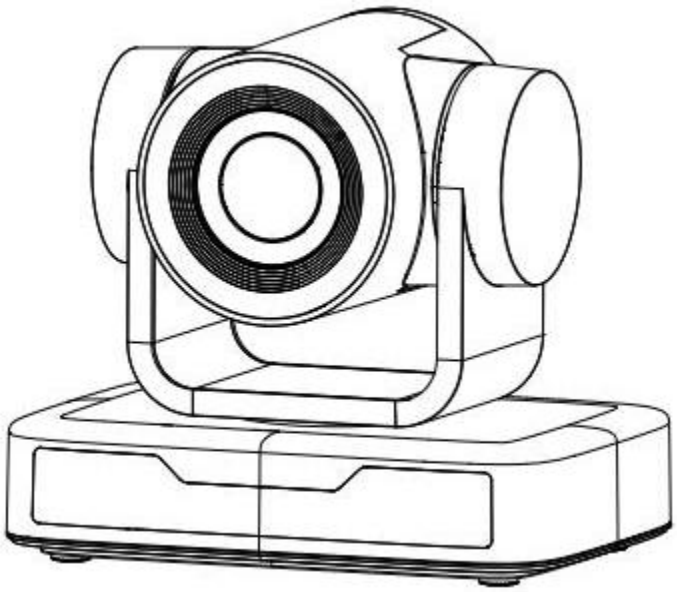
RGBlink RGB10X-USB-BK PTZ Camera User Manual

PTZ Camera
RGB10X-USB-BK



User Manual

Contents

RGB10X-USB-BK PTZ Camera

Thank you for choosing our product! This User Manual is designed to show you how to use this camera quickly and make use of all the features. Please read all directions and instructions carefully before using this product.

Declarations

FCC/Warranty
Federal Communications Commission (FCC) Statement
This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation
RGBlink provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. RGBlink must be informed immediately in writing of any complains.
The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, RGBlink can repair the fault or provide a replacement at its own discretion within an appropriate period. If this

measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other service provided by RGBlink, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of RGBlink.
If the purchaser or a third party carries out modifications or repairs on goods delivered by RGBlink, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by RGBlink either.
The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels
There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source
This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product
This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord
Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse
To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres
To avoid explosion, do not operate this product in an explosive atmosphere.

Installation Safety Summary

Safety Precautions
For all camera installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment. To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power Cord.
The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection
Before opening camera shipping box, inspect it for damage. If you find any damage, notify the shipping carrier

immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative. Once you have removed all the components from their packaging and checked that all the listed components are present, visually inspect the system to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation
The environment in which you install your camera should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Electric Safety
Installation and operation must accord with electric safety standard

Polarity of power supply
The power supply of the product is ±12V, the max electrical current is 2A .Polarity of the power supply drawing.

Careful of installation
Never move the camera by seizing the camera head. Don't rotate camera head by hand; otherwise, mechanical trouble will occur. This series item must be put on the smooth desk or platform, and it can not be installed slant ways; If the camera is installed on TV or computer, the base can be fixed by four double-sided adhesive trays. Don't apply in corrosive liquid, as or solid environment to avoid the cover which is made up of organic material. To make sure no obstacle in rotation range. Never power on before installation is completed.

Don't disassemble discretionarily.
We are not responsible for any unauthorized modification or dismantling.

Chapter 1 Your Product

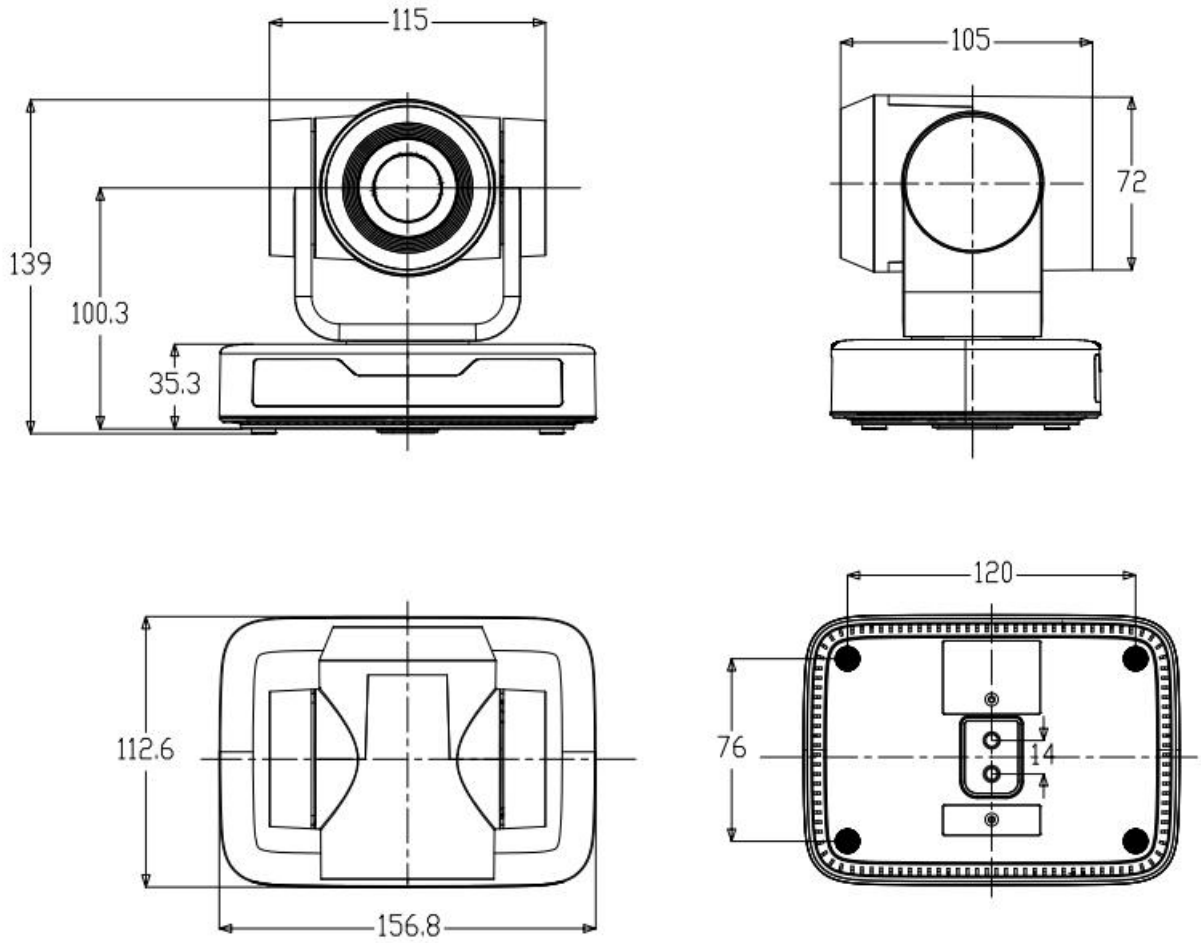
In the Box

Standard: Power Adapter × 1,USB2.0 cable × 1,Remote control × 1
Optional: ceiling mount, wall mount
USB2.0 video cable: If USB2.0 video cable is required for power supply without power adapter, in which power is supplied by red end and USB video signal is transmitted by black end; if power adapter is used, USB2.0 video cable is not required for power supply, and ordinary USB2.0 video cable is enough.

Product Overview

Product Model
The User Manual is applicable to: 10X PTZ Camera: RGB10X-USB-BK

1.2.2 Dimension



Product Dimension

Main Features

Camera Performance

This series camera has perfect functions, superior performance and rich video output interfaces; Featuring with advanced ISP processing algorithms, offering vivid and high resolution video with a strong sense of depth and fantastic color rendition.

- **Full HD Resolution:** 1/2.9 inch high quality CMOS sensor. Resolution is up to 1920×1080 with frame rate up to 30 fps.
- **Multiple Optical Zoom Lens:** 10X optical zoom lens.
- **Leading Auto Focus Technology:** Fast, accurate and stable auto focusing technology.
- **Low Noise and High SNR:** Super high SNR image is achieved with low noise CMOS. Advanced 2D/3D noise reduction technology further reduces the noise while ensuring high image clarity.
- **Control Interface:** RS485, RS232 (cascade connection)
- **Multiple Control Protocol:** Support VISCA, PELCO-D, PELCO-P protocols; Support automatic identification protocols.
- **Quiet Pan / Tilt Movement:** With high accuracy step driving motor, camera can pan / tilt extremely quiet and smooth.
- **Multiple presets:** Up to 255 presets (10 presets via remote control).
- **Multiple Application:** Online-education, Lecture Capture, Webcasting, Video conferencing, Tele-medicine,
- Unified Communication, Emergency command and control systems, etc.

