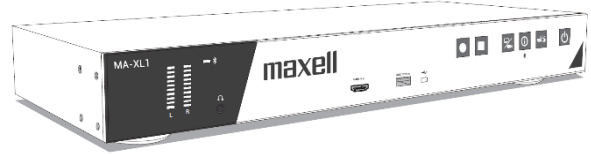Lecture Capture Station
MA-XL1

User's Manual (detailed)
Operating Guide

Thank you for purchasing this Lecture Capture Station.
Please read this manual thoroughly before using the product.

Our website: Please see the attached sheet

⚠WARNING
• Before using this product, please read all manuals for this product. Be sure to read "Safety Guide" first. After reading them, store them in a safe place for future reference.

About this manual
Various symbols are used in this manual. The meanings of these symbols are described below.

⚠**WARNING**	This symbol indicates information that, if ignored, could possibly result in personal injury or even death due to incorrect handling.
⚠**CAUTION**	This symbol indicates information that, if ignored, could possibly result in personal injury or physical damage due to incorrect handling.
NOTICE	This entry notices of fear of causing trouble.
📖	Please refer to the pages written following this symbol.

Do not open

CAUTION
RISK OF ELECTRIC SHOCK **DO NOT OPEN**

CAUTION / TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER(OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

The lightning flash with an arrowhead within a triangle is intended to tell the user that inside this product may cause risk of electrical shock to persons.

The exclamation point within a triangle is intended to tell the user that important operating and/or servicing instructions are included in the technical documentation for this equipment.

[**NOTE**]
• The information in this manual is subject to change without notice.
• The illustrations in this manual are for illustrative purposes. They may differ slightly from your product.
• The manufacturer assumes no responsibility for any errors that may appear in this manual.
• The reproduction, transfer or copy of all or any part of this document is not permitted without express written consent.

NOTICE
When recovering the product for repairing or replacing the product, the data, account ID, account password, and setting data saved in the HDD will be deleted immediately after recovery, for the purpose of protecting personal information. Since it is impossible to restore the data saved in the HDD, be sure to back up the necessary data and settings.
If we recover the product, you are deemed to have agreed to the above.

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Contents 📖

Introduction

Features

The product provides you with the broad use by the following features.

- ✓ Teacher Friendly, Intuitive Operation With Simple GUI
- ✓ Remote Classroom Optimized, Connecting Two Remote Locations to One
- ✓ Student Friendly, Learn Whenever You Want, Wherever You Are By Streaming Or Uploading The Lecture
- ✓ Operate with your smartphones, or tablets

Checking the contents of package

Please see the **Contents of package** section in the **User's Manual (concise)** which is a book. Your product should come with the items shown there. Contact your dealer immediately if any items are missing.
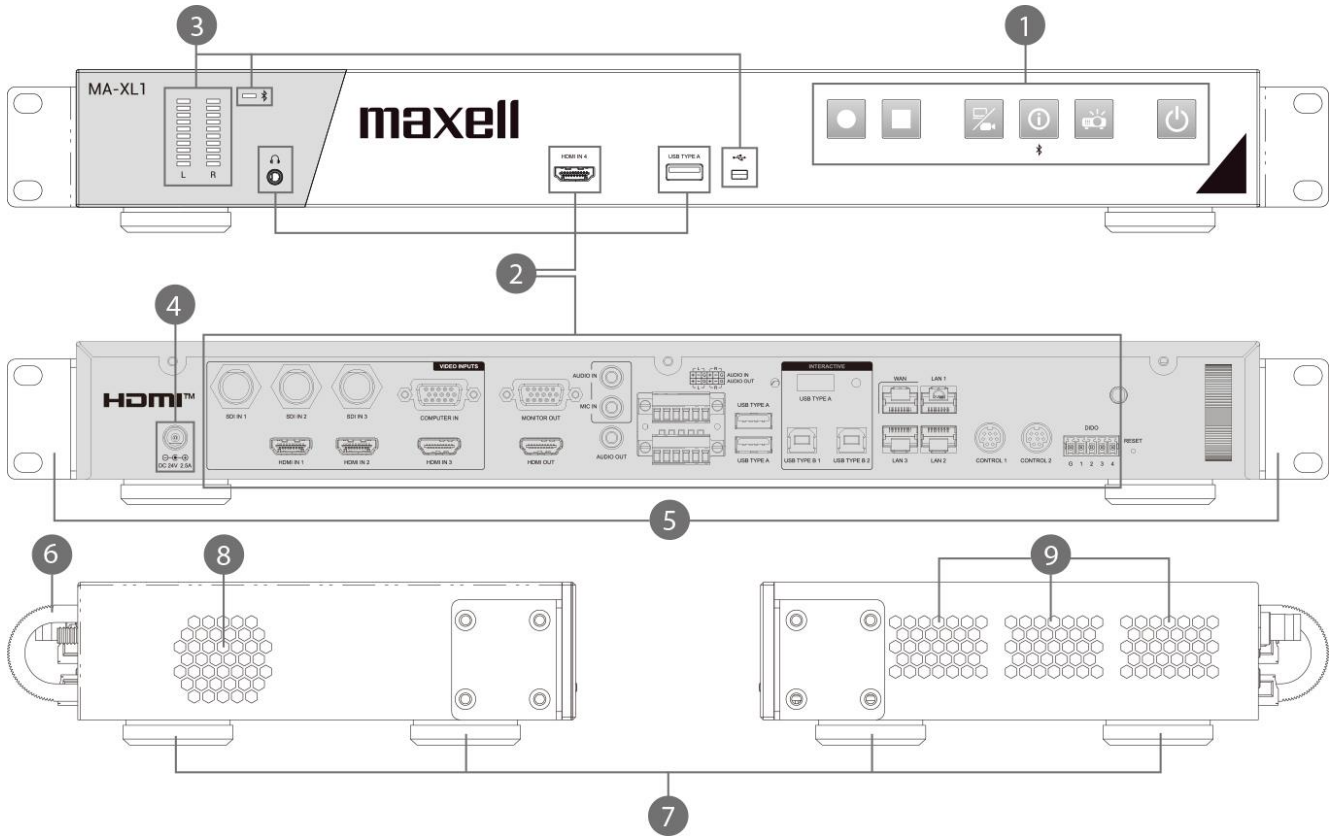
> [**NOTE**]
> • Keep the original packing materials, for future reshipment. Be sure to use the original packing materials when moving the product.

Part names

Lecture Capture Station

(1) Control buttons (📖6)
(2) Ports (📖6)
(3) Indicators (📖110)
(4) Power connector (📖17)
(5) Rack mount brackets (📖7)
(6) Security bar (📖19)
(7) Spacers
(8) Exhaust vent
(9) Intake vents
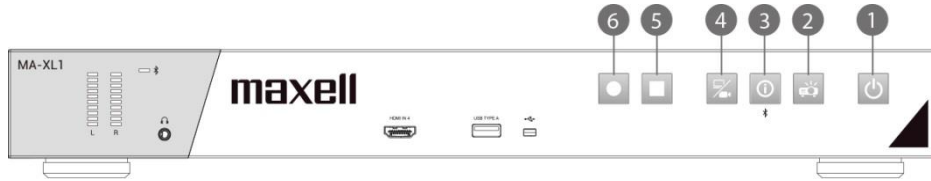

⚠WARNING

• Do not touch around the exhaust vents during use or just after use, since it is too hot.

⚠CAUTION

• Maintain normal ventilation to prevent the product from heating up. Do not cover, block or plug up the vents. Do not place anything that can stick or be sucked to the vents, around the intake vents.
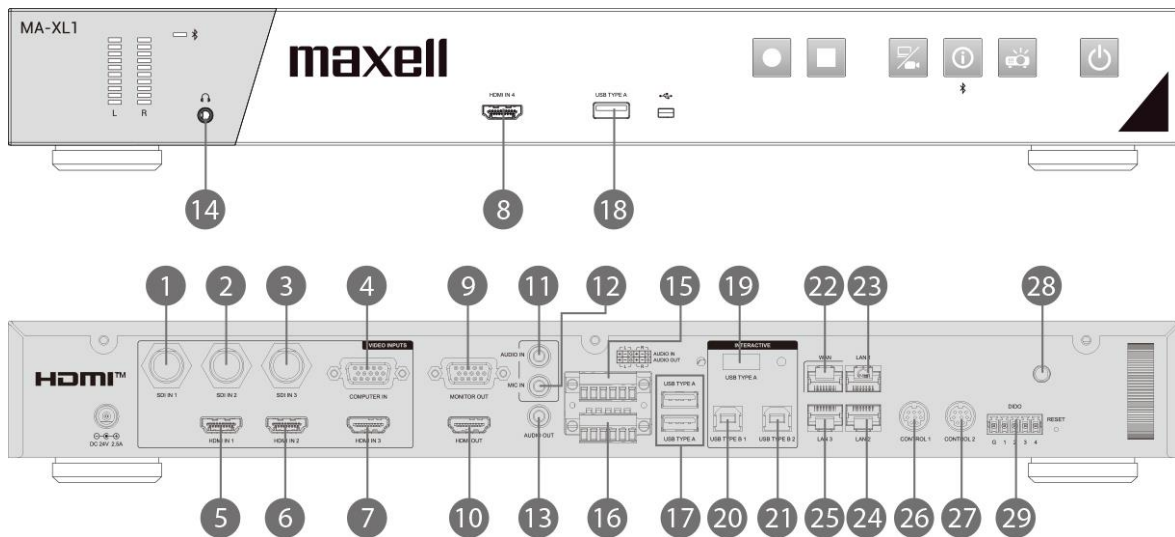
Control buttons

(1) Main power button (&29)
(2) Projector power button (&29)
(3) Information button (&29, 44)
(4) Video switch button (&29, 31)
(5) Recording stop button (&29, 38)
(6) Recording start button (&29, 38)

Ports　　(&13)

(1) **SDI IN 1** port
(2) **SDI IN 2** port
(3) **SDI IN 3** port
(4) **COMPUTER IN** port
(5) **HDMI IN 1** port
(6) **HDMI IN 2** port
(7) **HDMI IN 3** port
(8) **HDMI IN 4** port
(9) **MONITOR OUT** port
(10) **HDMI OUT** port
(11) **AUDIO IN** port
(12) **MIC IN** port
(13) **AUDIO OUT** port
(14) Front audio output port
(15) **AUDIO IN** port (Balanced)

(16) **AUDIO OUT** port (Balanced)
(17) **USB TYPE A** port (x2)
(18) **USB TYPE A** port
(19) **USB TYPE A** port (Interactive)
(20) **USB TYPE B 1** port
(21) **USB TYPE B 2** port
(22) **WAN** port
(23) **LAN 1** port
(24) **LAN 2** port
(25) **LAN 3** port
(26) **CONTROL 1** port
(27) **CONTROL 2** port
(28) Bluetooth® antenna port
(29) **DIDO** port

Setting up

Install the product according to the environment and manner the product will be used in.

Placement

Please set this product to level. This product can be mounted into a rack (for 19-inch rack) with the provided "rack mount bracket". When attaching the rack mount bracket to the main unit, be sure to use the provided screws. Please follow the manual of the rack to mount.
Please take a distance of more than 2 cm between the product and the wall.

Attach rack mount bracket
1. Attach one of the brackets to the 4 screw holes at the side of the product. Using 4 screws in accessory box to fix the bracket on the side of the product
2. Do the same steps to complete another side.
3. The product is ready for the rack fixation.
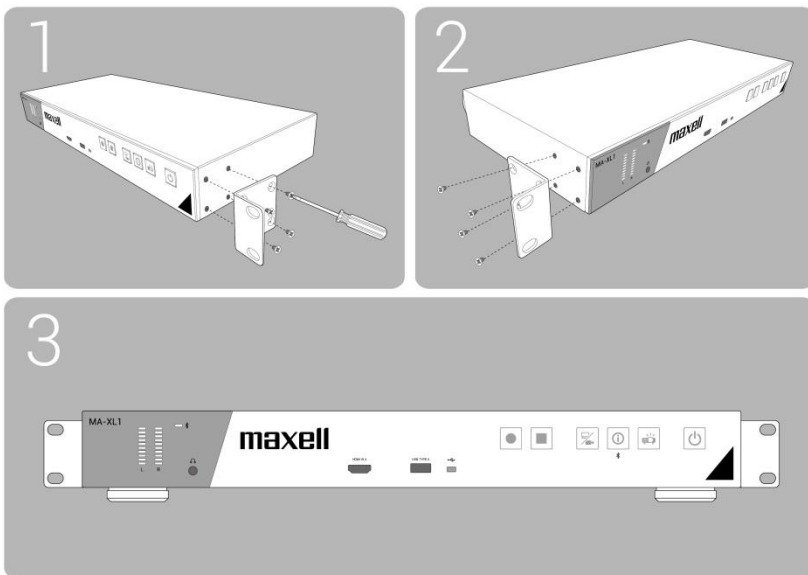
⚠WARNING

- Place the product in a stable horizontal position at the direction the spacer is on the bottom. If the product falls or is knocked over, it could cause injury and/or damage to the product. Using a damaged product could then result in fire and/or electric shock.
- Do not place the product on an unstable, slanted or vibrational surface such as a wobbly or inclined stand.
- Place the product in a cool place, and ensure that there is sufficient ventilation. The high temperature of the product could cause fire, burns and/or malfunction of the product.
- Do not stop-up, block or otherwise cover the product's vents.
- Keep a space of 2 cm or more between the sides of the product and other objects such as walls.
- Do not place or attach anything that would block the product vent holes.
- Do not place the product on metallic thing or anything weak in heat.
- Do not place the product on carpet, cushions or bedding.
- Do not place the product in direct sunlight or near hot objects such as heaters. Do not place anything near the product vents, or on top of the product. It causes high temperature and could result in fire or smoke.
- Do not place anything that may be sucked into or stick to the vents on the bottom of the product.
- Do not place the product anyplace where it may get wet. Getting the product wet or inserting liquid into the product could cause fire, electric shock and/or malfunction of the product.
- Do not place the product in a bathroom or the outdoors.
- Do not place anything containing liquid near the product.
- Do not place the product where any oils, such as cooking or machine oil, are used. Oil may harm the product, resulting in malfunction, or falling from the mounted position. Do not use adhesive such as threadlocker, lubricant and so on.
- Use only the mounting accessories the manufacturer specified, and leave installing and removing the product with the mounting accessories to the service personnel.
- Read and keep the user's manual of the mounting accessories used.
- When attaching the rack mount to the main unit, be sure to use the provided screws. Using other screws may cause failure, fire, or electric shock.

⚠CAUTION

- Avoid placing the product in smoky, humid or dusty place. Placing the product in such places could cause fire, electric shock and/or malfunction of the product
- Do not place the product near humidifiers, smoking spaces or a kitchen. Also do not use an ultrasonic humidifier near the product. Otherwise chlorine and minerals contained in tap water are atomized and could be deposited in the product causing image degradation or other problems.
- Do not place the product in a place where radio interference may be caused.
- Do not place this product in a magnetic field.

Product connection

Before connecting the product to a device, consult the manual of the device to confirm that the device is suitable for connecting with this product and prepare the required accessories, such as a cable in accord with the signal of the device.
Consult your dealer when the required accessory did not come with this product or the accessory is damaged.
After making sure that this product and the devices are turned off, perform the connection, according to the following instructions.

⚠WARNING

- Use only the appropriate accessories. Otherwise it could cause a fire or damage the product and devices.
  - Use only the accessories specified or recommended by this product's manufacturer. It may be regulated under some standards.
  - Neither disassemble nor modify this product and the accessories.
  - Do not use the damaged accessory. Be careful not to damage the accessories. Route a cable so that it is neither stepped on nor pinched.
- Be careful to the volume When using headphone or earphone. If you continue to use it for a long time at a loud volume that stimulates your ears, your auditory capacity may be greatly impaired.

⚠CAUTION

- Do not turn on or off the product while connected to a device in operation, unless that is directed in the manual of the device. Otherwise it may cause malfunction in the device or product.
- Be careful not to mistakenly connect a connector to a wrong port. Otherwise it may cause malfunction in the device or product.
  - When connecting a connector to a port, make sure that the shape of the connector fits the port.
  - Tighten the screws to connect a connector equipped with screws to a port.
  - Use the cables with straight plugs, not L-shaped ones.
- Before connecting this product to a network system, be sure to obtain the consent of the administrator of the network.
- Do not connect the **WAN/LAN** port to any network that might have the excessive voltage.
- Be sure to confirm that the product has been installed and connected safely even if it is turned on automatically.
- If you connect the product to an existing network, consult a network administrator before setting server addresses.
- You should be aware of the following:
DO NOT USE NEAR THE FOLLOWING!
- Microwave ovens
- Industrial, scientific or medical devices
- Designated low power radio stations
- Premises radio stations
- Wireless LAN router
- Using this product near the above may cause radio interference, which would result in a decrease in transmission speed or interruption, and even lead to malfunctioning of devices such as pacemakers.
- Depending on the location where this product is used, radio wave interference may occur, which may result in a decrease in transmission speed or interruption in communication.
- Bringing this product out of the country or region you reside in and using it there could lead to a violation of the radio laws of that country or region.
- The product is for indoor use only. Outdoor use is prohibited.
- Be careful to the volume When using headphone or earphone. If you raise the volume too much from the beginning, you may suddenly get loud noise and damage your ears. Please increase the volume little by little.

・To enable the port, login to the Web Interface in Administrator mode and set Media I/O. (📖48)
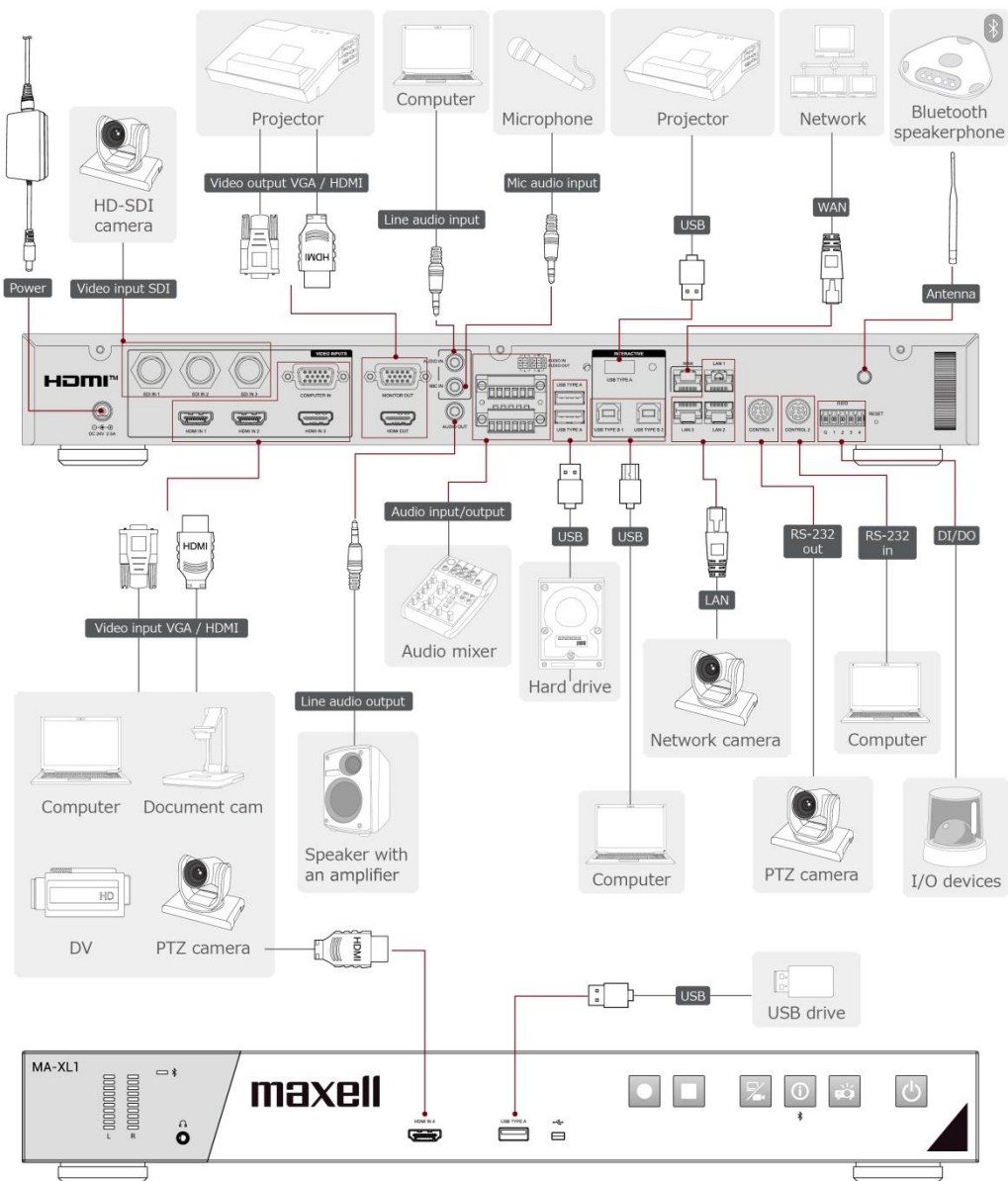
[**NOTE**]
• Before connecting the product to a computer, consult the computer's manual and check the compatibility of the signal level, the synchronization methods and the display resolution output to the product.
- Some signal may need an adapter to input this product.
- Some computers have multiple screen display modes that may include some signals switch are not supported by this product.

[**NOTE**]
- If you connect this product and a notebook computer, you need output the display to an external monitor, or output simultaneously to the internal display and an external monitor. Consult the computer's manual for the setting.
- This product does not support HDCP encryption & decryption. When input content has HDCP protection, the HDMI Input may receive no image and connected display may show black screen. Therefore, if you display content with HDCP protection set, please output directly to an HDCP supported monitor without passing through this product.
  - The HDMI^{TM} supports the following signals.
    Video input signal: 1920X1080p(60/50/30/25/24Hz), 1280X720p(60/50Hz), 1024X768p(60/70/75Hz),
    Video output signal: 1920X1080(60Hz)
    Audio signal: Format Linear PCM
    Sampling frequency 48kHz / 44.1kHz / 32kHz
  - This product can be connected with another equipment that has HDMI™ connector, but with some equipment the product may not work properly, something like no video.
  - Be sure to use an HDMI™ cable that has the HDMI™ logo.
  - Use a Category 2-certified HDMI™ cable to input 1920X1080p(50/60Hz) signal to the product.
  - When the product is connected with a device having DVI connector, use a DVI to HDMI™ cable to connect with the HDMI input.

To use network functions of the product, connect the WAN port with the external network. For connection, use a network cable with RJ45 connector.
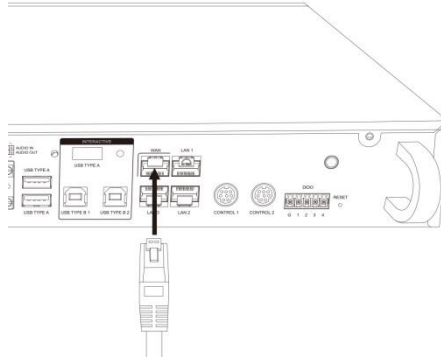

⚠️CAUTION

- Before connecting the product to a network system, be sure to obtain the consent of the administrator of the network.
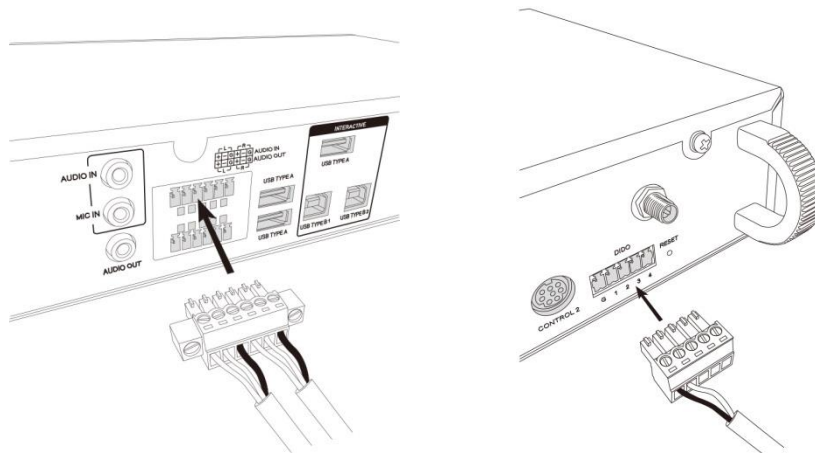- Do not connect the **WAN/LAN** port to any network that might have the excessive voltage.

Connect detachable terminal block
When using balanced audio or DIDO, use the supplied detachable block connector.

Loosen the screw of block connector and insert the cable into the port. Then tighten the block connector screw to fix the cable.
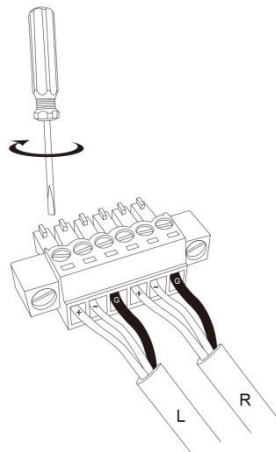
Connect the block connector to the Audio IN terminal or DIDO terminal.
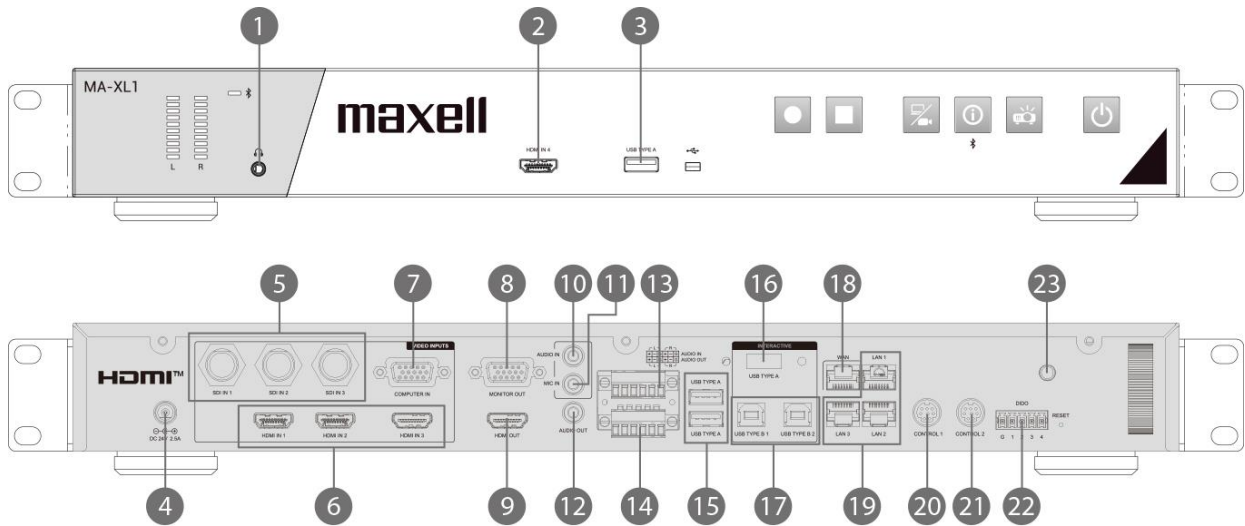
No.	Name	Brief information
1	Front audio output	Output of recording sound for monitoring
2	HDMI IN	HDMI input source
3	USB TYPE A	・ External USB storage device (mp4 video file recording and snapshot image) ・ Lecture information import with recording ・ Mouse control
4	Power Connector	DC : 24V / 2.5A
5	SDI IN x 3	HD-SDI input
6	Rear HDMI IN x 3	HDMI input source
7	COMPUTER IN	VGA input source for PC
8	MONITOR OUT	VGA output for display
9	HDMI OUT	HDMI output for display
10	AUDIO IN	Line audio input
11	MIC IN	Mic audio input
12	AUDIO IN	Line audio output
13	AUDIO IN(L,R)	Differential line audio input Refer to below chart for the pin define
14	AUDIO OUT(L,R)	Differential line audio output Refer to below chart for the pin define
15	USB TYPE A port x 2	For Extended USB storage & Mouse control

(continued on next page)

No.	Name	Brief information
16	USB TYPE A (INTERACTIVE)	Operation input port by interactive projector and touch monitor
17	USB TYPE B x 2	For PC USB mouse control
18	WAN	RJ-45 Ethernet connector for network connection
19	LAN x 3	RJ-45 Ethernet connectors for network camera input source, & accessing to web management setting pages, and projector ON/OFF.
20	CONTROL 1	Mini DIN connector for camera Refer to below chart for the pin define
21	CONTROL 2	Mini DIN connector for other devices* *: Hitachi / Maxell Projector & Computer etc.
22	DIDO	Refer to below chart for the pin define
23	Bluetooth antenna port	Antenna for Bluetooth speaker/microphone

Product connection (continued)

RS-232

DIDO

8-pin mini DIN connector

Pin No.	Description
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	N/C
8	N/C

Terminal block

Pin No.	I/O	Description
1	-	GND
2	O	H while recording L while recording stop
3	-	Reserved
4	-	Reserved
5	-	Reserved

Output voltage : 5.5V or less
Output current : IOH 20uA / IOL 1mA

Balanced connector
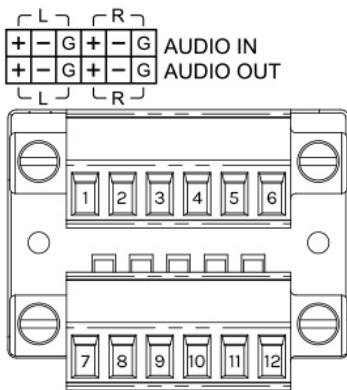
Connect terminal block, 12 pin

Pin No.	Description	Pin No.	Description
1	AUDIO IN L (+)	7	AUDIO OUT L (+)
2	AUDIO IN L (-)	8	AUDIO OUT L (-)
3	AUDIO IN L GND	9	AUDIO OUT L GND
4	AUDIO IN R (+)	10	AUDIO OUT R (+)
5	AUDIO IN R (-)	11	AUDIO OUT R (-)
6	AUDIO IN R GND	12	AUDIO OUT R GND

Product connection (continued)

CONTROL port connection

RS-232 port of the camera   **CONTROL1 port of the product**

DTR	(1)	(1)	DTR
DSR	(2)	(2)	DSR
TXD	(3)	(3)	TXD
GND	(4)	(4)	GND
RXD	(5)	(5)	RXD
GND	(6)	(6)	GND
-	(7)	(7)	-
-	(8)	(8)	-

RS-232C port of the computer   **CONTROL2 port of the product**

CDC	(1)	(1)	DTR
RXD	(2)	(2)	DSR
TXD	(3)	(3)	TXD
DTR	(4)	(4)	GND
GND	(5)	(5)	RXD
DSR	(6)	(6)	GND
RTS	(7)	(7)	-
CTS	(8)	(8)	-
RI	(9)		

CONTROL port of the projector   **CONTROL2 port of the product**

-	(1)	(1)	DTR
RXD	(2)	(2)	DSR
TXD	(3)	(3)	TXD
-	(4)	(4)	GND
GND	(5)	(5)	RXD
-	(6)	(6)	GND
RTS	(7)	(7)	-
CTS	(8)	(8)	-
-	(9)		

[**NOTE**]
- Depending on the device to be connected, the pin assignment may be different. Before connecting, please refer to the manual of the device to be connected and check the pin assignment.

