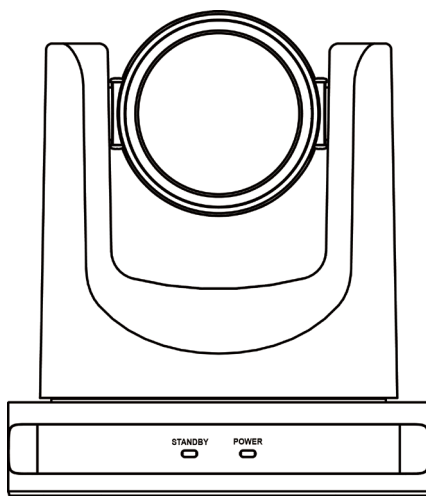


# DVDO



DVDO-C2-1  
PTZ Video Conference Camera

## User Manual

Version: V1.0.1



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# 1 Safety Precautions

## ● Electrical Safety

Please install and operate this product in accordance with all electrical safety standards.

## ● Use Caution to Transport

Avoid stress, vibration or liquid damage in transport, storage and installation.

## ● Power Supply Polarity

This product uses a +12V power supply with 2A max electrical current. Power supply plug polarity is shown below.



## ● Installation Precautions

Do not hold the camera lens when carrying it. Mechanical damage may be caused by touching camera lens by hand. Do not use in corrosive liquid, gas or solid environments to avoid plastic cover damage.

Make sure there are no obstacles within rotation range. Do not power on before installation is completed.

## ● Do Not Disassemble Camera

We are not responsible for any unauthorized modification or dismantling.



Specific frequencies of electromagnetic fields may affect camera image performance.

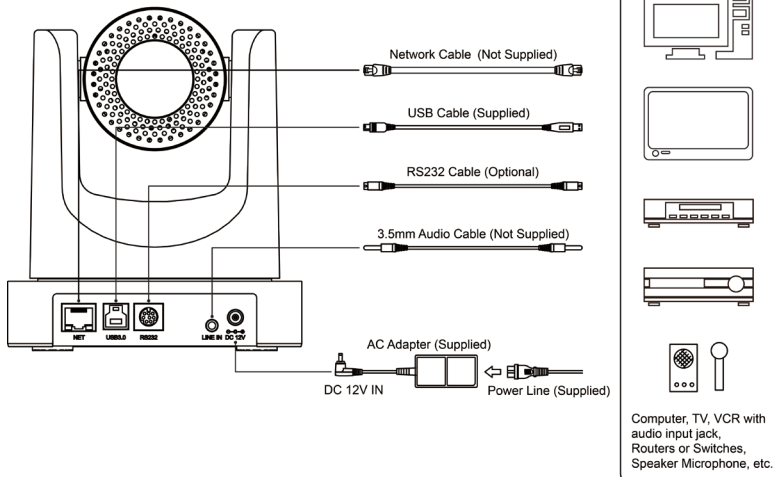
# 2 Package Contents

Please check that all supplied accessories are included:

Name	Quantity
Camera	1
AC Power Adaptor	1
Power Cable	1
Remote Control	1
User Manual	1
Quality Card	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 will turn on.
- 3) After the camera is powered on, it will initialize by moving to its limits, then returning horizontally and vertically to the middle position. The initialization is complete when the motor stops running. (Note: If preset 0 is saved, PTZ will move to preset 0.)

## 4 Product Information

### 4.1 Features

- **Full Function USB Interface**

Compatible with USB 3.0 and USB 2.0, full function USB interface supports audio and compressed video output, as well as UVC 1.5 protocol.

- **Full HD 1080p**

Full HD CMOS sensor with 2.07 million pixels for high-quality images up to 1920x1080.

- **12x Optical + 16x Digital Zoom**

Powerful zoom allows close-up viewing.

- **Low Light Performance**

2D / 3D noise reduction algorithms greatly reduce image noise to keep images clean and clear even under ultra-low lighting.

- **Remote Control**

The camera can be controlled remotely through the RS232 serial port.

- **H.264 Slice/SVC Encoding**

Supports Slice/SVC encoding mode for video conferencing and advanced USB applications.

- **Dual Stream**

The first stream can provide YUY2, MJPEG, or H.264, and the second stream supports H.264, enabling host to reduce codec pressure.

- **Dual Power Supply**

Supports DC IN 5V and DC IN 12V.

