



Nexvoo PTZ Video Camera



USER MANUAL

(Model: N412 & N420)

Video conference camera overview

Preface

Thank you very much for using Nexvoo PTZ video camera. Please read this manual in detail and use accordingly.

This manual introduces the function of video camera, opening and operation principle in detail.

The PTZ video camera is high-quality and flexibility with a remote pan355° /tilt 120° operation and image flip, and a DSP dealing integration module input. Support VISCA and PELCO P/D protocol.

Allowing install on the ceiling /desk and an accurate remote control of RS232/422/485.

Safety requirement

In order to avoid camera and other connecting equipment damaged and lead to potential danger, please follow the rules as below:

- Only professional technician can install and maintenance.
- Prohibit setting on the places which raining or dampness, using unit under stated temperature, humidity and power.
- Using accessories from original factory or allowed.
- Once exchange product or repair happen, please use universal meter test before using.
- Please use soft and dry rag for cleaning, not strongly corrosive cleanser for avoiding mangled for outside of camera or lens.
- Take care using and no squeeze crust avoiding camera broken.
- Bracket must be endured 3 times weight of camera at least.

Features

- 1080p full HD PTZ camera;
- Pan 355°, Tilt 120°.
- The features include advanced ISP processing algorithms to provide vivid images with a strong sense of depth, high resolution, and fantastic color rendition.
- Multi function IR remote controller can control PTZ, lens and other function conveniently;
- Using PC to control camera with Sony Visca or Pelco command.
- IR remote controller, RS422, RS232 and other control method.
- 9 preset positions by remote controller, 200 preset positions by PC or remote control unit, memory auto saved when power off.
- The maximum speed of horizontal rotation: 80° /s, tilt: 60° /s.
- Providing multifunctional accurate remote control.

Packing list

Please check up all devices inside while open package.

- Video camera-----1
- Remote controller-----1
- USB cable-----1
- HDMI cable-----1
- Power adapter-----1
- RS232 cable-----1
- Bracket-----1
- User manual-----1

Remote controller (1)



Video camera (1)



USB cable (1)



HDMI cable (1)



Power adapter (1)



Rs232 cable (1)



Bracket (1)



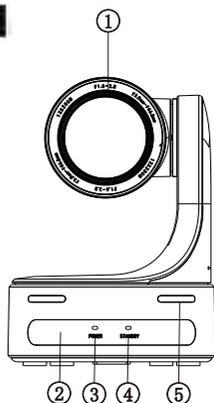
or (Optional)

User manual (1)



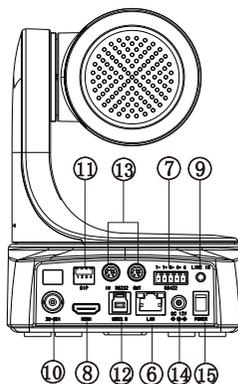
Parts and Introduction

Front

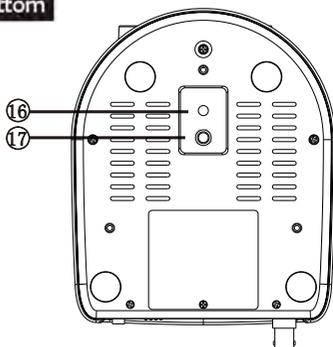


- 1. Lens
- 2. Sensor for the remote control
- 3. Power lamp
- 4. Standby lamp
- 5. Tally lamp

- 6. RJ-45 network video output
- 7. RS-422/485 VISCA/PELCO
- 8. HDMI video output
- 9. Line-in
- 10. 3G-SDI HD video output
- 11. IR select switch
- 12. USB3.0 video output
- 13. VISCA RS-232 IN/OUT connector
- 14. DC IN 12V input
- 15. Power on/off