Connecting the power supply

1. Connect the power cord to the Power adaptor.
2. Put the DC plug of the power adaptor into the DC 24V connector of the product.
3. Firmly plug the power cord's plug into the outlet. In a couple of seconds after the power supply connection, the **POWER** indicator lights up in steady red.

Power Adaptor

Power cord

Power button / indicator

DC plug

Power adaptor   Power cord
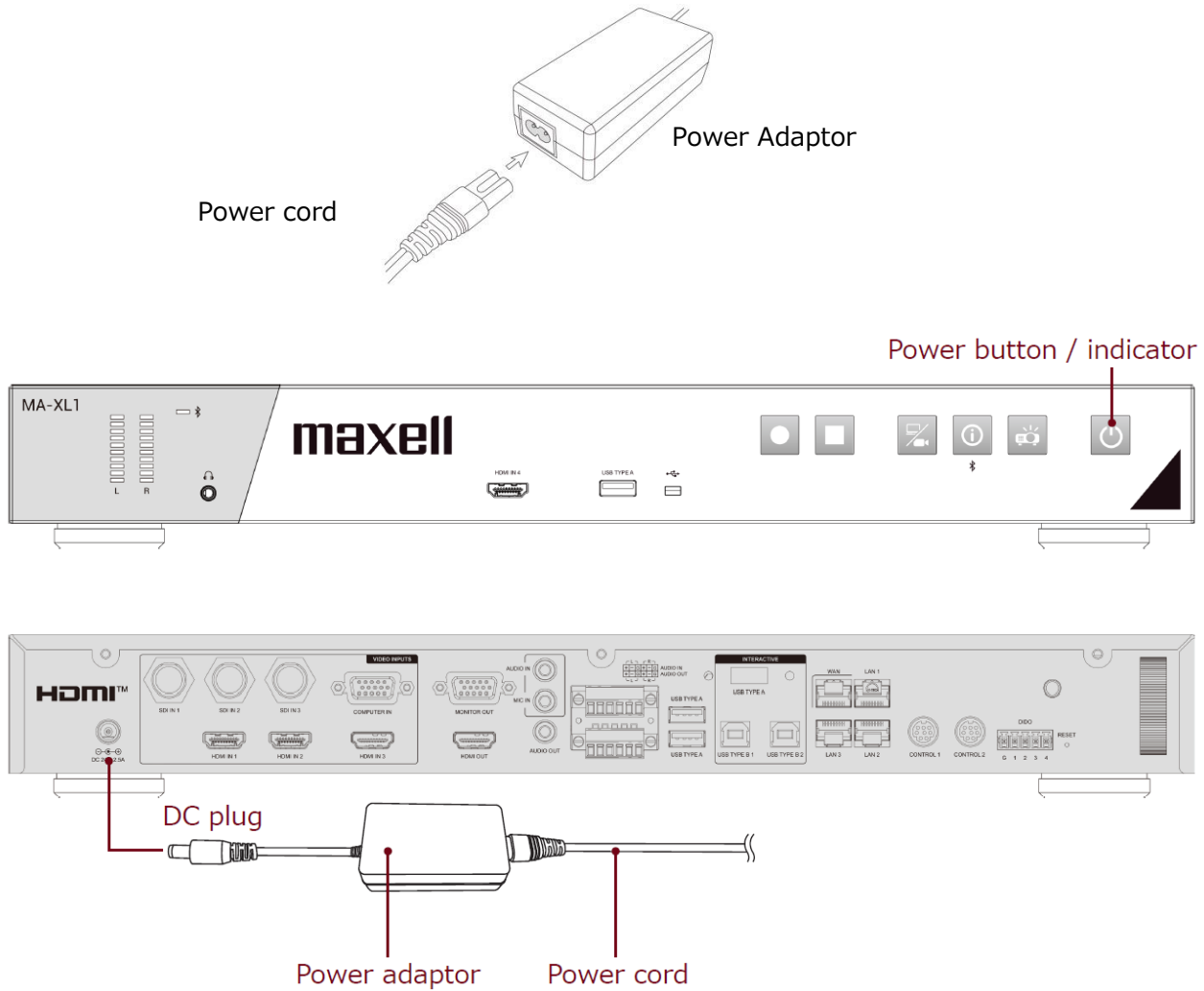
⚠WARNING

- Please use extra caution when connecting the power adapter and the power cord, as incorrect or faulty connections may result in fire and/or electrical shock.
- Do not touch the power adapter and the power cord with a wet hand.
- Only use the power adapter and the power cord that came with the product. If it is damaged, consult your dealer to get a new one. Never modify the power adapter and the power cord.
- Only plug the power cord into an outlet whose voltage is matched to the power cord. The power outlet should be close to the product and easily accessible. Unplug the power cord for complete disconnection.
- Do not distribute the power supply to multiple devices. Doing so may overload the outlet and connectors, loosen the connection, or result in fire, electric shock or other accidents.
- Do not press the main body of product on the power adapter and the power cord.
- Connect the-terminal for the AC inlet of power adaptor to the power outlet of the building using an appropriate power cord (bundled).
- When multiple power cords are included, please use the power cord that matches the outlet shape.
- Do not use with the power adaptor hanging.
- Do not trample the power adaptor or cord.

NOTICE
- Do not unplug the power cable during recording. There is a possibility of breaking the recorded data and breaking the product.

Using the security bar

A commercially available anti-theft chain or wire can be attached to the security bar on the product.
Refer to the figure to choose an anti-theft chain or wire.
For details, refer the manual of the security tool.
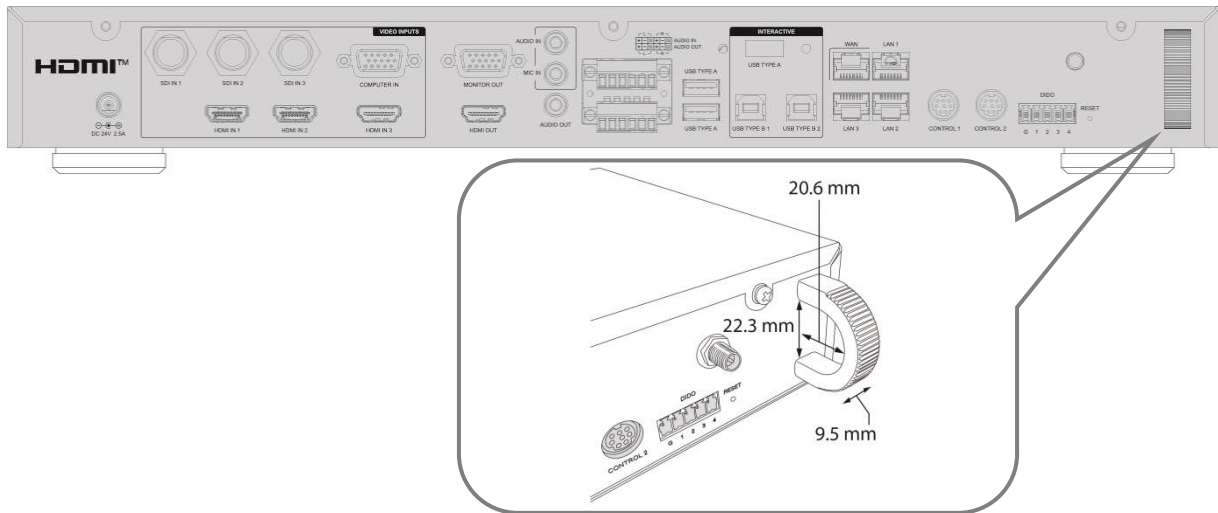
⚠WARNING

• Do not use the security slot to prevent the product from falling down, since it is not designed for it.

⚠CAUTION

• Do not place anti-theft chain or wire near the exhaust vents. It may become too hot.

[**NOTE**]
• The security bar is not comprehensive theft prevention measures. It is intended to be used as supplemental theft prevention measure.

Power on/off

Turning on the power

1. Make sure that the Power adaptor and power cord is firmly and correctly connected to the product and the outlet.
2. Make sure that the **POWER** indicator is lighted in steady red.
3. Press the ⏻ (power) button on the product.

Power button / indicator
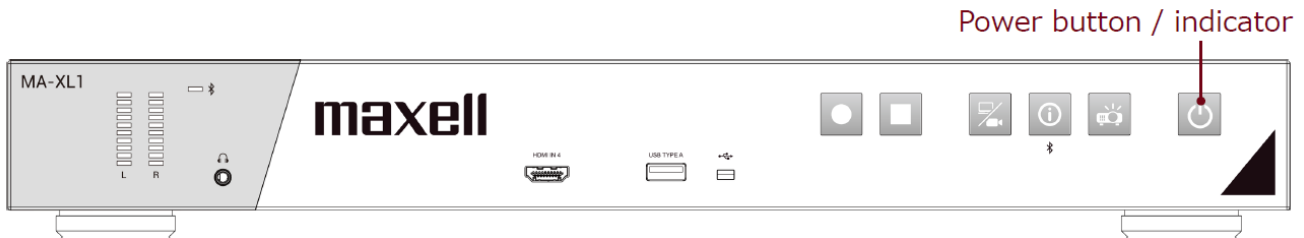
Press the power button to start automatically.
When the power button is pressed, the power indicator lights red and green alternately. When startup is completed, the indicator lights in steady green.

To display the picture, select an input signal according to the section Video switch (📖31).

⚠WARNING

• Keep the product out of the reach of children.

[**NOTE**]
• Turn on any connected devices prior to the product.
• After turning off the power, if the indicator is light in red it is possible to turn on the power.
• This product has the function that can make the product automatically turn on/off. Please refer to section "System setting" (📖72), items of the System settings.

Turning off the power

1. Press the POWER button on the product. The message "Shutdown?" appears on the screen for about 10 seconds.
2. Press the POWER button again while the message appears. The POWER indicator will begin blinking in red. Then the POWER indicator will stop blinking and light in steady red when shutdown completed.
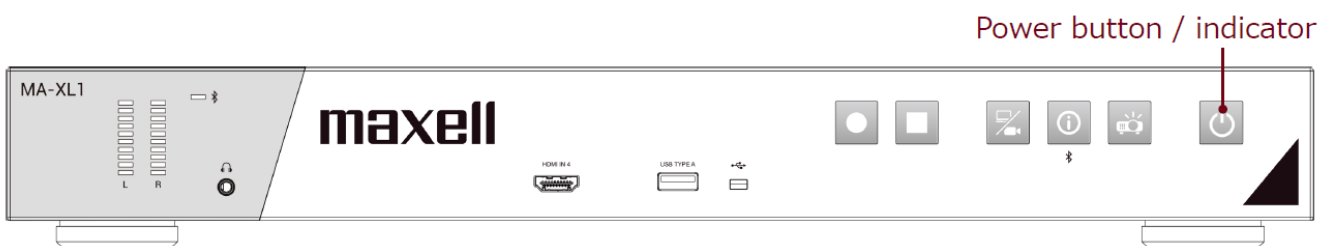
Power button / indicator

⚠WARNING

• Do not touch around the exhaust vents during use or just after use, since it is too hot.

• Remove the power cord for complete separation. The power outlet should be close to the product and easily accessible.

Getting start

Connection of the peripheral devices

Refer to section "Product connection" and connect peripheral devices. (📖9)
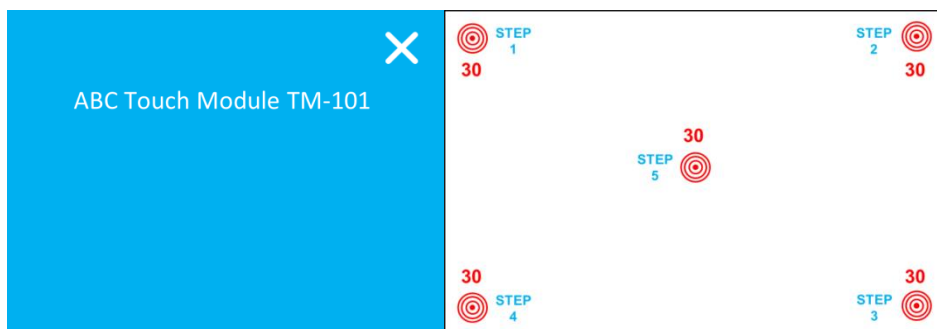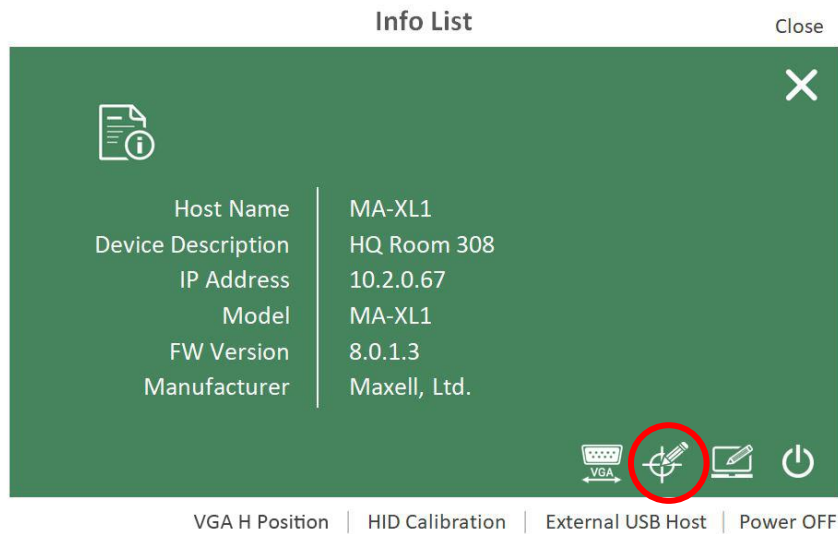Below check list for reference.
· Connect interactive projector or touch monitor to both the HDMI output port and Interactive USB port.
  If you connect an unsupported interactive projector or touch monitor, the menu bar will not be
  displayed. Also, when starting this product for the first time, connect the mouse to the front USB port
  to calibrate the touch module. For detail refer to section "Calibration of Touch Module".(📖22)
· Connect audio devices: both input and output
    ex: Speaker & Microphone
· Use RJ45 to connect WAN port with the external network
· Connect camera via HDMI/SDI/RJ45
· Connect several cables to reserve for video input sources
    ex: HDMI & VGA & SDI
If everything is connected well, you could see the menu ball & toolbar appear in the display.
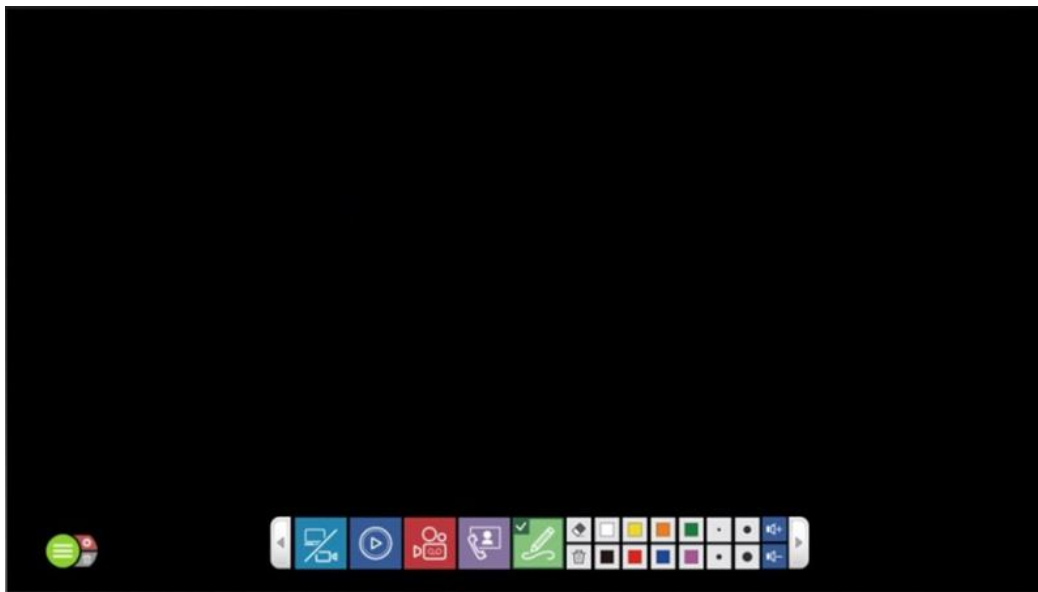
Calibration of Touch Module

In some cases, installers would need to do calibration before using touch function.
After connecting interactive projector or touch monitor with the product USB TYPE A port (Interactive), finding a USB mouse and insert into the front USB port.
Press information button ⊙ on the front panel to call information dialog.
Moving the mouse cursor to click on calibration icon ✐. Then go through the calibration process with your figure or the dedicated optical pen of the touch module.

Info List   Close

Host Name	MA-XL1
Device Description	HQ Room 308
IP Address	10.2.0.67
Model	MA-XL1
FW Version	8.0.1.3
Manufacturer	Maxell, Ltd.

VGA H Position | HID Calibration | External USB Host | Power OFF

ABC Touch Module TM-101

STEP 1   30
STEP 2   30
STEP 5   30
STEP 4   30
STEP 3   30

After all the settings finished, start enjoy the easy interface of the product!

Mirror   Video Switch   Playback   Record   Conference   Pen ON/OFF   Eraser/Clear All   Pen Color   Pen Width   Audio Adjust   Mirror
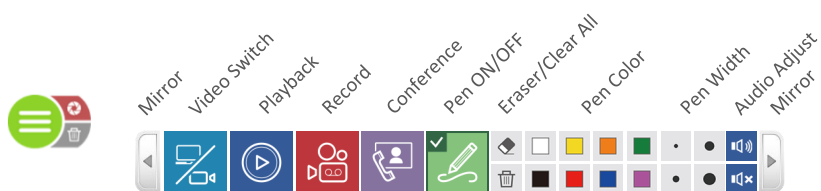
Log into the settings webpage

Prepare a PC for the settings of the first time installation.

Connection via LAN port

Turn on the product and using RJ45 cable to connect PC with the **LAN** port of the product. Set the PC's IP address to 192.168.11.XX*. Then open the web browser and input 192.168.11.254 as the URL to access the product setting page.

Log in web page with default username "admin" and password "lcsadmin", then entering the system Administrator webpages.

* "XX" is any number between 1 and 253

Connection via WAN port

Turn on the product and using RJ45 cable to connect router with the **WAN** port of the product. And connect router to PC with RJ45 cable. Set the PC's IP address to DHCP. Push Information button to get IP address of the product.

Then open the web browser and input the IP address of the product as the URL to access the product setting page.

Log in web page with default username "admin" and password "lcsadmin", then entering the system Administrator webpages.

Language switching : The product automatically detects PC's system language and selects the coordinate language to display. The product also provides Language options on the top-right corner of the webpage for changing.

> [**NOTE**]
> Be sure to change the user name and password of the Administrator / Online Director / Video Manager after first logging in to the administrator page. Please be careful in managing user name and password. For details, refer to section "Account". (📖80)

Settings of the video and audio input sources

Refer to section "Media I/O" to setup video & audio input sources. (📖48)
If you use HDMI input, make the following settings.
Go to [Media I/O]→ [Video inputs]→ Select the Enable checkbox of the HDMI port number to which the HDMI output device is connected. For example, if CH1 is selected, select the Enable checkbox of ⭕ in the following figure.

If you use network camera, make sure it comply with standard ONVIF before the setting.
Then check if the RJ45 is well connected with the product LAN port and the camera is ON.
Check Camera's product label and remember the MAC address of the camera.
Come back to Administration webpage.
Go to [Media I/O]→ [Network Camera Manager]→ Press [Refresh] button
The network camera should be listed in the table and using **MAC** address to identify the one in use.
Press "Login" button and input camera's account name and password* to pass authentication until "Status" shows "OK".
Remember the IP address of the camera.
*: To know camera's account name and password, please refer to the manual of the network camera.

Settings of the video and audio input sources (continued)

Go back to [Media I/O]→ [Video Inputs]→ scroll down to [Cam 1 Group].
From "Video Source" drop down list, select "Network Camera".
Then you will be able to assign the correct camera as the video source via "IP address" and press "Apply".

1   **Cam 1 Group**

Video Source : Network Camera

Name :

Cam 1

Video Source :

Network Camera

Change icon :

CH2

IP address :

10.2.50.153(CI-230) Connected

PTZ control :

Over IP

Apply

Press 〖icon〗 icon to enter advanced configuration page and check the video source. For details of advanced configuration, please refer to section "Content Group / Cam1 Group / Cam2 Group" (📖51).

Settings of the conference function

Go to [Conference] and assign the product as the internal conference server or point to an external server.

As an internal conference server, the product needs to have a fixed/public IP address in order to let other product access via internet. Check with IT staff to make sure port 1935 & 5070 are not block in the local network environment.
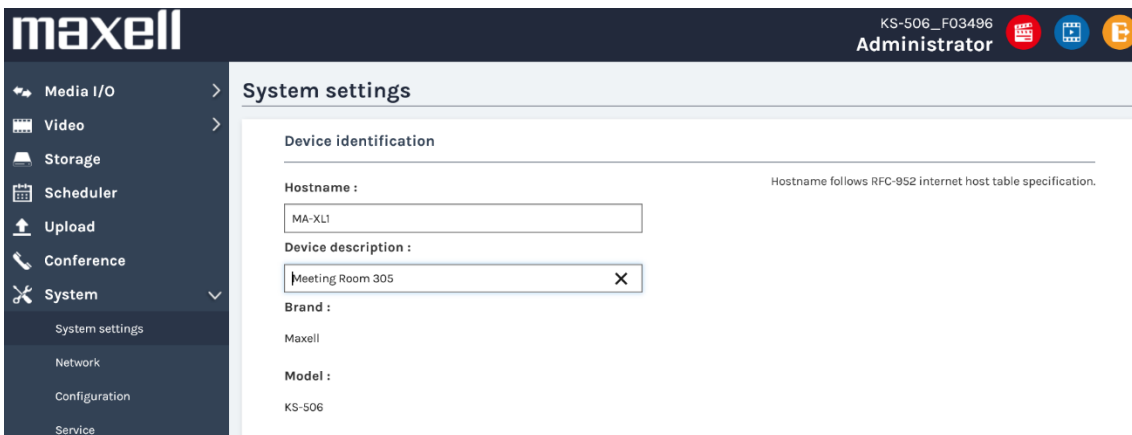
When set as the external server, means there must be another product already set as the internal conference server. To join into the same contact list, input the IP address of the product which is set as the internal server. When the connection built, the conference icon in the toolbar will turn from disable to be available.
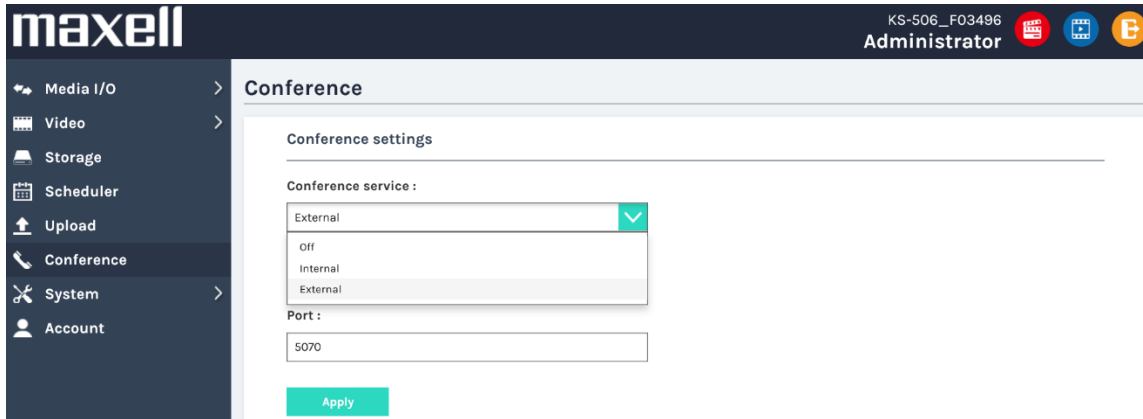
Scroll down to find "Encoder Settings". Change the video compression profile if necessary.
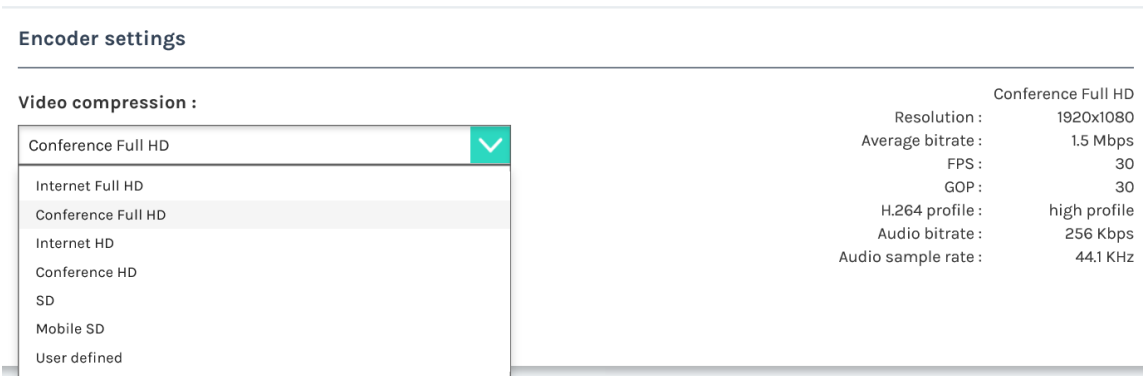
Then, Go to [System]→ [System settings]→ find "Device description". Give(assign) this product a name for identification. This name will show in the "call-out list". And while connection built, users from the remote site could see this description on the top banner.
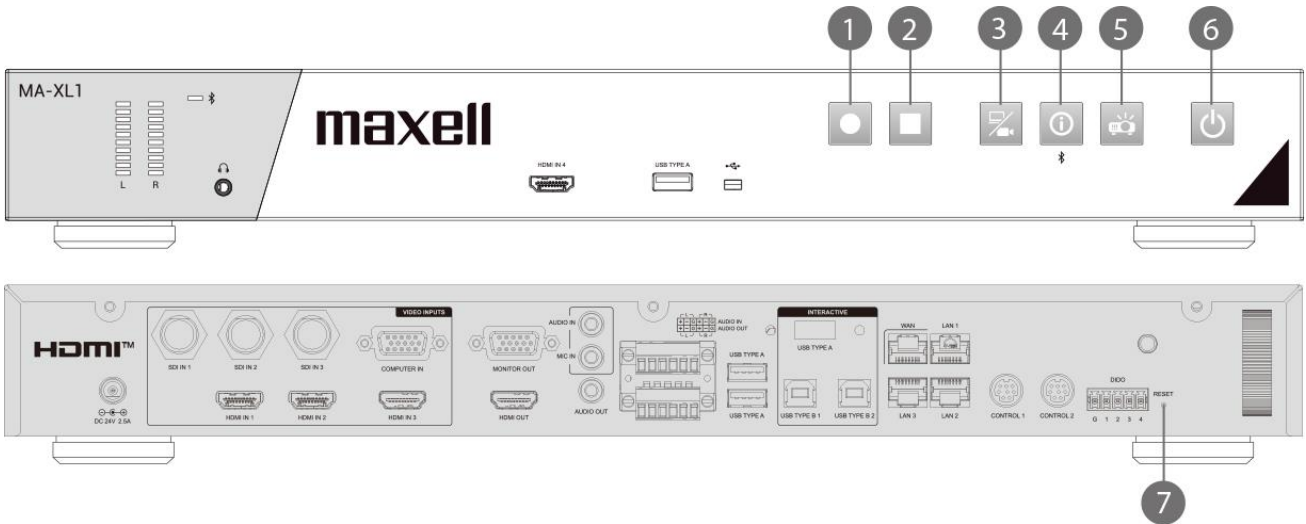
27

Settings of the conference function (continued)

Button Control

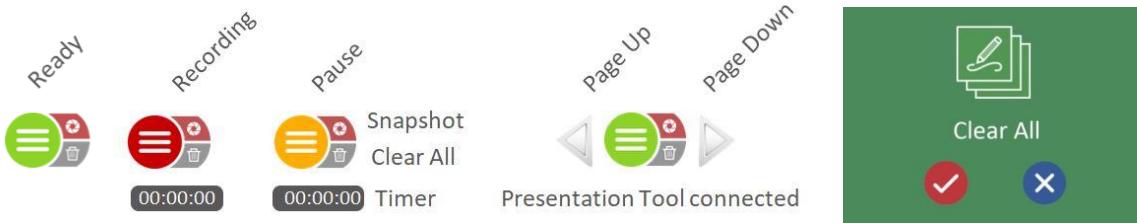| No.	Name	Brief information
1	Recording start button	Recording start Pause while recording and click again to resume recording.
2	Recording stop button	Recording stop

3	Video switch button	Video source switch; cycling switch for each assigned source
		   CH1->CH2->CH3, In each CH, follow below order
		   HDMI1->HDMI2->HDMI3->HDMI4->VGA->SDI1->SD2->SD3->Network Camera

4	Information button	**Short push :** Information list appears and USB mouse control switch back from PC to the product **Long push :** 2 sec. Bluetooth pairing start *The nearest one or the strongest one or the first one would be paired in pairing mode. *The product's Bluetooth module can pair with only one Bluetooth device at a time. And only one paired device could be kept for auto-connection next time. *Bluetooth Auto connection: When any of the Bluetooth devices disconnected, the product would auto connect to the remembered Bluetooth device. The retry interval is 5 seconds.
5	Projector power button	Power on / off button of PJLink compatible projector or Hitachi / Maxell projector.
6	Main power button	Power on/off button for the MA-XL1 **Short push** : pop out a dialog to ask if power off is confirmed. **Long push** : power off directly
7	Reset	Users are not allowed to use this reset. For service personnel only.

