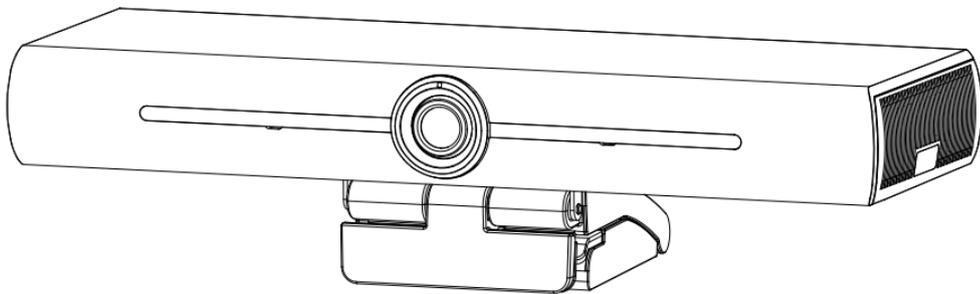




# **BG-EPTZ-AF**

## **AI 4K UHD Video Conference Camera**

User Manual



## Content

<b>ATTENTION .....</b>	<b>1</b>
<b>1. FAST INSTALLATION.....</b>	<b>2</b>
1.1 CAMERA INTERFACE .....	2
1.2 CAMERA OPERATION .....	2
<b>2. PRODUCT OVERVIEW.....</b>	<b>3</b>
2.1 PRODUCT INTRODUCTION .....	3
2.1.1 <i>Dimensions</i> .....	3
2.1.2 <i>Accessories</i> .....	3
2.2 MAIN FEATURES .....	3
2.3 TECHNICAL SPECIFICATIONS .....	4
2.4 INTERFACE INSTRUCTION.....	5
2.4.1 <i>External Interface</i> .....	5
<b>3. APPLICATION INSTRUCTION.....</b>	<b>6</b>
3.1 REMOTE CONTROLLER .....	6
3.1.1 <i>Keys Instruction</i> .....	6
3.1.2 <i>Applications</i> .....	7
3.2 MENU SETTING .....	9
3.2.1 <i>Main Menu</i> .....	9
<b>4.MAINTENANCE AND TROUBLESHOOTING .....</b>	<b>14</b>
4.1 MAINTENANCE .....	14
4.2 TROUBLESHOOTING .....	14
<b>5. WARRANTY.....</b>	<b>15</b>
<b>6. MISSION STATEMENT.....</b>	<b>15</b>
<b>7. COPYRIGHT STATEMENT .....</b>	<b>15</b>

# Attention

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**This manual introduces functions, installation and operations for the camera in details. Please read this manual thoroughly before installation and use.**

## **1. How to Use**

To prevent damage to this product or any product connected to it, this product should only be used 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. Do not use strong or corrosive detergents to avoid scratching the lens and affecting the image;

## **2. Electrical Safety**

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

## **3. Handle with Care**

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

## **4. 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 on a non-level surface, otherwise it may display a slanted image.
- 3). If the camera is installed on TV or computer, the base can be fixed by four double-sided adhesive trays.
- 4). The 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 completely installation.

## **5. 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 user without permission is not covered by warranty.

## **6. Magnetic Interference**

Electromagnetic fields at specific frequencies may affect the image. This product is Class A. It may cause radio interference in household applications.

# 1. Fast Installation

---

## 1.1 Camera Interface

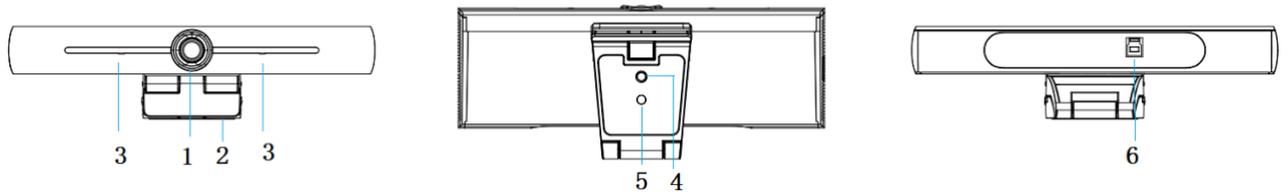


Figure 1.1 camera interface

1. camera lens  
2. bracket

3. built-in MIC  
4. tripod fixing hole

5. positioning hole  
6. USB 3.0 output interface

## 1.2 Camera Operation

- 1) Product Installation: Camera can be installed on an LCD screen, the top of a computer, or placed directly on a desk or tripod.
- 2) Connect camera via USB cable to computer, video conference terminal or other USB input device, log in to the video conference software and select a video device to activate image output.

