# VC-A61P / VC-A61PN
HD camera
(PTZ Video Camera)

User Manual - English
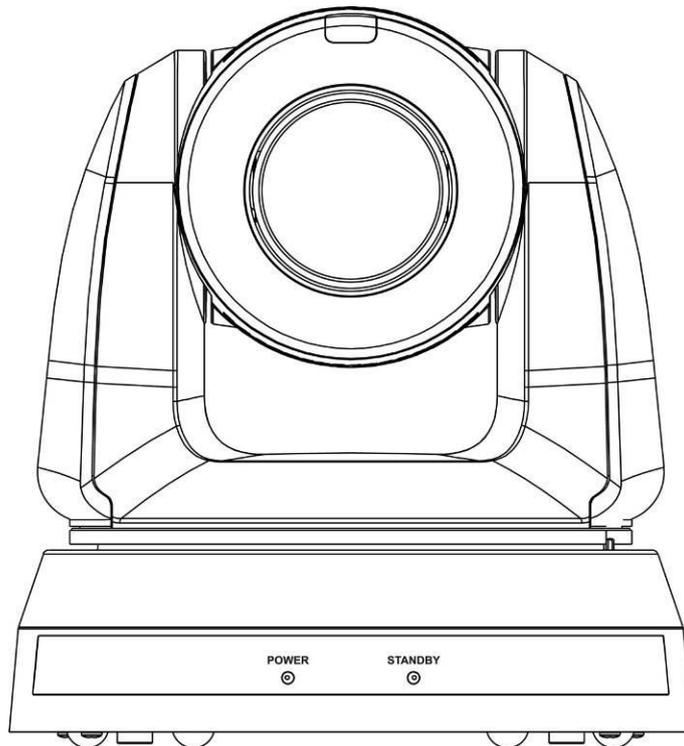
To download the latest version of Quick Start Guide, multilingual user manual, software, or driver, etc., please visit Lumens
https://www.MyLumens.com/support

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Chapter 1 Safety Instructions

Always follow these safety instructions when using the product:

1   Operation

1.1   Please use the product in the recommended operating environment, away from water or source of heat.

1.2   Do not place the product in tilted position or unstable trolley, stand or table.

1.3   Please clean the dust on the power plug prior to usage. Do not insert the product's power plug into a multiplug to prevent sparks or a fire.

1.4   Do not block the slots and openings in the case of the product. They provide ventilation and prevent the product from overheating.

1.5   Do not open or remove covers, otherwise it may expose you to dangerous voltages and other hazards. Refer all servicing to licensed service personnel.

1.6   Unplug the product from the wall outlet and refer servicing to licensed service personnel when the following situations happen:
- If the power cords are damaged or frayed.
- If liquid is spilled into the product or the product has been exposed to rain or water.

2   Installation

2.1   For security considerations, please make sure the standard hanging rack you bought is in line with UL or CE safety approbations and installed by technician personnel approved by agents.

3   Storage

3.1   Do not place the product where the cord can be stepped on as this may result in fraying or damage to the lead or the plug.

3.2   Unplug the product during thunderstorms or if it is not going to be used for an extended period.

3.3   Do not place the product or accessories on top of vibrating equipment or heated objects.

4   Cleaning

4.1   Disconnect all the cables prior to cleaning and wipe the surface with a dry cloth. Do not use alcohol or volatile solvents for cleaning.

5   Batteries (for products or accessories with batteries)

5.1   When replacing batteries, please only use similar or the same type of batteries.

5.2   When disposing of batteries or products, please adhere to the relevant instructions in your country or region for disposing of batteries or products.

■   **Precautions**

	This symbol indicates that this equipment may contain dangerous voltage which could cause electric shock. Do not remove the cover (or back). No user-serviceable parts inside. Refer servicing to licensed service personnel.		This symbol indicates that there are important operating and maintenance instructions in this User Manual with this unit.

■   **FCC Warning**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Notice :
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

■   **IC Warning**

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.
Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe A prescrites dans la norme sur le material brouilleur: "Appareils Numeriques," NMB-003 edictee par l'Industrie.

■   **EN55032 CE Warning**

Operation of this equipment in a residential environment could cause radio interference.

■   **KC Warning**

This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home.

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Chapter 2 Package Contents

VC-A61P / VC-A61PN	M3 Screws	Remote Control
	Silver x8 / Black x2	
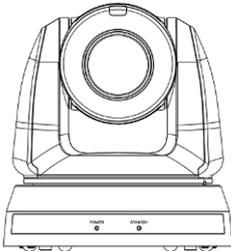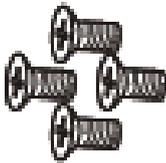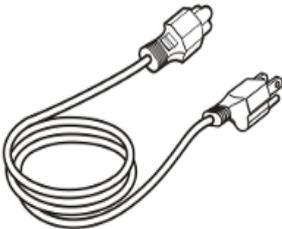
Power Cord	Power Adapter	RS-422 Connector
Appearance may vary depending on country/region		
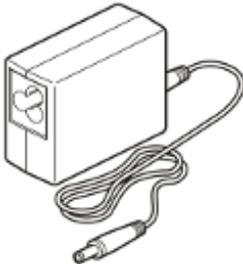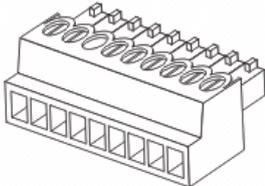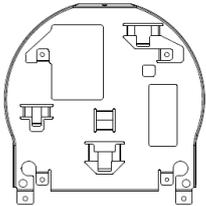
Metal Plate A	Metal Plate B
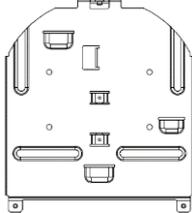
Chapter 3 Function Introduction

3.1 I/O functions Introduction

3.1.1 Front View
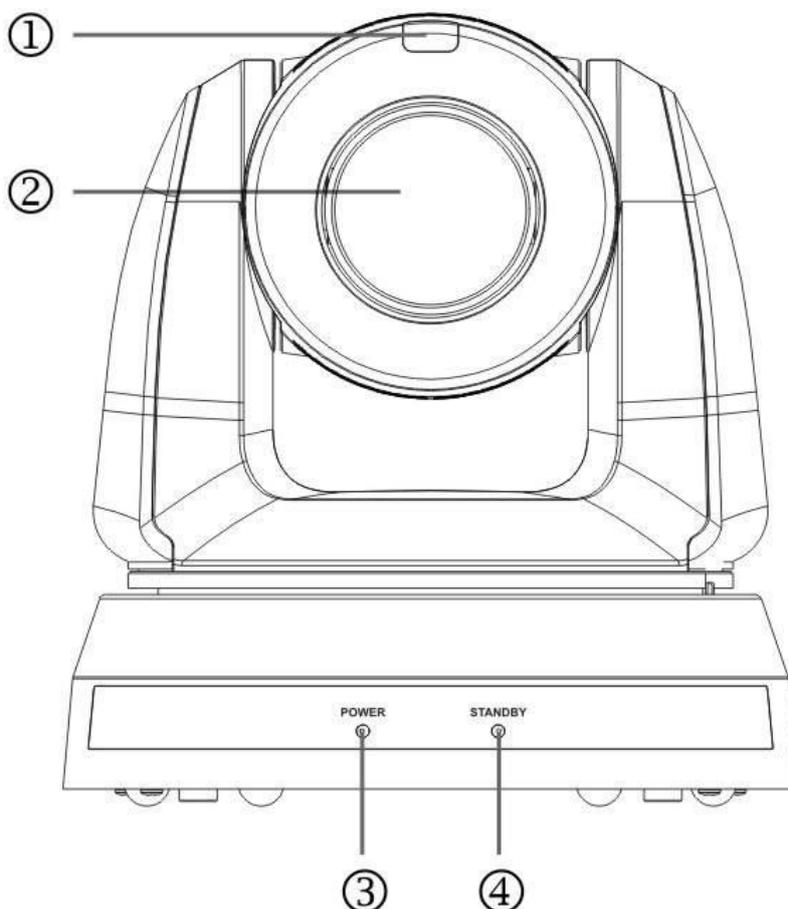
NO.	Item	Function Descriptions
1.	Tally indicator light	Display the tally light status of the camera
2.	Camera lens	30x HD camera lens
3.	Power LED indicator	Display the status of the camera
4.	Standby LED indicator	Display the status of the camera

3.1.2 Back View
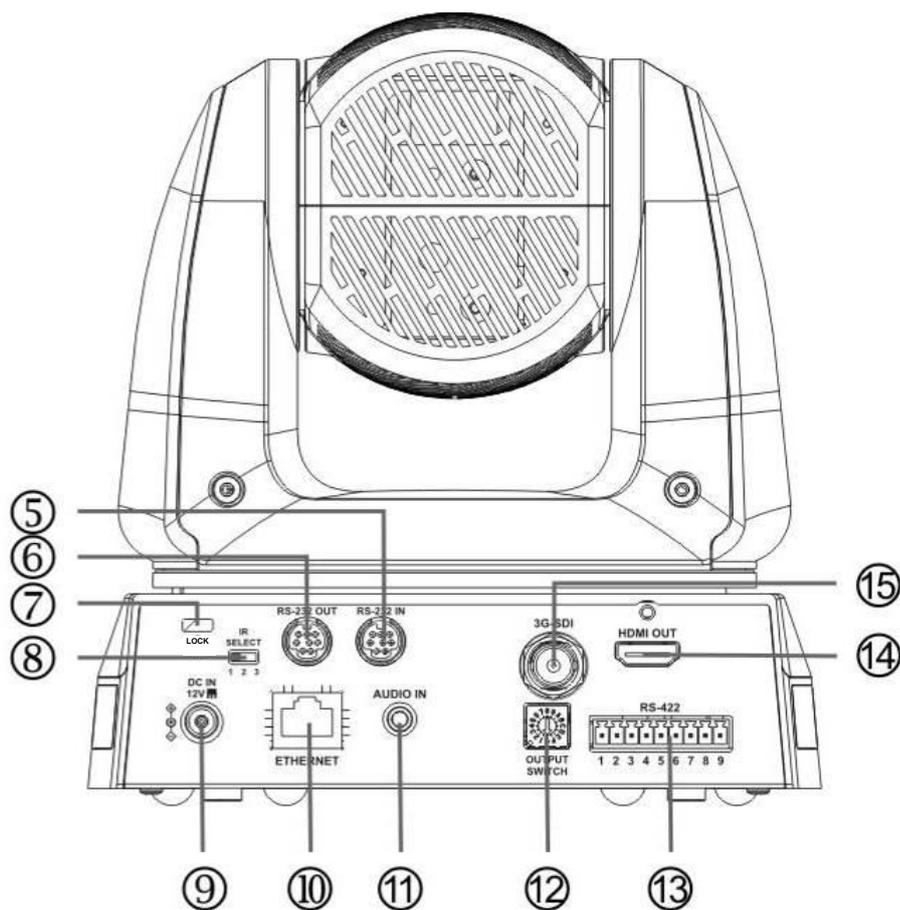
NO.	Item	Function Descriptions
5.	RS-232 input	RS-232 input port, at most 7 cameras can be connected in a serial connection
6.	RS-232 output	RS-232 output port, at most 7 cameras can be connected in a serial connection
7.	Kensington lock hole	Lock hole of safety lock
8.	IR SELECT	The remote control ID setting is only controlled after corresponding to the Camera Select on the remote control
9.	DC 12 V power Port	DC power supply connecting port
10.	Ethernet port	Network cable port supports routers or hubs of PoE+ (IEEE 802.3at) with power supply
11.	Audio input	Support Line In/Mic In
12.	OUTPUT Switch	Adjust the resolution setting. The default is 1080p/59.94
13.	RS-422 Port	RS-422 connecting port, at most 7 cameras can be connected in a serial connection
14.	HDMI output	HDMI output (Audio output supported)
15.	3G-SDI output	3G-SDI output(Audio output supported) *Support the audio output of 48 KHz only/resolutions up to 1080p 59.94/50

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3.1.3 Bottom
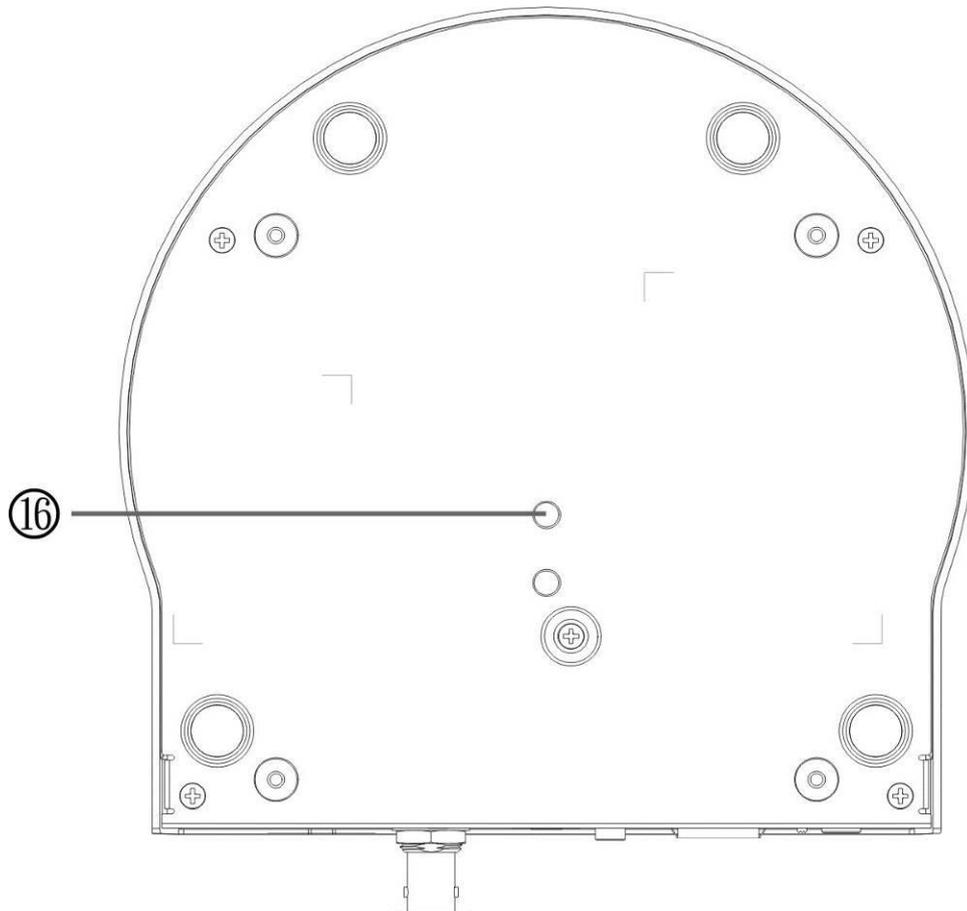
NO.	Item	Function Descriptions
16.	Tripod lock hole	The camera is mounted on a (specification) 1/4" - 20 UNC tripod

3.2 Description of LED indicator

Status	Power	Standby
Startup in progress (initialization)	Green light	Orange light
In use	Green light	No indicator
In standby mode	No indicator	Orange light

3.3 Tally Indicator Light Function Description
The tally indicator light function can be enabled through RS-232 command. Please refer to RS-232 command set document.

Chapter 4 Instruction for installation

4.1 Preparation before installation

Installation and connection of the HD camera requires special skills. To install by yourself, please follow necessary steps, ensure steady and tight installation of the device, and pay attention to your safety to avoid any accident.

4.1.1 Ensure the safety of the installation environment. Please do not install the device on unstable ceiling or in a place where the device is in danger of falling to avoid any accident.

4.1.2 Please check whether accessories in the box are complete or not. Please contact the supplier for any shortage, and make sure to keep the accessories in the box intact.

