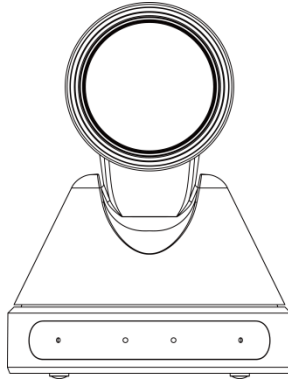


Video Conference Camera



User Manual English (V1.1)

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Warning

This is class A production. Electromagnetic radiation at specific frequencies may affect the image quality of TV in home environment.

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1 Note

● Electric Safety

Installation and operation must accord with electric safety standard.

● Use caution to transport

Avoid stress, vibration or soakage in transport, storage and installation.

● Polarity of power supply

The power supply of this product is +12V, the max electrical current is 2A. Polarity of the power supply plug drawing shows as below.



● Installation Precautions

Do not grasp the camera lens when carrying it. Don't touch camera lens by hand. Mechanical damage may be caused by doing so.

Do not use in corrosive liquid, gas or solid environment to avoid any cover (plastic

material) damage. Make sure there is no obstacle within rotation range.

Please never power on before installation is completed.

● Do not dismantle the camera

We are not responsible for any unauthorized modification or dismantling.



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

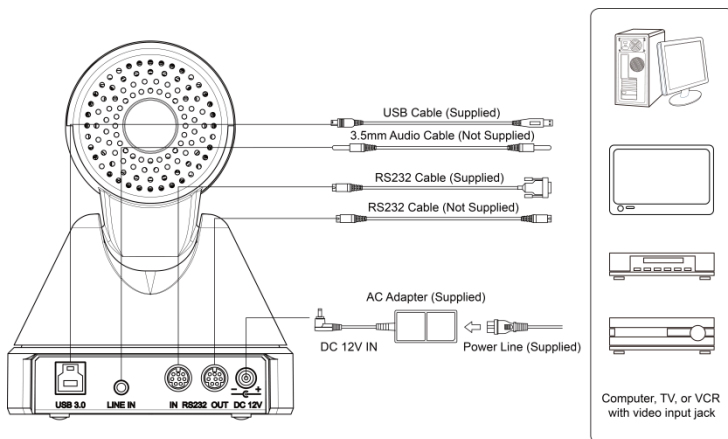
2 Packing List

When you unpack, check that all the supplied accessories are included:

Name	Quantity
Camera	1
AC Power Adaptor	1
Power Cable	1
Serial Cable	1
Remote Control	1
User Manual	1
USB 3.0 Cable	1

3 Quick Start

1) Please check connections are correct before starting.



- 2) Connect the power adapter to the power connector on the rear panel of the camera. The power indicator on the front panel of the camera is on.
- 3) After the camera is powered on, it starts to initialize, right up to the limit position, and then both horizontal and vertical go to the middle position, the motor stops running, and the initialization is completed.
(Note: If preset 0 is saved, PTZ will be set to preset 0)

4 About Product

4.1 Features

- **New appearance**

Worm and worm drive design, new appearance, mini-style, two-color optional.

- **USB 3.0**

Supports UVC protocol, compatible with USB 2.0 and USB 3.0, USB 3.0 supports up to 1920x1080p/60 output, and USB 2.0 supports up to 960x540p/60 output.

When the camcorder is connected to the PC through the USB for the first time, the PC will automatically install the UVC-related drivers.

- **Built-in Microphone**

Built-in microphone, pick up distance up to six meters, high sensitivity, low noise floor.

- **1080P Full HD**

With the new generation of Panasonic 1/2.7 inch, 2.07 million effective pixels of high-quality HD CMOS sensors, you can achieve high-quality images with a maximum resolution of 1920x1080.

- **High Frame Rate**

1080P output frame rate up to 60fps.

- **72.5° Wide-angle lens + 16x Digital Zoom**

With a 72.5° high quality super-lens lens, the optical zoom can be up to 12 times and supports 16x digital zoom (optional).

- **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 still keeps the picture clean and clear, and the SNR of image is as high as 55dB.

- **Remote Control**

Through the RS232 and RS485 serial ports, the camera can be controlled remotely.

