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Product Manual

Automate VX Software

Crestron 1 Beyond Automate VX Series Software

Crestron Electronics, Inc.

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Automate VX Software

Crestron 1 Beyond Automate VX Series Software

The Crestron 1 Beyond Automate VX Series camera switching systems bring a full multicamera studio experience to meetings, town halls, and classrooms. Crestron 1 Beyond cameras automatically switch based on the location of the active speaking participant. Visual AI enhanced camera switching intelligently frames camera shots with the participants centered.

> **NOTES:**
>
> - 1 Beyond Automate VX models are functionally similar. For simplicity within this documentation, the term "Automate VX" is used except where otherwise noted.
> - This document is current as of the Automate VX version 6.7 release.

This product manual is intended for Room Designer software and Automate VX system configuration menus.

- For more information about Automate VX2 installation and initial setup procedures, refer to the Automate VX2 Series Product Manual.
- For more information about Automate VX installation and initial setup procedures, refer to the Automate VX Series Product Manual.

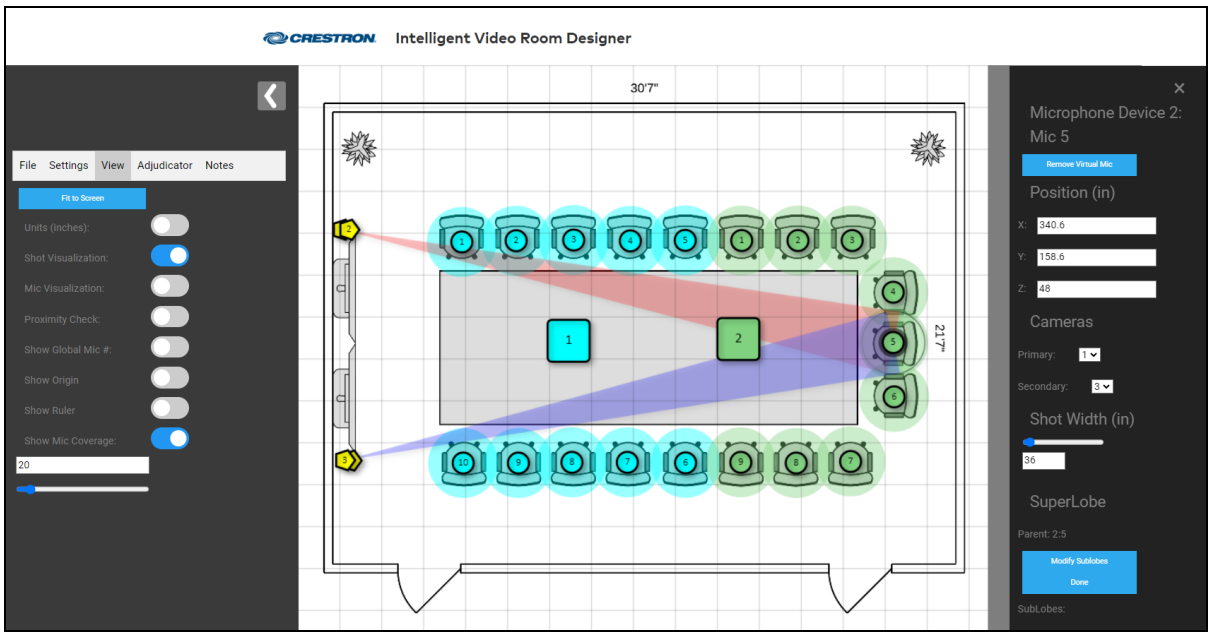
Features

Refer to the following sections for more information on the 1 Beyond Automate VX model features:

- Room Designer Features
- IV-PROSERVICE-1B Features

Room Designer Features

Crestron Intelligent Video Room Designer Software provides the tools needed to design, configure, and verify Intelligent Video meeting spaces. A simple browser interface can be used to help choose the best position for cameras and microphones in the room. Designed meeting spaces can be saved and imported into an Automate VX multi-camera switching solution for fast deployment. To learn more about the Crestron Intelligent Video Room Designer Software, visit the Crestron Technical Institute.



Key features include:

- Simple browser-based software
- Flexible tools available to design Intelligent Video Spaces
- Determine camera shots in real time with Shot Visualization
- Intuitive Proximity Check for optimizing participant positions and microphone placement
- Easily export .1brd files for fast Automate VX deployments

Operates in a Web Browser

No software downloads or installations are required. Crestron Intelligent Video Room Designer Software operates in your browser of choice.

Design Meeting Spaces

Upload a floor plan and set the scale, select seating locations and other common meeting participant positions. Use the simple drag and drop interface to determine ideal positions for cameras and microphones around the space. Select from the list of System Components on page 8 for each device and determine which positions they each should cover.

Configure Devices

Cameras and microphones can be configured with the browser-based interface. Use the desired microphone type and place it in the room, set speaking participant positions based off of the microphone used, and determine camera shots for the participant positions. Additionally, a default camera shot, adjudicators, and chairman mic position can be configured in Room Designer.

Verify the System Design

View coverage zones of connected cameras and microphones. The Crestron Intelligent Video Room Designer Software indicates if any seats are too close together based on the device positions. Room Designer can easily determine ideal device placement.

Export the Completed Meeting Space

Meeting spaces can be exported as an image for easy sharing or in a project file format. Project files can be reloaded into the Crestron Intelligent Video Room Designer Software or imported into Automate VX.

IV-PROSERVICE-1B Features

1 Beyond Camera Systems Remote Professional Services provide support for commissioning your Automate VX voice-activated camera tracking solution.

The purchase of 1 Beyond Camera Systems Remote Professional Services (IV-PROSERVICE-1B) is required with the purchase of each Automate VX (IV-SAM-VXS-1B), Automate VX Pro (IV-SAM-VXP-1B), or Automate VX Plus (IV-SAM-VXN-1B) model. 1 Beyond Camera Systems Remote Professional Services is not available for purchase separately.



Overview

Crestron 1 Beyond Camera Systems Remote Professional Services (IV-PROSERVICE-1B) provides dedicated technical support for the remote deployment of Automate VX Voice-Activated Multi-Camera Switching Solutions. With the purchase of IV-PROSERVICE-1B, Crestron's Remote Professional Services team helps you deploy and validate up to three Automate VX room configurations.

> **NOTE**: 1 Beyond Camera Systems Remote Professional Services (IV-PROSERVICE-1B) includes a maximum of three (3) room configurations for each Automate VX system purchased. An additional charge will apply for systems requiring more than three room configurations. The Equipment Proposal will include the cost of deploying additional room configurations.

Purchasing Requirements

Crestron 1 Beyond Camera Systems Remote Professional Services must be purchased with each Automate VX (IV-SAM-VXS-1B), Automate VX Pro (IV-SAM-VXP-1B), or Automate VX Plus (IV-SAM-VXN-1B).

To schedule Crestron Remote Professional Services, complete the Automate VX Professional Services Fulfillment Request Form.

Before submitting the Automate VX Professional Services Fulfillment Request Form, customers must obtain an Equipment Proposal from Crestron's Sales Support Services team. The Equipment Proposal will include the Automate VX system(s), Crestron 1 Beyond cameras, other third-party equipment (such as microphones), and the number of proposed room configurations required for deployment. All requests for Remote Professional Services must reference the Equipment Proposal number and customers must acquire the complete camera system as outlined in the Equipment Proposal, including 1 Beyond Camera Systems Remote Professional Services.

> **NOTE**: The purchase of Crestron Remote Professional Services and the provision of an Equipment Proposal is optional for Crestron Intelligent Video Certified Engineers (**IVC-E**). Refer to **Crestron Certifications** below for more information.

Crestron Certifications

Crestron Intelligent Video Certified Designers (**IVC-D**) are not required to submit an Equipment Proposal when purchasing Remote Professional Services. A .1BRD design file, related room drawings, and IVC-D certification number are required when submitting the Automate VX Professional Services Fulfillment Request Form. A design review may be required at the discretion of Crestron.

For Crestron Intelligent Video Certified Engineers (**IVC-E**) planning to self-deploy and self-validate a purchased Automate VX system, the purchase of Remote Professional Services is optional, subject to verification by Crestron.

To learn more about obtaining the **IVC-D** and **IVC-E** certifications, visit the Crestron Technical Institute Portal and view the Intelligent Video learning paths.

Preinstallation Support

After purchase, the Crestron support team will review your proposed installation plan and recommend the optimal placement of the Automate VX system, Crestron 1 Beyond cameras, and other third-party equipment (such as microphones).

A dedicated team member will answer questions regarding system configuration and control system programming and help identify the resources required onsite for deployment.

Remote Commissioning and Validation

Following installation, the Remote Professional Services team may need to connect remotely with your onsite team to help deploy the Automate VX solution. An AV technician is required onsite during this stage, as local configuration changes to auxiliary equipment such as microphones, Digital Signal Processors (DSPs), and control processors may be required.

Once the system is configured, the Remote Professional Services team may perform a complete validation of the camera tracking system remotely. Validation of the Crestron Automate VX system involves simulating a video conference call with your onsite AV technician to validate camera tracking, microphone sensitivity, lip-sync, API control from your control panel, and all other related functionality.

System Design

This section aids in the design and implementation of an Automate VX system. Correct design and implementation are pivotal in creating a room with Automate VX, as these elements are required for a seamless video conferencing solution.

Additionally, the design and implementation of an Automate VX system should be replicated within the Room Designer software. Room Designer enables the system to communicate with microphones and cameras, along with creating the desired camera shots for the room. For more information about Room Designer, refer to Room Designer on page 44.

> **NOTE**: 1 Beyond Camera Systems Remote Professional Services (IV-PROSERVICE-1B) is required with the purchase of each Automate VX system. Professional Services provide pre-installation support, deployment, and validation of an Automate VX system. For more information, refer to IV-PROSERVICE-1B Features on page 5.

Refer to the following sections for information on designing and implementing a room for Automate VX:

- System Components
- Component Implementation
- Room Design
- Room Design Examples
- Visual AI Design

System Components

An Automate VX system typically comprises cameras and microphones. Refer to the following sections for information on compatible cameras and microphones:

- Cameras
- Intelligent Array Microphones
- Wired and Wireless Microphones
- Discussion Systems
- Blackmagic® Design ATEM Switchers

Cameras

Crestron offers multiple cameras that fit the needs of a room in tandem with an Automate VX system. The following Crestron cameras are compatible with Automate VX.

Crestron 1 Beyond Cameras

The following Crestron 1 Beyond cameras are compatible with Automate VX. Refer to the following sections for information on individual camera models. For more information on configuring Crestron 1 Beyond cameras, refer to the Crestron 1 Beyond Camera Product Manual.

IV-CAM-P12 Series

The IV-CAM-P12-B and IV-CAM-P12-W (hereafter referred to as "p12") are high quality PTZ cameras that output up to 1080p60 resolution video. These cameras are ideal for meetings in medium to large spaces where one camera needs to capture several areas of the room.

IV-CAM-P20 Series

The IV-CAM-P20-B and IV-CAM-P20-W (hereafter referred to as "p20") are high quality PTZ cameras that output up to 1080p60 resolution video. These cameras are ideal for meetings in large to extra large spaces where one camera needs to capture several areas of the room.

IV-CAM-I12-B

The IV-CAM-I12-B (hereafter referred to as "i12") is a high quality intelligent PTZ camera that uses visual AI to automatically track or frame meeting participants. The IV-CAM-I12-B is ideal for group framing meeting participants in medium to large conference rooms, and presenter tracking in medium sized training rooms and classrooms.

IV-CAM-I20 Series

The IV-CAM-I20-B and IV-CAM-I20-W (hereafter referred to as "i20") are high quality intelligent PTZ cameras that use visual AI to automatically track or frame a presenter. These cameras are ideal for presenter tracking in large to extra large sized training rooms and classrooms, and group tracking meeting participants in large to extra large conference rooms.

Legacy 1 Beyond Cameras

Legacy 1 Beyond cameras are still compatible with Automate VX. Refer to the following sections for information on individual discontinued camera models.

IV-CAMPTZ-12 Series

The IV-CAMPTZ-12-N-W-1B, IV-CAMPTZ-12-N-SLVR-1B, IV-CAMPTZ-12-W-1B, and IV-CAMPTZ-12-SLVR-1B (hereafter referred to as "PTZ-IP 12") are high quality PTZ IP cameras that output up to 1080p60 resolution video via the 3G-SDI or HDMI® ports. These cameras are ideal when participants will be closer to the camera. For more information on configuring a IV-CAMPTZ-12 camera, refer to the 1 Beyond PTZ Series Product Manual.

IV-CAMPTZ-20 Series

The IV-CAMPTZ-20-N-W-1B, IV-CAMPTZ-20-N-SLVR-1B, IV-CAMPTZ-20-W-1B, and IV-CAMPTZ-20-SLVR-1B (hereafter referred to as "PTZ-IP 20") are high quality PTZ IP cameras that output up to 1080p60 resolution video via the 3G-SDI or HDMI® ports. These cameras are ideal when participants will be further from the camera. For more information on configuring a IV-CAMPTZ-20 camera, refer to the 1 Beyond PTZ Series Product Manual.

IV-CAMA3-20 Series

The IV-CAMA3-20-N-W-1B, IV-CAMA3-20-N-SLVR-1B, IV-CAMA3-20-W-1B, and IV-CAMA3-20-SLVR-1B (hereafter referred to as "AutoTracker") AutoTracker™ 3 series cameras are high-quality PTZ cameras that automatically track and frame a presenter based on facial and motion detection. For more information on configuring a IV-CAMA3-20 camera, refer to the 1 Beyond AutoTracker™ 3 Presenter Tracking Camera Product Manual.

Camera Comparison

The following table shows a comparison of Crestron intelligent video cameras:

Features	p12	p20	i12	i20
Optical Zoom	12x	20x	12x	20x
Field of View (FOV)	67.68°	56.45°	67.68°	56.45°
Maximum Distance for 3 ft Wide Camera Shot	28 ft	60 ft	28 ft	60 ft
Presenter Tracking Enabled	No	No	Yes	Yes
Can be Inverted	Yes	Yes	No	No
SDI Output Available	Yes	Yes	Yes	Yes
HDMI Output Available	Yes	Yes	Yes	Yes
NDI Output Available	Yes	Yes	No	Yes

For more information on which cameras are best suited for a room design, refer to Camera Implementation.

Third-Party Cameras

The following third-party cameras are supported by Automate VX2 Pro (IV-SAM-VX2-P) systems:

> **NOTE**: The Automate VX Pro System Series 2 Third-Party Camera Enablement Key (SW-IV-SAM-3RDPARTYCAM) is required to use supported third-party cameras. For more information on procuring the Automate VX Pro System Series 2 Third-Party Camera Enablement Key, refer to the SW-IV-SAM-3RDPARTYCAM product page.

- Panasonic® AW-UE100
- Panasonic® AW-UE150A
- Panasonic® AW-UE160

Intelligent Array Microphones

Positional microphones are most commonly used with Automate VX. Multiple intelligent array microphones can be positioned around the room to gather audio position data from speaking participants. Automate VX uses this data to switch camera shots to ensure that the speaking participant is accurately captured.

When designing an Automate VX project, intelligent array microphones should be used if possible. To determine if a positional microphone can provide accurate positional data for a speaking position, perform a **Proximity Check** in Room Designer with the desired microphone device. For more information on Proximity Check, refer to Proximity Check on page 95.

The following positional microphones are compatible with Automate VX:

- Shure® MXA920
- Shure MXA925
- Shure MXA901
- Sennheiser® TCC2
- Sennheiser TCCM
- Sennheiser TCCM+
- Yamaha® ADECIA RM-CG
- Audio Technica® ATND1061

The following lobe architecture microphones are compatible with Automate VX:

- Shure MXA310
- Shure MXA910
- Shure MXA920 (when set to lobe mode)

DM NAX Intelligent Audio Processors

DM NAX® Intelligent Audio Processors (DM-NAX-AP-100) can be connected to Automate VX and can act as an intermediary between multiple intelligent array microphones at once. Microphones connected through the DM-NAX-AP-100 communicate their positional data through the DM NAX device to Automate VX.

The following microphones are compatible with Automate VX through the DM-NAX-AP-100:

- Sennheiser TCCM+

Wired and Wireless Microphones

Gooseneck microphones, tabletop microphones, button microphones, and other wired microphones that do not provide positional data when detecting audio are compatible with Automate VX. Wireless microphones such as lavalier microphones are compatible with Automate VX as well. Wired and wireless microphones require a DSP (Digital Signal Processor) to operate with Automate VX.

> **NOTE**: Pendant microphones are not compatible with Automate VX.

DSPs

A DSP is required if wired or wireless microphones that do not provide positional data are used with Automate VX. These microphones are routed through a DSP as either gated on when detecting audio or gated off when no audio is detected. Automate VX then uses these gating properties to determine which camera shots should be shown.

The following DSPs are compatible with Automate VX:

> **NOTE**: The channel limits listed for each DSP are the maximum audio channels that Automate VX can use with the DSP. For more information about DSPs and configuring them to communicate with Automate VX, refer to DSP Configuration on page 219.

- Shure Intellimix™ Room
  - 8 or 16 channel limit depending on the software license used
- Shure P300
  - 8 channel limit
- Biamp TesiraFORTÉ™
  - 128 channel limit
- Biamp Tesira™ SERVER
  - 128 channel limit
- QSC Q-SYS™ Core
  - Unlimited channels

Discussion Systems

Discussion systems usually contain a microphone, speaker, and central control units. A discussion system reports whether its microphones are active or inactive. There are two types of discussion systems: push-to-talk and voice-activated. Both system types can be wired or wireless.

The following discussion systems are compatible with Automate VX:

- Shure MXCW
- TAIDEN® Conference System — compatible with the following models:
    - HCS-4100
    - HCS-5300
    - HCS-4800
    - HCS-8300
    - HCS-8600
- Televic® Discussion System — compatible with the following models:
    - Plixus AE
    - Plixus AE-R
    - Plixus MME
    - WAP G4
    - WCAP G3
    - D-Cerno AE
- Audio-Technica® ATUC-50
- Bosch DICENTIS Conference System

Blackmagic® Design ATEM Switchers

Blackmagic® Design ATEM switchers are compatible with Automate VX. These are typically used with Automate VX when more than 12 cameras are desired in a Room Configuration. Automate VX conducts all camera switching based on audio cues from microphones when connected to a Blackmagic Design ATEM switcher. The Blackmagic Design ATEM switcher controls the camera inputs and outputs that are used with the Automate VX project.

The following Blackmagic Design ATEM switcher models are compatible with Automate VX:

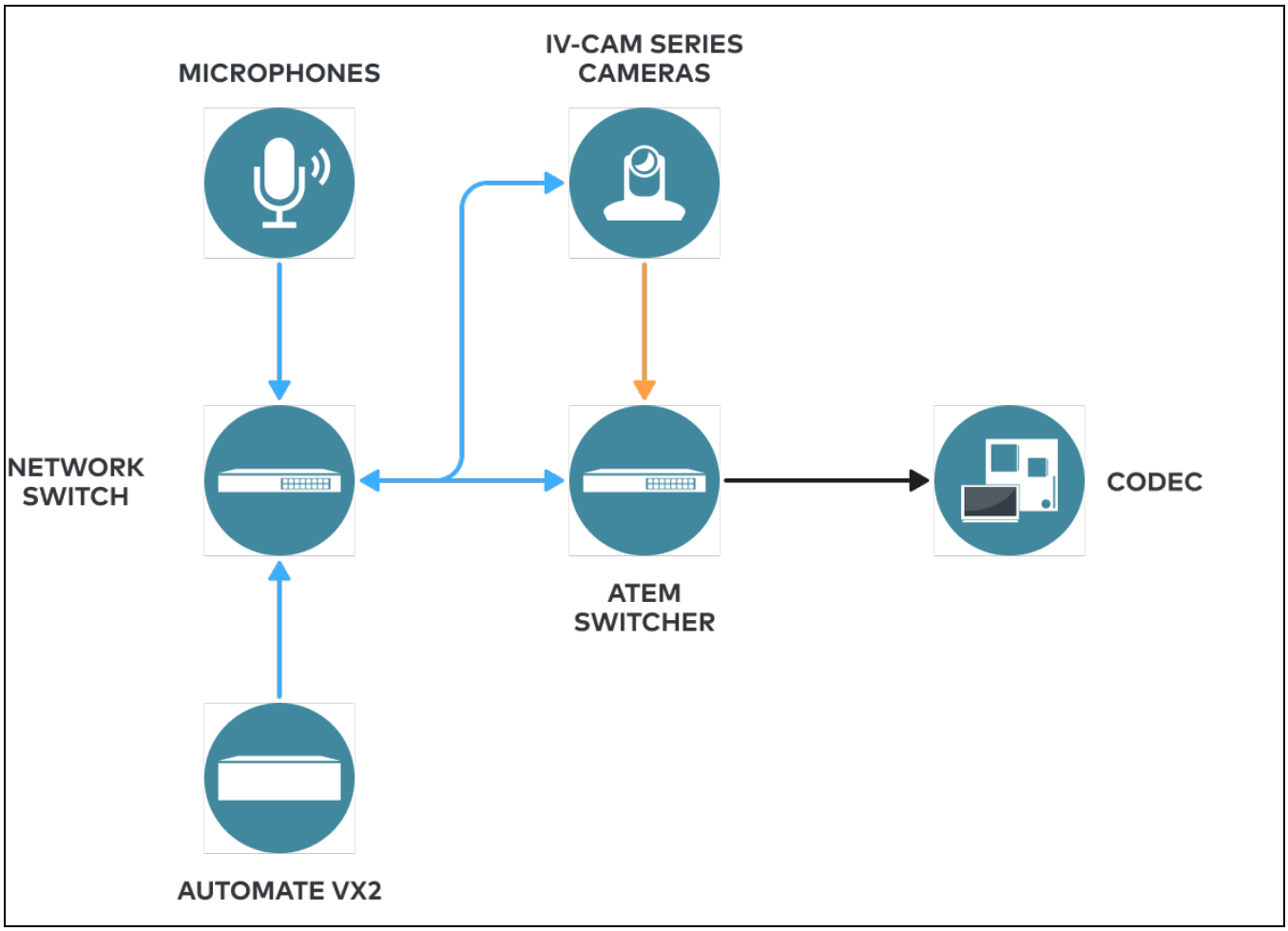
- ATEM Constellation 8K
- ATEM 4 M/E Constellation 4K
- ATEM 4 M/E Constellation HD
- ATEM 2 M/E Constellation HD
- ATEM 1 M/E Constellation HD

For more information on enabling a Blackmagic Design ATEM switcher within Automate VX, refer to Enable ATEM on page 169.

Blackmagic Design ATEM Switcher Design Example

Refer to the following application diagram for an example of how a Blackmagic Design ATEM switcher is connected to an Automate VX system.

Blackmagic Design ATEM Switcher Design Example



Observe the following connection details:

- The Crestron 1 Beyond cameras are connected via SDI to the Blackmagic Design ATEM switcher (not Automate VX).
- The Crestron 1 Beyond cameras also require a network connection to communicate with Automate VX.
- Automate VX, Microphone, and the Blackmagic Design ATEM switcher all communicate with one another via a network connection.
- The Blackmagic Design ATEM switcher may not have a native USB output for a codec. The included Automate VX SDI to USB adapter can be used with the Blackmagic Design ATEM switcher.

Component Implementation

Automate VX relies on a combination of cameras and microphones to properly operate, and the location of these peripherals is crucial. The following sections provide information on implementing cameras and microphones in a room with Room Designer for Automate VX. For more information about Room Designer, refer to Room Designer on page 44.

This section provides the following information:

- Camera Implementation
- Microphone Implementation

Camera Implementation

Camera usage in a room is dependent on the room itself (shape, orientation, and purpose of the room), but there are general guidelines to implementing cameras. The following sections provide information on camera room requirements.

Camera Quantity

Two p12 or p20 cameras should be placed as close as possible to one another for the following reasons:

- Ensures fast and clean video shots
- Provides consistency for the primary and secondary camera shots (eliminates the change in perspective between the two cameras)
- An extra camera is available to support multiple speaking participants

> **NOTE**: Failing to have an extra camera available for multiple speaking participants causes the camera output to display a still image (also known as camera freeze) as it moves into position.

Typically only one i12 or i20 camera is required in a room, as it is best used for presentation areas. Use i12 and i20 cameras only when presenter tracking is necessary for the room configuration.

Camera Placement

Cameras should always be placed facing towards where participants and presenters are located. This often means placing cameras on top of or next to monitors that are used within video conferencing applications. Ensure that there are no obstructions blocking the camera shot.

> **NOTE**: All camera placements require proper lighting for the video output. 500 lux is the recommended minimum lighting for a camera shot.

NDI and SDI

Crestron 1 Beyond cameras that are compatible with Automate VX have SDI or NDI outputs available. NDI enabled cameras are recommended if the room has more than 7 cameras, or has multiple Automate VX units. Otherwise, SDI or NDI outputs can be used interchangeably depending on preference. For more information on Crestron 1 Beyond cameras that are NDI enabled, refer to Camera Comparison on page 10.

> **CAUTION**: Do not use NDI and SDI outputs in conjunction with one another. Doing so will negatively impact the camera switching performance of Automate VX.

Microphone Implementation

Microphone usage is dependent on the room itself (shape, orientation, and purpose), but there are general guidelines for implementing microphones. The following sections provide information on microphone room requirements.

Microphone Quantity

The microphone quantity required for a room depends on which microphones are used. For intelligent microphone arrays, determine the microphone quantity by using the **Proximity Check** setting in Room Designer on Automate VX. **Proximity Check** will give an accurate assessment of where intelligent microphone arrays should be placed in a room for adequate speaking participant coverage.

For microphones that are not intelligent microphone arrays, the microphone quantity required is equal to the number of speaking participants in the room. For microphones that require a DSP, ensure the DSP has a sufficient channel count to meet the microphone quantity. For more information on DSP channel limits, refer to DSPs on page 12.

Microphone Placement

The microphone placement for a room depends on which microphones are used. For intelligent microphone arrays, optimal placement can be determined by using the **Proximity Check** setting in Room Designer on Automate VX. **Proximity Check** displays the range of intelligent microphone arrays, and will notify when a microphone is not in speaking range.

When using a lavalier microphone, use an AutoTracker to follow the presenter's movement. For all other microphones used with Automate VX, microphones should be placed where speaking participants are located in the room. If a DSP is present, the DSP location does not affect the performance of Automate VX.

Voice Lift Guidance

Voice lift is an audio technology that amplifies a speaking participant's voice within the room. Voice lift is typically implemented in presenter-led spaces or large rooms to make speech more intelligible.

Voice lift is generally not recommended with an Automate VX system. If it is used, additional considerations are necessary to avoid unwanted camera switching. Observe the following guidance when using voice lift with an Automate VX system.

> **NOTE**: Voice lift is an advanced configuration that goes beyond scope of this document and requires specialized audio knowledge to implement successfully. The following information is provided only as a guideline for those who are confident performing this configuration.

Intelligent Array Microphone Voice Lift Guidance

When intelligent array microphones are used with Automate VX in a room configured with voice lift, an Acoustic Echo Cancellation (AEC) reference must be sent to the intelligent array microphones at specific times.

A zoned voice lift architecture using intelligent array microphones is recommended. Speaker zones are configured per microphone, and when speech is detected, an AEC reference is sent to the audio speakers near the active zone.

Wireless Microphone Voice Lift Guidance

When wireless microphones are used in tandem with intelligent array microphones for Automate VX, an AEC reference must be sent from the wireless microphones to the intelligent array microphones. If the wireless microphone is active, the intelligent array microphones do not provide positional data as they receive an AEC reference from the wireless microphone.

If a wireless microphone is used for audience or roaming reinforcement, it is recommended to define a dedicated area for the participant to enable reliable camera switching. If this is not possible due to the room setup, then consider making a wide angle camera shot of the audience when the wireless microphone is activated.

Room Design

Automate VX functions in a variety of spaces; however, these spaces often have specific considerations that need to be addressed. The following sections provide information on the types of spaces where Automate VX systems are commonly deployed and the design considerations required for each space.

Extra Large Rooms

Extra large rooms hold 12 or more participants. Automate VX accommodates extra large meeting space configurations where participants are either facing one monitor or facing various monitors throughout the room. Depending on the size of the room, more cameras and microphones may be required to provide speaker tracking for all participants.

Multipurpose Spaces

If the room is a multipurpose space (such as a training room where furniture will be moved and regularly reconfigured), account for multiple furniture layouts with appropriate camera and microphone placement. A multipurpose space may require additional cameras and/or microphones compared to a room with a static furniture layout. This ensures that cameras are always facing participants regardless of furniture layout.

> **TIP**: Use a physical indicator in the room such as a marking on the ceiling or floor to accurately position furniture. Automate VX requires furniture to be placed consistently for each respective room configuration.

High Value Rooms

High value rooms are meeting spaces that are considered important and where custom video conferencing is required. Automate VX provides a custom tailored experience for these spaces, allowing for dynamic compositions and camera shots. Examples of high value rooms include but are not limited to a CEO's boardroom or a client-facing location.

The intended usage of a high value space can change the required amount of cameras significantly. For example, if side-by-side compositions are used, ensure that speaking participants can be presented simultaneously.

Divisible Spaces

Divisible spaces are very large rooms that can be sectioned off into two or more rooms, often with folding walls or sliding doors. These rooms have multiple configurations that change depending on the event and number of participants. They can also include multiple presentation areas and multiple furniture layouts.

To ensure that all presentation and participant areas are captured with speaker tracking video, one Automate VX system should be used for each room within the divisible space. Each divisible space that uses an Automate VX requires additional cameras and microphones.

Crestron NDI enabled cameras are recommended for divisible spaces because they can connect to multiple Automate VX systems. For more information on Crestron NDI enabled cameras, refer to Cameras on page 9.

Training and Learning Spaces

Training and learning spaces are rooms where there is an audience and a main presentation area. These are typically classrooms where a presenter stands in front of a class of students. Automate VX provides the ability to track a presenter's movements while camera switching to the students when they speak. A side-by-side composition is common with training and learning spaces, where the presenter and a speaking student can be seen simultaneously.

An i20/i12 camera is typically positioned at the opposite side of the room facing the presentation area, enabling the presenter to be accurately tracked. p12 and/or p20 cameras should be positioned at the presentation side of the room facing the students.

Microphones should be positioned within the space to accommodate a moving presenter and stationary students. A lavalier microphone is recommended for the presenter, while intelligent ceiling array microphones are recommended for the student section.

Room Design Examples

This section provides the following room design examples using Automate VX, cameras, and microphones:

- Large Boardroom with Standard Monitors on page 24
- High Value Boardroom with Table Mics on page 27
- Divisible Room on page 30

Room Designer Key

Refer to the following sections for information on what Room Designer software symbols represent in the room design examples.

Camera Device

Camera Devices are indicated in Room Designer as pentagon-shaped nodes. PTZ-IP 12, PTZ-IP 20, p12, and p20 cameras are yellow, whereas AutoTracker 3, i12, and i20 cameras are orange. For more information on Camera Devices, refer to Camera Device Configuration on page 105.

PTZ-IP 12 and PTZ-IP 20 Camera Device



AutoTracker 3 Camera Device



Microphone Device

Microphone Devices are indicated in Room Designer as square-shaped nodes. Microphone Devices represent intelligent microphone arrays, discussion systems, and DSPs. The color of the Microphone Device is associated with its number (Microphone Device 1 is blue, Microphone Device 2 is green, and so forth). For more information on Microphone Devices, refer to Microphone Device Configuration on page 115.

Microphone Device



Virtual Mic Location

Virtual Mic locations are indicated in Room Designer as circle-shaped nodes. Virtual Mics represent speaking participant positions in Room Designer. The color of the Virtual Mic is associated with the Microphone Device that it is reporting to (blue Virtual Mics report to Microphone Device 1, green Virtual Mics report to Microphone Device 2, and so forth). For more information on Virtual Mics, refer to Virtual Mic and Blocking Zone Configuration on page 127.

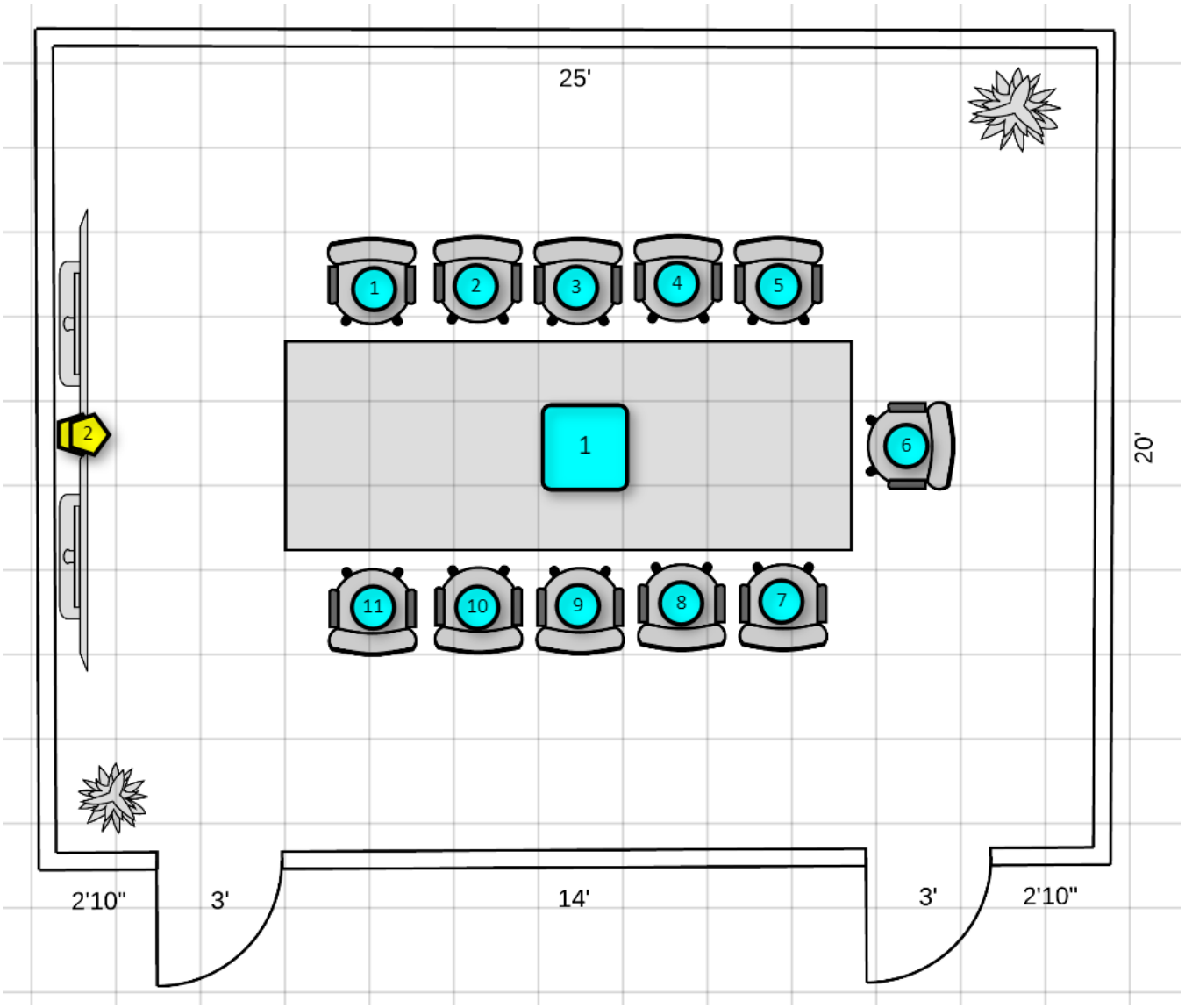
Virtual Mic Location



Large Boardroom with Standard Monitors

The large boardroom in the example below has a rectangular table with participants seated along both long edges of the table, and at one chairman position at the end (6). The left wall has two side-by-side monitors.

Large Boardroom with Standard Monitors



Refer to the Room Designer Key on page 22 for information on the numbered symbols.

The following Automate VX solution is recommended for this room:

System	Cameras	Microphones	Other Devices
1 Automate VX2 (IV-SAM-VX2-S)	2 p12 cameras (IV-CAM-P12-B)	1 intelligent ceiling array microphone	1 Conferencing codec (UC-Engine)
			1 SDI to USB converter
			1 Network Switch
			2 Displays

Refer to the following sections for information about the Automate VX solution recommended for this room.

Cameras

Two p12 cameras are placed in-between the two monitors at the end of the room. The cameras in this example are mounted on top of each other with Universal Mounting Brackets (IV-CAMA-UMB). These cameras are placed here to properly frame all participants in the room.

p12 cameras are used in this configuration instead of p20 cameras as their wider field of view ensures all participants are framed properly.

Automate VX System

An Automate VX2 system (IV-SAM-VX2-S) is used for this room. A standard Automate VX system is recommended since there are only two cameras in the room.

Microphones

One intelligent ceiling array microphone is placed in the middle of the room over the rectangular table. This ensures that all participants are accurately detected by the microphones. To check the audio detection range of the microphone, use the **Proximity Check** feature in Room Designer.

Network Switch

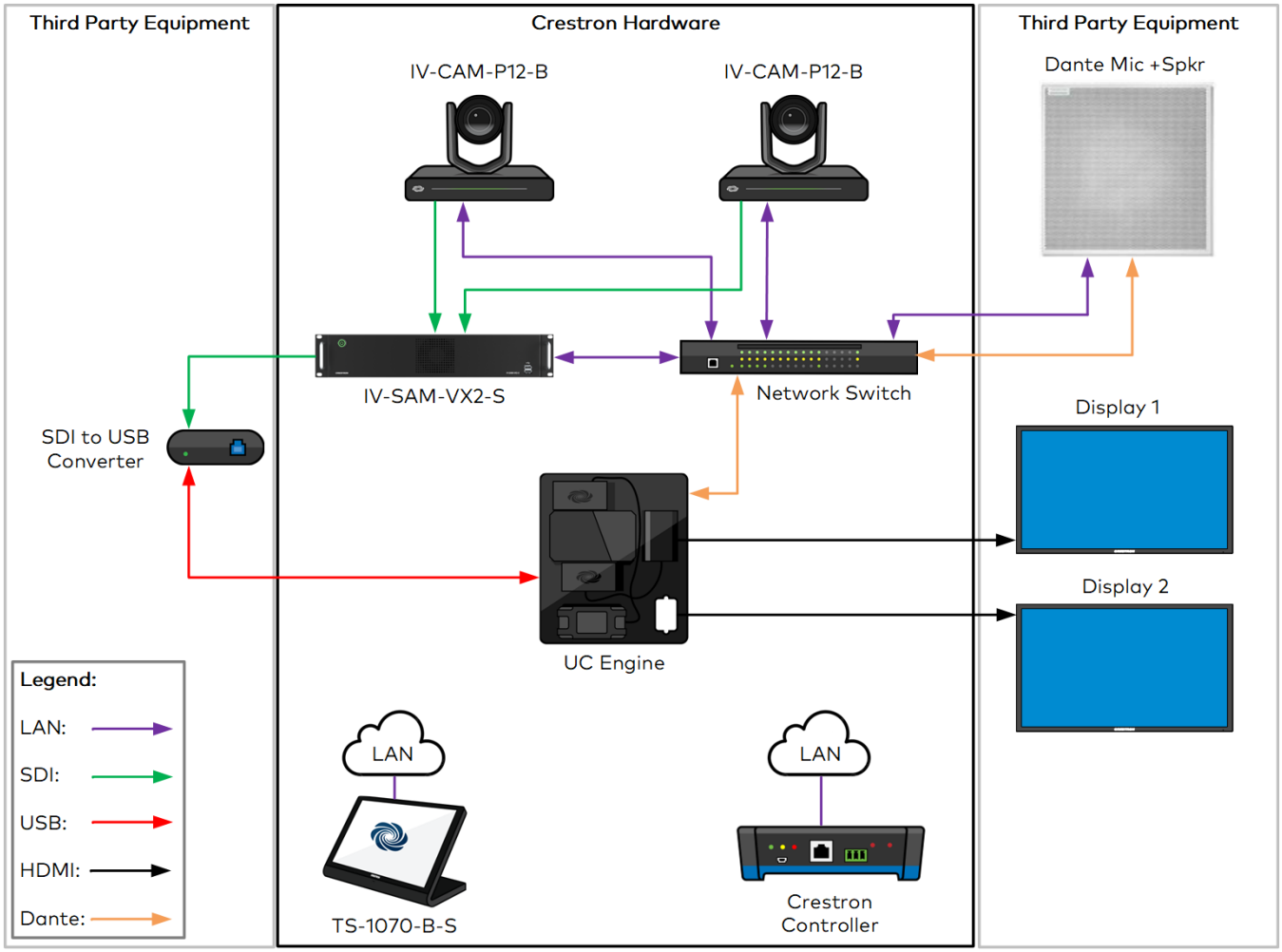
One network switch is used for this room. The network switch allows the cameras, microphone, and Automate VX to communicate with each other through the network. The network switch also provides power (PoE+) to the cameras and microphone.

Conferencing Codec

One conferencing codec is used for this room. The conferencing codec allows the Automate VX video and microphone audio to be outputted to a conferencing software such as Microsoft Teams® software. One SDI to USB converter is required to use the conferencing codec.

Application Diagram

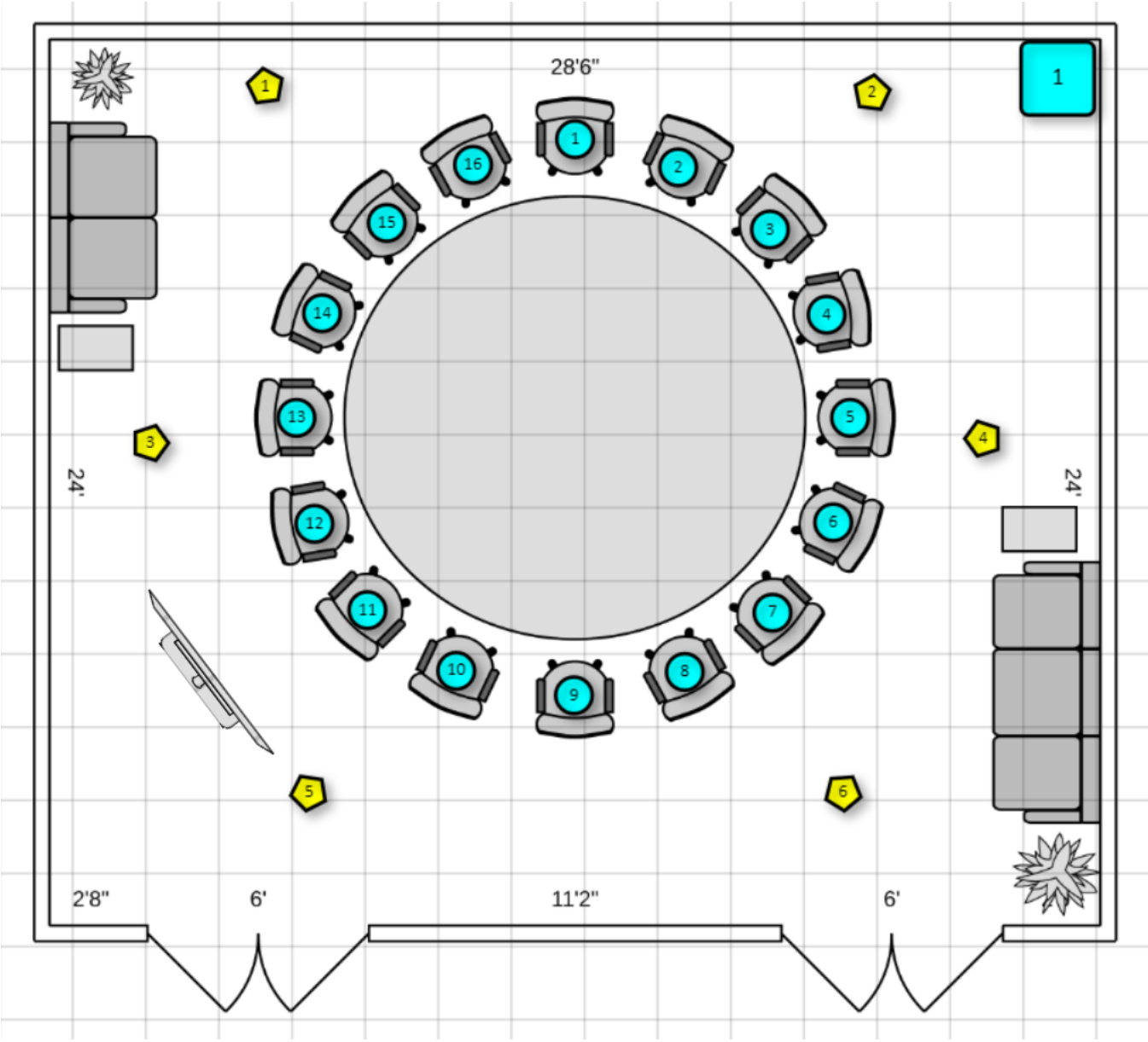
The following diagram shows how the recommended Automate VX solution is connected.



High Value Boardroom with Table Mics

The high value boardroom in the example below has a circular table with seating all around. The display in this room can be moved and is not in a fixed location.

High Value Boardroom with Table Mic



Refer to the Room Designer Key on page 22 for information on the numbered symbols.

The following Automate VX solution is recommended for this room:

System	Cameras	Microphones	Other
1 Automate VX2 Pro (IV-SAM-VX2-P)	6 p12 cameras (IV-CAM-P12-B)	16 gooseneck microphones	1 Conferencing codec (UC-Engine)
		1 compatible DSP	1 SDI to USB converter
			1 Network Switch
			1 Display

Refer to the following sections for information about the Automate VX solution recommended for this room.

Cameras

Six p12 cameras are placed in a hexagonal shape above the perimeter of the table. The cameras are inverted with Universal Mounting Brackets (IV-CAMA-UMB) with one camera per location.

> **NOTE**: Due to the placement of cameras and seating around the table, it is not required to have two cameras placed at the same position.

p12 cameras are used in this configuration instead of p20 cameras as their wider field of view ensures all participants are caught in the camera shot.

Automate VX System

An Automate VX2 Pro system (IV-SAM-VX2-P) is used for this room. The Pro system is required due to there being six cameras connected through SDI.

Microphones

Gooseneck microphones are located at each seat around the table. Each Virtual Mic position represents an individual gooseneck microphone, and the mics are all connected through a DSP that communicates with Automate VX.

The DSP is indicated by the Microphone Device labeled 1 () in the top right corner of the Room Designer project. The DSP's location in Room Designer is not important as Automate VX only needs the gating information from the DSP. For more information about DSPs, refer to DSPs.

Network Switch

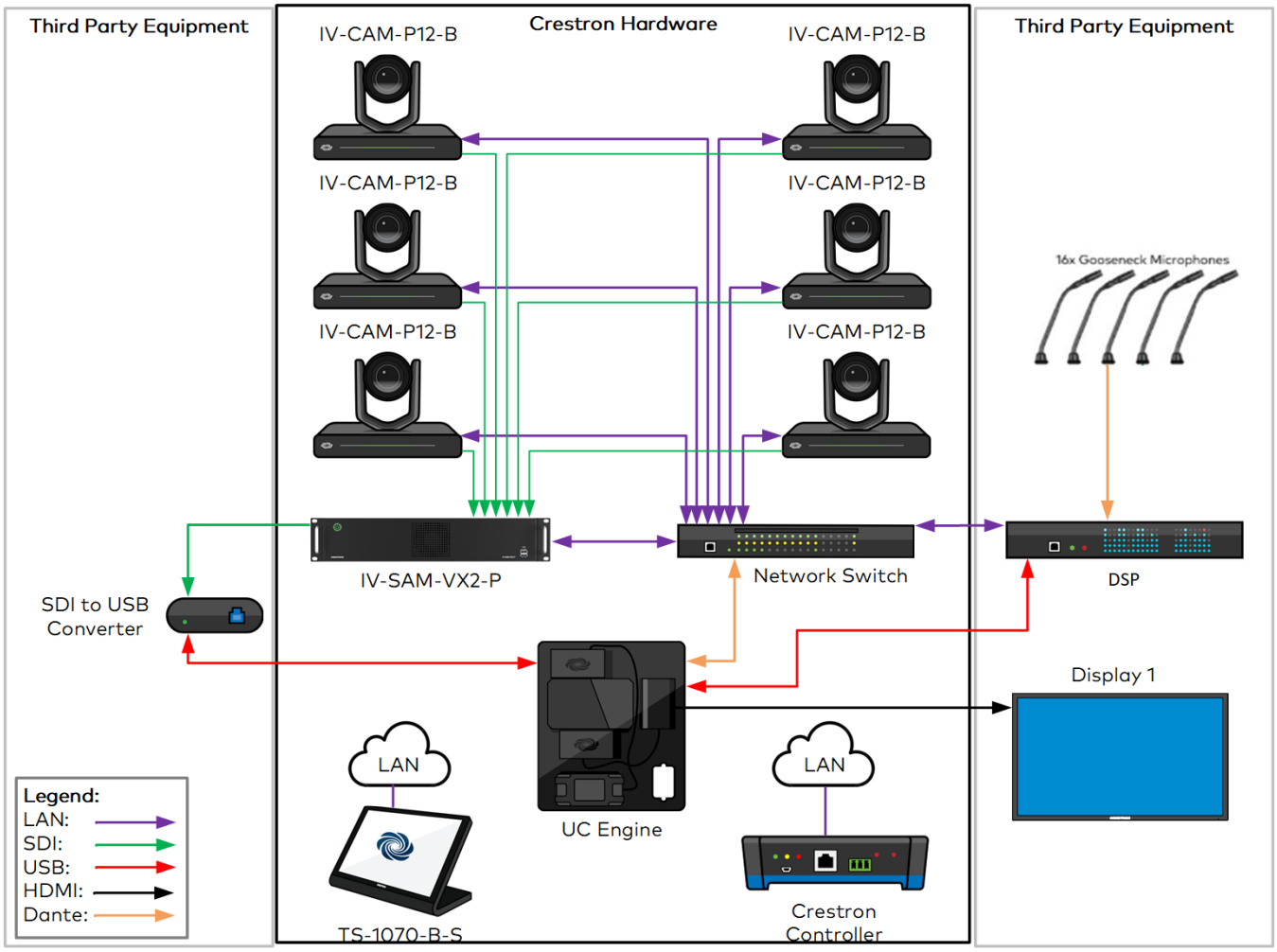
One network switch is used for this room. The network switch allows the cameras, DSP, and Automate VX to communicate with each other through the network. The network switch also provides power (PoE+) to the cameras and microphone.

