



User Guide

MS-4KCAM

4K UHD USB Camera



Copyright Notice

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Product specifications and information which were referred to in this document are for reference only. We may change, delete, or update any content at any time and without prior notice.

FC FCC Notice

This product complies with Part 15 of the FCC Rules. The operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.delete, or update any content at any time and without prior notice.

This product has been tested and found to comply with the limits for a Class A 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/television technician for help.

Class A ITE

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:



Warning Operating this equipment in a residential environment may cause radio interference.

CE EC Compliance Statement (Class A)

This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2014/30/EU.

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Note

- During the installation and use of the equipment, all electrical safety regulations of the country and region of use must be strictly observed.
- Please use the power adapter that comes standard with this product.
- Please do not connect multiple devices to the same power adapter (exceeding the capacity of the adapter may generate excessive heat or cause a fire).
- Do not rotate head of the camera by hand, otherwise it may cause mechanical failure.
- When installing this product on a wall or ceiling, secure the device securely. When installing, make sure that there are no obstacles within the rotation range of the gimbal; do not turn on the power until all installations are completed.
- To avoid heat build-up, keep ventilation around the device smooth.
- If the device emits smoke, smells, or makes noises, please turn off the power immediately and unplug the power cord, and contact the dealer in time.
- This device is not waterproof, please keep the device dry.
- This product has no user serviceable parts, damage caused by disassembly by the user is not covered by the warranty.



Notice: Specific frequencies of electromagnetic field may affect the image of the camera!

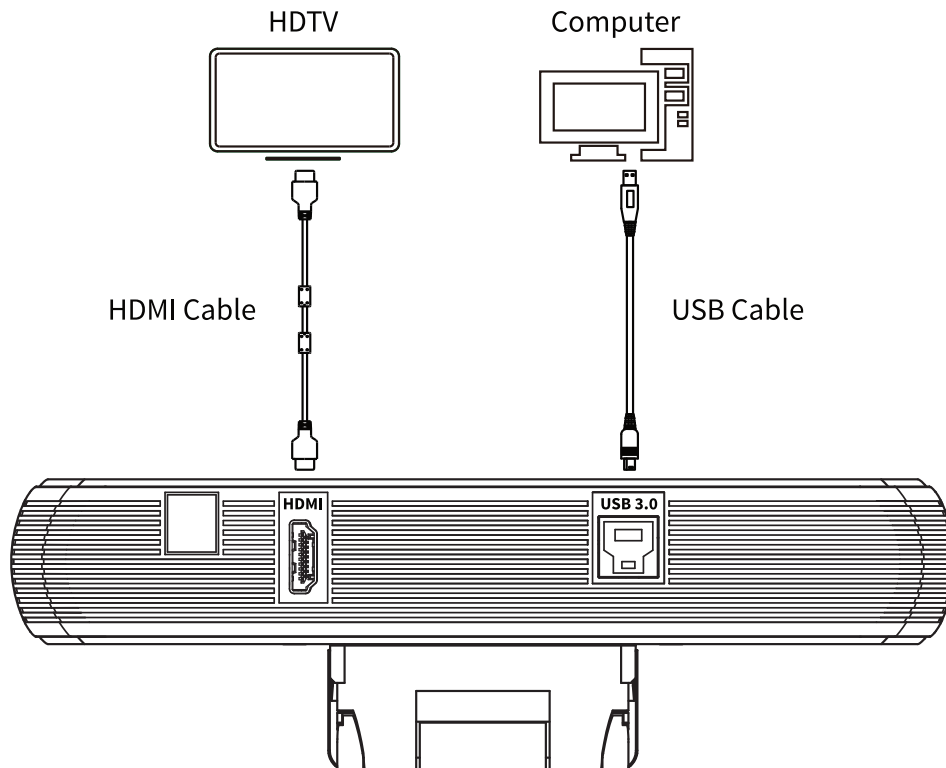
Packing List

When unpacking the package, check that all the supplied accessories are included:

Name	Quantity
Camera	1
USB Cable	1
Remote Control	1
User Manual	1

Quick Start

1. Please check that connections are correct before starting.



2. Connect the USB cable to the connector on the rear panel of the camera.
The power indicator on the front panel of the camera will turn on.
3. After the camera is powered on, it will start to initialize.

About the Product

4.1 Features

- **4K UHD**

Support 4K UHD, ultra-high definition with ultra-high resolution, provide up to 4K30/25 encoding output, and down compatible with 1080P and 720P etc.

