The WECAM Series WiFi+Ethernet C-Mount CMOS Camera Help Manual

Contents

The WECAM Series WiFi+Ethernet C-mount CMOS Camera

1   The Characteristic of WECAM Series Camera

The WECAM series camera is intended to be used for the acquisition of digital images from the stereo microscope, biological microscope or online interactive teaching. The basic characteristics are listed as below:

- Sony Exmor back illuminated CMOS sensor
- LAN, WLAN(AP/STA mode) multiple video outputs
- Powerful ISP functions
- ToupView/ToupLite software for PC
- iOS/Android app for smart phones or tablets

2   WECAM Series Camera Datasheet and Functions

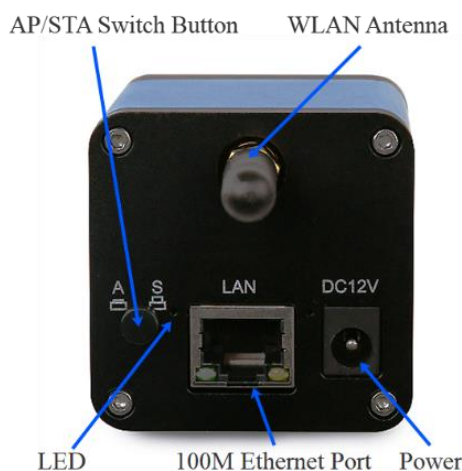| Order Code	Sensor & Size(mm)	Pixel(µm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure (ms)
WECAM5MPA	5M/Sony IMX178(C) 1/1.8"(6.22x4.67)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	30@2592*1944	1x1	0.03ms~918ms

Figure 1 Available Ports on the Back Panel of the Camera Body

Interface	Function Description
WLAN Antenna	Antenna for the WLAN signal
LED	LED status indicator When the power adapter is inserted into the power slot, the LED light will be on and the starting process will last about 8 seconds; WLAN AP mode: the LED flashes fast; WLAN STA mode: the LED flashes slowly; LAN mode: the Ethernet indicator and the LED light will be on;
DC12V	Power jack (12V/1A).
AP/STA Switch Button	Press to switch between AP and STA mode;
LAN	100M Ethernet port to connect to the router or computer to transfer video. Video can be transmitted via LAN or WLAN. LAN and WLAN cannot be used at the same time. The priority of LAN connection is higher than WLAN;
Video Output Interface	Function Description
LAN Interface	30fps@2592*1944 H264 encoded video and Jpeg image capture
WLAN Interface	Support 802.11ac protocols in AP/STA mode; 30fps@2592*1944 H264 encoded video and Jpeg image capture
Software Environment under LAN/WLAN/Output	
White Balance	Auto White Balance
Color Technique	Ultra-Fine Color Engine
ISP	Exposure(Automatic/Manual Exposure)/ Gain，White Balance(Manual / One Push), Sharpening，3D Denoise，Saturation Adjustment，Contrast Adjustment，Brightness Adjustment，Gamma Adjustment，50HZ/60HZ Anti-flicker，Mirror/Flip，Network Bandwidth Adjustment
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)
Recording System	Still Picture or Movie

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 8.1 /10(32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory: 4GB or More
	Ethernet RJ45 Interface: : 100M bps or more
	WiFi Adaptor: Support 802.11 b/g/n/ac
	Display:19" or Larger
	CD-ROM
Operating Environment	
Operating Temperature (in Centidegree)	-10°~ 50°
Storage Temperature (in Centidegree)	-20°~ 60°
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 12V/1A Adapter

3   Dimension of WECAM Series Camera

Dimension of WECAM Series Camera

4   Packing Information for WECAM Series Camera

Packing Information for WECAM Series Camera

Standard Packing List	
A	Gift box : L:15cm W:15cm H:10cm (1pcs, 0.46kg/ box)
B	One WECAM series camera
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A **American standard:** Model: GS12U12-P1I 12W/12V/1A: UL/CUL/BSMI/CB/FCC **European standard:** Model:GS12E12-P1I 12W/12V/1A; TUV(GS)/CB/CE/ROHS EMI Standard:EN55022,EN61204-3, EN61000-3-2,-3, FCC Part 152 class B, BSMI CNS14338 EMS Standard:EN61000-4-2,3,4,5,6,8,11,EN61204-3,Class A Light Industry Standard
D	CD (Driver & utilities software, Ø12cm)
Optional Accessory		
E	Ethernet cable		
F	Adjustable lens adapter	C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	108001/AMA037 108002/AMA050 108003/AMA075
G	Fixed lens adapter	C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	108005/FMA037 108006/FMA050 108007/FMA075
	Note: For F and G optional items, please specify your camera type(C-mount, microscope camera or telescope camera), ToupTek engineer will help you to determine the right microscope or telescope camera adapter for your application;		
H	108015(Dia.23.2mm to 30.0mm ring)/Adapter rings for 30mm eyepiece tube		
I	108016(Dia.23.2mm to 30.5mm ring)/ Adapter rings for 30.5mm eyepiece tube		
J	Calibration kit	106011/TS-M1(X=0.01mm/100Div.); 106012/TS-M2(X,Y=0.01mm/100Div.); 106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.)	

