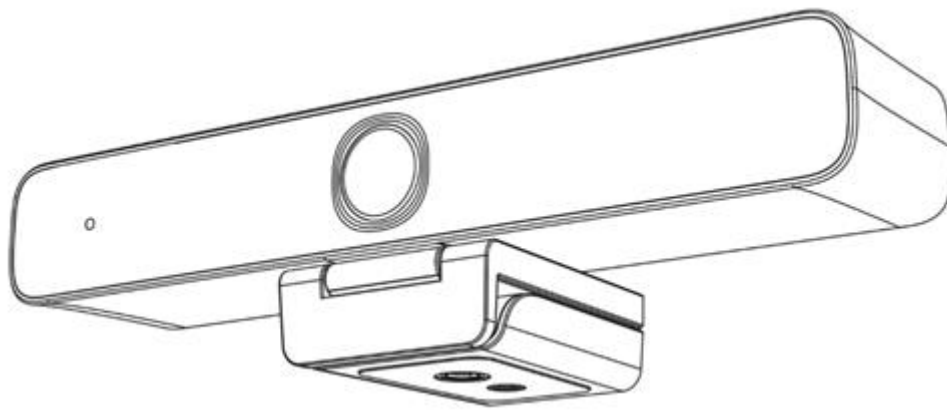


KAC-CAM-50M

Video Conference Camera



User Manual

This *User Manual* provides a brief introduction to the functions, installation, and operations of the KAC-CAM-50M Video Conference Camera.

The document describes two product flavors:

- KAC-CAM-**50L**. The field of view is 81 degrees (suitable for a **L**arge room)
- KAC-CAM-**50M**. The field of view is 100 degrees (suitable for a **M**edium room)

The target environment size is the only difference between the KAC-CAM-**50L** and the KAC-CAM-**50M**.



Safety Precautions

This *User Manual* describes the functions, installation, and operations related to the KAC-Cam50 camera. Read the manual thoroughly before installation and use.

How to Use

To prevent damage to this product or any product connected to it, use it within the specified range:

1. Do not expose the product to rain or moisture.
2. To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
3. Do not use the product beyond the specified temperature, humidity, or power supply specifications.
4. Wipe it with a soft, dry cloth when cleaning the camera lens. Wipe it gently with a mild detergent if needed. To avoid scratching the lens and affecting the image, do not use strong or corrosive detergents.

Electric Safety

Installation and use of this product must strictly comply with local electrical safety standards.

Handle with Care

Avoid damage to product caused by heavy pressure, strong vibration or immersion during transportation, storage and installation.

Install with Caution

1. Do not rotate the camera head violently otherwise it may cause mechanical failure.
2. This product should be placed on a stable desktop or other horizontal surface. Do not

install the product obliquely otherwise it may display an inclined image.

3. If the camera is installed on a TV or a computer, the base can be fixed by four double-sided adhesive trays.
4. Housing of this product is made of organic materials. Do not expose it to any liquid, gas or solids which may corrode the shell.
5. Ensure there are no obstacles within rotation range of the holder.
6. Do not power on before completing installation.

Do not Disassemble the Product Without Permission

This product contains no parts which can be maintained by users themselves. Any damage caused by dismantling the product by users without permission is not covered by the warranty.

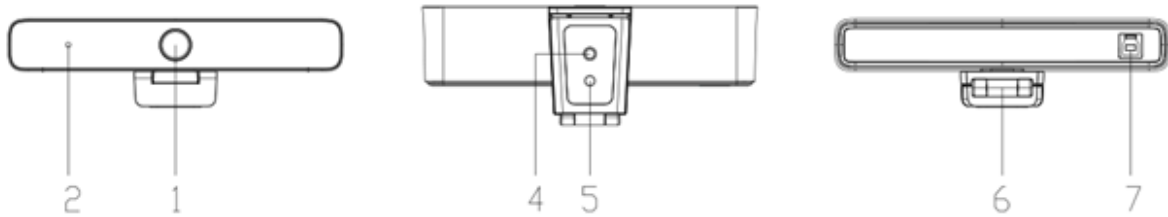
Magnetic Interference

Electromagnetic fields at specific frequencies may affect the image. This product is Class A. It may cause radio interference for household applications. Appropriate measures are required.

