Marshall

CV630-BI/WI/ND3/ND3W
UHD IP/NDI® PTZ Camera

User Manual

Table of Contents

Precautions

This symbol indicates that this equipment may contain dangerous voltage which could cause electric shock.	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.

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.

Chapter 1: Safety Instructions

Always follow these safety instructions when setting up and using this 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.

Chapter 2: Package Contents
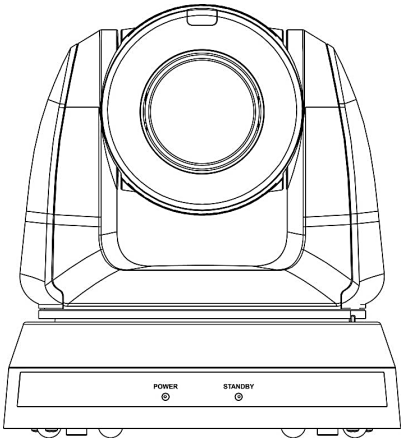
PTZ Camera	Installation Instructions	Remote Control
	Click Here for Product Page: https://marshall-usa.com/cameras/CV630-NDI/	
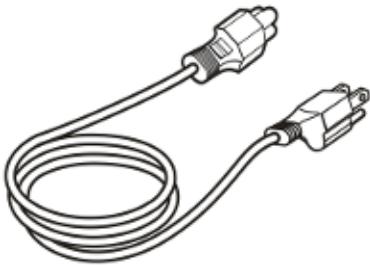
AC Power Cord	Power Adapter	RS-422 Connector
 Appearance may vary depending on county/ region		
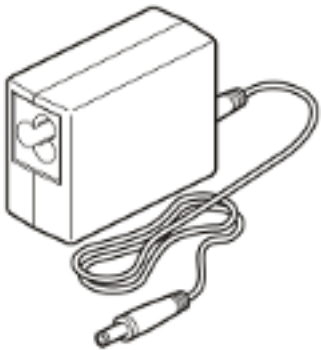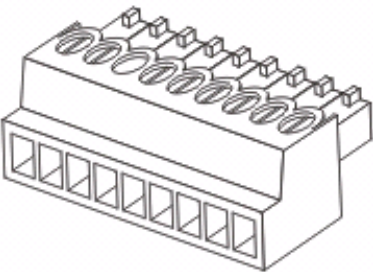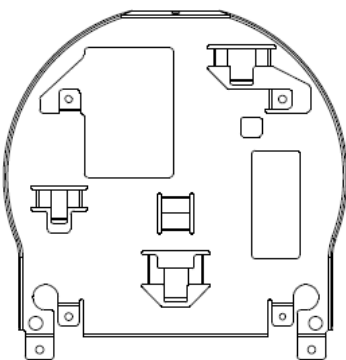
Metal Plate A	Metal Plate B	M3 Screws
		 Silver x8/ Black x2
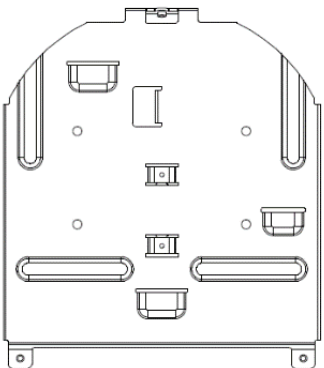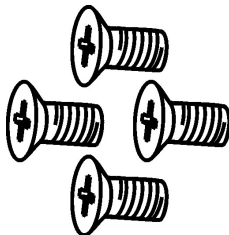
Chapter 3: Function Introduction

3.1 I/O functions Introduction

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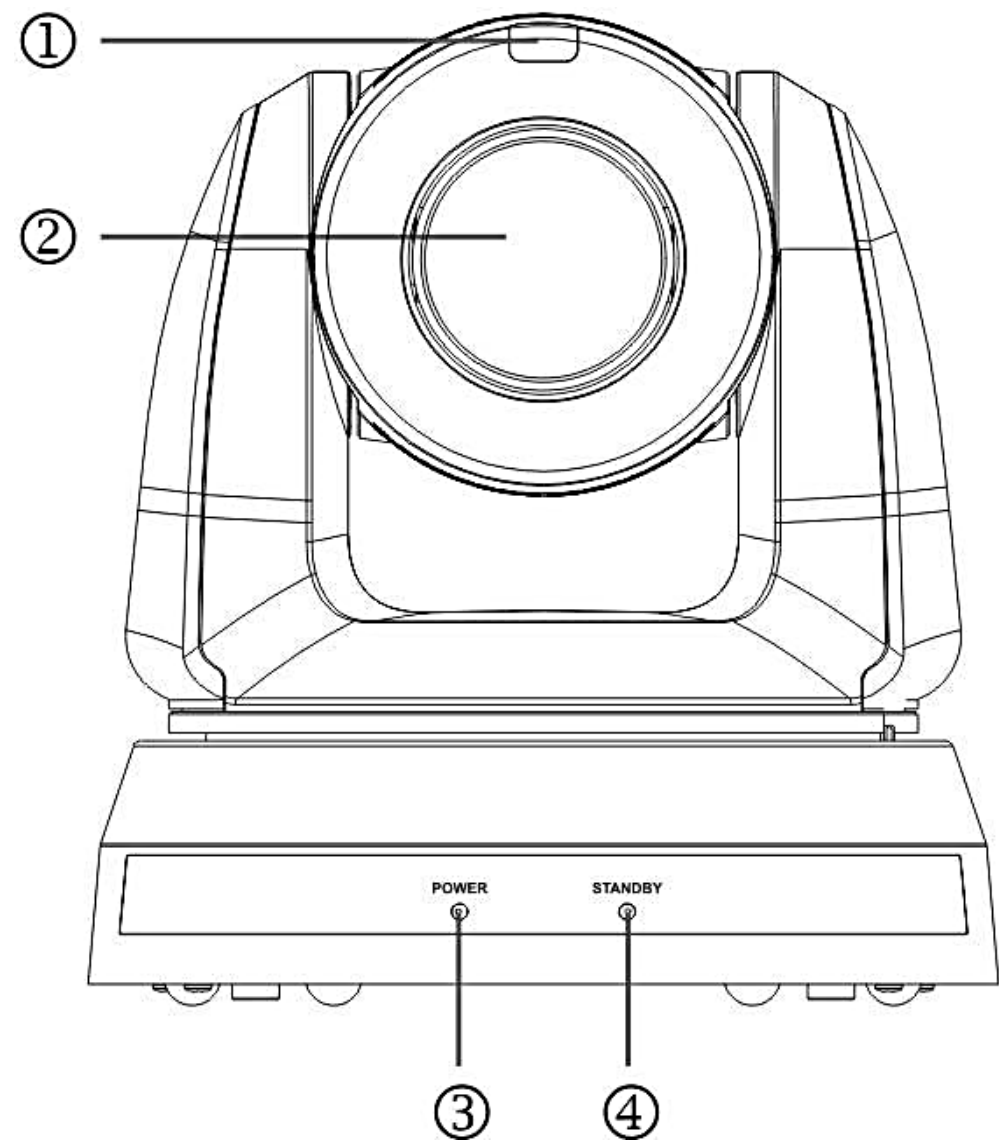
NO.	Item	Function Descriptions
1.	Tally Lamp	Display the tally light status of the camera
2.	Camera lens	30x HD camera lens
3.	Power LED indicator	Display the status of the camera
4.	Standby LED indicator	Display the status of the camera

3.1.2 Back View
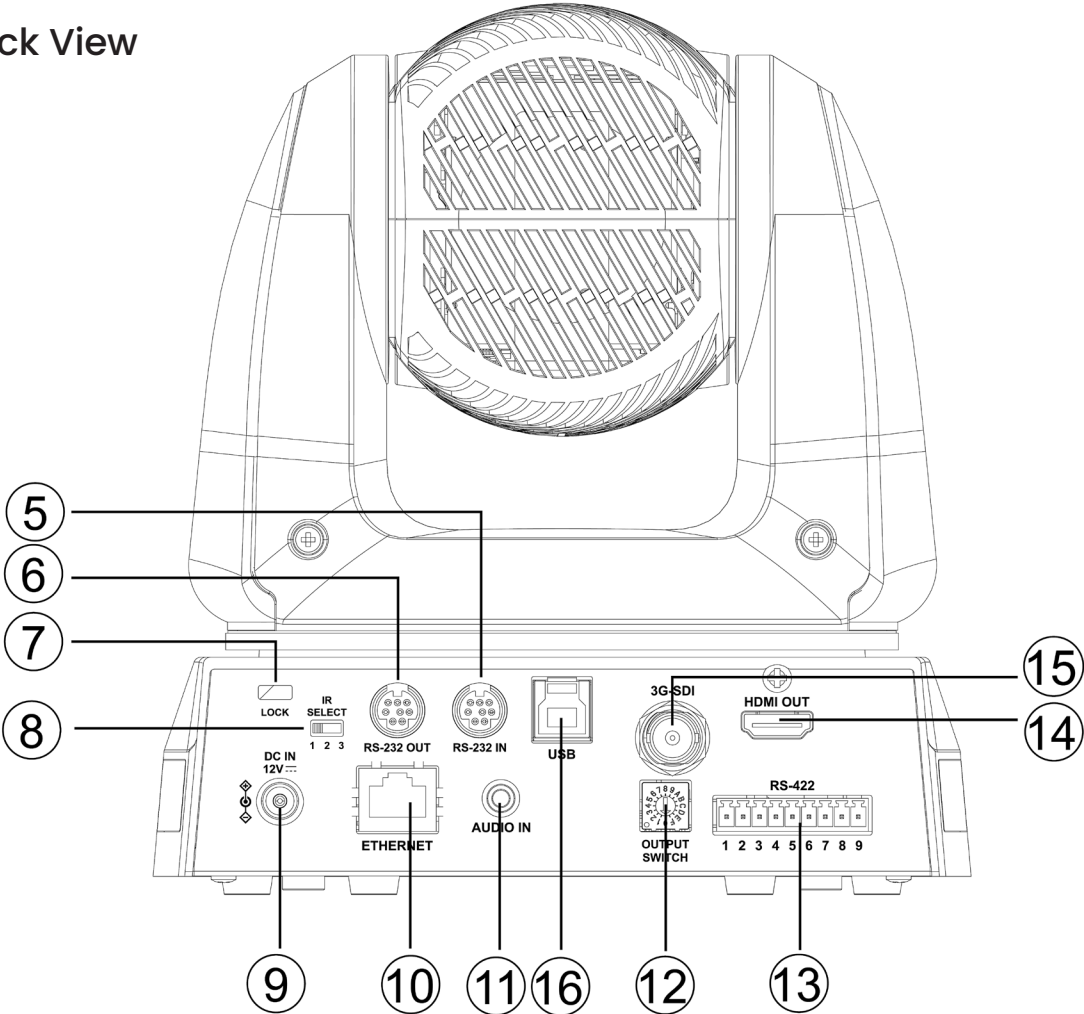
NO.	Item	Function Descriptions
1.	RS-232 input	RS-232 input port, at most 7 cameras can be connected in a serial connection
2.	RS-232 output	RS-232 output port, at most 7 cameras can be connected in a serial connection
3.	Lock hole	Lock hole of safety lock
4.	IR SELECT	The remote-control ID setting is only controlled after corresponding to the Camera Select on the remote control
5.	DC 12 V power Port	DC power supply connecting port
6.	Ethernet port	Network cable port supports routers or hubs of PoE+ (IEEE 802.3at).
7.	Audio input	Support Line In/Mic In
8.	OUTPUT Switch	Adjust the resolution setting. The default is 1080p/59.94
9.	RS-422 Port	RS-422 connecting port, at most 7 cameras can be connected in a serial connection
10.	HDMI output	HDMI output (Audio output supported)
11.	3G-SDI output	3G-SDI output(Audio output supported) <Remark>Support the audio output of 48 KHz only/resolutions up to 1080p 59.94/50
12.	USB 3.0 port	Connect to the USB port of the computer, camera image output via video software <Remark> Support up to H.264 2160 29.97p/MJPEG 1080 29.97p
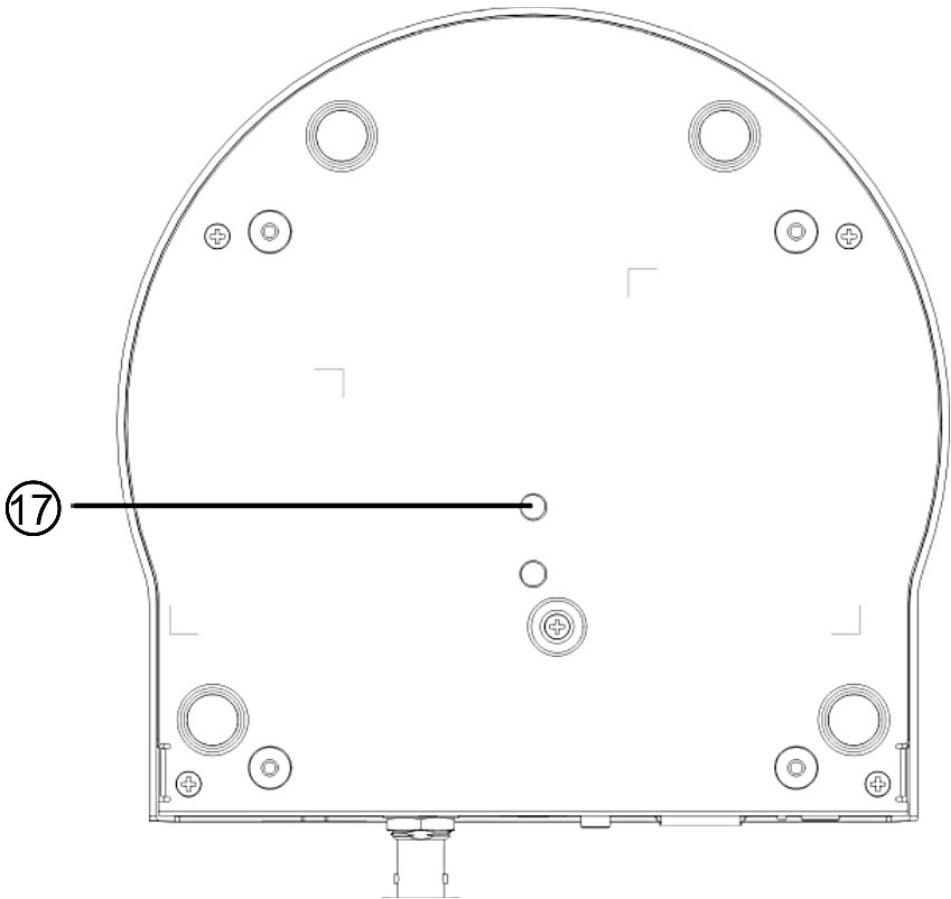
NO.	Item	Function Descriptions
17.	Tripod lock hole	The camera is mounted on a (specification) 1/4" - 20 UNC tripod

