Lumens AI-BOX1 Automates Multi Camera Voice Tracking User Manual

Contents

Lumens

Lumens AI-BOX1 Automates Multi Camera Voice Tracking

Product Information

Version: 1.2.3
To download the latest versions of the Quick Start Guide, multilingual user manual, software, driver, etc., please visit Lumens **https://www.MyLumens.com/support**

Table of Contents

Product Usage Instructions

System Connection and Application

System Connection
To connect the AI-BOX1 system, please refer to the system connection instructions in the user manual.

AI-BOX1 IO Interface
The AI-BOX1 has an IO interface for connecting various devices. Please refer to the user manual for detailed instructions on connecting different devices to the AI-BOX1.

Support Devices

Shure

- Shure MXA310 Table Array Microphone
- Shure MXA910 Ceiling Array Microphone
- Shure MXA920 Ceiling Array Microphone

Sennheiser

- Sennheiser TeamConnect Ceiling 2 (TCC2) Ceiling Microphone
- Note: 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 Senheisser's horizontal angle of view. They correspond to CamConnect Azimuth Angle 1 to 8.

Nureva

- HDL300 Audio Conferencing System
- HDL310 Audio Conferencing System
- HDL410 Audio Conferencing System

Yamaha
Yamaha RM-CG Ceiling Array Microphone

Operation Interface Description
The user manual provides a detailed description of the operation interface of the AI-BOX1. Please refer to it for instructions on how to use the different functions and settings.

Web Page Function
Refer to the user manual for information on the web page functions of the AI-BOX1.

Connect to a Conference Video Software
To connect the AI-BOX1 to a conference video software, follow these steps:

1. Set the output mode of AI-BOX1 to UVC.
2. Click the start streaming option.
3. Launch a video software like Skype, Zoom, Microsoft Teams, or other similar software.
4. Choose the video source to output camera images.

Troubleshooting

If you encounter any issues with the AI-BOX1, refer to the troubleshooting section in the user manual for solutions.

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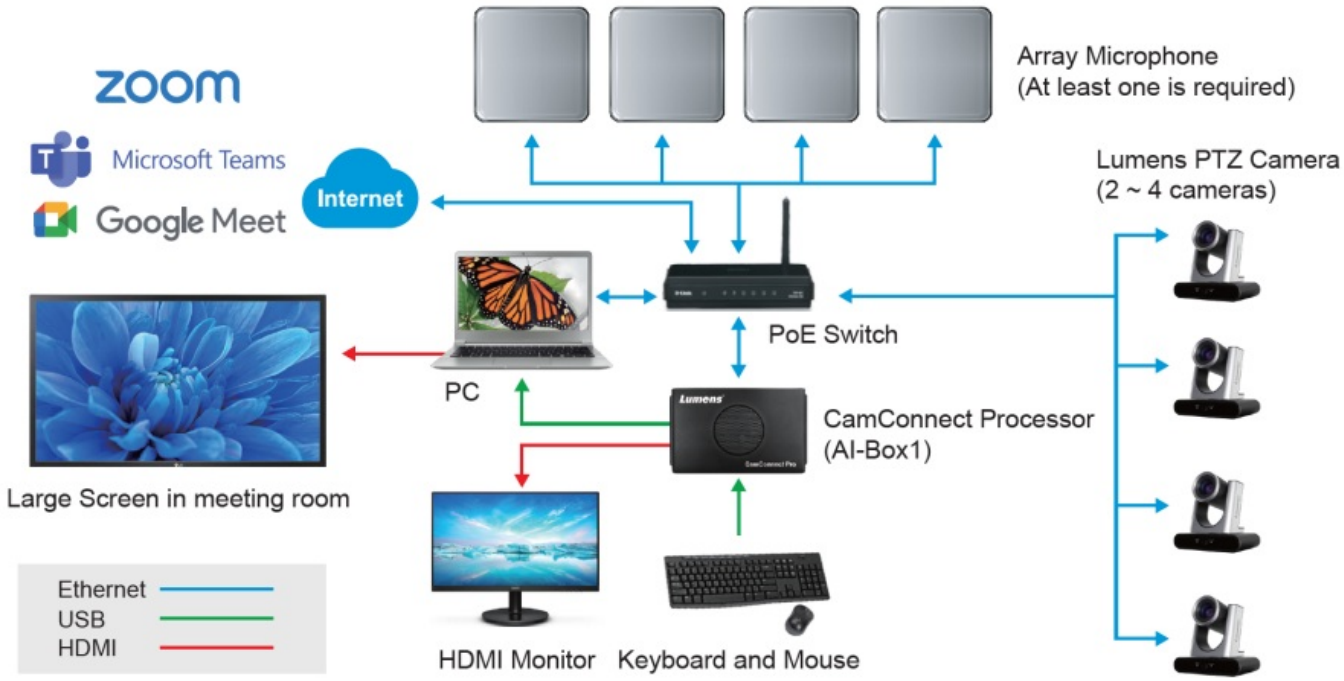
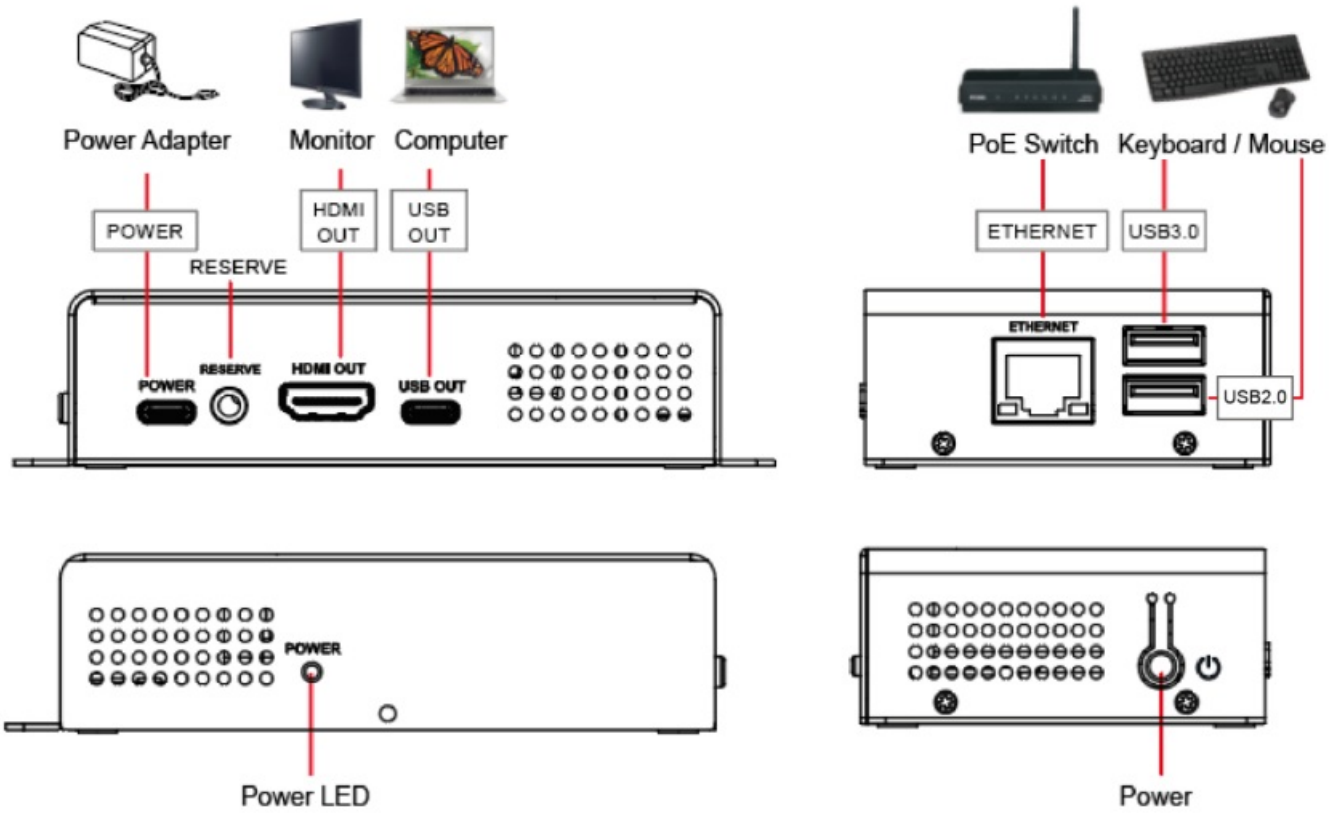
System Connection and Application