Quick Installation Instructions

The figure below illustrates the camera interface.

Camera Interface



- 1. Camera lens
- 2. Indicator Light

- 4. Tripod fixing hole
- 5. Positioning hole

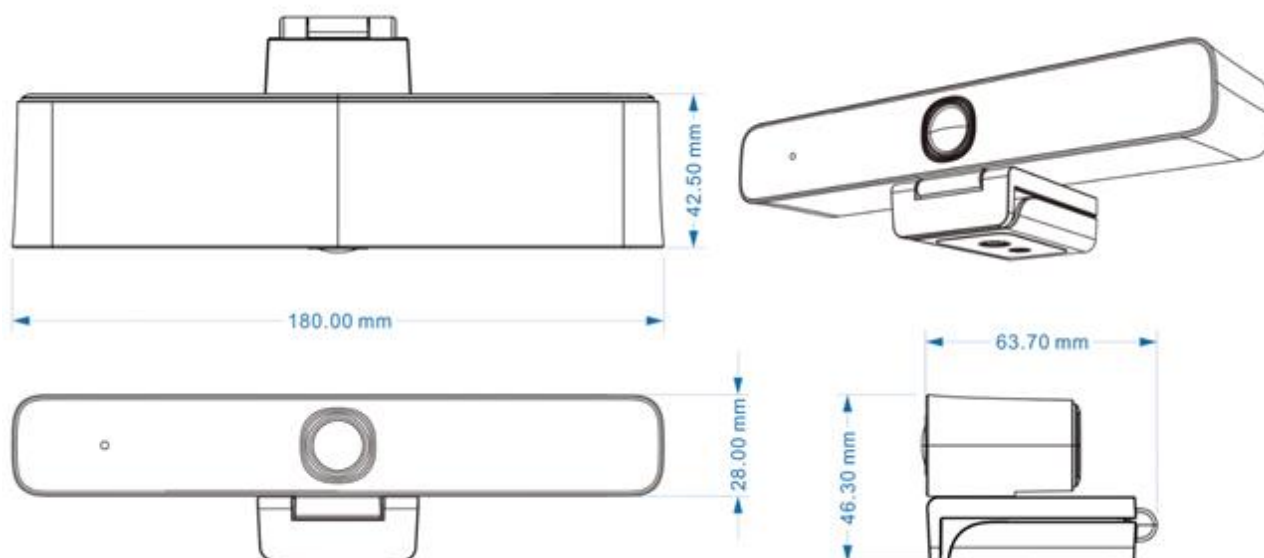
- 6. Bracket
- 7. USB3.0 interface

Camera Operation

1. Product Installation: Fix the device onto an LCD screen, on top of a computer; place it on a desktop, or on a tripod mounting.
2. Connect the camera using a USB cable to a computer, a video conference terminal, or any other USB input device. Log in to the video conference software and select a video device.

Product Overview

- **Product Model:** KAC-CAM-50
- **Camera Dimensions:**



- **Accessories:**
- Wireless remote controller
- USB3.0 Type-A to Type-B, 3-meter cable
- 2 * AAA batteries

Main Features

The camera includes integral AI functions which can automatically centrally frame all people in a meeting. It features smooth functionality and superior performance with advanced ISP processing algorithms that provide vivid images with evenly clear brightness, strong color layering, high resolution, and good color rendition. The product is easy and convenient to install and maintain and is stable and reliable.