Technical Parameter

Model	10X
Camera Parameter	
Sensor	1/2.9 inch high quality CMOS sensor
Effective Pixels	2.07 megapixel, 16 9
Video Format	1920×1080P@30 fps/25fps 1280×720P@30fps/25fps 1024×576P@30fps/25fps 960×540P@30fps/25fps 800×448P@30fps/25fps 640×360P@30fps/25fps 320×176P@30fps/25fps,etc
View Angle	8.8° 66°
Focus Length	f=4.34mm 41.66mm
AV	F1.85 F2.43
Optical Zoom	10X
Digital Zoom	10X
Minimum Illumination	0.5Lux(F1.8, AGC ON)
DNR	2D 3D DNR
White Balance	Auto / Manual/ One Push//3000K/3500K/4000K/4500K/5000K/5500K/6000K/6500K/7000K
Focus	Auto / Manual/ One Push Focus
Exposure	Auto / Manual
BLC	On/Off
Video Adjustment	Brightness, Color, Saturation, Contrast, Sharpness, B/W mode, Gamma curve
SNR	>50dB

Input/output Interface

Video Output	USB2.0 Interface, A Type Interface
Video Compression Format	MJPG, H.264, H.265
Control Interface	RS232 (IN/OUT), RS485
Control Protocol	VISCA/Pelco-D/Pelco-P
Power Interface	HEC3800 outlet (DC12V)

USB Feature

Operation Systems	Windows 7, Windows8, Windows10, Mac osx, Linux, etc
Video Compression For mat	MJPG/H264/H265
USB Communication Pro tocol	UVC

PTZ Parameter

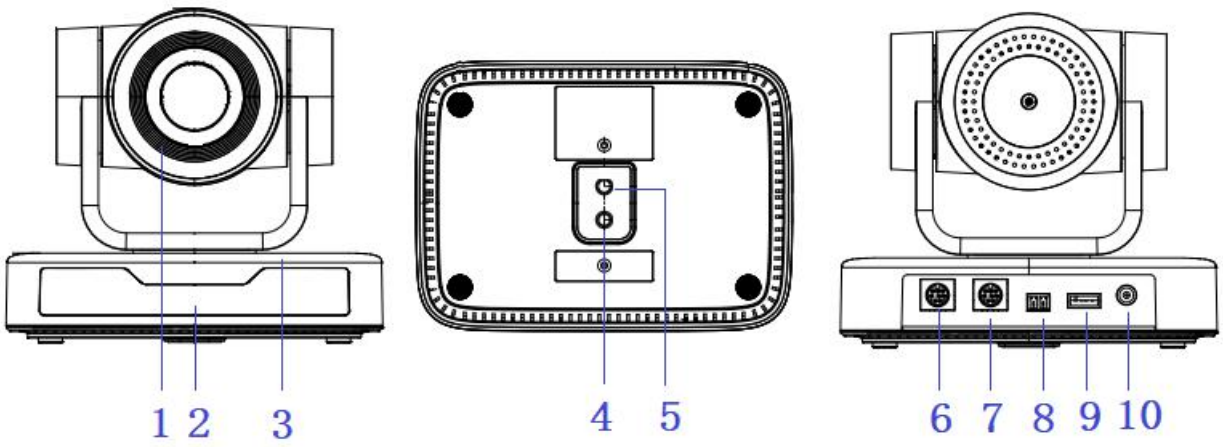
Pan Rotation	-170° +170°
Tilt Rotation	-30° +30°
Pan Control Speed	0.1 60°/sec
Tilt Control Speed	0.1 40°/sec
Preset Speed	Pan: 60°/sec, Tilt: 40°/sec
Preset Number	255 presets (10 presets via remote control)

Other Parameter

Input Voltage	12V
Input Current	Maximum: 4.98A
Power Consumption	Maximum: 2.5W
Stored Temperature	-40℃ +70℃
Storage Humidity	20% 90%
Working Temperature	-10℃ +50℃
Working Humidity	20% 80%
Dimension (W*H*D)	156.8mm×112.6mm×139.5mm
Weight	1KG
Application	Indoor
Package	Power Supply, RS232 Control Cable, IR Remote Control, User Manual, Warranty C ard, USB2.0 Cable
Optional Accessories	Ceiling / Wall Mount (Extra Cost)

Chapter 2 Install Your Product

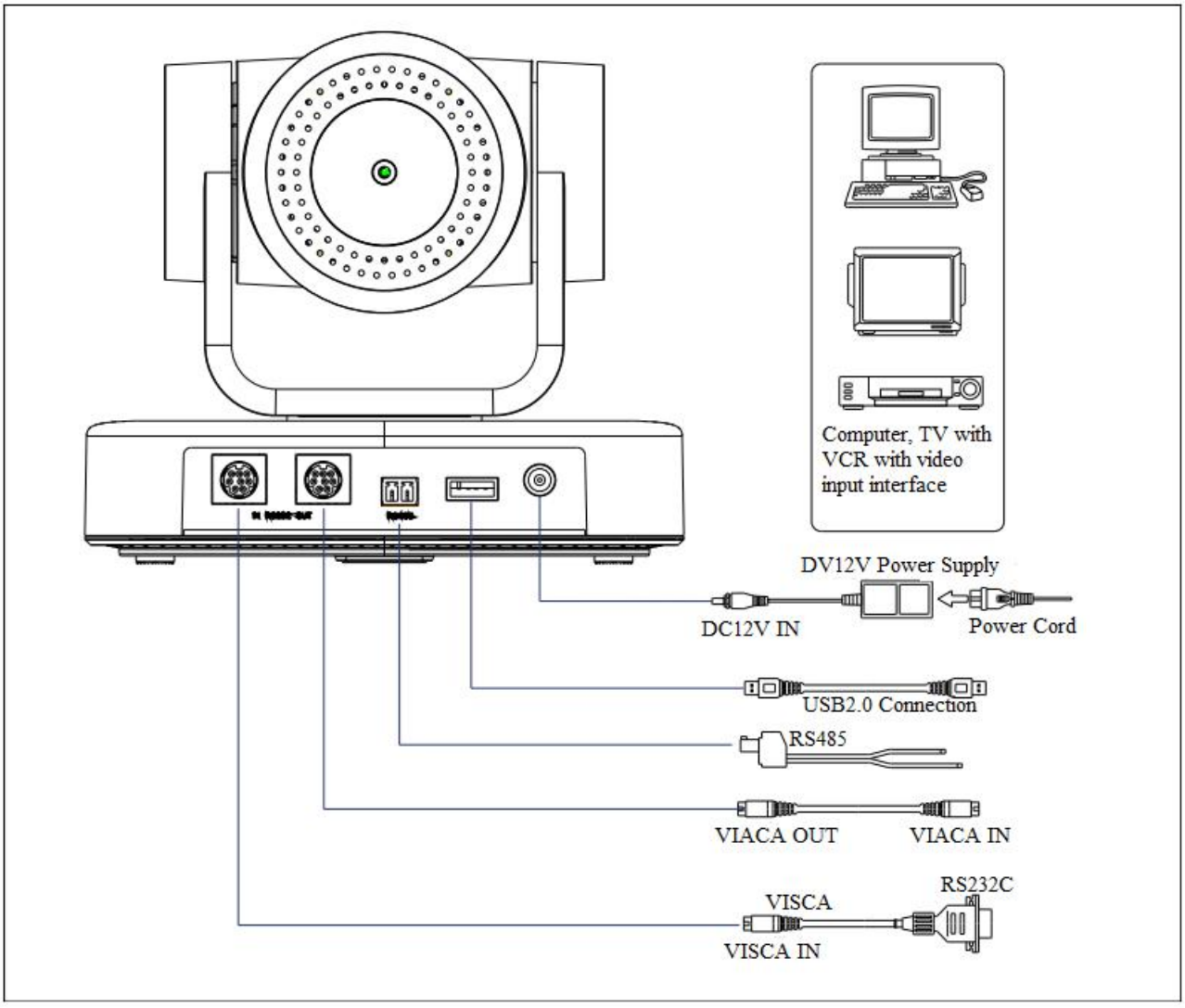
Camera Interface Explanation



Product Interfaces

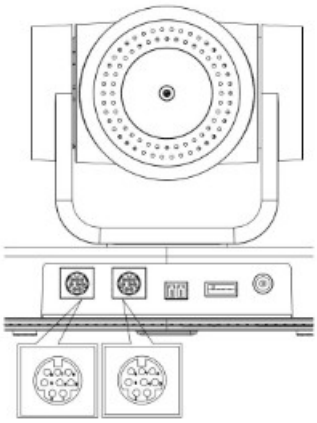
1. Camera Lens 2. Remote Control Receiving Indicator 3. Camera Base 4. Tripod Screw Hole 5. Screw Hole for Tripod	6. RS232 Control Interface Input 7. RS232 Control Interface Output 8. RS485 Input (left +, right-) 9. USB 2.0 Interface 10. DC12V Input Power Supply Socket

