AI-Box1

User Manual-English

Version: 1.6.3
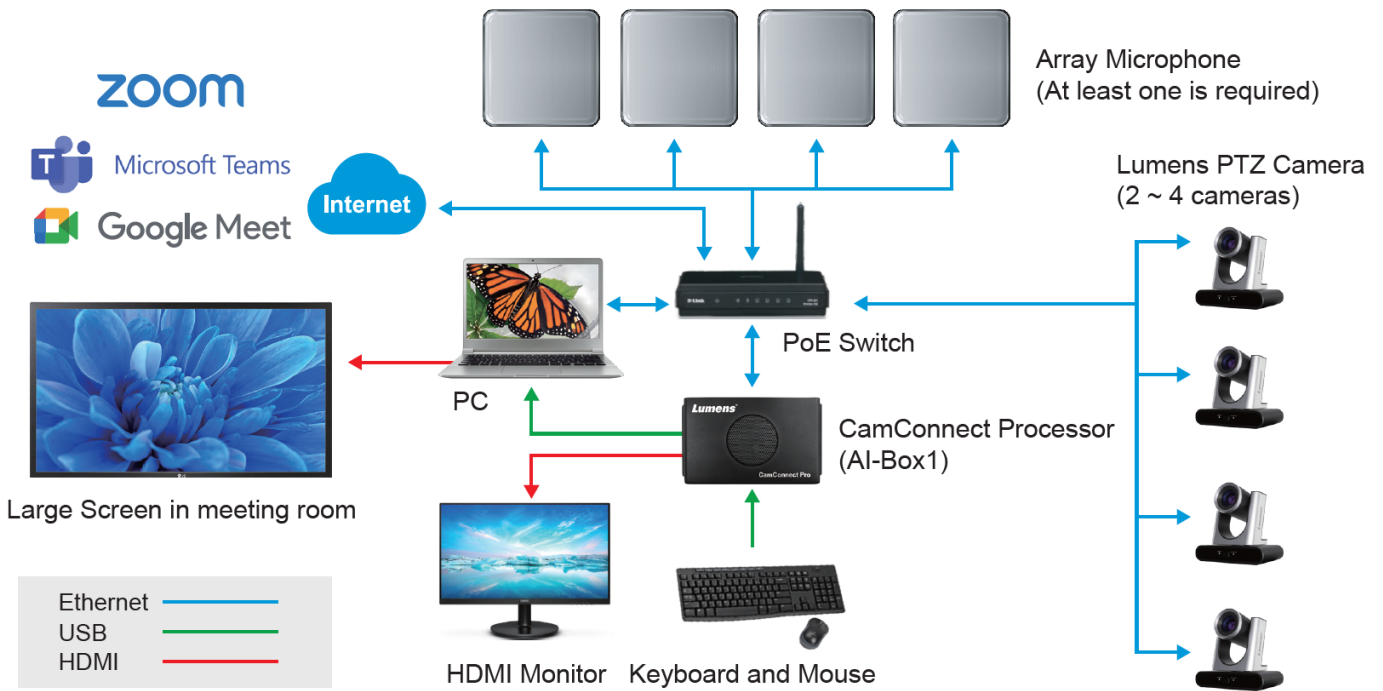
To download the latest versions of the Quick Start Guide, multilingual user manual, software, driver, etc., please visit Lumens
https://www.MyLumens.com/support
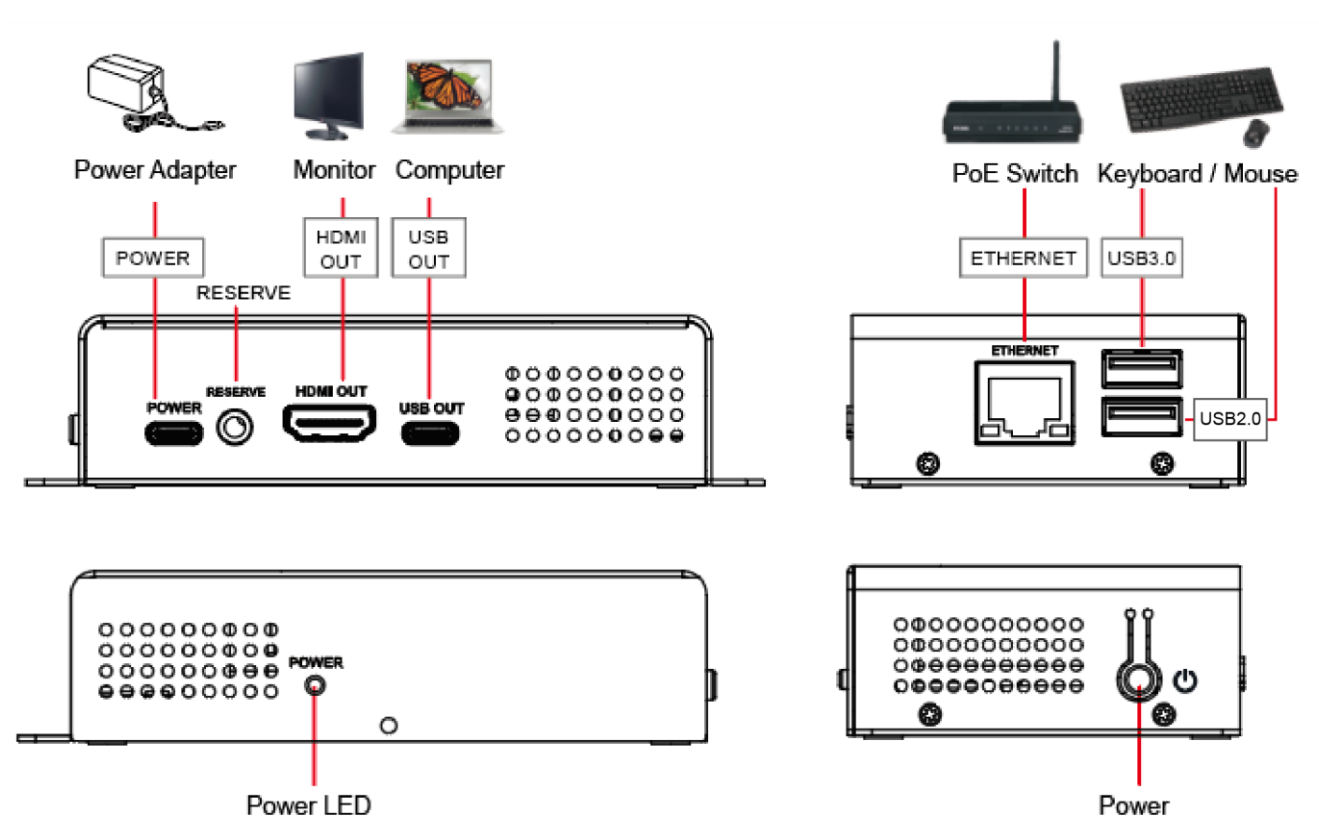
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Chapter 1 System Connection and Application