4.1.3 Please choose a proper place for installation of camera in advance. Please determine an installation place according to the following requirements

4.1.1.1 Confirm the position for the object to be captured.

4.1.1.2 Confirm whether the camera is set at a proper distance from other light sources.

4.2 Instruction for installation

4.2.1 I would like to install camera on the desk

4.2.1.1 Precautions for installation

◆ Please install the machine on a flat desk

◆ Do not grab the camera head by hand when handling the device

◆ Do not rotate the camera head by hand, improper rotation may result in breakdown of the camera
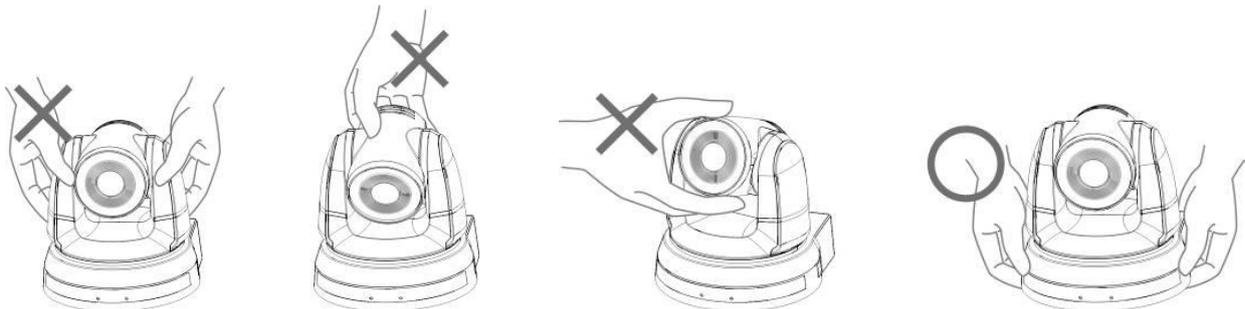
4.2.1.2 Installation steps

1. Please adjust DIP switch at first prior to installation

<Remark> Please refer to *Chapter 7 DIP Switch Setting* for the relevant descriptions on DIP switch.

2. Place the camera on a flat desk directly to ensure the normal vertical and horizontal operation of the machine
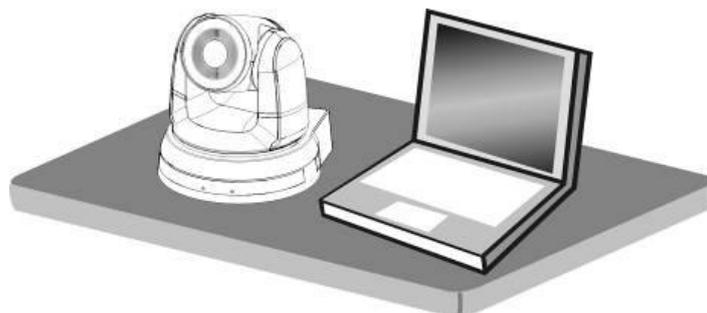
4.2.2 I would like to install the camera on the ceiling

4.2.2.1 Prepare for the parts and equipment required during the installation

1. Accessories in the box (metal plates A, B, M3 screw silver x 8, black x 2)
2. Screw for locking on ceiling mounted hanger x 4
3. Drilling machine, screw driver, ladder

4.2.2.2 Camera Size

L x W x H : 174 x 187 x 190 mm

Weight: 2.0 Kg
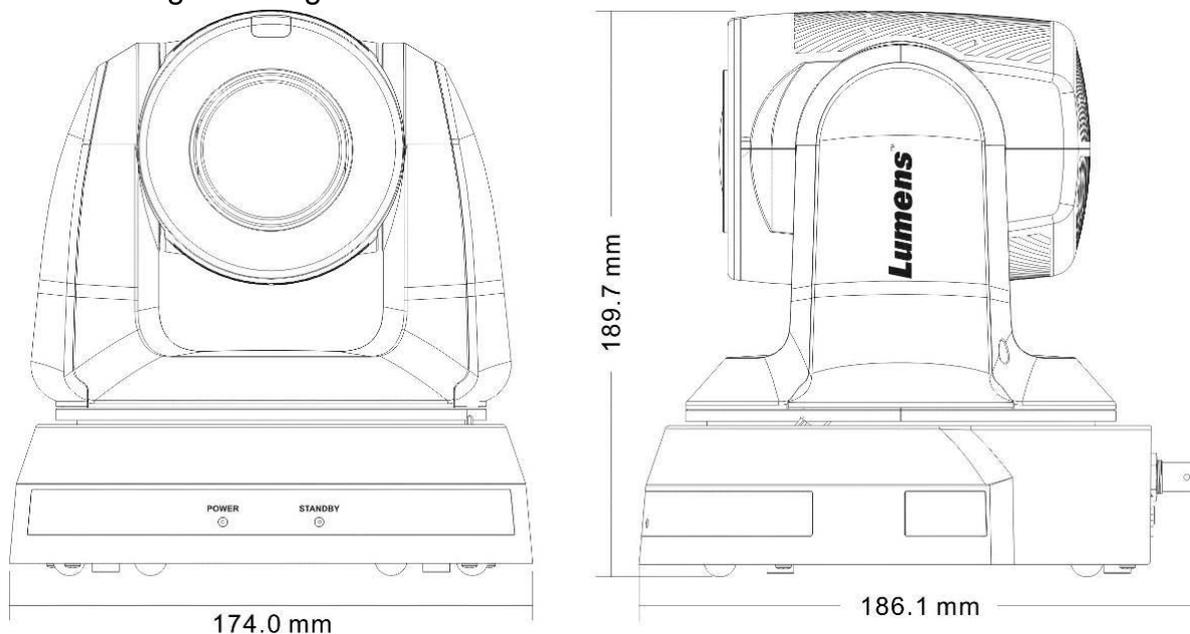
4.2.2.3 Max. rotation dimension of camera
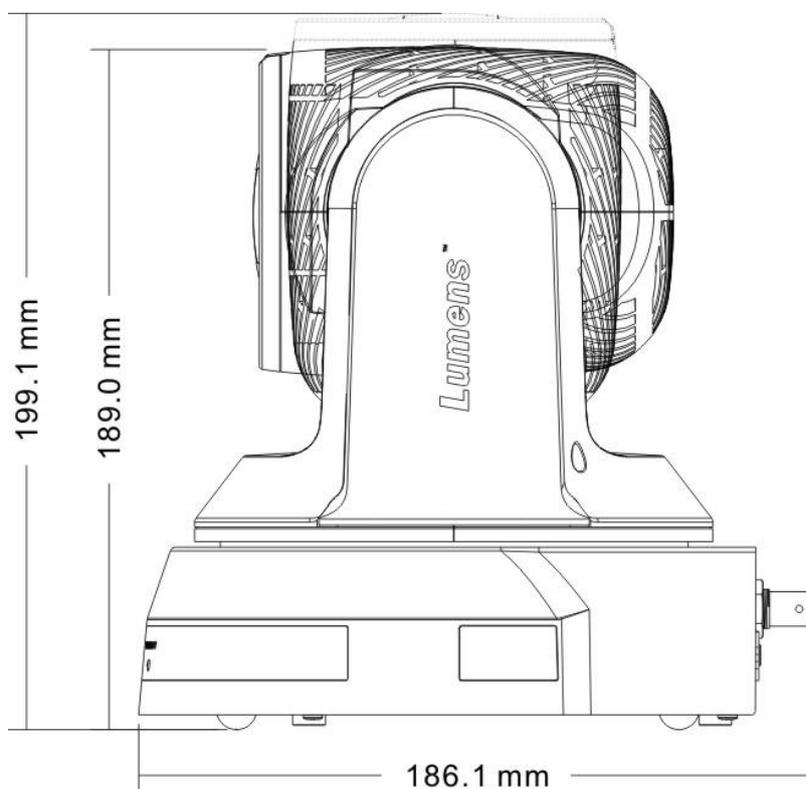
4.2.2.4 Size Diagram

1. Bottom of machine

The camera can be mounted on a 1/4", -20 UNC PTZ tripod deck by using the lock
holes on the bottom for the tripod
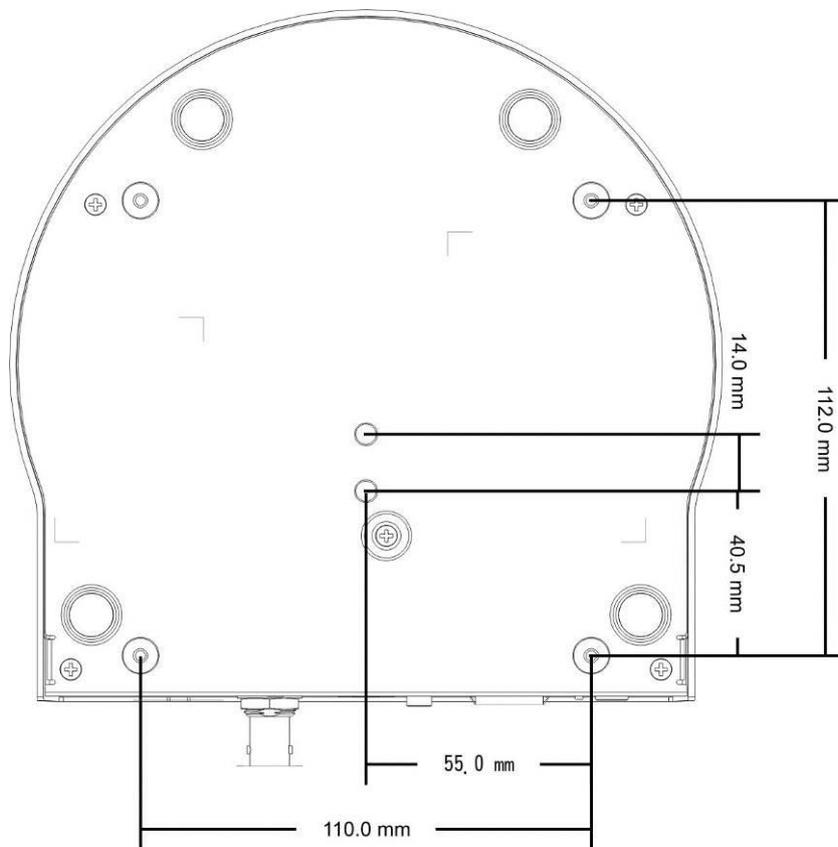
2.   Metal Plate size diagram

■ Metal plate A - machine side
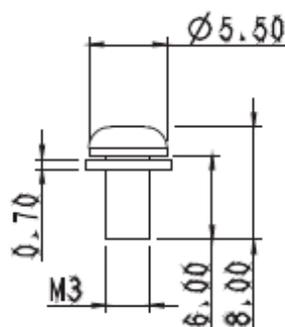
Metal plate A locking screw
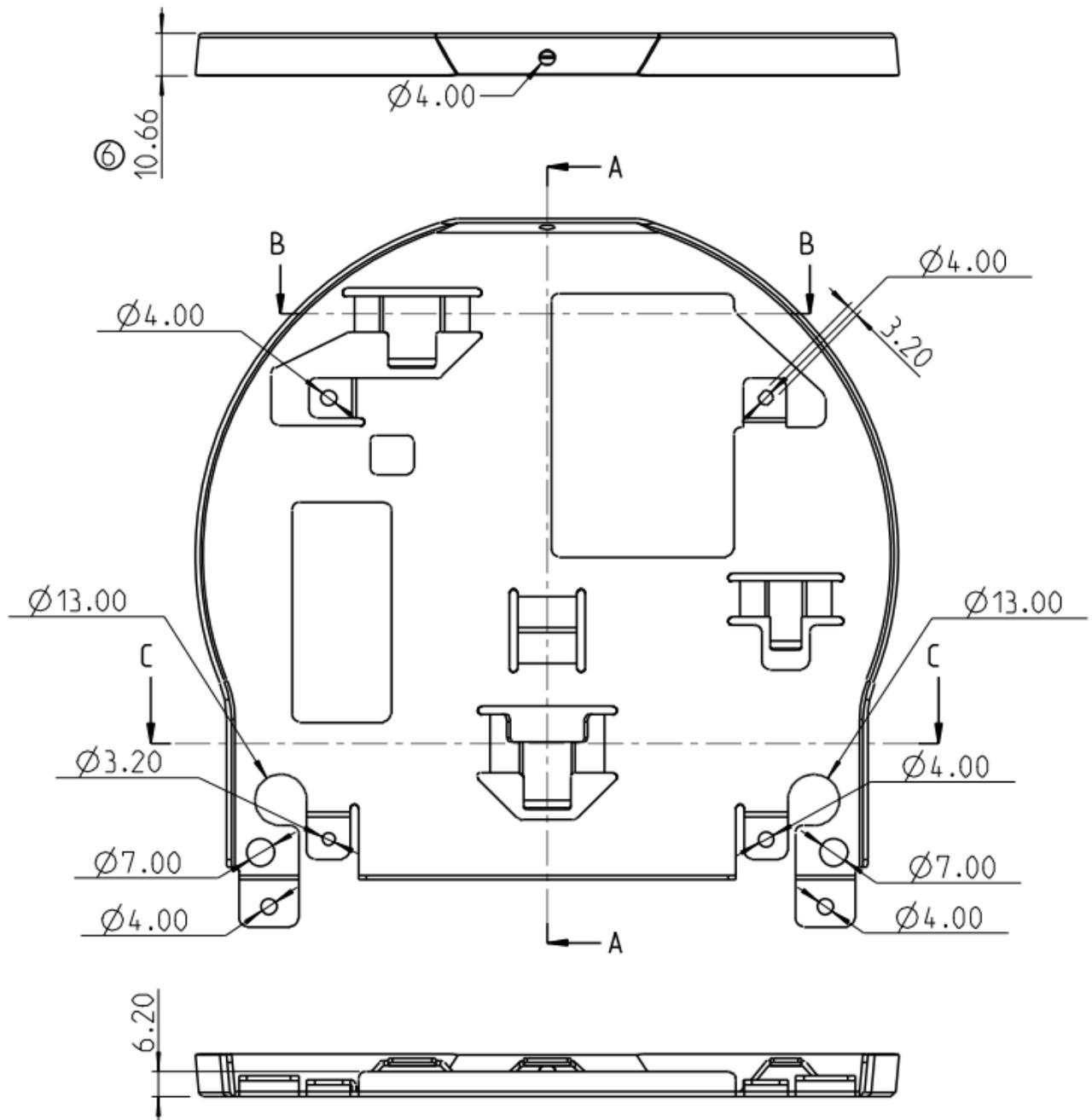
Metal plate A - machine side

