# Kopa YF22 Trinocular Microscope Camera Solution Dual Sensor Camera User Manual



Contents



## Kopa YF22 Trinocular Microscope Camera Solution Dual Sensor Camera

## Product Information

### Trinocular Microscope Camera Solution (Dual-sensor Camera)

- The Trinocular Microscope Camera Solution is a dual-sensor camera designed for use with various brand dovetail mount models, including Olympus, Nikon, Leica, Zeiss, YF22, A1A, N1A, L1A, Z1A, A1B, N1B, L1B, and Z1B. The camera has a physical resolution of 20.0MP (Color) + 2.0MP (Color) for Olympus, Nikon, Leica, Zeiss, YF22, A1A, N1A, L1A, Z1A models and a resolution of 20.0MP (Color) + 2.3MP (Monochrome) for Olympus, Nikon, Leica, Zeiss, YF22, A1B, N1B, L1B, Z1B models.
- The camera comes with a packing list that includes a dual-sensor camera (dovetail mount), power adapter and power cord, gigabit ethernet cable (2m), Allen key (3mm) (only for dovetail mount), paper with QR code and links to download software, and an optional video set-top box (product model: NA001).

The camera features a 5G WiFi antenna to enhance the 5G WiFi signal transmission for wireless connection to the camera for image acquisition. It has USB/OFF/WiFi working mode switching options and an easy focus hole (only for the dovetail mount model). The 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 the eyepiece. The camera also has FL/BL module switching push-pull rod and PC interface.

## Product Usage Instructions

### Trinocular Microscope Camera Solution (Dual-sensor Camera)

1. To avoid scratches on the surface, do not touch the lens with your fingers. Wipe the lens or sensor lightly.
2. The camera is not specifically designed for outdoor use. Do not expose it to outdoor environment without any protection.
3. Connect the dual-sensor camera (dovetail mount) to the microscope model of your choice.
4. Connect the power adapter and power cord to the camera and plug it into an electrical outlet.
5. Use the gigabit ethernet cable (2m) to connect the camera to a computer or other device for image acquisition.

6. Use the allen key (3mm) (only for dovetail mount) to adjust the easy focus hole for better image clarity.
7. Use the FL/BL module switching push-pull rod to switch between different modules as needed.
8. Use the PC interface to connect the camera to a computer and use the software provided to capture and analyze images.

| Applicable brand Olympus | Nikon | Leica | Zeiss |
|---|---|---|---|
| Dovetail mount models | YF22 | | |
| Category A1A | N1A | L1A | Z1A |

**Physical resolution:** 20.0MP (Color) + 2.0MP (Color)

| Olympus | Nikon | Leica | Zeiss |
|---|---|---|---|
| | YF2 | 2 | |
| A1B | N1B | L1B | Z1B |

20.0MP (Color) + 2.3MP (Monochrome)

## Notes And Safety Requirements

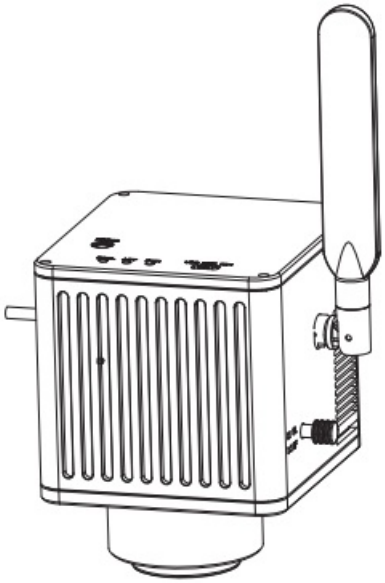
### Cautions and notes

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. Please use and store in the following environment:
    - **Operating temperature** 0℃~ 35℃;
    - **Storage temperature** -10℃~ 60℃;
    - **Operating Humidity** 30~60%RH;
    - **Storage Humidity** 10~80%RH.
7. If any foreign matter, water or liquid enter into the device by accident, disconnect the USB cable immediately.
8. 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 the 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 OSTEC 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.