1.1 System Connection

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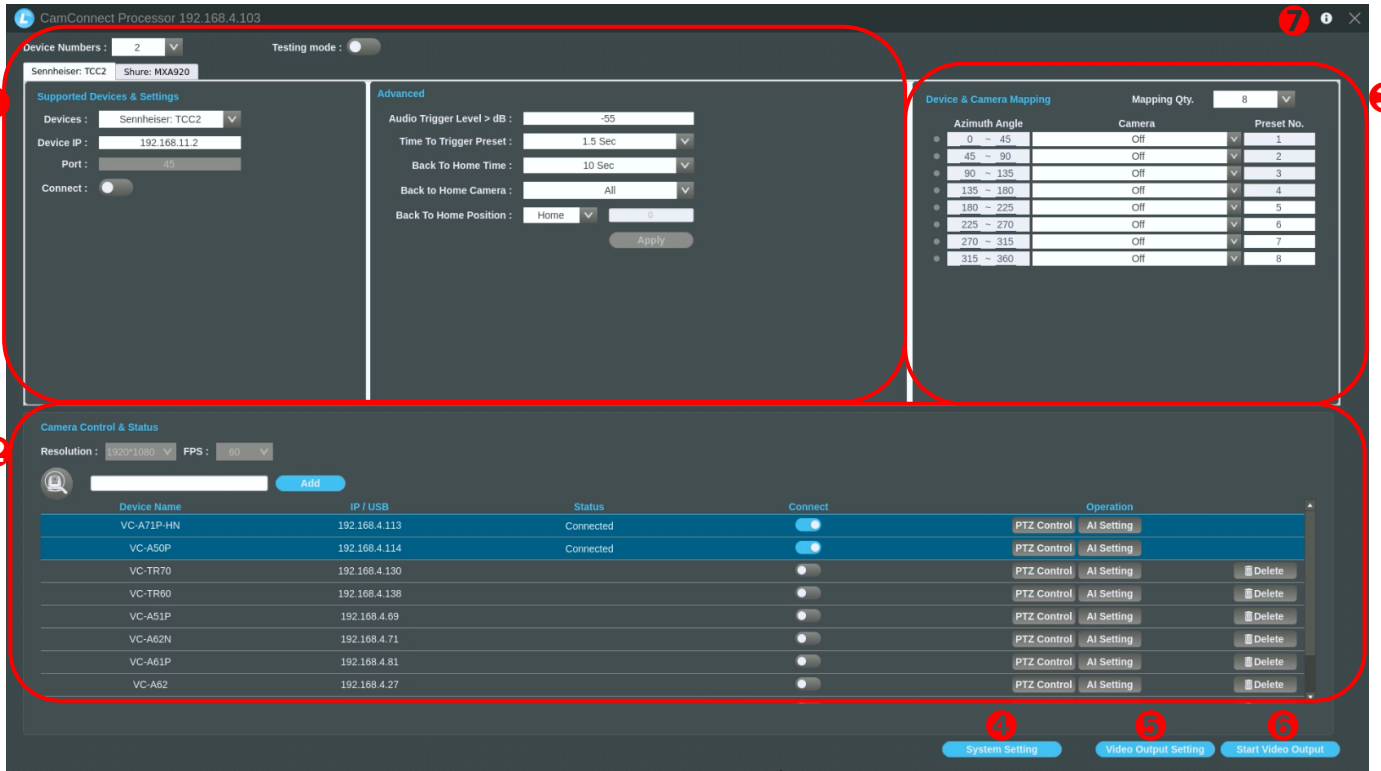
2.1 Device Setting
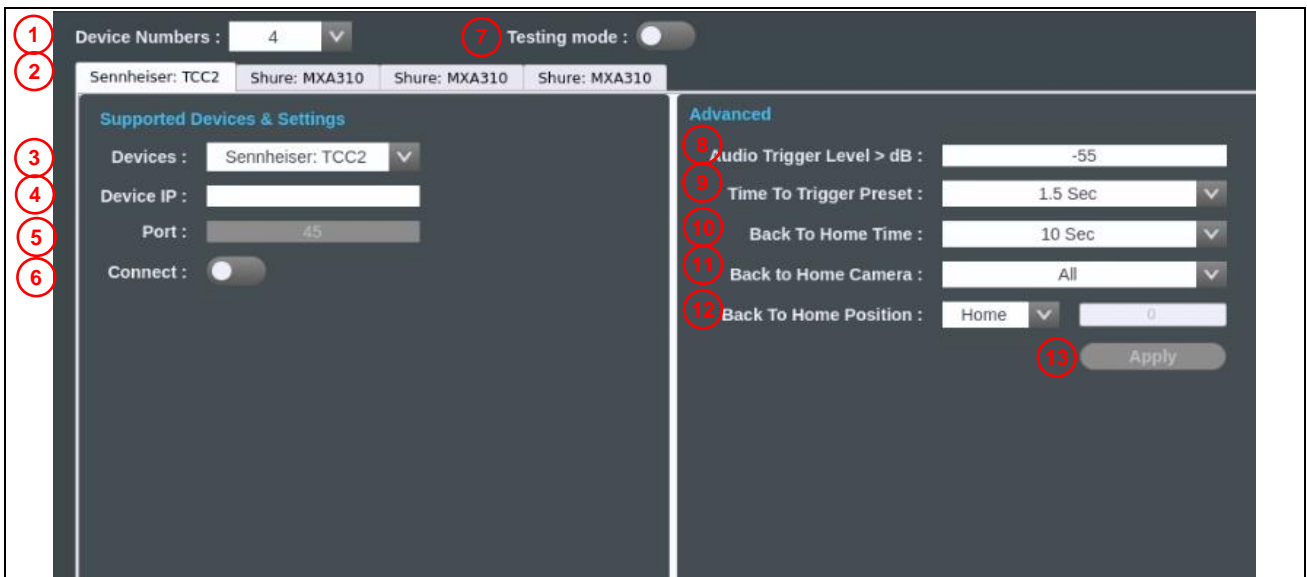
No	Item	Function Descriptions
1	Device Number	Select the desired number of microphones to connect
2	Device List	Display the devices according to the Device Numbers
3	Devices	Select Microphone Device Note Please check the supported devices from Products- CamConnect Pro in Lumens website.
4	Device IP	Enter the IP address of the microphone
5	Port	Display based on the connected devices

|		• Shure: 2202
		• Sennheiser: 45
		• Sennheiser TCCM: 443
		• Nureva: 8931
		• Yamaha: 49280
		• Audio-Technica : 17300
		Note Only Nureva allows customized PORT
6	Connect	Enable/Disable Setting mode
7	Testing Mode	When the Testing mode is enabled, the microphone can receive signals, but it will not trigger the camera to the preset position.
8	Audio Trigger Level > dB	Triggered only if audio source exceeds the dB value. • Sennheiser:-90~0 (recommended -55) • Nureva:0~120 (recommended 40 up) • Audio-Technica:0~60 (recommended 30) • Yamaha:0~126 (recommended 80 up for RM-CG / 70 up for RM-W)
9	Time To Trigger Preset	Audio Reception Delay Settings When a second sound trigger occurs, there will be a delay in calling the preset position based on the configured duration in seconds.
10	Back To Home Time	Back To Home Time Settings If there is no audio input at the venue, it will trigger, after the set seconds, and return to Home
11	Back to Home Camera	Select one camera or all to back to home.
12	Back To Home Position	Home Position Setting Set Preset# when [Preset] is selected.
13	Apply	Setting completed and click Apply

2.2 Camera Control & Status
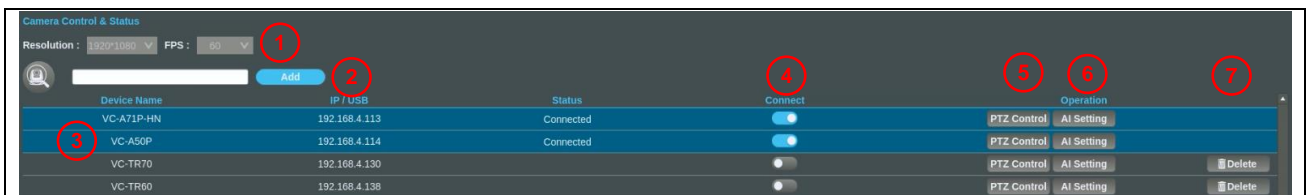
No	Item	Function Descriptions
1	Resolution/ FPS	Resolution/FPS Settings (must match the camera output settings)
2	Refresh/ Add	Click 🔍 to search for the device again or manually enter the specified IP, and click **[Add]** to add it Note Please ensure that the camera and AI-Box1 are on the same network segment.
3	Device Name	Display the camera name in the same network segment.
4	Connect	Click to On/ Off the connection with the camera

|		
5		The connected camera will be highlighted in blue.
5	PTZ Control	Click to enable PTZ control Refer to **_2.2.1 PTZ Control_** for function description
6	AI Setting	Enable/Disable AI People Tracking ▪Center Stage: After triggering to the preset position, the tracked person will be positioned in the center of view and tracking will stop after 5 seconds ▪Continuous Tracking: The system will continuously track a person and keep them positioned in the center
7	Delete	Delete the camera from the list.