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 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

4.1.3.1 Confirm the position for the object to be captured.

4.1.3.2 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
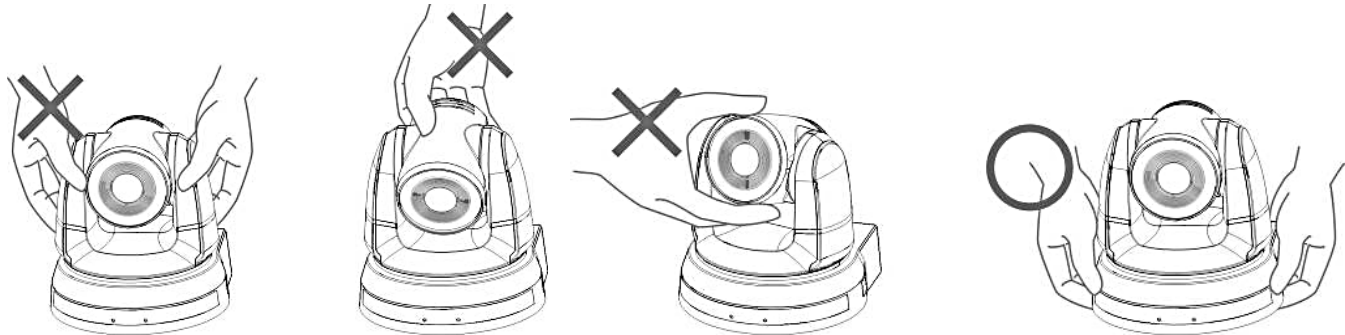
4.2.1.2 Installation steps

1. Please adjust DIP switch at first prior to installation
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, screwdriver, ladder

4.2.2.2 Camera Size

L x W x H : 174 x 187 x 190 mm   **Weight:** 2.0 Kg

189.7 mm

186.1 mm

174.0 mm
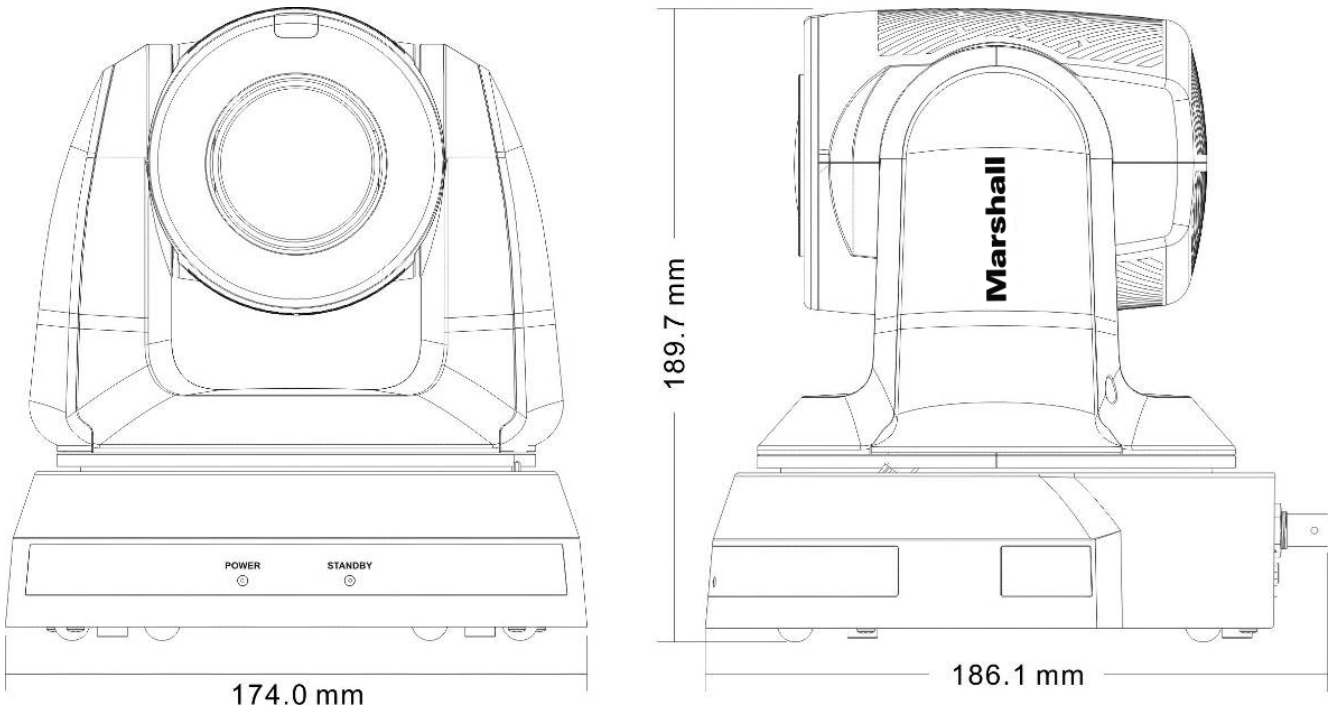
4.2.2.3 Max. rotation dimension of camera

199.1 mm

189.0 mm

186.1 mm
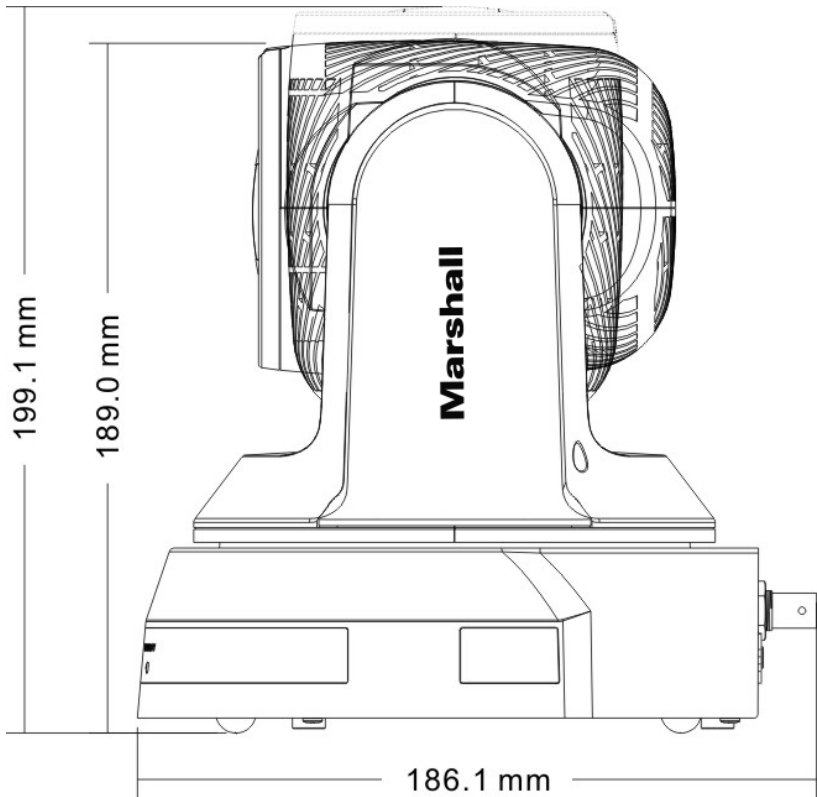
4.2.2.4 Size Diagram

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.

14.0 mm

112.0 mm

40.5 mm

55.0 mm

110.0 mm
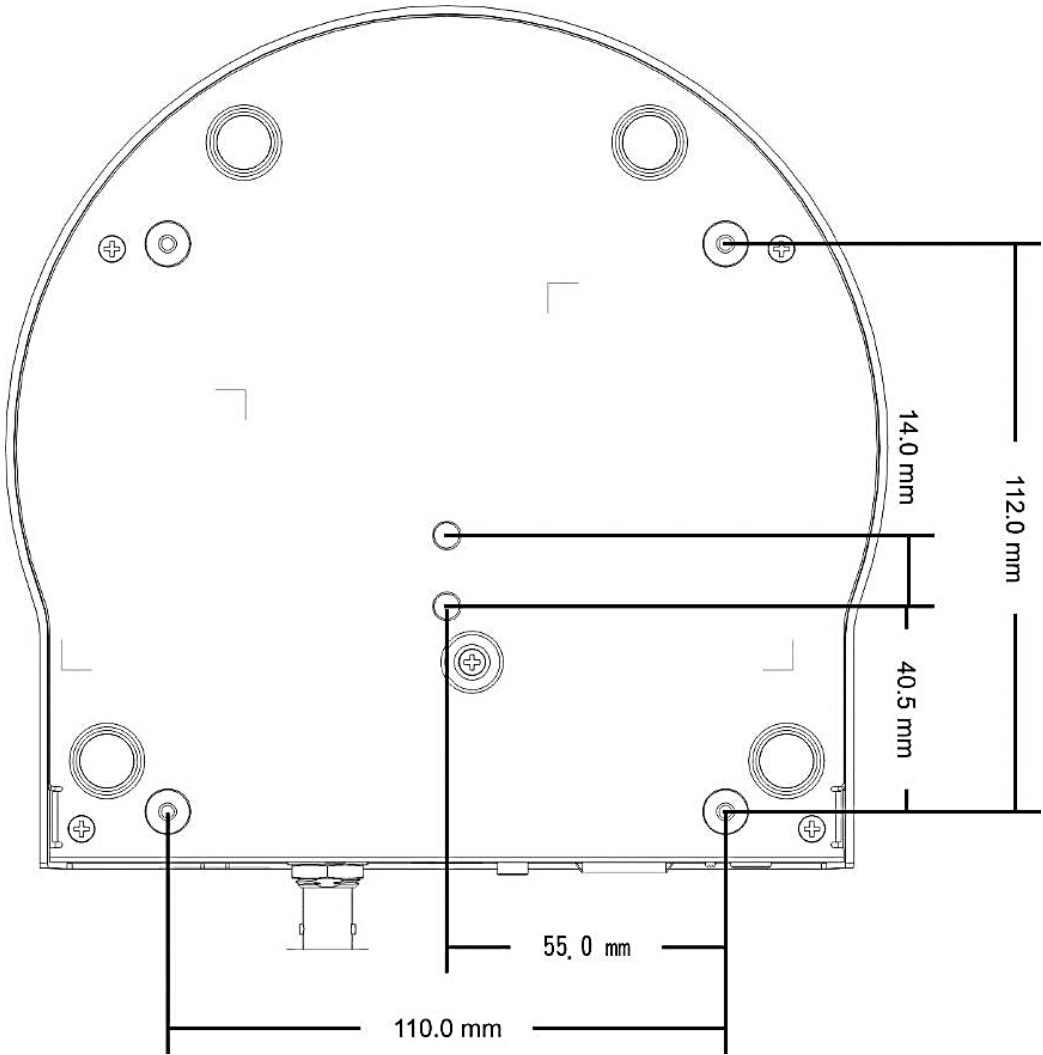
2. Metal Plate size diagram
  • Metal plate A - machine side

Ø5.50

0.70

M3

6.00

8.00

Metal plate A - Locking Screw
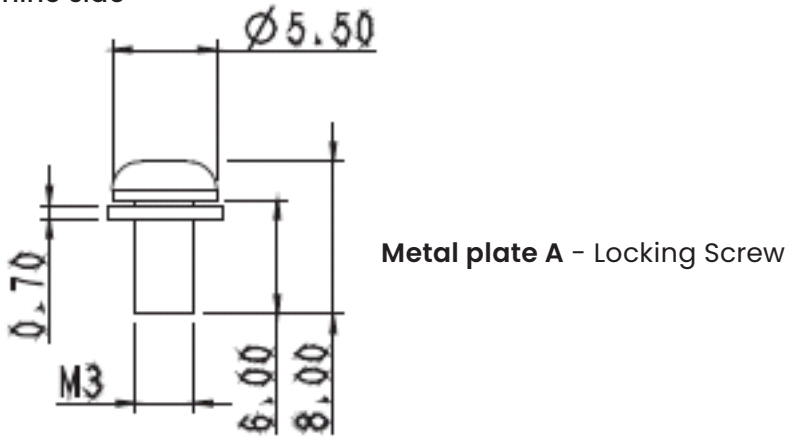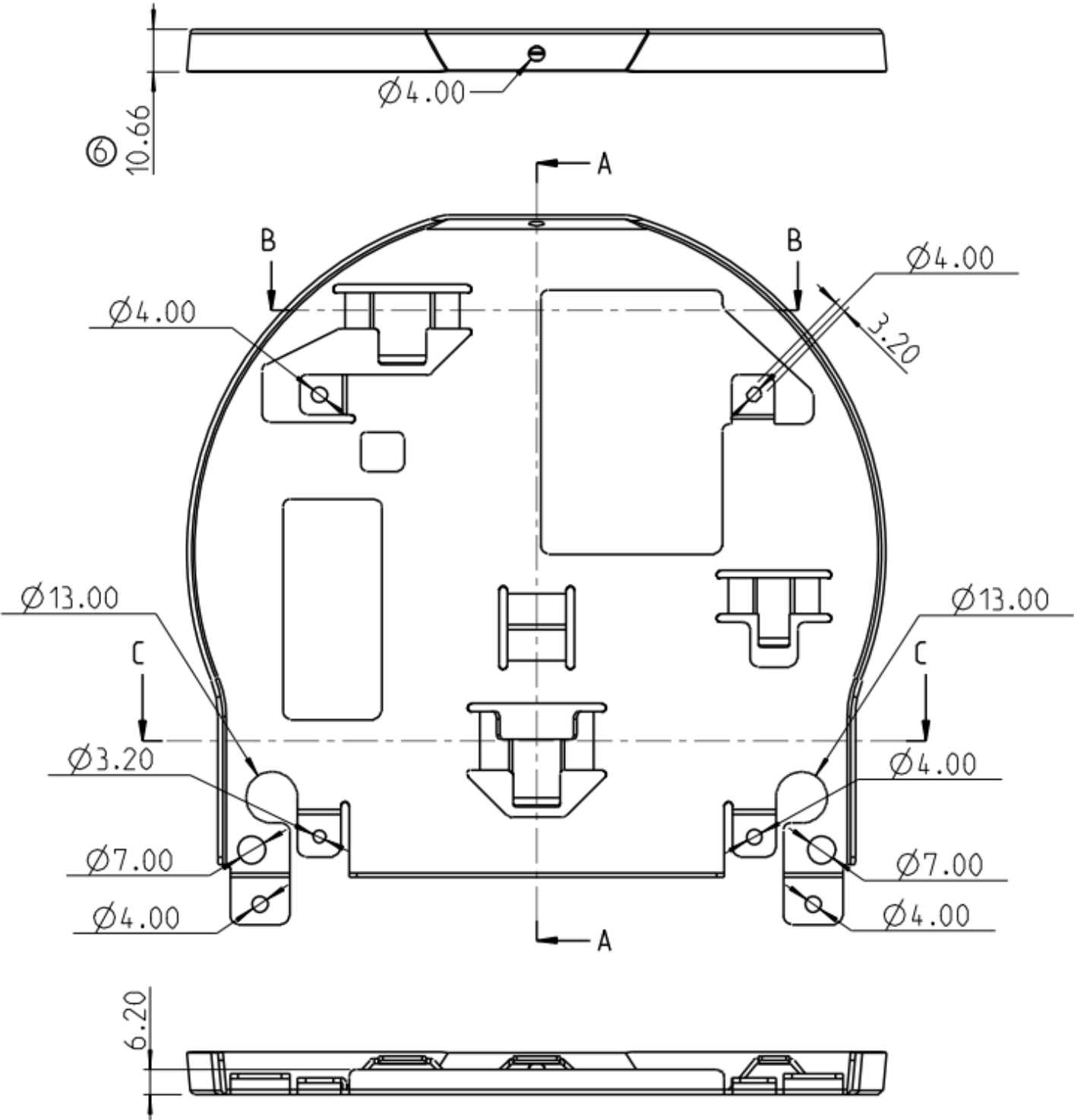
Metal Plate A – Machine Side

