

AI-Box1

User Manual-English



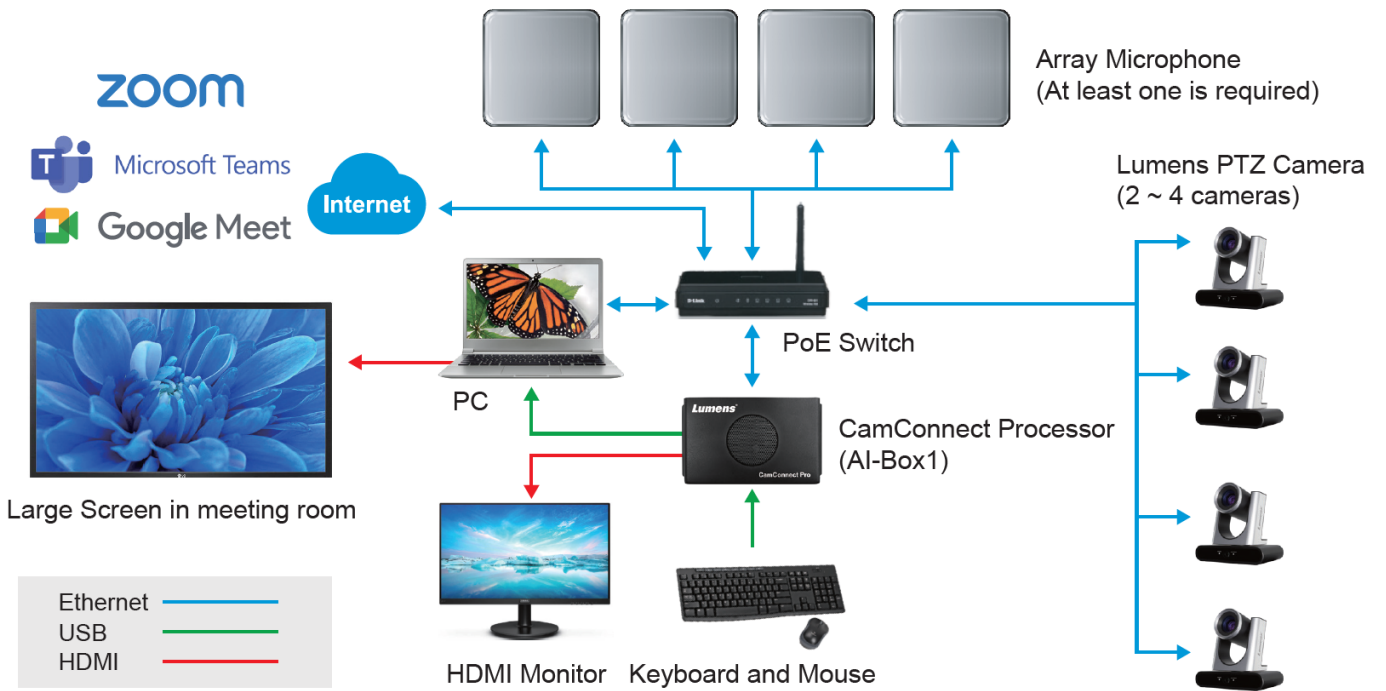
To download the latest versions of the Quick Start Guide, multilingual user manual, software, driver, etc., please visit Lumens <https://www.MyLumens.com/support>

Table of Contents

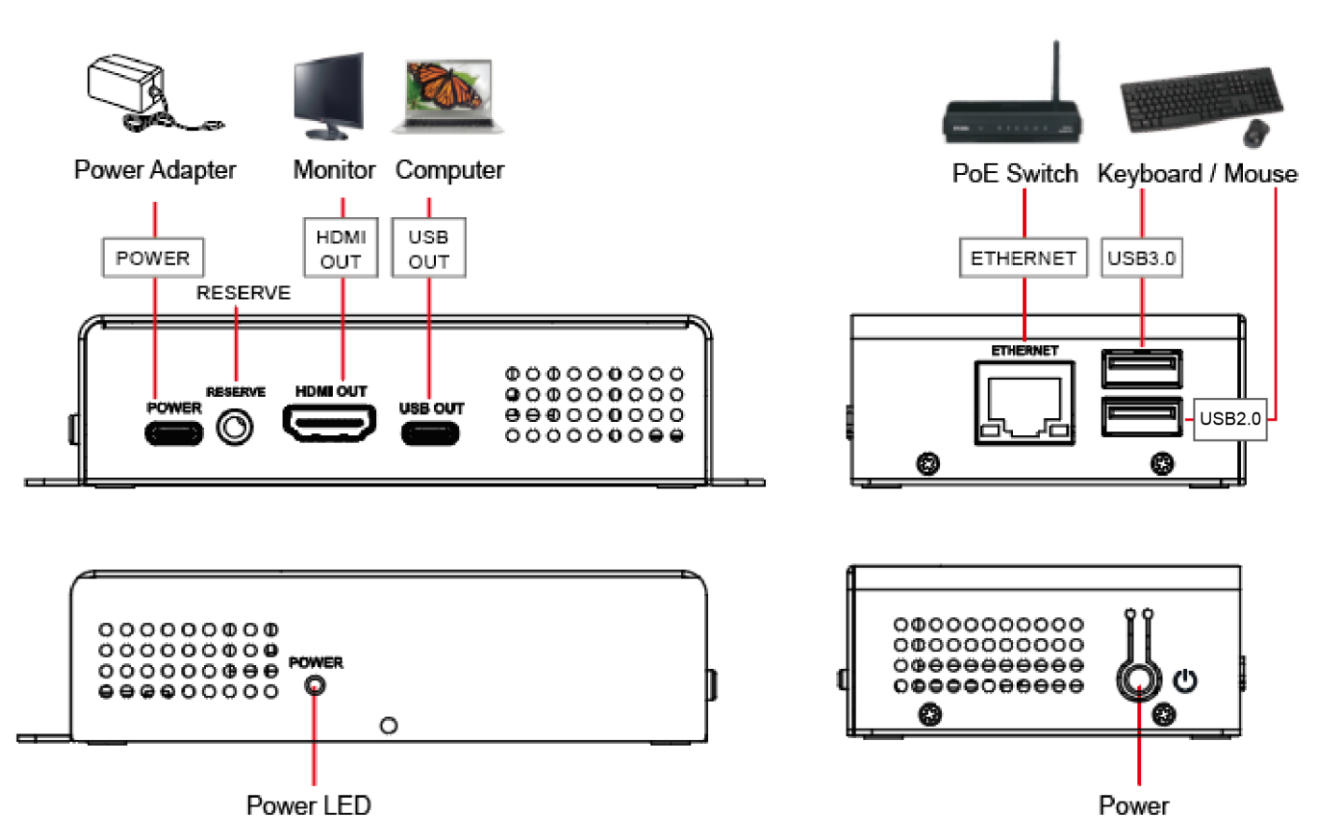
Chapter 1	System Connection and Application	2
1.1	System Connection	2
1.2	AI-Box1 IO Interface	2
Chapter 2	Operation Interface	3
2.1	(A)Device Setting	3
2.2	(B)Camera Control & Status	4
2.3	(D)Device & Camera Mapping	6
2.4	(E)System Setting	7
2.5	(F)Video Output Setting	8
2.6	(G)Start Video Output	9
2.7	(H)Information	10
Chapter 3	Web Interface	11
3.1	Device Setting	11
3.2	Device - Camera List	13
3.3	Video Output Setting	14
3.4	System- Network	15
3.5	System- Profile	15
3.7	About	18
Chapter4	Connect to a conference video software	19
4.1	Set the output mode of AI-Box1 to UVC or HDMI+UVC, then click the Video output button	19
4.2	Launch a video software like Skype, Zoom, Microsoft Teams, or other similar software	19
4.3	Choose the video source to output camera images	19
Chapter5	Microphone Settings	20
5.1	Sennheiser	20
5.2	Shure	20
Chapter6	Troubleshooting	21
Chapter7	System Message	22
	Copyright Information	23