- **USB 3.0**

Full-featured USB 3.0 interface, integrating power supply, video and audio, supports 1 USB video + audio and 1 HDMI signal source.

- **Lens**

Wide angle field of view up to 120°, small lens, large vision. Support EPTZ to brake without moving, image larger, see more clearly.

- **Built-in Microphone**

Built-in microphone array, omnidirectional pickup distance up to 6m. Support unique noise suppression algorithm and make your voice perfect.

- **Low Illumination**

The new CMOS image sensor with ultra-high SNR can effectively reduce the image noise under low illumination. The application of 2D and 3D noise reduction algorithm greatly reduces the image noise even under the condition of ultra-low illumination, it keeps the picture clean and clear, and the SNR of image is as high as 55dB.

- **Auto Framing**

Support intelligent auto framing function, the camera can automatically adjust to get a better composition as the seating level of people in the meeting room changes.

- **Easy Installation**

The standard damping rotary shaft bracket adapts to 100% of the monitors on the market, easy to install, stable and reliable.

4.2 Specifications

Camera	4K UHD USB Camera
Sensor	1/2.5 inch, CMOS, Effective pixels: 8.29M
Scanning Mode	Progressive
Lens Mount	M12
Lens 1 (optional)	Focus: f=3.5mm, FOV: 84°, (Support Auto Focus)
Lens 2 (default)	Focus: f=2.8mm, FOV: 120°
Minimum Illumination	0.5 Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Auto, Indoor, Outdoor, One Push, Manual, VAR
Camera Stand	Standard damping rotary bracket
Digital Noise Reduction	2D & 3D Digital Noise Reduction
Backlight Compensation	Supported
Horizontal Angle of View	71° ~ 8.2°
Vertical Angle of View	42.7° ~ 4.5°
Horizontal Rotation Range	~170°
Vertical Rotation Range	-30° ~ +90°
Pan Speed Range	1.7° ~ 100°/s
Tilt Speed Range	1.7° ~ 69.9°/s
H & V Flip	Supported
Image Freeze	Supported
PoE	Supported
Number of Preset	255
Preset Accuracy	0.1°

USB Features	
Operating System	Windows® 7 (only 1080P and below supported), Windows 8.1/10 or higher; macOS® 10.10 or higher; Linux (needed support UVC); Android
Hardware	<ul style="list-style-type: none"> 2.4 GHz Intel® Core 2 Duo CPU or higher 2 GB RAM or more USB 2.0 interface (4K required USB 3.0)
Color Compression	YUY2/MJPEG/H.264
Video Format	4K30/25, 1080P30/25, 720P30/25, 960x540P30/25, 40x360P30/25 etc.
USB Protocol	UVC 1.1
UVC PTZ Control	Supported (EPTZ)

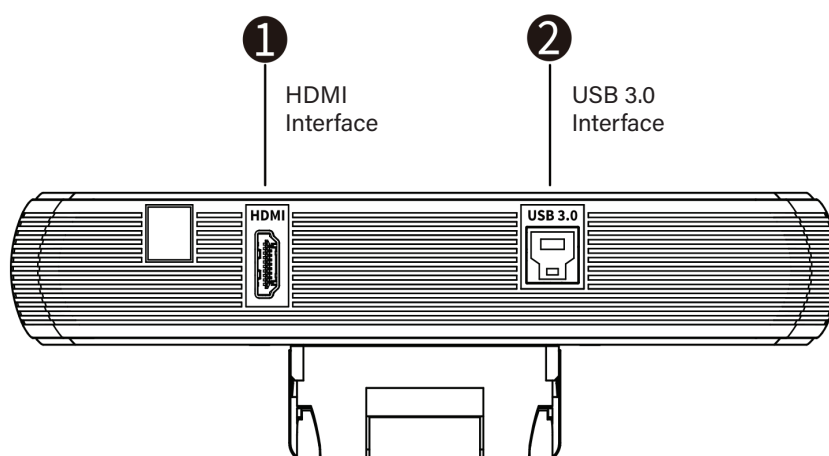
4.2 Specifications (continued)

Interface	
HDMI Interface	1 x HDMI: 1.4
USB Interface	1 x USB 3.0: Type B, female

