Marshall

Broadcast A/V Division

CV730-NDI
CV730-NDIW

30X UHD60 PTZ Camera with NDI®|HX

User Manual

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Understanding Quick setup of CV730-NDI with NDI®|HX

This section explains how to quickly configure the Marshall **CV730-NDI** camera with NDI®|HX.

It also explains how to update the device, and where you can find additional NDI software to extend your workflow. Complete NDI® Tools can be found here: https://www.ndi.tv/tools/

Here you will choose whether you will require NDI® Tools for Windows or Mac and download.

After completing this short section, you will be all set to begin using your new NDI®|HX camera.

OVERVIEW: Unlike typical cameras, CV730-NDI leverages the easy plug-n-play benefits of the NDI-based IP workflow supported by leading video software and hardware developers around the globe.

GETTING READY: Your new CV730-NDI uses the NDI®|HX protocol for audio/video transmission, and more. Your first step will be to install NDI|HX drivers if using a TriCaster, or Microsoft HEVC decode on non-TriCaster systems, as appropriate for your computer platform or device.

1. Navigate to ndi.tv/formats in your web browser and follow the relevant directions to download and install the drivers for your computer platform. NOTE: The NDI|HX driver also installs NewTek's NDI Studio Monitor application, which will not only display the output of your camera but also provide easy access to its settings. Also contains built-in PTZ controls.
2. NDI Studio Monitor and other useful NDI tools can be found here: https://www.ndi.tv/tools/
3. Then simply plug the Ethernet (NDI) port to same Network your computer or Newtek equipment are plugged into and off you go.

NOTE: The End User License Agreement under which you use the NDI|HX driver specifies that "you may use up to five (5), and no more than five, copies on separate machines at one time."

OPTIONAL – for Microsoft Windows® users, downloading and installing the NewTek NDI® Tools pack, available at no cost from ndi.tv/tools/, the download pack will provide learning tools and utilities to maximize your NDI®|HX experience.

FINAL NOTE – if you are experience any problems with the NDI® platform, NDI® software, NDI® drivers please contact Newtek for technical assistance or join the NDI community to review HOW-TO videos, social media, forums, blogs: www.ndi.tv/community

If you are having a hardware problem, and need assistance please contact Marshall Electronics.

Marshall Customer Support

Toll Free: 800-800-6608 or 310-333-0606

Email: support@marshall-usa.com

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.
1.2 Do not place this product in tilted position.
1.3 Do not place the product on an unstable trolley, stand or table.
1.4 Do not use this product near water or source of heat.
1.5 Use attachments only as recommended.
1.6 Use the type of power source indicated on this product. If you are not sure of the type of power available, consult your distributor or local electricity company for advice.
1.7 Always take the following precautions when handling the plug. Failure to do so may result in sparks or fire:
- Ensure the plug is free of dust before inserting it into a socket.
- Ensure that the plug is inserted into the socket securely.

1.8 Do not overload wall sockets, extension cords or multi-way plug boards as this may cause fire or electric shock.
1.9 Do not block the slots and openings in the case of this product. They provide ventilation and prevent this product from overheating.
1.10 Except as specifically instructed in this User Manual, do not open or remove covers, otherwise it may expose you to dangerous voltages and other hazards. Refer all servicing to licensed service personnel.
1.11 Unplug this 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 Never push objects of any kind through cabinet slots. Never allow liquid of any kind to spill into the product.
3.3 Unplug this product during thunderstorms or if it is not going to be used for an extended period.
3.4 Do not place this product or accessories on top of vibrating equipment or heated objects.

4 Cleaning

4.1 Unplug all the cables before cleaning. Use a damp cloth for cleaning. Do not use liquid or aerosol cleaners.

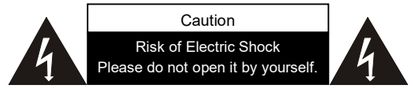
5 Remote control (if the accessories are equipped with remote control)

5.1 Using an incorrect battery type in the remote control may result in breakdown. Follow local instructions on how to dispose of used batteries.

■ **Precautions**

Warning: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

If the UHD camera will not be used for an extended time, unplug it from the power socket.



Caution: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to licensed service personnel.			
	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 UHD Camera has been tested and found to comply with the limits for a Class A computer device, pursuant to Article 15-J of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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.

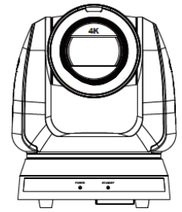
Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe A prescrites dans la norme sur le material brouilleur: “Appareils Numeriques,” NMB-003 edictee par l’Industrie.