Chapter 1 System Connection and Application

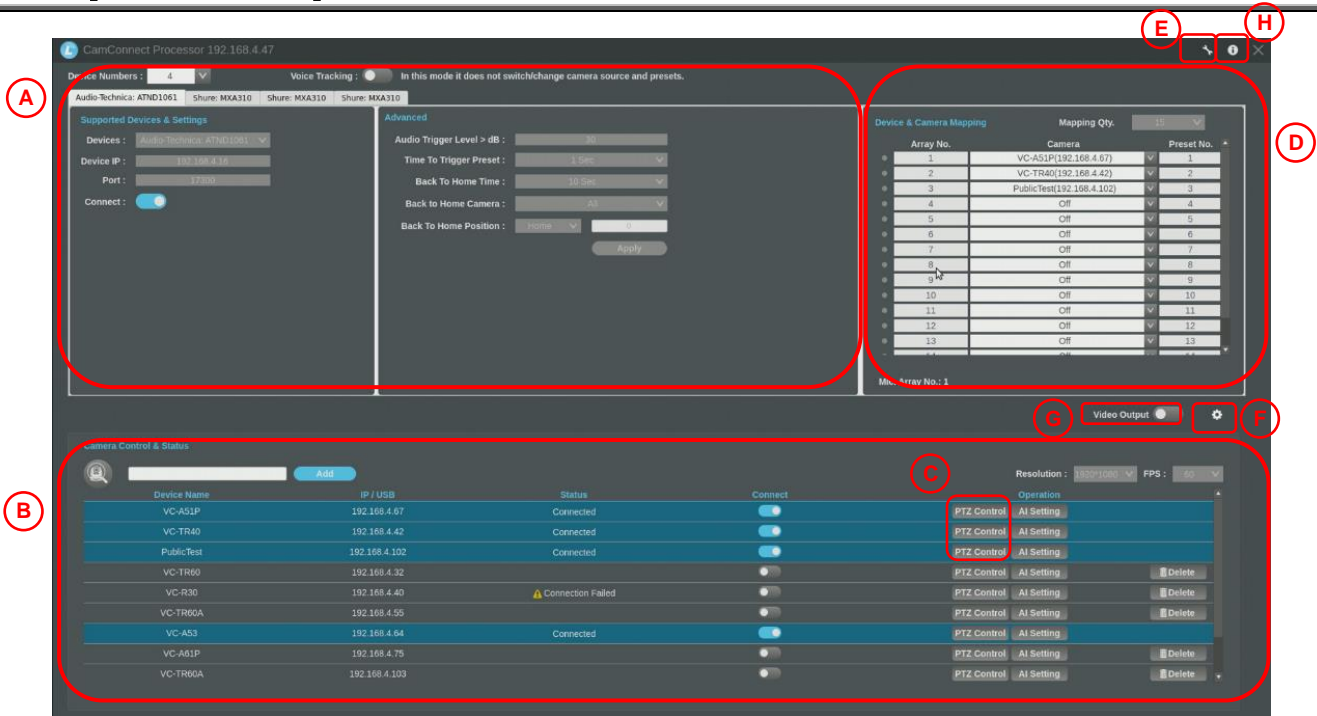
1.1 System Connection



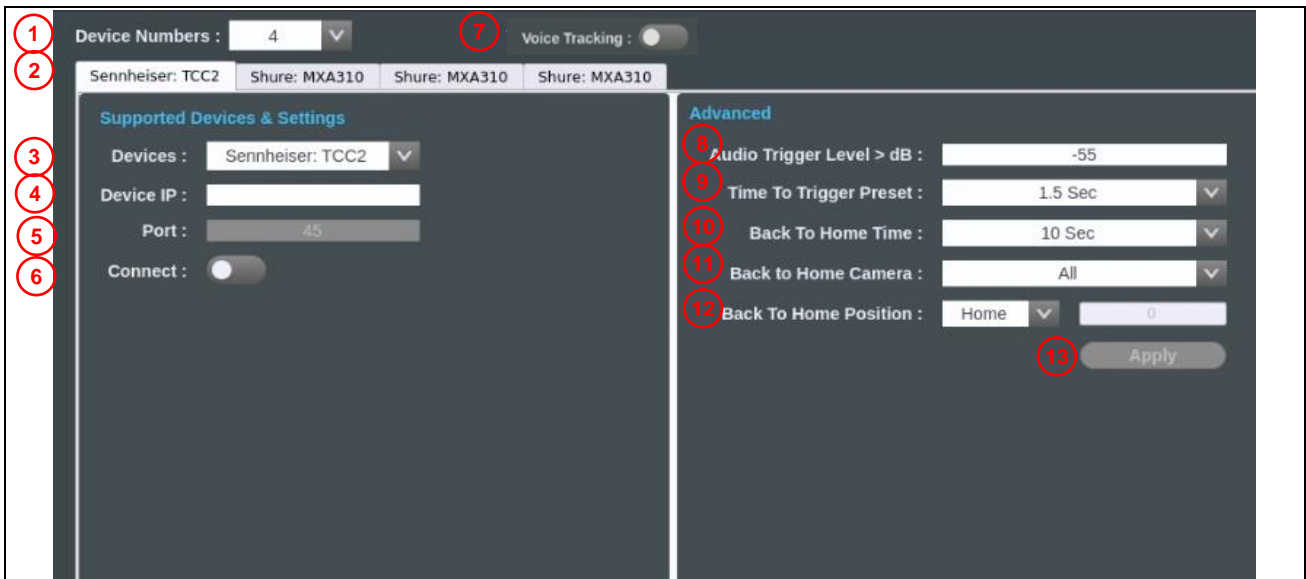
1.2 AI-Box1 IO Interface



Chapter 2 Operation Interface



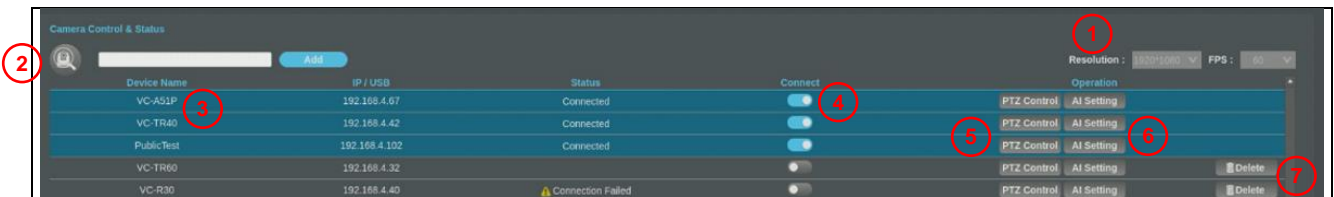
2.1 (A) Device Setting




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

		<ul style="list-style-type: none"> ▪ Sennheiser: 45 ▪ Sennheiser TCCM: 443 ▪ Nureva: 8931 ▪ Yamaha: 49280 ▪ Audio-Technica : 17300 <p>Note Only Nureva allows customized PORT</p>
6	Connect	Enable/Disable Setting mode
7	Voice Tracking	When enabled, the microphone can receive signals, and the camera would move to preset positions when triggered. When setting preset positions, it is recommended to disable the function to ensure the setting process won't be disrupted.
8	Audio Trigger Level > dB	Triggered only if audio source exceeds the dB value. <ul style="list-style-type: none"> ▪ 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.
11	Back to Home Camera	Select one camera or all to back to home.
12	Back To Home Position	Camera will return to either Home position or the specific preset position you designated.
13	Apply	Setting completed and click Apply

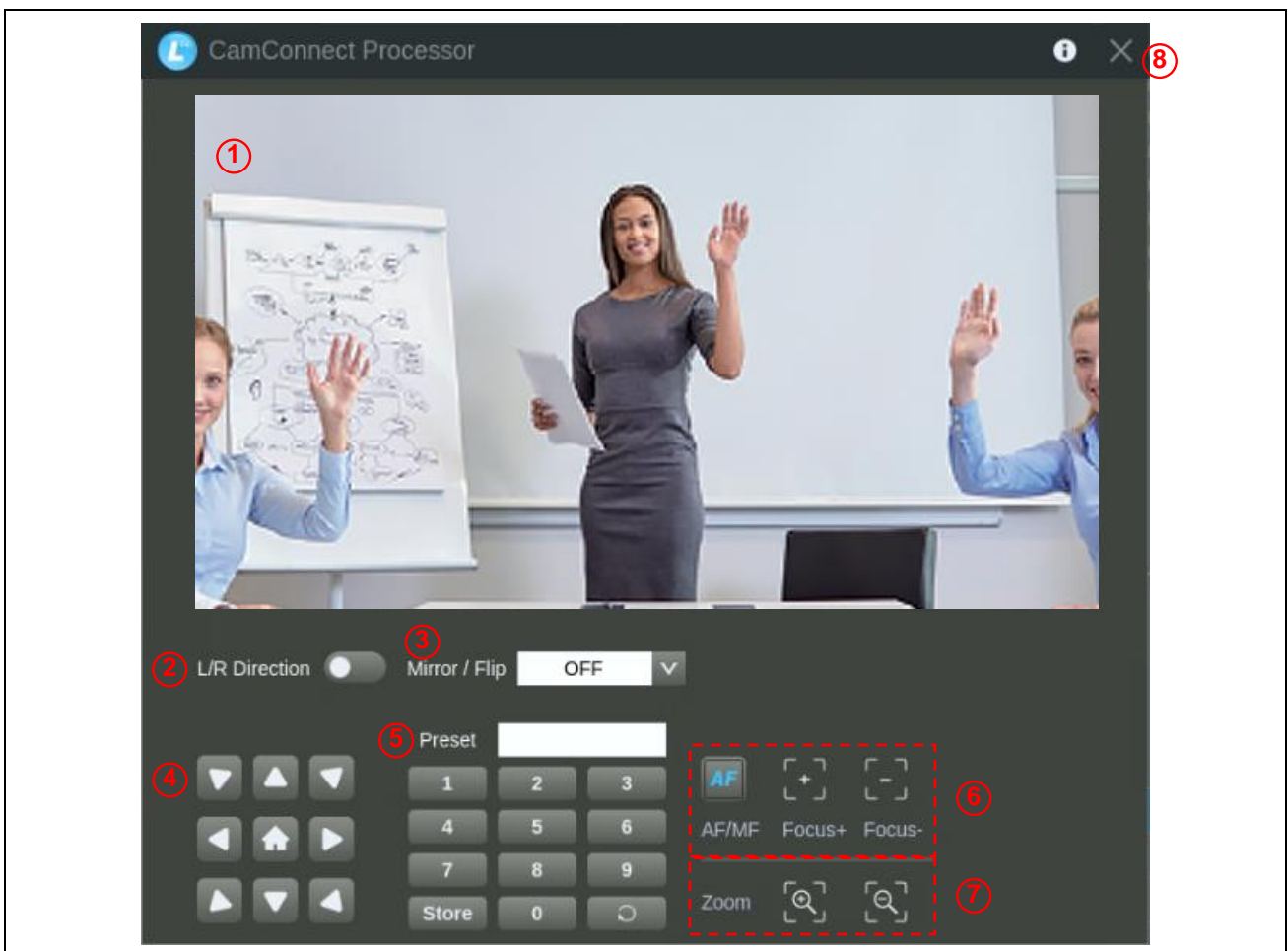
2.2 (B) Camera Control & Status



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 connect. 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 Tracking <ul style="list-style-type: none"> ➤ Center Stage : When the camera has been triggered to preset position, the individual will be centered on the screen for 5 seconds before tracking stops. ➤ Continuous Tracking : The camera will continuously track the individual, maintaining them in the center position.
7	Delete	Delete the camera from the list.

