



# GOHD4K

4K 3G-SDI/HDMI/IP/USB  
PTZ Camera with 20x Zoom

User Manual



# 1 NOTE

## ❖ Electric Safety

Installation and operation must be in accordance with national and local electric and safety standards. Do not use any power supply other than the one originally supplied with this camera.

## ❖ Handling

Avoid stress, vibration or moisture/water during transport, storage, installation, and operation.

Do not lift or move the camera by grasping the camera head. Do not manually turn the camera head by hand. Ensure that there are no obstacles in the tilt or pan ranges of the camera head.

Do not dismantle the camera. The manufacturer is not responsible for any unauthorized modification or dismantling.

## ❖ Polarity of Power Supply

The power supply of this product is 12VDC with a maximum current supply of 2A. Polarity of the power supply plug is as shown below.



# 2 PACKING LIST

Camera	1
IR Remote Control	1
Power Adapter	1
Power Cable	1
RS232 Cable	1
USB Cable	1
User Manual	1

# 3 FEATURES

## ❖ 4K Ultra HD

With a new generation Sony 1/1.8-inch, maximum 8.42 million pixels, high-quality UHD CMOS sensor, 4K (3840x2160) ultra-high resolution images are available. Camera is backward compatible with 1080p, 720p and other resolutions.

## ❖ 60° Wide-angle Lens with 20x Optical Zoom

Super wide angle lens with a horizontal field of view up to 60° and 20x optical zoom.

## ❖ AI Intelligent Tracking

Built-in AI processor uses deep learning technology to achieve smooth automatic tracking of the human shape suitable for auto target tracking in lectures, teaching and other applications.

## ❖ HDMI 2.0

Supports HDMI 2.0. Camera can directly output 4Kp60 uncompressed digital video.

## ❖ Low Light

The application of 3D digital noise reduction algorithm greatly reduces image noise. Even under low light, the camera will still produce a clear picture.

## ❖ Multiple Video Outputs

The camera supports both HDMI 2.0 FHD out and 3GSDI out with an effective transmission distance up to 150 meters (1080p30).

## ❖ Remote Control

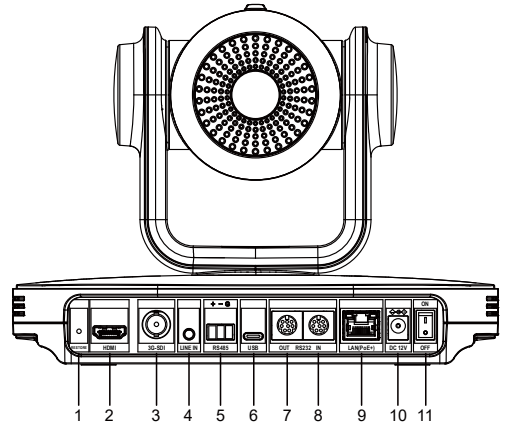
The camera can be controlled remotely through RS232 and RS485 serial ports.

# 4 PRODUCT SPECIFICATIONS

Camera	
Signal System	<b>HDMI:</b> 4KP25, 4KP30, 4KP50, 4KP60, 4KP59.94, 4KP29.97, 1080P25, 1080P30, 1080P50, 1080P60, 1080P59.94, 1080P29.97, 1080I50, 1080I60, 1080I59.94, 720P50, 720P59.94, 720P60 <b>3G-SDI:</b> 1080P25, 1080P30, 1080P50, 1080P60, 1080P59.94, 1080P29.97, 1080I50, 1080I60, 1080I59.94, 720P50, 720P59.94, 720P60
Sensor	1/1.8 inch, CMOS, Max Effective Pixel: 8.42M
Scanning Mode	Progressive
Lens	20x, f = 6.25mm ~ 125mm, F1.58 ~ F3.95
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
Backlight Compensation	Support
Digital Noise Reduction	3D Digital Noise Reduction
Signal Noise Ratio	≥55dB
Horizontal Angle of View	60° ~ 3.5°
Vertical Angle of View	35.7° ~ 2.0°
Horizontal Rotation Range	±162.5°
Vertical Rotation Range	-30° ~ +90°
Pan Speed Range	1.8°/s ~ 80.5°/s
Vertical Rotation Speed Range	1.5°/s ~ 49°/s
H & V Flip	Support

Image Freeze	Support
Number of Preset	255
Preset Accuracy	0.1°
USB Features	
Operate System	Windows 7/8/10, Mac OS X, Linux, Android
Color System / Compression	YUY2 / MJPEG / H.264 / H.265
Video Format	<ul style="list-style-type: none"> <li>● YUY2: max to 1080P@30fps</li> <li>● H.264 AVC/SVC: max to 2160P@30fps</li> <li>● H.265 SVC: max to 2160P@30fps</li> <li>● MJPEG: max to 2160P@30fps</li> </ul>
USB Audio	Support
USB Video Protocol	UVC 1.1 ~ 1.5
UVC PTZ	Support
Network Features	
Video Compression	H.264/H.265/MJPEG
Video Stream	First Stream, Second Stream
First Stream Resolution	3840x2160, 1920x1080, 1280x720, 1024x576, 720x480, 720x408, 640x480, 640x360
Second Stream Resolution	720x480, 720x408, 640x480, 640x360, 480x320, 320x240
Bit Rate Control	CBR, VBR
Frame Rate	50Hz: 1fps ~ 50fps, 60Hz: 1fps ~ 60fps
Audio Compression	G711A, AAC
Audio Bit Rate	96K, 128K
Protocols	NDI® HX, TCP/IP, HTTP, RTSP, RTMP(S), ONVIF, DHCP, SRT, Multicast, etc.
Interface / Indicator	
LINE IN Interface	1 x LINE IN: 3.5mm Audio Interface
Communication Interface	1 x RS485: 3pin phoenix port, Max Distance: 1200m, Protocol: VISCA / Pelco-D / Pelco-P 1 x RS232 OUT: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA network