■ **EN55032 (CE Radiation) Warning**

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

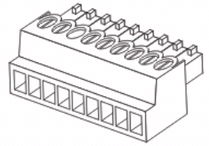
Chapter 2 Package Contents

CV730-NDI

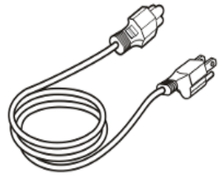


Remote Control

RS-422 Connector

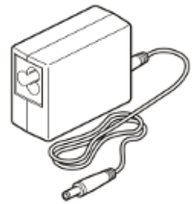


Power Cord

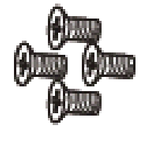


Appearance may vary depending on country/region

Power Adapter

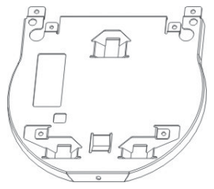


M3 Screws

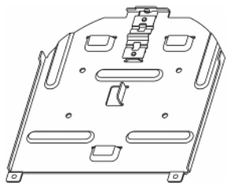


Silver x8 / Black x2

Metal Plate A



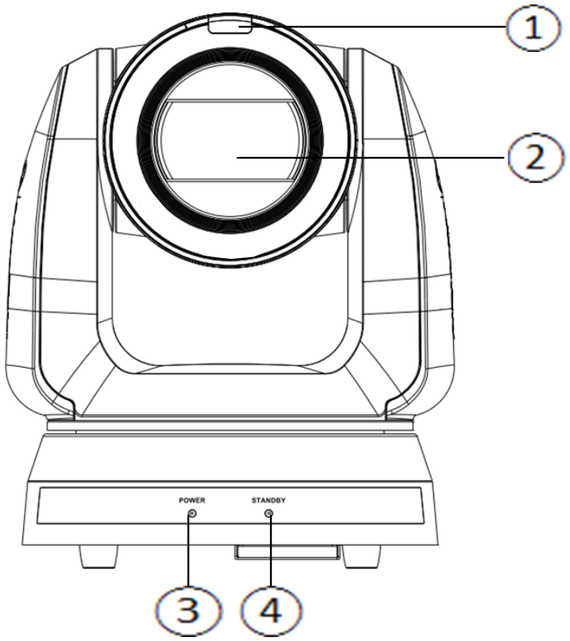
Metal Plate B



Chapter 3 Function Introduction

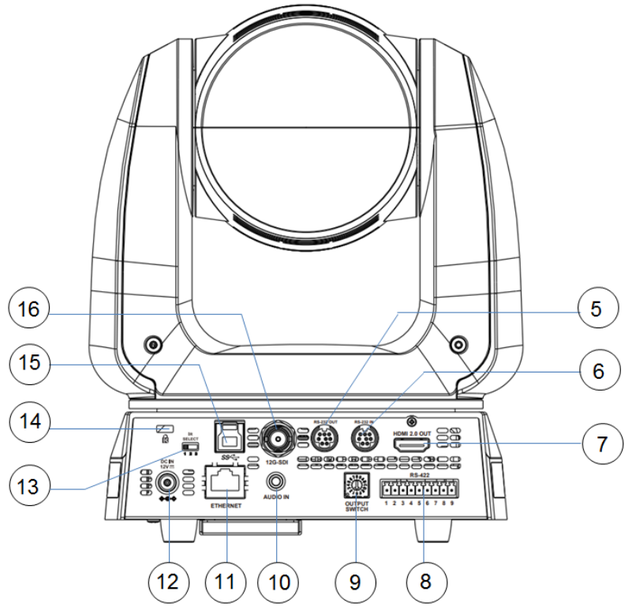
3.1 I/O functions Introduction

3.1.1 Front View



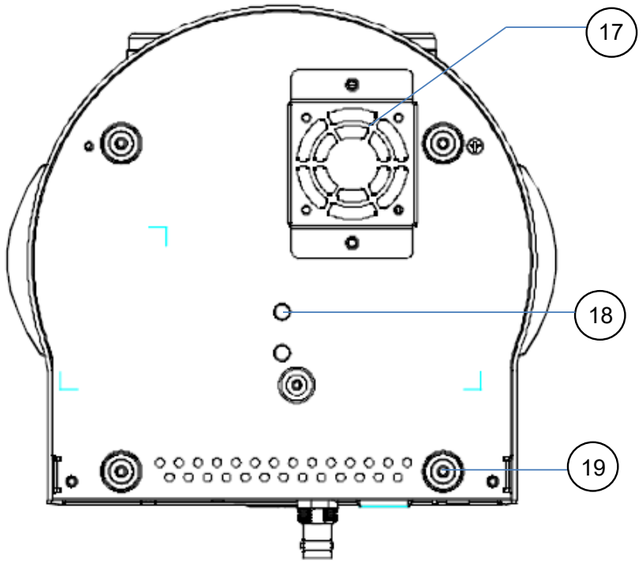
NO.	Item	Function Descriptions
1.	Tally Lamp	Display the Tally Lamp status of the camera
2.	Camera lens	30x UHD camera lens
3.	Power LED indicator	Display the status of the camera, please refer to 3.2 Description of LED indicator
4.	Standby LED indicator	Display the status of the camera, please refer to 3.2 Description of LED indicator

3.1.2 Back View



NO.	Item	Function Descriptions
5.	RS-232 output	RS-232 output port, at most 7 cameras can be connected in a serial connection
6.	RS-232 input	RS-232 input port, at most 7 cameras can be connected in a serial connection
7.	HDMI 2.0 output	HDMI 2.0 output (Audio output supported)
8.	RS-422 port	RS-422 connecting port, at most 7 cameras can be connected in a serial connection
9.	OUTPUT SWITCH	Adjust the resolution setting. The default is 3840 x 2160/59.94p
10.	Audio input	Support Line In/Mic In
11.	Network port	Network port, supporting routers or hubs of PoE++ (IEEE802.3BT)
12.	DC 12 V power connector	AC power supply connecting port
13.	IR SELECT	The remote control ID setting is only controlled after corresponding to the Camera Select on the remote control
14.	Kensington lock hole	Safety lock slot
15.	USB 3.0 port	A reserved hole. The current firmware does not support this function. Please refer to the firmware update information on the webpage for the official release schedule.
16.	12G-SDI output	12G-SDI output (Audio output supported)

3.1.3 Bottom



NO.	Item	Function Descriptions
17.	Mute cooling fan	The cooling fan automatically controls its rotation speed and performs cooling in cope with the operation temperature of the machine
18.	Tripod deck lock hole	The camera is mounted on a (specification) 1/4” - 20 UNC tripod deck
19.	Rotatable foot pad	When using the metal plates of accessories, remove 4 pieces of rotatable food pads on the bottom by rotating counterclockwise, and then install the mental plates

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 Lamp Function Description

3.3.1 Tally Lamp function may be enabled through the control of RS-232 command. The setting method is as follows:

Tally Mode: 8x 01 7E 01 0A 01 0p FF

p = 0: OFF

p = 4: Red light (half-brightness)

p = 5: Red light (full-brightness)

p = 6: Green light (full-brightness)

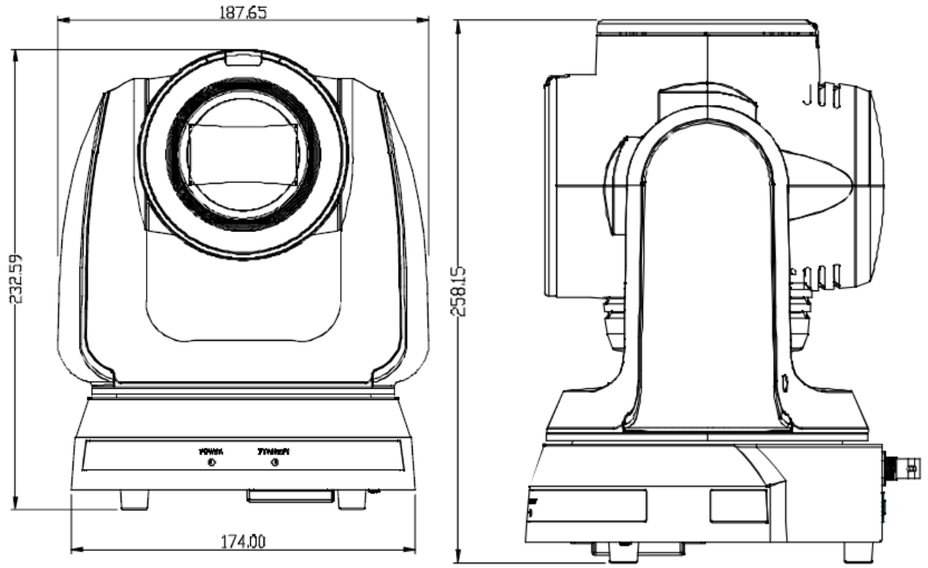
p = 7: Orange light (full-brightness)

Chapter 4 Instruction for installation

4.1 Camera dimension:

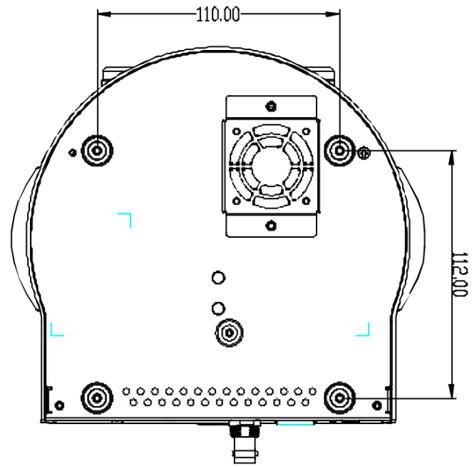
4.1.1.1 Camera front view and side view

- Length x width x height: 232 x 188 x 189 mm
- Weight: 3.0Kg (excluding the metal plate)



4.1.1.2 Camera base

The camera base has tripod mount lock holes and can be installed on the tripod deck of a standard specification 1/4”-20 UNC.



4.2 Preparation before installation

Installation and connection of CV730-NDI UHD 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.

4.2.1 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.

4.2.2 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.

4.2.3 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.

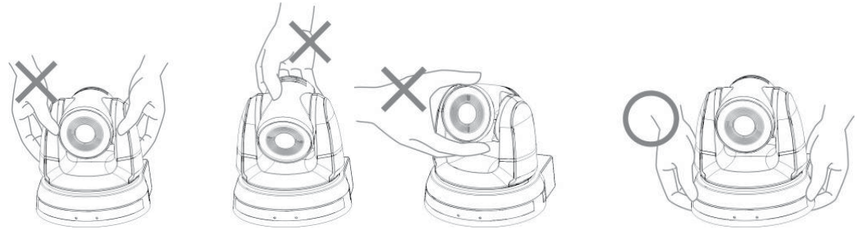
4.1.1.2 Confirm whether the camera is set at a proper distance from other light sources.