Conferencing Codec

One conferencing codec is used for this room. The conferencing codec allows the Automate VX video and DSP audio to be outputted to a conferencing software such as Microsoft Teams software. One SDI to USB converter is required to use the conferencing codec.

Application Diagram

The following diagram shows how the recommended Automate VX solution is connected.

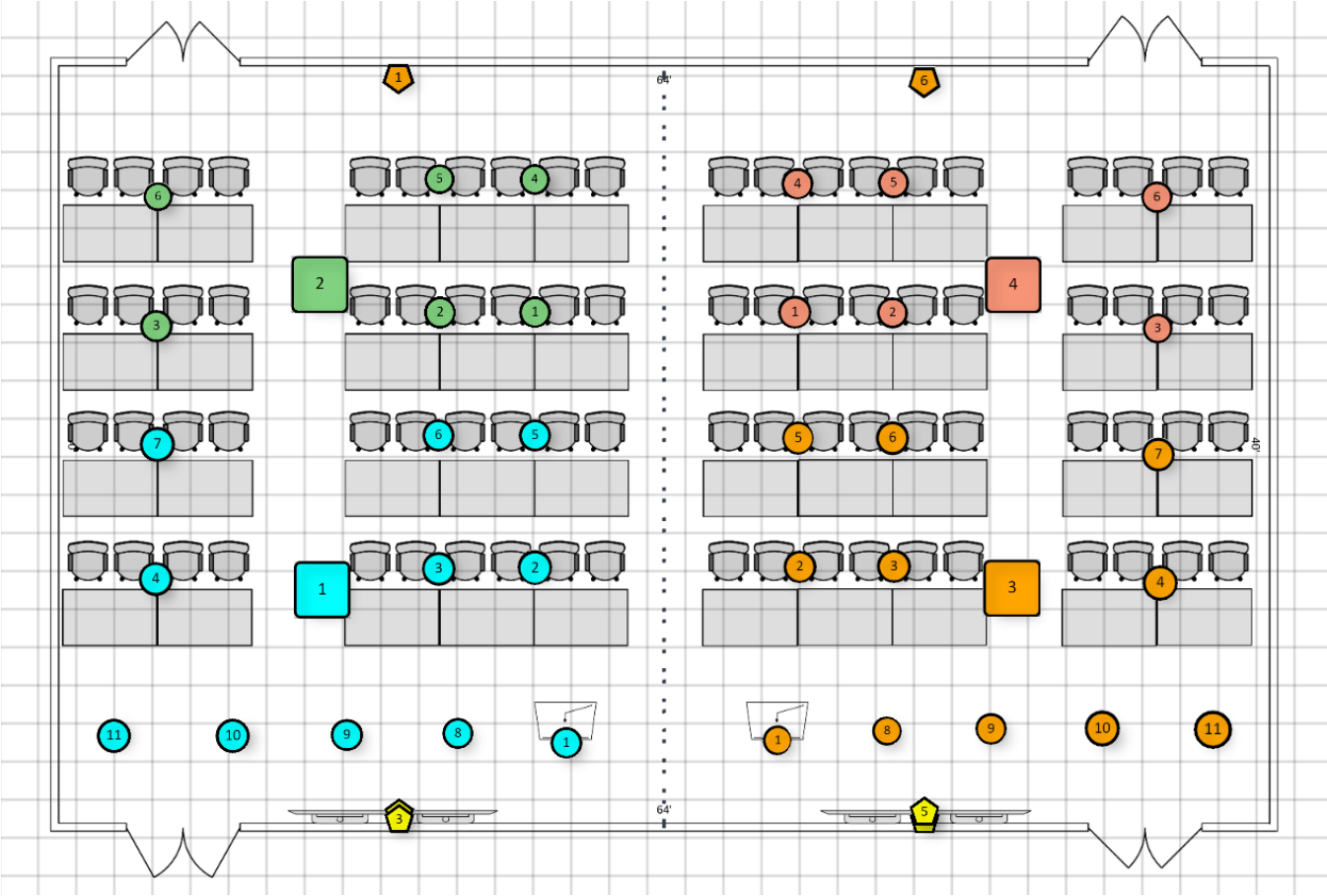


Divisible Room

The divisible room in the example below is separated into two main rooms, both functionally similar. The room has a collapsible folding wall, and the individual spaces are used as standalone rooms in one configuration.

The other configuration for this room has the folding wall collapsed and both spaces are used as one large room. In both halves of the divisible room, the majority of the participants are seated in rows facing towards a presentation space with a podium.

Divisible Room



Refer to the Room Designer Key on page 22 for information on the numbered symbols.

The following Automate VX solution is recommended for this room:

System	Cameras	Microphones	Other
2 Automate VX2 Pro (IV-SAM-VX2-P)	4 p20 cameras (IV-CAM-P20-B)	4 intelligent ceiling array microphones	2 Conferencing codecs (UC-Engine)
	2 i20 cameras (IV-CAM-I20-B)		2 SDI to USB converters
			2 Network Switches
			2 Displays

Refer to the following sections for information about the Automate VX solution recommended for this room.

Cameras

There are two types of cameras used in this room, refer to the following sections for information on the camera implementation for this room.

> **NOTE**: Cameras are connected to the Automate VX2 Pro systems as NDI inputs instead of SDI for this room. This allows cameras to be connected to individual Automate VX2 Pro systems in each divisible space, and when the spaces are combined into a single room, the cameras can be connected to a single Automate VX2 Pro system.

p20 Cameras

Four p20 cameras are used for this room. Each space within the divisible room has two p20 cameras. Each room has the cameras on the presenter side facing towards the audience. These cameras are mounted on top of each other with Universal Mounting Brackets (IV-CAMA-UMB) above the monitors in the presenter space.

p20 cameras are used instead of p12 cameras as their longer optical range ensures that participants are properly framed in the camera shot.

i20 Cameras

Two i20 cameras are used in this room. Each half of the divisible space has one i20 camera, and both spaces have the cameras on the audience side facing towards the presenter space. These cameras are mounted high enough that the audience does not interfere with the camera shot of the presenter space.

i20 cameras are used because the presentation area in the front of the room requires a presenter tracking camera shot. This allows the presenter to move around the presentation area while still being properly framed in the camera shot.

Automate VX Systems

Two Automate VX2 Pro systems (IV-SAM-VX2-P) are used for this room. Two Automate VX2 Pro systems are required to support camera operation for both of the divisible spaces (as two separate systems) and the larger combined room (as one unified system). For the combined room, one of the two Automate VX2 Pro systems will operate as the primary system.

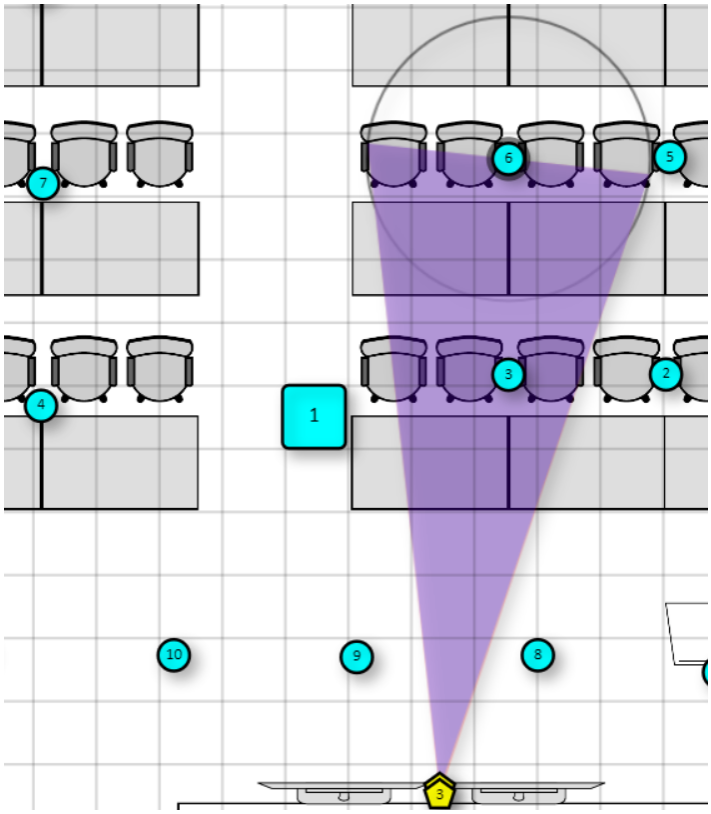
Microphones

Four intelligent ceiling array microphones are used in the divisible room. Two microphones are placed in each of the divisible spaces, ensuring that both the audience seated at the tables and the presentation area are able to be properly detected by the microphones. **Proximity Check** in Room Designer should be used to determine the optimal placement of the intelligent ceiling array microphones.

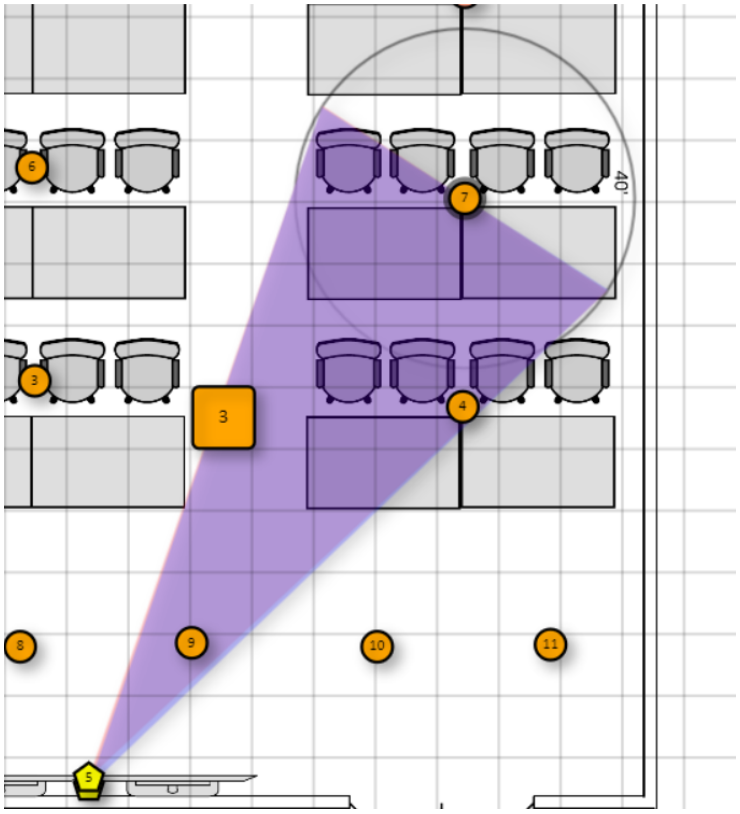
Virtual Mic Positions

Virtual Mics are not placed directly at each seat because a wide angle shot of the audience is desired. To achieve this, Virtual Mics are placed at tables so that four participants are visible in the camera shot.

Camera Shot Example 1



Camera Shot Example 2



Five Virtual Mics are placed along the presentation area in the front of each space of the divisible room. This ensures that whenever audio is detected in the presentation area, the AutoTracker camera at the back of the room switches to the presenter.

Network Switches

Two network switches are used for this room. The network switch allows the cameras, microphones, and Automate VX to communicate with each other through the network. The network switch also provides power (POE+) to the cameras and microphone.

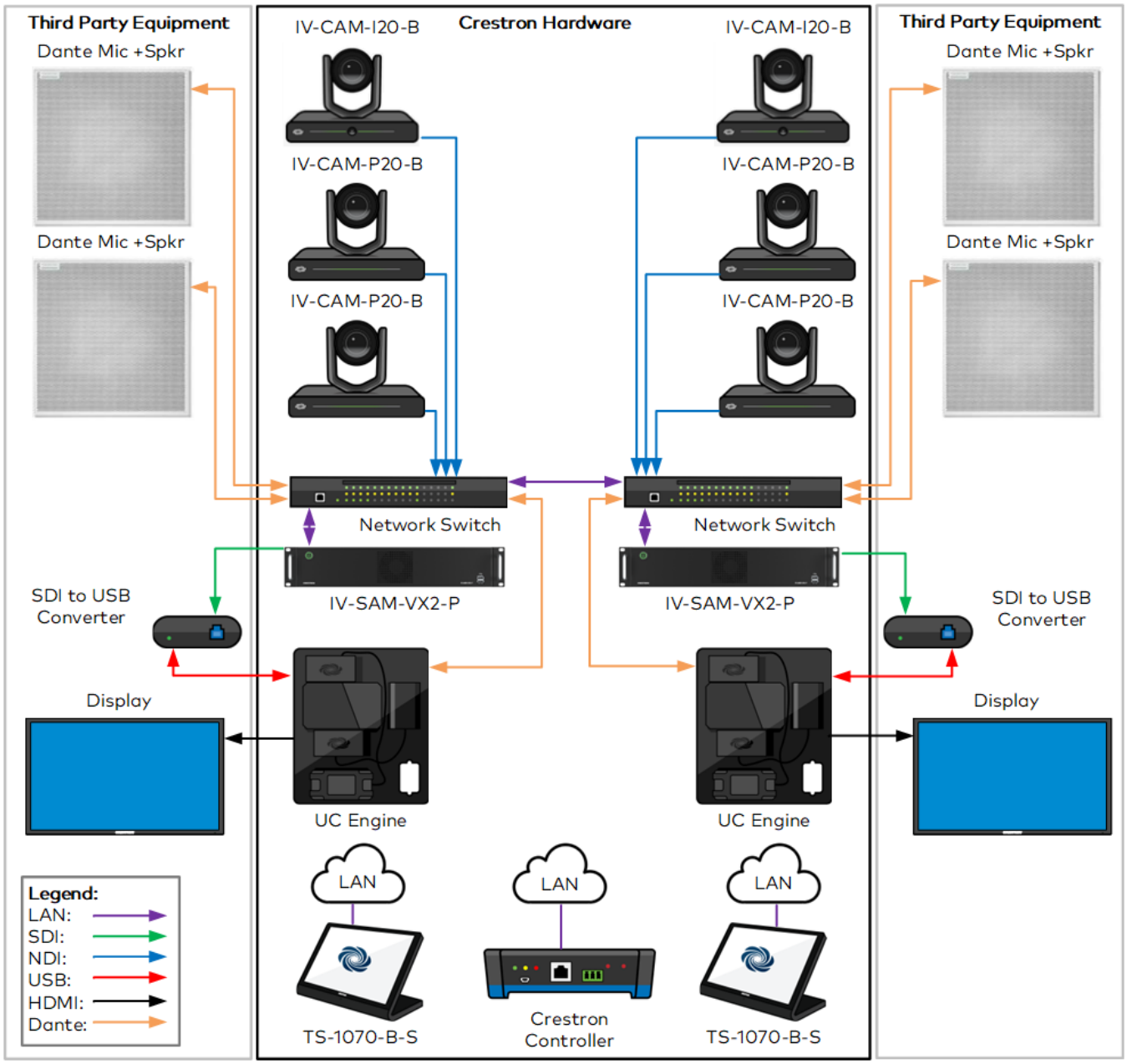
The two network switches are connected to one another, allowing for communication between them. This provides the ability to combine the microphones and cameras of each room when the divisible wall is collapsed.

Conferencing Codecs

Two conferencing codecs are used for this room. The conferencing codec allows the Automate VX video and DSP audio to be outputted to a conferencing software such as Microsoft Teams software. Each space receives a conferencing codec to ensure that can be used independently in their respective spaces. Two SDI to USB converters are required to use the conferencing codecs.

Application Diagram

The following diagram shows how the recommended Automate VX solution is connected.



Visual AI Design

Visual AI enables Automate VX to perform AutoFraming, Reframing, and Face Direction features with Crestron 1 Beyond cameras.

NOTE:

Autoframing Settings are available with the following PTZ camera models:

- p12 (IV-CAM-P12)
- p20 (IV-CAM-P20)
- PTZ-IP 12 (IV-CAMPTZ-12)
- PTZ-IP 20 (IV-CAMPTZ-20)

Autoframing Settings are available with the following intelligent camera models when set to **Use as PTZ**:

- i12 (IV-CAM-I12)
- i20 (IV-CAM-I20)
- AutoTracker 3 (IV-CAMA3-20)

For more information on cameras, refer to Camera Device Configuration on page 105.

The following Visual AI features are available:

- **AutoFraming**: The camera will frame the participant in the center of the camera shot.
- **Reframing**: The camera will AutoFrame the participant, keeping them in the center of the camera shot even if they move.
- **Face Direction**: Automate VX detects which camera has the best shot of the speaking participant, and switches to that camera accordingly.

For more information on using Visual AI features, refer to Visual AI on page 173.

Refer to the following sections for information on designing rooms for Visual AI use.

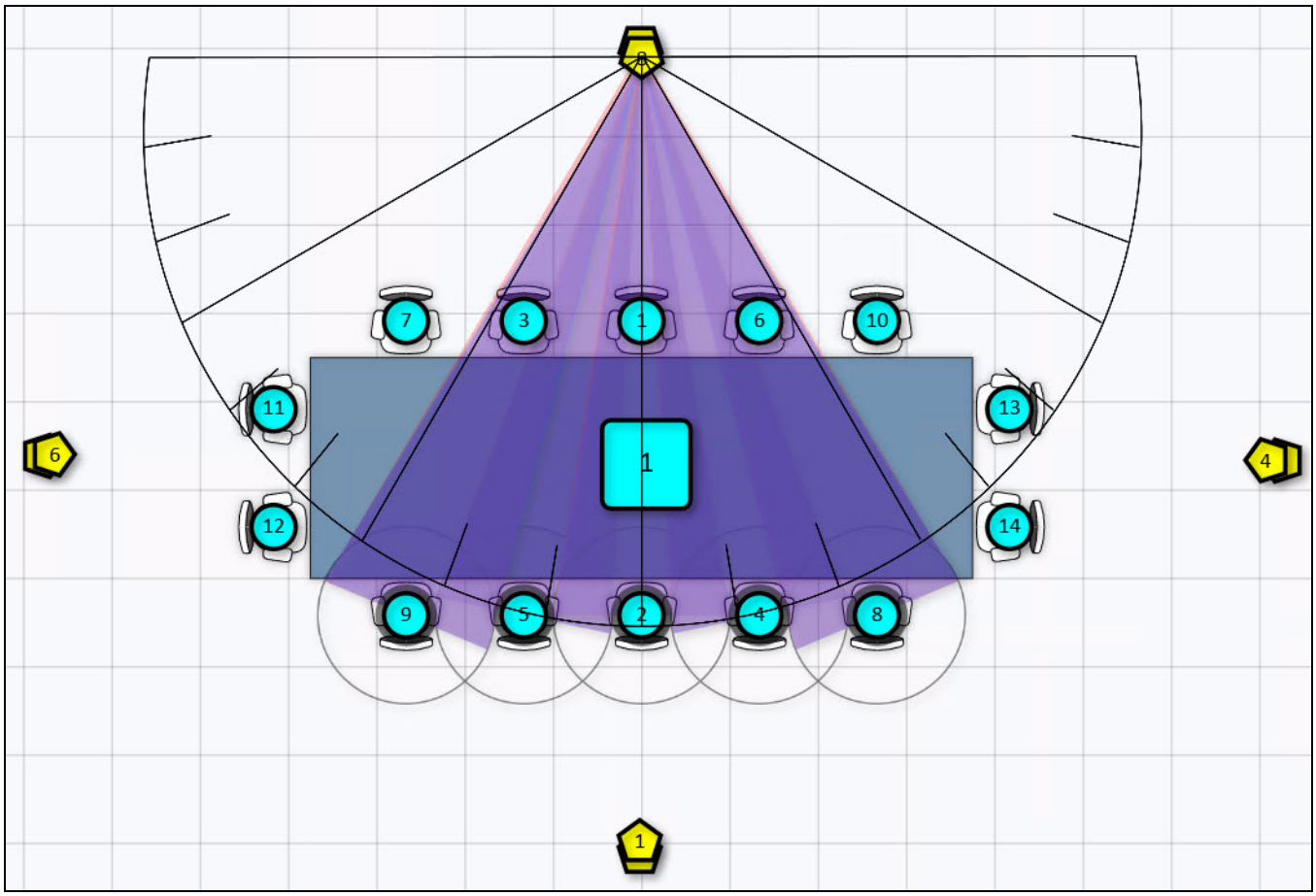
Designing Rooms for Visual AI

Visual AI requires optimal camera placement for the best performance. Poor camera positioning and certain room features can negatively impact Visual AI performance. Refer to the following guidelines for designing rooms with Crestron 1 Beyond cameras and Visual AI.

Camera Placement for Visual AI

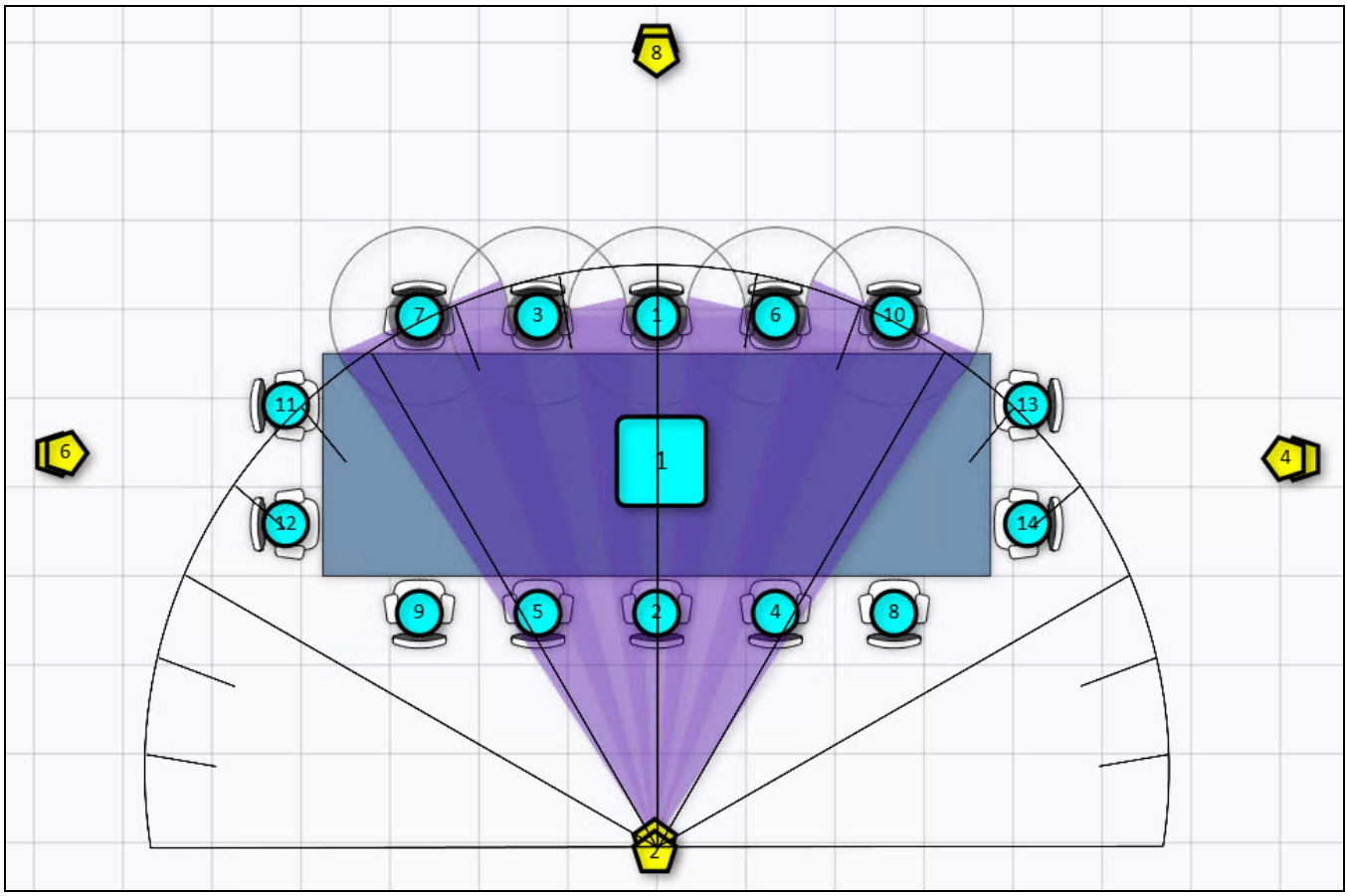
Automate VX with Visual AI performs the best when Crestron 1 Beyond cameras are positioned towards the speaking participant. Cameras should not be placed outside of a 60° radius from the direction of the speaking participants. Refer to the following image for an example of ideal camera placement for Visual AI.

Visual AI Design Example 1

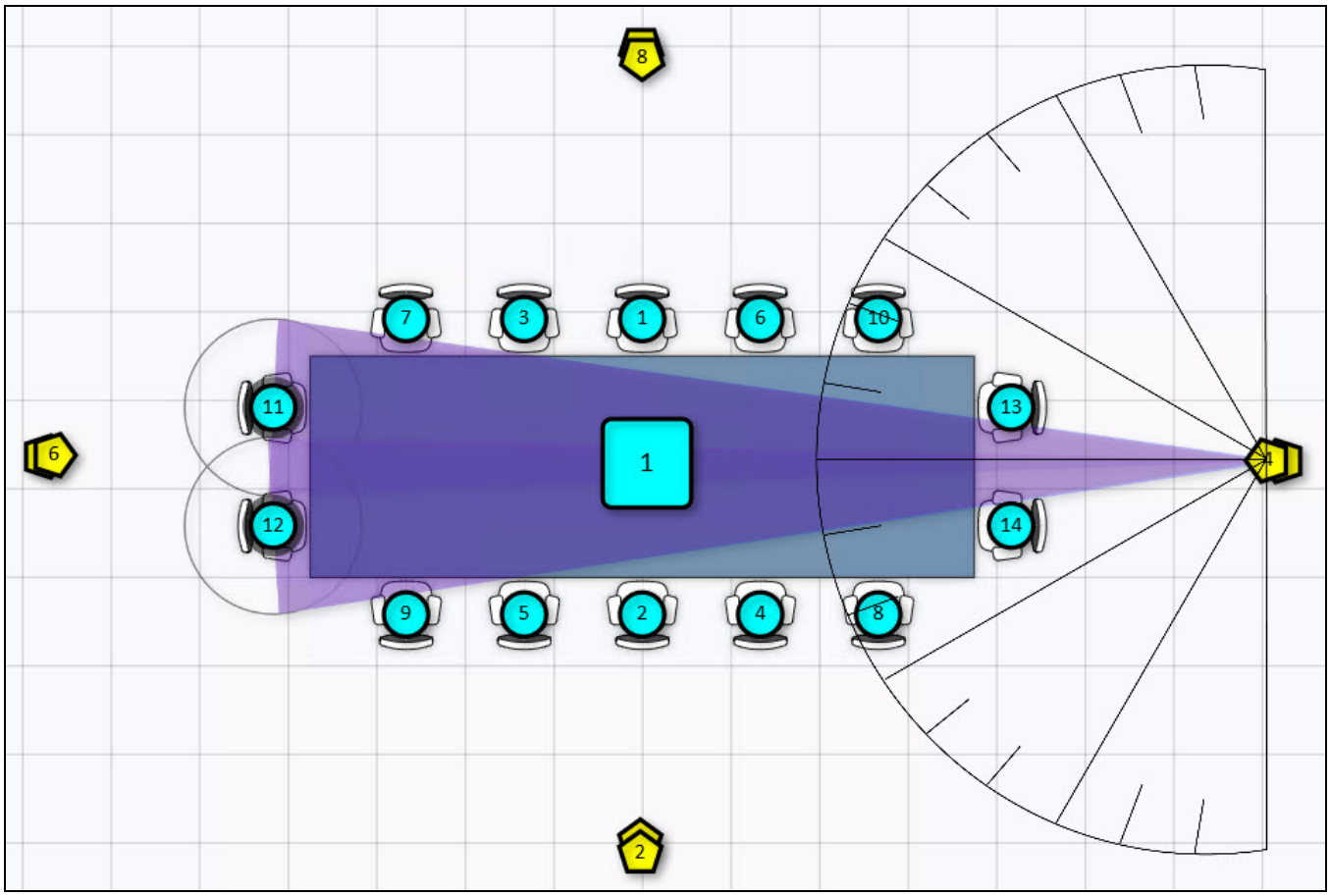


In the image above, the two cameras are positioned on the other side of the table from where speaking participants are located. All camera shots are within the 60° radius for Visual AI. Refer to the following examples to see camera shot visualization for all Virtual Mic positions.

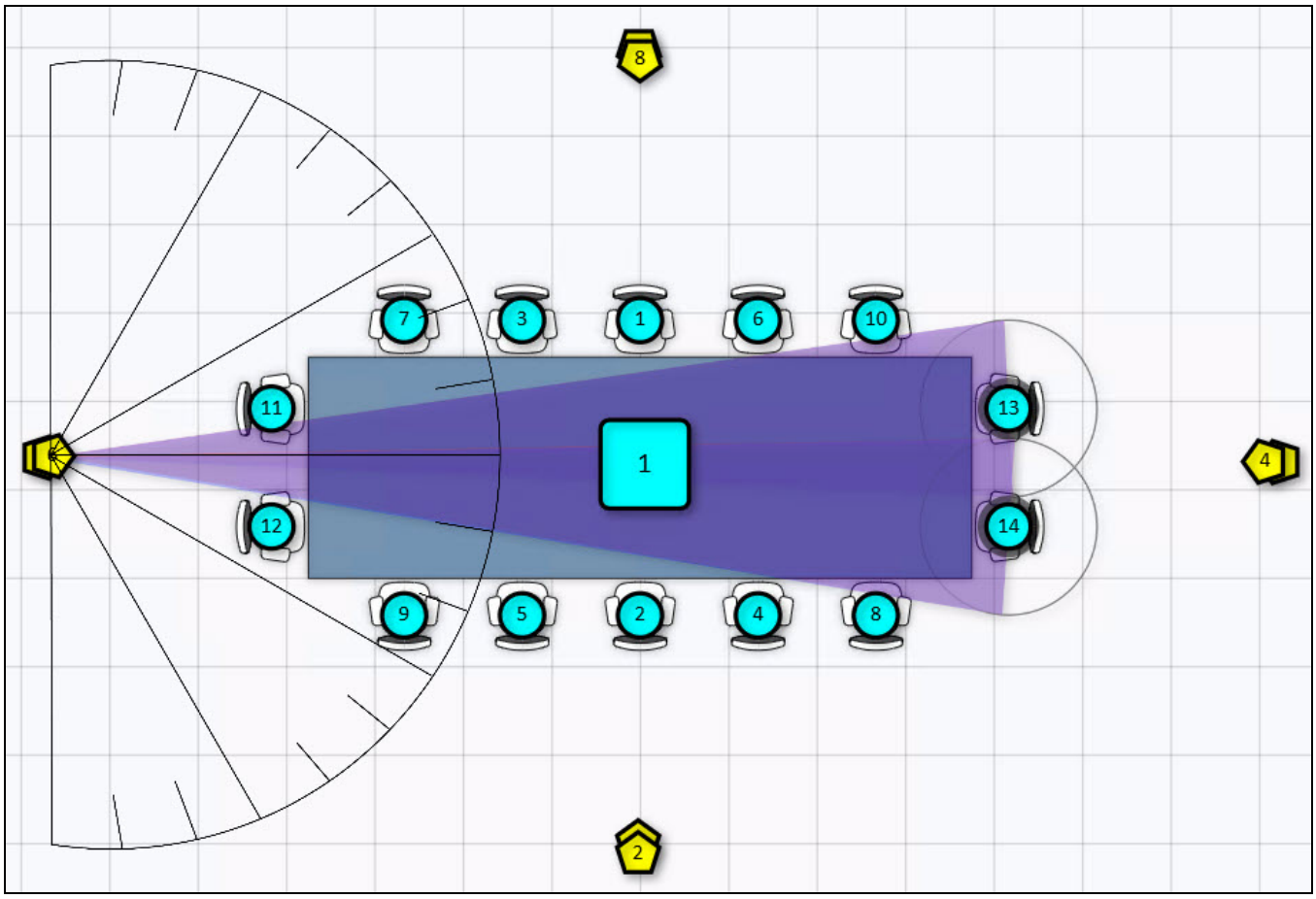
Visual AI Design Example 2



Visual AI Design Example 3



Visual AI Design Example 4



Visual AI and Room Features

There are room features that can negatively impact the Automate VX performance with Visual AI. Refer to the following room features that can impact Visual AI performance.

Displays

Ensure that there are no displays visible when a speaking participant is in the camera shot. Visual AI may perform AutoFraming and Reframing on faces that appear on the display, causing undesired camera shots.

Glass Walls and Windows

Ensure that there are no glass walls or windows visible when a speaking participant is in the camera shot. Visual AI may perform AutoFraming and Reframing on faces that are on the other side of the glass, causing undesired camera shots.

Face Direction Design

Automate VX with Face Direction automatically selects cameras around the room to focus on the current speaker, ensuring the best camera angle is chosen based on the direction they are facing. It only switches to a new camera if the difference in angle is greater than 10° compared to the current shot.

NOTE: This feature can override the Primary and Secondary cameras set for the Virtual Mic position. For more information about Primary and Secondary cameras for a Virtual Mic position, refer to Virtual Mic and Blocking Zone Configuration on page 127.

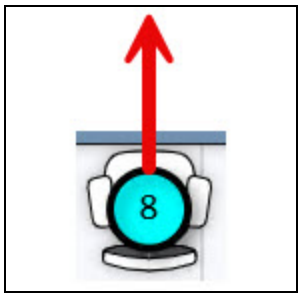
Face Direction Design Key

Refer to the following sections for information about the meaning of colored arrows and shapes in the room design examples.

NOTE: For more information on what the basic Room Designer software symbols represent, refer to Room Designer Key on page 22.

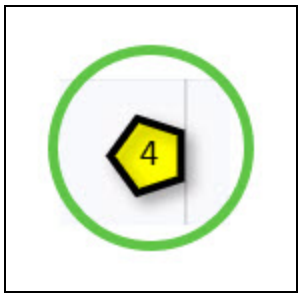
The red arrow extending from the Virtual Mic indicates the direction the speaking participant is looking.

Speaking Participant Direction



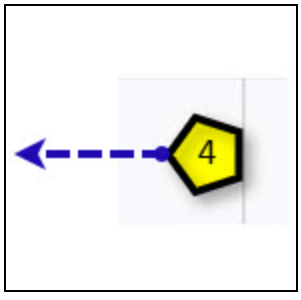
The green circle around the Camera Device indicates that it is the active camera shot.

Active Camera



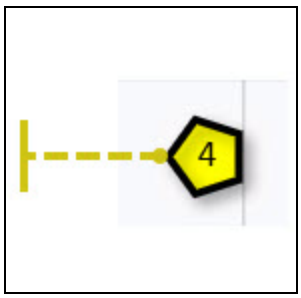
The blue dashed arrow extending from the Camera Device indicates the direction the camera is looking.

Camera Direction



The yellow dashed line indicates either a viable camera shot that was not selected or the previous camera shot.

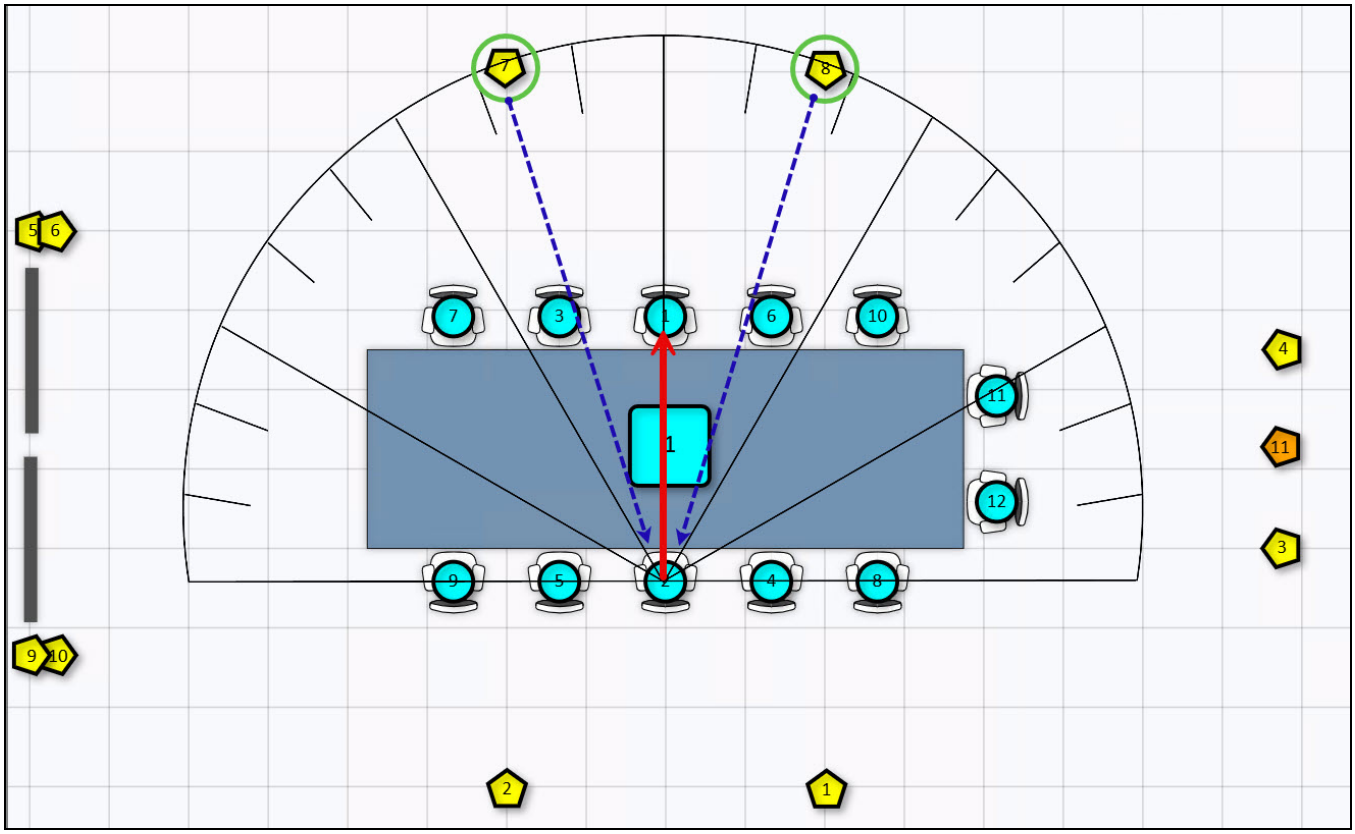
Viable Camera Shot



Face Direction Design Example

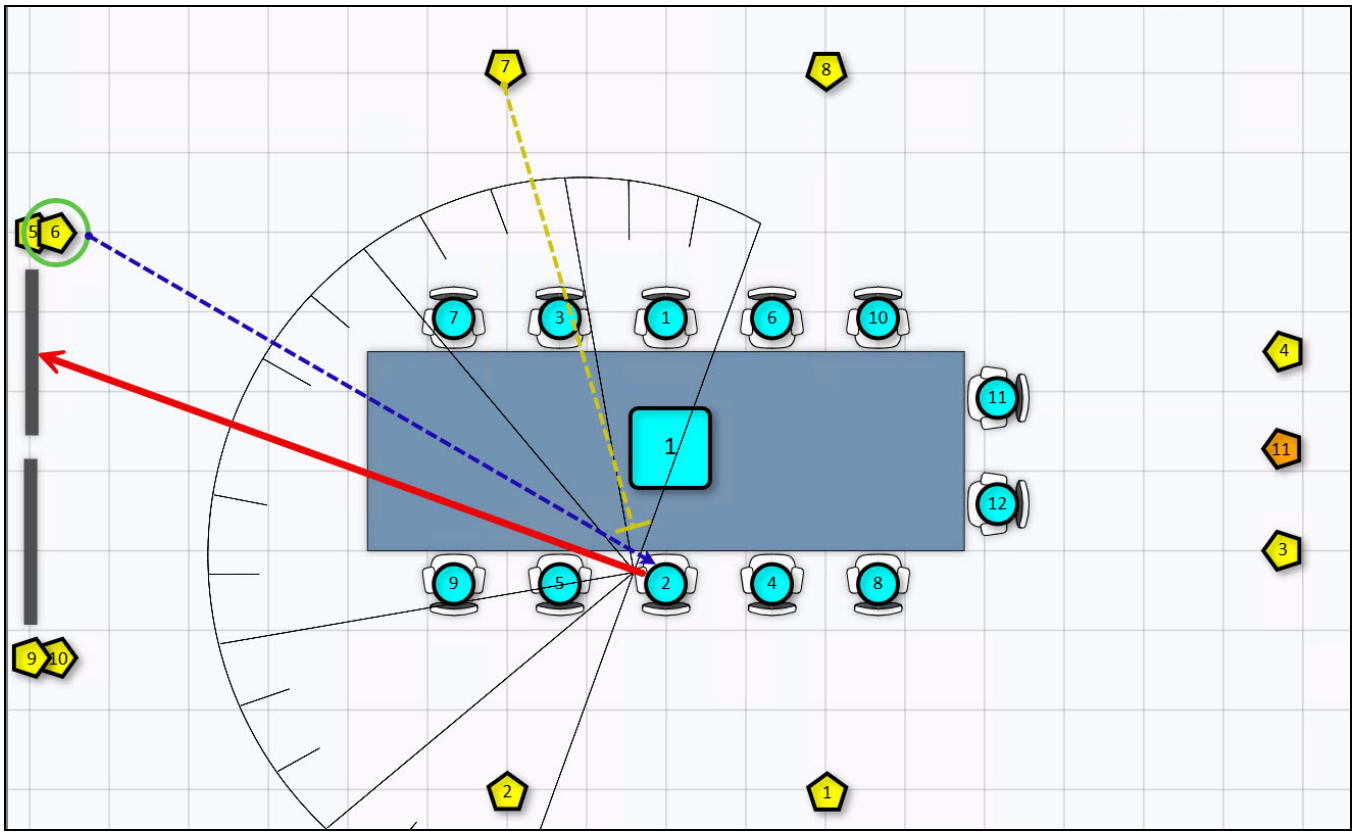
Refer to the following examples for a visual representation of which cameras can be used with Face Direction.

Example 1



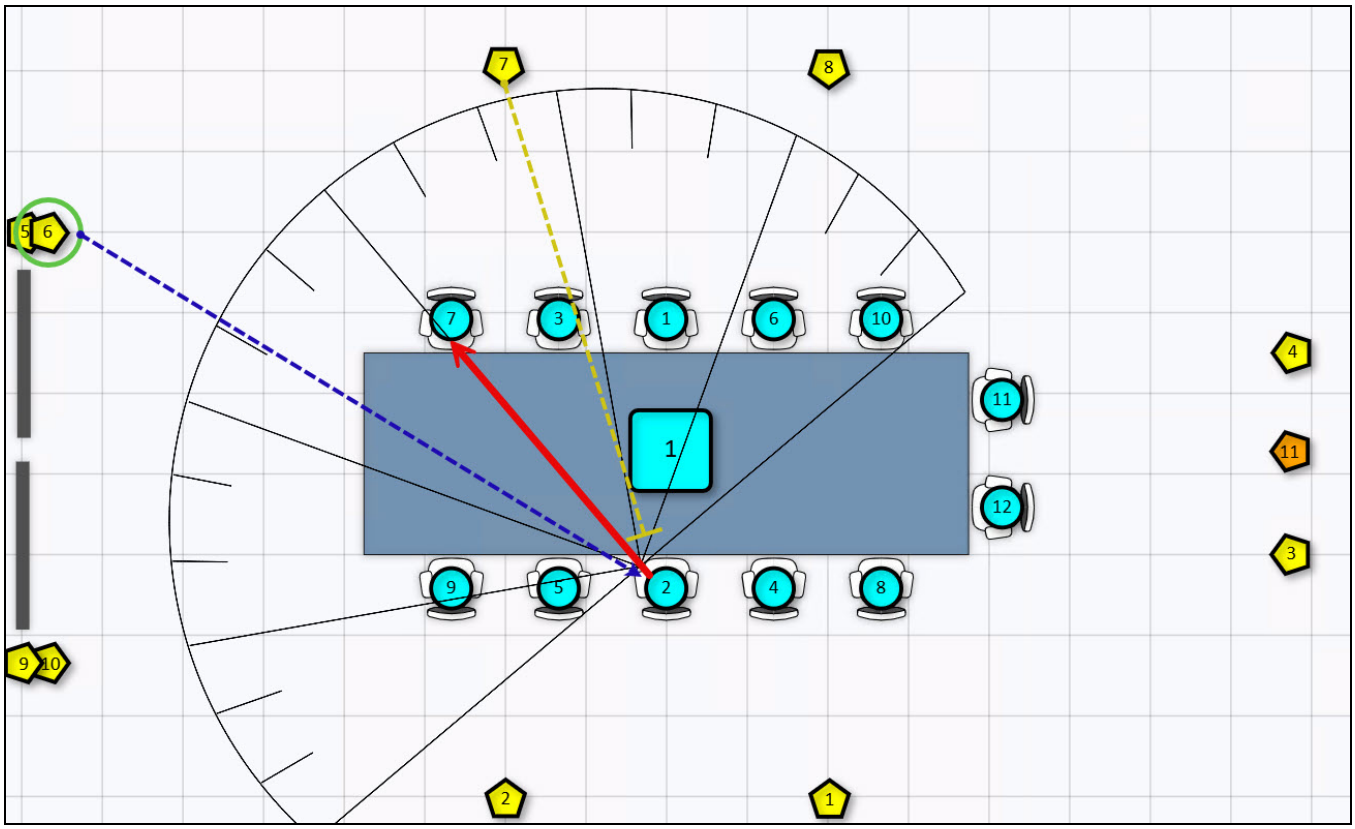
In the image above, the speaking participant (Virtual Mic 2) is looking in the direction of Virtual Mic 1. Therefore, the Primary or Secondary camera (Camera Devices 7 and 8) are selected.

Example 2



The participant is now looking to the left and is in range of Camera Device 6. Additionally, there is more than a 10° difference between the shot from Camera Device 7, so Face Direction switches the shot from Camera Device 7 to Camera Device 6.

Example 3



The speaking participant is now looking slightly to the right now towards Virtual Mic 7, and is in range of both Camera Devices 6 and 7. There is less than a 10° difference between the current camera shot (Camera Device 6) and the potential new camera shot (Camera Device 7), so no camera switching occurs.

Room Designer

Automate VX contains the Room Designer tool that uses the scaled floor plan (in the form of an image) to create a framework for how the Automate VX operates. Automate VX relies on audio gating or positional information provided by third-party devices to determine where an active speaking participant is located in a room. Room designer links third-party audio logic information to camera behavior.

> **NOTE:** Some Room Designer features are only available on the Automate VX system and not on the web version of Room Designer. Settings that are only available on Automate VX systems are indicated throughout this section.