### 4.2 Product Specification

<b>Name</b>	USB Video Conference Camera
<b>Camera</b>	
Video System	1080p, 720p, 540p, 480p, 360p, 240p etc.
Sensor	1/2.7 inch, CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Lens	12x, f=3.5mm ~ 42.3mm, F1.8 ~ F2.8
Digital Zoom	16x
Minimum Illumination	0.5 Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Auto, Indoor, Outdoor, One Push, Manual, VAR
Backlight Compensation	Supported
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° ~ +90°
Pan Speed Range	1.7° ~ 100°/s
Tilt Speed Range	1.7° ~ 69.9°/s
H & V Flip	Supported
Image Freeze	Supported
Number of Presets	255
Preset Accuracy	0.1°

<b>IPC Video Features</b>	
Video Compression	H.264 / H.265 / MJPEG
Video Stream	First Stream, Second Stream
First Stream Resolution	1920x1080, 1280x720, 1024x576, 960x540,

# DVDO

## DVDO-C2-1 PTZ Video Conference Camera User Manual

	640x480, 640x360
Second Stream Resolution	1280x720, 1024x576, 720x576 (50Hz support), 720x480 (60Hz support), 720x408, 640x360, 480x270, 320x240, 320x180
Video Bit Rate	32Kbps ~ 20480Kbps
Bit Rate Type	Variable Rate, Fixed Rate
Frame Rate	50Hz: 1fps ~ 25fps, 60Hz: 1fps ~ 30fps
Audio Compression	AAC
Audio Bit Rate	96Kbps, 128Kbps, 256Kbps
Protocols	TCP/IP, HTTP, RTSP, RTMP, ONVIF, DHCP, Multicast, etc.

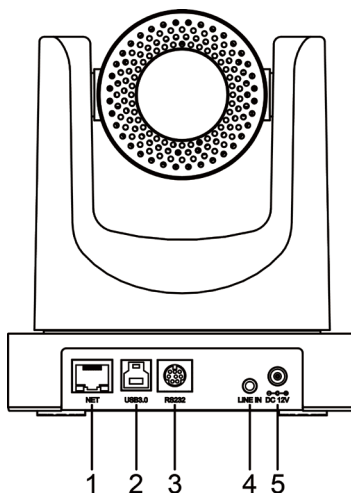
USB Features	
Operating System	Windows 7, Windows 8, Windows 10, Mac OS X, Linux, Android
Color System / Compression	MJPEG/YUY2/H.264
Video Format	YUY2 (ISOC) / H.264 AVC / H.264 SVC / MJPEG: Max to 1080p@30fps
USB Audio	Support
USB Video Communication Protocol	UVC 1.5
UVC PTZ	Supported

Input / Output Interface	
Network Interface	1 x RJ45: 10/100M Adaptive Ethernet Ports
USB Interface	1 x USB 3.0: 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
Power Jack	JEITA type (DC IN 12V) / USB B type (DC IN 5V)

### Physical Parameter

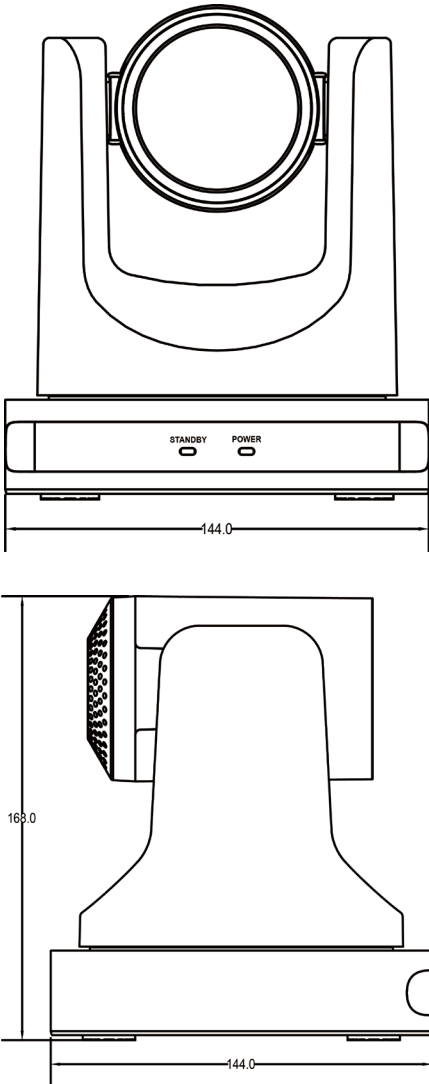
Input Voltage	DC 12V / DC 5V
Current Consumption	12V 1.0A (Max) / 5V 1.5A (Max)
Operating Temperature	-10°C ~ 40°C
Storage Temperature	-40°C ~ 60°C
Power Consumption	12W (Max)
MTBF	>30000h
Size	144 x 144 x 168 (mm)
Net Weight	1.17Kg