Graphical User Interface

When there is any mouse or touch device connected to the product, users could see the graphical user interface appeared. It includes menu ball and toolbar which carry several of the useful functions for teachers or presenters.

Menu Ball

The menu ball carries most important information of the system and useful functions. Do a snapshot, clear all the annotation, control presentation slide page up & down and show recording status. Users could also move the menu ball to any location of the display for ease of use.

Icons	Function description	Remark
Toolbar switch ≡	• Show device status: Ready or recording or Pause • Click to call toolbar appear/disappear	Long press 2 seconds in any space to lead the menu ball to change location
Snapshot	Screen shot of the display	Menu ball & Toolbar will flash one time to show captured.
Clear all	Clear all the annotation in current display	-
Timer 00:00:00	Show the recording time	-
Page Up	Control presentation slide page up	Icons appear only when the Presentation tool connected with the product via PC. For details, refer to section "Presentation tool ". (📖101) If it's not in full screen mode, click either on Page Up icon or Page down icon could enter full screen mode
Page Down	Control presentation slide page down	

Snapshot function:
Allow users to do snapshot of the display, for both video source and annotation:
The snapshot image would be saved as JPG file into assigned storage*
While users insert front USB storage and activate "front USB recording" function in admin setting page, JPG file would be saved in both assigned storage* & front USB storage.
While recording, the product would automatically insert an index with thumbnail together with the snapshot image captured.
The menu ball and toolbar will flash once after snapshot icons pressed to show it works. No graphical user interface would be taken within the snapshot image.
* Assigned Storage: internal HDD or rear USB storage, please refer to section "Storage".(📖64)

 : Snapshot from menu ball   : Snapshot from playback toolbar

Toolbar

All the main function icons are in toolbar, and allow users to mirror icons arrangement.
Including video switch, playback, record, conference, annotation and pen ON/OFF, eraser, clear all, pen color for annotation, pen/eraser width for annotation, audio output adjustment/mute and mirror all icons.

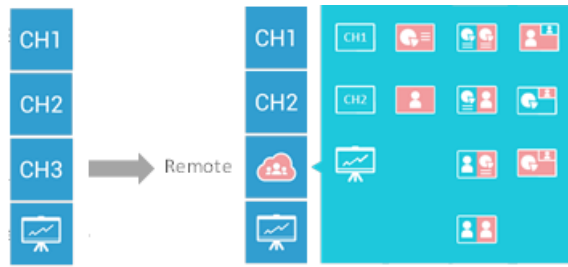Mirror placement of all icons
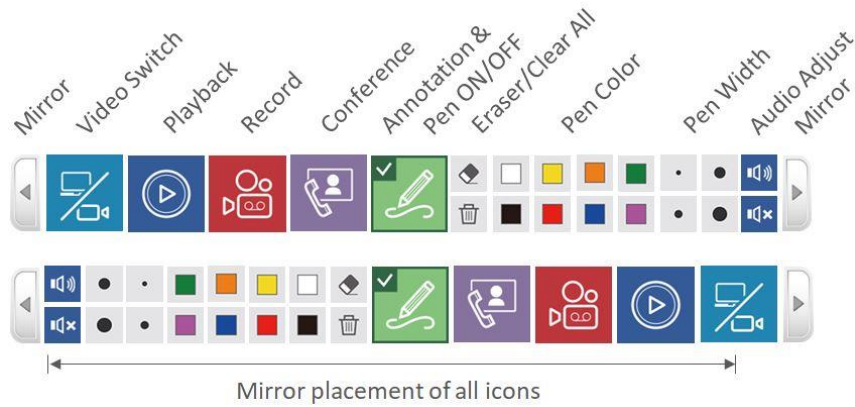
Video switch

The product allows installers to connect different types of video input sources(HDMI/VGA/SDI/IP video) and assign them into different channel groups(CH1/CH2/CH3). For details, refer to section "Video inputs" (🔖49). Besides, during the conferencing mode, it also allows users to select the video sources from the remote site. Furthermore, the whiteboard groups offer 4 types for selection. Use video switch icons to choose target video source and show on the display for sharing. In addition, icons that were not assigned are grayed out.
You can also switch video by using the video switch button on the front panel of the product.
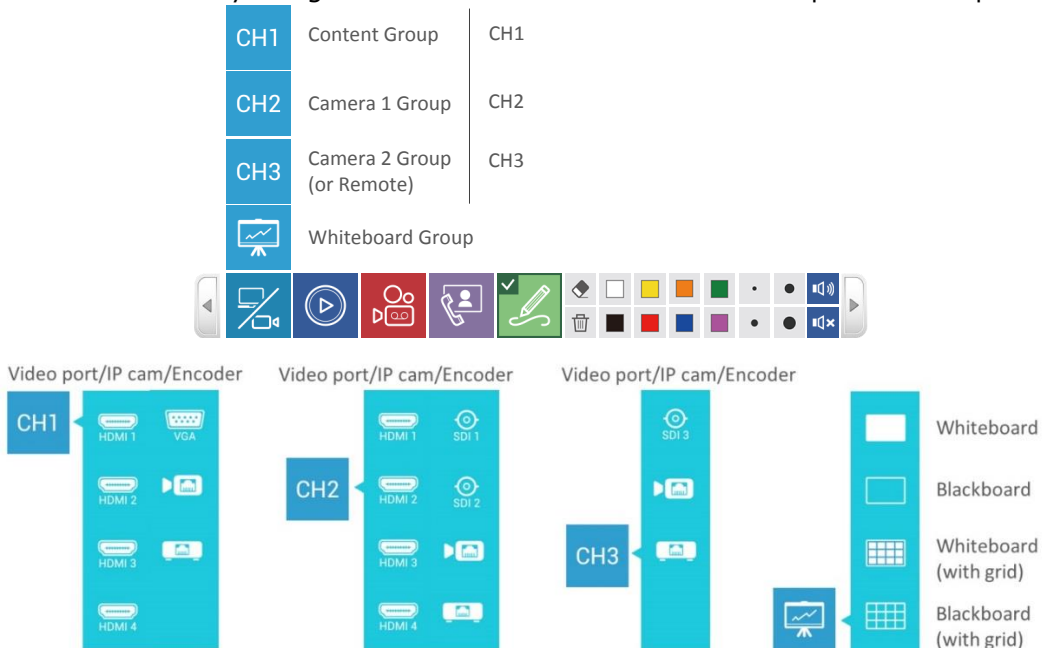
During the conferencing mode, CH3 would be replaced by remote video sources for the ease of communication and collaboration purpose. Which means users cannot switch to any CH3 video sources under this mode.

(continued on next page)

31

Function descriptions:

Layer 1	Layer 2		Function description	Remark
Video switch	CH1	Channel 1 group for Content	Select one of the assigned local content sources to show on the display device	HDMI 1 /2 /3 /4 , VGA or IP camera , encoder for selection
	CH2	Channel 2 group for Camera 1	Select one of the local camera sources to show on the display device	HDMI 1 /2 /3 /4 , SDI 1 /2 or IP camera , encoder for selection
	CH3	Channel 3 group for Camera 2	Select one of the local camera sources to show on the display device	SDI 3 or IP camera , encoder for selection
		Remote Sources group	Select one layout of the remote sources to show on the display device	Totally 12 layouts for selection For detail refer to section "Conference". (📖39)
		Whiteboard Group	Select one whiteboard type to show on the display device	Whiteboard/ Blackboard/ Whiteboard with grid/ blackboard with gird

Playback

Allow users to playback snapshot images, existing and current recording files.
• Snapshot preview: show all images captured in hard disk.
• Current recording video: playback current recording video from the start recording time.
• Existing files: all the videos saved in assigned storage could be selected and playback.
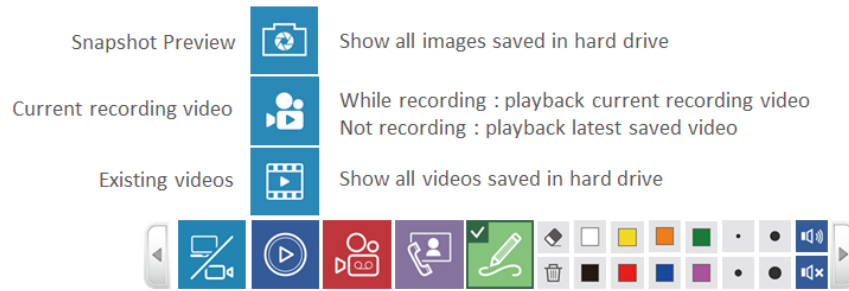
After click snapshot preview or existing video icons, a dialog window would pop up to show Image List or Video List.
Using page up and page down to review Image List or Video List, and select the folder/file you want to playback.

33

Function descriptions:

Layer 1	Layer 2	Function description		Remark
Playback	Snapshot images	Show all the folders which contain snapshot image files		Images taken in the same day are put in the same folder Display 4 folders in one page
		Image list Dialog	Choose any file in the list to playback	Show Date and numbers of the image files in the folder
			‹Page up	folder list page up
			›Page down	folder list page down
			✕Close	Close the dialog
			▭Folder pages list	Click to jump to different folder index page
	Current recording video	• While recording: playback current recording video from start time • Not recording: playback latest saved video file		-
	Existing videos	Show all videos saved in hard disk drive		4 videos in one page
		Video list Dialog	Choose any file in the list to playback	Show Thumbnail/ Date/ Start-End time/ Video duration
			‹Page up	file list page up
			›Page down	file list page down
			✕Close	Close the dialog
			▭Video Pages	Click to jump to different video page

After click the folder or video to playback, the display would enter playback mode.
Under playback mode, the function toolbar would be different.

Image playback mode:

Annotation Tool

↓ Show latest one when preview

Mirror Exit Snapshot First Image Previous Image Next Image Last Image Date Info Total Images Current Image Eraser/Clear All Pen Color Pen Width

Mirror placement of all buttons

Function descriptions:

Icons	Function description	Remark
Mirror	Function icons rearrange from left ←→ right	Playback mode toolbar
Exit	Exit the playback mode and back to the main toolbar	-
Snapshot	Screen capture during playback mode	-
First Image	Jump to the first Image	
Previous image	Show previous image	-
Next image	Show next image	-
Last Image	Jump to the last Image	
Folder information 2017.07.13	Show the date when the folder built	-
Image number 125/125	Show the current image number from total images in the folder	-
Annotation toolbar	Eraser	Eraser the part mouse move over
	Clear all	Clear all the annotation on playback mode
	Pen color	Change color to white/ black/ yellow/ blue/ green/ red/ orange/ purple
	Pen width	Pen: 3/6/9/12 pixels Eraser: 16/32/48/64 pixels

Video playback mode:

Function descriptions:

Icons	Function description		Remark
Mirror	Re-arrange Function icons from left ←→ right		Playback mode toolbar
Exit	Exit the playback mode and back to the main toolbar		-
Snapshot	Screen capture during playback mode		-
Index list	Show Index list attached with this playback video		4 Index items in one page
	Index list dialog	Choose any Index to jump to the correspondent time stamp to playback	Show Thumbnail/ Index title/ Index time
		Page up	Index list page up
		Page down	Index list page down
		Close	Close the dialog
		Index Pages	Click to jump to different Index list page
Source switch	Switch between different video source while playback		Only available if the recording video include individual source files
Last Index	Skip to last Index time stamp to playback		-
Play/Pause	Playback chosen video While the video is playing, click to pause and click again to resume		-
Next Index	Skip to next Index time stamp to playback		-
Time bar	Show playback progress in bar Click any point on the bar will jump to correspondent time		-
Time information	Show total recording time & current playback time		-
Audio On/Off	Mute or resume playback audio		-
Volume bar	Show playback volume level Click any point on the bar will adjust to correspondent volume level		-
Annotation panel	Eraser		Eraser the part mouse move over
	Clear all		Clear all the annotation on playback mode
	Pen color		Change color to white/ black/ yellow/ blue/ green/ red/ orange/ purple
	Pen width		Pen: 3/6/9/12 pixels Eraser: 16/32/48/64 pixels

Record

The product supports lecture capture functions. From graphic user interface, users could do simple recording controls which including recording start/pause/stop, layouts preview and selection.
After recording start, the icon of Record will change to Pause. Icon changes to Record during pause and click on record icon to resume recording. You can also recording start/pause/stop by using the recording start/stop button on the front panel of the product.

Function descriptions:

Layer 1	Layer 2	Function description	Remark
Recording	Snapshot	Screen shot of the display	Menu ball & Toolbar will flash one time to show captured.
	Record	Start recording Click to Pause while recording	Recording icon on toolbar change to yellow while recording
	Pause	Click to resume recording	-
	Stop	Stop recording	-
	Layout selection	Click to select recording layout	• Single source(Display content)/ • Picture in Picture(Display content big + Camera 1 small)/ • Picture by Picture (Display content + Camera 1)/ • Triple sources: (Display content + Local camera 1 + Remote camera 1 or Display content + Local camera 1 + Local camera 2)

While the recording time of the internal HDD or external USB storage is limited, a confirm dialog will show on screen to remind users that the maximum time length of current recoding job, users could confirm to record or cancel recording attempt.

Record (continued)
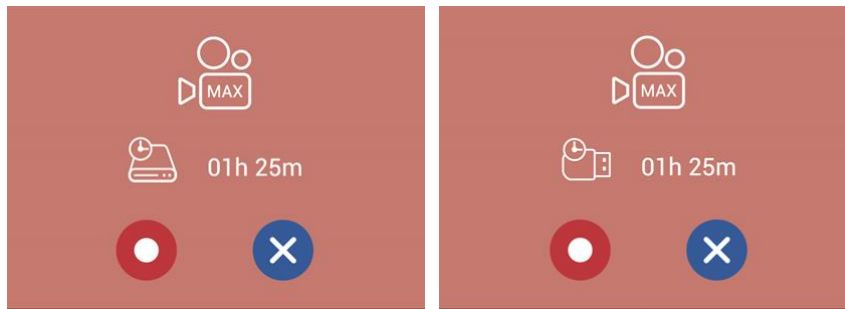
After recording start, all menu and confirmed dialog will disappear, only menu ball appear and the timer start.

[**NOTE**]
- Maximum time length of a recording video file is 8 hours.
- A dialog will be displayed to show the available recording time if the recordable time is 8 hours or less. The system will only show the less one between internal HDD and the front USB storage.
- If front USB storage is FAT32 format, the maximum file size is 4GB.
- If front USB storage is NTFS format, maximum recording time would be based on USB storage free space & recording profile
- Recording will be stopped under below conditions:
  - Remaining time is zero
  - HDD or front USB storage cannot be access
  - HDD or front USB storage cannot be read/write
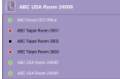
Conference

The product provides an easy way of conferencing and collaboration functions.

39

Function descriptions:

Layer 1	Layer 2		Function description	Remark
Conference	Open Contact list		Show Contact list	-
		Contact list	Show local device name	-
			Show destination devices names	●Green: ready for call ●Black: device not available ●Red: Busy ●Yellow: waiting for connection
			Click to choose one destination device and make a call	✆Accept or ☎Refuse icons s in call in dialog ☎Stop icon in call out dialog Conferencing icon on toolbar change to yellow while connected ABC USA Room 24009 ABC Taipei Room 301 Call-out Dialog Call-in Dialog
			Close the dialog	-
	Hang-up		Disconnect the conferencing	-
	Collaboration on/off		Collaboration enable/disable	

> [**NOTE**]
> - When the call is waiting for acceptance, the product would keep playing a ring tone.
> - If anyone is in a conference call in the list, you cannot call out.
> - If the call doesn't be accepted within 15 seconds, the dialog will disappear and the ring tone will stop.

After the call been accepted, the ring tone would be stopped, and a bar shows the remote name at the top area of the display, an icon 🔗 shows when collaboration is ON.
Furthermore, the display will show Camera 1 Picture-in-Picture. The big window shows remote camera 1 while the small window shows local camera 1.
Use video switch to select target video input source for display and collaboration. For details, refer to section "Video switch" (📖31)

Hang up the call by clicking the icon at the right side of the bar or click the icon 🔨 in main toolbar.

Collaboration Status   Connection Name   Hang-up
🔗 ABC USA Room 24009

Collaboration

When users enable collaboration function, annotations from each site would be shown on both screens, and any change of the video source on display would automatically apply to another site to make sure the users from two sites could see the same content on display.

Collaboration ON   Collaboration OFF

Refer to the table below for the displayed content.

Device-A (Local site)
    [A]: content channel (CH1 of Device-A)
    [a] : camera channel (CH2 of Device-A)

Device-B (Remote site)
    [B] : content channel (CH1 of Device-B)
    [b] : camera channel (CH2 of Device-B)

Device-A			Device-B		
Video Source	**Description**	**Local Display**	**Auto Switch**	**Description**	**Local Display**
CH1	Local content (Local CH1)	[A]		Remote content (Remote CH1)	[A]
CH2	Local camera (Local Ch2)	[a]		Remote camera (Remote CH2)	[a]
	Local whiteboard	[WB]		Local whiteboard	[WB]
	Local playback	[Play]		Remote content (Remote playback)	[Play]
	Remote content (Remote CH1)	[B]	CH1	Local content (Local CH1)	[B]
	Remote camera (Remote CH2)	[b]	CH2	Local camera (Local CH2)	[b]
	Local content + Remote content (Local CH1+ Remote CH1)	[A+B]		Remote content + Local content (Remote CH1+ Local CH1)	[A+B]
	Local content + Remote camera (Local CH1+ Remote CH2)	[A+b]		Remote content + Local camera (Remote CH1+ Local CH2)	[A+b]
	Local camera + Remote content (Local CH2+ Remote CH1)	[a+B]		Remote camera + Local content (Remote CH2+ Local CH1)	[a+B]
	Local camera + Remote camera (Local CH2+ Remote CH2)	[a+b]		Remote camera + Local camera (Remote CH2+ Local CH2)	[a+b]
	Remote camera + Local camera (Remote CH2+ Local CH2)	[b+a]		Remote camera + Local camera (Remote CH2+ Local CH2)	[a+b]
	Local content + Remote camera (Local CH1+ Remote CH2)	[A+b]		Remote content + Remote camera (Remote CH1+ Remote CH2)	[A+a]
	Remote content + Remote camera (Remote CH1+ Remote CH2)	[B+b]		Local content + Remote camera (Local CH1+ Remote CH2)	[B+a]

After hang-up the phone, the display source will return to CH1 & system will remember the source before the connection built.

Conference (continued)

Display layout for Conference

The display will show Picture-in-Picture. Big window for remote camera 1 and small window for local camera 1 video.

Meanwhile, the video switch function on toolbar will switch from Camera 2 to remote sources. Allow users to switch remote Content/Camera 1/Picture-in-picture/Content side-by-side/Camera 1 side-by-side/Camera 1 picture-in-picture.
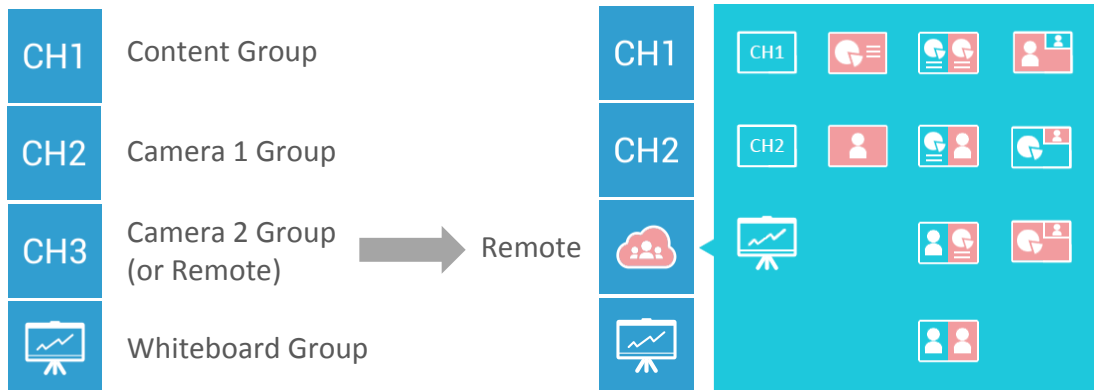
Icon	Description	Display Layout
CH1	Local content video (Local CH1)	Full screen
CH2	Local camera 1 video (Local CH2)	Full screen
	Local whiteboard	Full screen
	Remote content video (Remote CH1)	Full screen
	Remote camera 1 video (Remote CH2)	Full screen
	Local content + remote content (Local CH1 + Remote CH1)	Picture-by-picture ● Left : Local content ● Right : Remote content
	Local content + remote camera 1 (Local CH1 + Remote CH2)	Picture-by-picture ● Left : Local content ● Right : Remote camera 1
	Local camera 1 + remote content (Local CH2 + Remote CH1)	Picture-by-picture ● Left : Local camera 1 ● Right : Remote content
	Local camera 1 + remote camera (Local CH2 + Remote CH2)	Picture-by-picture ● Left : Local camera 1 ● Right : Remote camera 1
	Local camera 1 + remote camera 1 (Local CH2 + Remote CH2) *Default layout when conference connected	Picture-in-picture ● Full screen : Remote camera 1 ● Top-right : Local camera 1
	Local content + remote camera 1 (Local CH1 + Remote CH2) *Default layout when conference connected	Picture-in-picture ● Full screen : Local content ● Top-right : Remote camera 1
	Remote content + camera 1 video (Remote CH1 + CH2)	Picture-in-picture ● Full screen : Remote content ● Top-right : Remote camera 1

Annotation

Using the interactive projectors or touch monitors, the product could allow users to do annotation on still images, videos and a white board. It supports 8 colors and 4 sizes of the width could be selected.

Function descriptions:

Layer 1	Layer 2	Function description	Remark
Annotation and Pen ON/OFF	-	OFF: Hide all the annotations and show mouse cursor only ON: show all existing annotations	
Eraser	-	Eraser the part mouse move over	-
Clear all	-	Clear annotation on display Long click 2 sec. Could pop-out dialog to confirm if clear all annotation for each input source	-
Pen color	8 colors	Change color to white/ black/ yellow/ blue/ green/ red/ orange/ purple	-
Pen width	4 sizes	Pen: 3/6/9/12 pixels Eraser: 16/32/48/64 pixels	Default Pen size: 3 pixels Default Eraser size: 64 pixels

[**NOTE**]
- The product only supports single touch annotation. Multiple-touch behavior may cause un-expected result.
- During the conference mode, the annotation on different video sources would be at the same layer.

Master Audio adjustment

A master volume control bar allows users to mute or adjust the audio volume for the speakers.

Volume Bar

Volume Adjust

Mute
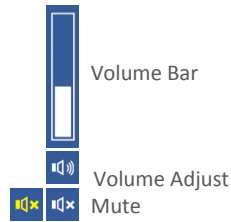
Function descriptions:

Layer 1	Layer 2	Function description	Remark
Volume Adjustment	Volume level	Click to show volume bar	-
		Volume bar	Show volume level Click any point on the bar will jump to correspondent level
	Mute	Mute & Resume	Mute on: icon become yellow Mute off: icon become white

Information Button

Push the Information button on the product front panel could show device information and allow device manager to do VGA H position adjustment, HID calibration, USB control switch and power off.

Info List

Item	Description
Host Name	For network management use
Device Description	ID to show on conference contact list.
IP Address	For accessing to the web control interface
Model	Show the model name of this product
Version	For maintenance or service identification
Brand	Show the manufacturer information about this product

Info List   Close

Host Name	MA-XL1
Device Description	HQ Room 308
IP Address	10.2.0.67
Model	MA-XL1
Version	8.0.1.3
Brand	Maxell

VGA H Adjust | HID Calibration | External USB Host | Power OFF

(continued on next page)

Function descriptions:

Button	Information / icons	Function description
Information	Show device information	Host Name/ Device Description/ IP Address/ Mode/ Firmware version/ Manufacturer
	Power OFF icon	Power OFF the product & Projector
	External USB Host icon	Click to switch USB HID to external host(ex. PC), HID goes to Host 1(USB Type-B 1) when current video source is CH1, and HID goes to Host 2(USB Type-B 2) when current video source is CH2. Menu ball & Toolbar will disappear after click this icon.
	HID Calibration icon	See below illustration
	VGA H Adjust icon	Adjust the VGA input H offset position
		Adjust the VGA input H offset phase
	Close icon	Close information dialog

HID calibration: some of the interactive projector / touch monitor need to be calibrated before use. Use USB mouse device to click the calibration icon to start.
First appears the Touch Module list, select one and then start the calibration process.
Use touch pen or finger to click on the center of the red circles/dots one by one. Totally 5 circles/dots, and each circle/dot keep 30 seconds for time out.
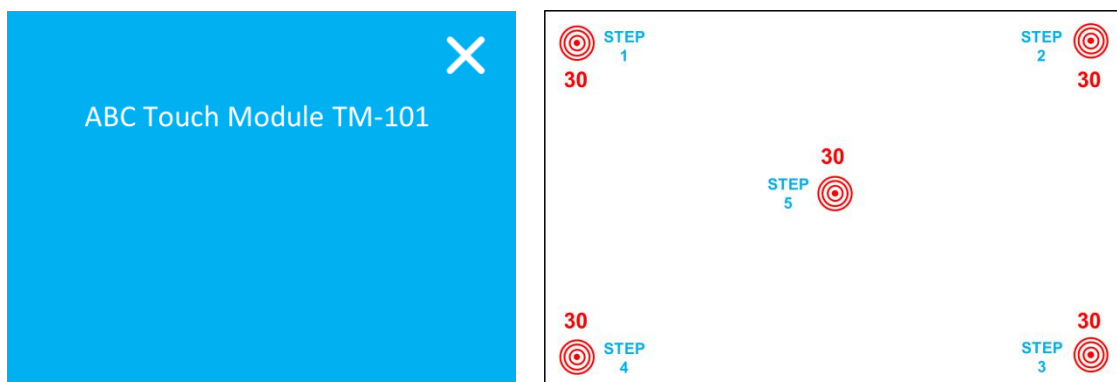
[**NOTE**]
• Both HID Calibration & External USB Host icons appears while HID such as interactive projector or touch monitor connected.

Lecture information import

Users could edit a text file for the lecture(video) information and this information would be recorded together with the video and be uploaded to the video server.

1. Edit the video information based on below instruction and save into the USB storage.
2. The file name should be defined as "lcs_user_config.ini"
3. The data should be written in below format.
   Add an arbitrary character string after "=".

   [Content Information]

   Title =

   Organization =

   Department =

   Event_date =

   Semester =

   Topic =

   Level =

   Audience =

   Room =

   Category =

   Presenter =

   Section =

   Description =

4. Insert the USB storage into the product front USB port. The product will recognize the data with pre-defined format and import the data to combine with recording file and show in video manager UI.
5. After the product read and confirm the data, a dialog will show on GUI.
6. Press Confirm button to continue.

Content Info List   Close

Title	Dennis's Class
Organization	Maxell
Department	Teacher
Event's Date	2018
Semester	A++
Topic	Matrix
Level	Grade 6
Audience	K-12
Room	301
Category	Mathematic
Presenter	Dennis
Section	Chapter 3
Description	Welcome to Dennis' Math Class and enjoy a lot!!!

[**NOTE**]
- Available characters: 1024 Unicode for Description and 256 Unicode for the others.
- If ";" is inserted before the item name, that item will be ignored.

Web Interface

Overview of the Web Interface

The product web interface has three user modes, which are described in detail in the following chapters :

User mode	Description
Administrator	To setup the device, logging into Administrator with default username "admin" and password "lcsadmin". The admin account provides highest priority to log into all three user modes.
Online Director	For quick start recording and video source switching, logging into Online director mode from the initial login page with default username "director" and password "lcsdirector". This user also could access to Video Manager web pages and recording related pages in administration.
Video Manager	If you only need to access to the recordings, log in Video Manager with default username "video" and password "lcsvideo".