4.3 Instruction for installation

4.3.1 I would like to install camera on the desk

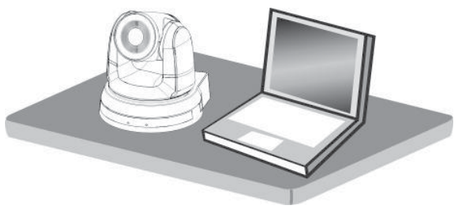
4.3.1.1 Precautions for installation

- ◆ 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



4.3.1.2 Installation steps

1. Place the camera on a flat desk directly to ensure the normal vertical and horizontal operation of the machine



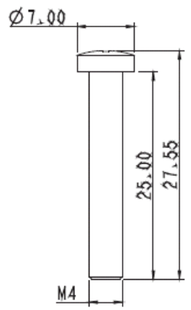
4.3.2 I would like to install the camera on the ceiling

4.3.2.1 Prepare for the parts and equipment required during the installation

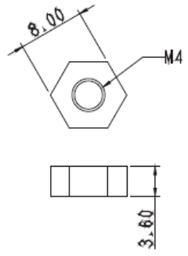
1. Accessories in the box (metal plates A, B, M3 screw silver x 8, black x 2)
2. Screw for locking on ceiling mounted hanger x 4
3. Drilling machine, screwdriver, ladder

4.3.2.2 Metal Plate size diagram

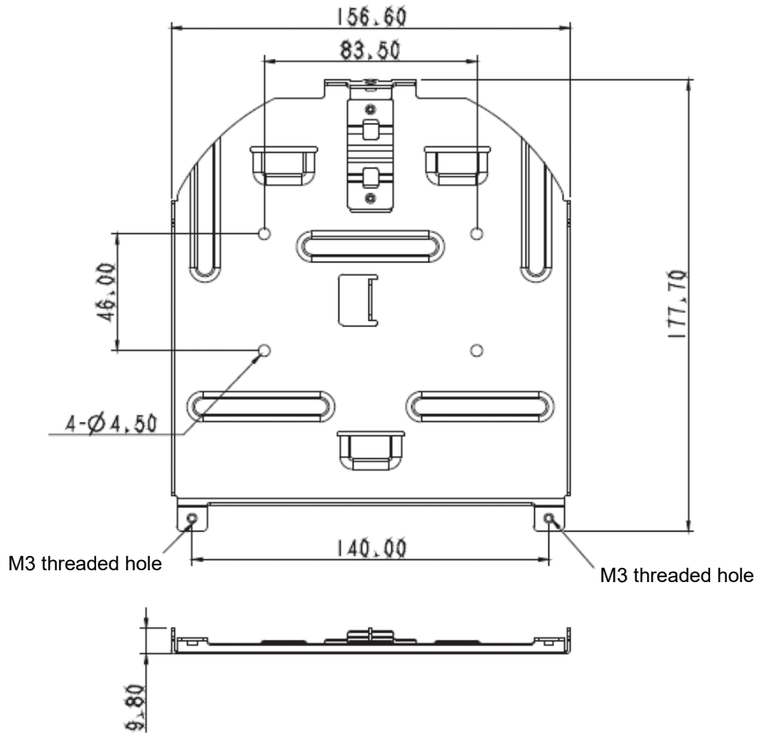
- Metal plate B - ceiling side



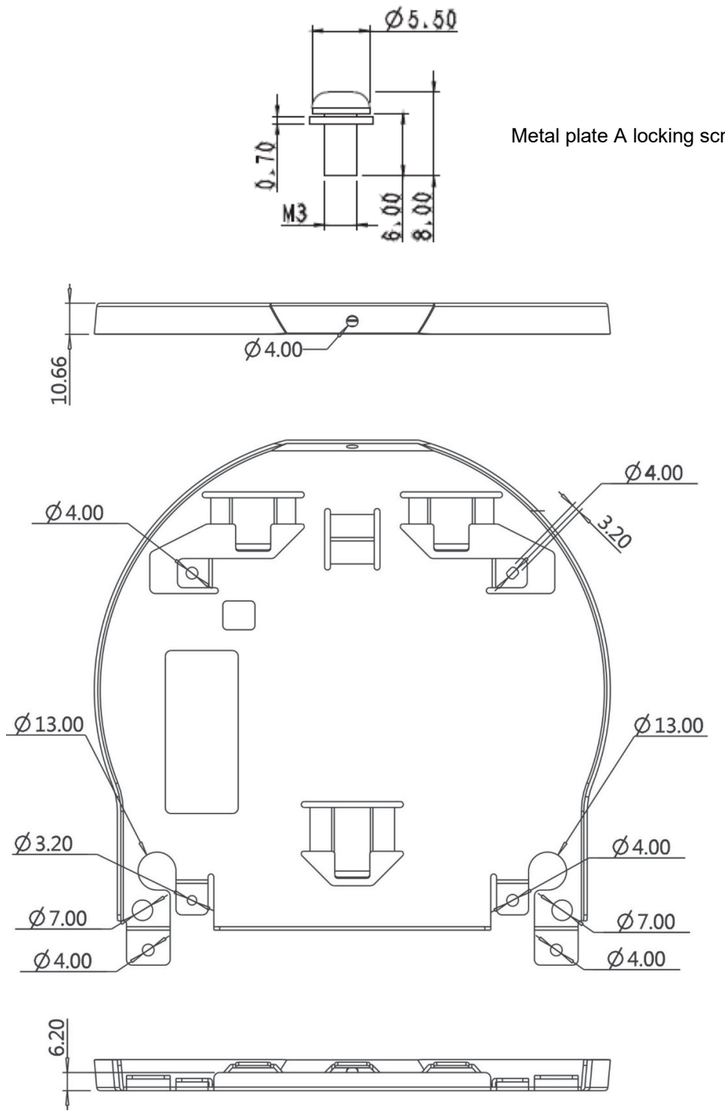
Metal plate B locking screw



Metal plate B locking bolt

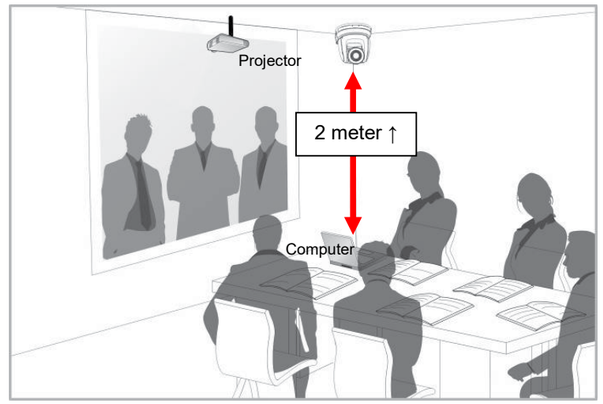


- Metal plate A - machine side



4.3.2.3 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 more than 2 meters away from the object to be captured. Please adjust for a best distance according to the magnification of the lens

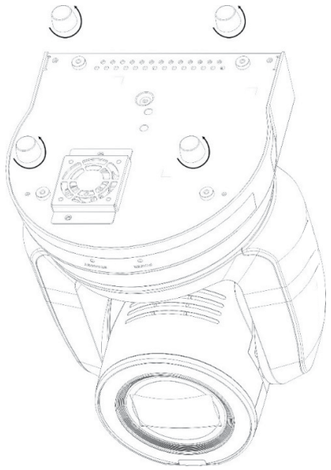


3. The machine (including metal plates) is weighed at about 3 kg. If it is to be installed on the ceiling, please use the hanger that has obtained UL security approval to prevent the machine from falling.
4. Please check whether the camera is installed securely on a regular basis.
5. Please clean the cooling fan located at the bottom to ensure the good heat dissipation effect of the machine on a regular basis.

