

SKYDROID Cloud Platform



R100UserManual

pay attention to

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

Note: Failure to follow instructions may result in property damage and minor injuries.

Note: Failure to follow instructions may result in property damage, serious accidents, and severe injuries.

Warning: Before operating this product, thoroughly read the user manual to understand its functions. Improper operation may cause serious harm to yourself or others, or result in product damage and property loss. This product is relatively complex and requires time to familiarize yourself with its safe operation. Basic knowledge is essential for proper use. Without strong safety awareness, improper operation may lead to product damage, property loss, or even severe harm to yourself or others. This product is not suitable for children. Do not use any components not provided or recommended.

1. Overview

1. Product Features

(1) The R100 series features a cutting-edge Qualcomm Snapdragon 660 octa-core processor, powered by Android 9 (64-bit) embedded OS. With advanced SDR technology and a super protocol stack, it delivers sharper images, lower latency, extended range, and enhanced anti-jamming capabilities, making it ideal for applications in drones, robotics, industrial control systems, and beyond.

(2) Featuring HDMI (remote control), dual Ethernet ports, sensor interface, dual serial port data transmission, and USB ports, this system is fully equipped for aerial photography, security, firefighting, power, surveying robots, and border control applications, delivering a hands-on experience as if you were on-site.

(3) With IP65 waterproof and dustproof construction, it ensures not only a pleasant touch but also durability. The R100 features a 10.1-inch industrial touch screen + sunlight visible screen, maintaining clear visibility even in sunlight. The screen resolution is 1920*1200, supporting 1080P high-definition digital image transmission. Dual triple-frequency antennas complement each other, providing strong signals and ultra-long range. Combined with algorithm control and frequency hopping algorithms, it significantly enhances weak signal communication capabilities. It comes with built-in dual speakers, triple-frequency 800M, 1.4G, 2.4G, and WIFI 2.4 5G.

(4) Featuring high-energy-density lithium-ion batteries that deliver 5 hours of continuous operation on a full charge, this rugged wilderness survival mindset ensures you can focus on survival without worrying about equipment reliability.

(5) The R100 supports HDMI, SIM card slot, USB, Type-C, RJ45 network port, TF card slot, and PPM connector.

The device features multiple interfaces including R30 dual-channel serial port, dual network ports, and SBus, supporting a wide range of video devices such as cameras, pan-tilt-zoom (PTZ) units, and pods with additional network ports. It provides development kits, SDKs, and technical support, with features like video floating, compatibility with mainstream flight control ground stations, and support for QGC and wireless RTSP video streaming sharing.

(6) The R100 features weather-resistant silicone, matte rubber, stainless steel, and ABS materials, delivering an exceptional tactile feel while meeting the rigorous demands of outdoor drone operations. Dustproof protection is implemented across the body, control switches, and peripheral interfaces, ensuring stable and smooth performance in harsh environments.

(7) Comprehensive connectivity options: RJ45 network interface for long-distance internal network connections, Type-C high-speed USB port for Android devices, OTG port for USB flash drives, and expandable TF card slot.

2. Main Uses and Applicable Scope

It is used to control helicopters, fixed wings, multi-rotor, vehicles, ships and so on for video image transmission, data transmission, and control the flight of UAV.