■ Metal plate B - ceiling side

Ø7.00

25.00
27.55

M4
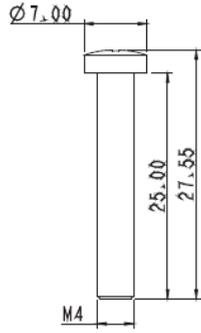
Metal plate B locking screw

8.00

M4

3.60

Metal plate B locking bolt

M3 threaded hole

B

53.50±0.10

4-Ø4.50

46.00±0.10

167.47

85.27±0.20

B

M3 threaded hole

28.25±0.10

83.50±0.10

140.00±0.10

156.60±0.10

M3 threaded hole

3-5.00±0.10

Metal plate B - ceiling side

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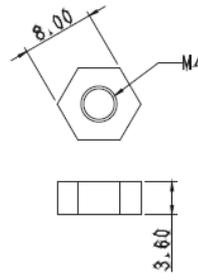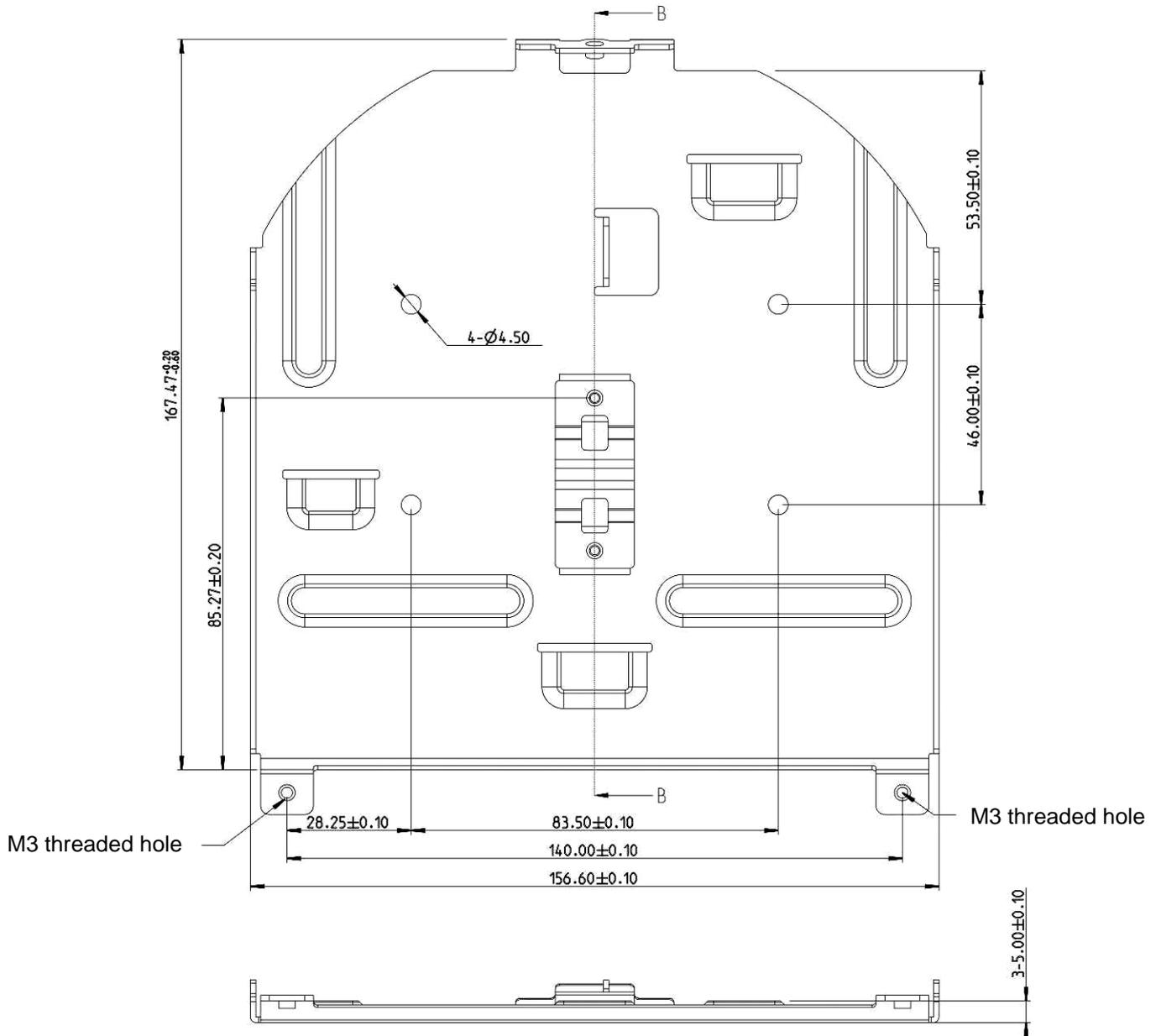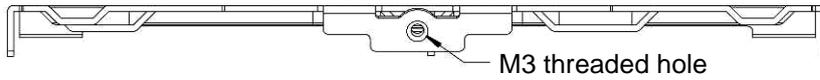
4.2.2.5 **Precautions for installation**

1. Before installation, please confirm the orientation of the machine relative to the object to be captured
2. It is recommended that the machine should be set at a distance of more than 1.5 meter away from the object to be captured. Please adjust for a best distance according to the magnification of the lens
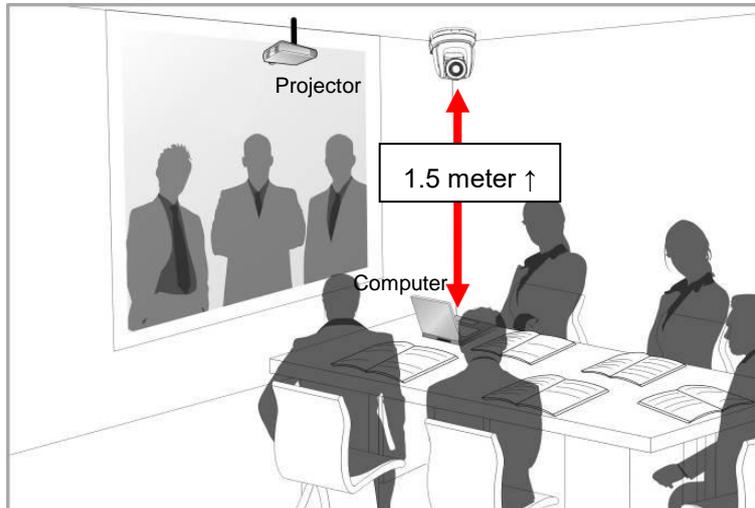
3. The machine (including metal plates) is weighed at about 2.5 kg. If it is to be installed on the ceiling, please use the hanger that has obtained UL security approval to prevent the machine from falling down.
4. Please check whether the camera is installed securely on a regular basis

4.2.2.6 **Installation steps**

1. Please adjust resolution on DIP switch at first

   <Remark> Please refer to ***Chapter 7 DIP Switch Setting*** for the relevant descriptions on DIP switch

2. Fix the metal plate A on the machine base with 4 M3 silver screws
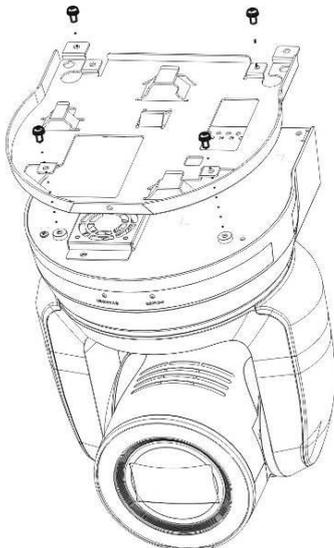
3. Lock the metal plate B on ceiling mounted hanger

   <Remark>Caution: (1) Please use the hanger that has obtained UL security approval

   (2) Please reserve the hole for the connecting wires of the camera

4. Combine the metal plate A and the metal plate B
    (1) Push the metal plate A up to the ceiling and then to the right to latch the metal plate B
    (2) And then secure with 2 M3 silver screws and 1 M3 black screw

black
screw
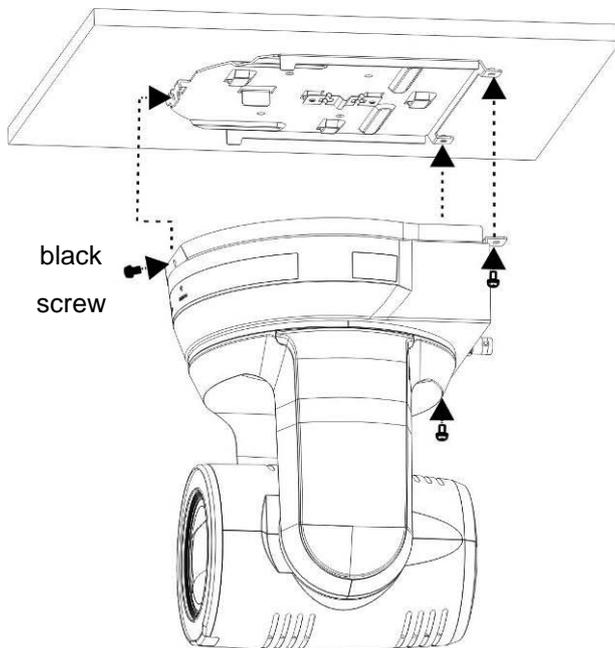
4.2.2.7 How to remove

1. Remove the connecting wires from the camera
2. Uninstall the camera together with the ceiling, loosen the three screws that fix the metal plates A and B and push to the left to remove the machine
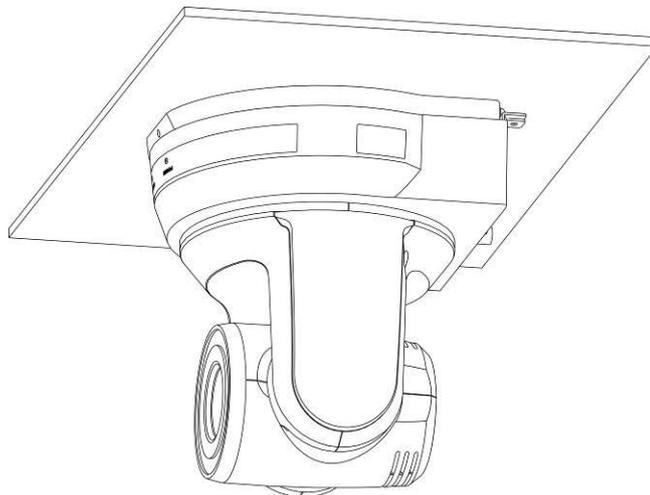
3. Then remove the screws on the hanger and the machine

4.3 Connecting devices

4.3.1 Connecting to PC (video conference)

<Remark> SDI supports the audio output of 48 KHz / resolutions up to 1080p 59.94/50

HDMI Cable

Or

SDI Cable

MTU
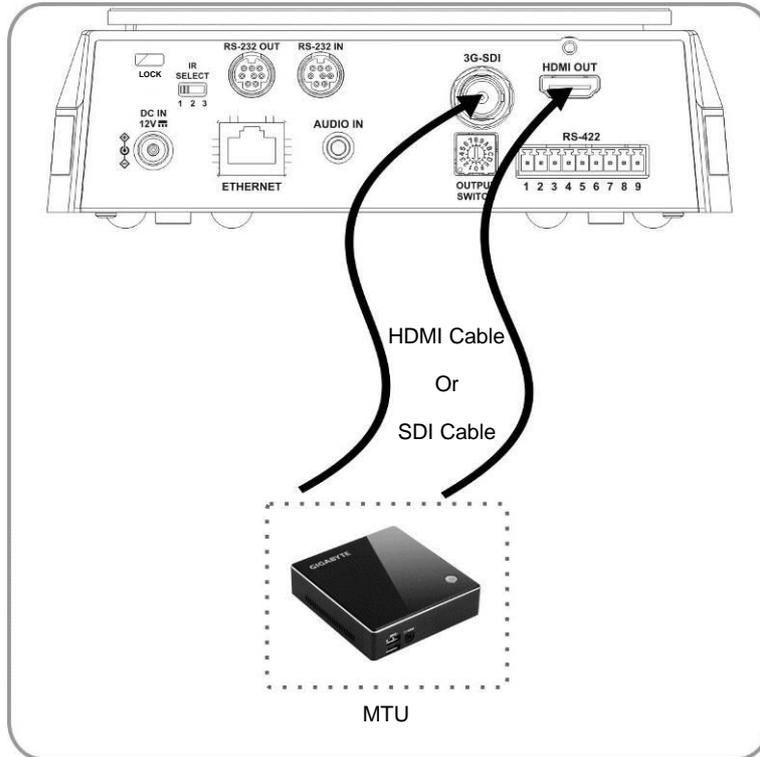
4.3.2 Connecting to an HDTV/computer monitor (HDMI)

HDMI cable
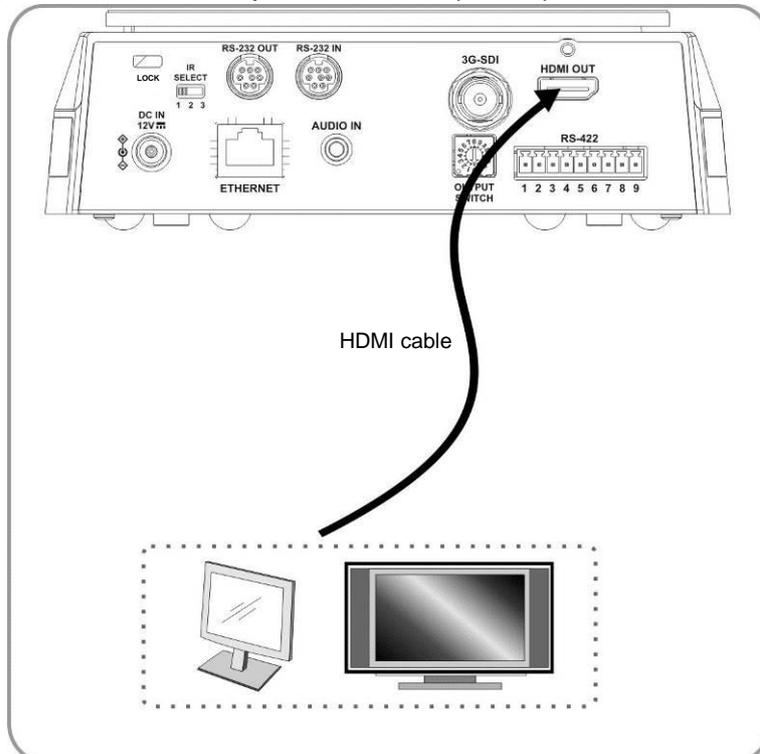
4.3.3 Connecting to Internet

For details of web page connection setting and description, please refer to ***Chapter 6 Network Function Settings Description***

