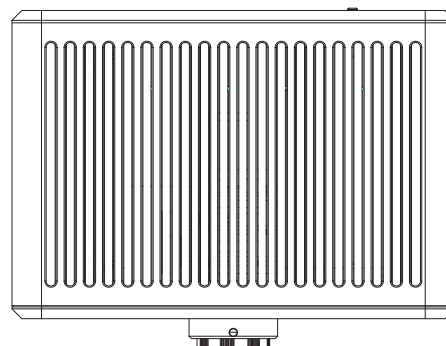
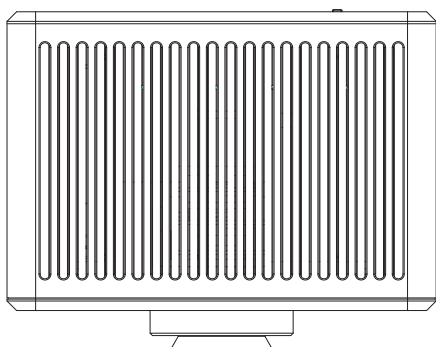


Trinocular Microscope Camera Solution④ (5G WiFi Multi-Viewing Workstation) User Manual



Applicable brand	Olympus	Nikon	Leica	Zeiss
C-mount model	CG12			
Dovetail mount models	YG12			
Category	A0	N2	L0	Z0
Physical resolution	12.0MP			

Olympus	Nikon	Leica	Zeiss
CG20			
YG20			
A0	N2	L0	Z0
20.0MP			

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1.1 Cautions and notes

- (1) To avoid danger or damage incurred to the lens, do not touch the lens or sensor directly with your fingers.
- (2) To avoid failure or electric shock hazard and so on, do not disassemble or modify the internal structure of the device.
- (3) Do not plug in or unplug the USB port or the HDMI port when hands are wet.
- (4) Do not use alcohol and other organic solvents to clean.
- (5) If the lens or sensor is dirty or damp, you should better use dry and non-linen fabric or professional lens tissue to wipe them.
To avoid scratches on the surface, do not touch the lens with your fingers. Wipe the lens or sensor lightly.
- (6) The products are not specifically designed for an outdoor use. Do not expose it to outdoor environment without any protection.
Excessive temperature and humidity will damage the lens. Please avoid using the product under the following environment:
high temperature or high humidity environment, places with direct sunlight, dirt or vibration and places near heat source.
- (7) Please use and store in the following environment:
Operating temperature : 0°C~ 40°C;
Storage temperature: -10°C~ 60°C;
Operating Humidity : 30~60%RH;
Storage Humidity: 10~80%RH.
- (8) If any foreign matter, water or liquid enter into the device by accident, disconnect the USB cable immediately. Please send it to the maintenance center and do not use the hair dryer to dry it by yourself.
- (9) To prevent microscope from being tripped over or dropped, please put away the device's USB cables in use or standby.
- (10) To avoid electric shock by accident, please power off microscope before you move your Windows PC or laptop.
- (11) The cleanliness of the device lens will directly affect clarity degree of contents from the computer screen during preview.
Problems like various circles or spots on the screen may mostly be incurred by dirt on the lens. When cleaning, please use professional lens tissue or other professional detergent to clear the dirt on the lens.
- (12) Registered trademark and copyright information: this product is copyrighted by GUANGZHOU OSTECH ELECTRONIC TECHNOLOGY CO.,LTD.Without written authorization of the company, any organization or individual shall not copy, print or translate any part of this article into another language.

Chapter 2 Package List

1.5G WiFi Multi-Viewing Workstation
(C-mount or dovetail mount)



2. Power adapter and power cord
(Optional Chinese, American, European, Australian, Korean, British standard, etc.)



3. Gigabit Ethernet cable (2m)



4. Allen key (3mm)
(only for dovetail mount)



5. One paper with QR code and link to download software

Software、Manual Download
软件、说明书下载



Windows Download
PC软件下载

Windows download link:
PC软件下载链接:

<https://ostec.com.cn/downloads/>



For 5.0/8.0MP



For 12.0MP



KoPa WiFi Lab For Android/iOS Download
KoPa WiFi Lab 安卓/iOS 软件下载



软件说明书下载

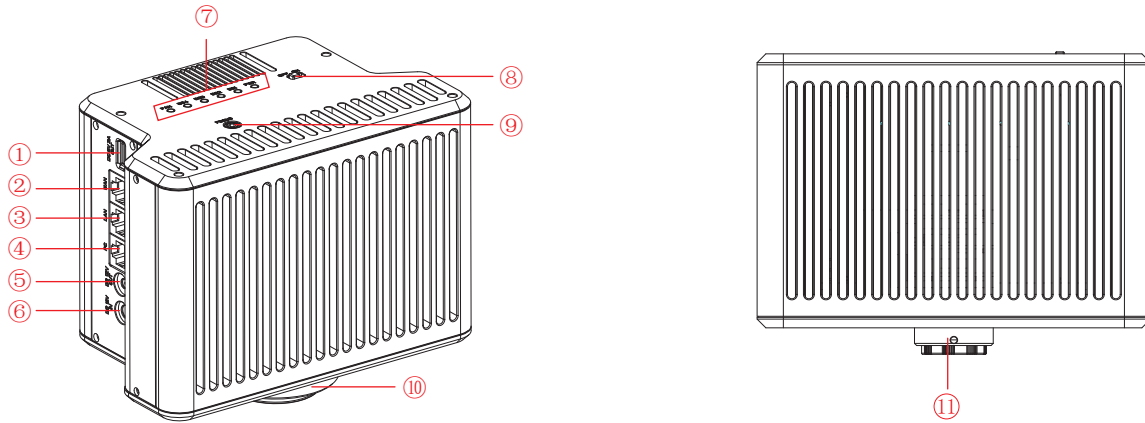


Software Manual Download

6. Video set-top box (optional)
Product model: NA001



Chapter 3 Hardware Introduction



①	Power output interface (DC 5V 2A)	can power microscope (output voltage is 5V, maximum output current is 2A)
②	WAN network interface	it can be connected to the router and access to the local area network via network cable, so that Windows PC, smartphones and tablets in the local area network can share the microscopic screen; it can also be directly connected to the Internet.
③	LAN network interface	it can be connected to the Windows PC via network cable for data transfer, and the Windows PC side can image acquisition through software.
④	PC interface	it can be connected to the Windows PC via network cable for data transfer, and the Windows PC side can image acquisition through software.
⑤	Power output interface (DC 12V 1A)	can power microscope (output voltage is 12V, maximum output current is 1A).
⑥	Power input interface (DC 12V 5A)	connect with the adapter in the accessories to achieve power supply to the camera.
⑦	FAN / 5G4 / 5G3 / 5G2 / 5G1 / PWR indicator	FAN: when the indicator light is on, it means the cooling fan is faulty. 5G4 / 5G3 / 5G2 / 5G1: when the indicator light is on, it means the corresponding 5G channel of the product is running; when the indicator light is blinking, it means there is a device accessing the corresponding 5G channel or there is data transmission in the channel. PWR: it is in standby mode when the red light is on, and in on mode when the green light is on.
⑧	Power switch (OFF / ON)	dial to ON for power on, need to wait about 30 seconds; dial to OFF for power off, need to wait about 5 seconds.
⑨	Easy focus hole (only for dovetail mount model)	internal filament focus structure is used to adjust the 0.43X field lens of the camera to achieve par-focal with electronic imaging and observation under eyepiece.
⑩	Dovetail mount	connect with the dovetail slot on the trinocular microscope.
⑪	Standard C-mount	connect with trinocular microscope which has C-mount.

4.1 Camera install to a trinocular microscope

- (1) Remove the dust cover of microscope dovetail slot or standard C -mount, as shown in Figure 1.
- (2) Snap the 5G WiFi multi-viewing workstation camera onto the dovetail slot or screw it onto the standard C -mount of the microscope, oriented as in Figure 2; tighten the fastening screws on the dovetail slot of the microscope, fix the camera on the microscope.