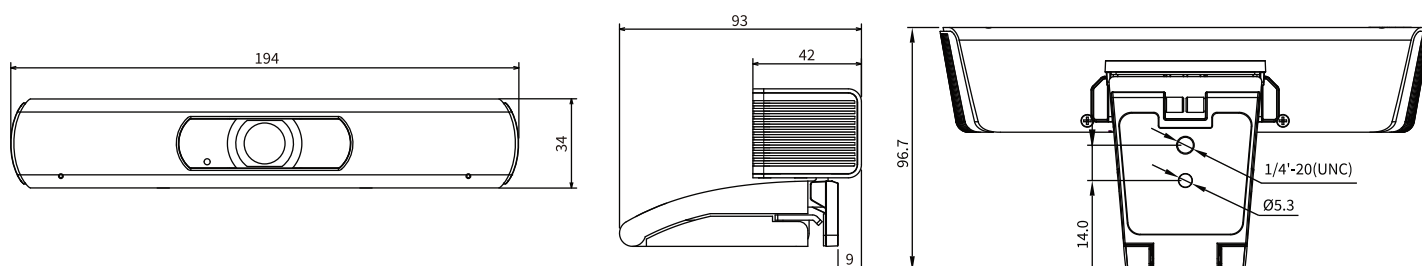
General Specifications	
Input Voltage	5V (USB Power Supply)
Input Current	0.6A (max.)
Operating Temperature	0°C~40°C (32°F~104°F), 95%RH
Storage Temperature	-40°C~60°C (-40°F~140°F), 95%RH
Power Consumption	3W (max.)
Dimension	194mm x 34mm x 42mm (without bracket)
Net Weight	About 0.5Kg

Product features and specifications are subject to change without notice.

4.3 Interface

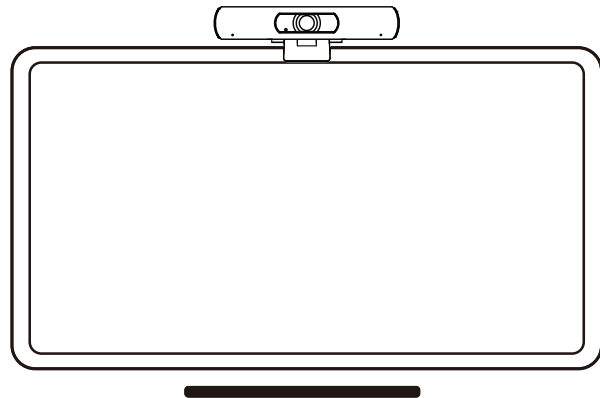


4.4 Dimensions

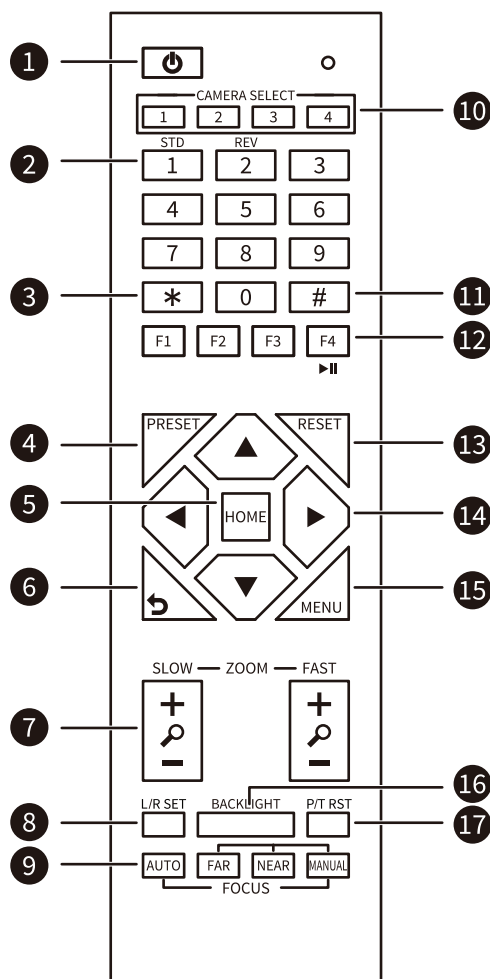


4.5 Installation

Camera can be placed on horizontal desktop or mounted on the monitor which thickness is $\leq 45\text{mm}$ as per the diagram:



4.6 Remote Control



1. (Standby) Key

Press to enter standby mode. Press again to resume to normal mode
Note: The power consumption in standby mode is approximately half of that in normal mode

