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Hall Technologies • 1234 Lakeshore Dr Suite #150 Coppell, TX 75019 • halltechav.com

HT-CAM-4K-EPTZ
Auto Framing 4K EPTZ Camera

User Manual

Version: 1.0

⚠️ Attentions

This manual introduces functions, installations, and operations for this camera in details. Please read this manual carefully before installation and use.

1. **Cautions**
   1.1. Avoid damage to product caused by heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
   1.2. Housing of this product is made of organic materials. Do not expose it to any liquid, gas or solids which may corrode the shell.
   1.3. Do not expose the product to rain or moisture.
   1.4. To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
   1.5. Do not use the product beyond the specified temperature, humidity, or power supply specifications.
   1.6. Wipe it with a soft, dry cloth when cleaning the camera lens. Wipe it gently with a mild detergent if needed. Do not use strong or corrosive detergents to avoid scratching the lens and affecting the image.
   1.7. This product contains no parts which can be maintained by users themselves. Any damage caused by dismantling the product by user without permission is not covered by warranty.

2. **Electrical Safety**
   Installation and use of this product must strictly comply with local electrical safety standards.

3. **Install**
   3.1 Do not rotate the camera head violently, otherwise it may cause mechanical failure.
   3.2 This product should be placed on a stable desktop or other horizontal surface. Do not install the product obliquely, otherwise it may display inclined image.
   3.3 Ensure there are no obstacles within rotation range of the holder.
   3.4 Do not power on before completely installation.

4. **Magnetic Interference**
   Electromagnetic fields at specific frequencies may affect the video image. This product is Class A. It may cause radio interference in household application. Appropriate measure is required.

Table of Contents

1. Camera Installation

1.1 Camera Interface
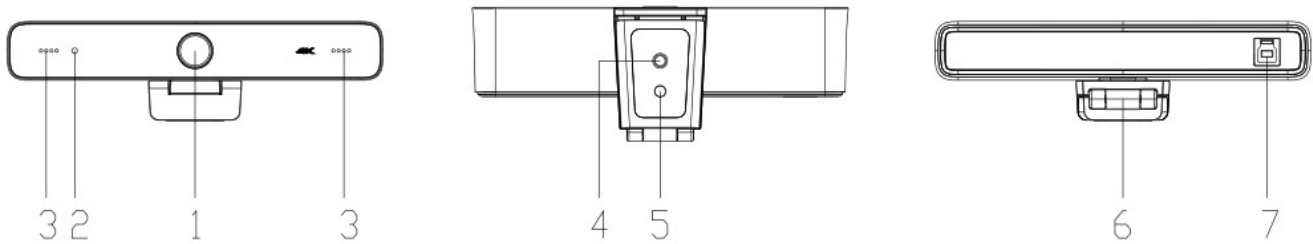
Figure 1.1 Product Interfaces

1. Camera Lens
2. Indicator Light
3. Built-in MIC

4. Tripod Fixing Hole
5. Positioning Hole
6. Bracket

7. USB3.0 Interface

1.2 Camera Operation

1. Product Installation: Fix the device on LCD screen, top of computer; directly put it on a desk or on a tripod mounting.

2. Connect the camera via USB cable to a computer, video conference terminal or other USB input device. Log in to the video conference software and select the device to see the image output.