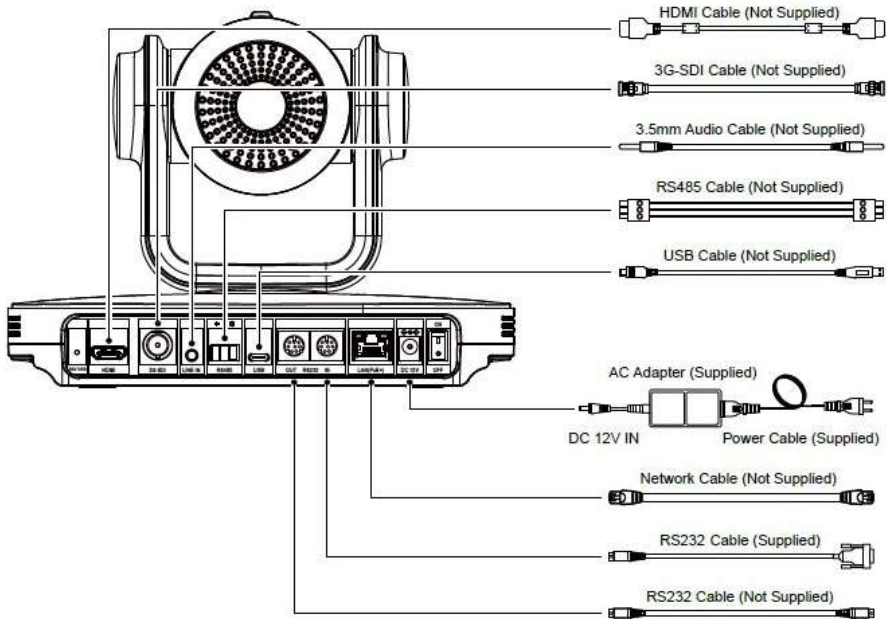
	use only 1 x RS232 IN: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA / Pelco-D / Pelco-P
HDMI Interface	1 x HDMI: Version 2.0
LAN(PoE+) Interface	1 x RJ45: 10/100/1000M Adaptive Ethernet Port. It supports PoE+
USB Interface	1 x USB: Type-C
3G-SDI Interface	1 x 3G-SDI: BNC type, 800mVp-p, 75Ω. Along to SMPTE 424M standard
RESTORE Button	1 x RESTORE Button
Power Jack	JEITA type (DC IN 12V)
TALLY Indicator	1 x TALLY Indicator
Power Indicator	1 x Power Indicator
Status Indicator	1 x Status Indicator
Display Screen	1 x Display Screen
Power Switch	1 x Power Switch
<b>General Parameter</b>	
Input Voltage	DC 12V / PoE+(802.3at)
Operating Temperature	0°C ~ 40°C
Storage Temperature	-40°C ~ 60°C
Power Consumption	18W (Max)
Size	223 x 154.8 x 165 (mm)
Net Weight	1.8Kg



Item	Name
1	RESTORE Button
2	HDMI Interface
3	3G-SDI Interface
4	LINE IN Interface
5	RS485 Interface
6	USB Interface
7	RS232 OUT Interface
8	RS232 IN Interface
9	LAN(PoE+) Interface
10	DC 12V Interface
11	ON/OFF Switch

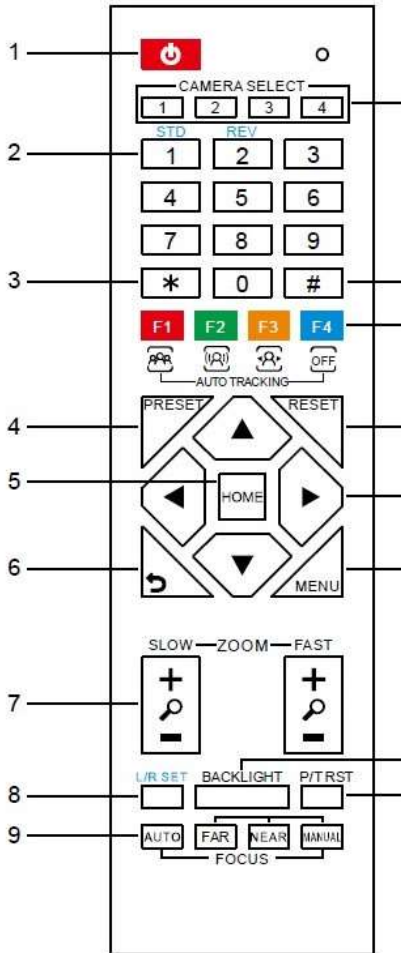
# 5 QUICK START

1) Verify that all connections are correct before powering on the camera.



- 2) Power the camera on via the switch on the rear of the unit. The power indicator on the front panel of the camera will illuminate.
- 3) After the camera is powered on, the pan-tilt mechanism will rotate the camera head to maximum positions, and then stop in the forward-facing position when initialization is complete.  
Note: If preset '0' is saved, the camera will move to preset '0' upon startup.