Log-in Authorization	Administrator	Online Director	Video Manager
Administrator	V (Default page)	V	V
Online Director	V (Video setting page only)	V (Default page)	V
Video Manager			V (Default page)

[**NOTE**]
  Be sure to change the user name and password of the Administrator / Online Director / Video Manager after first logging in to the administrator page. Please be careful in managing user name and password. For details, refer to section "Account". (📖80)

Administrator

The Administrator web pages provide a system administration interface of the product : It includes Media I/O, Video, Storage, Scheduler, Upload, Conference, System, Account settings.
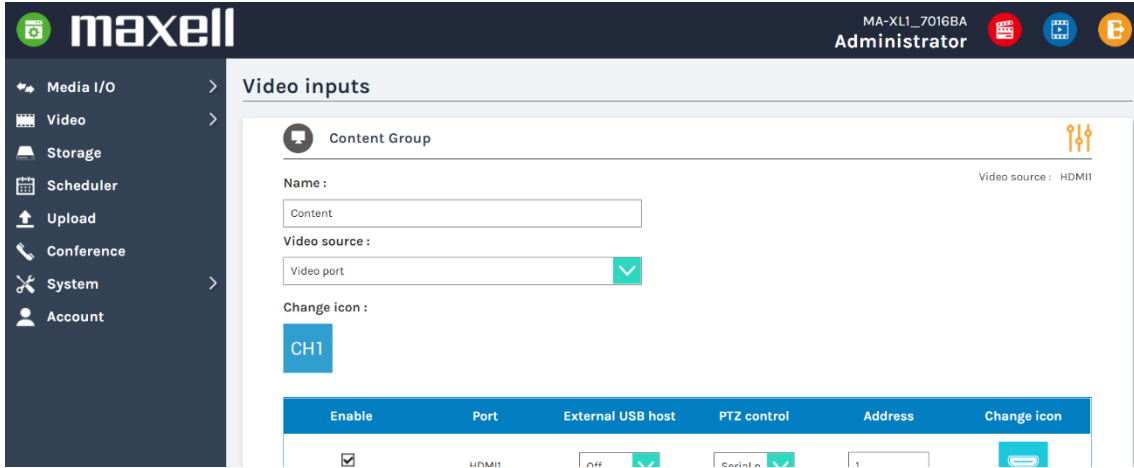
NOTICE
Pay attention to the configuration setting. There is a possibility of data deletion and information leak if you make wrong setting.

[**NOTE**]
- Pay attention to the configuration setting. There is a possibility of data deletion and information leak if you make wrong setting.
- After changing the setting, be sure to back up the configuration file by exporting the configuration file. For details on backing up the configuration file, refer to section "Configuration". (📖76)

Media I/O

Media I/O settings help you assign video inputs to each video channel, camera authentication, PTZ control setting and audio related adjustment. The functions within "Media I/O" include the following :

Item	Description
Video inputs	Select video source to do settings, enable/disable video capture sources, change sources icon and assign PTZ control method for each input.
Network device manager	Search & list all the connected network cameras. Camera management including authentication & delete.
PTZ control port	Set the product RS-232 serial port for the control of PTZ cameras or other PTZ devices.
Audio	Adjust the volume and set the audio input gain.

Video inputs

The product is capable to process up to three video inputs at the same time. The name of each input could be defined by administrators; the default value is "Content", "Cam 1" and "Cam 2". The icon on display could also be changed (default icons show CH1/CH2/CH3). Click on the icon, one dialog carries all the options would pop up for selection.

49

Video inputs (continued)

[**NOTE**]
- Ch2 is dedicated to camera, please assign a camera to Ch2. Assigning other video or content may cause the video to be distorted or change color.
- The video recorded with this product may not be used without permission by the right owner under the copyright law.
- When using a device such as a camera, please take responsibility for the subject's privacy, portrait right, copyright on your responsibility. Appropriately respond to privacy, portrait right, copyright, etc. by getting consent beforehand from the person who becomes the subject at your own risk as necessary. The manufacturer does not assume any responsibility for infringement acts on portrait rights, copyright, etc. using this product, or illegal acts, etc.
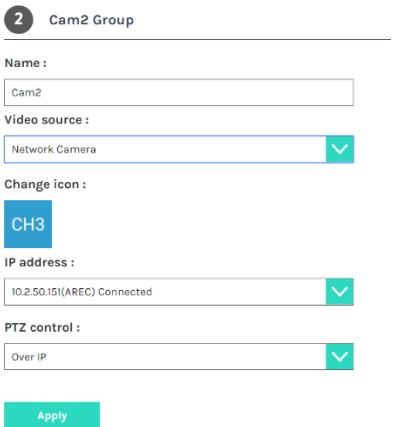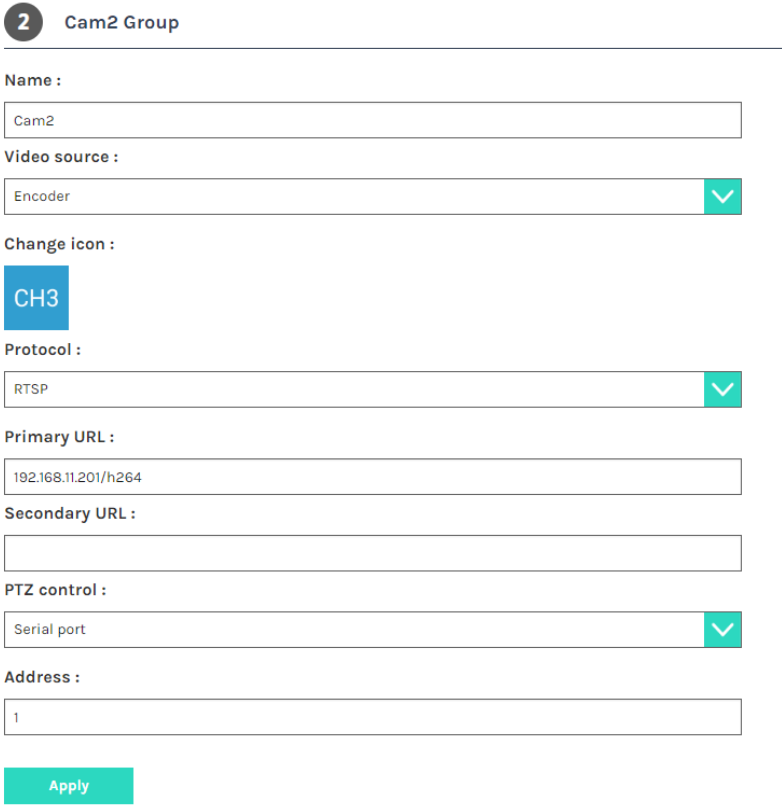
Content Group / Cam 1 Group / Cam 2 Group

Video source can be chosen as Video port, Network Camera, or Encoder.

Item	Description
Video port	Check the box to select Video source: The product provides HDMI, VGA and SDI input options. ・ Content Group : can select HDMI 1/ HDMI 2/ HDMI 3/HDMI 4/ VGA ・ Cam-1 Group : can select HDMI 1/ HDMI 2/ HDMI 3/HDMI 4/ SDI 1/ SDI 2 ・ Cam-2 Group : can select SDI 3 only While connect with PC via USB type B, it is necessary to assign USB host to be USB 1 or USB 2 Note: For HDMI1~4 port, when anyone be assigned in CH2, it would not show in CH2 for selection.

(continued on next page)

Item	Description
Network Camera	**Select IP address:** Select from the drop-down list of the available cameras which shows authentication OK and also be well connected. Note: A login authentication with the camera might be required. Refer to section "Network camera manager" for more details. (📖54)
Encoder	**Select Protocol:** The available options are RTP, RTSP, or RTMP. Enter the primary and secondary URL which provided by the encoder or stream server. Primary stream would be used for recording; where secondary URL would be used for director preview.

PTZ control : The product web interface could control PTZ cameras and provides two control methods, Over IP or via Serial port.

Serial port : When PTZ cameras connect with the product via RS-232 port. For detail refer to section "PTZ control port". (📖55)

Over IP : The option is available when the network cameras comply with ONVIF profile S.

Advanced configuration

Provide video preview and further configuration of the assigned video input device. After the video input setting is successfully applied, click 🎚️ to enter the advanced configuration page. In the case of a PTZ camera, the 9key directional control panel, zoom in/out bar, and up to 8 preset points are available for control.
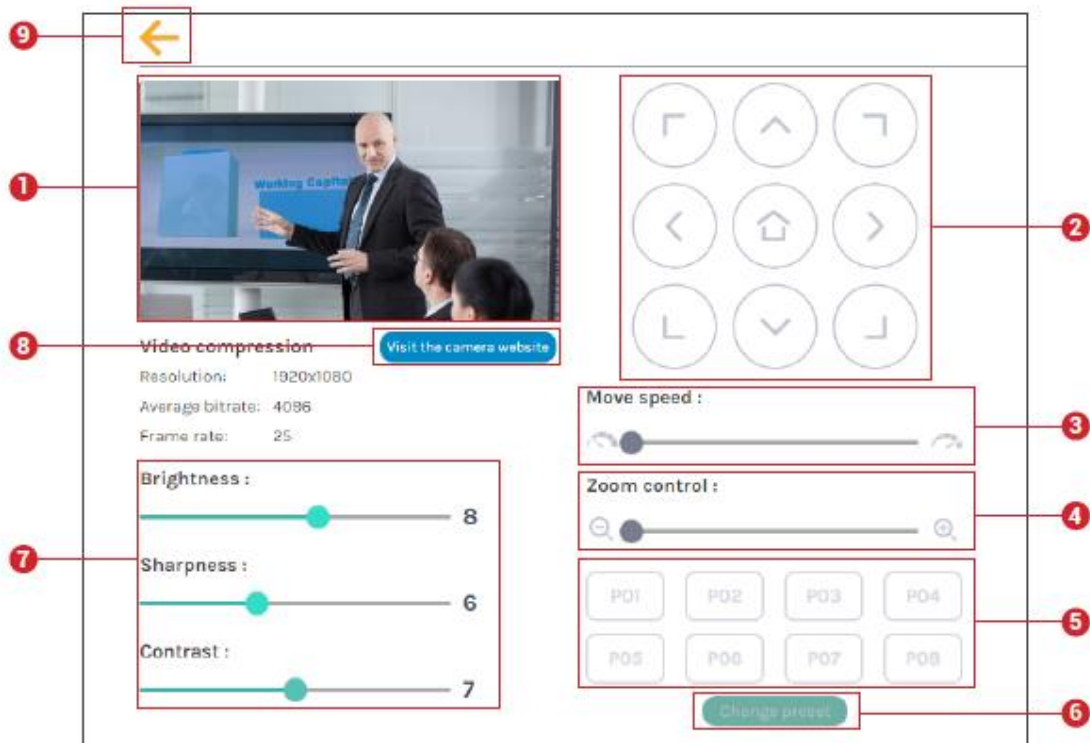
No.	Description
①	The preview of the assigned video input.
②	Direction control panel: Click the arrow icons to control camera pan and tilt.
③	Movement speed: Move leftward or rightward to set camera's moving speed.
④	Zoom in/out: Click the zoom in & out icons or drag the control bar.
⑤	Preset positions: Click the icons to drive camera to the preset position.
⑥	Change preset positions: Click the icon to change the preset positions. Select any of the P01~P08, move the camera to the new position by using the direction control panel and the zoom in/out control. Click Save icon to complete the change or click Cancel icon to give it up.
⑦	Brightness, sharpness, and contrast: Slide the bar left or right to change the camera image settings.
⑧	Visit the camera website icon: Click the icon to enter the camera management webpage. Check camera's manual for the account name and password, and input them into the pop-up authentication dialog.
⑨	Click ← icon at upper left corner to return to the last page.

Network camera manager

The Network camera manager page can display/scan the network camera connected to the product. Network cameras connected before product startup are automatically scanned.
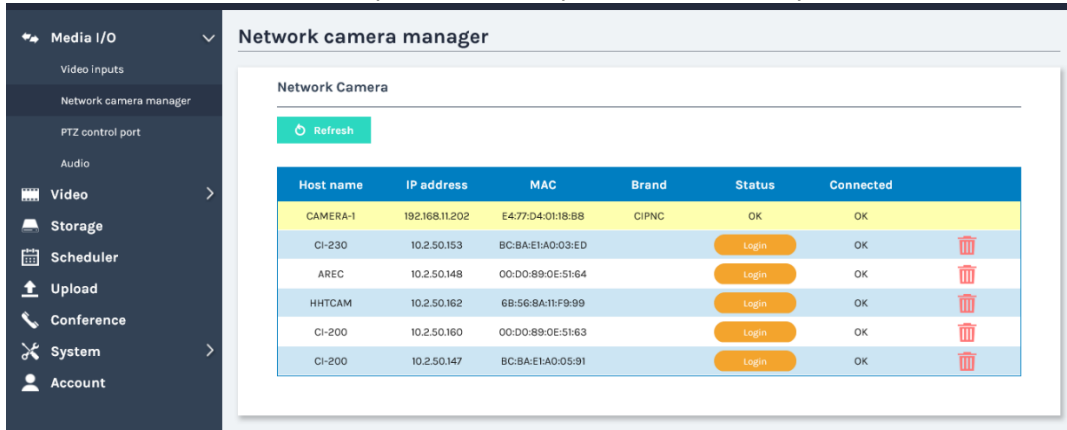
You may click Refresh icon to scan again. Click Login icon and the login authentication dialog would pop out.
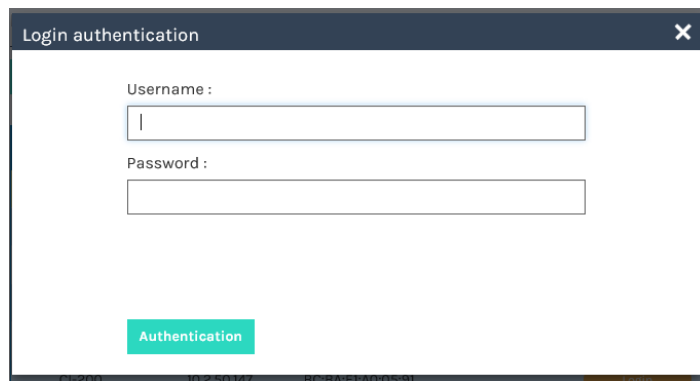
Enter the username and password of the camera to complete the authentication.
The status then changes to OK, which indicates it is available for video input selection.

[**NOTE**]
- If you fail to find your camera by clicking on "Refresh", it means the camera may not comply with standard ONVIF. If the camera supports RTSP streaming, you could try in another way to get the video stream. Select "Signal type" as "Encoder" in the "Video Inputs" and check the camera's manual to find out camera's RTSP streaming URL. Then fill in the URL into the encoder setting page.
- If ONVIF authentication of the camera is set to OFF, please press the authentication icon with Username and Password blank.

PTZ control port

The product facilitates the users control PTZ cameras via web interface. Before making any changes on the configuration, please get to know about the RS-232 settings of the assigned PTZ camera. The following information must be identified first

    Protocol : Available options are VISCA, PELCO-D, and PELCO-P;
    Baud rate : 2400, 4800, 9600, and 115200
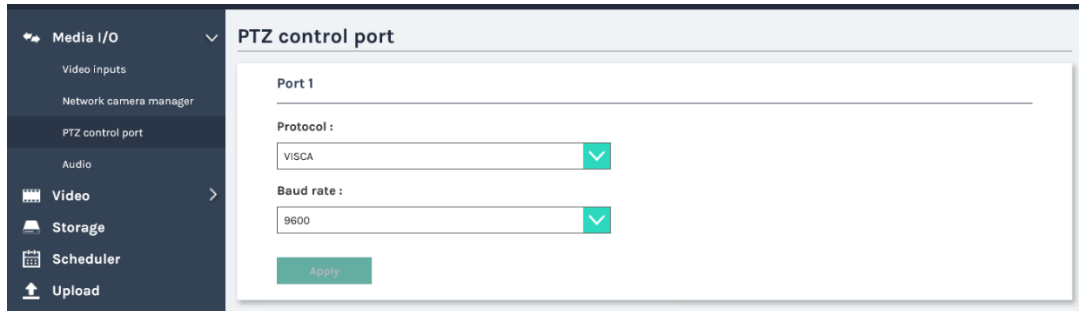
Audio

Adjust the volume and select the input source. Press Default icon, the volume will be back to factory default.
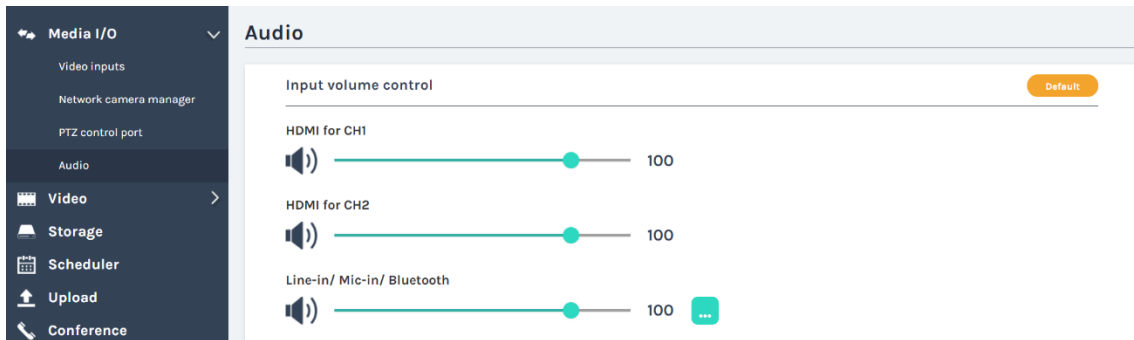
Input volume control: Adjust the volume of each audio input. The configurable range is 0-125. The volume meter indicates the energy of the current volume. In addition, you can set it to mute by clicking the 🔊 icon.

Click ⬚ for advanced settings.
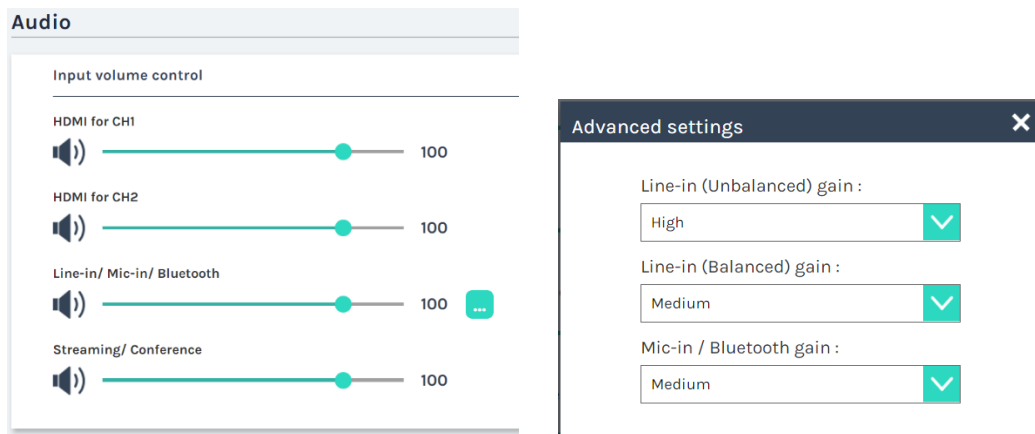
In advanced settings, for Line-in, Line-in(Balanced), and Mic-in/Bluetooth, there are 3 levels of gain could be selected.

55

Recording volume control: Adjust the volume for recording & streaming. The configurable range is 0-125. The volume meter indicates the energy of the current volume.
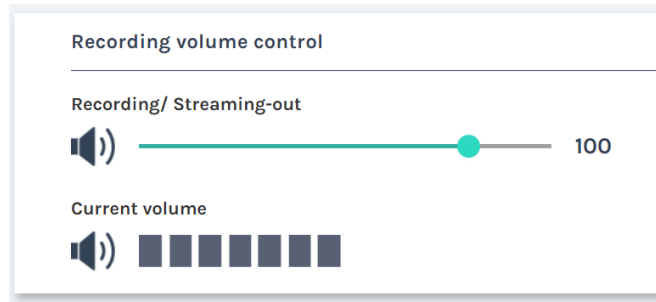
Output volume control: Adjust the audio output (via HDMI/Line-out/Bluetooth) volume. Switch Audio output loop through ON/ OFF.
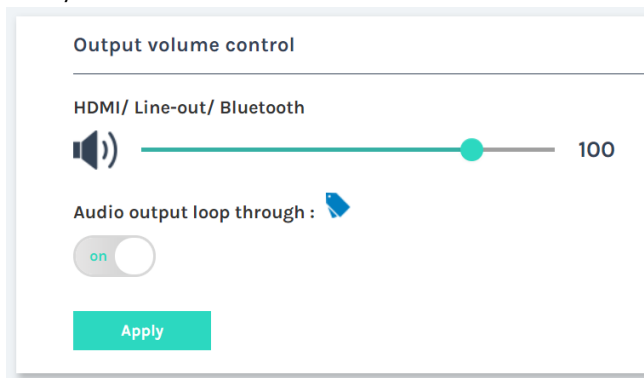
[**NOTE**]
   When speaker is connected via Bluetooth, it will be output in monaural sound.

Video

The Video setting pages provides recording & streaming related configurations. The functions within "Video" include the following :
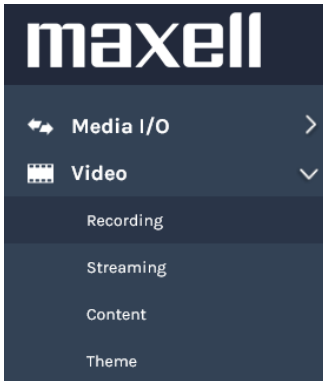
Item	Description
Recording	Configure recording mode, profile and Index related settings
Streaming	Configure streaming mode, profile and URL.
Content	Edit the video information which could be uploaded/downloaded together with the mp4 file.
Theme	Add the overlay and background images.

Recording
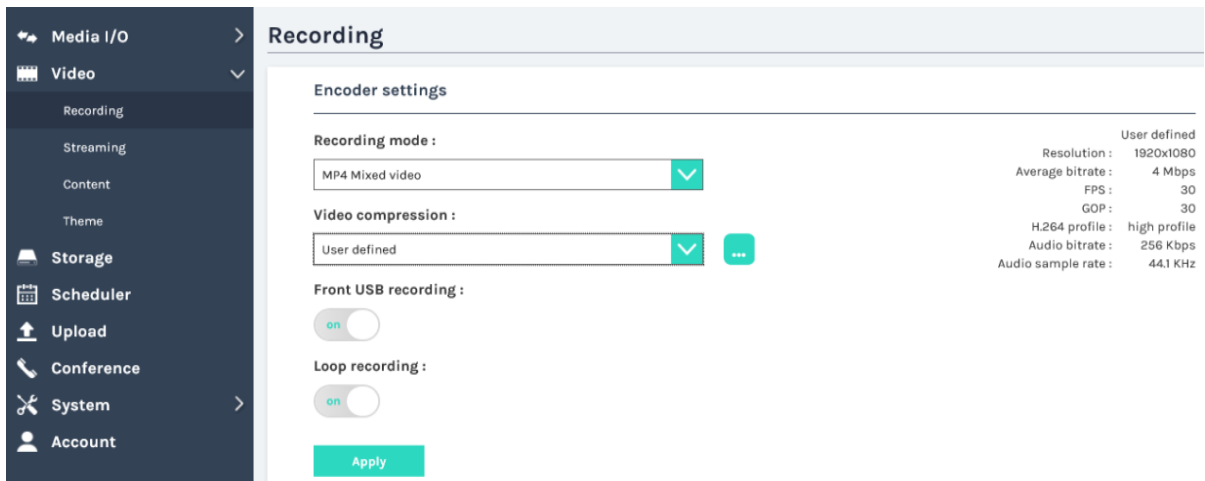
Encoder settings
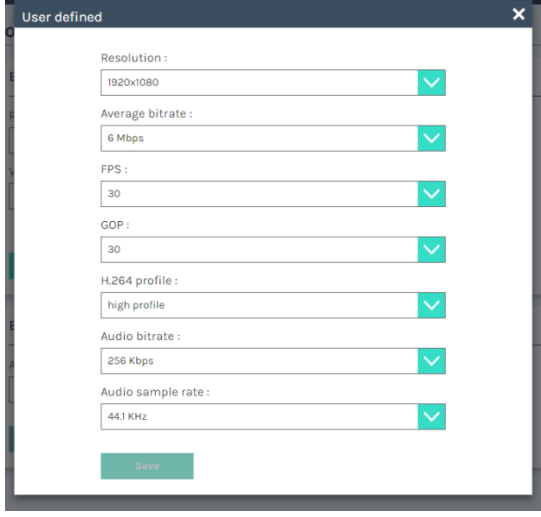
Item	Description
Recording mode	Available options are MP4 Mixed video only, MP4 Mixed video with original sources and OFF.
Video compression	There are 7 compression profiles for selection (Refer to the table below). Select one to see the detail information at the right side. You may also choose "User defined" for advanced settings.
Front USB recording	Switch between ON/OFF to enable/disable the product front USB recording function. Make sure the connected USB storage can be normally read and written and have enough space for the recording time.
Loop recording	Switch between ON/OFF to enable/disable loop recording function. Click Apply icon at the bottom when configuration finished.

Recording (continued)

[**NOTE**]
- No matter ON/OFF of Front USB recording, users still could save snapshot image when they insert USB storage into the front port.
- When you record on USB flash drive or USB HDD, it may be playable on other devices.

7 video compression profiles :

Profile name	Video Resolution/ Bitrate	Application description
Full HD	1080p/ 4Mbps	Dynamic scene and large local hard disk recording.
Internet Full HD	1080p/ 3Mbps	General scene and medium local hard disk recording.
HD	720p/ 2Mbps	Static scene and small local hard disk recording.
Internet HD	720p/ 1.5Mbps	Live broadcasting through the Internet.
SD	480p/ 800kbps	Static scene for live broadcasting through the Internet.
Mobile SD	480p/ 500kbps	Live broadcasting for portable mobile devices watching.
User defined	Click [⋯] icon for more options to configure, and click Save icon after making any change.	

Index settings:

Item	Description
Add automatically	Select on if you want to add indexes automatically during recording. Refer to the table below for conditions. **Index settings** Add automatically : [on ⬤] [Apply] Additional condition of index *(see table below)*

Additional condition of index

Add automatically	Functions	Trigger
Only on	Presentation tool	Slides changed
	Video Switch	Each video switch
	Playback mode	Enter/Esc playback mode
	Conference mode	Connection start/Hang up
On and off	Menu ball	Snapshot icon
	Playback mode	Snapshot icon
	Web Director	Snapshot icon
	Web Director- Presenter	Input text & press Snapshot icon
	Mobile controller	Input text & press Snapshot icon
	Video Manager	Add/delete Index
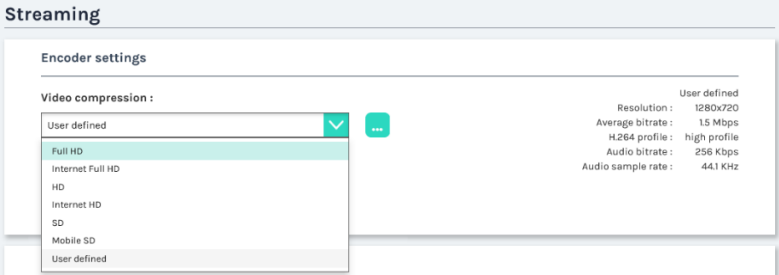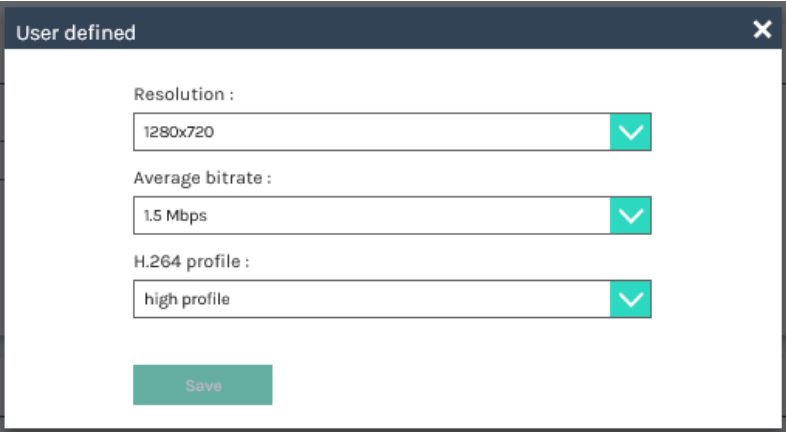
Add prefix to video filename:

Item	Description
Prefix setting	This description would be added to the video filename as a prefix string for Download and Upload. **Recording file name setting** Prefix setting : [_____] [Apply]

Streaming

Streaming profile could be independent from recording one. Normally for the smooth of the video stream transferred through network, especially for internet, users may need a smaller bitrate and resolution. Here allow you to change the profile to fit in local network environment.

Encoder settings:
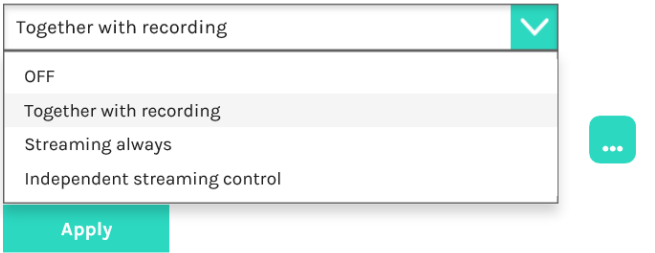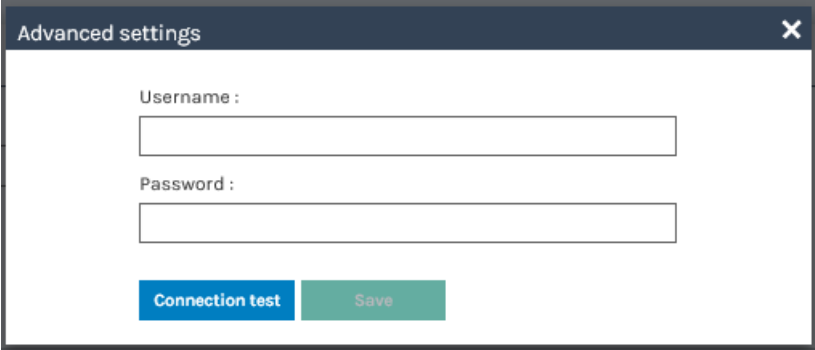
Item	Description
Video compression	There are 7 streaming compression profiles for different resolutions and bitrates. Select a proper one to see the detail information at the right side. Remember to click "Apply" icon after settings finished. Click ▦ icon for more options and click "Save" icon after making any change.