2.2.1   PTZ Control
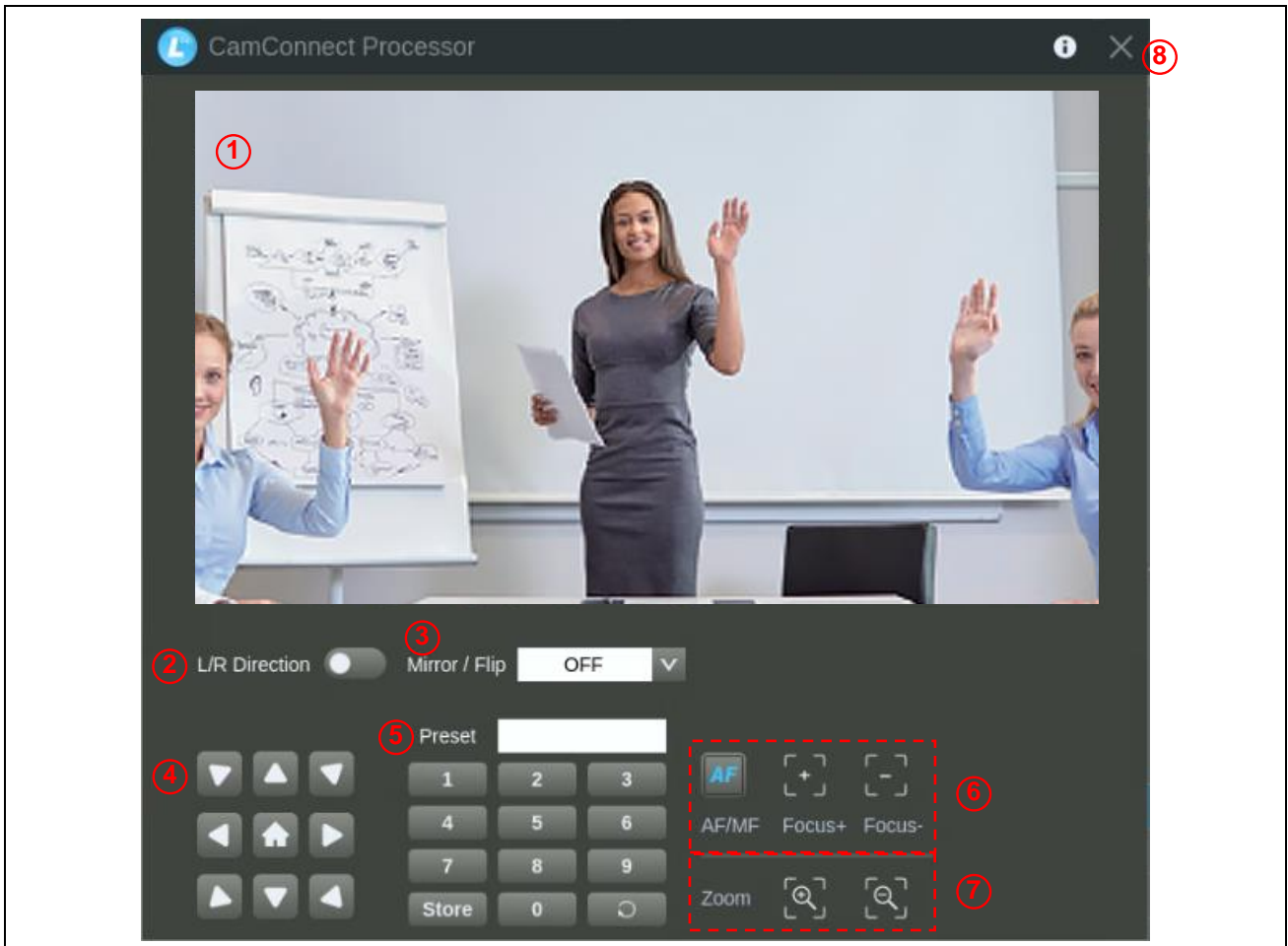
No	Item	Function Descriptions
1	Preview window	Display the screen currently captured by the camera
2	L/R Direction	L/R Direction / Normal
3	Mirror / Flip	Set image mirroring/ flip
4	Pan/Tilt/Home	Adjust the Pan/Tilt position of the camera screen Click **[Home]** button to return to its central position
5	Preset setting	▪Call Preset： Click number first and then ⟳ ▪Store Preset： Click number first and then Store
6	AF/MF	Switch to Auto/Manual Focus. Focus can be adjusted in Manual

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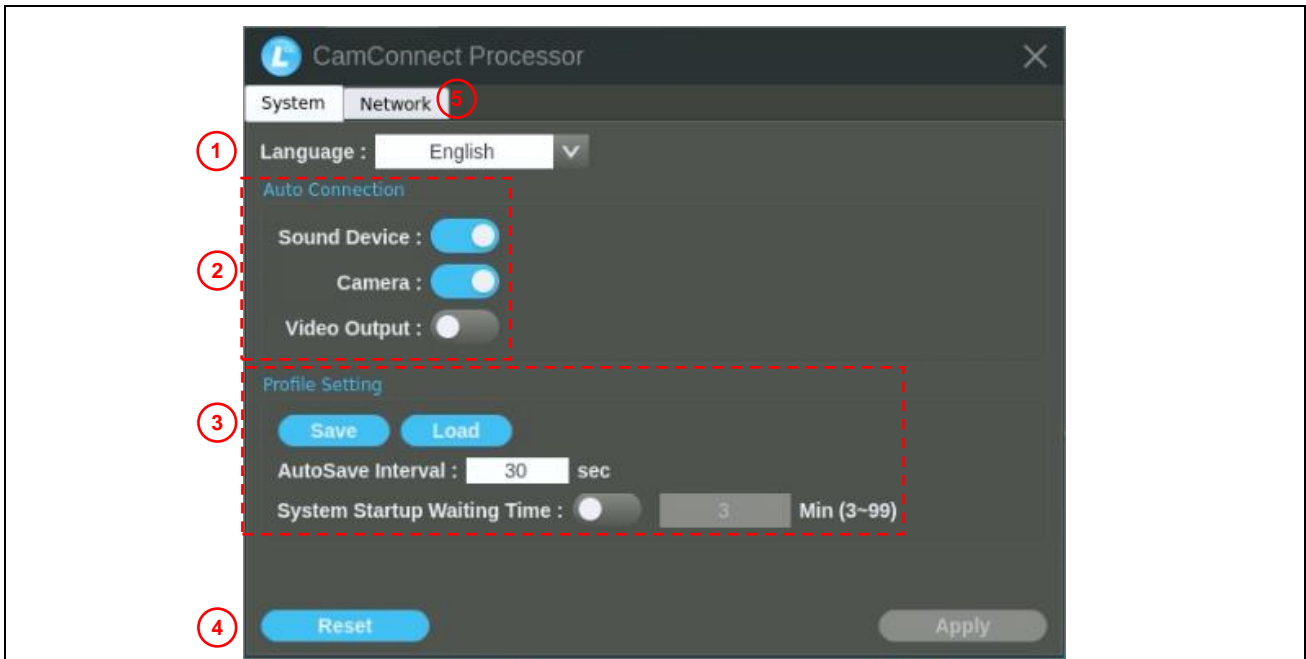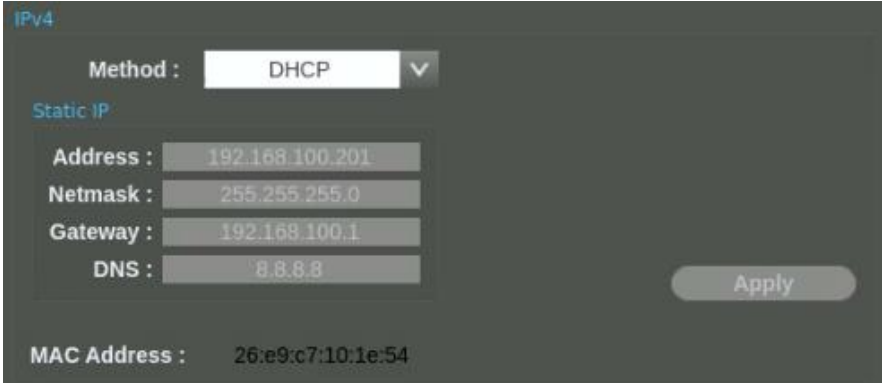| 7	Zoom	Zoom In/ Zoom Out ratio
8	Exit	Exit the PTZ Control page