# 6 REMOTE CONTROL



## 1) **STANDBY**

Press to enter Standby Mode.  
Press again to enter Normal Mode.

Note: In Standby Mode, power consumption is approximately half of Normal Mode and the camera will not provide an image or respond to commands.

## 2) **0-9**

Press numeric buttons 0-9 to set and call preset positions.

## 3) **\***

## 4) **PRESET**

To set a preset position press [PRESET] + a numeric button [0]-[9]

## 5) **HOME**

Press to return camera to home position.

When accessing the camera's on-screen menu, press to enter a sub-menu or confirm a selection.

## 6) **RETURN**

When accessing the camera's on-screen menu, press to return to the previous menu.

## 7) **ZOOM +/- (SLOW/FAST)**

Press and hold [+] to zoom in. Camera will continue to zoom in until the button is released.

Press and hold [-] to zoom out. Camera will continue to zoom in until the button is released.

## 8) **L/R SET**

Press to reverse the left/right direction of the remote control.

## 9) **FOCUS Buttons**

Press [AUTO] to enable auto focus on the center of the image. Press [MANUAL] to enable manual focus.

Adjust focus manually with [FAR] and [NEAR] to focus on a far object or a near object, respectively.

## 10) **CAMERA SELECT Buttons**

Press the button [1-4] corresponding to the camera you want to operate with the remote controller.

## 11) **#**

- 12) **AUTO TRACKING Buttons**  
 [F1] No function  
 [F2] No function  
 [F3] Press to start AI Intelligent Tracking.  
 [F4] Press to stop AI Intelligent Tracking.
- 13) **RESET**  
 To erase a preset position press [RESET] + a numeric button [0]-[9]  
 To erase all preset positions at once press [\*]+[#]+[RESET]
- 14) **PTZ CONTROL Buttons**  
 Press and hold the up/down/left/right button: Camera will continue rotating from slow to fast; the camera stops as soon as the button is released.
- 15) **MENU**  
 Press to enter/exit the camera's on-screen display menu.
- 16) **BACKLIGHT**  
 Press to enable/disable backlight compensation.  
 NOTE: Effective in auto exposure mode.  
 NOTE: If there is a light behind the subject, the subject will appear dark. In this case, press the backlight ON / OFF button.  
 To cancel this function, press the backlight ON / OFF button.
- 17) **P/T RST**  
 Press to self-calibrate pan/tilt.

#### IMAGE FREEZE FUNCTION

To enable image freeze function press [#]+[\*]+[F4]. "Freeze" will display in left upper corner and disappear after five seconds

(though the freeze feature continues). To disable manual freeze press [#]+[\*]+[F4]. "Unfreeze" will display in left upper corner and disappear after five seconds.

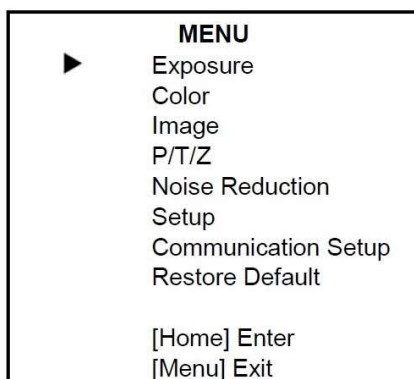
#### SHORTCUTS

- [\*]+[#]+[1]: Display OSD menu in English  
 [\*]+[#]+[3]: Display OSD menu in Chinese  
 [\*]+[#]+[4]: Display current IP address  
 [\*]+[#]+[6]: Restore default settings  
 [\*]+[#]+[8]: Show camera version  
 [\*]+[#]+[9]: Flip camera image vertically  
 [\*]+[#]+[MANUAL]: Restore default IP address

## 7 CAMERA OSD MENU

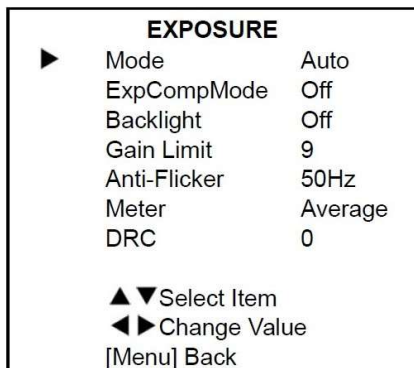
### 7.1 MENU

Press [MENU] to display the camera's On-Screen Display (OSD) Menu. Use the arrow buttons to traverse the OSD menu, the [HOME] button to make selections, and the [RETURN] button to go back a sub menu.



## 7.2 EXPOSURE

Move the cursor to the “Exposure” option and press the [HOME] button to enter the Exposure page, as shown in the figure below.