2. Product Overview

2.1 Product Introduction

2.1.1 Model
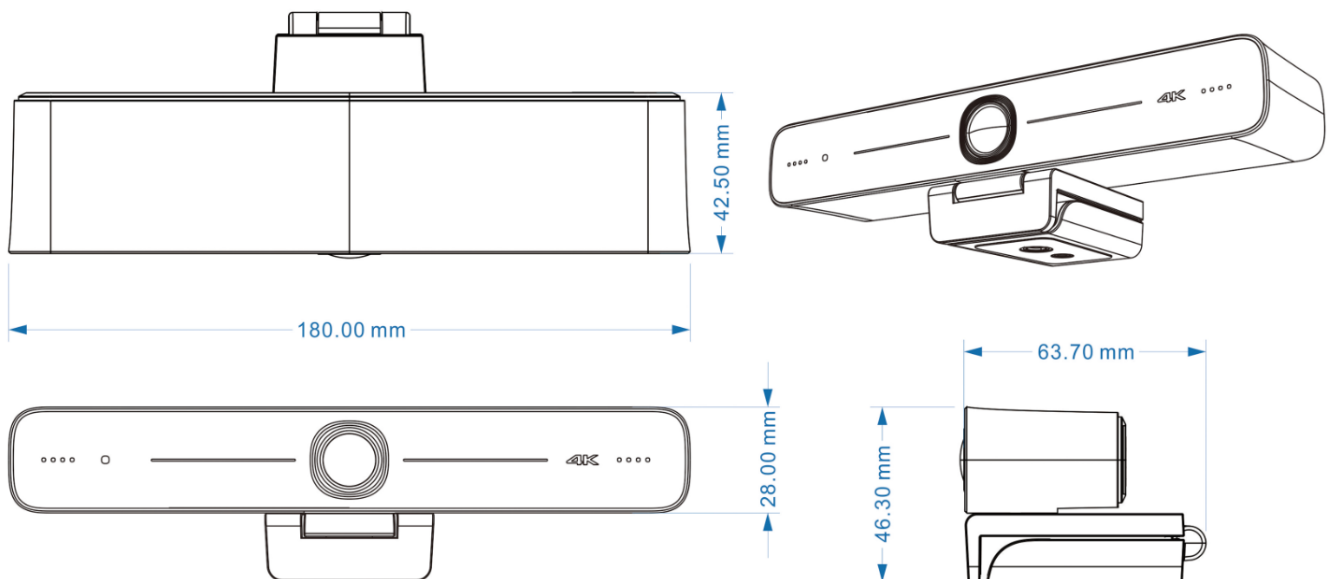HT-CAM-4K-EPTZ *100° Fixed Lens*

2.1.2 Dimension

Figure 2.2 Product Dimensions

2.1.3 Accessory
Standard Accessory – IR Remote Control, USB3.0 Cable, User Manual

2.2 Main Features

HT-CAM-4K-EPTZ is a 4K ultra-high-definition EPTZ camera with a new design. With AI intelligence, it can frame according to the number of people in the scene, and the characters will be framed in the middle. It has advanced functionality and superior performance, which employ advanced ISP processing algorithms to provide vivid images. These images are clear and bright, with strong colour layering, high resolution, and fantastic colour rendition. It is easy and to install and maintain together with being stable and reliable.

- **Ultra HD 4K Resolution:** 1/ 2.8-inch-high quality CMOS sensor. Resolution is up to 4K with frame rates up to 30fps (MJPG) or 30fps (H.264); compatible with 1080P and 720P.
- **ePTZ:** ePTZ and 10X digital Zoom.

- **Built-in MIC:** Built-in two omni-directional MIC pickups; with unique noise suppression algorithm, effective pickup distance up to 6 meters.
- **Auto Framing:** Employing a superior face detection algorithm to intuitively and automatically frame according to the number of people in the scene, keeping the characters in the middle.
- **Wide FOV:** 83°/100°/120°wide angle and small distortion lens options.
- **Video output interface:** Video output interface USB3.0
- **Multiple Audio/ Video Compression Standards:** Supports H.264, MJPG, YUY2, NV12 video compression to make video play smoothly.
- **Low Noise and High SNR:** Super high SNR image is achieved with low noise CMOS. Even in ultra-low light situations, the picture remains clean and clear.
- **Multiple Installation Methods:** Standard equipped with screen clamp. Easy to install on any devices,such as LCD screens, laptops, tables, and a tripod.
- **Easy to Use:** No need to download any drivers; USB 3.0 Plug and play; Wide Applications: Personal video conferencing, enterprise video conferencing, collaboration meetings, etc.