Network cable

Router
or Hub
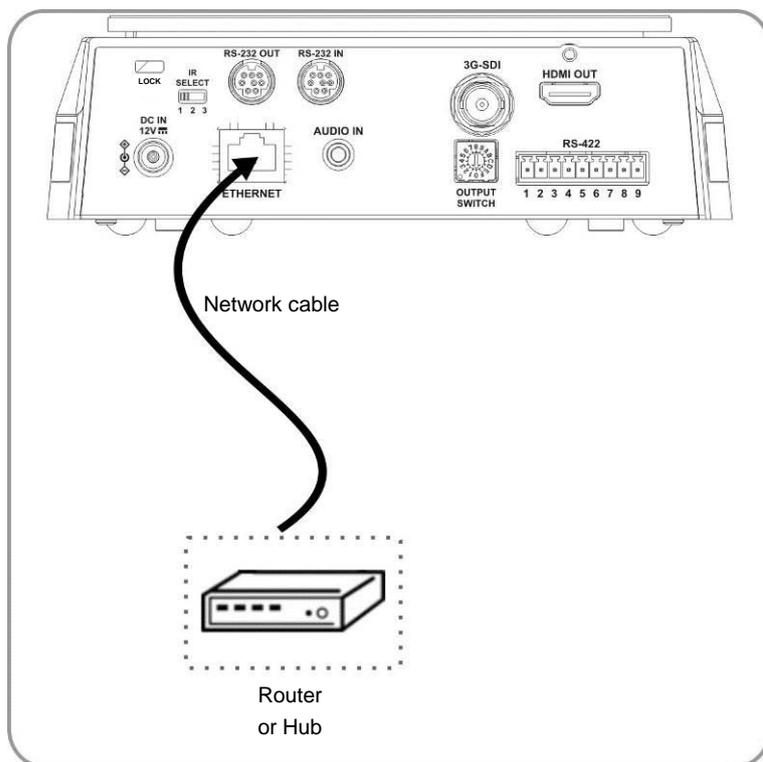
4.3.4 Connecting AUDIO IN

Set the [Audio In] in the OSD to reflect the input device

Audio Cable

MIC or audio mixer
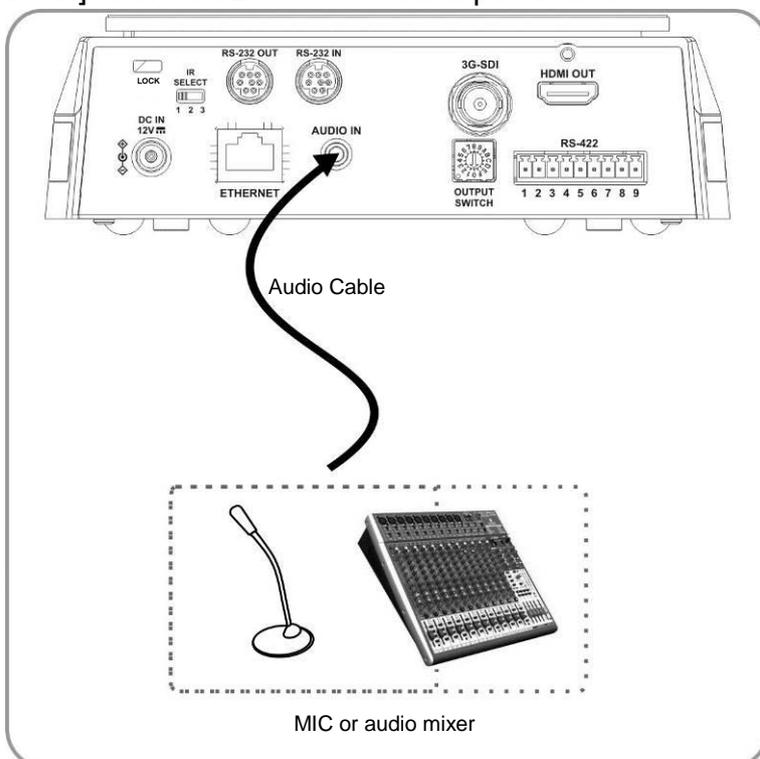
4.3.5 Connecting RS-232
With RS-232 in/out, at most 7 Lumens cameras can be connected.
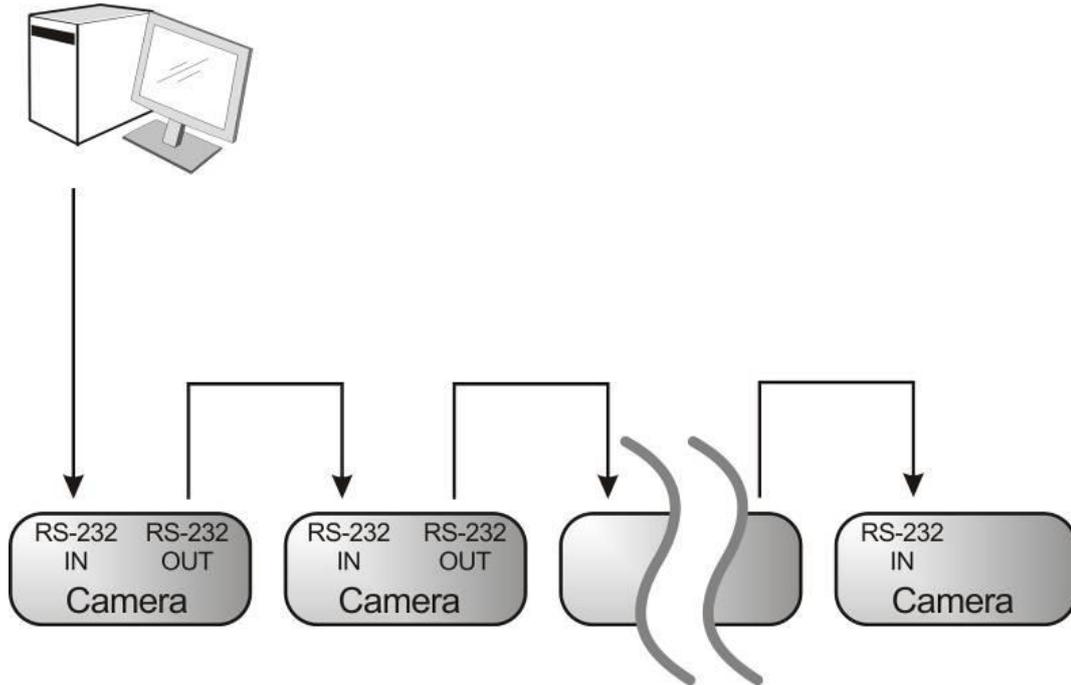
■ RS-232 pins definition instructions

▼ **RS-232 IN Pins Instructions**
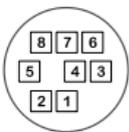
NO	Pins	Signals
1	DTR	Data Transmission Reade
2	DSR	Data Set Reade
3	TXD	Transmit Data
4	GND	Ground
5	RXD	Receive Data
6	GND	Ground
7	IR OUT	IR Commander Signal
8	N.C.	No Connection

▼ **RS-232 OUT Pins Instructions**
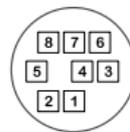
NO	Pins	Signals
1	DTR	Data Transmission Reade
2	DSR	Data Set Reade
3	TXD	Transmit Data
4	GND	Ground
5	RXD	Receive Data
6	GND	Ground
7	OPEN	Reserved
8	OPEN	Reserved

▼ **RS-232 Connection Instructions**

RS-232 IN of VC	RS-232 of PC
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. N.C.	8. CTS
	9. RI

▼ **RS-232 Connection Instructions**

RS-232 IN of Next Camera	RS-232 OUT of Last Camera
1. DTR	1. DTR
2. DSR	2. DSR
3. TXD	3. TXD
4. GND	4. GND
5. RXD	5. RXD
6. GND	6. GND
7. IR OUT	7. OPEN
8. N.C.	8. OPEN
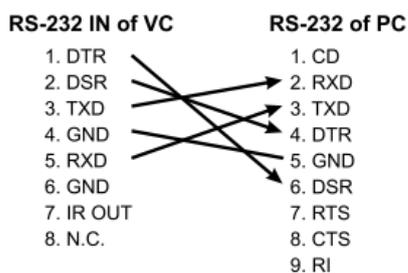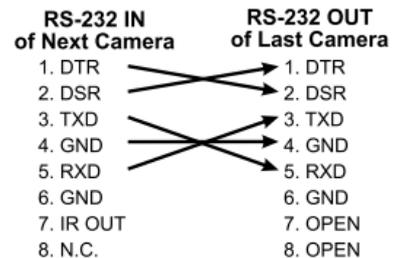
4.3.6 Connecting RS-422

With RS-422, at most 7 Lumens cameras can be connected.

<Caution> When RS-422 connection is being used, do not use RS-232 connection.
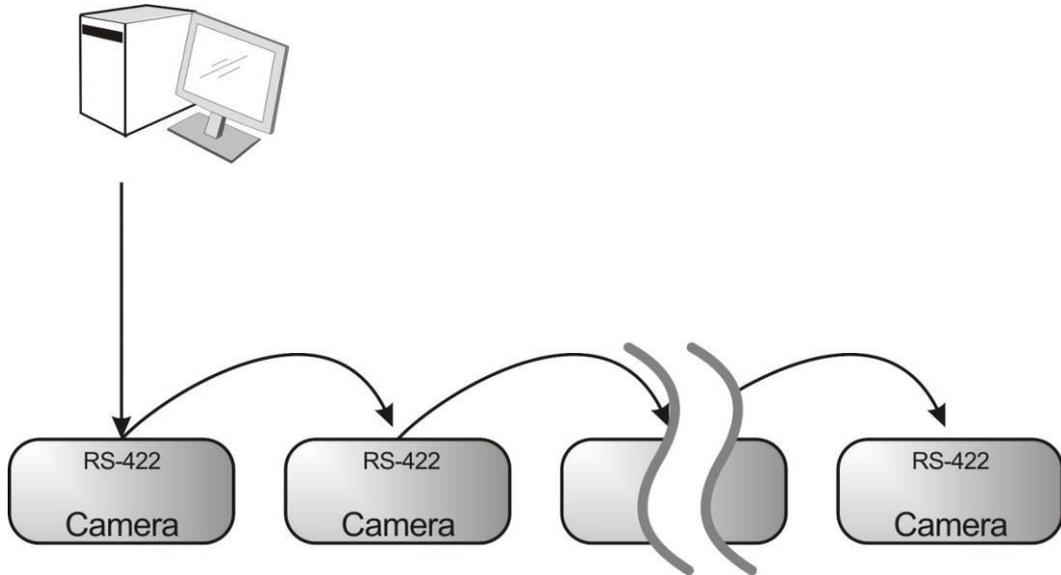
■ RS-422 pins definition instructions

▼ RS-422 Pins Instructions

RS-422

1 2 3 4 5 6 7 8 9

Pin NO.	Function
1	RXD OUT-
2	RXD OUT+
3	TXD OUT-
4	TXD OUT+
5	GND
6	RXD IN-
7	RXD IN+
8	TXD IN-
9	TXD IN+

▼ RS-422 Connection Instructions

—Applicable to
Lumens Compact Camera Controller

Compact Camera Controller	Camera
GND	5. GND
RXD IN-	6. RXD IN-
RXD IN+	7. RXD IN+
TXD IN-	8. TXD IN-
TXD IN+	9. TXD IN+
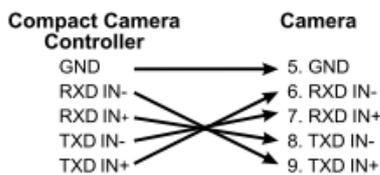
▼ RS-422 Connection Instructions

—Applicable to
SONY Compact Camera Controller

Compact Camera Controller	Camera
GND	5. GND
RXD IN-	6. RXD IN-
RXD IN+	7. RXD IN+
TXD IN-	8. TXD IN-
TXD IN+	9. TXD IN+

▼ RS-422 Serial Connection
Up to seven cameras can be daisy-chained

Third Camera

1	RXD OUT-
2	RXD OUT+
3	TXD OUT-
4	TXD OUT+
5	GND
6	RXD IN-
7	RXD IN+
8	TXD IN-
9	TXD IN+

Second Camera

1	RXD OUT-
2	RXD OUT+
3	TXD OUT-
4	TXD OUT+
5	GND
6	RXD IN-
7	RXD IN+
8	TXD IN-
9	TXD IN+

Compact Camera Controller

1	NC
2	NC
3	NC
4	NC
5	GND
6	RXD IN-
7	RXD IN+
8	TXD IN-
9	TXD IN+

First Camera

1	RXD OUT-
2	RXD OUT+
3	TXD OUT-
4	TXD OUT+
5	GND
6	RXD IN-
7	RXD IN+
8	TXD IN-
9	TXD IN+

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■ RS-422 connection instructions

1. Hold the two sides of RS-422 connector and pull out in the direction shown by the arrow in the figure below
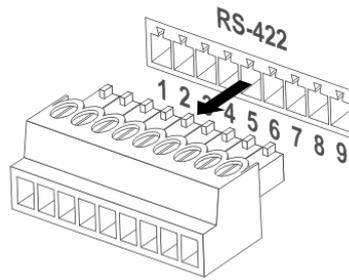
2. Peel off a section of copper wire (AWG Nos. 28 to 18) and insert it into the connector hole; then use flat screw driver to fix it
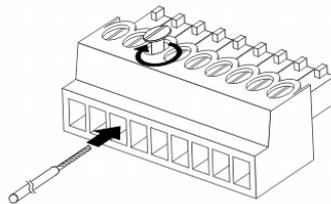
3. Insert the wired RS-422 connector back to the Camera. Now the connection is completed
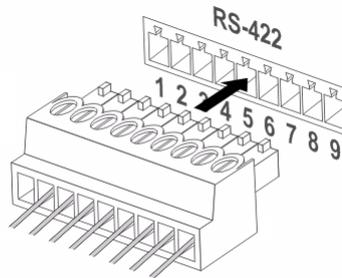
Chapter 5 Remote Control and Setting Menu

5.1 Functions of remote control

<Remark> The below functions are listed alphabetically.
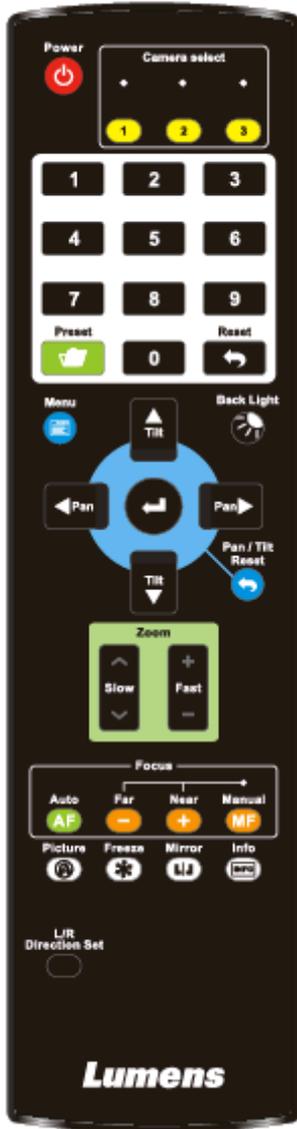
Item	Description
◄,►,ʌ,v	Move the lens
Back Light	Turn on/off back light compensation
Camera select	Choose Camera ID 1 ~ 3
Focus-Manual / Far/Near	Turn on manual focus to adjust the focal length
Focus-Auto	Auto Focus
Freeze	Freeze the screen
Home-Enter	Go back to the main page / Execute
Info	Status information
L/R Direction Set	L/R Direction / Normal
Menu	Display OSD menu
Mirror	Rotate the image (OFF / Mirror / Flip / Rotate)
Pan/Tilt Reset	Clear the Pan / Tilt setting
Picture	Switch image effect (OFF / Neg / B&W)
Power	Power Switch
Preset	Appoint an ID (0 ~ 9) to save the current position data
Reset	Appoint an ID (0 ~ 9) to delete the current position data
Zoom-Fast	Adjust image size
Zoom-Slow	Fine-tune image size

5.2 Setting Menu

<Remark> Press **[Menu]** on the **remote control** to enter the setting menu; the **bold underlined** values in the following table are defaults.

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values		Function Descriptions
Exposure	**Mode**	1. **<u>Full Auto</u>** 2. Shutter Pri 3. Iris Pri 4. Manual		Exposure mode setting
	Exposure Comp.	On / **<u>Off</u>**		AE Level
	Exposure Comp. Level	-5 ~ **<u>C</u>** ~ 5		The value can be adjusted after ***Exposure Comp.*** is activated
	Spot Light	On / **<u>Off</u>**		
	Spot Light Position	X (0 ~ 6) Y (0 ~ 4)		The value can be adjusted after **Spot Light** is activated
	Shutter Pri	60/30 mode	50/25 mode	Adjustable when the ***Exposure mode*** is set to ***Shutter Pri***
		1/10000	1/10000	
		1/5000	1/5000	
		1/3000	1/3000	
		1/2500	1/2500	
		1/2000	1/1750	
		1/1500	1/1250	
		1/1000	1/1000	
		1/725	1/600	
		1/500	1/425	
		1/350	1/300	
		1/250	1/215	
		1/180	1/150	
		1/120	1/120	
		1/100	1/100	
		1/90	1/75	
		<u>1/60</u>	**<u>1/50</u>**	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	

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1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values		Function Descriptions
	Iris Pri	1. F1.6 2. F2 3. F2.2 4. F2.7 5. **F3.2** 6. F3.8 7. F4.5 8. F5.4 9. F6.3 10. F7.8 11. F9 12. F11 13. F13 14. F16 15. F18 16. Close		Adjustable when the *Exposure mode* is set to *Iris Pri*
	Manual Gain	1. **0 dB** 2. 3 dB 3. 6 dB 4. 9 dB 5. 12 dB 6. 15 dB 7. 18 dB 8. 21 dB 9. 24 dB 10. 27 dB 11. 30 dB 12. 33 dB 13. 36 dB 14. 39 dB 15. 42 dB 16. 45 dB		Adjustable when the *Exposure mode* is set to *Manual*
	Manual Speed	60/30 mode	50/25 mode	Manually set the shutter
		1/10000	1/10000	
		1/5000	1/5000	
		1/3000	1/3000	
		1/2500	1/2500	
		1/2000	1/1750	
		1/1500	1/1250	
		1/1000	1/1000	
		1/725	1/600	
		1/500	1/425	
		1/350	1/300	
		1/250	1/215	
		1/180	1/150	
		1/120	1/120	
		1/100	1/100	

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1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values		Function Descriptions
		1/90	1/75	
		1/60	**1/50**	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	
	Manual Iris	1. F1.6 2. F2 3. F2.2 4. F2.7 5. **F3.2** 6. F3.8 7. F4.5 8. F5.4 9. F6.3 10. F7.8 11. F9 12. F11 13. F13 14. F16 15. F18 16. Close		Manually set the iris
	Gain Limit	1. 9 dB 2. 12 dB 3. 15 dB 4. 18 dB 5. 21 dB 6. 24 dB 7. **27 dB** 8. 30 dB 9. 33 dB 10. 36 dB 11. 39 dB 12. 42 dB 13. 45 dB		Max. limit value of electron gain
	Iris Limit	1. **F3.2** 2. F3.8 3. F4.5 4. F5.4 5. F6.3 6. F7.8 7. F9 8. F11		Max. limit value of iris
	WDR	1. **Off** 2. 1 3. 2 4. 3		
	Smart AE	On/**Off**		Available when "Auto Focus-Smart AF" is on