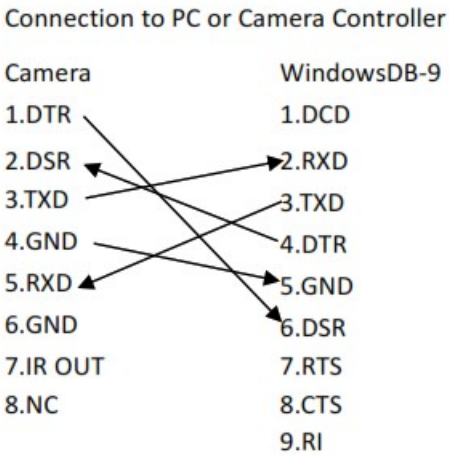
External Interface



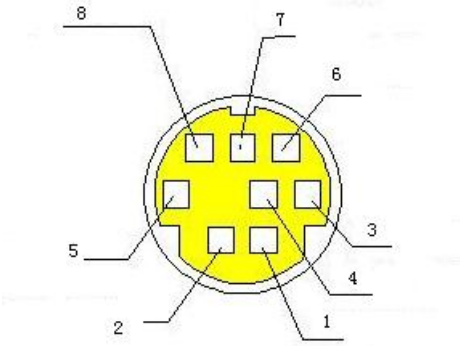
RS-232 Interface

1. RS-232 Interface Definition



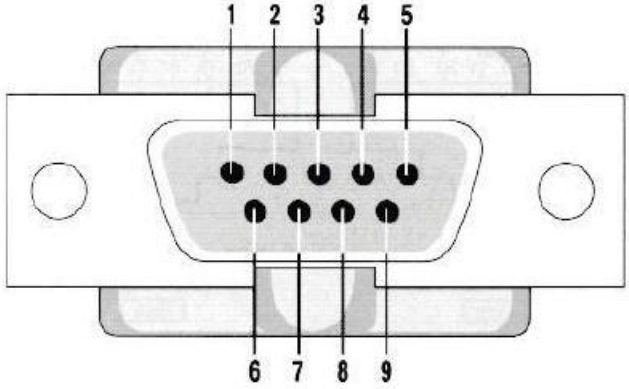


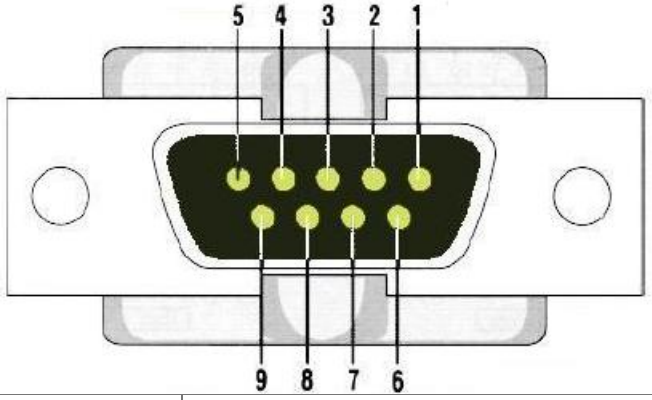
2. RS-232 Mini-DIN 8-pin Port Definition



NO.	Port	Definition
1	DTR	Data Terminal Ready
2	DSR	Data Set Ready
3	TXD	Transmit Data
4	GND	Signal Ground
5	RXD	Receive Data
6	GND	Signal Ground
7	IR OUT	IR Commander Signal
8	NC	No Connection

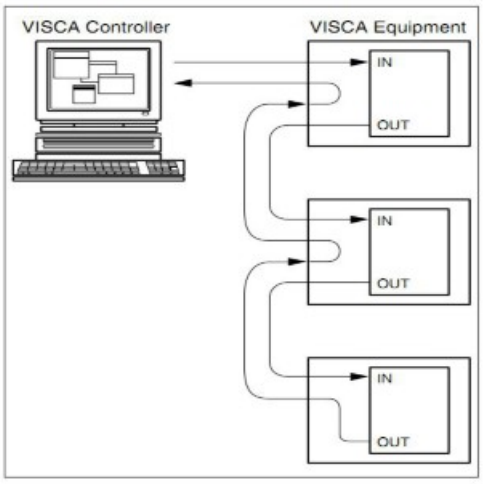
3. RS232(DB9) Port Definition





NO.	Port	Definition
1	DCD	Data Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	System Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator

4. VISCA networking as shown below



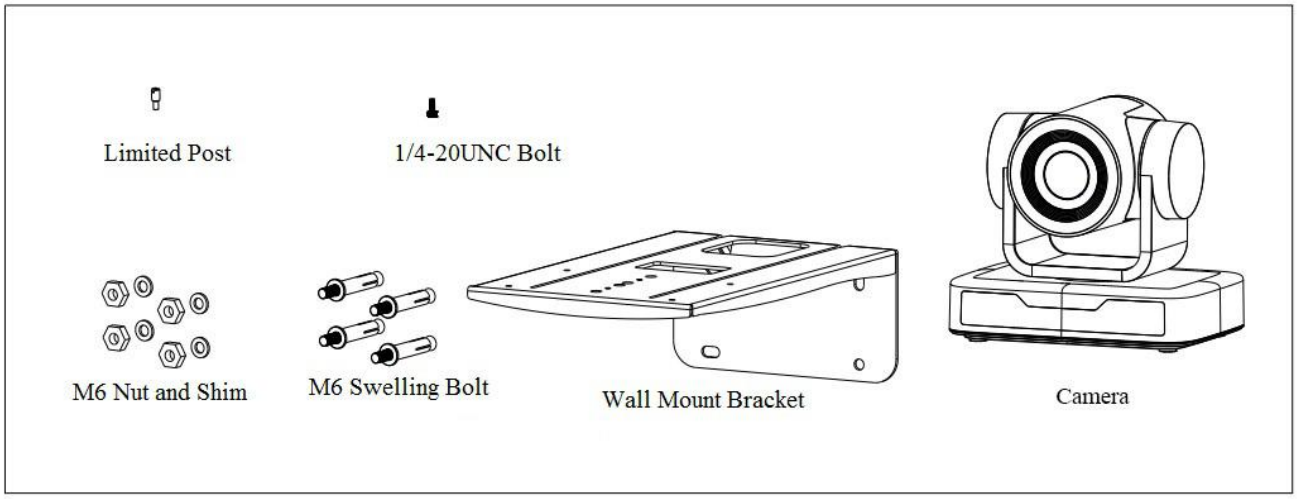
Camera cascade connection

Camera 1	Camera 2
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.OPEN
8. NC	8.OPEN

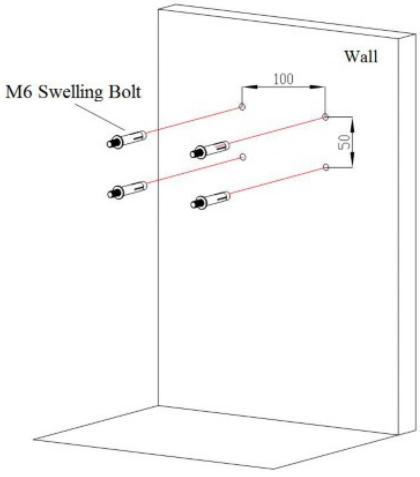
Bracket Mount

Notes: Ceiling or wall mounting brackets can only be mounted on template and concrete wall.
For safety reason, plasterboard is not recommended.