2.3 Device & Camera Mapping

After the microphone device is connected, the camera can be controlled to turn to the corresponding preset position according to the microphone detection position.
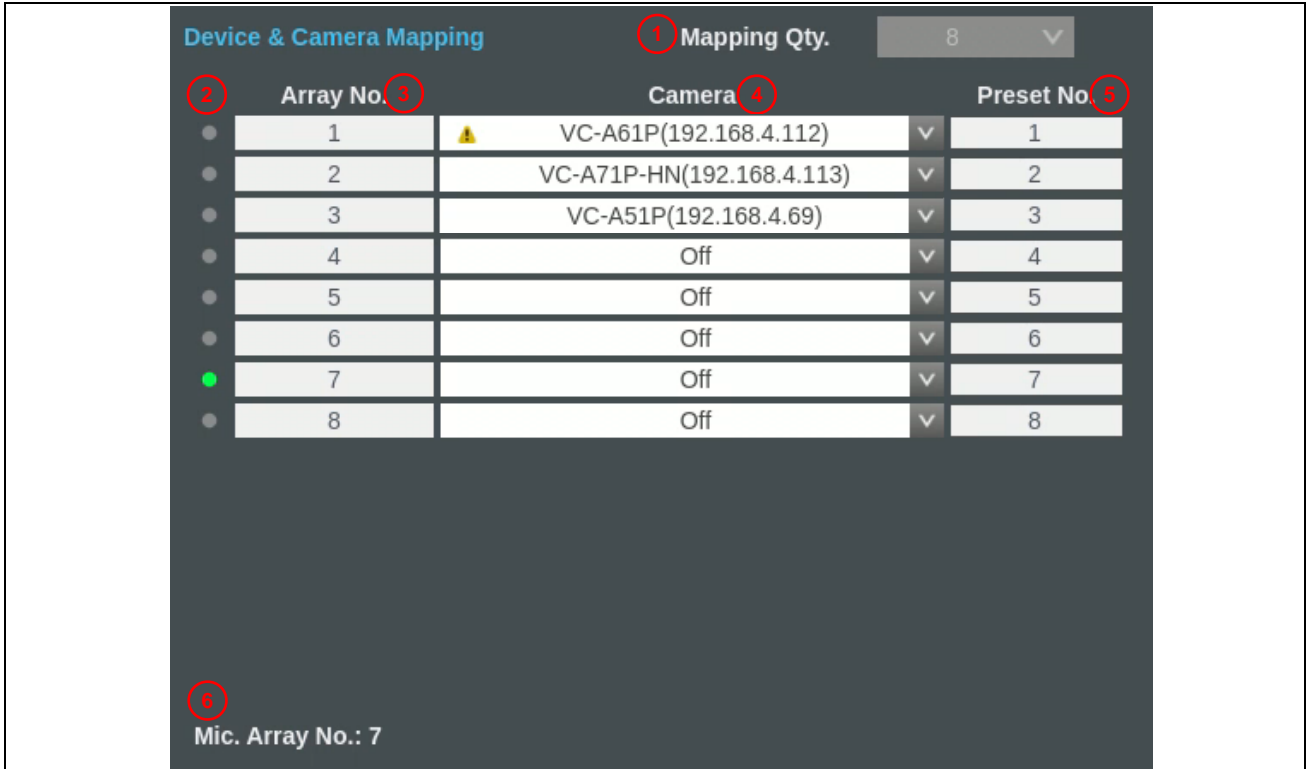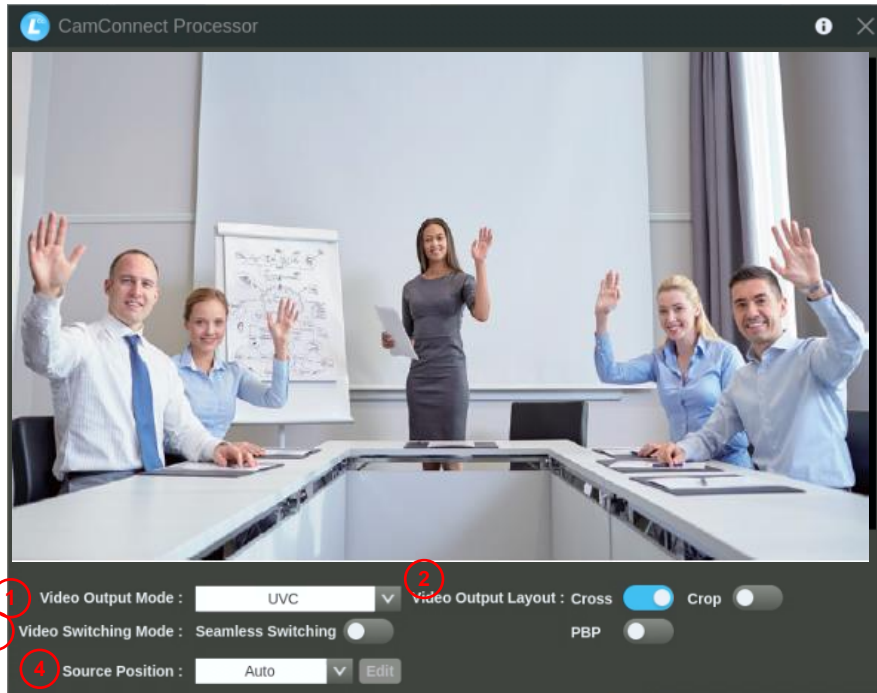

No	Item	Function Descriptions
1	Mapping Qty	Select mapping quantity. Up to 128 presets supported. [Note] Shure MXA310/ MXA910/ MXA920/ Audio-Technica no supported
2	Indicator	This indicator shows the status of microphone signal reception. (A green light indicates successful reception)
3	Array No. Azimuth Angle	▪ Array No.: Applicable to Shure/ Audio-Technica ▪ Azimuth Angle: Applicable to Sennheiser, Nureva, and Yamaha. The angle can be manually adjusted
4	Camera	Select the desired camera from the dropdown menu If unable to connect with a previously saved camera, ⚠ will be displayed.
5	Preset No.	Select the preset position for the camera from the dropdown menu
6	Mic. Array No. Mic. Azimuth Angle	Display current trigger position/ angle information for the camera.