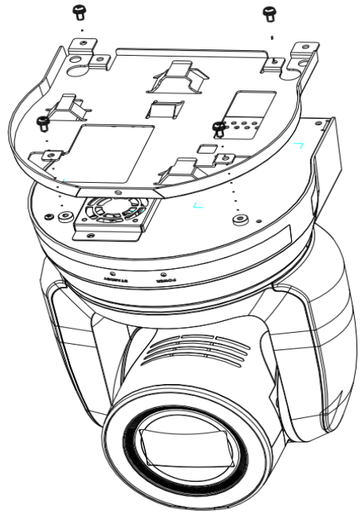
4.3.2.4 Installation steps

1. Remove 4 pieces of foot pads on the bottom of the camera by rotating the foot pads counterclockwise.

<Remark>Please keep the foot pads properly after removal and store them for future use.



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

<Caution>:

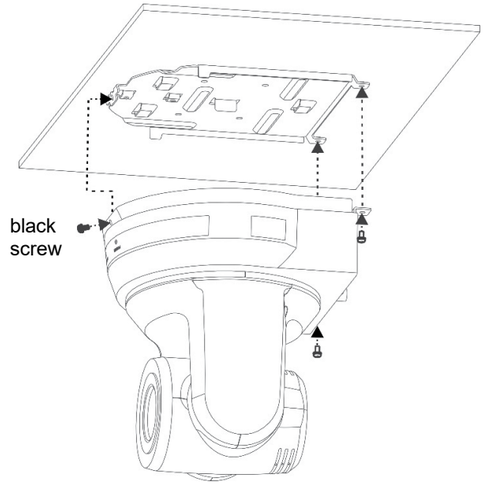
(1) Please use the hanger that has obtained UL security approval

(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



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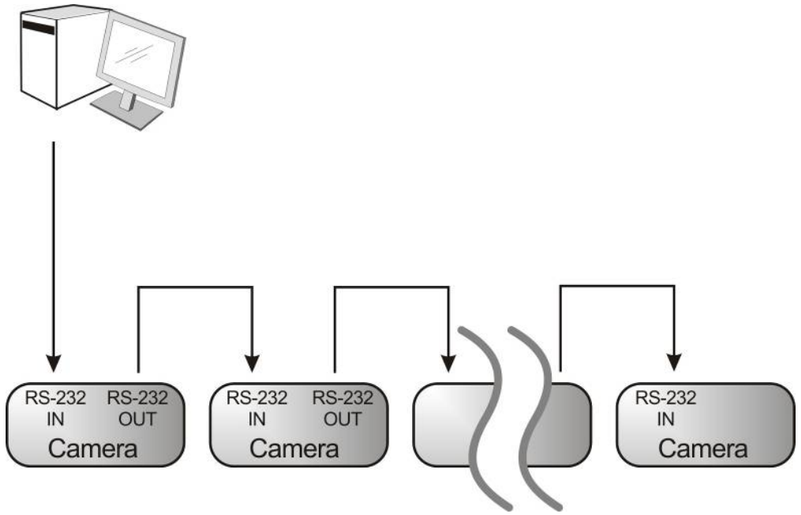
4.3.2.5 How to remove

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

4.4 Connecting devices

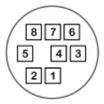
4.4.1 Connecting RS-232

With RS-232 in/out, at most 7 Marshall cameras can be connected.



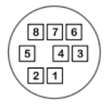
■ RS-232 pins definition instructions

▼ RS-232 IN Pins Instructions



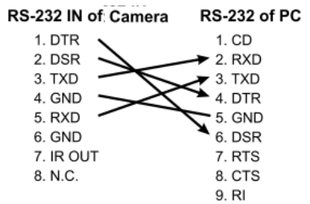
NO	Pins	Signals
1	DTR	Data Transmission Reade
2	DSR	Data Set Reade
3	TXD	Transmit Data
4	GND	Ground
5	RXD	Receive Data
6	GND	Ground
7	IR OUT	IR Commander Signal
8	N.C.	No Connection

▼ RS-232 OUT Pins Instructions

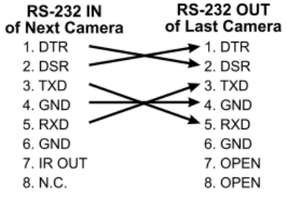


NO	Pins	Signals
1	DTR	Data Transmission Reade
2	DSR	Data Set Reade
3	TXD	Transmit Data
4	GND	Ground
5	RXD	Receive Data
6	GND	Ground
7	OPEN	Reserved
8	OPEN	Reserved

▼ RS-232 Connection Instructions



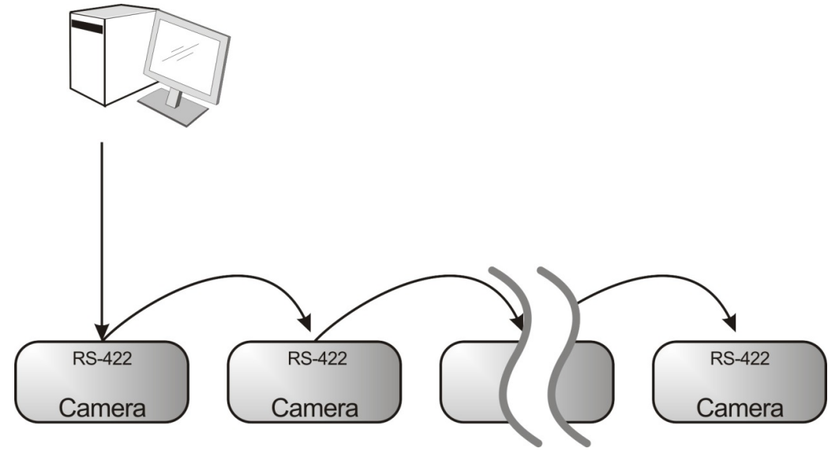
▼ RS-232 Connection Instructions



4.4.2 Connecting RS-422

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

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



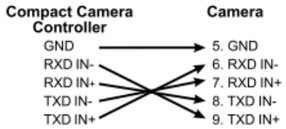
■ RS-422 pins definition instructions

▼ RS-422 Pins Instructions

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+

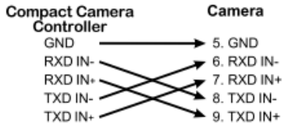
▼ RS-422 Connection Instructions

—Applicable to
Marshall Compact Camera Controller



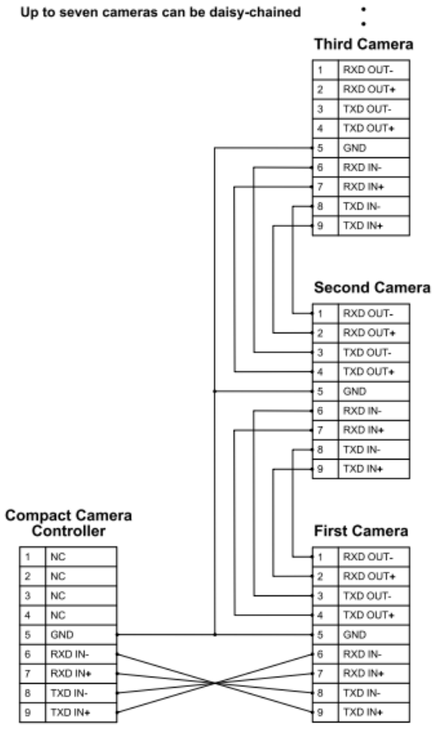
▼ RS-422 Connection Instructions

—Applicable to
SONY Compact Camera Controller



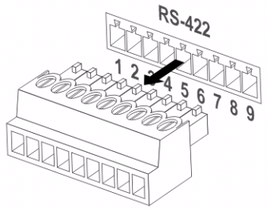
▼ RS-422 Serial Connection

Up to seven cameras can be daisy-chained

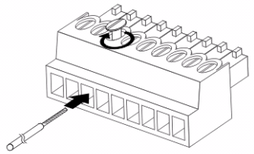


■ RS-422 connection instructions

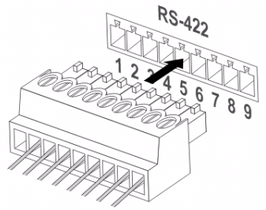
1. Hold the two sides of RS-422 connector and pull out in the direction shown by the arrow in the figure below