## Package List

1. Dual-sensor Camera (dovetail mount)



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

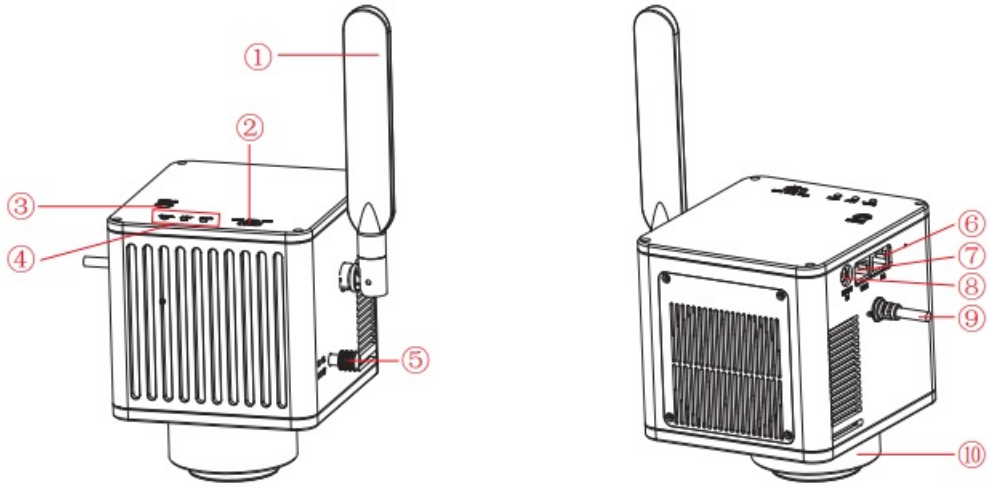
3. Gigabit Ethemet cable (2m)

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

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


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

**Hardware Introduction**




| | | |
|---|---|---|
| ① | 5G WiFi antenna | enhance the 5G WiFi signal transmission, to achieve wireless connection to the camera for image acquisition. |
| ② | USB / OFF / WiFi working mode switching | USB: when the USB cable connected to the computer, it can image acquisiti on through the computer software.<br>OFF: turn off the power, the camera stops working on this time.<br>WiFi: the wireless devices connect to the camera WiFi to image acquisition. |
| ③ | Easy focus hole (only for d ovetail 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. |
| ④ | COOL / ACT / PWR indicator | COOL: when the indicator light is on, it means the cooling system is faulty.<br>ACT: when the blue light is on, it means the WiFi module is in working state, and when the green light is on, it means it is in USB state.<br>PWR: it is in standby mode when the red light is on, and in on mode when t he green light is on. |

| | | |
|---|---|---|
| ⑤ | FL / BL module switching push-pull rod | fluorescence / bright field imaging module switch push-pull rod, when the push-pull rod is pushed in that is to select the fluorescence imaging module, pull out that is to select the bright field imaging module. |
| ⑥ | 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. |
| ⑦ | WAN network interface | it can be connected to the router and access to the local area network via network cable, so that Windows PC, smart phones and tablets in the local area network can share the microscopic screen; it can also be directly connected to the Internet. |
| ⑧ | Power input interface (DC 12V 5A) | connect with the adapter in the accessories to achieve power supply to the camera. |
| ⑨ | USB output | turn to USB: connects to Windows PC for data transfer, and the Windows PC side can image acquisition through software. |
| ⑩ | Dovetail mount | connect with the dovetail slot on the trinocular microscope. |

## Installation Methods

### Camera install to a trinocular microscope

1. Remove the dust cover of microscope dovetail slot, as shown in Figure 1.
2. Snap the camera onto the dovetail slot 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.

