

UHD Color Video Camera

User Manual

English Version

Foreword

Thank you for selecting this series of Video Conference Cameras.
Please read and understand this Operations Manual before using the product.

Warning!

To prevent this product or any other products connected from damage, this product can only be used within a predetermined range.

- Avoid raining or moisture environment;
- Do not remove product casing. Use certified personnel for installation and reparation;
- Do not use beyond the limitation of temperature, humidity or power voltage range;
- When cleaning the camera lens, use a soft, dry cloth; when seriously dirty, please use a mild detergent and wipe gently. Do not use strong cleaning agents or corrosive cleaner so as not to scratch the lens and affecting image quality.

Notes

This manual covers the installation and use of a variety of models of our company's products, please distinguish the products' features, parameters, and their installation instructions according to the ordered products model No..

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Attentions

▼Electric Safety

Installation and operation must accord with electric safety standard.

▼Caution to transport

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

▼Polarity of power supply

The power supply of the product is ±12V, and the polarity of the power plug is shown as following.



▼Careful of installation

Do not move the camera by seizing the camera head. Do not rotate camera head by hand; otherwise, mechanical trouble will occur.

This series item must put on the smooth desk or platform, and it cannot be installed slant ways;

If the camera is installed on TV or computer, the base can be fixed by four double-sided adhesive trays.

The product housing is made up of organic material, it is prohibited to contact any liquid, gas or solid material that may cause shell corrosion, and make sure no obstacle in rotation range during installation.

Do not power on before installation is completed.

▼Don't disassemble discretionarily

We are not responsible for any unauthorized modification or dismantling.

⚠Attention!

Electromagnetic filed under certain rate may affect camera image!