- **4K UHD:** Employs a 1/2.5 inch, 8 million-pixel high-quality CMOS sensor; supports 4K UHD; provides 4K@30fps MJPG video resolution maximum; and provides clear UHD video and vivid expressions and movements. At the same time, it's compatible with 1080p and 720p resolution.
- **ePTZ:** ePTZ and 4x digital zoom
- **Dual stream output:** The USB3.0 port supports simultaneous main stream and sub-stream output.
- **Auto framing:** Includes an excellent facial detection algorithm which automatically adjusts the zoom according to the number of people in the meeting. It can frame all the people in the meeting and display them in the middle of the scene.
- **Wide view angle without distortion:**
 - KAC-CAM-50L. The field of view is 81 degrees (suitable for a **L**arge room)
 - KAC-CAM-50M. The field of view is 100 degrees (suitable for a **M**edium room)
- **Multiple Installations:** Standard equipped with a mold clamp. Easy to install on any device, be it LCD screen, PC, table, or tripod.
- **Easy to Use:** No need to download a driver; USB plug and play.
- **Wide Applications:** Personal video conferencing, enterprise video conferencing, Unified Collaboration (UC), etc.

Specifications

Parameter	KAC-CAM-50L	KAC-CAM-50M
Camera		
Image Sensor	1/2.5-inch high-quality 4K CMOS Sensor	
Effective Pixels	8.28MP 16:9	
Video output port	1* USB3.0, Type B, supports audio output over USB3.0	
View Angle	91°(D) / 81°(H) / 54°(V)	102°(D)/100°(H)/64°(V)
Video Format	<ul style="list-style-type: none"> ▪ Main stream: 3840×2160@30fps、1920×1080P@30fps/25fps、1280×720P@30fps/25fps, etc. ▪ Sub-stream:1280×720P@30fps/25fps; 640×480P@30fps/25fps; 320×172P@30fps/25fps, etc. 	
Min Illumination	0.1Lux (F1.8, AGC ON)	
Lens	f=3.24mm	f=2.26mm
Aperture	F2.1	F1.8
Digital zoom	4X	
Ultra-low illumination	On/Off	
White Balance	Auto / Manual/ One Push/ 3000K/ 3500K/ 4000K/ 4500K/ 5000K/ 5500K/ 6000K/ 6500K/ 7000K	
Focus	Auto / Manual	
Exposure	Auto / Manual	
Auto framing	On/Off/Sensitivity	
Backlight compensation	On/Off	
Dual stream	On/Off	
USB Feature		
Operation Systems	Windows 7 (1080p maximum), Windows 8.1, Windows 10; macOS™ 10.10 or higher, Linux (required for UVC support)	
Video Compression format	YUY2, NV12, MJPG, H.264	