2. Number Keys

To set preset or call preset

3. * Key

Use with other keys

4. PRESET Key

Successively press [PRESET] + Number key (0-9) to set preset position

5. HOME Key

Confirm selection or press to turn the lens back to the middle position

6. (Return) Key

Press to return to the previous menu

7. ZOOM Keys

- SLOW: Zoom In [+] or Zoom Out [-] slowly
- FAST: Zoom In [+] or Zoom Out [-] fast

8. L/R SET Key

- Standard: Simultaneously press [L/R SET] + 1
- Reverse: Simultaneously press [L/R SET] + 2

9. FOCUS Keys

Auto/Manual/Far-end/Near-end focus

10. CAMERA SELECT Keys

Press to select and control the camera

11. # Key

Use with other keys

12. IR Remote Control Keys

Successively press [*] + [#] + [F1]/[F2]/[F3]/[F4] to set the camera address 1/2/3/4

13. RESET Key

Successively press [RESET] + Number key (0-9) to clear preset position

14. PTZ Control Keys

After zooming, press arrow keys to perform panning and tilting. Press [HOME] key to face the camera back to front

15. MENU Key

Enter or exit OSD menu

16. BACKLIGHT Key

Backlight On/Off

NOTE:

- Effective only in auto exposure mode
- If there is a light behind the subject, the subject will become dark, press the backlight key to enable the backlight compensation. Press again to disable this function

17. P/T RST (PTZ Reset) Key

Function only applicable to the PTZ camera

Shortcut Set

F1: Tracking On

F4: Tracking Off

Successively press [*] + [#] + [1]:

OSD menu default English

Successively press [*] + [#] + [3]:

OSD menu default Chinese

Successively press [*] + [#] + [5]:

Turn off Microphone

Successively press [*] + [#] + [6]:

Quickly recover the default

Successively press [*] + [#] + [8]:

Check the camera version

Successively press [*] + [#] + [9]:

Turn on Microphone

GUI Settings

5.1 Menu

Press [MENU] key to display the main menu on the screen. Use direction keys to move the cursor to desired item and press the [HOME] key to confirm to enter the sub-menu.

MENU	
▶	Exposure
	Color
	Image
	Noise Reduction
	Setting
	Information
	Restore Default
	Exit

5.2 Exposure

When in main menu page, move the cursor to [Exposure] and press [HOME] key to confirm to enter the Exposure page as below.

EXPOSURE		
▶	Mode	Full Auto
	ExpCompMode	On
	ExpComp	1
	Gain Limit	7
	Backlight	Off
	DRC Strength	2
	Anti Flicker	50Hz
	Return	

Mode: Full Auto, Manual, Shutter Priority, Bright.

Shutter: 1/30s, 1/60s, 1/90s, 1/100s, 1/125s, 1/200s, 1/250s, 1/350s, 1/500s, 1/725s, 1/1000s, 1/1500s, 1/2000s, 1/3000s, 1/4000s, 1/6000s, 1/10000s (effective in Manual and Shutter Priority mode).

ExpCompMode (Exposure Compensation Mode): On, Off (effective in Full Auto mode).

ExpComp (Exposure Compensation Value): -7~7 (effective in ExpCompMode On).

Gain Limit (Maximum Gain Limit): 0~15 (effective in Full Auto and Bright mode).

Backlight: On, Off (effective in Full Auto mode).

Bright: 0~17 (effective in Bright mode).

DRC Strength: 0~8.

Anti Flicker: Off, 50Hz, 60Hz (effective in Full Auto and Bright mode).

5.3 Color

When in main menu page, move the cursor to [Color] and press [HOME] key to confirm to enter the Color page as below.

COLOR		
▶	WB Mode	Auto
	RG Tuning	1
	BG Tuning	1
	Saturation	100%
	Hue	7
	Return	

WB Mode (White Balance Mode): Auto, Indoor, Outdoor, One Push, Manual, VAR.

R Gain (Red Gain): 0~255 (effective in Manual mode).

B Gain (Blue Gain): 0~255 (effective in Manual mode).

Colortemp: 2500K~8000K (effective in VAR mode).

RG Tuning (Red Gain Tuning): -10~10 (effective in Auto, One Push and VAR mode).

BG Tuning (Blue Gain Tuning): -10~10 (effective in Auto, One Push and VAR mode).

Saturation: 60%~200%.