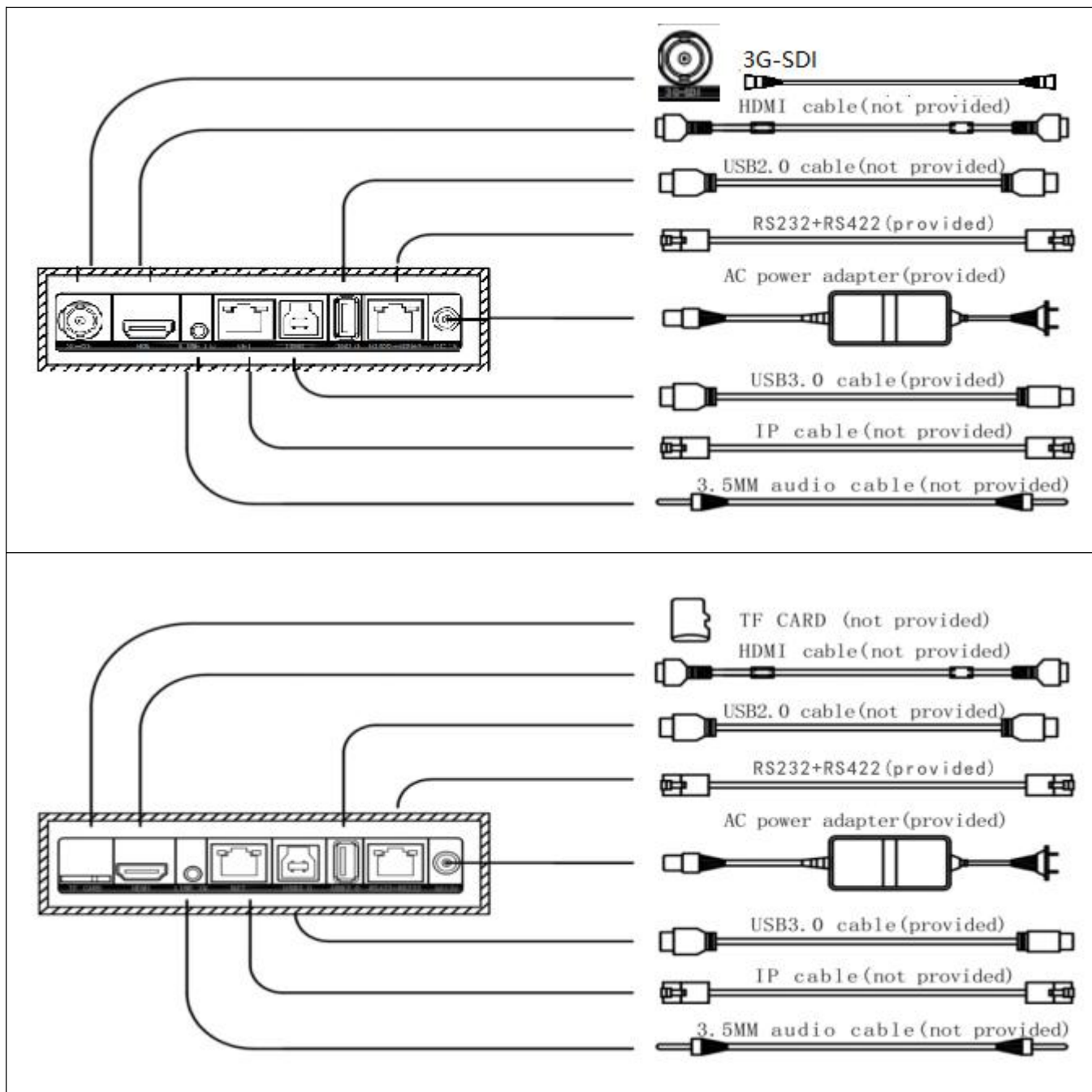
Accessory

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

Camera.....	1
Power Adapter.....	1
3m USB3.0 line (provided)	1
Cable	1
Control port junction box.....	1
Mounting bracket (wall-mounted / suspended) (provided).....	1
Remote Controller	1
User Manual.....	1

Quick Start

- 1、 Please make sure all wiring are correct before power on.



Camera Performance

- **Precise positioning, quiet and smooth PTZ control**

By adopting high accuracy Algorithm for PTZ Control, precise location($\pm 0.1^\circ$), it works extremely quiet and moves smoothly and very quickly to designated position.

- **Real 4K HD image**

Adopt 1/2.5 inch, 8.51 effective megapixels HQ“Exmor R” CMOS Sensor, achieve 3840×2160 high quality image with super high resolution. Focus on meeting the need for picture fluency while ensuring the the ultra-high definition.

- **Low noise and high SNR:**

Adopt advanced 2D&3D noise reduce technology and low noise CMOS sensor to reduce the noise.

- **10X 12X 20x optical zoom 12x digital zoom**

- **4KP30 HDMI video output**

Support 4KP30/25, 1080P60/50/30/25, 720P60/50 etc.HD video formats.

- **4KP30 USB3.0 video output**
Support 4KP30/25, 1080P30/25, 720P30/25 etc.HD video formats.
- **4KP30 UHD network video output**
Support 4KP30/25, 1080P30/25, 720P60/50etc.HD video formats.
- **3G-SDI HD output(only support UH series)**
Supports various high-definition video formats, such as 1080P60/50/30/25, 720P60/50, etc.
- **TF card video support (only support UH series)**
Support TF card video function, support a variety of time recording, support audio recording.
- **AI Human Tracking (Optional)**
The camera, with the help of its AI chipset, utilizes advanced AI algorithms to achieve single-object tracking, which can be used for scenarios such as education, meetings, and live streaming.
- **255 preset positions**
255 positions can be preset through serial port, including level, pitch, zoom to preset, even if the camera is powered off, the preset data can be saved.
- **Multi-functional remote controller**
Equipped with simple remote control, it can not only use for level, pitch and zoom control, but also can set the parameters through remote control menu.
- **OSD Chinese/English menu function**
Various OSD menu, feasible for remote controller to control Chinese/English OSD menu.