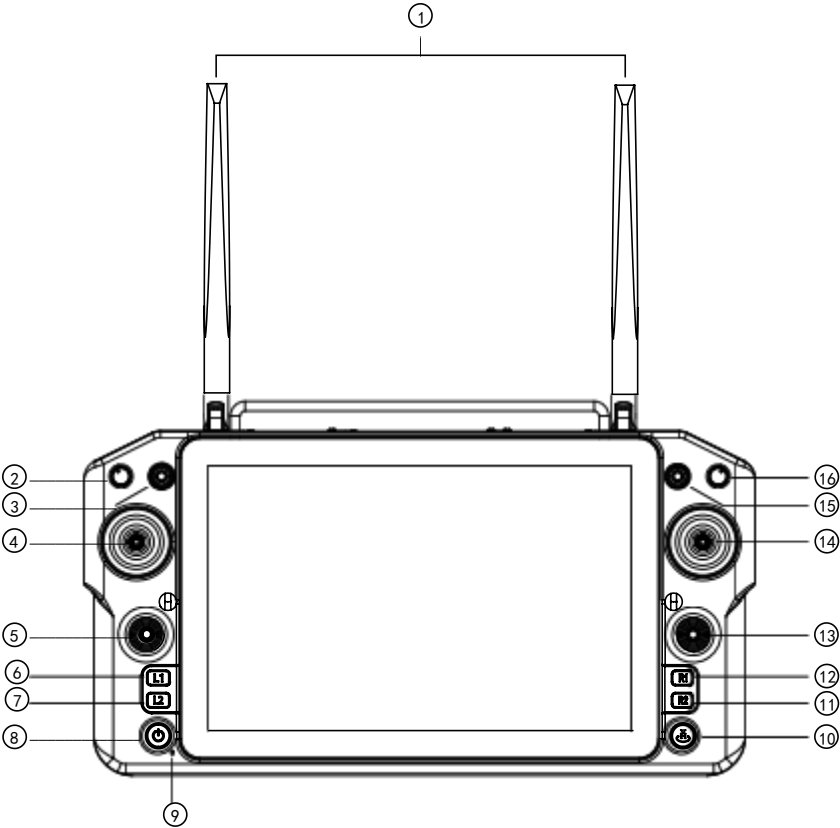
3. Variety, specifications, and product parameters

R100 remote control parameters			
product model	R100	number of channels	16
working voltage	4.2V (built-in battery)	radio-frequency power	23dBm@CE/FCC
frequency range	800M/1.4G/2.4G	dynamic frequency modulation	frequency hopping support
size	346 (length) * 196.5 (width) * 89.4mm (height)	weight	1.5kg
duration of flight	5 hours	cell	20000mA/H
upgrade	OTA Package/Online Upgrade	USB	TYPE-C
running memory	4G	system memory	64G
apply	Helicopter, fixed-wing, multi-rotor, vehicle and ship		

R30 receiver parameters			
product model	R30	number of channels	16
working voltage	7.2V~72V	radio-frequency power	23dBm@CE/FCC

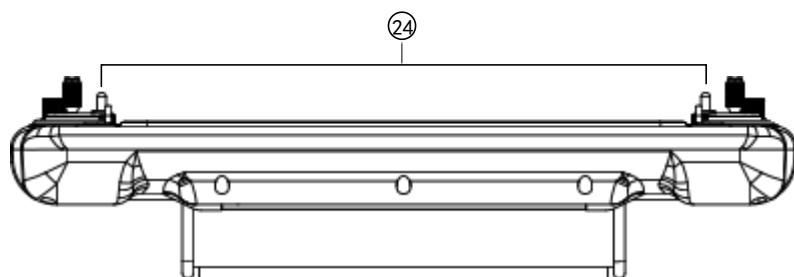
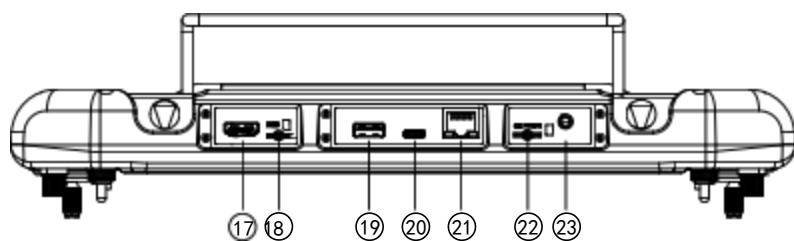
size	76.4 (length) * 59 (width) * 15 (height) mm	weight	65g
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4. Composition of Model and Its Significance