2.2.1 (C)PTZ Control

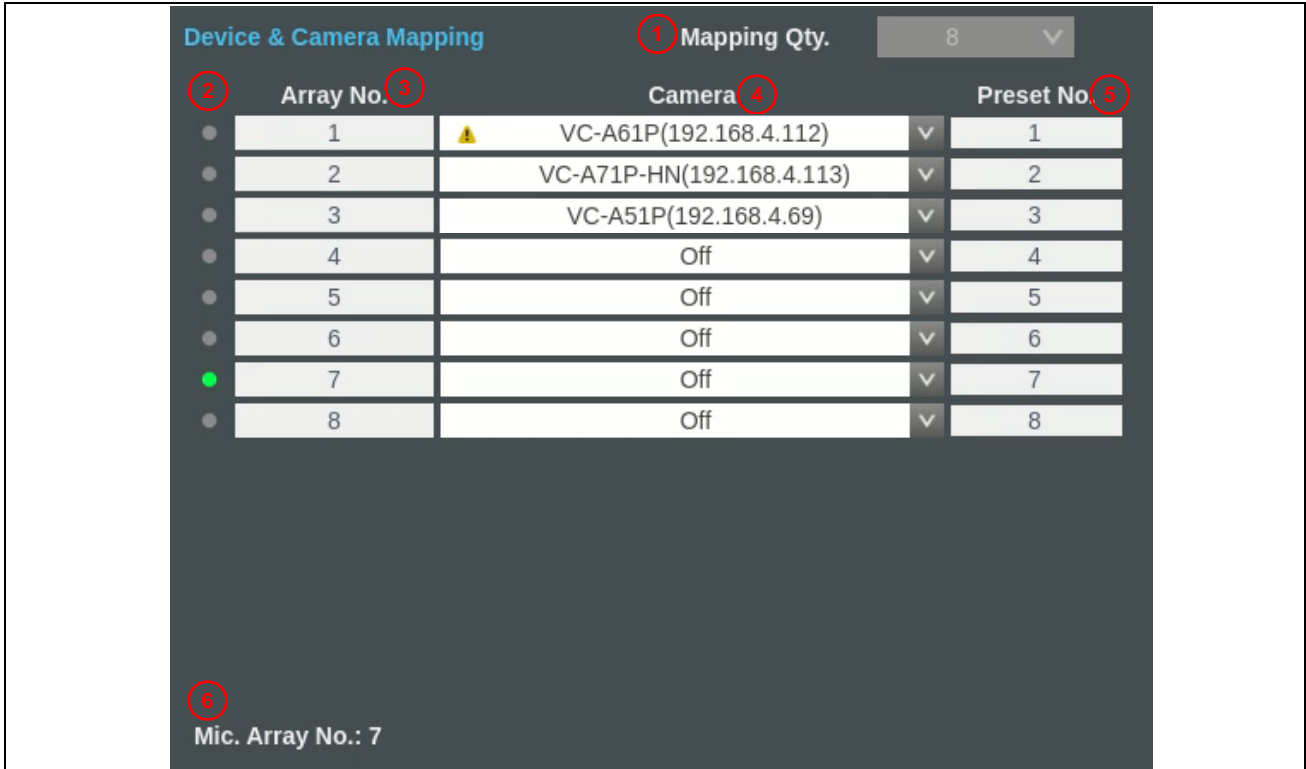


No	Item	Function Descriptions
1	Preview window	Display the screen currently captured by the camera
2	L/R Direction	L/R Direction / Normal
3	Mirror / Flip	Set image mirroring/ flip
4	Pan/Tilt/Home	Adjust the Pan/Tilt position of the camera screen Click [Home] button to return to its central position
5	Preset setting	<ul style="list-style-type: none"> ▪Call Preset : Click number first and then ▪Store Preset : Click number first and then
6	AF/MF	Switch to Auto/Manual Focus. Focus can be adjusted in Manual

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

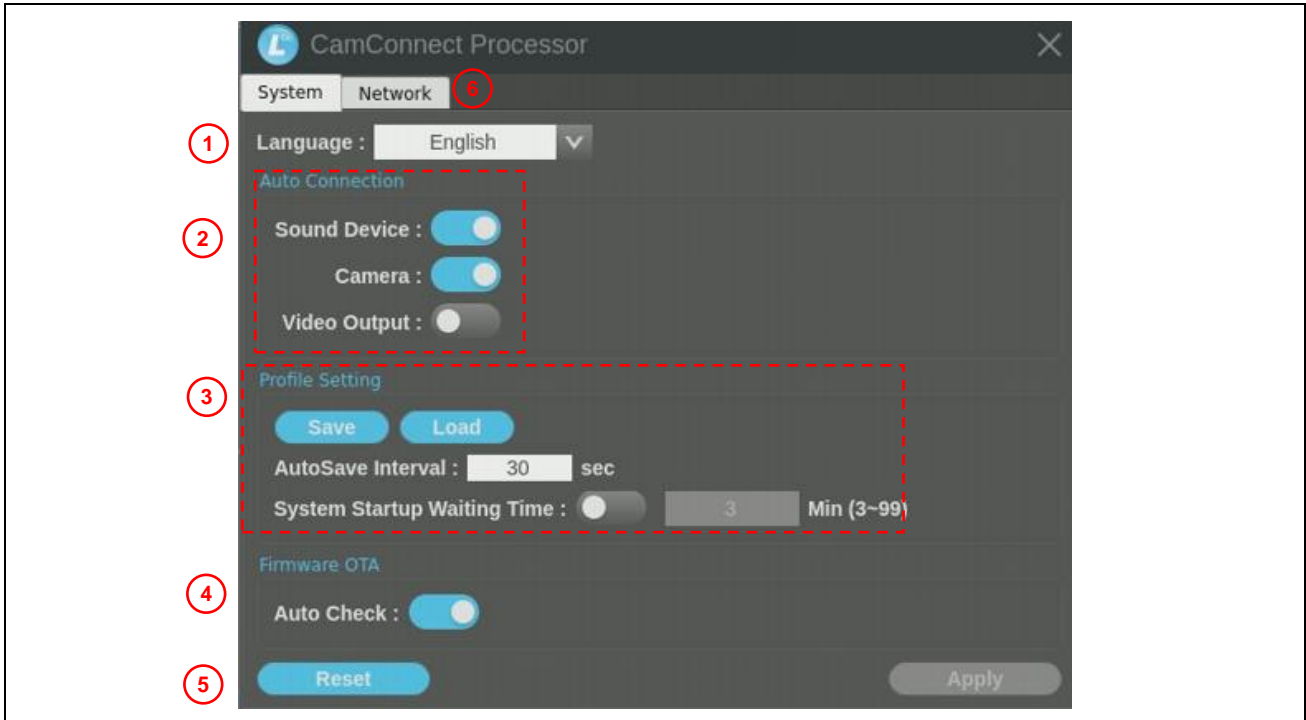
2.3 (D) Device & Camera Mapping

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

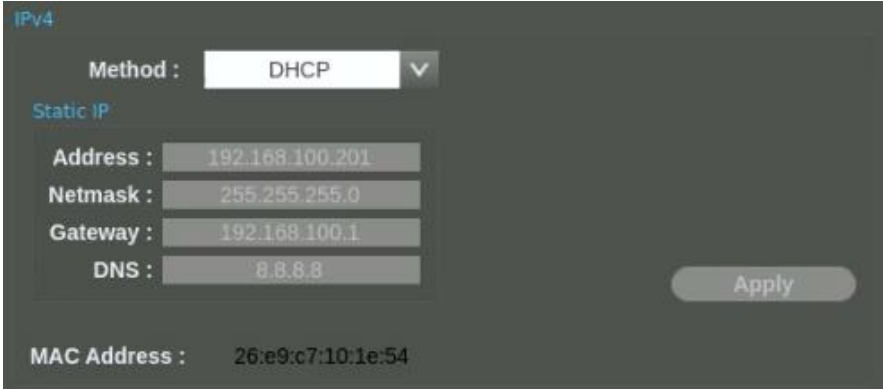


No	Item	Function Descriptions
1	Mapping Qty	Select mapping quantity. Up to 128 presets supported. <small>Note</small> Shure MXA310/ MXA910/ MXA920/ Audio-Technica no supported
2	Indicator	This indicator shows the status of microphone signal reception. (A green light indicates successful reception)
3	Array No. Azimuth Angle	<ul style="list-style-type: none"> 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.