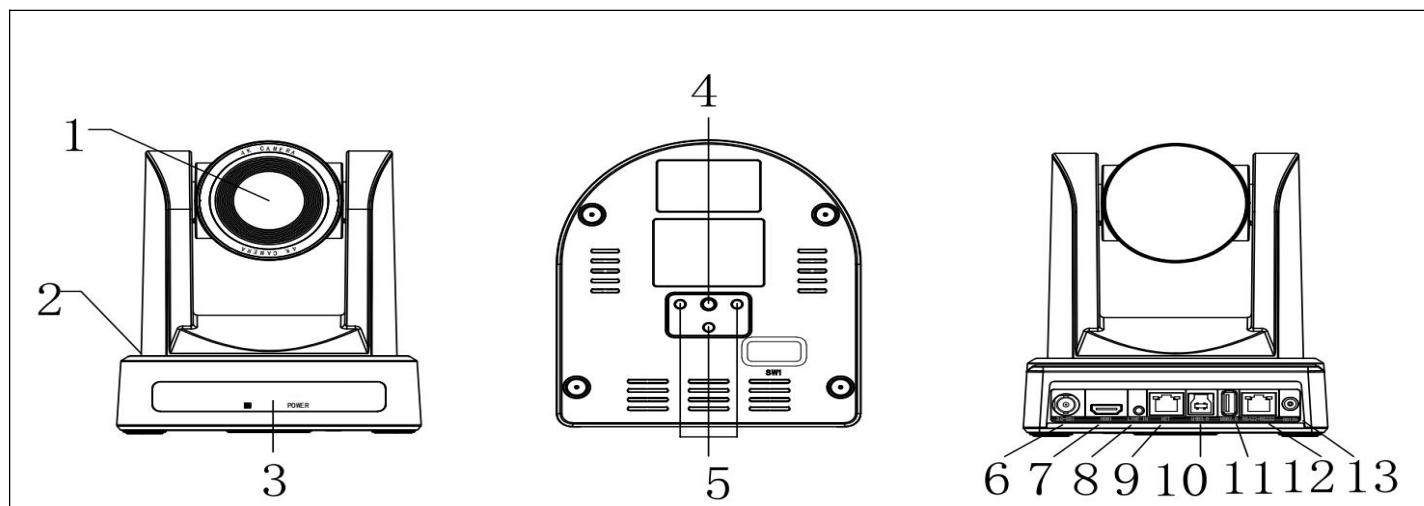
Camera Specifications

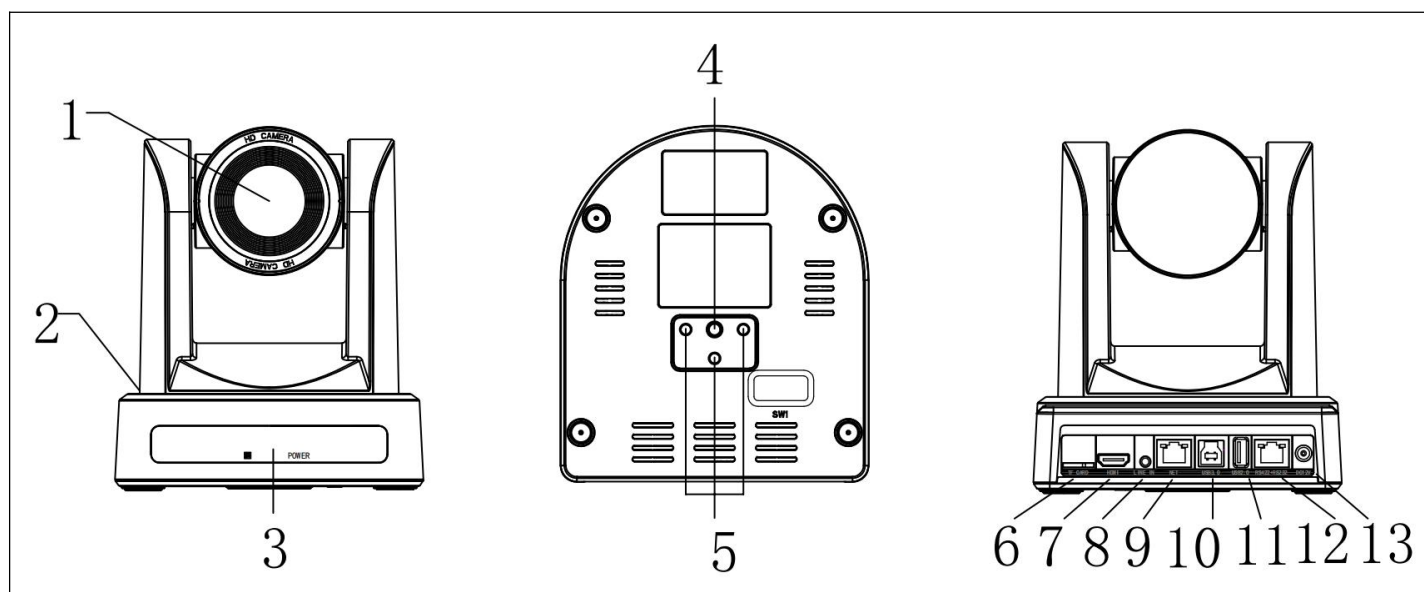
Camera		
Signal system		3840×2160P30/25,1080P60/50/30/25 , 720P60/50
Sensor		1/2.5inch HQ CMOS Sensor, 8.51 effective megapixels
Scanning mode		progressive
Optical zoom		20x 12X 10X
Minimum illumination		Support ultra-low illumination: 0.1Lux@F1.6(color), 0.01Lux@F1.6 (b&w)
Shutter		1/30s ~ 1/10000s
White balance		Indoor/Outdoor/Auto/Manual
BLC		Yes
DNR		2D&3D DNR
SNR		≥52dB
Focal length		20X f=5.5 ~ 110mm 12X f=4 ~ 48mm 10X f=5.7 ~ 57mm
Horizontal view angle		20X: 58°(wide end) ~ 2.9°(far end) 12X: 70.5°(wide end) ~ 5.9°(far end) 10X: 55°(wide end) ~ 5.5°(far end)
Pan rotation		±170°
Tilt rotation		-30° ~ +90°
Pan control Speed		1 °/s ~ 100 °/s
Tilt control Speed		1 °/s ~ 60 °/s
Image flip		Yes
Preset number		255
Accuracy of preset		±0.1°
Input/Output Interface		
HD video	HDMI2.0	Max 4KP30
	USB3.0	Support USB3.0 video output, max 4KP30