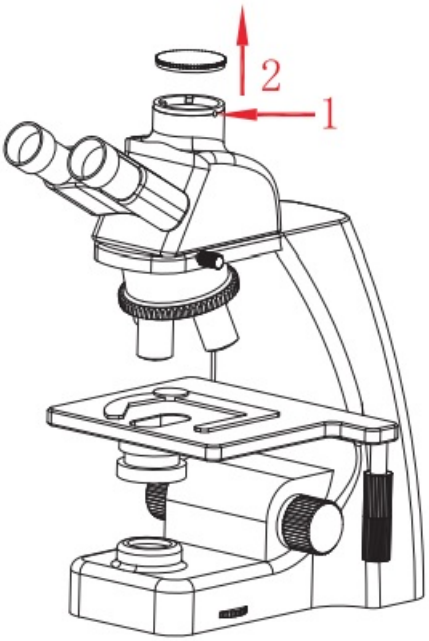



Figure 1

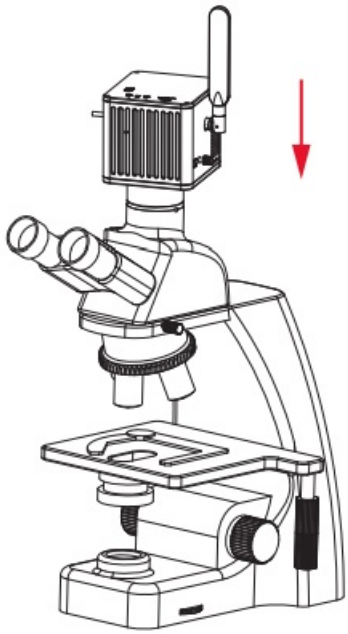


Figure 2

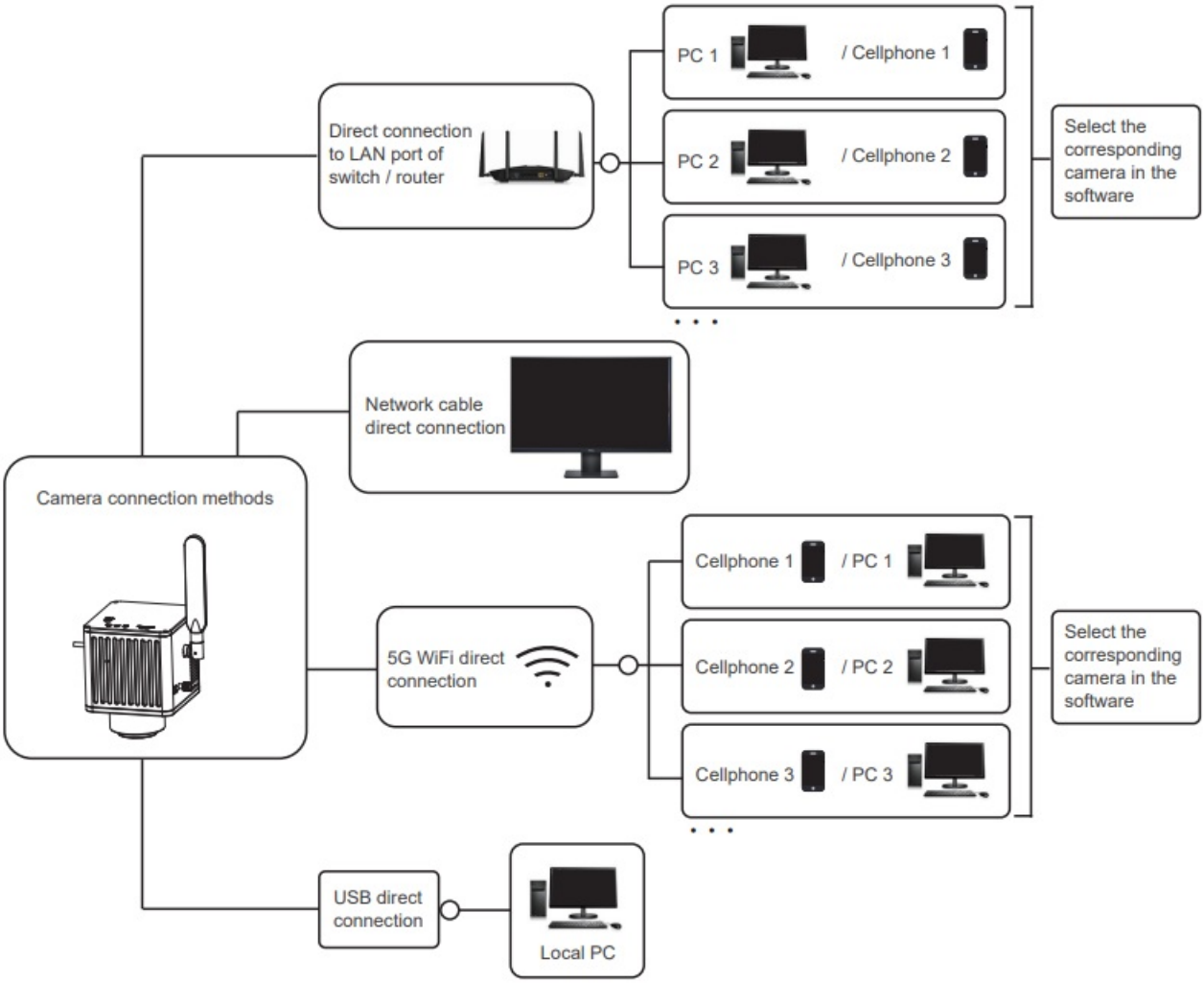
**Remove camera from microscope**

Reverse the order with the installation.

**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.

## Connection Methods




**Output methods:**
USB; 5G WiFi; 5G WiFi+PC LAN +WAN (USB and WiFi cannot be output at the same time).

#### USB connection

**Steps:**

1. Camera USB cable connect to the USB port of a Windows PC;
2. Toggle switch to USB gear;
3. Install and run KoPa Capture Pro software.
   Windows PC software KoPa Capture Pro download link: **https://cn.ostec.com.cn/downloads/**; 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:** Core i5 10th generation or later version (when using FL camera 120fps, CPU Core i5 11th generation or later version is required) Hard drive: 512GB or more.
- **Memory:** 16GB or more.
- **Graphics card:** Core graphics.
- **Network card:** 10/100/1000M adaptive.

- **Switching between fluorescence / bright field viewing:**
- Click on the icon “  ” in the upper right corner of KoPa Capture Pro (Figure 1) to display the list of FL cameras / BF cameras (Figure 2), when the push-pull rod is pushed in that is to select the fluorescence imaging module, pull out that is to select the bright field imaging module, select a camera as needed, support switching midway at any time