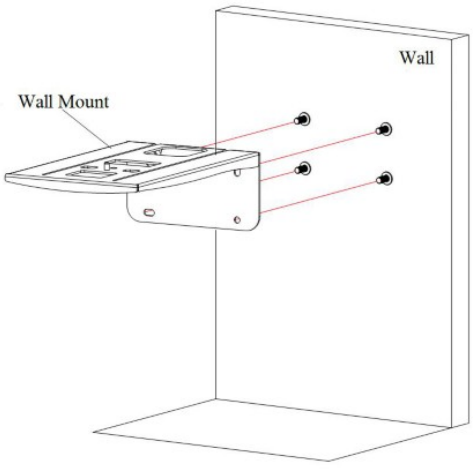
1. **Wall Mounting:**



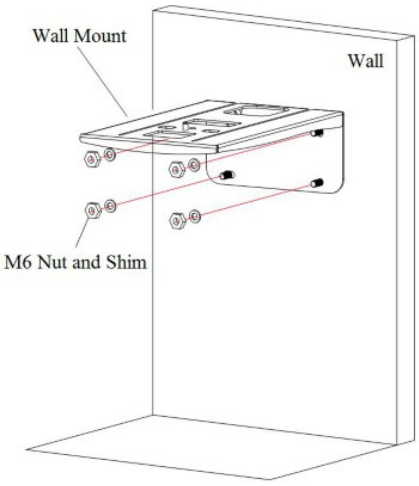
STEP 1



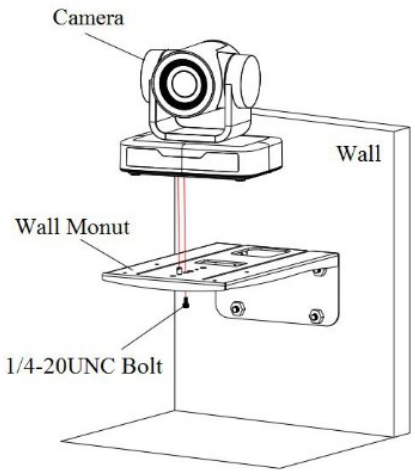
STEP 2



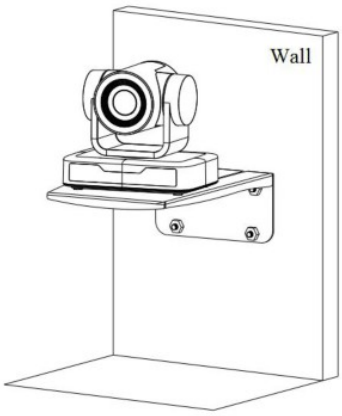
STEP 3



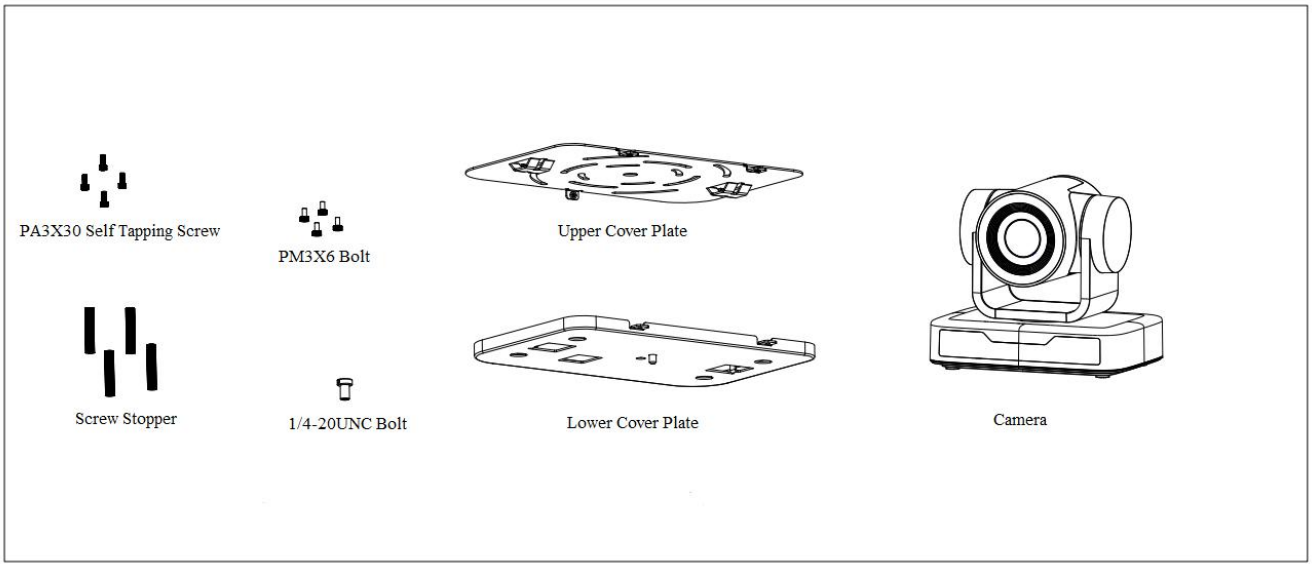
STEP 4

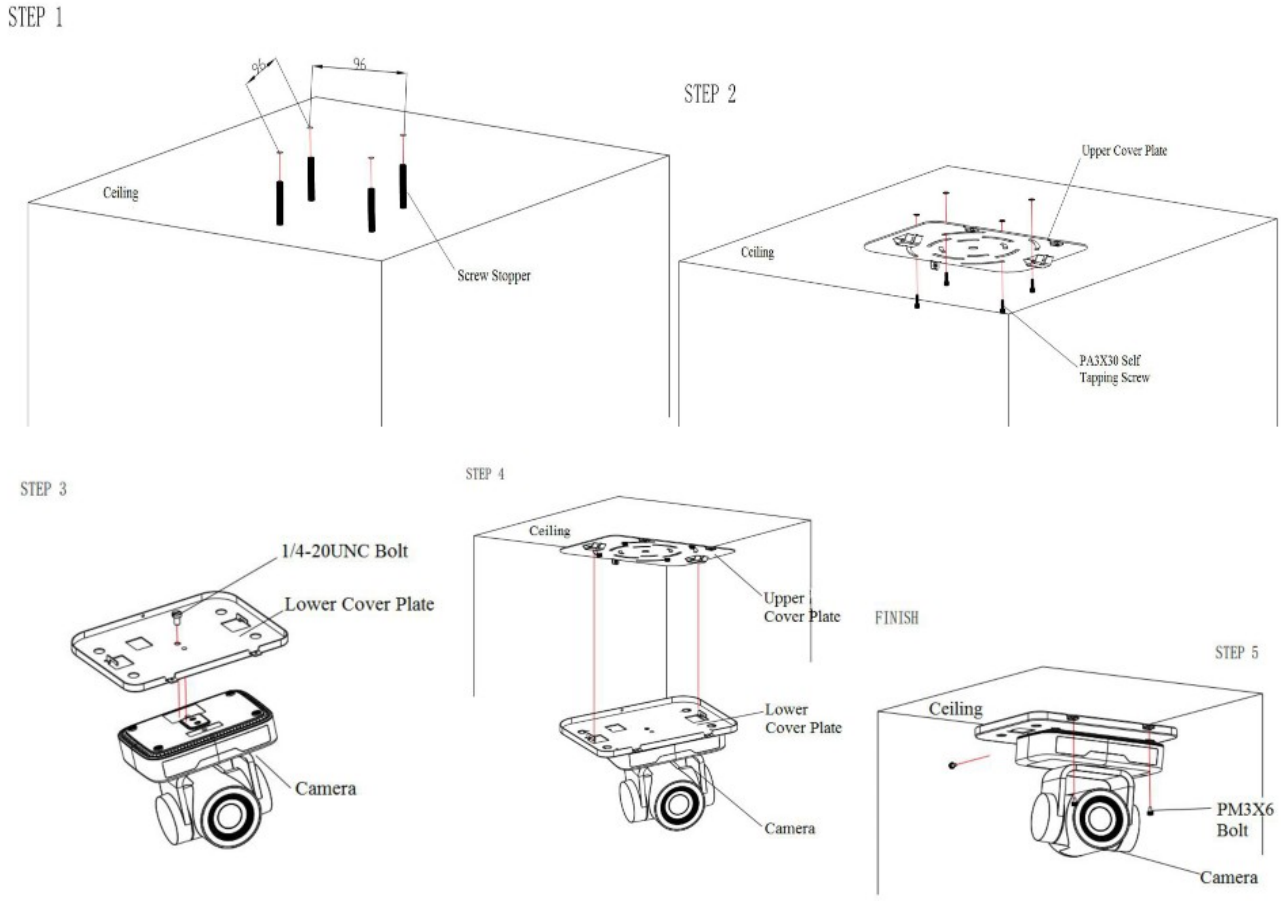


FINISH



2. **Ceiling Mounting**





Chapter 3 Use Your Product

Video Output

Power on initial configuration

The remote control receiving indicator flashes after power on, the pan-tilt turns left to the lowest left to the lowest, and then turns to the HOME position (both the horizontal and vertical positions are in the middle), while the movement first shrinks and then stretches. When remote control receiving indicator stops flashing, the self-checking is completed. After power on and self-checking, the camera will automatically return to the preset 0 position if it's pre-set.

Video Output

Connect to the video output cable: the user can refer to Figure 1.1 product interfaces.
USB2.0 output: Connect the camera with the computer USB2.0 interface (black), open the Device Manager to see whether there is an imaging device and whether the Universal Serial Bus controllers recognize the USB2.0 device.
After properly identified, open the software, choose the imaging device, and then it will output the image.

Remote Controller

Keys 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. **Standby Key**

   The camera enters standby mode if long press 3s on standby key;

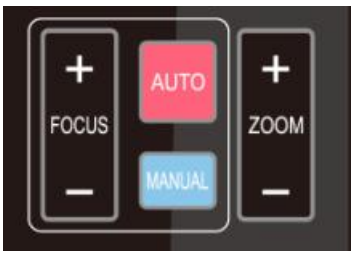
   Long press 3s again on the standby key, the camera will self-check again and return to

   HOME position (If preset 0 position is set, the camera will return to preset 0 position).

2. **Camera Selection**

   Select the camera address to control.

3. **Focus Control**



   Auto: auto focus mode

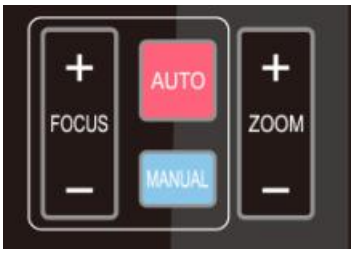
   Manual: manual focus mode

Focus + (near):Press FOCUS + key (Valid only in manual focus mode)

Focus – (far): Press FOCUS - key (Valid only in manual focus mode)

Press and hold the keys, the action of focus will keep continue and stop as soon as the key is released.

