SmallRig

Wireless Tethering Hub
for Cameras (WTH-500)
For Insta360 Camera

User Manual

Chapter / Section Title

Lanyard Hole

1/4" Threaded Hole with Anti-Deflection Design

Red / Green Status Indicator

USB-C Input

Reset Button

1/4" Threaded Hole

1/4" Threaded Hole with Anti-Deflection Design

Note: The power supply can be a power bank with 5V⎓3A output.
1. Connect the power supply;
2. The "SmallRig" indicator changes from red to green, indicating successful startup;
3. Wait for approximately one minute, and the smartphone will detect the Wi-Fi signal
   [SmallRig_5G_****] [SmallRig_2.4G_****]

2,Use diagram

Wi-Fi connect

Power on

Wi-Fi connect

Install the official Insta360 APP

(1) Users must prepare the power bank, camera, and smartphon (or tablet) themselves.

3,Compatible models

Insta360 Go2, Go3, Go3s, ONE R, ONE RS, ONE X2,
Ace pro 2, Ace pro, X4, X3, Insta360 X5

4,Battery life

Battery life test data of WTH-500					
Battery model	Battery capacity （Wh)	Working voltage (V)	Working current (A)	Power (W)	Actual battery life(H)
XIAOMI power bank/10000mA	37	5	0.6	3	9

Note:
1. The battery life will vary depending on the battery.
2. The battery life will vary slightly when connecting to different models of cameras.
3. The measured data is for reference only

5,Schematic Diagram of Remote Control Distance
Test Environment: Open riverside area with no obstructions; both the Wireless Tethering Hub for Cameras and the camera are mounted at a height of 2 meters, with good communication conditions;
Schematic Diagram of Communication Distance Between Smartphone, Wireless Tethering Hub for Cameras, and Camera.

Distance ≤250m   Distance ≤50m

Distance ≤250m

Distance ≤50m

6,Description of Communication Distance for the Wireless Tethering Hub for Cameras

1. Device Layout

Ensure there is no obstruction or slight obstruction between devices; heavy obstruction will cause signal interruption and latency.

The camera should be kept off the ground, and the Wireless Tethering Hub for Cameras should be placed close to the camera.

The higher the Hub is mounted, the stronger the signal and the longer the communication distance.

2. Device Performance

Newly Released Camera + High-Performance Smartphone = Longer Communication Distance.

3. Communication Frequency Band Selection

Wilderness/Uninhabited Areas: Use the 5.8 GHz frequency band for the longest remote control distance.

Urban/Interfered Areas: (e.g., near stadiums or base stations): Use the 2.4 GHz frequency band; the remote control distance is shorter but more stable.

7,Device Layout Methods and Tips for Ensuring Smooth Communication

1. Smooth communication between the Wireless Tethering Hub for Cameras, camera, and smartphone (or tablet) is key to smooth shooting.

2. A triangular layout is an effective way to avoid obstructions.

Concealed Shooting Layout:

Wireless Tethering Hub for Cameras: Mounted at a commanding height (e.g., tripod, tree branch, or rock)

Camera: Placed close to the subject

Operating End: Can be hidden behind cover (e.g., inside a vehicle, in bushes, etc.)

Depression Shooting Solution:

Camera: Placed in the depression

Wireless Tethering Hub for Cameras: Must be mounted at a commanding height. An extension bracket is recommended

3. Device Maintenance

 Keep the device battery level above 20%.

 Impact of Low Battery Level: Picture latency will increase by 30-50%, and image quality will be automatically reduced.

4. Troubleshooting Process:

① Check the Wi-Fi connection status

② Confirm the device power supply is functioning properly

③ Verify the camera connection status

④ Restart the entire system if necessary

Chapter 2 App Download and Installation (Preparations)