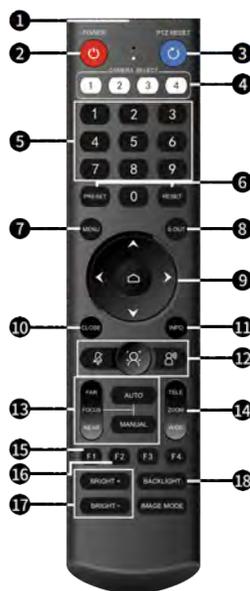
Bottom



- 16. Local hole
- 17. British screw holes

Remote Controller

- ① IR transmit
- ② POWER
- ③ PAN-TILT RESET
- ④ CAMERA SELECT
- ⑤ POSITION: (Number area; PRESET: press PRESET then press 1-9 for set up preset position)
- ⑥ RESET: (Press RESET and then press 1-9 for eliminate preset position)
- ⑦ MENU
- ⑧ S-OUT: SWITCH TO 720P50
- ⑨ PAN-TILT ; HOME for return middle position
- ⑩ CLOSE THE MENU
- ⑪ DATA-SCREEN: Switching color mode
- ⑫ Reserved buttons have no function
- ⑬ FOCUS: (auto or manual)
- ⑭ ZOOM: (Telephoto or Wide Angle)
- ⑮ F1: Press and hold for 3 seconds to quickly switch the image normal and inversion
- ⑯ F2: Press and hold for 3 seconds to quickly restore the factory settings
- ⑰ Brightness adjustment: bright-/ bright+
- ⑱ BACK LIGHT



*Infrared address modifying operation (combination buttons):

Press the button ⑩ over 5 seconds, then press F1/F2/F3/F4 to switch infrared address 1/2/3/4 respectively.

VISCARS-422

Pin No.	Function
1	GND
2	RXD IN+(RS485-)
3	RXD IN-(RS485+)
4	TXD IN+
5	TXD IN-

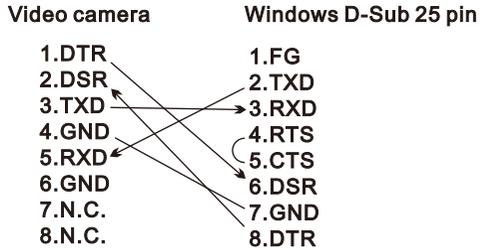
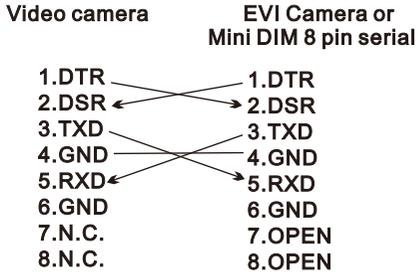
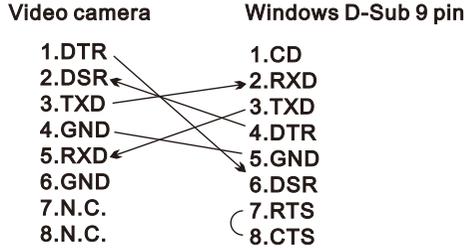
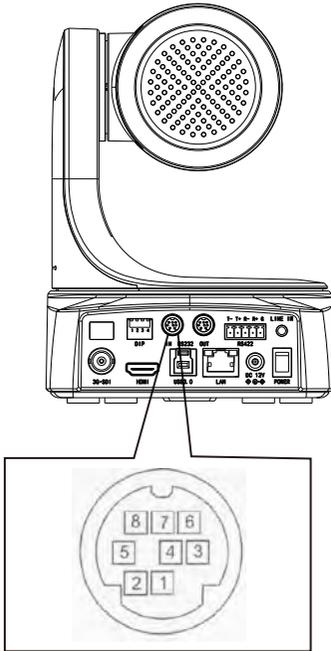
1 2 3 4 5



Attention:

RS-422 and RS-232 can not be used at the same time.

VISCA RS-232



NO	Pins	Signal
1	DTR	Data Transmission Ready(OUTPUT)
2	DSR	Data Set Ready(INPUT)
3	TXD	Transmit Data(OUTPUT)
4	GND	Ground
5	RXD	Receive Data(INPUT)
6	GND	Ground
7	N.C.	No Connection
8	N.C.	No Connection

Basic Operation

Basic Operation

A、PTZ control

1. The camera is powered on, and the pan/tilt reset action will be performed automatically.

2. Press the arrow keys to change the direction of the camera. While checking the image on the screen, press the desired arrow key. To move the camera little by little, just press the button once.