2. Peel off a section of copper wire (AWG Nos. 28 to 18) and insert it into the connector hole; then use flat 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
←,→,↑,↓	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. **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 **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	
		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	
	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. Off		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	
		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. Off		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	
White Balance	**Mode**	1. **Auto** 2. Indoor 3. Outdoor 4. One Push WB 5. ATW 6. Manual 7. Sodium Lamp	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***
	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 direction
	Tilt Flip	On / **Off**	Activate the reverse Tilt direction
	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
	PTZ Speed Comp	On / **Off**	Set the Pan/Tilt moving speed to vary from the zoom position
D-Effect	**Mirror**	1. **Off** 2. MIRROR 3. Flip 4. Mirror + Flip	Set the mode at which the image is mirror or flipped
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 Area 2. Full Area 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

	PTZ Assist	On / **Off**	This function can only be enabled in the Manual Focus (MF) mode When PTZ Assist is enabled and PTZ control is in operation, the focus performs only once upon immediate execution. The focus will not be triggered afterward when the scene changes
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
System	**Prompt**	On / **Off**	Turn on/off the prompt information on the display
	IR Receive	**On** / Off	When it is Off, the remote control will not be able to control the camera. At this moment, turn off and then turn on the power to restore control of the remote control.
	Tally Lamp	**On** / Off	Select to enable or disable Tally Lamp function.
	Language	**English** / Chinese	
	Initial Position	**Last operation**/First default position	Select the camera lens to return to the last operated position or the first preset position after POWER ON.
	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	The Protocol set to VISCA allows the camera ID address to be assigned. Select 0 for automation.
	PELCO D Address	**1** ~ 255	The Protocol set to Pelco D allows the camera ID address to be assigned.
	Output Mode	1. **3840 x 2160/59.94p** 2. 3840 x 2160/50p 3. 3840 x 2160/29.97p 4. 3840 x 2160/25p 5. 1080p/59.94 6. 1080p/50 7. 1080p/29.97 8. 1080p/25 9. 720p/59.94 10. 720p/25	Choose the output resolution
	Factory Reset	On / **Off**	Resume the factory default setting
Status			Display the current setting status

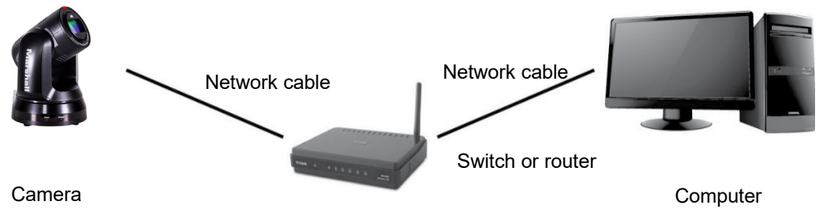
Chapter 6 Network Function Settings Description

6.1 Connecting Camera to Network

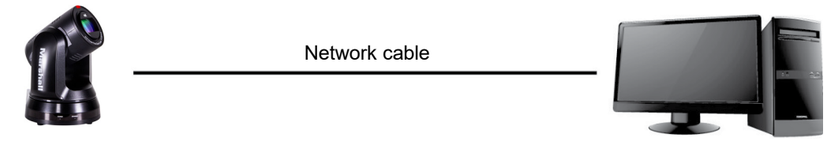
6.1.1 Connecting to Internet

Two common connection methods are shown below

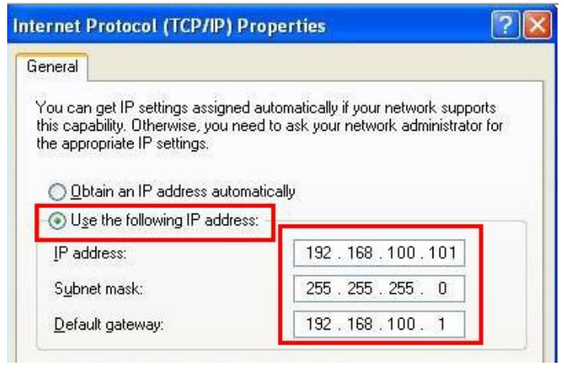
1. Connecting via switch or router



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 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



- 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 User Management Modify the default password

Marshall Network Camera

- Account: admin
- Password: 9999

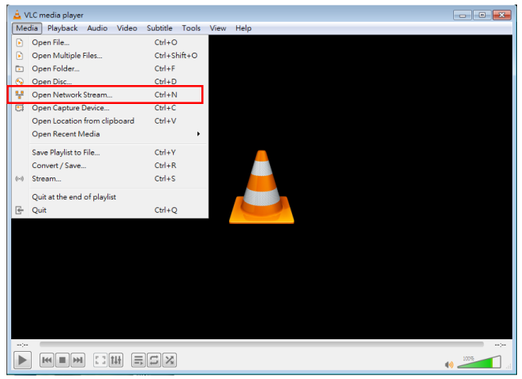
6.1.3 Using RTSP Player to View the Images

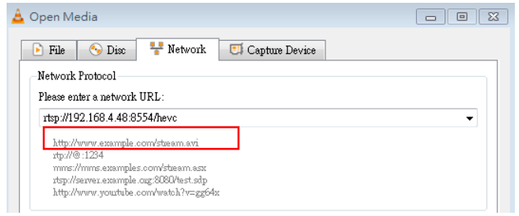
In addition to the browser and VMS, other free software also can be used for RTSP connection, such as VLC, Quick Time and PotPlayer

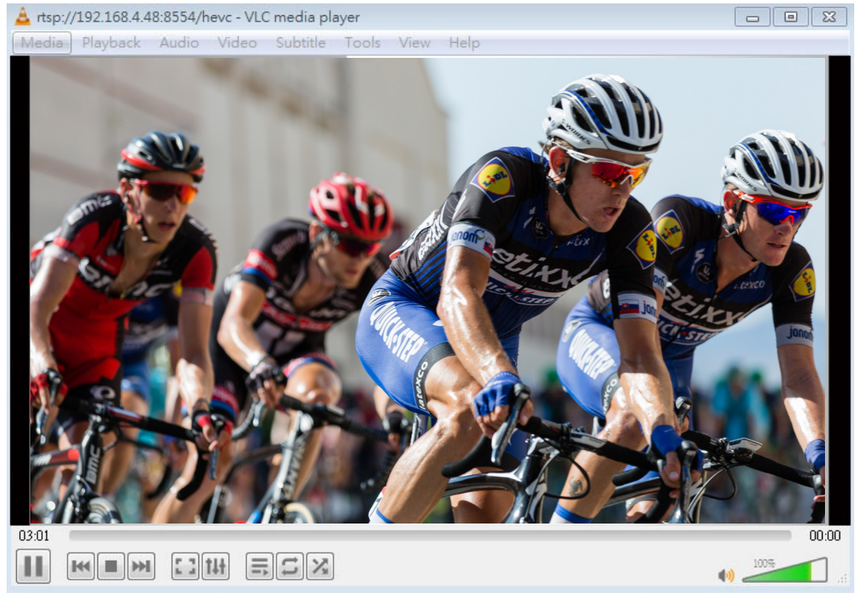
RTSP connection address formats are as follows:

- RTSP Main Streaming (4K@H.265) => rtsp://camera IP:8554/hevc
- RTSP Sub1 Streaming (1080P@H.264) => rtsp://camera IP:8557/h264
- RTSP Sub2 Streaming (720P@H.264) => rtsp://camera IP:8556/h264

