

PTZ310/330

Professional PTZ Camera

User Manual



FCC NOTICE (Class A)



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Federal Communications Commission Statement

NOTE- 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 in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Class A ITE

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning - This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Community Compliance Statement (Class A)



This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2014/30/EU.

Warning - This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures to correct this interference.

DISCLAIMER

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NOTICE

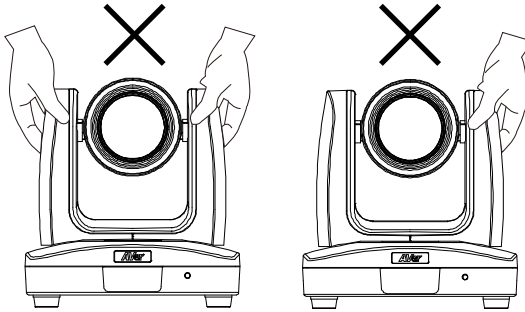
SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. THE INFORMATION CONTAINED HEREIN IS TO BE CONSIDERED FOR REFERENCE ONLY.

Remote Control Battery Safety Information

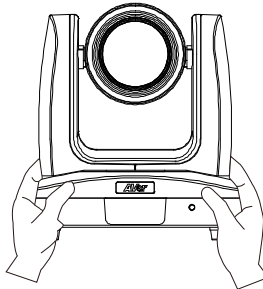
- Store batteries in a cool and dry place.
- Do not throw away used batteries in the trash. Properly dispose used batteries through specially approved disposal methods.
- Remove the batteries if they are not in use for long periods of time. Battery leakage and corrosion can damage the remote control. Dispose of batteries safely and through approved disposal methods.
- Do not use old batteries with new batteries.
- Do not mix and use different types of batteries: alkaline, standard (carbon-zinc) or rechargeable (nickel-cadmium).
- Do not dispose of batteries in a fire.
- Do not attempt to short circuit the battery terminals.

WARNING

- To reduce risk of fire or electric shock, do not expose this appliance to rain or moisture. Warranty will be void if any unauthorized modifications are done to the product.
- Do not drop the camera or subject it to physical shock.
- Use correct power supply voltage to avoid damaging camera.
- Do not place the camera where the cord can be stepped on as this may result in fraying or damage to the lead or the plug.
- Hold the bottom of the camera with both hands to move the camera. Do not grab the lens or lens holder to move the camera.



OK

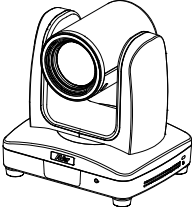


Contents

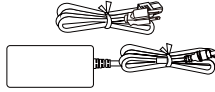
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Package Contents



PTZ 310/330 unit



Power adapter &
Power cord



HDMI cable



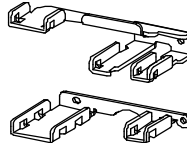
Remote controller



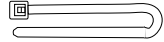
4 to 3 pin MIC In cable



Quick Guide



Cable Fixing plate



Cable ties(x5)

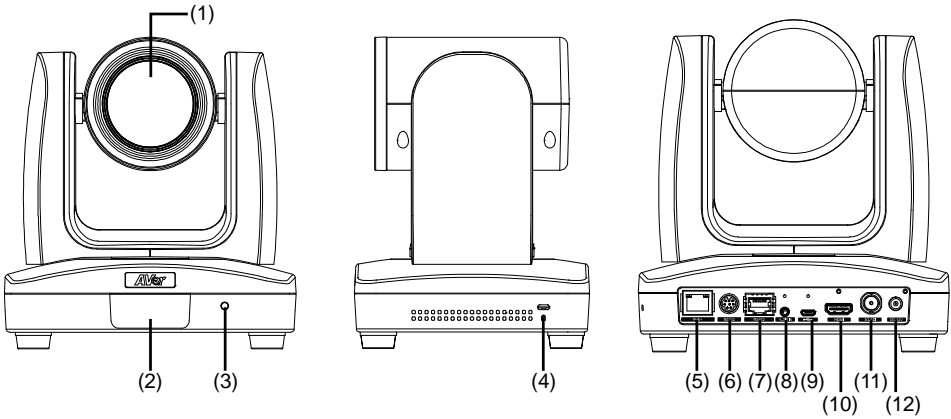


Batteries(x2)

*The power cord will vary depending on the standard power outlet of the country where it is sold.

Product Introduction

Overview

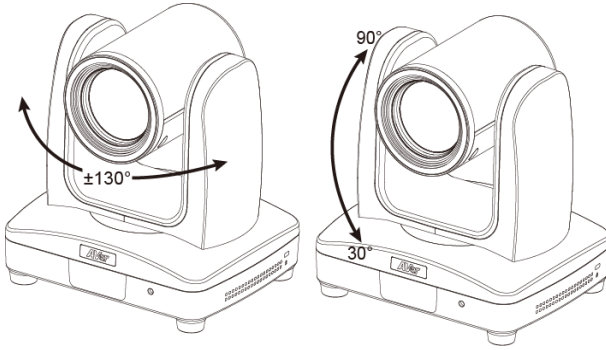


(1) Camera lens	(5) PoE+ port	(9) mini-USB port
(2) IR sensor	(6) RS232 port	(10) HDMI port
(3) LED indicator	(7) RS422 port	(11) 3G-SDI port
(4) Kensington lock	(8) Audio IN	(12) DC Power jack