4. **Zoom Control**



ZOOM +: press ZOOM + key to zoom in

ZOOM – : press ZOOM - key to zoom out

Press and hold the keys, the action of focus will keep continue and stop as soon as the key is released.

5. **Set and Clear Presets**

Set Preset: press SET PRESET button, and then press the number key 0-9 to set preset positions.

Note: 10 presets via remote control.

Call Preset: Press a number key 0-9 directly to call a preset position.

Clear Preset: press CLEAR PRESET button, and then press the number key 0-9 to clear preset positions.

Note : press the # key three times continually to clear all presets.

6. **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 movements will keep running, from slow to fast, until it runs to the endpoint; stop as soon as the key is released.

7. **Menu Setting**

MENU : Open / close the OSD menu

HOME : Camera lens back to the middle position;

Confirm button; Enter next menu

↑ ↓ Choose item

← → Modify values

BLC ON/OFF Turn on or off the back light compensation

8. **Camera Remote Control Address Setting**

* + + F1 :Camera Address No.1

* + + F2 :Camera Address No. 2

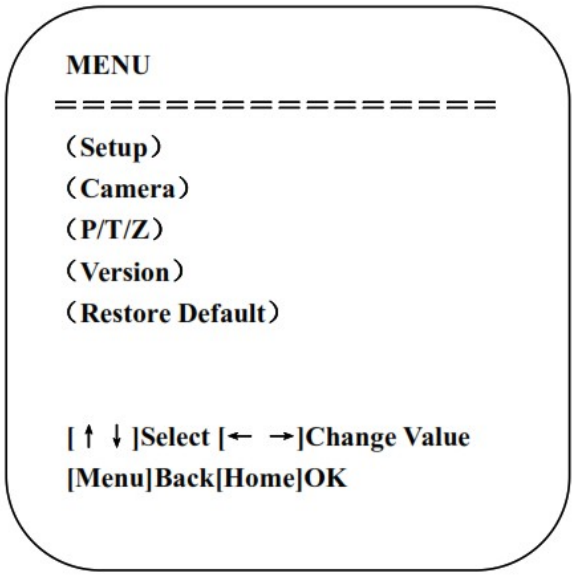
* + + F3 :Camera Address No. 3

* + + F4 :Camera Address No. 4

Menu Setting

1. **Main Menu**

In normal working mode, press MENU key to display the menu, using scroll arrow to point at or highlight the selected items.



Setup: System parameter setting

Camera: Camera parameter setting

P/T/Z: Enter into sub menu

Version: Enter into sub menu

Restore Default: Enter into reset setting, select YES or NO to confirm

[↑↓] Select: For selecting menu

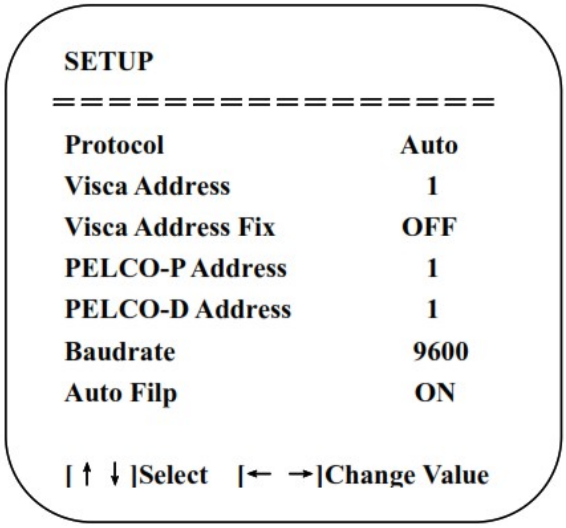
[← →] Change Value: For modifying parameters

[MENU] Back: Press [Menu] to return

[Home] OK: Press [Home] to confirm

2. **System Setting**

Move the pointer to the (Setup) in the Main Menu, click the HOME key and enter into the (System Setting) as shown below,



Protocol: VISCA/Pelco-P/Pelco-D/Auto

Visca Address: VISCA=1~7 Pelco-P=1~255 Pelco-D=1~255

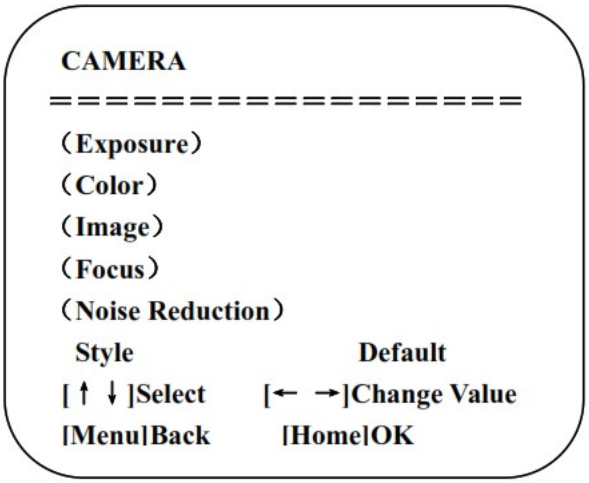
Baudrate: 2400/4800/9600/115200

Visca Address Fix: On/Off

Auto Filp: On/Off

3. **Camera Setting**

Move the pointer to the (CAMERA) in the Main Menu, click the HOME key and enter the (CAMERA) as follow,



Exposure: Enter into Exposure setting

Color: Enter into color setting

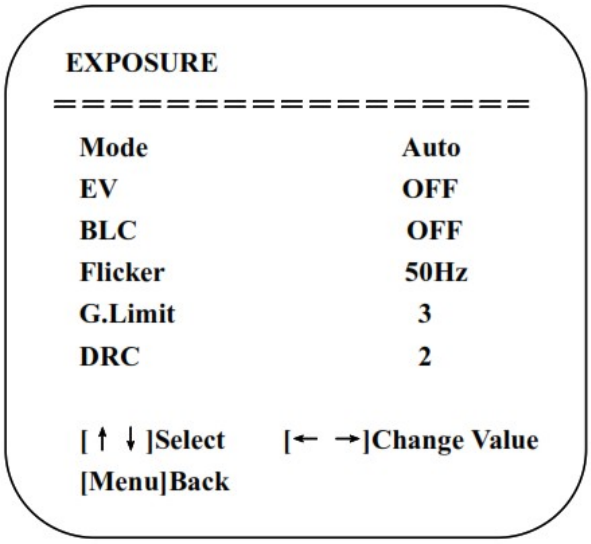
Image: Enter into image setting

Focus: Enter into focus setting

Noise Reduction: Enter into noise reduction

1 Exposure Setting

Move the pointer to the (EXPOSURE) in the Main Menu, click the HOME key and enter into the (Exposure sub menu) as shown below,



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: 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

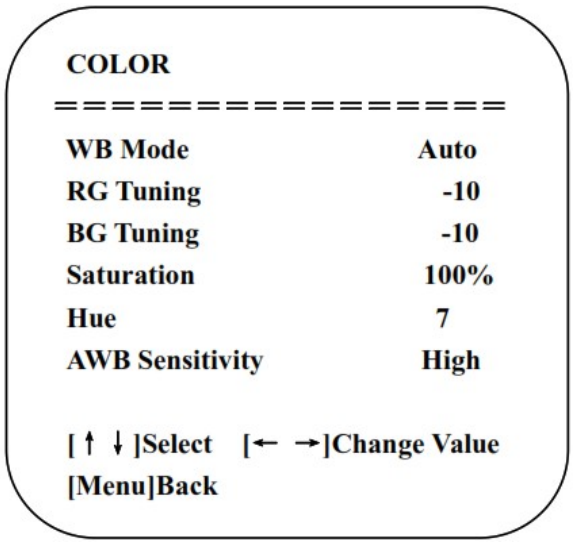
Shutter **Priority:** 1/25,1/30,1/50,1/60,1/90,1/100,1/120,1/180,1/250,1/350,1/500,1/1000,1/2000,1/3000,1/4000,1/6000, 1/10000 (only available in Manual and Shutter priority mode)

IRIS Priority: OFF, F11.0, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.8(only available in Manual and Iris priority mode)

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

2 Color

Move the pointer to the (COLOR) in the Main Menu, click the HOME and enter the (COLOR sub menu) as follow,



WB Mode: Auto, Manual, One Push, 3000K, 3500K, 4000K, 4500K, 5000K, 5500K, 6000K, 6500K,7000K

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

Red fine-tuning: -10~10 (only available in automatic mode)

Blue fine-tunable: -10~10 (only available in automatic mode)

RED GAIN: 0~255(only available in Manual mode)