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2.4 System Setting

No	Item	Function Descriptions
1	Language	English
2	Auto Connection	Auto connected items setting after AI-Box1 power on. ▪ Sound Device ▪ Camera ▪ Video Output
3	Profile Setting	▪ Save/ Load: Import and export the config file ▪ AutoSave Interval: Set the auto saving interval. ▪ System Startup Waiting Time: Set startup waiting time. After AI-Box1 power on, it will automatically search microphones and cameras once. If the devices have a longer boot-up time, it may cause AI-Box1 failed to connect to the devices properly. To prevent this issue, please adjust the system waiting time based on the current environment and the boot-up time of the microphones and cameras.
4	Reset/ Apply	Reset/ Apply settings
5	Network	Ethernet Setting. When it is set to Static IP, the setting can be modified. Once the settings are completed, click Apply.

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2.5 Video Output Setting

No	Item	Function Descriptions
1	Video Output Mode	Set the Output Mode to either UVC, HDMI or UVC+HDMI
2	Video Output Layout	Configure the layout of the video output according to the provided reference in section *2.5.1 Video Output Layout* ▪ Cross: 4-split screen ▪ PBP: Picture by Picture screen ▪ Crop: Screen cropping function Note Choose either Cross/PBP only
3	Seamless Switching	The system is set up for single screen output, and the screen switching is triggered by the microphone signal.
4	Source Position	Switch the camera display position, select "[Custom]" and then click on "[Edit]" to enter the editing mode.

2.5.1 Video Output Layout

	1 camera in connection	2 cameras in connection	3 cameras in connection	4 cameras in connection
Cross				
PBP				

If there are three connected cameras, they will be displayed in a 4-grid layout, with one grid showing a black screen.

	Crop On	Crop Off
Crop		

2.6 Start Video Output

Click to output the camera images to HDMI or UVC devices
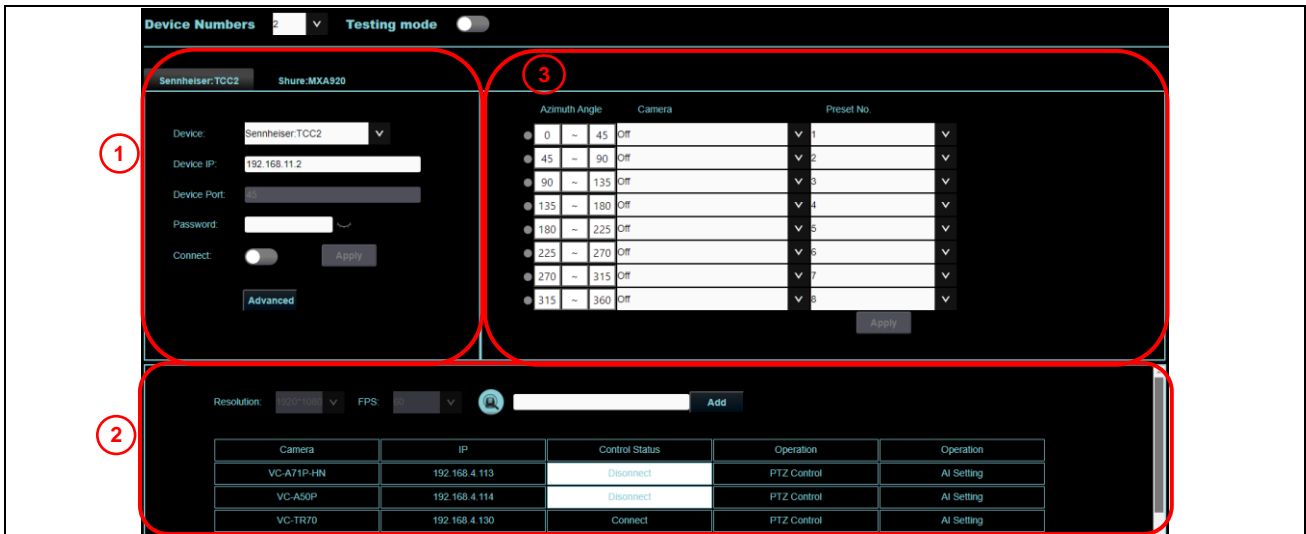
2.7 Information

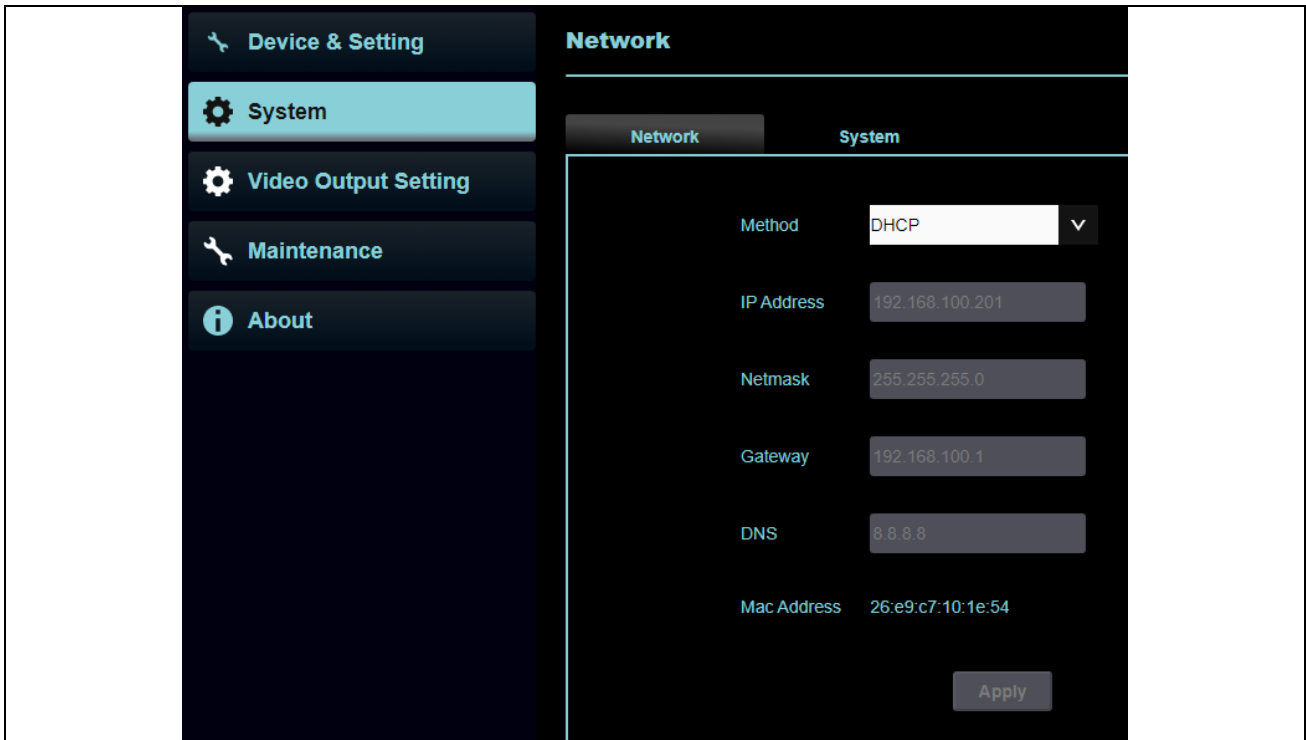| Function Descriptions |
|---|
| This window displays the software version information of AI-Box1. Click on **Check** to confirm the latest version and updates |
| For technical support, please scan the QRcode on the right. |