System Connection



AI-BOX1 IO Interface



Support Devices

Shure

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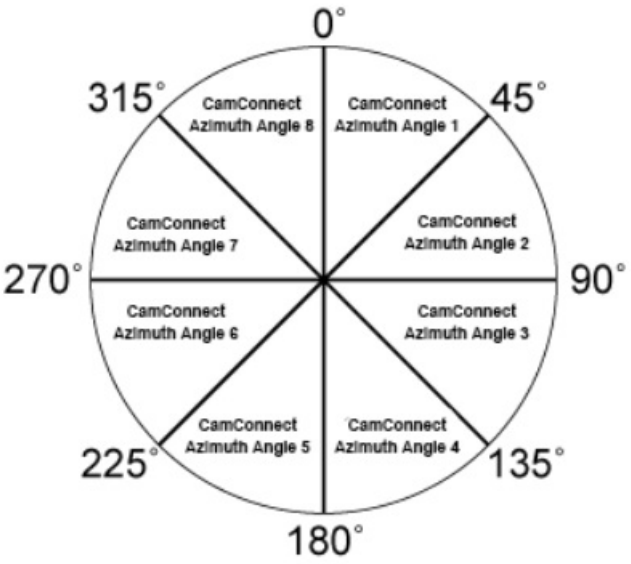
- Shure MXA920 Ceiling Array Microphone

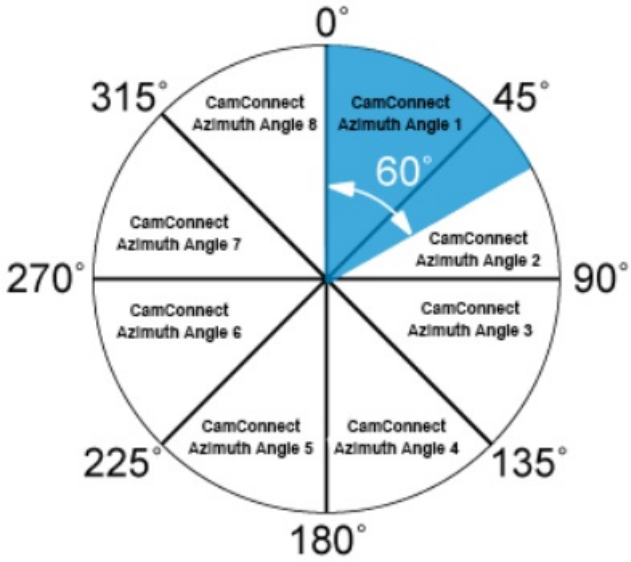
Sennheiser

Sennheiser TeamConnect Ceiling 2 (TCC2) Ceiling Microphone
<Note> 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 Senheisser’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.