1. A smartphone or tablet;

2. Download the Insta360 App: Visit https://www.insta360.com/cn/download, using your device's browser;

3. Select the Android or iOS version;

4. Install and open the App, then complete the initial permission prompts as directed. This process requires an active internet connection. Without internet access, you cannot download or use the app—even if already installed.
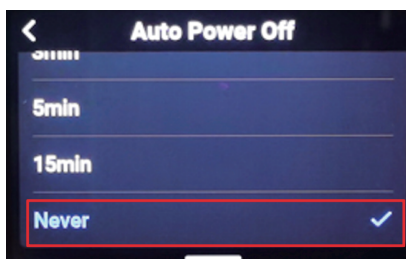
I. Insta360 Ace Pro 2 Camera Settings
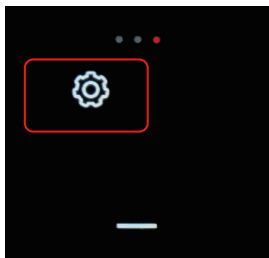
1. After powering on the camera, swipe down from the screen's edge to open the menu, then swipe left to find the [Settings] icon
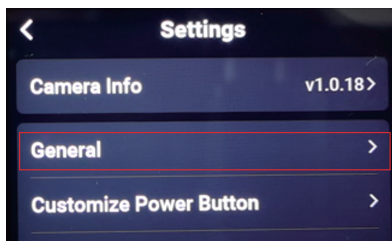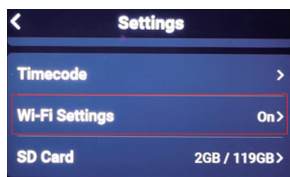
2. Go to: [Settings] → [General Settings]
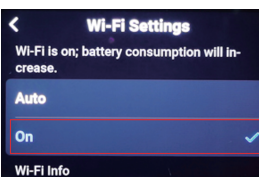

3. Enable [Automatic Shutdown]
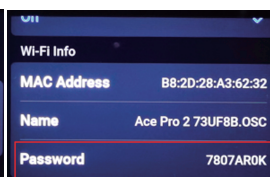
4. Set the shutdown timer to [Never]

II. Insta360 Ace Pro 2 Wi-Fi Settings

1. Open camera settings, find Settings

2. Set Wi-Fi to "On"

3. Remember your local password; you will need it multiple times.

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Use one smartphone (or tablet) with the Insta360 App installed

1. (1) Confirm that the virtual reality repeater is turned on, open the Wi-Fi settings on your mobile phone, search for the Wi-Fi of the virtual reality repeater [SmallRigr_5G_***** or 2.4G****], click [5G_*******], and the password setting page will pop up automatically.
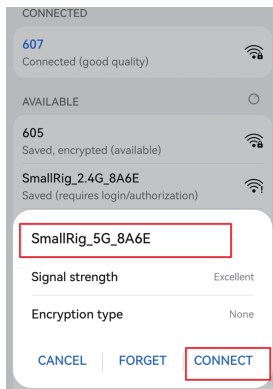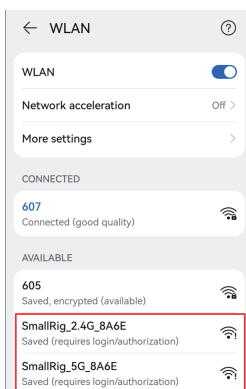
(2) Set the password:

1. Upon first use of the repeater, a password needs to be set. This password will be required for every subsequent use.

2. The password must be a combination of letters and numbers, and easy to remember, such as aaa666.

3. Please remember the password. If you forget it, you will need to restore factory settings (see page 15 for instructions).

4. If the configuration page does not automatically pop up, open a browser and manually enter 192.168.100.1.
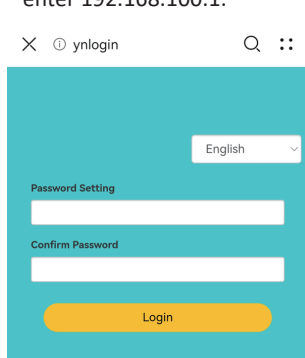
Password settings page
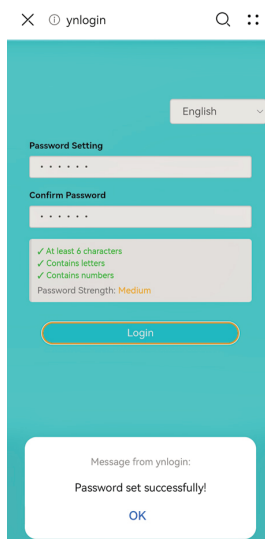
A pop-up message appears:
Password set successful.
Click "OK".
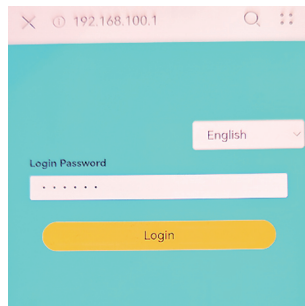
Enter the password you just set again and click Login.

The camera password input page pops up automatically.

Find the camera's default Wi-Fi network, click on Wi-Fi.