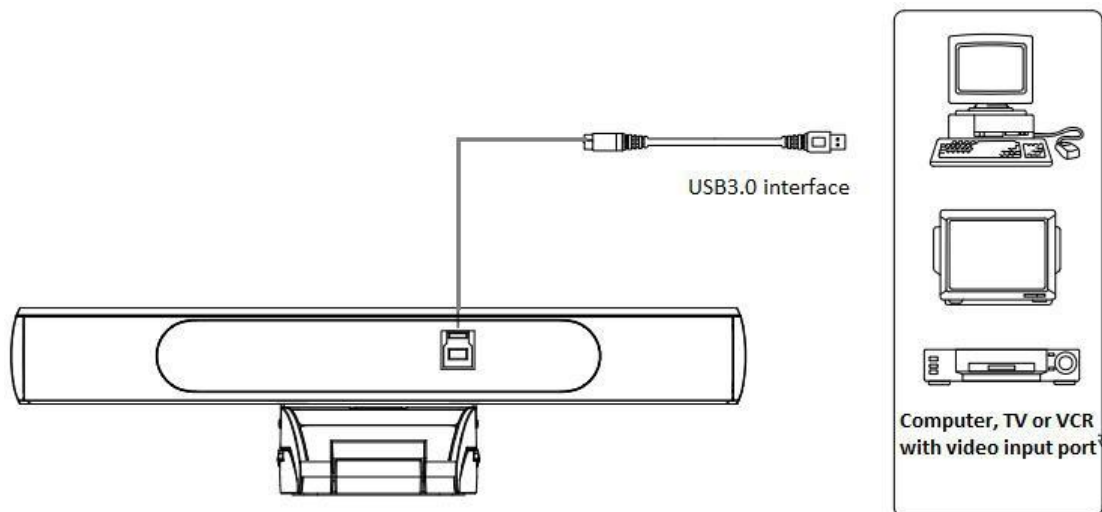
Parameter	KAC-CAM-50L	KAC-CAM-50M
USB communication protocol	UVC, UAC	
PTZ control	Supports EPTZ	
Hardware requirement	<ul style="list-style-type: none"> ▪ 2.4 GHz Intel@ Core 2 Duo processor or higher ▪ 2GB RAM or more USB 2.0/USB3.0 port (USB 3.0 is needed for 4K video) 	
Other Parameters		
Input Voltage	5V	
Input Current	1A (max.)	
Power consumption	5W (max.)	
Store Temperature	-10°C~+60°C	
Store Humidity	20%~90%	
Working Temperature	-10°C~+50°C	
Working Humidity	20%~80%	
Dimension	(W*H*D) 180mm×42.5mm×46.3mm	
Weight	Approximately 0.23 kg	
Application	Indoor	
Accessory	<ul style="list-style-type: none"> ▪ Wireless Remote Controller ▪ USB3.0 Type-A to Type-B 3-meter cable ▪ 2 * AAA batteries 	

Interface

External Interface

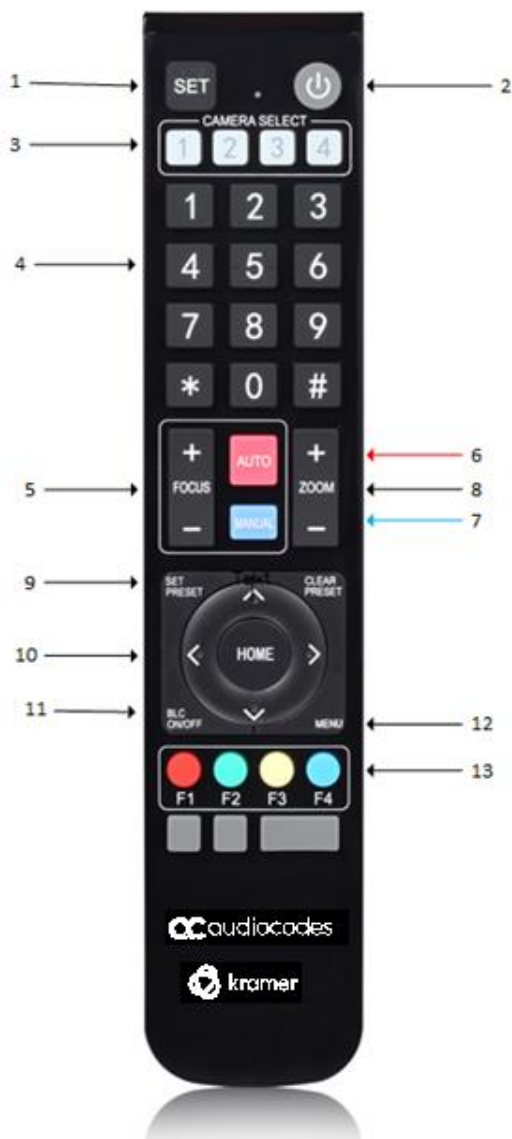
The figure below shows the external interface connections.

Interface Diagram



Application

Wireless Remote Controller



Keys Instructions

1. **SET:** Use in combination with other keys to confirm actions).
2. **Standby:** Press for the device to enter standby mode; press again for the device to redisplay the picture.
3. **CAMERA SELECT:** Select the camera to control.