4.2 Product Specification

Name	Video Conference Camera
Camera	
Signal System	1080p/60 (optional), 1080p/50 (optional), 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25
Sensor	1/2.7 inch, CMOS, Effective pixels: 2.07 million
Scanning Mode	Progressive
Lens	12x, f3.5mm ~ 42.3mm, F1.8 ~ F2.8
Digital Zoom	16x (optional)
Minimum Illumination	0.5Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Auto, Indoor, Outdoor, One Push, Manual, VAR
Backlight Compensation	Support
Digital Noise Reduction	2D, 3D digital noise reduction
Signal Noise Ratio	≥55dB
Horizontal Angle of View	72.5° ~ 6.9°
Vertical Angle of View	44.8° ~ 3.9°
Horizontal Rotation Range	±170°

Vertical Rotation Range	-30° ~ +30°
Pan Speed Range	1.7° ~ 100°/s
Tilt Speed Range	1.7° ~ 69.9°/s
H & V Flip	Support
Image Freeze	Support
Number of Preset	255
Preset Accuracy	0.1°

USB Feature

Operating System	Windows XP/Vista/7/8/10, Mac OS X, Linux
Color space/Compression	YUV 4:2:2/H.264/MJPEG

Video Format	USB3.0: 1080p/60 (optional), 1080p/50 (optional), 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25 USB2.0: 1080p/30, 1080p/25, 1080p/15, 1080p/10, 720p/30, 720p/25, 960x540p/30, 960x540p/25, 640x360p/60, 640x360p/50
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USB Audio	Support
USB Video Communication Protocol	UVC 1.1, UVC 1.5
UVC PTZ Control	Support

Input/Output Interface

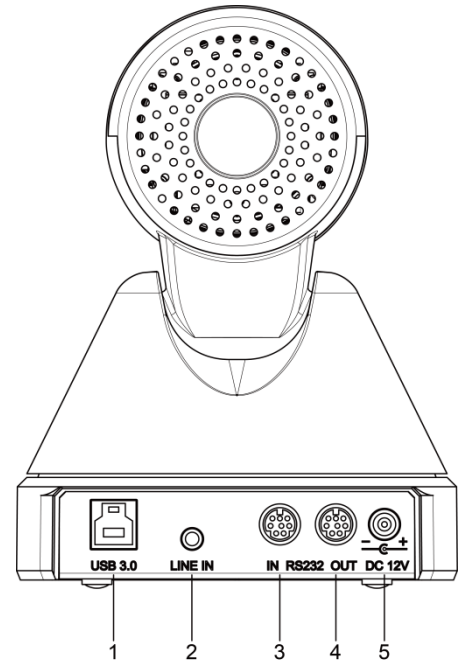
USB Interface	1 x USB3.0: Type B female jack
Audio Interface	1-ch: 3.5mm Audio Interface, Line In
Communication Interface	1 x RS232 In: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA / Pelco-D / Pelco-P 1 x RS232 Out: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA network use only

	1 x RS485: Share with RS232 Out, Max Distance: 1200m, Protocol: VISCA/Pelco-D/Pelco-P
Power Jack	JEITA type (DC IN 12V)