**Mode:** Exposure Mode

Options: Auto, Manual, SAE, AAE, Bright

**ExpCompMode:** Exposure Compensation Mode

Options: On, Off

(Only available in Auto mode)

**ExpComp:** Exposure Compensation Value

Options: -7 to +7

(Only available when ExpCompMode is On)

**Backlight:** Backlight Compensation Mode

Options: On, Off

(Only Available in Auto mode)

**Bright:** Brightness Intensity

Options: 0 to 17

(Only available in Bright mode)

**Gain Limit:** Maximum Gain Limit

Options: 0 to 15

(Only available in SAE, AAE, and Bright modes)

**Anti-Flicker:** Anti-Flicker (lighting)

Options: Off, 50Hz, 60Hz

(Only available in Auto, AAE, and Bright modes)

**Meter:**

Options: Average, Center, Smart, Top

**Iris:** Camera Iris value

Options: 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

(Only available in Manual and AAE modes)

**Shutter:** Camera Shutter value

Options: 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

(Only available in Manual and SAE modes)

**Gain:**

Options: 0 to 7

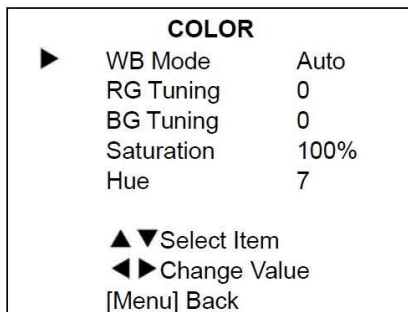
(Only available in Manual mode)

**DRC:** Dynamic Range Control strength

Options: 0 to 8

## 7.3 COLOR

Move the cursor to the “Color” option and press the [HOME] button to enter the Color page, as shown in the figure below.



**WB-Mode:** White Balance Mode

Options: Auto, Indoor, Outdoor, One Push, Manual



**RG Tuning:** Red Gain tuning  
Options: -10 to +10  
(Only available in Auto mode)

**BG Tuning:** Blue Gain tuning  
Options: -10 to +10  
(Only available in Auto mode)

**Saturation:**  
Options: 60% to 200%

**Hue:** Chroma adjustment  
Options: -10 to +10

**RG:** Red Gain  
Options: 0 to 255  
(Only available in Manual mode)

**BG:** Blue Gain  
Options: 0 to 255  
(Only available in Manual mode)

#### 7.4 IMAGE

Move the cursor to the “Image” option and press the [HOME] button to enter the Image page, as shown in the figure below.

IMAGE		
▶	Luminance	7
	Contrast	7
	Sharpness	6
	Flip-H	Off
	Flip-V	Off
	B&W-Mode	Off
	Style	Default
▲▼ Select Item		
◀▶ Change Value		
[Menu] Back		

**Luminance:** Brightness adjustment  
Options: 0 to 14

**Contrast:** Contrast adjustment  
Options: 0 to 14

**Sharpness:** Sharpness adjustment  
Options: 0 to 11

**Flip-H:** Image Flip Horizontal  
Options: On, Off

**Flip-V:** Image Flip Vertical

Options: On, Off

**B&W-Mode:** Black & White Mode  
Options: On, Off

**Style:**  
Options: Default, Norm, Bright, PC

#### 7.5 P/T/Z

Move the cursor to the “P/T/Z” option and press the [HOME] button to enter the P/T/Z page, as shown in the figure below.

P/T/Z		
▶	SpeedByZoom	On
	AF-Zone	Front
	AF-Sense	High
	L/R Set	STD
	Display Info	On
	Image Freeze	Off
	Digital Zoom	Off
	Call Preset Speed	24
	Pre Zoom Speed	5
▲▼ Select Item		
◀▶ Change Value		
[Menu] Back		

**SpeedByZoom:** Scale (slow down) pan/tilt speed when camera is zoomed in.

Options: On, Off

**AF-Zone:** Auto Focus Zone  
Options: Front, Top, Center, Bottom

**AF-Sense:** Auto-Focus Sensitivity  
Options: Low, Normal, High

**L/R Set:** Left/Right pan direction  
Options: STD, REV

**Display Info:** Display camera info upon startup  
Options: On, Off

**Image Freeze:** Temporarily freeze image during preset call  
Options: On, Off

**Digital Zoom:** Increase zoom level with electronic zoom  
Options: Off, 2x, 4x, 8x, 16x

**Call Preset Speed:** Preset pan/tilt speed

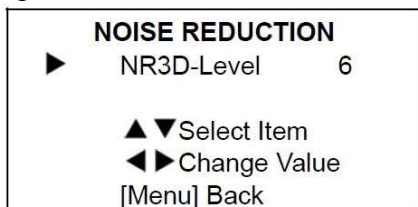
Options: 1 to 24

**Pre Zoom Speed:** Preset zoom speed

Options: 0 to 7

## 7.6 NOISE REDUCTION

Move the cursor to the “Noise Reduction” option and press the [HOME] button to enter the Noise Reduction page, as shown in the figure below.

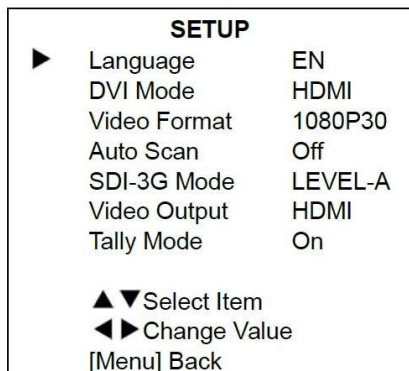


**NRD3D-Level:** 3D Noise Reduction

Options: Off, 1 to 9

## 7.7 SETUP

Move the cursor to the “Setup” option and press the [HOME] button to enter the Setup page, as shown in the figure below.