Metal Plate B – Ceiling Side

Metal plate B locking screw

Metal plate B locking Bolt

M3 Threaded Hole

M3 Threaded Hole

M3 Threaded Hole
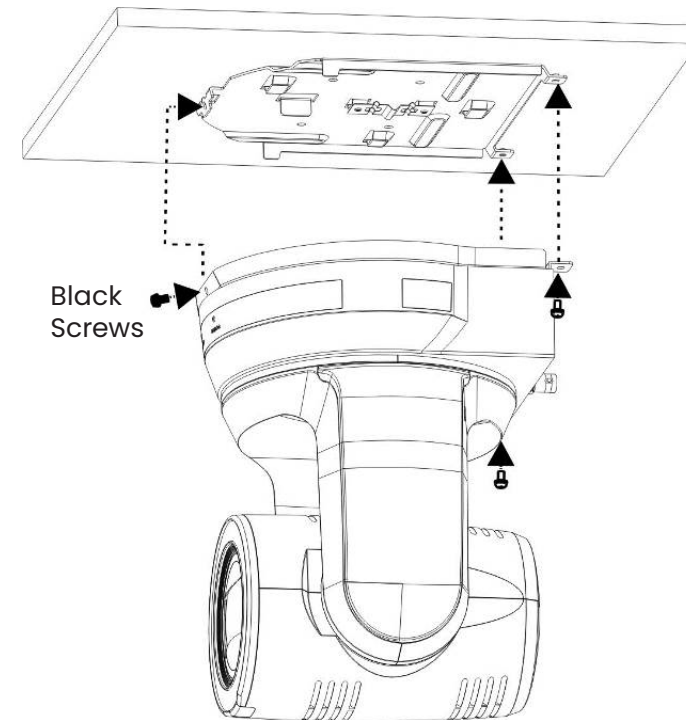
Metal Plate B – Ceiling Side
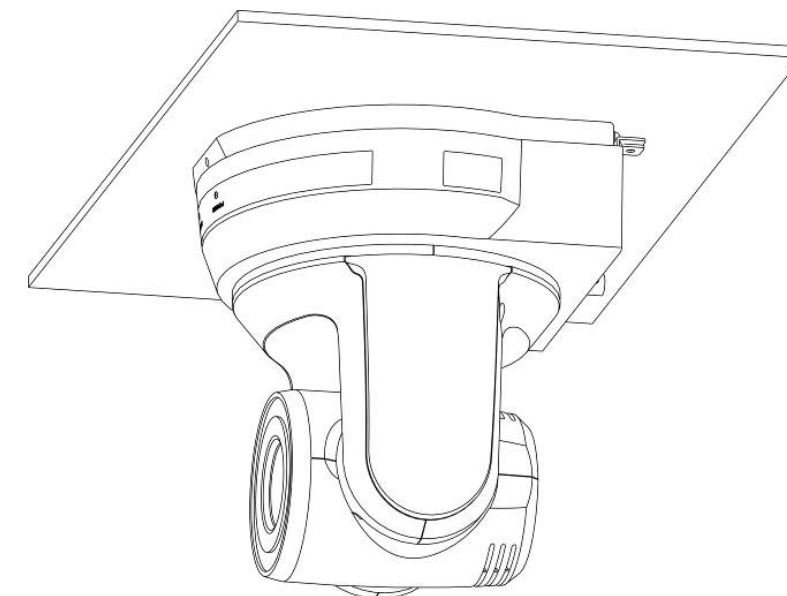
4.3   Connecting devices

4.3.1 Connecting to PC
(video conference)

Support up to H.264 2160 29.97p/ MPEG 1080 29.97p

USB
Cable
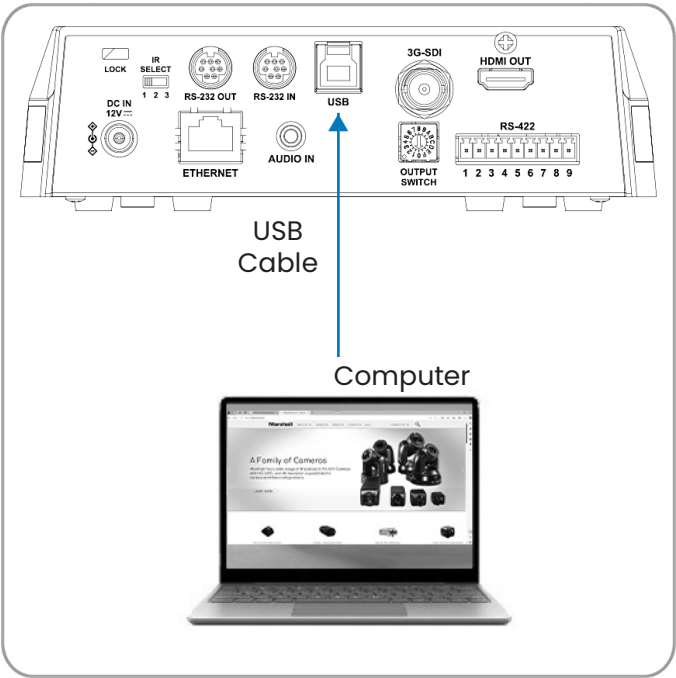
Computer

4.3.2 Connecting to an HDTV/computer monitor (HDMI)

HDMI
Cable
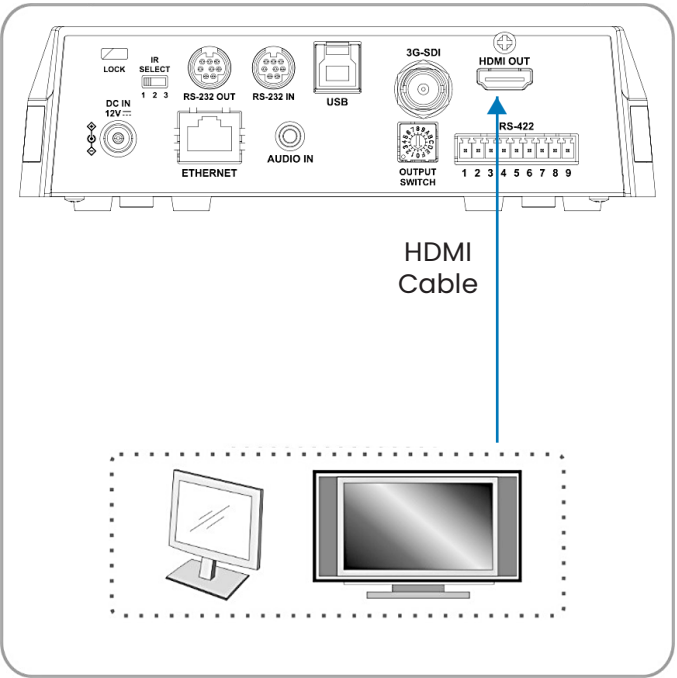
4.3.3 Connecting to Internet
For details of web page connection setting and description, please refer to Chapter 6 Network Function Settings Description

Network
Cable

Router or Hub
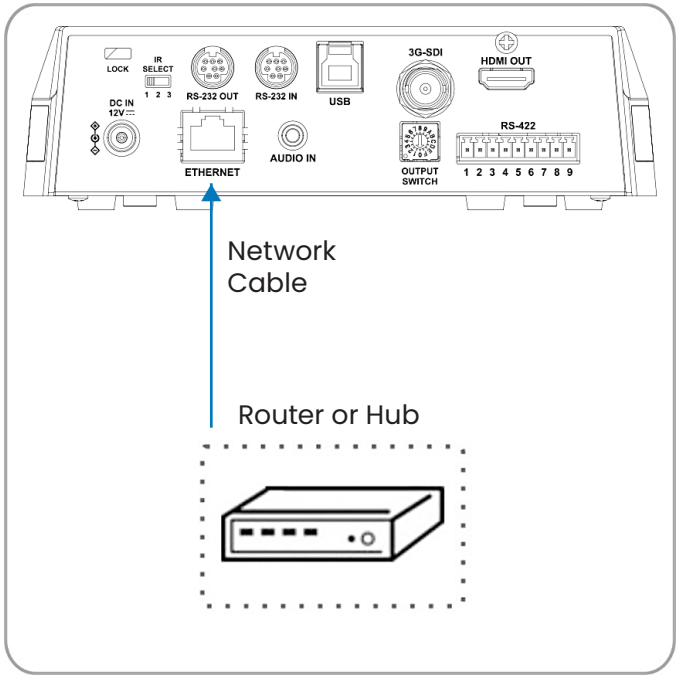
4.3.4 Connecting AUDIO IN
Set the [Audio In] in the OSD to reflect the input device

Audio
Cable

Mic or Audio Mixer
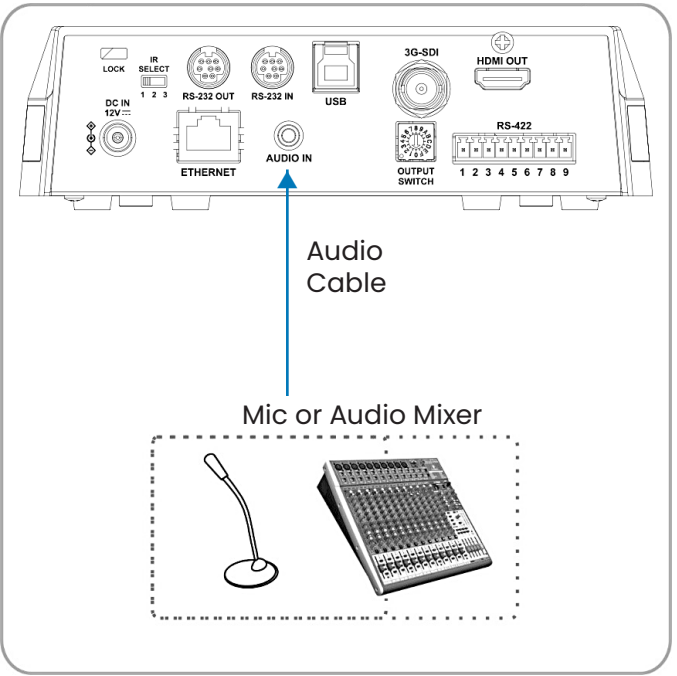
4.3.5 Connecting RS-232

With RS-232 in/out, at most 7 Marshall cameras can be connected.
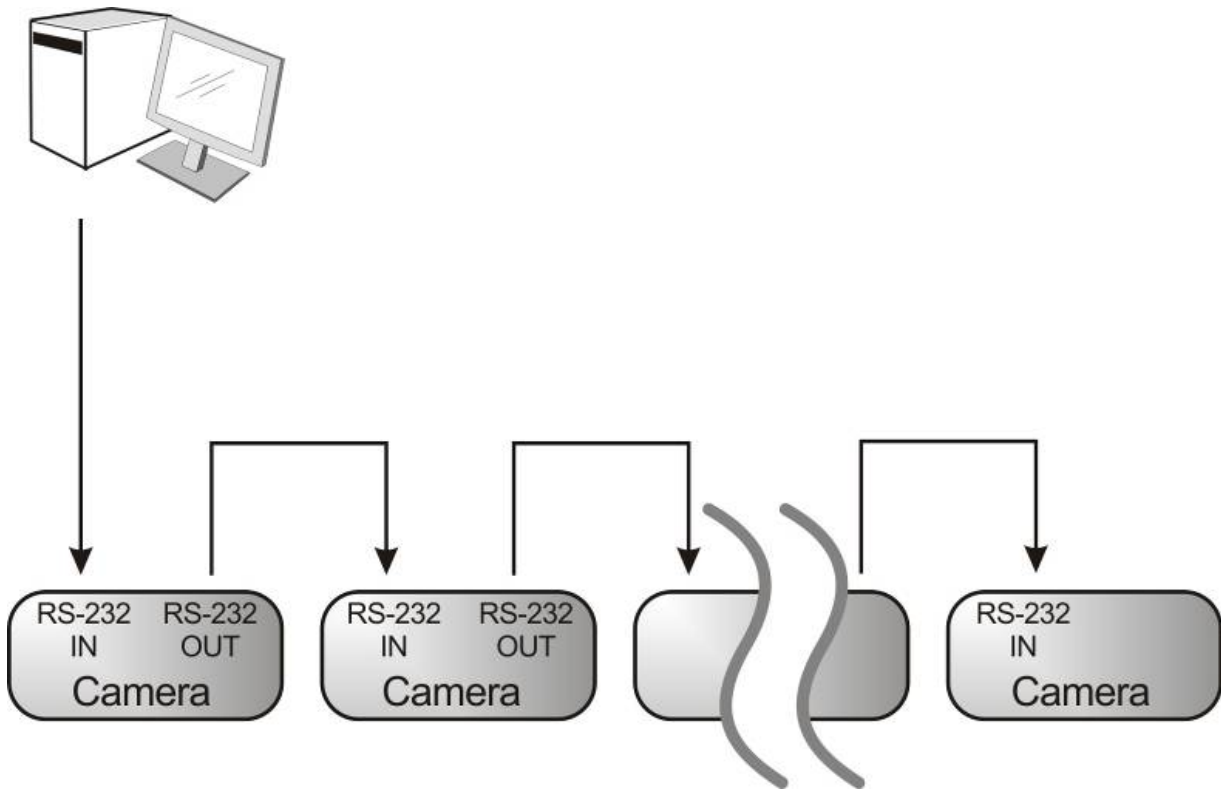
● **RS-232 PINS DEFINITION INSTRUCTIONS**