Physical Parameter

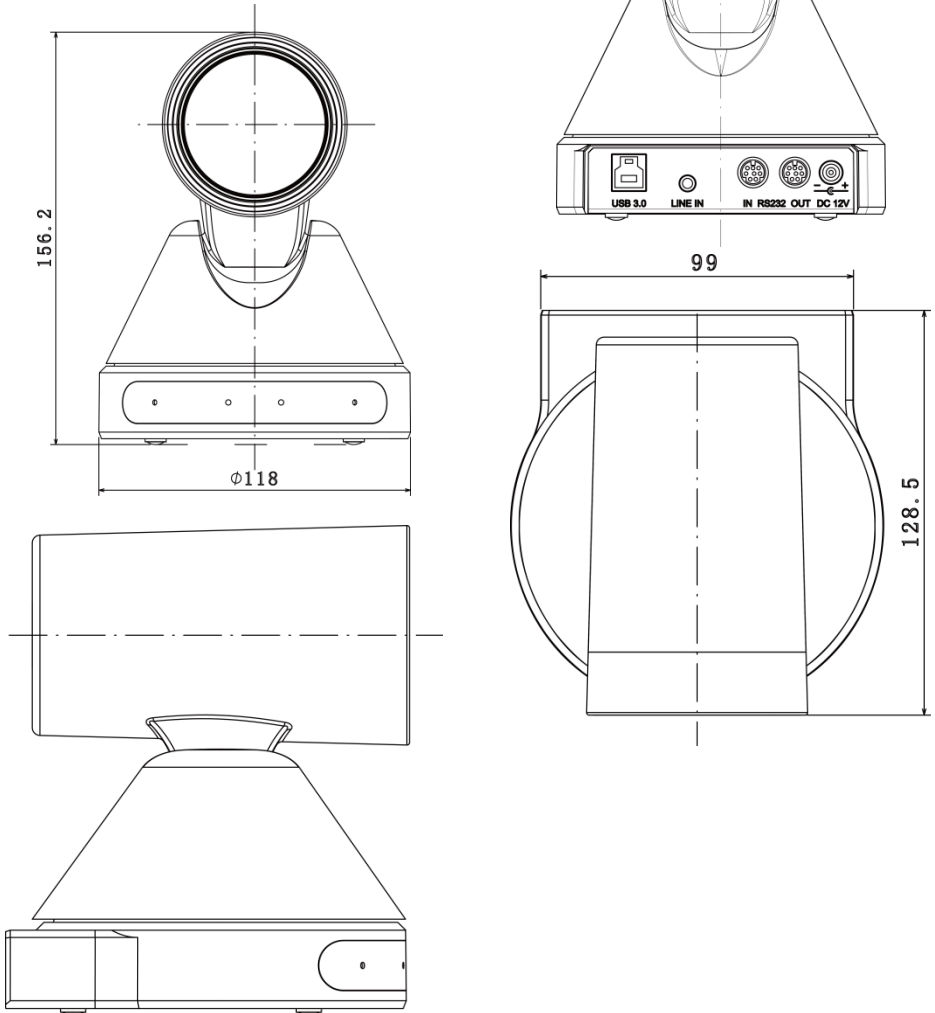
Input Voltage	DC 12V
Current Consumption	1.0A (Max)
Operating Temperature	-10°C ~ 40°C
Power Consumption	-40°C ~ 60°C
Power Consumption	12W (Max)
MTBF	>30000h
Size	128 x118 x158mm
Net Weight	0.91Kg

4.3 Interfaces and Buttons

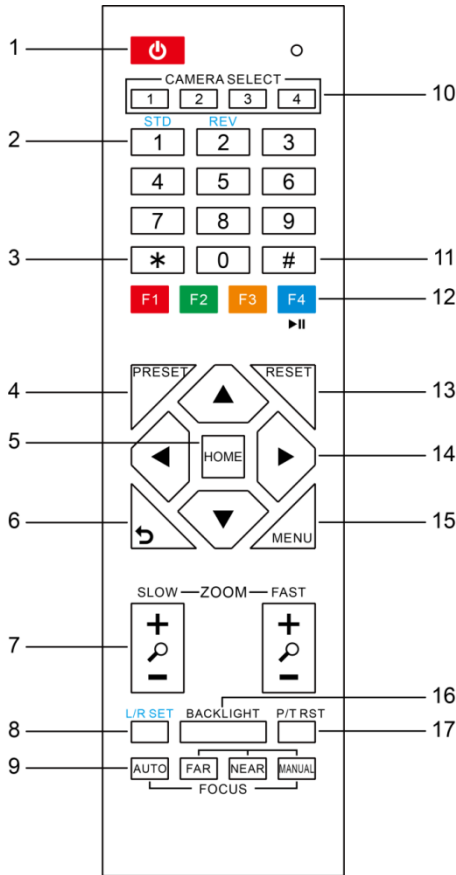


Item	Name
1	USB 3.0 Interface
2	Audio Input Interface
3	RS232 IN Interface
4	RS232 OUT Interface
5	DC 12V Power Interface

4.4 Dimension



4.5 Remote Control



Key Description

1. Standby Button

Press this button to enter standby mode. Press it again to enter normal mode.

Note: Power consumption in standby mode is approximately half of the normal mode

2. Position Buttons

To set preset or call preset.