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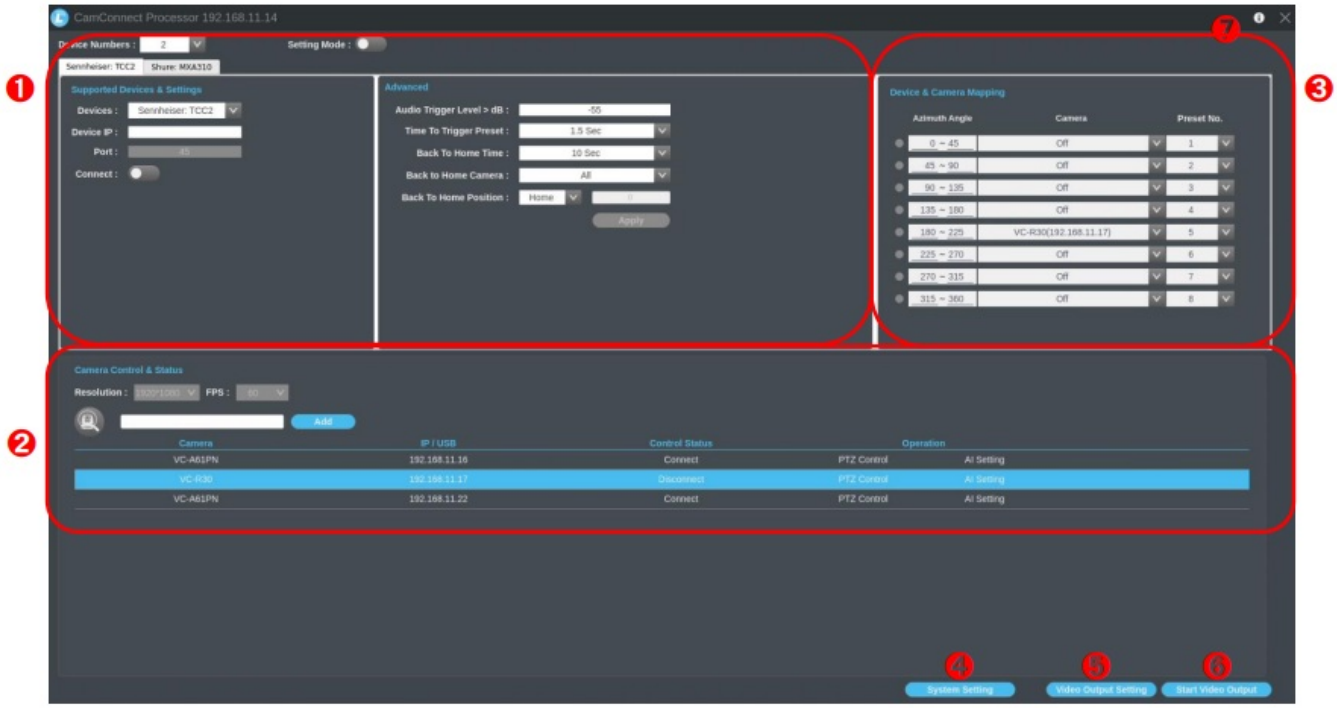
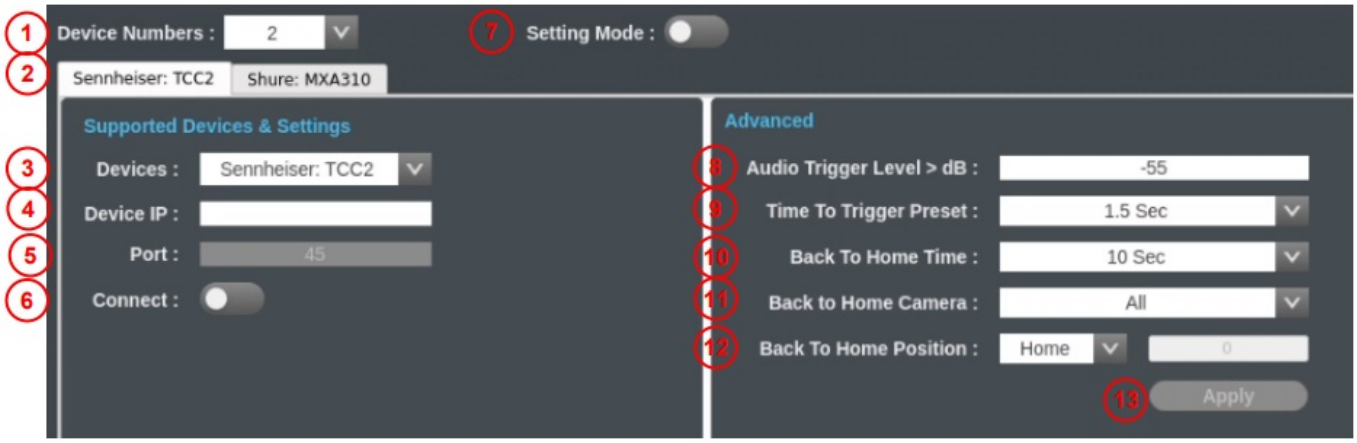
Operation Interface Description