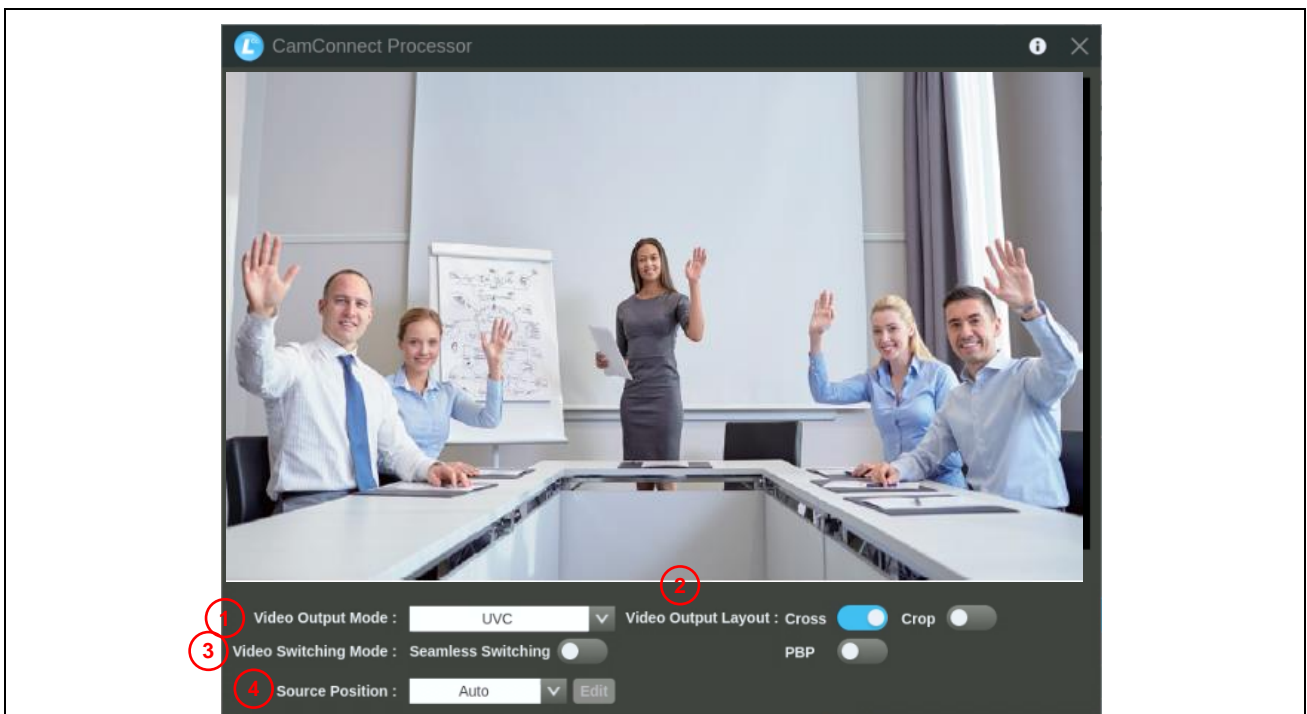
2.4 (E)System Setting



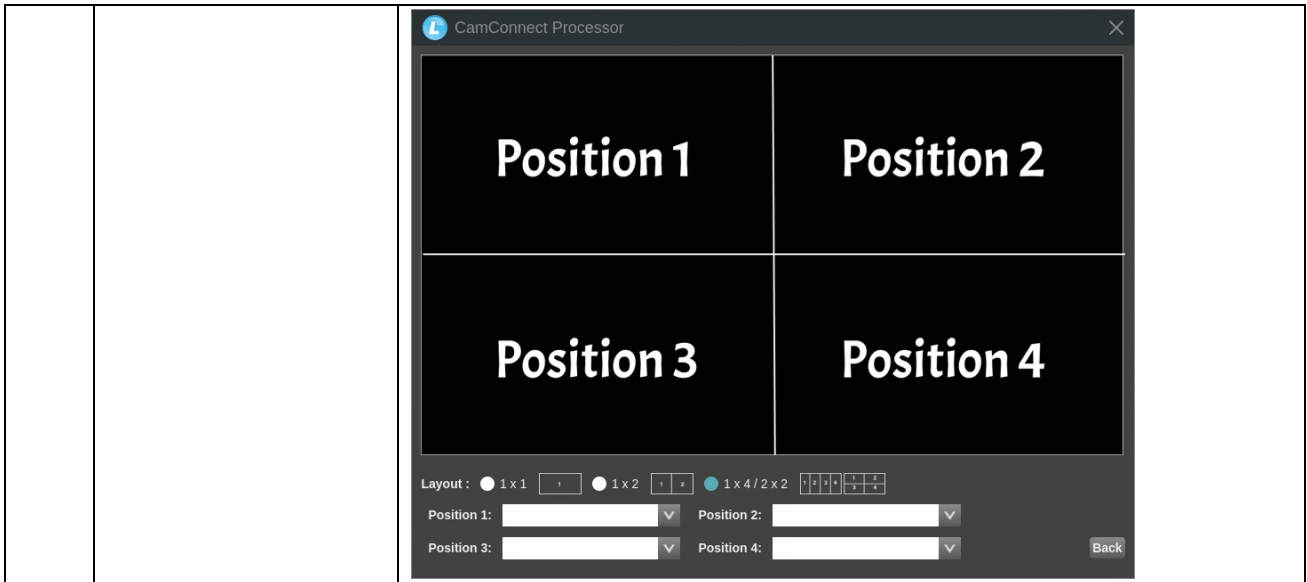
No	Item	Function Descriptions
1	Language	English
2	Auto Connection	Auto connected items setting after AI-Box1 power on. <ul style="list-style-type: none"> ▪ Sound Device ▪ Camera ▪ Video Output
3	Profile Setting	<ul style="list-style-type: none"> ▪ Save/ Load: Import and export the config file ▪ AutoSave Interval: Set the auto saving interval. ▪ System Startup Waiting Time: Set startup waiting time. <p>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.</p>
4	Firmware Auto Check	Check if the firmware is update to date automatically every time.
5	Reset/ Apply	Reset/ Apply settings

6	Network	 <p>Ethernet Setting. When it is set to Static IP, the setting can be modified. Once the settings are completed, click Apply.</p>
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2.5 (F) 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 <ul style="list-style-type: none"> ▪ Cross: 4-split screen ▪ PBP: Picture by Picture screen ▪ Crop: Screen cropping function <p>Note Choose either Cross/PBP only</p>
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 (G) Start Video Output