[**NOTE**]
- The product does not protect streaming contents. Take security measures by yourself.
- It's not allowed to choose the resolutions of the streaming larger than recording one.
  For example, if you already choose HD resolution for recording, then the maximum resolution for streaming profile is HD. No Full HD could be selected.
- About the 7 streaming profiles please refer to section "Recording". (▢57)

Streaming settings:

Item	Description
Live streaming	4 available options for streaming control **OFF** : No streaming **Together with recording :** Streaming control together with recording icons **Streaming always :** Always streaming after power-on. **Independent streaming control :** Recording and Streaming are controlled by independent icons. Streaming start / stop by LIVE icons. It does not work with recording. **Streaming settings** Live streaming : Together with recording ⌄ OFF Together with recording Streaming always Independent streaming control **Apply**
URL	Input target streaming server URL into the blank column. For the RTMP stream, some servers provide the server URL and key separately. Please connect server URL and the key together with "/". Click on … for RTMP name/password if necessary. URL : rtmp://0.0.0.0 **Advanced settings** ✕ Username : Password : **Connection test** **Save** **Protocol** The available protocols on the product are RTP and RTMP, the URL format is as follows : RTMP: In the protocol setting field, copy and paste the Server or Stream URL and Stream name provided by your CDN (Content Delivery Network) or server administrator in the format of rtmp://serverurl/streamkey. RTP: Enter the destination IP address and the port number in the format of rtp://@ip_address:port_number. For example, rtp://@226.10.24.32:7000

[**NOTE**]
- The LIVE icon exists in Online director and mobile controller. (⌑81, 103)
- Please refer to the server manual for the URL.

Content

The product offers up to 15 user-configurable items for describing content.
It includes Title, Organization, Department, Event_Date, Semester, Topic, Level, Audience, Room, Category, Presenter, Section, Descriptions.
Only 256 Unicode characters for "Description"; the others are 24 Unicode characters
These texts messages will be saved and attached with the recording files.
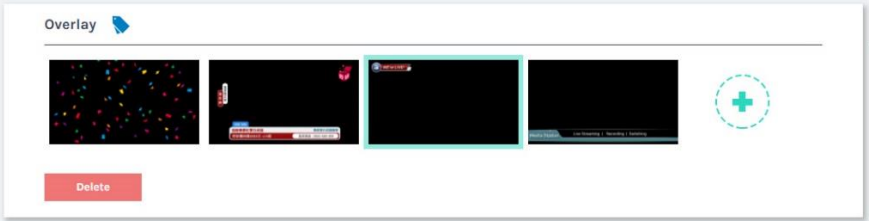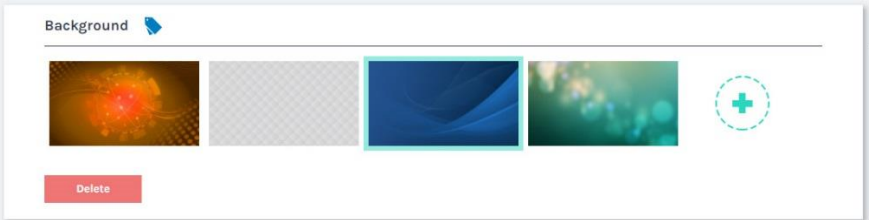
> [**NOTE**]
>   This setting would not be applied to the existing recording files, only for the coming recording event. To edit or check the existing files information, refer to section "Video Manager".(📖94)

Theme

The product provides three overlays and three backgrounds for selection. Users could design and upload their own image files for more options.
Administrator user mode adds and deletes images. Layout to the recording screen is done in Online Director user mode. For details, refer to section "Overlay/Background Selection". (📖90)

Item	Description
Overlay	Allow users to select and delete the overlay files. Or click [⊕]icon and select the file in the open dialog to upload for more options.
Background	Allow administrators to select and delete the background files. Click [⊕]icon and select the desired file in the Open dialog box.

[**NOTE**]
- The overlay file must be in PNG format, maximum size 1920px x 1080px.
- The background file must be in PNG format, maximum size 1920px x 1080px.

63

Storage

Allow administrators to select local storage sources, show embedded disk information and format.
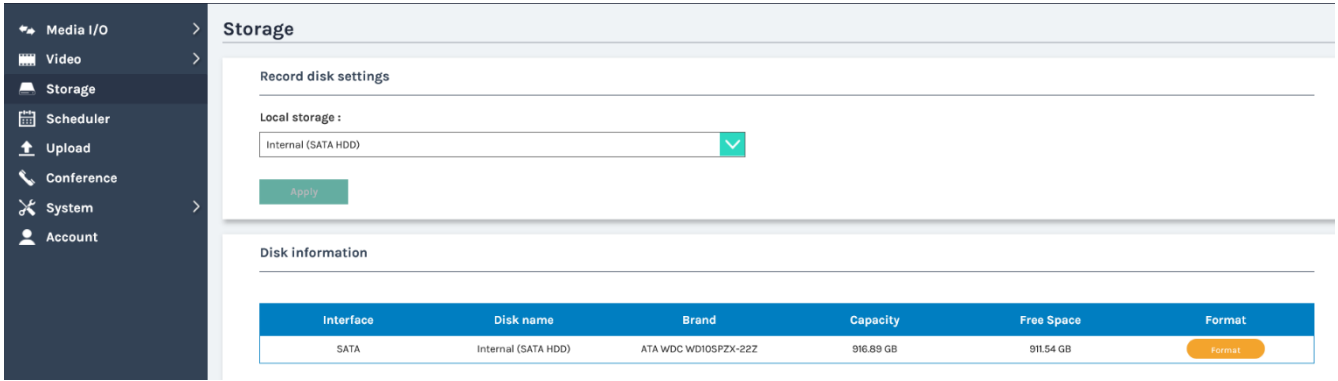
Record disk settings

Item	Description
Local storage	Available options are internal hard disk drive(default) and external USB storage. Select external USB storage to save recording files to a USB hard disk connected with the product rear USB port.
Disk information	Show disk information, available storage space and total capacity. Click Format: The product allows administrator to connect external USB storage via rear USB port to replace internal HDD. However, to work the same as internal HDD, this USB storage must be format for the product access, read/write as a better efficiency and performance.

NOTICE

• This product supports only Partition style MBR. As GPT is not supported, it is not possible to connect GPT format HDD or USB storage.

[**NOTE**]
   • Because format function will overwrite all the existing data saved in HDD, make sure all the data is backup well or deleted before clicking the icon.
   • Please upload the data recorded with this product to the server within 24 hours. HDD is for temporary storage. Manufacturers do not guarantee data. Therefore, when recording important scenes, record with two products and record backup data. For details on uploading data, refer to section "Upload". (📖67)
   • The product supports USB storage formatted with FAT32, NTFS, EXT2, EXT3, or EXT4. And the product supports USB storage of 2TB or less.

Scheduler
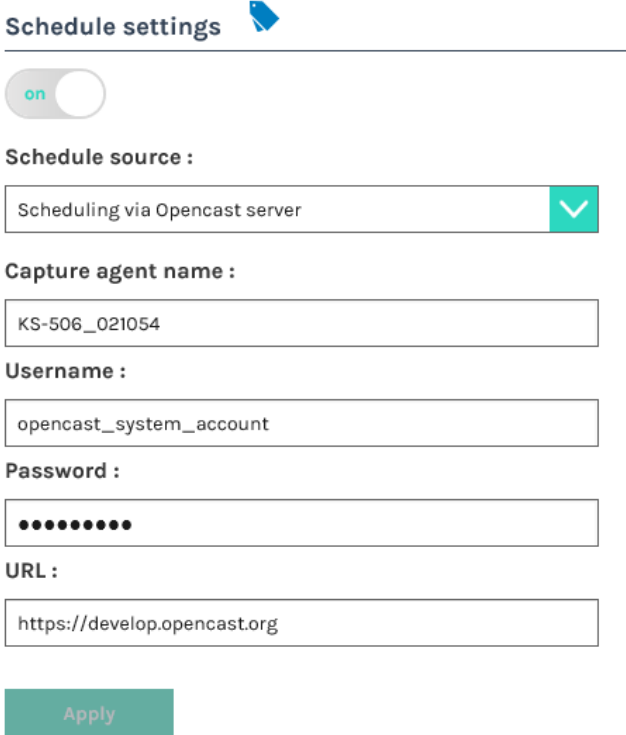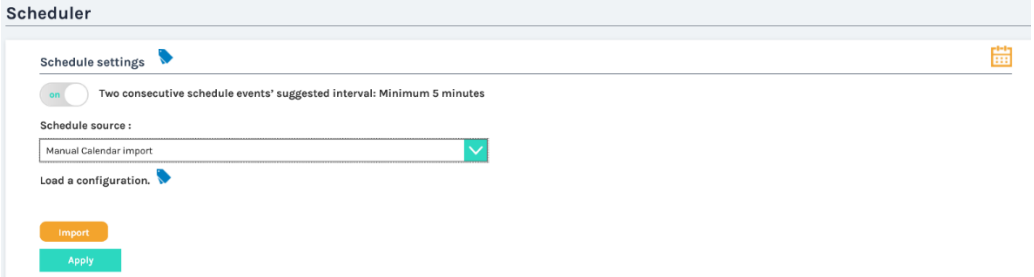
Support 3 kinds of schedule/calendar import for scheduled recording.
Available options are Scheduling via Opencast server, Manual Calendar import, and Periodic Calendar import.
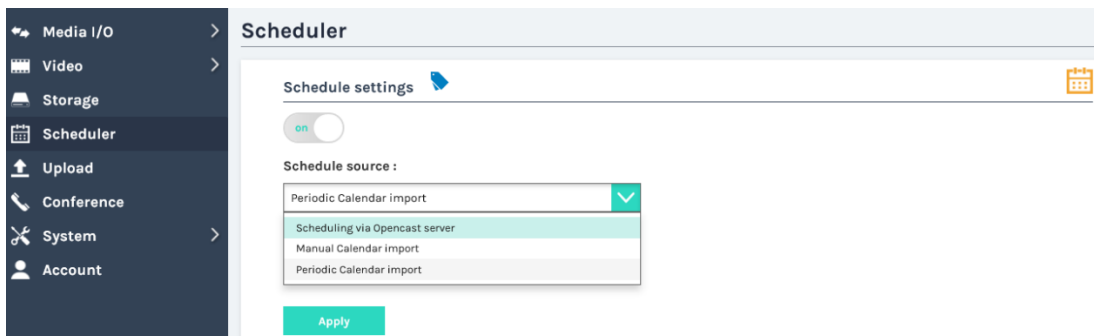
Schedule settings

Item	Description
Scheduling via Opencast server	Leverage scheduling interface on Opencast server, the product will synchronize with Opencast server periodically. Enter the Capture agent name、Username、Password and iCalendar URL in these fields. Capture agent name: the ID to recognize the product on Opencast platform Username: Opencast user account Password: Opencast user password URL: Opencast server URL **Schedule settings** on Schedule source : Scheduling via Opencast server Capture agent name : KS-506_021054 Username : opencast_system_account Password : ••••••••• URL : https://develop.opencast.org Apply 1. Click **Apply**. The product will try to connect with Opencast server then show successful message. If it show failed, please check the network condition or contact the manager of the opencast server. 2. Go to Opencast server's administration interface and double check if the product is correctly registered on Opencast.
Manual Calendar import	Importing iCalendar files manually Scheduler Schedule settings on Two consecutive schedule events' suggested interval: Minimum 5 minutes Schedule source : Manual Calendar import Load a configuration. Import Apply 1. Click **Import**. An Open window pops up. 2. Select an iCalendar file from the PC to import. The file must have a *.ics file extension. Click open icon to confirm. 3. Click **Apply** to import. The event schedule would be added and appears in the calendar on the Scheduled Events page.

Item	Description
Periodic Calendar import	Importing iCalendar files automatically Fill in the iCalendar URL. Click **Apply**. The assigned schedule would be added and shows in the calendar on the Scheduled Events page. Schedule settings 🏷 on Schedule source : Periodic Calendar import ∨ URL : https://calendar.google.com/calendar/embed?src=ar **Apply**

[**NOTE**]
  The product scheduler cannot include cycling events, only accept one-time event. Furthermore, Scheduler also cannot allow more than 2 events to start at the same time. When two events' time periods are partially overlapped, the product would only pick the earlier one and drop the other.

Click 📅 : Open Scheduled Events page.

Scheduler

Date	Start time	End time	Presenter	Room	Title	Description
2019-02-15	13:00:00	14:30:00		MA-XL1	Mathematics	

Content information:
When users set content information in platform's interface, it will be synchronized to the product's content info and attach with the video after the recording.

Opencast	iCAL	The product content info.
Title	SUMMARY	Title
Description	DESCRIPTION	Description
Location = Capture Device = Device Description	LOCATION	Room
Presenter (1st)	1. ATTENDEE (mail to) 2. ORGANIZER (mail to)	Presenter
Start	DTSTART	Start_Time
End	DTEND	End_Time

Recording interruption
While recording by schedule, you cannot stop recording from the front panel button and the toolbar.
To stop recording by schedule, click **Stop**.

Upload

The product allows administrators to set a target server as the destination for recording files uploading.
Connection test is the icon for testing after the setting completed.
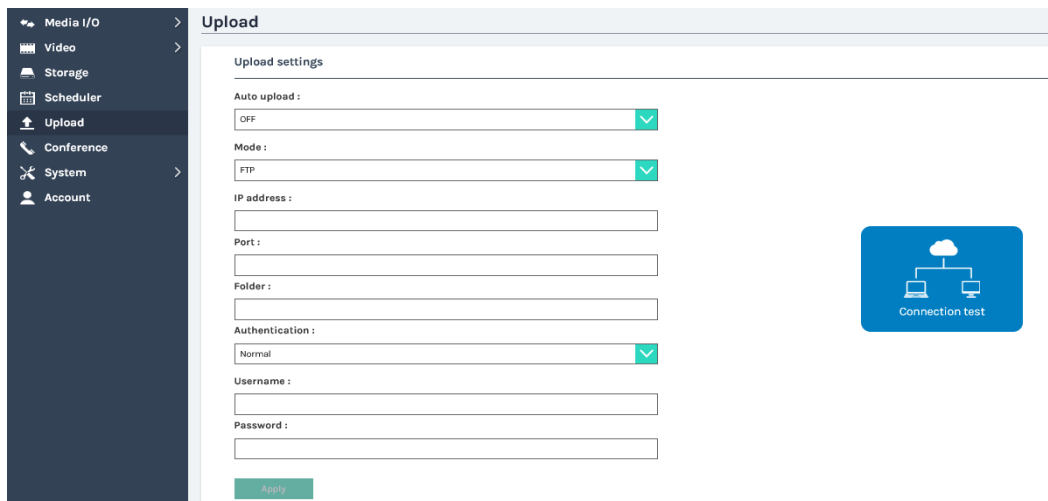
Item	Description
Auto upload	Select from "OFF" or enable uploading "After recording is completed". Followings to be configured according to the upload destination.
Mode	Select network server type: FTP/SFTP/Kaltura/Panopto/OpenCast HTTP/OpenCast HTTPS For the operation method of Kaltura / Panopto / OpenCast, refer to the manual of each service.
IP address, port, or domain name	Fill in server information
Folder	Assign the folder name as the uploading destination.
Authentication	Select authentication type. Normal or Anonymous
Connection test	Click the Connection test icon and the product will try to connect the server and show the result.

Click Apply after the settings are completed.
The upload status/result will be shown in the Video Manager web pages. (📖94)

Conference

The product supports one-on-one conferencing function. Users in two different locations could communicate with each other by two product devices via internet or intranet.

For the settings, it follows server-clients structure.

Max. 100 products can join one internal service unit (including itself), 99 other products will show on contact list, and only one conference connection allowed at the same time.

As a service server, this product needs to be assigned as "Internal" from the drop down list.

When act as a client, the other product need to be set as "external".
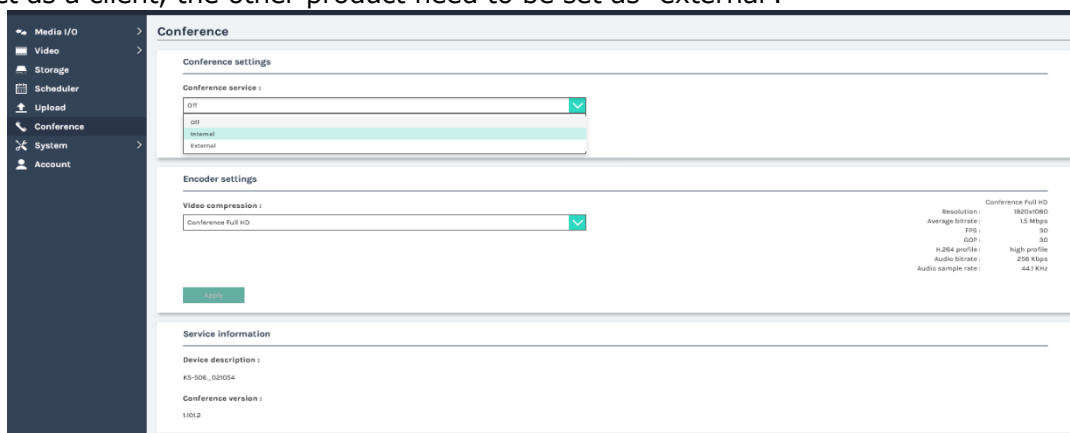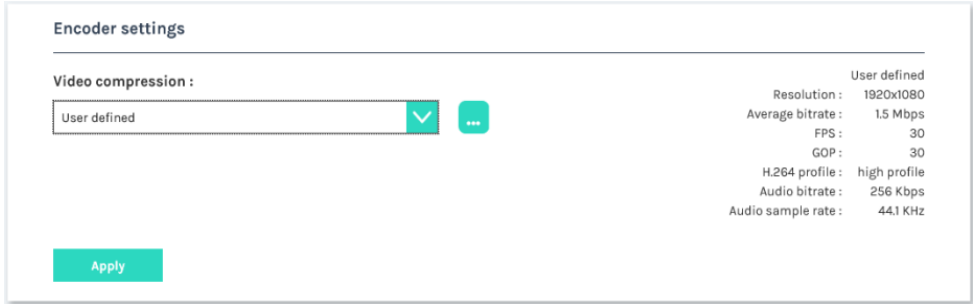
Conference settings:
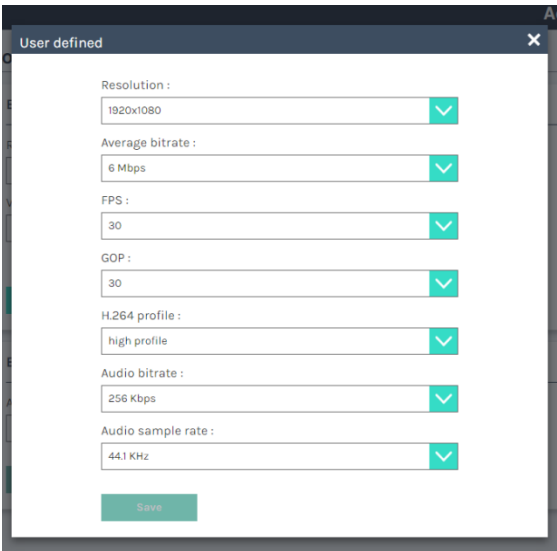
Item	Description
Conference service	**Internal**: Set the product as conference server, the port number is 5070. Contact list : List all the other products connected to this product. Click "Clear All" to clear all the registered products. The contact list would be blank until administrators registered new units. **external** : Set the product as client. IP address : Fill in the conference server's IP address. Port : Fill in the same number as the Internal conference server's port number

Encoder settings

Item	Description
Video compression	The compression profiles of the conferencing could be different from recording and streaming. Conferencing stream has another 7 profiles for selection. Select one to see the detail information at the right side. You may also choose "User defined" for advanced settings.

7 video compression profiles of conferencing :

Profile name	Video Resolution/ Bitrate	Application description
Internet Full HD	1080p/ 3Mbps	Dynamic scene and good bandwidth for high resolution & quality of audio/video.
Conference Full HD	1080p/ 1.5Mbps	General scene and enough bandwidth for high resolution video.
Internet HD	720p/ 1.5Mbps	Static scene and enough bandwidth for HD resolution video.
Conference HD	720p/ 1.2Mbps	Fit to normal network environment with HD resolution video.
SD	480p/ 800kbps	Limited bandwidth with acceptable resolution & audio/video quality.
Mobile SD	480p/ 500kbps	Limited bandwidth with acceptable resolution.
User defined	Click 🔲 icon for more options to configure, and click Save icon after making any change.	

70

Conference (continued)

Service information

Item	Description
Device description	Displays the Device description of the product. This is the device name displayed in the contact list. Device description can be changed. For details, refer to "System settings".(📖72)
Conference version	Conference version is displayed.

System

System function page includes basic settings and the information of this device. The functions within "System" include the following :
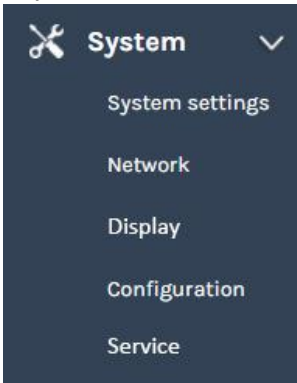
Item	Description
System setting	Contains device identification, date and time configuration, and booting settings
Network	IP assignment for network connection
Configuration	Export /Import the configuration & Reset
Service	Displays the current firmware version, and provides web-based way to update firmware, download system log, and restart.
Display	Settings related to local display/projector

System settings

Device identification
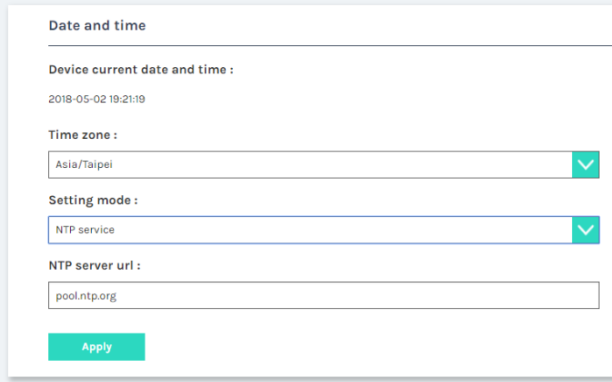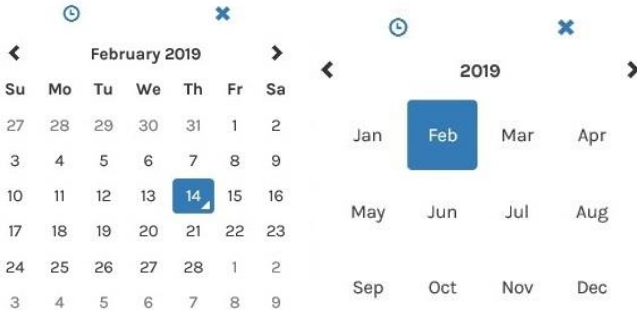
Allow administrator to change the host name and description. Remember to click "Apply" in the bottom area.

Item	Description
Host Name	As a network device, the product would be identified by other network devices by host name. Device identification Hostname : Hostname follows RFC-952 internet host table specification. MA-XL1
Device description	For conferencing function, this product will be identified as this description. Device description : MA-XL1_2876E8
Show other system information	Brand, Model, Serial number & MAC address. Brand : Maxell Model : MA-XL1 Serial number : 18438606 MAC : 3C:B7:92:28:76:E8 Apply
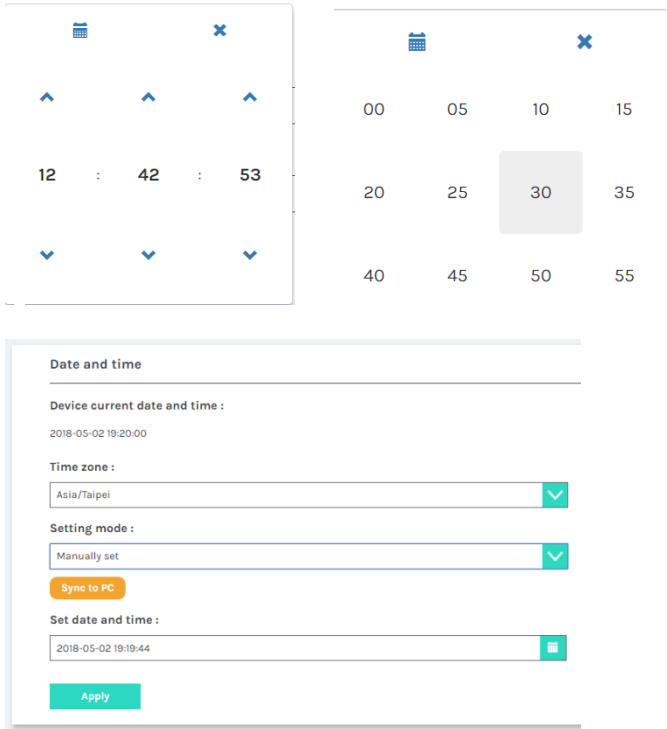
Date and Time:

Show current time, set time zone and select time setting mode.

Item	Description
Device current date and time	Show current time in format of YYYY-MM-DD hh-mm-ss
Time zone	Drop list for manual or auto select the time zone.
Setting mode	NTP service: Users could use default URL or input own NTP server URL. Date and time Device current date and time : 2018-05-02 19:21:19 Time zone : Asia/Taipei Setting mode : NTP service NTP server url : pool.ntp.org Apply Manually set: Users could press the icon to synchronize with PC or manually input date and time. Set Date & Time: Click on ☐ to call calendar for setting. Or click on the time blank to get the cursor and use keyboard to key in directly. 2018-05-30 18:52:11 📅 • ⏱ : Switch to time setting page • ✖ : Close the window. If users click on other area outside this window, also the window will be closed. • ‹ › : Switch to previous/next month or year • Chose any date to assign the date information • Click on "Month Year", will switch to Month setting page.

(continued on next page)

Item	Description
Setting mode (Continued)	• 📅 : Switch to date setting page • ∧ ∨ : Increase/decrease the number of the time. Or click on the number will show numbers for selection. For the hours is from 00~23. For the minutes and seconds, the options use "5" as the interval. Totally 12 numbers to choose. Date and time Device current date and time : 2018-05-02 19:20:00 Time zone : Asia/Taipei Setting mode : Manually set Sync to PC Set date and time : 2018-05-02 19:19:44 Apply

Boot image:

Item	Description
Boot image	Change the boot screen image file. The boot screen is the image you will see when booting up the device. Click Browse icon and select the image file from your PC to upload. Then click "Apply" Boot image Lecture Capture Station Browse Apply

[**NOTE**]
The boot screen file must be in PNG format, maximum size 1920x1080px.
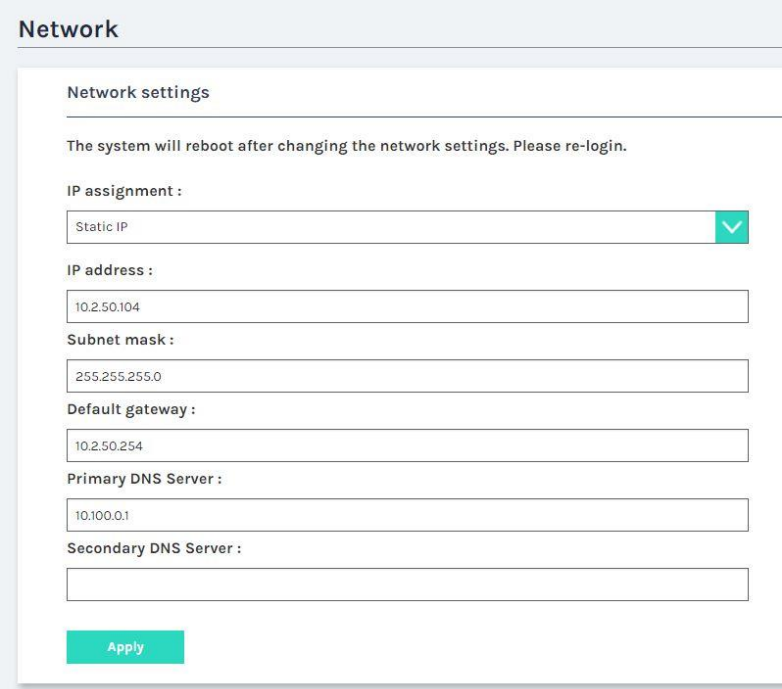
Power:

Item	Description
Power mode	Select Boot-up with power button or Boot-up on AC power. Boot-up with power button : Boot-up by pressing the power button as a trigger. Boot-up on AC power : Boot-up by plug-in AC power directly as a trigger. Power Power mode : Boot-up with power button Apply

Network

The default IP assignment mode is DHCP, which means the product would automatically try to obtain an IP Address from a router or any other DHCP server. It also allows administrator to assign a static/fixed IP address manually.
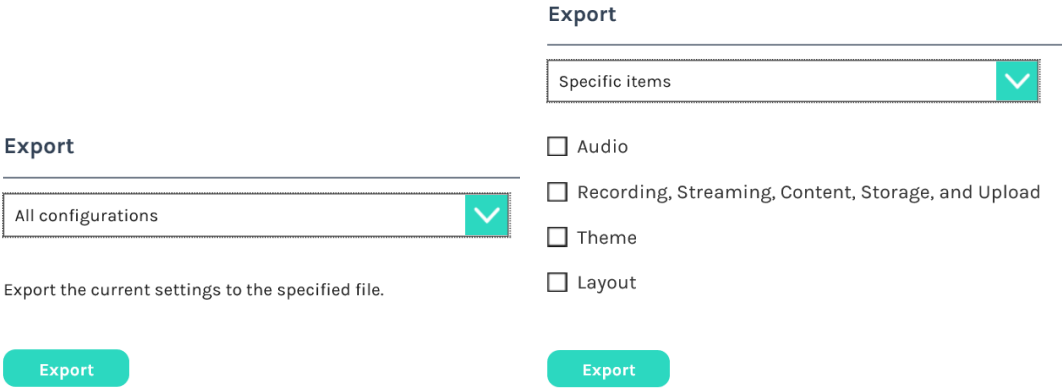
Item	Description
IP assignment	Select DHCP to be dispatched IP address by a router or any DHCP server being connected; or Select Static IP and fill in the IP address / subnet mask / default gateway/ DNS server. Network Network settings The system will reboot after changing the network settings. Please re-login. IP assignment : Static IP IP address : 10.2.50.104 Subnet mask : 255.255.255.0 Default gateway : 10.2.50.254 Primary DNS Server : 10.100.0.1 Secondary DNS Server : Apply
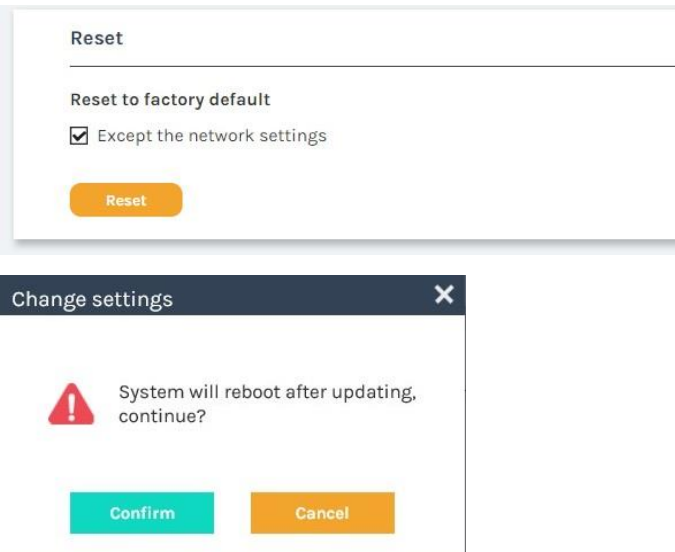
[**NOTE**]
The system will automatically reboot to complete the network settings. Login the updated new IP address after the system restarts.