### 4.3 Interfaces and Buttons

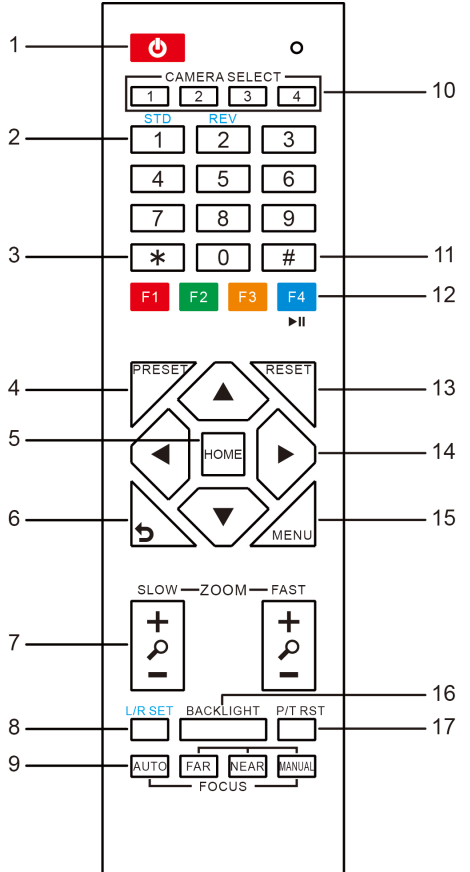


Item	Name
1	Network Interface
2	USB 3.0 Interface
3	RS232 Interface
4	LINE IN Interface
5	DC 12V Interface

### 4.4 Dimensions



### 4.5 Remote Control



#### Key Description

##### 1. Standby Key

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

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

##### 2. Number Key

To set preset or recall preset.

##### 3. \* Key

Used with other buttons.

##### 4. Preset Key

Set preset: Store a preset position.

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

##### 5. HOME Key



Confirm menu selection; Returns PTZ to the middle position when pressed.

### 6. Return Key

Return to previous level menu.

### 7. Zoom Key

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

### 8. Left / Right Setting Key

Press with 1 button and 2 button to set the direction of the Pan-Tilt.

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

### 9. Focus Key

Used for focus adjustment.

Press [AUTO] to adjust focus on the center of the object automatically.

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

Use [FAR] to focus on distant object and [NEAR] to focus on close object.

### 10. Selection Key

Press the button corresponding to the camera to be operated with the remote controller.

### 11. # Key

Used with other buttons.

### 12. IR Remote Control Key

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

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

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

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

### 13. Reset Key

Used to erase a preset position.

[RESET] + Numeric button (0-9)

Or: [\*] + [#] + [RESET] to erase all presets.

### 14. PTZ Control Key

Press arrow buttons to pan and tilt. Press [HOME] button to return the camera to default position.

### 15. Menu Key

Press to enter or exit OSD MENU.

### 16. Backlight Key

Press to enable or disable backlight compensation.

NOTE:

- Effective only in auto exposure mode.
- Use when lighting behind subject darkens the image. Backlight compensation will improve the image, and can be canceled by pressing [BACKLIGHT] button again.

### 17. PTZ Reset Key

Preset Pan/Tilt self-test.

### 18. Image Freezing Function

Press remote control key [F4] to freeze the image. "Freeze" indication will appear on the upper left corner of image for five seconds. Press [F4] key again to return display to normal, and "Unfreeze" indication will appear for five seconds.

### 19. Shortcut Set

[\*]+[#]+[1]: OSD menu default English

[\*]+[#]+[3]: OSD menu default Chinese

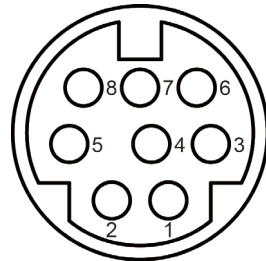
[\*]+[#]+[4]: Display current IP address

[\*]+[#]+[6]: Recover default settings

[\*]+[#]+[8]: View camera version

[\*]+[#]+[9]: Invert the image

## 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 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;

Starting Position: 1 bit

Data bits: 8 bits

Stop bits: 1 bit

Parity: None

After powering 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.

- **Protocols**

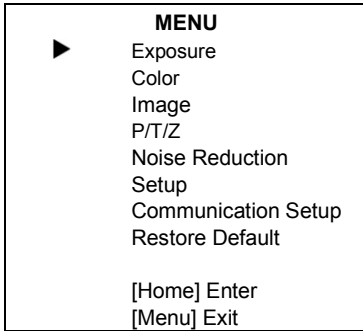
The serial port of the camera follows the VISCA/Pelco-D/Pelco-P standard protocol. If secondary development is required, the camera can be controlled according to the standard protocol.

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

## 5 GUI Settings

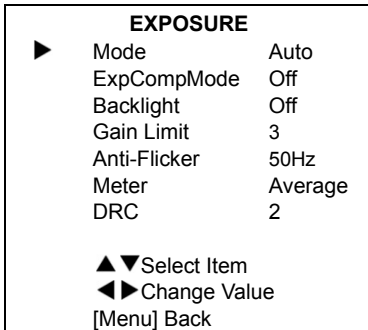
### 5.1 MENU

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 to enter the exposure page, as shown below.