Example: Open VLC software and enter URL: rtsp://192.168.4.48:8554/hevc





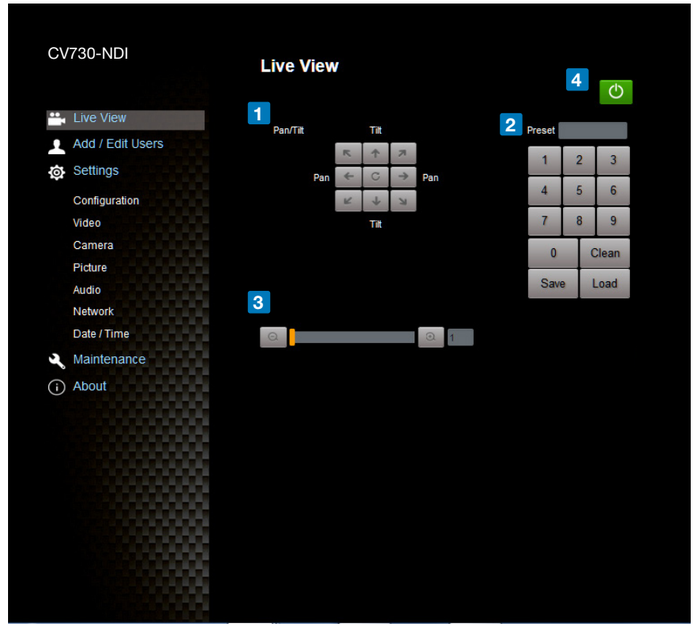


6.2 Web Page Function Description

6.2.1 Login Screen

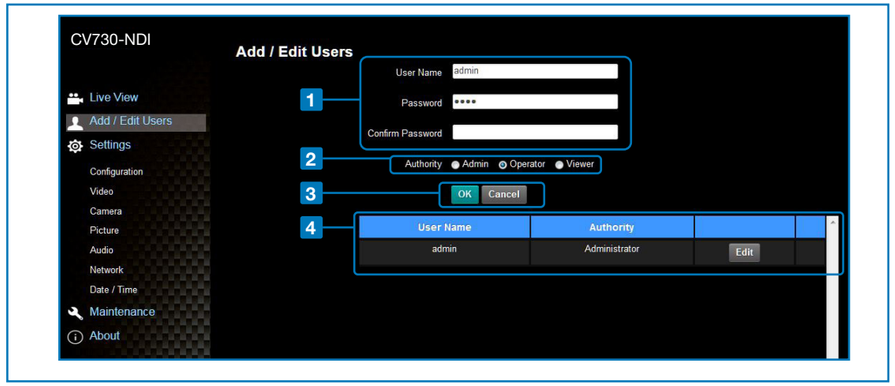
No	Item	Function Descriptions
1	Username	Enter user account (default: admin)
2	Password	Enter user password (default: 9999) *For the first login, please refer to 6.2.3 User Management Modify the default password
3	Language selection	Currently, the system supports English, Traditional Chinese, and Simplified 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 Viewing In Real Time



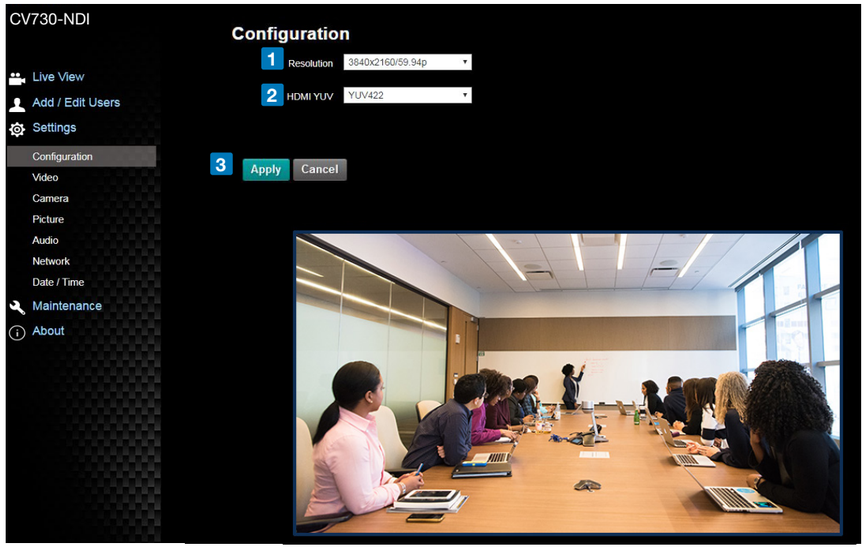
No	Item	Function Descriptions
1	Pan / Tilt setting	Adjust the Pan/Tilt position of the camera screen
2	Preset setting	Select the number first and then select SAVE or LOAD
3	Zoom ratio	Adjust the zoom-in or zoom-out ratio via scroll bar
4	Power button	Turn on or turn off the camera power

6.2.3 Account Management



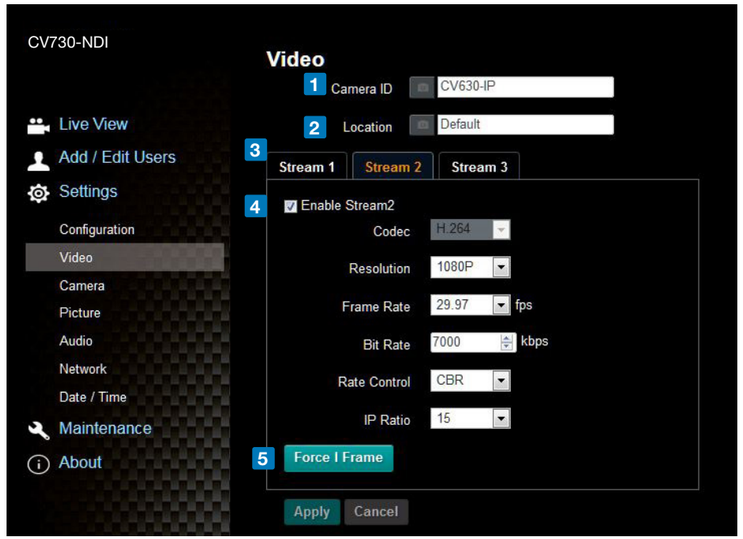
No	Item	Function Descriptions
1	Add user account	Enter a user name and password to add a new user
2	Permission setting	Set the new account management permissions User Type / **Admin** / **Operator** / **Viewer** View images / **V** / **V** / **V** Settings / **V** / **V** / **X** Account management / **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 Setting - System Setting



No	Item	Function Descriptions
1	Resolution	Set the resolution of the camera, resolutions supported by the camera are as follows: 3840 x 2160 59.94 / 50 / 29.97 / 25 fps 1080P 59.94 / 50 / 29.97 / 25 fps 720P 59.94 / 50 After switching to the resolution, the camera will restart. Please refresh the browser
2	HDMI YUV	Select YUV422 or YUV420 (This function is only available for these two resolutions, 3840 x 2160/59.94p and 3840 x 2160/50p and remains in display mode for all other resolutions)
3	Apply	After the setting has been modified, select this button to apply the setting

6.2.5 Setting – Video

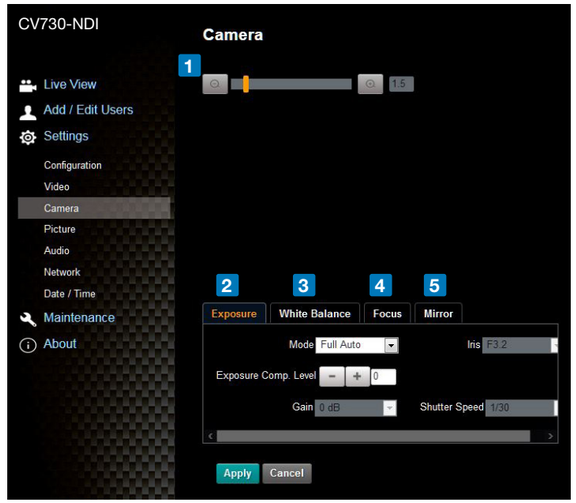


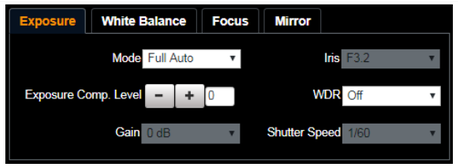
No	Item	Function Descriptions
1	Camera name	Modify the camera name ■ Camera names are limited to 1 - 12 characters ■ Please use a camera name by mixing uppercase and lowercase letters or numbers. Do not use “/” and “space” or special symbols
2	Camera Location	Modify the location of the camera, such as Meeting Room 1 ■ Camera location is 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
3	Streaming 1/Streaming 2/Streaming 3	CV730-NDI supports 3 streaming outputs. Please refer to **6.2.5.1 Streaming Parameter Setting** for relevant settings
4	Open Streaming	Confirm whether or not the streaming function is opened
5	Force I Frame	Check this item to insert IDR frame into specified series flow and apply its setting. User’s setting will be reserved and displayed in GUI interface