To move the camera in a wide range, keep pressing the button. To move the camera diagonally, hold down the arrow key (left or right) while holding down the arrow key (up or down).

Return the camera to face forward and press the HOME button. If the camera is in the wrong direction. The angle of the gimbal will be different from the angle when the camera is in the normal position.

Whenever the front (right) key is pressed, the camera is preset to the right. You may want to orient the camera opposite the direction of the key you pressed, so that you can change the orientation of the camera while checking the image on the screen. To do this, turn on the PAN reverse switch in the PTZ option in the menu.

■ Notice

If using multiple remotes, repeat the above steps for each remote. This is because the settings are made by changing the signal from each remote control, not by changing the settings of the camera itself.



B、Adjust the camera

■ Focus

- Autofocus using the camera
Press the "Auto" key.
- Manual focus using the camera
After pressing the "Manual" key, press the "Far" or "Close" key to focus the camera.

■ Notice

When the camera is in the telephoto mode, the image movement speed on the screen may be a little jerky if you perform a pan/tilt operation.

■ Zoom

Press the zoom in/out button to zoom in/out the screen.



■ Operate multiple cameras with the remote control

1. Set a different remote control address in the serial port option of the camera menu that you want to operate remotely.
2. Set the remote control to send different infrared address channels by using the remote control F1-F4 combination shortcut keys. The digitally designated camera can then be operated. Each time the camera is operated with the remote control, pressing the "Camera Select" key in step 2 will light up.



■ Shoot with background light

If there is a light source behind the subject, the subject will become dark. Press the "Backlight" key in this case. To cancel this function, press the "Backlight" key again.



C、Preset operation

■ The camera stores a preset position

Up to 200 preset positions (position, zoom, focus and backlight) can be set. Only 9 preset positions can be set and recalled through the remote control. 200 preset positions can be set and called through the user-defined agreement.

1. Adjust the position, zoom, focus and background light of the camera.
2. While holding down the "Preset" key, press (number keys) at the same time Any of 1-9 - one.



■ Recall stored settings

Press any of the (numeric keys) 1-9 to save the settings.

■ Cancel preset storage

While holding down the "Delete" key, press the number key whose setting is to be canceled.



Note: If a location channel is storing or deleting a new setting, it cannot be recalled, set or unset on the channel.

The Menu

Due to product iteration, the product menu is subject to change without prior notice, subject to the actual object .

Serial Port

This option can set protocol, address, baud rate, speed scale, speed limit when the camera is communicating through serial port.

PTZ

This option can set PTZ related functions, including digital zoom, focus mode, remote speed, pan direction, tilt direction, flip and mirror.

Exposure

This option can set exposure mode including full auto exposure, manual exposure, shutter priority, iris priority, bright priority, etc.

White Balance

This option can set white balance mode including auto, manual, indoor, outdoor, one push, ATW, etc.

Image

This option allows you to set image effects, including 2D/3D noise reduction, contrast, chroma, acutance, gamma, wide dynamic range, defog, anti flicker, etc.

Audio

This option can set the switch of Audio, if turn it on, the audio signal of camera can be input through HDMI.

Video

This option can set the megapixel of camera as well as image mode.

Network

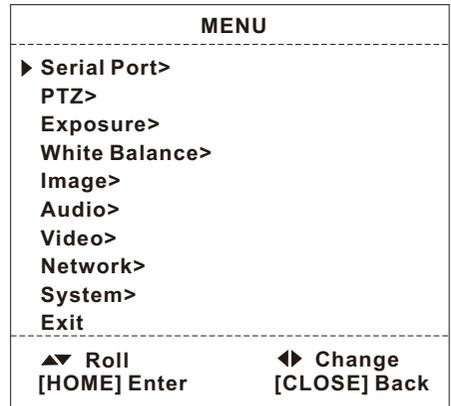
This option can check the network information of the camera, and can set the DHCP function on/off.