▼ **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 Camera   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   RS-232 OUT
of Next Camera   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
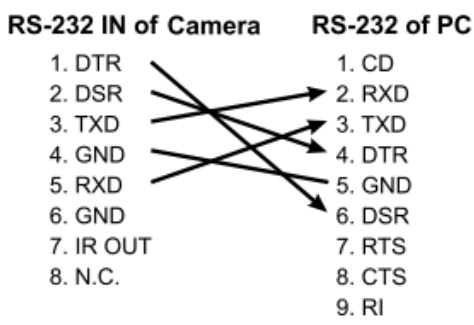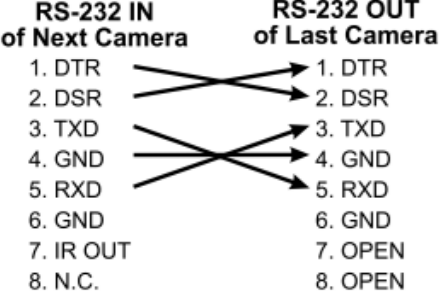
4.3.6 Connecting RS-422

CAUTION: When RS-422 connection is being used, do not use RS-232 connection.
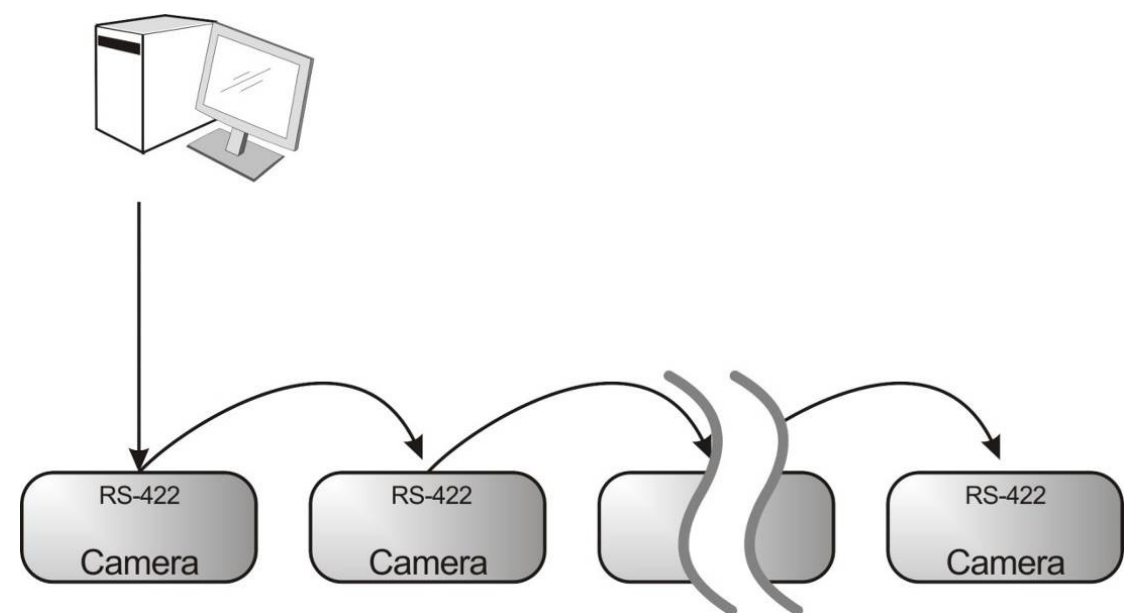
● **RS-422 PINS DEFINITION INSTRUCTIONS**

▼ RS-422 Pins Instructions
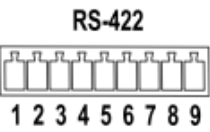
Pin NO.	Function
1	RXD OUT-
2	RXD OUT+
3	TXD OUT-
4	TXD OUT+
5	GND
6	RXD IN-
7	RXD IN+
8	TXD IN-
9	TXD IN+

▼ RS-422 Connection Instructions
—Applicable to
Marshall 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+
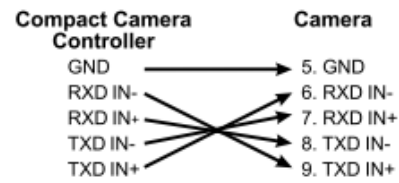
▼ RS-422 Connection Instructions
—Applicable to
SONY Compact Camera Controller

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+
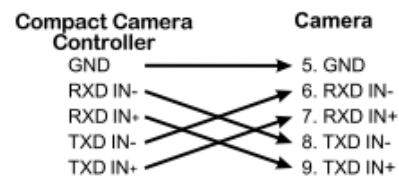
▼ RS-422 Serial Connection
Up to seven cameras can be daisy-chained
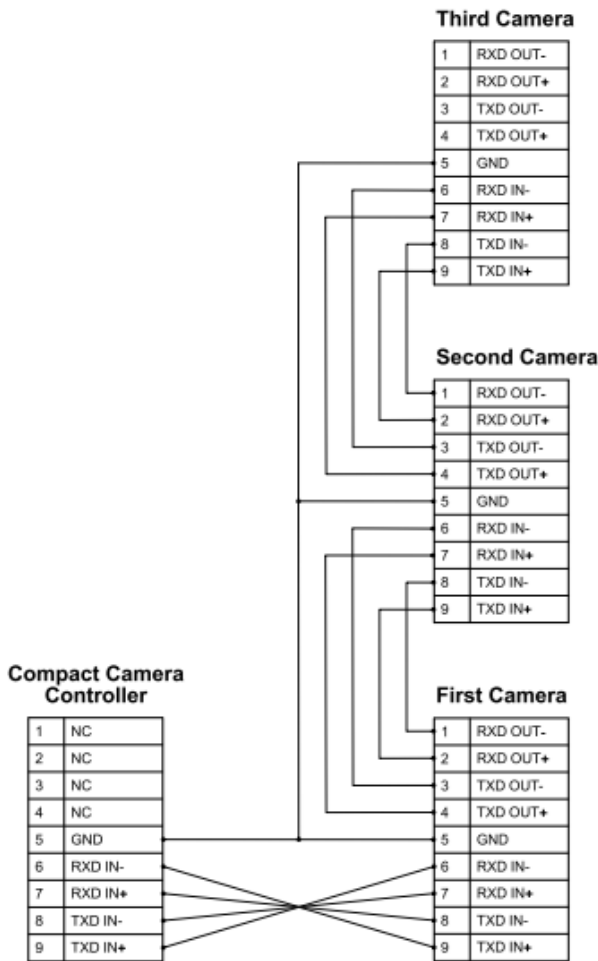
● **RS-422 CONNECTION INSTRUCTIONS**

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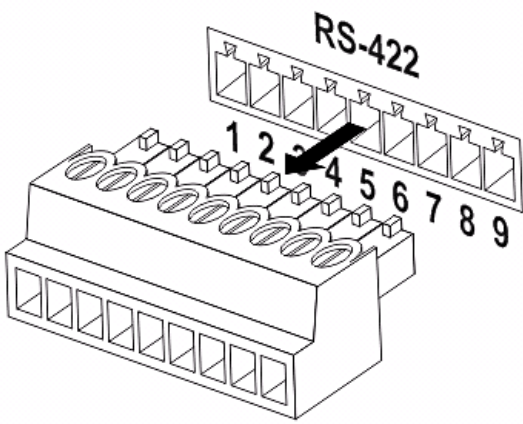
2. Peel off a section of copper wire (AWG Nos. 28 to 18) and insert it into the connector hole; then use flat screwdriver to fix it
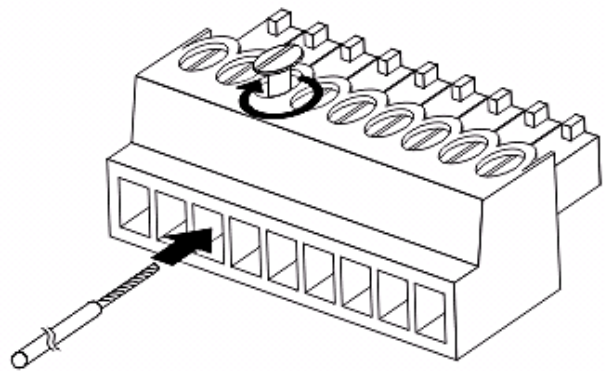
3. Insert the wired RS-422 connector back to the Camera. Now the connection is completed
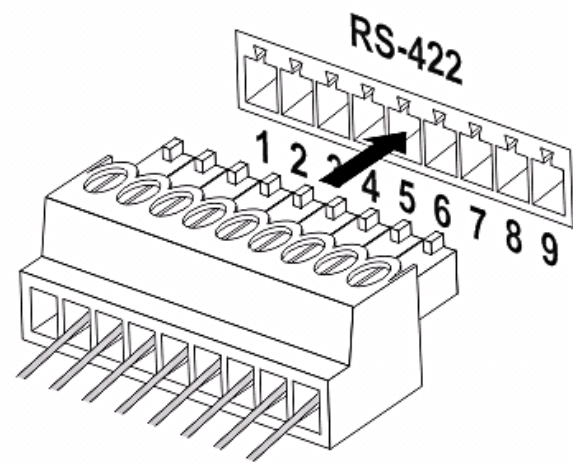
Chapter 5: Remote Control and Setting Menu

5.1 Functions of remote control
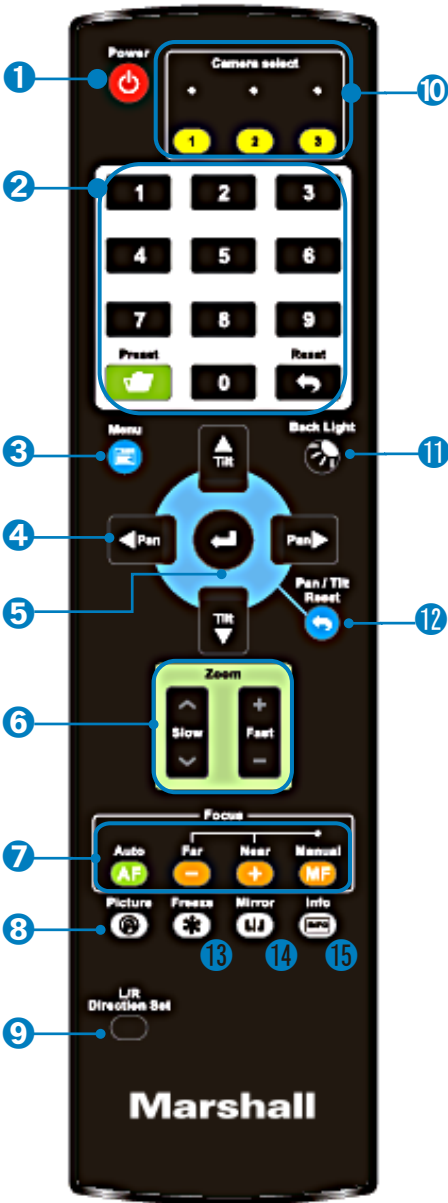
No	Item	Description
1	Power	Power Switch
2	Preset	• Numeric Keys 0 - 9: Click to call the preset • Preset: Appoint an ID (0 ~ 9) to save the current position data • Reset: Appoint an ID (0 ~ 9) to delete the current position data
3	Menu	Display OSD menu
4	Pan/ Tilt	Move the lens
5	Home-Enter	Go back to the main page / Execute
6	Zoom	• Fast: Adjust image size • Slow: Fine-tune image size
7	Focus	• Auto: Auto focus • Manual: Enable Manual Focus • Far/ Near: Adjust the focal length in Manual
8	Picture	Switch image effect (OFF/ Neg/ B&W)
9	L/R Direction Set	L/R Direction / Normal
10	Camera select	Choose camera ID 1 ~ 3
11	Back Light	Turn on/off back light compensation
12	Pan/ Tilt Reset	Clear the Pan/Tilt setting
13	Freeze	Freeze the screen
14	Mirror	Rotate the image (OFF/ Mirror/ Flip/ Rotate)
15	Info	Status information

5.2 Setting Menu

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

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values		Function Descriptions
Exposure	Mode	1. **Full Auto** 2. Shutter Pri 3. Iris Pri 4. Manual		Exposure mode setting
	Exposure Comp.	On / **Off**		AE Level
	Exposure Comp. Level	-5~**C**~5		The value can be adjusted after **Exposure Comp.** is activated
	Spot Light	On / **Off**		
	Spot Light Position	X(0~6)Y(0~4)		The value can be adjusted after **Spotlight** is activated
	Shutter Pri	60/30 Mode	50/25 Mode	Adjustable when the **Exposure mode** is set to **Shutter Pri**
		1/10000~**C**~1/1		
	Iris Pri	F1.6~**C**~F18/ Off		Adjustable when the **Exposure mode** is set to **Iris Pri**
	Manual Gain	**0**~45dB		Adjustable when the **Exposure mode** is set to **Manual**
	Manual Speed	60/30 Mode	50/25 Mode	Manually set the shutter
		1/10000~**C**~1/1		
	Manual Iris	F1.6~**C**~F18/ Off		Manually set the iris
	Gain Limit	9~45 dB		Max. limit value of electron gain
	Iris Limit	**F3.2**~F11		Max. limit value of iris
	WDR	**Off**/ 1/ 2/ 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	**Off**/ Neg/ B & W	
	Sharpness	0~**C**~14	
	2D NR	Off/ **1**/ 2/ 3	
	3D NR	Off/ Low/ **Typ**/ Max	
	Image Mode	**Default**/ 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~**C**~15	Adjustable when the *Image mode* is set to *Custom*
	Hue	0~**C**~15	Adjustable when the *Image mode* is set to *Custom*
	Saturation	0~**C**~15	Adjustable when the *Image mode* is set to *Custom*
	Gamma	0~**C**~3	Adjustable when the *Image mode* is set to *Custom*
Pan Tilt	Pan/Tilt Limit	On / **Off**	Turn on/off the angle limit setting

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
Zoom	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	5/ 25/ 50/ 80/ 120/ **160**/ 200/ 300 **deg/sec**	Set the rotation speed of the cradle head when Preset is executed
	Preset Mode	Normal/ PTZ Only	▪Normal: Call the preset, execute Pan/Tilt/Zoom/Focus + Image parameter 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	**Off**/ Mirror/ Flip/ Mirror + Flip	Set the mode at which the image is turned
Auto Focus	AF Sensitivity	Low/ **Middle**/ High	For AF triggering speed, the higher the speed is, the faster AF is triggered
	AF Frame	Center Area / All Area / **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