## 2. Product Overview

### 2.1 Product Introduction

#### 2.1.1 Dimensions

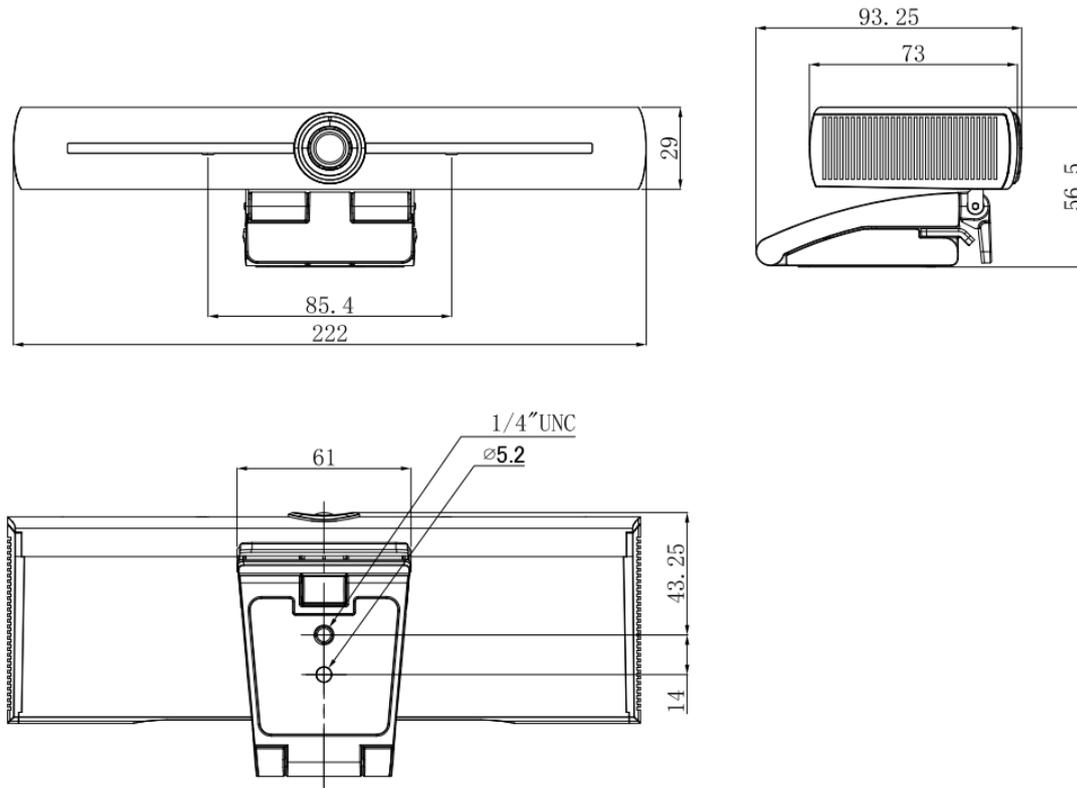


Figure 2.2 Camera Dimensions

#### 2.1.2 Accessories

BG-EPTZ-AF	Accessories
	Wireless remote controller
	USB3.0 cable
	Warranty card
	Cushion
	Packing List

### 2.2 Main Features

The BG-EPTZ-AF is a new 4K UHD ePTZ video conference camera. It is built with AI functions, which can automatically frame all people in the meeting and place them in the middle of the scene. It also utilizes advanced ISP processing algorithms that provide vivid images with even brightness, strong color layering, high resolution, and fantastic color rendition. Easy and convenient to install and maintain, stable and reliable.