**Language:**

Options: English, Chinese, Russian

**DVI Mode:** HDMI Data Transfer type

Options: DVI, HDMI

**Video Format:**

Options: 4KP25, 4KP29.97, 4KP30, 4KP50, 4KP59.94, 4KP60, 1080P30, 1080P25, 1080P50, 1080P60, 1080P59.94, 1080P29.97, 1080I50, 1080I60, 1080I59.94, 720P60, 720P59.94, 720P50

**Auto Scan:**

Options: On, Off

**SDI-3G Mode:**

Options: Level A, Level B

**Video Output:**

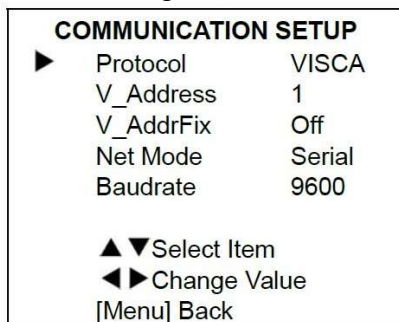
Options: HDMI, SDI

**Tally Mode:**

Options: On, Off

## 7.8 COMMUNICATION SETUP

Move the cursor to the “Communication Setup” option and press the [HOME] button to enter the Communication Setup page, as shown in the figure below.



**Protocol:**

Options: Auto, VISCA, PELCO-D, PELCO-P

**V\_Address:** Camera VISCA address

Options: 1 to 7

(Only available in Auto, VISCA protocols)

**V\_AddrFix:** Fixed VISCA address

Options: On, Off

**P\_D\_Address:** Pelco-D address

Options: 0 to 254

(Only available in Auto, PELCO-D)

protocols)

**P\_P\_Address:** PELCO-P address

Options: 0 to 31

(Only available in Auto, PELCO-P protocols)

**Net Mode:**

Options: Serial, Parallel

**Baudrate:**

Options: 2400, 4800, 9600, 38400

## 7.9 RESTORE DEFAULT

Move the cursor to the “Restore Default” option and press the [HOME] button to enter the Restore Default page, as shown in the figure below.



**Restore?:** Restore factory settings

Options: Yes, No

# 8 NETWORK FUNCTION

## 8.1 OPERATING ENVIRONMENT

Operating System: Windows 7/8/10, Mac OS X, Linux, Android

Network Protocol: TCP/IP

Client PC: P4/128M RAM/40G HDD/ support DirectX 8.0 or more advanced version.

## 8.2 EQUIPMENT INSTALLATION

- 1) Connect camera to your internet or to your PC via a network cable.
- 2) Connect DC 12V power to camera.
- 3) If the network connection is successful, the connection light

at the network interface will light up green within 5 seconds and the data indicator will flash orange, indicating that the physical connection of the camera has been completed.

## 8.3 NETWORK CONNECTION

Connect the camera and PC to the LAN as shown below.

Direct Connection by Network Cable



Connection via LAN Wall Jack or LAN Switch



## 8.4 CAMERA CONTROLLED BY LAN

### 8.4.1 Setup IP Address

To lookup the camera's IP address:  
OPTION 1: Press [\*] and [#] and [4] on the IR remote control one by one. The camera's IP address will display on the camera's screen.

OPTION 2: Connect the camera to a PC with a network cable and use "upgrade\_EN.exe" to search for the camera's IP address.

To change the camera's IP address:

OPTION 1: Login to the webpage, select "Network > LAN Settings", change IP address, subnet mask and gateway. Click "Submit" 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:A3:AA:A6

Submit Cancel

**Port Settings**

HTTP Port: 80

RTSP Port: 554

TCP Port: 5678

UDP Port: 1259

Sony Visca: 52381

**RTMP(S) Settings**

First Stream:  On  Off Video  Audio

MRL: rtmp://192.168.100.138/live/stream0

Second Stream:  On  Off Video  Audio

MRL: rtmp://192.168.100.138/live/stream1

**SRT Settings**

SRT:  On  Off

SRT Port: 4578

SRT Encryption: None

SRT Password: 1234564913131

**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

**NTP Settings**

NTP time sync:  On  Off

Time Zone: (GMT+08:00) Beijing, ChC

Server address: cn.ntp.org.cn

Time interval(min): 1440

Main time show:  On  Off

Position: X 0 Y 0

Sub time show:  On  Off

Position: X 0 Y 0

restart.

Config Backup

Mode: Manual  Snapshot

IP Address: 192.168.100.88

NetMask: 255.255.255.0

GateWay: 192.168.100.1

First DNS: 8.8.8.8

MAC Address: D4 : E0 : 8E : A0 : 41 : F5

Set Rewrite Default

### Change IP Address:

**Step 1:** Search the IP address of camera.

**Step 2:** Select the camera IP you want to change.

**Step 3:** Select the config dialog of upgrade applets.

**Step 4:** Change the IP address, netmask and gateway, then click "Set".

### 8.4.2 Visit/Access Camera

Input <http://192.168.100.88> in web browser.

In pop login window enter the following (as pictured below):

User name: admin

Password: admin

Windows Security

The server 192.168.100.88 is asking for your user name and password. The server reports that it is from ..

Warning: Your user name and password will be sent using basic authentication on a connection that isn't secure.

User name:

Password:

Remember my credentials

OK Cancel

OPTION 2: Open "upgrade\_en.exe". Select the "Config" tab, change IP Address and click "Set". The camera will

Once logged in, the user interface will appear:



### Tips

IE browser does not support H5. You will need to install the VLC plug-in. Visit [VLC website \(http://www.videolan.org/vlc/\)](http://www.videolan.org/vlc/), download and install the 32-bit media player. Once installed, open the media player to view the camera image. Other mainstream browsers support H5 and do not require the VLC plug-in.