Microphone Setting



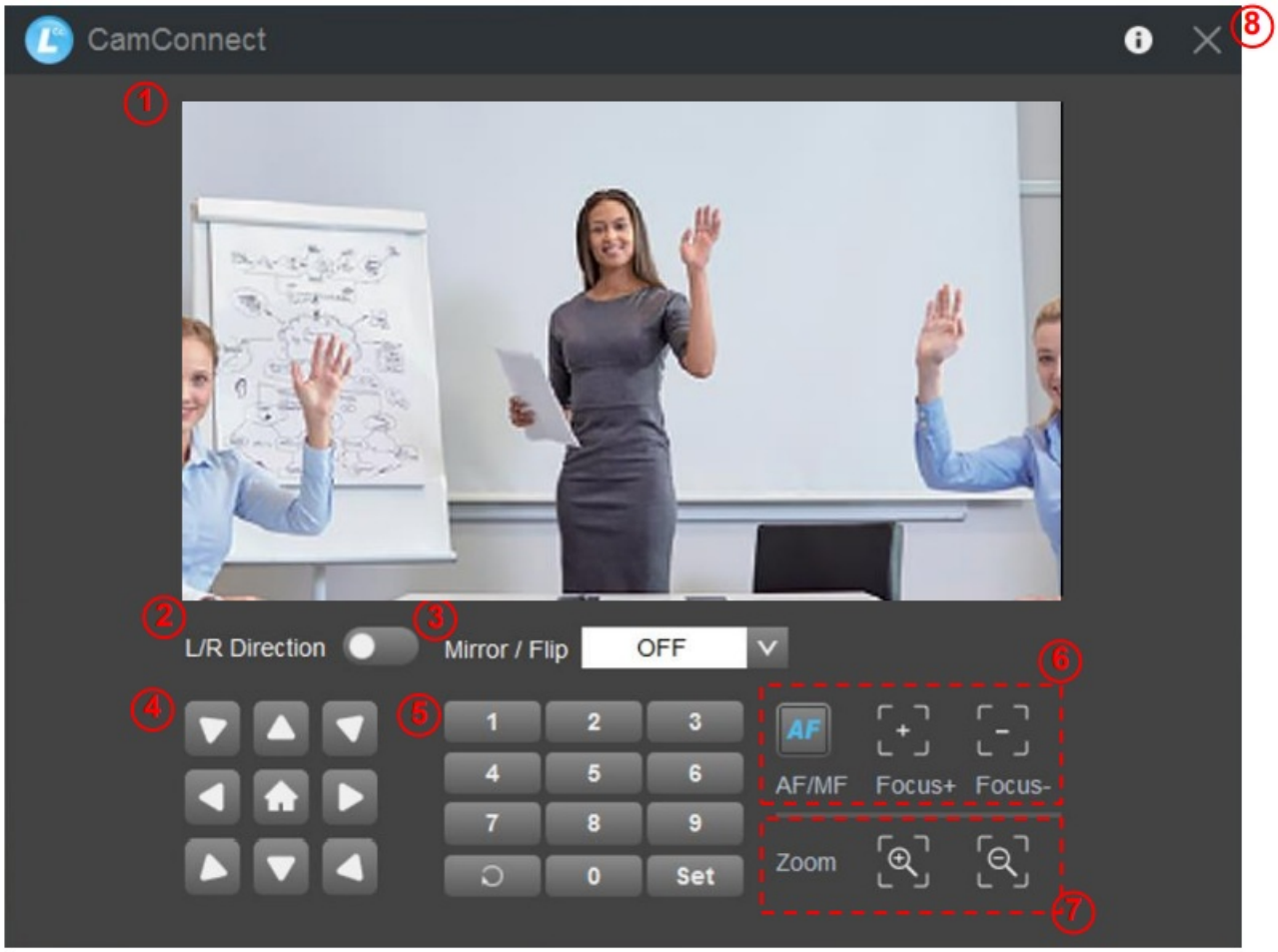
No	Item	Function Descriptions
1	Device Number	Select the desired number of microphones to connect
2	Device List	Display the devices according to the Device Numbers
3	Devices	Select Microphone Device
4	Device IP	Enter the IP address of the microphone
5	Port	Display based on the connected devices § Shure 2202 § Sennheiser 45 § Nureva 8931 **<Remark>** Only Nureva allows customized input of PORT
6	Connect	Enable/Disable microphone connection

7	Setting Mode	Enable/Disable Setting mode When the Setting mode is enabled, the microphone can receive signals, but it will not trigger the camera to the preset position. Enabling this mode is recommended when setting the preset position, to prev ent microphone from interference from other sounds, triggered to unintended positions.
8	Audio Trigger Level > dB	Triggered only if audio source exceeds the preset dB **<Remark>**For Sennheiser/Nureva only
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	Back To Home Camera Setting
12	Back To Home Position	Home Position Setting
13	Apply	Setting completed; click Apply

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 ※ Please ensure that the camera and AI-BOX1 are on the same network segment.
3	Connect/ Disconnect	Click **[Connect]**to establish a connection with the camera or / **[Disconnect]** to cancel the connection The connected camera will be highlighted in blue § Disconnected:  ▪Connected:
4	PTZ Control	Click to enable PTZ control Refer to ***3.2.1 PTZ Control*** for function description
5	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

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	Click the number keys directly to call the preset Ÿ Save preset: Click Set first and then a number key Ÿ Clear preset: Click ↻ first and then a number key
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