System

This option can set language of camera, review present version and reset default factory settings.

Exit

Exit menu.



The Menu

1. Serial Port Settings

Serial Port Settings>	
▶ Protocol:	<Auto>
Address:	<1>
Address Fixed:	<OFF>
Baud Rate:	<9600>
Speed Grade:	<Standard>
Speed By Zoom:	<OFF>
RS-485:	<OFF>
Remote Control Address:	<1>
Back>	
▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

Serial Port Settings Sub Menu

Protocol: Can set auto/visca/pelco-p/pelco-d.

Address: Can set camera serial communication address.

Address Fixed: This option is used to cover automatic distributing order under VISCA protocol.

Baud Rate: Can set serial communication baud rate, 2400/4800/9600/ 19200/ 38400/115200.

Speed Grade: Can set speed range of PTZ(only take effect when using serial communication), standard/ expand.

Speed By Zoom: Can set on/off of pan tilt speed and lens magnification linkage.

RS-485: This option can set the camera to enable/disable the RS-485 serial port return code function.

Remote Control Address: Can be set up to receive the remote control address signal .

2. PTZ Settings

PTZ Settings>	
▶ Dzoom:	<OFF>
Focus Mode:	<Auto>
Zoom Speed:	<Normal>
Remote Speed:	<4>
Installation:	<Dial(Normal)>
Reload Preset 1:	<ON>
PAN Reverse:	<OFF>
TILT Reverse:	<OFF>
Back>	
▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

PTZ Settings Sub Menu

Dzoom: on/off.

Focus Mode: auto/ manual.

Zoom Speed: This option is for setting the zoom speed of camera, there are 3 levels: low, standard and high levels.

Remote speed: PTZ speed 1-16(only take effect when using IR remote controller).

Installation: This option can set image flip effect of camera in order to match installation of desktop and ceiling.

Reload Preset: This option can set the function that automatically call number 1 preset position after starting camera.

Pan Reverse: Can set pan direction normal/ reverse.

Tilt Reverse: Can set pan direction normal/ reverse.

The Menu

3.Exposure Settings

Exposure Settings>	
▶ AE Mode:	<Auto>
Backlight:	<OFF>
De-Flicker:	<OFF>
Back>	

▲▼ Roll	◀▶ Change
[HOME] Enter	[CLOSE] Back

Exposure Settings Sub Menu

Backlight Can be adjustable in auto mode, open/off.

De-Flicker:This option can set the refresh frequency of camera to resolve problem of image blink caused by light source.

Iris pri: Iris value can be adjustable in iris priority mode, Close-1/ 1.8.

Exposure compensation can be adjustable in auto mode, 0-15.

Backlight can be adjustable in auto mode, open/off.

Shutter pri: Shutter value can be adjustable in shutter priority mode, 1/1-1/ 10K.

Exposure compensation can be adjustable in auto mode 0-15.

Backlight can be adjustable in auto mode, open/ off.

Bright pri: Bright value can be adjustable in bright priority mode, 0-27.

Manual: Exposure compensation can be adjustable in manual mode 0-15.

Iris value can be adjustable in manual mode, Close-1/1.8.

Shutter value can be adjustable in manual mode, 1/ 1-1/10K.

4.White Balance Settings

White Balance Settings>	
▶ WB Mode:	<Auto>
Back>	

▲▼ Roll	◀▶ Change
[HOME] Enter	[CLOSE] Back

White Balance Settings Sub Menu

WB Mode: Auto, Indoor, Outdoor, Auto Tracking
White Balanced, Keyed, Manual

Manual mode:

Red gain is adjustable, 0-254.

Blue gain is adjustable, 0-254.