3. *Button

Used with other buttons.

4. Set/Preset Buttons

Set preset: Store a preset position.

[SET PRESET] + Numeric button (0-9): Setting a corresponding numeric key preset position.

5. Pan-Tilt control Buttons

Press Pan-Tilt back to the middle position.

6. Back buttons

Press the OSD menu return to the superior.

7. Zoom Buttons

Slow Zoom: Zoom In [+] or Zoom Out [-] slowly

Fast Zoom: Zoom In [+] or Zoom Out [-] fast

8. Pan-Tilt L/R set

Press with 1 buttons and 2 buttons setting the direction of the Pan-Tilt.

- Simultaneously press L/R Set + 1 [STD]: set the Pan-Tilt turn the same direction as the L/R Set.
- Simultaneously press L/R Set + 2 [REV]: set the Pan-Tilt turn the opposite direction as the L/R Set.

9. Focus Buttons

Used for focus adjustment.

Press [AUTO] adjust the focuses on the center of the object automatically. To adjust the focus manually.

Press [MANUAL] adjust the focus on the center of the object manual.

MANUAL button, and adjust it with [Far] (Focus on far object) and [NEAR] (Focus on near object).

10. Camera Select Buttons

Press the button corresponding to the camera you want to operate with the remote controller.

11. # Button

Used with other buttons.

12. Set Camera IR Address Buttons

[*]+[#]+[F1]: Address 1

[*]+[#]+[F2]: Address 2

[*]+[#]+[F3]: Address 3

[*]+[#]+[F4]: Address 4

13. Clear Preset Buttons

Clear preset: Erase a preset position.

[CLEAR PRESET] + Numeric button (0-9)

Or: [*]+[#]+[CLEAR PRESET]: Erase all the preset individually.

14. Pan/Tilt Control Buttons

Press arrow buttons to perform panning and tilting. Press [HOME] button to face the camera back to front.

15. MENU

MENU: enter or exit OSD MENU.

16. BLC (Backlight Compensation) Button

BLC ON/OFF: Press this button to enable the backlight compensation. Press it again to disable the backlight compensation.

NOTE:

- Effective only in auto exposure mode.
- If a light behind the subject, the subject will become dark. In this case, press the backlight ON/OFF button. To cancel this function, press backlight ON/OFF button.

17. Pan/Tilt reset

Preset Pan/Tilt self-test.

18. Image freezing function

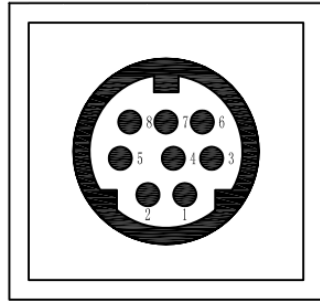
Manually freeze: Open the freezing function after press the remote control [F4], display “Freeze” on the left upper corner character, after five seconds display disappear automatically. If you want to cancel the freeze, press [F4] key and then can return to normal, display “Unfreeze” on the left upper corner, after five seconds display disappear automatically.

Recalling the Preset image Freeze: By the OSD Menu Setting “Recalling the Preset image Freeze” function. After the function is opened, the screen will stay in before Recalling the Preset when Recalling the Preset, the screen can be switched to the preset position screen until the camera points to the preset position.

19. Shortcut Set

- [*]+[#]+[1]: OSD menu default English
- [*]+[#]+[3]: OSD menu default Chinese
- [*]+[#]+[5]: Save OSD
- [*]+[#]+[6]: Quickly recover the default
- [*]+[#]+[8]: Look the camera version
- [*]+[#]+[9]: Quickly set up inversion

4.6 RS-232 Interface



No.	Function
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	IR OUT
8	NC

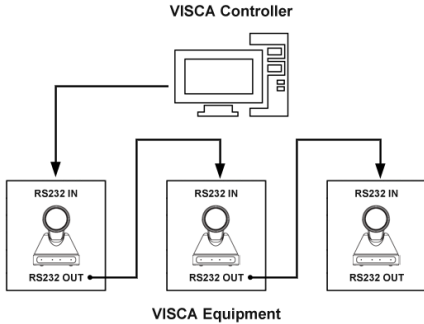
The correspondence between the camera and Windows DB-9 pin:

Camera	Windows DB-9
1.DTR	1.CD
2.DSR	2.RXD
3.TXD	3.TXD
4.GND	4.DTR
5.RXD	5.GND
6.GND	6.DSR
7.IR OUT	7.RTS
8.NC	8.CTS
	9.RI

The correspondence between the camera and the Mini DIN pin:

Camera	Mini DIN
1.DTR	1.DTR
2.DSR	2.DSR
3.TXD	3.TXD
4.GND	4.GND
5.RXD	5.RXD
6.GND	6.GND
7.IR OUT	7.NC
8.NC	8.NC

4.7 VISCA Network



4.8 Serial Communication Control

● **RS232 Communication Control**

The camera is controlled via RS232. The RS232 serial port parameters are as follows:

- Baud rate: 2400/4800/9600/38400 bit/s;
- Starting Position: 1 bit
- Data bit: 8 bits
- Stop bit: 1 bit
- Check digit: None

● **RS485 Communication Control**

Control camera via RS485, half duplex mode:

- Baud rate: 2400/4800/9600/38400 bit/s;
- Starting position: 1 bit
- Data bit: 8 bits
- Stop bit: 1 bit
- Check digit: None

After power on, the camera goes to the upper right limit and then back to the middle position. The zoom lens is pulled to the farthest position, auto focus, and the aperture is adjusted to the default value. If the camera has preset 0 saved, the camera will be set to position 0 after the initialization is completed. At this point, the user can use the serial port command to control the camera.

- List of protocols (omitted)

The serial port of the camera follows the VISCA/Pelco-D/Pelco-P standard protocol. If

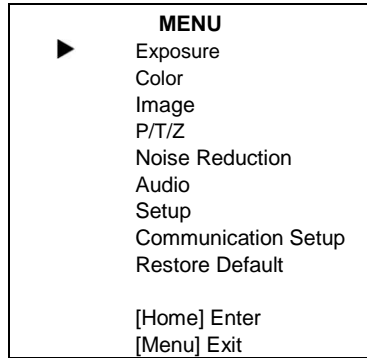
secondary development is required, the camera can be controlled according to the standard protocol.

For a detailed list of VISCA/Pelco-D/Pelco-P protocols, contact the manufacturer.

5 GUI Settings

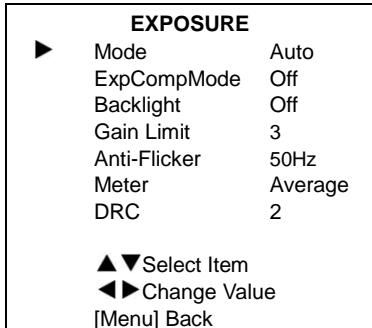
5.1 MENU

Press [MENU] button to display the main menu on the normal screen, using arrow button to move the cursor to the item to be set. Press the [HOME] button to enter the corresponding sub-menu.



5.2 EXPOSURE

Move the main menu cursor to [EXPOSURE], and press [HOME] key enter the exposure page, as shown in the following figure.



Mode: Exposure mode, optional items: Auto, Manual, SAE, AAE, Bright.

ExpCompMode: Exposure compensation mode, optional items: On, Off (Effective only in Automode).

ExpComp: Exposure compensation value, optional items: -7~7 (Effective only in ExpCompMode item to On).

Backlight: Set the backlight compensation, optional items: On, Off (Effective only in Auto mode).

Bright: Intensity control, optional items: 00~17 (Effective only in Bright mode).

Gain Limit: Maximum gain limit, optional items: 0 ~ 15 (Effective only in Auto, AAE, Bright mode).

Anti-Flicker: Anti-flicker, optional items: Off, 50Hz, 60Hz (Effective only in Auto, Bright mode).

Meter: optional items: Average, Center, Smart, Top.

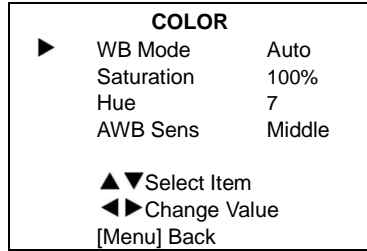
Iris: Aperture value, optional items: F1.8, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11.0, Close (Effective only in Manual, AAE mode).