Refer to the following sections for information on how to configure a project within Room Designer:

- Access the Web Configuration Interface
- Project Management
- AutoMeasure Setup
- Room Designer Settings
- Camera Device Configuration
- Microphone Device Configuration
- Virtual Mic and Blocking Zone Configuration
- AutoSwitch Preview

Access the Web Configuration Interface

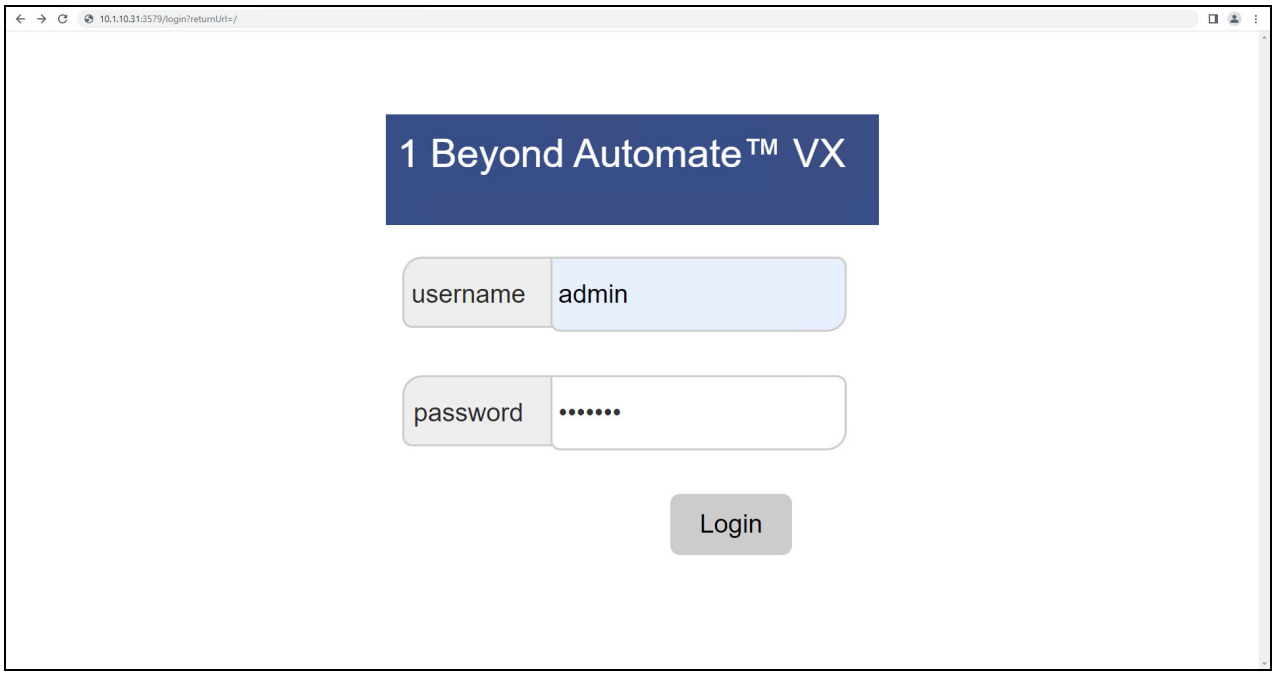
To access the web configuration interface for the Automate VX, open the browser on Automate VX. The web configuration interface loads automatically.

To access the web configuration interface from a different device:

1. Enter the IP address of the Automate VX with port 4443 appended to the address (for example, "https://10.1.10.31:4443")

   A login page is displayed.

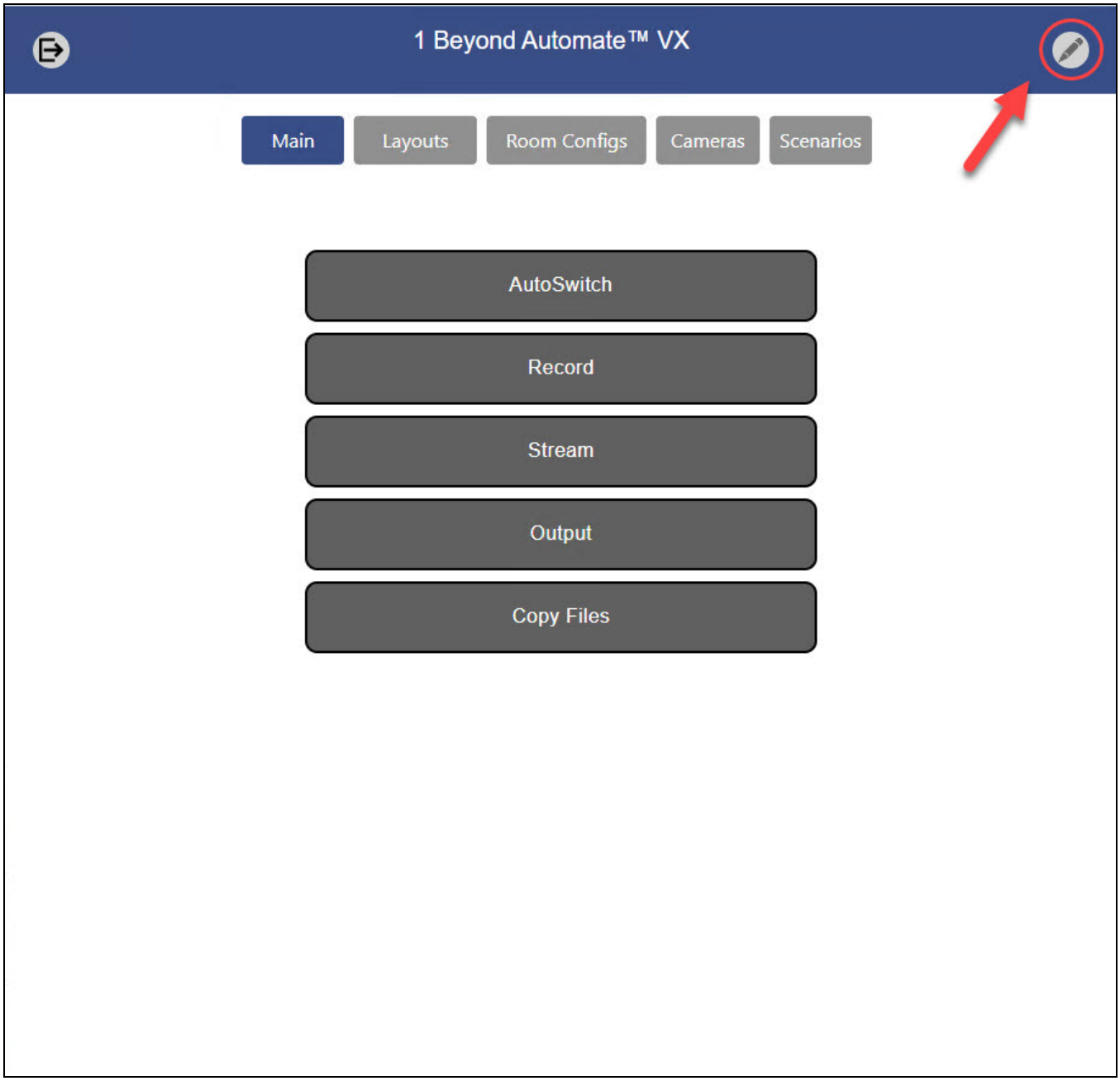
   Login Page



1. Enter the login credentials for the system. For access to the administrator account (to edit Room Configuration files and settings), use the username **admin**. If the system is in the factory default state, Automate VX will prompt you to create a new password.
2. Select **Login**.

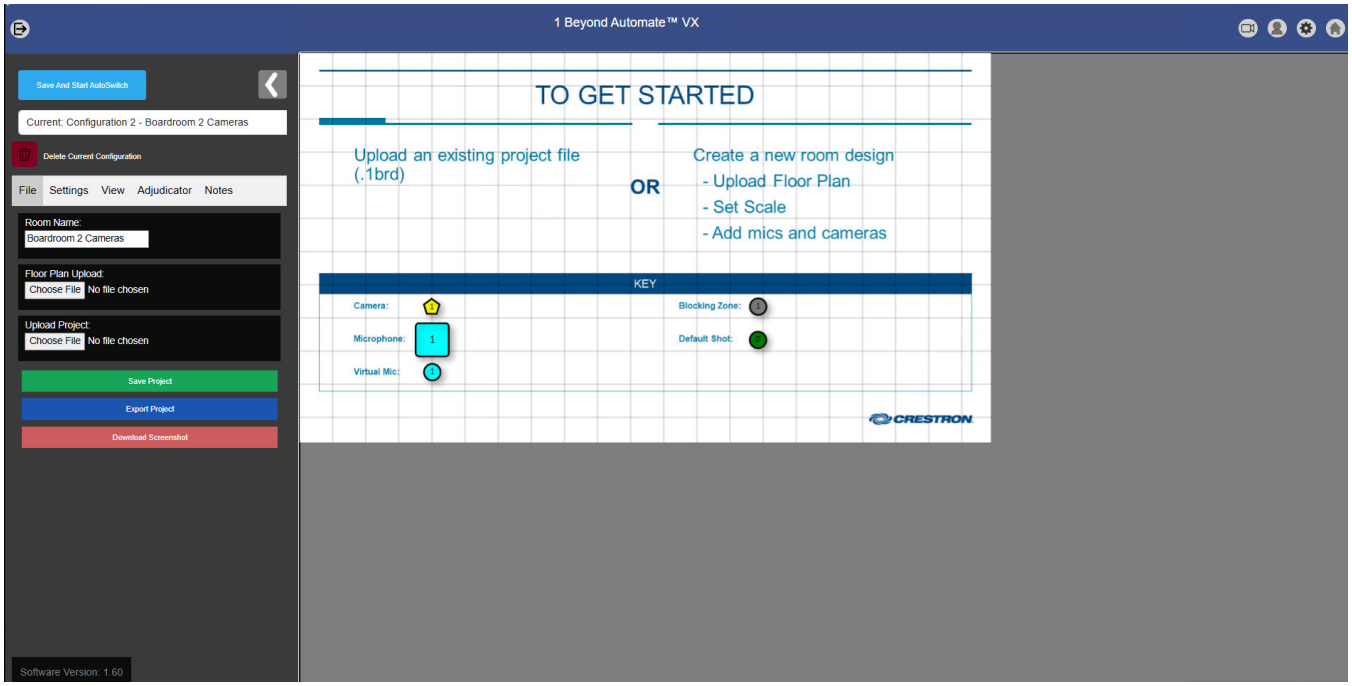
The web configuration interface is displayed with the **Main** tab open by default. To access Room Designer from the **Main** tab, select the pencil icon in the top right of the menus.

Main View to Room Designer



The Room Designer page is displayed.

Room Designer Default Page



Refer to the following sections for information on how to configure a project within Room Designer.

Project Management

Room Designs and Room Configurations are projects created within Room Designer Software that dictate how an Automate VX system operates. Room Designs and Room Configurations are configured individually.

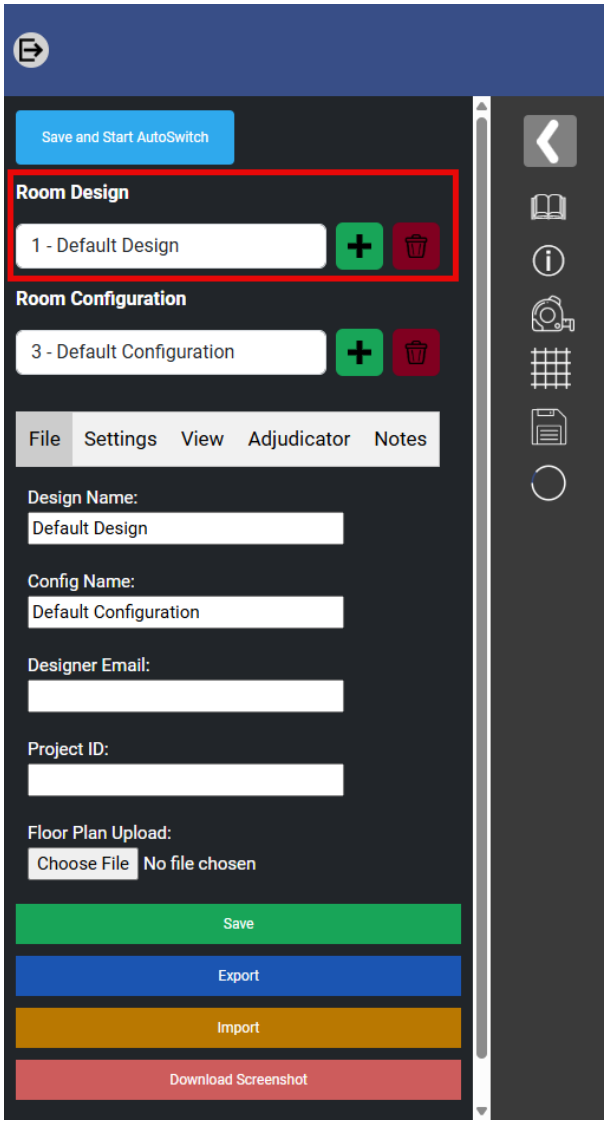
Refer to the following sections for more information about managing Room Designs and Room Configurations.

Room Design Management

A Room Design contains the properties set for Camera Devices, Microphone Devices, and the project floor plan. For more information about creating Room Design objects, refer to Room Designer on page 44.

The following management options are available for Room Designs:

Room Design Management



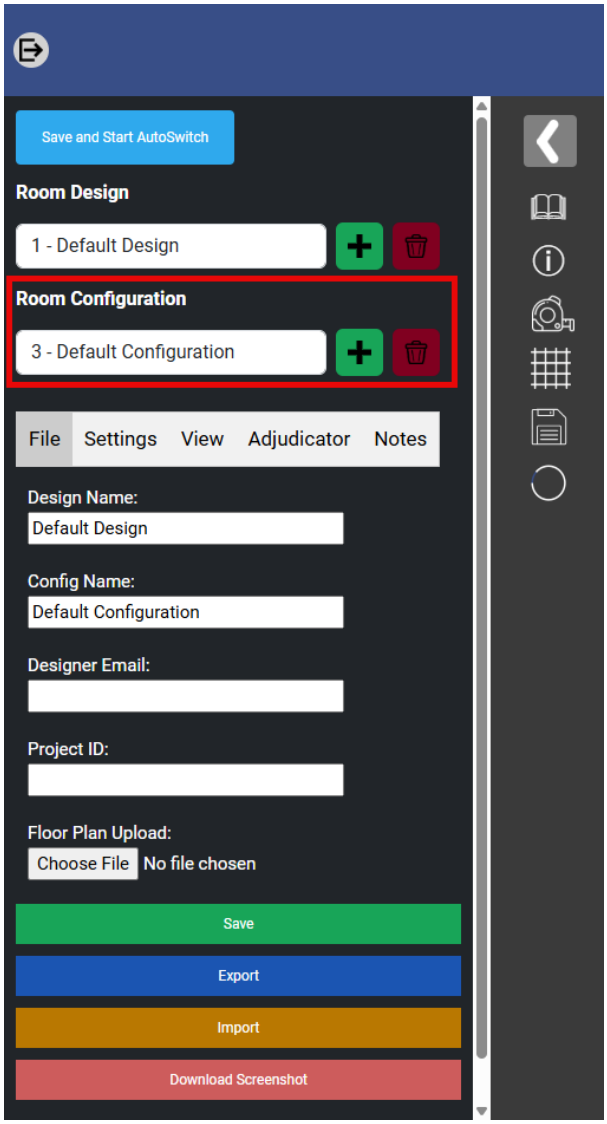
- Select the green plus ( ) button to add an additional Room Design. Up to 99 Room Designs can be created and stored on the system.
- Select the red garbage can ( ) button to delete the selected Room Design from the system.
- Select the **Room Design** drop-down to change the current project.

Room Configuration Management

A Room Configuration contains the Virtual Mic properties, furniture layout, and configuration settings of an associated Room Design. For more information about Room Configuration settings, refer to System Configuration on page 154. For more information about Virtual Mics, refer to Virtual Mic and Blocking Zone Configuration on page 127.

The following management options are available for Room Configurations:

Room Configuration Management



- Select the green plus (+) button to add an additional Room Configuration. Up to 99 Room Configurations can be created and stored on the system.
- Select the red garbage can (🗑) button to delete the selected Room Configuration from the system.
- Select the **Room Configuration** drop-down to change the current configuration file.

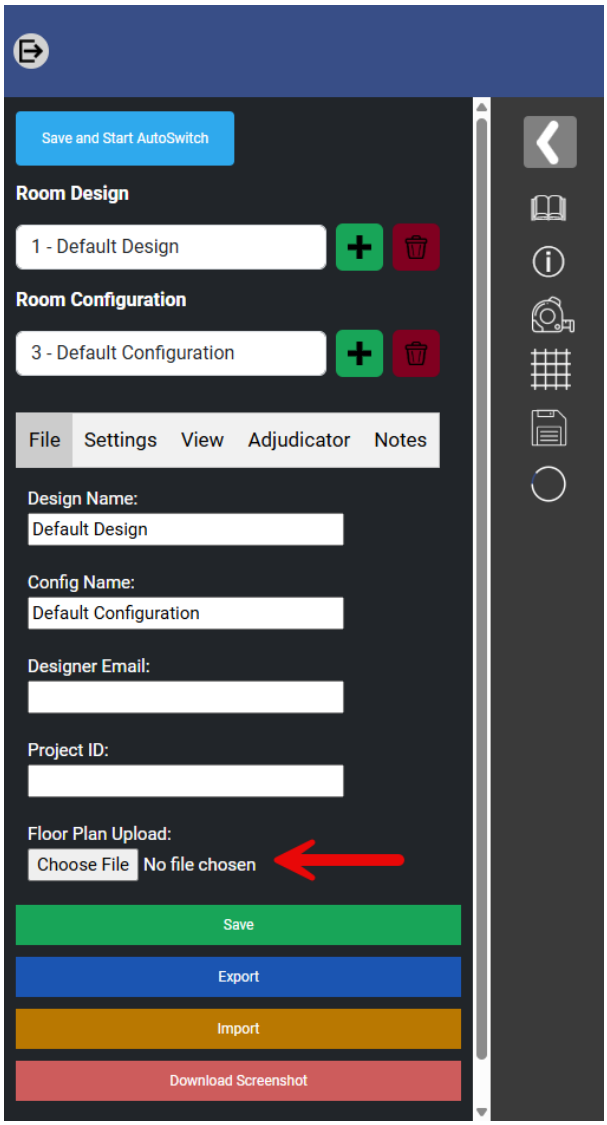
Floor Plan Upload

Room Designer by default comes with a blank layout tied to Room Design 1.

To upload a floor plan for a room design:

1. Select the **Choose File** button under the **Floor Plan Upload** banner. A file explorer window is displayed.

   Floor Plan Upload



2. In the file explorer window, navigate to the desired floor plan and select it (.png and .jpeg files are supported).

The selected floor plan is displayed on the Room Designer page.

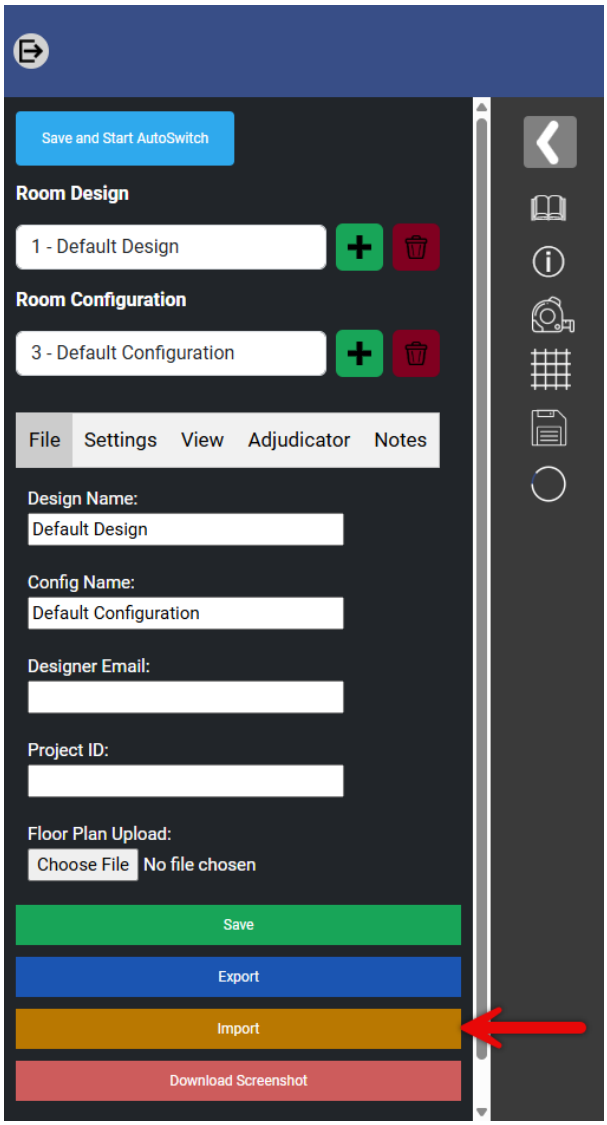
Import a Project

A previously created project can also be uploaded to the system. This situation occurs primarily when a project is created using the Room Designer website and needs to be uploaded to the Automate VX system.

To upload a Room Designer project into the Automate VX:

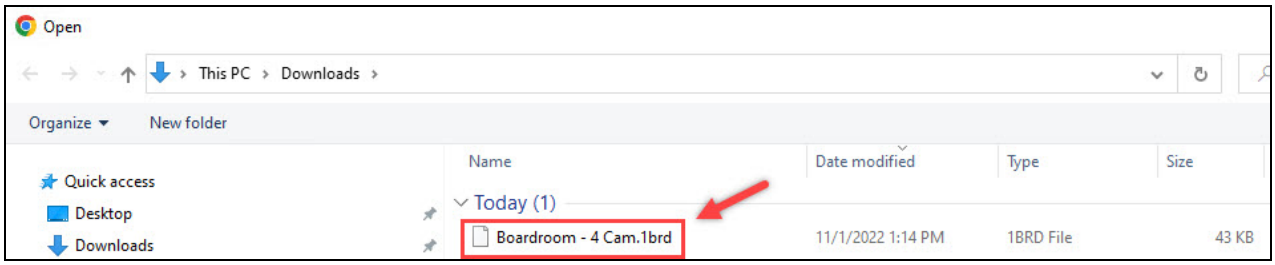
1. Ensure that the project to be uploaded is located in a file directory on the Automate VX.
2. Select the **Import** button. A file explorer window is displayed.

Upload Project



3. In the file explorer window, navigate to and select the desired Room Designer project (in a .1brd format).

Upload Project File Explorer Window



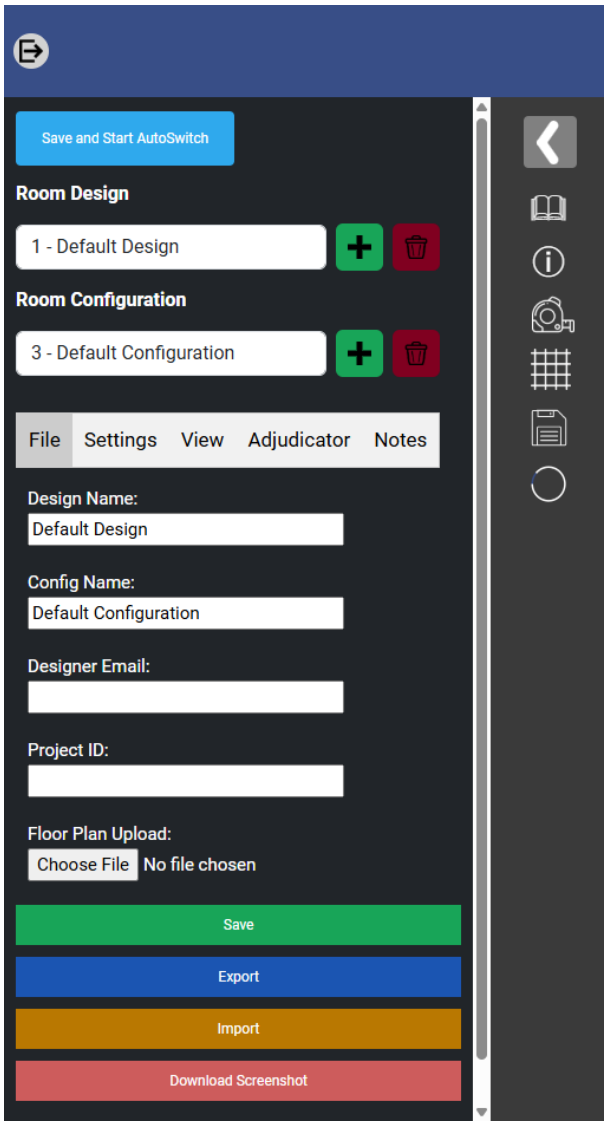
Once the project is uploaded, Room Designer updates to show the project details.

Export Project

A project can be exported from Room Designer as a .1brd file. Complete the following procedure to export a project from Room Designer.

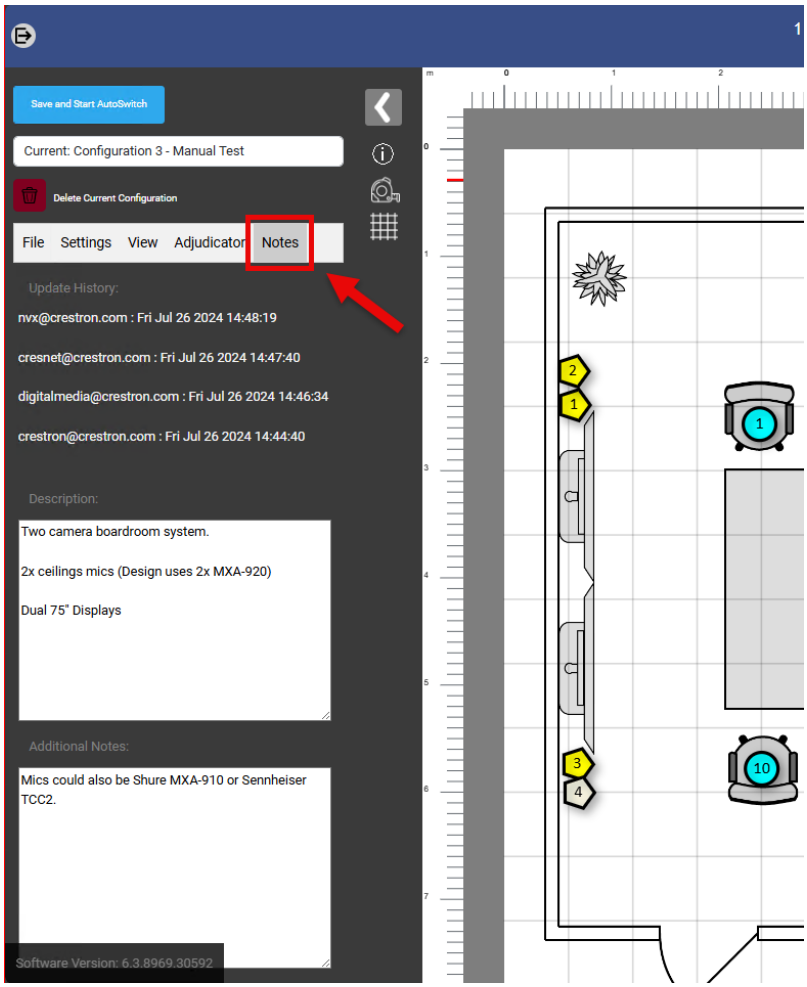
1. Enter an email address into the **Designer Email** text field.
2. Enter a project name into the **Project ID** text field.
3. Select the **Export** button.

File Settings



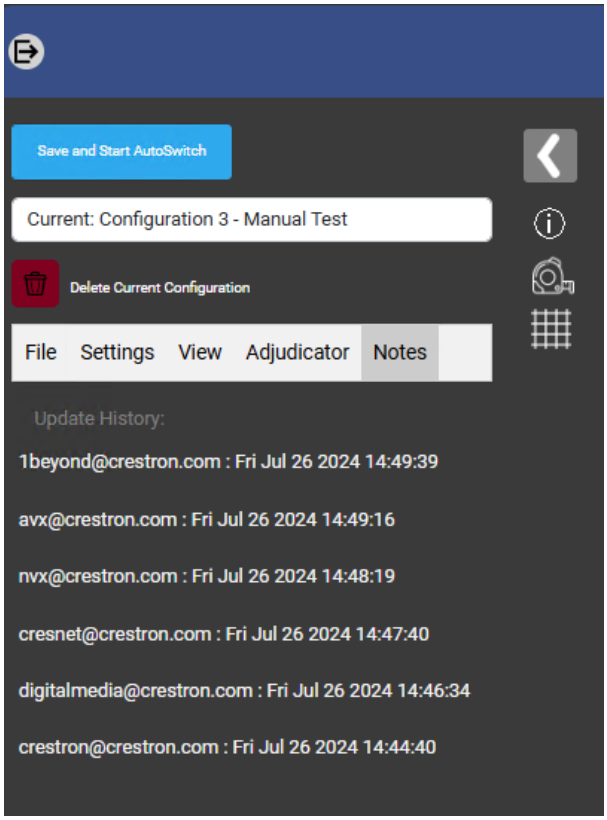
The .1brd project file is now saved locally to the system. The **Designer Email** and **Project ID** are saved to the Room Designer project for reference in the **Update History**. To access the **Update History**, select the **Notes** button.

Notes


Save and Start AutoSwitch
Current: Configuration 3 - Manual Test
Delete Current Configuration
File
Settings
View
Adjudicator
Notes
Update History:
nvx@crestron.com : Fri Jul 26 2024 14:48:19
cresnet@crestron.com : Fri Jul 26 2024 14:47:40
digitalmedia@crestron.com : Fri Jul 26 2024 14:46:34
crestron@crestron.com : Fri Jul 26 2024 14:44:40
Description:
Two camera boardroom system.
2x ceilings mics (Design uses 2x MXA-920)
Dual 75" Displays
Additional Notes:
Mics could also be Shure MXA-910 or Sennheiser TCC2.
Software Version: 6.3.8969.30592

Up to six Designer Emails can be stored on a project in the **Update History**. The original project creator is always displayed and cannot be overwritten. When the **Update History** exceeds six entries, the oldest **Designer Email** is replaced by the most recent entry.

Update History



AutoMeasure Setup

NOTE: This setting is only available on Automate VX2 systems (IV-SAM-VX2-S and IV-SAM-VX2-P)

Automate VX2 uses the IV-SAMA-AMCUBE-1-12 AutoMeasure cubes to reduce commissioning times by measuring camera and microphone placements.

Before proceeding, observe the following requirements for AutoMeasure:

- An Automate VX2 system (IV-SAM-VX2-S or IV-SAM-VX2-P) must be used. Legacy Automate VX systems (IV-SAM-VXS-1B, IV-SAM-VXP-1B, and IV-SAM-VXN-1B) cannot use the AutoMeasure feature.
- AutoMeasure is compatible with the following camera models:
  - IV-CAM-P12 Series
  - IV-CAM-P20 Series
  - IV-CAM-I12 Series
  - IV-CAM-I20 Series
- AutoMeasure is compatible with the following microphone models:
  - Sennheiser® TCC2
  - Shure® MXA920 (Square)
- Cameras and microphones must be included in the Room Configuration file (.1brd file) with their respective IP addresses assigned. Additionally, the Z (height) value of each microphone must be entered. For more information on adding cameras and microphones to a Room Configuration file, refer to Room Designer on page 44.
- For reliable results, make sure all cameras are installed within 25 ft of the microphone designated as Microphone Device 1 in the Room Configuration file. For more information on Microphone Devices, refer to the Microphone Device Configuration on page 115.
- Minimize obstructions (pillars, light fixtures, people and so forth) between cameras and AutoMeasure cubes.

Complete the following procedure to perform AutoMeasure with Automate VX2:

1. Ensure that the Crestron 1 Beyond cameras and microphones are properly installed.
   - For Crestron 1 Beyond Camera installation, refer to the IV-CAM Product Manual.
   - For microphone installation, refer to the respective manufacturer's documentation.

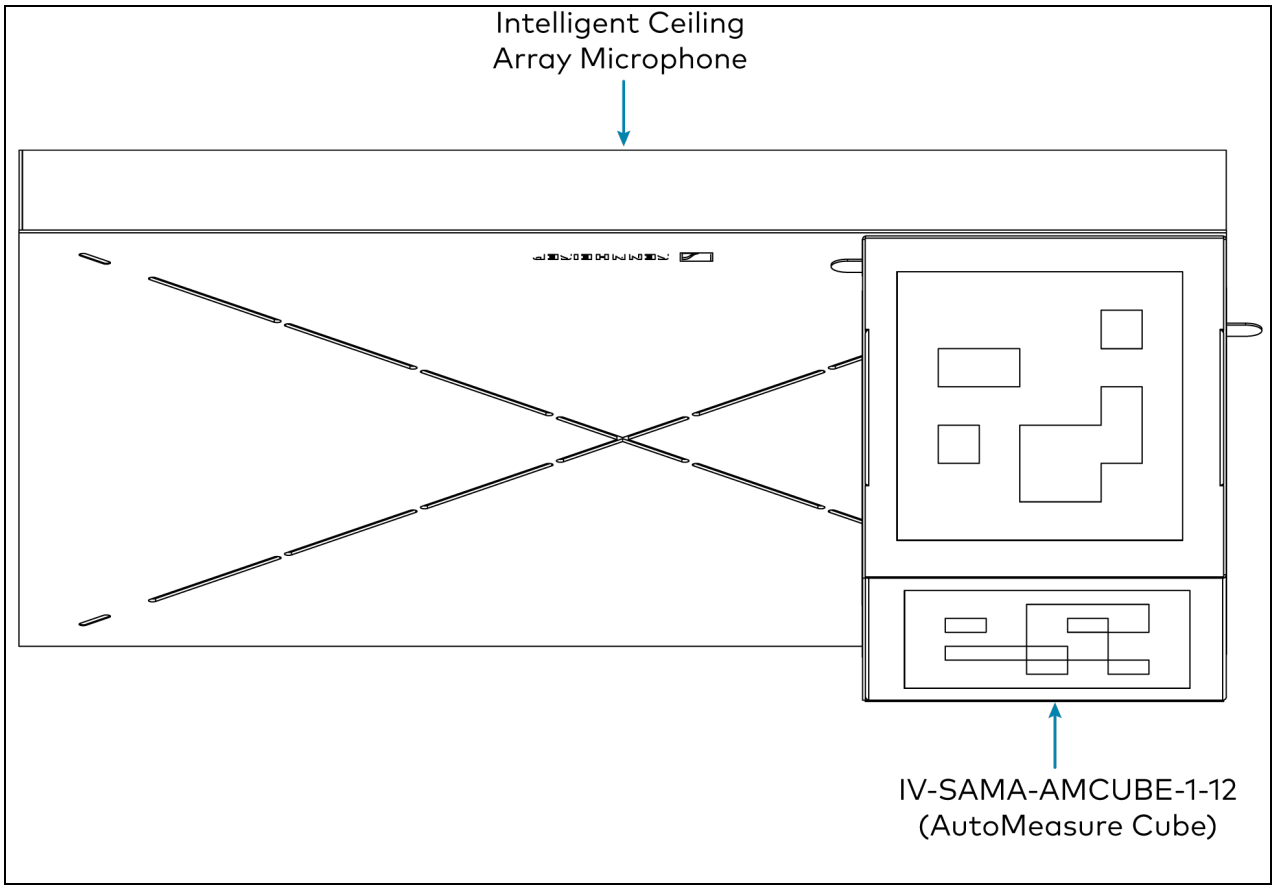
2. Assemble the IV-SAMA-AMCUBE-1-12 AutoMeasure cubes. Fold the sides of the AutoMeasure cubes so that each flap is fitted into its respective slit.

   NOTE: Each AutoMeasure Cube is labeled and corresponds to a Microphone Device number. AutoMeasure cube 1 is to be used with Microphone Device 1, AutoMeasure cube 2 is to be used with Microphone Device 2, and so forth. Only assemble the required amount of AutoMeasure cubes to match the quantity of microphones used in the room. For more information on Microphone Devices, refer to the Automate VX Software Manual.

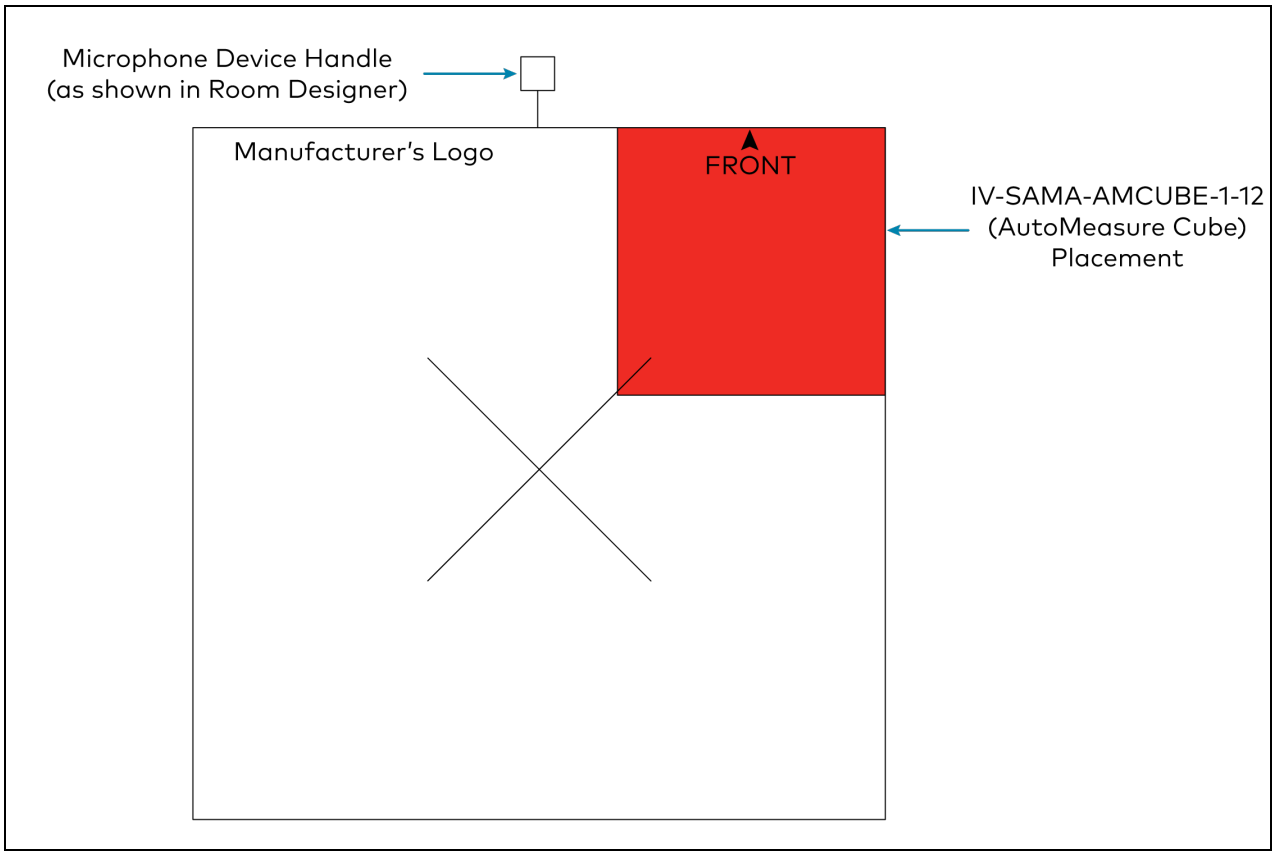
3. Attach three IV-SAMA-AMCUBE-TAPE 3M™ Command™ strips to the top of each AutoMeasure cube (the side with **Crestron** on it). There are three rectangles on the top of the AutoMeasure cube for guidance.

4. Attach the top side IV-SAMA-AMCUBE-1-12 AutoMeasure cube to the face of the microphone as shown below:

AutoMeasure Cube Attached to Microphone



AutoMeasure Cube Attachment Diagram



> **NOTE**: The AutoMeasure Cube Attachment Diagram image above is shown from a ground-to-ceiling perspective.

Observe the following when attaching the IV-SAMA-AMCUBE-1-12 to the face of the microphone:

- Ensure that the correctly labeled AutoMeasure cube is being attached to the corresponding microphone (cube 1 attaches to Microphone Device 1, cube 2 attaches to Microphone Device 2, and so forth).
- Align the edges of the AutoMeasure cube with the edges of the microphone's face.
- Orient the side of the AutoMeasure cube labeled **FRONT** towards the front side of the microphone (manufacturer's logo).

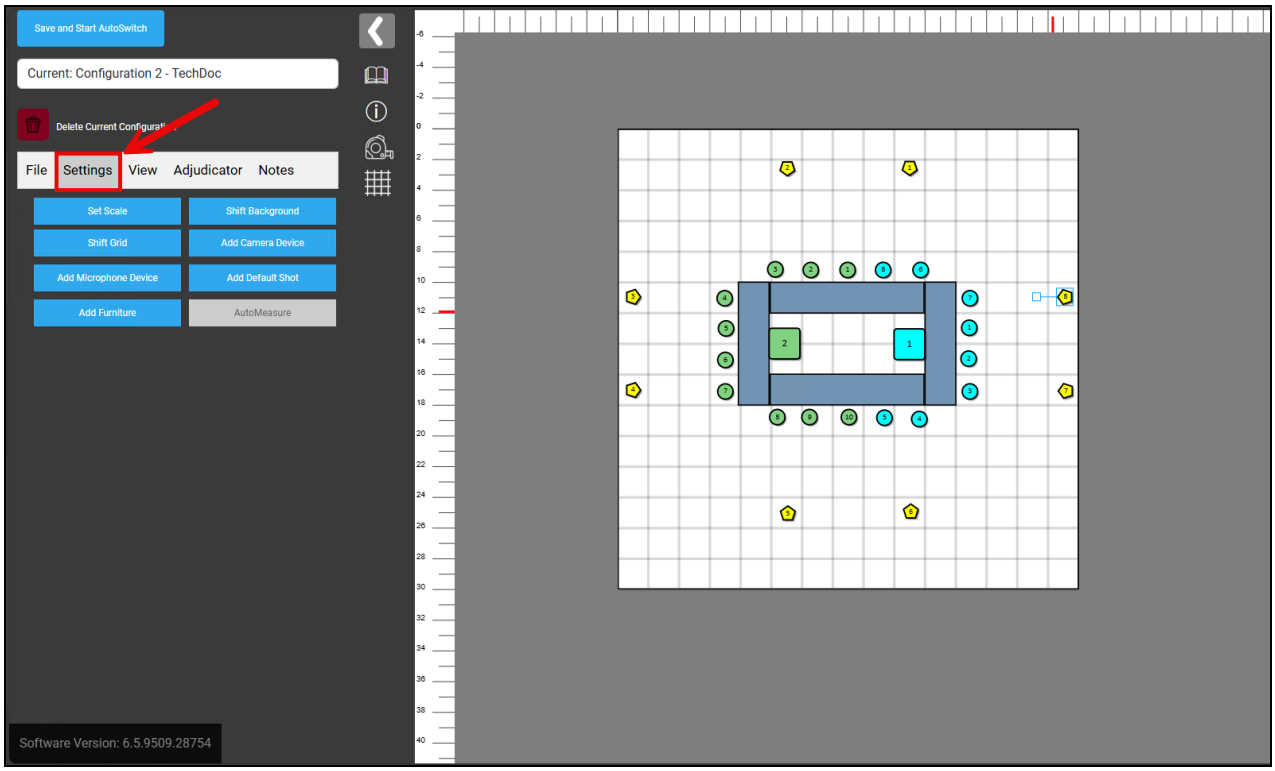
  > **TIP**: The front of the microphone also matches the direction of the Microphone Device handle in Room Designer. For more information about Microphone Device Orientation, refer to the Automate VX Software Manual.

- Ensure that the lighting of the room does not create glare on the AutoMeasure cube. It is recommended to reduce lighting if the microphone is near lighting.

5. Repeat Step 4 for each microphone in the room that is used in the Room Configuration file.
6. Open the Room Designer application on the Automate VX system. For more information on accessing Room Designer, refer to Room Designer on page 44.

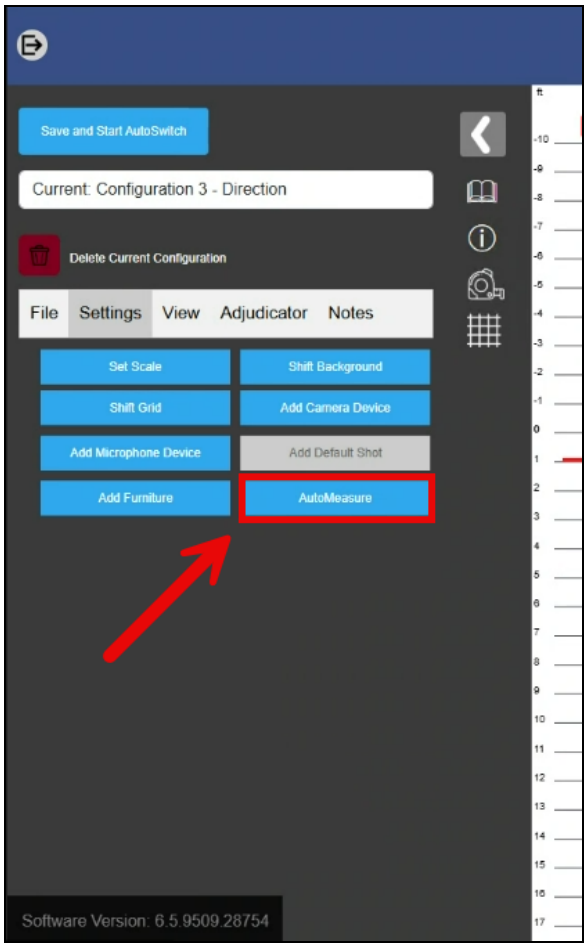
7. Select the **Settings** tab on the left side of the Room Designer page.

Settings Tab

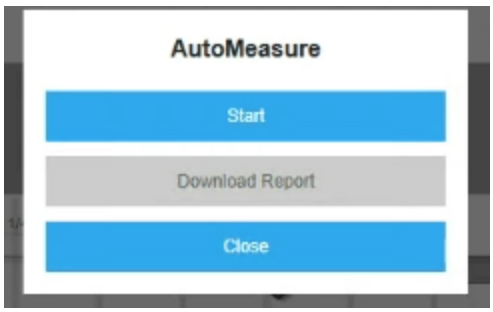


8. Select the **AutoMeasure** button. The AutoMeasure dialog box appears.

Select AutoMeasure



AutoMeasure Dialog Box



9. Select **Start** to begin the AutoMeasure process. Automate VX begins to locate the AutoMeasure cubes attached to microphones around the room.

   > **NOTE**: Ensure that the Automate VX output is disabled on the in-room displays. Failure to do so may cause unintended AutoMeasure cube detection.

   The AutoMeasure process can take up to 15 minutes to be completed. Once complete, Automate VX updates the coordinates and orientation of Camera Devices and Microphone Devices in the Room Configuration file.

AutoMeasure for cameras and microphones used with Automate VX2 is now complete. Proceed to Verify AutoMeasure Performance on page 68 to ensure that AutoMeasure's coordinate and orientation adjustments were performed correctly.

Alternative AutoMeasure Setup

If the ceiling array microphones are inaccessible, unreachable from a safe distance, or there is difficulty attaching the AutoMeasure cubes to the microphone, an alternate tabletop AutoMeasure procedure can be performed.

To perform AutoMeasure with Automate VX2 from a tabletop:

> **NOTES**:
>
> - Before proceeding, ensure that the requirements stated in AutoMeasure Setup on page 57 are met.
>   - For this procedure, the Z (height) value of the Microphone Device in Room Designer should match the height from the top of the AutoMeasure cube to the floor. For more information about Microphone Devices in Room Designer, refer to Microphone Device Configuration on page 115.
> - In addition to the AutoMeasure requirements, a laser measuring tool is required for this procedure.

1. Ensure that the Crestron 1 Beyond cameras and microphones are properly installed.
   - For Crestron 1 Beyond Camera installation, refer to the IV-CAM Product Manual.
   - For microphone installation, refer to the respective manufacturer's documentation.
2. Assemble the IV-SAMA-AMCUBE-1-12 AutoMeasure cubes. Fold the sides of the AutoMeasure cubes so that each flap is fitted into its respective slit.

   > **NOTE**: Each AutoMeasure Cube is labeled and corresponds to a Microphone Device number. AutoMeasure cube 1 is to be used with Microphone Device 1, AutoMeasure cube 2 is to be used with Microphone Device 2, and so forth. Only assemble the required amount of AutoMeasure cubes to match the quantity of microphones used in the room. For more information on Microphone Devices, refer to the Automate VX Software Manual.
3. Place the assembled IV-SAMA-AMCUBE-1-12 AutoMeasure cubes onto a table or similar surface underneath the corresponding ceiling array microphones.