5 Software and App

For Windows user (Windows XP (32bit), Windows 7/8/10 (32/64 bit)), please use ToupView.

For macOS and Linux user (macOS 10.10 or above or Linux distributions with kernel 2.6.27 or higher), please use ToupLite. When connecting the camera with a mobile device, the free ToupView App is required. Just make sure that the mobile device uses iOS 11 or higher/Android 5.1 or higher operating systems.

The software or the App can be downloaded from the following link：

Windows:https://www.touptekphotonics.com/download/

Linux & macOS: https://www.touptekphotonics.com/download/

iOS: https://itunes.apple.com/us/app/toupview/id911644970

Android: https://play.google.com/store/apps/details?id=com.touptek.tpview

Note: The device must be WLAN enabled to support WLAN connection.

6 WECAM Camera Application Configurations

6.1 Camera working in WLAN AP mode

Figure 2 The PC or Mobile Device Connect to the Camera through WLAN AP Mode

The steps to start the camera are listed below:

- Install the ToupView/ToupLite on your PC or install the ToupView App on the mobile device;
- Insert the power adapter to the camera's power jack;
- Press down the AP/STA Switch Button, the LED will flash fast with about 2HZ frequency, which means the camera is in the WLAN AP mode;
- Connect the PC or mobile device to the camera;
- Start the ToupView/ToupLite software or ToupView App and check the configuration. Normally, active WECAM cameras are automatically recognized. The connected cameras will be listed in the Camera List group of the Camera Control Bar of ToupView/ToupLite on PC. On mobile device, connected cameras will be listed in the Camera Thumbnail page of ToupView App. Click the corresponding camera to start the stream.

6.2 Connecting multi-cameras to the router with WLAN STA mode for the network application

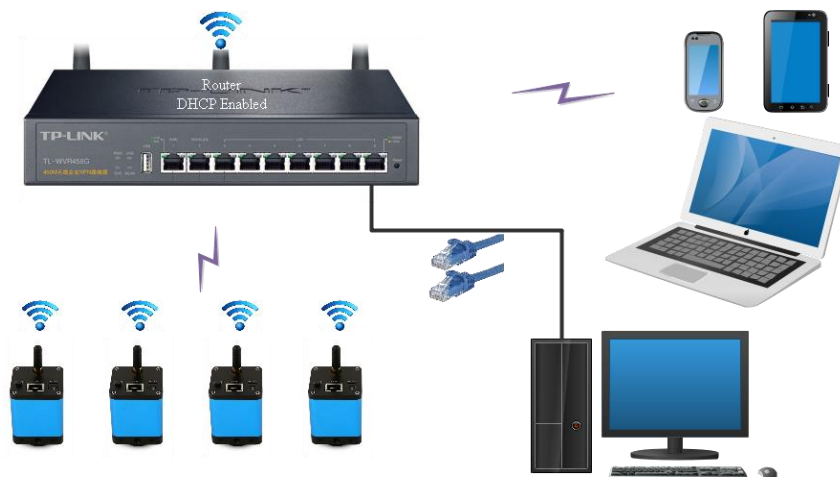In WLAN STA mode, the camera is supposed to connect to router.

Figure 3 Multi WECAM Cameras Connecting to the Router through the WLAN STA Mode

- Install the ToupView /ToupLite software on your PC. Alternatively, install the free ToupView App on the mobile device;
- Insert the power adapter to the camera's power jack;
- Connect the camera to the router with WLAN STA mode: Pop up the AP/STA Switch Button, the LED will flash slowly, this means the camera is in WLAN STA mode and has connected to the router(See Sec. 7 on how to set the router's name and password in the camera);
- Connect PC or mobile device to router(by LAN or WLAN). Start the ToupView/ToupLite software or

ToupView App and check the configuration. Normally, active WECAM cameras are automatically recognized. The connected cameras will be listed in the Camera List group of the Camera Control Bar of ToupView/ToupLite on PC. On mobile device, connected cameras will be listed in the Camera Thumbnail page of ToupView App. Click the corresponding camera to start the stream.