**Mode:** Set Exposure to Auto, Manual, SAE, AAE, or Bright.

**ExpCompMode:** Exposure Compensation On / Off. (Effective only in Auto mode)

**ExpComp:** Exposure compensation range from -7~7. (With ExpCompMode On)

**Backlight:** Backlight compensation On / Off. (Effective only in Auto mode)

**Bright:** Intensity control from 0~17. (Effective only in Bright mode)

**Gain Limit:** Maximum gain limit 0~15. (Effective in Auto, SAE, AAE, Bright modes)

**Anti-Flicker:** Select Off / 50Hz / 60Hz. (Effective only in Auto, AAE, Bright modes)

**Meter:** Select Average / Center / Smart / Top.

**Iris:** Aperture value 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 modes)

**Shutter:** Select 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)

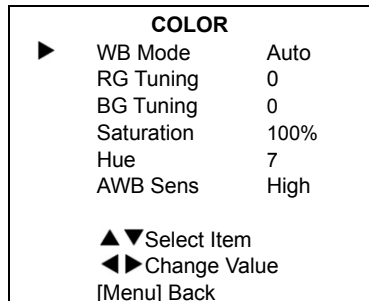
**Gain:** Select 0~7.

(Effective only in Manual mode)

**DRC:** DRC strength 0~8

### 5.3 COLOR

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



**WB-Mode:** Set White Balance to Auto, Indoor, Outdoor, One Push, Manual, VAR.

**RG Tuning:** Red Gain fine-tuning from -10~10. (Effective in Auto, One Push, VAR modes)

**BG Tuning:** Blue Gain fine-tuning from -10~10. (Effective in Auto, One Push, VAR modes)

**Saturation:** Select from 60% ~ 200%.

**Hue:** Select from 0 ~ 14.

**AWB Sens:** Set White Balance Sensitivity to Low / Middle / High.

**RG:** Red Gain from 0~255. (Manual mode)

**BG:** Blue gain from 0~255. (Manual mode)

**Colortemp:** Select 2500K ~ 8000K. (Effective only in VAR mode).

### 5.4 IMAGE

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

IMAGE	
▶ Luminance	6
Contrast	8
Sharpness	3
Flip-H	Off
Flip-V	Off
B&W-Mode	Off
Gamma	0.5
Style	Clarity
▲▼ Select Item	
◀▶ Change Value	
[Menu] Back	

**Luminance:** Select from 0~14.

**Contrast:** Select from 0~14.

**Sharpness:** Select Auto, 0~15.

**Flip-H:** On / Off.

**Flip-V:** On / Off.

**B&W-Mode:** On / Off.

**Gamma:** Select Default, 0.45, 0.5, 0.56, 0.63.

**Style:** Select Default, Norm, Clarity, Clarity (LED), Bright, Soft, 5S.

### 5.5 P/T/Z

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

P/T/Z	
▶ SpeedByZoom	On
AF-Zone	Center
AF-Sense	High
Display Info	On
Image Freeze	Off
Call Preset Speed	18
▲▼ Select Item	
◀▶ Change Value	
[Menu] Back	

**SpeedByZoom:** Depth of field scale On / Off.

**AF-Zone:** Set automatic focusing area to Top / Center / Bottom.

**AF-Sense:** Set automatic focusing sensitivity to Low / Normal / High.

**Display Info:** On / Off.

**Image Freeze:** On / Off.

**Call Preset Speed:** Select 1~24.

### 5.6 NOISE REDUCTION

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

NOISE REDUCTION	
▶ NR2D-Level	Off
NR3D-Level	3
▲▼ Select Item	
◀▶ Change Value	
[Menu] Back	

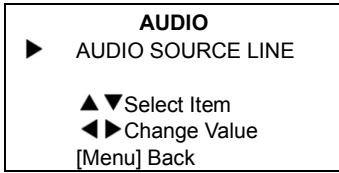
**NR2D Level:** Set 2D noise reduction to Off / Auto / 1~5.

**NR3D Level:** Set 3D noise reduction to Off / 1~8.

### 5.7 AUDIO

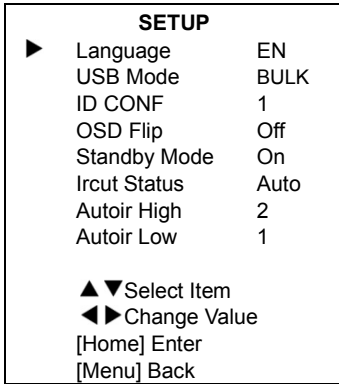
# DVDO

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



## 5.8 SETUP

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



**Language:** Select EN (English) / Chinese / Russian.

**USB Mode:** Select BULK / ISOC.

**ID CONF:** Select 1 / 2.

**OSD Flip:** Select On / Off.

**Standby Mode:** Select On / Off.

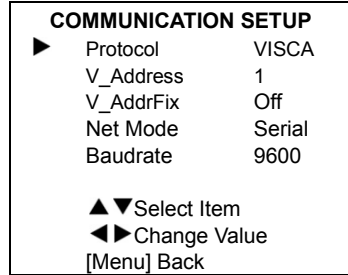
**Ircut Status:** Select On / Off / Auto.