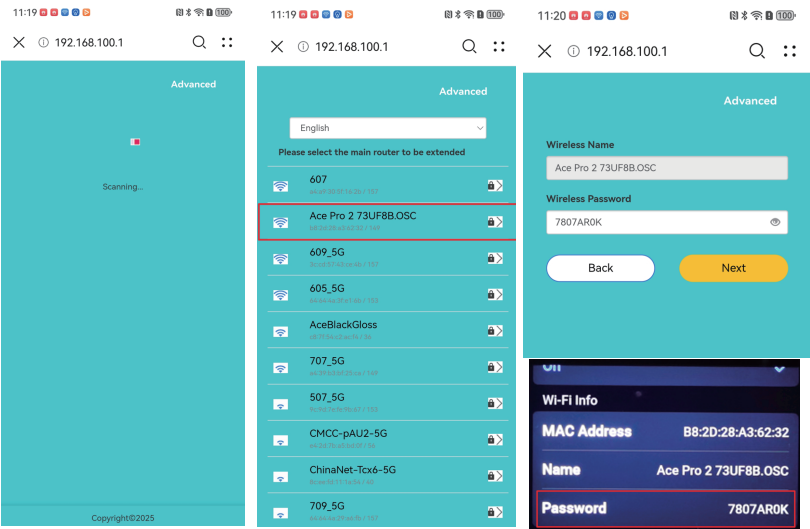Enter your password (case-sensitive). Click "Next".

The image below shows the default Wi-Fi passwords for various Insta camera models. This information can be used as a reference when using other camera models.

Enter the default password for your action camera, and click Next. A screen will pop up to change the Wi-Fi name and password for the augmented reality repeater. (To ensure shooting stability, it is not recommended to change the Wi-Fi name and password.) Click Next and Start Connecting.
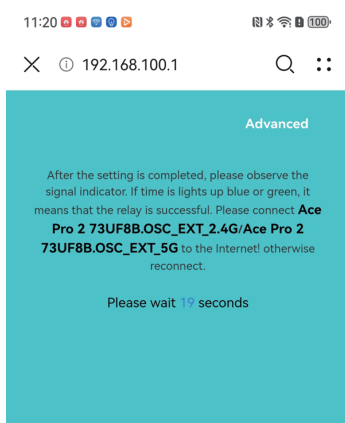
Wait 20 seconds, the number will be 0; exit and return to the WLAN page.
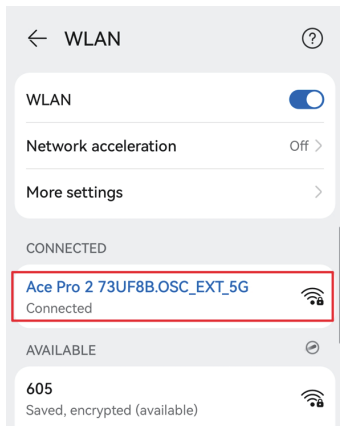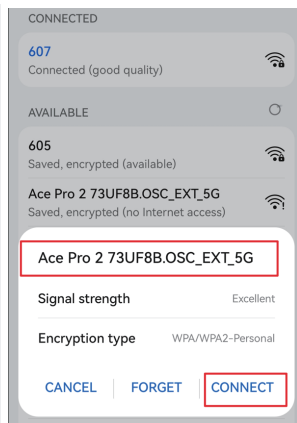
The appearance of "Ace Pro 2 73UF8B.OSC_EXT_5G; Ace Pro 2 73UF8B.OSC_EXT_2.4G; Ace Pro 2 73UF8B.OSC;" indicates successful network configuration. Clicking "5Gwifi" will connect the Ace Pro2 73UF8B.OSC_EXT_5G successfully.

1. Network Connection.
Open the tablet's WLAN settings and confirm that the Ace Pro 273UF8B.OSC_EXT_5G is successfully connected.
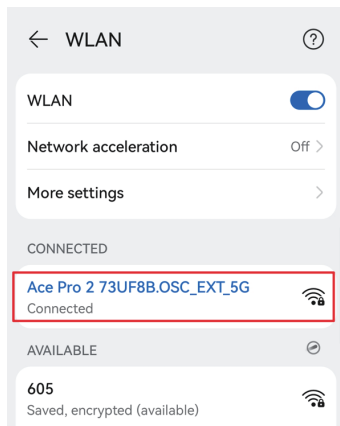
Remarks:
2.4G/5G Wi-Fi for Smartphones or Tablets - How to Choose
(1) 5G signals have larger bandwidth and higher transmission speeds, making them suitable for use in open areas.
(2) 2.4G signals have stronger penetration, making them suitable for use in sheltered areas.