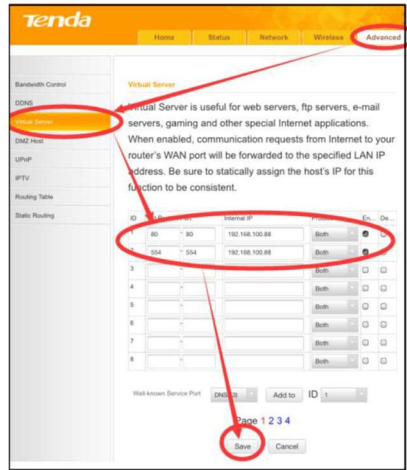
## 8.5 CAMERA CONTROLLED BY WAN

### 8.5.1 Setup IP Controlled by Dynamic DNS

Two dynamic DNS services:  
 DynDNS.org  
 3322.org

#### Router Port Mapping:

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”, put camera IP address to “Internal IP”, then select “Save”, shown as below:



### 8.5.2 Setup Camera Dynamic DNS

Set domain name to camera, setup the parameter, then dynamic DNS can access camera. Access link: `http://hostname: port number`. For example, setup host computer name: `youdomain.f3322.org`, the camera port number is 89, the access link should be <http://youdomain.3322.org:89>



### Tips

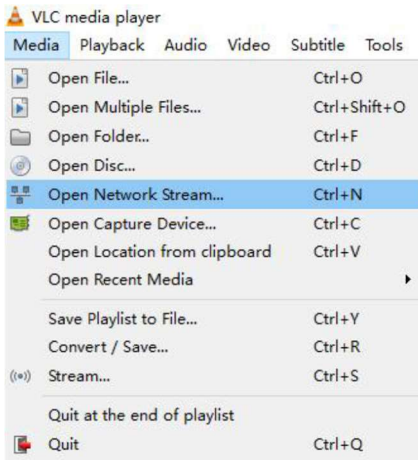
If the camera port default is 80, then it is not necessary to input port number; host name can access camera directly.

### 8.5.3 VLC Stream Media Player Monitor

#### VLC Media Server Procedure

**Step 1** Open VLC media player

**Step 2** Click “Media > Open Network Stream” or “Ctrl + N”:



**Step 3** Input URL address:

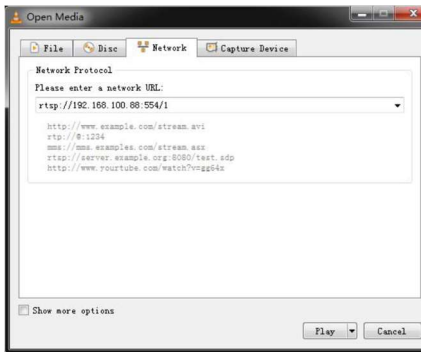
rtsp://ip: port number/1 (first stream)

rtsp://ip: port number/2 (second stream)

**Step 4** Click “Play”



RTSP port number default is 554. If the camera port default is 80, then it is not necessary to input the port number of the URL address.



## 8.6 CAMERA PARAMETER SETUP

### 8.6.1 Homepage

All pages include two menu bars:  
Real Time Monitoring (for displaying video image)

Parameter Setup (function buttons)

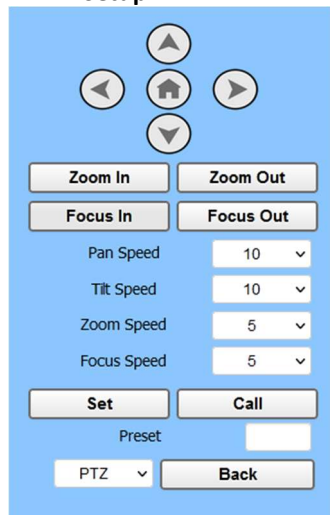
#### A. Video Monitoring Window

Video viewing window must be the same as video resolution; the bigger the resolution is, the bigger the playing area is. Double click the viewing window to show full-screen. Double click again to return to the initial size.



- 1) Video Playback Pause Button:  
Use to control real-time video pause, stop the last picture, click recoverable video again.
- 2) Audio Control Buttons: Adjust volume or set silent mode.
- 3) Full Screen Switch Button.

#### B. PTZ Setup



#### 1) Pan and Tilt Control

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

## 2) Zoom

Zoom In and Zoom Out buttons allow for a wide or close-up shot.

## 3) Focus

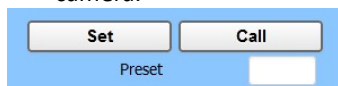
Focus In and Focus Out buttons allow for fine manual focus adjustment if the camera has difficulty auto-focusing on the subject.

## 4) PTZ Speeds

Pan speed can be set to any rate between 1 and 24. Tilt speed can be set to any rate between 1 and 20. Zoom and Focus speeds can be set to any rate between 0 and 7.

## 5) PTZ Presets

If you have camera shots that you would like to return to often, you can save presets for quick recall of these positions. After manually setting up the desired shot, type a number between 0 and 254 into the Preset box and click the “Set” button to save the current location with that preset number. At any time, enter a previously saved preset number and click the “Call” button to return the camera to the corresponding position. This enables smooth, quick and convenient control without the need to manually move the camera.