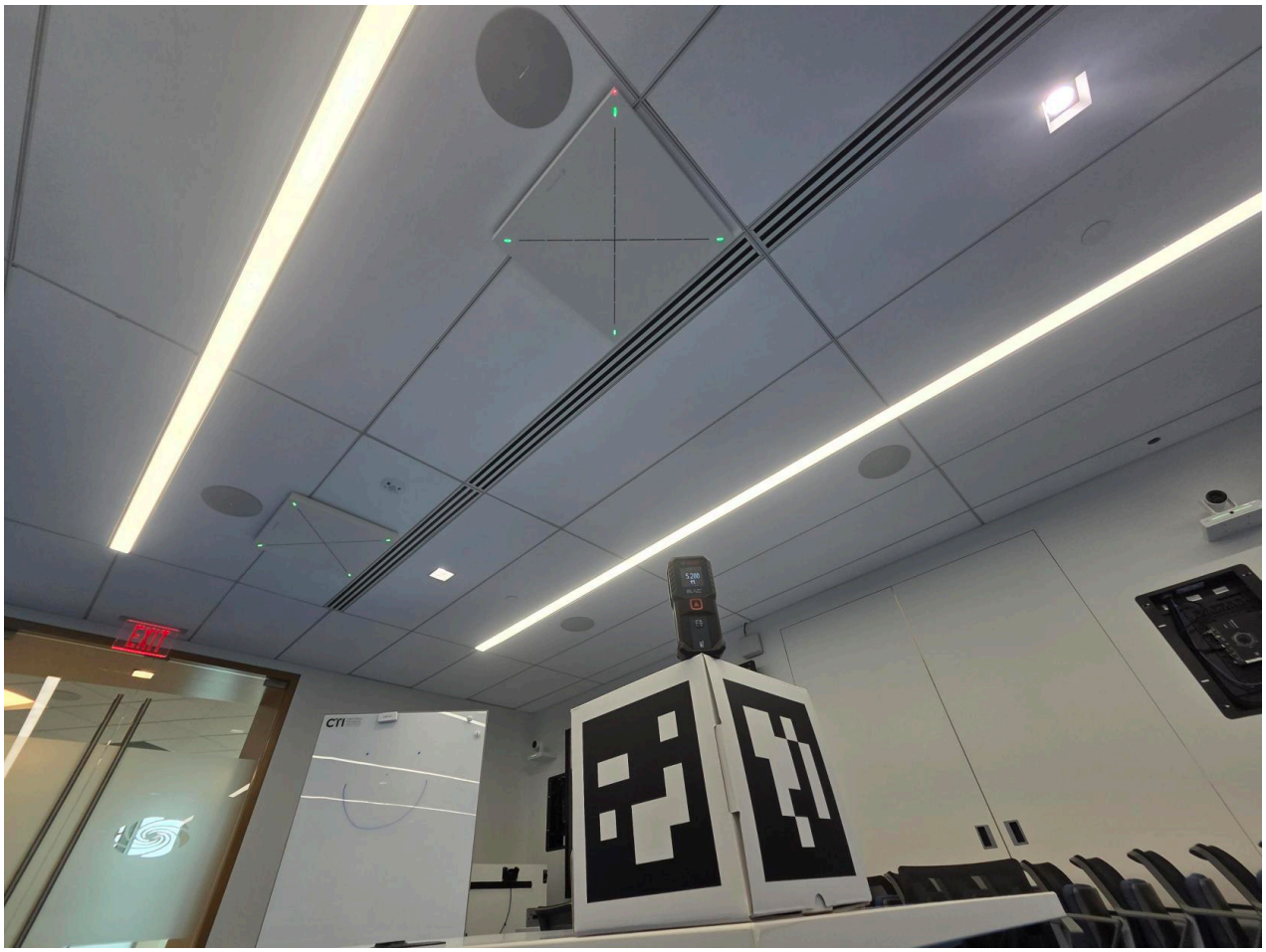
4. Using a laser measuring tool, align the IV-SAMA-AMCUBE-1-12 AutoMeasure cube with the corner of the ceiling array microphone. Orient the side of the AutoMeasure cube labeled **FRONT** towards the front side of the microphone (manufacturer's logo).

   The images below are an example of how the cube should be aligned with the ceiling array microphone.

   AutoMeasure Cube Laser Measure



AutoMeasure Cube Alignment



Place the laser measuring tool on the corner of the AutoMeasure cube, and align it with the correct corner of the ceiling array microphone (as indicated by the red laser dot on the ceiling array microphone). Additionally, make sure the AutoMeasure cube placement aligns with the edges of the ceiling array microphone.

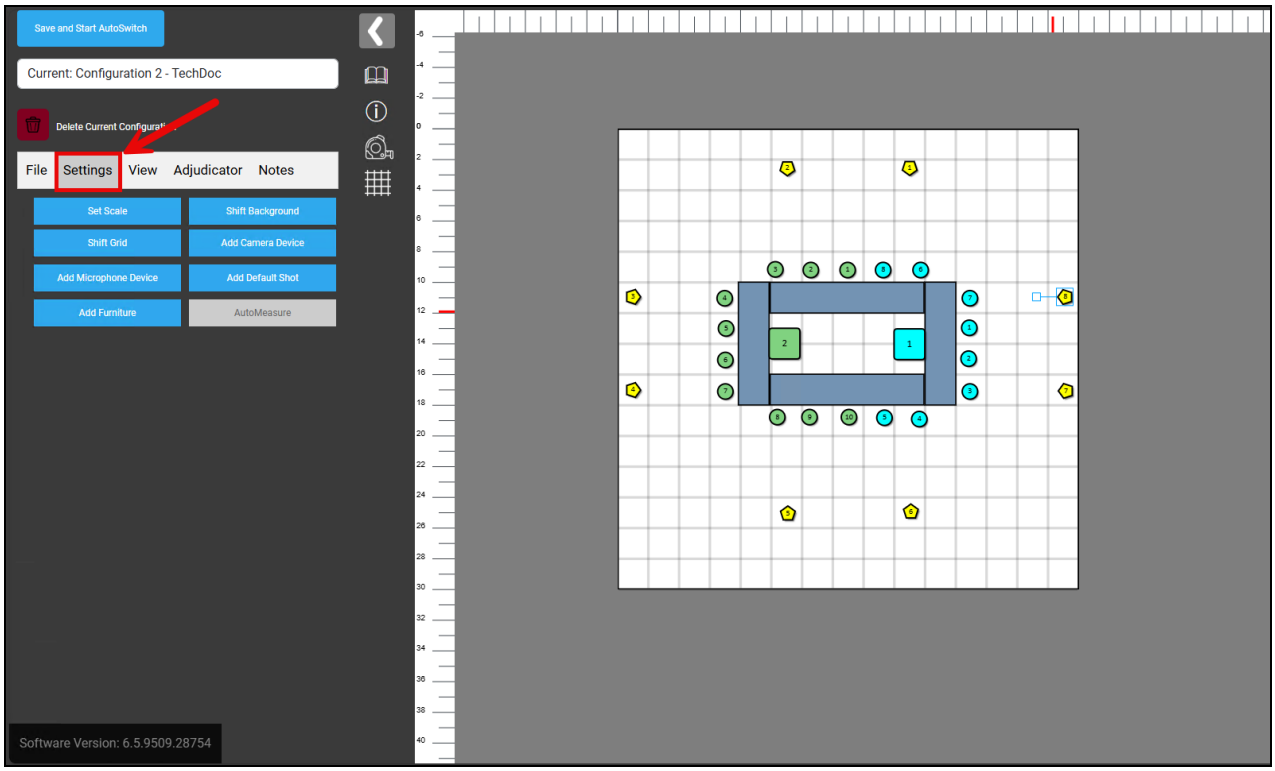
Ensure that this is done for each ceiling array microphone that is used with Automate VX2.

> **TIP**: AutoMeasure cube numbers correspond to Microphone Device numbers in the Room Designer project. Place AutoMeasure cube 1 beneath Microphone Device 1, AutoMeasure cube 2 beneath Microphone Device 2, and so forth. For more information about Microphone Devices in Room Designer, refer to Microphone Device Configuration on page 115.

5. Open the Room Designer application on the Automate VX system. For more information on accessing Room Designer, refer to Room Designer on page 44.

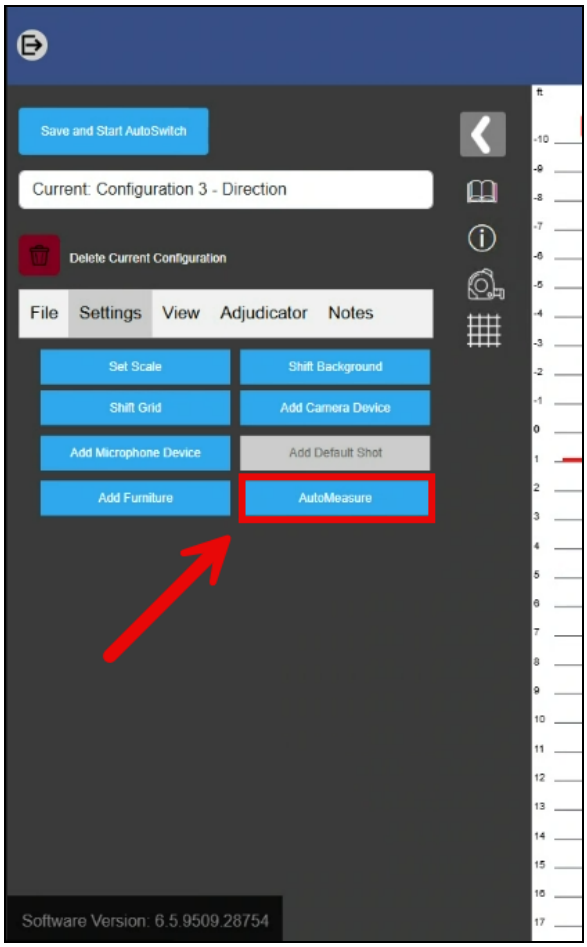
6. Select the **Settings** tab on the left side of the Room Designer page.

Settings Tab

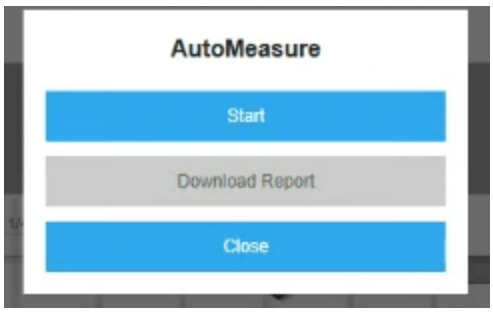


7. Select the **AutoMeasure** button. The AutoMeasure dialog box appears.

Select AutoMeasure



AutoMeasure Dialog Box



8. Select **Start** to begin the AutoMeasure process. Automate VX begins to locate the AutoMeasure cubes attached to microphones around the room.

   > **NOTE**: Ensure that the Automate VX output is disabled on the in-room displays. Failure to do so may cause unintended AutoMeasure cube detection.

   The AutoMeasure process can take up to 15 minutes to be completed. Once complete, Automate VX updates the coordinates and orientation of Camera Devices and Microphone Devices in the Room Configuration file.
9. Measure the Z (height) value of the ceiling array microphone. This measurement should be from the face of the microphone to the floor.
10. Input the measured Z (height) value of the ceiling array microphone into the Z text field in the Microphone Device properties field. For more information on inputting the Z value for a Microphone Device, refer to Microphone Device Configuration on page 115.
11. Repeat steps 9 and 10 for each Microphone Device in the Room Configuration file.

AutoMeasure for cameras and microphones used with Automate VX2 is now complete. Proceed to Verify AutoMeasure Performance on page 68 to ensure that AutoMeasure's coordinate and orientation adjustments were performed correctly.

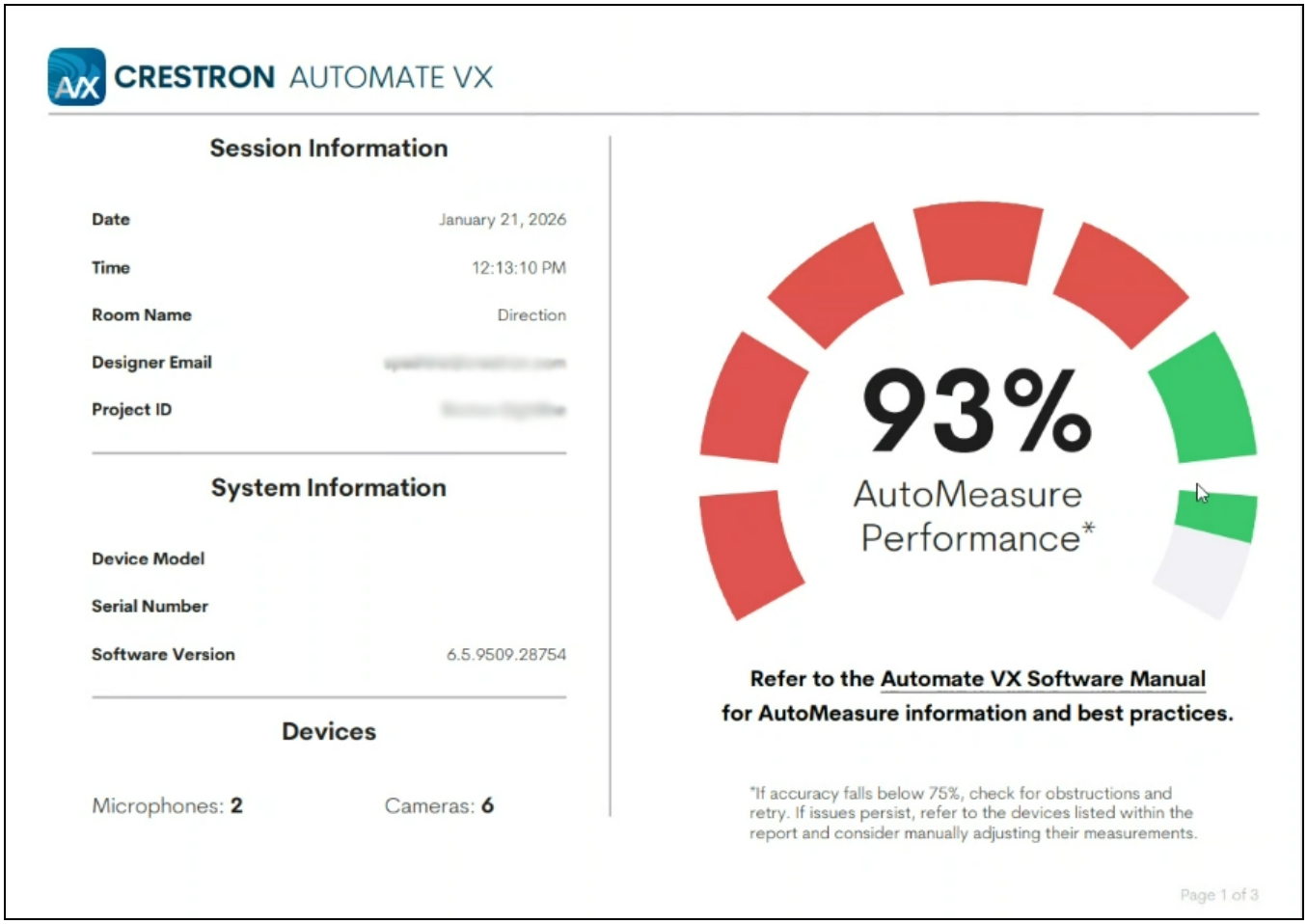
Verify AutoMeasure Performance

To ensure that AutoMeasure was performed correctly, it is recommended to verify that camera shots correspond with Virtual Mic positions by using Live Mode. For more information on using Live Mode, refer to Live Mode on page 94.

> **NOTE**: Prior Virtual Mic positions are not impacted by AutoMeasure. For more information on Virtual Mic positions, refer to Virtual Mic and Blocking Zone Configuration on page 127.

Additionally, a performance report is generated upon AutoMeasure completion. The report states the effectiveness of the AutoMeasure procedure via a percentage value. Any accuracy report below 75% may require a second attempt at activating AutoMeasure, or manual measurements may need to be made to verify camera and microphone positions.

AutoMeasure Performance Report



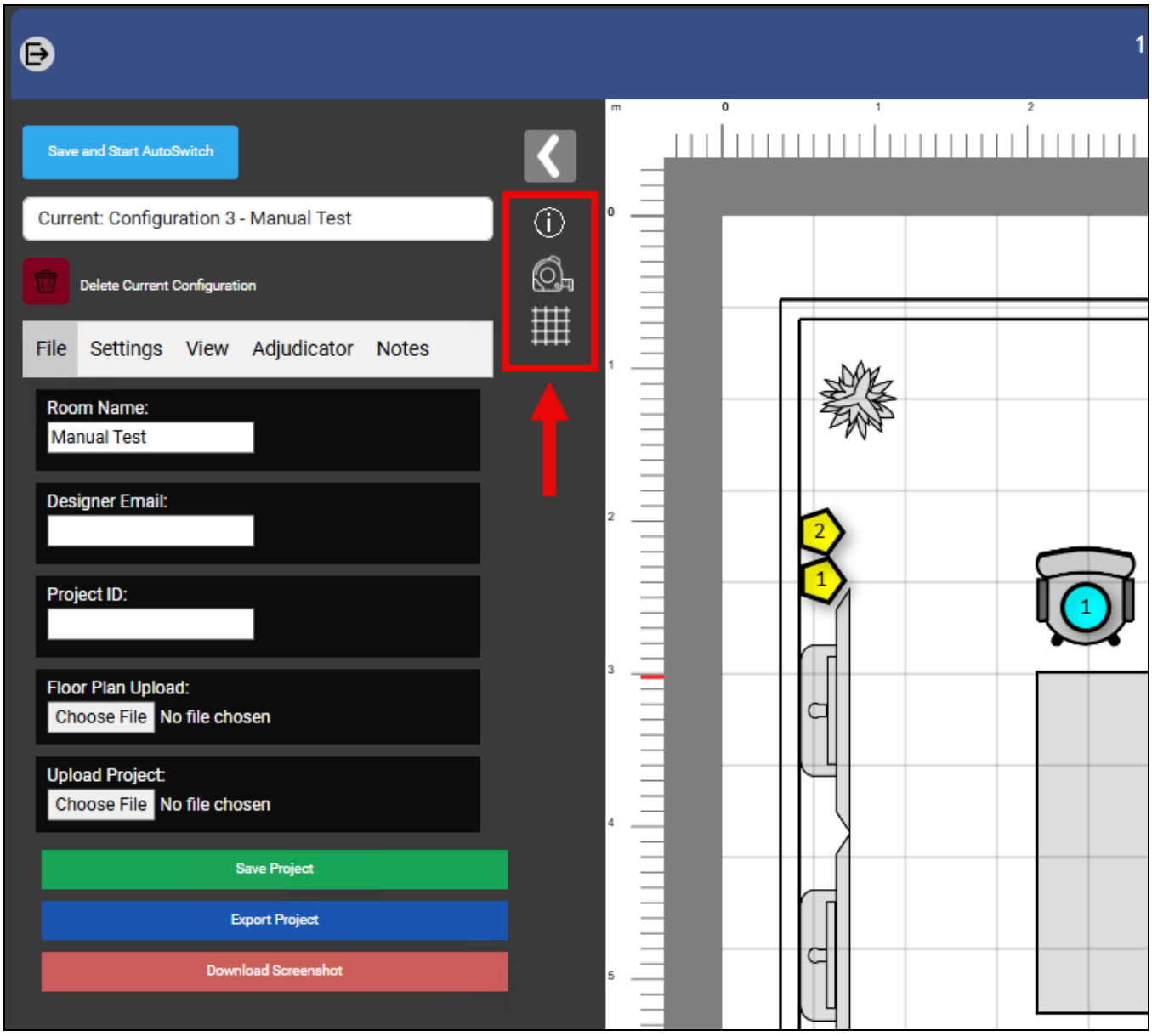
Room Designer Settings

The following settings are provided for configuring a Room Designer project.

Toolbar Settings

The toolbar is located on the left side of the Room Designer page.

Toolbar



Refer to the following sections for information about the available toolbar settings.

Keyboard Shortcuts

Hover the mouse cursor over the  icon to display the keyboard shortcuts within Room Designer. The following keyboard shortcuts are available:

- **Arrow Keys**: Move Item
- **CTRL + A**: Add Virtual Mic
- **CTRL + E**: Export project
- **CTRL + G**: Toggle AutoSwitch
    - **CTRL + G** enables or disables AutoSwitch Preview. For more information, refer to AutoSwitch Preview on page 144.
- **CTRL + H**: Toggle Ruler
- **CTRL + I**: Toggle Shot Visualization
- **CTRL + K**: Use Measuring Tape
- **CTRL + L**: Toggle Ceiling Grid
- **CTRL + M**: Toggle Mic Coverage
- **CTRL + O**: Toggle Origin
- **CTRL + S**: Save Room Design
    - Saving Room Designs is only available on Automate VX systems.
- **CTRL + Y**: Redo
- **CTRL + Z**: Undo
- **CTRL + U**: Add Table
- **CTRL + R**: Add Chair
- **CTRL + D**: Add Display
- **CTRL + Q**: Toggle Live Mode
    - **CTRL + Q** enables or disables Live Mode. For more information, refer to Live Mode on page 94.

Keyboard Shortcuts

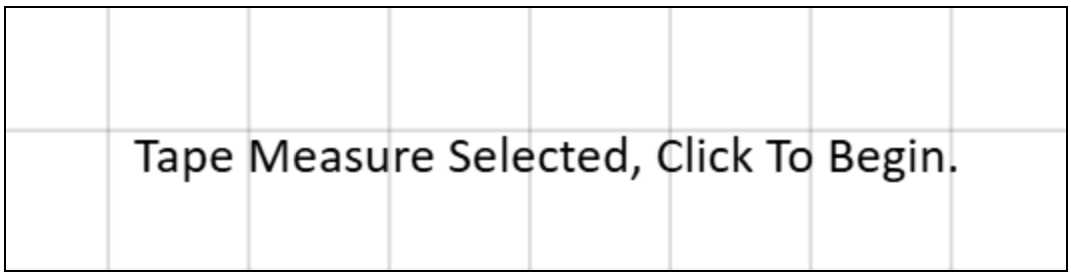


Tape Measure

The **Tape Measure** tool measures the distance between two selected locations. To use the **Tape Measure** tool:

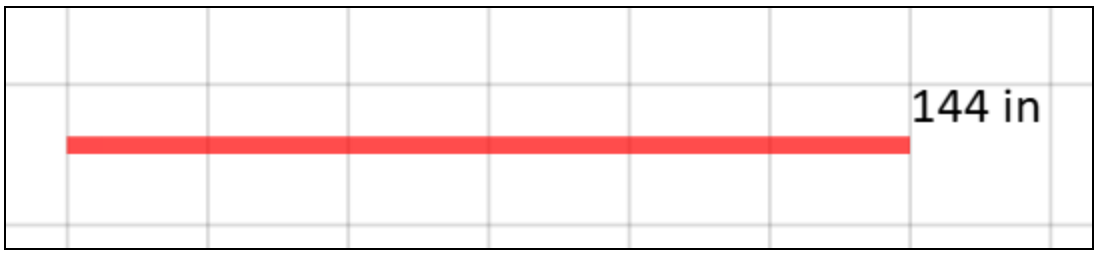
1. Select the  icon to activate the **Tape Measure** tool. When selected, the "Tape Measure Selected, Click To Begin" text is displayed.

   Tape Measure Selected

2. Left-click at the desired starting location of the measurement.
3. Drag the mouse cursor to the opposite end of the object being measured. A line appears from the selected point to the mouse cursor with the distance between displayed.

   Measured Line

   NOTE: The Tape Measure tool displays the distance in the respective units selected (imperial or metric). For more information on changing the units used in Room Designer, refer to Units on page 91.

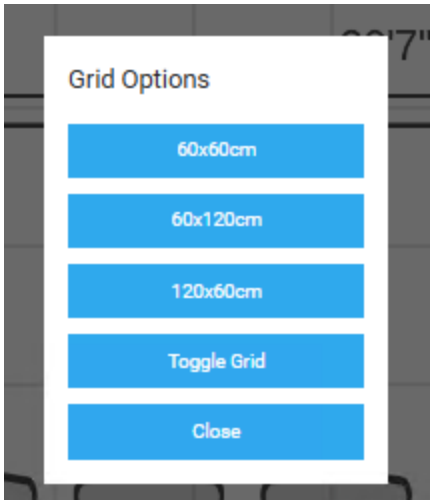
4. Left-click again anywhere to deactivate the **Tape Measure** tool.

Grid Options

The **Grid Options** allows for customization of the grid overlay. Select the  icon to open the **Grid Options** menu. The following options are available:

- **24x24in (60x60cm)**
- **24x48in (60x120cm)**
- **48x24in (120x60cm)**
- **Toggle Grid**
    - **Toggle Grid** enables or disables the grid overlay.
- **Close**
    - **Close** exits the **Grid Options** menu without changing the current grid overlay.

Grid Options

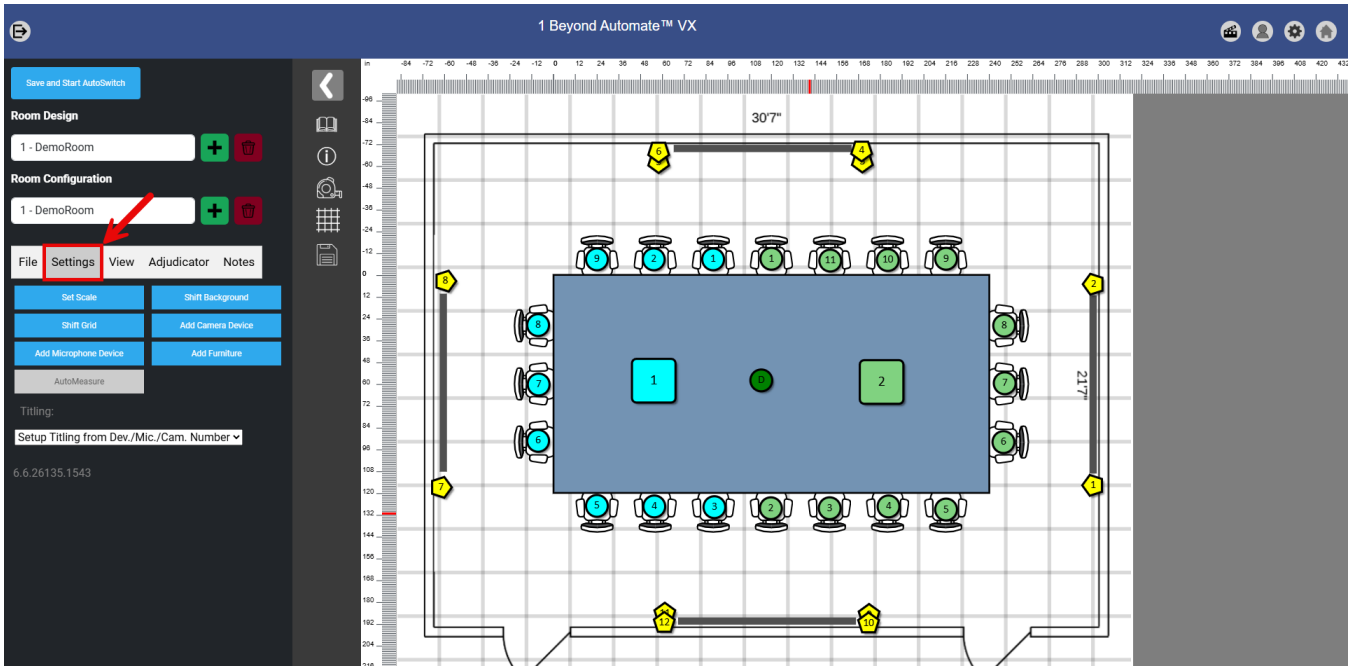


Selecting an option closes the menu with the grid overlay setting applied. To shift the grid overlay from its current position, refer to Shift Grid on page 81

General Settings

Select the **Settings** tab on the left side of the Room Designer page to access the following general Room Designer settings.

Settings Tab



Set Scale

Set the scale for the room to provide the Automate VX a reference to the room size.

To set the scale of the Room Designer project:

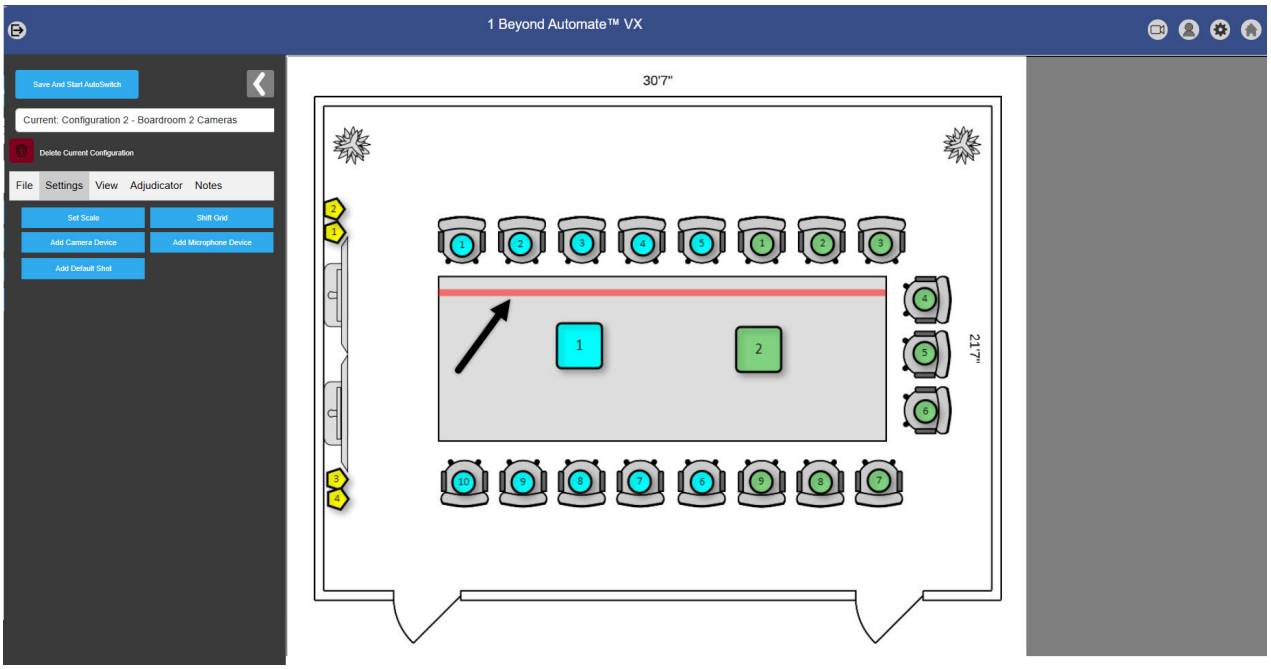
1. Select the **Set Scale** button. The mouse cursor acts as the beginning point of a measurement line.
2. Move the mouse cursor to a point in the room where the length or width of the object (for example, a conference table) is known.
3. Click once on one end of the object that is being used as a reference. There will now be a red line attached to the start point that was clicked.

> **NOTE:** Holding shift while using the **Set Scale** tool will lock the red line to 90-degree increments.

4. Move the mouse cursor to the other end of the object that is being used as a reference. Ensure that the red line is straight, then click on the endpoint of the reference object.

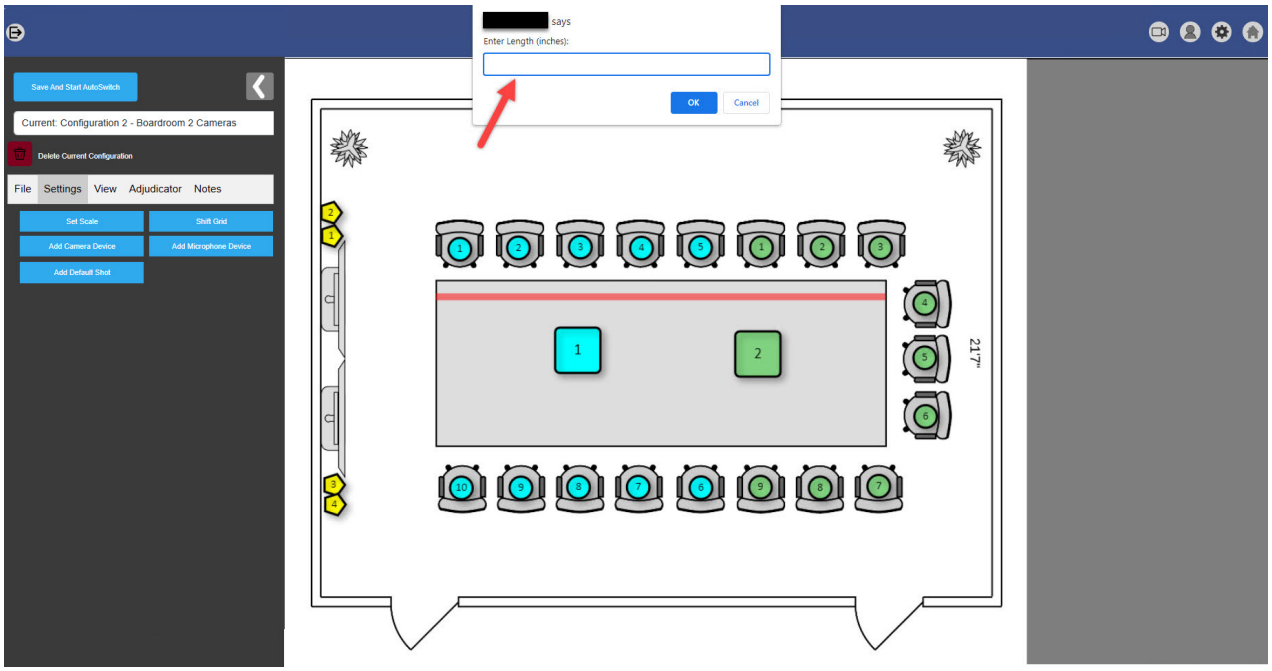
> **CAUTION:** Ensure that this process is done accurately and precisely. If the reference object was not measured correctly, then the performance of the Automate VX may suffer.

Scaling Measurement Line



5. A text field is displayed asking for the length of the red line (in either inches or millimeters, depending on if the system is set to imperial or metric). Input the length or width of the object into the field. For more information on changing the measurement units, refer to Units on page 91.

Scaling Measurement Line



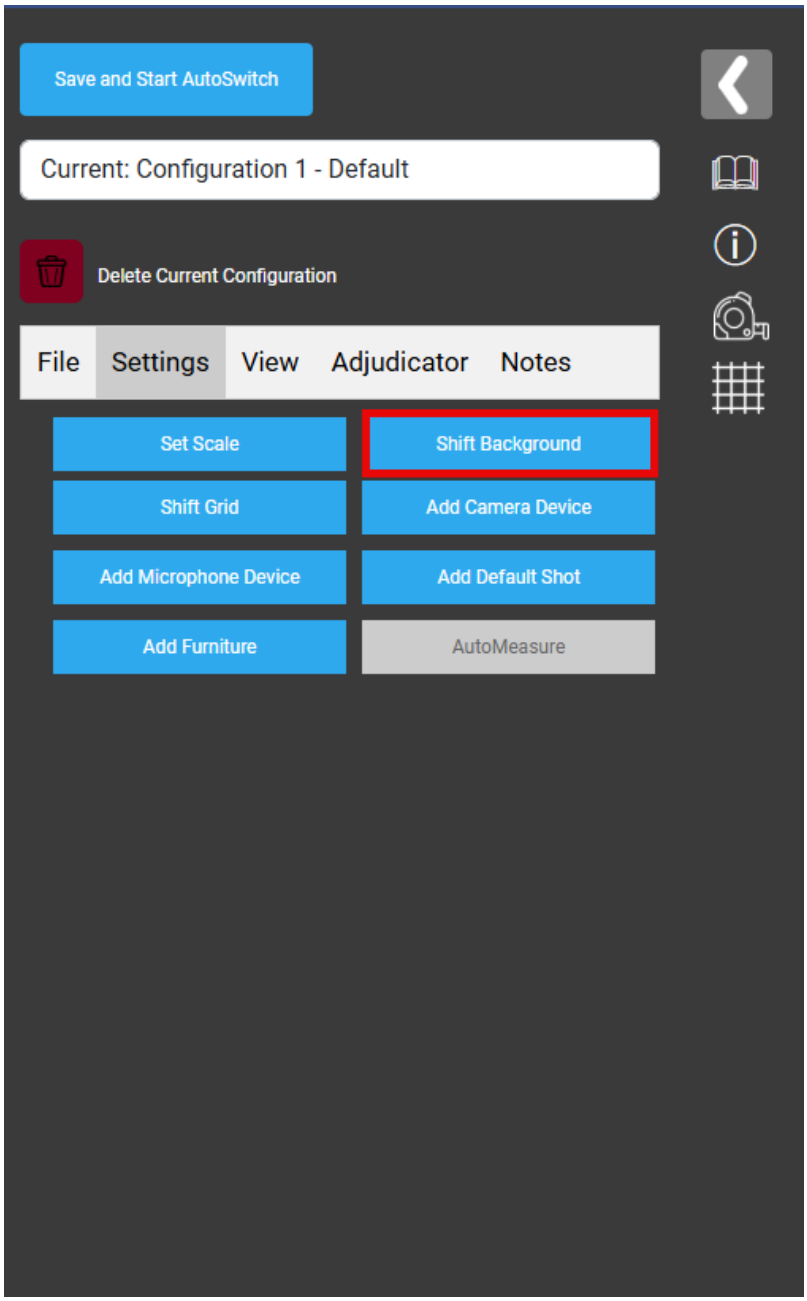
6. Select **Ok** to confirm the measurement.

Once the scaling is complete, the floor plan changes size relative to the measurement provided. If assets are present in the room layout (Camera Devices, Microphone Devices, and so forth), they remain their original size once the scaling is set.

Shift Background

Select **Shift Background** to move the floor plan image in the Room Designer project. For more information on uploading a floor plan, refer to asd

Shift Background

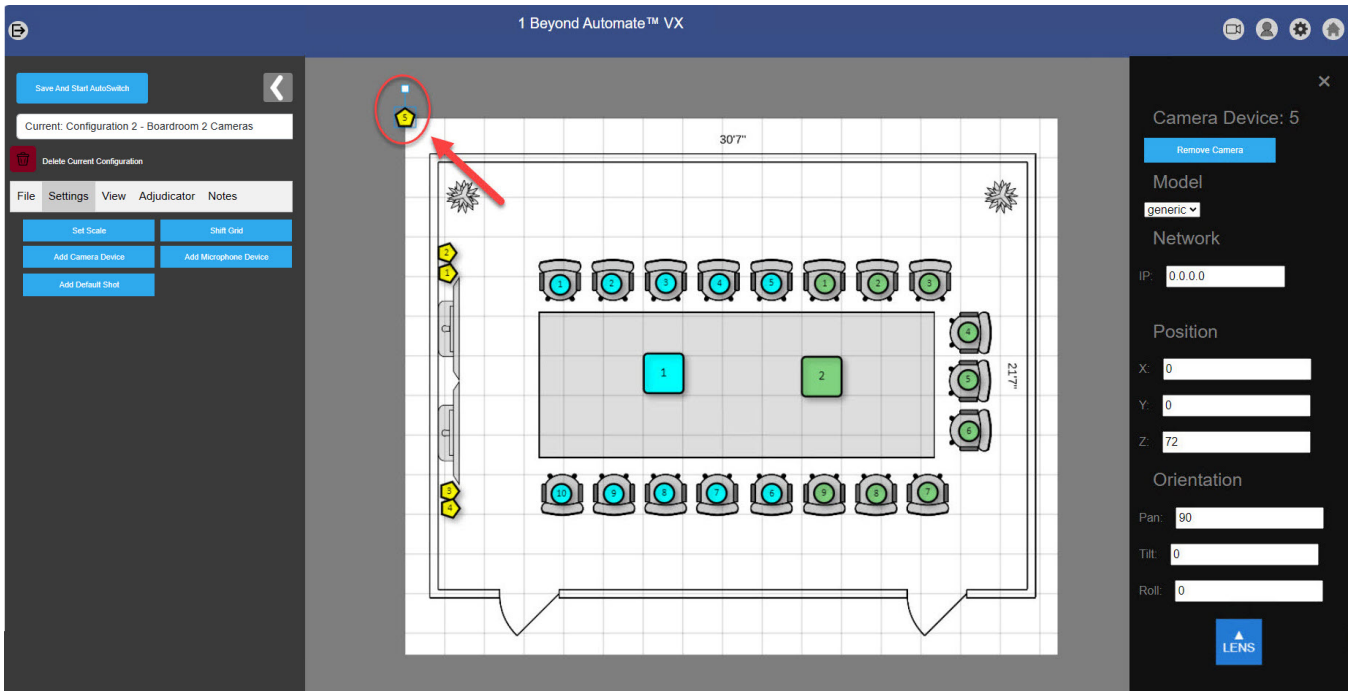


Once selected, the floor plan moves with the cursor. When the floor plan is in the desired location, left click on the mouse once to lock it into position.

Add Camera Device

Select **Add Camera Device** to add a pentagon-shaped object that designates a camera at the origin point. Place a Camera Device in each location where there is a camera within the room layout. The cameras are numbered in the order they are added. For more information, refer to Camera Device Configuration on page 105

Camera Device



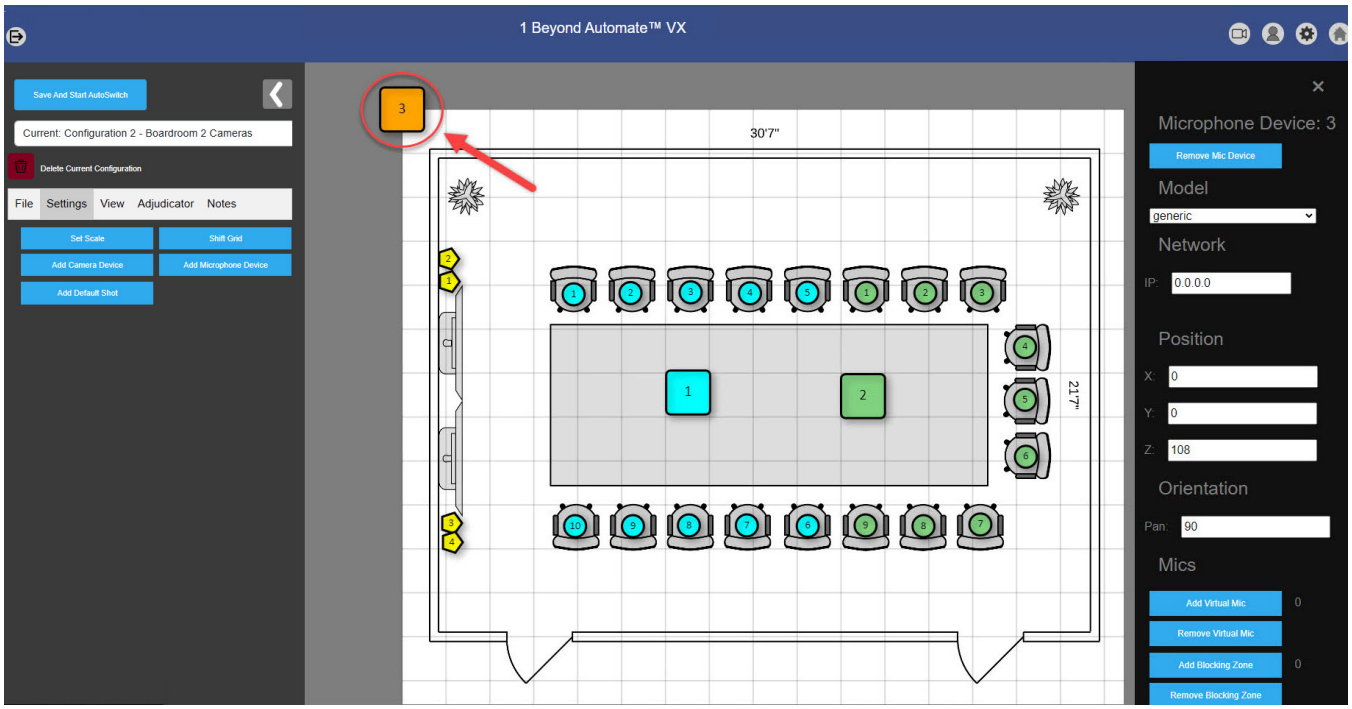
Add Microphone Device

Select **Add Microphone Device** to add a square-shaped object that designates a microphone at the origin point. Place a Microphone Device in each location where there is a microphone within the room layout. For more information, refer to Microphone Device Configuration on page 115

If a DSP such as Biamp Tesira™, QSC Q-Sys™ Core, or Shure IntelliMix™ Room is used as a Microphone Device:

- The placement of the Microphone Device square does not matter, and it will not affect the Automate VX.
- Virtual Mics should match the positions of the individual microphones in the room. For more information, refer to Virtual Mic and Blocking Zone Configuration on page 127.

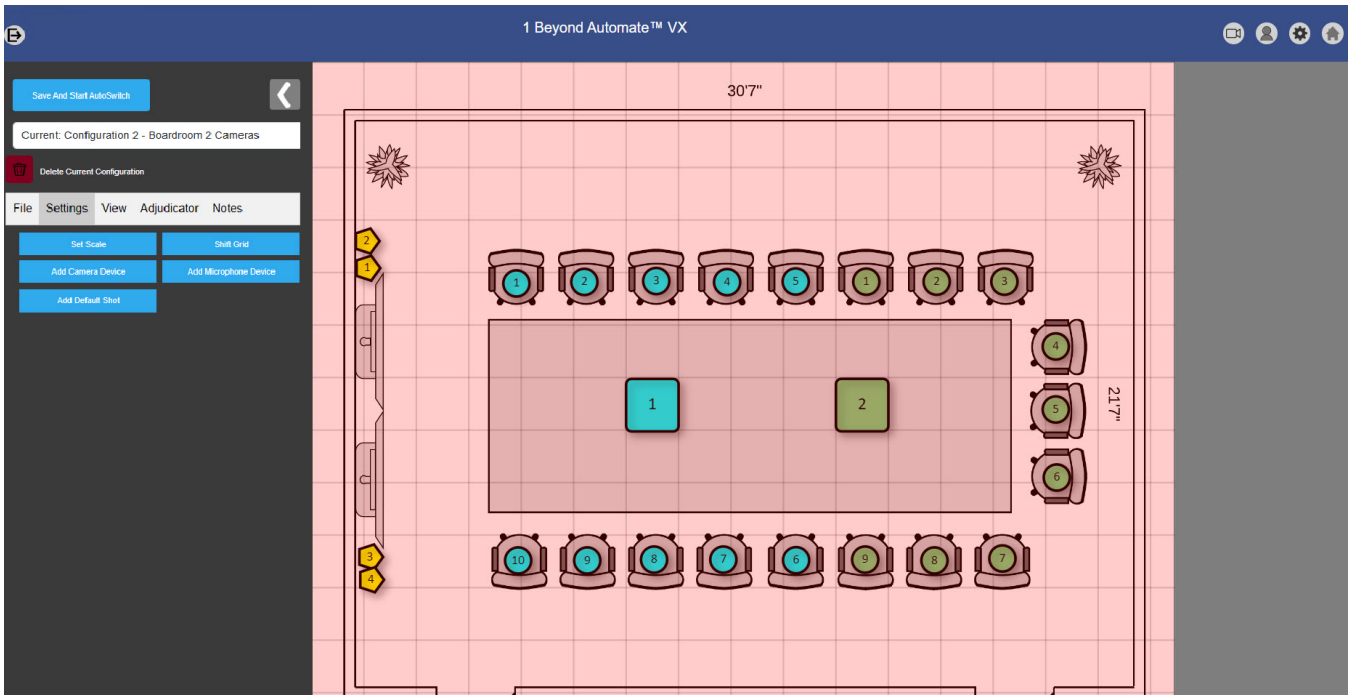
Microphone Device



Shift Grid

Select **Shift Grid** to move the grid overlay created by the **Set Scale** feature. Once selected, the room layout turns red. Click the grid and move it to the desired location.

Shift Grid Overlay



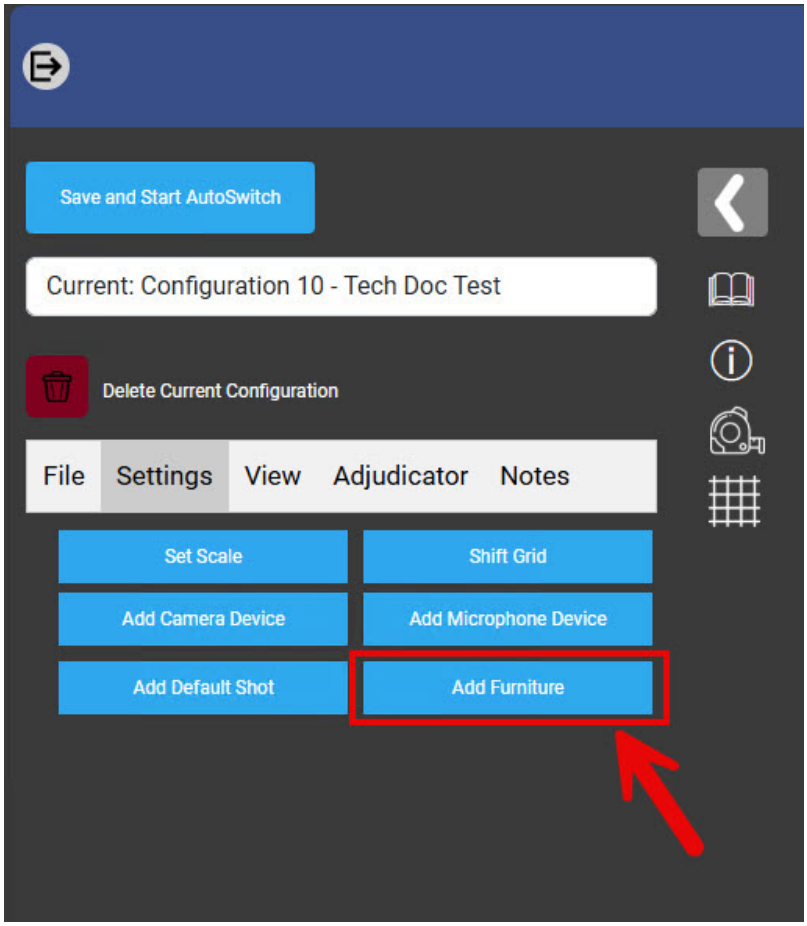
> **NOTE**: Shifting the grid will not affect its scaling. The grid will retain its 2 x 2 ft (60 x 60 cm) dimensions regardless of its placement.