Hue: 0~14.

5.4 Image

When in main menu page, move the cursor to [Image] and press [HOME] key to confirm to enter the Image page as below.

IMAGE		
▶	Luminance	7
	Contrast	7
	Sharpness	4
	Flip-H	Off
	Flip-V	Off
	Gamma	EXT
	Style	Default
	LDC	8
	Return	

Luminance: 0~14.

Contrast: 0~14.

Sharpness: Auto, 0~15.

Flip-H: On, Off.

Flip-V: On, Off.

Gamma: EXT, Default, 0.45, 0.5, 0.56, 0.63.

Style: Default, Norm, Clarity.

LDC: Off, 1~10.

5.5 Noise Reduction

When in main menu page, move the cursor to [Noise Reduction] and press [HOME] key to enter the Noise Reduction page as below.

NOISE REDUCTION		
▶	2D NR	Auto
	3D NR	Auto
	Return	

2D NR (2D noise Reduction): Close, Auto, 1~5.

3D NR (3D noise Reduction): Close, Auto, 1~8.

5.6 Setting

When in main menu page, move the cursor to [Setting] and press [HOME] key to enter the Setting page as below.

SETTING		
▶	Language	English
	EPTZ	On
	Zoom Limit	3x
	HDMI setting	
	Uvc EXT setting	
	Osd EXT setting	
	Audio	
	Return	

Language: English, Chinese, French and Deutsch.

EPTZ: On, Off.

Zoom Limit: 1.5x, 2x, 3x, 4x, 8x (effective in EPTZ On).

HDMI Setting: Press [HOME] key to confirm to enter the HDMI Setting page as below:

HDMI SETTING		
▶	HDMI Enable	On
	DVI Mode	HDMI
	HDMI Format	4K@30
	Return	

HDMI Enable: On, Off.

DVI Mode: DVI, HDMI.

HDMI Format: 4K@30, 1080P30, 1080P60, 1080P50.

Uvc EXT Setting: Press [HOME] key to confirm to enter the Uvc EXT Setting page as below:

UVC EXT SETTING		
▶	H264 Enable	On
	NV12 Enable	Off
	Return	

H264 Enable: On, Off.

NV12 Enable: On, Off.

Osd EXT Setting: Press [HOME] key to confirm to enter the Osd EXT Setting page as below:

OSD EXT SETTING		
▶	Goto Preset 0	Off
	Tracking Mode	Off
	Return	

Goto Preset 0: On, Off.

Tracking Mode: Participants, Off.

Tracking Effect: Instantaneous, Smooth (effective in Tracking Participants mode).

Audio: Press [HOME] key to confirm to enter the Audio page as below:

AUDIO		
▶	Audio Enable	On
	Audio PC Mono	On
	Return	

Audio Enable: On, Off.

Audio PC Mono: On, Off (effective in Audio Enable On).

5.7 Information

When in main menu page, move the cursor to [Information] and press [HOME] key to confirm to enter the Information page to check the product information.

INFORMATION		
	Version	9.0.27
	Model	O54.V
	Date	2021-10-12
▶	Return	

5.8 Restore Default

When in main menu page, move the cursor to [Restore Default] and press [HOME] key to confirm to enter the Restore Default page as below.

RESTORE DEFAULT		
▶	Yes	
	No	
	Return	

Restore: Yes, No.



Notice

Press [HOME] key to confirm, all parameters will be restored to factory setting, include the IR Remote Address.



Note

GUI menu and device information are subject to change without notice.

Maintenance & Troubleshooting

Camera Maintenance

- Use soft cloth to clean camera cover.
- Please use a soft dry cloth to clean the lens. If the camera is very dirty, clean it with diluted neutral detergent. Do not use any type of solvents which may damage the surface.

Unqualified Application

- Do not shoot extremely bright objects (such as sunlight, etc.) for a long time,
- Do not operate in unstable lighting conditions, otherwise image will be flickering.
- Do not operate close to powerful electro-magnetic radiation, such as TV or radio transmitters, etc.

Troubleshooting Image

Image jitters after the camera is properly connected

- 1) Ensure that the camera installation is in stable position.
- 2) Check that any vibrating machinery or object near the camera.

Troubleshooting Control

Remote control does not work

- 1) Check and replace with new batteries.
- 2) Ensure that the camera working mode is correct.
- 3) Ensure that the address key of remote control can match the camera.



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