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
	Zoom tracking	Manual / **Curve Tracing** / Zoom Tracking	It can be set in the Manual Focus (MF) mode The focus mode during lens zooming
	PTZ Assist	On / **Off**	Check whether auto focus is enabled if there is any changes of PTZ (can be set in "Manual") **<Remark>** When PTZ Assist is enabled and PTZ control is in operation, the focus will be triggered. The focus will not be triggered when the scene changes
	Preset AF	**On** / Off	Set whether to perform Auto Focus after 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~**C**~10	Audio Volume Setting

| 1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values	Function Descriptions
	Audio Delay	On / **Off**	When the audio is not synchronized with the video, enable this function to set the audio delay time **<Remark>** Supported when NDI|HX function setting is off
	Audio Delay Time(ms)	**-1**~-500ms	Set audio delay time **<Remark>** Supported when NDI|HX function setting is off
	Encode Type	**AAC**/ G.711	Set audio encode type **<Remark>** Supported when NDI|HX function setting is off
	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>** Supported when NDI|HX function setting is off
System	Prompt	On / **Off**	Turn on/off the prompt information on the display
	IR Receive	**On** / Off	
	Tally Lamp	On / **Off**	
	Tally CMMD Mode	General / **Link**	Set whether the indicator light is linked with RS232 command ■ **General** (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 the 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 the indicator light mode when the indicator light is off will turn on the indicator light
	Language	**English** / Chinese	
	Initial Position	**Last MEM** / 1st Preset	Select the camera lens to return to the last memory position or the 1st Preset position after POWER ON **<Remark>** 1st Preset = Preset 0
	Control Device	Encoder / **Controller**	Control Device setting, Controller: for joystick Encoder: for tracking system

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**
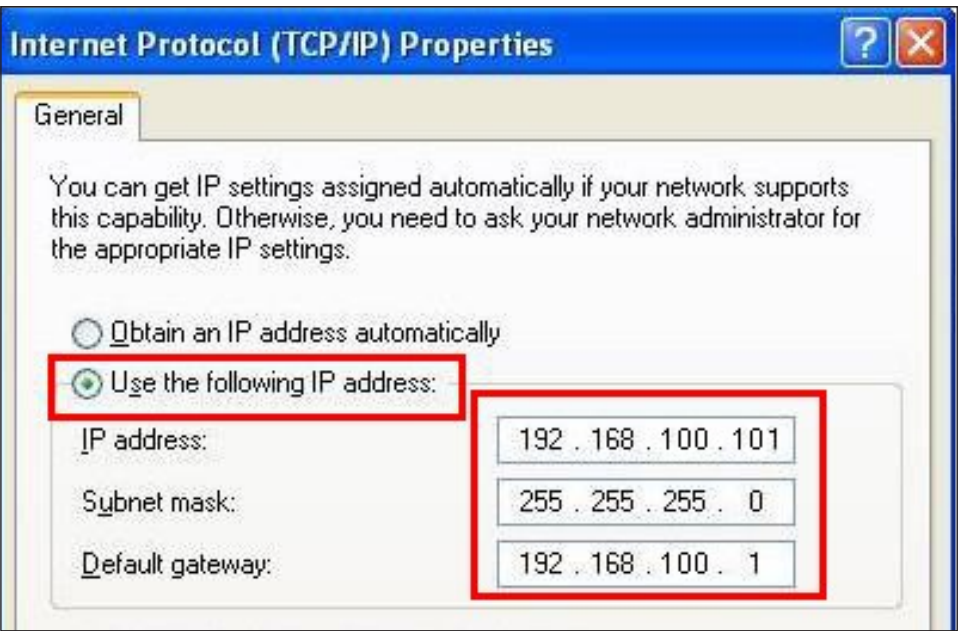
Camera

Switch or Router
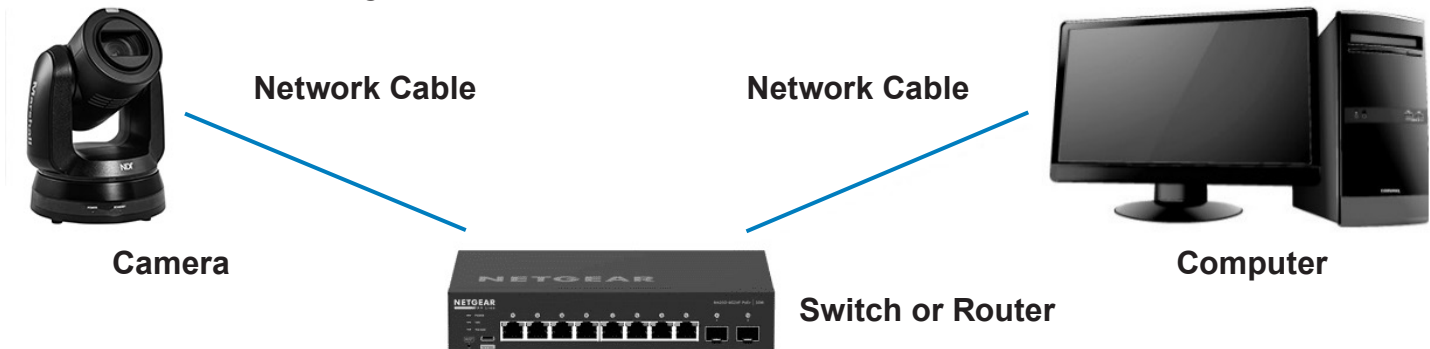
Computer

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
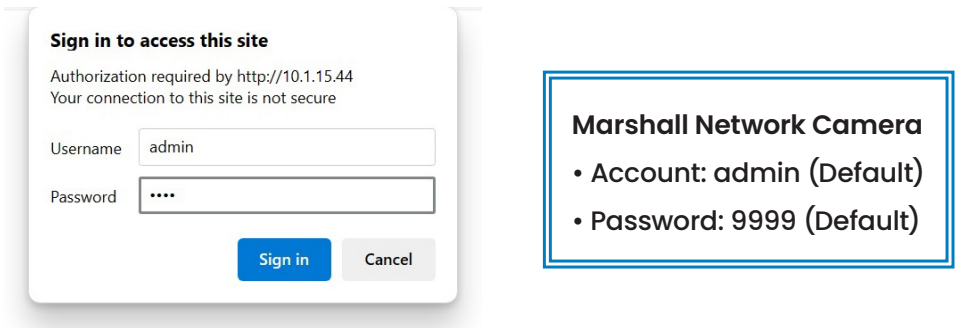
Network Cable

Camera

Computer
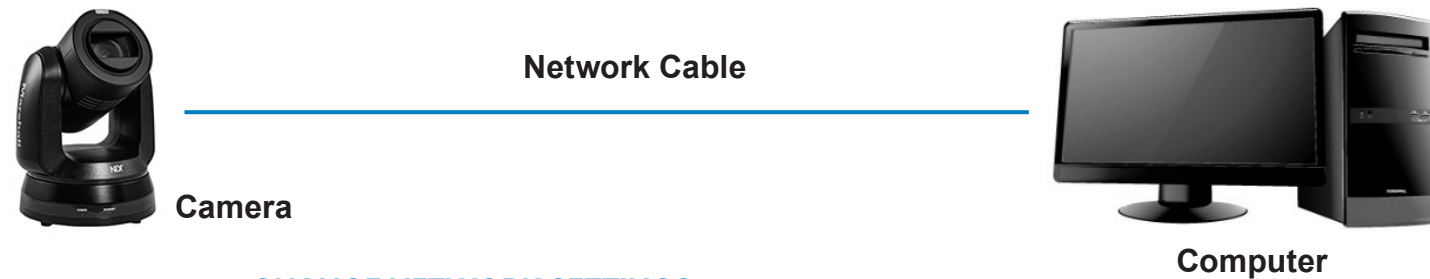
● **CHANGE NETWORK SETTINGS**

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 **6.2.9 Account Management** to change the default password

Sign in to access this site

Authorization required by http://10.1.15.44
Your connection to this site is not secure

Username   admin

Password   ••••

Sign in   Cancel

Marshall Network Camera
- Account: admin (Default)
- Password: 9999 (Default)

6.1.3 Using RTSP Player to View the Images

For CV630-ND3/ND3W, to support this function, please turn off NDI|HX (Please refer to 6.2.4 Streaming-NDI)
In addition to the browser and VMS, other free software also can be used for RTSP connection, such as VLC, Quick Time and PotPlayer

RTSP connection address formats are as follows:

- RTSP Streaming 1 => rtsp://camera IP:8554/hevc
- RTSP Streaming 2 => rtsp://camera IP:8557/h264
- RTSP Streaming 3 => rtsp://camera IP:8556/h264

Example: Open VLC software, click [Open Network Streaming], and enter a URL:
rtsp://192.168.100.150:8557/h264

6.1.4 Using NDI Studio Monitor to View the Images

This is only applicable to VC-630-ND3/ND3W.
Support when NDI|HX is on
*(Please refer to **6.2.5 Setting** - 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

Network Protocol
Please enter a network URL:
rtsp://192.168.100.150:8557/h264
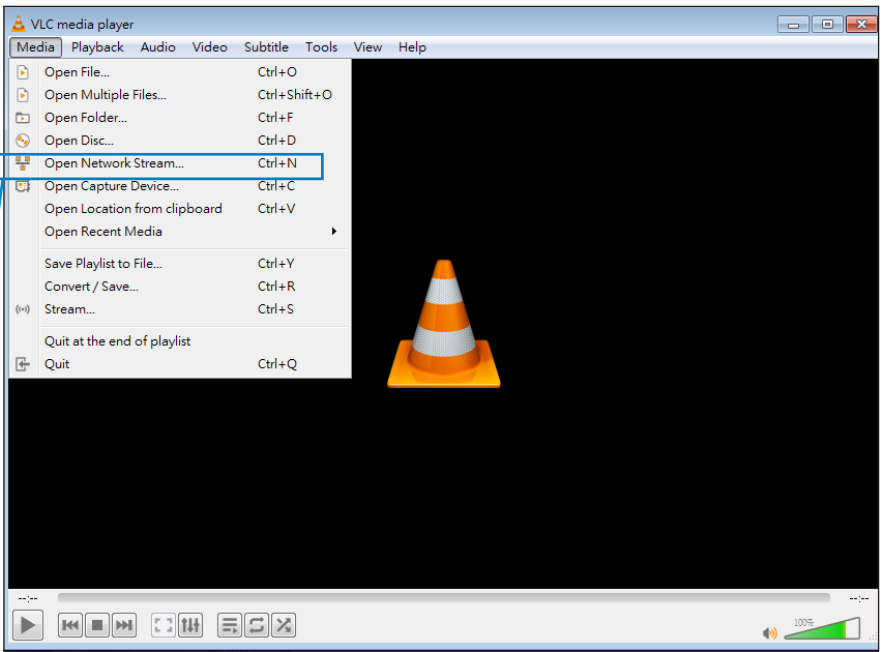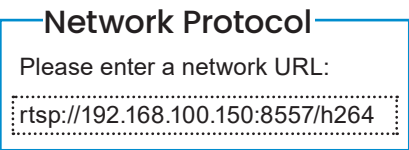
6.2 Web Page Function Description

6.2.1 Connecting to Internet

Two common connection methods are shown below:

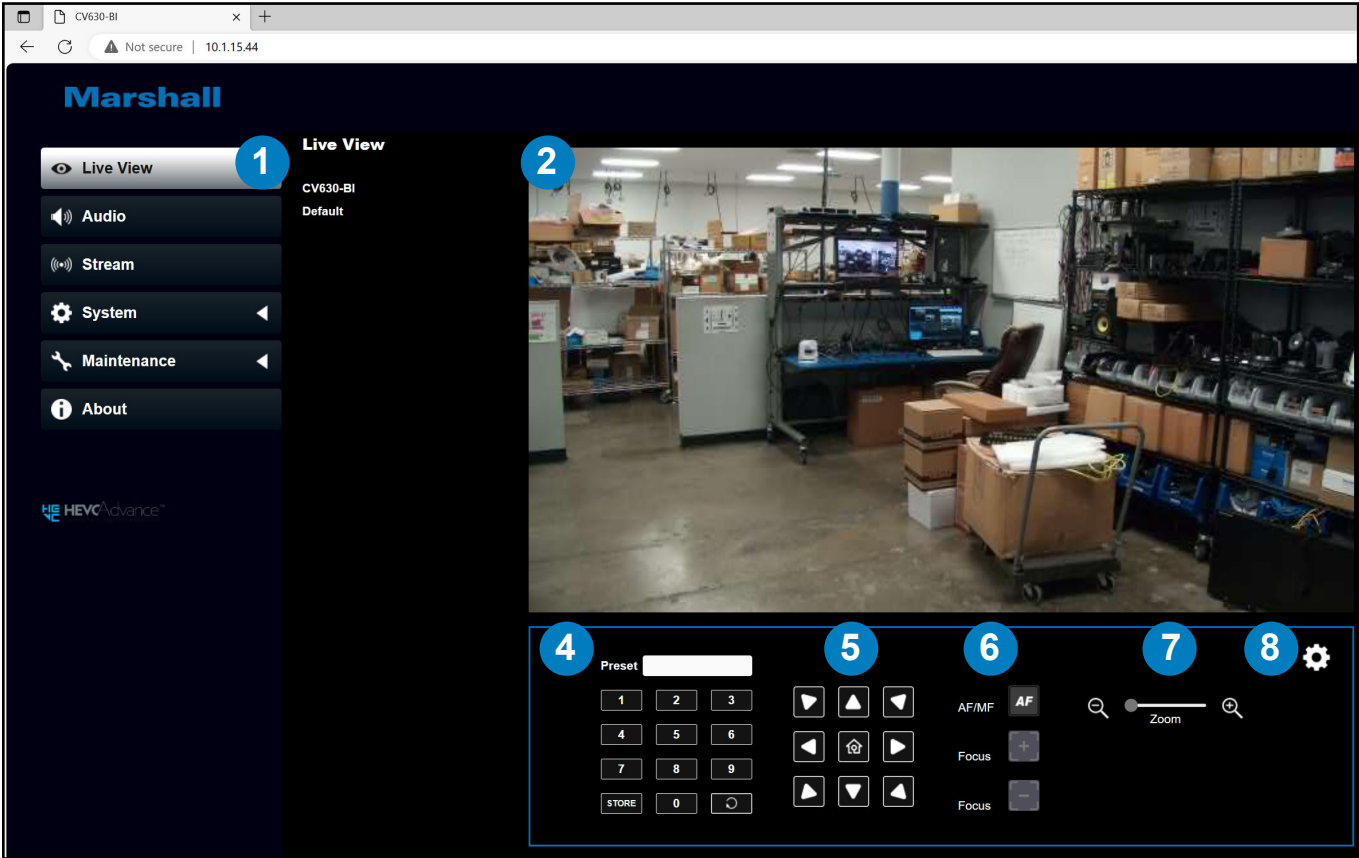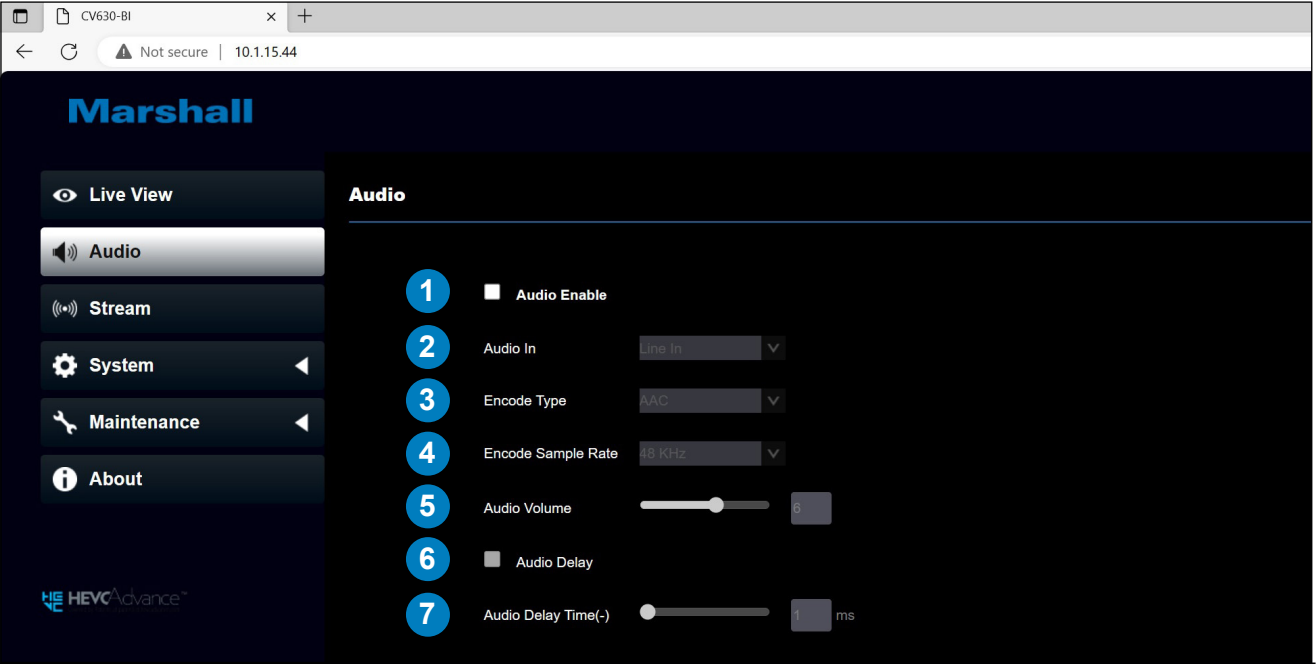| No	Item	Function Descriptions
1	Camera ID/location	Display camera ID/location Please refer to **6.2.5 System-Device**
2	Preview window	Display the screen currently captured by the camera
3	Enlarge the preview window	Zooming in/out the preview image
4	Preset setting	Select the number first and then select SAVE or LOAD **PTZ ONLY** Enable/disable PTZ Only §Disable (Default): Call the preset, execute Pan/ Tilt/ Zoom/ Focus + picture parameters setting §Enable: Call the preset, only execute Pan/Tilt/Zoom/Focus
5	Pan/Tilt setting	Adjust the Pan/Tilt position of the camera screen
6	AF/MF	Switch to Auto Focus/Manual Focus. Focus can be adjusted in Manual Focus
7	Zoom ratio	Adjust the zoom-in or zoom-out ratio via scroll bar
8	Camera Setting	Please refer to **6.2.1.1 Camera Setting** for relevant settings
9	Language	Support English/ Traditional Chinese/ Simple Chinese
10	Power button	Turn on or turn off the camera power
11	Logout	Log out the administrator screen on the website