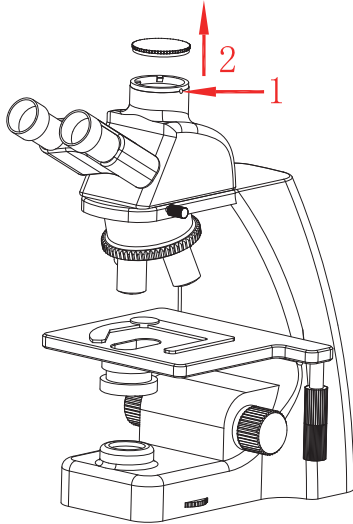


Figure 1

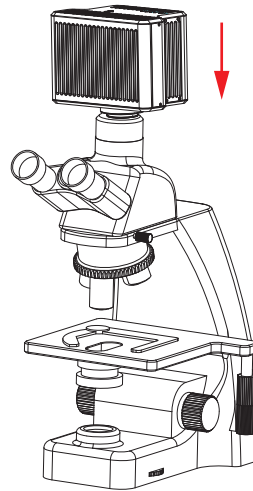


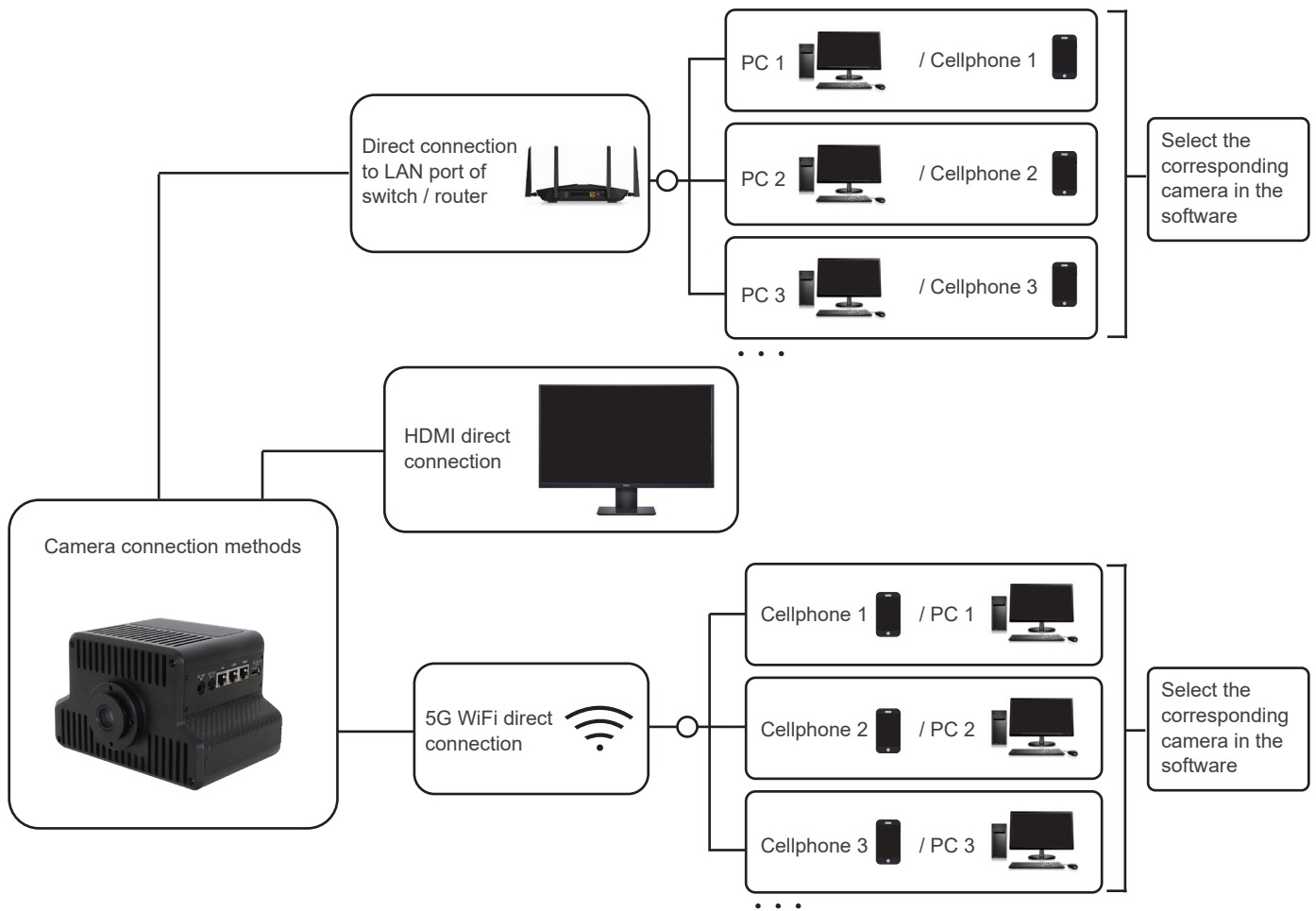
Figure 2

4.2 Remove camera from microscope

Reverse the order with the installation.

4.3 Par-focal(only for dovetail models)

- (1) Place a specimen under microscope, adjust diopter of the eyepiece to the minimum value, and use the 10X objective lens, recommend to focus on any black spot / or the darkest spot on the specimen, until the visualization is the clearest;
- (2) Adjust the easy focus hole in clockwise or counterclockwise direction with the Allen key until the image from software is clear to achieve par-focal;
- (3) Once par-focal under 10X objective is completed, the other objectives are basically free of adjustment and achieve par-focal as well.



- (1) Output methods: 5G WiFi+PC+LAN+WAN.
- (2) Support 60+ Windows PC terminals or smart terminals (cell phones, tablets) for live view image simultaneously.
- (3) When the network cable of PC/LAN network interface is connected to a Windows PC, the images can be captured by PC software.
- (4) WAN network interface can be connected to a switch or router, 5G WiFi multi-viewing workstation camera can be switched to a network camera by connecting to a local area network.
- (5) Windows PC or smart terminals in the same local area network can realize synchronized real-time preview after installing special software, supporting up to 60 Window PC terminals or smart terminals (cell phones, tablets).
- (6) The WAN network interface can also connect to the Internet regardless of the computer or smart terminal (e.g., cell phone or tablet).