Add Furniture

Room Designer has tools that can be used to add furniture to an empty floor plan. To access the available furniture tools, select **Add Furniture**.

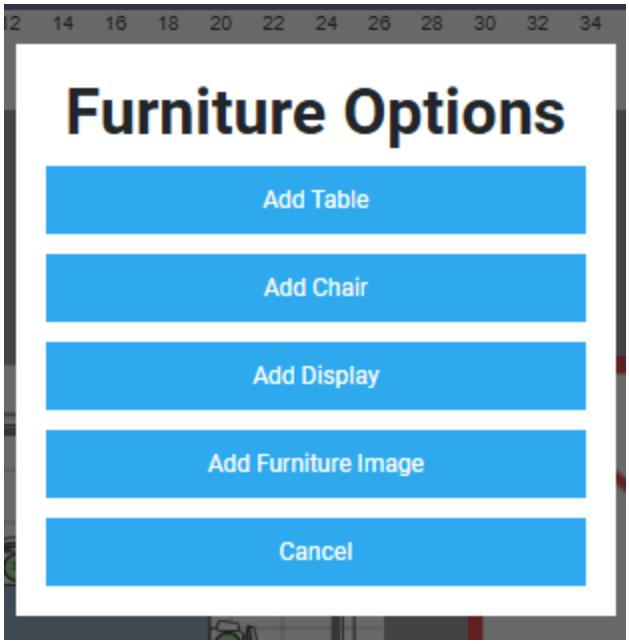
> **NOTE**: Ensure that the scale is set for the Room Designer project prior to adding furniture to ensure it remains in position. For more information on setting the scale of the Room Designer project, refer to Set Scale on page 75.

Add Furniture



When selected, the Furniture Options menu appears.

Furniture Options

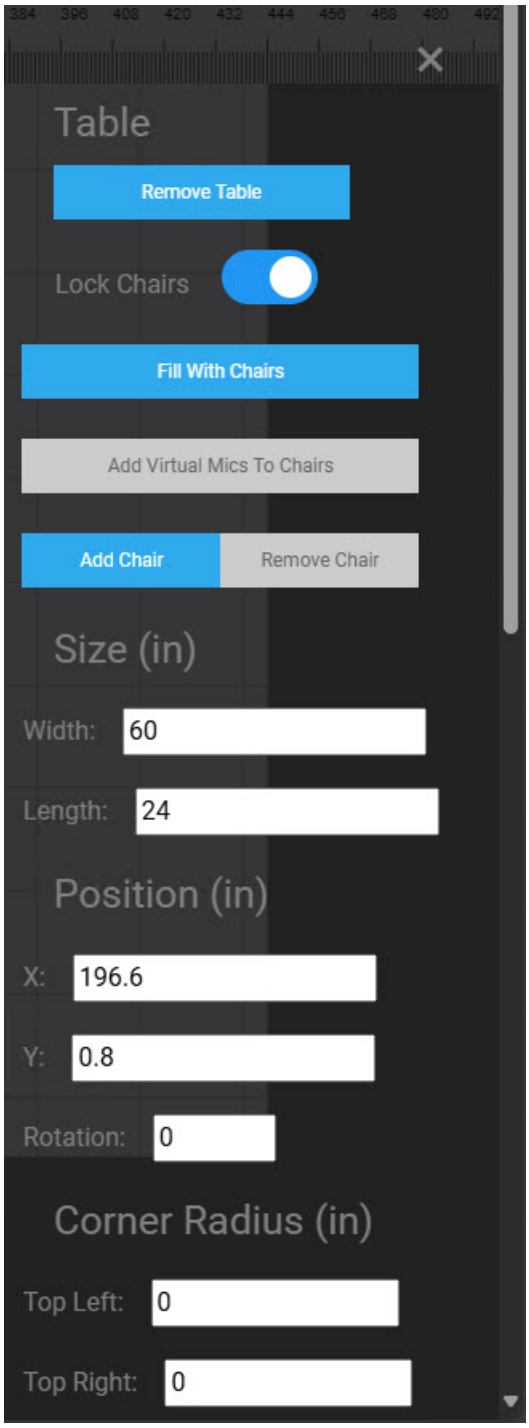


Select **Add Table**, **Add Chair**, or **Add Display** to add furniture to the Room Designer project. Select **Add Furniture Image** to add a image file of the room to overlay it onto the project. Alternatively, select **Close** to exit the Furniture Options menu.

Table Properties

Tables in Room Designer contain the following settings and properties.

Table Properties



Remove Table

Select the **Remove Table** button to delete the selected table from the Room Designer project.

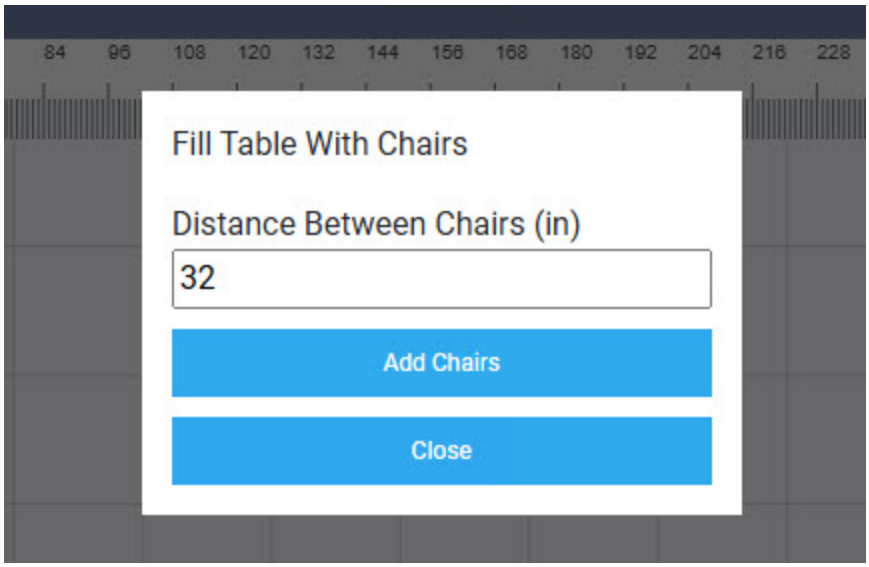
Lock Chairs

Enable **Lock Chairs** to lock the chairs around the table to the table, so that when the table is moved the chairs move along with it.

Fill With Chairs

Select the **Fill with Chairs** button to automatically add chairs to the table. When selected, the Fill Table With Chairs menu appears.

Fill Table With Chairs



Enter the desired distance in inches between chairs around the table into the **Distance Between Chairs** text field, then select **Add Chairs**.

Add Virtual Mics to Chairs

Select the **Add Virtual Mics to Chairs** button to automatically add Virtual Mics to the chairs around the table.

> **NOTE**: The **Add Virtual Mics to Chairs** button requires that the table has chairs locked to it and that there is a Microphone Device in the Room Designer Project.

Add or Remove Chair

Select the **Add Chair** button to add a chair to the table. Select the **Remove Chair** button to remove a chair from the table.

Size

Use the **Width** and **Length** text fields to change the size of the table.

Position

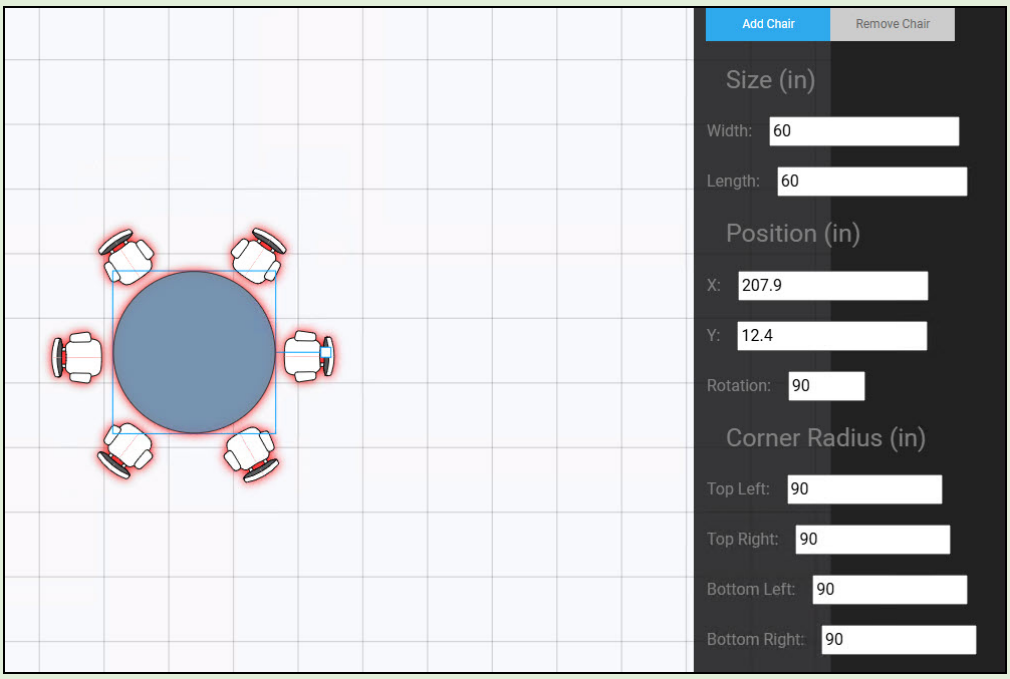
Use the **X**, **Y**, and **Rotation** text fields to change the position of the table. Alternatively, click and drag the table to move it into the Room Designer project.

Corner Radius

Use the **Top Left**, **Top Right**, **Bottom Left**, and **Bottom Right** text fields to change the corner of the table.

TIP: If the table has the same **Width** and **Length** values, then setting the **Top Left**, **Top Right**, **Bottom Left**, and **Bottom Right** text fields all to 90° will create a circular table.

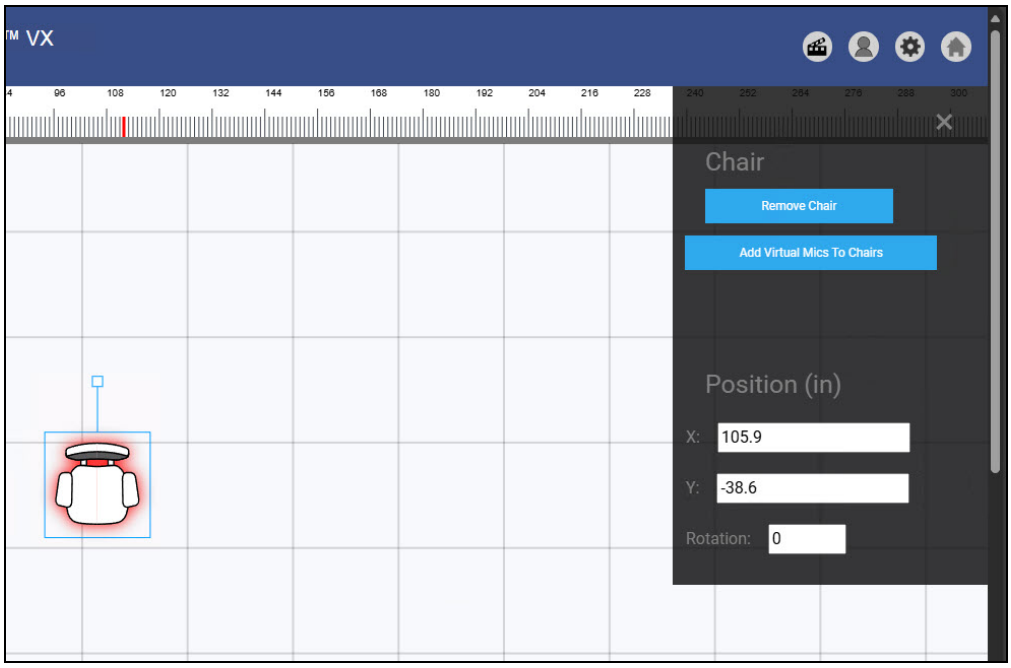
Round Table



Chair Properties

Chairs in Room Designer contain the following settings and properties.

Chair Properties



Remove Chair

Select the **Remove Chair** button to delete the chair from the Room Designer project.

Add Virtual Mics to Chairs

Select the **Add Virtual Mics to Chairs** button to automatically add Virtual Mics to selected chairs.

> **NOTE**: The **Add Virtual Mics to Chairs** button requires that there is a Microphone Device in the Room Designer Project.

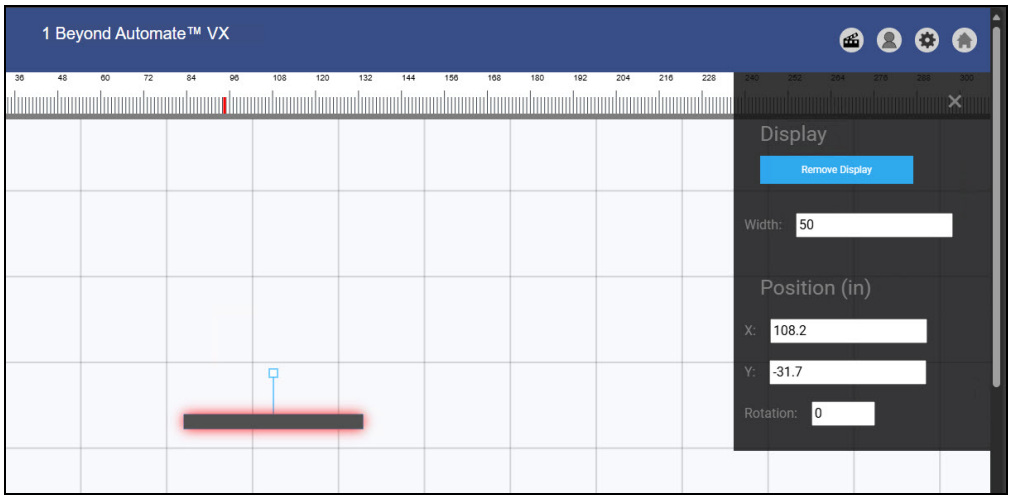
Position

Use the **X**, **Y**, and **Rotation** text fields to change the position of the chair. Alternatively, click and drag the chair to move it into the Room Designer project.

Display Properties

Displays in Room Designer contain the following settings and properties.

Display Properties



Remove Display

Select the **Remove Display** button to remove the display.

Width

Use the **Width** text field to change the size of the display.

Position

Use the **X**, **Y**, and **Rotation** text fields to change the position of the display. Alternatively, click and drag the display to move it into the Room Designer project.

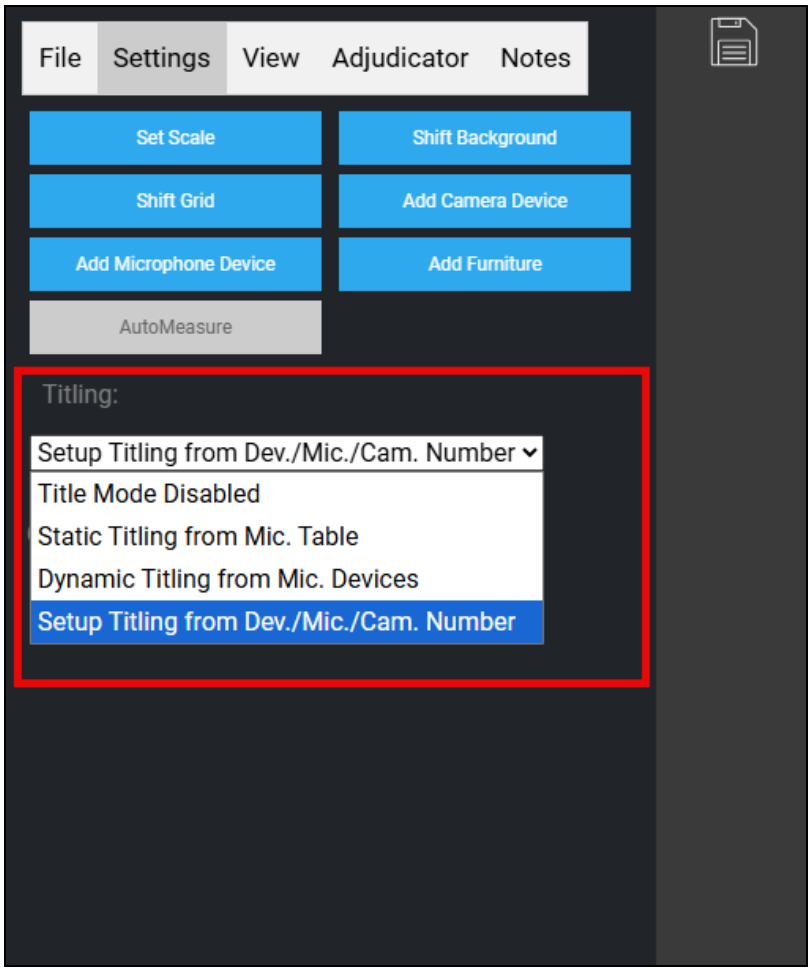
Add Furniture Image

Select Add Furniture Image to add a .png or .jpg image file into the Room Designer project. Once the image has been added, it can be moved and transformed around the project.

Titling Settings

The following titling settings are available.

Title Settings



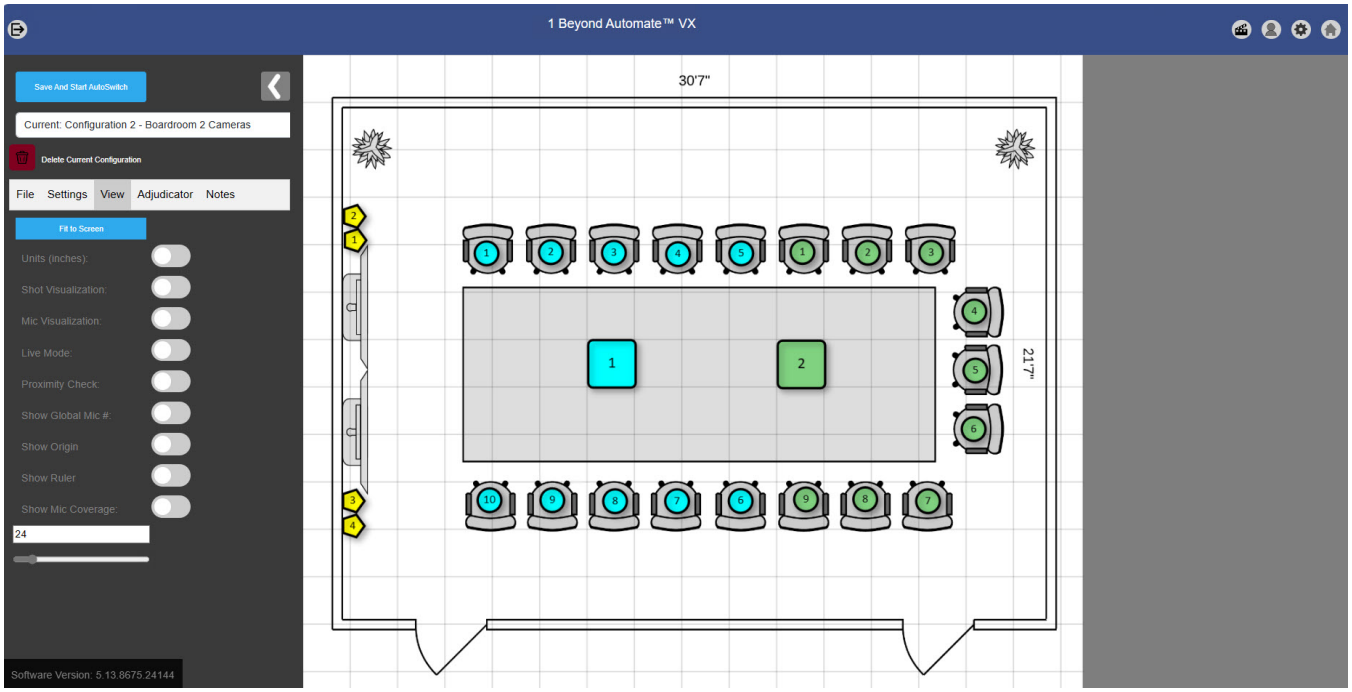
Selecting the check box next to the **Enable Titling** setting will allow one of the following three selections to be available:

- Select **Static Titling from Mic. Table** to use the titles from the Mic Title text field located on Virtual Mics. For more information, refer to the Mic Title on page 140.
- Select **Dynamic Titling from Mic. Devices** to dynamically pull titles from a discussion system.
- Select **Setup Titling from Dev./Mic./Cam. Number** for use during system configuration. The active device and corresponding microphone numbers will be displayed to verify that the correct device and microphone are being used.

View Settings

Select the **View** tab on the left side of the Room Designer page to access the following Room Designer settings.

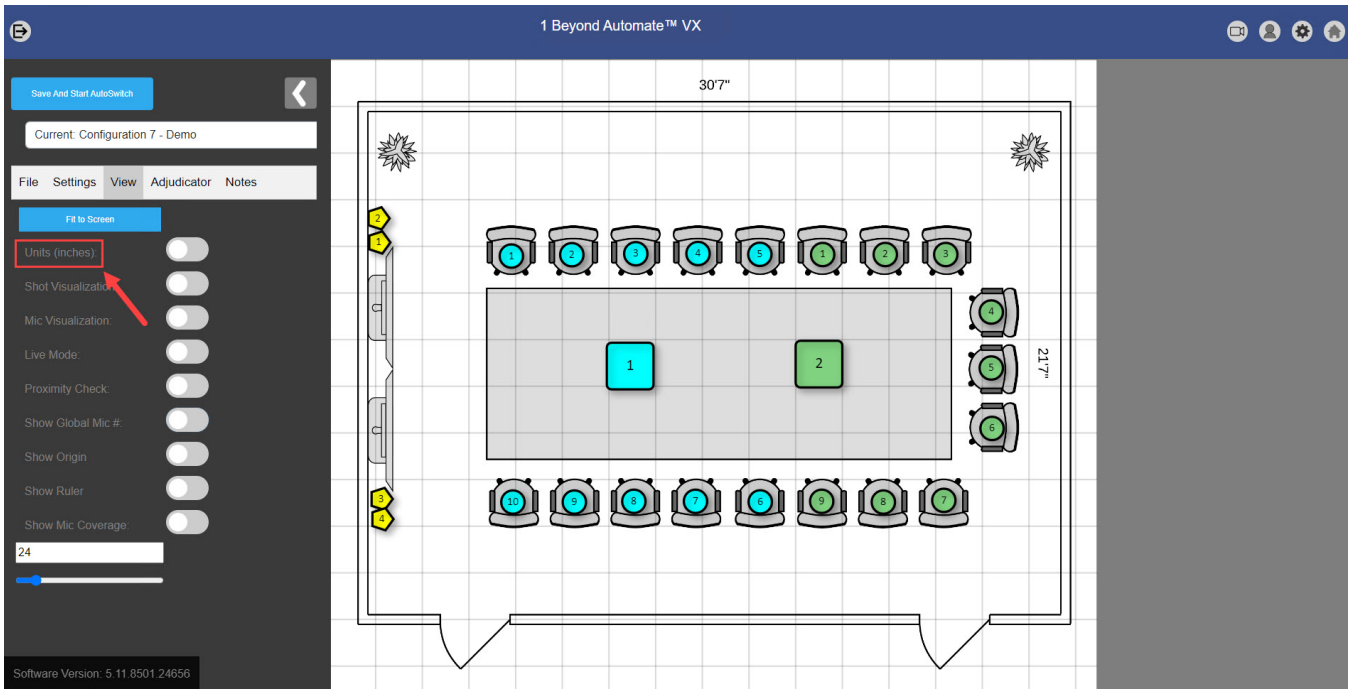
View Tab



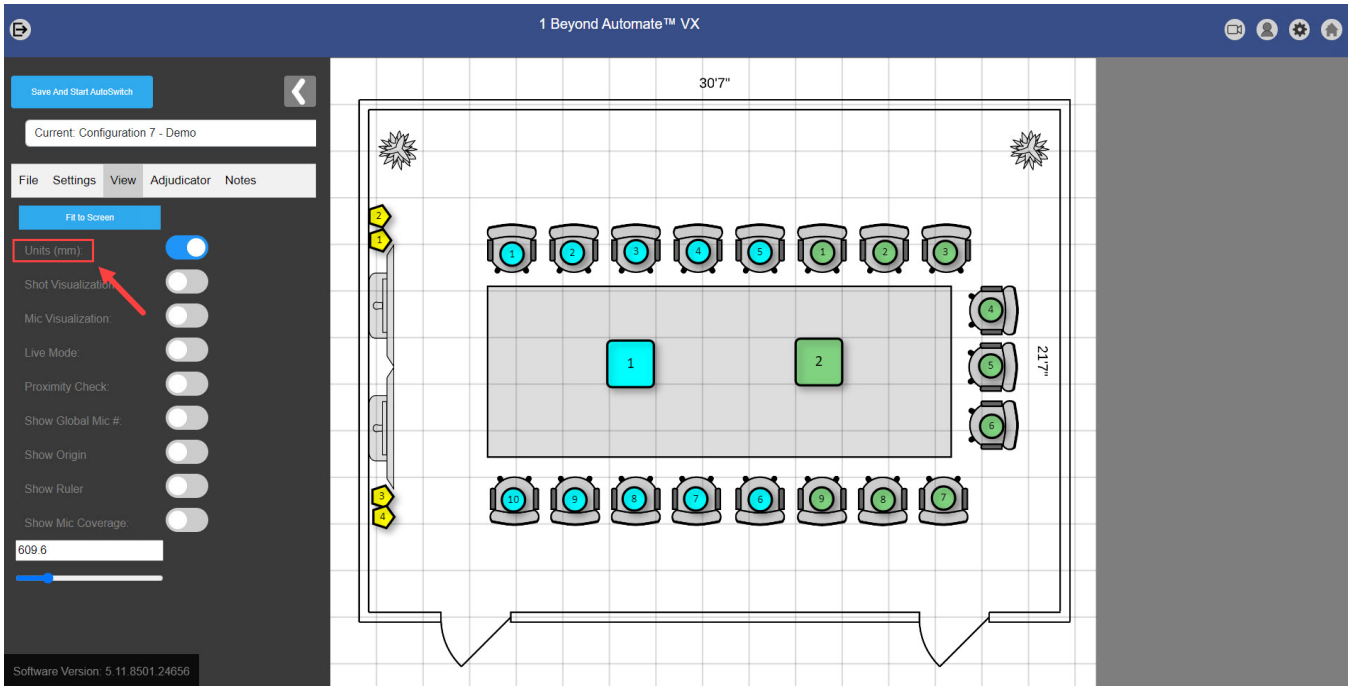
Units

Enable **Units** to change the units used in Room Designer from imperial units (inches) to metric (millimeters). Disabling this option will revert the units from metric (millimeters) to imperial (inches). The current unit type is indicated by the parentheses next to the **Units** option.

Units in Imperial (inches)



Units in Metric (mm)



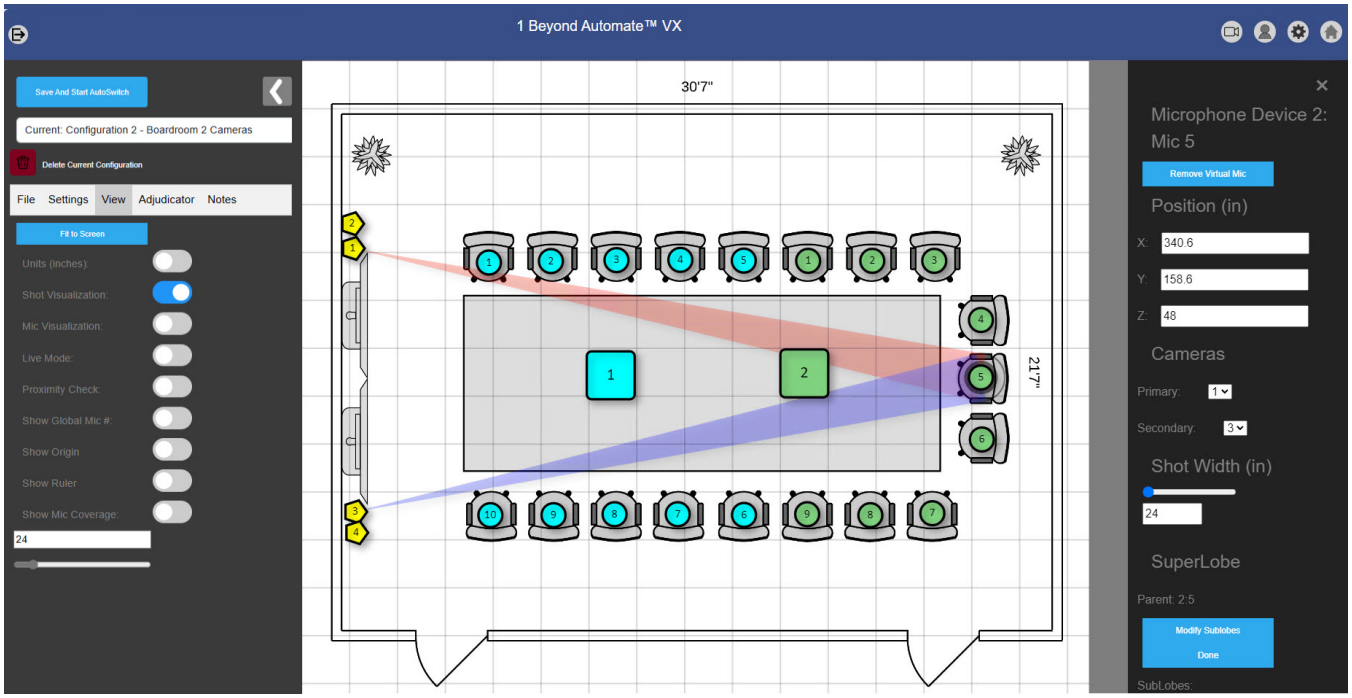
Shot Visualization

Enable **Shot Visualization** to show which Camera Devices are aimed at a particular Virtual Mic position (or Default Shot). The following camera shot information is provided when Shot Visualization is enabled:

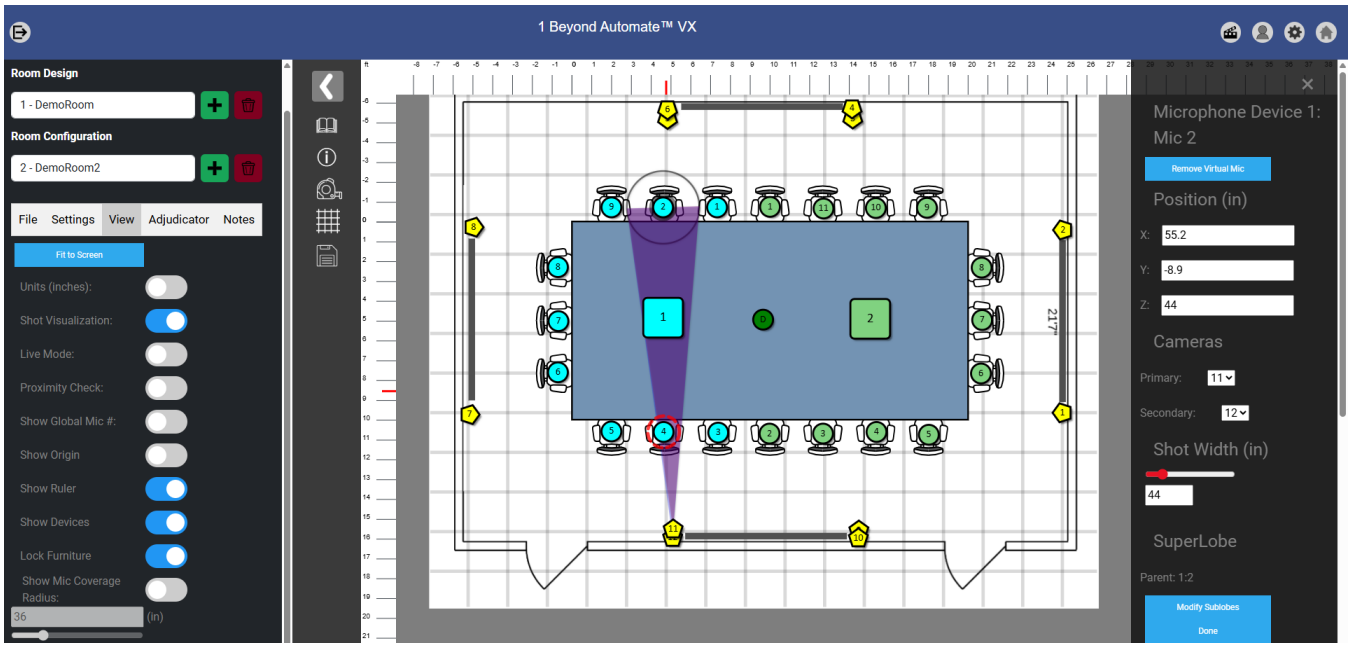
- A cone will extend from the Camera Device to the Virtual Mic position, and the size of the cone will coincide with the Shot Width.
- A red circle appears around any Virtual Mic position that blocks the Camera Device from a clear shot of the selected Virtual Mic position.
- Presenter Tracking cameras show their wide-angle reference camera FOV.

For more information on configuring Virtual Mics with Camera Devices, refer to Virtual Mic and Blocking Zone Configuration on page 127

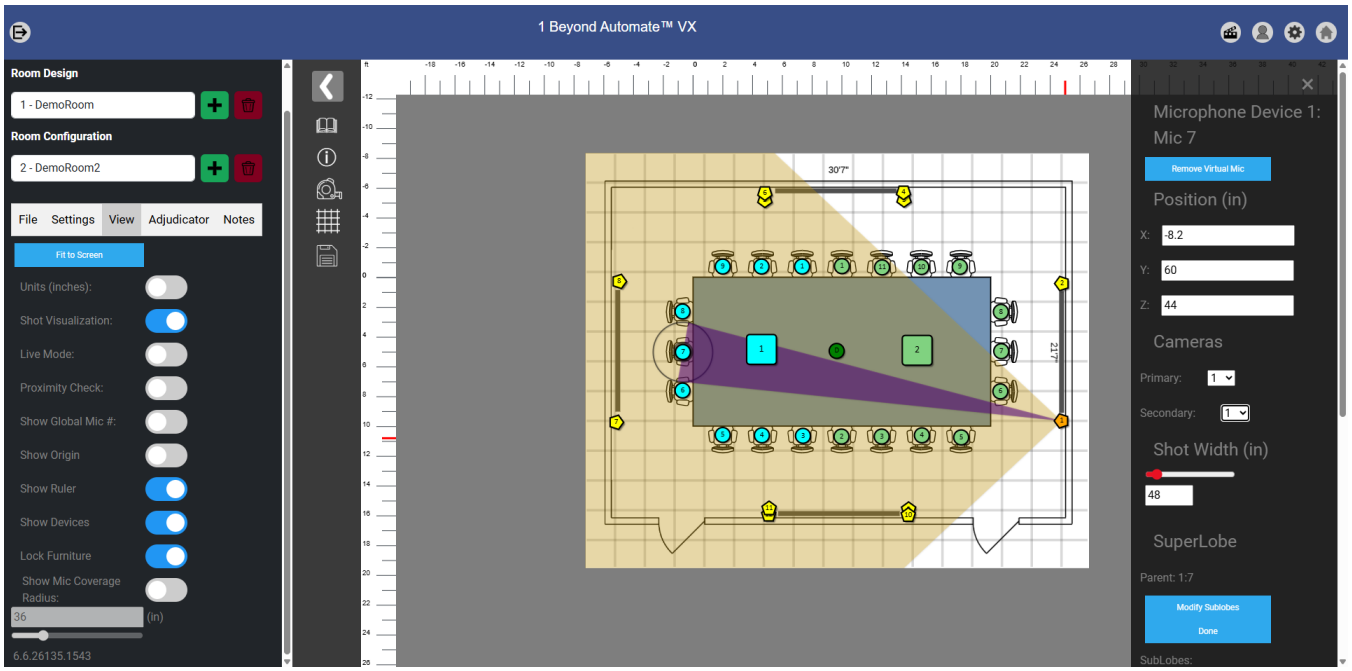
Shot Visualization



Obstructed Camera Shot Indicator



Presenter Tracking Camera FOV



Live Mode

> **NOTE:** This setting is only available on Automate VX systems.

Enable **Live Mode** to display a grid view in Wirecast to show all live Camera Device feeds at once. When a virtual mic is selected with Live Mode enabled, the Primary and Secondary Camera Devices will point at the location of the Virtual Mic in the room automatically.

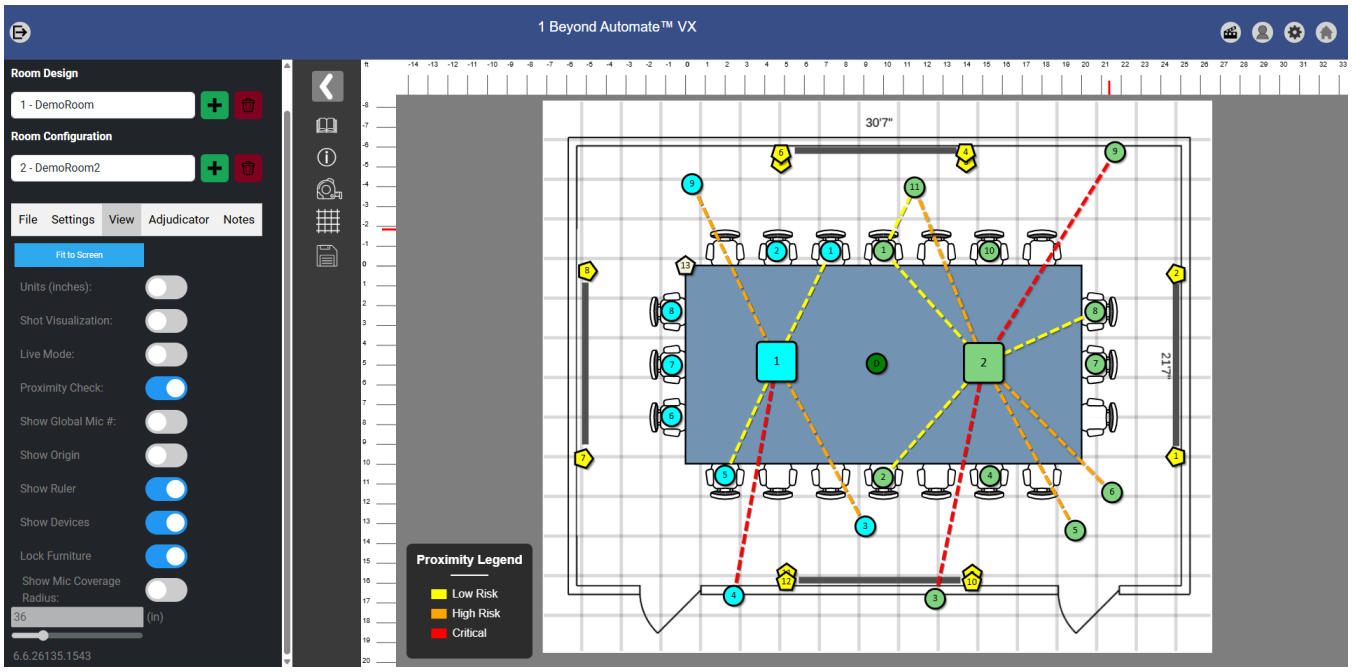
The camera shots react in real-time if the location of a Virtual Mic or Camera Device is changed. If a PTZ Override is enabled, Live Mode will show the camera shot of the PTZ Override instead of the automatically generated camera shot. For more information about Virtual Mics, refer to Virtual Mic and Blocking Zone Configuration on page 127

> **NOTE: Live Mode** is useful when determining the **Virtual Mic** positions and verifying that they are in the correct position, ensuring that the camera shot is appropriately framed, and checking for obstructions in the camera shot.

Proximity Check

Enable **Proximity Check** to show whether Virtual Mics are positioned too close together or if they are out of range from the Microphone Device. If any of these issues are present, they will be indicated in the room layout with a dashed line.

Virtual Mic Proximity Check



The dashed line indicates the proximity risk based on various parameters of the Microphone Device. The Proximity Check warnings indicate the following:

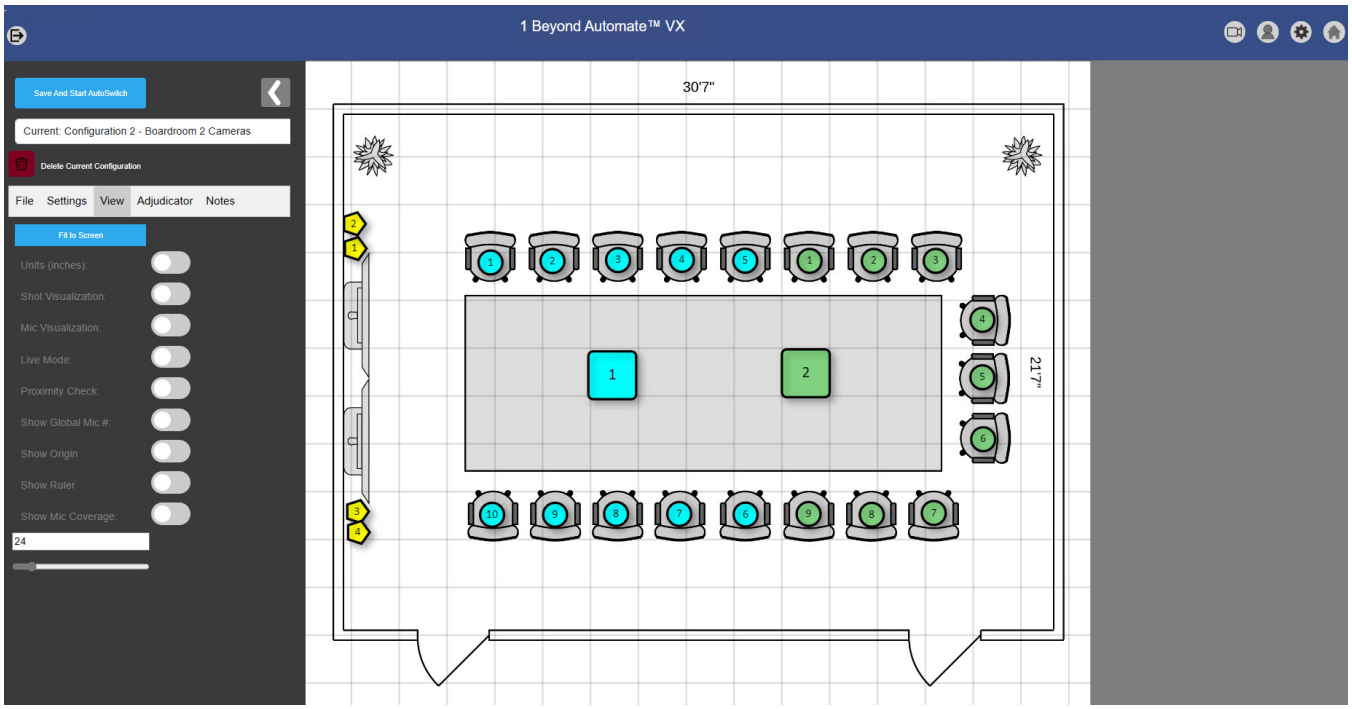
> **NOTE**: These indicators are provided as guidelines only. If a Virtual Mic position is giving a **High Risk** or **Critical** warning, it may still be able to be called while AutoSwitching. However, advanced configuration knowledge may be required to make certain Virtual Mic positions work properly in these situations.

- Yellow/**Low Risk**: There is a low risk (unlikely) that the Virtual Mic position will be activated inaccurately when audio is detected near it.
- Orange/**High Risk**: There is a high risk (likely) that the Virtual Mic position will be activated inaccurately when audio is detected near it.
- Red/**Critical**: There is a critical risk (very likely) that the Virtual Mic position will be activated inaccurately when audio is detected near it.

Show Global Mic

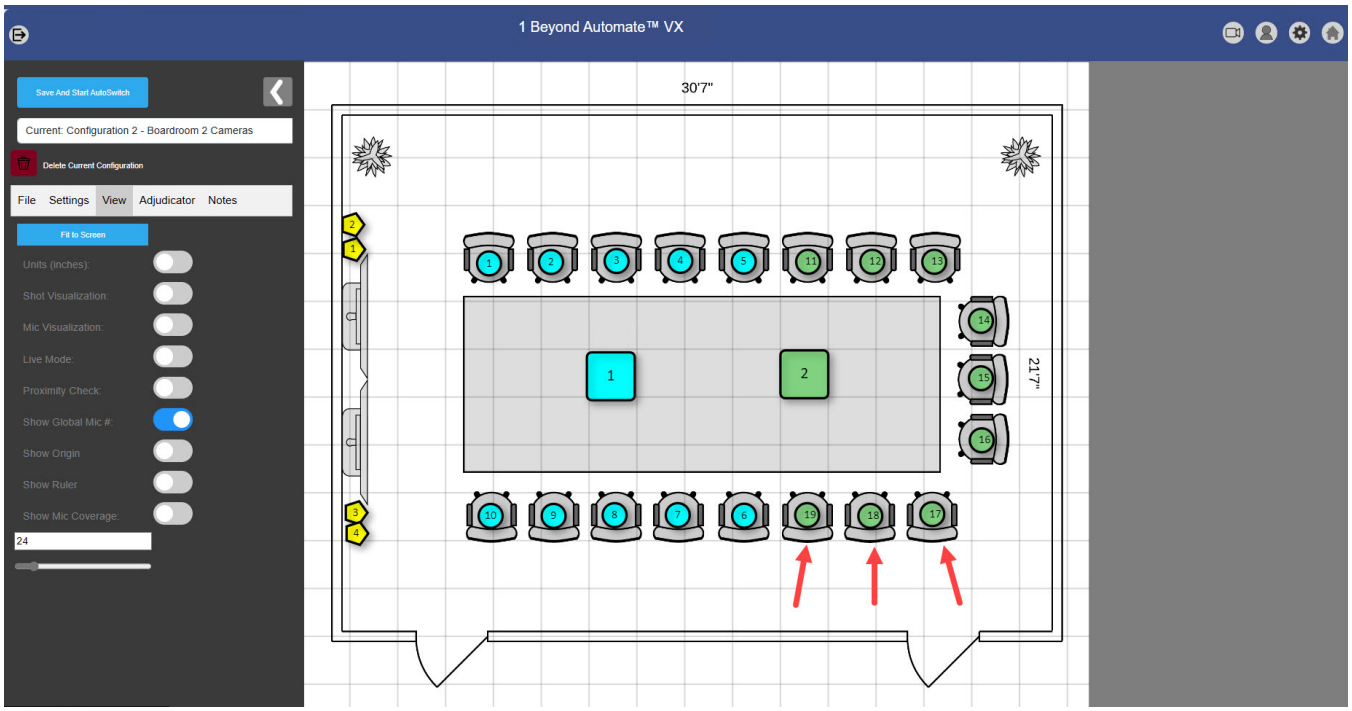
By default, Room Designer numbers the Virtual Mics and Blocking Zones in the system separately based on their connected Microphone Device.

Global Mic # OFF



Enable **Show Global Mic #** to show the total number of virtual mics and blocking zones.