## 6) PTZ / OSD Drop-down

From the drop-down menu, clicking OSD will open the camera’s on-screen display menu giving you navigation of the

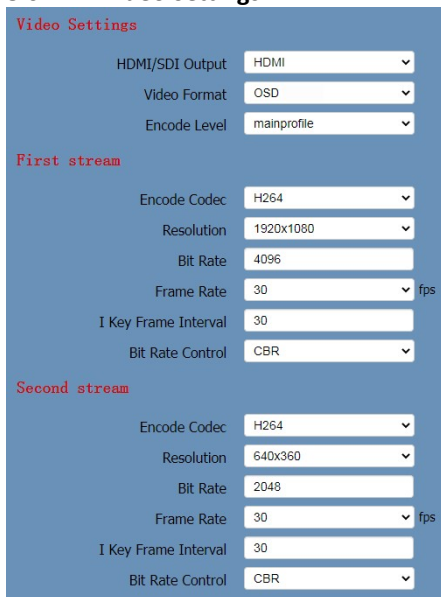
menu within the IP interface.

## C. Language Selection



Select either “Chinese”, “English” or “Russian” to change the language of the webpage.

## 8.6.2 Video Settings



### 1) HDMI/SDI Output

Supports HDMI and SDI output signals.

### 2) Video Format

Supports 50Hz (PAL), 60Hz (NTSC) and OSD formats.

### 3) Encode Level

Supports mainprofile and highprofile levels.

### 4) Encode Protocol

Supports H.264, H.265 and MJPEG protocols.

### 5) Resolution

First stream supports:  
3840x2160, 1920x1080,  
1280x720, 1024x576, 720x480,  
720x408, 640x480, 640x360.

Second stream supports:  
720x480, 720x408, 640x480,  
640x360, 480x320, 320x240.

The higher the resolution, the clearer the image and the more network bandwidth used.

### 6) Bit Rate

Adjust the maximum bit rate of the network video. The higher the bit rate, the clearer the image will be. Bit rates set too high can congest the network and cause the video to not transmit properly, causing the video to appear worse.

### 7) Frame Rate

Adjust the frame rate of the video. The higher the frame rate, the smoother the video will appear.

### 8) I-Key Frame Interval

Adjust how frequently a keyframe is produced.

### 9) Bit Rate Control

Supports Constant Bit Rate (CBR) and Variable Bit Rate (VBR)

## 8.6.3 Image Settings



Brightness	-	7	+
Saturation	-	4	+
Contrast	-	7	+
Sharpness	-	6	+
Hue	-	7	+
Flip	<input checked="" type="radio"/> on	<input type="radio"/> off	
Mirror	<input type="radio"/> on	<input checked="" type="radio"/> off	

### 1) Brightness

Brightness 0 – 14, default value is 7

### 2) Saturation

Saturation 0 – 14, default value is 4

### 3) Contrast

Contrast 0 – 14, default value is 7

### 4) Sharpness

Sharpness 0 – 11, default value is 6

### 5) Hue

Hue 0 – 14, default value is 7

### 6) Flip and Mirror

Check the Flip and/or Mirror buttons to rotate the image accordingly.

## 8.6.4 Audio Settings

Audio Settings	
Audio Switch	On
Audio Type	AAC
Sample Rate	48K
Bit Rate	96K
Input Type	LINE IN
Input Vol	20 dB
ADTS Options	Off



- 1) **Audio Switch**  
Enable / Disable audio embedding
- 2) **Audio Type**  
Select audio type: AAC, G711A
- 3) **Sample Rate**  
Select sample rate: 44.1K, 48K
- 4) **Bit Rate**  
Select bit rate: 96K, 128K
- 5) **Input Type**  
LINE IN
- 6) **Input Vol**  
Select volume of audio
- 7) **ADTS Options**  
Enable / Disable ADTS

## 8.6.5 System Settings

The screenshot shows the 'System Settings' page. At the top, there is a red 'Initialize' section with a 'Reboot' button. Below that is the 'User' section with fields for 'UserName' (admin), 'Passwd' (masked with dots), 'Guest' (guest), and another 'Passwd' (masked with dots).

- 1) **Reboot**  
Click "Reboot" to power cycle the camera.
- 2) **Username and Password**  
Username and password (letters and numbers only) to login to device.

## 8.6.6 Network Settings

The screenshot shows the 'Network Settings' page. It is divided into several sections:
 

- 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 A3 AA A6). Buttons for Submit and Cancel.
- Port Settings:** HTTP Port (80), RTSP Port (554), TCP Port (5678), UDP Port (1259), Sony Visca (52381).
- RTMP(S) Settings:** First Stream (On/Off/Video/Audio), MRL (rtmp://192.168.100.138/live/stream0), Second Stream (On/Off/Video/Audio), MRL (rtmp://192.168.100.138/live/stream1).
- SRT Settings:** SRT (On/Off), SRT Port (4578), SRT Encryption (None), SRT Password (1234564913131).
- 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).
- NTP Settings:** NTP time sync (On/Off), Time Zone ((GMT+08:00) Beijing, Chn), Server address (cn.ntp.org.cn), Time Interval (min) (1440), Main time show (On/Off), Position (X 0 Y 0), Sub time show (On/Off), Position (X 0 Y 0).

- 1) **LAN Settings**  
The LAN Settings section allows you to adjust the IP parameters

of the camera. The default IP address is 192.168.100.88. You cannot change the Mac address.