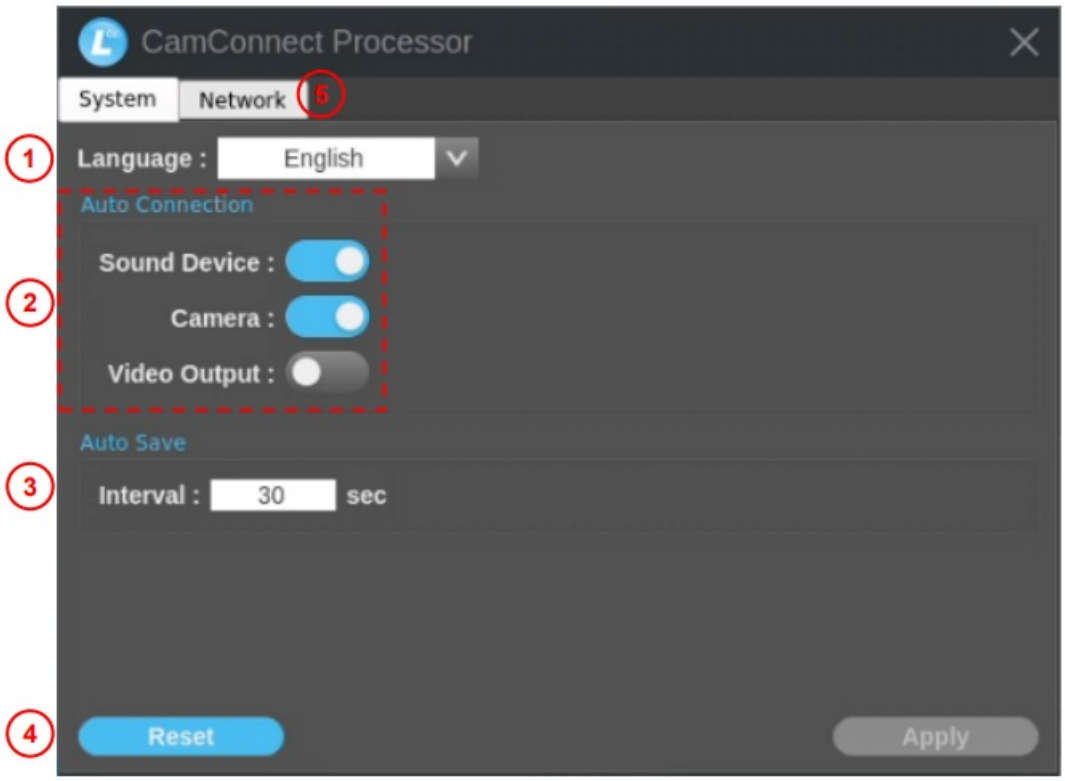
Microphone orientation and camera preset relationship setting

After the microphone device is connected, the camera can be controlled to turn to the corresponding preset

position according to the microphone detection position.

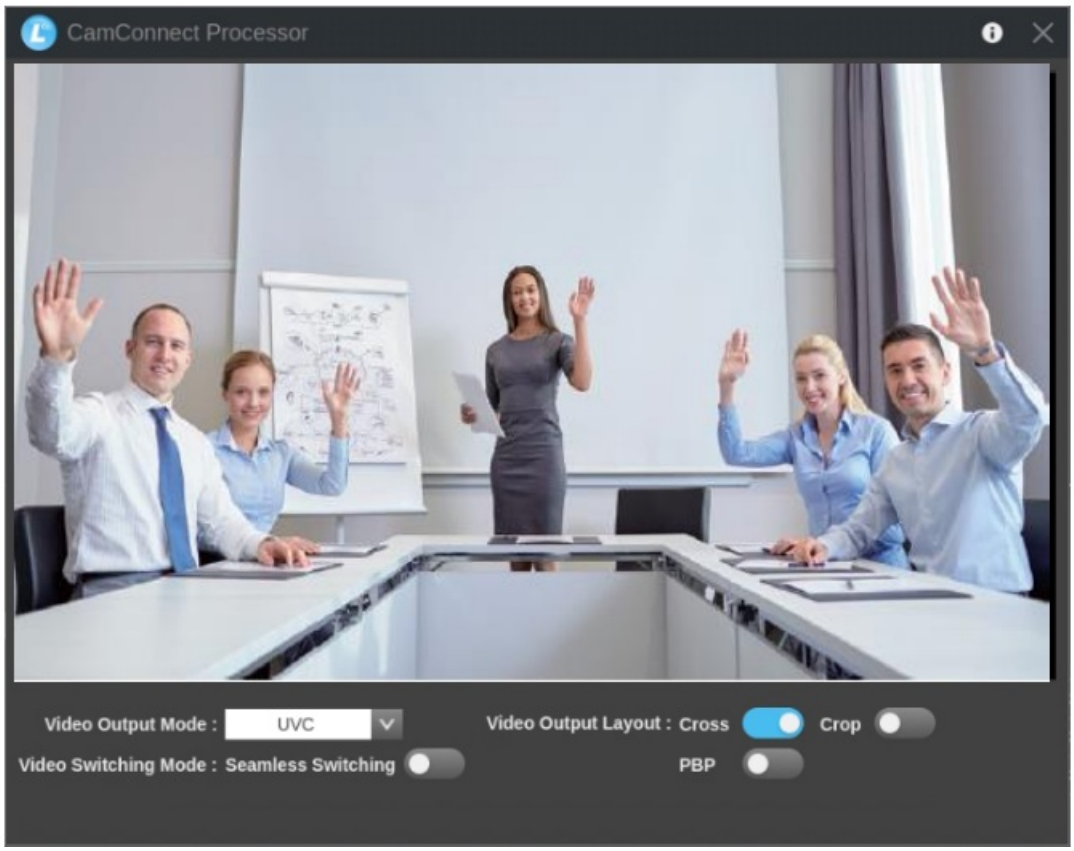
No	Item	Function Descriptions
1	Indicator	This indicator shows the status of microphone signal reception. (A green light indicates successful reception)
2	Array No. Azimuth Angle	§ Array No.: For Shure models: § Azimuth Angle: Applicable to Sennheiser, Nureva, and Yamaha models. The angle can be manually adjusted
3	Camera	Select the desired camera from the dropdown menu
4	Preset No.	Select the preset position for the camera from the dropdown menu