4. **Number keys:** Set or call 0-9 presets.
5. **FOCUS** (unsupported)
 - + Focus in
 - - Focus out
6. **AUTO** (unsupported)
7. **MANUAL** (unsupported)
8. **ZOOM**
 - Press + to zoom in
 - Press – to zoom out
9. **SET PRESET | CLEAR PRESET**
 - **Set Preset:** Press and then press a number key (0-9) to set a position. Note that 10 presets can be set using the RC.
 - **Clear Preset:** Press and then press the number key (0-9) to clear a preset.
 - **To clear all presets:** Press the # key three consecutive times (see [Key Combinations](#) below for other possible key combinations)
10. **Pan/Tilt**
 - **Up:** Long-press ↑; release to stop
 - **Down:** Long-press ↓; release to stop
 - **Left:** Long-press ←; release to stop
 - **Right:** Long-press →; release to stop
 - **HOME:** Press for the camera lens to return to the middle position, or to enter the next menu.
11. **BLC ON/OFF:** Press to switch the back light compensation on or off.
12. **MENU**

Press to open or close the On-Screen Display (OSD) menu or return to the previous menu.
13. **Setting Camera Address**
 - **F1, F2, F3, F4.** Press the following sequence to set an address:

Press * + # + **F1** to set Camera Address 1

Press * + # + **F2** to set Camera Address 2

Press * + # + **F3** to set Camera Address 3

Press * + # + **F4** to set Camera Address 4

Key Combinations

Press # + # + # to clear all presets

Press * + # + **6** to restore defaults

Press * + # + **9** to flip switch

Basic Operations

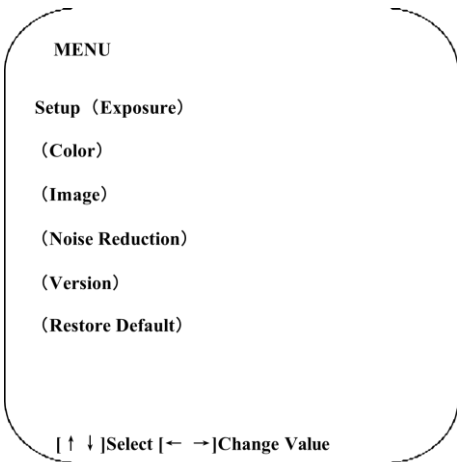
Pairing the RC with the Camera

1. Connect the camera to the PC using a USB3.0 Type-A to Type-B cable.
2. On the Remote control (RC), long-press the **SET** and * keys simultaneously for three seconds; the LED indicator on the RC starts flashing.
3. Release the **SET** and * keys.
4. Unplug the USB cable from the camera for one second and then plug it back in; the LED indicator on the RC turns off.

Pairing has successfully completed.

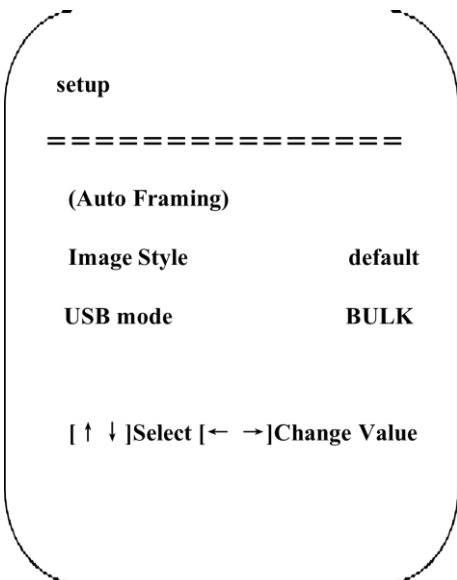
Menu Setting

To display the menu, press the **MENU** key under MJPG, YUY2, NV12 or H264 compression encoding format output. Use the scroll arrow to point at or highlight the selected item.