Chapter 3 Web Interface

3.1 Device Setting

No	Item	Function Descriptions
1	Device & Setting	▪ Select the desired number of microphones to connect ▪ Devices: Select Microphone Device ▪ Device IP: Enter the IP address of the microphone ▪ Port: Display based on the connected devices ➢ Shure: 2202 ➢ Sennheiser: 45 ➢ Sennheiser TCCM: 443 ➢ Nureva: 8931 ➢ Yamaha: 49280 ➢ Audio-Technica : 17300 〔Note〕 Only Nureva allows customized PORT ▪ Connect: Enable/Disable microphone connection ▪ Advanced: Advanced Function Settings ▪ Audio Trigger Level > dB： Triggered only if audio source exceeds the dB value. ➢ Sennheiser:-90~0 (recommended -55)

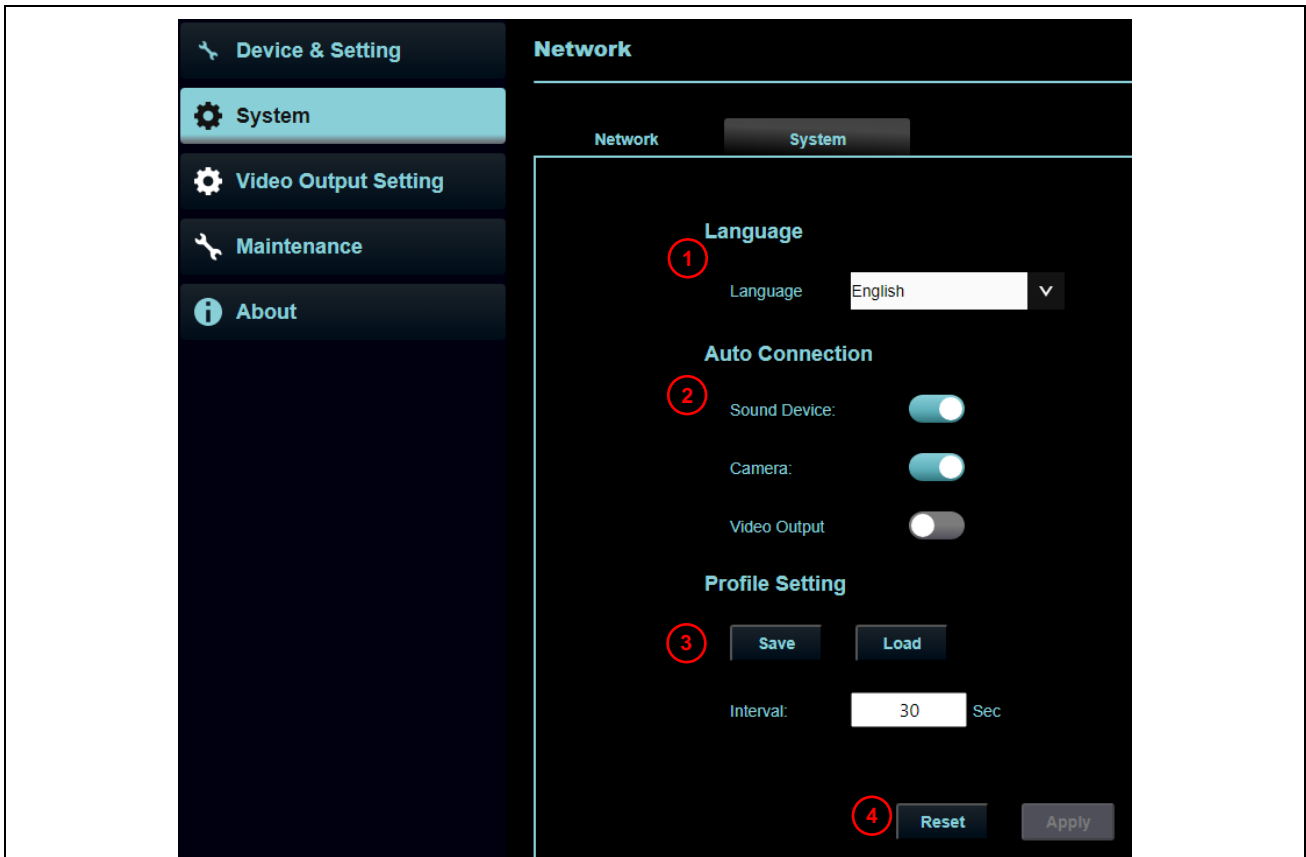|		
		➢ Nureva:0~120 (recommended 40 up) ➢ Audio-Technica:0~60 (recommended 30) ➢ Yamaha:0~126 (recommended 80 up for RM-CG / 70 up for RM-W) ▪ Time To Trigger Preset: Audio Reception Delay Settings. When a second sound trigger occurs, there will be a delay in calling the preset position based on the configured duration in seconds. ▪ Back To Home Time: Back To Home Time Settings. If there is no audio input at the venue, it will trigger, after the set seconds, and return to Home. ▪ Back To Home Position：Home Position Setting. Set Preset# when Preset is selected.
2	Camera & Control Status	▪ Resolution/FPS: Resolution/FPS Settings (must match the camera output settings) ▪ Refresh: Perform a device search again ▪ Add: Manually enter the specified IP address and click on Add to add Note Please ensure that the camera and AI-Box1 are on the same network segment. ▪ Connect/Disconnect: Click **[Connect]**to establish a connection with the camera or / **[Disconnect]** to cancel the connection The connected camera will be highlighted in white <table><tr><th>Connected</th><th>Disconnected</th></tr><tr><td>Control Status Connect</td><td>Control Status Disonnect</td></tr></table> ▪ PTZ Control: Click to access the camera's webpage settings Default username and password: admin/999 Please refer to the camera user manual for function description ▪ AI Setting: Enable/Disable AI People Tracking ➢ Center Stage: After triggering to the preset position, the tracked person will be positioned in the center of view and tracking will stop after 5 seconds ➢ Continuous Tracking: The system will continuously track a person and keep them positioned in the center
3	Device & Camera mapping	▪ Mapping Q'ty: Select mapping quantity. Up to 128 presets supported. Note Shure MXA310/ MXA910/ MXA920/ Audio-Technica no supported ▪ Indicator: This indicator shows the status of microphone signal reception. (A green light indicates successful reception) ▪ Array No. / Azimuth Angle： ➢ Array No.: Applicable to Shure/ Audio-Technica ➢ Azimuth Angle: Applicable to Sennheiser, Nureva, and Yamaha. The angle can be manually adjusted ▪ Camera: Select the desired camera from the dropdown menu ▪ Preset No.: Select the preset position for the camera from the dropdown menu