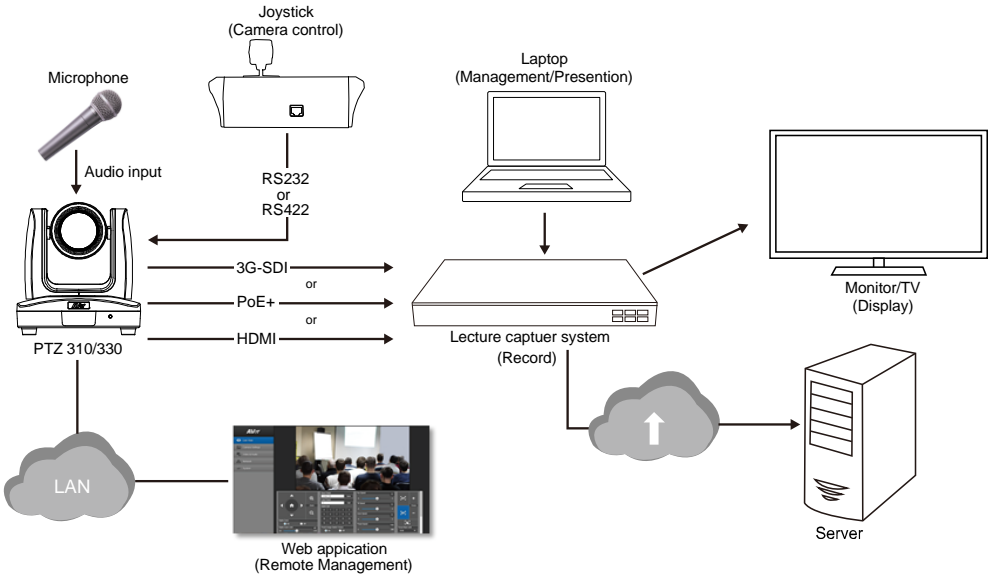
LED Indicator

LED	Status
Blue(Solid)	Normal Operation
Orange(Blinking)	Camera Initialization
Orange (Solid)	Standby
Red(Blinking)	FW Updating

Pan and Tilt Angle



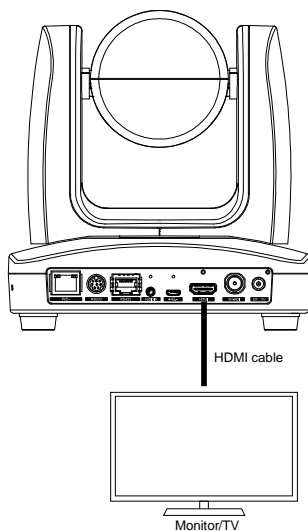
Device Connection



Video Output Connection

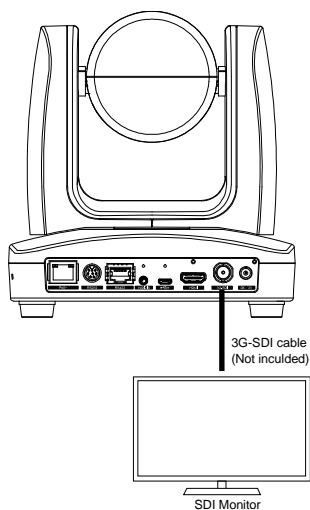
■ HDMI

Use the HDMI cable to connect with monitor or TV for video output.



■ 3G-SDI

Connect to 3G-SDI monitor for video output.

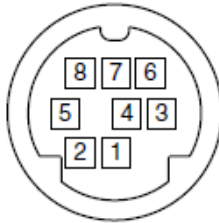
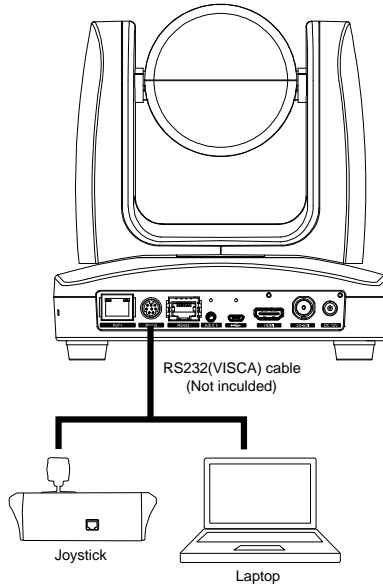


[Note] HDMI and 3G-SDI monitors can be connected to camera and output live video simultaneously; Assuming HDMI monitor is well connected before camera turned on, the OSD menu will be displayed on HDMI monitor in default.”

RS232 and RS422 Connection

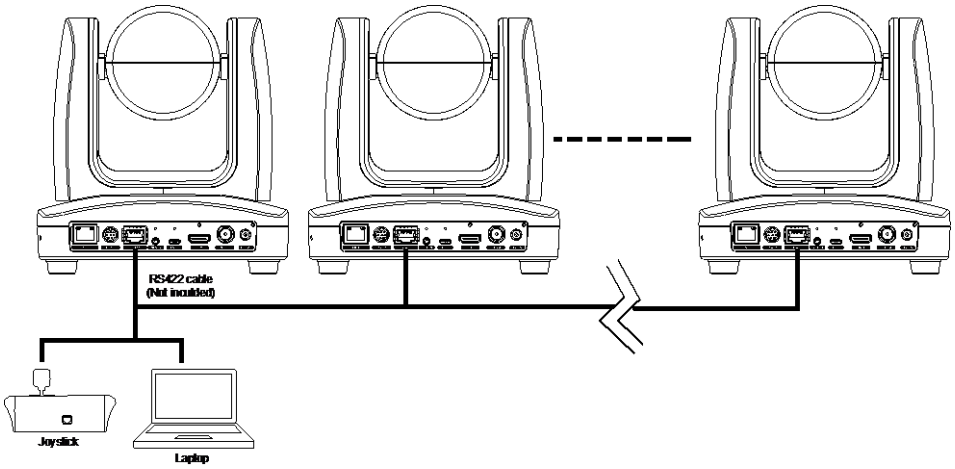
Connect through the RS232 or RS422 for camera controlling.

■ RS232

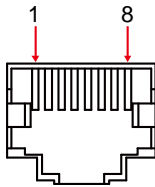


RS232 Pin	
No.	Pin
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	NC
8	NC

■ RS422

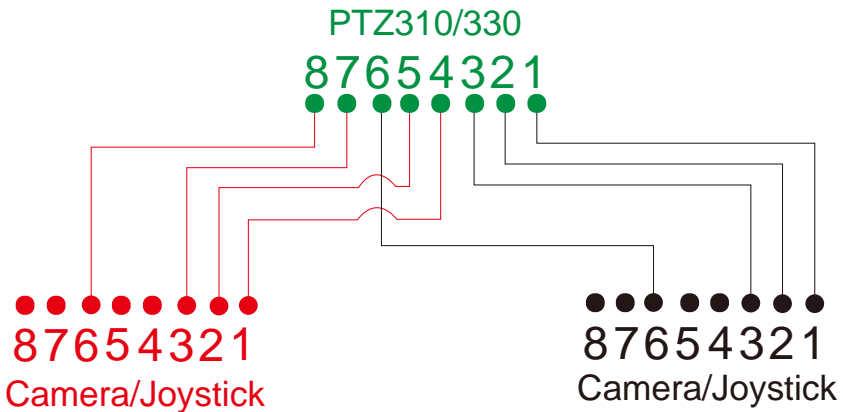


[Note] Use cat5e splitter for multi-camera connection.