2.3 Technical Parameter

Model			
Camera Parameter			
Sensor	1/2.8-inch-high quality 4K CMOS sensor		
Effective Pixels	8.28MP,16：9		
Video Interface	1 Channel USB 3.0 output, Type B; Support audio signal output		
Audio input	2*Built-in MIC pickup		
Video Format	MJPG：3840*2160@30 /2560*1440@30 /1920*1080@30 /1600*896@30 /1280*720@30 /1024*576@30 /960*540@30 /800*600@30 /800*448@30 /720*576@30/ 720*480@30 /640*480@30 /640*360@30 /480*270@30 /352*288@30 /320*240@30 H264：3840*2160@30 /2560*1440@30 /1920*1080@30 /1600*896@30 /1280*720@30 /1024*576@30 /960*540@30 /800*600@30 /800*448@30 /720*576@30/ 720*480@30 /640*480@30 /640*360@30 /480*270@30 /352*288@30 /320*240@30 YUY2：1920*1080@30 /1280*720@30 /1024*576@30 /800*600@30 /800*448@30 /640*480@30 /640*360@30 /480*270@30 /320*180@30 NV12：1920*1080@15 /1280*720@30 /1024*576@30 /800*600@30 /800*448@30 /640*480@30 /640*360@30 /480*270@30 /320*180@30		
View Angle	115°（D）/100°(H)/56°(V)		
Focal Length	f=2.26mm		
Aperture	F1.8±5%		
Digital Zoom	10X		
Minimum Illumination	0.1Lux (F1.8, AGC ON)		
White Balance	Auto / Manual		
Focus	Manual		
Exposure	Auto / Manual/		
BLC	On/Off		
SNR	≥50dB		

| USB Feature	
Operation Systems	Windows 7(1080p or lower), Windows 8.1, Windows 10 ; macOS™ 10.10 or higher; Android ； Linux (UVC support)

Video Compression Format	YUY2, NV12, MJPG, H264
USB Audio	Support
USB Communication Protocol	UVC, UAC
PTZ Control	Support EPTZ
Hardware Requirement	2.4 GHz Intel@ Core 2 Duo or higher,2GB or higher, USB 3.0 port (USB 3.0 for 4K)

Other Parameter	
Input Voltage	5V
Input Current	1A(max)
Power Consumption	5W(max)
Stored Temperature	-10℃～+60℃
Stored Humidity	20%～90%
Working Temperature	-10℃～+50℃
Working Humidity	20%～80%
Dimension	180mm×42.5mm×46.3mm
Weight	Around 0.3kg
Working Environment	Indoor
Accessory	User Manual, USB 3.0 cable