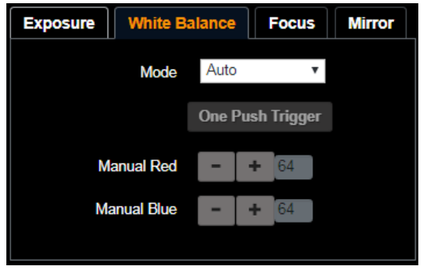
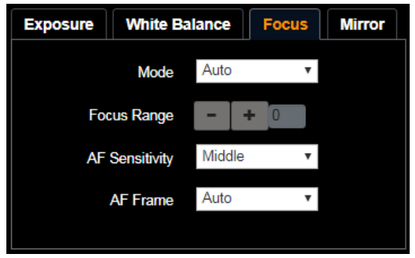
6.2.5.1 Streaming parameter setting

Function		Streaming 1	Streaming 2	Streaming 3
Encode Format		H.265	H.264	
Resolution		4K /1080P / 720P	1080P/720P	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		

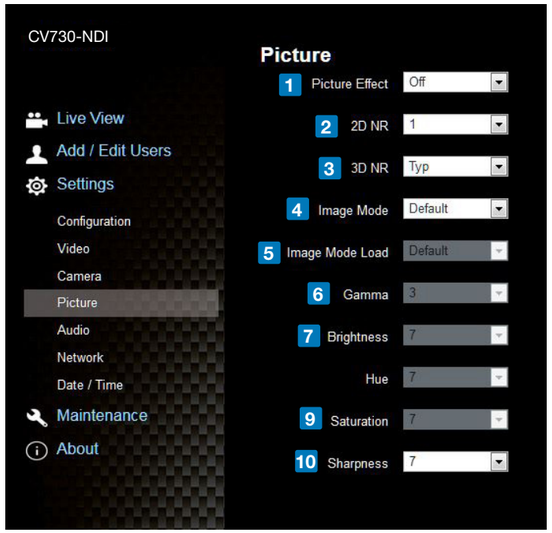
6.2.6 Setting – Camera



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”

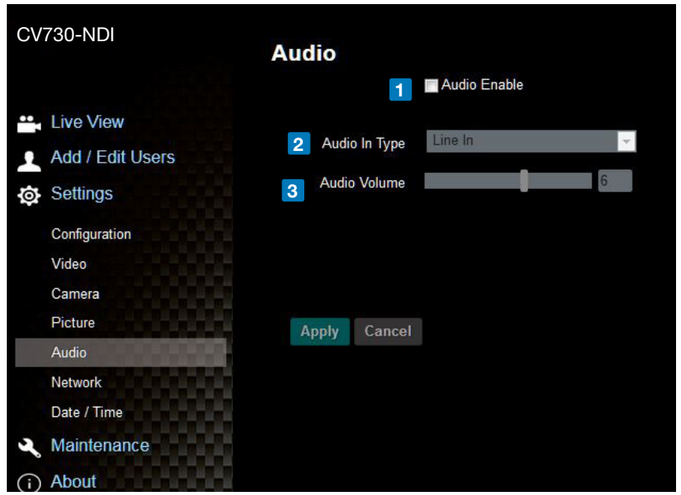
3	White Balance	 ■ **Mode:** Select the color temperature mode ➢ Auto ➢ Indoor ➢ Outdoor ➢ One Push WB ➢ ATW ➢ Manual ➢ Sodium Lamp ■ **Open Push WB:** One push color temperature is adjustable when the white balance mode is set to “One Push WB” ■ **Manual Red/Blue:** Manually adjust blue/red color temperature
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
5	MIRROR	 ■ **Mirror:** Set automatic flip mode

6.2.7 Setting – Picture



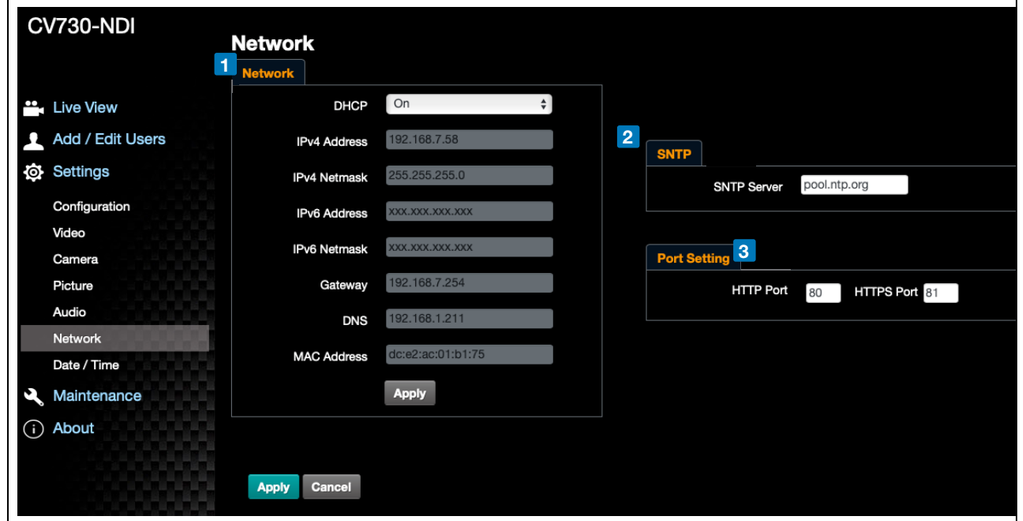
No	Item	Function Descriptions
1	Picture Effect	Set picture effect, Off/Neg/Black and White
2	2D noise reduction settings	2D noise reduction settings
3	3D noise reduction settings	3D noise reduction settings
4	Image mode	The user may customize his/her desired image mode.
5	Image Mode Load	When no custom 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	Contrast	Contrast 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 Setting – Audio



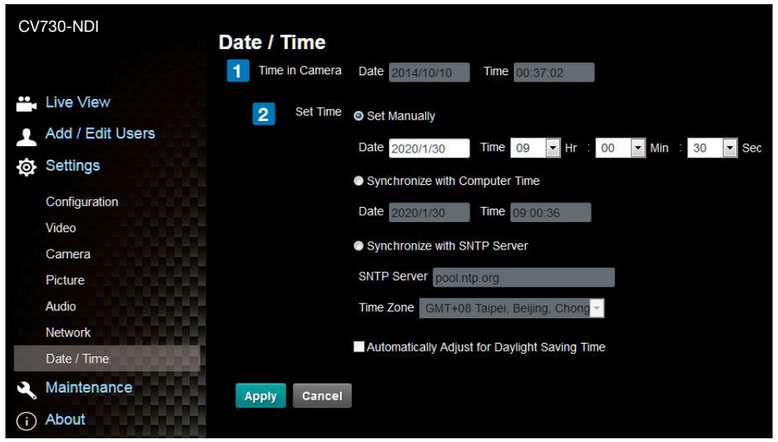
No	Item	Function Descriptions
1	Open audio	Turn on/off sound
2	Soundtrack effect setting	Set MIC In/Line In
3	Audio Volume	Adjust Volume