RS422 Pin			
No.	Pin	No.	Pin
1	TX-	5	TX+
2	TX+	6	RX+
3	RX-	7	RX-
4	TX-	8	RX+

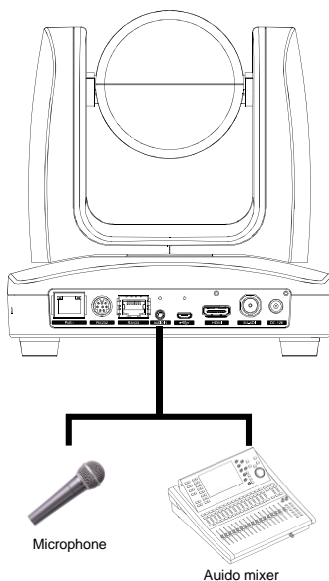
Cat5e splitter pin assignment:



Audio Input Connection

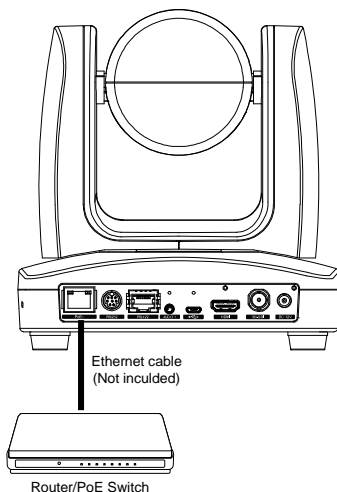
Connect the audio device for audio receiving.

[Note] If use MIC-in device (ex: microphone), please use 3 to 4 MIC In cable to connect camera and MIC-in device.



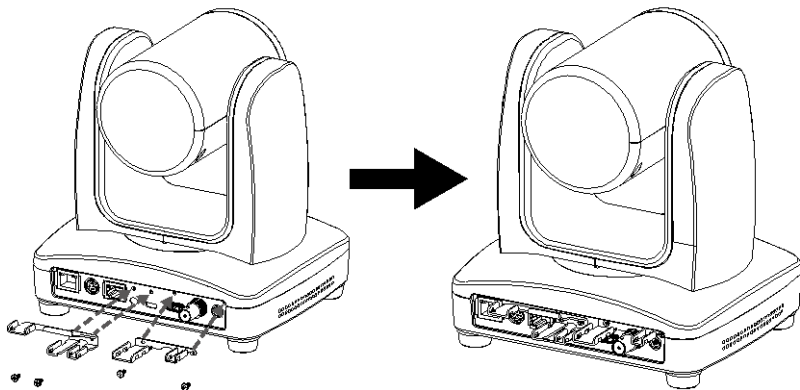
PoE Connection

Connect the camera to the router or switch through the PoE+ port.

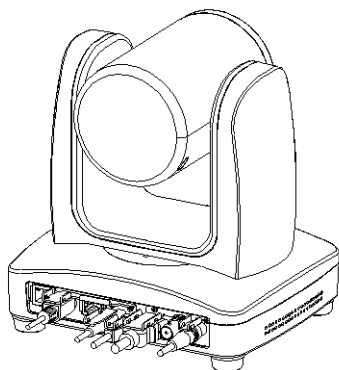


Install Cable Fixing Plate

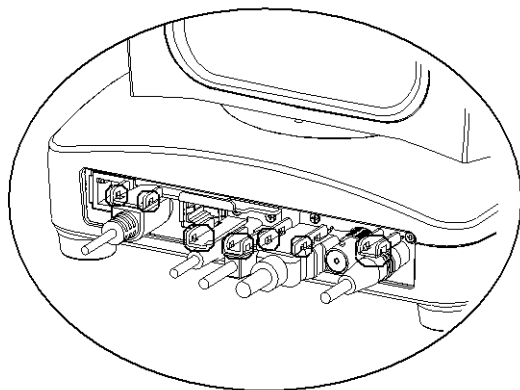
- 1 Secure the cable fixing plate to the camera with screws.



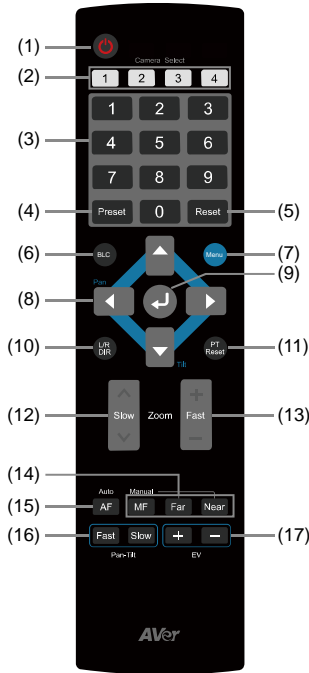
- 2 Plug-in cables.



- 3 Using cable ties to secure the cable and cable fixing plate.