interface	TF Card	Support TF card video function, support a variety of time recording, support audio recording.
	3G-SDI	1080P60/50/30/25、 720P60/50
	IP	Code : H.265/H.264/MJPEG , network protocol : IPv4, TCP, UDP, HTTP,NTP,DNS, DHCP,ARP, RTSP, RTP,RTCP, RTMP, NDI (Optional) ,ONVIF,,VISCA OVER IP,
Communication interface	1 *, RS-232 IN, Longest distance: 30 m, VISCA/Pelco-D/Pelco-P protocol 1 *, RS-422 , Longest distance: 1200 m, VISCA/Pelco-D/Pelco-P protocol	
Power interface	JEITA Type (DC IN 12V) HEC3800	
General Specifications		
Input voltage	AC110V-AC220V to DC12V/2A	
Input current	DC12V(DC11.5-DC12.5V)	
Working temperature	0℃~ +45℃	
Storage temperature	-10℃~+60℃	
Power consumption	12W(max)	
Dimension	Refer to “Dimension”	
Package size	355mmX270mmX255mm	

Notice: Specifications and information of the camera are for reference only, and the contents are subject to change without prior notice.

Camera Interface Function





1. Interface	1.Camera lens	6.TF card/ 3G-SDI	11.USB2.0 port(preset)
	2.Camera base	7.HDMI port	12.RS232&RS422control port
	3.Remote Controller Receiver light	8.AUDIO IN	13.DC power port
	4.Installation screw hole	9.IP port	
	5. Installation Orientation Hole	10.USB3.0 port	

Remote Control Instructions



1. Power key

After press ,the camera will step into standby mode. Press again, the camera will self-test again and back to HOME position. (Note: If power-on mode is turned on and Preset 0 is set, it will automatically point to the specified preset position.)

2. Camera select key

Choose the camera address ready for control.

3. Position key

Set or run presets.

4. *key #key

5. Focus key: focus control

Auto focus: enter into auto focus mode

Manual focus: the camera focus mode is manual; switch the camera focus mode to manual focus by pressing[focus +] or [focus -] to adjust.

6. Zoom key

Zoom+: lens near **Zoom-**: lens far

7. Clear preset key

Clear preset key: +0-9 number key

8. Pan-tilt key

Press $\wedge$ key :Up

Press $\vee$ key :Down

Press $\leftarrow$ key :Left

Press $\rightarrow$ key: Right

HOME key: Return to the middle position

9. BLC on/off key

Back light compensation ON/OFF(Reserved)

10. Menu key

Open or close the OSD menu(Reserved)

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

11. Camera IR remote control 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) 【#】+【#】+【#】：cancel all preset bits	2) 【*】+【#】+【6】：restore factory defaults
3) 【*】+【#】+【9】：flip switch	4) 【*】+【#】+【7】：switch to left/right image
5) 【#】+【#】+【0】：switch to video format1080P60	6) 【#】+【#】+【1】：switch to video format1080P50
7) 【#】+【#】+【2】：switch to video format1080I60	8) 【#】+【#】+【3】：switch to video format1080I50
9) 【#】+【#】+【4】：switch to video format720P60	10) 【#】+【#】+【5】：switch to video format720P50
11) 【#】+【#】+【6】：switch to video format1080P30	12) 【#】+【#】+【7】：switch to video format1080P25
13) 【#】+【#】+【8】：switch to video format4KP30	14) 【#】+【#】+【9】：switch to video format4KP25

Serial port Communication Control

Under normal working condition, the camera can connect one VISCA or Pelco-D, Pelco-P control equipment.