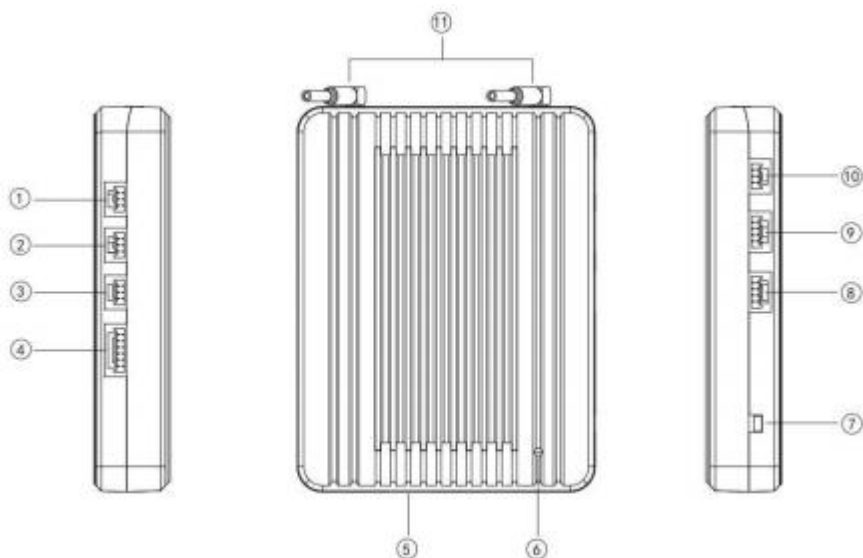


order number	annotate	order number	annotate
1	800M/1.4G/2.4G Three types of antennas	9	microphone
2	AUX 1 knob switch	10	key H
3	Turn the three-position switch SW 1	11	R2 button
4	Left joystick X1, Y1	12	R1 button
5	Left joystick X3, Y3	13	Right small joysticks X4, Y4
6	L1 button	14	Right joystick X2, Y2

7	L2 button	15	Move the three- position switch SW 2
8	power switch	16	AUX 2 knob switch

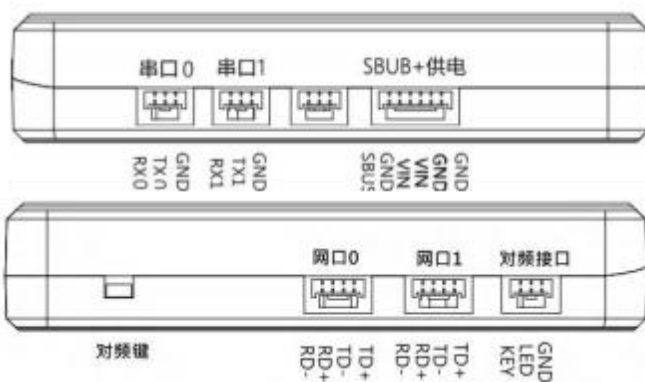


order number	annotate	order number	annotate
17	HDMI joggle	21	RJ 45 network port interface
18	SIM card slot	22	TF card slot
19	USB joggle	23	PPM joggle
20	Type-C port	24	hanging hook



order number	annotate	order number	annotate
1	Serial port 0	6	frequency status indicator
2	Serial Port 1	7	frequency key
3	Reserve slot (no function available)	8	Network port 0
4	7.2-72V input and SBUS output	9	Network port 1
5	Type-C port	10	external frequency response button interface
11	Antenna MMCX interface		

5. Port Definition Diagram



6. Environmental conditions for use

pay attention to

A) Ambient temperature: -10°C to +45°C.

B) Storage temperature: -20°C to +50°C.

C) Relative humidity: Not exceeding 85%. D) Atmospheric pressure: 86 kPa to 106 kPa.

E) The usage site must not contain explosive media, and the surrounding environment should not have corrosive metals, gases that damage insulation, or conductive substances. Additionally, the area must not be saturated with water vapor or harbor significant mold growth.

F) The usage site must be equipped with facilities to protect against rain, snow, wind, sand, and dust.

7. Working Conditions

Power supply methods and precautions

The R100 series ground terminal features an integrated rechargeable lithium battery, compatible with standard TYPE-C ports (such as USB chargers for smartphones, cameras, and other digital devices) for charging.

If the ground terminal emits smoke, has an unusual odor, or experiences leakage during charging, stop charging immediately and send it to our company for repair.

Do not charge this product in areas where infants can touch to avoid electric shock. Do not charge this product in environments exceeding 60°C.

8. Safety

warn

Beginners, please pay special attention to the following safety measures! Read carefully!

⊗ Do not fly when you are tired, drunk or in poor physical condition. ⊗ Do not fly in bad weather such as rain and strong winds!

Flying near high-voltage lines, communication base stations, or any crowded or active areas is strictly prohibited! ⊗ Fly no more than 100 km above the airport and other no-fly zones!

Prohibit flying operations in crowded areas, parking zones, or other locations where property damage or personal injury may occur. ⚠ Before flight, the equipment of the aircraft should be tested to ensure the normal operation of the transceiver system and the aircraft itself.

① Use a certified professional charger to charge the battery.