## 2) Port Settings

### A. HTTP Port

This port is used for HTTP-CGI control and for the web application.

Default: 80

### B. RTSP Port

This port is used for the RTSP streaming protocol.

Default: 554

### C. TCP Port

This port is used for the TCP control protocol.

Default: 5678

### D. UDP Port

This port is used for the UDP protocol.

Default: 1259

### E. Sony Visca

This port is used for the Sony VISCA protocol. You cannot change this port number.

Default: 52381

## 3) RTMP(S) Settings

Enable / Disable video and audio for first and second RTMP streams.

## 4) SRT Settings

Enable / Disable Secure Reliable Transport protocol.

Modify SRT port. (Default: 4578)

Enable / Disable SRT encryption. Modify SRT password when SRT Encryption is enabled. (Default: 1234567891)

## 5) RTSP Settings

Enable / Disable RTSP authorization.

## 6) ONVIF Settings

Enable / Disable ONVIF protocol control and ONVIF authorization.

## 7) Multicast Settings

Enable / Disable the Multicast protocol.

Adjust the Multicast address. (Default: 224.1.2.3)

Modify Multicast port. (Default: 6688 for first stream, 6690 for second stream)

## 8) NTP Settings

Enable / Disable Network Time Protocol of the camera.

### 8.6.7 NDI Config

#### 1) NDI Local Device Name

Set the NDI Local Device name.

#### 2) NDI Receive Group

Set the NDI Receive Group

#### 3) NDI Firmware Version

View NDI firmware version.

### 8.6.8 Device Information

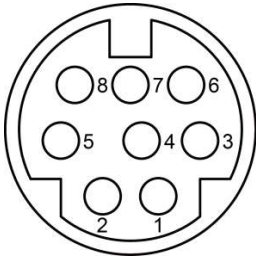
Displays current device information.

Information	
Device ID	HD Camera
Device Type	G41.V
Software Version	SOC v2.99.98 - ARM v6.3.06S
Webware Version	v1.5.5

## 8.7 DOWNLOAD UPGRADE PROGRAM

If you need the camera upgrade program, please contact the manufacturer.

# 9 RS232 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

# 10 SERIAL COMMUNICATION CONTROL

## ❖ RS232 Communication Control

The camera can be controlled via RS32. The RS232 serial port parameters are as follows:

Baud rate:

2400/4800/9600/38400

Starting Position: 1 bit

Data bit: 8 bits

Stop bit: 1 bit

Check digit: None

## ❖ RS2485 Communication Control

The camera can be controlled via RS485, half-duplex mode. The parameters of RS485 are as follows:

Baud rate:

2400/4800/9600/38400

Starting position: 1 bit

Data bit: 8 bits

Stop bit: 1 bit

Check digit: None

# 11 MAINTENANCE / TROUBLESHOOTING

## CAMERA MAINTENANCE

- ❖ If camera will not be used for an extended period of time, power down the camera via the switch on the back and unplug the power cord from the outlet.
- ❖ Use a soft cloth or tissue to clean the camera lens. Do not use any type of solvents as these could damage the lens surface.

## CAMERA OPERATION GUIDELINES

- ❖ Do not shoot extreme bright objects, such as sunlight or a light source, for a long period of time.
- ❖ Do not operate in unstable lighting conditions to avoid flickering image.
- ❖ Do not operate close to power electromagnetic radiation, such as TV or radio transmitters.

## TROUBLESHOOTING

- ❖ No image
  1. Confirm that the camera power supply is connected, voltage is normal and power indicator light on the camera is on.
  2. Confirm that the video cable is securely connected at both ends.
  3. Check that the lens cap is not installed on the camera lens.
  4. Check that the iris is not closed.
- ❖ Abnormal display of image
  1. Check that the selected video format (resolution and frame rate) for the camera is

supported by your hardware/software.

- ❖ Image is shaky or vibrating
  1. Check that the camera is mounted securely on a horizontal, level surface.
  2. Check the building and any supporting furniture for vibration. Ceiling mounts are often more affected by building vibration more than wall mounts.
  3. Any external vibration affecting the camera will be more apparent when the camera is zoomed in.
- ❖ No image in web browser
  1. IE browser does not support H5. Use VLC plug-in to view camera video. Visit: [www.videolan.org/vlc](http://www.videolan.org/vlc) Download and install 32-bit version VLC media player.
- ❖ Unable to access camera in browser
  1. Disconnect network, connect camera and PC separately and reset the IP address of the PC.
  2. Check IP address, subnet mask and gateway settings for camera.
  3. Check whether Mac address has conflicts.
  4. Check whether the web port is modified. Default: 80.
- ❖ IR handheld remote control does not control the camera
  1. Do any of the Camera Select buttons (at the top of the remote) light up when you press any of the buttons on the remote? If not, change the batteries in the remote.
  2. The camera and remote control

may not be set to the same IR address. Try each of the four camera select buttons on the remote.

- ❖ Serial communication does not control the camera
  1. Verify that the RS-232/RS-485 cable is connected correctly and is using the proper pinout.
  2. Verify the communication settings of the control software or device (e.g., joystick).
  3. Verify that the communication port on the controlling device is activated (e.g., Com port on PC).
  4. Verify that the communication settings (in the OSD setup menu) correlate to the commands being used (e.g., VISCA address).

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