➤ RS232 communication control

Control the camera through RS232, RS232 serial port parameter shown as following:

Baud rate: 2400/4800/9600 b/s;

Start bit: 1 bit;

Data bit: 8 bit;

Stop bit: 1 bit;

Check bit: none.

➤ RS485 communication control

Control the camera through RS485, half duplex mode:

Baud rate: 2400/4800/9600 b/s;

Start bit: 1 bit;

Data bit: 8 bit;

Stop bit: 1 bit;

Check bit: none.

After power on, the camera first go left, then back to the middle position. Self-test is finished after the zoom moved to the farthest and then back to the nearest position. If the camera saved 0 preset before, it will be back to that position after initialization. At this point, the user can control the camera by the serial commands.

Protocol List(Omitted)

The camera serial port follows VISCA/Pelco-D/Pelco-P protocol, the camera can be controlled according to the standard protocol if secondary development is needed; please contact the manufacturer to get a detailed list of protocol if needed.

MENU SETTING

Notice: the menu displays only two lines. Please refer to the following for specific items.

[↑↓]**SELECT**: press up/down arrow keys to select the menu
 [← →]**MODIFY**: press left/right arrow keys to modify parameters
 [MENU]**BACK**: press menu key to return/enter the menu
 [HOME]**CONFIRM**: press [Home]key to confirm

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.

MENU	
=====	
LANGUAGE	ENGLISH
<SETUP>	
<CAMERA>	
<P/T/Z>	
<VIDEO FORMAT>	
<VERSION>	
<RESTORE DEFAULT>	

LANGUAGE: Language setting, Chinese / English

SETUP: System setting

CAMERA: Camera setting

PTZ: Pan tilt setting

VIDEO FORMAT: video format setting

VERSION: camera version setting

RESTORE DEFAULT: Reset setting

[↑↓] **SELECT**: for selecting menu

[← →] **MODIFY**: for modify parameters

[MENU] **BACK**: Press [MENU] to return

[HOME] **CONFIRM**: Press [Home] to confirm

2. SETUP

Move the pointer to the <SETUP> in the Main Menu, click the **[HOME]** key and enter into the <SETUP> as shown below,

SETUP	
=====	
PROTOCOL	AUTO
VISCA ADDR	1
V-ADDR FIX	OFF
PELCO-P ADDR	1
PELCO-D ADDR	1
BAUDRATE	
9600	
RS485	ON
VO OUTPUT MODE	HDMI
IP ADDR:192.168.1.123	

PROTOCOL: VISCA/Pelco-P/Pelco-D/AUTO

VISCA ADDR: VISCA=1~8 Pelco-P=1~16 Pelco-D=0~15

BAUD RATE: 2400/4800/9600

V-ADDR FIX: On/Off

3. CAMERA PARAMETER SETTING

Move the pointer to the <CAMERA> in the Main Menu, click the **[HOME]** key and enter the <CAMERA> as follow.

CAMERA	
=====	
<EXPOSURE>	
<COLOR>	
<IMAGE>	
<FOCUS>	
<NOISE REDUCTION>	
COLOR STYLE	STANDARD
OSD DIR	OFF

EXPOSURE: Enter into Exposure setting

COLOR: Enter into Color setting

IMAGE: Enter into Image setting

FOCUS: Enter into Focus setting

NOISE REDUCTION: Enter into Noise reduction

3.1 EXPOSURE

Move the cursor to the <EXPOSURE> item in the main menu and press [HOME] button, <EXPOSURE> menu appears, as shown in the following figure.

EXPOSURE	
=====	
MODE	AUTO
GAIN	2
EV LEVEL	0
BLC	OFF
FLICKE	50HZ
G.LINIT	32
DRC	16
AI EXPOSURE	OFF

BLC: On/Off

DYNAMIC RANGE: On/Off

3.2 COLOR

Move the cursor to the <COLOR> item in the main menu and press [HOME] button, <COLOR> menu appears, as shown in the following figure.