- (7) WiFi connection is recommended for short distance transmission and WAN connection is recommended for long distance transmission.

5.1 Software installation

5.1.1 Windows PC side

To install the software, download and install "KoPa WiFi Lab for Windows" through the attached paper QR code and link address, and follow the software's instructions to complete the installation of the application software. Please refer to the "KoPa Capture Pro Software User Manual" for details.

Windows System Requirements

- Microsoft Windows 10 (64 bit) or later version operating systems.
- CPU: i5 10th generation or later version.
- Hard drive: 512GB or more.
- Memory: 16GB or more.
- Graphics card: Core graphics.
- Network card: 10/100/1000M adaptive.

5.1.2 Smart terminal

Android System Requirements

- Android System 7.0 or later version.
- CPU dual-core 1.7Ghz or later version.
- Memory RAM 3GB or more.
- Storage ROM 32GB or more.
- Support wireless protocol 5G WiFi IEEE802.11ac.

iOS System Requirements

- iOS System 11.0 or later version.
- CPU dual-core 1.8Ghz or later version.
- Memory RAM 2GB or more.
- Storage ROM 32GB or more.
- Support wireless protocol 5G WiFi IEEE802.11ac.


Download and install the APP:

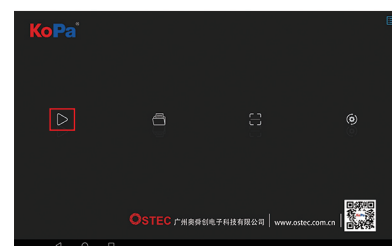
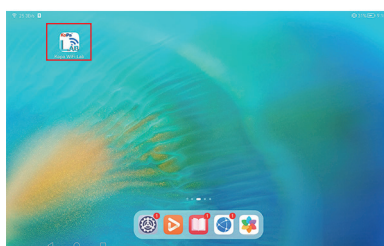
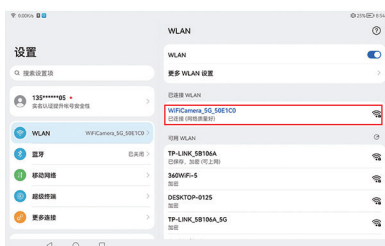
- (1) Official website link: <https://cn.ostec.com.cn/downloads/>;
- (2) Choose KoPa WiFi Lab for Android or KoPa WiFi Lab for iOS to download and install according to your phone and tablet system;
- (3) You can search and download KoPa WiFi Lab from Google Play app store;
- (4) You can search and download KoPa WiFi Lab from Apple App Store.