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
White Balance	Mode	1. **Auto** 2. Indoor 3. Outdoor 4. One Push WB 5. ATW 6. Manual 7. Sodium Lamp 8. 3000K 9. 4300K 10. 5000K 11. 6500K 12. 8000K	Select the color temperature mode 1. 4000k ~ 7000k 2. 3200k 3. 5800k 4. 1700k ~ 10000k 5. 1700k ~ 10000k 6. Custom 7. 2800k
	One Push Trigger	**ENTER**	One push trigger
	Manual Red	0 ~ **C** ~ 128	Adjustable when the white balance mode is set to *Manual*
	Manual Blue	0 ~ **C** ~ 128	Adjustable when the white balance mode is set to *Manual*
Picture	Picture effect	1. **Off** 2. Neg 3. B & W	
	Sharpness	0 ~ **A** ~ 14	
	2D NR	1. Off 2. **1** 3. 2 4. 3	
	3D NR	1. Off 2. Low 3. **Typ** 4. Max	
	Image Mode	1. **Default** 2. Custom	The user may customize his/her desired image mode
	Image Mode Load	**ENTER**	Adjustable when the *Image mode* is set to *Custom*. After selected, the corresponding *Image mode* parameters will be read and applied to *Custom*
	Brightness	0 ~ **A** ~ 15	Adjustable when the *Image mode* is set to *Custom*
	Hue	0 ~ **A** ~ 15	Adjustable when the *Image mode* is set to *Custom*
	Saturation	0 ~ **A** ~ 15	Adjustable when the *Image mode* is set to *Custom*

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
	Gamma	0 ~ **A** ~ 3	Adjustable when the *Image mode* is set to *Custom*
Pan Tilt Zoom	**Pan/Tilt Limit**	On / **Off**	Turn on/off the angle limit setting
	Pan Right Limit	0 ~ **170**	Limit the right angle
	Pan Left Limit	**-170** ~ 0	Limit the left angle
	Tilt UP Limit	0 ~ **90**	Limit the upward angle
	Tilt Down Limit	**-30** ~ 0	Limit the downward angle
	Pan Flip	On / **Off**	Activate the reverse Pan command
	Tilt Flip	On / **Off**	Activate the reverse Tilt command
	Preset Speed	1. 5 deg/sec 2. 25 deg/sec 3. 50 deg/sec 4. 80 deg/sec 5. 120 deg/sec 6. **160 deg/sec** 7. 200 deg/sec 8. 300 deg/sec	Set the rotation speed of the cradle head when Preset is executed
	Preset Mode	**Default** / PTZ Only	▪ Default: Call the preset, execute Pan/Tilt/Zoom/Focus + picture parameters setting ▪ PTZ Only: Call the preset, only execute Pan/Tilt/Zoom/Focus
	PTZ Speed Comp	On / **Off**	Set the Pan/Tilt moving speed to vary from the zoom position
	D-Zoom Limit	**x1**~x12	Set limits for digital zoom
	PTZ Motion Sync	On / **Off**	After turning on, operate **Preset** to achieve PTZ Motion Sync **<Remark>** This function will refer to the default speed setting, but may automatically adjust the speed due to the difference in PTZ movement range
D-Effect	**Mirror**	1. **Off** 2. Mirror 3. Flip 4. Mirror + Flip	Set the mode at which the image is turned
Auto Focus	**AF Sensitivity**	1. Low 2. **Middle** 3. High	For AF triggering speed, the higher the speed is, the faster AF is triggered
	AF Frame	1. Center 2. Full Frame 3. **Auto**	AF frame setting, when central area was set as AF frame, focusing will be on the center of the screen. When Full Frame was set as AF frame, focusing will be calculated based on the full screen

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1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
	Zoom tracking	Manual/ **Curve Tracking**/ Zoom Tracking	This function can only be enabled in the Manual Focus (MF) mode Set the focus mode during lens zooming in Manual Focus mode
	PTZ Assist	On / **Off**	In Manual, check whether auto focus is enabled if there is any changes of PTZ
	Preset AF	**On** / Off	Set whether to execute auto focus after **restore to** *preset*
	SMART AF	On / **Off**	Turn on this function and AF will mainly focus on the face
Ethernet	**DHCP**	**On** / Off	Enable/Disable DHCP setting using left and right arrow keys and press [ENTER] to apply setting.
	IP Address	**192.168.100.100**	Press [ENTER] to be in modify mode; select the item to be modified using the up and down keys, and modify the value using the left and right keys or the numeric keys.
	Subnet Mask	**255.255.255.0**	Press [ENTER] to be in modify mode; select the item to be modified using the up and down keys, and modify the value using the left and right keys or the numeric keys.
	Gateway	**192.168.100.254**	Press [ENTER] to be in modify mode; select the item to be modified using the up and down keys, and modify the value using the left and right keys or the numeric keys.
Audio	**Audio In**	**Line In**/Mic In	Set Audio In
	Audio Enable	On / **Off**	Turn on/off audio output
	Audio Volume	0 ~ **A** ~ 10	Volume Setting
	Audio Delay	On / **Off**	When audio and video are out of sync, enable this feature to set the audio delay time **<Remark> For VC-A61PN, to support this function, please turn off NDI|HX**
	Audio Delay Time (ms)	-1~-500ms	Set audio delay time **<Remark> For VC-A61PN, to support this function, please turn off NDI|HX**
	Encode Type	1. **AAC** 2. G.711	Set encode type **<Remark> For VC-A61PN, to support this function, please turn off NDI|HX**
	Encode Sample Rate	1. **48 KHz(AAC)** 2. 44.1 KHz(AAC) 3. 16 KHz(AAC) 4. 16 KHz(G.711) 5. 8 KHz(G.711)	Set the encode type and sample rate **<Remark 1>** SDI supports the audio output of 48 KHz only **<Remark 2> For VC-A61PN, to support this function, please turn off NDI|HX**

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1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
System	**Prompt**	On / **Off**	Turn on/off the prompt information on the display
	IR Receive	**On** / Off	
	Tally Lamp	On / **Off**	
	Tally CMMD Mode	**Normal/ Link**	Set whether the indicator light is linked with RS232 command ■ Normal (Not linked): The indicator light switch and mode shall be set separately. ➢When the indicator light is on and the default mode is off, additional command is required to set the indicator light mode ➢Setting indicator light mode when the indicator light is off will not trigger the indicator light ■ Link: ➢When the indicator light is on, the default mode is red light ➢Setting indicator light mode when the indicator light is off will turn on the indicator light
	Language	**English** / Chinese	
	Initial Position	**Last MEM** / 1st Preset	Set the camera lens to return to the last operated position or the first preset position after POWER ON **< Remark >** 1st Preset = Preset 0
	Control Device	Encoder / **Controller**	Control Device setting, Controller: for joystick Encoder: for tracking system
	Motionless Preset	On / **Off**	When the function is enabled, the screen will Freeze when Preset is executed. Freeze will be released after Preset is completed.
	Control Port	**RS-232**/RS-422	Choose whether the control interface used is RS-232 or RS-422
	Protocol	**VISCA**/Pelco D	
	Baud Rate	**9600**/38400	Choose the transmission speed of the control signal
	VISCA Address	**0** ~ 7	
	Pelco D Address	**1** ~ 255	The Protocol set to Pelco D allows the camera ID address to be assigned

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1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
	Output Mode	1. 3840 x 2160/29.97p 2. 3840 x 2160/25p 3. **1080p/59.94** 4. 1080p/50 5. 1080p/29.97 6. 1080p/25 7. 720p/59.94 8. 720p/50 9. 720p/29.97 10. 720p/25 11. 1080i/59.94 12. 1080i/50	Choose the output resolution **<Remark>**VC-A61PN does not support 720p/29.97 and 720p/25 output modes **<Remark>Select 1080i/59.94, 1080i/50, only HDMI/SDI outputs 1080i, while NDI will output 1080p e.g. HDMI 1080i60; NDI 1080p60**
	Factory Reset	On / **Off**	Resume the factory default setting
Status			Display the current setting status

Chapter 6 Network Function Settings Description

6.1 Connecting Camera to Network
6.1.1 Connecting to Internet
Two common connection methods are shown below
1. Connecting via switch or router

Network cable   Network cable

Camera   Switch or router   Computer
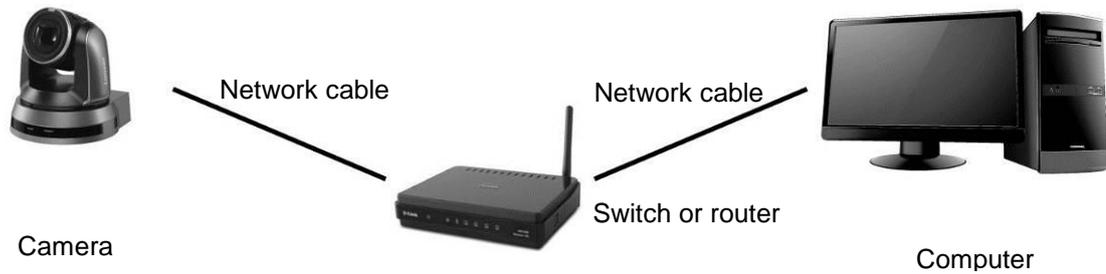
2. To connect directly through network cable, the IP address of the computer should be changed so that it is on the same network segment as the camera
e.g.: The factory-preset default IP address of the camera is 192.168.100.100. The computer IP address must be set with the same network segment, such as 192.168.100.101, so that the computer can be connected correctly with the camera

Network cable

Camera   Computer
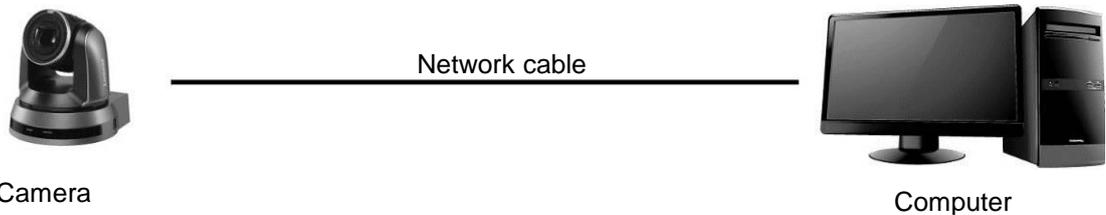
● Change network settings
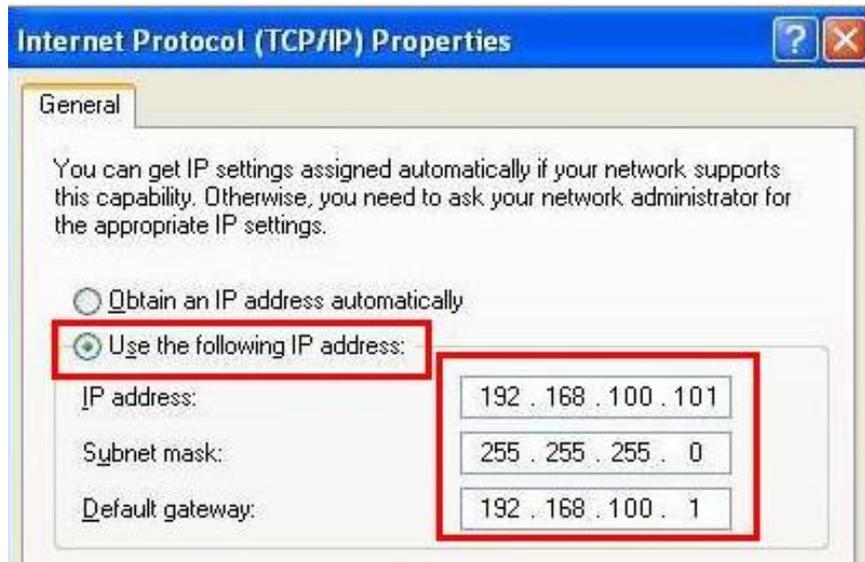
6.1.2 Using the Browser to View the Images
- Open the browser, and enter the URL of camera in the IP address bar
  e.g.: http://192.168.100.100 (default IP address)
- Enter administrator's account and password
  * For the first login, please refer to *6.2.3 Account Management* to change the default
  password


```
Lumens IP Camera
   ●   Account: admin
   ●   Password: 9999
```

6.1.3 Using Lumens VMS Software to View the Images
<Remark> For VC-A61PN, to support this function, please turn off NDI|NX (Please
refer to *6.2.5 Settings-Video*)
- Open **LUMENS VMS** software (Please download from the Lumens official website)
- Search for the camera: Press [🔍] [automatically search for the device] button to
  locate the camera
- Click the camera in the list and start operation after connecting to network
  **<Note> When using automatic search, the camera and computer must be in the same network
  segment, e.g.: 192.168.4.X**
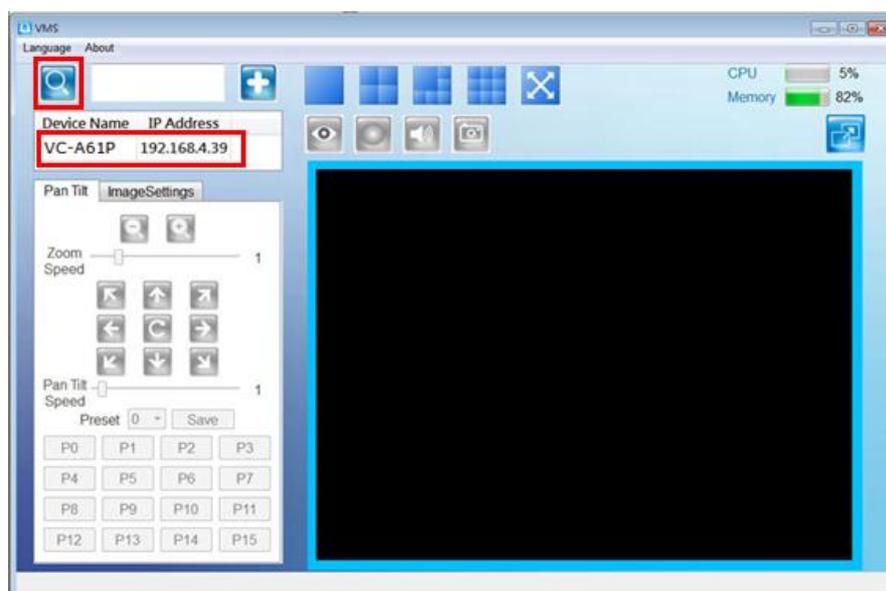
6.1.4 Using RTSP Player to View the Images

<Remark> For VC-A61PN, to support this function, please turn off NDI|HX (Please refer to ***6.2.5 Settings-Video***)

In addition to the browser and VMS, other free softwares also can be used for RTSP connection,such as VLC, Quick Time and PotPlayer

RTSP connection address formats are as follows:
- RTSP Stream 1 => rtsp://<u>camera IP</u>:8554/<u>hevc</u>
- RTSP Stream 2 => rtsp://<u>camera IP</u>:8557/<u>h264</u>
- RTSP Stream 3 => rtsp://<u>camera IP</u>:8556/<u>h264</u>

For password authentication, the RTSP connection address is as follows:
- rtsp://Username:Password@VC IP address:port/hevc
- rtsp://Username:Password@VC IP address:port/h264
- To enable password authentication, please refer to ***6.2.9 Settings - Network***

Example: Open VLC software, click [**Open Network Streaming**], and enter a URL:
rtsp://192.168.100.150:8557/h264
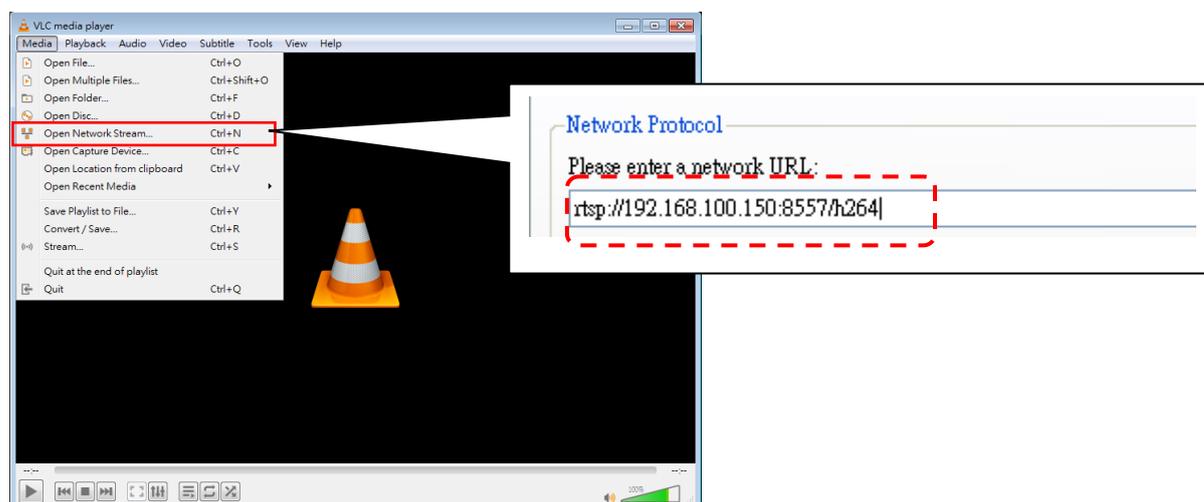
6.1.5 Using NDI Studio Monitor to View the Images

<Remark> This is only applicable to VC-A61PN. Support when NDI|HX is on
(Please refer to ***6.2.5 Settings - Video***)

For NewTek product operation or instructions, please visit the website:
https://www.newtek.com/.