COLOR		
=====		
WB	MODE	INDOOR
CCT		6500
COLOR INDEX		50
RG TUNING		50
BG TUNING		50
GG TUNING		50
SAURATION		50
HUE		50

WB: Auto, Indoor, Outdoor, ATW, Manual

CCT: 6500

COLOR INDEX: 50

RG TUNING: 50

BG TUNING: 50

GG TUNING: 50

SAURATION: 50

HUE: 50

3.3 IMAGE

Move the cursor to the <IMAGE> item in the main menu and press [HOME] button, <IMAGE> menu appears, as shown in the following figure.

IMAGE	
=====	
BRIGHTNESS	4
CONTRAST	9
SHARPNESS	9
FLIP-H	OFF
FLIP-V	OFF
B/W MODE	DAY
GAMMA	DEFAULT
DZOOM	OFF

BRIGHTNESS: 0~14

CONTRAST: 0~14

SHARPNESS: 0~15

FLIP-H: ON/OFF

FLIP-V: ON/OFF

B/W-MODE: DAY/NIGHT

DZOOM: Digital zoom options: ON/OFF

3.4 FOCUS

Move the cursor to the <FOCUS> item in the main menu and press [HOME] button, <FOCUS> menu appears, as shown in the following figure.

FOCUS	
=====	
FOCUS MODE	AUTO
AF-ZONE	DEFAULT
AF-SENSITIVITY	MIDDLE
NEARLIMIT	30CM
FARLIMIT	60M
AI FOCUS	OFF

FOCUS MODE: AUTO/MANUAL

AF-ZONE: DEFAULT/TOP/CENTER/BOTTOM/ALL

AF-SENSITIVITY: MIDDLE/HIGH/LOW

NEARLIMIT: 30CM(10CM-1M)

FARLIMIT: 60M(20M-INF)

AI FOCUS: ON/OFF

3.5 NOISE REDUCTION

Move the cursor to the <NOISE REDUCTION> item in the main menu and press [HOME] button, <NOISE REDUCTION> menu appears, as shown in the following figure.

NOISE REDUCTION	
=====	
NR-2D	2
NR-3D	3
DEFOG	13
DYNAMIC HOT PIXEL	3

NR-2D: OFF, 1~5

NR-3D: OFF, 1~8

DEFOG: 13

DYNAMIC HOT PIXEL: 3

4. P/T/Z

Move the cursor to the <P/T/Z> in the Main Menu, click the [HOME] key and enter the <P/T/Z> as follow.

P/T/Z	
=====	
SPD BY ZOOM	ON
IR SPEED	10
PSPD BY ZOOM	OFF
PRO SPEED	10
ZOOM SPEED	6
PRO LRSET	OFF
IMAGEFREEZING	OFF

SPD BY ZOOM: The depth of field scale switch for IR Remote, Optional items: ON/OFF

IR SPEED: Set the PTZ speed for remote controller 1~16

PSPD BY ZOOM: ON/OFF

PRO SPEED: 10

ZOOM SPEED: 6

PRO LRSET : OFF

IMAGEFREEZING: OFF

5. VIDEO FORMAT

Move the cursor to the < **VIDEO FORMAT** > in the Main Menu, click the **【HOME】** key and enter the < **VIDEO FORMAT** > as follow.

VIDEO FORMAT
4KP30
4KP25
1080P60
1080P50
1080P30
1080P25
720P60

Video format: 4KP30, 4KP25, 1080P60, 1080P30, 1080P25, 720P60, 720P50

6. VERSION

Move the cursor to the < **VERSION** > in the Main Menu, click the **【HOME】** key and enter the < **VERSION** > as follow.

VERSION
=====
ARM VERSION 1.1.0.0

ARM Version: Display MCU version information

7. RESTORE DEFAULT

Move the cursor to the < **RESTORE DEFAULT** > in the Main Menu, click the **【HOME】** and enter the < **RESTORE DEFAULT** > as follow.

RESTORE DEFAULT
=====
RESTORE ALL NO
SET OPRESET NO

RESTORE ALL: YES/NO

SET OPRESET: YES/NO, Set the preset position 0

Notice: Instructions about the menu above are for reference only, and the contents are subject to change without prior notice.