**Autoir High:** Select 0~4.

**Autoir Low:** Select 0~4.

## 5.9 COMMUNICATION SETUP

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



**Protocol:** Select protocol type to Auto / VISCA / PELCO-D / PELCO-P.

**V\_Address:** Select 1~7.  
(Effective in Auto, VISCA protocols).

**V\_AddrFix:** Select On / Off.

**P\_D\_Address:** Select 0~254.  
(Effective only in PELCO-D protocol)

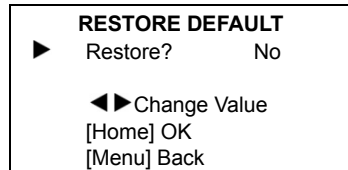
**P\_P\_Address:** Select 0~31.  
(Effective only in PELCO-P protocol).

**Net Mode:** Set serial port network control to Serial / Parallel.

**Baudrate:** Select serial port baud rate to 2400 / 4800 / 9600 / 38400.

## 5.10 RESTORE DEFAULT

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



**Restore:** Confirm restore factory settings, Yes / No.

**Note:** Press [HOME] button to confirm restoring all parameters to default, including IR Remote address and VISCA address.

## 6 Network Function

### 6.1 System Requirements

Operating System: Windows 2000/2003/XP/ vista/7/8/10

Network Protocol: TCP/IP

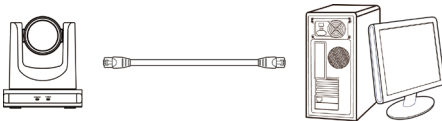
Client PC: P4 / 128M RAM / 40G HDD / scaling graphics card with DirectX 8.0+.

### 6.2 Equipment Installation

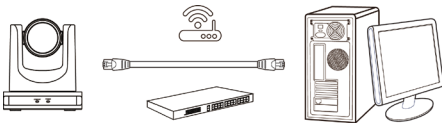
- 1) Connect USB camera to the internet or to your PC directly via ethernet cable.
- 2) Turn on DC 12V power.
- 3) If the network connection is normal, the green connection light at the network interface will light up within 5 seconds, and the orange data indicator will flash, indicating that the physical connection of the camera has been completed.

### 6.3 Internet Connection

There are two main ways to connect USB camera to the internet.



Connect by Network Cable



Connect by Switch / Router

### 6.4 Camera Controlled by LAN

#### 6.4.1 Setup IP Address

Determine camera IP address as follows:

Method 1: Press \* and # and 4 on remote controller one by one, the camera IP address will be shown on screen.

Method 2: Connect camera to PC with network cable, use “upgrade\_En.exe” to search for IP address.



upgrade

To change IP address, two methods as below:  
Method 1: Log in to the web interface, select “Network > Lan Settings”, change IP address, subnet mask and gateway. Click “Apply” and restart the camera.

**Lan Settings**

IP Configuration Type: Fixed IP Address

IP Address: 192.168.100.88

Subnet Mask: 255.255.255.0

Gateway: 192.168.100.1

DNS Address: 8.8.8.8

MAC Address: D4 E0 8E 8A 87 FF

Apply Cancel

**Port Settings**

HTTP Port number: 80 (80)

RTSP Port: 554 (554)

PTZ Port: 5678 (5678)

**Control Protocol Settings**

Visca Address: 1 (1-7)

Pelco-D Address: 0 (0-255)

Pelco-P Address: 0 (0-31)

**RTMP Settings**

First stream:  On  Off  Video  Audio

MRL: http://192.168.100.138/live/stream0

Second stream:  On  Off  Video  Audio

MRL: http://192.168.100.138/live/stream1

**RTSP Settings**

RTSP Auth:  On  Off

**ONVIF Settings**

ONVIF:  On  Off

ONVIF Auth:  On  Off

**Multicast Settings**

Multicast:  On  Off

Address: 224.1.2.3

Port: 6688

**SDK Settings**

Active Connection:  On  Off

Address: 192.168.100.138

Port: 1234

**NTP Settings**

NTP time sync:  On  Off

Server address: cn.ntp.org.cn

Time interval: 1440 minutes

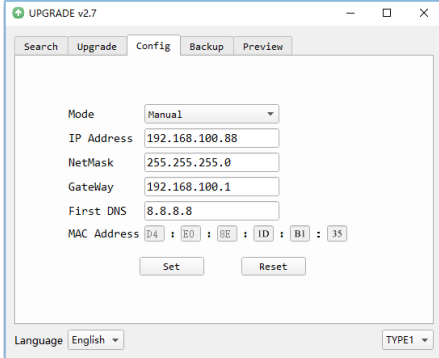
Main time show:  On  Off

Position: X 0 Y 0 (0-100)

Sub time show:  On  Off

Position: X 0 Y 0 (0-100)

Method 2: Open “upgrade\_En.exe”, change IP and click “Set”. USB camera will restart.