- **4K UHD:** It employs 1/2.5-inch, 8 million pixels high quality CMOS sensor; supports 4K UHD; provides 4K@ 30fps MJPG video resolution at most; and provides clear UHD video and vivid expressions and movements. At the same time, it is compatible with 1080p and 720p resolution.
- **EPTZ:** EPTZ and 4X digital Zoom
- **Built-in pickup:** Includes 2 built-in pickups, all-round pickup. Antique noise suppression algorithm ensures your voice be perfect. The effective pickup distance is up to 5 meters.
- **Dual stream output:** The USB3.0 port support main stream and sub-stream output at the same time.
- **Auto framing:** With excellent facial detection algorithm, automatically adjust the zoom according to the number of people in the meeting. It can frame all the meeting people and make them shown in the middle of the scene.
- **Wide view angle without distortion:** 120° super wide view angle lens
- **Low Noise and High SNR:** Low Noise CMOS effectively ensures high SNR of video. Image is still clear even under low light condition.
- **Multiple Installations:** Standard equipped with mold clamp. Easy to install on any devices, such as LCD screen, PC, table and tripod.
- **Easy to Use:** No need to download driver; USB Plug and play.
- **Wide Applications:** Personal video conferencing, enterprise video conferencing, unified collaboration and etc.

### 2.3 Technical Specifications

Model Number	BG-EPTZ-AF
Camera Parameter	
Image Sensor	1/2.5-inch 4K CMOS Sensor
Effective Pixels	8.28MP 16:9
Video output port	1* USB3.0, Type B, support audio output over USB3.0
Audio input	2 built-in MIC pickups
Video Format	Main stream: 3840x2160@30fps; 1920x1080P@30fps/25fps; 1280x720P@30fps/25fps, etc. Sub-stream:1280x720P@30fps/25fps; 640x480P@30fps/25fps; 320x172P@30fps/25fps, etc.
View Angle	126°(D)/120°(H)/85°(V)
Lens	f=2.72mm
Aperture	F2.5
Digital zoom	4X
Min Illumination	0.1Lux (F1.8, AGC ON)
DNR	2D & 3D DNR
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
SNR	≥50dB
USB Feature	

Operation Systems	Windows 7(1080p at the most), Windows 8.1, Windows 10 ; macOS™ 10.10 or higher, Linux (Require to support UVC.)
Video Compression format	YUY2, MJPG, H.264, H.265
Audio over USB3.0	Support
USB communication protocol	UVC, UAC
PTZ control	Support EPTZ
Hardware requirement	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)
<b>Other Parameters</b>	
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)	222mm×93.25mm×56.5mm
Weight	Around 0.53kg
Application	Indoor
Accessory	User Manual; Warranty card, remote controller, USB3.0 cable

## 2.4 Interface Instruction

### 2.4.1 External Interface

The interface illustration is as Figure 2.4 below:

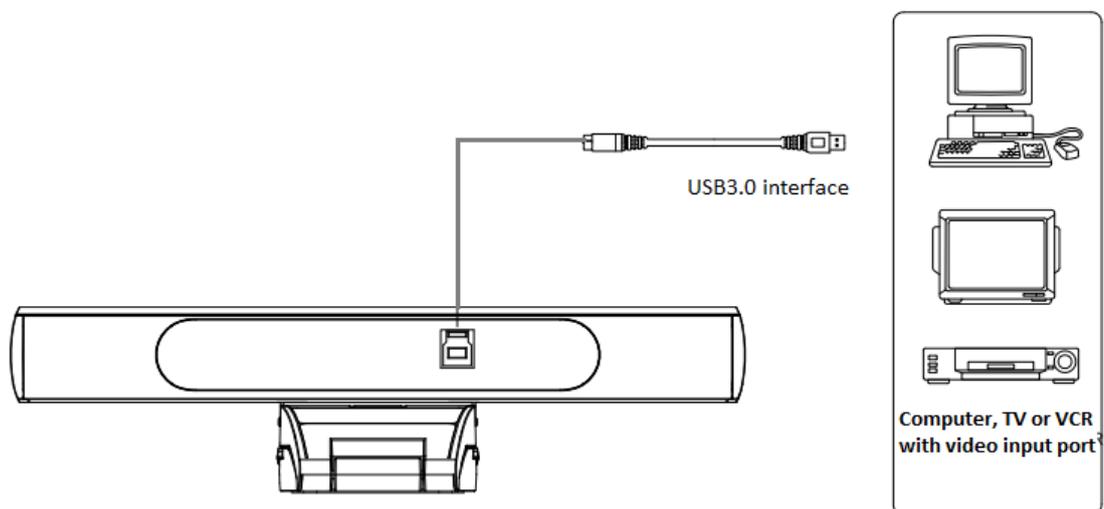


Figure.2.4 Interface Diagram

# 3. Application Instruction

## 3.1 Remote Controller



### 3.1.1 Keys Instruction

#### 1. Standby Key (not supported currently)

After 3s long press, the camera will be in standby mode. Long press 3s again, the camera will self-test again and back to HOME position. Note: If preset 0 is set, there is no operation within 12s, camera head will automatically point to the specified preset 0 position.

#### 2. Camera Address Selection

Select the camera address

#### 3. Number Key

Set or call 0-9 presets

#### 4. \*, # Key

Key combination use

Long Press 5s "SET" + "\*" at the same time, the WR controller is light on, releases hands. Power on the camera again, it will successfully pair with WR controller.

Long Press 5s "SET" + "#" at the same time, the WR controller is light on, releases hands. Power on the camera again, it will cancel to paired with WR controller.

#### 5. Focus Control Key

This camera does not support manual focus control.

#### 6. Zoom Control Key

Manual zoom only functions when auto-framing feature is disabled.

#### 7. Set or Clear Preset key:

Set Preset: Set preset key + 0-9 number key

Clear Preset key: Clear preset key + 0-9 number key

#### 8. Electronic Pan/Tilt Control Key

Press Key : Up

Press Key : Down

Press Key : Left

Press Key: Right

"HOME" Key: Return to the middle position or enter into the sub-menu

#### 9. BLC Control Key

Back Light ON / OFF: Turn on or off the back light

## 10. Menu Setting

Open or close the OSD menu

Enter / exit the OSD menu or return to the previous menu

## 11. Address Setting

【\*】+【#】+【F1】:Camera Address No.1

【\*】+【#】+【F2】:Camera Address No. 2

【\*】+【#】+【F3】:Camera Address No. 3

【\*】+【#】+【F4】:Camera Address No. 4

## 12. Key Combination Functions

1) 【#】+【#】+【#】:Clear all presets

2) 【\*】+【#】+【6】:Restore factory defaults

3) 【\*】+【#】+【9】:Flip switch

4) 【\*】+【#】+【4】:Menu set to English

5) 【\*】+【#】+【3】:Menu set to Chinese

6) 【\*】+【#】+【0-9】: Switch video format

7) 【\*】+【#】+Manual: Restore the default user name, password, and IP address

### 3.1.2 Applications

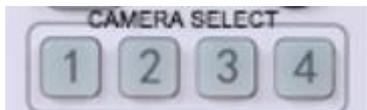
Power on the camera, press the “ SET ” and “ \* ” keys together for 5 seconds, the indicator light will be on. Then release the button and power on the camera again when the light is flashing. The pairing process will be complete when the indicator light stops flashing. Then users can control the pan/tilt/zoom, set and call preset positions via the wireless remote controller.

Key Instruction:

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.

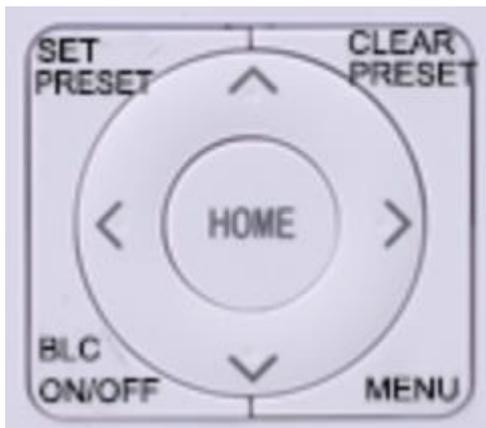
2. When a key-combination is required, do it in sequence. For example, “ 【\*】+【#】+【F1】 ”means press“ 【\*】 ”first and then press“ 【#】 ” and last press“ 【F1】 ”.

### 1) Camera Selection



Select the camera address to control.

## 2) Pan/Tilt Control



Up: press  Down: press 

Left: press  Right: press 

Back to middle position: press“ 【HOME】 ”

Press and hold the up/down/left/right key, the pan/tilt will keep running, from slow to fast, until it runs to the endpoint; the pan/tilt running stops as soon as the key is released.