System Setting



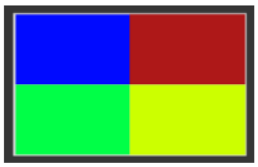
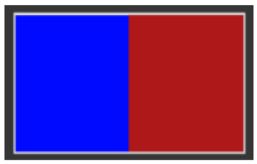
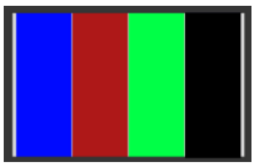
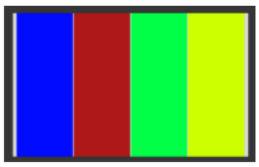
No	Item	Function Descriptions
1	Language	English
2	Auto Connection	Auto connection settings § Sound Device: Microphone
		§ Camera: Camera § Video Output: Automatic image output
3	Auto Save	Set automatic save interval in seconds
4	Reset/ Apply	Reset/Apply your settings
5	Network	 Ethernet Setting. When it is set to Static IP, the setting can be modified. Once the settings are completed, click Apply.

Video Output Setting

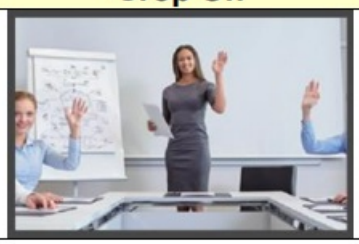
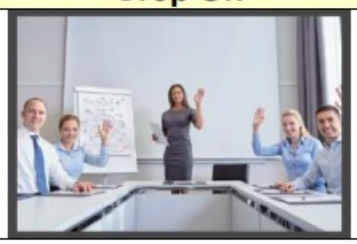


No	Item	Function Descriptions
1	Video Output Mode	Set the Output Mode to either UVC or HDMI
2	Video Output Layout	Configure the layout of the video output according to the provided reference in section ***3.5.1 Video Output Layout*** § Cross: 4-split screen § PBP: Picture by Picture screen § Crop: Screen cropping function **<Remark>** Choose either Cross/PBP only
3	Seamless Switching	Enable/disable the microphone connection function The system is set up for single screen output, and the screen switching is triggered by the microphone signal.

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		

Start Video Output
Click to output the camera images to HDMI or UVC devices
<Note> Choose only either HDMI/UVC output. For setting the Output Mode, please refer to 3.5 Video Output

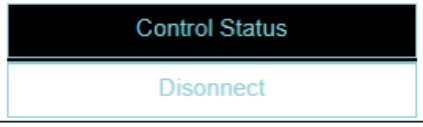
Information

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.

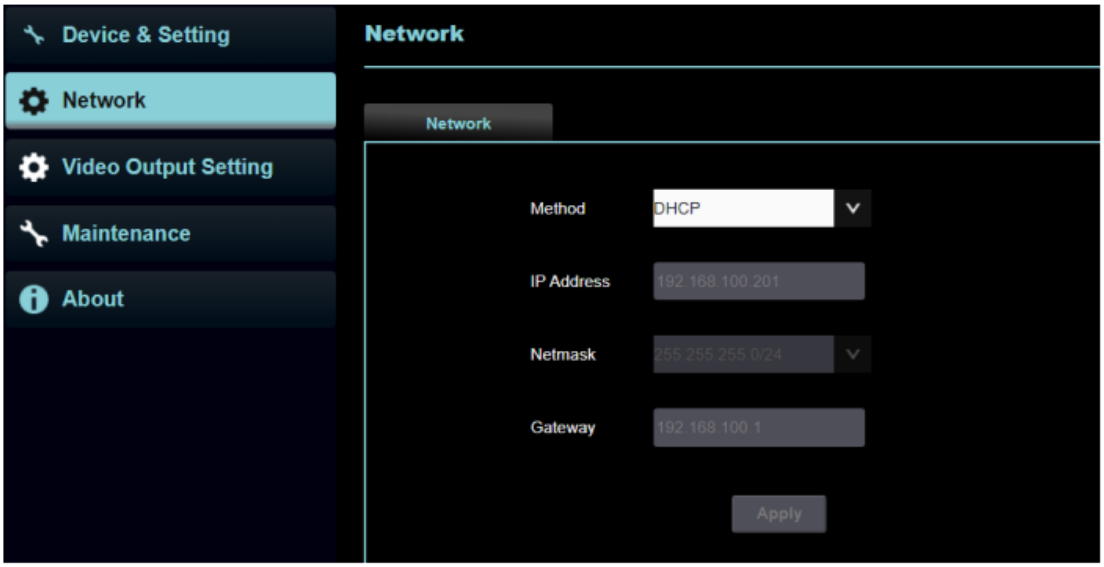
Web Page Function

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 ➢ Nureva: 8931 **<Remark>** Only Nureva allows customized input of PORT ▪ Connect: Enable/Disable microphone connection ▪ Advanced: Advanced Function Settings  ▪ Audio Trigger Level > dB: Triggered only if audio source exceeds the preset dB **<Remark>** For Sennheiser/Nureva only ▪ 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