① The antenna of this product is a fragile component, so avoid excessive force to prevent damage.

2. Usage and Operation

1. Preparations and Checks Before Use

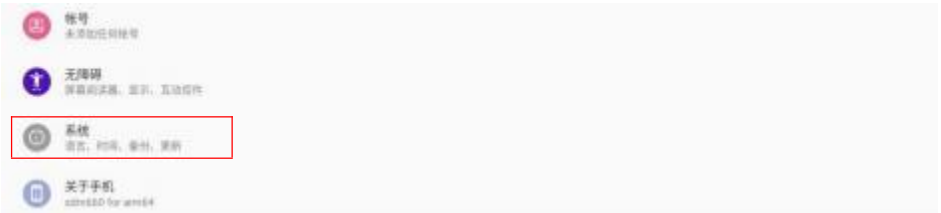
pay attention to

- ① Before use, make sure the remote control is fully charged.
- ② Before use, check if the antenna is properly positioned to achieve optimal performance.
- ③ Users should ensure they are not operating under the influence of alcohol or drugs.

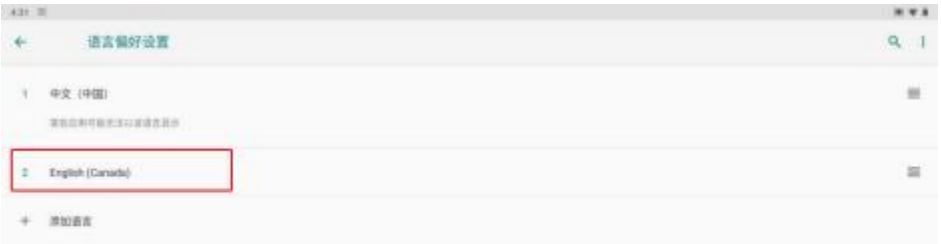
2. Usage Instructions

Language settings

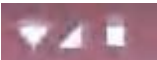
- ① Go to System Settings, select System-> Language and Input Method



- ② After entering the Language and Input Method section, click Language-> Language to switch, add, or delete a language



Status bar



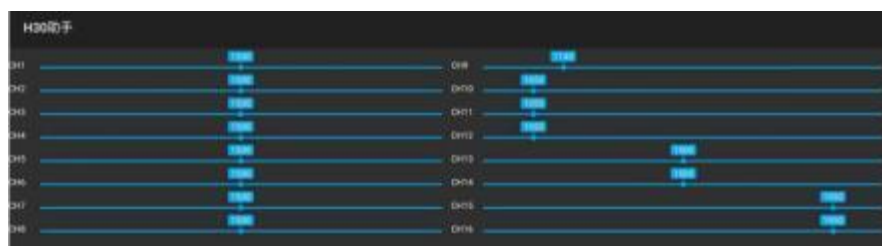
①②③④⑤⑥

- ① WIFI connection identifier
- ② SIM card signal identifier
- ③ battery status
- ④ Return key
- ⑤ Return the primary key surface button
- ⑥ Background task management

R100 Assistant

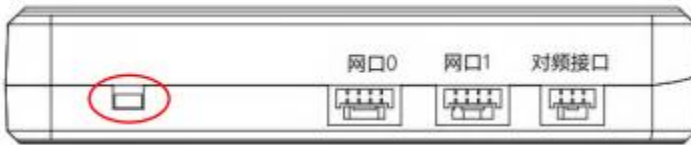


- ① Hand configuration: Switch the remote controls joystick operation mode (American hand, Japanese hand; default: American hand). 1. Read 2. Set 3. Save.
- ② Video viewing: You can view RTSP video (details on the next page)
- ③ Check if all channel values on the remote control are normal.



- ④ Wireless parameter configuration. Pair the remote control with other receivers (frequency pairing method is described below: image connection and settings)
- ⑤ Signal Check (View Signal)
- ⑥ Advanced settings include: receiver serial port baud rate adjustment, remote control parameter tuning, device upgrade, SN (Serial Number), training mode (under development), and wireless module upgrade (password 999 for professional debugging only).