To download NDI 4 Tool, click the link: http://new.tk/NDIHX-Driver-Win

6.2 Web Page Function Description
6.2.1 Login Screen
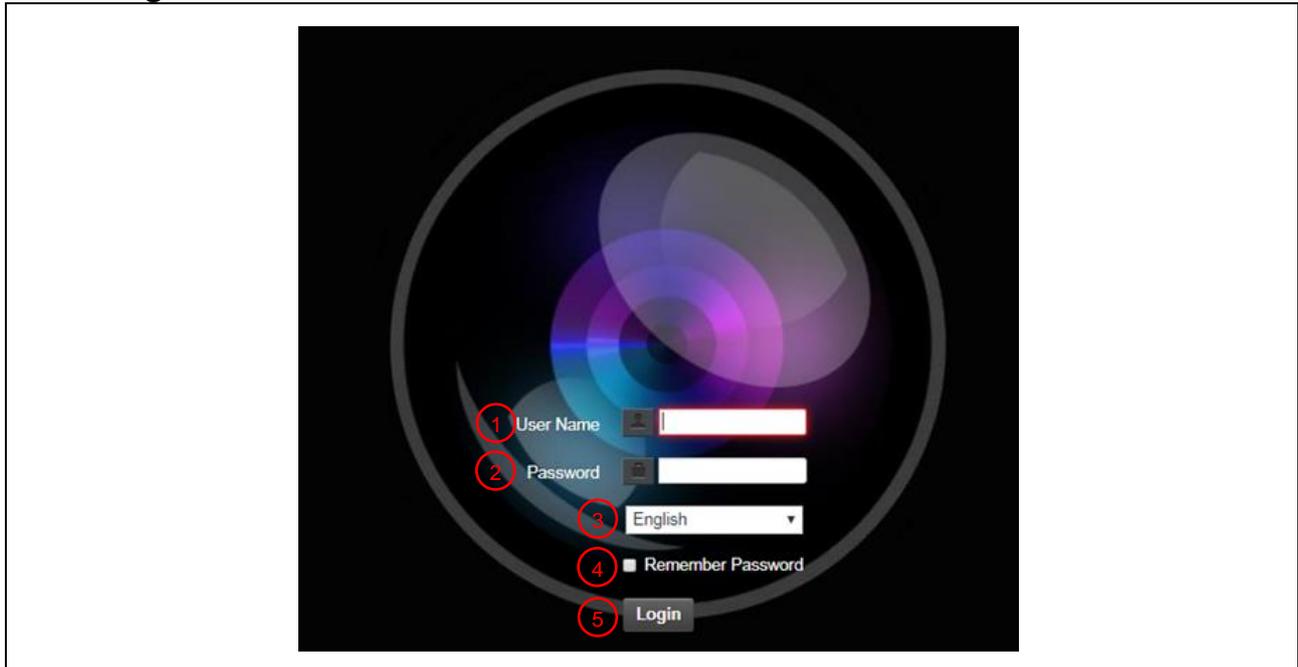
No	Item	Function Descriptions
1	Username	Enter user account (default: admin)
2	Password	Enter user password (default: 9999) *When log in for the first time, please refer to **6.2.3 Account Management** to change the default password.
3	Language selection	Currently, the system supports English, Traditional Chinese and Simplified Chinese
4	Remember password	Save user account name and password to the browser. When you log in next time, there is no need to re-enter them
5	Login	Log into the administrator screen on the website

6.2.2 Live View
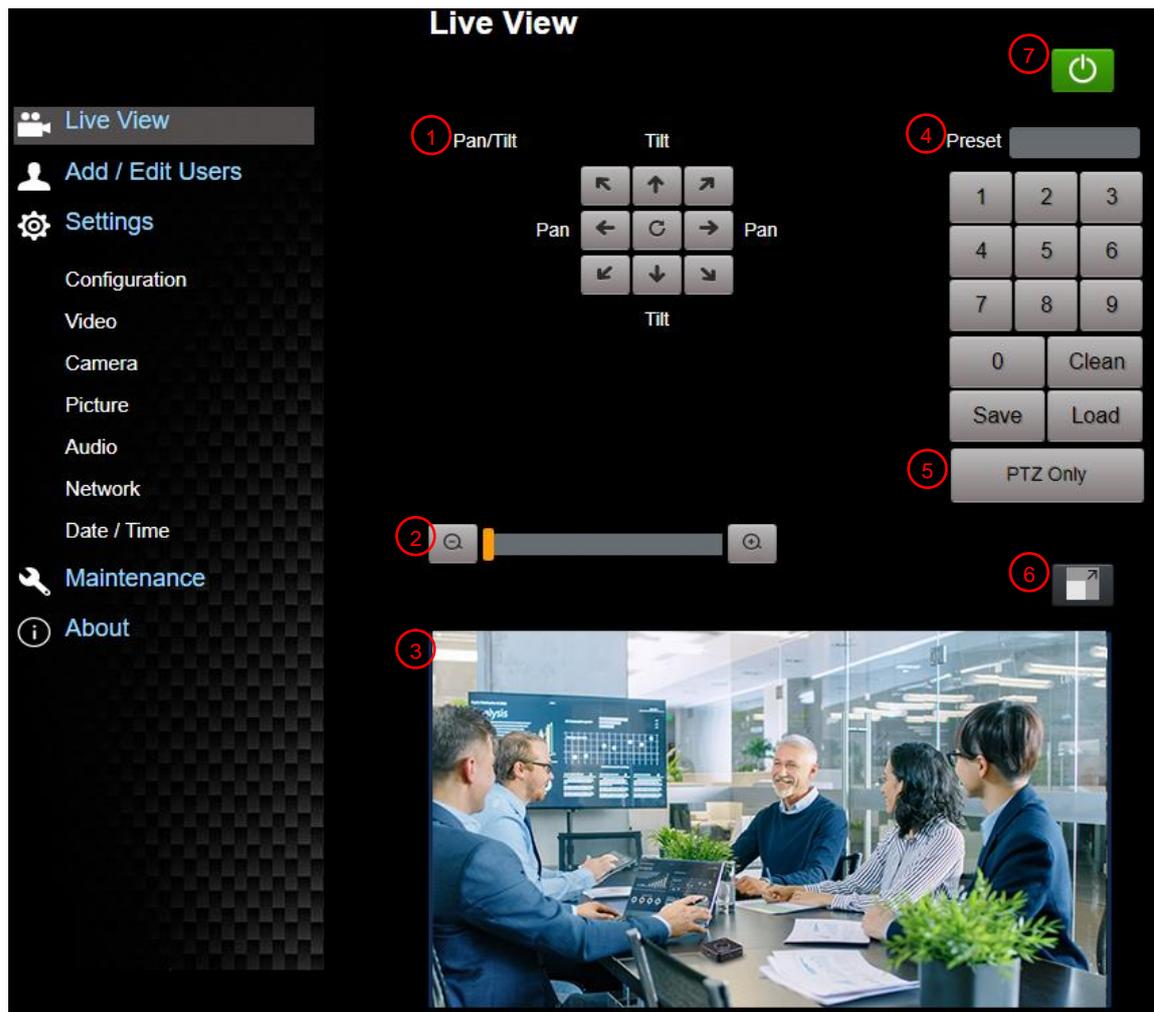
No	Item	Function Descriptions	VC-A61P	VC-A61PN
1	Pan / Tilt setting	Adjust the Pan/Tilt position of the camera screen	V	V
2	Zoom ratio	Adjust the zoom-in or zoom-out ratio via scroll bar	V	V
3	Preview window	Display the screen currently captured by the camera	V	Support when NDI|HX is Off
4	Preset setting	Select the number first and then select SAVE or LOAD	V	V
5	PTZ Only	Enable/Disable PTZ setting ▪ Disable (Default): Call the preset, execute Pan/Tilt/Zoom/Focus + picture parameters setting ▪ Enable: Call the preset, only execute Pan/Tilt/Zoom/Focus	V	V
6	Switch to Full Screen	Switch the preview window to full screen	V	Support when NDI|HX is Off
7	Power button	Turn on or turn off the camera power	V	V

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6.2.3 Account Management

No	Item	Function Descriptions
1	Add user account	Enter a user name and password to add a new user
2	Permission setting	Set the new account management permissions | User Type	Admin	Operator	Viewer
---	---	---	---
View images	V	V	V
Settings	V	V	X
Account management	V	X	X	
3	Applying setting	Add the newly created user to the list of account
4	List of accounts	Edit: Modify the user password and permissions Delete: Delete the user account

6.2.4 Settings - Configuration

<Remark> Preview is not supported when VC-A61PN NDI|HX is on

No	Item	Function Descriptions
1	Resolution	Set the resolution of the camera, resolutions supported by the camera are as follows: 3840x2160 29.97/25 fps 1080P 59.94/50/29.97/25 fps 720P 59.94/50/29.97/25 fps 1080i 59.94/50fps After switching to the resolution, the camera will restart. Please refresh the browser **<Remark>**VC-A61PN does not support 720p 29.97 / 25 fps resolutions **<Remark>**Select 1080i/59.94, 1080i/50, only HDMI/SDI outputs 1080i, while NDI will output 1080p **e.g.** HDMI 1080i60; NDI 1080p60
2	HDMI Format	Select YUV422 / RGB
3	Overlay	Set the stream to display "date and time" or "custom content" and to display location
4	Apply	After the setting has been modified, select this button to apply the setting

6.2.5 Settings - Video

No	Item	Function Descriptions	VC-A61P	VC-A61PN
1	Camera name	Modify the camera name ■ Camera names are limited to 1 - 12 characters ■ Please use a camera name by mixing uppercase and lowercase letters or numbers. Do not use "/" and "space" or special symbols **<Remark>** Modifying this field will modify the Onvif device name synchronously	V	V
2	Camera Location	Modify the location of the camera, such as Meeting Room 1 ■ Camera location is limited to 1 - 11 characters ■ Please use a camera name by mixing uppercase and lowercase letters or numbers. Do not use "/" and "space" or special symbols **<Remark>** Modifying this field will modify the Onvif device name synchronously	V	V
3	NDI|HX	VC-A61PN can turn NDI|HX on/off ■ On: Support NDI (ONVIF cannot find devices, and RTSP/RTMP/RTMPS/MPEG-TS/SRT streams cannot be used.) ■ Off: Support RTSP/RTMP/RTMPS/MPEG-TS/SRT, and ONVIF can find devices but cannot be used with NDI Tool		V

3.1	Group Name	 The group name can be modified here and set with Access Manager - Receive in NDI Tool ■ If no group is assigned, the machine belongs to Public. As the default of Access Manager includes Public, Studio Monitor can discover this machine. ■ If a group is assigned, but this group is not added into Access Manager, Studio Monitor cannot discover this machine. ■ If a group is assigned and this group is added into Access Manager, Studio Monitor can discover this machine. The name can contain commas (,) to distinguish different groups Example: "default, 123, abc" means this machine belongs to three groups at the same time (default / 123 / abc)		Support when NDI|HX is On
4	Streaming 1/ Streaming 2/ Streaming 3	VC-A61P supports 3 streaming outputs. Please refer to **6.2.5.1 Streaming Parameter Setting** for relevant settings	V	Support when NDI|HX is Off
5	Preview window	Display the screen currently captured by the camera	V	
6	Apply	After the setting has been modified, select this button to apply the setting	V	V

6.2.5.1　Streaming parameter setting

Function		Streaming 1	Streaming 2	Streaming 3
Encode Format		H.265	H.264	
Resolution		4K /1080P / 720P	1080P / 720P / 1080i	640 x 360
Frame Rate		Setting according to the supported resolution		
Bit Rate (kbps)	Range	2,000 ~ 20,000	2,000 ~ 20,000	512 ~ 5,000
	Factory Default	7,000	7,000	1,000
Rate Control		CBR/VBR		
IP Ratio		Setting according to the supported resolution		

6.2.6 Settings – Camera

<Remark> Preview is not supported when VC-A61PN NDI|HX is on

No	Item	Function Descriptions
1	Zoom ratio	Adjust the zoom-in or zoom-out ratio via scroll bar
2	Exposure	 ■ **Mode:** Select exposure mode (Automatic/Shutter Priority/Aperture Priority/Manual) ■ **Exposure Comp. Level:** Select exposure compensation level ■ **Gain:** The gain limit is adjustable when the exposure mode is set to "Manual" ■ **Iris:** The size of aperture is adjustable when the exposure mode is set to "Manual" or "Aperture Priority" ■ **WDR:** Set the level of wide dynamic range (WDR) in order to obtain better images ■ **Shutter Speed:** The shutter speed is adjustable when the exposure mode is set to "Manual" or "Shutter Priority" ■ **Smart AE**：Enable/Disable Smart Exposure; Available when "Focus - SMART AF" is on

3	White Balance	
		■ **Mode:** Select the color temperature mode ➢Auto ➢Indoor ➢Outdoor ➢One Push WB ➢ATW ➢Manual ➢Sodium Lamp ➢3000K/ 4300K/ 5000K/ 6500K/ 8000K ■ **One Push Trigger:** One push color temperature is adjustable when the white balance mode is set to "One Push WB" ■ **Manual Red/Blue:** Manually adjust blue/red color temperature
4	Focus	
		■ **Mode: Select manual/automatic focus** ■ **Focus Range:** The focusing range is adjustable when the focus mode is set to "Manual" ■ **AF Sensitivity:** Set automatic focus sensitivity ■ **AF Frame:** Set automatic focus range ■ **Zoom Tracking:** Set the focus mode during lens zooming in Manual Focus mode ■ **PTZ Assist:** Set Auto Focus in manual mode ■ **Smart AF:** Turn on this function and AF will mainly focus on the face ■ **Preset AF:** Set whether to perform auto focus after Preset ■ **One Push Focus**: When manual focus mode is on, click this function for one-shot autofocus
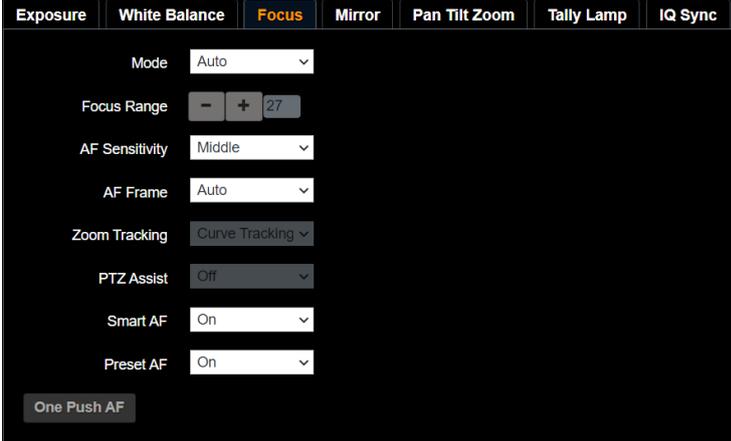
5	Mirror	
		
		■ **Mirror:** Set automatic flip mode
		   ➤Off
		   ➤Mirror
		   ➤Flip
		   ➤Mirror+Flip