The Menu

5. Image Settings

Image Settings>	

▶ 2D NR:	<8>
3D NR:	<8>
Bright:	<8>
Contrast:	<8>
Color Gain:	<8>
Sharpness:	<8>
HUE:	<8>
Gamma	<1>
Flip:	<OFF>
Mirror:	<OFF>
Back>	

▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

6. Audio Settings

Audio Settings>	

▶ Audio:	<OFF>
Sound channel:	Stereo
Back>	

▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

7. Video Settings

Video Settings>	

▶ Video Format:	<1920x1080p60>
HDMI Mode:	<DVI>
Color Space:	<RGB>
Enter>	
Back>	

▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

Image Settings Sub menu

2D NR: 2D noise reduction, 0-15.

3D NR: 3D noise reduction, 0-15.

Bright: Can set image bright, 0-15.

Contrast: Can set image contrast, 0-15.

Color Gain: Can set image color gain, 0-15.

Sharpness: Can set image sharpness value, 0-15.

HUE: Can set image color saturation, 0-15.

Gamma: Can set image gamma, 0-15.

Flip: Can set the camera image to flip up and down 180 degrees.

Mirror: Can set the camera image to flip left and right 180 degrees.

Audio Settings Sub menu

Audio: This option can set the HDMI/SDI audio turn on/off.

Video Settings Sub menu

Video Format: This option can set the current resolution of the image.

HDMI Mode: This option can set the HDMI/DVI mode.

Color Space: This option can set RGB/YCbCr.

The Menu

8. Network Settings

Network Settings>	
▶ DHCP:	<OFF>
IP Address:	192.168.1.118
Subnet mask:	255.255.255.0
Default gateway:	192.168.1.1
Back>	
▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

Network Settings Sub menu

Can check the network information of camera, can set the DHCP on/off.

9. System Settings

System Settings>	
▶ Language:	<English>
Version:	V1.0.20
Preset Color:	<ON>
Reset Device>	
Back>	
▲▼ Roll [HOME] Enter	◀▶ Change [CLOSE] Back

System Settings Sub menu

Language: Camera menu operation language can be set, English/simplified Chinese.

Version: You can view the current software version, which can not be modified.

Preset Color: This option can be used to set the camera to enable/disable the function of saving the image effect in the preset position.

Reset Device: You can restore to the default factory settings for all the camera parameters.

Network Connections

Connection mode

Direct connection mode: connect the camera directly to the computer with a network cable.

Network connection mode: connect the camera to the Internet network, and access the network through a router or switch. Users can log in to the device through the browser.

The computer must have the network segment where the camera IP is located. If the network segment is not added, you will not be able to log in. If the default IP address of the camera is 192.168.1.118, you need to add 1 network segment to the computer. The specific method is as follows :

Firstly open the computer network local connection properties window, select “Internet Protocol Version 4 (TCP/IPv4)” double click or click the property “Internet Protocol Version 4 (TCP/IPv4)” enter the properties window, click “Advanced” to enter advanced TCP/IP Set the IP address and subnet mask in the IP address field. After the addition is completed, click OK to complete the IP network segment addition. Users can add corresponding network segments according to the modified camera IP address.

Network login

WEB login:

Enter the device IP address in the browser address bar to default to 192.168.1.118, and press Enter to enter the web client login interface. Enter “admin” in the [Username] field, “admin” in the [Password] field, and pass the verification to enter the background preview interface.

Language selection: The selected language can be displayed at the bottom of the login interface.

Preview and pan/tilt

After successful login, enter the management interface, the default entry is the video preview interface. On the left side of the preview interface, is the image preview area, and on the right side of the preview interface, is the PTZ control area, which can realize the following functions: PTZ up and down rotation, PTZ left and right rotation, the gimbal returns to the initial center position, the lens zooms out and in, adjusts the near focus and far focus, adjusts the PTZ speed level, adjusts the zoom speed level, and adjusts the focus speed level; set the preset position Number, starts counting from number 1, which is the number 1 preset position; save the currently set preset position; delete the corresponding preset position; call the corresponding preset position; the upper part of the preview interface can take local photos and videos of the preview screen.