Shutt: Shutter value, optional items: 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 (Effective only in Manual, SAE mode).

DRC: DRC strength, optional items: 0 ~ 8.

5.3 COLOR

Move the main menu cursor to [COLOR], and press [HOME] key enter the color page, as shown in the following figure.



WB-Mode: White balance mode, optional items: Auto, Indoor, Outdoor, One Push, Manual, VAR.

RG: Red gain, optional items: 0~255 (Effective only in Manual mode).

BG: Blue gain, optional items: 0~255 (Effective only in Manual mode).

Color Temp: Optional items: 2500K ~ 8000K (Effective only in VAR mode).

RG Tuning: Red gain fine-tuning, optional items: -10 ~ +10 (Effective only in AWB sens is Low).

BG Tuning: Blue gain fine-tuning, optional items: -10 ~ +10 (Effective only in AWB sens is Low).

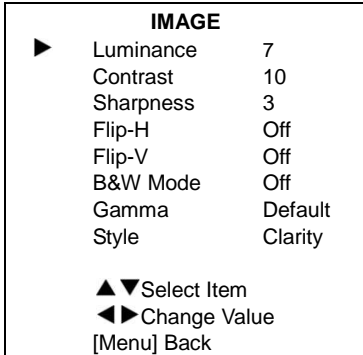
Saturation: Optional items: 60% ~ 200%.

Hue: Chroma adjustment, optional items: 0 ~ 14.

AWB Sens: The white balance sensitivity, optional items: Low, Middle, High.

5.4 IMAGE

Move the main menu cursor to [IMAGE], and press [HOME] key enter the image page, as shown in the following figure.



Luminance: Brightness adjustment, optional items: 0 ~ 14.

Contrast: Contrast adjustment, optional items: 0 ~ 14.

Sharpness: Sharpness adjustment, optional items: Auto, 0 ~ 15.

Flip-H: Image flipped horizontally, optional items: On, Off.

Flip-V: Image Flip Vertical, optional items: On, Off.

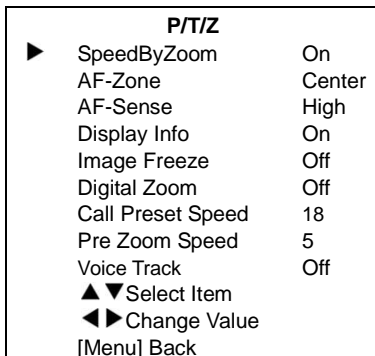
B&W Mode: Optional items: On, Off.

Gamma: Optional items: Default, 0.45, 0.5, 0.56, 0.63.

Style: Optional items: Norm, Clarity(LED), Clarity, Bright, Soft, 5S, QS.

5.5 P/T/Z

Move the main menu cursor to [P/T/Z], and press [HOME] key enter the P/T/Z page, as shown in the following figure.



SpeedByZoom: The depth of field scale switch, optional items: On, Off.

AF-Zone: Interested in focusing area, optional items: Top, Center, Bottom.

AF-Sense: Automatic focusing sensitivity options, optional items: Low, Medium, High.

Display Info: Optional items: On, Off.

Image Freeze: Optional items: On, Off.

Digital Zoom: Optional items: Off, 2x, 4x, 8x, 16x.

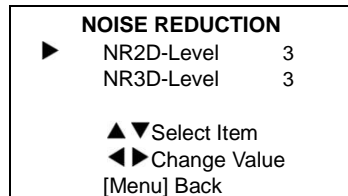
Call Preset Speed: Optional items: 1 ~ 24.

Pre Zoom Speed: Optional items: 0 ~ 7.

Voice Track: Optional items: On, Off.

5.6 NOISE REDUCTION

Move the main menu cursor to [NOISE REDUCTION], and press [HOME] key enter the noise reduction page, as shown in the following figure.

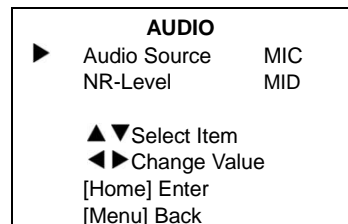


NR2D Level: 2D noise reduction, optional items: Off, Auto, 1 ~ 5.