frequency operation

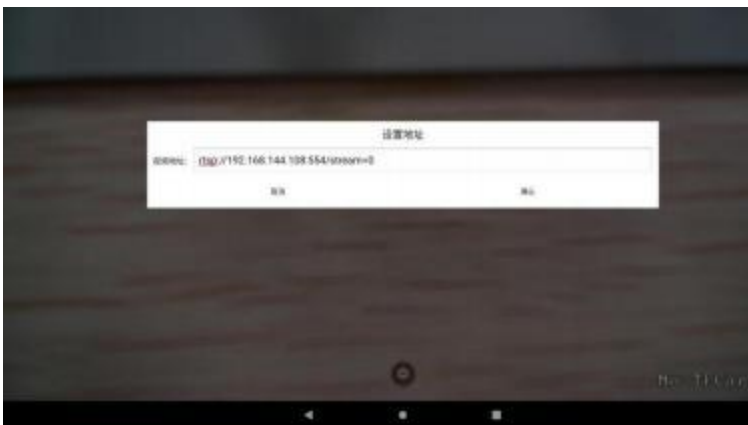


Note: The remote control and receiver come pre-calibrated. Simply power on and wait 20 seconds for automatic frequency alignment.

① When the receiver is powered on, the power indicator (red) stays on. After 20 seconds, press and hold the SET key to adjust the frequency (the blue light will flash). Release the key (the remote control requires recalibration when replaced).

② Enter the R100 Assistant, click to tune. Status: Tuning... After successful tuning, the status will show "Connected" and "Tuning Successful" (receiver green light on).

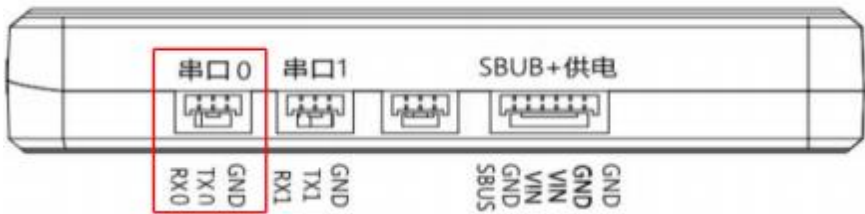
Image Connection and Settings



The network segment of the network port camera needs to be set in advance to the 144 network segment (192.168.144.XXX) camera connection receiver network port 0 or network port 1, the pin definition is shown in the section "I. Overview-> 5. Port Definition Diagram" of this article.

Settings: This configuration transmits images via the SkyPort network interface to display the C103-axis PTZ camera (when connected to C10). RTSP: `//192.168.144.108:554/stream=0`. For third-party network interface camera pods, consult the manufacturer for the RTSP address.

How to Display Data and Video Transmission on R100 Remote Control Ground Station



Connect the flight control data line to serial port 0, using the ground station as the reference connection (R100 Assistant must be turned off)



ground station:
Serial port 0: Server IP: 192.168.144.101, Server port: 14550. Click to connect.
Serial port 1: Server IP: 192.168.144.101, Server port: 14551. Click to connect directly. C103-axis PTZ connects to network port 0 or port 1, using the ground station as the reference for the connection diagram and video transmission.

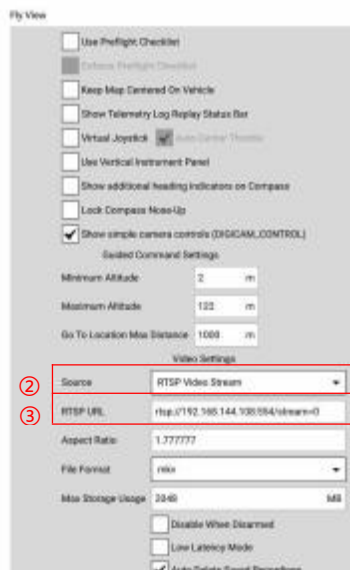
3-> Common Settings-> Other Settings-> User Interface-> Video Window

-->C10 (Display C10 screen)



->Custom (Enter RTSP address to display other cameras)

Use the R100 remote QGC ground station as a reference for the connection diagram transmission (the R100 assistant backend must be turned off).



Click the Q system setting icon in QGC to access the settings.