## 3) Presets



1. Preset setting: to set a preset position, the users should press the “【SET PRESET】” key first and then press the number key 0-9 to set a relative preset,

**Note: 10 preset positions in total are available by remote controller.**

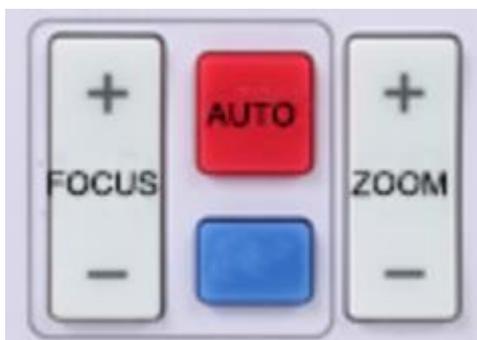
2. **Preset calling:** Press a number key 0-9 directly to call a relative preset.

Note: Nothing will happen if a relative preset position is not set.

3. Preset clearing: to clear a preset position, the user can press the “【CLEAR PRESET】” key first and then press the number key 0-9 to clear the relative preset;

**Note : press the“ 【#】” key three times continually to clear all the presets.**

## 4) Zoom Control

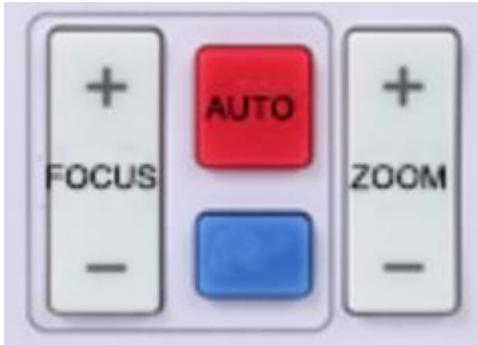


ZOOM IN: press “ZOOM ” key

ZOOM OUT: press “ZOOM ” key

**NOTE: Manual zoom control only functions when auto-framing feature is disabled!**

## 5) Focus Control



Focus (near): Press “ 【focus+】 ” key (Valid only in manual focus mode)

Focus (far): Press “ 【focus-】 ”key (Valid only in manual focus mode)

Auto Focus: yes

Manual Focus: yes

Press and hold the key, the focus adjustment will continue until the key is released.

## 6) Address Setting



【\*】 + 【#】 + 【F1】 :Camera Address No.1

【\*】 + 【#】 + 【F2】 :Camera Address No. 2

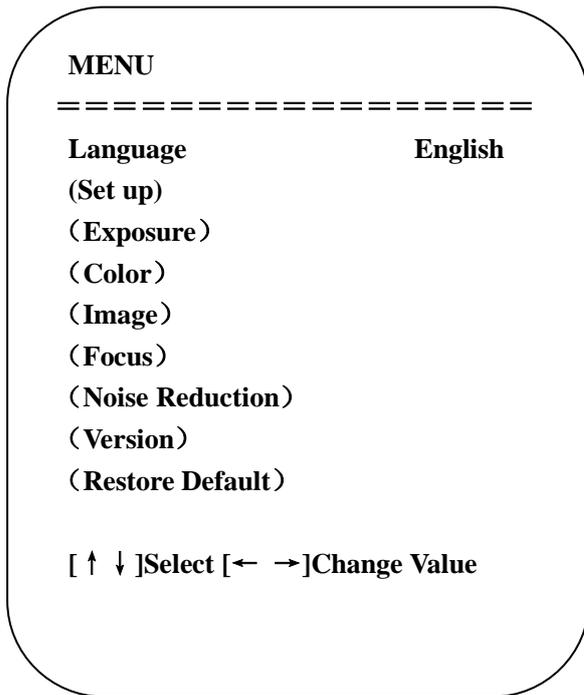
【\*】 + 【#】 + 【F3】 :Camera Address No. 3

【\*】 + 【#】 + 【F4】 :Camera Address No. 4

## 3.2 MENU SETTING

### 3.2.1 Main Menu

When using MJPG/ H.264 / H.265 compression , press 【MENU】 key to display the menu, using scroll arrow to point at or highlight the selected items.