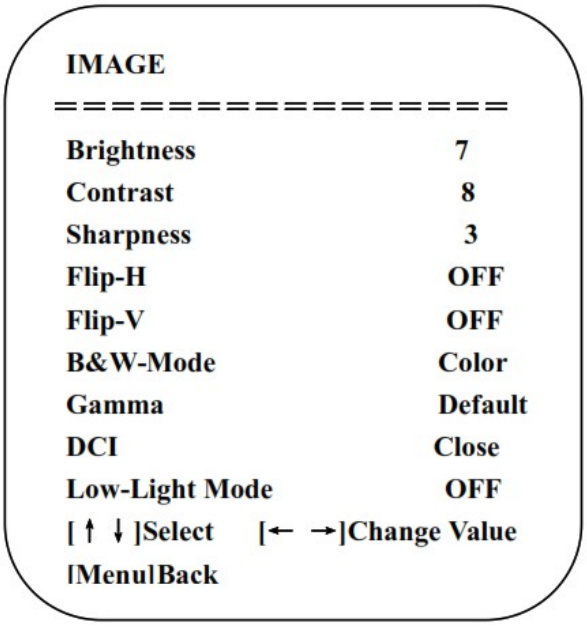
BLUE GAIN: 0~255(only available in Manual mode)

AWB Sensitivity: high/middle/low

Chroma: 0~14

3) Image

Move the pointer to the (IMAGE) in the Menu, click the HOME and enter into the (IMAGE sub menu) as follow,



Brightness: 0~14

Contrast: 0~14

Sharpness: 0~15

Flip-H: On/Off

Flip-V: On/Off

B&W Mode: color, black/white

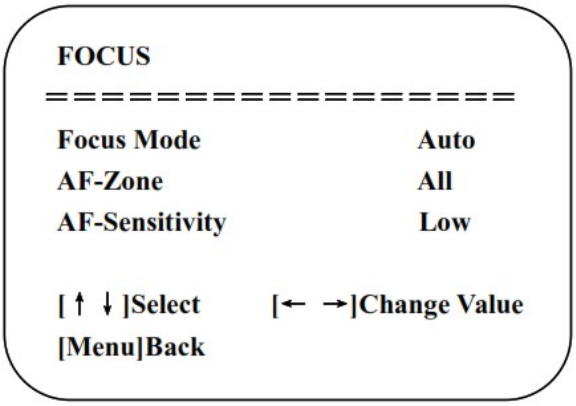
Gamma: Default/0.45/0.50/0.5/0.63

DCI: Dynamic Contrast: Off/1 8

Minimum Illumination: On/Off

4 Focus

Move the pointer to the (FOCUS) in the Menu, click the HOME and enter the (FOCUS) as follow,



Focus Mode: Auto/manual

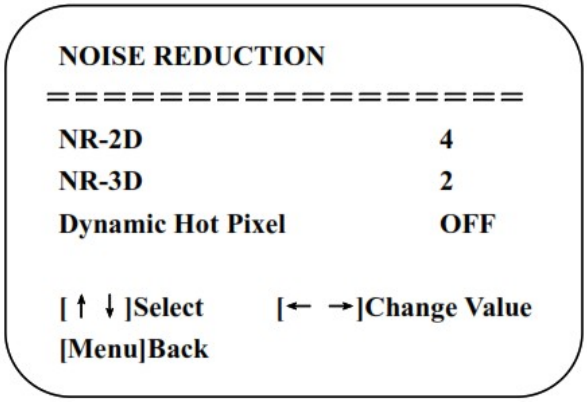
AF-Zone: Up/middle/down

AF-Sensitivity: High/middle/low

5 Noise Reduction

Move the pointer to the (NOISE REDUCTION) in the Menu, click the HOME and enter the (NOISE

REDUCTION) as follow,



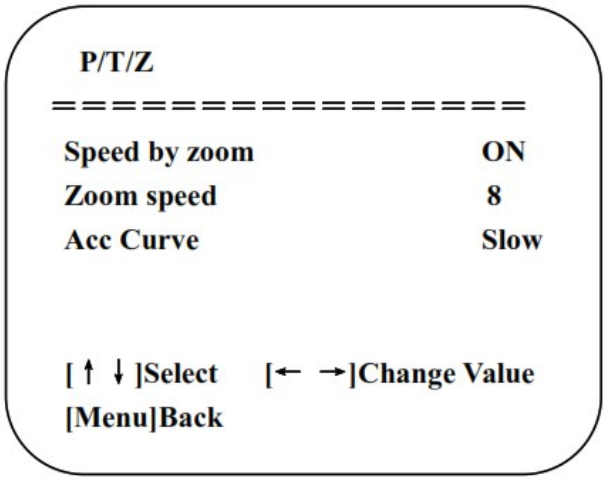
2D Noise Reduction: Auto, close, 1~7

3D Noise Reduction: Close, 1~8

Dynamic Hot Pixel: Close, 1~5

4. **P/T/Z**

Move the pointer to the (P/T/Z) in the Main Menu, click the HOME and enter the (P/T/Z) as follow,



Depth of Field: Only effective for the remote controller, On/ Off; (When zooming in, the PT control speed by remoter will become slow)

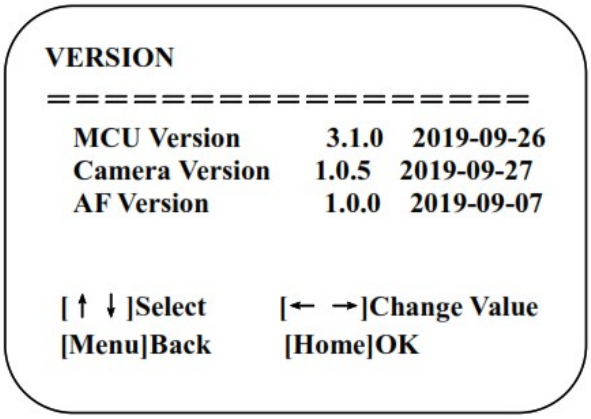
Zoom Speed: Set the zoom speed for the remote controller, 1~8

Image Freezing: On/Off

Accelerating Curve: Fast/Slow

5. **Version**

Move the pointer to the (VERSION) in the Main Menu, click the HOME and enter the (VERSION) as follow,



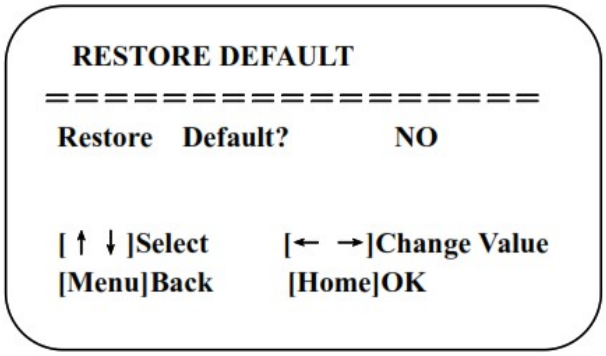
MCU Version: Display MCU version information

Camera Version: Display camera version information

AF Version: Display the focus version information

6. **Restore Default**

   Move the pointer to the (RESTORE DEFAULT) in the Main Menu, click the HOME and enter the (RESTORE DEFAULT) as follow,



Restore default: YES/NO. Color 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).

Chapter 4 Ordering Codes

Product

981-0011-12-0: RGB10X-USB-BK 10X PTZ Camera

Chapter 5 Support

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Camera Maintenance and Troubleshooting

1 Camera Maintenance

1. Please power off the camera and disconnect the power adapter and socket, if it's not used for a long run.
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 video quality.

Troubleshooting

1. **No video output**
   a. Check whether the camera power supply is connected, the voltage is normal, the power indicator is lit.
   b. Whether the machine could do self-check after restarted.
   c. Check whether the bottom of the DIP switch is the normal operating mode
   d. Check whether the video output cable or video display is normal
2. **No image sometimes**
   a. Check whether the video output cable or video display is normal
3. Video dithering when zoom-in or zoom-out
   a. Check whether the camera installation position is solid
   b. Whether there is shaking machine or objects around the camera
4. **Remote control not works**
   a. Remote control address is set to 1 (if the machine is set back to the factory defaults, remote control addresses need to be back to 1 too)
   b. Check whether the battery is installed on the remote controller or low.
   c, Check the camera working mode is the normal operating moded. Check the menu whether is closed, camera control through remote controller is only available after exiting the menu. If video output from LAN, menu will not be displayed, menu will automatically exists 30s later, and then it can be controlled by remote controller.
5. **Serial port not works**
   a. Check whether the camera serial device protocol, baud rate, address is consistent

b. Check whether the control cable is connected properly

c. Check whether the camera working mode is the normal operating mode

Chapter 6 Appendix

The camera could be controlled through RS232/RS485 interface; RS232C serial parameter are as follows: Baud rate: 2400/4800/9600/115200 bits / sec; Start bit: 1; data bits: 8; Stop bit: 1; Parity: None.
After power on, the camera first goes 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.