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2. Open the Insta360 App. After tapping the camera icon at the bottom of the page, the App will automatically connect to the camera.
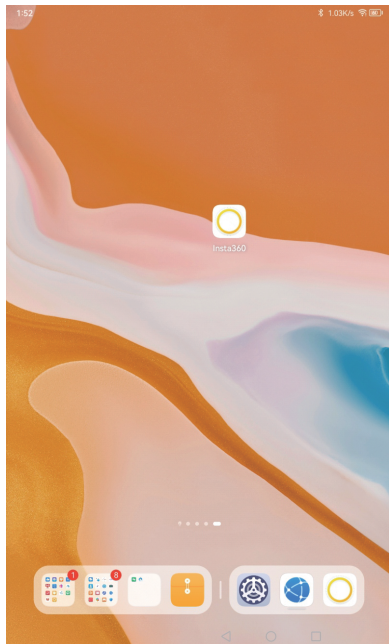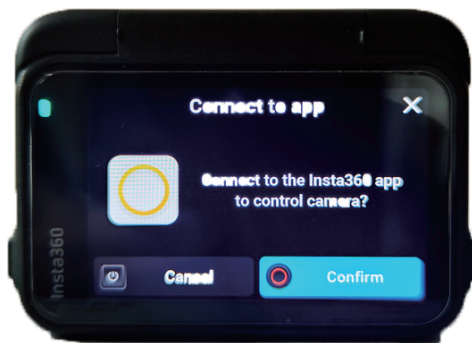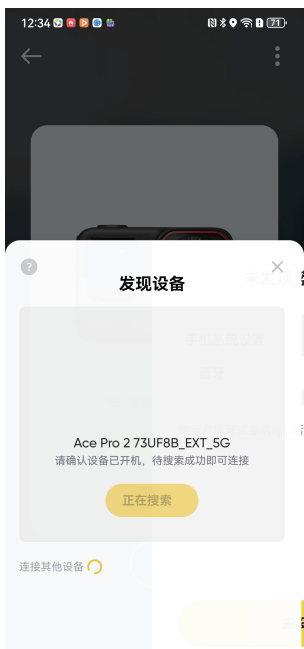
When the app displays the message "Please confirm on your device," you need to tap "Confirm" on the camera.

3. After successful connection, click the camera icon at the bottom of the page to enter the remote shooting interface and start controlling the camera to shoot.
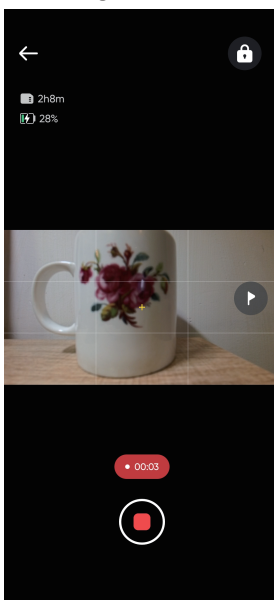
Chapter 6 Reconnecting to the Insta360 Camera

When using this Insta360 camera and Wireless Tethering Hub for Cameras again, any smartphone or tablet with the Insta360 App installed can connect to the camera for remote shooting by following these steps.
Conditions for Reconnection
1. The action camera is powered off;
2. The Wireless Tethering Hub for Cameras is powered off;
3. The network between the action camera and the Wireless Tethering Hub for Cameras is disconnected.
4. If the action camera and Wireless Tethering Hub for Cameras remain powered on, the connection between them will not be disconnected. If your smartphone is temporarily disconnected from the Hub's Wi-Fi, simply reconnect to the Wi-Fi and open the Insta360 App.

Reconnection Steps
If you do not replace the smartphone, tablet, or action camera, simply power on the Wireless Tethering Hub for Cameras and action camera, wait for approximately 3 minutes for the network to configure automatically, connect your smartphone or tablet to the Hub's Wi-Fi, then open the App—it will connect to the action camera automatically.

1. Connect to the PRLV500's Wi-Fi named [ONE RS 2YWMR6.OSC_EXT_5G].

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2. Open the Insta360 App. After tapping the camera icon at the bottom of the page, the App will automatically connect to the camera. Tap the camera icon below to enter the shooting page and control the camera for shooting.

Chapter 7 Features of the Action Camera and Wireless Tethering Hub for Cameras

I. Features of the Insta360 App

1. To ensure smooth shooting, network configuration must be completed first;

2. If the App remains on the Bluetooth connection screen or camera Wi-Fi connection screen for an extended period, ensure there are three Wi-Fi signals named [ONE RS****] in the current Wi-Fi network, then connect to the Wi-Fi with the suffix [ONE RS**** 2.4G] or [ONE RS**** 5G].