① Click General

② Change the Source (video source) to RTSP Video Stream

③ Enter the RTSP address of the network camera (connected to the C10) in the RTSP URL field. The image from the C103-axis PTZ camera (requires C10 connection) should be specified as: `rtsp://192.168.144.108:554/stream=0`



Using the R100 remote control QGC ground station as a reference for data transmission connections

Back < Application Settings

General

Comm Links

Offline Maps

MAVLink

Console

Help

Create New Link Configuration

Name Q

☐ Automatically Connect on Start

☐ High Latency

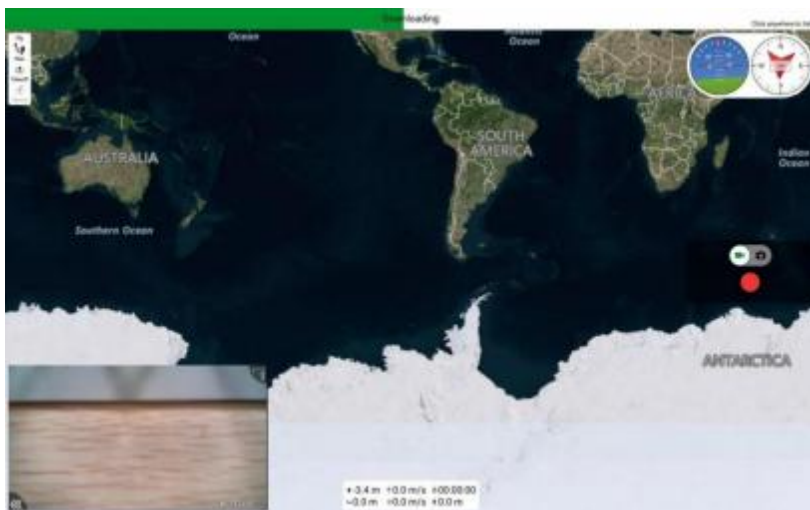
Type TCP

Server Address 192.168.144.101

Port 14550

OK Cancel

- ①Click CommLinks (Communication Connection)
 - ①Click General (General)
 - ② Click ADD to change the Type to TCP and the Name to a named field.
 - ③ Serial port 0: Server Address (server address) is changed to 192.168.144.101Port and listening port is changed to 14550. Serial port 1: Server Address (server address) is changed to 192.168.144.101Port and listening port is changed to 14551.
- Click OK to save



How to connect to the internet

The remote control can connect to the internet in three ways:

Connect to a 2.4G or 5G Wi-Fi network

(2) Connect to the network through the WAN port on the remote control

(3) Insert a SIM card to access the internet.

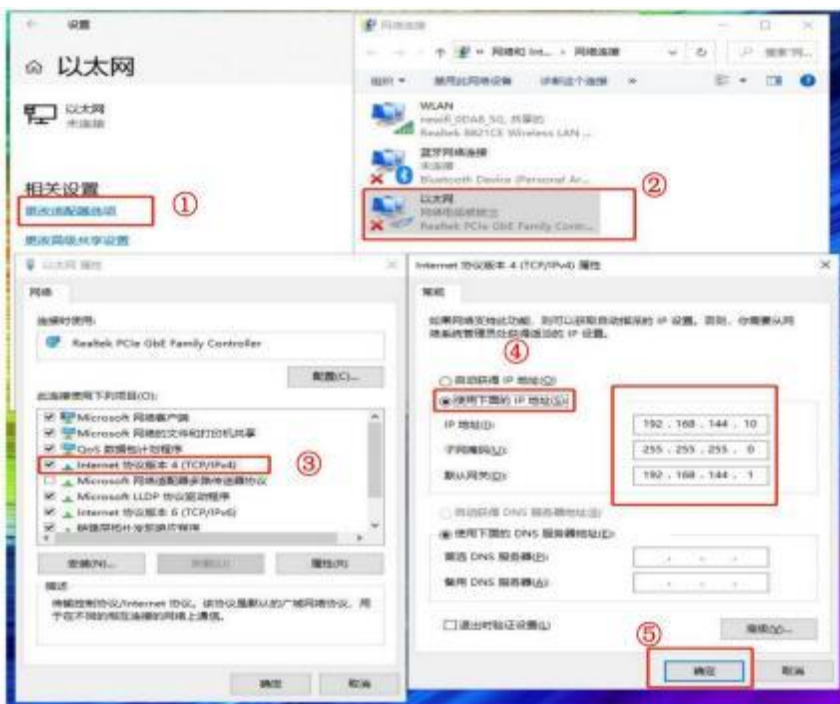
How to share data and image transmission



1. Shared data transmission

(1) Connect the remote control to the computer's network port via an Ethernet cable. Note: The remote control's ground station must be disconnected!