1. Language Setting: **press** 【← →】 key to select Language
2. Set up Setting: **press** 【Home】 key to as below:

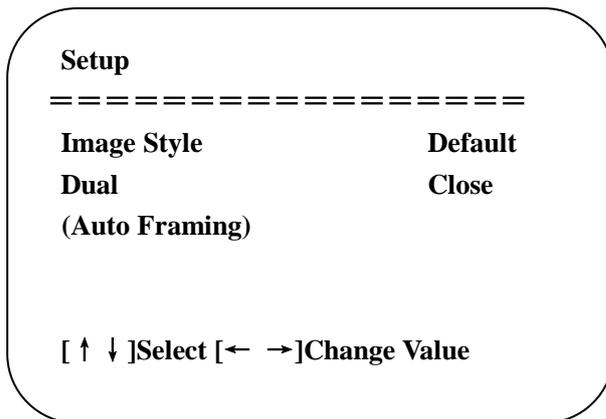


Image Style: Default/Conference/Clear/Bright/Soft Options

Dual: open/close

Auto Zoom: open/close, sensitivity 0-7

### 3. Exposure Setting

Move the pointer to EXPOSURE in the Main Menu, click the 【HOME】 and enter the (EXPOSURE SET) as follows:

## EXPOSURE

=====

<b>Mode</b>	<b>Auto</b>
<b>EV</b>	<b>OFF</b>
<b>BLC</b>	<b>OFF</b>
<b>Flicker</b>	<b>50Hz</b>
<b>G.Limit</b>	<b>3</b>
<b>DRC</b>	<b>2</b>

[ ↑ ↓ ]Select [ ← → ]Change Value

**Mode** : Auto, Manual, Shutter priority, Iris 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)      Dynamic range: adjustable items:  
1 ~ 8, close

**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

**Shutter Priority**:

1/25,1/30,1/50,1/60,1/90,1/100,1/120,1/180,1/250,1/350,1/500,1/1000,1/2000,1/3000,1/4000,  
1/6000, 1/10000 (only available in Manual and Shutter priority mode)

**Brightness**: 0~23 (only available in Brightness priority mode)

## 4. Color Setting

Move the pointer to COLOR in the Main Menu, click the **【HOME】** and enter the (COLOR SET) as follows:

## COLOR

=====

<b>WB Mode</b>	<b>Auto</b>
<b>RG Tuning</b>	<b>0</b>
<b>BG Tuning</b>	<b>0</b>
<b>Saturation</b>	<b>100%</b>
<b>Hue</b>	<b>7</b>
<b>AWB Sensitivity</b>	<b>High</b>

[ ↑ ↓ ]Select [ ← → ]Change Value

**WB Mode**: Auto, Manual, One Push, 3000K, 3500K, 4000K, 4500K, 5000K, 5500K, 6000K,

6500K, 7000K

**RG Tuning:** -10~10 (only available in Manual mode)

**BG Tuning:** -10~10 (only available in Manual mode)

**Red Gain:** 0~255 (only available in Manual mode)

**Blue Gain:** 0~255 (only available in Manual mode)

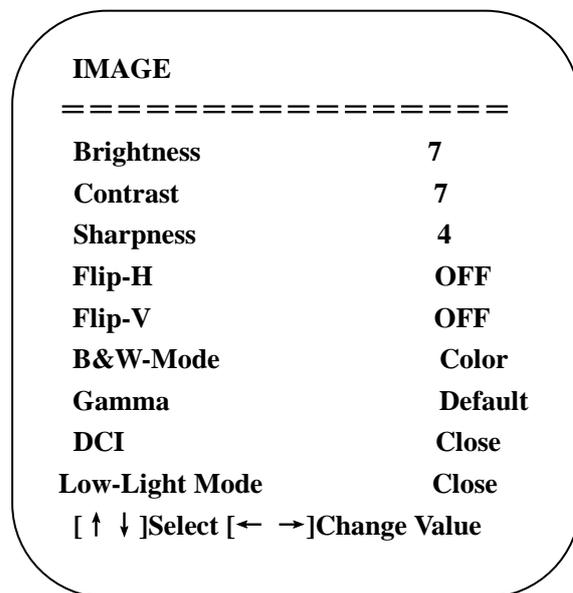
**Saturation:** 60%, 70%, 80%, 90%, 100%, 110%, 120%,130%, 140%,150%, 160%, 170%, 180%, 190%, 200%