**To change IP address:**

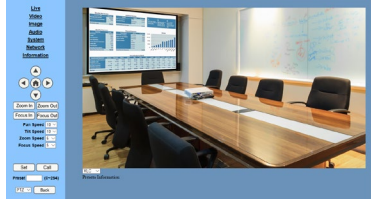
- Step 1** Search the IP address of camera.
- Step 2** Select the camera IP to be changed.
- Step 3** Select “Config” tab in upgrade app.
- Step 4** Change the IP address, netmask and gateway, then click “Set”.

**6.4.2 View / Access Camera**

Input <http://192.168.100.88> into browser (Internet Explorer recommended). Input login name: **admin** and password: **admin** into login window as shown:



The camera can now be viewed as shown:



When using this camera for the first time, VLC player software must be installed. Please visit <http://www.videolan.org/vlc/#download> and install VLC player software. Once VLC is installed, log in again to view camera.

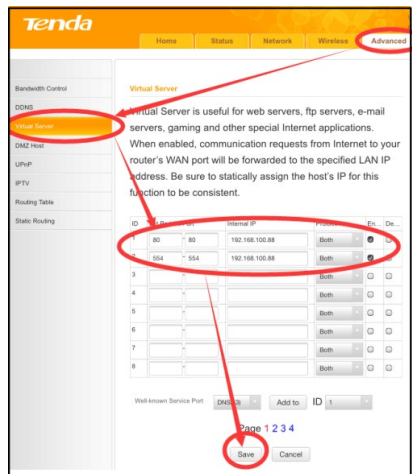
**6.5 Camera Controlled by WAN**

**6.5.1 Setup IP controlled by dynamic DNS**

DDNS providers: DynDNS.org, 3322.org

**Router Port Mapping:**

Refer to below “Tenda” router example: enter the Router Home Page (interface page), select “Advanced” -> “Virtual Server”, add a new port number in “Ext Port”, add a new port number in “Int port”, input camera IP address to “Internal IP”, then select “Save”, as shown below:



**6.5.2 Dynamic DNS View Camera**

To view camera via DDNS, use this link format: **http://hostname:port number**. For example, for host computer name “youdomain.f3322.org” and camera port 89, the link is <http://youdomain.3322.org:89>



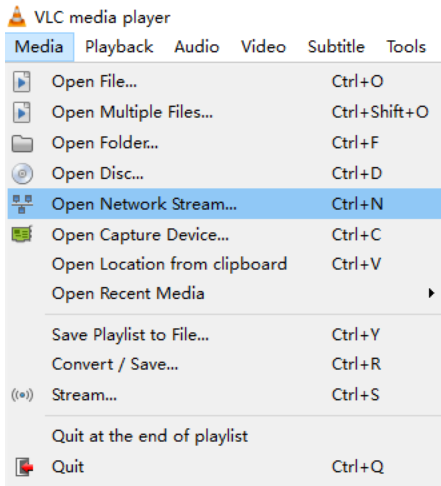
If the camera default port is 80, it is unnecessary to input port number. The host name can access camera directly.

### 6.5.3 VLC Stream Media Player Monitor

#### VLC media server viewing procedure

**Step 1** Open VLC media player.

**Step 2** Click “Media > Open Network Stream”, or click “Ctrl + N”; as shown:



**Step 3** Input URL address:

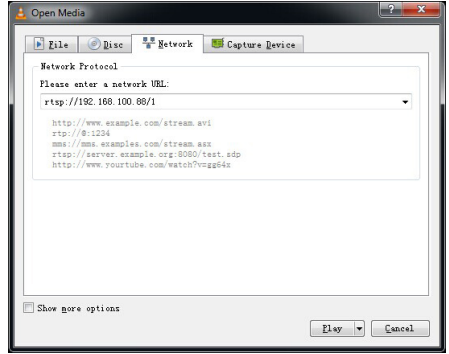
rtsp://ip: port number/1 (First stream);

rtsp://ip: port number/2 (Second stream).

**Step 4** Finish.



Default RTSP port number: **554**



## 6.6 Camera Parameter Setup

### 6.6.1 Homepage Introduction

#### Menu

All pages include two menu bars for:

Real time monitoring: displaying video image

Parameter setup: with function buttons.

#### A. Video Viewing Window

Video viewing window must accommodate video resolution; higher resolutions will allow larger playback area. Double click viewing window to view full-screen; double click again to will restore window size.

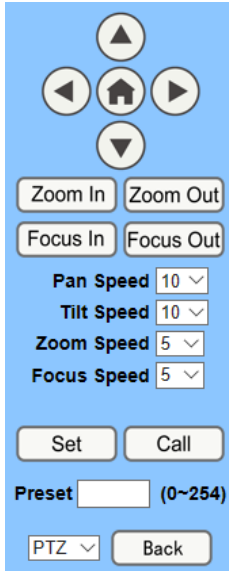
Status bar in viewing window shown below:



- 1) Video playback pause button: pause video real-time, click to resume playback.
- 2) Audio control buttons: adjust volume or mute.
- 3) Full screen button.



### B. PTZ Setup



#### 1) Pan and Tilt Control

Up, Down, Left and Right arrows and home button allow you to manually move the camera to the desired position.