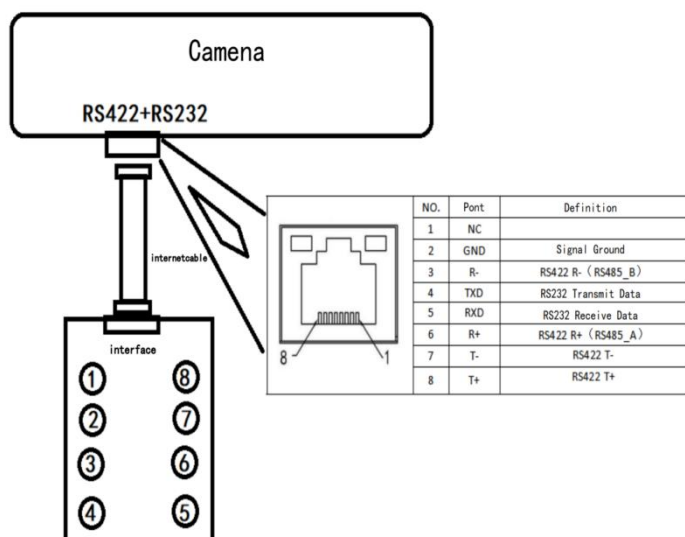
HDMI USAGE

1. The interface to the backboard is HDMI
2. Requirements for wire rods: recommend HDMI UHD, supporting 4K transmission.
3. Receive end: support HDMI.(supports 4K resolution ratio)

USB3.0 USAGE

- 1.The interface to the backboard is USB3.0 B port.
- 2.Requirements for wire rods: recommend USB3.0 ultra HD extension cable, supporting 4K transmission.
- 3.Receive end: support USB3.0 or above.

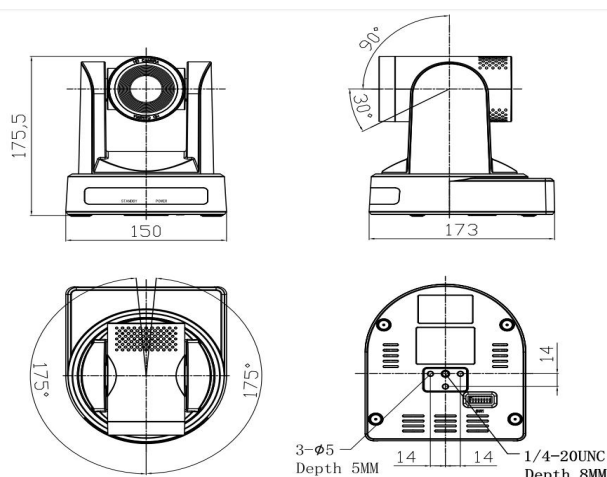
RS422&RS232 CONNECTING METHODS



Notice:

- 1.RS232 must be connected to TXD,RXD,GND
- 2.RS422must be connected to T+,T-,R+(A),R-(B)
- 3.RS485must be connected to R+(A),R-(B).

Installation Size Chart



Camera Maintenance and Fault Handling

Camera Maintenance

- If camera is not used for long time, please turn off the power switch and disconnect the AC power adapter from the AC socket after use.
- Use soft cloth or tissue to clean the camera housing.
- Use soft cloth to clean the lens; use neutral cleaner to wipe gently when faced with serious surface dirt. Do not use strong or corrosive cleaner so as not to scratch the lens and affect the image.

Avoid using in the following conditions

- The camera should avoid shooting extremely bright objects, such as sunlight, lights.
- Avoid working under unstable lighting conditions, otherwise the image will flash.
- Avoid using around facilities that emit high-powered radio waves, such as television stations or radio stations.

Fault Handling

Image

1) No video output

—— a, Check whether the camera power supply is connected, the voltage is normal, the power indicator is on.

b, Check Whether the camera can self-check after restarted.

c, Check whether the DIP switch at the bottom is normal

d, Check whether the cable of video platform or television is connected properly.

2) Image intermittence

——a, Check whether the video output cable or video display is in a normal state.

3) Image dithering appears when the camera lens is at the maximum magnification

——a, Check whether the camera is solidly installed.

b, Check Whether there are vibrating machinery or objects around the camera

4) Remote controller cannot work

——a, Replace with a new battery

b, Check whether the battery is installed on the remote controller or low

c, Check whether the working mode of the camera is correct

d, Check whether the camera address is correct.

5) Serial port cannot work

——a, Check whether the working mode of the camera is correct

b, Check whether the control cable is connected properly

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