VISCA Protocol List

1 Camera Return Command

Ack/Completion Message		
	Command packet	**Note**
ACK	z0 41 FF	Returned when the command is accepted.
Completion	z0 51 FF	Returned when the command has been executed.

z = camera address + 8

Error Messages		
	Command packet	**Note**
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted
Command Not Executable	z0 61 41 FF	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

2 Camera Control Command

Command	**Function**	**Command packet**	**Note**
Address Set	Broadcast	88 30 Op FF	p: Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
Command Cancel		8x 21 FF	
CAM Power	On	8x 01 04 00 02 FF	Power ON/OFF
	Off	8x 01 04 00 03 FF	
	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	
	Wide(Standard)	8x 01 04 07 03 FF	

CAM Zoom	Tele(Variable)	8x 01 04 07 2p FF	p – 0(low) – F(high)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 Op Oq Or Os F F	pqrs: Zoom Position
CAM _Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Fa r(Variable)	8x 01 04 08 2p FF	p = 0(low) – F(high)
	Near (Variable)	8x 01 04 08 3p FF	
	Direct	8x 0104 48 Op Oq Or Os FF	pqrs: Focus Position
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	One Push mode	8x 01 04 38 04 FF	
CAM Zoom Focus —	Direct	8x 01 04 47 Op Oq Or Os Ot Ou Ov Ow FF	pqrs: Zoom Position tuvw: Focus Position
CAM WB —	Auto	8x 01 04 35 00 FF	
	3000K	8x 0104 35 01 FF	
	4000k	8x 01 04 35 02 FF	
	One Push mode	8x 01 04 35 03 FF	
	5000k	8x 01 04 35 04 FF	
	Manual	8x 01 04 35 05 FF	
	6500k	8x 01 04 35 06 FF	
	3500K	8x 01 04 35 07 FF	
	4500K	8x 01 04 35 08 FF	
	5500K	8x 01 04 35 09 FF	
	6000K	8x 01 04 35 OA FF	
	7000K	8x 01 04 35 OB FF	
CAM _RGain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 Op Oq FF	pq: R Gain
CAM_ Bgain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	

	Direct	8x 01 04 44 00 00 Op Oq FF	pq:B Gain
CAM AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter priority	8x 01 04 39 OA FF	Shutter Priority Automatic Exposure mode
	Iris priority	8x 01 04 39 OB FF	Iris Priority Automatic Exposure mod e
	Bright	8x 01 04 39 OD FF	Bright mode
CAM Shutter	Reset	8×0104 OA °OFF	Shutter Setting
	Up	8x 01 04 OA 02 FF	
	Down	8x 01 04 OA 03 FF	
	Direct	8x 01 04 4A 00 00 Op Oq FF	pq: Shutter Position
CAM Iris	Reset	8x 01040B 00 FF	Iris Setting
	Up	8x 01 04 OB 02 FF	
	Down	8x 01 04 OB03 FF	
	Direct	8x 01 04 46 00 00 Op Oq FF	pq: Iris Position
CAM Gain Limit	Gain Limit	8x 01 04 ?Cep FF	p: Gain Positon
CAM Bright	Reset	8x 01 04 °DOG FF	Bright Setting
	Up	8x 01 04 0002 FF	
	Down	8x 01 04 OD 03 FF	
	Direct	8x 01 04 4D 00 00 Op Oq F F	pq: Bright Positon
C.AMExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 0104 OE °OFF	Exposure Compensation Amount Set ting
	Up	8x 01 04 OE 02 FF	
	Down	8x 01 040E 03FF	
	Direct	8x 01 04 4E 00 00 Op Oq FF	pq: ExpComp Position
CAM Back Light	On	8x 01 04 33 02 FF	Backlight Compensation
	Off	8x 01 04 33 03 FF	
CAM_WDRStrength	Reset	8x 01 04 21 00 FF	WDR Level Setting
	Up	8x 01 04 21 02 FF	
	Down	8x 0104 2103 FF	
	Direct	8×01 04 51 00 00 000p FF	p: WDR Level Positon

CAM_NR (2D)		8x 01 04 53 Op FF	N0-7 0:OFF
CAM_NR (3D)		8x 01 04 54 Op FF	NO-8 0:OFF
CAM Gamma		8x 01 04 5B Op FF	p = 0 — 4 0: Default 1:0.45 2:0.50 3: 0.55 4: 0.63
CAM_Flicker	OFF	8x 01 04 23 00 FF	OFF
	50HZ	8x 01 04 23 01 FF	50HZ
	60HZ	8x 01 04 23 02 FF	60HZ
CAM Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 Op Oq FE	pq: Aperture Gain
CAM Memory	Reset	8x 01 04 3F 00 pq FF	pq: Memory Number(=0 to 254) Corr esponds to 0 to 9 on the Remote Co mmander
	Set	8x 01 04 3F 01 pq FF	
	Recall	8x 01 04 3F 02 pq FF	
CAM_LR_Rever se	On	8x 01 04 61 02 FF	Image Flip Horizontal ON/OFF
	Off	8x 01 04 61 03 FF	
CAM PictureFlip	On	8x 01 04 66 02 FF	Image Flip Vertical OWOFF
	Off	8x 01 04 66 03 FF	
CAM_ColorSatu rati on	Direct	8x 01 04 49 00 00 000pFF	P=O-E 0:60% 1:70% 2:80% 3:90% 4:100% 5:110% 6:120% 7:130% 8:140% 9:150% 10:160% 11:160% 12:180% 13:190% 14:200%
CAM_IDWrite		8x 01 04 22 Op Oq OrOs FF	pqrs: Camera ID (41000 to FFFF)
SYS_Menu	ON	8×01 04 06 06 02 FF	Turn on the menu screen
	OFF	8x 01 04 06 06 03 FF	Turn off the menu screen
IRReceive	ON	8x 01 06 08 02 FF	IR(r emote commander)receive On/O ff
	OFF	8x 01 06 08 03 FF	
IR_ReceiveRetu rn	On	8x 017D 01 03 00 00 FF	IR(r emote commander)receive mess age via the VISCA communication O N/OFF
	Off	8x 01 7D 01 13 00 00 FF	
CAM_SettingReset	Reset	8x 01 04 AO 10 FF	Reset Factory Setting
CAM Brightness	Direct	8x 01 04 Al 00 00 Op Oq FF	pq: Brightness Position
CAM Contrast	Direct	8x 01 04 A2 00 00 Op Oq FF	pq: Contrast Position
	OFF	8x 01 04 A4 00 FF	

CAM_Flip	Flip-H	8x 01 04 A4 01 FF	Single Command For Video Flip
	Flip-V	8x 01 04 A4 02 FF	
	Flip-HV	8x 01 04 A4 03 FF	
CAM_VideoSystem	Set camera video system	8x 01 06 35 00 0p FF	P: 0~E Video format 0:1080P60 1:1080P50 2:1080i60 3:1080i50 4:720P60 5:720P50 6:1080P30 7:1080P25 8:720P30 9:720P25 A 1080P59.94 B 1080i59.94 C 720P59.94 D 1080P29.97 E 720P29.97
Pan_tiltDrive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed 0x01 (low speed) to 0x14 (high speed) YYYY: Pan Position ZZZZ: Tilt Position
	Down	8x 01 06 01 VV WW 03 02 FF	
	Left	8x 01 06 01 VV WW 01 03 FF	
	Right	8x 01 06 01 VV WW 02 03 FF	
	Upleft	8x 01 06 01 VV WW 01 01 FF	
	Upright	8x 01 06 01 VV WW 02 01 FF	
	DownLeft	8x 01 06 01 VV WW 01 02 FF	
	DownRight	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	
	AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	RelativePosition	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	

Pan-tiltLimitSet	Set	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z F F	W:1 UpRight 0:DownLeft YYYY: Pan Limit Position(TBD) ZZZZ: Tilt Limit Position(TBD)
	Clear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	

3 Inquiry Command

Command	**Command Packet**	**Return Packet**	**Note**
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off(Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 Op Oq Or Os FF	pqrs: Zoom Position
CAM_FocusAFModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
		y0 50 04 FF	One Push mode
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 Op Oq Or Os FF	pqrs: Focus Position
CAM WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	3000K
		y0 50 02 FF	4000K
		y0 50 03 FF	One Push Mode
		y0 50 04 FF	5000K
		y0 50 05 FF	Manual
		y0 50 00 FF	6500K
		y0 50 06 FF	6500K
		y0 50 07 FF	3500K
		y0 50 08 FF	4500K
		y0 50 09 FF	5500K
		y0 500A FF	6000K
CAM RGain Inq	8x 09 04 43 FF	1,0 50 Of3 FF	7000K
CAM_BGain Inq	8x 09 04 44 FF	ir0 50 00 00 Op Oq FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	0 50 00 FF	Full Auto
		W 50 03 FF	Manual
		110 50 OA FF	Shutter priority
		1,0 50 OB FF	Iris priority
		y0 50 OD FF	Br tght