Click to output the camera images to HDMI or UVC devices

2.7 (H)Information



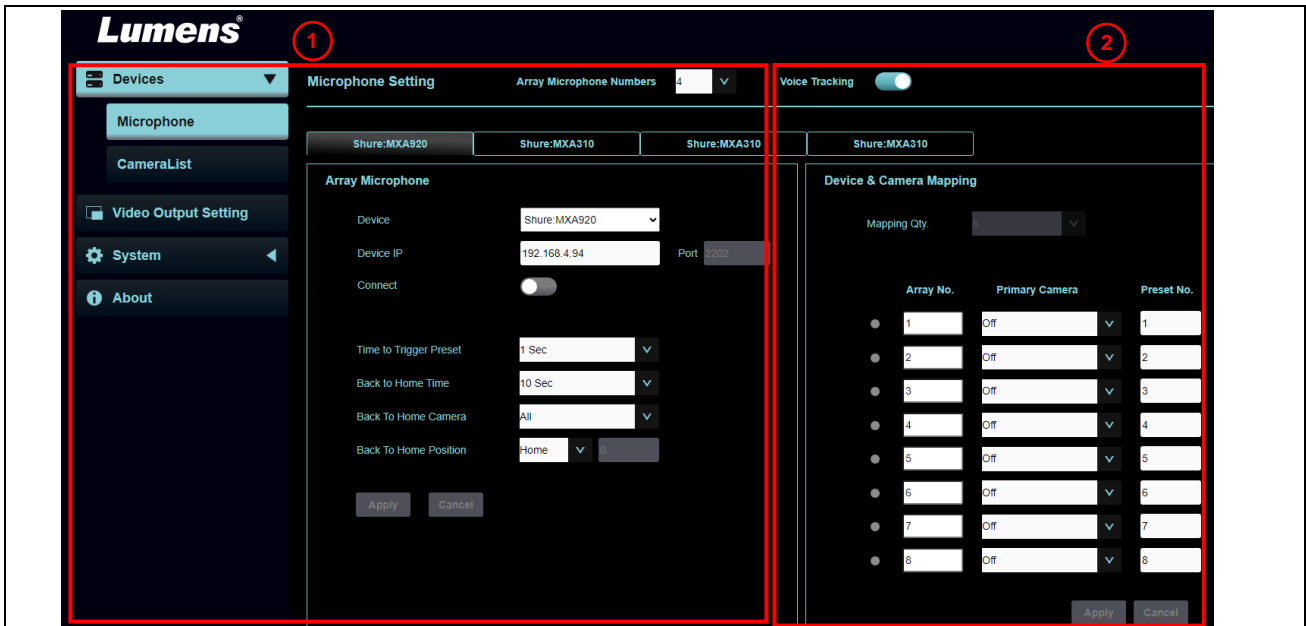
Function Descriptions

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

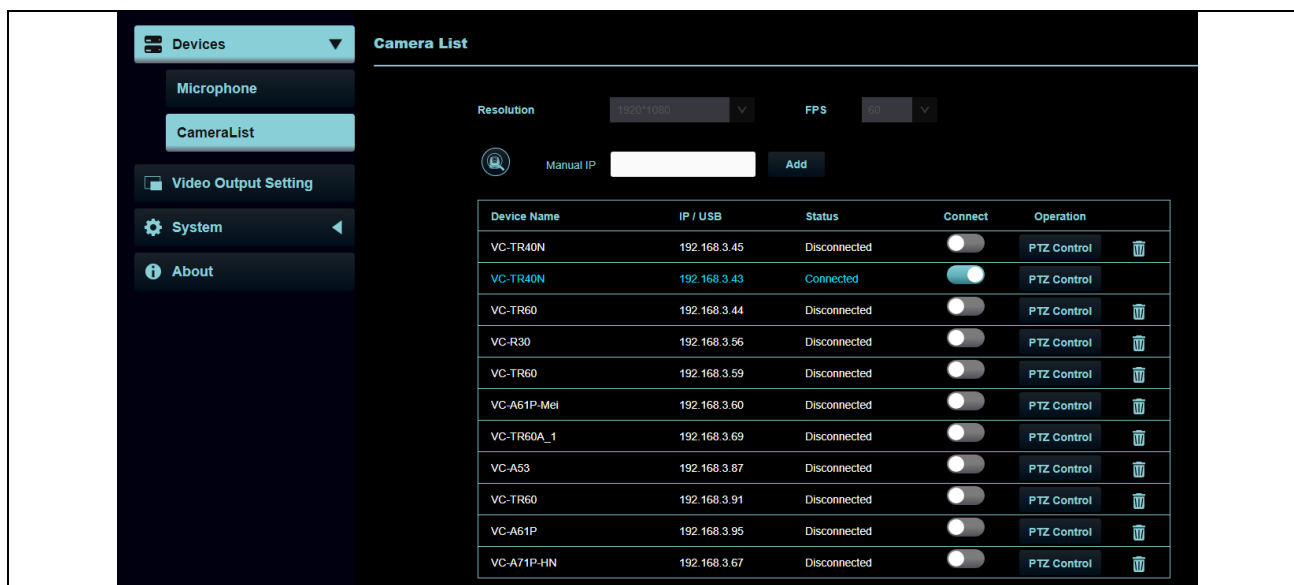
3.1 Device Setting



No	Item	Function Descriptions
1	Array Microphone	<ul style="list-style-type: none"> ▪ Array Microphone Number : 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 <ul style="list-style-type: none"> ➢ Shure: 2202 ➢ Sennheiser: 45 ➢ Sennheiser TCCM: 443 ➢ Nureva: 8931 ➢ Yamaha: 49280 ➢ Audio-Technica : 17300 <p>Note Only Nureva allows customized PORT</p> <ul style="list-style-type: none"> ▪ Connect: Enable/Disable microphone connection ▪ Advanced Function Settings <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Audio Trigger Level > dB: <input type="text" value="-55"/></p> <p>Time to Trigger Preset: <input type="text" value="1.5 Sec"/> ▼</p> <p>Back To Home times: <input type="text" value="10 Sec"/> ▼</p> <p>Back To Home Camera: <input type="text" value="All"/> ▼</p> <p>Back To Home Position: <input type="text" value="Home"/> ▼ <input type="text" value="0"/></p> <p style="text-align: center;"> <input type="button" value="Close"/> <input type="button" value="Apply"/> </p> </div>

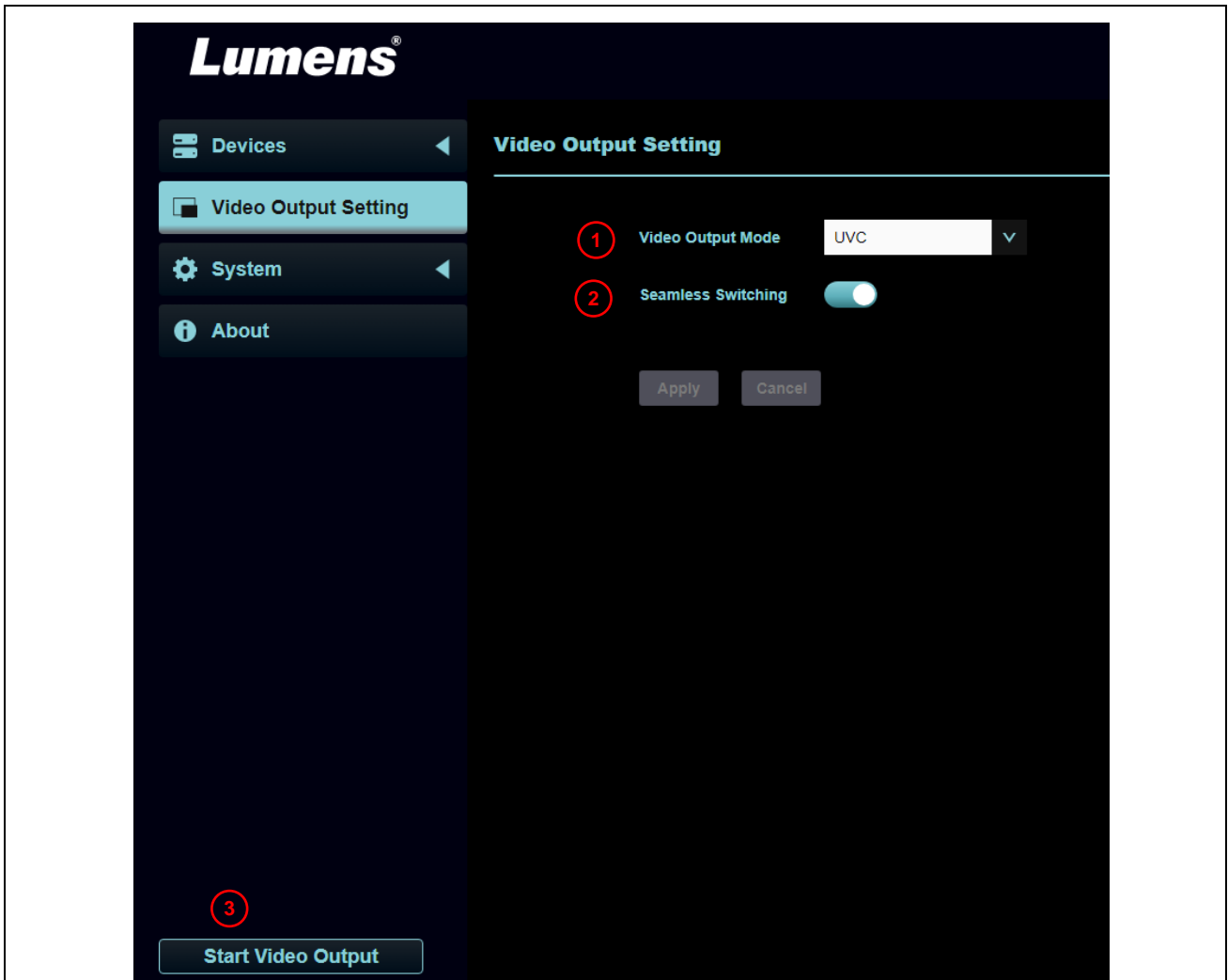
		<ul style="list-style-type: none"> ▪ Audio Trigger Level > dB : Triggered only if audio source exceeds the dB value. ➤ Sennheiser:-90~0 (recommended -55) ➤ Nureva:0~120 (recommended 40 up) ➤ Audio-Technica:0~60 (recommended 30) ➤ Yamaha:0~126 (recommended 80 up for RM-CG / 70 up for RM-W) ▪ Time To Trigger 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: If there is no audio input at the venue, the camera will automatically return to its Home position after the designated number of seconds. ▪ Back To Home Position: You can select either the Home position or a preset number that you have designated
2	Device & Camera mapping	<ul style="list-style-type: none"> ▪ Voice Tracking: When enabled, the microphone can receives signals, and the camera would moves to preset positions when triggered. When setting preset positions, it is recommended to disable the function to ensure the setting process won't be disrupted. 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 : <ul style="list-style-type: none"> ➤ 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 ▪ AI Setting : Enable/Disable AI tracking <ul style="list-style-type: none"> ➤ Center Stage : When the camera has been triggered to preset position, the individual will be centered on the screen for 5 seconds before tracking stops. ➤ Continuous Tracking : The camera will continuously track the individual, maintaining them in the center position.