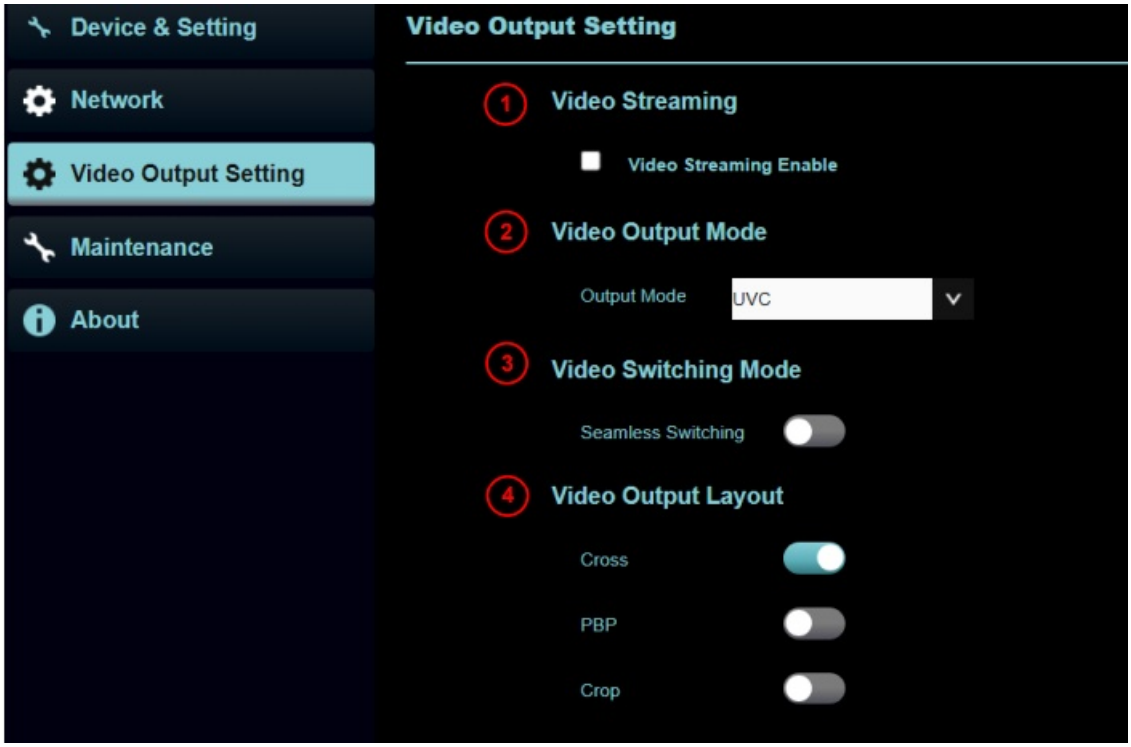
<table>
<tr>
<td>2</td>
<td>Camera & Control Status</td>
<td>
▪ Resolution/FPS: Resolution/FPS Settings (must match the camera output settings)
▪ Refresh: Perform a device search again
▪ Add: Manually enter the specified ip address and click on  to add
<Remark> Please ensure that the camera and AI-BOX1 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>Disconnected</th><th>Connected</th></tr>
<tr><td> 
</td><td> 
</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
</td>
</tr>
<tr>
<td>3</td>
<td>Device & Camera mapping</td>
<td>
▪ Indicator: This indicator shows the status of microphone signal reception. (A green light indicates successful reception)
▪ Array No. / Azimuth Angle:
➢ Array No.: For Shure models:
➢ Azimuth Angle: Applicable to Sennheiser, Nureva, and Yamaha models. 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
</td>
</tr>
</table>

Network



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

Video Output Setting

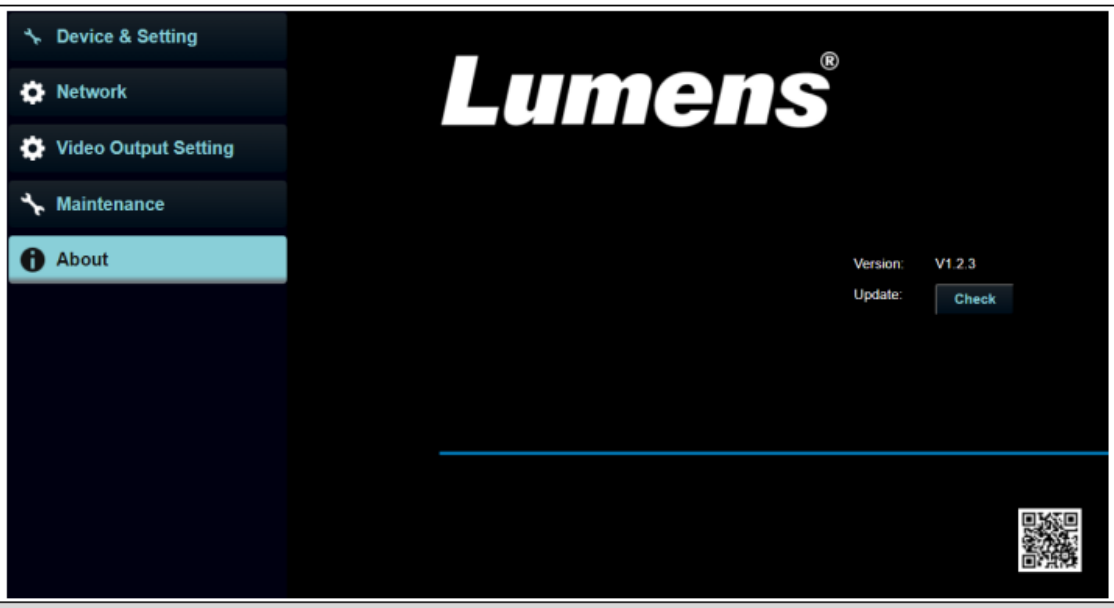


No	Item	Function Descriptions
1	Video Streaming	Enable/disable the camera image output
2	Video Output Mode	Set the Output Mode to either UVC or HDMI
3	Video Switching Mode	Enable/disable the microphone connection function The system is set up for single screen output, and the screen switching is trig gered by the microphone signal.
4	Video Output Layout	Configure the layout of the video output according to the provided reference i n section ***3.5.1 Video Output Layout*** § Cross: 4-split screen § PBP: Picture by Picture screen § Crop: Screen cropping function **<Remark>** Choose either Cross/PBP only