2.4 Interface Instruction

2.4.1 External Interface

Figure 2.4 Wiring Diagram

USB3.0 Connection

Computer, TV or VCR with video input interface
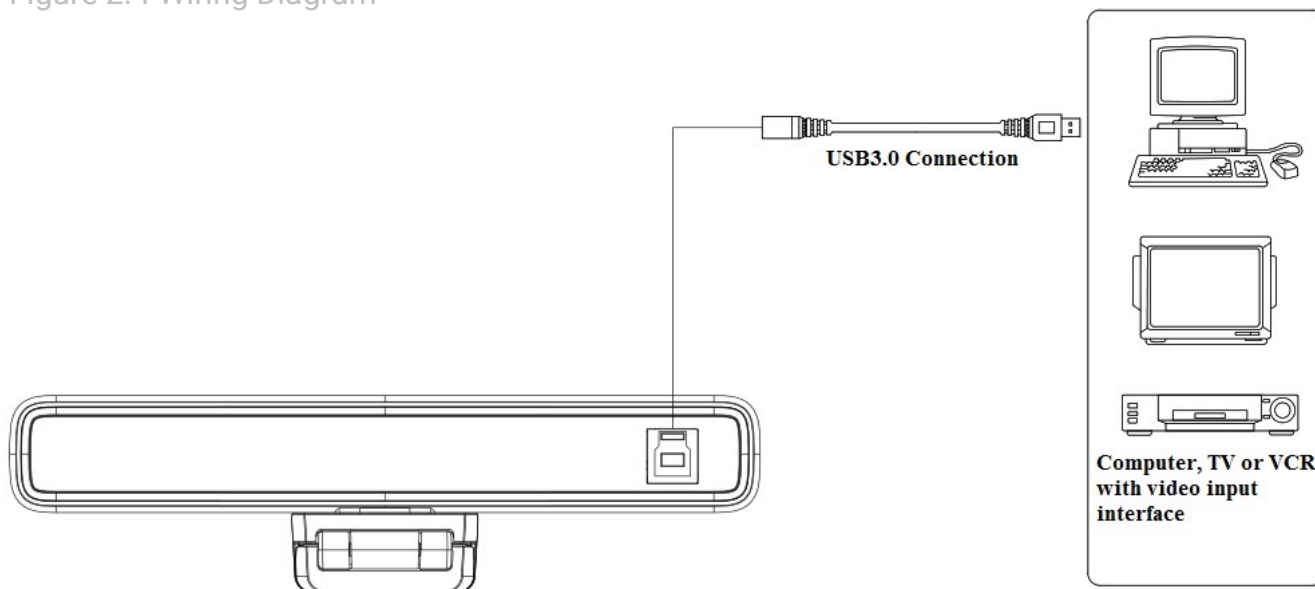
3. Application Instruction

3.1 Remote Control
3.1.1 Keys Introduction

1. Infrared indicator light

2. Stand By
The device enters standby mode after pressing
it once, and the device re-displays the picture
after pressing it again.

3. Menu Button
Enter/exit the OSD menu or return to the previous menu.

4. Pan/Tilt Control
Up: press ▲
Down: press ▼
Left: press ◄
Right: press ►

Press and hold the up/down/left/right key, the
pan/tilt movements will keep running.
【OK】　Camera lens will return back to the middle
position; Enter next menu

5. Number key
Number keys 1, 2, 3: preset position setting, calling, or deleting
Note: Short press for 1s [preset position recall]; long press
for 3s [preset position setting]
Long press for 5s [preset delete]

6. Zoom Control
【⊕】 : press 【⊕】 key to zoom in
【⊖】 : press 【⊖】 key to zoom out

7. Auto Framing Function Key

3.1.2 Applications

1. In this manual, "press the key" means a click rather than a long-press, and a special note will
be given if a long-press for more than one second is required.

2. When a key-combination is required, do it in sequence. For example, "【*】 + 【#】 + 【F1】" means press "【*】" first and then press "【#】" and last press "【F1】".

1. Infrared indicator light
1. Flashing (red): Sending instructions
2. No flashing: do not send instructions

2. Standby, Menu Setting
1. Standby button: ⏻ turn on or turn off the camera image
2. Menu key: ☰ call up the camera OSD menu

3. Pan/Tilt Control
Rotate up: press 【▲】 key Rotate down: press 【▼】 key

Rotate to the left: press the 【◀】 key

Rotate to the right: press the 【▶】 key

Middle position: press 【OK】 key

Long press the up, down, left, and right rotation buttons, it will continue to rotate from slow to fast until the end of the stroke; release it halfway to stop the rotation.