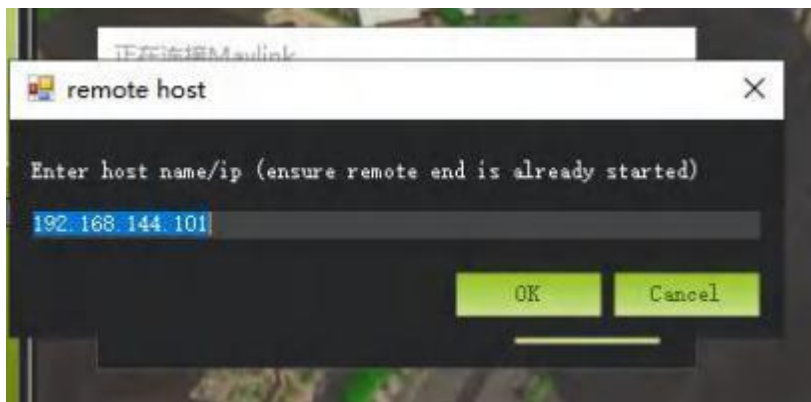
(2) Open the computer settings, click on the adapter, select Ethernet, choose the IPv4 protocol, select custom IP address, enter the address as shown in the diagram, and click OK (see the figure below).



(3) Open MissionPlanner on your computer and select TCP as the connection method

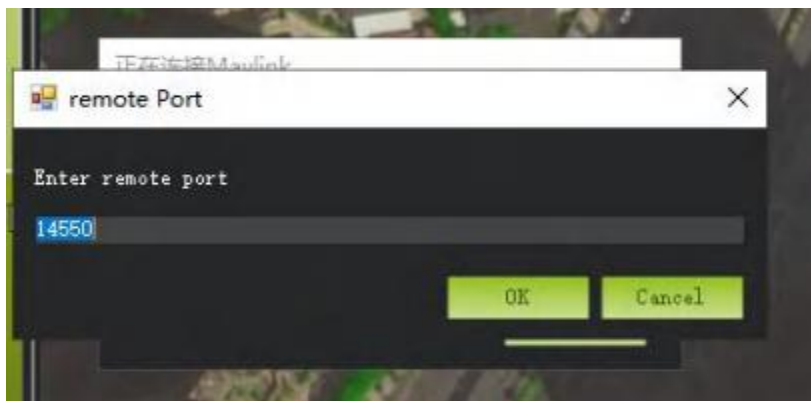


(4) After clicking Connect, enter the IP address: 192.168.144.101. Click OK after entering.



(5) Select port 0 for serial port 14550. After completing the input, click OK to connect (see the figure below).

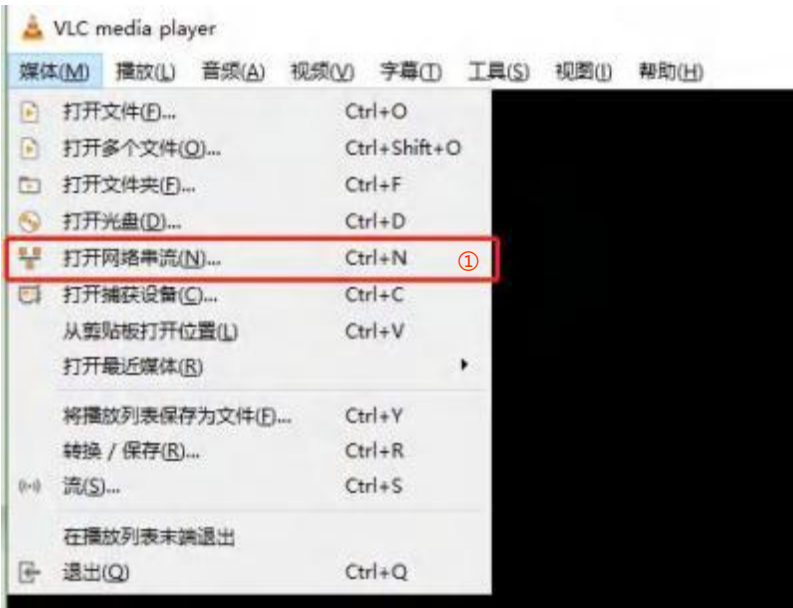
(6) Serial port 1: Select port number 14551. After completing the input, click OK to connect.