Remote Controller




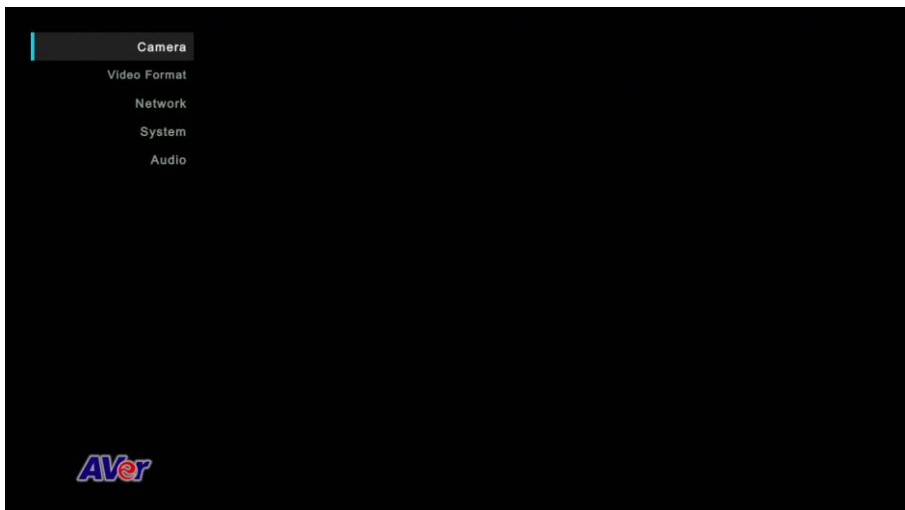
Name	Function
(1) Power	Turn the unit on/standby.
(2) Camera Select	Select 1~4 PTZ camera. Set the camera ID in OSD menu: System > Camera Selector, ex: camera ID is set to 1. Then, press the “camera select” button “1” to control camera.
(3) Numeric Pad	<ul style="list-style-type: none"> ■ Use for set the preset position 0~9. ■ Press number button (0~9) to move the camera to pre-configure preset position 0~9.
(4) Preset	Press “Preset” + “Number button (0~9)” to set the preset position.
(5) Reset	Press “Reset” + “Number button (0~9)” to cancel the pre-configure preset position.
(6) BLC	Turn on/off back light compensation
(7) Menu	Open and exit the OSD menu.
(8) ▲, ▼, ◀, & ▶	Pan and tilt the camera lens.
(9) ↵	<ul style="list-style-type: none"> - Confirm the selection or make a selection in OSD menu. - One push focus.
(10) L/R DIR	Left and right orientation setting. <ul style="list-style-type: none"> - Press “L/R DIR” + “#1” button to reset setting. - Press “L/R DIR” + “#2” button to move to opposite direction.

Name	Function
(11) PT Reset	Reset the Pan-Tilt position.
(12) Zoom Slow	Zoom in/out slow.
(13) Zoom Fast	Zoom in/out fast.
(14) MF/Far/Near	Enable manual focus. Use Far/Near to adjust the focus.
(15) AF	Auto focus.
(16) Pan-tilt Fast/Slow	Pan-Tilt speed adjustment. There are totally 24 levels for pan-tilt speed adjustment; press the button once will adjust fast or slow one level of speed (also see Manual Pan-Tile-Zoom and Preset Speed Adjustment chapter).
(17) EV +/-	EV level adjustment.

Setup PTZ310/330


OSD Menu

Press  button on remote controller to call out the OSD menu and use ▲, ▼, ◀, ▶ and ↵ button to operate the OSD menu.



Setup IP Address of PTZ310/330

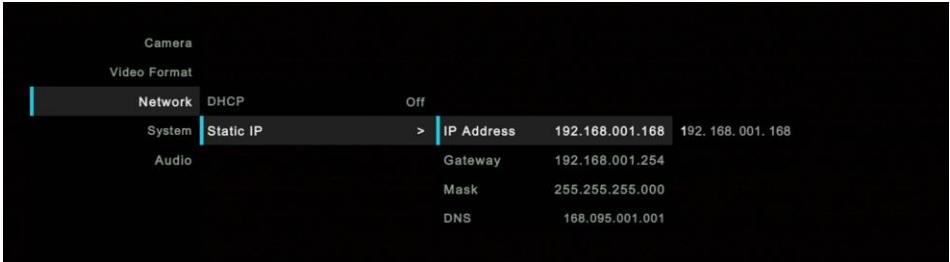
Static IP

1. Press  button on the remote controller to call out OSD menu.


2. Go to **Network > Static IP**.

[Note] Turn the DHCP off before setup static IP (Network > DHCP > Off).

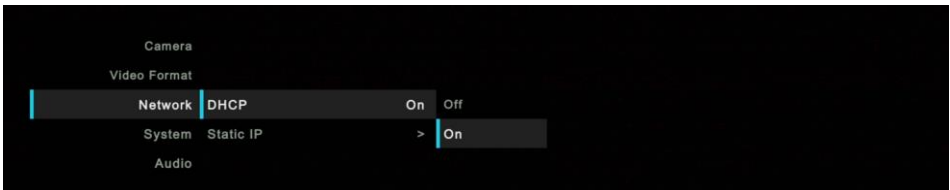
3. Select the **IP address, Gateway, Mask, and DNS** to configure. Press  and use , , number pad to enter the data.



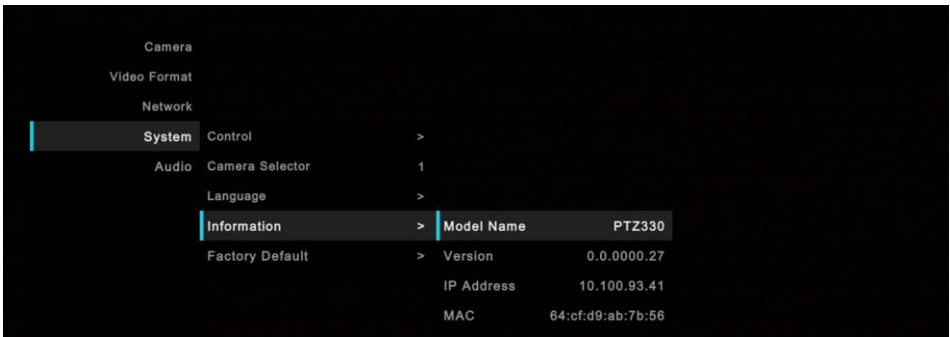
DHCP

1. Press  button on the remote controller to call out OSD menu.

2. Go to **Network > DHCP > On**.



3. After turn the DHCP on, user can go to **System > Information** to view IP address.



OSD Tree

Camera

Setup camera parameters – Exposure mode, White balance, Pan-Tilt Zoom, Noise reduction, Frequency, Saturation, Contrast, Sharpness, Mirror, and Flip.

Camera	Exposure Mode	
	Full Auto	Exposure Value/Gain Limit Level/Slow Shutter
	Shutter Priority	Exposure Value/Shutter Speed/Gain Limit Level
	Iris Priority	Exposure Value/Iris Level/Gain Limit Level/Slow Shutter
	Manual	Shutter Speed/Iris Level/Gain Level
	White Balance	Auto/Indoor/Outdoor/One Push/Manual
	Color Temperature	2500~10000
	Pan Tilt Zoom	Preset Speed/Digital Zoom/Digital Zoom Speed/Pan/Tilt Slow
	Noise Reduction	Off/Low/Medium/High
	Frequency	50HZ/60HZ/Auto
	Saturation	0~10
	Contrast	0~4
	Sharpness	0~3
	Mirror	Off/On
	Flip	Off/On

Video Format

Select video resolution.