5.2 Network cable connection

- (1) Plug a network cable into the PC/LAN network interface of the 5G WiFi multi-viewing workstation camera, and connect the other end to a Windows PC.
- (2) The camera is properly connected to the power adapter and the power switch is turned to ON after power is applied.
- (3) Run KoPa WiFi Lab for Windows software, please refer to the “KoPa WiFi Lab Software User Manual” for the detailed operation of the software.

5.3 5G WiFi connection

- (1) Connect the power adapter correctly, turn the power switch to ON after power on, and the camera will automatically start the 5G WiFi function after about 30 seconds.
- (2) Search for the camera's WiFi SSID: WiFi5Camera_xxxxxx in the WLAN of cell phones or tablets; default connection password: 12345678.
- (3) Run the App KoPa WiFi Lab, enter the App KoPa WiFi Lab navigation interface, and click  the button to connect to the microscope screen manually.



5.4 Local area network connection

- (1) Connect the power adapter correctly, turn the power switch to ON after power on, and the camera will automatically start the 5G WiFi function.
- (2) Plug the network cable into the WAN network interface of the camera and the other end into the LAN interface of the switch or router.
- (3) Images can be accessed by smart terminals or Windows PCs within the same local area network to which the 5G WiFi multi-viewing workstation camera is connected.
- (4) The local area network open Internet function, then the smart terminal or Windows PC accesses the Internet at the same time when observing microscopic images.

5.4.1 Retrieve images via the local area network from a Windows PC on the same local area network

- (1) Connect a Windows PC or laptop that supports 5G WiFi IEEE802.11ac protocol to the same local area network as the camera.
- (2) Install and run the software KoPa Capture Pro on the Windows PC or laptop.
- (3) When there is only one network camera in the local area network, the software can automatically get the live image from the camera.
- (4) When there are multiple network cameras in the same local area network, click the icon "📷" in the upper right corner of KoPa Capture Pro (Figure 1), the list automatically shows all cameras in the current local area network (Figure 2), select a camera as needed, support switching midway at any time.

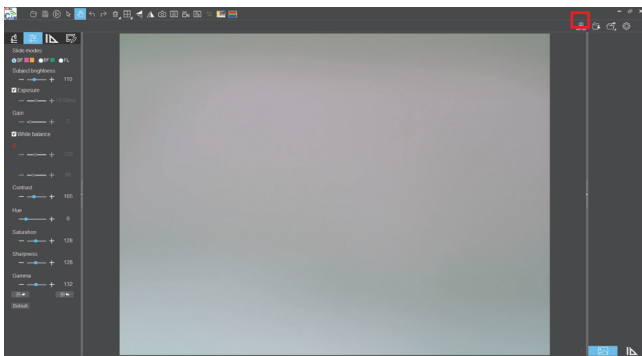


Figure 1

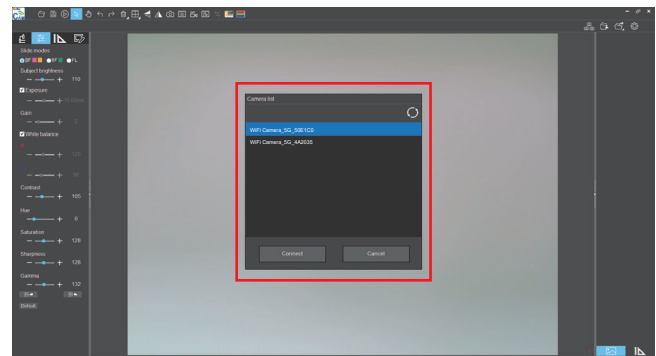


Figure 2

Notes:

When a Windows PC or laptop computer accesses the camera microscope images, it does not affect the computer's ability to access the Internet, and if that local area network is open to the Internet, the Windows PC or laptop can also access the Internet.