2. Shared video feed

Connect the network cable as described above, share the data link, and set a fixed Ethernet IP address. Download VLC software to display the image.

① Open VLC software on your computer and select the online streaming media



② In the network URL input field, enter `rtsp://192.168.144.108:554/stream=0` ③ Click Play



Frequently Asked Questions and Solutions

1. Can the remote control be installed with other apps?

All permissions are fully enabled on the remote control, with no restrictions on installing or uninstalling any dedicated or restricted software.

2. How to obtain the RTSP address for a third-party network camera

The network port of the camera needs to be pre-configured as the 144 network segment (ip 192.168.144.XXX, gateway 192.168.144.10). The camera connects to the receiver's network port 0 or port 1. For pin definitions, refer to the section "I. Overview -> 5. Port Definition Diagram" in this document. The camera can be connected to the network port first.

For the brain, use VLC on your computer to stream RTSP from the 144 subnet. The RTSP address should be confirmed with the network camera manufacturer before connecting to the receiver.

Open the R100 Assistant, select Video View, then click Settings (virtual button). Select the video stream address and enter the RTSP link formatted by VLC on your computer.

3. Data transfer failed to connect

The flight controller's data line connects to serial port 0. To connect the RXTX to the receiver, reverse the connection: connect RX to TX and TX to RX. Check if the ground station is TCP-based for remote control connection, address 192.168.144.101, and port 14550. Verify the baud rate matches the flight controller's.

Cannot share data or video

Check if the network cable is connected to the remote control, if the Ethernet has a static IP, and if the network camera gateway is on 192.168.144.10

5. How to enable fast charging on the remote control?

Only the dedicated charger can enable fast charging mode.

III. Maintenance and Repair

Maintenance and Care for Long-term Parking

Store the remote control in a dry, well-ventilated area and avoid direct sunlight to prevent battery overheating. If stored for over a month, regularly charge the battery to 70-80% of its capacity to prevent complete discharge. The recommended storage temperature range is 22°C to 28°C. Never store batteries in environments below -20°C or above 45°C.

IV. Transportation and Storage

warn

To avoid potential harm and loss, it is important to follow these steps:

As wires and small parts can be dangerous to children, it is important to keep children away from the components of the remote control.

pay attention to

- 1) Never submerge the remote control in water. If it gets wet, immediately wipe it with a soft, dry cloth, turn off the power, and contact our after-sales service.
- 2) Mechanical impact, rolling, or piercing of the battery is prohibited, as is dropping the battery.

SKYDROID Cloud Platform

IC warning statements:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Specific Absorption Rate (SAR) information: This device meets the government's requirements for exposure to radio waves. The guide lines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.

The SAR limit of ISED (Canada) is 1.6 W/kg averaged over one gram of tissue. Device types: Portable _PMN NAME_Remote Controller _ (IC: 34552-R100) has also been tested against this SAR limit. according to this standard is less than 1.6W/kg w.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L' appareil ne doit pas produire de brouillage;
- (2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

Informations sur le débit d'absorption spécifique (DAS) : cet appareil est conforme aux exigences gouvernementales en matière d'exposition aux ondes radio. Les lignes directrices sont basées sur des normes qui ont été élaborées par des organisations scientifiques indépendantes grâce à une évaluation périodique et approfondie d'études scientifiques. Les normes comprennent une marge de sécurité substantielle conçue pour assurer la sécurité de toutes les personnes, quel que soit leur âge ou leur état de santé.

La limite SAR d'ISED (Canada) est de 1,6 W/kg en moyenne sur un gramme de tissu. Types d'appareil : __ Portable __PMN NAME__ Remote Controller __ (IC : 34552-R100) a également été testé par rapport à cette limite SAR. selon cette norme est inférieure à 1,6 W/kg w

The device are restricted to indoor operation only in the band 5150-5250 MHz.

This radio transmitter [34552-R100] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

List of all Antenna

Antenna types	Antenna Gain(dBi)	Input Impedance (Ω)	Frequency Range (MHz)
Rod antenna	4	50	2400-2483MHz

SKYDROID Cloud Platform

FCC Warning:

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.
-

The device are restricted to indoor operation only in the band 5150-5250 MHz.

RF Exposure Information (SAR)

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels. The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of www.fcc.gov/oet/ea/fccid.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.