6.2.1.1 Camera Setting

No	Item	Function Descriptions
1	Exposure	• **Mode:** Select exposure mode (Automatic/ Shutter Priority/ Aperture Priority/ Manual) • **Gain Level:** The gain limit is adjustable when the exposure mode is set to "Manual" • **WDR:** Set the level of wide dynamic range (WDR) to obtain better images • **Exposure Comp. Level:** Select exposure compensation level • **Iris Level:** The size of aperture is adjustable when the exposure mode is set to "Manual" or "Aperture Priority" • **Shutter Speed:** The shutter speed is adjustable when the exposure mode is set to "Manual" or "Shutter Priority"
2	White Balance	• **Mode:** Select the color temperature mode • **One Push Trigger:** One push color temperature is adjustable when the white balance mode is set to "One Push Trigger" • **Manual Red / Blue:** Manually adjust blue/red color temperature
3	Focus	• **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:** Check whether auto focus is enabled if there is any changes of PTZ (can be set in "Manual") **<Remark>** When PTZ Assist is enabled and PTZ control is in operation, the focus will be triggered. The focus will not be triggered when the scene changes • **Preset AF:** Set whether to perform auto focus after Preset • **Smart AF:** Turn on this function and AF will mainly focus on the face • **One Push AF:** When the manual focus mode is on, click the button to perform one auto focus

4	Mirror	

- **Mirror:** Set automatic flip mode
- **Flip:** Set the mode at which the image is turned

5	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 memory position or the 1st 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:** When activated, PTZ synchronization can be achieved by controlling with the ***Presets***

  <Remark> Refer to the Preset speed setting for this feature. The speed may be adjusted automatically due to the difference of PTZ moving range

6	Picture	

- **Picture Effect:** Set picture effect, Off/ Neg/ Black and White
- **Image Mode:** The user may customize his/ her desired image mode
- **Image Mode Load:** When no custom setting is needed, reset the picture parameters back to the factory default by selecting this item
- **2D NR:** 2D noise reduction settings
- **3D NR:** 3D noise reduction settings
- **Gamma:** Gamma Level adjustment; Adjustable when the image mode is set to Custom
- **Brightness:** Brightness adjustment of the image; Adjustable when the image mode is set to Custom
- **Hue:** Hue adjustment; Adjustable when the image mode is set to Custom
- **Saturation:** Saturation adjustment of the image; Adjustable when the image mode is set to Custom
- **Sharpness:** Adjust the sharpness of the image

6.2.2 Audio

No	Item	Function Descriptions	NDI|HX OFF	NDI|HX ON
1	Audio Enable	Turn on/ off sound	v	v
2	Audio in	Set MIC In/ Line In	v	v
3	Encode Type	AAC / G.711	v	
4	Encode Sample Rate	Set Encode sample rate ➢ 48 KHz (AAC) ➢ 44.1 KHz (AAC) ➢ 16 KHz (AAC) ➢ 16 KHz (G.711) ➢ 8 KHz (G.711)	v	
5	Audio Volume	Adjust Audio Volume	v	v
6	Audio Delay	Turn on/ off audio delay	v	
7	Audio Delay Time	Set the audio signal delay time (-1 ~ -500 ms)	v	

6.2.3 Stream-Stream

*For CV630-ND3/ND3W, to support this function, please turn **off** NDI|HX*

No	Item	Function Descriptions
1	Stream Type	Support types: MPEG-TS/RTMP/RTMPS/RTSP/SRT
	RTSP	■ Enable / Disable Multicast It is suggested to enable Multicast when the number of users online watching the image simultaneously is more than 4 ■ Enable / Disable Password Authentication • RTSP connection format can be found in *6.1.3 Using RTSP Player to View the Images* • The username/password is the same as the web login password of the camera, please refer to *6.2.10 System User* to add/ modify account information • Stream1/ 2/ 3: Please refer to *6.2.3.1 Streaming parameter setting* table below for relevant settings

MPEG-TS

■ Set MPEG-TS format
<Remark> Port must be set in the range above 1024 with a maximum value of 9999
< Remark> The following ports are used by the camera. Setting of the port may not connect correctly 1935, 8080, 8554, 8556, 8557, 9090
■ Stream1/ 2: Please refer to *6.2.3.1 Streaming parameter setting* table below for relevant settings

RTMP/ RTMPS

■ 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
<Remark> To upload to YouTube for live streaming, please refer to *6.2.2 Audio* to turn on the audio function
■ Stream 2: Please refer to *6.2.3.1 Streaming parameter setting* table below for relevant settings

Stream	NDI

Stream Type: SRT

Connect Status: SRT Disable

Connection Mode: Caller

URL: ____ Port: 0

Stream ID: ____

Latency: 120 ms

Encryption: None

Passphrase: ____

● Stream1

Codec:H.265   Bit Rate: 7000 kbps

Resolution: 1080P   Rate Control: CBR

Frame Rate: 59.94   IP Ratio: 30

◉ Stream2

Codec:H.264   Bit Rate: 7000 kbps

- The port number must be set in the range above 1024 with a maximum value of 9999

   <Remark> The following port is used by the camera. Setting of the port may not

   connect correctly

   1935,8554,8555,8556,8557
- Delay time is for 20 to 8000 microseconds. The default value is 120 microseconds
- Stream1/ 2: Please refer to *6.2.3.1 Streaming parameter setting* table below for relevant settings

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

SRT

6.2.3 Stream – NDI

For CV630-ND3/ND3W only; the setting is available when NDI|HX is set to HX2/HX3

No	Item	Function Descriptions
1	Camera ID/ Location	Displaying ID/location according to [System] > [Device] setting content

2	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
		  <Remark> 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)

3	NDI|HX	Set NDI HX 2/ HX3/ Off - Off: Support RTSP/ RTMP/ RTMPS/ MPEG-TS/ SRT, and ONVIF can find devices but cannot be used with NDI Tool - HX2: Support HX2 - HX3: Support HX3 **< Remark >** HX3 only supports 1080p 60/59.94/50 resolutions **<Remark>** ONVIF cannot find devices, and RTSP/ RTMP/ RTMPS/ MPEG-TS/ SRT streams cannot be used when HX2/ HX3 on.

4	Encode Format	Display Encode Format
5	Multicast	Multicast Setting It is suggested to enable Multicast when the number of users online watching the image simultaneously is more than 4
6	Discovery Serve	Check to enter the Server IP address
7	Apply	After the setting has been modified, select this button to apply the setting

6.2.4 System – Output

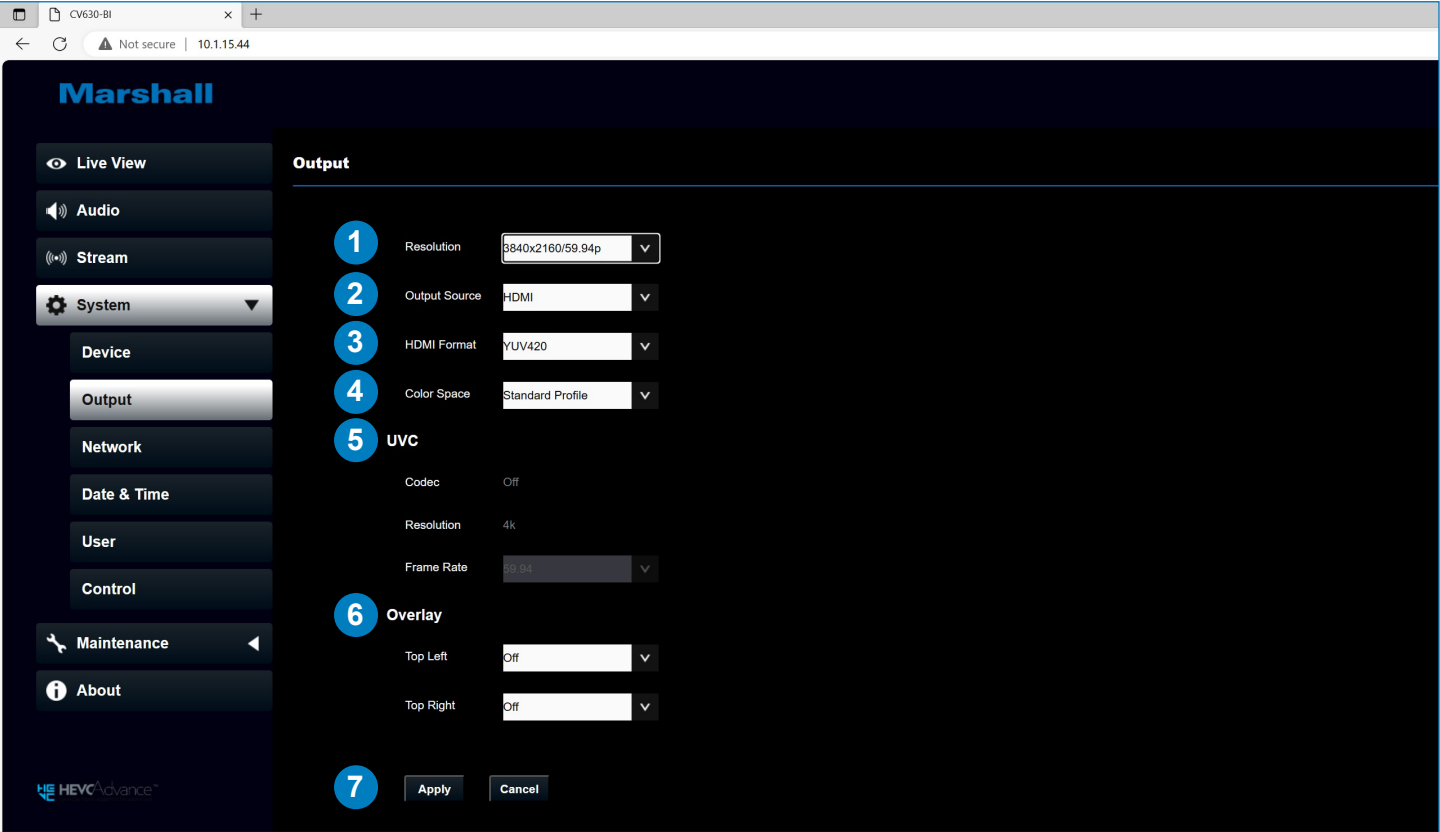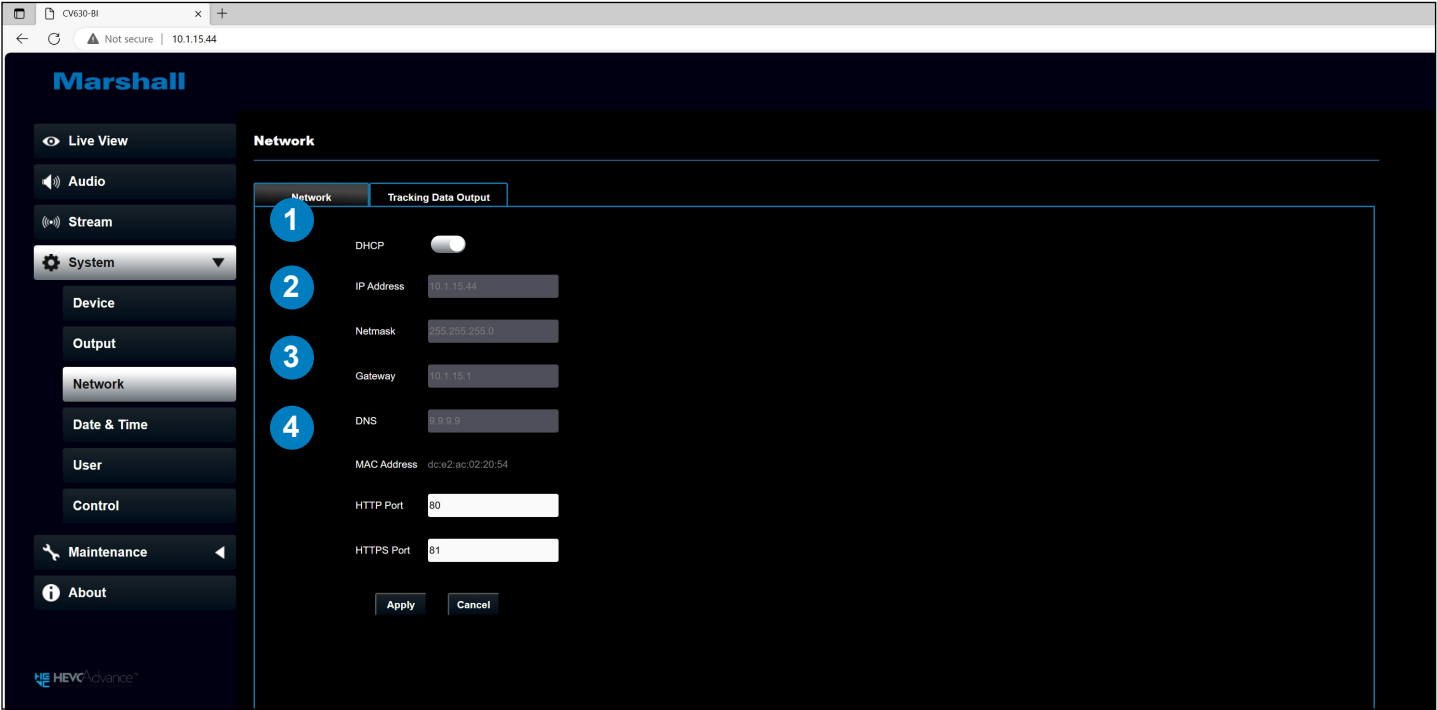| No	Item	Function Descriptions
1	Camera ID	Change camera ID here ■ Camera IDs are limited to 1 - 12 characters ■ Please mix uppercase and lowercase letters or numbers for characters. Special symbols such as **"/"** and **"space"** cannot be used **<Remark>** Modifying this field will modify the Onvif device name synchronously
2	Location	Modify the location of the camera, such as Room 1 ■ Camera location is limited to 1 - 11 characters ■ Please mix uppercase and lowercase letters or numbers for characters. Special symbols such as "/" and "space" cannot be used **< Remark >** Modifying this field will modify the Onvif device location synchronously
3	Apply	After the setting has been modified, select this button to apply the setting
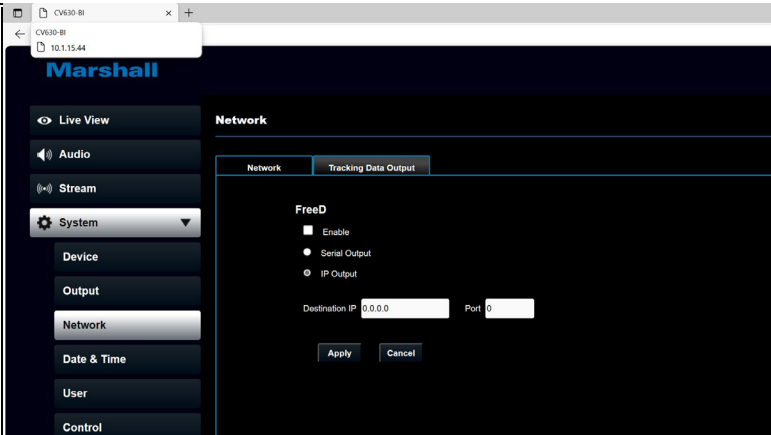
6.2.5 System – Output