3.2 Device - Camera List



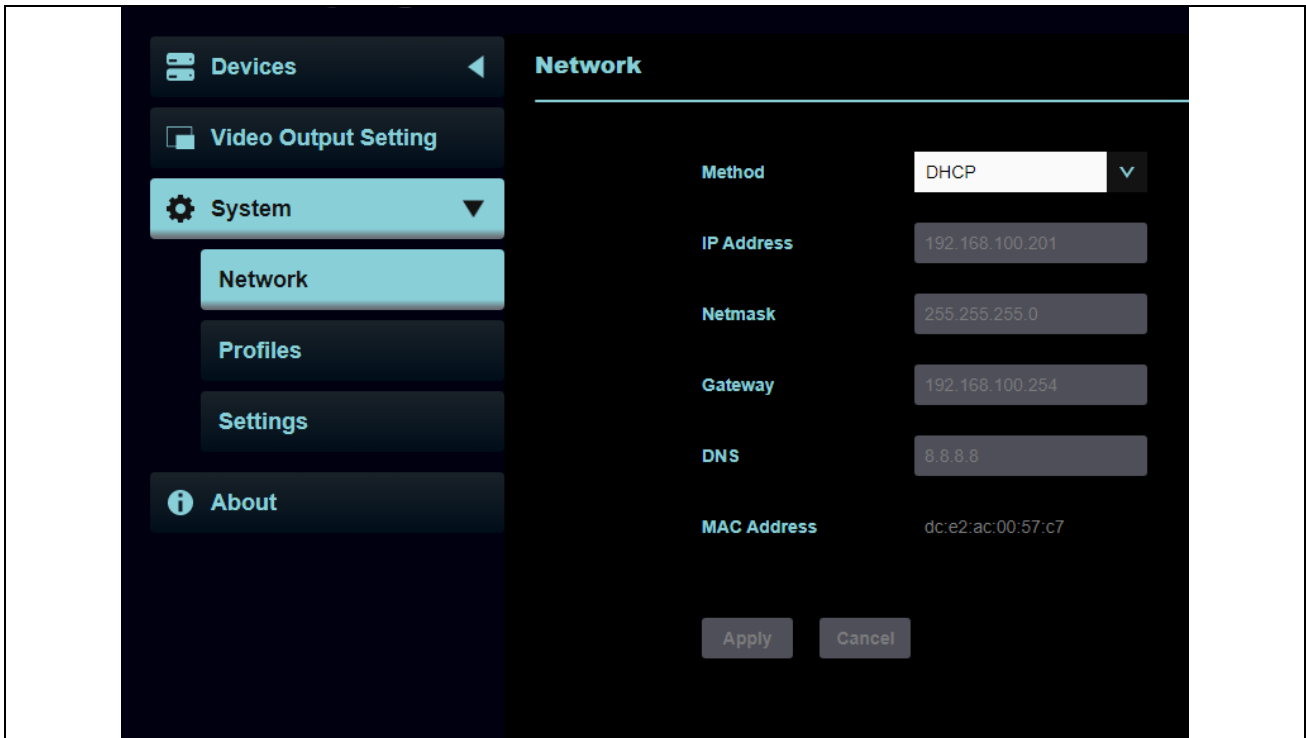
No	項目	功能説明
1	Camera List	<p>Resolution/ FPS : Must match the camera's resolution settings</p> <ul style="list-style-type: none"> Refresh : search the cameras in this network segment. Add : Manually type the IP address, then click Add <p>Note Please ensure that cameras and AI-Box1 are under the same network segment .</p> <ul style="list-style-type: none"> Connect/ Disconnect : Click [Connect] to enable or disable the connection with the camera. PTZ Control : Click it to access the camera's webpage. <p>Default account: admin/ 9999</p> <p>For more function introductions, please refer to the camera's user manual.</p>

3.3 Video Output Setting



No	Item	Function Descriptions
1	Video Output Mode	HDMI,UVC or HDMI+UVC
2	Seamless Switching	The system is set up for single screen output, and the screen switching is triggered by the microphone signal.
3	Start Video Output	Click the button to start or stop video output.

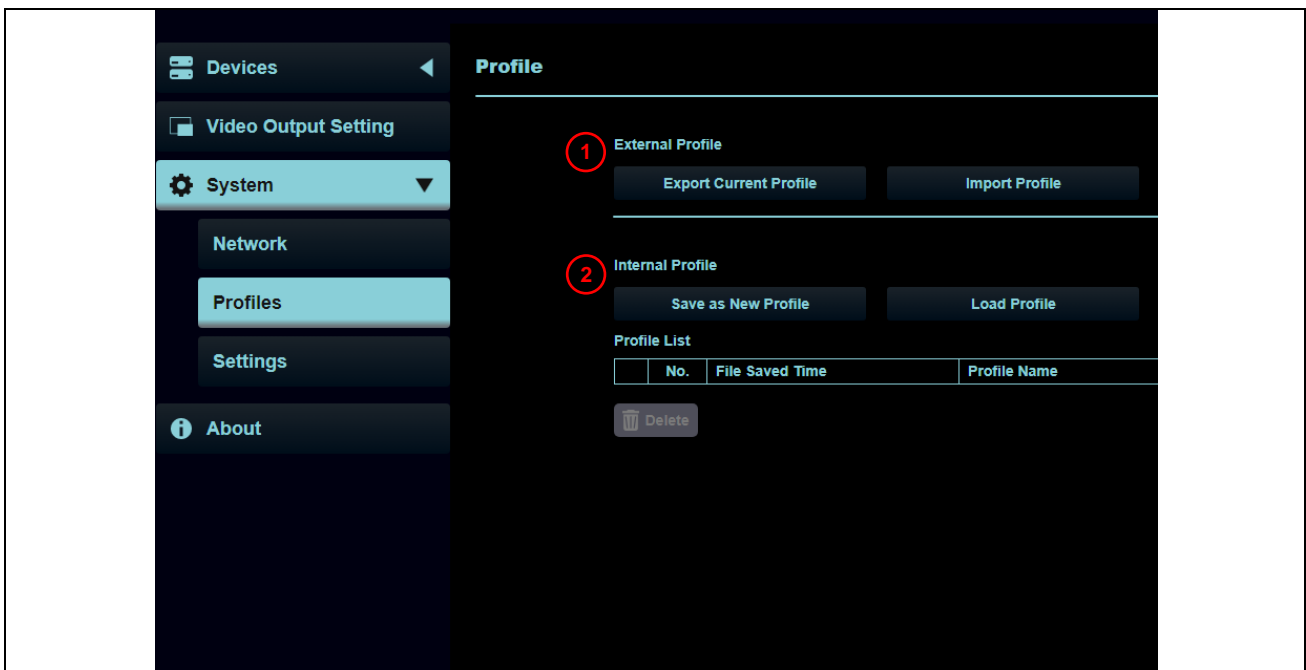
3.4 System- Network



Function Descriptions

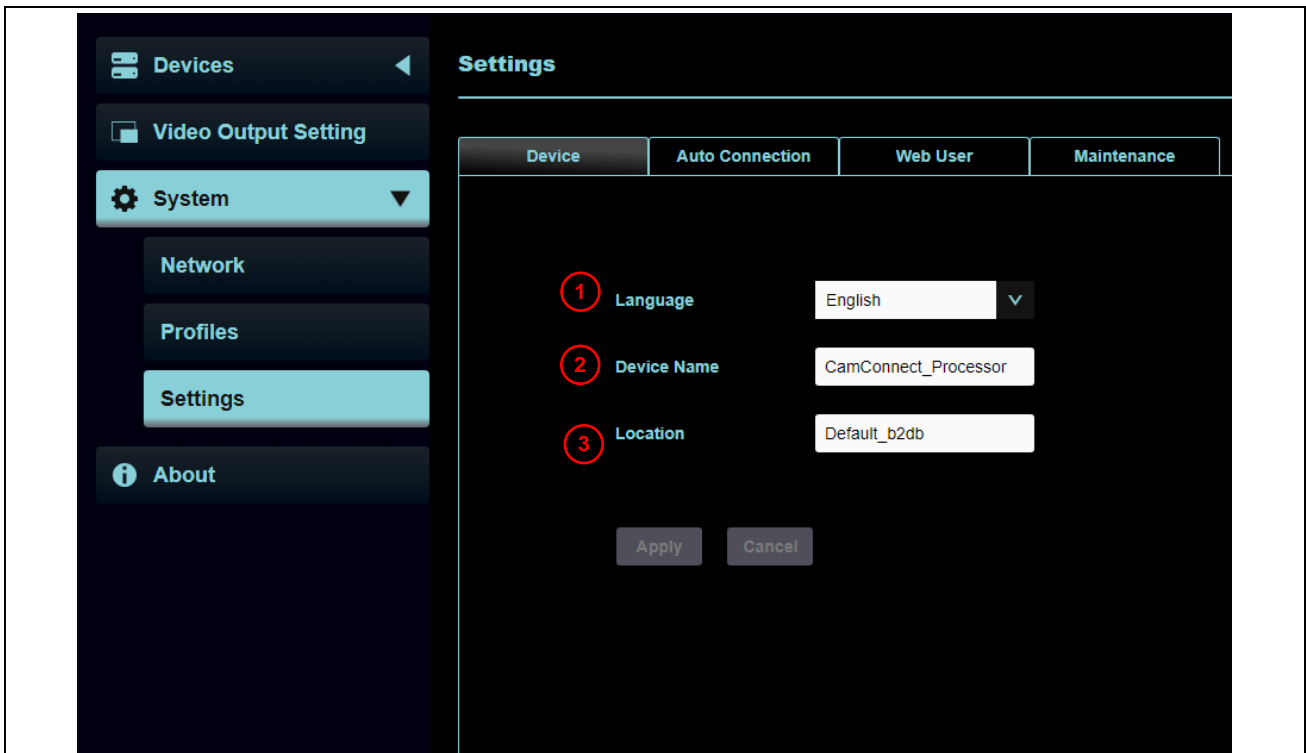
Ethernet Setting. When it is set to Static IP, the setting can be modified. Once the settings are completed, click Apply.