6.3 Connecting multi-cameras to the router through the LAN port for the network application

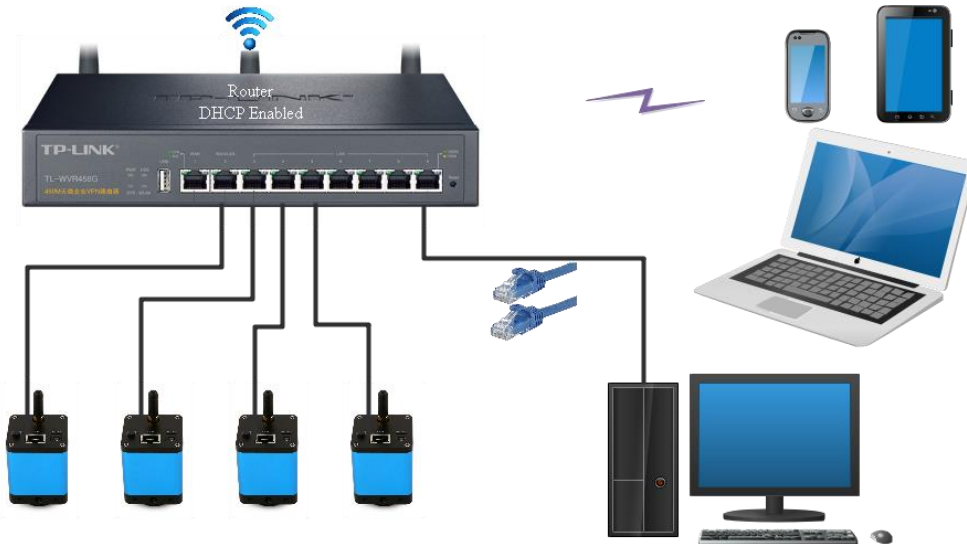In LAN mode, the camera connects to router by Ethernet cable.

Figure 4 Multi WECAM Cameras Connecting to the Router through the LAN Style

- Install the ToupView /ToupLite software on your PC. Alternatively, install the free ToupView App on the mobile device;
- Insert the power adapter to the camera's power slot;
- Connect the camera to the router with LAN method: Connect the camera and the router by Ethernet cable; If the connection is successful, the LED light will be on and the network indicator will be light up;
- Make sure that your PC or your mobile device is connected to the (by LAN or WLAN); Start the ToupView/ToupLite software or ToupView App and check the configuration. Normally, active WECAM cameras are automatically recognized. The connected cameras will be listed in the Camera List group of the Camera Control Bar of ToupView/ToupLite on PC. On mobile device, connected cameras will be listed in the Camera Thumbnail page of ToupView App. Click the corresponding camera to start the stream.

6.4 Connecting multi-cameras to the router through the LAN port/WLAN STA mode for the network application

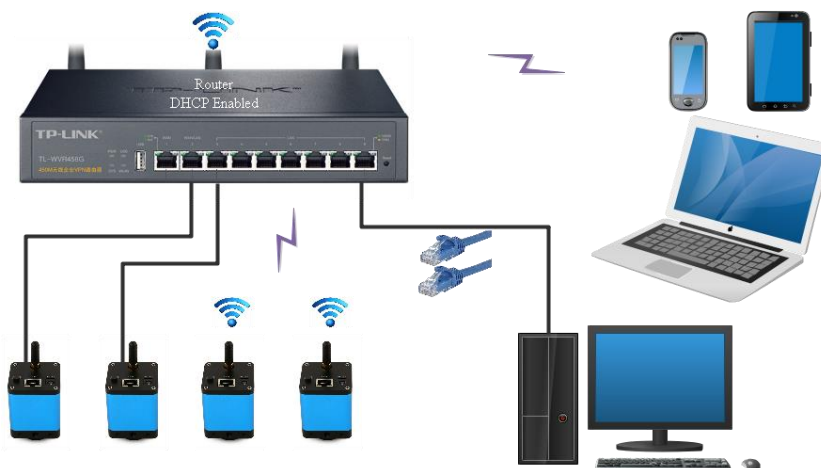In LAN/WLAN STA mode, the camera connects to router by Ethernet cable or with WLAN STA mode

Figure 5 Multi WECAM Cameras Connecting to the Router through the LAN/WLAN Style

- Install the ToupView /ToupLite software on your PC. Alternatively, install the free ToupView App on the mobile device;
- Insert the power adapter to the camera's power jack;
- Connect the camera to the router with WLAN STA mode: Pop up the AP/STA Switch Button, the LED will flash slowly, this means the camera is in WLAN STA mode and has connected to the router(See Sec. 7 on how to set the router's name and password in the camera);
- Connect the camera to the router with LAN method: Connect the camera and the router by Ethernet cable; If the connection is successful, the LED will light up steadily and the network indicator will be light up;
- Connect PC or mobile device to the router(by LAN or WLAN). Start the ToupView/ToupLite software or ToupView App and check the configuration. Normally, active WECAM cameras are automatically recognized. The connected cameras will be listed in the Camera List group of the Camera Control Bar of ToupView/ToupLite on PC. On mobile device, connected cameras will be listed in the Camera Thumbnail page of ToupView App. Click the corresponding camera to start the stream.