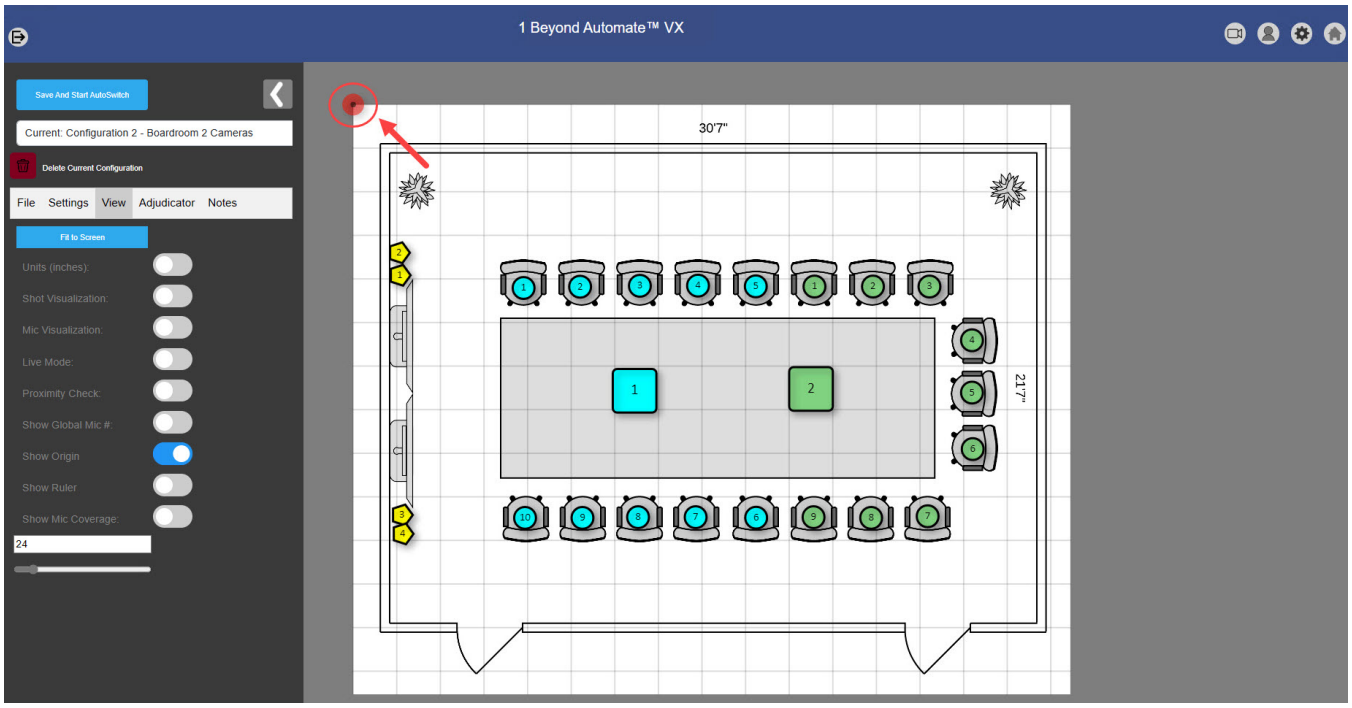
Global Mic # ON



Show Origin

Enable **Show Origin** to have the origin point visible in the room layout. The origin point is the reference point that is used for all of the coordinates used inside of Room Designer (Camera Devices, Microphone Devices, and Virtual Mic locations). The origin point is indicated by the red circle with a dot in the room layout.

Origin Point

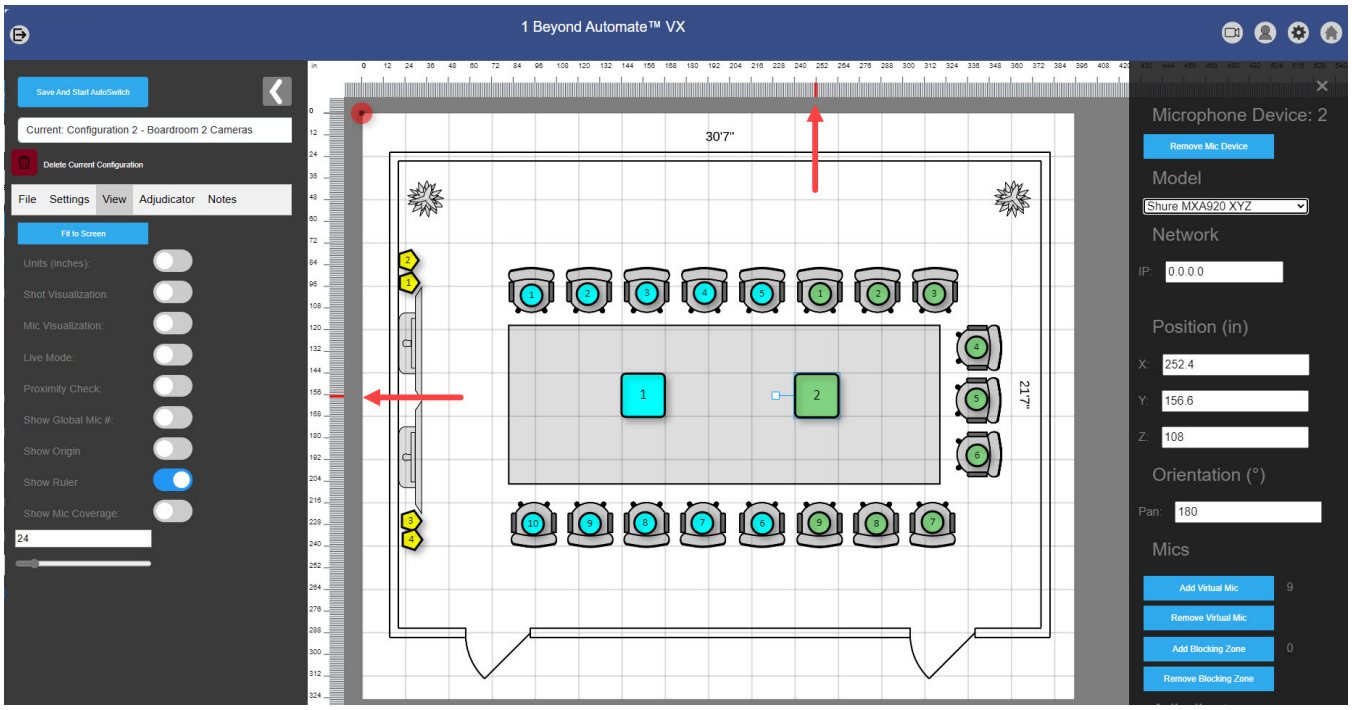


To move the origin point, click and hold the left mouse button on the origin point and drag the cursor. Use the origin point as a measurement tool to determine distances inside the room layout. Wherever the origin point is placed, it becomes the central location (0,0) for coordinates. The system automatically changes the coordinates of all entities in the configuration to reflect their locations relative to the new origin point.

Show Ruler

Enable **Show Ruler** to display a ruler on the top and left of the room layout. The ruler will use the corresponding unit from the **Units** option (inches or millimeters). The 0,0 position on the ruler is determined by the origin point.

Ruler Overlay

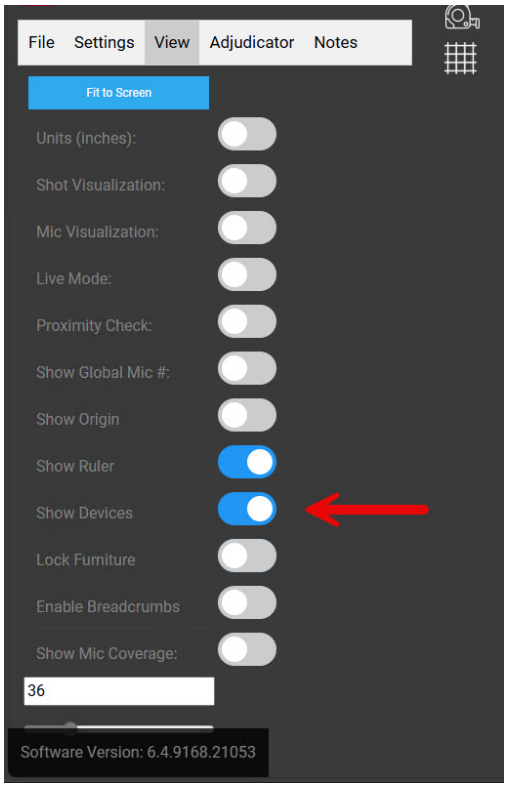


The ruler displays red lines as the X and Y coordinates indicating where the cursor is in the room layout. Use the red lines as a positional reference when moving Camera Devices, Microphone Devices, and Virtual Mic positions within the room layout.

Show Devices

Enable **Show Devices** to show Camera Devices, Microphone Devices, and Virtual Mics in the Room Designer project.

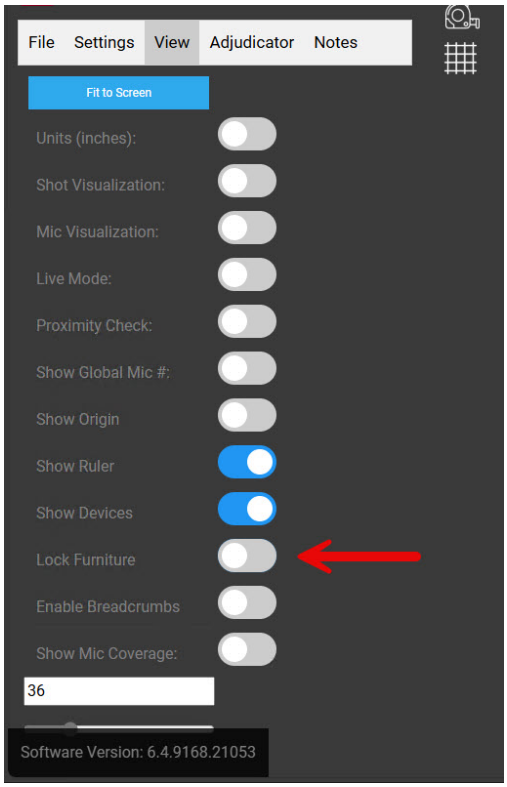
Show Devices



Lock Furniture

Enable **Lock Furniture** to lock the positions of all furniture elements added to the Room Designer project. For more information about adding furniture to the Room Designer project, refer to Add Furniture on page 82.

Lock Furniture

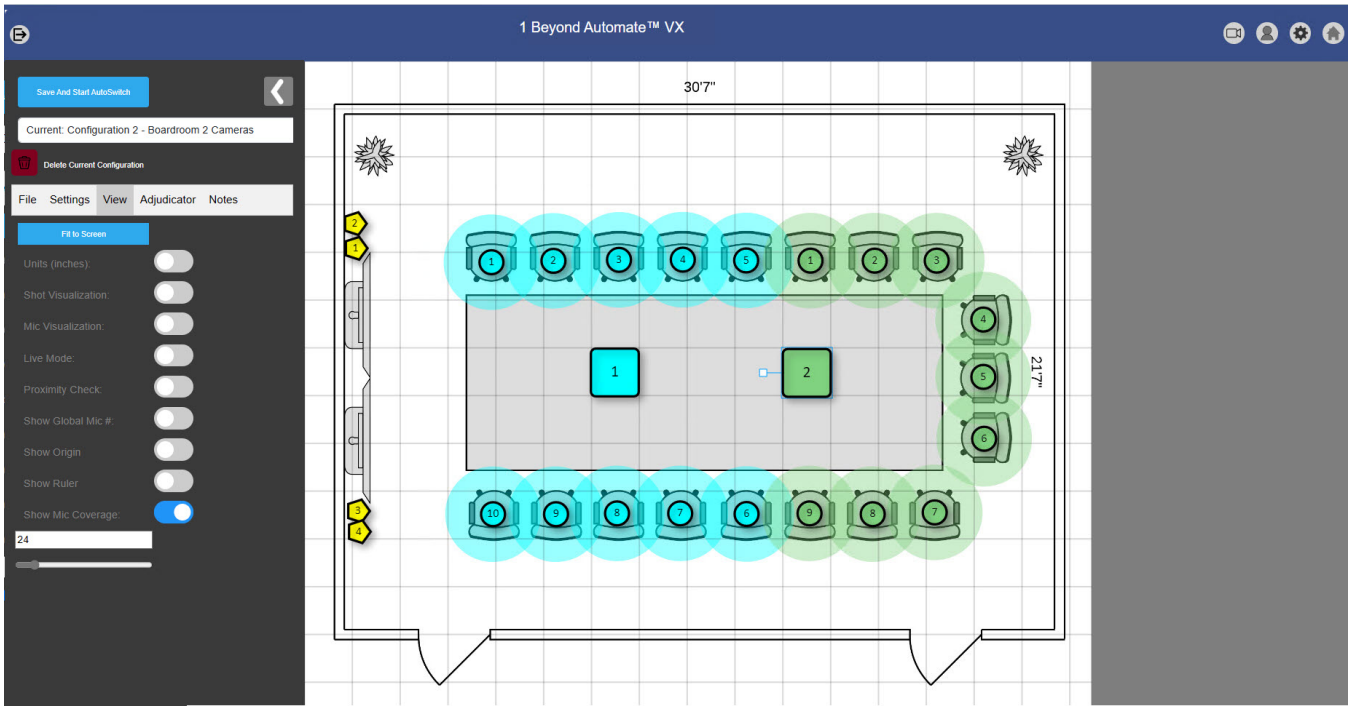


Show Mic Coverage

Enable **Show Mic Coverage** to show the circular range of Virtual Mic positions. This range indicates the area where the Microphone Device will switch the camera feed to the Virtual Mic's location when audio is detected.

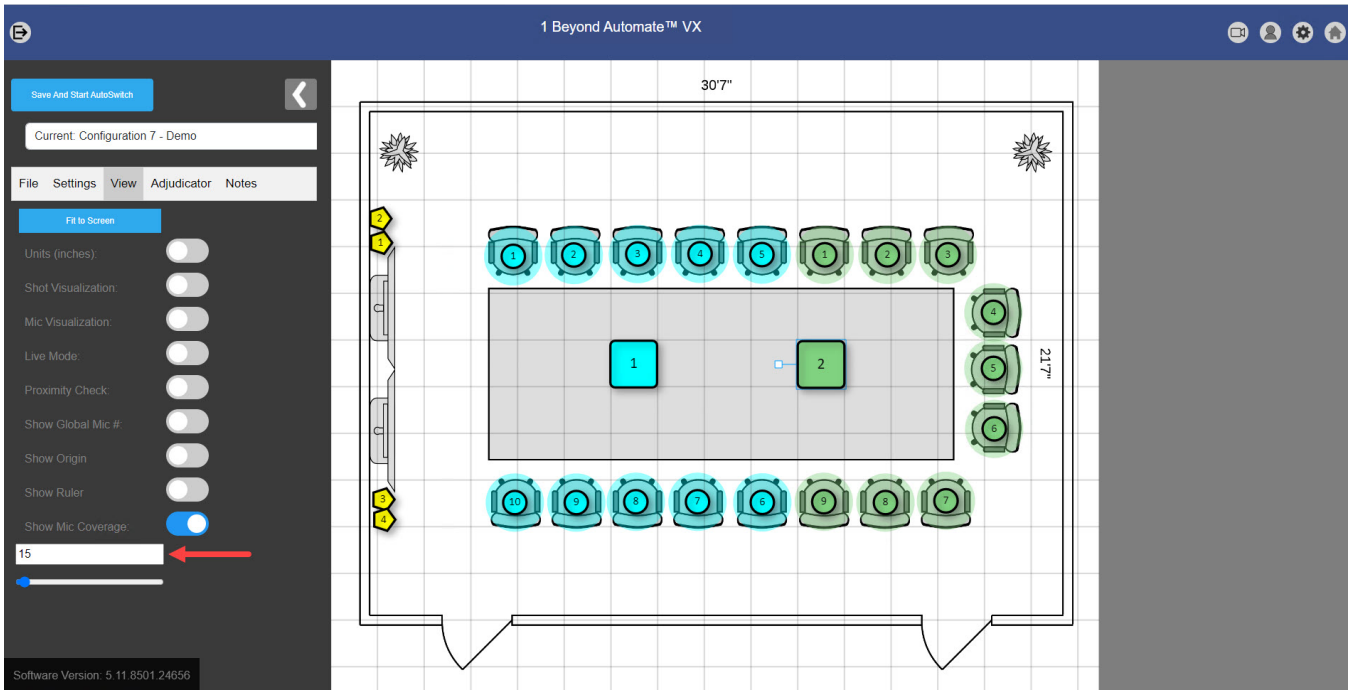
> **NOTE:** The **Show Mic Coverage** feature is only applicable to the Shure MXA920 XYZ, Sennheiser TCC2, Sennheiser TCCM, Audio Techinica® ATND1061, and Yamaha ADECIA™ microphones.

Virtual Mic Coverage



Use the text field to input a Virtual Mic radius or use the slider to adjust the radius. Change the Virtual Mic radius to fine-tune Virtual Mic locations so that there is no overlap between positions.

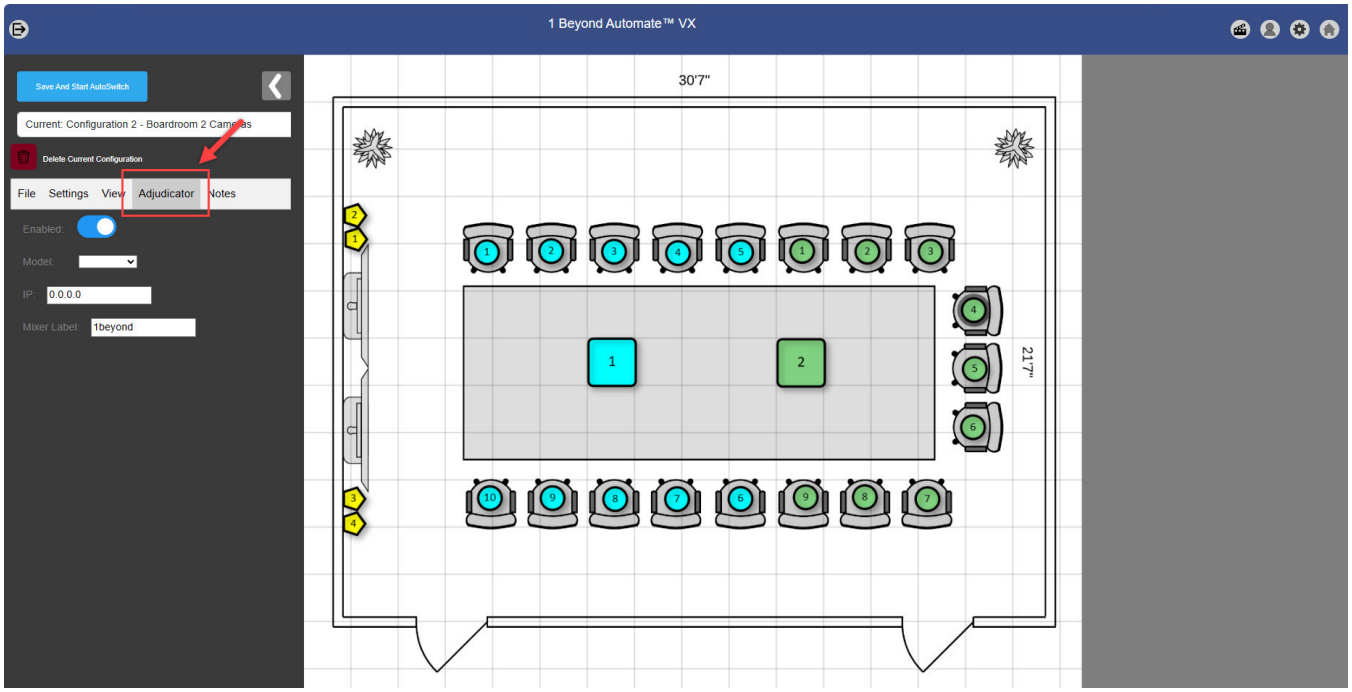
Virtual Mic Coverage Radius



Adjudicator Settings

Select the **Adjudicator** tab on the left-hand side of the Room Designer page to access the following room adjudicator settings.

Adjudicator Tab

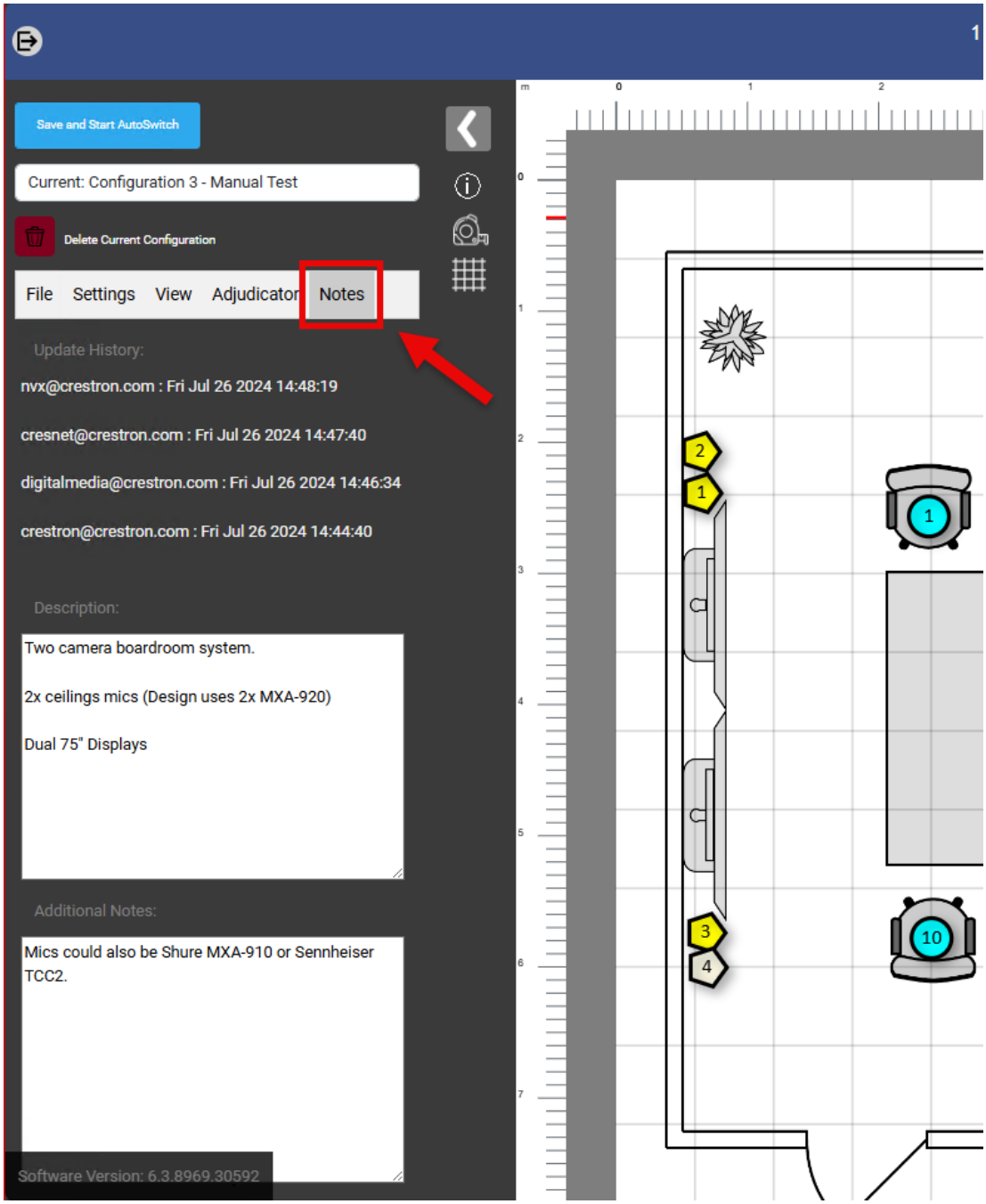


- To enable the adjudicator, turn on the **Enabled** toggle. This should be enabled when there is a DSP involved with the room configuration. When the adjudicator setting is enabled, the other settings beneath it become available. For more information about adjudicators, refer to Configuring Adjudicators on page 141
- Select the DSP model used by opening the drop-down menu next to the **Model** title. The following DSPs are compatible with Automate VX:
    - Shure Intellimix™ Room **(IMX-Rm)**
    - Shure P300 **(P300)**
    - QSC Q-SYS™ Core **(Q-SYS)**
    - Shure SCM-820 **(SCM-820)**
    - Biamp Tesira™ **(TESIRA)**
- Enter the IP address of the DSP into the field to the right of the **IP** title.
- Enter the name that will appear on the DSP that indicates the Automate VX into the **Mixer Label** field.

Notes Page

Select the **Notes** tab on the left-hand side of the Room Designer page to access the notes page. Information or any notes about the current room configuration can be placed here and will be saved for future use.

Notes

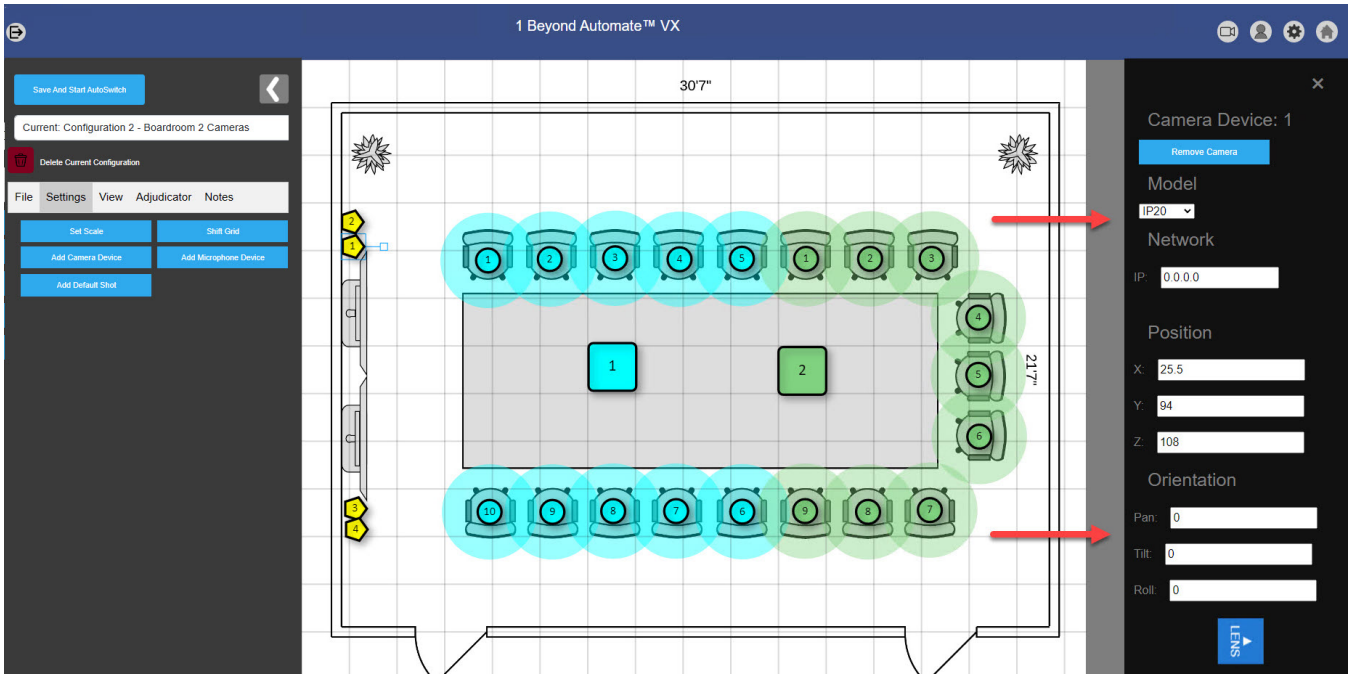


Camera Device Configuration

Camera Devices are the camera outputs that the Automate VX uses to display the camera feed. Camera Devices are indicated in Room Designer as pentagon-shaped nodes. For more information about adding cameras to a room layout, refer to Add Camera Device on page 79.

Once the Camera Devices are placed in the room layout, select a Camera Device to open the Camera Device Settings. This panel will appear on the right side of the screen.

Camera Device Settings

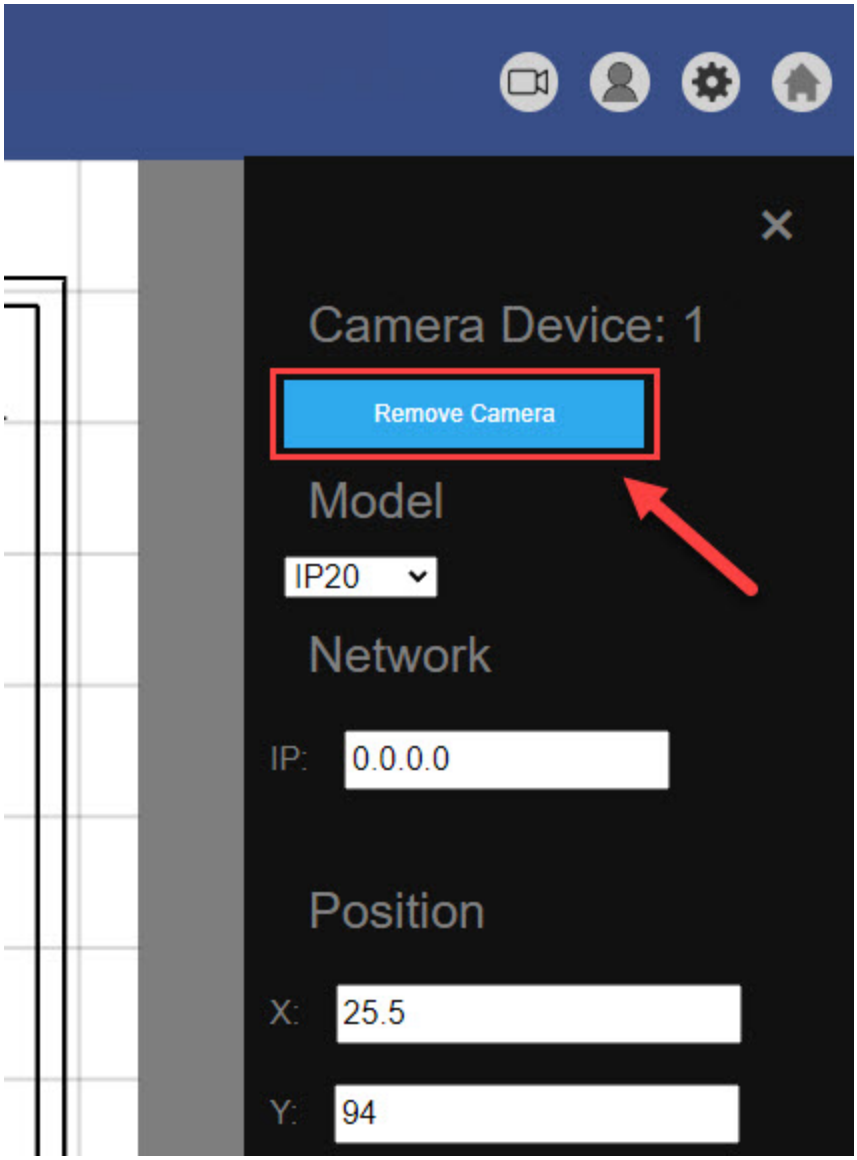


The following Camera Device settings are available.

Remove Camera

Select the **Remove Camera** button to remove the selected Camera Device from the current configuration. This removes all settings associated with the Camera Device from the configuration.

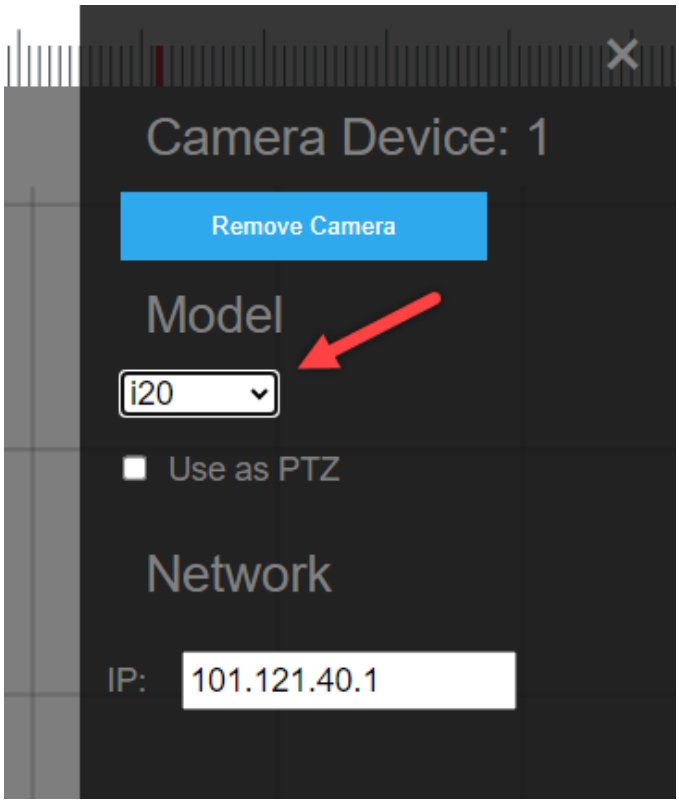
Remove Camera Button



Model

Select the drop-down menu under the **Model** title to select the camera model for the respective Camera Device. This should match the same model that was used in the physical room.

Camera Device Model Menu



The following camera models are available.

- **Intelligent Cameras**
  - **AT**: Select this when the camera model being used is a 1 Beyond AutoTracker 3 camera. For more information about 1 Beyond AutoTracker 3 cameras, refer to the 1 Beyond AutoTracker™ 3 Product Manual.
    Refer to the list below for additional information about AutoTracker 3 cameras in Room Designer:
    - The PTZ controls (Position and Orientation controls) on these cameras do not need to be adjusted, as the AutoTracker 3 does the tracking internally.
    - If custom PTZ controls are desired, then select the **Use as PTZ** check box.
    - AutoTracker 3 cameras are shown in Room Designer as an orange pentagon.

    > **NOTE**: When updating the firmware to the current version from versions prior to 6.1, previously configured AutoTracker 3 cameras will not work when set to IP20. Set the AutoTracker 3 camera to **AT** and select the **Use as PTZ** check box to use an AutoTracker 3 with custom PTZ controls.

  - **i12**: Select this when the camera model being used is a Crestron 1 Beyond i12 camera. For more information about Crestron 1 Beyond i12 cameras, refer to the Crestron 1 Beyond Camera Product Manual.
    Refer to the list below for additional information about i12 cameras in Room Designer:
    - The PTZ controls (Position and Orientation controls) on these cameras do not need to be adjusted, as the i12 does the tracking internally.
    - If custom PTZ controls are desired, then select the **Use as PTZ** check box.
    - i12 cameras are shown in Room Designer as an orange pentagon.
  - **i20**: Select this when the camera model being used is a Crestron 1 Beyond i20 camera. For more information about Crestron 1 Beyond i20 cameras, refer to the Crestron 1 Beyond Camera Product Manual.

    Refer to the list below for additional information about i20 cameras in Room Designer:
    - The PTZ controls (Position and Orientation controls) on these cameras do not need to be adjusted, as the i20 does the tracking internally.
    - If custom PTZ controls are desired, then select the **Use as PTZ** check box.
    - i20 cameras are shown in Room Designer as an orange pentagon.

- **Panasonic AW-UE100**: Select this when the camera model being used is a Panasonic AW-UE100 camera.

  > **NOTE**: The Automate VX Pro System Series 2 Third-Party Camera Enablement Key (SW-IV-SAM-3RDPARTYCAM) is required to use the Panasonic AW-UE100 camera. For more information on procuring the Automate VX Pro System Series 2 Third-Party Camera Enablement Key, refer to the SW-IV-SAM-3RDPARTYCAM product page.

  Refer to the list below for additional information about Panasonic AW-UE100 cameras in Room Designer:

  - The PTZ controls (Position and Orientation controls) on these cameras do not need to be adjusted, as the Panasonic AW-UE100 does the tracking internally.
  - If custom PTZ controls are desired, then select the **Use as PTZ** check box.
  - Panasonic AW-UE100 cameras are shown in Room Designer as an orange pentagon.

- **Panasonic AW-UE150A**: Select this when the camera model being used is a Panasonic AW-UE150A camera.

  > **NOTE**: The Automate VX Pro System Series 2 Third-Party Camera Enablement Key (SW-IV-SAM-3RDPARTYCAM) is required to use the Panasonic AW-UE150A camera. For more information on procuring the Automate VX Pro System Series 2 Third-Party Camera Enablement Key, refer to the SW-IV-SAM-3RDPARTYCAM product page.

  Refer to the list below for additional information about Panasonic AW-UE150A cameras in Room Designer:

  - The PTZ controls (Position and Orientation controls) on these cameras do not need to be adjusted, as the Panasonic AW-UE150A does the tracking internally.
  - If custom PTZ controls are desired, then select the **Use as PTZ** check box.
  - Panasonic AW-UE150A cameras are shown in Room Designer as an orange pentagon.

- **Panasonic AW-UE160**: Select this when the camera model being used is a Panasonic AW-UE160A camera.

  > **NOTE**: The Automate VX Pro System Series 2 Third-Party Camera Enablement Key (SW-IV-SAM-3RDPARTYCAM) is required to use the Panasonic AW-UE160 camera. For more information on procuring the Automate VX Pro System Series 2 Third-Party Camera Enablement Key, refer to the SW-IV-SAM-3RDPARTYCAM product page.

  Refer to the list below for additional information about Panasonic AW-UE160 cameras in Room Designer:

  - The PTZ controls (Position and Orientation controls) on these cameras do not need to be adjusted, as the Panasonic AW-UE160 does the tracking internally.
  - If custom PTZ controls are desired, then select the **Use as PTZ** check box.
  - Panasonic AW-UE160 cameras are shown in Room Designer as an orange pentagon.

- **PTZ Cameras**
  - **IP12**: Select this when the camera model being used is a 1 Beyond PTZ-12 camera. These cameras have full access to the Automate VX's camera features, including PTZ controls. For more information about 1 Beyond PTZ-12 cameras, refer to the 1 Beyond PTZ 12 Series Product Manual.
  - **IP20**: Select this when the camera model being used is a 1 Beyond PTZ-20 camera. These cameras have full access to the Automate VX's camera features, including PTZ controls. For more information about 1 Beyond PTZ-20 cameras, refer to the 1 Beyond PTZ 20 Series Product Manual.
  - **p12**: Select this when the camera model being used is a Crestron 1 Beyond p12 camera. These cameras have full access to the Automate VX's camera features, including PTZ controls. For more information about Crestron 1 Beyond p12 cameras, refer to the Crestron 1 Beyond Camera Product Manual.
  - **p20**: Select this when the camera model being used is a Crestron 1 Beyond p20 camera. These cameras have full access to the Automate VX's camera features, including PTZ controls. For more information about Crestron 1 Beyond p20 cameras, refer to the Crestron 1 Beyond Camera Product Manual.
- **Other**
  - **generic**: Select this when the camera model being used is not a listed camera. The generic cameras do not have access to PTZ controls (Position and Orientation controls).

    > **NOTE**: All USB cameras connected to the Automate VX must be designated as generic, including IV-CAM Series cameras.

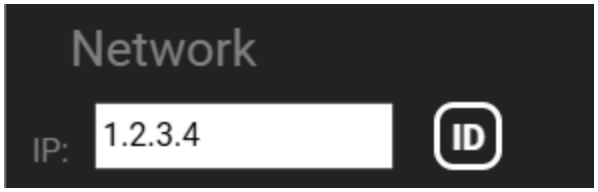
Network

Enter the IP address of the camera that is being used as the Camera Device in the **IP** text field. Crestron 1 Beyond cameras IP addresses can be obtained and changed in the Crestron 1 Beyond Camera Manager. For more information about the Crestron 1 Beyond Camera Manager, refer to the documentation for your Crestron 1 Beyond camera model.

> **NOTE:** When adding Camera Devices, ensure that the camera numbers in Room Designer match the IP addresses and corresponding Wirecast shots for each camera. For more information about Wirecast, refer to Wirecast Configuration.

Once a valid IP address is entered for the Camera Device, select the ID button to flash the camera's LED to identify it within the room.

Camera Device Network Setting

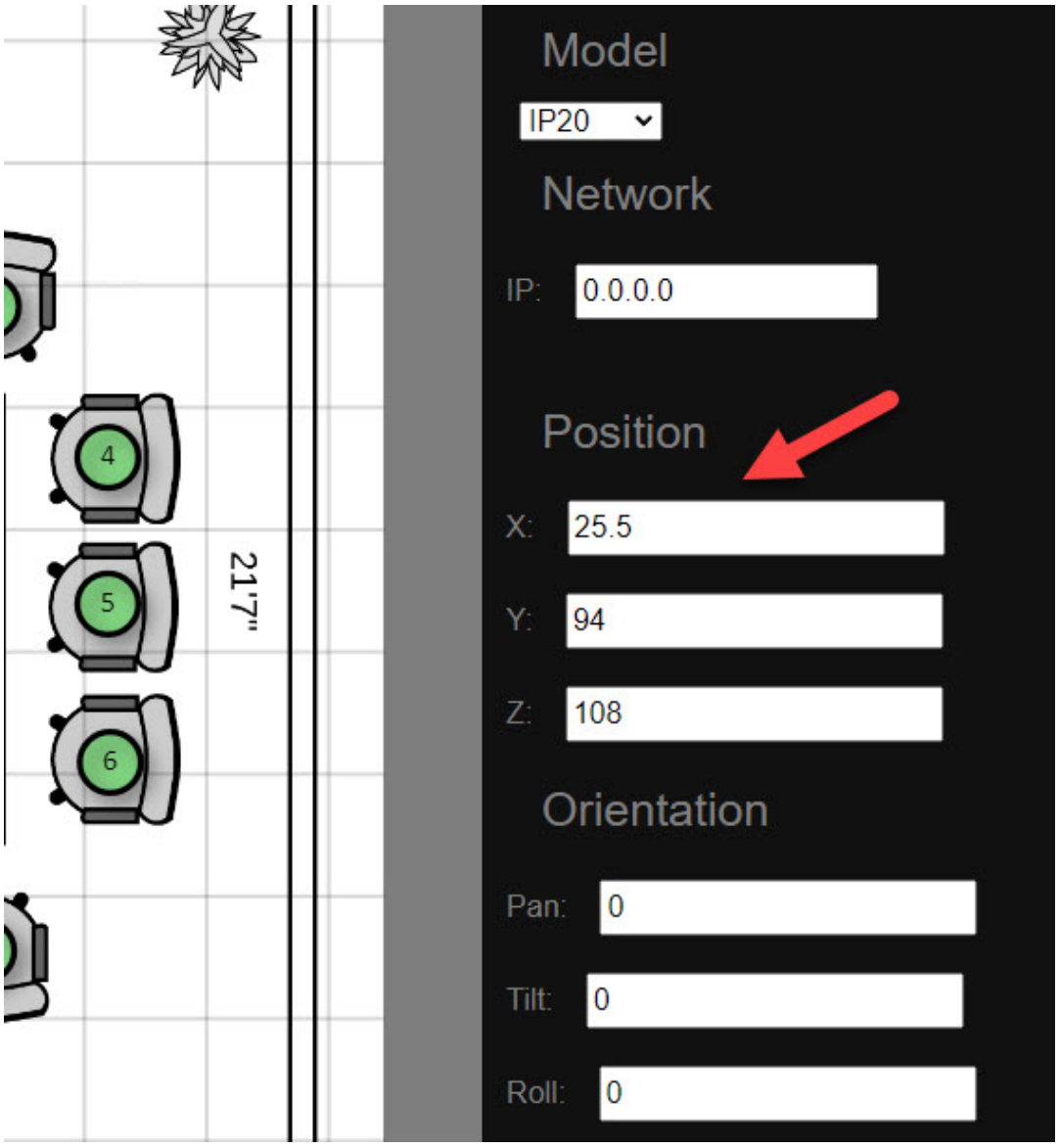


Position

The **X**, **Y**, and **Z** fields are the coordinates of the Camera Device in the room layout. Enter the coordinates of the Camera Device into their respective fields, or drag the Camera Device and place it into the correct location. The units used in the text fields are either in inches or millimeters, depending on the unit selected in the **View** tab. For more information about changing the units, refer to Camera Device Configuration on page 105

> **NOTE:** The X, Y, and Z coordinates of the Camera Device are measured relative to the set Origin Point. For more information about the Origin Point, refer to Show Origin on page 97

Camera Device Position Setting

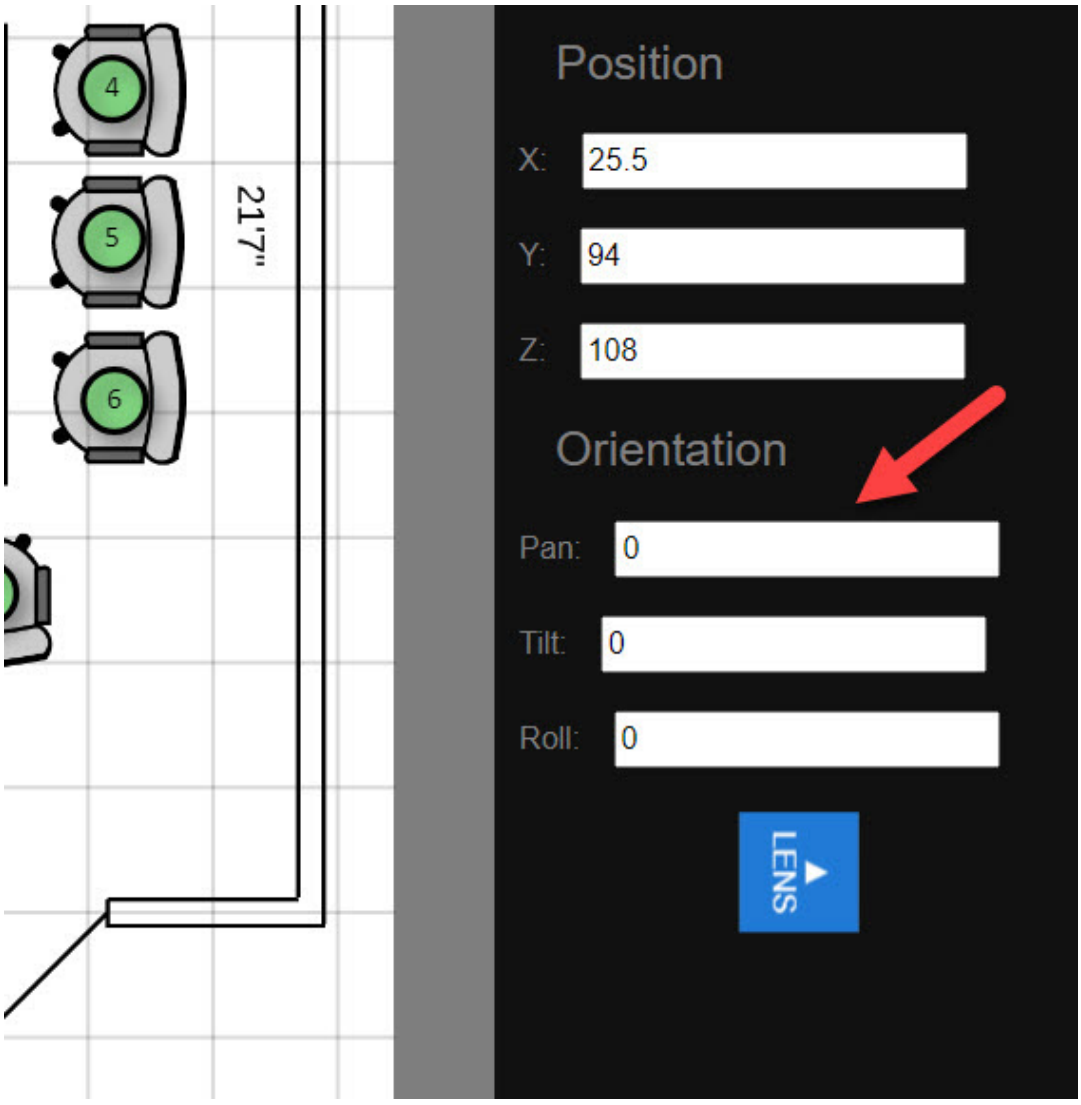


Orientation

The **Pan**, **Tilt**, and **Roll** text fields indicate the direction the Camera Device's lens is facing when it is in the default (resting) state. The direction that the camera lens is facing is indicated by the blue **LENS** box. **LENS** is the bird-eye view of the top of the camera, and the orientation of the blue box should match the way the camera is set up in the physical room.

Use the **Pan**, **Tilt**, and **Roll** text fields to change the direction of the Camera Device.

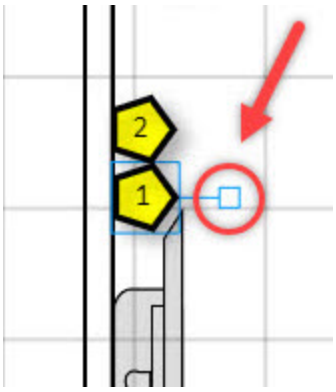
Camera Device Orientation Setting



The handle sticking out of the Camera Device in the room layout can also adjust the **Pan** setting of the camera. Click and hold the handle to change this value.

> **NOTE:** When adjusting the Camera Device Orientation, the Camera Device handle corresponds with the camera lens when the lens is facing forward.