Video Format	Auto
	1080P/60
	1080P/59.94
	1080P/30
	1080P/29.97
	1080I/60
	1080I/59.94
	720P/60
	720P/59.94
	1080P/50
	1080P/25
	1080I/50
	720P/50

Network

Setup IP mode – DHCP or static IP.

Network	DHCP	Off/On
	Static IP	IP Address
		Gateway
		Mask
		DNS

System

Preset OSD: Enable/disable Preset status (Save Preset, Call Preset, Cancel Preset) display on screen.

Camera Selector: Set the camera ID 1~4 for using remote controller on multiple cameras control (also see [\(2\) Camera select](#) in Remote Controller chapter).

System	Control	Protocol	VISCA/Pelco D
		Camera Address	1~7
		Baud Rate	2400/4800/9600/38400
		Preset OSD	Off/On
Camera Selector	1~4		
Language	English/日本語/繁體中文		
Information	Model Name/Version/IP Address/MAC		
Factory	Off/On		

Audio

Camera	Input Type	Mic in/Line in
	Auto Gain Control	Off/On
	Noise Suppression	Off/Low/Normal
	Audio Volume	0 ~ 10

Web Setup

Connect the camera from remote site through the internet.

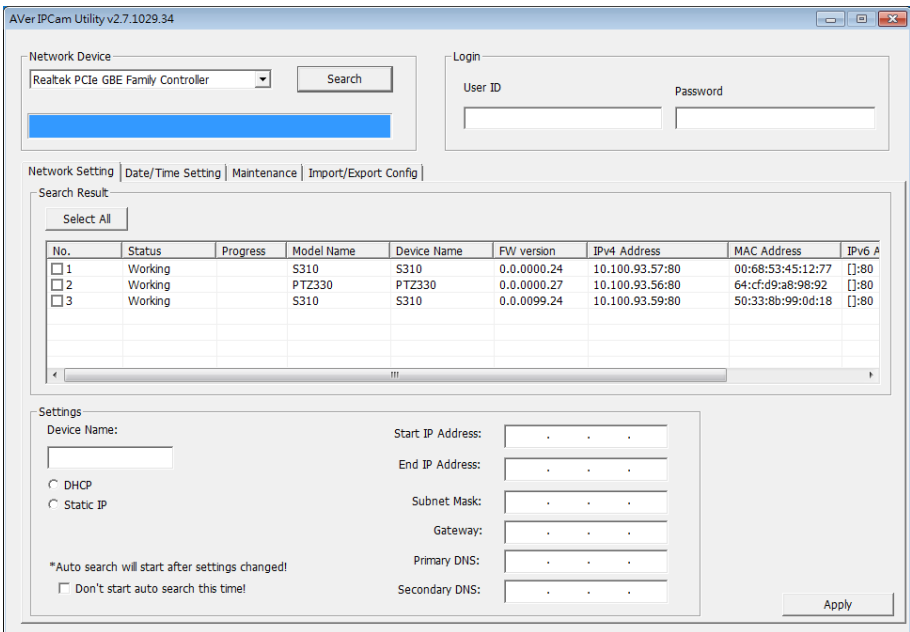
Using the AVer IPCam Utility to Find the Camera

To find the IP address of your cameras, you can execute the IPCam Utility installer. Follow the below steps to find the IP address of camera.

1. Download the IPCam Utility from <http://www.aver.com/download-center> .
2. Run the IPCam Utility
3. Click Search, and all available devices will be listed on the screen
4. Select a camera from the list.
5. The corresponding fields of IP address will display.
6. Double-click on the IP address of camera from the list can connect to camera through the browser.

[Note] If IPCam utility cannot find the camera, please check following:

1. Please make sure the Ethernet connection of camera is well connected.
2. The camera and PC (IPCam utility) are in the same LAN segment.



Make a Connection to PTZ310/330 via Browser

1. Find the IP address of camera. Call out OSD menu and select **"System"** > **"Information"** Or use AVer IPCam utility to find the IP address of camera.



2. Open the browser and enter the IP address of the camera. The PC/laptop is required an internet access.

After connecting to camera, the live view interface is displayed.



[Note] User can use mouse or ←, → of the keyboard to control the scroll bar on the control panel.








Live View

In live view, user can setup zoom in/out, preset, focus (Auto, Manual, One push, and Focus Near Limit), speed of zoom, pan-tilt, and preset and view preset.

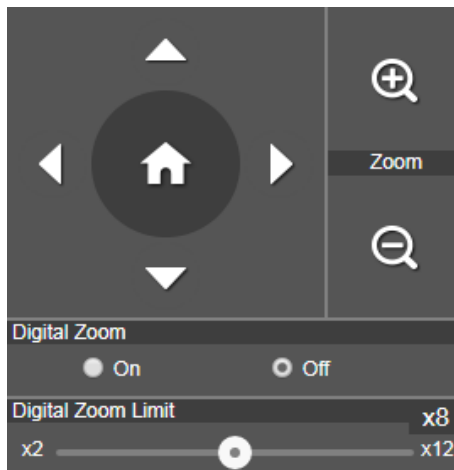


Pan-Tilt-Zoom Control

To operate the PTZ Camera motion.

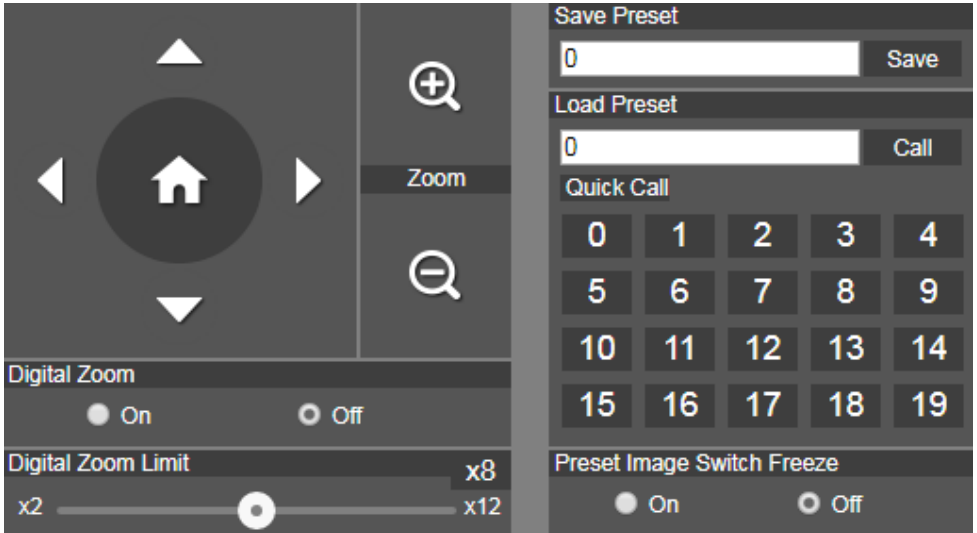
Use , , , and  to adjust camera view position and use  and  to zoom. Select  to back to default position.