75

Configuration

For the ease of installation, the product supports export/import the configuration values.

Item	Description
Export	Choose from "All configurations" or "specific items only" to export the *.config. This file would be saved in administrator's PC. When "All configurations" is selected, all settings excluding the Network setting are exported. **Export** All configurations Export the current settings to the specified file. Export **Export** Specific items ☐ Audio ☐ Recording, Streaming, Content, Storage, and Upload ☐ Theme ☐ Layout Export
Import	Select a *.config file from administrator's PC to import the configuration into the product. After import, the original settings will be overwritten. **Import** Load a configuration. Import

Item	Description
Reset	Reset to factory default. Check if you want to keep your network settings, and click "Reset". The dialog pop out and ask you "System will reboot after updating, continue?" Make sure the system is not busy and click "Confirm" to start reset. Reset Reset to factory default ☑ Except the network settings Reset Change settings ✕ ⚠ System will reboot after updating, continue? Confirm Cancel

[**NOTE**]
    The configuration file contains important items of the system. Please, handle with care.

Service

This page shows the device firmware version. Provide this information together with firmware version & log files to the service center when your product cannot work properly.

Firmware version:

Item	Description
MCU version	MCU version is for service use only.
Bluetooth module	Show the embedded Bluetooth module firmware version.
Firmware	When updating Firmware, click "Update" to select the firmware file from your PC. Click "Open" to confirm and "Apply" to start firmware updating process. System will reboot automatically when the firmware update is completed. It might take a few minutes. Until the menu ball and toolbar appear again, it's ready for use.
Service data	Log file is used for problem analysis while the product cannot work properly. Export the log file to your PC and send to the service center for further investigation. Totally 3 files would be downloaded. Including device configuration data, service data, and debug log.
Restart Device	Allow the administrator to restart the device at remote site via network connection. Make sure the device is not in use or busy before restart. After click on Restart icon, one warning dialog would pop up to ask if you want to continue. Click Confirm to restart.

NOTICE

Do not shutdown / power off the system during firmware updating. It may cause un-reversible damage on the device.

Display
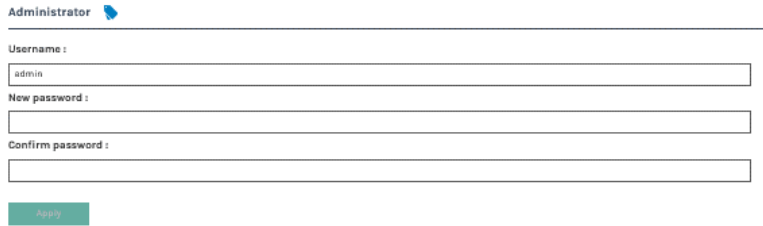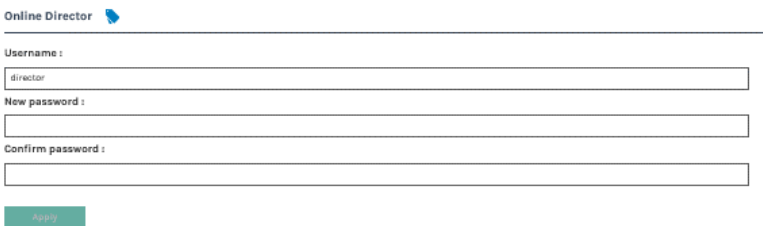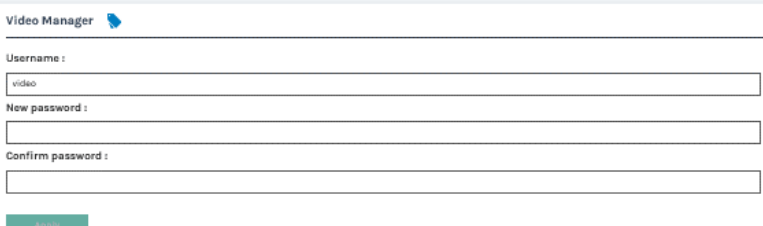
Select the language of on-screen graphic interface & the output resolution

Item	Description
On-screen language	Select the language of on-screen graphic interface. On-screen language : English 繁體中文 简体中文 English
Turn on/off the GUI	Show / Hide menu ball, toolbar, and annotation layer on the display Turn on/off the GUI : on
Resolution mode	Display the output resolution. Resolution settings Resolution mode : 1920x1080
Projector control	Protocol: ● None ● TCP: Select between Hitachi and PJLink projectors IP address: IP address of projector Password: Password of projector ● RS-232: only support Hitachi / maxell projector Protocol : None None TCP RS232

Account

This webpage provides the account management of three user types.
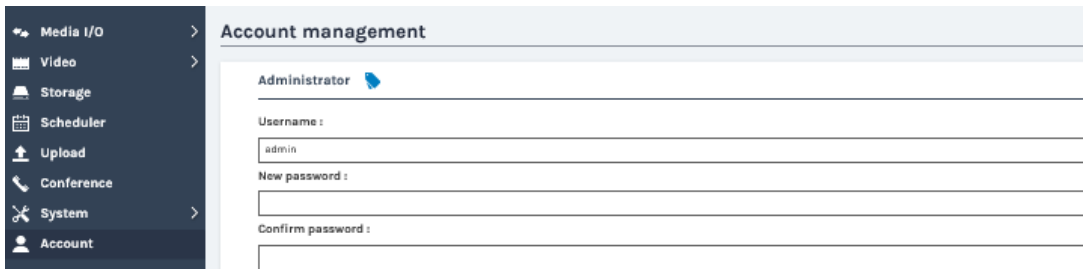
Item	Description
Administrator	Allow to access Web Administrator/Online Director/Video Manager. Input username and new password, and then input password again to make sure it is correct.
Online Director	Allow to access Online Director/Video Manager/Video item of Administrator. Input username and new password, and then input password again to make sure it is correct.
Video Manager	Allow to access Video Manager. Input username and new password, and then input password again to make sure it is correct.

[**NOTE**]
- Be sure to change the user name and password of the Administrator / Online Director / Video Manager after first logging in to the administrator page. Please be careful in managing user name and password. For details, refer to section "Account". (📖80)
- User name character: 4~16 characters, ASCII code, only accept a~z, A~Z, 0~9, no space allowed
- Password character: 8~16 characters ASCII code, only accept a~z, A~Z, 0~9, no space allowed

Online Director

Online Director webpage provides users to do recording & streaming controls. Including recording start/pause/stop; snapshot; camera and audio control; overlay, background and vide source switching. Login the Online Director webpage via [Administrator] by clicking the icon 📷; or log in with the initial login page with default username "director" and password "lcsdirector".

Director Page 🎬

Allow users to do basic recording control and some.

Please refer to below table for the function description.

Item	Function Description	Remark
1	Online Director indicator	
2	Device description	Could be configurable in Administrator webpage, indicates the device description. For the setting refer to section "System settings"(📖72)
3	Director tag	
4	Cameraman tag	For details refer to section "Cameraman Page"(📖92)
5	Presenter tag	For details refer to section "Presenter Page" (📖93)
6	Switch to administration webpage without log-in	If using administrator to log-in, can access whole administration function tags. If using director to log-in, only access Video Settings tag. For details refer to section "Overview of the Web Interface".(📖47)
7	Switch to Video Manager without log-in.	For managing and playback recorded videos
8	Exit	Logout Online Director webpage
9	Video Title	Title of the content that is being/ or going to be recorded and streamed
10	USB drive capacity	Would be converted into remaining time for recording

(continued on next page)

Item	Function Description	Remark
11	Internal HDD capacity	Would be converted into remaining time for recording If loop recording function enable, there will show an icon ⟳
12	Preview	For both recording and streaming
13	Recording status and timer	
14	Link icon 🔗	This icon appears only when user choose "Streaming with recording mode" and click start recording icon
15	Live-streaming indicator	Live-streaming ON=> appear Live-streaming OFF=> disappear
16	Live icon (Start streaming)	Only be enable when steaming & recording control separately. For details refer to section "Streaming" (📖60)
17	Start recording	
18	Recording Pause	While pause, the change of layouts/overlay/background would be invalid.
19	Stop recording	
*All above four recording control icons(from 16~19) will disappear and replace by a scheduling icon 📅 when scheduling function enable		
20	Snapshot	To get a snapshot image and automatically add an Index while recording
21	Audio volume meter	Indicates the audio volume of the content being recorded and streamed.
22	Auto layout functions	For details refer to section "Auto Layout" (📖84)
23	Manual layout functions	For details refer to section "Manual Layout" (📖90)
24	Overlay image selection	For details refer to section "Overlay/Background Selection" (📖90)
25	Background image selection	For details refer to section "Overlay/Background Selection" (📖90)
26	Audio volume control	For details refer to section "Audio Volume Control" (📖91)
27	Function control panel	For item 22 to 26

(continued on next page)

[**NOTE**]

If the following figure is displayed, the director cannot check the image.
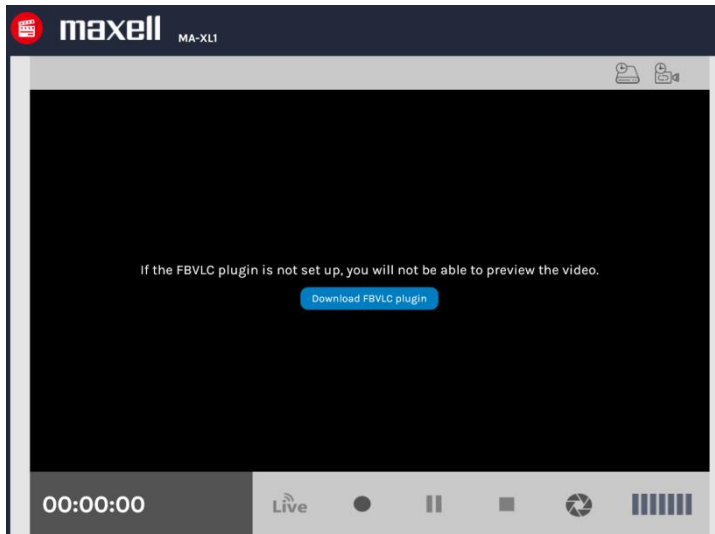
In order to check the image, please click the Download icon [Download FBVLC plugin] and download FBVLC plugin installer according to the screen instructions.
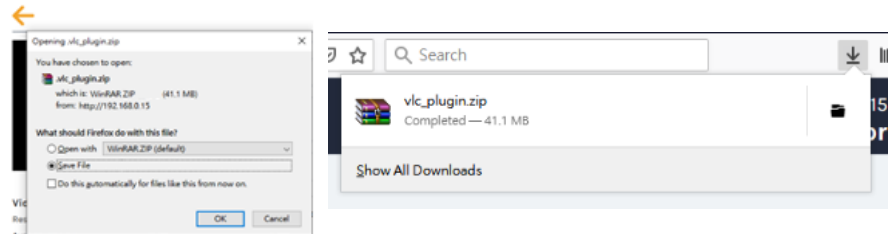
Unzip the downloaded installer and run the installer file.

FBVLC_0.1.5_vlc_2.1.3.msi   22,138,880   22,044,729   Windows Installer...   2017/6/8

Follow the instructions on the screen to install FBVLC plugin.

After installation completed, re-open the browser and video will show in the Window.

Temporarily stop the firewall and anti-virus software etc. during installation. Some of software interfere with the installation of plugins.

Suggested SW environment:
Internet Explorer 11(Windows 10), Safari 10(macOS Sierra)

Recording Controls

Auto Layout

Allow users to select 1 out of 12 layout templates and system will automatically assign content source, camera 1 source, camera 2 source in different windows.

• Avoid same source appears in two windows and make content as biggest one.
- When the layout has only 1 source, then no auto-layout happens.
- When the layout has 2 video sources, if the main window is switched to CH2(camera 1), then another camera window will be replaced with CH1(content) source.
- When the layout has 3 video sources, and the main window is switched to an existing source which already in another window. To avoid from double video, the system will automatically pick another available source to fill into the other window.
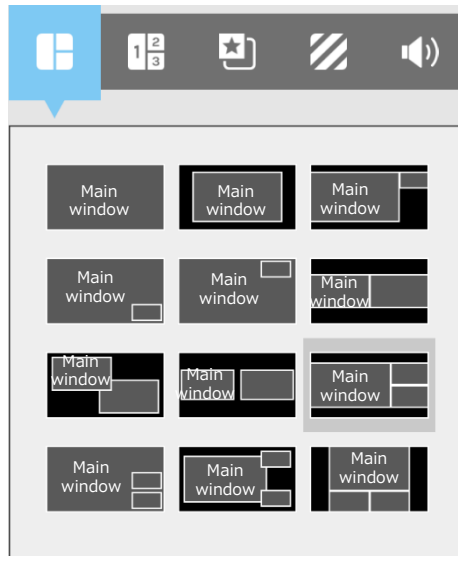
Auto layout assign rule:

84

1. Auto Layout (Normal Case)

		Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / Cam
1-4	Local Display — Whiteboard	Recording — Whiteboard	Recording — Whiteboard / 2	Recording — WB / 2 / 3
1-5	Playback	Playback	Playback / 2	Playback / 2 / 3

When playback finishes, change to CH1 (1-1).

2. Auto Layout (Conferencing, no Collaboration)

		Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM
2-1	CH1 or CH1 — Local Display — CH1 ← RM stream out CH2	Recording — 1	Recording — 1 / 2	Recording — 1 / 2 / RM2
2-2	CH2 or CH2 — CH2 ← RM stream out CH2	2	2 / 1 (Auto)	2 / 1 (Auto) / RM2

2. Auto Layout (Conferencing, no Collaboration)

		Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM
2-3	or — Local Display — Whiteboard ← RM stream out CH2	Recording — Whiteboard	Recording — Whiteboard / 2	Recording — WB / 2 / RM2
2-4	Playback ← RM stream out CH2	Playback	Playback / 2	Playback / 2 / RM2

When playback finishes, change to CH1 (2-1).

85

2. Auto Layout (Conferencing, no Collaboration)

	Local Display	Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM
2-5	Remote CH1 ← RM stream out CH1	Recording RM 1	Recording RM 1 / 2	Recording RM 1 / 2 / 1 — Auto
2-6	Remote CH2 ← RM stream out CH2	RM 2	RM 2 / 2	RM 2 / 2 / 1 — Auto
2-7	CH1 / Remote CH1 ← RM stream out CH1	1 / RM 1	1 / RM 1 / 2	1 / RM 1 / 2 / RM1 — No Choice

2. Auto Layout (Conferencing, no Collaboration)

	Local Display	Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM
2-8	CH1 / Remote CH2 ← RM stream out CH2	1 / RM 2	1 / RM 2 / 2	1 / RM 2 / 2 / RM2 — No Choice
2-9	CH2 / Remote CH1 ← RM stream out CH1	2 / RM 1	2 / RM 1 / 1 — Auto	2 / RM 1 / 1 — Auto / RM1 — No Choice
2-10	CH2 / Remote CH2 ← RM stream out CH2	2 / RM 2	2 / RM 2 / 1 — Auto	2 / RM 2 / 1 — Auto / RM2 — No Choice

86

2. Auto Layout (Conferencing, no Collaboration)

		Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM

	Local Display		Recording	Recording	Recording
2-11	CH2 / Remote CH2 / RM stream out CH2		2 / RM 2	2 / RM 2 / Auto 1	2 / RM 2 / 1 Auto / RM2 No Choice
2-12	RM 2 / CH1 / RM stream out CH2		RM 2 / 1	RM 2 / 1 / 2	RM 2 / 1 / 2 No Choice / RM2
2-13	RM 2 / Remote CH1 / RM stream out CH2 CH1		RM 2 / RM 1	RM 2 / RM 1 / 2	RM 2 / RM 1 / 2 / 1 Auto

3. Auto Layout (Conferencing + Collaboration)

		Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM

	Local Display	Remote Display	Recording	Recording	Recording
3-1	CH1 or / CH1 / CH1 / RM stream out CH2	RM CH1	1	1 / 2	1 / 2 / RM 2
3-2	CH2 or / CH2 / CH2 / RM stream out CH2	RM CH2	2	2 / 1 Auto	2 / 1 Auto / RM 2

3. Auto Layout (Conferencing + Collaboration)

		Single Layout	Dual Layout	Triple Layout
		Display	Display / Cam	Display / Cam / RM

	Local Display	Remote Display	Recording	Recording	Recording
3-3	Whiteboard or / Whiteboard / RM stream out CH2	Whiteboard	Whiteboard	Whiteboard / 2	WB / 2 / RM 2
3-4	Playback / Playback / RM stream out CH2	RM Playback / Remote Record RM Playback 2 / 1 Auto	Playback	Playback / 2	Playback / 2 / RM 2

When playback finishes, change to CH1 (3-1).

**3. Auto Layout
(Conferencing + Collaboration)**

	Single Layout	Dual Layout	Triple Layout
	Display	Display Cam	Display — Cam / RM

	Local Display	Remote Display / RM stream out	Recording (Single)	Recording (Dual)	Recording (Triple)
3-5	Remote CH1 / CH2	CH1 / CH1	RM 1	RM 1 / 2	RM 1 / 2 / **1** Auto
3-6	Remote CH2 / CH2	CH2 / CH2	RM 2	RM 2 / 2	RM 2 / 2 / **1** Auto
3-7	CH1 — Remote CH1 / CH1	RM 1 · CH1 / CH1	1 · RM 1	1 · RM 1 / 2	1 · RM 1 · 2 / **RM1** No Choice

**3. Auto Layout
(Conferencing + Collaboration)**

	Single Layout	Dual Layout	Triple Layout
	Display	Display Cam	Display — Cam / RM

	Local Display	Remote Display / RM stream out	Recording (Single)	Recording (Dual)	Recording (Triple)
3-8	CH1 — Remote CH2 / CH1	RM 1 · CH2 / CH2	1 · RM 2	1 · RM 2 / 2	1 · RM 2 · 2 / **RM2** No Choice
3-9	CH2 — Remote CH1 / CH2	RM 2 · CH1 / CH1	2 · RM 1	2 · RM 1 / **1** Auto	2 · RM 1 · **1** Auto / **RM1** No Choice
3-10	CH2 — Remote CH2 / CH2	RM 2 · CH2 / CH2	2 · RM 2	2 · RM 2 / **1** Auto	2 · RM 2 · **1** Auto / **RM2** No Choice

88

3. Auto Layout
(Conferencing + Collaboration)

	Single Layout	Dual Layout	Triple Layout
	Display	Display / Cam	Display / Cam / RM

	Local Display	Remote Display	Recording	Recording	Recording
3-11	CH2 / Remote CH2 / CH2 — RM stream out CH2	CH2 / RM 2	2 / RM 2	2 / RM 2 — Auto / 1	2 / RM 2 — Auto / 1 / No Choice / RM2
3-12	RM 2 / CH1 / CH1 — RM stream out CH2	RM 2 / RM 1	RM 2 / 1	RM 2 / 1 / 2	RM 2 / 1 / 2 — No Choice / RM2
3-13	RM 2 / Remote CH1 / CH2 — RM stream out CH1	CH1 / RM 2 — Remote Record RM 2 / 2 / 1 / No Choice / RM2	RM 2 / RM 1	RM 2 / RM 1 / 2	RM 2 / RM 1 / 2 — Auto / 1

Manual Layout

Allow users to select 1 out of 12 layout templates(same as auto layout) and manually assign display source, content source, camera 1 source, camera 2 source in different windows.
- Click each window to set video source cycling by display ✎ (with annotation), CH1 ☐, CH2 **1**, CH3 **2**, and the video from remote site ☁.
- Click [Apply] icon would change the current recording & streaming layout.
- Once users click auto layout or change layout by display toolbar, manual layout function will be invalid.

> [**NOTE**]
>
> Basically all the layouts are applied as aspect ratio except two layouts.
>
> The 2 small windows in layout ▭ and ▭ are applied as fit to all.
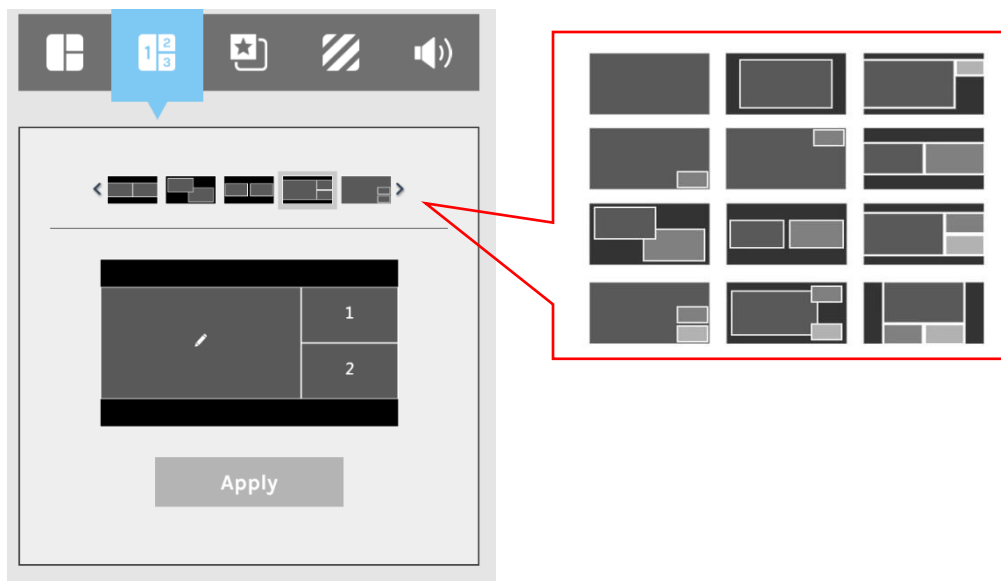
Overlay/Background Selection

Allow users to select 1 out of max. 5 overlay/background images for recording & streaming
- Overlay image will be mixed on the top of the video
- Background image will be mixed on the bottom of the video
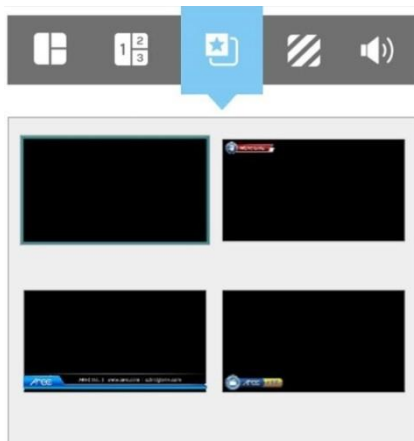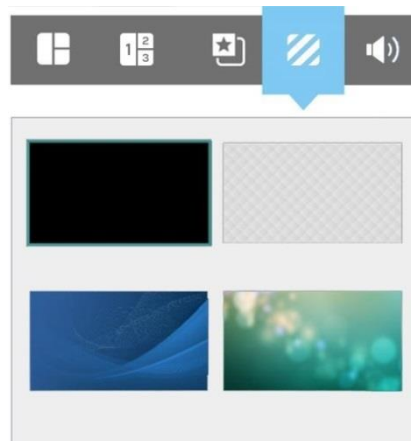
Overlay image selection   Background image selection

Audio Volume Control

Includes 4 inputs and 1 output for adjustment.
• HDMI for CH1 input (125 levels)
• HDMI for CH2 input (125 levels)
• Line-in/Mic-in/Bluetooth mixed input (125 levels)
• Streaming/Conference input (125 levels)
• Recording/Streaming mixed output (125 levels)
Move the bar leftward and rightward to adjust the volume. Click on the speaker icon 🔊 could switch between mute and resume.
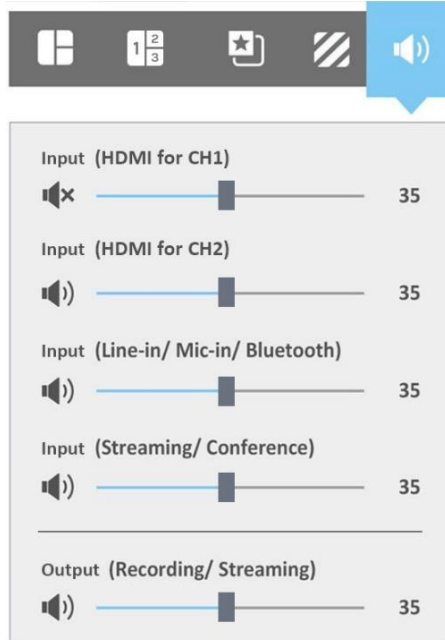
Cameraman Page

Cameraman provides users to do PTZ control of every assigned camera.
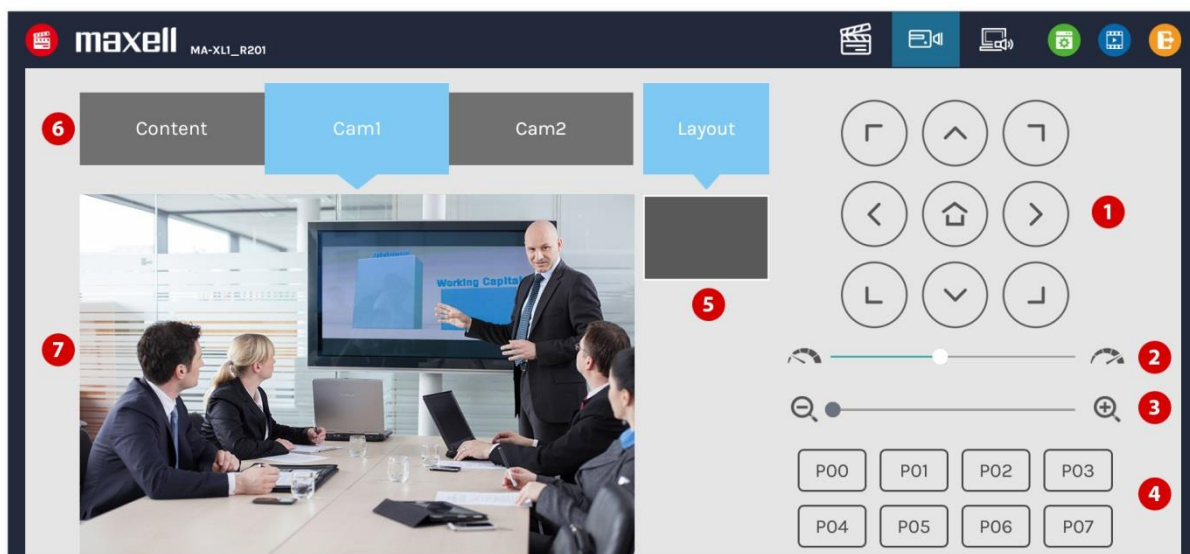
This webpage provides the following features and information about:

Item	Function Description	Remark
1	Directional control panel	Click the arrow icons to move the camera.
2	Movement speed	Move leftward or rightward to set slower or faster the camera is moving.
3	Zoom in/out	Click the icon or drag on the control bar.
4	Preset positions	Click the icons to command that the camera go to the preset position. For details on registering the preset position, refer to section "Advanced configuration" (🕮53).
5	Recording layout indicator	Show current recording layout
6	Channel selection	Select between Content CH1/Cam1 CH2/Cam2 CH3
7	Source monitor window	Display live video of each channel source.