Camera Device Handle



Microphone Device Configuration

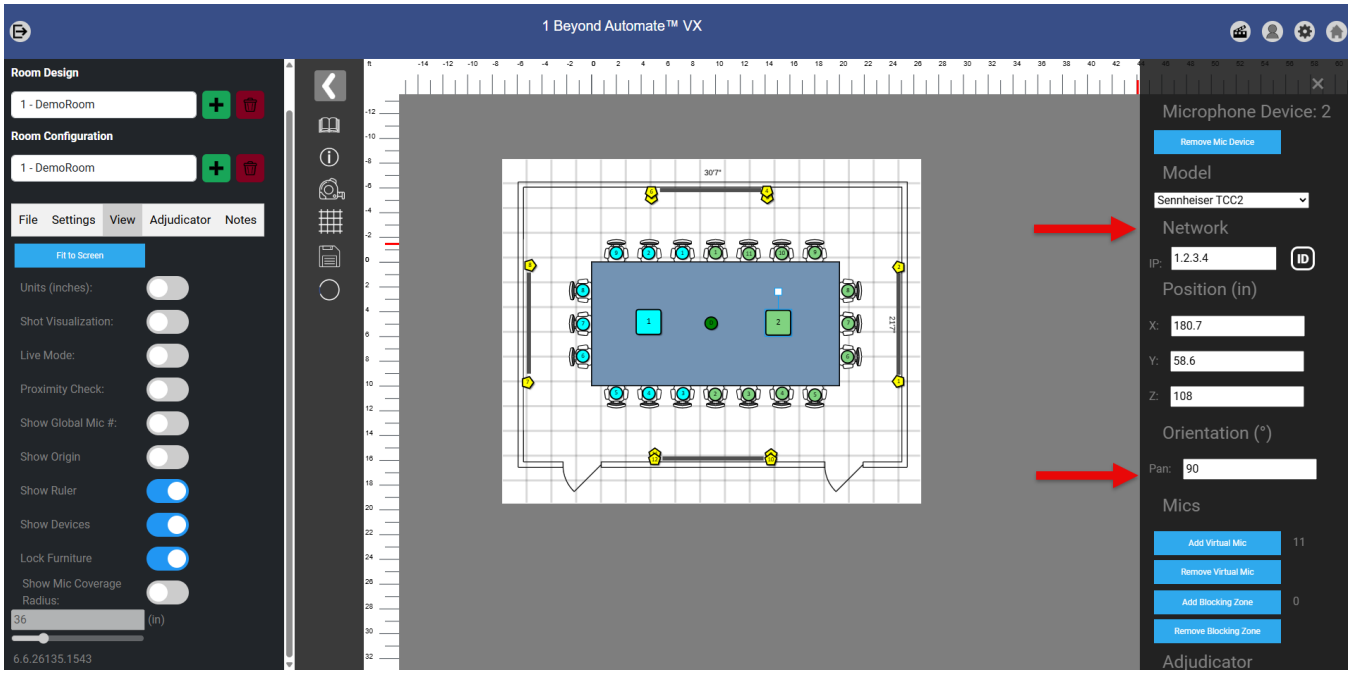
Microphone Devices are the microphones in a room that the Automate VX uses to receive audio from active-speaking participants. Microphone Devices are indicated in room designer as square-shaped nodes. For more information about adding Microphone Devices to a room layout, refer to Add Microphone Device on page 80

There are three different types of microphones, and each microphone type is configured differently within Room Designer.

- **Positional microphones:** These are microphones installed in the ceiling. Microphone Devices should be placed in the exact location where they exist physically in the room layout. Intelligent microphones have a radius that can collect audio data, and in conjunction with AutoSwitching, can broadcast audio from any position within the radius.
- **DSPs and discussion systems:** Microphones positioned at each active speaking participant location. These are often push-to-talk microphone systems, gooseneck microphones, or any microphone system that is using a DSP. For the Microphone Device in the room layout, the location of the Microphone Device is not important and can be placed anywhere. The microphones used to track audio need to have Virtual Mics in positions where microphones are located. For more information on configuring Virtual Mics, refer to Virtual Mic and Blocking Zone Configuration on page 127

Once the **Microphone Devices** are situated in their appropriate locations within the room layout, click on a Microphone Device to open the Microphone Device Settings. This panel appears on the right side of the screen.

Microphone Device Settings

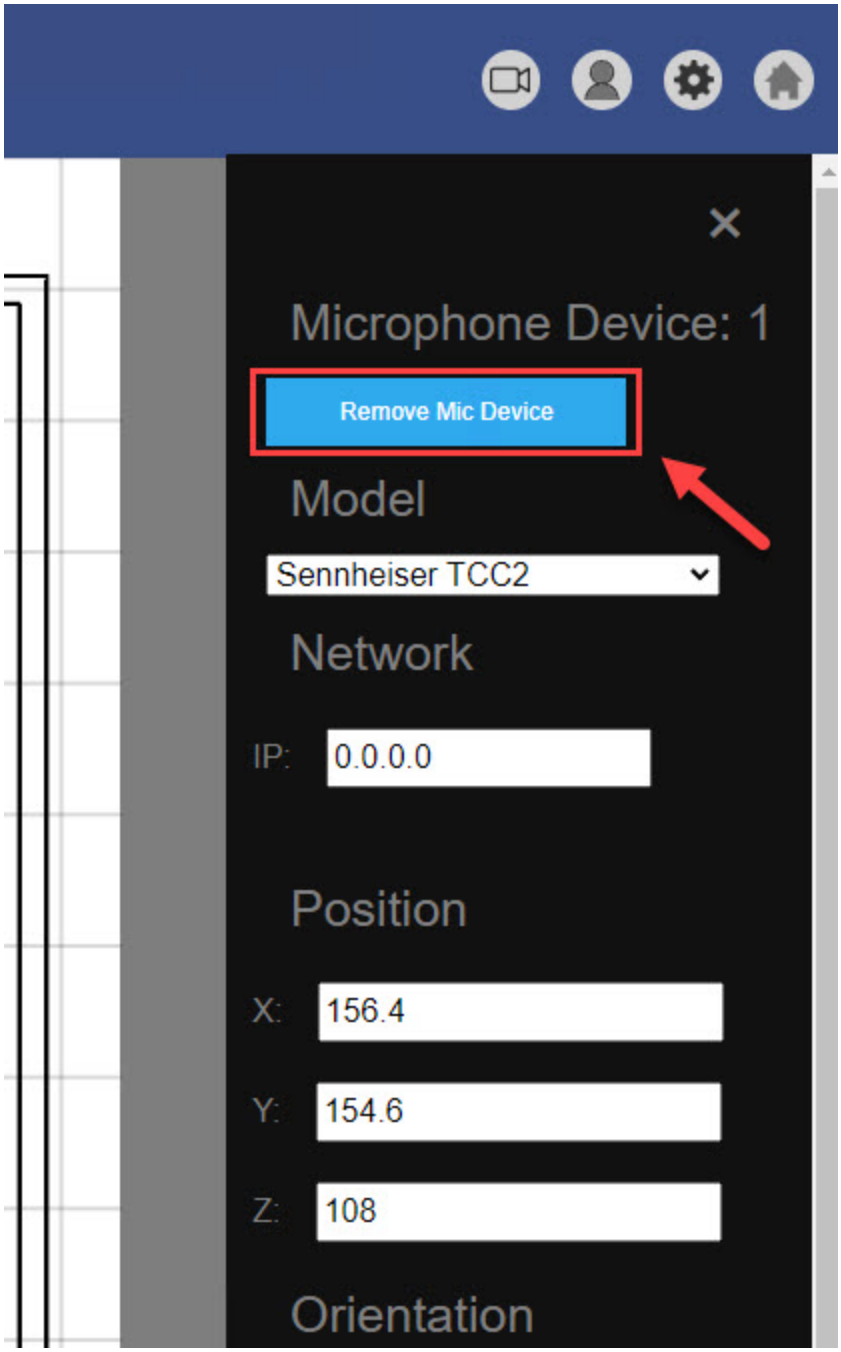


The following **Microphone Device** settings are available.

Remove Mic Device

Select the **Remove Mic Device** button to remove the selected Microphone Device from the current configuration. This removes all settings associated with the Camera Device from the configuration.

Remove Mic Device Button



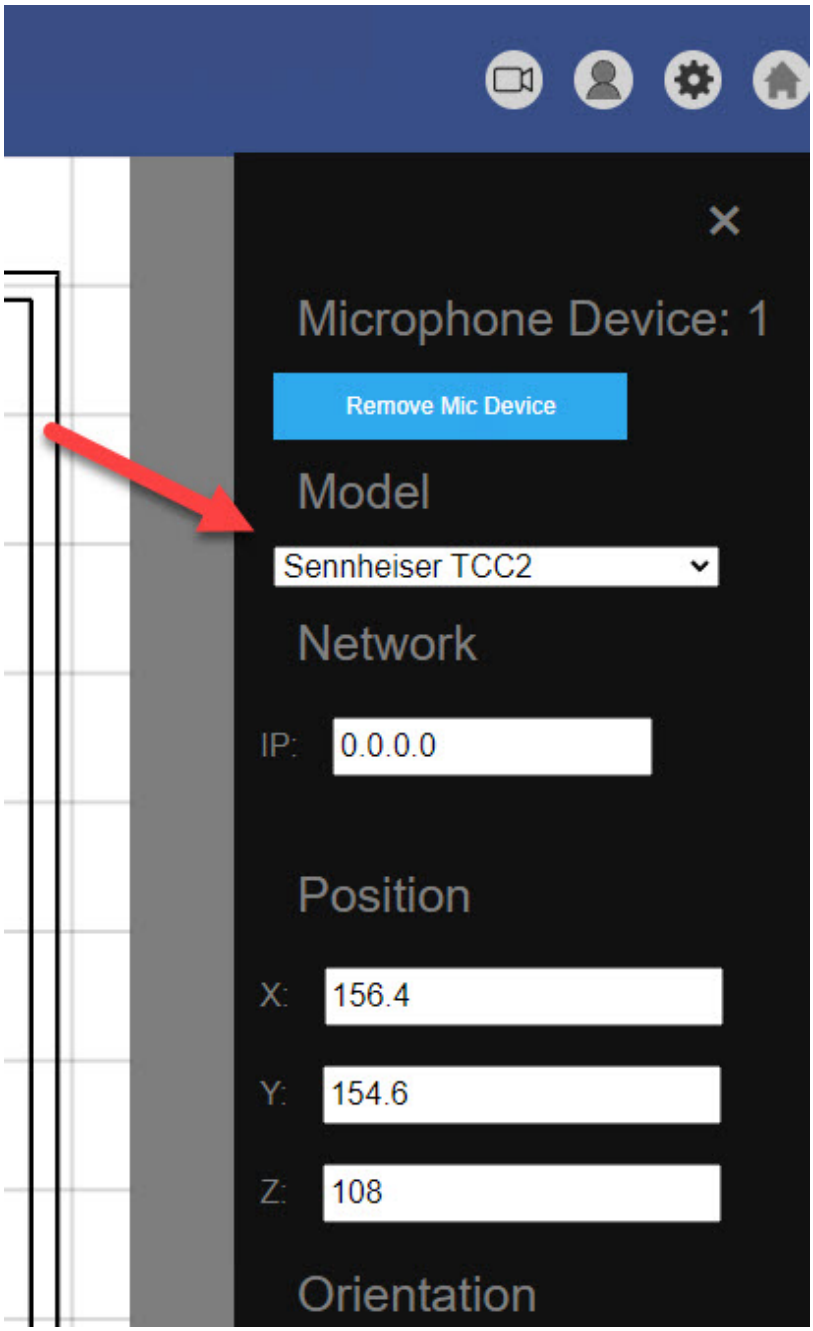
Model

Select the drop-down menu under the **Model** title to select the microphone model for the respective Microphone Device. This should match the same model that was used in the physical room. For more information about microphone models compatible with Automate VX, refer to System Components on page 8.

The following microphone models are available:

- **Positional Mics**
  - DM-NAX Intelligent Audio Processor
  - Audio Technica® ATND1061
  - Sennheiser TCC2
  - Sennhesier TCCM
  - Sennhesier TCCM+
  - Shure MXA925
  - Shure MXA920 XYZ
  - Shure MXA901
  - Yamaha ADECIA RM-CG
- **DSP**
  - Biamp Tesira
  - QSC Q-SYS™ Core
  - Shure Intellimix™ Room
  - Shure P300
- **Discussion System**
  - Audio-Technica ATUC-50
  - Shure MXCW
  - TAIDEN® Conference System
  - Televic Discussion System
  - Bosch DICENTIS Conference System
- **Other**
  - Shure MXA310
  - Shure MXA910
  - Shure MXA920-Lobe
  - Unknown

Microphone Device Model Menu



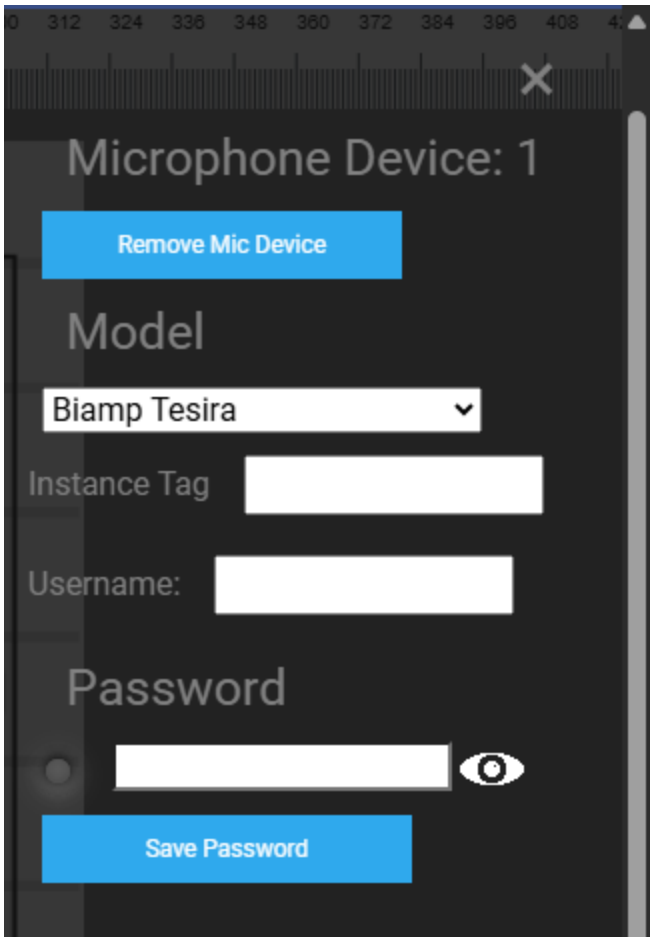
NOTES:

- If the microphone that is being used in the room is not one of the models listed above, then select **generic**. Generic microphones may not operate properly with the Automate VX.
- When using the Shure MXA920-Lobe or Shure MXA910 as the Microphone Device, the Virtual Mic positions should match the locations of the lobes in the Shure Designer Configuration software. For more information about these Shure microphones, refer to Shure's documentation.

Instance Tag and Credentials

Additional information is required for Biamp, QSC, and BOSCH Dicentis® devices. When these models are selected, a combination of the following credentials must be entered to connect:

Instance Tag and Credentials Example



- **Instance Tag** (Biamp Tesira): Input the **Instance Tag** of the Logic Meter within the Biamp Tesira software. For more information on configuring the Logic Meter for a Biamp DSP, refer to Biamp Tesira™ Configuration for Automate VX on page 226.
- **Code Name** (QSC Q-SYS Core): Input the **Code Name** of the Gating Mixer within the Q-SYS Designer software. For more information on configuring the Gating Mixer for a Q-SYS DSP, refer to QSC Q-SYS™ Core Configuration for Automate VX on page 245.
- **Username**: Input the username of the device (if a login is required to connect to the device).
- **Password**: Input the password of the device (if a login is required to connect to the device). Once the password is entered, select the **Save Password** button to allow Automate VX to remember it.

DM NAX Intelligent Audio Processor Settings

When the **DM NAX Intelligent Audio Processor** device is selected as the microphone model, additional settings are shown.

DM-NAX Intelligent Audio Processor Settings



The Microphone Device can be set to any microphones connected to the DM-NAX-AP-100. All microphones connected to the DM-NAX-AP-100 communicate concurrently with one another, and audio position data is processed through the DM-NAX-AP-100. For more information on microphones that can be connected through the DM-NAX-AP-100, refer to DM NAX Intelligent Audio Processors on page 11.

Use the **Available NAX Devices** drop-down menu to select a connected microphone as the Microphone Device. To add a DM NAX device to Automate VX, refer to DM NAX Connections to Automate VX on page 162.

Available NAX Devices Drop-Down Menu



Within the **Available NAX Devices** drop-down menu, a DM-NAX-AP-100 device and its associated microphones are identified by their hostnames.

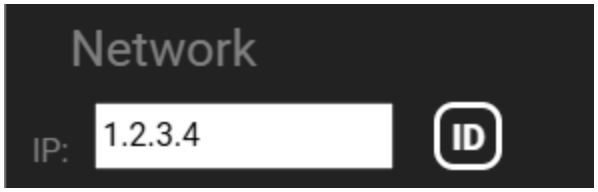
> **TIP**: Multiple DM-NAX-AP-100 devices can be connected to Automate VX. Additional DM-NAX-AP-100 devices populate the **Available NAX Devices** drop-down menu with their corresponding microphones.

Network

Enter the IP address of the microphone in the **IP** text field. This allows Automate VX to connect and communicate with the microphone.

Once a valid IP address is entered for the Microphone Device, select the ID button to flash the microphone's LED to identify it within the room.

Microphone Device Network Setting

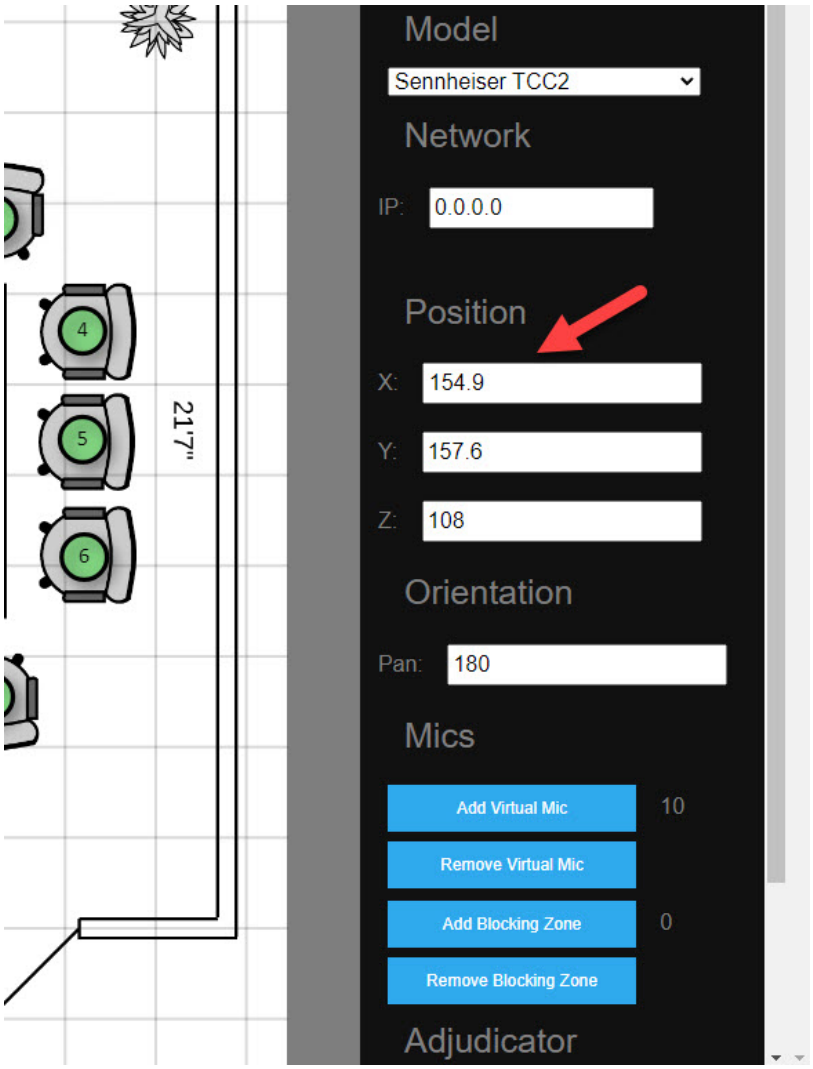


Position

The **X**, **Y**, and **Z** fields are the coordinates of the Microphone Device in the room layout. Enter the coordinates of the Microphone Device into their respective fields, or drag the Microphone Device and place it into the desired location. The units used in the text fields are either in inches or millimeters, depending on the unit selected in the **View** tab. For more information about changing the units, refer to Units on page 91

> **NOTE:** The X, Y, and Z coordinates of the Microphone Device are measured relative to the Origin Point that is set. For more information about the Origin Point, refer to Show Origin on page 97

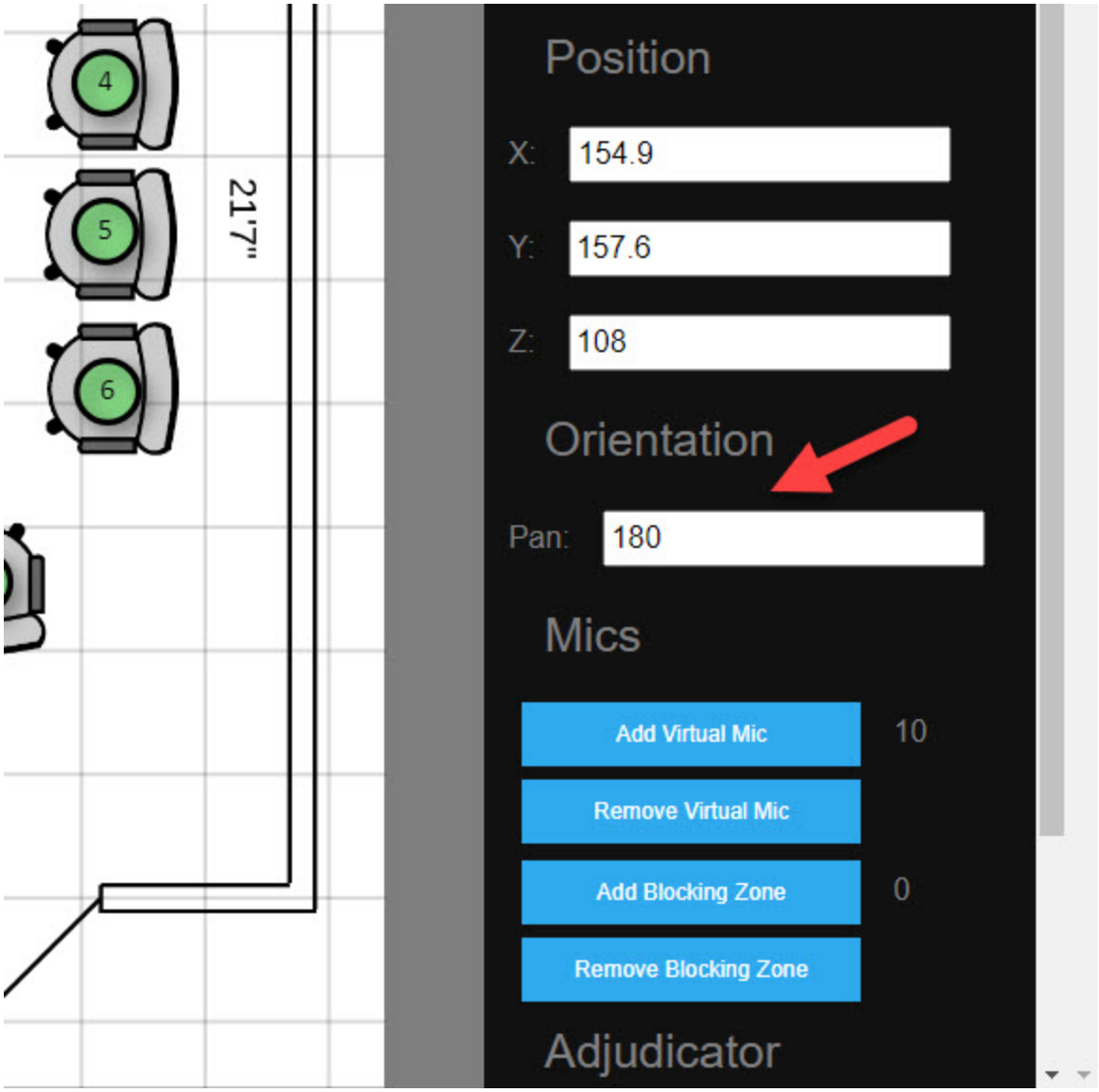
Microphone Device Position Setting



Orientation

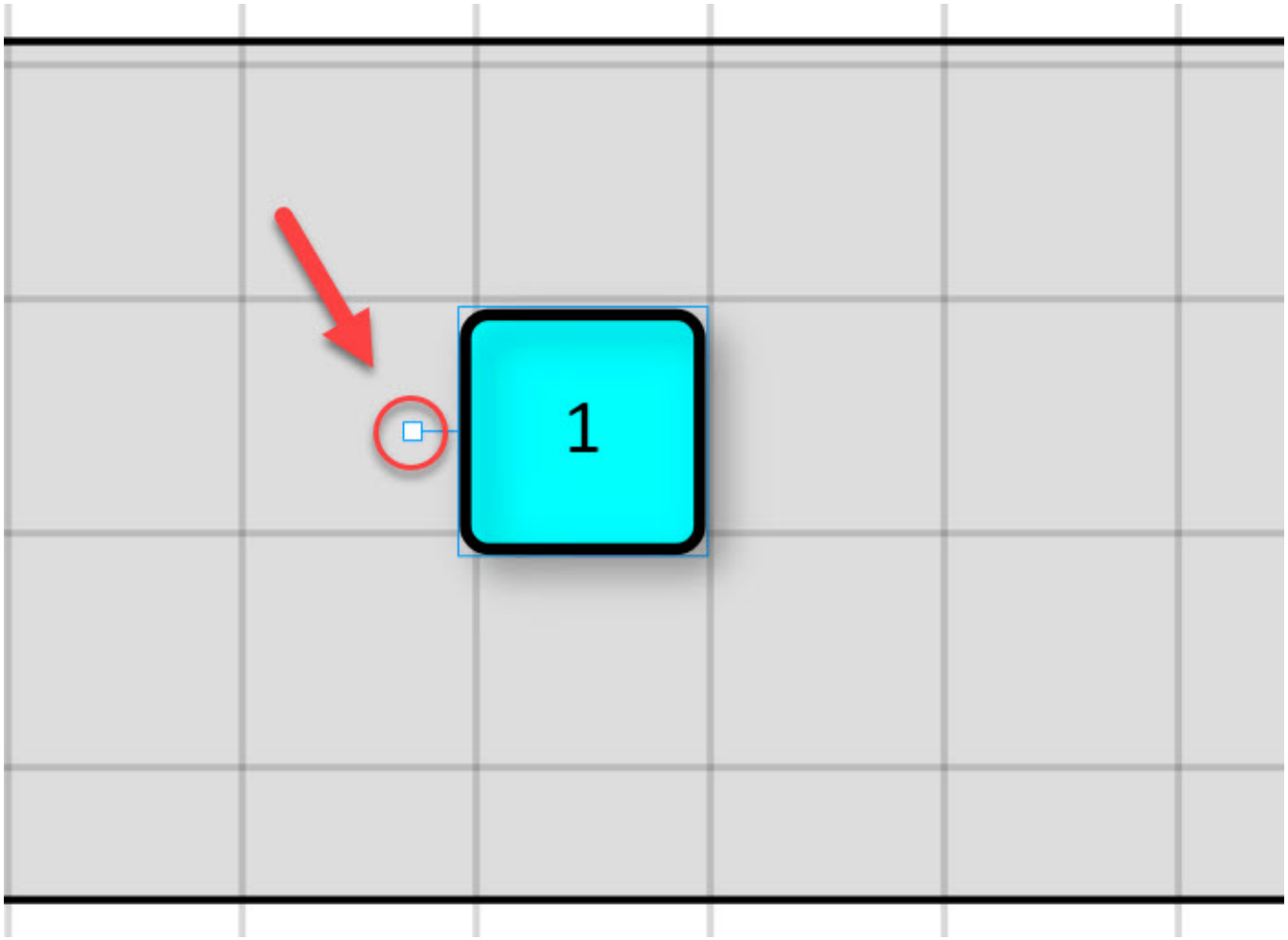
The **Pan** field indicates the direction that the microphone is facing. Change the value in the **Pan** field to match the Microphone Device to the physical microphone.

Microphone Device Orientation Setting



Alternatively, the handle attached to the Microphone Device can rotate the microphone. This will automatically change the value in the Pan field to reflect the orientation.

Microphone Device Handle



For optimal microphone performance, the Microphone Device should be oriented with the handle extending in the same direction as the manufacturer logo on the physical microphone.

Mics

Mics settings allow for the creation and removal of Virtual Mics and Blocking Zones. For more information, refer to Virtual Mic and Blocking Zone Configuration on page 127.

Adjudicator

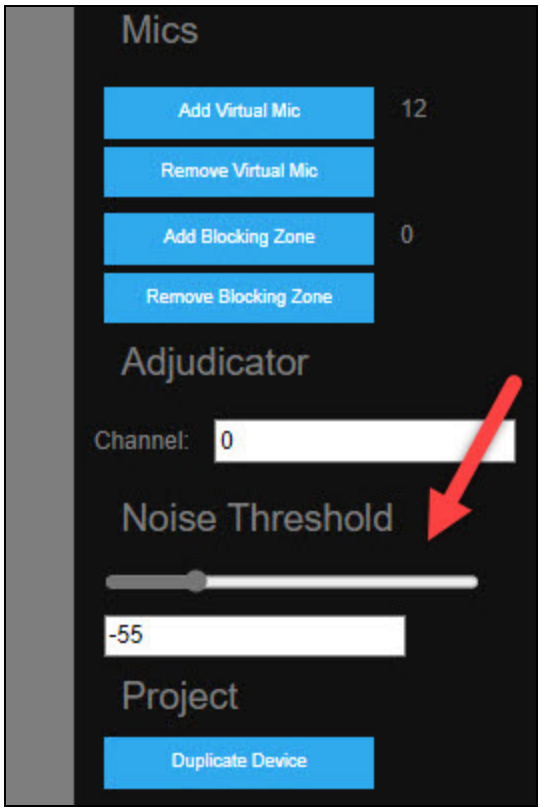
Input the channel that the Microphone Device will communicate with the adjudicator (if necessary). For more information, refer to Configuring Adjudicators on page 141

Noise Threshold

Use the slider under the **Noise Threshold** setting to adjust the RMS (Root Mean Square) value of the Microphone Device. The text field below the slider can also be used to manually input an RMS value.

> **NOTE: Noise Threshold** is only applicable to the Shure MXA920 XYZ Mode, Sennheiser TCC2, Sennheiser TCCM, and Yamaha ADECIA microphones. **Noise Threshold** will not function with any other microphones.

Microphone Device Noise Threshold

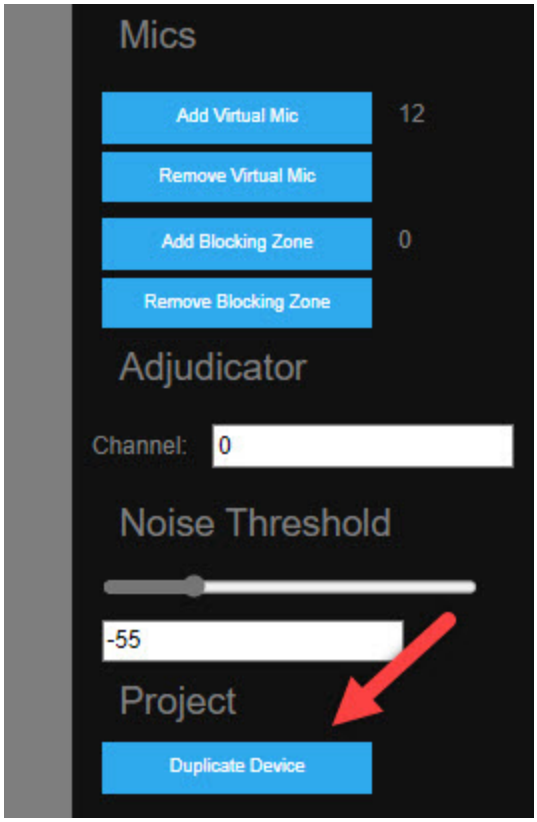


This will affect the sensitivity of the microphone when AutoSwitching is enabled. The higher the RMS value, the more noise is required to trigger Virtual Mic positions associated with the Microphone Device. Conversely, the lower the RMS value, the less noise is required to trigger Virtual Mic positions.

Duplicate Device

Select the **Duplicate Device** button to create a copy of the currently selected Microphone Device. Once the button is clicked, click again in the desired location for the copied Microphone Device. This also duplicates all Virtual Mic positions, Blocking Zone positions, and Adjudicator settings as well.

Microphone Device Duplicate Device Setting



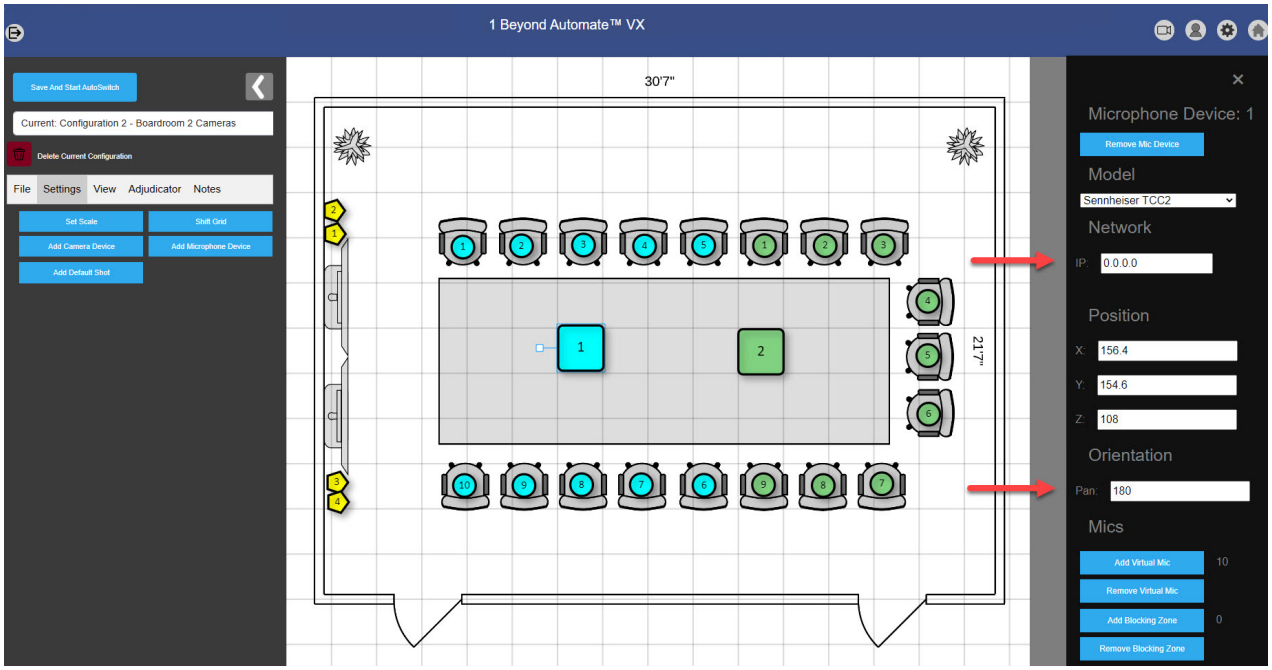
Virtual Mic and Blocking Zone Configuration

Virtual Mics represent the active speaking participant positions in Room Designer. These are most often seats but can be used for standing positions as well. Virtual Mic locations in the room layout are markers for the Microphone Devices to pick up the speaking positions. The respective cameras will then switch to the Virtual Mic location.

To use Virtual Mic settings in a room layout:

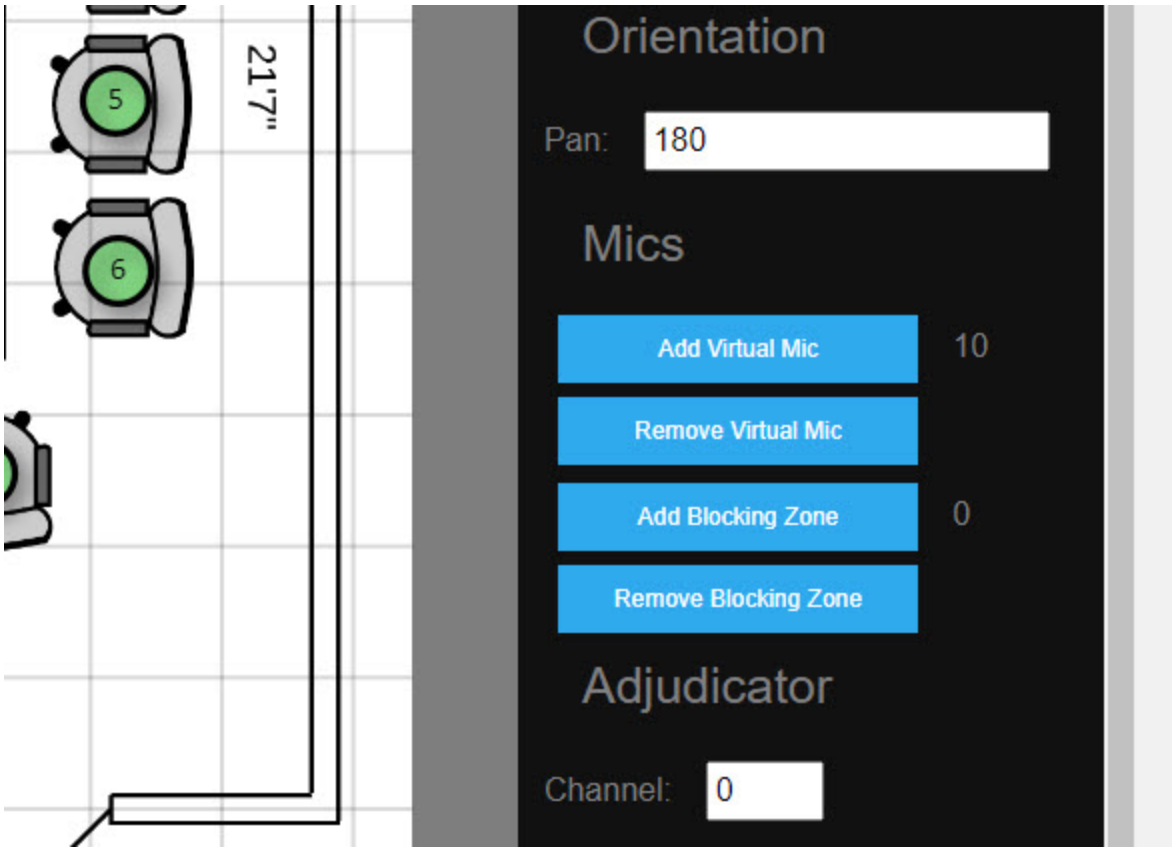
1. Select the Microphone Device that is going to be tracking audio. The **Microphone Device** settings menu appears on the right side of the window.

   Microphone Device Settings



2. Navigate to the **Mics** section of the **Microphone Device** settings menu.

Microphone Device Settings: Mics

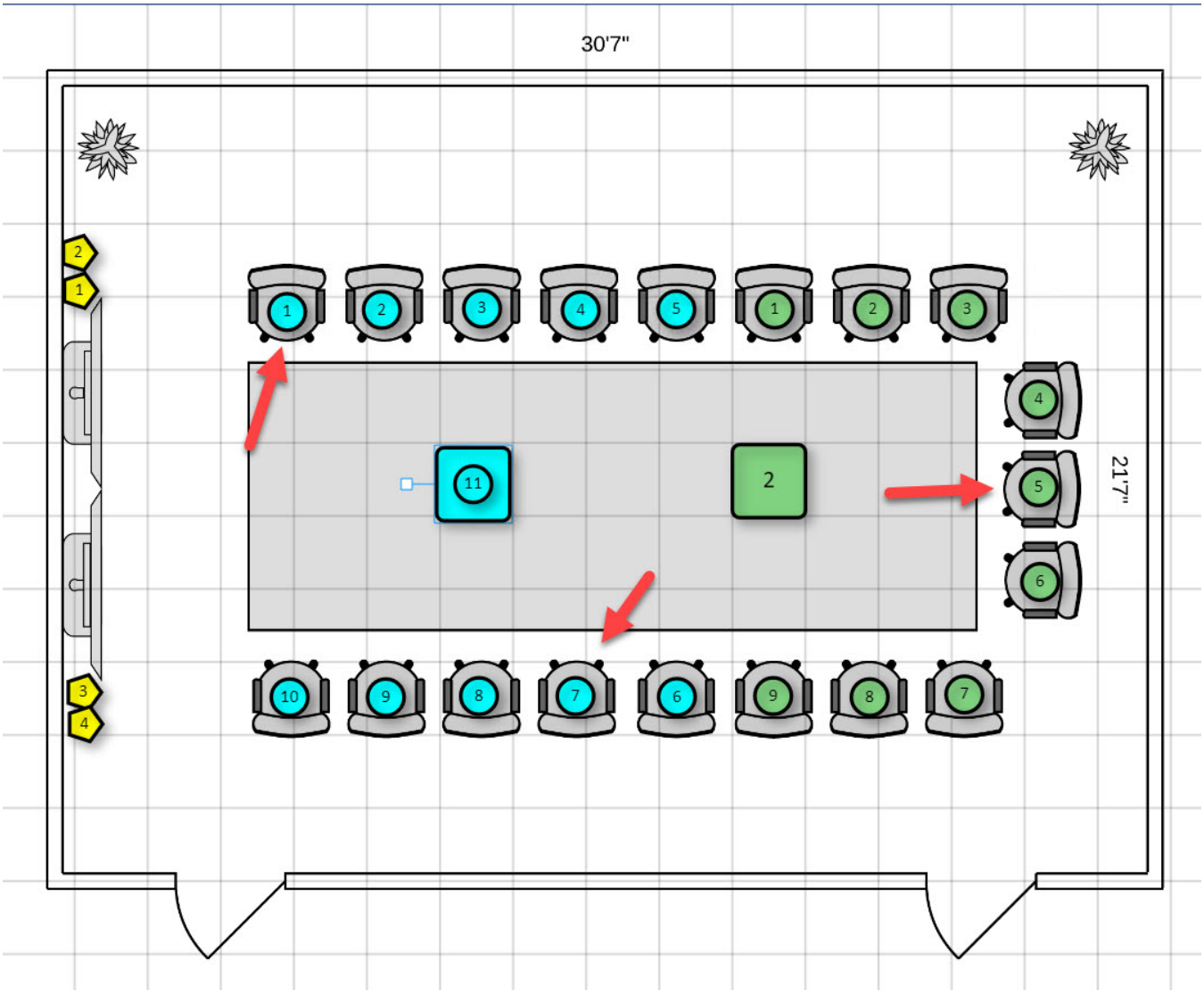


The following Virtual Mic settings are available.

Add Virtual Mic

Select **Add Virtual Mic** to add a Virtual Mic to the room layout. The Virtual Mic will be placed directly on top of the Microphone Device. Click and drag the Virtual Mic to the position where an active speaking participant would be in the room layout. Refer to the example below for a reference of how Virtual Mics should be positioned in a room layout:

Virtual Mic Location Example



There is a Virtual Mic position in every seat in the conference room, so when someone speaks, they will be recognized as a camera shot location. Virtual Mics need to be located near their respective Microphone Devices. This is important for the Auto Switching performance between camera shots in the Automate VX. To help with this, consider turning on **Proximity Check** in the **View** menu.

For more information about Virtual Mic settings, refer to Virtual Mic Settings on page 132

Remove Virtual Mic

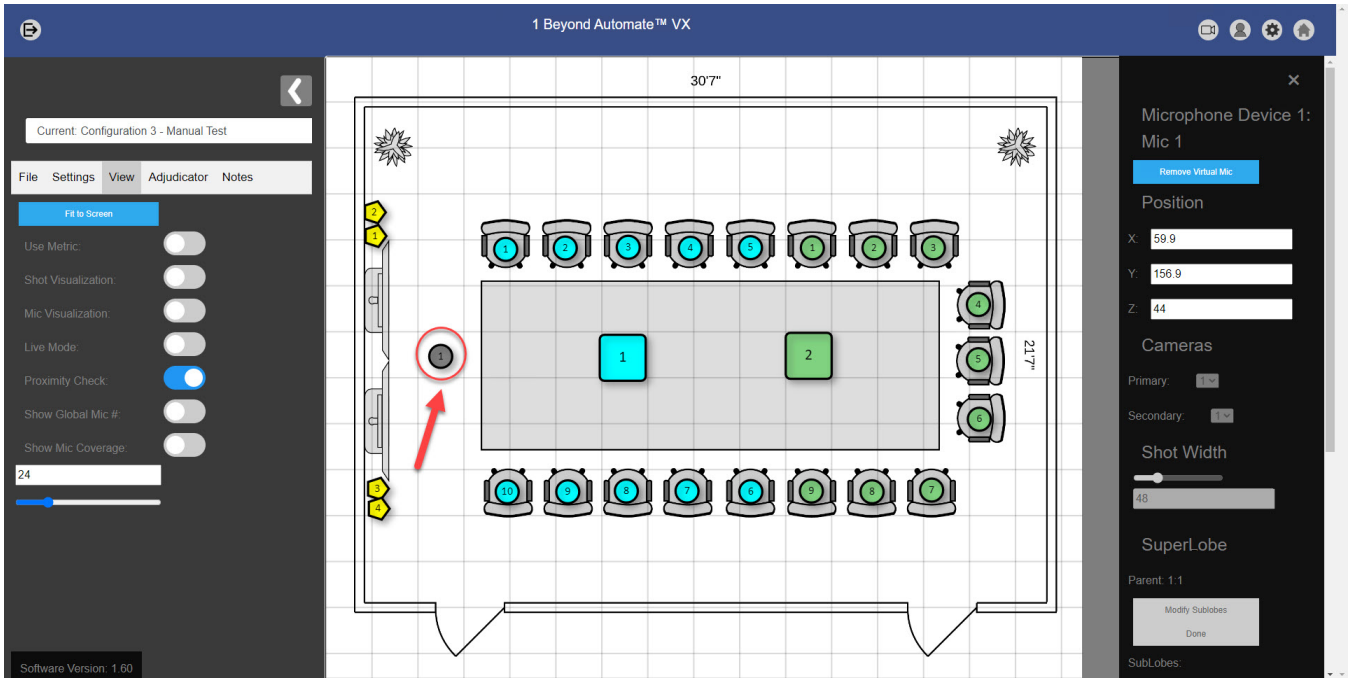
Select **Remove Virtual Mic** to delete a Virtual Mic in the room layout. This will delete the highest numbered Virtual Mic associated with the Microphone Device (10, 9, then 8, and so forth).

Add Blocking Zone

A Blocking Zone is used to mute a Microphone Device that might pick up unwanted ambient audio. This is particularly useful when there is an ambient sound in the room (vents, AC unit, and so forth). A Blocking Zone in Room Designer is indicated by a gray circle.

Select **Add Blocking Zone** to create a Blocking Zone in the room. To move the Blocking Zone, click and hold the left mouse button on the Blocking Zone and drag the cursor. Place the Blocking Zone in the room layout at the source of the ambient sound in the physical room.

Blocking Zone

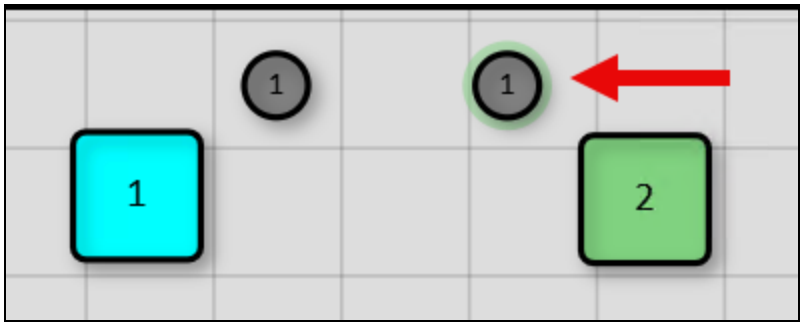


Blocking Zones are associated with their respective Microphone Device and will not work with other Microphone Devices. When a Blocking Zone is selected, the outline around it matches the color of the associated Microphone Device.

Blocking Zone for Microphone Device 1



Blocking Zone for Microphone Device 2



Use Blocking Zones to define the space between multiple intelligent microphones. This helps mitigate switching to the incorrect camera shot when virtual mics from multiple Microphone Devices are placed in close proximity.