Digital Zoom: Enable/disable digital zoom function. Move the scroll to adjust the limit of digital zoom.



Preset

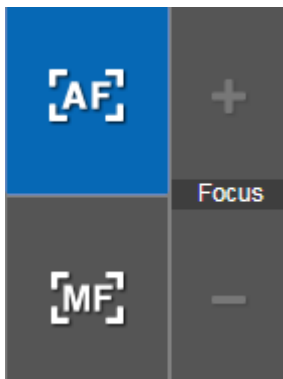
Setup preset position and view preset position.



1. Use , , , and  to adjust camera view position.
2. Enter preset position number (0~255) in **Save Preset** column and select "**Save**" to save the position.
3. To call the preset position, enter preset number (0~255) in **Load Preset** column or select the preset number (0~19) from **Quick Call** section.
4. **Preset Image Switch Freeze:** On/Off the screen view freeze function. When "Preset Image Switch Freeze" is on, during the preset operation, the screen will freeze till the operation is done.

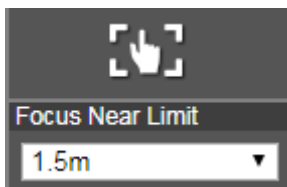
Focus

Switch to auto (AF) or manual (MF) focus. The manual focus use + and – to adjust focus. Press “+” to adjust focus to far end and focusing on a far subject; press “-“to adjust focus to near end and focusing on a near subject.



One push focus: By clicking button to adjust Lens focus automatically once.

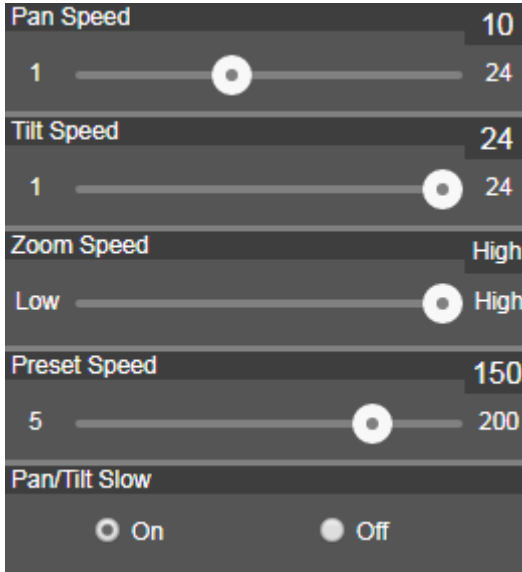
Focus Near Limit: Set the focus distance limit.



Manual Pan-Tile-Zoom and Preset Speed Adjustment

Adjust speed of manual Pan-Tilt-Zoom and Preset operation. Enable/Disable the slow mode for manual pan-tilt operation. There are totally 24 levels for manual pan-tilt speed adjustment, and 2 levels (Low/High) for zoom speed adjustment. There are 5 levels for preset speed adjustment.

Pan/Tilt Slow: Pan/Tilt Slow: When this option is set as ON, the maximum speed of manual pan-tilt operation is 40°/sec; when this option is set as Off, the maximum speed of manual pan-tilt operation is 100°/sec.



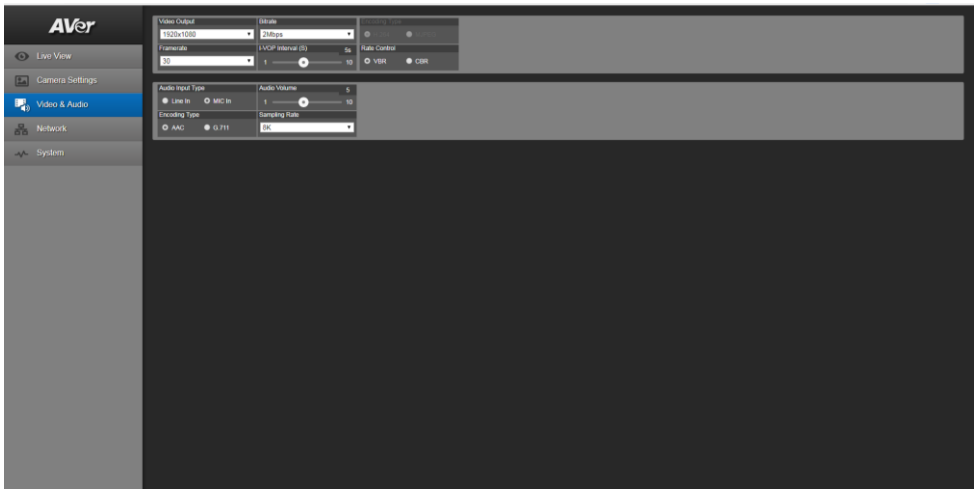
Camera Settings

Setup camera related parameters – Full auto, Iris priority, Shutter priority, Exposure, Gain, Saturation, Contrast, Sharpness, Noise, Power frequency, Mirror, and Flip.