6	Pan Tilt Zoom	 ■ **Pan/Tilt Limit**：Set the Pan/Tilt limit ■ **Pan/ Tilt Flip**：Set Pan/Tilt flip ■ **Preset Speed:** Set the rotation speed of the cradle head when Preset is executed ■ **PTZ Speed Comp:** Set the Pan/Tilt moving speed to vary from the zoom position ■ **Initial Position:** Set the camera lens to return to the last operated position or the first preset position after POWER ON **\<Remark\>**1st Preset = Preset 0 ■ **Motionless Preset:** When the function is enabled, the screen will Freeze when Preset is executed. Freeze will be released after Preset is completed ■ **D-Zoom Limit:** Set the D-Zoom Limit, x1 - x12 ■ **PTZ Motion Sync:** After turning on, operate *Preset* to achieve PTZ Motion Sync

7	Tally Lamp	 ■ Enable/Disable Tally Lamp ■ Indicator Light Link Mode: Set whether the indicator light is linked with RS232 command ➤Normal (Not linked): The indicator light switch and mode shall be set separately. -When the indicator light is on and the default mode is off, additional command is required to set the indicator light mode -Setting indicator light mode when the indicator light is off will not trigger the indicator light ➤Link: -When the indicator light is on, the default mode is red light -Setting indicator light mode when the indicator light is off will turn on the indicator light
8	IQ Sync	Set IQ main synchronized device Available when "Exposure" and "White Balance" is set to "Auto" mode

6.2.7 Settings – Picture

\<Remark\> Preview is not supported when VC-A61PN NDI|HX is on
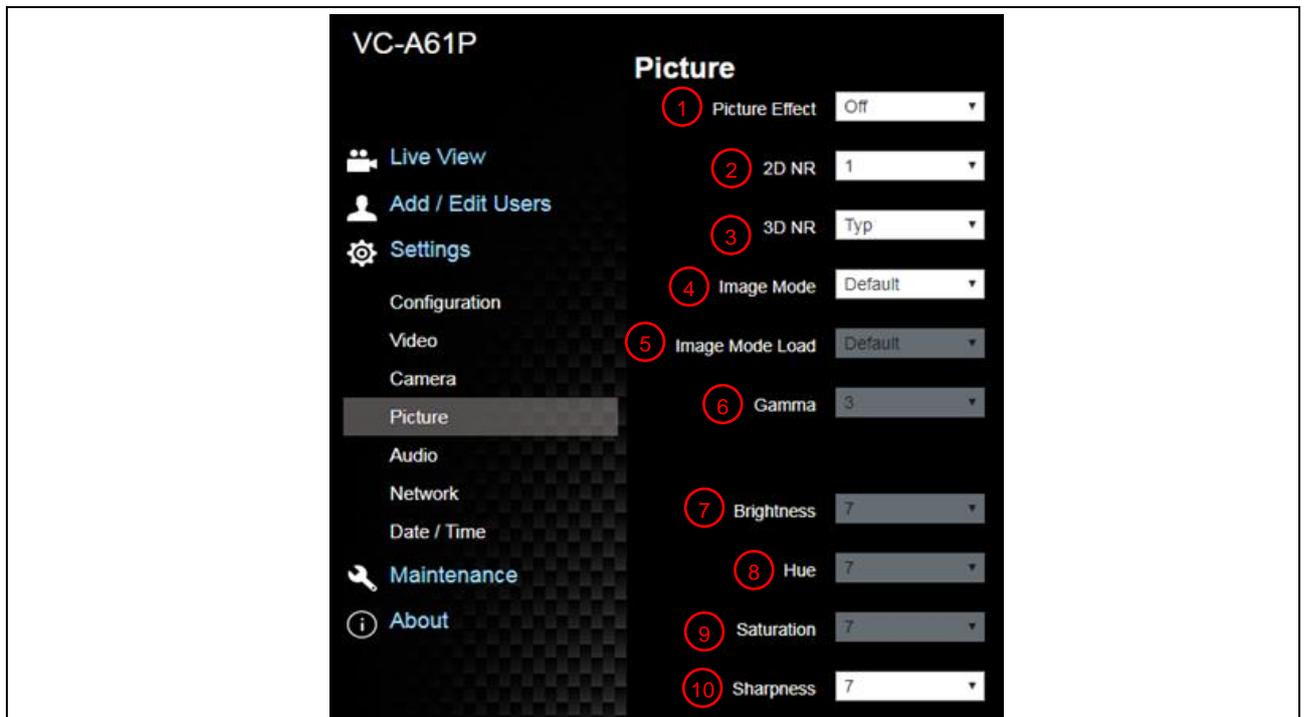
No	Item	Function Descriptions
1	Picture Effect	Set picture effect, Off/Neg/Black and White
2	2D noise reduction settings	2D noise reduction settings
3	3D noise reduction settings	3D noise reduction settings
4	Image mode	The user may customize his/her desired image mode

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5	Image Mode Load	When no custom setting is needed, reset the picture parameters back to the factory default by selecting this item
6	Gamma	Gamma Level adjustment; Adjustable when the image mode is set to Custom
7	Brightness	Brightness adjustment; Adjustable when the image mode is set to Custom
8	Hue	Hue adjustment; Adjustable when the image mode is set to Custom
9	Saturation	Saturation adjustment of the image; Adjustable when the image mode is set to Custom
10	Sharpness	Adjust the sharpness of the image

6.2.8 Settings – Audio
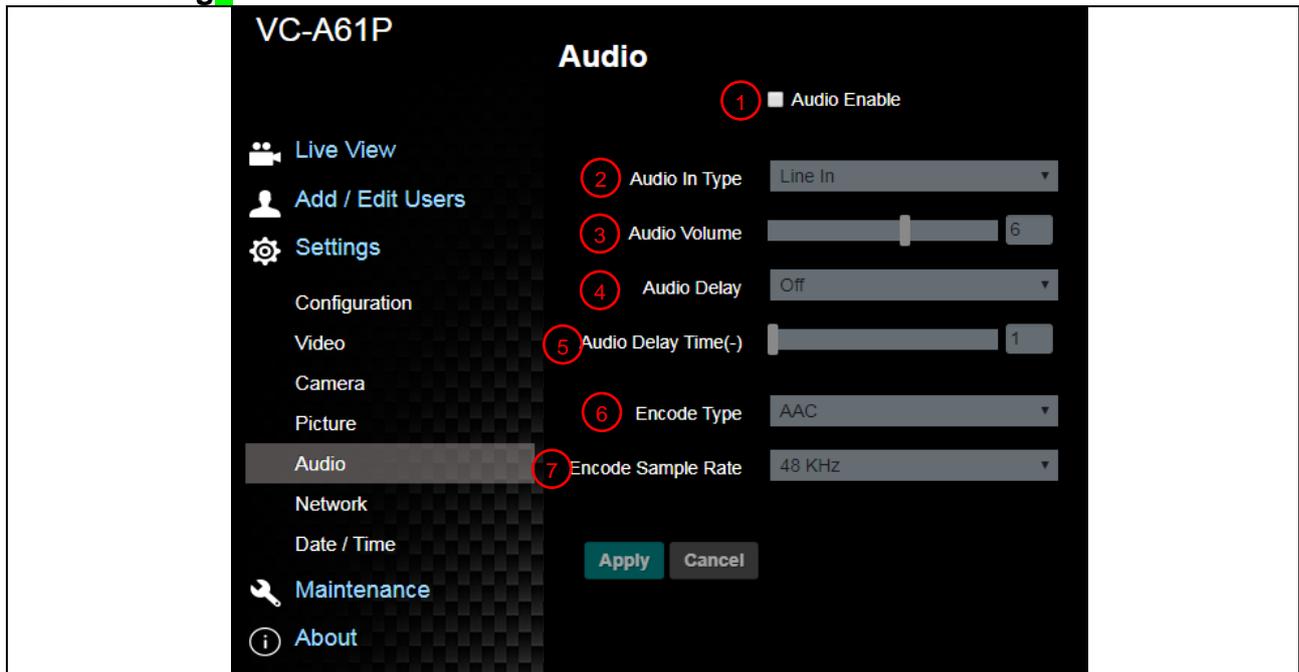
No	Item	Function Descriptions	VC-A61P	VC-A61PN
1	Open audio	Turn on/off sound	V	V
2	Soundtrack effect setting	Set MIC In/Line In	V	V
3	Volume	Adjust Volume	V	V
4	Audio delay	On / Off audio signal delay	V	Support when NDI|HX is Off
5	Audio delay time	Set the audio signal delay time (-1~-500ms)	V	
6	Encode type	AAC / G.711	V	
7	Encode sample rate	Set Encode sample rate ➢ 48 KHz (AAC) ➢ 44.1 KHz (AAC) ➢ 16 KHz (AAC) ➢ 6 KHz (G.711) ➢ 8 KHz (G.711)	V	

6.2.9 Settings - Network

No	Item	Function Descriptions	VC-A61P	VC-A61PN
1	Network	Network setting of camera. Change of setting is available when DHCP function is closed.	V	V
2	RTMP/ RTMPS Setting	Copy the RTMP web address provided by the RTMP service platform and paste it to the RTMP connection address to publish the camera images on the RTMP service platform To upload to YouTube for live streaming, please see **6.2.8 Settings - Audio** to turn on the audio function first	V	Support when NDI|HX is Off
3	RTSP Setting	■ Enable / Disable Multicast When more than 4 people are connected to watch live video at the same time, it is recommended to enable the multicast function ■ Enable / Disable Account Password Authentication ➢ Refer to **6.1.4 Using RTSP Player** to View Images for RTSP connection format ➢ The account password is the same as that for the camera web login page. Please refer to **6.2.3 Account Management** to add/revise the account information	V	

3-1	Multicast Setting	The setting can be configured after Multicast is enabled 		Support when NDI|HX is On
4	MPEG-TS Setting	Set MPEG-TS format **<Remark>** The port number must be set in the range above 1024 with a maximum value of 9999. The following port has been used by the camera. Setting of the port may not connect correctly 8554、8556、8557、8080、80、81、9090、23	V	Support when NDI|HX is Off
5	SRT Setting	1. Set the field of SRT and then check the item to open SRT streaming After the SRT streaming is opened, it will be connected automatically upon startup 2. The port number must be set in the range above 1024 with a maximum value of 9999. **<Remark>** The following port has been used by the camera. Setting of the port may not connect correctly 8554, 8556, 8557, 8080, 9090, 1935 3. Delay time is for 20 to 8000 microseconds. The default value is 120 microseconds	V	
6	SNTP Setting	Set SNTP Server IP	V	V
7	Port Setting	Set HTTP port. The default Port value is 80 Set HTTPS port. The default Port value is 81 **<Remark>** The settings can only be modified when the camera's DHCP function is turned off	V	V

| 8 | Tracking Data Output Setting | When enabled, PTZ position information can be fed back when the camera is moving
1. Serial port output: The protocol must be set to VISCA, and the baud rate should be 38400 (For related settings, please refer to **_6.2.14 Setting - Maintenance - System Service_**)
2. IP output: It can set IP address and communication port
<**Remark**> The performance of the camera may be affected when Tracking Data Output is enabled | V | V |

6.2.10 Settings - Time

No	Item	Function Descriptions
1	Camera Time	Display the date and time of the camera
2	Set the Time	■ Manually: Set time manually ■ Synchronize with computer time: Set the camera time according to the computer time ■ Synchronize with SNTP server: Set the camera time synchronously with the SNTP server **<Remark>** SNTP server address: Please refer to **_6.2.9 Setting - Network_**

6.2.11 Settings - Maintenance - Upgrading Firmware
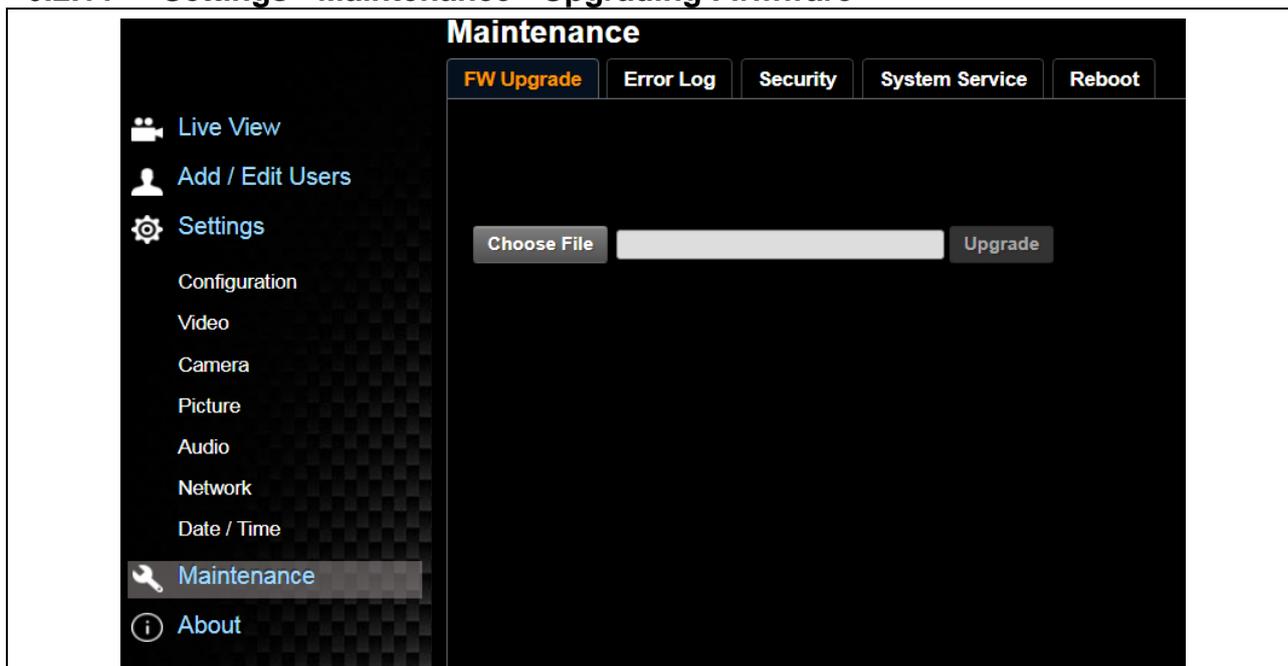
No	Item	Function Descriptions
1	Firmware Update	The camera firmware may be upgraded via web page. For the upgrade method, please download the FW upgrade manual from Lumens official website

6.2.12 Setting - Maintenance - Error Log
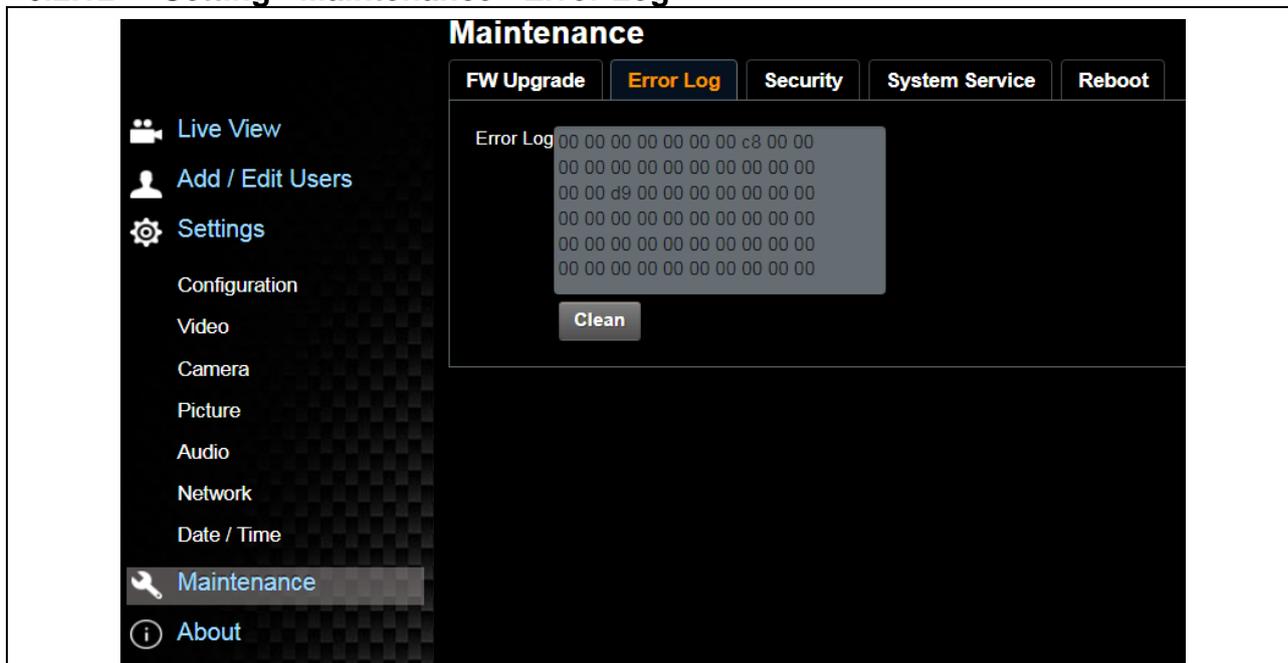
No	Item	Function Descriptions
1	Error Logs	If the camera encounters errors, an error code log will be established **<Remark>** When an error code appears, please try to clear it to make sure whether the issue has occurred repetitively