#### 2) Zoom

Zoom In / Zoom Out control.

#### 3) Focus

Focus In / Focus Out control for fine manual focus adjustment in case auto-focus encounters difficult objects or backgrounds.

#### 4) PTZ Speeds

Pan speed can be set between 1 ~ 24.

Tilt speed can be set between 1 ~ 20.

Zoom and Focus speeds can be set 0 ~ 7.

#### 5) PTZ Presets

After manually setting up a shot that you would like to return to, you can save presets for quick recall of these positions. Type a number between 0 and 254 into the Preset box.

Click the “Set” button to save the current location to that preset number. Click the “Call” button to cause the camera to return to that position. This enables smooth, quick and convenient control without the need to manually move the camera.

1: Type a number into the Preset box.



2: Type preset name into Presets Information.

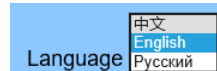
Presets Information		
No.	Name	
1	<input type="text"/>	Set
2	<input type="text"/>	Set
3	<input type="text"/>	Set
4	<input type="text"/>	Set
5	<input type="text"/>	Set
6	<input type="text"/>	Set
7	<input type="text"/>	Set
8	<input type="text"/>	Set
9	<input type="text"/>	Set

Click “Set” button. Click “Call” button or click the preset number / name in Presets Information to return PTZ to preset position.

#### 6) PTZ / OSD Dropdown

From the dropdown menu, click OSD option to open the camera’s on-screen display menu from the web interface.

### C. Language Selection



Choose “Chinese”, “English” or “Russian” to change web interface language.

## 6.6.2 Video Settings

**Video Settings**

Video Format:  ▾

Encode Level:  ▾

**First stream**

Encode Protocol:  ▾

Resolution:  ▾

Bit Rate:  (32~20480) kbps

Frame Rate:  ▾ fps

I Key Frame Interval:  (2~150)

Bit Rate Control:  CBR  VBR

Fluctuate Level:  ▾

Slice Split Enable:  On  Off

Split Mode:  Fixed blocks  Fixed bytes

Slice Size:  blocks/bytes

**Second stream**

Encode Protocol:  ▾

Resolution:  ▾

Bit Rate:  (32~6144) kbps

Frame Rate:  ▾ fps

I Key Frame Interval:  (2~150)

Bit Rate Control:  CBR  VBR

Fluctuate Level:  ▾

Slice Split Enable:  On  Off

Split Mode:  Fixed blocks  Fixed bytes

Slice Size:  blocks/bytes

### 1) Video Format

Support 50Hz (PAL) and 60Hz (NTSC), and Dial Priority three formats.

### 2) Encode Level

Support baseline, mainprofile, highprofile and svc-t four levels.

### 3) Encode Protocol

Support H.264, H.265 and MJPEG three formats.

### 4) Resolution

First stream: 1920x1080, 1280x720, 1024x576, 960x540, 640x480, 640x360.

Second stream: 1280x720, 1024x576, 720x576 (50Hz), 720x480 (60Hz), 720x408, 640x360, 480x270, 320x240, 320x180

Higher resolutions provide clearer images while consuming more network bandwidth.

### 5) Bit Rate

The user may specify the bit rate. In general, higher bit rates provide clearer images. However, bit rate configuration must match network bandwidth. When network bandwidth is narrow, high bit rates may result in abnormal video streams and inferior images.

### 6) Frame Rate

The user may specify frame rate. In general, higher frame rates provide smoother video.

### 7) I Key Frame Interval

Set interval between I frames. Larger intervals result in lower response from viewing window.

### 8) Bit Rate Control

CBR: Constant Bit Rate - Video encoded at preset speed.

VBR: Variable Bit Rate - Video encoder adjusts speed based on preset speed for optimal image quality.

### 9) Fluctuate Level

Set variable bit rate fluctuation range 1 ~ 6.

# DVDO

## 10) Slice Split Enable

Enable or disable slice split function.

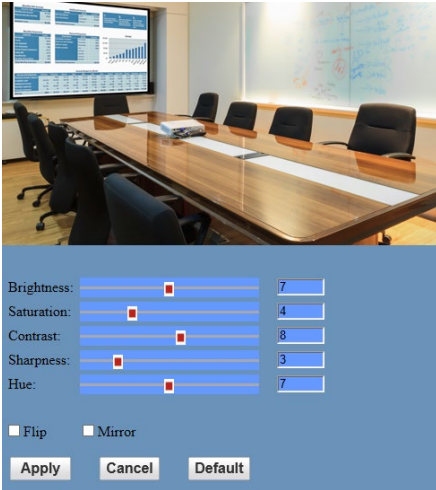
## 11) Split Mode

Select split mode: Fixed blocks / Fixed bytes.

## 12) Slice Size

Set size of slice.

## 6.6.3 Image Settings



### 1) Brightness

Image brightness 0~14 slider. Default = 7.

### 2) Saturation

Saturation 0~14 slider. Default = 4.