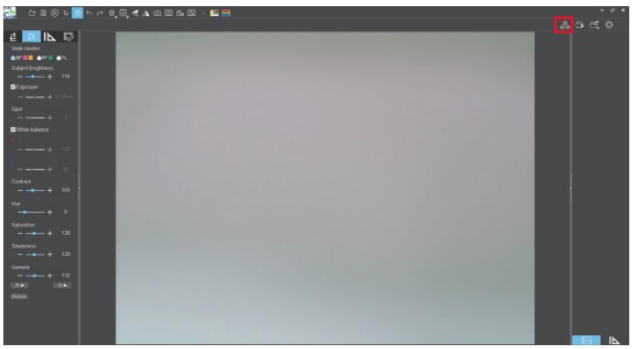


Figure 1

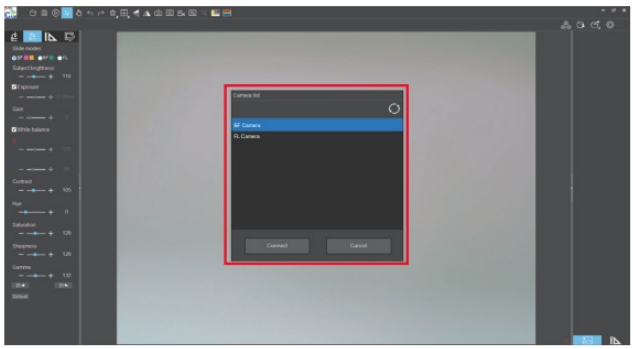


Figure 2

**5G WiFi connection**

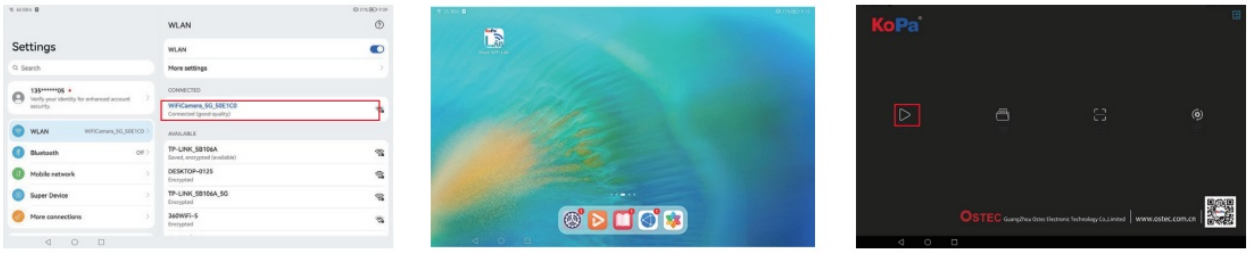
1. Desktop computers, cell phones, tablets, and laptops can be connected to the camera via 5G WiFi , supports up to 13 desktop computers, cell phones, tablets and laptops can realize microscopic view on the same microscope screen.
    - **Windows System Requirements**
    - Microsoft Windows 10 (64 bit) or later version operating systems.
    - **CPU: C**ore i5 10th generation or later version (when using FL camera
    - **120fps, CPU Core i5** 11th generation or later version is required)
    - **Hard drive:** 512GB or more.
    - **Memory: 1**6GB or more.
    - **Graphics card**: Core graphics.
    - **Network card:** 10/100/1000M adaptive.
    - **Wireless NIC supports** 5G WiFi IEEE802.11ac.
    - **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.
2. **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.

3. **Connection steps:**
    1. Connecting the camera USB cable to the power adapter or the USB port of the Windows PC, which is required to meet 5V 2A to power the camera;
    2. Set the camera to WiFi gear. After about 20 seconds, the camera's WiFi working signal indicator stops flashing and remains on;
    3. Search for the camera's WiFi SSID: WiFi5Camera_xxxxxx on the desktop computers or laptops; default connection password: 12345678, running the Windows software KoPa Capture Pro to start image acquisition.
    4. Cell phones, tablets scan QR code to get the images automatically: Run the App KoPa WiFi Lab;Click the "  " button on the navigation interface, scan the QR code on the camera body to connect to the microscope screen, no need to enter password, realize the same screen view.


    5. **Cell phones, tablets manually connect to get images:**
    Search for the camera's WiFi SSID: WiFi5Camera_xxxxxx in the WLAN of cell phones or tablets; default connection password: 12345678.
    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.




WiFi connection is recommended for short distance transmission and local area network connection is recommended for long
distance transmission.
Once the camera connected to a local area network, it can be changed to a network camera. Up to 13 desktop computers,
cell phones, tablets and laptops on the same local area network can realize synchronized real-time preview.
**Local area network connection**

1. Switching to WiFi gear when the camera is powered on;
2. Plug one end of the network cable into the WAN port of the camera and the other end into the LAN port of the local area network
router.

**Notes:**

1. The local area network must support 5G WiFi IEEE802.11ac protocol, otherwise it cannot be displayed in the list.
2. If the local area network opens the Internet function, the camera can also access the Internet.