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3.2 System- Network

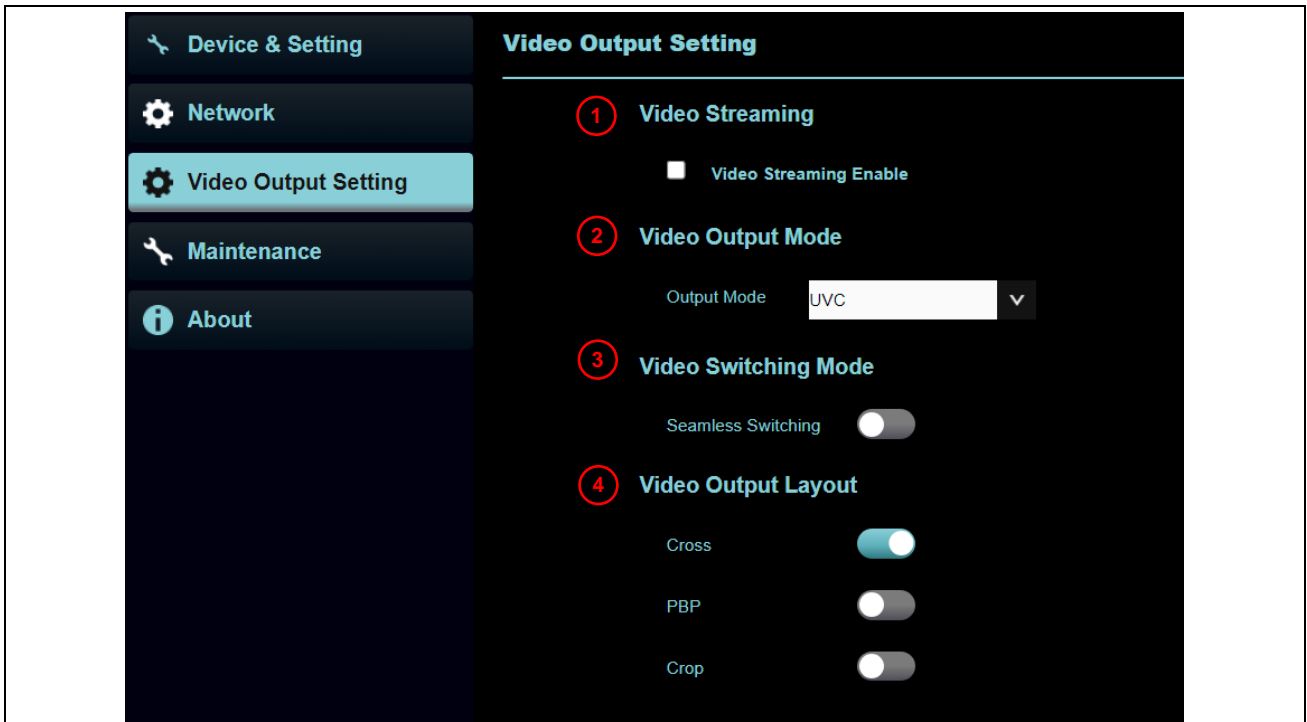| Function Descriptions |
|---|
| Ethernet Setting. When it is set to Static IP, the setting can be modified. Once the settings are completed, click Apply. |

## 3.3 System- System

No	Item	Function Descriptions

| 1	Language	English
2	Auto Connection	Auto connected items setting after AI-Box1 power on. ▪ Sound Device ▪ Camera ▪ Video Output
3	Profile Setting	▪ Save/ Load: Import and export the config file ▪ AutoSave Interval: Set the auto saving interval.
4	Reset/ Apply	Reset/ Apply settings

3.4 Video Output Setting

No	Item	Function Descriptions
1	Video Streaming	Enable/disable the camera image output
2	Video Output Mode	Set the Output Mode to either UVC or HDMI
3	Video Switching Mode	Enable/ disable the video switching function The system is set up for single screen output, and the screen switching is triggered by the microphone signal.
4	Video Output Layout	Configure the layout of the video output according to the provided reference in section *2.5.1 Video Output Layout* ▪ Cross: 4-split screen ▪ PBP: Picture by Picture screen ▪ Crop: Screen cropping function Note Choose either Cross/PBP only

3.5 Maintenance
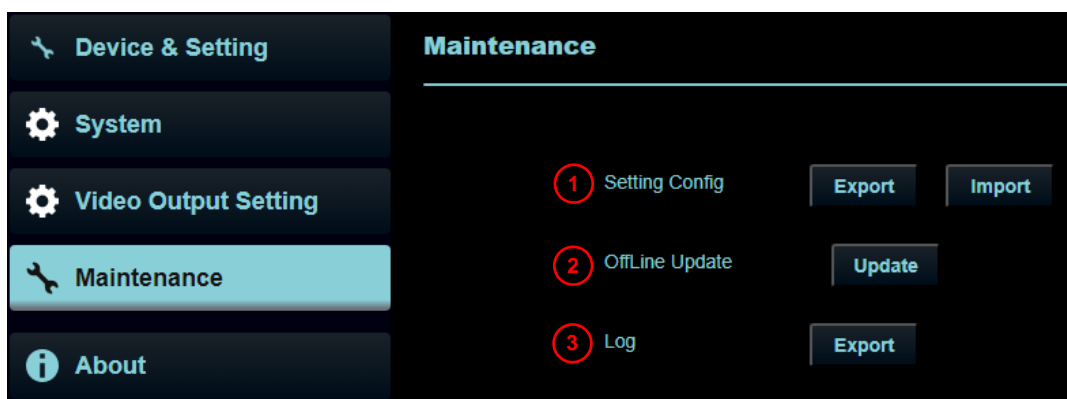
| No	Item	Function Descriptions
1	Setting Config	Export/Import AI-Box1 configuration parameters
2	OffLine Update	Click **Update** and select the firmware file for offline update.
3	Log	If the camera operates abnormally, please export the log and provide it to Lumens for confirmation.

3.6 About
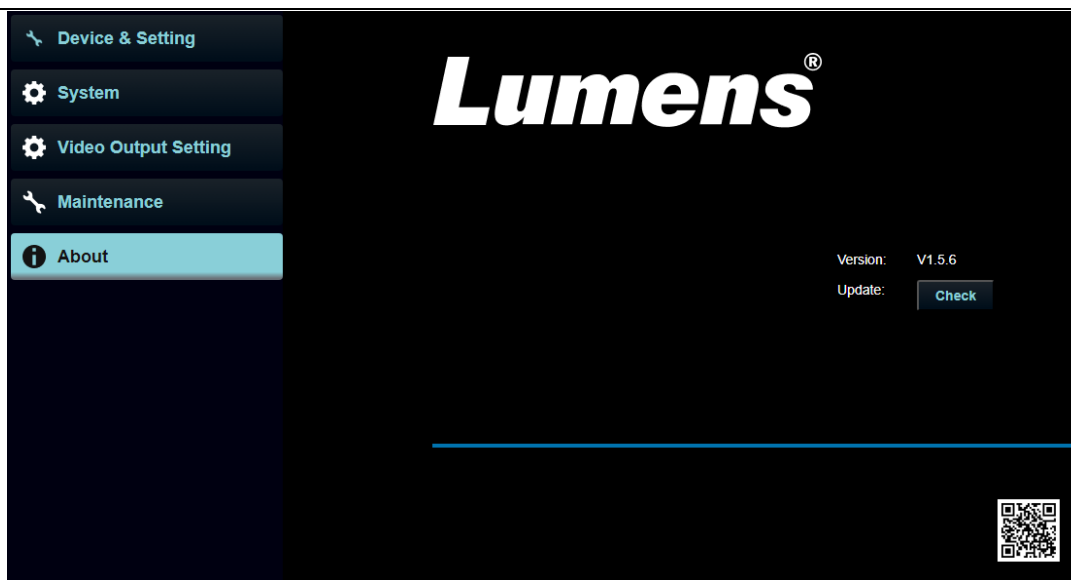
Function Descriptions
This window displays the software version information of AI-Box1. Click on **Check** to confirm the latest version and updates
For technical support, please scan the QRcode at the bottom right