**Hue:** 0~14

**AWB Sensitivity:** high/middle/low (only available in Manual mode)

## 5. Image Setting

Move the pointer to IMAGE in the Menu, click the **【HOME】** and enter the (IMAGE) as follows,



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, 0.45, 0.50, 0.55, 0.63

DCI: Dynamic Contrast: Off,1~8

## 6. Focus Setting

This camera supports auto focus only; there is no manual adjustment possible.

## 7. Noise Reduction Setting

Move the pointer to NOISE REDUCTION in the Menu, click the **【HOME】** and enter the (NOISE REDUCTION) as follows,

**NOISE REDUCTION**

=====

<b>NR-2D</b>	<b>2</b>
<b>NR-3D</b>	<b>5</b>
<b>Dynamic Hot Pixel</b>	<b>OFF</b>

[ ↑ ↓ ]Select [← →]Change Value

**2D Noise Reduction:** Auto, close, 1~7  
**3D Noise Reduction:** Close, 1~8  
**Dynamic Hot Pixel:** Close, 1~5

**8. Version**

Move the pointer to VERSION

**VERSION**

=====

<b>Cam Version</b>	<b>1.0.2</b>	<b>2019-11-28</b>
<b>Focus Version</b>	<b>1.0.6</b>	<b>2018-8-21</b>

[ ↑ ↓ ]Select [← →]Change Value

**9. Restore Default**

Move the pointer to RESTORE DEFAULT in the Main Menu, click **【HOME】** and enter RESTORE DEFAULT as below:

**RESTORE DEFAULT**

=====

<b>Restore Default?</b>	<b>NO</b>
-------------------------	-----------

[ ↑ ↓ ]Select [← →]Change Value

**Restore default:** Yes/No for options. (the video format and color style won't be restored)

**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 Maintenance

- 1) Please disconnect the camera if it is not used for a long time.
- 2) Use 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 to avoid scratching the lens and affecting the image;

### 4.2 Troubleshooting

#### 1) No video output

- a. Check whether USB cable is securely connected and power indicator light is ON.
- b. Verify camera completes self-check after reboot.
- c. Restart PC
- d. Check whether the camera is recognized by computer.

#### 2) Intermittent Image

- a. Check the USB cable and connection.

#### 3) Image dithering while zooming in or out

- a. Verify the camera is securely mounted
- b. Check for any devices near the camera that may transmit vibration

#### 4) Remote control does not work

- a. Repeat pairing of the camera and the wireless remote control.
- b. Set the camera address to 1 (address reverts to 1 after restoring factory defaults)
- c. Check batteries
- d. Verify camera is in normal operating mode (see Table 2.2 and Table 2.3)
- e. Exit the menu, the menu only displays under MJPG/H.264/H.265 compression format.

## **5. Warranty**

BZBGear wants to assure you peace of mind. All BZBGear cameras and camera-related products include our Stress-Free Three-Year Warranty.

For complete warranty information, please visit [BZBGear.com/warranty](http://BZBGear.com/warranty).

For questions, please call 1.888.499.9906 or email [support@bzbgear.com](mailto:support@bzbgear.com).

## **6. Mission Statement**

BZBGear manifests from the competitive nature of the audiovisual industry to innovate while keeping the customer in mind. AV solutions can cost a pretty penny, and new technology only adds to it. We believe everyone deserves to see, hear, and feel the advancements made in today's AV world without having to break the bank. BZBGear is the solution for small to medium-sized applications requiring the latest professional products in AV.

We live in a DIY era where resources are abundant on the internet. With that in mind, our team offers system design consultation and expert tech support seven days a week for the products in our BZBGear catalog. You'll notice comparably lower prices with BZBGear solutions, but the quality of the products is on par with the top brands in the industry. The unparalleled support from our team is our way of showing we care for every one of our customers. Whether you're an integrator, home theater enthusiast, or a do-it-yourselfer, BZBGear offers the solutions to allow you to focus on your project and not your budget.

## **7. Copyright Statement**

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