### 3) Contrast

Contrast 0~14 slider. Default = 8.

### 4) Sharpness

Sharpness 0~15 slider. Default = 3.

### 5) Hue

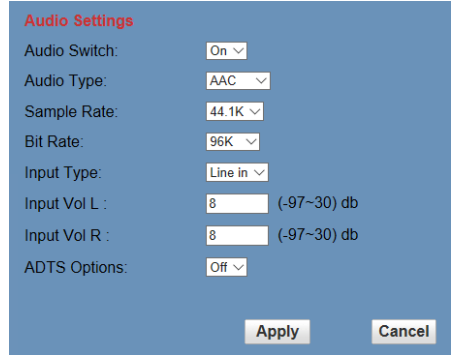
Hue 0~14, slider. Default = 7.

### 6) Flip & Mirror

Flip checkbox turns image upside down.

Mirror checkbox reverses image left / right.

## 6.6.4 Audio Settings



### 1) Audio Switch

Enable / disable audio switch.

### 2) Audio Type

Audio type AAC.

### 3) Sample Rate

Selectable 44.1K / 48K.

### 4) Bit Rate

Selectable 96K / 128K / 256K.

### 5) Input Type

Input type line in.

### 6) Input Vol L

Left channel volume.

### 7) Input Vol R

Right channel volume.

### 8) ADTS Options

Enable / disable ADTS.

### 6.6.5 System Settings

#### 1) Work Mode

Select RTSP / SDK / Multicast. (default: RTSP)

#### 2) Reboot

Click to restart system.

#### 3) Username and Password

Set password. (letters and numbers only)

### 6.6.6 Network Settings

#### 1) Lan Settings

Default IP address 192.168.100.88  
MAC address may not be modified.

#### 2) Port Settings

##### A. HTTP Port

IP address identifies the network device, which may run multiple web applications using network ports to transmit data. Port setting determines web server program's transmission port. Port mapping must be consistent with port numbers. (default port: 80)

##### B. RTSP Port

RTSP protocol supported. (default port: 554)  
Use VLC tools broadcast.

##### C. PTZ Port

PTZ protocol supported. (default port: 5678)

#### 3) Control Protocol Settings

Set camera control communication protocol. Enter Visca / Pelco-D / Pelco-P addresses.

#### 4) RTMP Settings

Set MRL of RTMP. Turn each stream On / Off and selectively enable / disable video and audio per stream.

#### 5) RTSP Settings

Turn On / Off RTSP authentication.

#### 6) ONVIF Settings

Turn On / Off ONVIF and ONVIF authentication.

#### 7) Multicast Settings

Turn On/Off multicast. Set multicast address (default: 224.1.2.3) and port (default: 6688 for first stream; 6690 for second stream).

## 8) SDK Settings

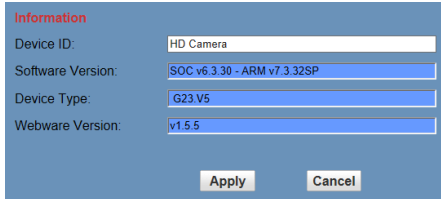
Turn On/Off active connection. Set SDK address (default: 192.168.100.138) and port (default: 1234).

## 9) NTP Settings

Turn On/Off NTP time sync, main time show and sub time show. Set NTP server address, time interval, main stream position and sub stream position.

### 6.6.7 Device Information

Display current device information, as shown:



## 7 Maintenance and Troubleshooting

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### Camera Maintains

- If camera will not be used for a prolonged period, please turn off the power switch, and disconnect power cord from outlet.
- Use soft cloth or tissue to clean the camera cover.
- Please use a soft dry cloth to clean the lens. Do not use any solvents, which may damage the surface.

### Operating Precautions

- Do not shoot extremely bright objects, such as sunlight, light sources, etc.
- Avoid unstable lighting conditions, which cause flickering images.
- Do not operate near powerful electromagnetic radiation, such as TV or radio transmitters, etc.

### Image Troubleshooting

- The monitor shows no image
  - 1) Check camera power supply is connected, voltage is normal, and power indicator light is always on.
  - 2) Turn off power switch to check whether camera is self-testing.
  - 3) Check all connections.
- Intermittent image loss

Check all cable connections of video platform and TF / display.

- Image jitter
  - 1) Ensure stable camera installation.
  - 2) Check for vibration near camera.
- No video image in IE browser

Please visit VLC website (<http://www.videolan.org/vlc>) to download and install VLC media player.

- Unable to access camera through IE browser
  - 1) Use PC to access network to test whether PC and USB camera can communicate.
  - 2) Disconnect the network, connect USB video conference camera and PC separately, and reset the IP address of PC.
  - 3) Check IP address, subnet mask, and gateway settings for USB camera.
  - 4) Check for MAC address conflicts.
  - 5) Check whether the web port is occupied by another device.

- Forgot IP address or login password
  - Default IP address: 192.168.100.88
  - Default user name: admin
  - Default password: admin