CAM_ShutterPosInq	Sx 09 04 4A FF	W 50 00 00 Op Oq FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 48 FF	Kl 50 00 00 Op Oq FF	pq: Iris Position
CAM Gain Limiting	8×09 042C FF	y0 50 Op FF	p: Gain Positon
CAM BrightPosilnq	8x 09 04 4D FE	y0 50 00 00 Op Oq FE	pq: Bright Position
CAM_ExpCompModelnq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	100 50 00 00 Op Oq FF	pq: ExpComp Position
CAM_BacklightModelnq	8x 09 04 33 FF	y0 50 02 FF On	
		Ir0 50 03 FF	Off
CAM_WDRStrengthInq	8x 09 04 51 FF	y0 50 00 00 00 Op FF	p: WDR Strength
CAM_NRLevel(2D) Inq	8x 09 04 53 FF	y0 50 Op FF	P: 2DNRlevel
CAM_NRLevel(3D) Inq	8x 09 04 54 FF	y0 50 Op FF	P:3D NRLevel
CAM_FlickerModelnq	8x 09 04 55 FF	v0 50 Op FF	p: Flicker Settings(0: OFF, 1: 50Hz, 2:60Hz)
CAM Aperturelnq	8x 09 04 42 FF	y0 50 00 00 Op Oq FE	pq: Aperture Gain
CAM_PictureEffectModdnq	8x 09 04 63 FF	y0 50 00 FF	Off
		y0 50 04 FF	B&W
CAM Memorylnq	8x 09 04 3F FF	W 50 Op FF	p: Memory number last operated.
SYS_MenuModelnq	8x 09 060 6 FF	y3 50 02 FF On	
		y0 50 03 FF	Off
CAM JR_Reverselnq	8x 09 04 61 FF	y0 50 02 FF	On
		W 50 03 FF	Off
CAM_PictureFlipinq	8x 09 04 66 FF	y3 50 02 FF On	
		y0 50 03 FF	Off
CAM_ColorSaturationln q	8x 09 04 49 FF	‘r0 50 00 00 00 Op FF	p: Color Gain setting Oh (60%) to E h (130%)
CAM Ong	8×090422 FF	Y3 50 Op FF	p: Gamma ID
IR_Receivelnq	8x 09 0608 FF	y3 50 02 FF	On

		y0 50 03 FF	Off
IR ReceiveReturn –		1,0 07 ?DOI 04 00 FF	Power ON/OFF
		y0 07 7D 01 04 07 FF	Zoom tele/wide
		y0 07 7D 01 04 38 FF	AF ON/OFF
		y0 07 7D 01 04 33 FF	Camera _Backltght
		y0 07 7D 01 04 3F FF	Camera _Memery
		Kl 07 7D 01 06 01 FF	Pan titleDriver _
CAM_Brightnesslnq	8x 09 04A1 FF	1,0 50 00 00 Op Oq FF	pq: Brightness Position
CAM Contrasting	8x 09 04A2 FF	y0 50 00 00 Op Oq FE	pq: Contrast Position
CAM_Flipinq	8x 09 04A4 FF	y0 50 00 FF	Off
		y050 01 FF Flip-H	
		W 50 02 FF	Flip-V
		yll 50 03 FF	Flip-HV
CAM_Gammalnq	8×09 045BFF	y3 50 Op FF	p: Gamma setting
CAM_VersionInq	8x 09 00 02 FF	y0 50 ab cd mn pq rs to vw FF	ab cd : vender ID (0220) mn pq : model ID ST (0510) . U2(0512). U3 (0513) rs tu : ARM Version vw : reserve
VideoSystemlnq	8x 09 06 23 FF	y0 500p FF	P: 0—E Video format 0:1080P60 8:720P30 1:1080P50 9:720P25 2:1080i60 3:1080i50 4:720P60 5:720P50 6:1080P30 7:1080P25 A 1080P59.94 B 1080i59.94 C 720P59.94 D 1080P29.97 E 720P29.97
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww: Pan Max Speed zz: Tilt Max Speed
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: Pan Position zzzz: Tilt Position

Note:[X] in the above table indicates the camera address to be operated, y = x + 8 .

Pelco-D Protocol Command List

Function	Bytel	Byte2	Byte3	Byte4	ByteS	Byte6	Byte?
Up	OxFF	Address	Ox00	Ox08	Pan Speed	Tilt Speed	SUM
Down	OxFF	Address	Ox00	Ox10	Pan Speed	Tilt Speed	SUM
Left	OxFF	Address	Ox00	0x04	Pan Speed	Tilt Speed	SUM
Right	OxFF	Address	Ox00	0x02	Pan Speed	Tilt Speed	SUM
Upleft	OxFF	Address	Ox00	OxOC	Pan Speed	Tilt Speed	SUM
Upright	OxFF	Address	Ox00	OxOA	Pan Speed	Tilt Speed	SUM
DownLeft	OxFF	Address	Ox00	0x14	Pan Speed	Tilt Speed	SUM
DownRight	OxFF	Address	Ox00	0x12	Pan Speed	Tilt Speed	SUM
Zoom In	OxFF	Address	Ox00	0x20	Ox00	Ox00	SUM
Zoom Out	OxFF	Address	Ox00	0x40	Ox00	Ox00	SUM
Focus Far	OxFF	Address	Ox00	0x80	Ox00	Ox00	SUM
Focus Near	OxFF	Address	Ox01	Ox00	Ox00	Ox00	SUM
Stop	OxFF	Address	Ox00	Ox00	Ox00	Ox00	SUM
Set Preset	OxFF	Address	Ox00	0x03	Ox00	Preset ID	SUM
Clear Preset	OxFF	Address	Ox00	Ox05	Ox00	Preset ID	SUM
Call Preset	OxFF	Address	Ox00	Ox07	Ox00	Preset ID	SUM
Query Pan Position	OxFF	Address	Ox00	Ox51	Ox00	0x00	SUM
Query Pan Position Response	OxFF	Address	Ox00	0x59	Value High Byte	Value Low Byte	SUM
Query Tilt Position	OxFF	Address	Ox00	0x53	Ox00	Ox00	SUM
Query Tilt Position Response	OxFF	Address	Ox00	Ox5B	Value High Byte	Value Low Byte	SUM
Query Zoom Position	OxFF	Address	Ox00	0x55	Ox00	Ox00	SUM
Query Zoom Position Response	OxFF	Address	Ox00	OxSD	Value High Byte	Value Low Byte	SUM

Pelco-P Protocol Command List

Function	Bytel	Byte2	Byte3	Byte4	ByteS	Byte6	Byte?	Byte8
Up	OxAO	Address	Ox00	0x08	Pan Speed	Tilt Speed	OxAF	XOR
Down	OxAO	Address	Ox00	Ox10	Pan Speed	Tilt Speed	OxAF	XOR
Left	OxAO	Address	Ox00	0x04	Pan Speed	Tilt Speed	OxAF	XOR
Right	OxAO	Address	Ox00	0x02	Pan Speed	Tilt Speed	OxAF	XOR
Upleft	OxAO	Address	Ox00	OxOC	Pan Speed	Tilt Speed	OxAF	XOR
Upright	OxAO	Address	Ox00	OxOA	Pan Speed	Tilt Speed	OxAF	XOR
DownLeft	OxAO	Address	Ox00	0x14	Pan Speed	Tilt Speed	OxAF	XOR
DownRight	OxAO	Address	Ox00	Ox12	Pan Speed	Tilt Speed	OxAF	XOR
Zoom In	OxAO	Address	Ox00	Ox20	Ox00	Ox00	OxAF	XOR
Zoom Out	OxAO	Address	Ox00	Ox40	Ox00	Ox00	OxAF	XOR
Stop	OxAO	Address	Ox00	Ox00	Ox00	Ox00	OxAF	XOR
Focus Far	OxAO	Address	Ox01	Ox00	Ox00	Ox00	OxAF	XOR
Focus Near	OxAO	Address	Ox02	Ox00	Ox00	Ox00	OxAF	XOR
Set Preset	OxAO	Address	Ox00	Ox03	Ox00	Preset ID	OxAF	XOR
Clear Preset	OxAO	Address	Ox00	Ox05	Ox00	Preset ID	OxAF	XOR
Call Preset	OxAO	Address	Ox00	Ox07	Ox00	Preset ID	OxAF	XOR
Query Pan Position	OxAO	Address	Ox00	Ox51	Ox00	Ox00	OxAF	XOR
Query Pan Position Response	OxAO	Address	Ox00	0x59	Value High By te	Value Low Byte	OxAF	XOR
Query Tilt Position	OxAO	Address	Ox00	Ox53	Ox00	Ox00	OxAF	XOR
Query Tilt Position Response	OxAO	Address	Ox00	OxSB	Value High By te	Value Low Byte	OxAF	XOR
Query Zoom Position	OxAO	Address	Ox00	Ox55	Ox00	Ox00	OxAF	XOR
Query Zoom Position Response	OxAO	Address	Ox00	OxSD	Value High By te	Value Low Byte	OxAF	XOR

Revision History

The table below lists the changes to the User Manual.

Format	Time	ECO#	Description	Principle
V1.0	01-09-21	0000#	Release	Sylvia

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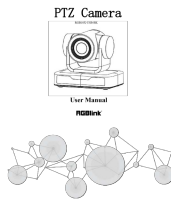
Documents / Resources

	RGBlink RGB10X-USB-BK PTZ Camera [pdf] User Manual RGB10X-USB-BK, RGB10X-USB-BK PTZ Camera, PTZ Camera, Camera

References

- RGBlink