6.2.9 Setting – Network



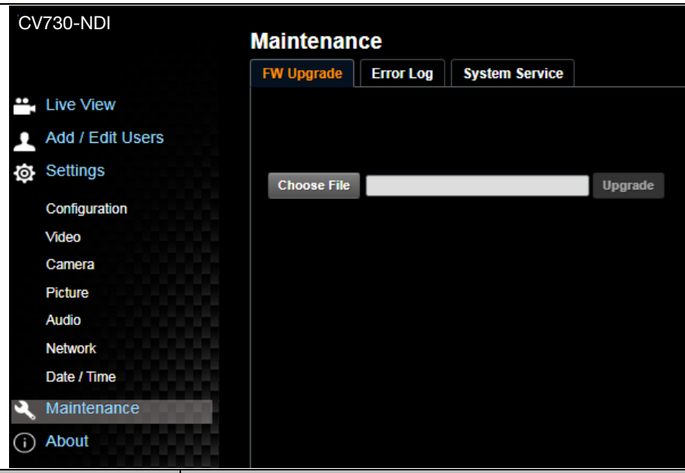
No	Item	Function Descriptions
1	Network	Network setting of camera. Change of setting is available when DHCP function is closed.
2	SNTP Setting	Set SNTP Server IP
3	Port Setting	Set HTTP port. The default Port value is 80 **<Remark>** Change of setting is available only when DHCP function of camera is closed

6.2.10 Setting – Time



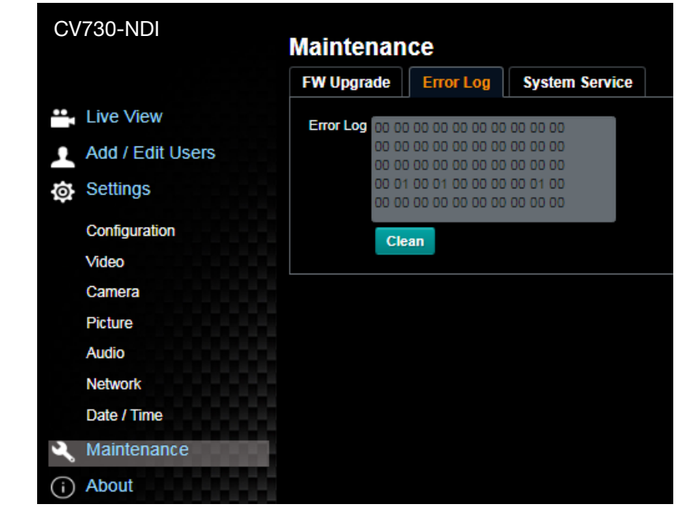
No	Item	Function Descriptions
1	Camera Time	Display the date and time of the camera
2	Set the Time	■ Manual Configuration Set time manually ■ Synchronize with computer time: Set the camera time according to the computer time ■ Synchronize with SNTP server: Set the camera time synchronously with the SNTP server **<Remark>**SNTP server address: Please change in network setting

6.2.11 Setting - Maintenance - Upgrading Firmware



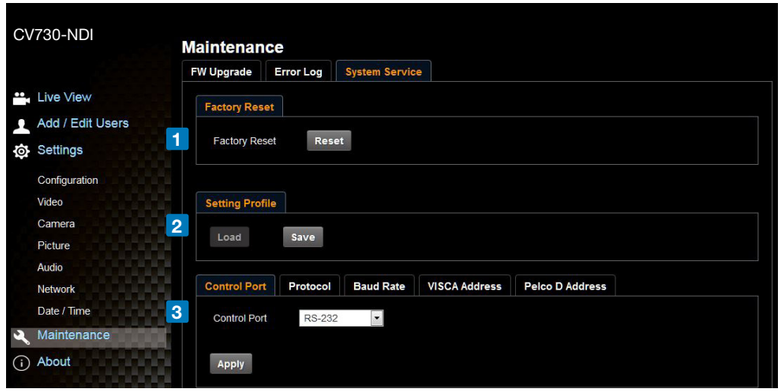
No	Item	Function Descriptions
1	Firmware Update	The camera firmware may be upgraded via web page. For the upgrade method, please download the FW upgrade manual from Marshall official website

6.2.12 Setting - Maintenance - Incident Log



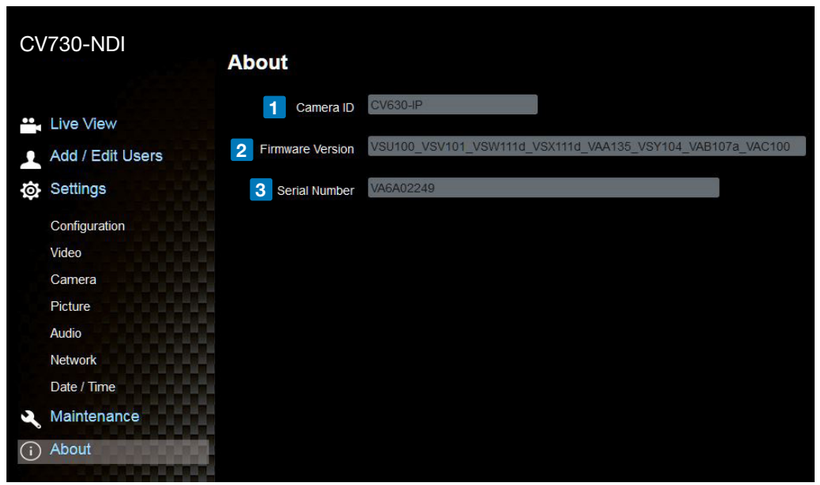
No	Item	Function Descriptions
1	Event Logs	If the camera encounters errors, an error code log will be established

6.2.13 Setting - Maintenance - System Service



No	Item	Function Descriptions
1	Reset to the default value	Select the reset button to resume the factory default setting as the web page setting
2	Setting File	The web page setting parameters can be exported from the computer and imported/applied to another camera
3	Protocol Setting	Communication protocol related settings for connection with RS-232/RS-422 communication

6.2.14 About



No	Item	Function Descriptions
1	Camera name	Display the camera name
2	Firmware Version	Display the firmware version of the camera
3	Serial No.	Display the camera serial No.

Chapter 7 DIP Switch Setting

7.1 DIP SWITCH

7.1.1 OUTPUT Switch (Switch to different output resolutions)

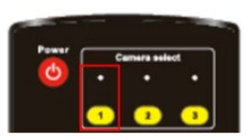
To switch via the OSD/ RS-232 Command is also available based on the last executed action

ID	Resolution	Frame Rate	
0	3840 x 2160	59.94P	
1		50P	
2		29.97P	
3		25P	
4	1920 x 1080	59.94P	
5		50P	
6		29.97P	
7		25P	
8	1280 x 720	59.94P	
9		50P	
C	1920x1080	59.94i	Not support yet
D		50i	Not support yet
E	Reserved	Reserved	
F			

7.1.2 IR SELECT (Selected by Remote control)

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 CV730-NDI. 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 PoE++(IEEE802.3bt) hubs.
2.	There is no image output from CV730-NDI	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.	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
4.	Whether the Internet can be used for operation	Please refer to **Chapter 6 Network Function Description** for the Internet usage

FCC Declaration of Conformity
47 CFR § 2.1077 Compliance Information

U.S. Contact Information

Company : **Marshall Electronics, Inc.**
Address : **20608 Madrona Ave., 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

Marshall Electronics warranties to the first consumer that this device will, under normal use, be free from defects in workmanship and materials, when received in its original container, for a period of two years from the purchase date. This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, Marshall Electronics reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer. This warranty does not apply to the product exterior or cosmetics. Misuse, abnormal handling, alterations or modifications in design or construction void this warranty. No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of Marshall Electronics, beyond the time period described above.

Due to constant effort to improve products and product features, specifications may change without notice.

Marshall

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