Remarks

1. If your smartphone's Wi-Fi cannot detect the [ONE RS**** 2.4G] or [ONE RS**** 5G] signals, check if the Wireless Tethering Hub for Cameras is powered on. If the [ONE RS****] Wi-Fi is missing, check if the action camera is powered on and if its Wi-Fi is set to [Always On];

2. If your smartphone connects directly to the [ONE RS****] Wi-Fi, the remote control distance will be limited, and long distance remote control will not be possible.

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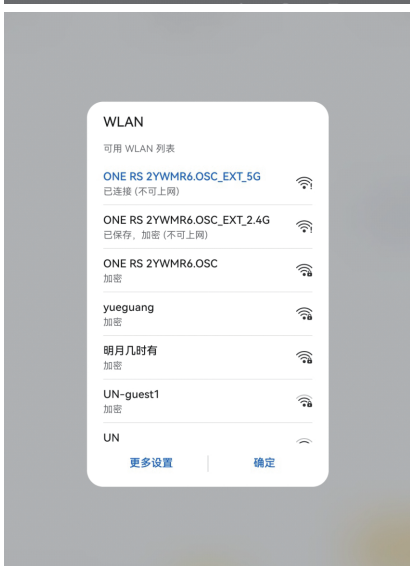
II. Insta360 Cameras and the Wireless Tethering Hub for Cameras Support Only [One-to-One] Network Pairing
1. When replacing the Insta360 camera to connect to this Hub, reset the Hub first, then re-pair the network.
2. If the Wireless Tethering Hub for Cameras is replaced but the Insta360 camera remains the same, the network still needs to be reconfigured.
3. One camera can only connect to one smartphone (or tablet). When using another smartphone (or tablet), the first smartphone/tablet must exit the Insta360 App.
III. Smartphones and tablets must have the latest Insta360 App installed, and the camera must be updated to the latest firmware.
IV. After an Insta360 camera is paired with the Wireless Tethering Hub for Cameras, any smartphone or tablet with the Insta360 App installed can connect to the camera for remote shooting.
V. Due to the Wi-Fi function of Insta360 cameras themselves, the latency for remote shooting is longer than that of cameras from other brands. Therefore, remote-controlled Insta360 cameras are more suitable for video recording than for still photo shooting.

Chapter 8 Trouble shooting Common Issues

1. When a smartphone, tablet, or camera can detect a Wi-Fi signal but fails to connect for a long time or encounters a connection error.
Solution: Press the [Reset] button on the Wireless Tethering Hub for Cameras for approximately 10 seconds to restore it to factory settings, then reconnect to Wi-Fi.
(Note: Sony cameras can directly open the official camera App for use after connecting to Wi-Fi. There is no need to access the network configuration page or configure any parameters.)

II. After connecting the power cable,
the Wireless Tethering Hub for Cameras
has an unlit indicator light and does not function.
Solution:
1. Check if the battery has power.
2. Check the power cable for damage or replace it with a new one.

Item/sub item		Contents
Name		Wireless Tethering Hub for Cameras
Model		WTH 500
Functions	Control method	A device that can remotely control camera shooting via a mobile phone or tablet within a range of 500m in unobstructed or slightly obstructed situations.
	Shooting function	Camera App control the camera to shoot
	App	Manufacturer's App
	Compatible model	Insta360 Go2, Go3, Go3s, ONE R, ONE RS, ONE X2, Ace pro 2, Ace pro, X4, X3, Insta360 X5
Communication	Communication distance	The maximum communication distance between the camera and the WTH500 is less than 90m, with no obstruction or slight obstruction.
		The maximum communication distance between a mobile phone or tablet and the WTH500 is <310m, with no obstruction or slight obstruction.
		Different remote control distance for different models and environments.
	Antenna	Built-in 2 high-gain antennas
	Wi-Fi standard	1201 Mbps (5 GHz, 11ax) + 574 Mbps (2.4 GHz, 11ax)，Compatible to EEE802.11B /G/N/AC/AX Wi-Fi standard
	Frequency	2.4 GHz and 5.0 GHz
Communication	Transmit power	FCC：<18 dBm(2.4GHz)，<18 dBm(5GHz)
	Signal rate	2.4GHz 574 Mbps，5GHz 1201 Mbps
Hardware	Dimension	95*95*27mm
	Network	152g
	Input voltage	5V3A
Certification		Passes the FCC, CE, SRRC, RoHS test
Ambient temperature and humidity	Operating temperature	0°C~40°C (32°F~104°F)
	Storage temperature	-40°C~70°C (-40°F~158°F)
	Operating humidity	10%~90%non-condensing
	Storage humidity	5%~90%non-condensing