**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.

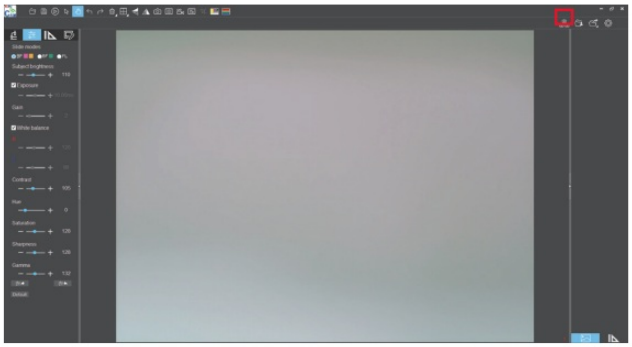


Figure 1

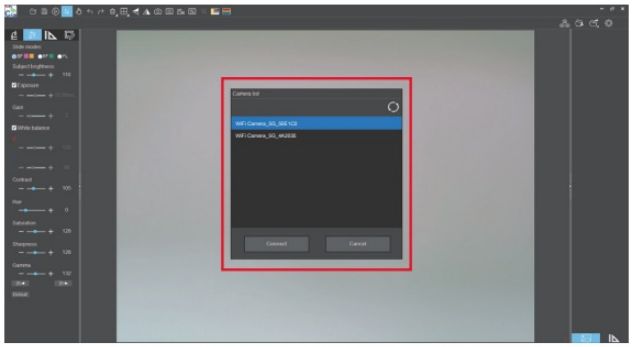


Figure 2

**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.

**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

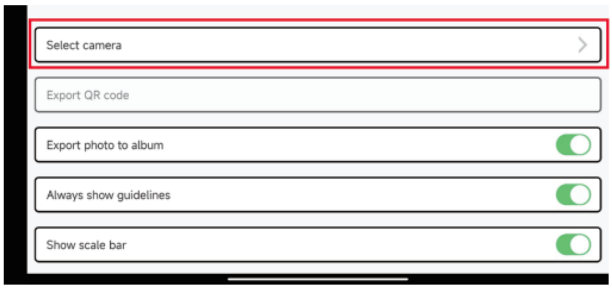



Figure 2

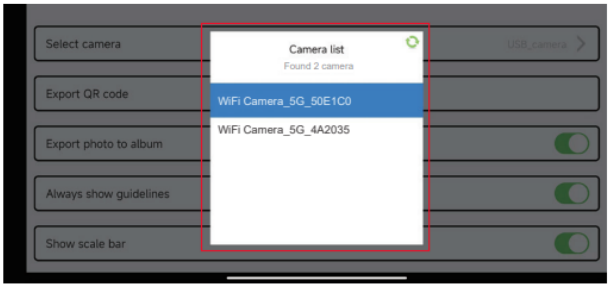



Figure 3

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

### 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

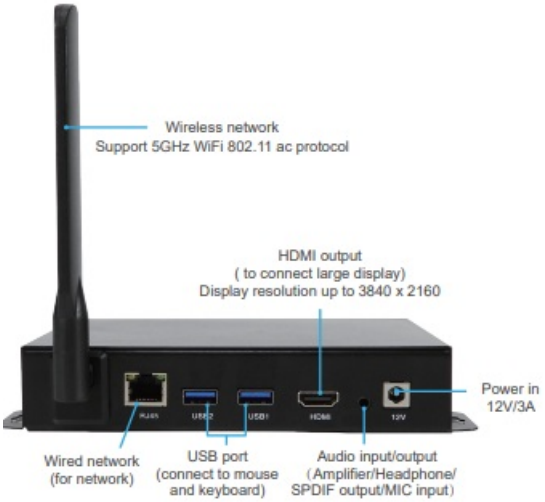
   (Optional Chinese, American, European, Australian, Korean,British standard,etc.)

**Advantages and connection of video set-top boxes**

## 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.

## Connection




1. Connect the video set-top box to the oversized display with an HDMI cable, the display resolution supports up to 3840×2160.
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

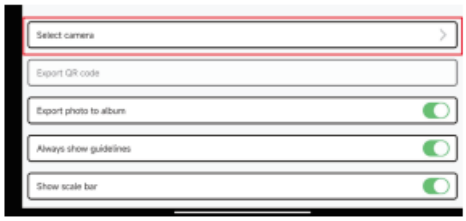



Figure 2

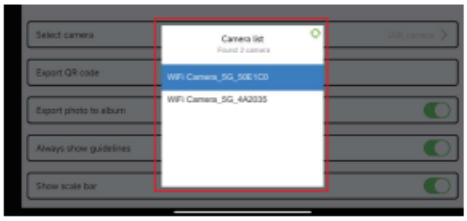



Figure 3

## 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 instruc-tions 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.

- GUANGZHOU OSTEC ELECTRONIC TECHNOLOGY CO.,LTD. **http://www.ostec.com.cn**
- Trinocular Microscope Camera Solution⑤(Dual-sensor Camera) User Manual

## Documents / Resources

| | |
|---|---|
|  | Kopa YF22 Trinocular Microscope Camera Solution Dual Sensor Camera [pdf] User Manual<br>YF22 Trinocular Microscope Camera Solution Dual Sensor Camera, YF22, Trinocular Microscope Camera Solution Dual Sensor Camera, Camera Solution Dual Sensor Camera, Dual Sensor Camera |

## References

- GUANGZHOU OSTEC ELECTRONIC TECHNOLOGY CO.,LTD
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