No	Item	Function Descriptions
1	Resolution	Set the resolution of the camera After switching to the resolution, the camera will restart. Please refresh the browser
2	Output Source	According to the output resolution, you can select HDMI+NDI, HDMI + Streaming or HDMI + UVC output **<Remark>** When it is set to UVC output, 3840 x 2160 30p or lower resolutions are supported **< Remark >** UVC does not support 1080i.
3	HDMI Format	Select YUV422 / YUV420 / RGB **<Remark>** When it is set to YUV420, 3840 x 2160 60p/ 59.94p/ 50p resolutions are supported
4	Color Space	Set the standard for color gamut Standard Profile/ REC.709/ BT.2020

5	UVC	Available when **_System-Output-Output Source_** is set to HDMI+UVC
		n **Encode Format**:
		  Ø3840x2160 29.97 / 25 fps: H.264
		  ØLess than 1080p (inclusive): H.264/MJPEG
		n Resolution: It is shown based on **_System-Output-Output Source_**
		Frame Rate: 3840 x 2160 can only select the highest 29.97 fps

6	Overlay	Set the stream to display "date and time" or "custom content" and to display location
7	Apply/ Cancel	Apply/ Cancel Setting

6.2.6 System – Network

No	Item	Function Descriptions
1	DHCP	Network setting of camera. Change of setting is available when DHCP function is closed.
2	HTTP Port	Set HTTP port. The default Port value is 80
3	HTTPS Port	Set HTTPS port. The default Port value is 81
4	Tracking Data Output	When enabled, PTZ position information can be reported when the camera moves 1. Serial Output: Please set the protocol to VISCA and the baud rate to 38400 2. IP output: Set the IP address and port 3. The port numbers should be > 1024. 1935, 8555, 8556, 8557 cannot be used. **<Remark>** When Tracking Data Output is enabled, the camera performance may be affected.

6.2.7 System – Date & Time
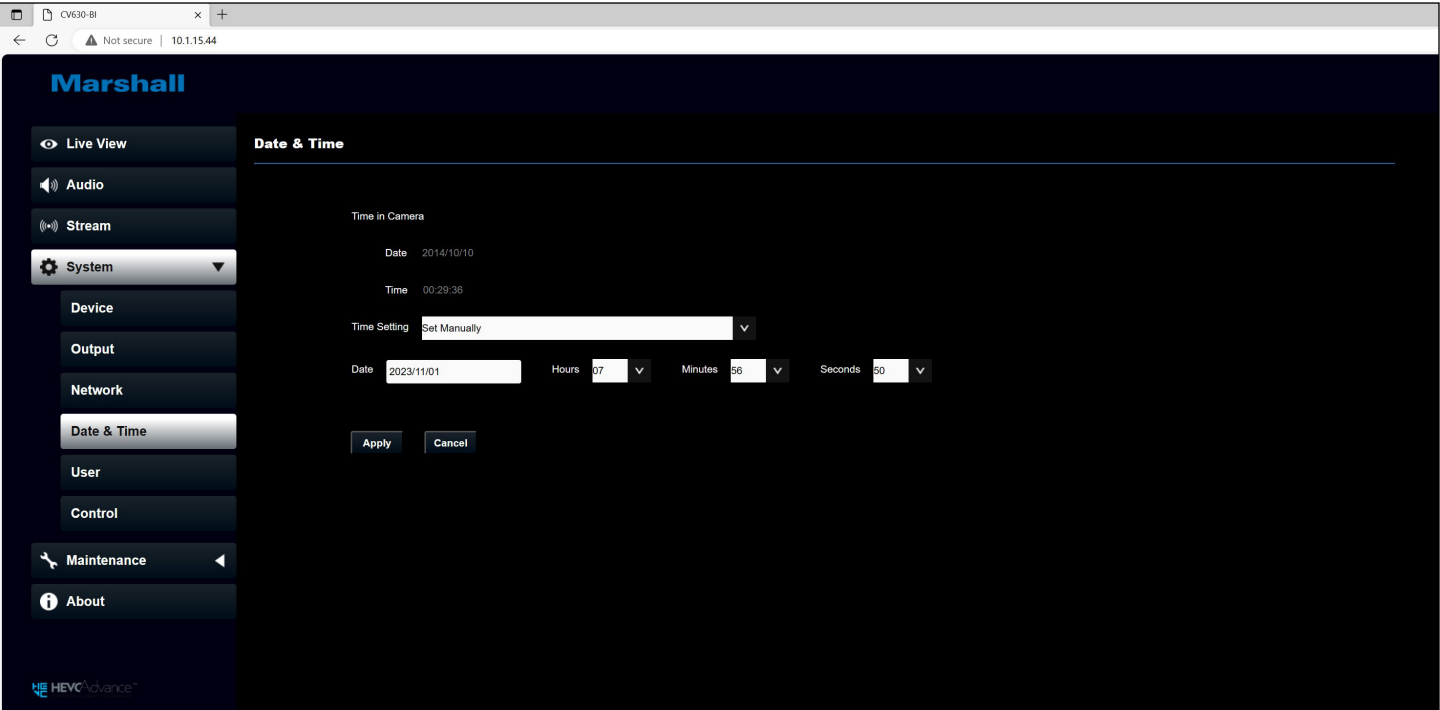
Function Descriptions
Enable/disable 802.1x protocol, and configure settings when enabled **<Remark>** The router must support 802.1x protocol to enable this feature

6.2.8 System – User
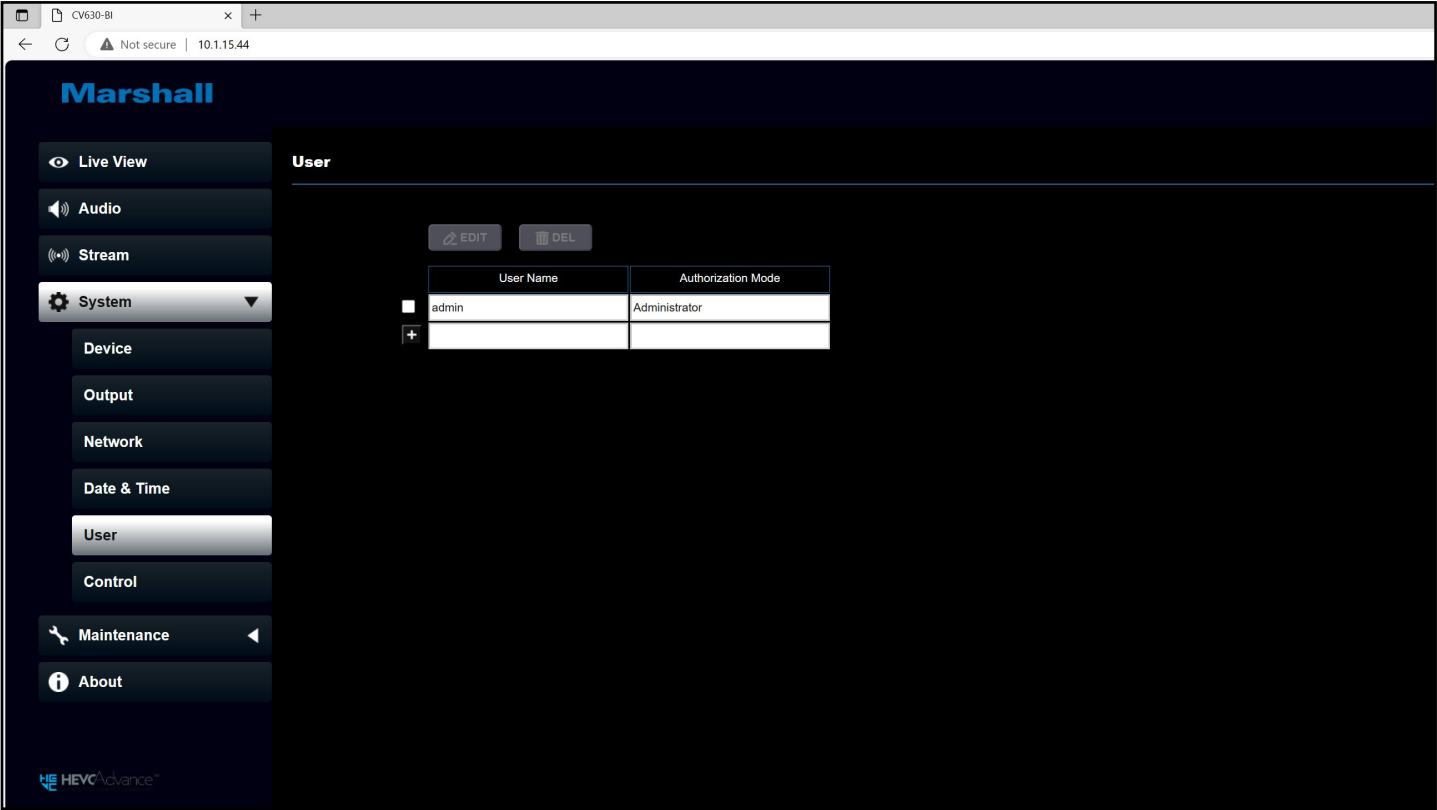
Function Descriptions
Add/ Modify/ Delete user account

n   Supporting 4 ~ 32 characters for username and password

n   Please mix uppercase and lowercase letters or numbers for characters. Special symbols or the underlined cannot be used

n   Authentication Mode: 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

<Remark> When Factory Reset is executed, it will clear the user's data.