Setup Settings

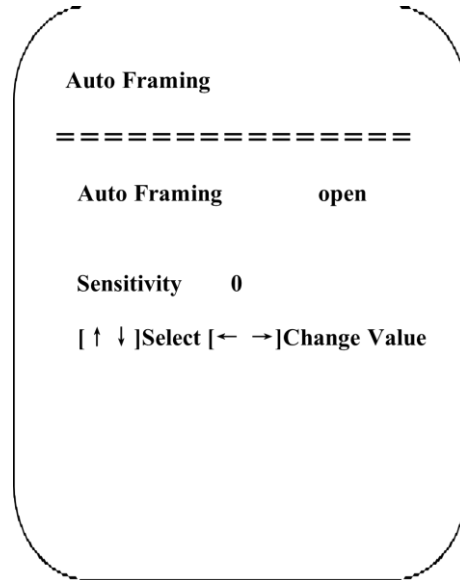
In the MENU settings, move the pointer to **Setup**, press the **HOME** key and enter into the **setup** settings:



- **image style:** Default, Normal, Clarity, Bright, Soft
- **USB Mode:** BULK, ISOC

Auto Framing

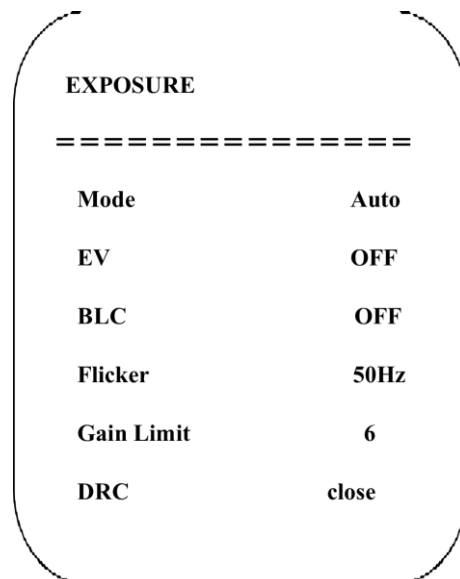
In the **setup** menu, move the pointer to (**Auto Framing**), press the **HOME** key and enter the **Auto Framing** settings:



- **Auto Framing:** close / open
- **Sensitivity:** 0~2 (only in open mode)

Exposure Settings

In the MENU settings, move the pointer to (**Exposure**), press the **HOME** key and enter the **EXPOSURE** settings:



- **Mode:** Auto, Manual, SAE, Bright
- **EV:** On/Off (available in Auto mode only)
- **BLC:** ON/OFF for options (available in Auto mode only).
- **Flicker:** OFF/50Hz/60Hz for options (available in Auto / SAE / Bright modes only)
- **Gain Limit:** 0~15 (available in Auto / Bright modes only)
- **DRC:** Close, 1~8 (available in Auto / Bright modes only)
- **Shutter:**
1/30, 1/50, 1/60, 1/90, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/1000, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 (available in Manual / SAE modes only)
- **Again:** 0~15 (only available in manual/SAE mode)

Color Settings

In the MENU settings, move the pointer to **(Color)**, press the **HOME** key and enter the **COLOR** settings:

COLOR	
=====	
WB Mode	Auto
RG Tuning	0
BG Tuning	2
Saturation	38
Hue	4

- **WB Mode:** Auto, Manual, OnePush, VAR
- **RG Tuning:** -10~10 (available only in Auto and Manual modes)
- **BG Tuning:** -10~10 (available only in Auto and Manual mode)
- **Saturation:** 0~50
- **Hue:** 0~8

- **AWB Sensitivity:** High/Middle/Low (available in Auto mode only)

Color Temp: 2400k-7100k (available in VAR mode only)