5.4.2 Retrieve images via the local area network from cell phones and tablets in the same local area network

- (1) Connect the cell phones or tablets that supports 5G WiFi IEEE802.11ac protocol to the same local area network as the camera.
- (2) Install and run the App KoPa WiFi Lab on the cell phones or tablets, enter the navigation interface and click the "▶" button.
- (3) When there is only one network camera in the local area network, the App can automatically get the live image from the camera.
- (4) When there are multiple network cameras in the same local area network, click the icon "⚙️" in the navigation interface (Figure 1), pop-up menu (Figure 2). The list automatically shows all cameras in the current local area network (Figure 3), select a camera as needed, support switching midway at any time.

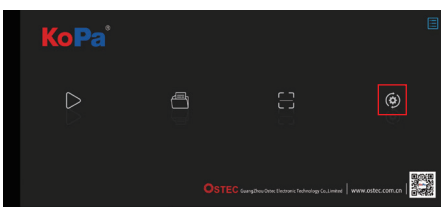


Figure 1

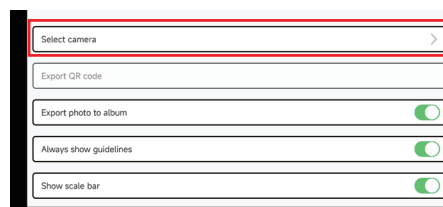


Figure 2

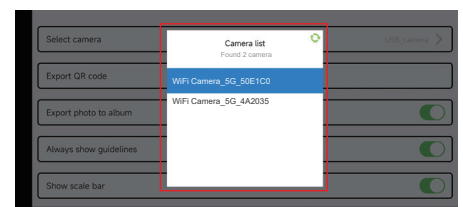


Figure 3

Chapter 6 The Function Introduction And Connection Way For Video Set-top Box (Optional Accessory)

6.1 Packing list

1.Video set-top box (optional)
Product model: NA001



2.HDMI cable (2m)



3.Wired mouse and keyboard



4.Power adapter and power cord
(Optional Chinese, American, European, Australian, Korean,British standard,etc.)

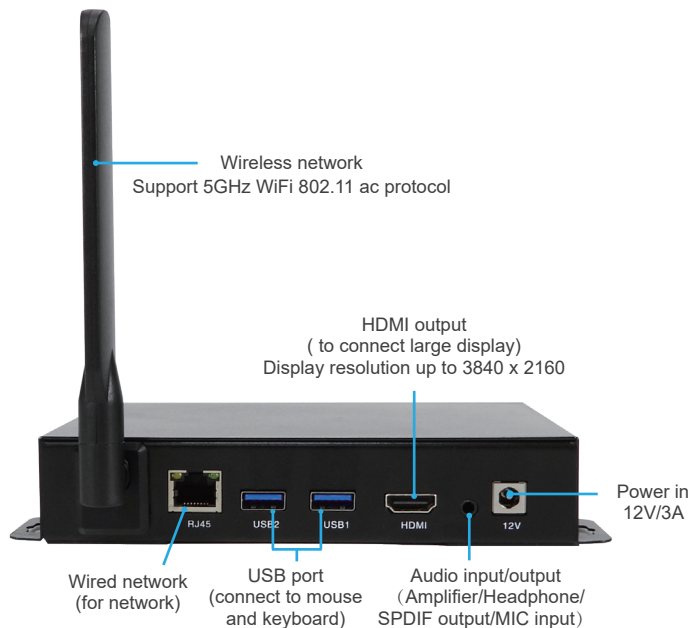


6.2 Advantages and connection of video set-top boxes

6.2.1 Advantages

- (1) It is suitable for applications such as pathology seminars, demonstration teaching, and video sharing on the large display screens in research institutes.
- (2) It supports the whole series of KoPa smart display camera, smart camera and WiFi cameras, and the factory has built-in high performance APP--KoPa WiFi Lab, which automatically connects with camera when it is turned on.
- (3) Built-in Android operating system, even if the large display screen has no operating system, it can wireless connect to the whole series of KoPa smart display camera, smart camera and WiFi cameras.