Video & Audio

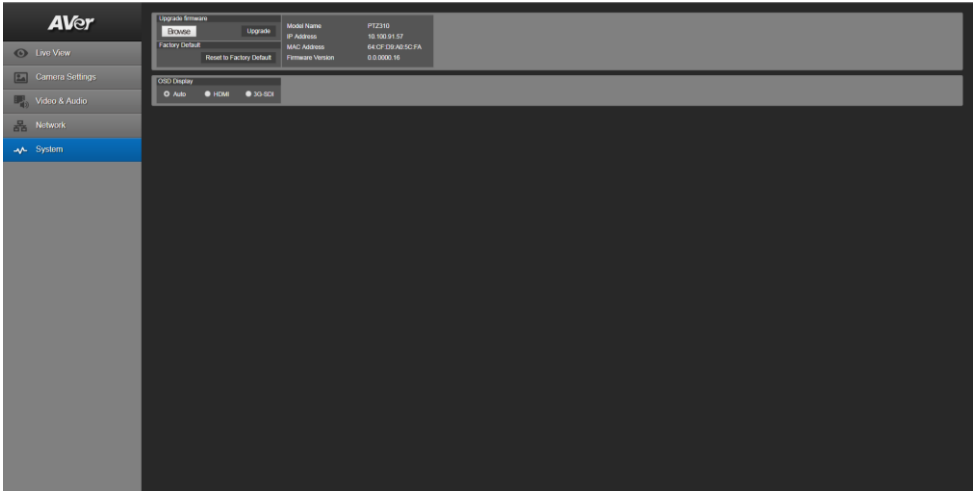
User can setup Video output, Framerate, Bitrate, I-VOP internal, Encode type, Rate control, Audio input type, Audio volume, and Sampling Rate.



System

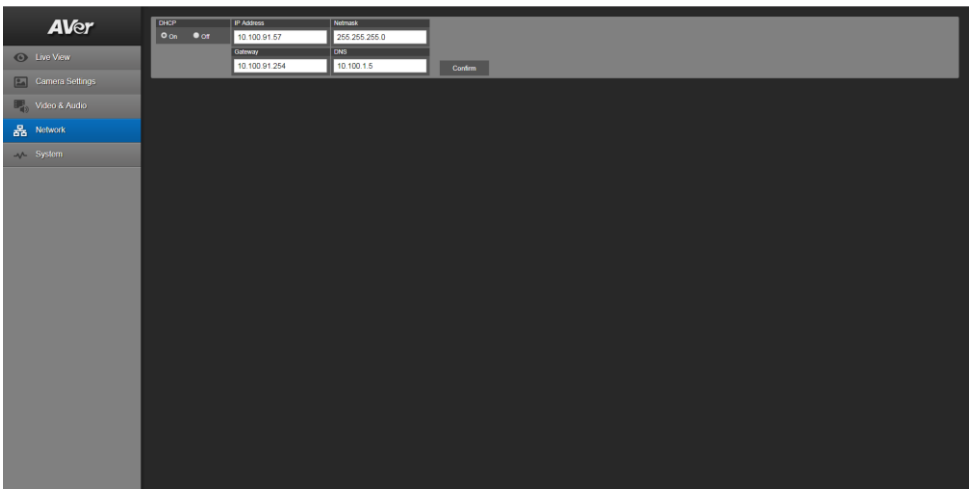
The system information of Camera is displayed in this page, including Model name, IP address, MAC address and firmware version.

User can update firmware and reset to Factory default in this page. User can also set the OSD display output to HDMI or 3G-SDI interface.



Network

Setup IP address of camera – DHCP or static IP, netmask, gateway, and DNS. After setting, select “Confirm” to apply settings.



Using RTSP Connect to Camera

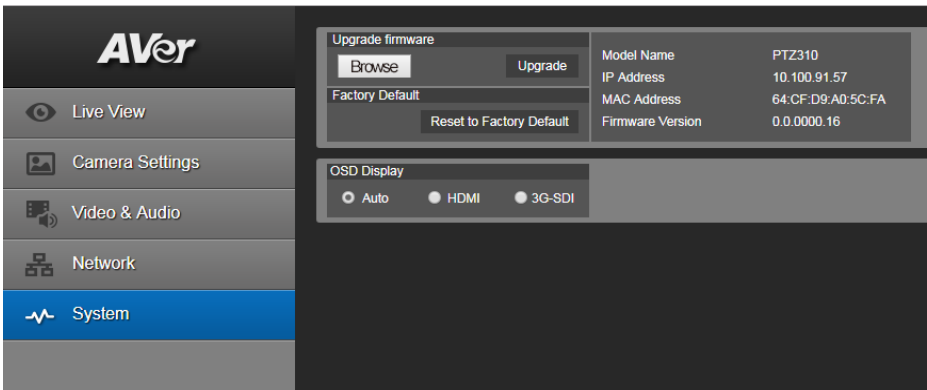
To use RSTP player connecting to camera; please enter the following RTSP URL in your application such as VLC, PotPlayer or Quick Time.

“rtsp://IP address of PTZ310/330/live_st1”

Firmware Update

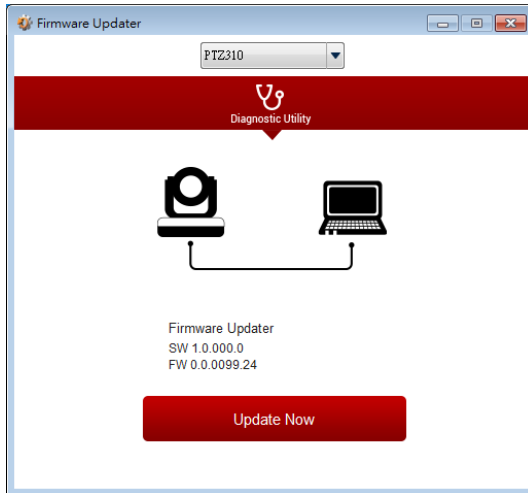
Web Firmware Update

1. Download the newest firmware from <http://www.aver.com/download-center> .
2. Connect to camera through browser.
3. Select **System** > **Upgrade** firmware > **Browse**.
4. Select the firmware and select “**Upgrade**” button.
5. After updating, refresh the browser.

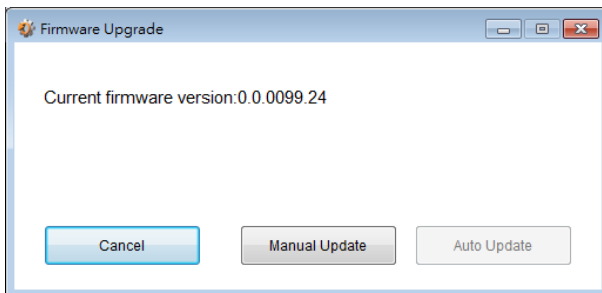


USB Update

1. Download the newest firmware and **AVer PTZApp** from <http://www.aver.com/download-center>.
2. Connect the camera to PC/Laptop through USB port.
3. Run the AVer PTZApp.
4. Select “**Update Now**”.