3.5 System- Profile



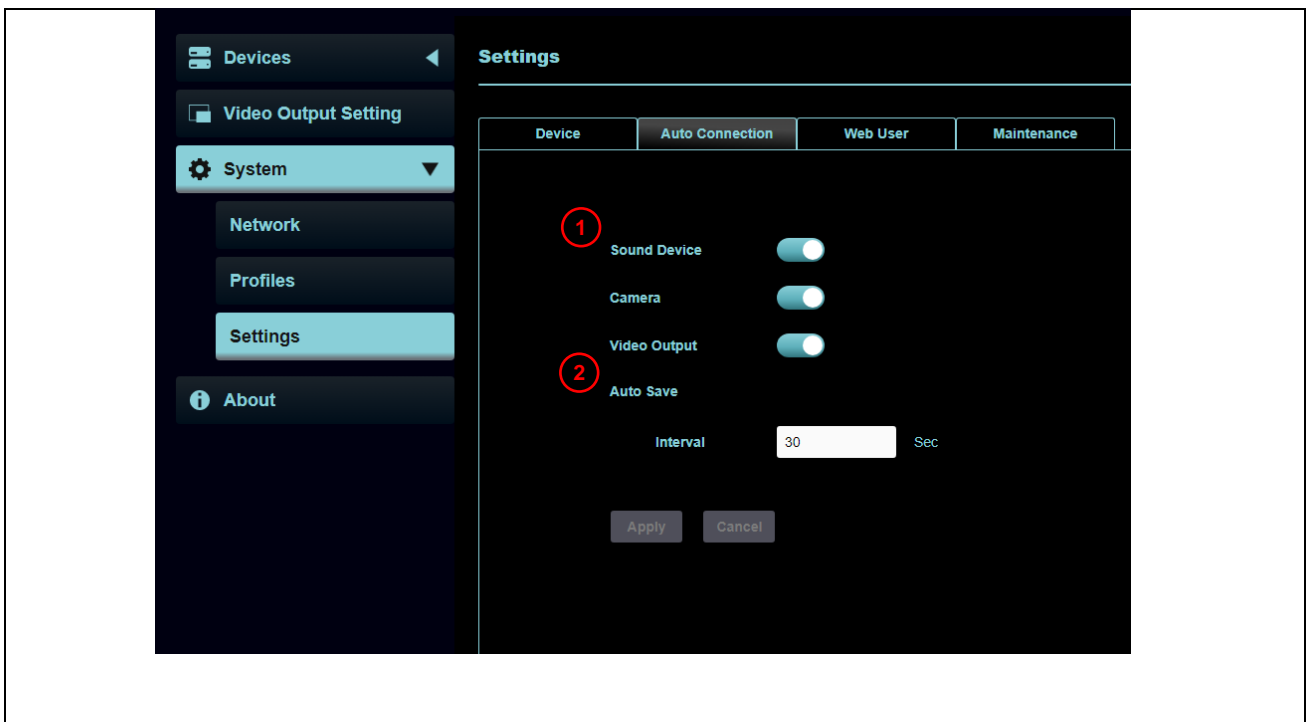
No	Item	Function Descriptions
1	External Profile	Import and export the config file.
2	Internal Profile	Save and load the config file.

3.6.1 System- Settings-Device



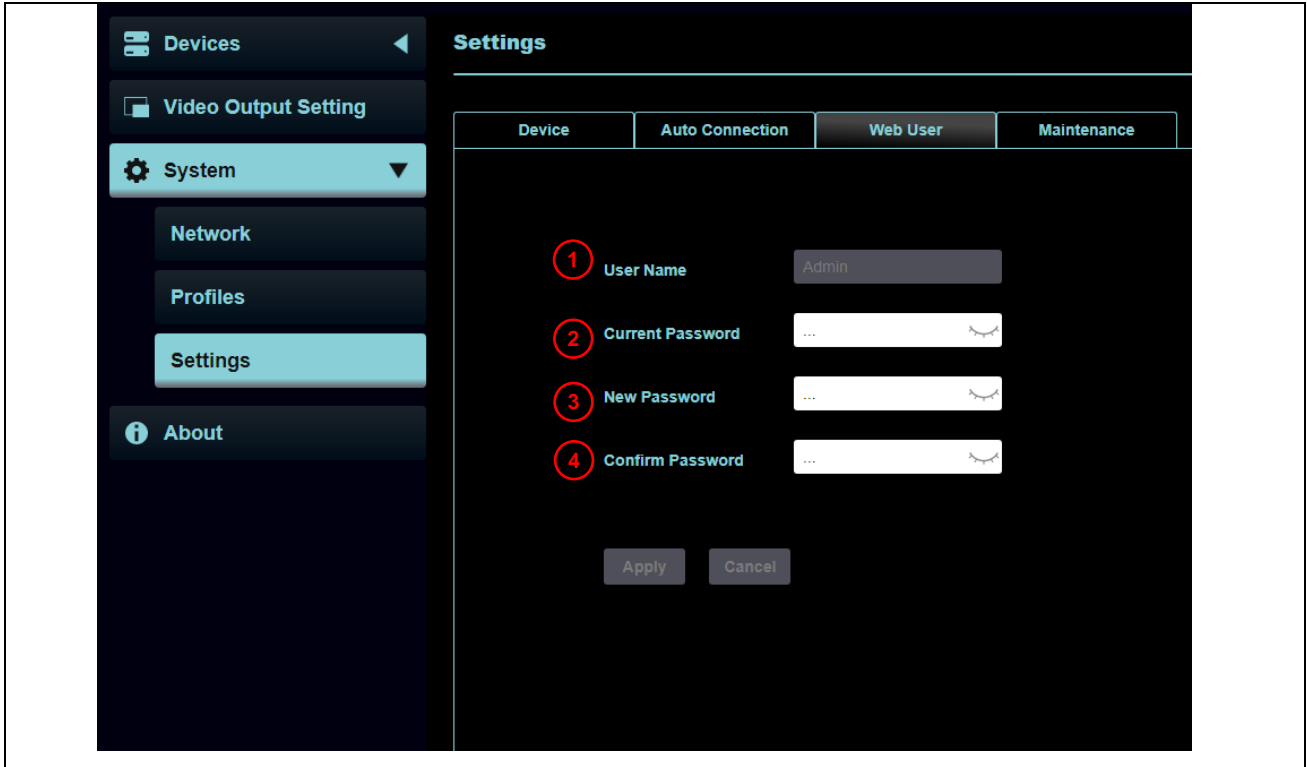
No	Item	Function Descriptions
1	Language	English
2	Device Name	CamConnect_Processor
3	Location	Default_XXXX(The last four characters of the MAC address)

3.6.2 System- Settings- Auto Connection



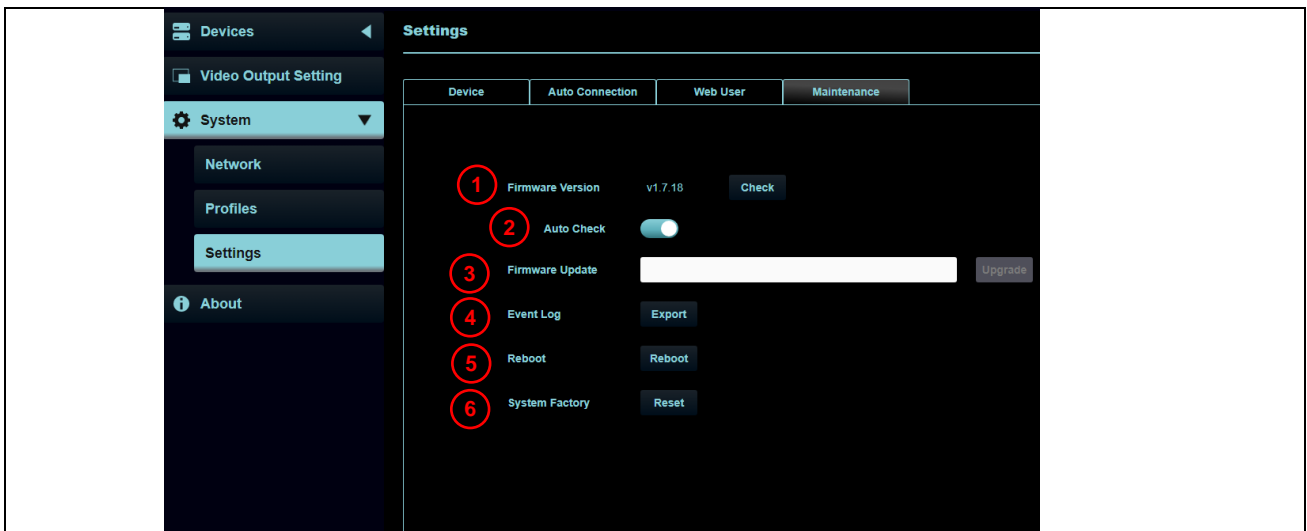
No	Item	Function Descriptions
1	Auto Connection	The microphone, camera and Video output can be reconnected automatically after restarting the AI Box.
2	Auto Save	The profile can be saved automatically after a specific interval time.