6.2.2 Connection



- (1) Connect the video set-top box to the oversized display with an HDMI cable, the display resolution supports up to 3840x2160.
- (2) The network cable is plugged into the video set-top box's wired network interface to give the video set-top box Internet access.
- (3) USB interface connects mouse and keyboard to facilitate the operation of the APP (KoPa WiFi Lab) on the oversized display.
- (4) Switching method for multiple network cameras in the same local area network:

Go to the APP (KoPa WiFi Lab) navigation interface, click the icon "⚙️" in the right (Figure 1), pop-up menu (Figure 2). The list automatically shows all cameras in the current local area network (Figure 3), select a camera as needed, support switching midway at any time.

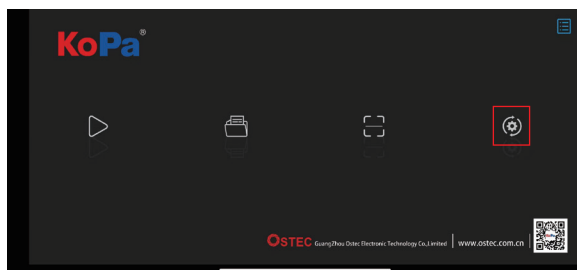


Figure 1

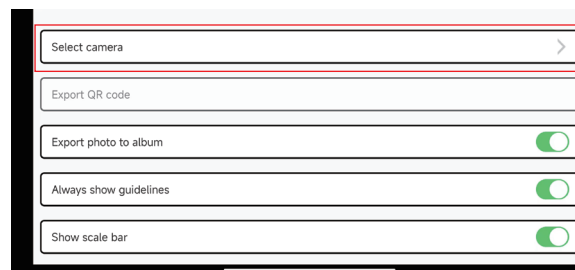


Figure 2

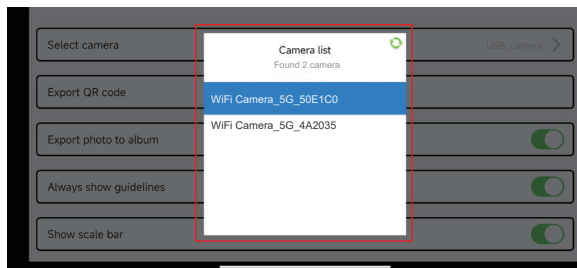


Figure 3

Chapter 7 Disclaimer

(1) In order to protect the legitimate rights and interests of users, please carefully read the instructions, disclaimers and safety instructions provided with this product before using it. The company reserves the right to update the above documents. Please operate the product according to the instructions and safety instructions.

(2) Once you begin to use the product, you shall be deemed to have read, understood, recognized and accepted all terms and contents of the product's instructions, disclaimers and safety instructions. Users undertake to be responsible for their actions and all consequences. User undertakes to use the product only for legitimate purposes and agrees to these terms and any relevant policies or guidelines that the company may establish.

(3) In the process of using this product, please strictly abide by and execute the requirements including but not limited to the instructions and safety instructions. All personal injuries, accidents, property losses, legal disputes and other adverse events that cause conflicts of interest caused by violation of the safety instructions or irresistible factors shall be borne by users themselves, and the company shall not assume any responsibility.

(4) Safety instructions:

- 1) Please do not use wet hands to plug and unplug the power supply of the equipment.
- 2) Please be sure to use a regular brand power socket, and make sure the grounding is well grounded to prevent electric shock.
- 3) Please be sure to make regular safety checks on sockets and plugs to avoid potential electrical safety hazards caused by aging and short circuit.
- 4) Please be sure not to use the product in a humid or hot environment to ensure the safety of the product.
- 5) Please be sure to loosen bundle cords of the power cable before using, to avoid electromagnetic induction and heating, thus increasing the heat dissipation speed.
- 6) Please be sure not to use the product equipment or socket or other places in high or easy to fall, so as to avoid damage.
- 7) Before opening the socket power supply, please be sure to turn off the load power switch of the product equipment.
- 8) The company reserves the rights to improve product, upgrade technology and change parameters without prior notice.

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