[**NOTE**]
- From No.1~4 items are enable only when the video source been configured for PTZ control, refer to section "Content Group / Cam 1 Group / Cam 2 Group" (🕮51)
- When in playback mode, CH1 video would be black; when in conferencing mode, CH3 will be black, and show a still image as below.
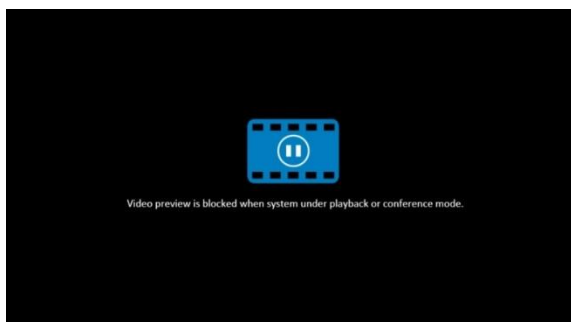
Presenter Page

This webpage helps the presenter do video source switch, snapshot, toolbar control ON/OFF and USB switch from the remote site.
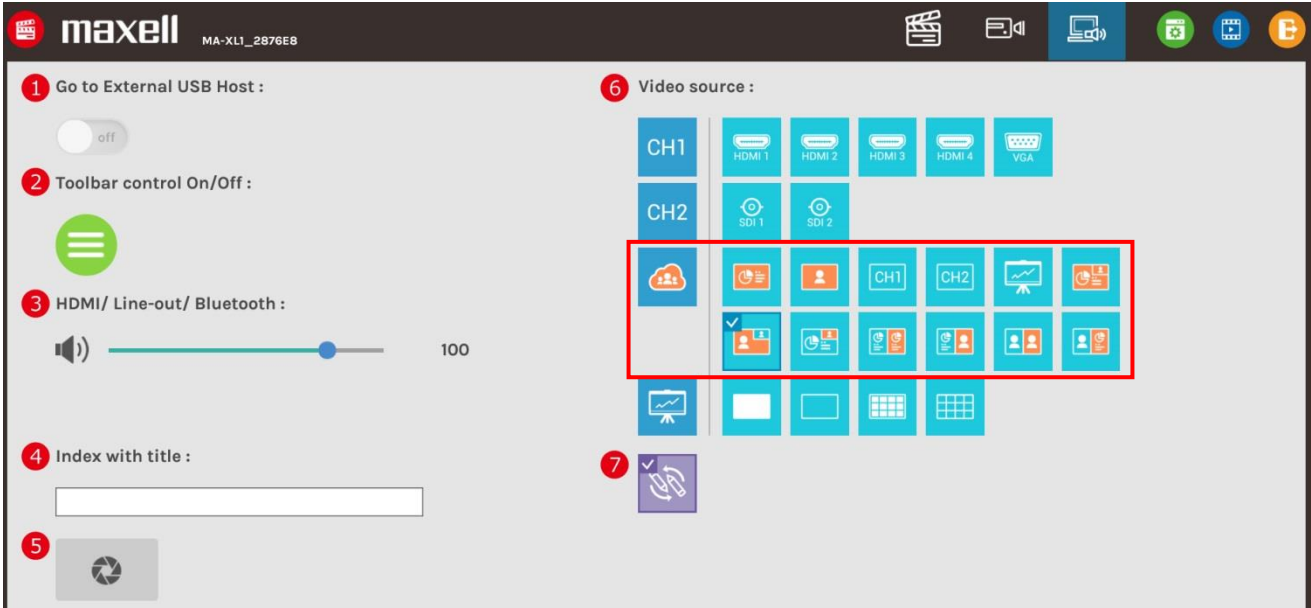
Below table shows the function description:

Item	Function Description	Remark
1	Switch USB HID to external host devices	Product's menu ball and toolbar on screen will disappear when switch to external hosts(PC), and come back when the USB control switch back.
2	Toolbar switch	Open/Hide Menu ball & toolbar on local display
3	Audio output adjustment	Adjust master out volume of local audio output
4	Index with text	Fill in text for Index title insertion
5	Snapshot	Click to get a snapshot manually, and insert an Index with filled text while recording
6	Display Video source switch	Switch video source on display, only one source can be selected at the same time. CH3 group will be replaced by remote group when conferencing. Video source icons are the same as main toolbar on display.
7	Collaboration ON/OFF	In conferencing mode, switch ON to make both sides see the same display content and annotation. Switch off would make both side control separately.

[**NOTE**]
Only item 3 audio would be saved after reboot.

Video Manager

The product Video Manager provides basic management functions for the video files stored in the internal HDD or external USB hard drive. The videos are listed in descending order by the recording time.
Login the Video Manager webpage via [Administrator] or [Online Director] by clicking the ![icon] icon; or log in with the initial login page with default username "video" and password "lcsvideo".
The Video Manager includes the following features: upload, download, delete, playback, edit recording information and Index title.

[**NOTE**]
 Video Manager would be invalid during the recording. After recording stop, refresh this page to restore the Video Manager page.

Below table shows the function description:

Item	Function Description	Remark
1	Video Manager indicator	
2	Device description	
3	Select video list	Recording
4	Select photo list	Snapshot
5	Switch to administration webpage without log-in	If users log in with Video Manager ID/PW, this icon will not be shown for click because this account and password cannot visit administration webpage.
6	Switch to Online Director webpage without log-in	If users log in with Video Manager ID/PW, this icon will not be shown for click because this account and password cannot visit Online Director webpage.
7	Exit	Log out Video Manager webpage.
8	Storage capacity	Show used & total HDD space
9	Upload	Upload selected files to backup server
10	Download	Download selected files to PC
11	Delete	Delete selected files
12	Video file	Show thumbnail image and video information
13	Check box	For file selection
14	Thumbnail	
15	File name	
16	Creating time	
17	Video length	
18	File size	
19	Page indicator	Show file list page number
20	Upload indicator	🔼✅ : Upload successful 🔼❌ : Upload failed 🔼🕐 : In the queue 🔼 : Uploading

Upload the recording file to server

Select the files and click [⬆] to upload. The upload destination is pre-configured in administrator webpage. For details refer to section "Upload"(📖67) The product arranges the upload sequence automatically and indicates the upload status/result on the corresponding files. The following indicators are used :
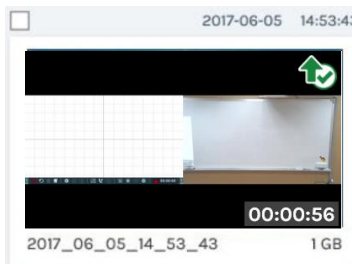
Download the recording file to PC

Select the files and click [⬇] to download. The videos would be saved in your computer in the format of *.mp4. Meanwhile, the data sets of each video would also be compressed and downloaded at the same time. These are saved to the default download location used by your browser.
The selected recording video may be more than one .mp4 files if that was recorded in MP4 Mixed video/Original sources mode.

Delete the recoding file

Recording files can be deleted manually to make space for new recordings.
Select the files and click [🗑] to delete. A confirmation dialog popup to ask for the confirmation. Click "Confirm" to permanently remove the files from mounted HDD. The list may not be updated immediately. Refresh the webpage to show the updated list.

Playback the video file

Click the file for playback, and you will be directed to the content information page. Use the control panel at the bottom of the playback window to watch the video.
There might be more than one files listed under the window if the content is recorded in MP4 Mixed video/ Original source mode. Select the single channel source for playback by clicking on the thumbnail. The title used for Mixed video is "Movie". To download MP4 Mixed video file, select the file by the check box and click "Download" icon. The file size being downloaded would be shown within the icon.

Below table shows the function description:

Item	Function Description	Remark
1	Back to video list	
2	Channel name	Movie or Content or Cam1 or Cam2
3	Recording date and time	
4	Content information	Refer to section "Edit the content information" (📖97)
5	Index list	Refer to section "Edit/Add Index" (📖98)
6	Delete/edit Index	Refer to section "Edit/Add Index" (📖98)
7	Add Index	Refer to section "Edit/Add Index" (📖98)
8	Playback window and control panel	Each Index will be shown as a dot on playback time bar. Drag the bar to skip to playback
9	Mixed & single channel video sources list	Click thumbnail to switch playing different channel sources, and check the box for download. Both mixed and each channel source videos will generate thumbnail automatically. The thumbnail of each channel source will be determined by the first recording second of an assigned video source.
10	Data set	Check the box to download. Users would get a zipped file with the file name: DataSet.zip. Un-zip the file would get Index information, Index/snapshot images, and the thumbnail of each video.
11	Download	

Edit the content information

Select video file to preview the content information. Edit on existing text or fill in new information in the content fields. Click Apply to save the changes.

This content information belongs to each video as kind of meta-data, and could be downloaded as part of the data set or uploaded to 3rd party server.

97

Edit/Add Index

Select the video file and click on Index to preview all Index took during the recording.
Click Edit icon to edit Index title as below illustrations. Or click the trash can icon to delete.

To add a new Index:
Move the bar of the video player in the playback window and find the target time to add the Index.
Click [Add Index] button and open the dialog with following features and information:
1. Show the thumbnail of the Index.
2. Show the target time of the Index which should be the same with the time stopped on the video player.
3. Fill in the title of the Index.
4. Click [Apply] to insert the new Index into the existing list.

Photo/Snapshot List & Preview

No matter snapshot done by manually or automatically, all the image files would be listed and could be managed in the Photo List as below.

Click 📷 tag in Video Manager to switch from video list to photo list.

All the image files are archived in folders by daily base.

Each folder shows the established date, image numbers and the folder size.

Same as the video list, all the folders are listed in descending order by the established date.

Check the box to select the folders to upload/download and delete.
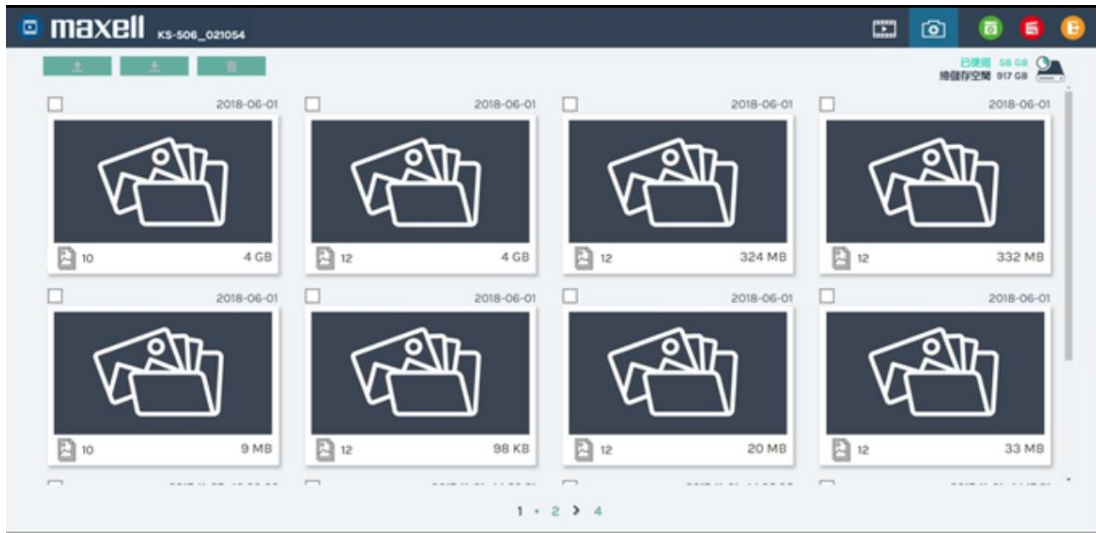
Choose and click any folder to get into the photo/snapshot list.
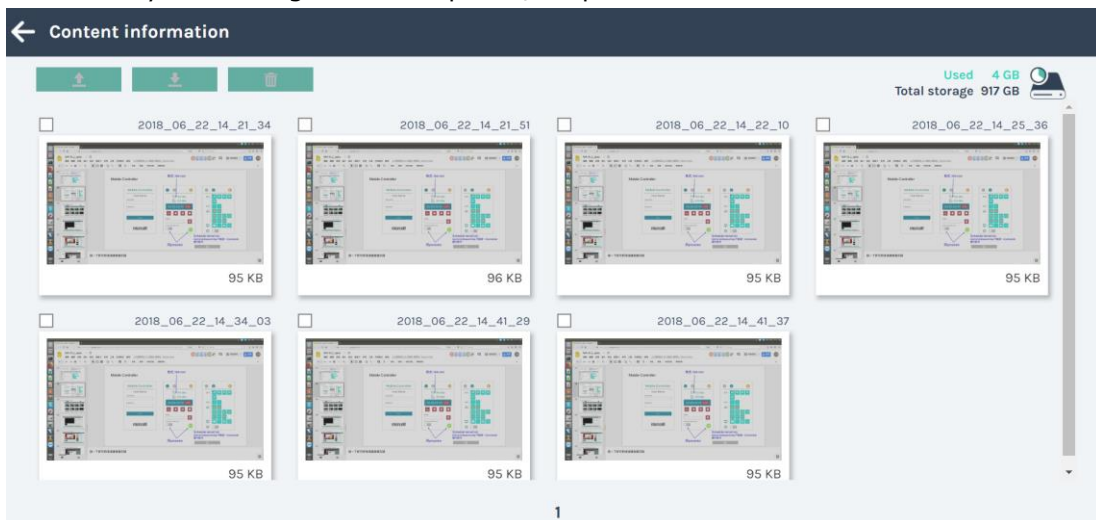
Click thumbnail on photo/snapshot list, photo preview dialog will show.
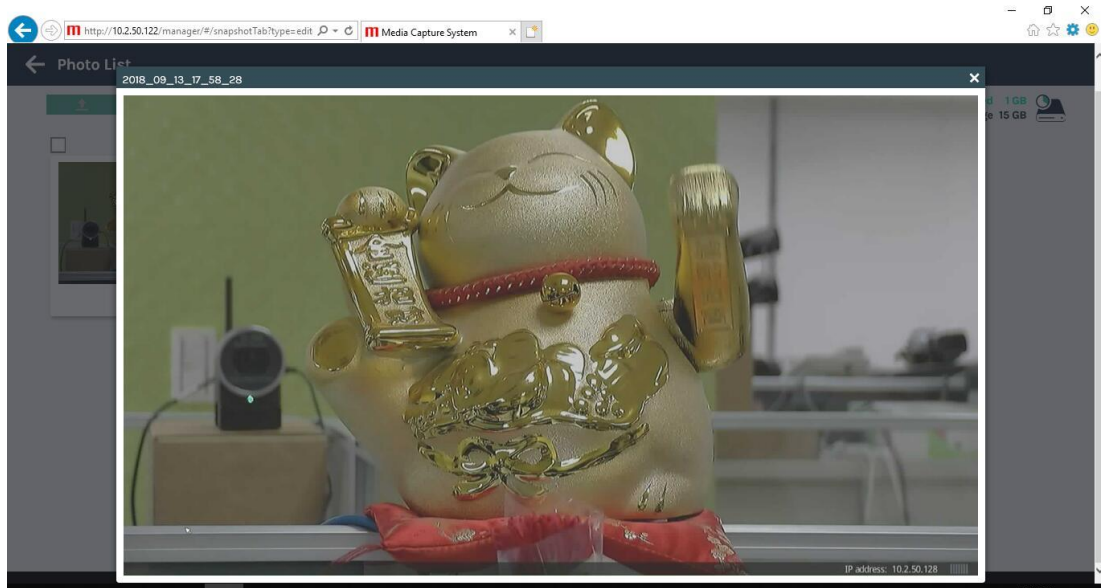
Tools/Applications

Presentation tool (Version 2.2.8.11)
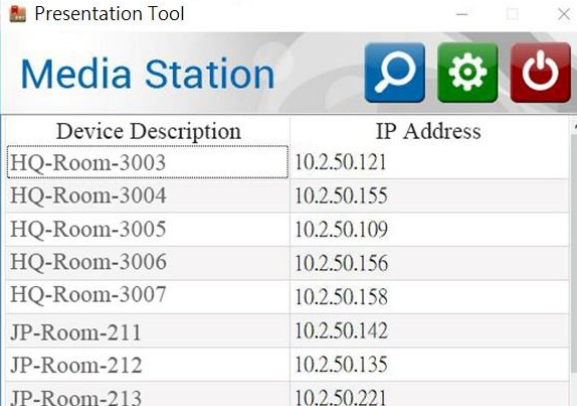
Presentation tool is a windows software which could help to make connection between products with user's PC. After opening a Microsoft® Powerpoint® file, the product could get the title of each Presentation slide and also send command to PC for page-up & page-down. Download the latest version of Presentation tool and presentation tool manual from our website.(📖1)
If you have an older version of Presentation tool installed, uninstall it and install new version.

User Interface

Device Search UI:
After click on 🔍, the application will start searching all the products in the same local network environment. Then all the found devices would be listed as below. Click on 🔴 or "X" of the window could close the application.

Monitoring UI:
After selecting one product from the list to link, the software would show a monitoring window. It shows the information regarding connected product, such as Device Description and IP Address. The status shows which Presentation file is open and linked now. Click on "Stop" button or "X" would disconnect and close the window. Please click "-" to keep the connection and minimize the window when doing presentation.
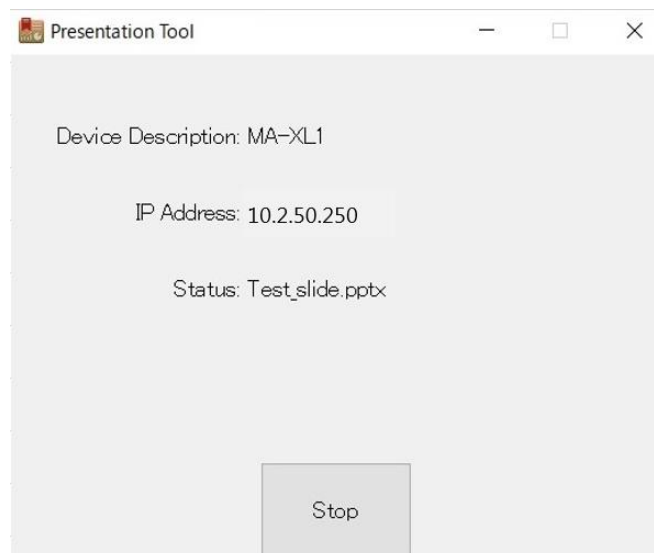
Setting UI:
Click on ⚙ to open settings page.
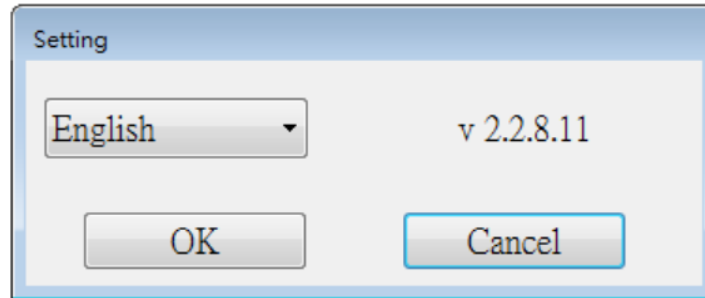
Item	Description
Language	English/Simple Chinese
version	Show software version
OK	Apply the changed settings and close the window
Cancel	Ignore the changed settings and close the window

Operation Flow

• Users need to install Presentation tool on their PC. Double click on
  "Presentation_Tool_Setup_v2.2.8.11.exe" to run the installation process and select the language.
• Connect PC to the same local network with target product through WAN port
• Open a PowerPoint® file and run Presentation tool (and vice versa)
• Choose and click the target product by the device descriptions or IP addresses.
• Monitoring UI pop up and the connection is ready.
• The GUI on display for Presentation slide page up and down then appear for control.

[**NOTE**]
   • If the slide display time is short, the Index may not be added.
   • Temporarily stop the firewall and anti-virus software etc. during installation. Some of software
     interfere with the installation of plugins.
     Suggested SW environment:
      Microsoft Windows 7, Windows 10
   • This software supports Microsoft PowerPoint 2007, 2010, 2013, and 2016

Mobile Controller Webpage

The product also allows end users to do easy control via mobile devices, such as recording control, snapshot, USB switch and video channel switch. Make sure the mobile device is in the same local network and open the browser to input the product's IP address to log in. Users could login with Administrator or Online Director accounts (admin/lcsadmin or director/lcsdirector)
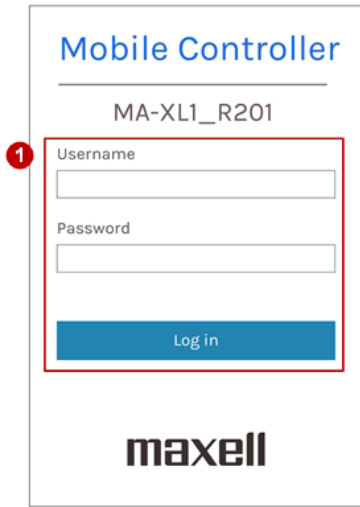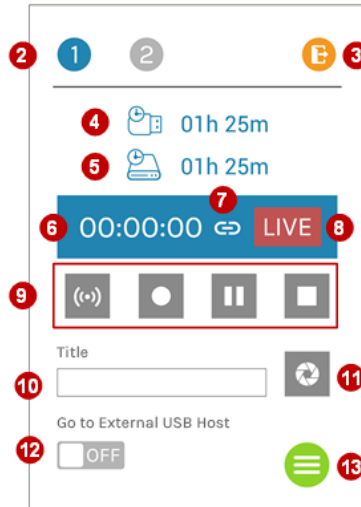
Log-in UI   **Recording Controls**   **Video Source Switch**
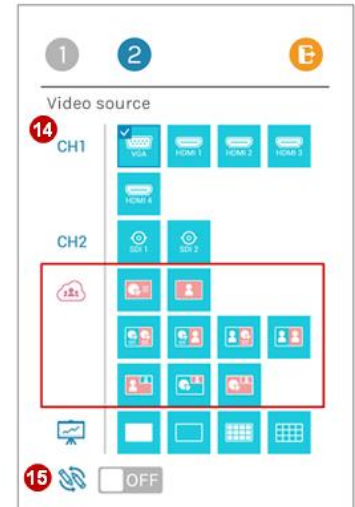
103

These webpages provide the following features and information about:

Item	Function Description	Remark
1	Login webpage	Access the product by mobile devices browser like smartphone or tablet, user could login with Administrator or Online Director accounts.
2	Function page switching	
3	Exit	Click to log out Mobile Controller
4	USB drive capacity	Converted into remaining time for recording
5	Internal Storage capacity	Converted into remaining time for recording If loop recording function enable, the remaining time will be replaced with an icon ⟳
6	Recording status and timer	
7	Link icon	Link icon ⟲ appear only when user choose "Streaming with recording mode" and click start recording button
8	Live-streaming indicator	Appear when Live-streaming ON Disappear when Live-streaming OFF
9	Recording controls	Streaming/record/pause/stop, Live icon 🔴 only enable when "Independent streaming control" setting. For details refer to section "Streaming"(📖60) All four icons will disapear and replace by a scheduling icon 📅 when scheduling function enable
10	Index title	
11	Snapshot	Click to get a snapshot manually, and insert an Index with filled Index title while recording
12	Switch USB HID to external host devices	ON : Control external host device. Menu ball and toolbar on screen disappear OFF : Menu ball and toolbar appear. External hosts cannot be controlled
13	Toolbar switch	Open/Hide Menu ball & toolbar on display
14	Display Video source switch	Switch video source on display, only one source can be selected at same time. CH3 group will be replaced by remote group when conferencing. Video source icons are the same as main toolbar on display.
15	Collaboration ON/OFF	In conferencing mode, switch ON to make both sides see the same display content and annotation. Switch off would make both side control separately.

VNC Remote Control Application

Overview

Users could download Apps of mobile devices and using the Apps to do remote control and annotation. The menu ball and toolbar would be mirror to the mobile device touch screen.

Below table shows the APP installation related information.
Fill in the connection information based on the instruction below.
You will see the GUI function buttons mirror to your mobile device and ready for use.

Remote client APP	About client application, please prepare by customer side
Connection	• Server : The product IP address • Port : 5900 • Username/Password : N/A • Input Mode : Direct, Hold Pan
Function	• Control the product by VNC client, including GUI & annotation drawing • Freeze local display and preview on device • When VNC login, the product will call back toolbar for control if it is disable or not connected with USB HID device.

Connection Flow

• Fill the product IP address in Server field
• Use port 5900
• Keep username/password fields empty
• Click [Connect] button
• Select [Direct, Hold Pan] for input mode

Remote Desktop UI

• Same graphic user interface as shown by local projector
• All functions on GUI are workable with finger touch

Operation by USB number keyboard

Basic operation is possible by USB number keyboard.
You can use the sticker included with the product.

Key	Key Assign	Sticker	Function
9	Snapshot		Snapshot and add index to recording
8	Stop		Stop recording
7	REC		Start recording, screen capture, Index
6	Skip Forward		Skip forward while play
5	Pause		Pause play, restart Play
4	Skip Backward		Skip backward while play
3	Playback Channel switch		Select playback channel, CH1, CH2, CH3, Mixed Video
2	Play		Go to playback window and Play newest "on recording" video
1	ESC	ESC	ESC from playback to normal screen
0	Ext USB (External USB Host)	Ext. USB	Switch USB HID to external host devices ON : Control external host device. Menu ball and toolbar on screen disappear OFF : Menu ball and toolbar appear. External hosts cannot be controlled
.	Screen Source switch		Check assigned sources from CH1->CH2->CH3 In each CH, follow below order HDMI1->HDMI2->HDMI3->HDMI4->VGA->SDI1->SDI2->SDI3->IPcam
-	Mute		Mute for master out
+	Vol +		Vol+ control for master out, Totally 16 levels
Enter	Vol -		Vol- control for master out, Totally 16 levels

Table of On Screen Display Icons

The product provides a HDMI/VGA preview output. At the top-right corner, event icons would appear to show warning or system information.
Below is the icon list.

Icon	Description	Duration	Display Timing	Indicator
	USB storage insert	2 sec	After USB storage be recognized by the product	The USB indicator lights up in green
	Bluetooth microphone connected	10 sec	When external Bluetooth device connected	The Bluetooth indicator lights up in blue
	Mounted HDD full	keep	When remaining time of internal HDD is less than 1 seconds. (180 sec. is the internal buffer space)	
	No Signal	Keep	When switch to a video source which has no signal	
	Useless operation	2 sec	While under scheduling mode, click on record buttons on front panel.	
	Mounted HDD error	keep	Mounted HDD cannot be access	The power indicator flashes in red
	Mounted HDD status error	Keep	When S.M.A.R.T doesn't report "Healthy"	The power indicator flashes in red
	USB storage error	keep	When the product is writing data into USB storage but fail.	
	Network error	keep	When WAN port is not connected with the network.	
	RTMP URL error	keep	When the product cannot get response from RTMP server	
	Fan error	Keep	When any fan stops	The power indicator flashes in red
	Date/Time error	Keep	When system date/time back to default value and hasn't been synchronized with NTP server or set manually	
	Overheat alarm	keep	When thermistor detects temperature over criteria	The power indicator flashes in red

Table of On Screen Display Icons (continued)

Display dialog list
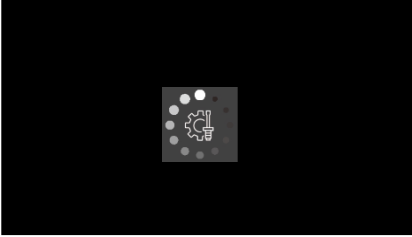
Applying settings

Firmware Update Fail
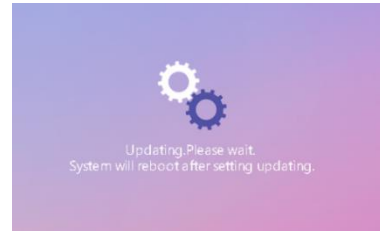
Firmware Updating

Overheat Diagram
System will be shut down in 60 sec.

CPU Fan Error Dialog
System will be shut down in 60 sec.

Indicator
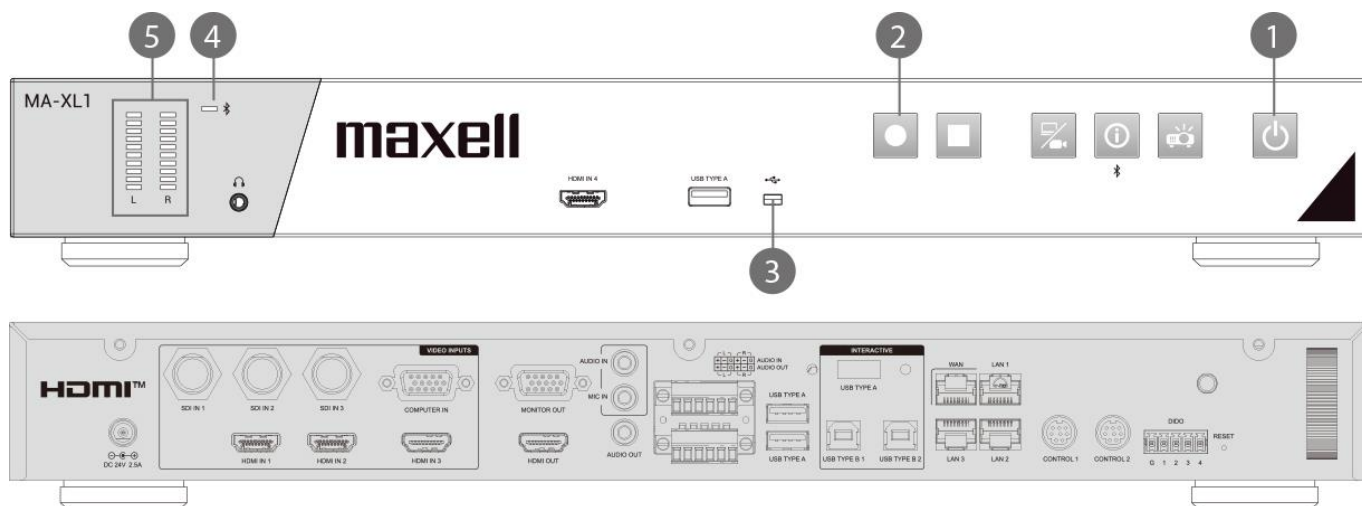
Indicator No.	Button / LED name (color)	Glow Rule	Operation
1	Main power button (RED / GREEN)	Red Steady	Standby
		Red/Green Flash ON: 600ms OFF: 600ms	Booting
		Green Steady	Ready
		Red/Green Flash ON: 600ms OFF: 600ms	Turning off
		Green Flash ON: 100ms OFF: 100ms	FW updating
2	Recording start button (RED)	Red Steady	Recording
		Red Flash ON: 600ms OFF: 600ms	Pause
		Red OFF	Non recording
3	USB LED (GREEN)	Green Steady	Mass Storage in
		Green Flash ON: 200ms OFF: 200ms	Read/Write
		Green OFF	No Storage in
4	Bluetooth LED (BLUE)	Blue Steady	Paired
		Blue Flash ON: 200ms OFF: 200ms	waiting for pairing
		Blue OFF	Not paired
5	Audio volume meter (GREEN)	Green ON	Show audio level
1+2	Main Power button (RED)	Flash ON: 200ms OFF: 200ms	FAN error Embedded HDD error Over heat-CPU If this alarm is displayed, consult with your dealer.