4. Preset position setting, calling, deleting
1. Save the preset position: Long press (within 3s-5s) one of the number keys 1 to 3, and a preset position corresponding to the number key will be preset.
2. Call the preset position: directly press the number keys 1 to 3 to call the saved preset position.
3. Delete preset position: Long press (5s) one of the number keys 1 ～ 3 to delete a preset position corresponding to the number key.
Note: If the number key is not preset, it is invalid.
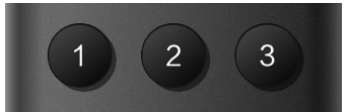
5. Zoom Control
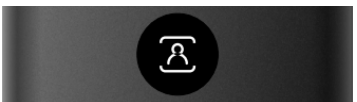1. Zoom in the lens: press the 【⊕🔍】 key

2. Zoom out the lens: press 【⊖🔍】 key

3. Long press these two buttons, it will continue to zoom in/out; release it halfway and stop.

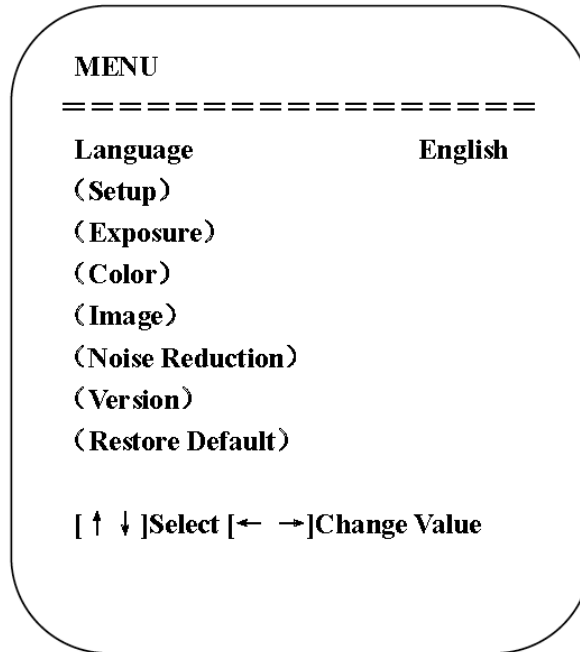## 6. Auto Framing Function On/Off
Turn on/off Auto Framing Function

3.2 Menu Introduction
3.2.1 Main Menu

Press 【MENU】 key under MJPG, YUY2, NV12 or H264 compression encoding format output to display the menu, using scroll arrows to point at or highlight the selected items.

```
MENU
==================
Language                    English
（Setup）
（Exposure）
（Color）
（Image）
（Noise Reduction）
（Version）
（Restore Default）


[↑↓]Select [← →]Change Value
```

1. Language

  1. Language Setting press 【← →】 key to select Language

2. System Setting

Move the pointer to the (Setup) in the Main Menu, click the 【OK】 key and enter into the SYSTEM SETTING menu as shown below:

```
Setup
==================
Image Style                  Default
(Auto Framing)



[↑↓]Select [← →]Change Value
```
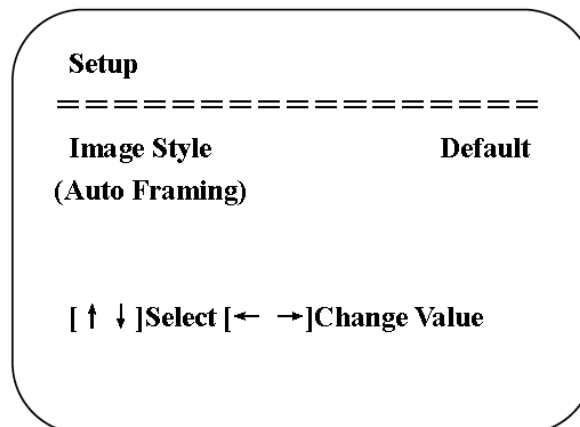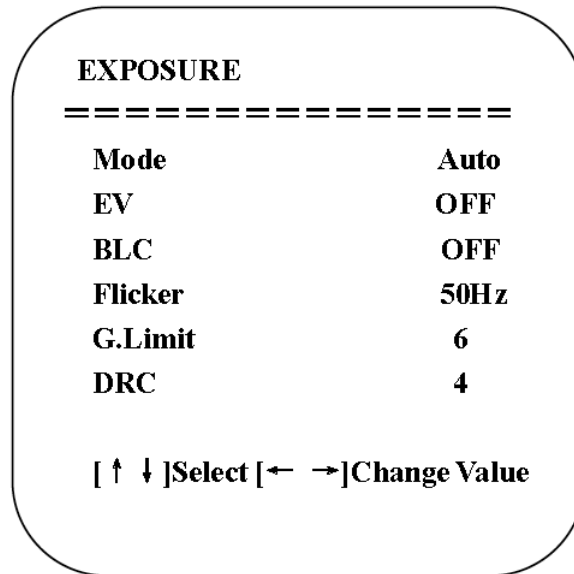
Image Style: default / standard / clear / bright / soft can be set
Intelligent zoom: on / off