NR3D Level: 3D noise reduction, optional items: Off, 1 ~ 8.

5.7 AUDIO

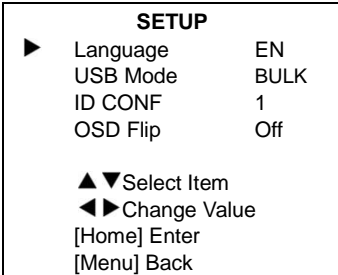
Move the main menu cursor to [AUDIO], and press [HOME] key enter the audio page, as shown in the following figure.



Audio Source: Optional items: MIC, LINE.
 NR-Level: Optional items: LOW, MID, HIGH.

5.8 SETUP

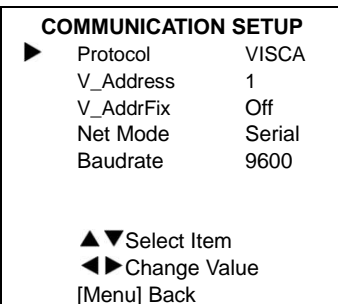
Move the main menu cursor to [SETUP], and press [HOME] key enter the setup page, as shown in the following figure.



Language: Optional items: EN, Chinese, Russian.
 USB Mode: Optional items: BULK, ISOC.
 ID CONF: Optional items: 1, 2.
 OSD Flip: Optional items: On, Off.

5.9 COMMUNICATION SETUP

Move the main menu cursor to [COMMUNICATION SETUP], and press [HOME] key enter the communication setup page, as shown in the following figure.



Protocol: Control protocol type, optional items: AUTO, VISCA, PELCO-D, PELCO-P.
 V_Address: Optional items: 1 ~ 7.
 P_D_Address: Optional items: 0 ~ 254.
 (Effective only in PELCO-D protocol).

P_P_Address: Optional items: 0 ~ 31.
 (Effective only in PELCO-P protocol).

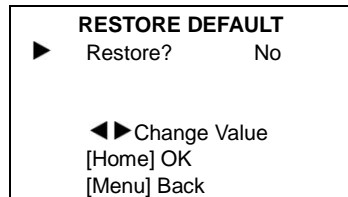
V_AddrFix: If you can change through the serial port of infrared switch, optional items: On, Off (When set to On, useless in 88 30 01 FF Command).

Net Mode: Set the serial port control networking, optional items: Serial, Paral.

Baudrate: Serial port baud rate, optional items: 2400, 4800, 9600, 38400.

5.10 RESTORE DEFAULT

Move the main menu cursor to [RESTORE DEFAULT], and press [HOME] key enter the restore default page, as shown in the following figure.



Restore: Confirm restore factory settings, optional items: Yes, No.

Note: Press [HOME] button to confirm, all parameter restore default, include IR Remote address and VISICA address.

6 Maintenance and Troubleshooting

Camera Maintains

- If camera will not be used for a long time, please turn off the power switch, disconnect AC power cord of AC adaptor to the outlet.
- Use soft cloth or tissue to clean the camera cover.
- Please use the soft dry cloth to clean the lens. If the camera is very dirty, clean it with diluted neuter detergent. Do not use any type of solvents, which may damages the surface.

Unqualified Application

- No shooting extreme bright object for a long period of time, such as sunlight, light sources, etc.
- No operating in unstable lighting conditions, otherwise image will be flickering.
- No operating close to powerful electromagnetic radiation, such as TV or radio transmitters, etc.

Troubleshooting

Image

- The monitor shows no image
 - 1) Check that the camera power supply is connected, the voltage is normal, and the power indicator light is always on.
 - 2) Turn off the power switch to check whether the camera is self-testing.
 - 3) Check the cable of video platform and TV whether correct connection.

- Sometimes without the image

Check the cable of video platform and TV whether correct connection.

- Image have jitter when the camera lens at max multiple.
 - 1) Check whether the camera installed position be stabled.
 - 2) Check whether have vibrating machinery or object near the camera.

Control

- Remote control can not control
 - 1) Check and replace the new battery for the remote controller.
 - 2) Check whether the camera working mode is correct.
- Series port can not control
 - 1) Check whether the camera protocol, address such is the same.
 - 2) Check whether the control line is connected well.