3.6.3 System- Settings- Web User



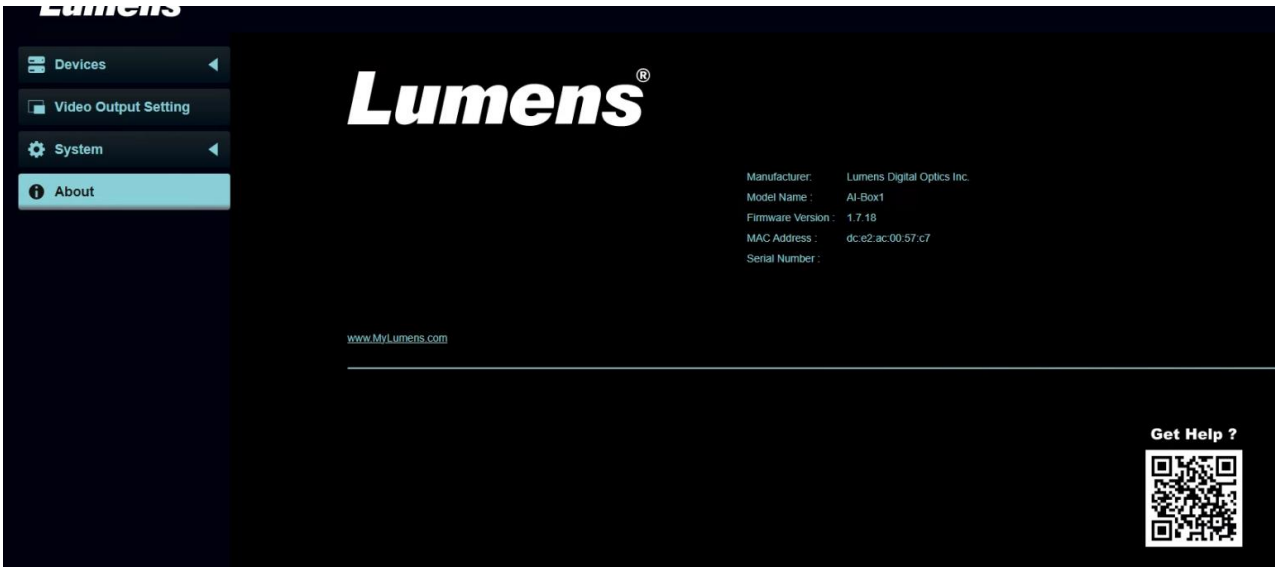
No	Item	Function Descriptions
1	User Name	Admin
2	Current Password	The password currently set for your account.
3	New Password	Enter your desired new password.
4	Confirm Password	Re-enter your new password to confirm.

3.6.4 System- Settings- Maintenance



No	Item	Function Descriptions
1	Firmware Version	Displays the current firmware version of the device.
2	Auto Check	Check if the firmware is updated automatically every time
3	Firmware Update	Allows you to select and update the firmware file from your computer.
4	Event Log	The log file, which preserves the activity over a period, can be exported.
5	Reboot	Restarts the device.
6	System Factory	Resets the device to its factory default settings.

3.7 About

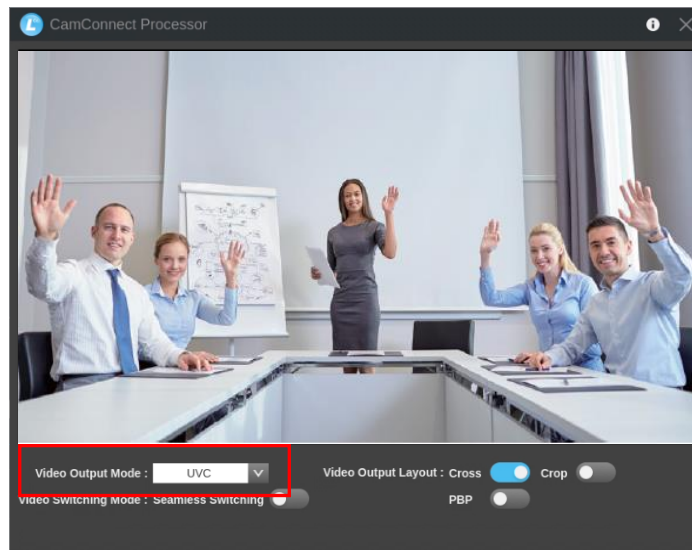


Function Descriptions

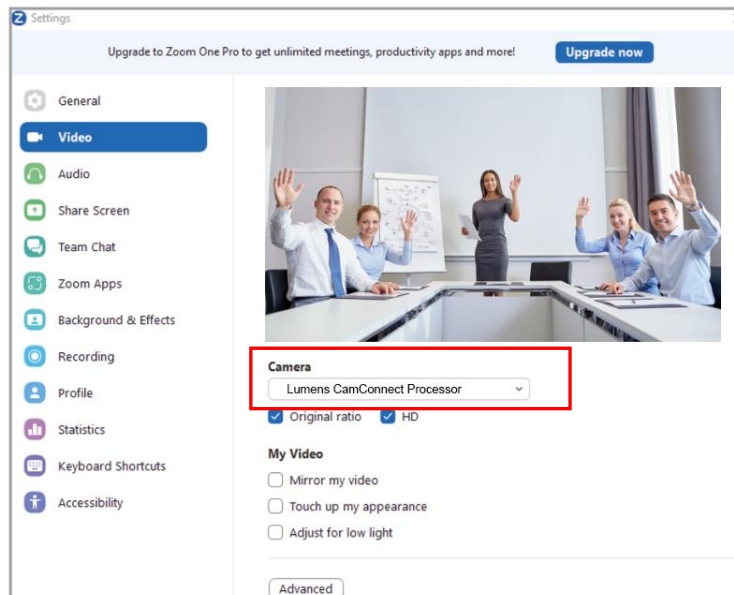
This window displays the version information of AI-Box1.
For technical support, please scan the QR code at the bottom right

Chapter4 Connect to a conference video software

- 4.1 Set the output mode of AI-Box1 to UVC or HDMI+UVC, then click the Video output button



- 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

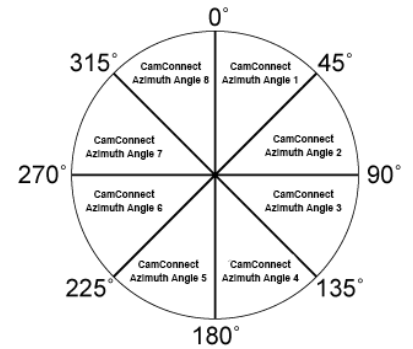
Please check the supported devices for the CamConnect Pro on the Lumens website. Below are examples. Compatibility is not limited to these Microphones.

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

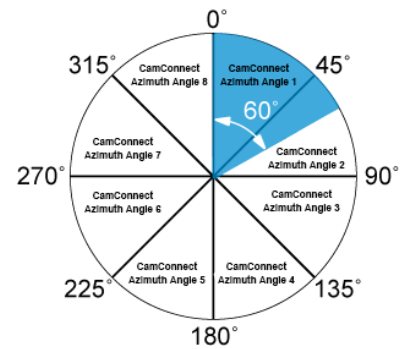
5.1 Sennheiser

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.

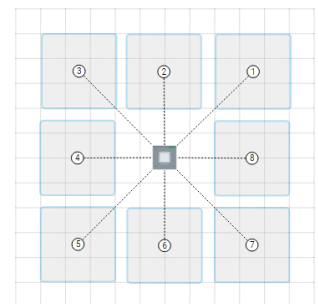


If the forbidden area is enabled on the Sennheiser Control Cockpit software, the corresponding position of CamConnect will also be affected. Example: If the forbidden area is set to 0° to 60°, the audio signal from 0° to 45° of CamConnect Array Azimuth 1 and 45° to 60° of Array Azimuth 2 will be ignored.

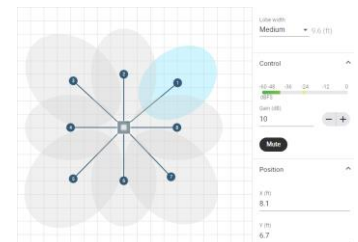


5.2 Shure

Suitable for large-area positioning when Shure Designer Automatic coverage is On.

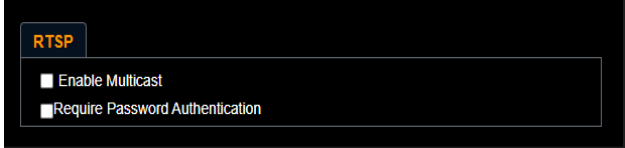
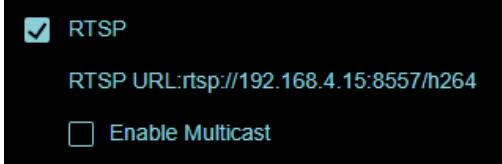


If more accurate positioning is required, it's suggested to disable Automatic coverage, adjust Gain value/Position manually, reduce beamforming angle, to achieve more accurate positioning



Chapter6 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<p>Please access to camera Webpage and go Network tab. Then, make sure if Multicast is deisable. When Multicast is opened, the AI-Box1 would not be able to connect the camera.</p>  
6.	Cannot upgrade firmware by OTA.	<ol style="list-style-type: none"> 1. Please check if you are using static IP. Turn to DHCP and try update again.

Chapter7 System Message

No	Warning message	Action
1	Microphone cannot be found, please check Microphone connection status and try to connect it again.	<p>Ensure that the microphone's port has been typed correctly and check if the IP address is on the same network as the AI Box.</p> <p>You can also refer to the link below from Lumens website for more information about the setup method with the compatible ceiling microphone.</p> <p><a data-bbox="600 555 1485 645" href="https://www.mylumens.com/en/Downloads/3?id2=5&keyword=ai%20box&keyword2=&pageSize=10&ord=">https://www.mylumens.com/en/Downloads/3?id2=5&keyword=ai%20box&keyword2=&pageSize=10&ord=</p>
2	Connection Loss.	<p>The connection between the AI box and the microphone has been lost. Please check if the microphone has been accidentally turned off or if there is another network issue.</p> <p>You can refer to <a data-bbox="600 797 1485 831" href="#">3.1 Device - Microphone Setting to check the microphone status.</p>
3	Camera connect failed, please check camera Resolution / FPS settings or camera connection status	<p>Check if the camera's resolution has been configured correctly with the AI Box. You can also try to access the camera's webpage to confirm its status such as network connectivity.</p> <p>You can refer to <a data-bbox="600 1039 1485 1072" href="#">3.2 Device - Camera List to check resolution of AI-Box1.</p>

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