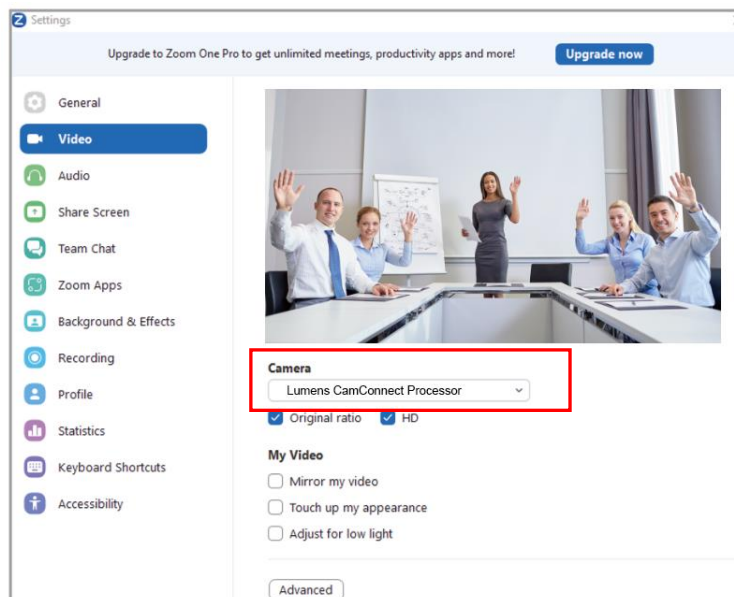# Chapter 4 Connect to a conference video software

4.1   Set the output mode of AI-Box1 to UVC and click the start streaming option
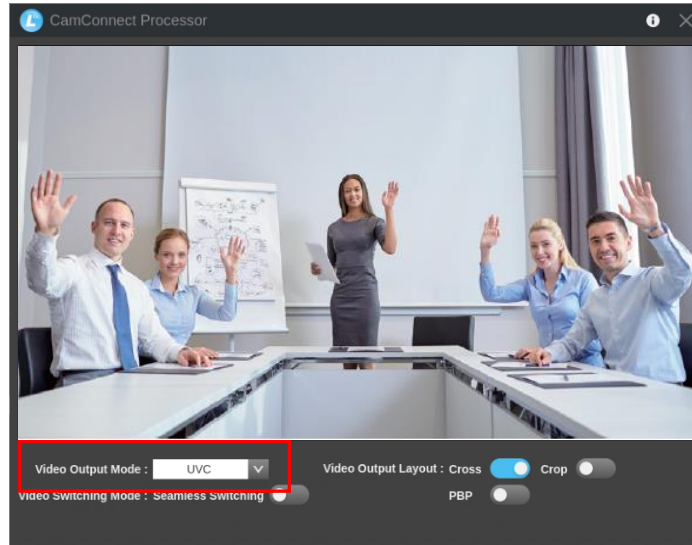
4.2   Launch a video software like Skype, Zoom, Microsoft Teams, or other similar software

4.3   Choose the video source, to output camera images

   ▪ Video Source Name: Lumens CamConnect Processor

Chapter 5 Microphone Settings

Please check the supported devices from Products- CamConnect Pro in Lumens website.

Before AI-Box1 installation, third-party microphone systems may require configuration in their software.

5.1 Sennheiser

When using TCC2 with CamConnect, please set and configure the channels on the Sennheiser Control Cockpit software first.
CamConnect is divided into 8 equal parts according to Sennheiser's horizontal angle of view. They correspond to CamConnect Azimuth Angle 1 to 8.
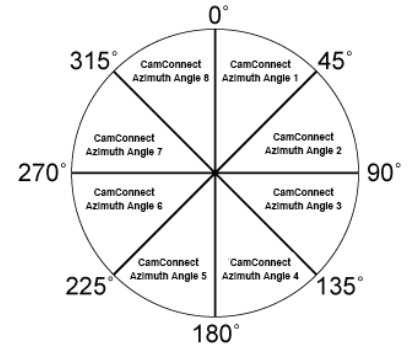

If the forbidden area is enabled on the Sennheiser Control Cockpit software, the corresponding position of CamConnect will also be affected. Example: If the forbidden area is set to 0° to 60°, the audio signal from 0° to 45° of CamConnect Array Azimuth 1 and 45° to 60° of Array Azimuth 2 will be ignored.
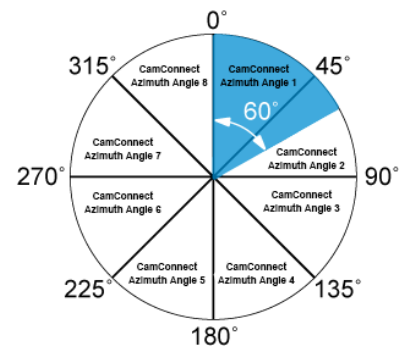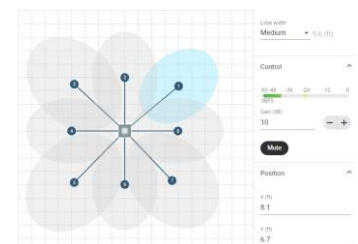

5.2 Shure

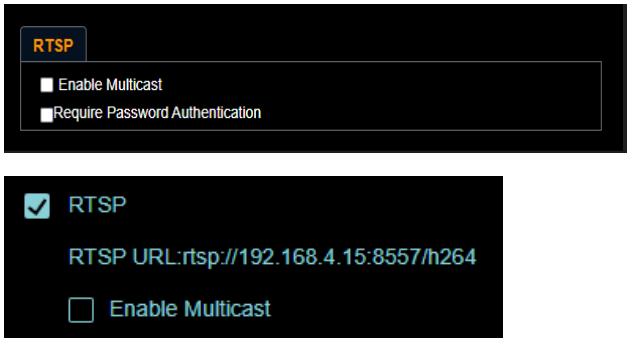Suitable for large-area positioning when Shure Designer Automatic coverage is On.
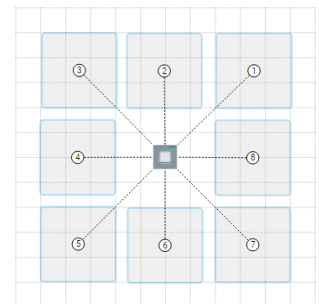
If more accurate positioning is required, it's suggested to disable Automatic coverage, adjust Gain value/Position manually, reduce beamforming angle, to achieve more accurate positioning

Chapter 6 Troubleshooting

This chapter describes problems you may encounter while using AI-Box1. If you have questions, please refer to related chapters and follow all the suggested solutions. If the problem still occurred, please contact your distributor or the service center.

NO	Problems	Solutions
1.	Unable to search camera devices	1. Check the power supply of camera or PoE power supply is stable. 2. Make sure the PC is connected to the camera with the USB cable 3. Replace the cables and make sure they are not faulty
2.	No response from the microphone detection position	Please confirm that the microphone device is in Connect status
3.	When using with a Sennheiser microphone, no response at the specific angle	1. Make sure the Azimuth Angle settings in the CamConnect software include that angle position 2. Make sure if the angle is set as the forbidden area on Sennheiser Control Cockpit software. Refer to ***5 Microphone Settings*** for details.
4.	When setting camera preset positions, if the microphone detects signals from other directions, it may cause the camera to move to other positions, thus interrupting the setting	Please refer to ***2.1 Device Setting*** to enable the Setting mode Once enabled, the microphone can receive signals, but it will not trigger the camera to the preset position
5.	Unable to connect camera.	Please access to camera Webpage and go Network tab. Then, make sure if Multicast is deisnable. When Multicast is opened, the AI-Box would not be able to connect the camera. **RTSP** ☐ Enable Multicast ☐ Require Password Authentication ☑ RTSP RTSP URL:rtsp://192.168.4.15:8557/h264 ☐ Enable Multicast
6.	Cannot upgrade firmware by OTA.	1. Please check if you are using static IP. Turn to DHCP and try update again.

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