Turn on "USB Network Sharing", and connect the TYPE-A port of the computer to the TYPE-C port of the remote controller with an A to C data cable.

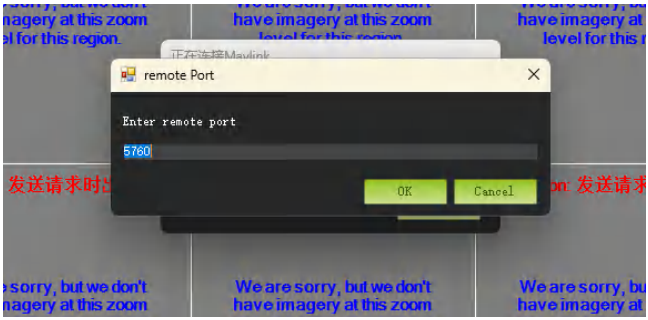


①Data Transmission Sharing (Requires Android system version 20250110 or above)
After successfully connecting using one of the above three methods, open Mission Planner. Select TCP as the connection method.

After clicking "Connect", enter the IP address 192.168.43.1. After entering, click "OK".



Enter the port number 5760 and click "OK", then you can connect to the data transmission.



②Image Transmission Sharing (Requires Android system version 20241130 and above, camera gateway 192.168.144.11)
After successfully connecting using one of the above three methods, launch the VLC player on the computer. In the "Media" menu, select "Open Network Stream", and then enter the camera's stream address. As shown in the following figure, you can achieve the sharing of image

G20 Remote Control Parameters			
Display	1500nit high-brightness 7-inch display screen	Resolution	1920*1200
Processor	Qualcomm 6nm processor	Computer Type	Android 13
Size	277(L)*138(W)*96(H)mm	Weight	1.2kg
Battery	20000mAh	Endurance	6~8hours
Operating Memory	4G	System Storage Memory	64G
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, SIM card slot, 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	Transfer Rate	Uplink: 200Kbps~1.2Mbps Downlink:10Mbps~20Mbps
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

G12 RX receiver parameters			
Frequency Band	2.4G/5.8G	Serial Baud Rate	57600/115200/921600
Supply Voltage	5V	Operating Current	5V/720mA
Data Transmission Port	1 channel	Transfer Rate	Uplink: 200Kbps~1.2Mbps Downlink:10Mbps~20Mbps
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.

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