Configuration

Click “Configuration” at the top of the interface to enter the software parameter configuration interface, which mainly includes the following options: system, network, audio and video, image, and user management.

Configuration

System

- 1) **System settings:** display the basic information of the device (not adjustable), time configuration is used to configure the system time;
- 2) **System maintenance:** can be used for software upgrade, restore factory settings and restart the device.

Internet

1) Basic Configuration.

TCP/IP configuration.

DHCP: Set whether to enable automatic IP acquisition.

IP address: set the IP address, the default is 192.168.1.118, where the IP is the address of the login web page.

Subnet Mask: Set the subnet mask (default is 255.255.255.0).

Default Gateway: Set the default gateway (192.168.1.1 by default).

Preferred DNS Server: Set the DNS server (default is 192.168.1.1).

DNS state selection.

Port Configuration.

HTTP port: Set the HTTP port, the default is 80.

RTSP port: Video Acquisition port, the default is 554.

ONVIF port: Set the ONVIF port, the default is 8765.

Service Port: Set the service port, the default is 90.

2) Advanced configuration.

Configurable FTP, email configuration, QOS, IGMP, SRT, RTMP, RTSP and other related parameters.

Video&Audio

1) Video

Set the video compression format, the default main/sub stream compression format is H.264/H.265;

Stream: Set different video output modes and select different streams. Including main stream and sub stream, the main stream can be 1920*1080, 1280*960, 720*576, 720*480, 640*480; the sub stream can be 640*480, 480*360, 352*288, 320*240, 176*144;

Video frame rate: set the video frame rate, the default frame rate is 30 frames, 3-50 optional;

Frame interval: set key frame interval, default 60, 5-120 optional;

Bit rate type: default variable bit rate;

Image quality: Under the condition of variable bit rate, the image quality can be selected, the default is medium;

Bit rate upper limit: default 512KB, 128~20000 optional.

2) Audio

Configure Network Audio.

3) Local Path

Select the local save path for photos and videos.

Configuration

Image

Image parameters The image parameters interface can make the following adjustments to the image effect.

Image adjustment: it can set picture brightness, contrast, saturation, sharpness, chroma, 3D noise reduction and other functions.

Exposure: Exposure mode, shutter speed, gain, aperture, etc. can be set.

Image enhancement: video format can be set, left and right mirroring, up and down mirroring, backlight compensation.

White balance: White balance mode, red and blue gain effect image can be set.

User Administer

Used to modify username and password.

Technical parameter

Due to the continuous iteration of the product, if there is any parameter change, it is subject to the actual product.

Image Sensor	SONY 1/2.8" Progressive CMOS
Pixels	3.1/3.5 Megapixels Image Sensor, 2.07 Megapixels Effective Pixels
Resolution HD	1080p60/50/59.94,1080i60/50/59.94,1080p30/25/29.97,720p60/50
Signal	PAL/NTSC
Lens	12X/20X optical zoom
Focal Length	12X: f=3.9mm(W)~46.8mm(T) 20X: f=4.7mm(W)~94.0mm(T)
Horizontal View Angle	12X: 72.5°(W)~7.4°(T) 20X: 58.7°(W)~3.2°(T)
Focus System	Auto/Manual
Minimum Illumination	0.1Lux
Exposure Control	Auto/Manual
Shutter	1/1~1/10000s
Gain	Auto/Manual
White Balance	Auto/Indoor/Outdoor/Manual
Image Effect	Full color/image flip
S/N Ratio	≥50db
Pan	355°(max.speed:80°/s)
Tilt	-30°to +30°(max.speed:60°/s)
Video Output HD	HDMI、3G-SDI、RJ45、USB3.0
Power	12V DC(10.8~13.0V DC)
Protocol	SONY VISCA、PELCO P/D、VISCA over IP、ONVIF
Control Mode	RS-232C、RS-485/422、USB Control
Size	(L)161×(W)133×(H)181mm
Weight	1200g
Color	Black/White
Accessories	Power adapter, IR Remote, User manual, HDMI cable, USB cable, RS232 cable, Bracket



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