Note on data security

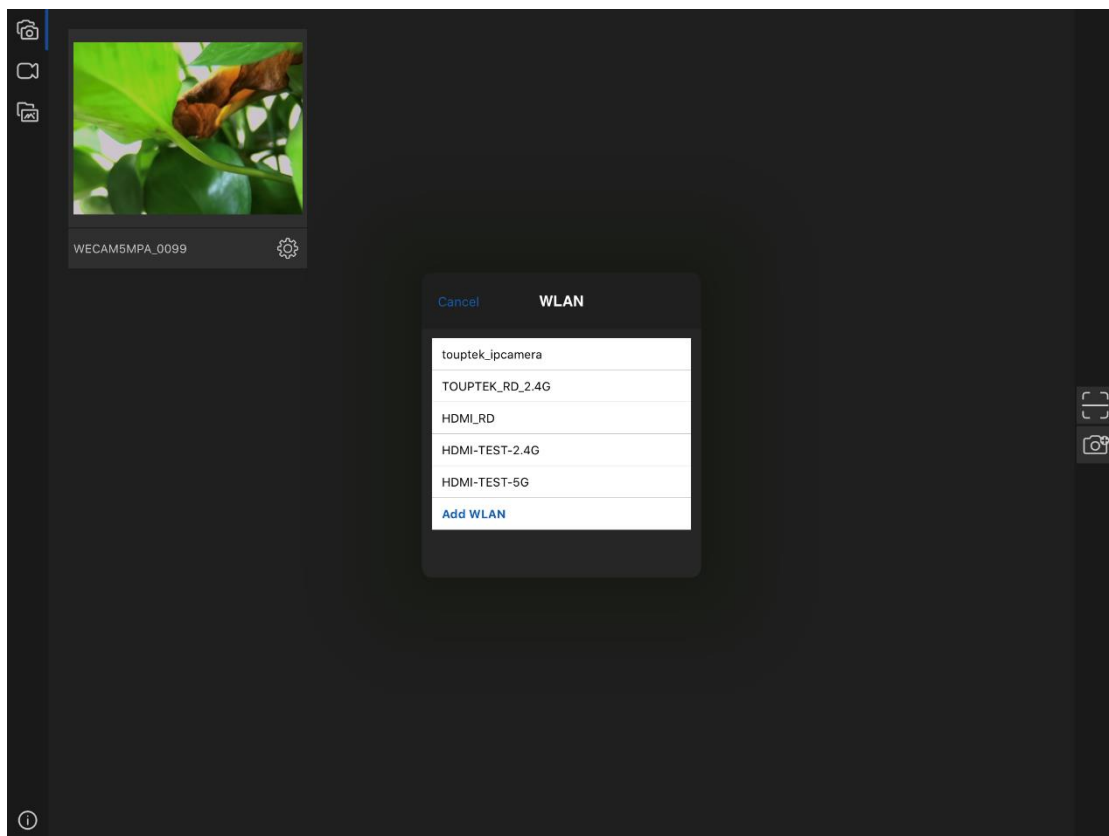The data transfer of the WECAM camera in LAN or WLAN is not encrypted. Anyone who is connected to the network and has installed the ToupView software or ToupView App, can see the live image of all active WECAM cameras.
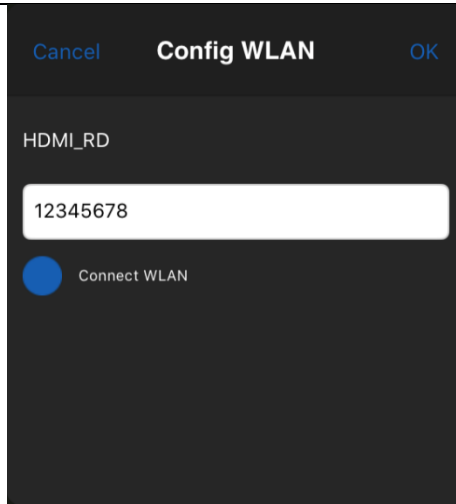
About the routers/switches

It is suggested that routers/switches supporting 802.11ac 5G segment should be selected to achieve better wireless connection experience.

7 Configure the Camera's WLAN STA Mode's SSID and Password

- Connect the WECAM series camera in WLAN AP mode according to Sec 6.2;
- Press the Setup button at the bottom right corner, a WiFi SSID setup dialog will popup；

- Select the SSID to be connected and input the Password, press OK to finish the SSID and Password setup process；

- If the pop-up UI does not have the desired SSID, press the Add WLAN item on the bottom and input SSID name and Password manually.