[**NOTE**]
- When requested for repair, the service personnel delete the HDD data for the purpose of protecting personal information.
- When requested for repair, the service personnel set the administrator setting to default for the purpose of protecting personal information.

Specifications

Item	Specification
Product Name	Lecture Capture Station
Model Name	MA-XL1
Dimension	Approx. 430 mm(W) x 60 mm(H) x 206 mm(D) (without rackmount) Approx. 480 mm(W) x 60 mm(H) x 206 mm(D) (with rackmount)
Weight (mass)	Approx. 3.0 kg
Power Requirement	DC : 24V/2.5A AC : 100 V~ 240V / 1.5 A
Power Consumption (Max.)	60W (Max.)
Operating Temperature / Humidity	0ºC ~ 40ºC / 10 ~ 90% RH
WAN, LAN	10 / 100 / 1000Mbps
Ports	Front audio output .... 3.5 mm (stereo) mini jack x1 SDI IN 1 .... BNC jack x1 SDI IN 2 .... BNC jack x1 SDI IN 3 .... BNC jack x1 HDMI IN 1 .... HDMI connector x1 HDMI IN 2 .... HDMI connector x1 HDMI IN 3 .... HDMI connector x1 HDMI IN 4 .... HDMI connector x1 COMPUTER IN .... D-sub 15 pin mini jack x1 MONITOR OUT .... D-sub 15 pin mini jack x1 HDMI OUT .... HDMI connector x1 AUDIO IN .... 3.5 mm (stereo) mini jack x1 MIC IN .... 3.5 mm (stereo) mini jack x1 AUDIO OUT .... 3.5 mm (stereo) mini jack x1 AUDIO IN(L,R) .... detachable terminal block x1 AUDIO OUT(L,R) .... detachable terminal block x1 USB TYPE A .... USB Type A x3 USB TYPE A(INTERACTIVE) .... USB Type A x1 USB TYPE B 1 .... USB Type B x1 USB TYPE B 2 .... USB Type B x1 WAN .... RJ45 jack x1 LAN 1 .... RJ45 jack x1 LAN 2 .... RJ45 jack x1 LAN 3 .... RJ45 jack x1 CONTROL 1 .... Mini DIN 8 pin jack x1 CONTROL 2 .... Mini DIN 8 pin jack x1 DIDO .... detachable terminal block x1 Bluetooth antenna .... SMA jack x1

Specifications (continued)
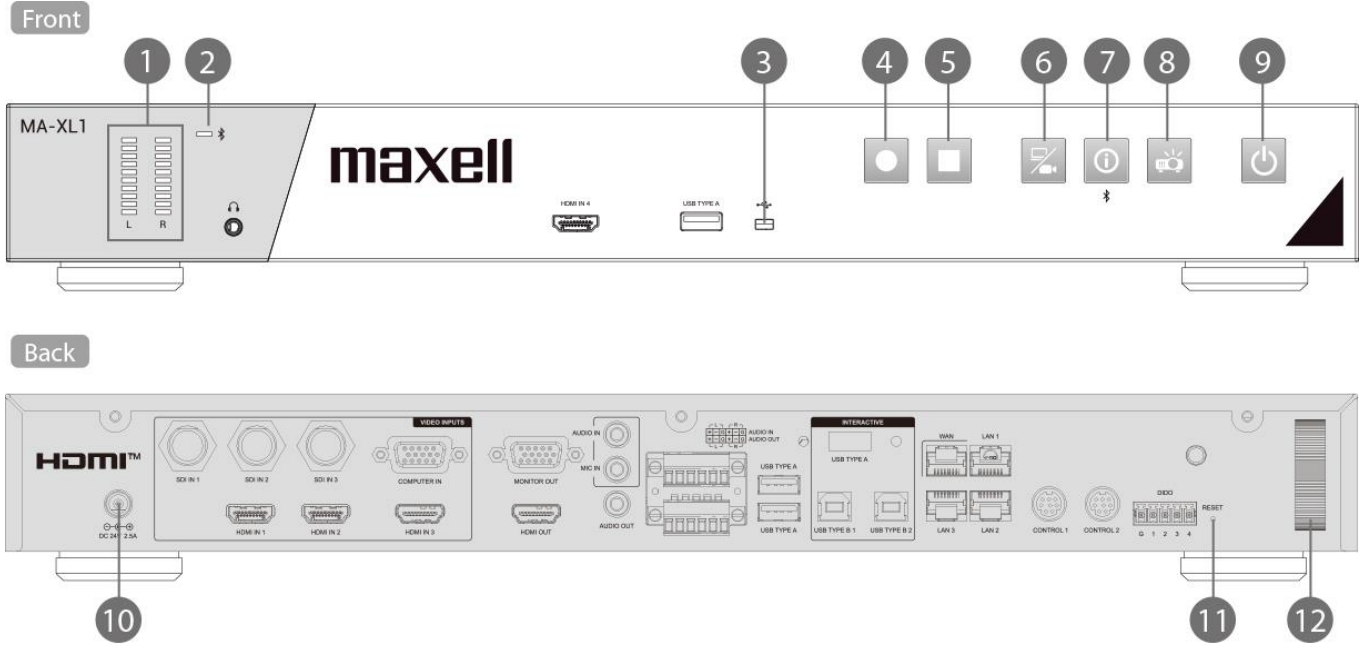
No.	Name	Brief information
1	Audio volume meter	Display recording audio level
2	Bluetooth pairing indicator	Show Bluetooth connection status
3	USB indicator	Show front USB storage status
4	Recording start button	Recording start and pause
5	Recording stop button	Recording stop
6	Video switch button	Video source switch; cycling switch for each assigned source
7	Information button	Short push: Information list appears and USB mouse control switch back from PC to the product Long push: Approx. 2 sec. Bluetooth pairing start
8	Projector power button	Power on / off button of PJLink compatible projector or Hitachi / Maxell projector.
9	Main power button	Power on/off button for MA-XL1
10	Power connector	DC:24V / 2.5A
11	Reset	Users are not allowed to use this reset. For service personnel only.
12	Security bar	Security bar.

RS-232/TCP Command

Media Station can be controlled from an external controller through a serial RS-232 connection or TCP connection. Control protocol is used for the communication between Media Station and external controller.

Configuration for connection

RS-232		TCP	
Baud rate:	9600	IP address:	This product's IP address
Data length:	8	Port:	5080
Parity:	none		
Stop bit:	1		
Flow control:	none		

Command Structure

	Header				Data		
Name	Header Code		Data length	Reserved	Action	Command Code	Parameter
ASCII Code	c	t	x* x*	0	x*	xx*	x~*
Byte number	1	2	3 4	5	6	7~8	9~

* Please refer to the below description for the detailed information.

Header
1. Header code :
        Two bytes ASCII code "ct".
2. Data length:
        Two bytes ASCII code for data byte length. Range is 00~99.
3. Reserved:
        One byte reserved for future use.

Data
1. Action
        One byte ASCII code as below:
        a. Get: "?"
                "Get" operation for Media Station.
        b. Set: "!"
                "Set" operation for Media Station.
2. Command code
        Two bytes ASCII code. For details, refer to the following pages.
3. Parameter
        N bytes ASCII code for parameter(N = Data length - 3).Please refer to "Command Code and Parameter" for more information.

RS-232/TCP Command (continued)
"Set" action command list

Function	Header					Action	Command Code		Parameter													
		Header				Action	Command Code		Parameter													
Power Off	c	t	0	3	0	!	P	W														
Reboot	c	t	0	3	0	!	R	E														
Record	c	t	0	3	0	!	R	1														
Pause Record	c	t	0	3	0	!	R	2														
Stop Record	c	t	0	3	0	!	R	3														
Audio Input Volume*: HDMI CH1	c	t	0	6	0	!	A	1	x	x	x											
Audio Input Volume*: HDMI CH2	c	t	0	6	0	!	A	2	x	x	x											
Audio Input Volume*: Analog Mix**	c	t	0	6	0	!	A	3	x	x	x											
Audio Input Volume*: Conference	c	t	0	6	0	!	A	4	x	x	x											
Audio Record Volume*	c	t	0	6	0	!	A	5	x	x	x											
Audio Output Volume*	c	t	0	6	0	!	A	6	x	x	x											
Audio Input Gain*: Unbalanced Line in	c	t	0	6	0	!	A	7	x	x	x											
Audio Input Gain*: Balanced Line in	c	t	0	6	0	!	A	8	x	x	x											
Audio Input Gain*: Mic in/Bluetooth mic in	c	t	0	6	0	!	A	9	x	x	x											
Snapshot	c	t	0	3	0	!	S	S														
Playback: Start Play	c	t	0	3	0	!	P	1														
Playback: Pause/Restart Play	c	t	0	3	0	!	P	2														
Playback: Stop Play	c	t	0	3	0	!	P	3														
Playback: Select Channel	c	t	0	3	0	!	P	4														
Playback: Skip Forward	c	t	0	3	0	!	P	5														
Playback: Skip Backward	c	t	0	3	0	!	P	6														
On Screen Menu On/Off	c	t	0	6	0	!	O	S	x	x	x											
Screen Source Switch	c	t	0	3	0	!	S	W														

* Volume parameter range: 000~125, 000 = mute, Gain parameter range: 000~003, 000 = mute
** Line in/Mic in/Bluetooth mic in mixed audio
*** On Screen Menu On/Off: 000 = Off, 001 = On

"Get" action command list

Function	Header					Action	Command Code		Parameter													
		Header				Action	Command Code		Parameter													
Product State	c	t	0	3	0	?	S	T														
Audio Input Volume: HDMI CH1	c	t	0	3	0	?	A	1														
Audio Input Volume: HDMI CH2	c	t	0	3	0	?	A	2														
Audio Input Volume: Analog Mix*	c	t	0	3	0	?	A	3														
Audio Input Volume: Conference	c	t	0	3	0	?	A	4														
Audio Recording Volume	c	t	0	3	0	?	A	5														
Audio Output Volume	c	t	0	3	0	?	A	6														
Audio Input Gain: Unbalanced Line in	c	t	0	3	0	?	A	7														
Audio Input Gain: Balanced Line in	c	t	0	3	0	?	A	8														
Audio Input Gain: Mic in/Bluetooth mic in	c	t	0	3	0	?	A	9														

*Line in/Mic in/Bluetooth mic in mixed audio

Response Structure

Name	Header			Data		
	Header Code	Data length	Reserved	Command Code	Result Code	Parameter
ASCII Code	@	x*	x*	0	xx*	xx*	x~*
Byte number	1	2	3	4	5~6	7~8	9~

* Please refer to the below description for the detailed information.

Header
1. Header code:
    One byte ASCII code "@".
2. Data length:
    Two bytes ASCII code for data byte length. Range is 00~99.
3. Reserved:
    One byte reserved for future use.

Data
1. Command code:
    Two bytes ASCII code. Return the same command code that received from the command structure.
2. Result code:
    Two bytes ASCII code as below:
        a. Success: "OK"
        b. Fail: "ER"
3. Parameter:
    N bytes ASCII code for parameter(N = Data length - 4). The parameter is command-specific. Please refer "Response Code and Parameter" for more information.

[**NOTE**]
• When the product receives the invalid protocol data(ie. the protocol data that product cannot understand). It returns NAK code (Hex: 0x15) only.

Response Code and Parameter
 Response after receiving "Set operation" command
 Example as below:

	Header				Data						
	Header				Command Code*		Result Code		Parameter		
Set operation OK	@	0	4	0	x	x	O	K			
Set operation ERROR	@	0	4	0	x	x	E	R			

Response after receiving "Get operation" command
 Example as below:

Function	Header				Data																							
	Header				Command Code		Result Code		Parameter																			
Product state*	@	0	7	0	S	T	O	K	0	0	1																	
Audio Volume**	@	0	7	0	A	x	O	K	1	0	0																	
Audio Gain**	@	0	7	0	A	x	O	K	0	0	2																	

 *   Product state: 000 = Waiting, 001 = Ready, 002 = Recording/Streaming, 003 = Record Paused
 ** Volume parameter range: 000~125, 000 = mute, Gain parameter range: 000~003, 000 = mute

Troubleshooting

Problem		Likely Cause	Things to Check
Power problem	The product cannot be turned on. (When the power adaptor's indicator is not lit)	The proper power cable or power adaptor are not used.	Make sure that you are using the power cord and power adaptor included in the product.
		A power cord suitable for the AC outlet is not used.	Make sure you are using the power cord suitable for the AC inlet.
		Power is not supplied from the AC outlet.	Make sure that power is supplied from AC outlet.
		The power adaptor and the power cord are not connected.	Make sure that the power adaptor and the power cord are connected.
	The product cannot be turned on. (When the power adaptor's indicator is lit)	The power adaptor is not connected to the DC 24V input of the product.	Is the power adaptor connected to the DC input of the product?
		Connection failure of power adaptor	Unplug the power adaptor from the product, make sure that the power indicator turns off, then reconnect.
OSD (On-screen display) problem	Toolbar does not appear.	The product power is OFF.	Is the product turned on? Is the power indicator lit in green?
		HID (Human Interface Device) power is OFF.	Is HID turned on?
		USB cable is not connected to Interactive USB Type-A port.	Is USB cable connected to Interactive USB type-A port?
		The product does not support the HID being used.	Are you using the HID that the product supports?
		The product does not recognize HID.	Unplug the USB cable and reconnect it.
		Toolbar control setting is OFF.	Is toolbar switch setting ON in Presenter page or mobile controller web page? For details refer to section "Presenter Page" and "Mobile Controller Webpage" in Operating Guide.
	The mouse cursor position is incorrect.	The product cannot accurately recognize the position of the mouse cursor.	Perform HID calibration. For details refer to section "Information Button" in Operating Guide.
		The product does not support the HID being used.	Are you using the HID that the product supports?
	Cannot annotation. Annotation is not displayed.	Annotation & Pen function is OFF.	Is Annotation & Pen function ON? For details refer to section "Annotation" in Operating Guide.
		HID is not connected.	Make sure that HID is connected Interactive USB type-A port.
		Toolbar control setting is OFF.	Is toolbar switch setting ON in Presenter page or mobile controller web page? For details refer to section "Presenter Page" and "Mobile Controller Webpage" in Operating Guide.

Problem		Likely Cause	Things to Check
Audio problem	Only audio is not recorded. (Wired connection)	The microphone device power is OFF.	Is the microphone device turned on?
		The connection cable is broken.	Is the connection cable broken?
		The port of product to be connected is incorrect	Is it connected to "MIC IN" or "AUDIO IN" of the product?
		The port of microphone device to be connected is incorrect	Is it connected to the output port of the microphone device?
		Volume is zero or low of "Line-in/Mic-in/Bluetooth"	Is volume setting appropriate in Administrator web page? For details refer to section "Audio" in Operating Guide.
		Gain is zero or low of "Line-in/Mic-in/Bluetooth"	Is gain setting appropriate in Administrator web page? For details refer to section "Audio" in Operating Guide.
		The "Line-in/Mic-in/Bluetooth" is set on Mute.	Is the "Line-in/Mic-in/Bluetooth" set on Mute? For details refer to section "Audio" in Operating Guide.
Bluetooth problem	Bluetooth device cannot pair.	The Bluetooth device power is OFF.	Is the Bluetooth device turned on?
		The product is not started pairing.	Is the Bluetooth indicator on front panel blinking? For details refer to section "Indicator" in Operating Guide. If it is off, long push the info button on the front panel. For details refer to section "Button Control" in Operating Guide.
		If Bluetooth indicator on front panel is lit, it is paired with another Bluetooth device.	Turn off the power of the Bluetooth device being paired and try pairing again.
		The Bluetooth device is not started pairing.	Is the Bluetooth device started pairing?
		The dedicated antenna is not connected.	Is the Bluetooth antenna attached to the product connected?
	Only audio is not recorded, or noisy.	Distance between product and microphone device is far.	Make sure that there is no obstacle between the Bluetooth antenna and the device. Is the distance between the product (Bluetooth antenna) and the device 10m or less? However, depending on the device to be paired, pairing may not be possible even if the distance is 10m or less.
		Radio waves are interfering.	Make sure that there is no Equipment emitting radio waves (microwave oven or wireless router, etc.) nearby.

Problem		Likely Cause	Things to Check
Record problem	The recorded data is deleted.	The HDD capacity is full and Loop recording setting is ON.	Is there HDD capacity remaining? Is Loop recording setting ON? For details refer to section "Recording" in Operating Guide.
	The index is not added automatically.	Add automatically setting is OFF.	Is add automatically setting set ON in Administrator setting? For details refer to section "Recording" in Operating Guide.
		Download video and play it.	Make sure that you play video in Playback mode.
	Recording stops automatically.	8 hours have passed from the start recording.	Has 8 hours passed since recording started?
	Information different from "Content" set on the administrator page is added to the video data.	The Lecture information import overwrites the content data.	Is the "lcs_user_config.ini" file saved in the USB flash drive connected to the product? For details refer to section "Lecture information import" in Operating Guide.
	Record cannot start by the key or webpage.	The schedule recording has been set.	Is the schedule recording set? For details refer to section "Scheduler" in Operating Guide.
Display problem	Input image is not output to monitor.	The product power is OFF.	Is the product turned on? Is the power indicator lit in green?
		The power of Input device is OFF.	Is input device turned on?
		The power of output device is OFF.	Is output device turned on?
		The connection cable is damaged.	Is the connection cable damaged?
		Connection failure of connection cable.	Disconnect the cable and reconnect it.
		Image is not output from the input device	Does the input device output video signal normally.

		Resolution of the input signal is not supported by this product.	Is the resolution of the input device one of the following?
			HDMI:
			  1920x1080p (60/50/30/25/24 Hz),
			  1280x720p (60/50 Hz),
			  1024x768p (60/70/75 Hz)
			VGA:
			  1920x1080p (60 Hz),
			  1280x720 (60 Hz),
			  1024x768p (60/70/75 Hz)
			SDI:
			  1920x1080p (30/25/24 Hz)
			  1280x720p (60/50 Hz)

Problem		Likely Cause	Things to Check
Display problem (continued)	Input image is not output to monitor. (continued)	The resolution is not supported by the output device.	Does the output device support the following resolution? HDMI / VGA: 1920x1080p(60Hz)
		Connection port and Video source switch do not match.	Make sure that the connection port and the Video Switch selected on the OSD match.
		There is an error in the Video inputs setting of the administrator user mode setting.	Make sure that the Video inputs setting of the administrator setting.
	The display is partly invisible.	The display is sliding	Is VGA input H offset position adjusted? For details refer to section "Information Button" in Operating Guide.
	Noise is generated on the display	Phase is not adjusted	Is VGA input H offset phase adjusted? For details refer to section "Information Button" in Operating Guide.
	Image distorted or color is abnormal.	You use the resolution that this product does not support	Check problem "Input image is not output to monitor".
		Content other than the camera is input to Ch2.	Make sure that contents other than camera are not entered in Ch2.
Web login problem	Cannot login to Administrator.	User name and/or Password of Administrator are/is incorrect.	Retry after waiting 10 minutes.
		You forgot administrator's Username or password	Contact your dealer.
	Cannot login to Online director page or Video manager page of the web interface.	User name and/or Password of Online director or Video manager are/is incorrect.	Retry after waiting 10 minutes.
		You forgot administrator's Username and/or password of Online director and/or Video manager	Set new User name / Password of Online director or Video manager in Administrator user mode. For details refer to section "Account" in Operating Guide.

Problem		Likely Cause	Things to Check
Web login problem (continued)	Cannot access the web login page (When connecting to an external network via WAN port)	The product power is OFF.	Is the product turned on? Is the power indicator lit in green?
		LAN cable is not connected.	Is the router connected to the WAN port of this product with a LAN cable?
		The network device such as a router, etc. is not turned on.	Is the network device turned on?
		The IP address entered in the Web browser is incorrect.	Is the IP address of the product correctly entered? To check the IP address of the product, press the Information button on the front panel.
		IP assignment setting is set to Static IP. (Only for automatic assignment by router)	Is IP assignment set to DHCP? (Login to the Administrator user mode via the LAN port and check.) For details refer to section "Network" in Operating Guide.
		The DHCP function is disabled on network device such as a router, etc. (Only for automatic assignment by router)	Is DHCP function of the network device enabled? Consult your network administrator.
		IP assignment setting is set to DHCP. (Only for static assignment by yourself)	Is IP assignment set to Static IP? (Login to the Administrator user mode via the LAN port and check.) For details refer to section "Network" in Operating Guide.
		The setting of IP address is incorrect. (Only for static assignment by yourself)	Is the IP address corresponding to the external network set up? (Login to the Administrator user mode via the LAN port and check.) Consult your network administrator.
		The setting of subnet mask is incorrect. (Only for static assignment by yourself)	Is the subnet mask corresponding to the external network set up? (Login to the Administrator user mode via the LAN port and check.) Consult your network administrator.
		The setting of Default gateway is incorrect. (Only for static assignment by yourself)	Is the Default gateway corresponding to the external network set up? (Login to the Administrator user mode via the LAN port and check.) Consult your network administrator.
		The setting of Primary DNS Server is incorrect. (Only for static assignment by yourself)	Is the Primary DNS Server corresponding to the external network set up? (Login to the Administrator user mode via the LAN port and check.) Consult your network administrator.
		The IP address is duplicated with the existing device. (Only for static assignment by yourself)	Make sure that the IP address of the product is not duplicated with the existing device. Consult your network administrator.

Problem		Likely Cause	Things to Check
Web login problem (continued)	Cannot access the web login page (When connecting to a PC directly via LAN port)	The product power is OFF.	Is the product turned on? Is the power indicator lit in green?
		LAN cable is not connected.	Is the PC connected to the LAN port of this product with a LAN cable?
		The network adaptor of the PC is not enabled.	Is the network adaptor of the PC enabled? Refer to the user's manual for the PC and enable the network adaptor.
		The IP address of the PC's network adaptor is not set to automatic acquisition. (Only for automatic assignment by the product)	Is the IP address of the PC's network adaptor set to automatic acquisition?
		The network settings of PC network adaptor are incorrect. (Only for static assignment by yourself)	Make sure that the network settings such as IP address, etc. are correctly set.
		The IP address entered in the Web browser is incorrect.	Make sure that the address you enter in Web browser is 192.168.11.254. For details refer to section "Log into the settings webpage" in Operating Guide.
	Cannot login only Video Manager	Recording is in progress.	Make sure that it is not recording.
Setting problem	The setting cannot be changed in the administrator mode.	Recording is in progress.	Make sure that it is not recording.
		Playback is in progress.	Make sure that it is not playing.

Problem		Likely Cause	Things to Check
Network camera problem	The network camera is not recognized.	The power of network camera is OFF.	Is network camera turned on?
		Network camera does not support ONVIF.	Does the network camera support ONVIF?
		ONVIF setting of the network camera is OFF.	Is the network camera ONVIF setting on?
		The IP setting of the network camera is incorrect.	If the network camera is connected to an external network, is it connected to the same network as the product? Consult your network administrator.
			If the network camera is connected to the LAN port of the product, is the IP address of the network camera set to 192.168.11."XX"? Or is it set to DHCP? "XX" is any number between 1 and 253.
	Cannot assign a network camera to Content Group (Ch1) / Cam 1 Group (Ch2) / Cam 2 Group (Ch3).	The power of Network camera is OFF.	Is network camera turned on?
		The product is not logged in to the network camera.	Make sure that the status of the network camera is "OK" display with Network camera manager of administrator setting. When "Login" display, please enter ID and PW and login to network camera. For details refer to section "Network camera manager" in Operating Guide.
PTZ camera problem	Cannot PTZ operate the network camera.	The power of PTZ camera is OFF.	Is PTZ camera turned on?
		Network camera does not support ONVIF.	Does the network camera support ONVIF?
		ONVIF setting of the network camera is OFF.	Is the network camera ONVIF setting on?
	Cannot PTZ operate the PTZ camera.	The power of PTZ camera is OFF.	Is PTZ camera turned on?
		The PTZ camera is not connected to the product's CONTROL 1 port.	Is the PTZ camera connected to the product's CONTROL 1 port?
		The PTZ camera and the product are not connected by a serial cross cable.	Are PTZ camera and the product connected by serial cross cable?
		The connection cable is broken.	Is the connection cable broken?
		PTZ control port setting is incorrect.	Make sure that the PTZ control port setting in administrator setting. For details refer to section "PTZ control port" in Operating Guide.

	Problem	Likely Cause	Things to Check
Storage problem	Cannot designate the USB storage as the recording destination.	You are using USB flash drive.	Are you using USB HDD?
		It is not formatted with the product.	Is the HDD formatted with the product?
	The USB storage is not recognized	The format of the USB storage is not supported by this product.	Make sure that the USB storage format is one of the following. FAT32, NTFS, EXT2, EXT3, or EXT4.
		USB storage capacity is larger than 2 TB.	Make sure that the USB storage capacity is 2 TB or less
		USB storage partition style is not MBR.	Is the USB storage partition style MBR?
		Incorrect connection port	USB HDD Are you connected to a back panel USB Type-A port other than interactive?
			USB flash drive Are you connected to a front panel USB Type-A port?
	It is not recorded to the USB flash drive.	Made a recording with the scheduler function.	If you use the scheduler, you cannot record to the USB flash drive. Record by manual operation.
		Front USB recording setting is OFF.	Is Front USB recording setting of administrator setting ON? For details refer to section "Recording" in Operating Guide.
	Do not know the recordable time of the USB flash drive.	Unknown method of confirming remaining amount	Make sure that the Online Director page.
Conference problem	Cannot start video conference (When the "conference service" setting is "Internal")	Communication between ports 5070 and 1935 is blocked with a router, etc..	Make sure that the router allows communication ports 5070 and 1935. Consult your network administrator.
		The router, etc. has not forwarded the data received at ports 5070 and 1935 to the product.	Make sure that the router forwards the data received on ports 5070 and 1935 to the product. Consult your network administrator.
	Cannot start video conference (When the "conference service" setting is "External")	"conference service" setting IP address is incorrect.	If the product whose "conference service" is set to "Internal" is on the same network, set the local IP address of the other party. If the product that "conference service" has set to "Internal" exists on another network, set the global IP address of the other party. Consult your network administrator.
	Audio interrupted during video conference	Throughput of network is low.	Have you selected an Encoder setting in administrator that matches your throughput of network? For details refer to section "Conference" in Operating Guide.
	Image interrupted during video conference	Throughput of network is low.	Have you selected an Encoder setting that matches your throughput of network? For details refer to section "Conference" in Operating Guide.

Problem		Likely Cause	Things to Check
External PC operation problem	Cannot operate external PC	The product power is OFF.	Is the product turned on? Is the power indicator lit in green?
		HID power is OFF.	Is HID turned on?
		HID is not connected to Interactive USB Type-A port.	Make sure that the USB cable to the HID is connected to Interactive USB Type-A port of this product.
		External PC is not connected.	Make sure that the USB cable to the External PC is connected to Interactive USB Type-B port of this product.
		USB external operation is not set or incorrect with Media I/O.	Make sure USB external operation is correctly set with media I/O. For details refer to section "Content Group / Cam 1 Group / Cam 2 Group" in Operating Guide.
		Selected channel is incorrect.	Is the PC screen displayed on the OSD?
		The operation mode has not been switched.	Make sure that the operation mode is switched. For details refer to section "Information Button" in Operating Guide.
Scheduler problem	Recording will not start, even though you have set up the scheduler.	Recording stop time and next recording start time is 5 minutes or less.	Is the next recording start time set after 5 minutes or later from the stop time?
		Device current date and time setting incorrect.	Make sure that the device current date and time is correct. For details refer to section "System settings" in Operating Guide.
		Incorrect time zone setting.	Is the time zone set correctly? For details refer to section "System settings" in Operating Guide.
		Time data cannot be received.	Is the LAN cable connected to the WAN port?
	Recording does not start at the time reserved by the scheduler.	Scheduler failed to reserve.	Make sure that the reservation on the "Scheduled Events page" of the administrator page.
	Recording does not start at the time reserved by the scheduler. (Scheduling via Opencast server)	Username, Password, URL, or port number is incorrect.	Make sure Username, Password, URL, or port number.
	Recording does not start at the time reserved by the scheduler. (Manual calendar import)	The reservation set last time was overwritten.	Are you recorded the existing recording reservation and additional recording reservation in the same ics file and import it?
	Recording does not start at the time reserved by the scheduler. (Periodic Calendar import)	URL is incorrect.	Is the URL correct?

Problem		Likely Cause	Things to Check
Upload problem	Cannot upload video files.	The protocol is incorrect.	Is the protocol correct? Does "Connection test" succeed? For details refer to section "Upload" in Operating Guide.
		URL is incorrect.	Is URL correct? Does "Connection test" succeed? For details refer to section "Upload" in Operating Guide.
		Username or password is incorrect.	Is Username and password correct? Does "Connection test" succeed? For details refer to section "Upload" in Operating Guide.
Streaming problem	Streaming fails.	RTMP server is abnormal.	Is the setting of RTMP server side appropriate?
		Live streaming setting is OFF	Make sure that the Live streaming setting is not OFF. For details refer to section "Streaming" in Operating Guide.
		Recording is not started. (When Live streaming setting is Together with recording) For details refer to section "Streaming" in Operating Guide.	Make sure that the recording is started.
		Streaming is not started. (When Live streaming setting is Independent streaming control) For details refer to section "Streaming" in Operating Guide.	Make sure that the streaming is started.
		The set URL is incorrect.	Make sure that the URL settings on the product side and the client side. For details refer to section "Streaming" in Operating Guide.
Other	Other problems, such as inability to operate, no display, no audio output, etc.	The product is in an abnormal state.	Please restart the product. You may need to hold the power button for 5 seconds to turn off the power.

NOTICE

If troubleshooting does not solve problem, consult with your dealer.

When recovering the product for repairing or replacing the product, the data, account ID, account password, and setting data saved in the HDD will be deleted immediately after recovery, for the purpose of protecting personal information.
Since it is impossible to restore the data saved in the HDD, be sure to back up the necessary data and settings.

If we recover the product, you are deemed to have agreed to the above.