6.2.13　Settings – Maintenance - Security

<Remark> For VC-A61P only; VC-A61PN does not support this feature
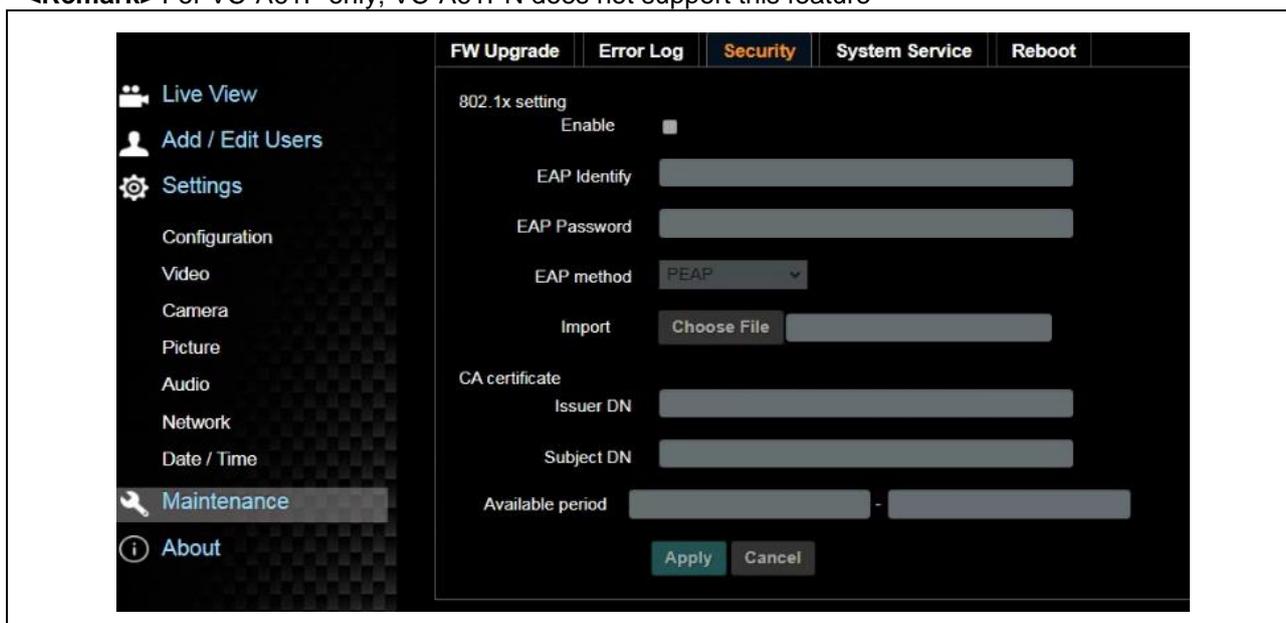
No	Item	Function Descriptions
1	802.1x Setting	Enable/Disable 802.1x Protocol. Setting can be made after enabling. **<Remark>** In order to enable this function, the router must support 802.1x Protocol.

6.2.14　Settings - Maintenance - System Service
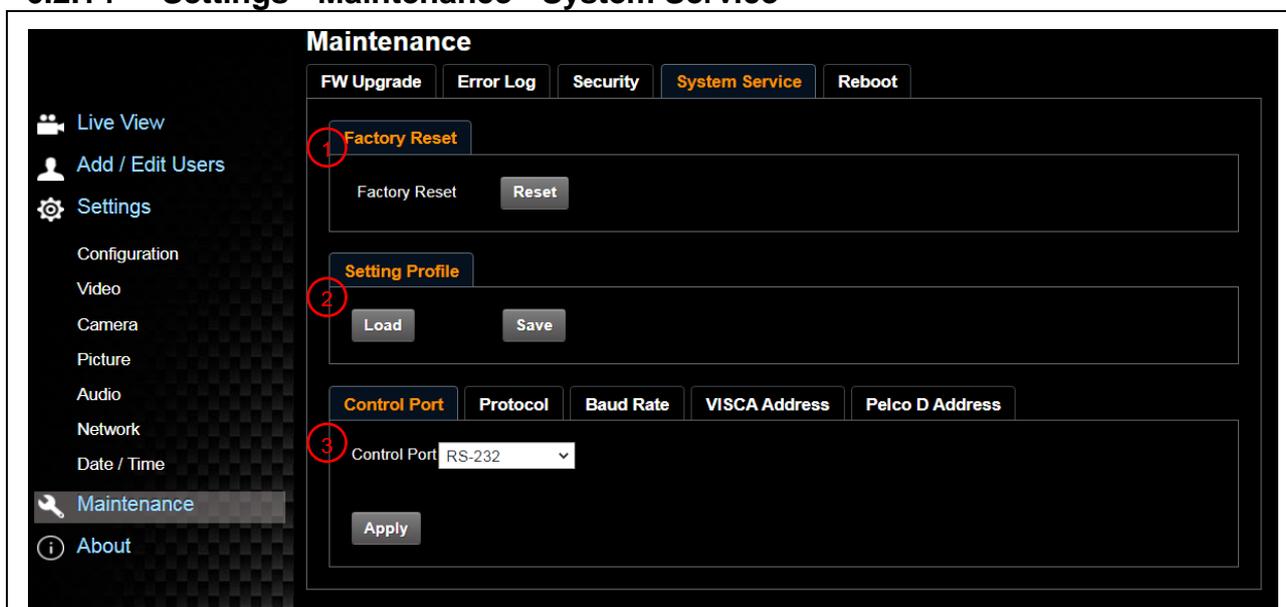
No	Item	Function Descriptions
1	Factory Reset	Select the reset button to resume the factory default setting as the web page setting
2	Setting Profile	The web page setting parameters can be exported from the computer and imported/applied to another camera
3	Communication protocol related settings	Communication protocol related settings for the use of connecting RS-232/ RS-422 communication

6.2.15 Settings – Maintenance - Reboot
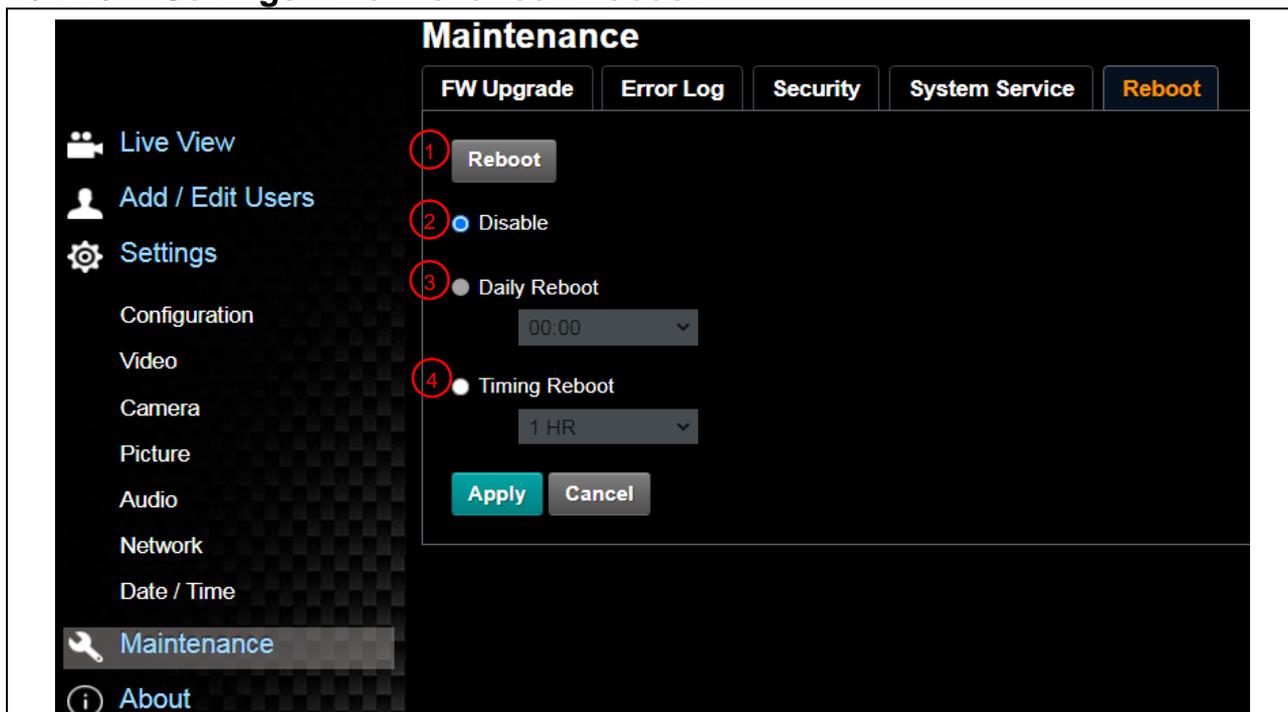
No	Item	Function Descriptions
1	Reboot	Reboot immediately
2	Disable	Disable the reboot settings
3	Daily reboot	Set the daily reboot time **<Remark>** Please go to **Settings – Date / Time** to complete the SNTP server synchronization to set daily reboot
4	Timing Reboot	Set the timing reboot time

6.2.16 About
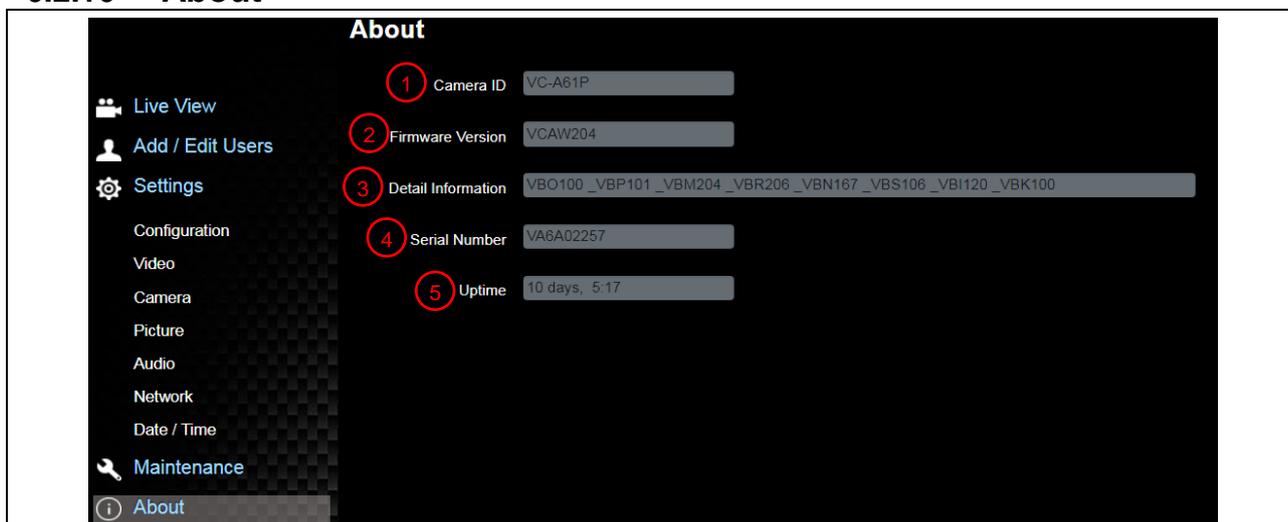
No	Item	Function Descriptions
1	Camera ID	Display the camera name
2	Firmware Version	Display the firmware version of the camera
3	Detail Information	Display firmware version-related information
4	Serial No.	Display the camera serial No.
5	Uptime	Displaying the running time of the camera (the timing of standby continues; the time will be reset when the camera is rebooted or turned off)

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Chapter 7 DIP Switch Setting

7.1 DIP SWITCH

7.1.1 OUTPUT Switch
To switch via the OSD/ RS-232 Command is also available based on the last executed action

ID	Resolution	Frame Rate	Remark
0	3840 x 2160p	29.97	
1		25	
2	1920 x 1080p	59.94	
3		50	
4		29.97	
5		25	
6	1280 x 720p	59.94	
7		50	
8		29.97	**<Remark>** VC-A61PN does not support 720p 29.97/25 fps resolutions
9		25	
A	1920x1080i	59.94	**<Remark>Select 1080i/59.94, 1080i/50, only HDMI/SDI outputs 1080i, while NDI will output 1080p e.g. HDMI 1080i60; NDI 1080p60**
B		50	
C	Reserved	Reserved	
D			
E			
F			

7.1.2 IR SELECT
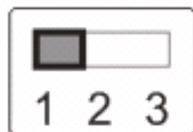
ID	Setting
1	
2	
3	

Chapter 8 Troubleshooting

This chapter describes problems you may encounter while using VC-A61P/VC-A61PN. If you have questions, please refer to related chapters and follow all the suggested solutions. If the problem still occurred, please contact your distributor or the service center.

No.	Problems	Solutions
1.	Boot without power signal	1. Make sure you have plugged in the power cord. 2. When using a PoE connection, ensure that the power supply supports POE+ (IEEE 802.3at) hubs
2.	There is no image output from the camera	1. Check the power supply or PoE supply functions. 2. Confirm the output signals are in streaming output. 3. Confirm whether the camera resolution can be used together with the monitor equipment ■ If 4k output, confirm the monitor equipment supports 4K output 4. Replace the cables and make sure they are not faulty.
3.	The Camera image is severely delayed	Please use 1080p or 720p 60/50 fps rather than 25/30 fps signals.
4.	RS-232 cannot be controlled	1. Confirm the connection is correct (RS-232 In/ Out) 2. Please make sure the Baud rate setting is the same as the control equipment
5.	No image for 3G-SDI output resolution 3840x2160 29.97/ 25	Please confirm the screen menu/ Dip Switch setting 3G-SDI supports output resolutions up to 1080p 59.94/50
6.	Whether the Internet can be used for operation	Please refer to **_Chapter 6 Network Function Description_** for the Internet usage
7.	ONVIF software cannot locate the machine	Please be sure to use only English alphabets or numbers in [Setting]>[Video]> [Camera](Location) of the webpage. Using special characters and pressing the spacebar will cause the ONVIF software unable to locate the machine. For VC-A61PN, either NDI or ONVIF can be used. Please go to the [Setting] > [Video] > [NDI|HX] on the web page to check if it is [Off].
8.	Tally lamp is not working when applying RS232 setting	Please make sure if the *Tally lamp* function is enabled from the setting menu or web page. ■ **Setting Menu: *System - Tally Lamp*** ■ **Web page: *Setting - Camera - Tally Lamp***
9.	The camera does not save the relevant parameters (PTZ, AWB …) after reboot	Please make sure if the *Initial Position* is set to *Last Operated Position* from the setting menu or web page ■ **Setting Menu: *System - Initial Position*** ■ **Web page: *Settings - Camera - Pan Tilt Zoom***

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Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

Manufacturer：**Lumens Digital Optics Inc.**

Product Name：**VC-A61P/ VC-A61PN**

Model Number：**4KPTZ Video Camera**

Responsible Party – U.S. Contact Information

Supplier：**Lumens Integration, Inc.**

4116 Clipper Court, Fremont, CA 94538, United States

e-mail **:** support@mylumens.com

FCC Compliance Statement

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.