3. Exposure Setting

Move the pointer to (EXPOSURE) in the Main Menu, click the 【OK】 and enter the EXPOSURE SETTING menu as follows:

```
EXPOSURE
===============
   Mode            Auto
   EV              OFF
   BLC             OFF
   Flicker         50Hz
   G.Limit         6
   DRC             4

   [ ↑ ↓ ]Select [← →]Change Value
```

Mode: Auto, Manual, Shutter priority and Brightness priority.
EV: On/Off (only available in auto mode)
Compensation Level: -7~7 (only available in auto mode when EV is ON)
BLC: ON/OFF for options (only available in auto mode)
Anti-Flicker: OFF/50Hz/60Hz for options (only available in Auto/Iris priority/Brightness priority modes)
Gain limit: 0~15(only available in Auto/ Iris priority /Brightness priority mode)
WDR: Off, 1~8
ShutterPriority:1/30,1/50,1/60,1/90,1/100,1/120,1/180,1/250,1/350,1/500,1/1000,1/2000,1/3000,1/4000,1/6
000, 1/10000 (only available in Manual and Shutter priority mode)
Brightness: 0~23 (only available in Brightness priority mode)

4. Colour

Move the pointer to the (COLOUR) in the Main Menu, click the 【OK】 and enter the COLOUR sub menu as follows:

```
COLOR
================
WB Mode            Auto
Saturation         100%
Hue                4
AWB Sensitivity    High

[↑ ↓]Select  [← →]Change Value
```

WB Mode: Auto, Manual, One Push, Specified color temperature
Saturation: 60%,70%,80%,90%,100%,110%,120%,130%,140%,150%,160%,170%,180%,190%,200%
AWB Sensitivity: high/middle/low (only available in automatic mode)
Chroma: 0~8

5. Image

Move the pointer to the (IMAGE) in the Menu, click the 【OK】 and enter into the IMAGE sub menu as follows:

```
IMAGE
================
Brightness         7
Contrast           7
Sharpness          5
Flip-H             OFF
Flip-V             OFF
B&W-Mode           Color
Gamma              Default
Low-Light Mode     Close
[↑ ↓]Select [← →]Change Value
```

Brightness: 0~14
Contrast: 0~14
Sharpness: 0~15
Flip-H: On/Off
Flip-V: On/Off
B&W Mode: color, black/white
Gamma: Default/0.34/0.39/0.47/0.5
Minimum Illumination: On/Off

6. Noise Reduction

Move the pointer to the (NOISE REDUCTION) in the Menu, click the 【OK】 and enter the NOISE REDUCTION menu as follows:

```
NOISE REDUCTION
=================
NR-2D                    OFF
NR-3D                    4

[ ↑ ↓ ]Select [← →]Change Value
```
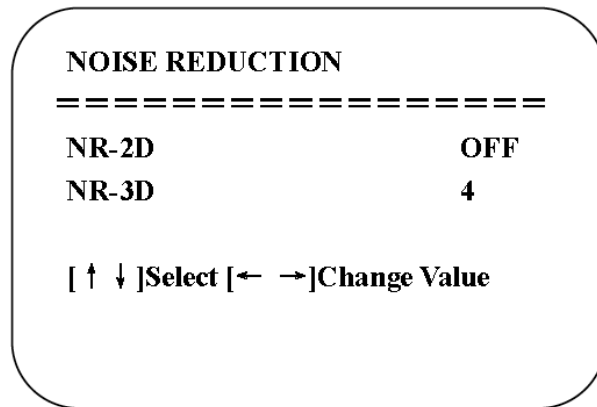
2D Noise Reduction: Auto, close, 1~7
3D Noise Reduction: Close, 1~8