6.2.9 System – Control

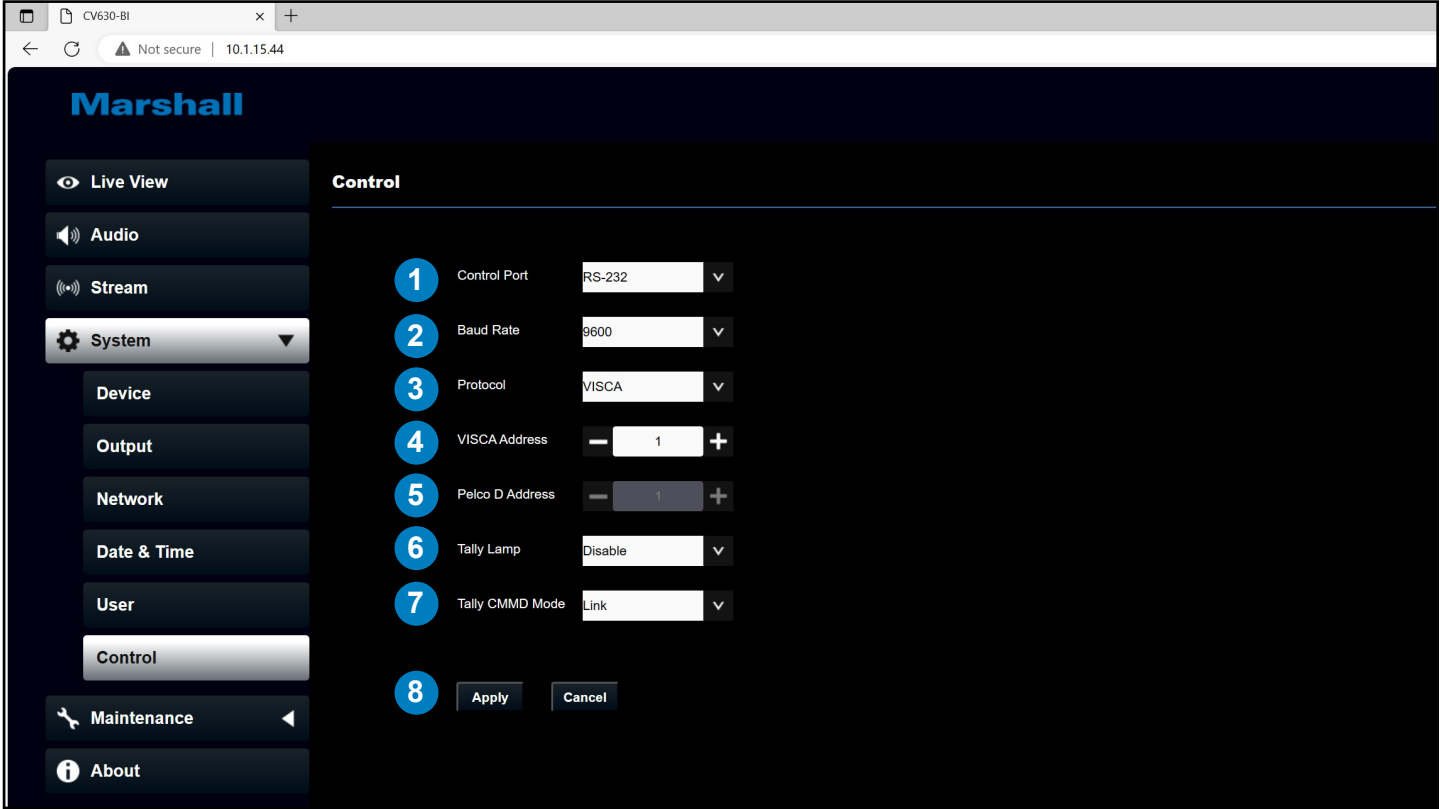| No	Item	Function Descriptions
1	Control Port	RS-232 / RS-422
2	Baud Rate	Choose the transmission speed of the control signal 9600/ 38400
3	Protocol	Support VISCA/ Pelco D Protocol
4	VISCA Address	The camera ID address 0 ~ 7 can be assigned.
5	Pelco D Address	The camera ID address 1 ~ 255 can be assigned.
6	Tally Lamp	Turn On/ Off Tally Lamp
7	Tally CMMD Mode	Set whether the indicator is linked with RS232 command Ø Normal (Not linked): The indicator light status 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 - When the indicator light is off will not trigger the indicator light ØLink: - When the indicator light is on, the default mode is red light - When the indicator light is off will turn on the indicator light
8	Apply/ Cancel	Apply/ Cancel Setting

6.2.10 – Maintenance
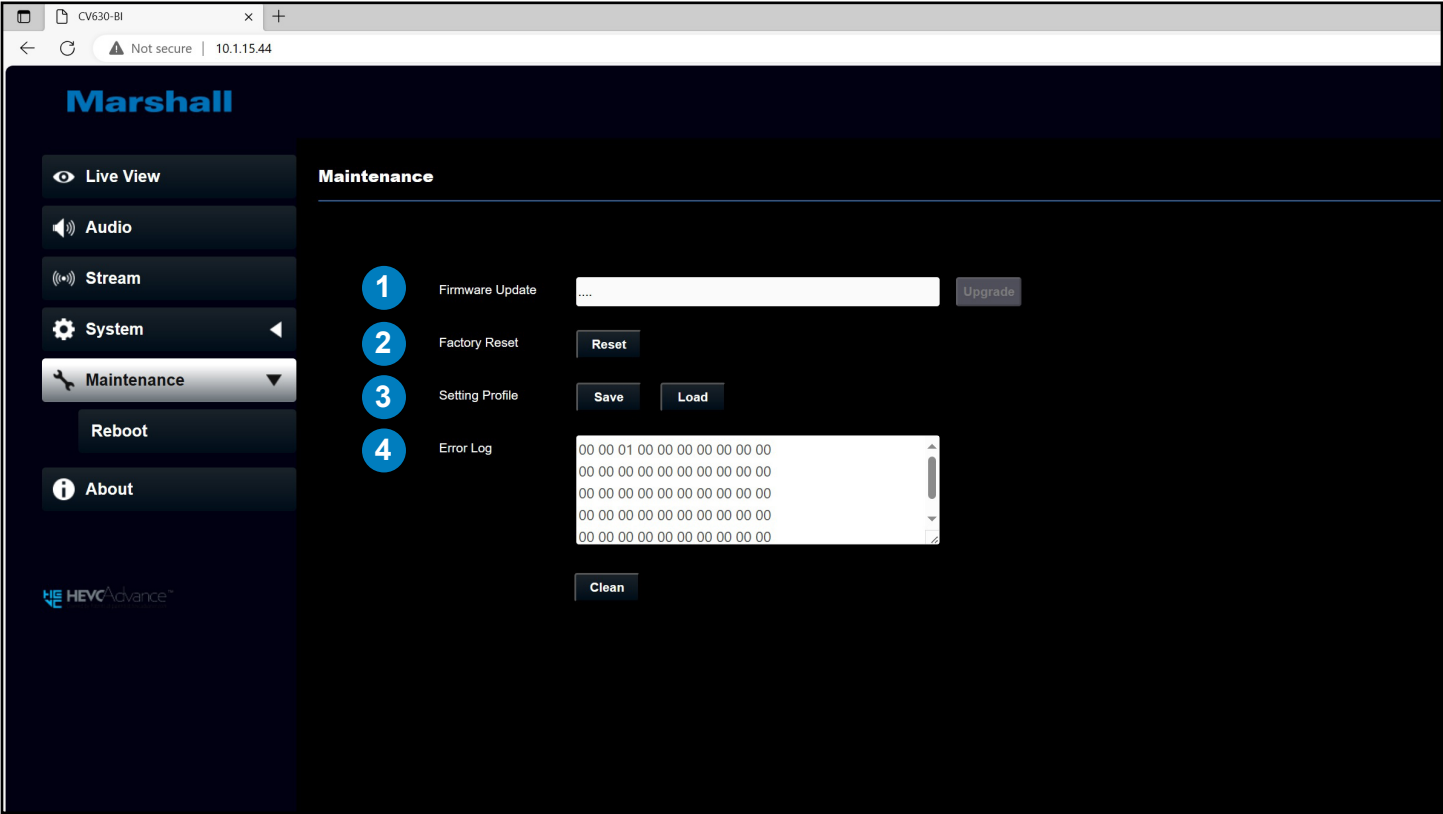
No	Item	Function Descriptions
1	Firmware Update	Click [….] to select the firmware file, and click [Upgrade] to update the firmware **<Remark>** Update takes about 2 - 3 minutes **<Remark>** Please do not operate or turn off the power of the device during the update to avoid firmware update failure
2	Factory Reset	Select the reset button to resume the factory default setting as the web page setting
3	Setting Profile	The web page setting parameters can be exported from the computer and imported/applied to another camera
4	Error Log	If the camera encounters errors, an error code log will be established **<Remark>** When an error code appears, the user may try to click **Clean** to confirm if the error will repeat itself

6.2.11 Maintenance – Reboot
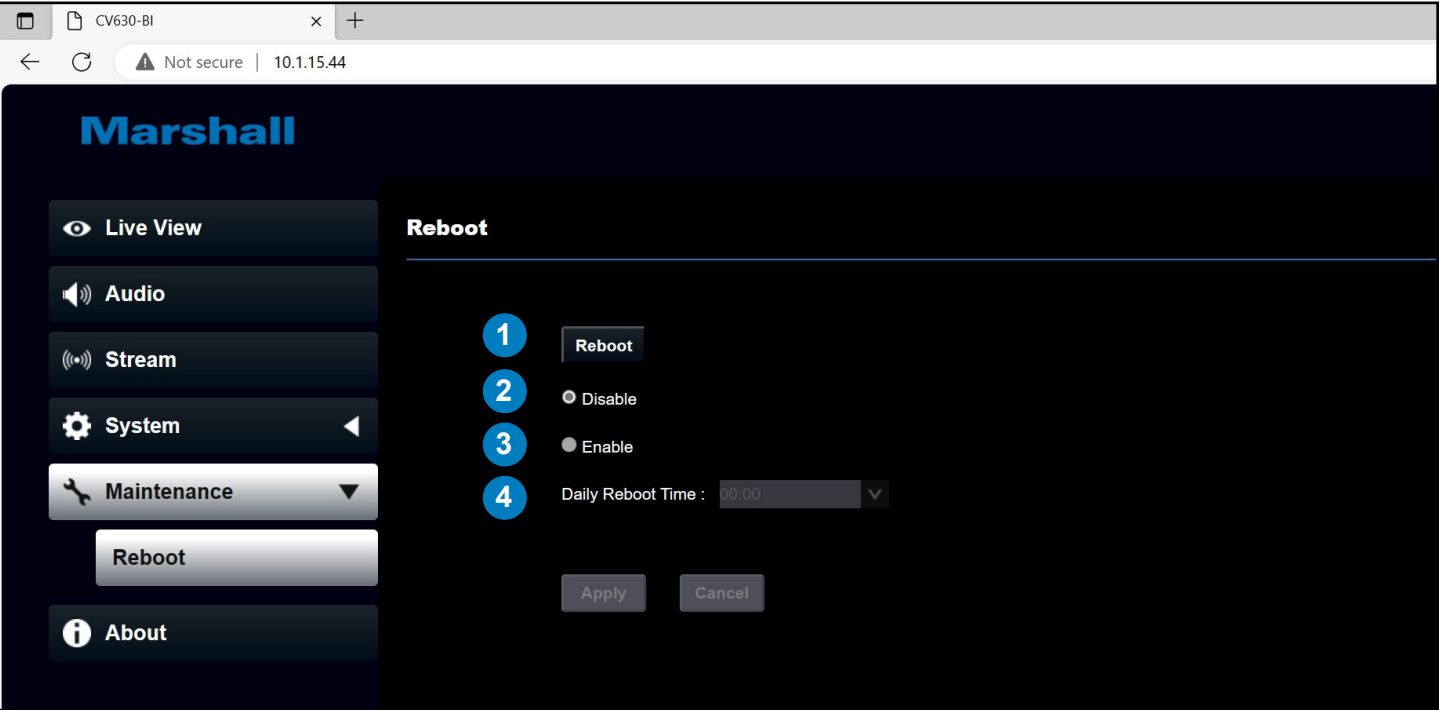
No	Item	Function Descriptions
1	Reboot	Reboot immediately
2	Disable	Disable the reboot settings
3	Daily Reboot	Set the daily reboot time **<Remark>** Please go to *6.2.9 System –Date & Time* to complete the SNTP server synchronization to set daily reboot
4	Timing Reboot	Set the timing reboot time

6.2.12 – About
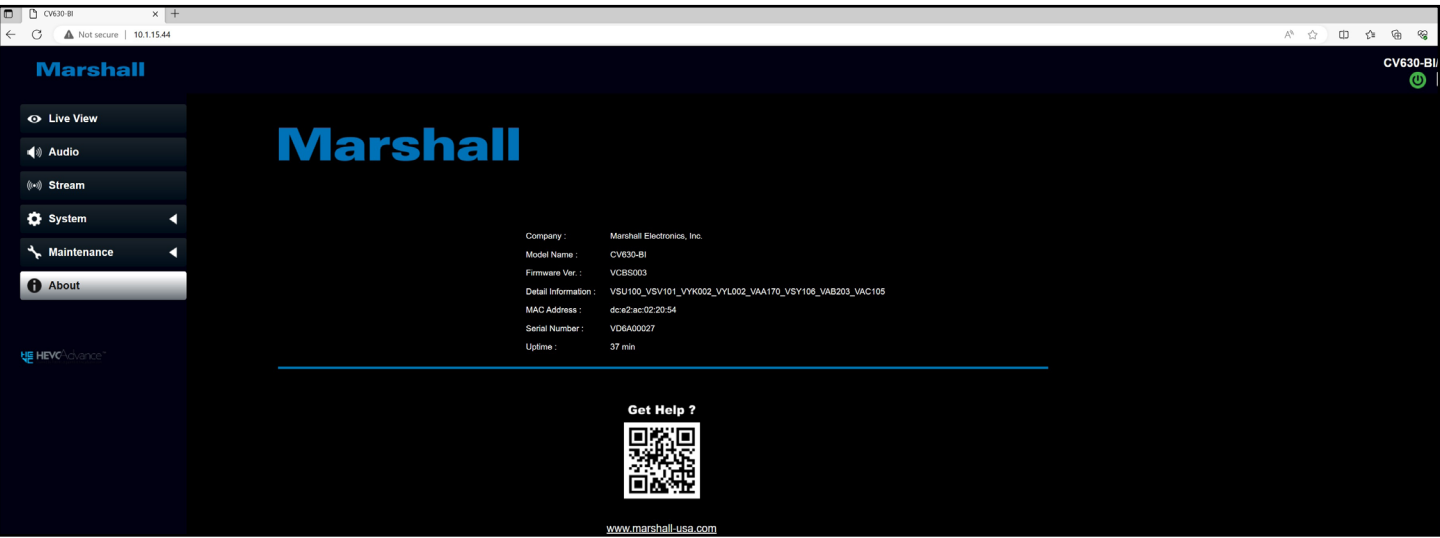
Function Descriptions
Display the firmware version, serial number, running time and other related information of the camera
For technical support, please scan the QRcode at the bottom right for assistance

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	
9		25	
A	1920x1080i	59.94	
B		50	
C	Reserved	Reserved	
D			
E			
F			

7.2 IR Select

When using the remote control, please make sure the settings of IR SELECT and the Camera Select of the remote control are consistent

ID	Setting
1	
2	
3	

Chapter 8: Troubleshooting

This chapter describes problems you may encounter while using CV630-BI/WI/ND3/ND3W. If you have questions, please refer to related chapters and follow all the suggested solutions. If the problem still occurs, 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 n 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-A62N, 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. n **Setting Menu:** *System - Tally Lamp* n **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 MEM* from the setting menu or web page n **Setting Menu:** *System - Initial Position* n **Web page:** *Live View-Setting – Camera Setting* ⚙ *- Pan Tilt Zoom - Initial Position*

Marshall

Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Manufacturer: Marshall Electronics Inc.

Product Name: CV630-BI/WI/ND3/ND3W

Model Number: 4K PTZ Video Camera

Responsible Party – U.S. Contact Information

Supplier: Marshall Electronics Inc..

20608 Madrona Avenue, Torrance, CA 90503

e-mail: support@marshall-usa.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.

Warranty

For Warranty information please refer to Marshall website page:
https:marshall-usa.com/company/warranty.php