Image Settings

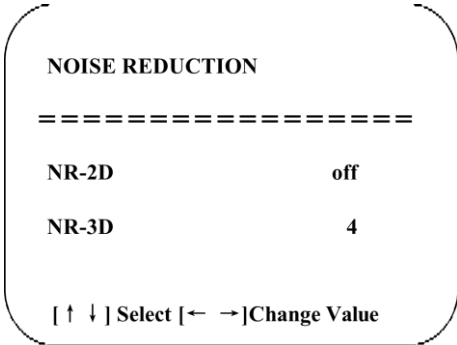
In the MENU settings, move the pointer to **(Image)**, press the **HOME** key and enter the **IMAGE** settings:

IMAGE	
=====	
Brightness	50
Contrast	50
Sharpness	5
Flip-H	OFF
Flip-V	OFF
B&W-Mode	Color
Gamma	Default
Low-Light Mode	Close

- **Brightness:** 0~100
- **Contrast:** 0~100
- **Sharpness:** 0~15
- **Flip-H:** On/Off
- **Flip-V:** On/Off
- **B&W Mode:** Color, B&W
- **Gamma:** 0.34, 0.39, 0.47, 0.50, default
- **Low-Light Mode:** Close, Open

Noise Reduction Settings

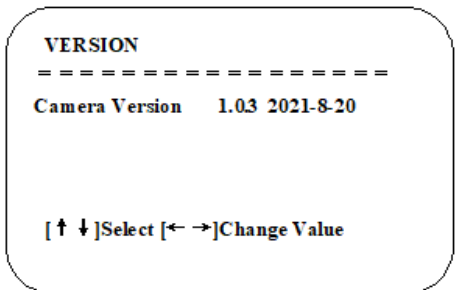
In the MENU settings, move the pointer to **(Noise Reduction)**, press the **HOME** key and enter the **NOISE REDUCTION** settings:



- **NR (Noise Reduction)-2D:** off, 1~7
- **NR (Noise Reduction)- 3D:** off, 1~8

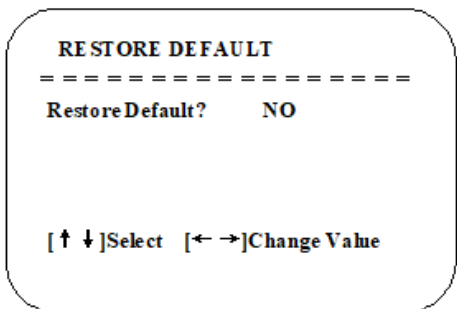
Version

In the MENU settings, move the pointer to **(Version)**. This field displays the current software version. It's read-only.



Restore Default

In the MENU settings, move the pointer to **(Restore Default)**, press the **HOME** key and enter the **RESTORE DEFAULT** settings.



Press the **← →** key to set **YES/NO** and then press **HOME** to confirm the selection.

Note: The video format and color style cannot be restored to factory defaults.

Maintenance and Troubleshooting

This section shows how to maintain and troubleshoot the device.

Maintenance

1. Disconnect the camera if it has not been in use for a long time.
2. Use soft cloth or tissue to clean the camera cover.
3. Wipe the camera lens with a soft, dry cloth when cleaning. Wipe it gently with a mild detergent if required. Do not use strong or corrosive detergents to avoid scratching the lens and affecting the image.

Troubleshooting

No Video Output

1. Check whether the USB cable is securely connected and that the power indicator light is ON.
2. Check whether the camera can perform a self-check after it has restarted.
3. Restart the PC.
4. Check whether the camera is successfully recognized by your PC.

Sometimes an Image is not Displayed

- Check the USB cable quality and whether it is securely connected.

Image Dithering when Zooming-in or Zooming-out

- Check whether the camera installation position is stable.

Remote Controller does not work

1. Set the camera address to **1** (the camera address is restored to **1** after restoring default settings).
2. Repeat the pairing procedure between the Wireless Remote Controller and the camera.
3. Replace the AAA batteries.

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