7. Version

Move the pointer to the (VERSION) in the Main Menu, click the 【OK】 and enter the (VERSION) as follows:

```
VERSION
=================
Camcra Version      1.0.0   2020-12-16


[ ↑ ↓ ]Select [← →]Change Value
```
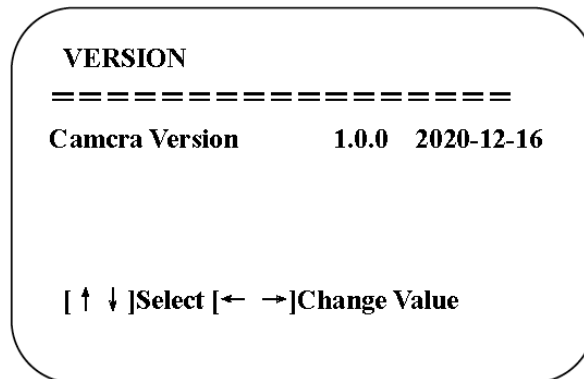
8. Restore Default

Move the pointer to the (RESTORE DEFAULT) in the Main Menu, click the 【OK】 and enter the RESTORE DEFAULT as follows:

```
        RESTORE DEFAULT
 =================
  Restore   Default?          NO




  [ ↑ ↓ ]Select   [← →]Change Value
```
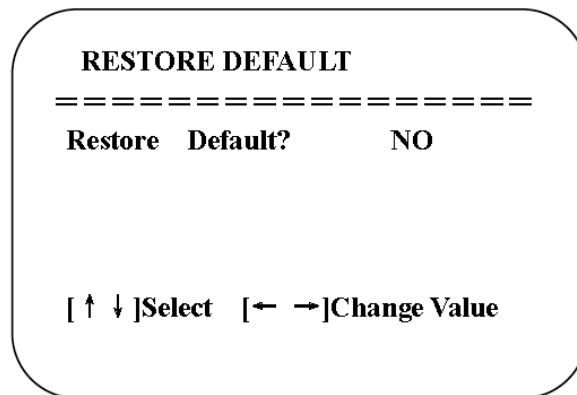
Restore default: YES/NO. Colour style and video format cannot be restored to factory default

Note: If the address of former remoter is not 1 but another one from 2, 3, 4, the corresponding camera address will restore to 1 when all parameters or system parameters are restored. User should change the remoter address to be 1 (press No.1 according to the camera so to get normal operation)

4. Maintenance and Troubleshooting

4.1 Camera Maintenance

1. Please power off the camera and disconnect the power adapter and socket if it is not going to be used for a long period of time.
2. Use a soft cloth or tissue to clean the camera cover.
3. Wipe it with a soft, dry cloth when cleaning the camera lens. Wipe it gently with a mild detergent if needed. Do not use strong or corrosive detergents in order to avoid scratching the lens and affecting the video quality.

4.2 Troubleshooting

1. No video output
  a. Check whether USB cable is connected well and the power indicator light is ON.
  b. Check if the machine could do a self-check after restarting.
  c. Restart the computer to check that the computer is operating normally.
  d. Check whether the video output cable or video display is normal
  f. Check whether the camera is properly recognized by the PC
2. No image sometimes
  a. Check the USB cable quality and that it is connected well.

5. Copyright Statement

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