Maintenance

Function Descriptions
Users can Export/Import AI-BOX1 configuration parameters

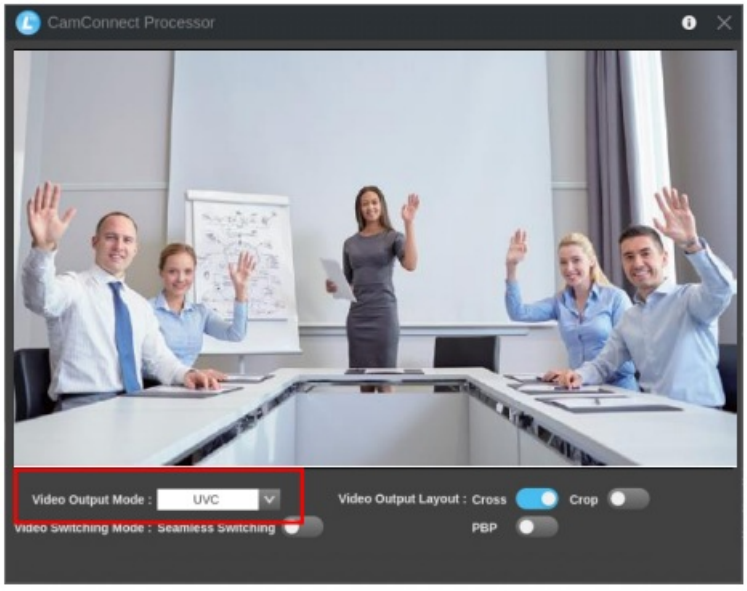
About



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

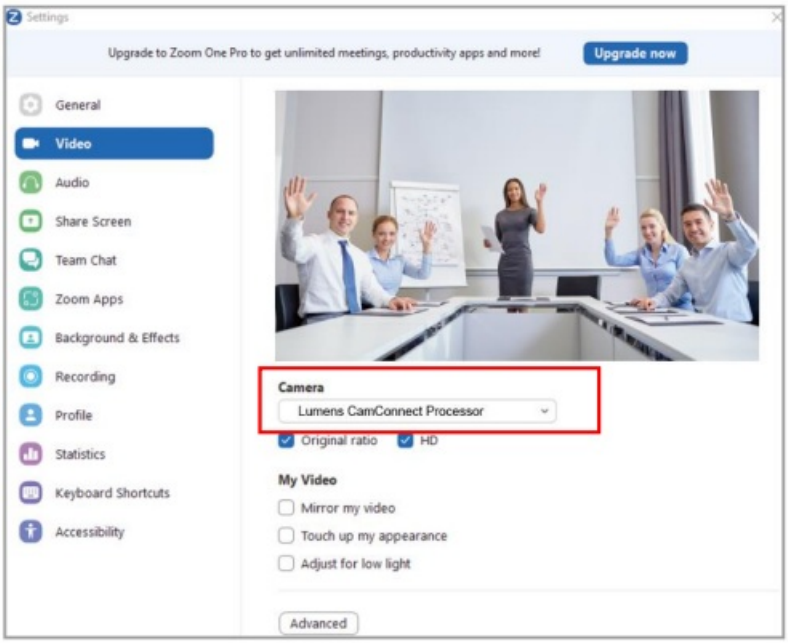
Connect to a conference video software

1. Set the output mode of AI-BOX1 to UVC and click the start streaming option



2. Launch a video software like Skype, Zoom, Microsoft Teams, or other similar software
3. Choose the video source, to output camera images

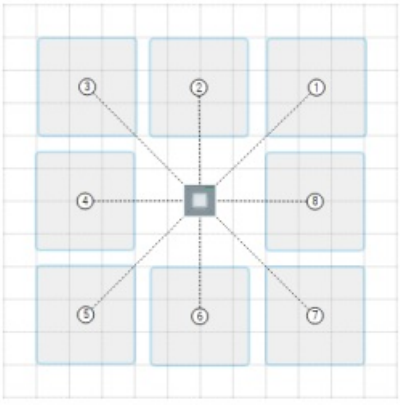
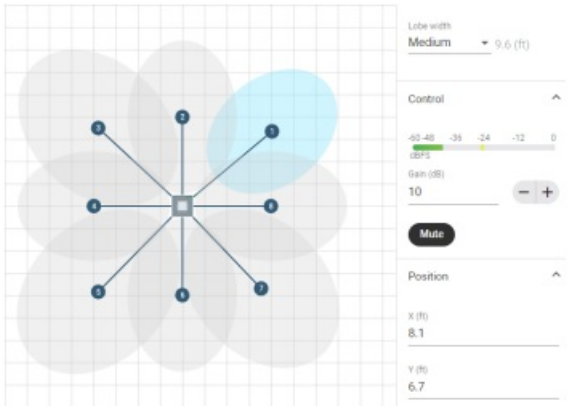
   Video Source Name: Lumens CamConnect Processor



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 sta ble. 2. Make sure the PC is connected to the camera with the USB ca ble 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 Sennhesier mi crophone, no response at the spe cific angle	1. Make sure the Azimuth Angle settings in the CamConnect softw are include that angle position 2. Make sure if the angle is set as the forbidden area on Sennhesier Control Cockpit software. Refer to ***3.2 Sennhesier Microphone System*** 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 ***3.1 Microphone 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.	Used together with Shure TCC2 microphone. Sound detection not sensitive, not accurate	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 

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Documents / Resources

	Lumens AI-BOX1 Automates Multi Camera Voice Tracking [pdf] User Manual AI-BOX1, AI-BOX1 Automates Multi Camera Voice Tracking, Automates Multi Camera Voice Tracking, Multi Camera Voice Tracking, Camera Voice Tracking, Voice Tracking, Tracking

References

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