5. Select “**Manual update**” and locate the firmware to start the process.



Specification

PTZ310

Camera	
Image sensor	1/2.8" 1080p 60fps Exmor CMOS
Effective picture elements	Approx. 2.1 Megapixels
Output Resolution	Auto, 1080p/60, 1080p/59.94, 1080p/50, 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 720p/60, 720p/59.94, 720p/50
Minimum Illumination	0.4 lux (IRE50, F1.6, 30FPS)
S/N ratio	> 50dB
Gain	Auto/Manual
TV Line	800 (center/wide), 700 (corner/wide)
Shutter Speed	1/1 s to 1/32,000 s
Exposure Control	Auto, Manual, Priority AE(Shutter, IRIS), BLC
White balance	Auto/Indoor/Outdoor/One-push/Manual(2500 - 10000)
Optical Zoom	12X
Digital Zoom	12X
Horizontal Viewing Angle	72.5° (Wide) ~ 6.3° (Tele)
Focal length	f = 3.9 mm (Wide) ~ 46.8 mm (Tele)
Aperture (Iris)	F = 1.6 (Wide) ~ 2.8 (Tele)
Minimum working distance	Wide - 0.3 m, Tele - 1.5 m
Pan/Tilt Angle	Pan: +- 130°, Tilt: +90°/-30°
Pan/Tilt Speed (manual)	Pan: 0.1~100°/sec, Tilt: 0.1~100°/sec
Preset Speed	Pan: 200°/sec, Tilt: 200°/sec
Preset Position	10 (IR), 255 (RS232)
Camera Control - IR	Yes

Camera	
Camera Control - Interface	RS232 (DIN8) / RS422 (RJ45)
Camera Control - Protocol	VISCA/PELCO-D (RS232/RS422/IP), CGI (IP)
Image Processing	Noise Reduction (2/3D), Filp, Mirror
Power Frequency	Auto/50Hz/60Hz
Audio	
Audio - Channel	2ch (stereo)
Audio - Codec	AAC-LC (48/44.1.32.24K), G.711/PCM (16K/8K)
Audio - Sample Rate	48/44.1/32/24/16/8Khz
Interface	
Video Output	3G-SDI, HDMI, IP
Audio Output	3G-SDI, HDMI, IP
Audio Input	MIC/Line in
General	
Power Requirement	AC100V-AC240V to DC12V/5A
PoE	POE+ (IEEE 802.3at), Class 4
Operating Condition	Temperature: 0°C ~ +40°C Humidity: 20% ~80%
Storage Condition	Temperature: -20°C ~ +60°C Humidity: 20% ~ 95%
Dimensions	180mm(L) x 140mm(W) x 183.5mm(H)
Weight	1.741 kg
Application	Indoor
Security	Kensington slot
Remote Controller	Infrared
Language	English / Japanese / Traditional Chinese
Accessory	Remote control, 12V/5A power adapter;

IP Streaming	
Resolution	1920x1080, 1280x720, 960x540, 640x480
Network Video Compress Format	H.264 (High Profile), MJPEG
Maximum Frame Rate	H.264: 60fps (1920x1080), MJPEG: 30fps (1920x1080)
Bit-rate Control Mode	VBR/CBR (selectable)
Range of Bit-rate setting	512Kbps ~ 32Mbps
Network Interface	10/100/1000Base-T
Multi-stream Capability	2
Network Protocol	IPv4, TCP, UDP, ARP, ICMP, IGMP, HTTP, DHCP, RTP/RTCP, RTSP, VISCA over IP
WebUI	
Live Video Preview	Yes
Camera PTZ Control	Pan / Tilt / Zoom / Focus / Preset Control
Camera/Image Adjustment	Exposure/WhiteBalance/Picture
Network Configuration	DHCP / IP Addr / Gateway / Netmask / DNS
Software Tools	
Device IP Searching, Configuration tool	Windows Application

PTZ330

Camera	
Image sensor	1/2.8" 1080p 60fps Exmor CMOS
Effective picture elements	Approx. 2.1 Megapixels
Output Resolution	Auto, 1080p/60, 1080p/59.94, 1080p/50, 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 720p/60, 720p/59.94, 720p/50
Minimum Illumination	0.3 lux (IRE50, F1.6, 30FPS)
S/N ratio	> 50dB
Gain	Auto/Manual
TV Line	800 (center/wide), 600 (corner/wide)
Shutter Speed	1/1 s to 1/32,000 s
Exposure Control	Auto, Manual, Priority AE(Shutter, IRIS), BLC
White balance	Auto/Indoor/Outdoor/One-push/Manual(2500 - 10000)
Optical Zoom	30X
Digital Zoom	12X
Horizontal Viewing Angle	67° (Wide) ~ 6.3° (Tele)
Focal length	f = 4.3 mm (Wide) ~ 129 mm (Tele)
Aperture (Iris)	F = 1.6 (wide) ~ 4.7 (Tele)
Minimum working distance	Wide - 0.1 m, Tele - 1.2 m
Pan/Tilt Angle	Pan: +- 130°, Tilt: +90°/-30°
Pan/Tilt Speed (manual)	Pan: 0.1~100°/sec, Tilt: 0.1~100°/sec
Preset Speed	Pan: 200°/sec, Tilt: 200°/sec
Preset Position	10 (IR), 255 (RS232)
Camera Control - IR	Yes
Camera Control - Interface	RS232 (DIN8) / RS422 (RJ45)

Camera	
Camera Control - Protocol	VISCA/PELCO-D (RS232/RS422/IP), CGI (IP)
Image Processing	Noise Reduction (2/3D), Filp, Mirror
Power Frequency	Auto/50Hz/60Hz
Audio	
Audio - Channel	2ch (stereo)
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General	
Power Requirement	AC100V-AC240V to DC12V/5A
PoE	POE+ (IEEE 802.3at), Class 4
Operating Condition	Temperature: 0°C ~ +40°C Humidity: 20% ~80%
Storage Condition	Temperature: -20°C ~ +60°C Humidity: 20% ~ 95%
Dimensions	180 mm(L) x 140mm(W) x183.5mm(H)
Weight	1.62 kg
Application	Indoor
Security	Kensington slot
Remote Controller	Infrared
Language	English / Japanese / Traditional Chinese
Accessory	Remote control, 12V/5A power adapter;

IP Streaming	
Resolution	1920x1080, 1280x720, 960x540, 640x480
Network Video Compress Format	H.264 (High Profile), MJPEG
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