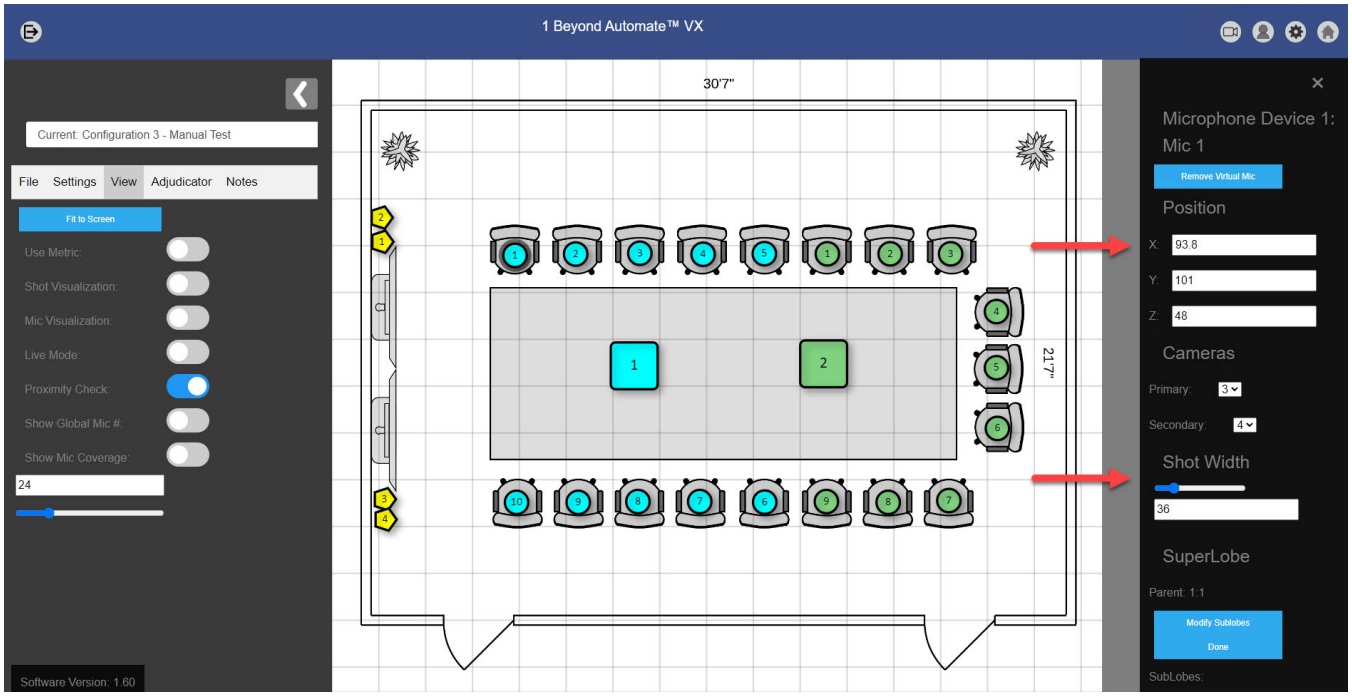
Remove Blocking Zone

Select **Remove Blocking Zone** to delete a Blocking Zone in the room layout. This will delete the highest numbered Blocking Zone associated with the Microphone Device (10, 9, then 8, and so forth).

Virtual Mic Settings

Once a Virtual Mic is placed in the correct location, select the Virtual Mic to open the Virtual Mic Settings. The menu will appear on the right side of the screen.

Virtual Mic Settings



The following Virtual Mic settings are available in this menu:

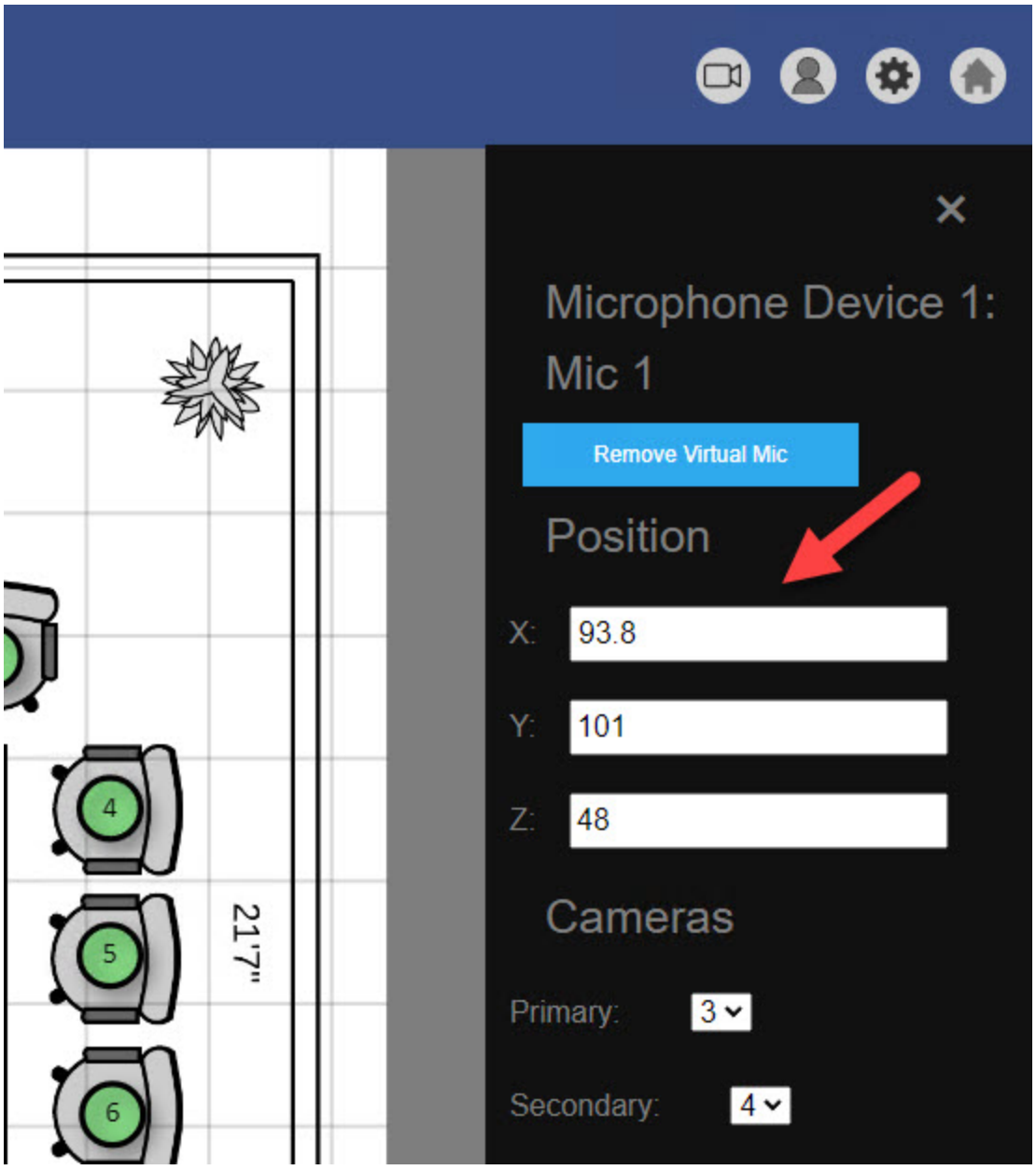
Remove Virtual Mic

Select **Remove Virtual Mic** to delete the currently selected Virtual Mic.

Position

The **X**, **Y**, and **Z** fields are the locations of the Virtual Mic in the room layout. These coordinates can be entered manually into their respective fields, or the Virtual Mic can be dragged and placed into the correct location. The units used in the text fields are either in inches or millimeters depending on the unit selected in the **View** tab. For more information about selecting units, refer to Units on page 91.

Virtual Mic Position Setting



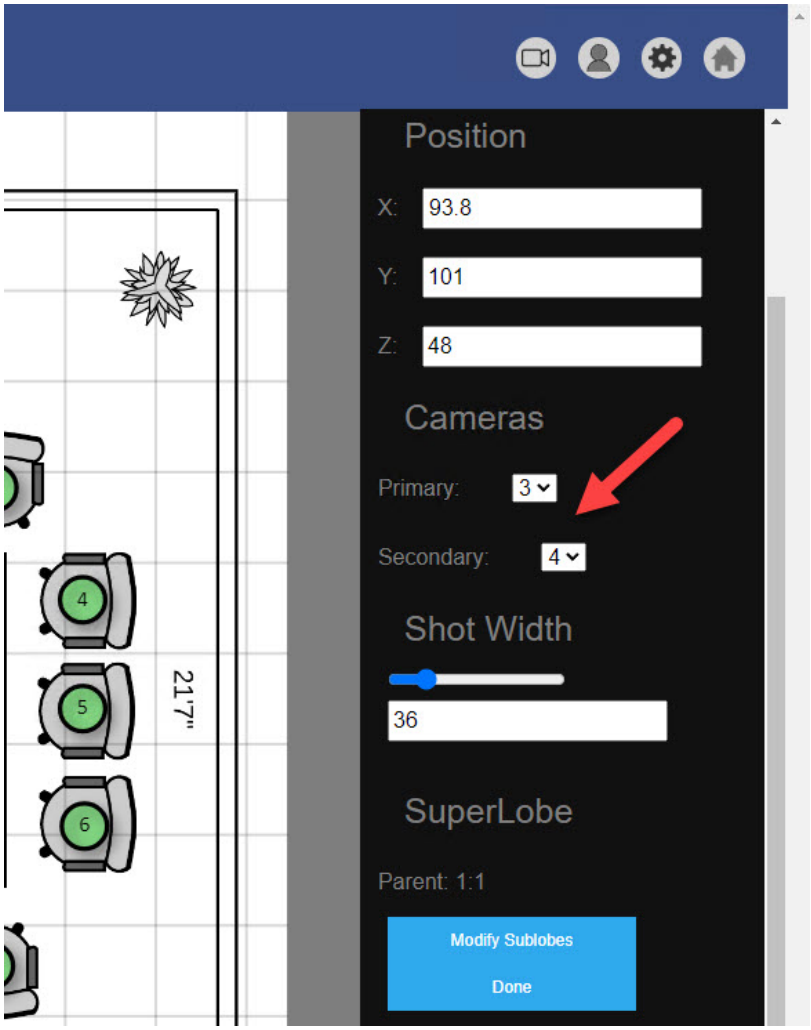
Cameras

There are two separate drop-down menus within the **Cameras** section: one for **Primary** and one for **Secondary**. These drop-down menus are provided for cameras that will be showing the Virtual Mic position through the camera feed. Select the desired camera that will broadcast the Virtual Mic location in the **Primary** drop-down menu, and select a backup camera for the Virtual Mic in the **Secondary** drop-down menu.

> **NOTE**: In certain situations where the **Secondary** camera can display the camera shot faster than the **Primary** camera, the **Secondary** camera will be selected even if the **Primary** camera is available.

When possible, ensure that there are always two different cameras set up for a Virtual Mic position. Consider enabling the **Shot Visualization** and **Live Mode** options in the **View** tab to help determine that the proper cameras are set to broadcast the Virtual Mic's location.

Virtual Mic Cameras Setting



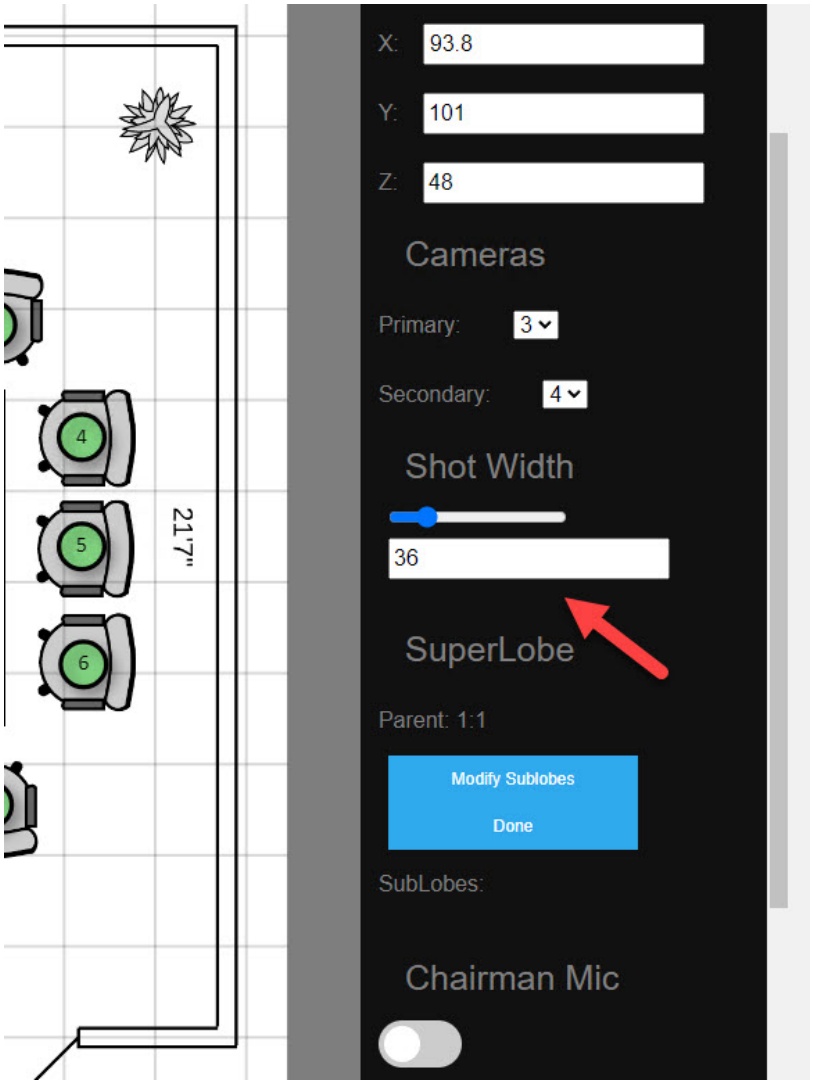
NOTE: For 1 Beyond AutoTracker 3 cameras, select the camera number associated with the AutoTracker 3 in both the **Primary** and **Secondary** drop-down menus.

Shot Width

Use the **Shot Width** slider or input a value into the text field to change the size of the camera shot. Enable **Shot Visualization** in the **View** tab to see the size of the camera shot in the room layout. Enable **Live Mode** in the **View** tab to see how the **Shot Width** affects the camera shot in real-time on Wirecast.

NOTE: The maximum and minimum values available for **Shot Width** are determined by the selected camera's field of view specifications. This does not apply to cameras selected under the **generic** option. For more information about supported cameras, refer to Camera Device Configuration on page 105

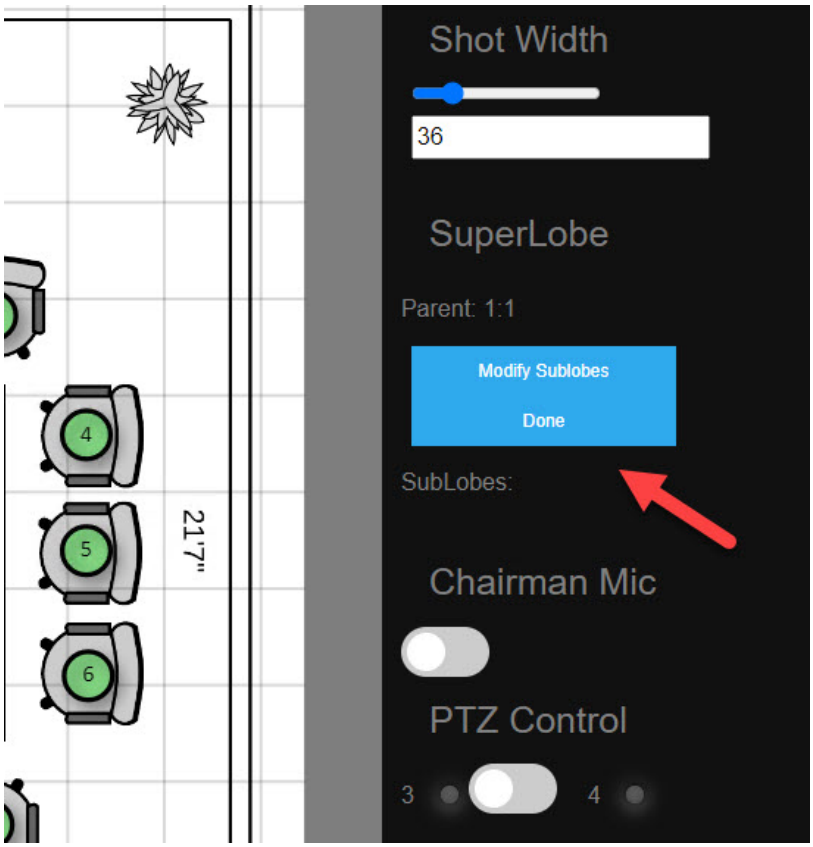
Virtual Mic Shot Width Setting



SuperLobe

A SuperLobe contains a group of Virtual Mic positions. The grouped Virtual Mic positions associated with the SuperLobe are SubLobes. When the Microphone Device detects audio from a SubLobe, the Camera Device will set the camera shot on the SuperLobe position rather than the specific SubLobe position.

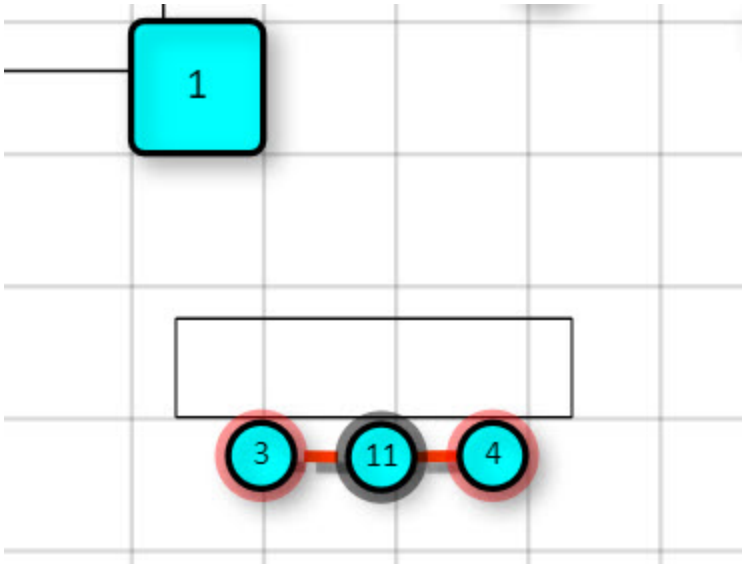
Virtual Mic SuperLobe Setting



Use a SuperLobe when there are multiple Virtual Mics and the microphone cannot accurately determine audio between the Virtual Mic positions. Perform a **Proximity Check** to see if the microphone can accurately determine Virtual Mic positions. For more information about **Proximity Check**, refer to Proximity Check on page 95.

In the following example, the Virtual Mic positions do not pass the **Proximity Check** (indicated by red lines between Virtual Mic positions). Virtual Mic **11** is the SuperLobe, and Virtual Mics **3** and **4** are SubLobes. The camera uses Virtual Mic **11** to create a single camera shot displaying all three of the Virtual Mic positions.

SuperLobe Example



To configure a SuperLobe and SubLobes:

1. Select the Virtual Mic that is going to be a SuperLobe by clicking the left mouse button on the Virtual Mic.
2. Select **Modify Sublobes** to set the Virtual Mic as the SuperLobe. This enters sublobe mode where the grouping of Virtual Mics occurs.
3. Select the other Virtual Mic positions that are to be grouped into the SuperLobe. A red circle will appear around each selected Virtual Mic, indicating the Virtual Mics are now SubLobes of the SuperLobe. The SuperLobe is marked with a gray circle around the Virtual Mic.

   > **NOTE:** The camera shot for the Superlobe position can be changed and saved with PTZ controls. For more information about PTZ controls, refer to PTZ Control on page 140

4. Once the SubLobes are configured, select the blue **Done** button to confirm changes and exit sublobe mode.

Identify SuperLobes and SubLobes by selecting a Virtual Mic position. Select a SuperLobe to display all SubLobes with a red outline around the Virtual Mic positions.

SuperLobe Selected



Select a Sublobe to display the SuperLobe that it is grouped with. A green outline is displayed around the SuperLobe Virtual Mic position.

Sublobe Selected



To remove a SubLobe from the SuperLobe:

1. Select the Virtual Mic that is a SuperLobe by clicking the left mouse button on the Virtual Mic.
2. Select **Modify Sublobes** to enter sublobe mode.
3. Select the Virtual Mic (SubLobe) to remove it from the SuperLobe. Repeat until all desired SubLobes are removed from the SuperLobe.

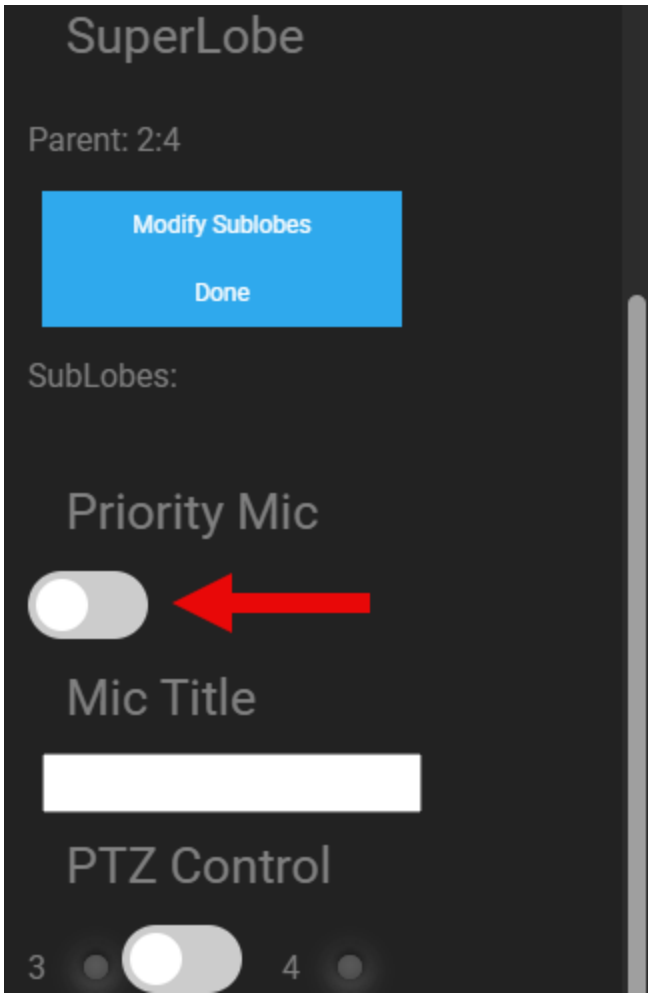
   > **NOTE**: The SubLobes of a SuperLobe are indicated on the **Superlobe Virtual Mic** under the **SubLobes** header.

4. Once all the desired SubLobes are removed from the SuperLobe, select the blue **Done** button to confirm changes and exit sublobe mode.

Priority Mic

Enable **Priority Mic** to designate the currently selected Virtual Mic as the priority position. This means that whenever audio is picked up from this Virtual Mic location, it will take priority over the other Virtual Mic positions. The camera shot switches to that Virtual Mic position regardless of audio signals from other Virtual Mic positions.

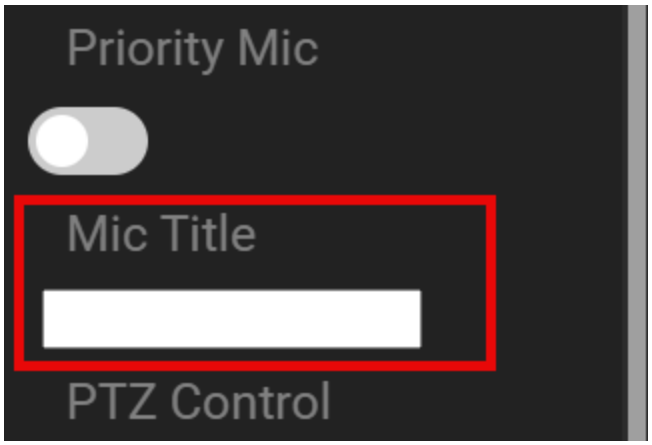
Virtual Mic Priority Setting



Mic Title

Enter the desired name of the Virtual Mic position into the **Mic Title** text field. The value entered here is displayed on the camera output if **Mic Titling** is enabled. For more information on **Mic Titling**, refer to System Configuration on page 154.

Mic Title

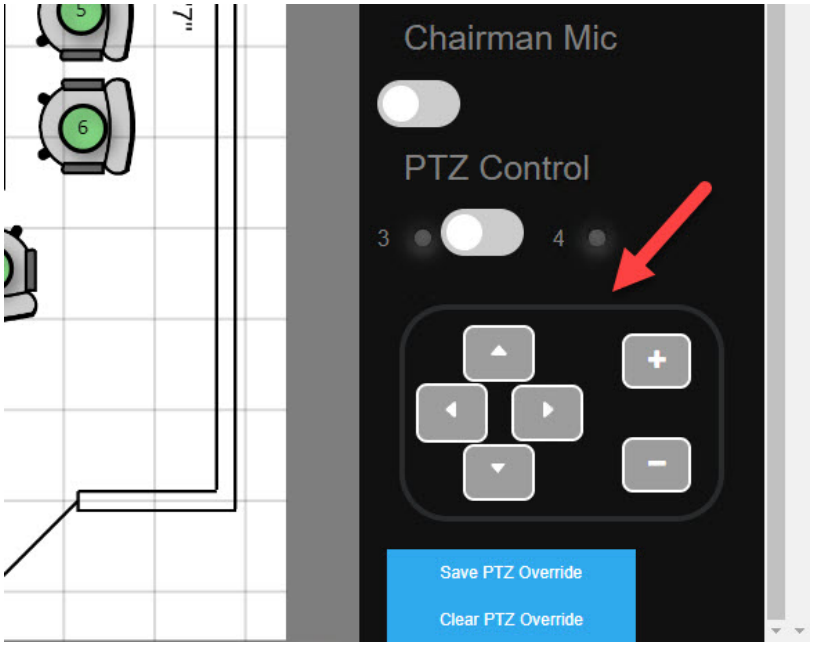


PTZ Control

> **NOTE:** This setting is only available on Automate VX systems.

PTZ controls adjust how a camera will display the Virtual Mic position. For the best results, enable **Live Mode** in the **View** tab to see how these settings change the camera shot in Wirecast.

Virtual Mic PTZ Controls



The PTZ Control switch indicates which camera is being edited. By default, the switch is set to the Primary camera (in the pictured example, 3 is the Primary camera). Move the switch to the right to edit the Secondary camera (in the pictured example, 4 is the Secondary camera). To change which cameras are the Primary and Secondary cameras for a Virtual Mic, refer to Cameras on page 134

Use the arrow buttons to change the angle that the camera shot will display. Use the **+** (zoom in) and **-** (zoom out) buttons to zoom the camera shot in or out. Once the desired shot is configured, select the blue **Save PTZ Override** button. To clear any PTZ settings set for the Virtual Mic, select the blue **Clear PTZ Override** button.

Configuring Adjudicators

> **NOTE:** This setting is only available on Automate VX systems.

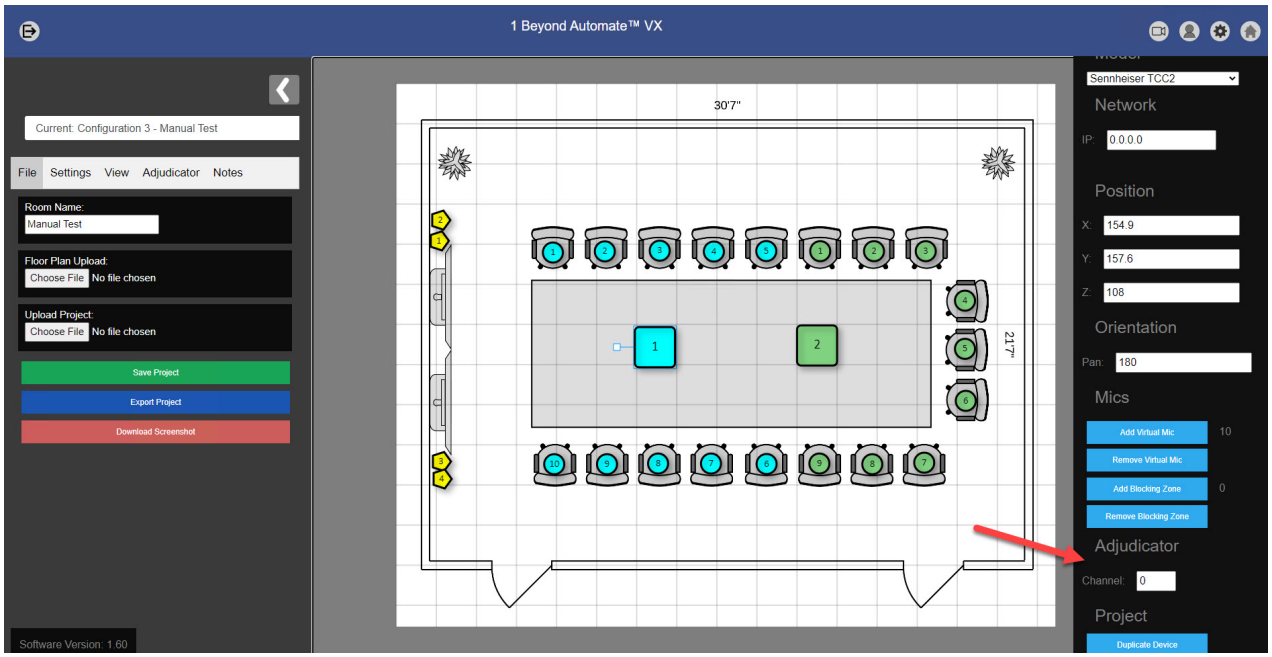
Adjudicators are used when there is more than one Microphone Device in a room. The adjudicator helps the microphones determine which microphone is the closest to the audio source.

> **NOTE**: Before setting Microphone Devices to channels for the adjudicator, ensure that a DSP is configured in the **Adjudicator** tab on the left side of the screen. For more information about setting up a DSP as an adjudicator, refer to Adjudicator Settings on page 103.

To configure a DSP or discussion system as an adjudicator with microphones in Room Designer:

1. Select the Microphone Device to make the Microphone Device settings appear on the right side of the screen.
2. Locate the **Adjudicator** setting in the Microphone Device settings menu.

Adjudicator Setting



3. In the **Channel** text field, input the desired channel that will be used for communication between the microphone and the adjudicator. Ensure each Microphone Device is on its own channel. Automate VX will not operate properly if multiple Microphone Devices are on the same channel.

For rooms that have standard and intelligent microphones working in tandem, set a Microphone Device to **Channel** 0 and add a Virtual Mic for each standard microphone in the room. Then, set the intelligent microphones to subsequent channels.

> **NOTE**: A standard microphone refers to any microphone that is not an intelligent microphone. For more information about configuring microphones, refer to Microphone Device Configuration on page 115.

The following procedure describes an example scenario for setting two standard microphones and two intelligent microphones in a room layout.

1. Create one Microphone Device, and place it anywhere in the room (location is not important). This Microphone Device is serving as the DSP or discussion system for Automate VX. For more information about creating Microphone Devices, refer to Add Microphone Device on page 80
2. Set the **Channel** in the **Adjudicator** setting to 0 for the Microphone Device.
3. Create two (or more) Virtual Mics, and place them in the exact locations where standard microphones are in the room. These Virtual Mics occupy **Channel** 1 and 2 respectively, but do not need to be set in Automate VX. For more information about creating Virtual Mics, refer to Add Virtual Mic on page 129.

   > **NOTE:** For more than two standard microphones, place additional Virtual Mics with subsequent **Channel** numbers. The third Virtual Mic would occupy **Channel** 3, the fourth Virtual Mic would occupy **Channel** 4, and so forth.

4. Create two Microphone Devices, and place them in the exact locations of the intelligent microphones in the room.
5. Set the **Channel** in the **Adjudicator** setting to 3 for one intelligent microphone, and 4 for the other.

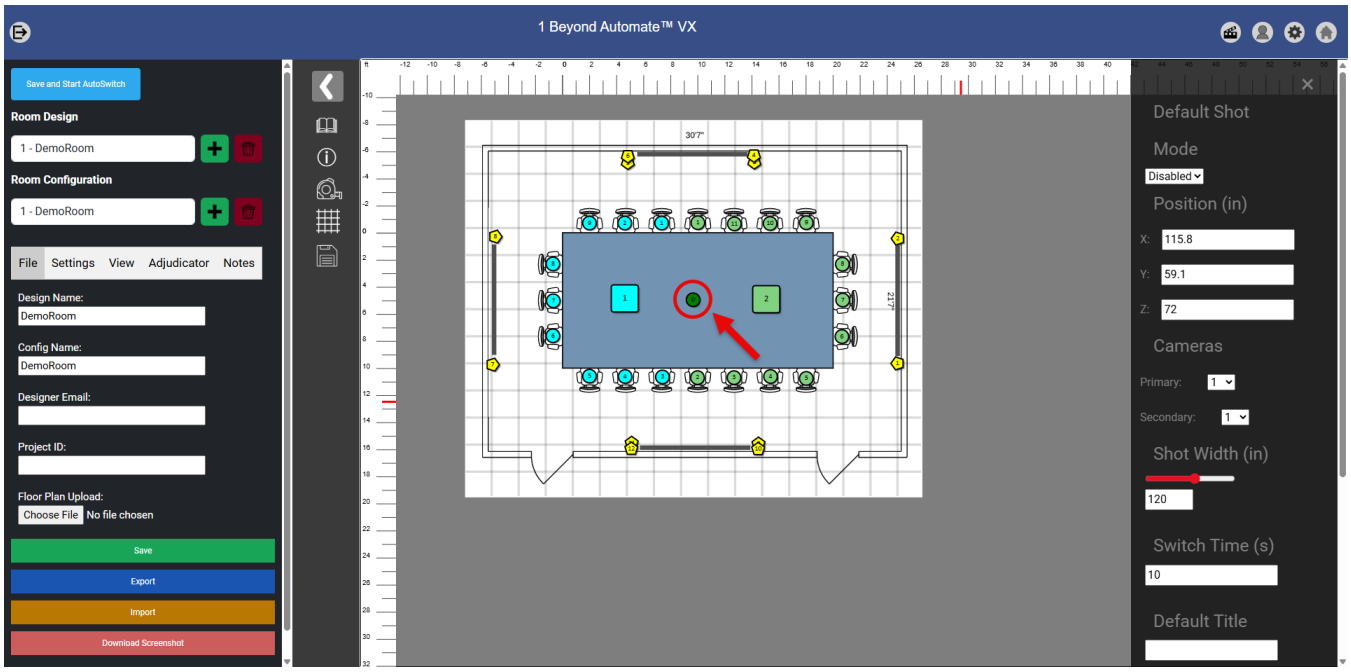
   > **NOTE:** The intelligent microphones should always be on higher numbered channels than the standard microphones. For example, if the standard microphones occupy channels 1, 2, 3, and 4, the intelligent microphone channels would begin at **Channel** 5 and higher.

Default Shot

A Default Shot is used when no audio is detected in the room for a set duration. The configuration will return from the current shot to the Default Shot after the duration elapses. For information on how to change the duration without audio before the Default Shot is called, refer to AutoSwitch Settings on page 166.

The Default Shot should be placed in a neutral location, such as a wide-angle camera shot of all participants. When the Default Shot is selected, the settings appear in the right menu and follow the same configuration parameters as Virtual Mics (unless noted otherwise below). For more information on the right menu and the Virtual Mic settings, refer to Virtual Mic Settings on page 132

Default Shot



Mode

Use the **Mode** drop-down menu to select one of the following Default Shot options:

- **Disabled**: The Default Shot is not called.
- **Enabled**: The Default Shot is called in the specified location after the **Switch Time** condition is met. The Default Shot uses the camera assignment in the **Primary** or **Secondary** fields and the set shot width.
- **Custom**: Allows for a Custom Default Shot to be called when the Switch Time condition is met. For more information on Custom Default Shots, refer to Default Shots on page 193.

Switch Time

Input the length of time for no audio detection in seconds into the **Switch Time (s)** text field to call the Default Shot.

Default Title

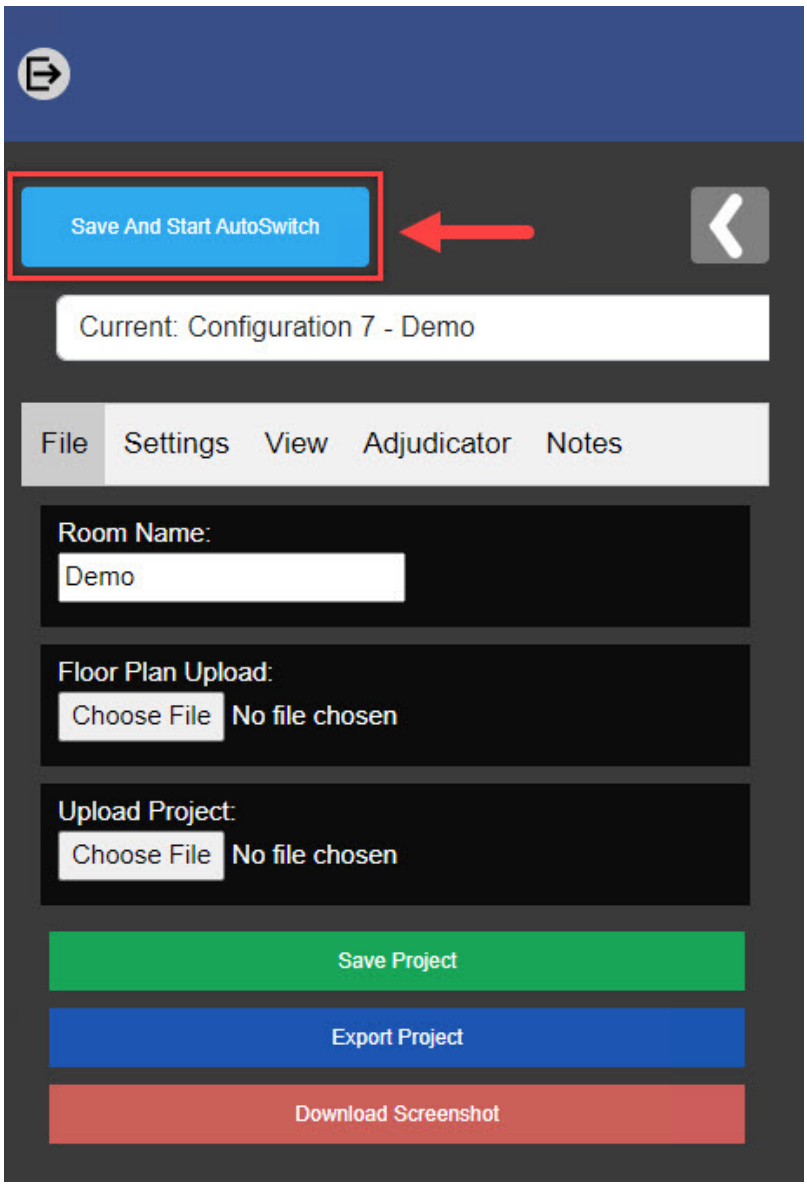
Default shots can have a title similar to Virtual Mic positions. Enter the desired name of the default shot into the **Default Title** text field. The value entered here is displayed on the camera output if **Mic Titling** is enabled and the default shot is called. For more information on **Mic Titling**, refer to Titling Settings on page 89.

AutoSwitch Preview

> **NOTE:** AutoSwitch Preview is only available on Automate VX systems.

The AutoSwitch Preview setting shows live positional data from audio sources within the room layout. To enable AutoSwitch Preview, select the **Save and Start AutoSwitch** button in the top left of Room Designer.

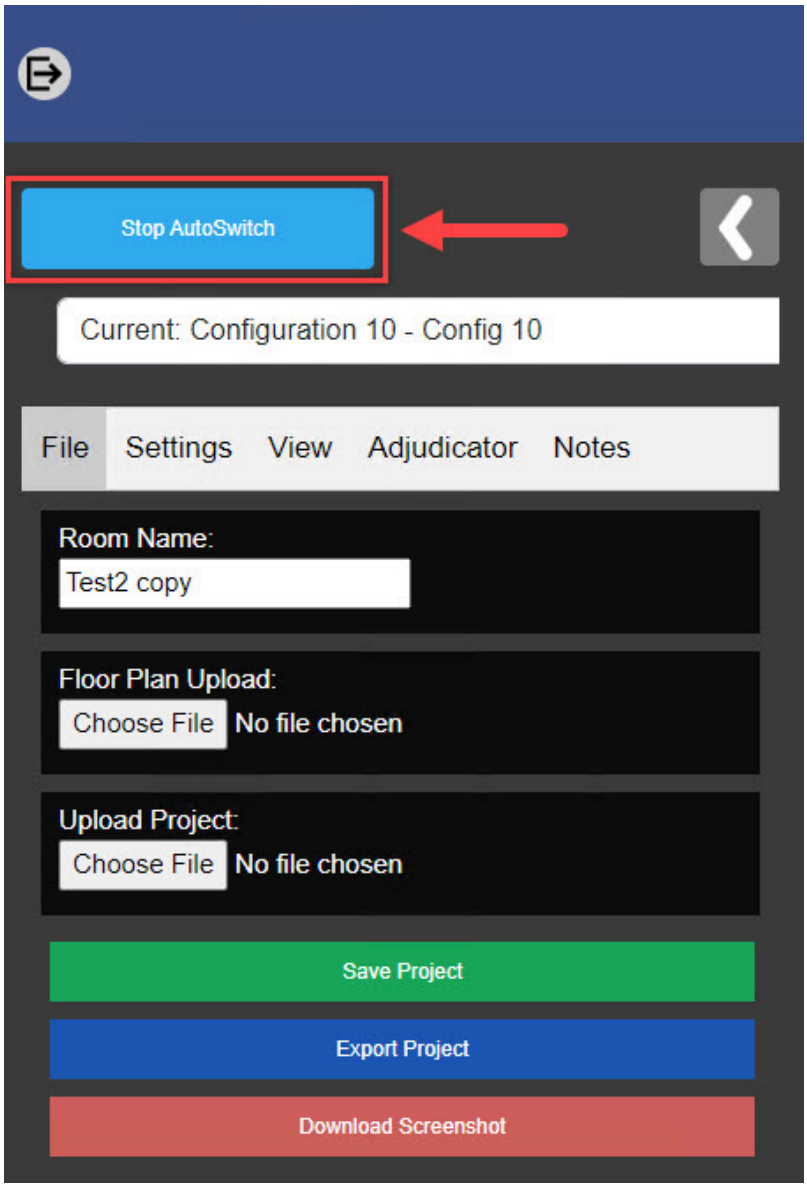
Save and Start AutoSwitch Preview



The button displays **Stop AutoSwitch** if AutoSwitching is currently on for the system. Select **Stop AutoSwitch** to turn off AutoSwitching. AutoSwitch Preview is only available if AutoSwitching is turned off.

> **NOTE**: The **Stop AutoSwitch** button turns off AutoSwitching, but this can be done through the **Main** tab too. For more information on the **Main** tab, refer to Main Tab on page 261.

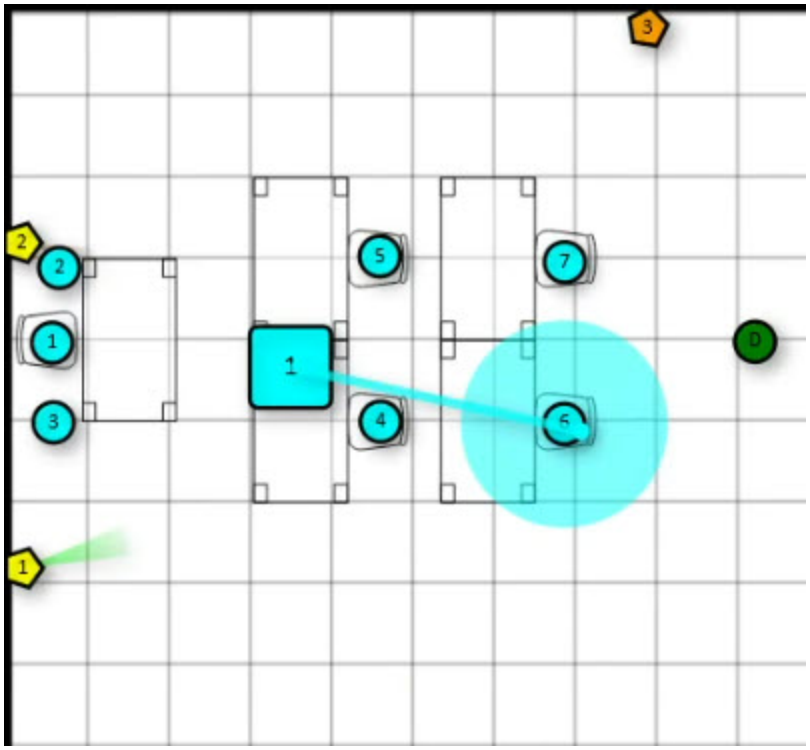
Stop AutoSwitch Preview



Microphone Device Indicators

Enable AutoSwitch Preview to have Microphone Devices display where they are actively detecting audio in the room. This is indicated by lines extending from the Microphone Devices towards the location where audio is detected. The color of the line indicates which Microphone Device is associated with the line (a blue line is tied to Microphone Device 1, a green line is tied to Microphone Device 2, and so forth).

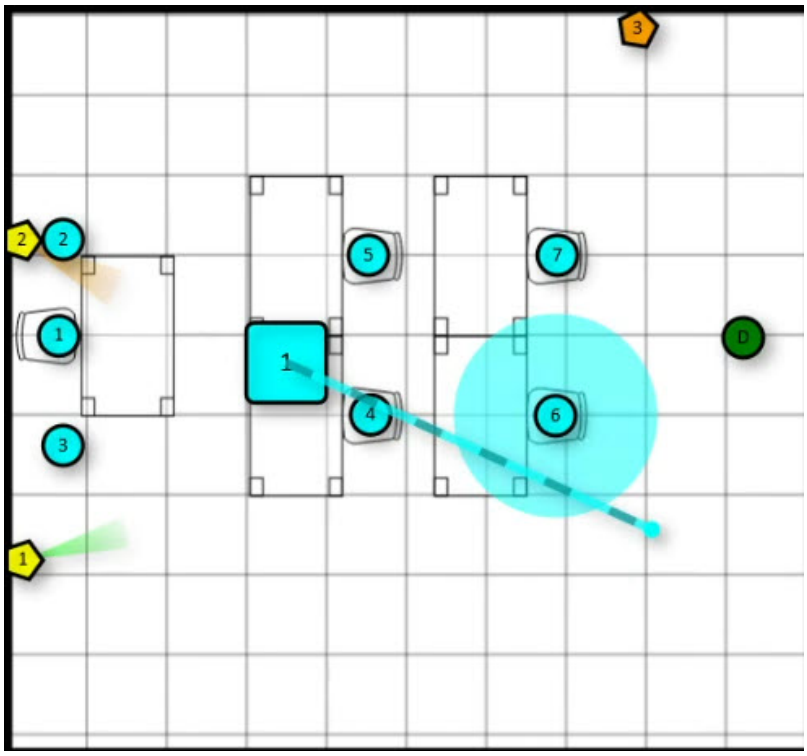
AutoSwitch Preview Detection



If the line extending from the Microphone Device has dashes, then the detected audio is outside of the Virtual Mic coverage area. For more information about Virtual Mic coverage, refer to Show Mic Coverage on page 101

> **NOTE**: The end of the line extending from the Microphone Device is associated with the height of the nearest Virtual Mic position. If the Microphone Device is determining that a Virtual Mic position is out of range, perform one of the following:
>
> - Adjust the height of the nearby Virtual Mic so that the microphone's detection beam intersects with the Virtual Mic's location.
> - Move the Virtual Mic to a location where the height of the Virtual Mic intersects with the microphone's detection beam.

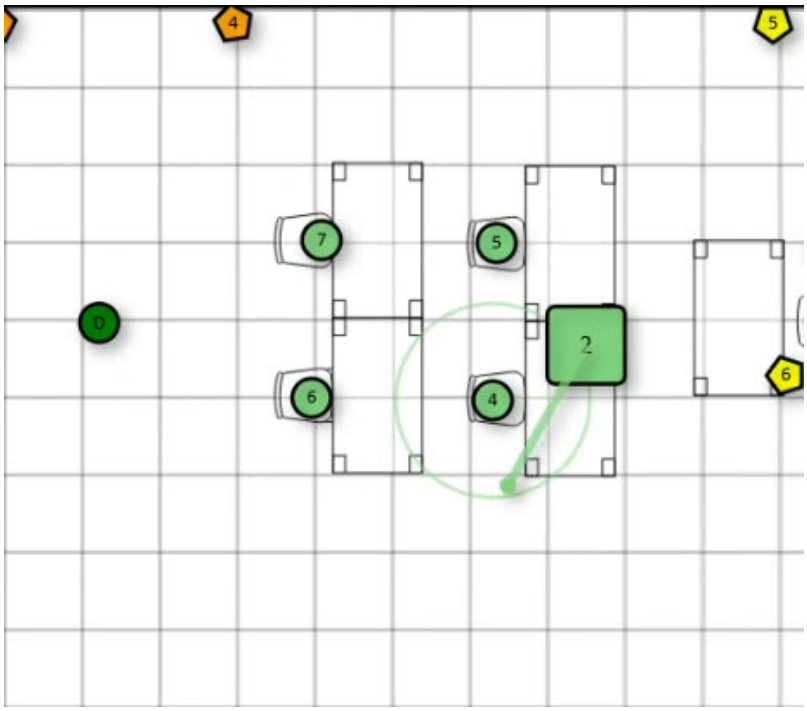
Out of Range Audio Detection



The circle around the Virtual Mic position indicates whether the speaker was audible for long enough for the **Noise Delay** threshold to be met. For more information regarding **Noise Delay**, refer to AutoSwitch Settings on page 166.

If the circle around the Virtual Mic position is filled, then the Noise Delay threshold was met. If the circle around the Virtual Mic position is not filled, then the Noise Delay threshold was not met. The system will not switch the camera shot to the Virtual Mic position if the circle is not filled.

Noise Delay Indicator



Breadcrumbs

Enable AutoSwitch Preview to have Microphone Devices place indicators (referred to as Breadcrumbs) at detected audio locations. Breadcrumbs remain on the project after the Microphone Device beam moves to a new audio source.

Breadcrumb Data



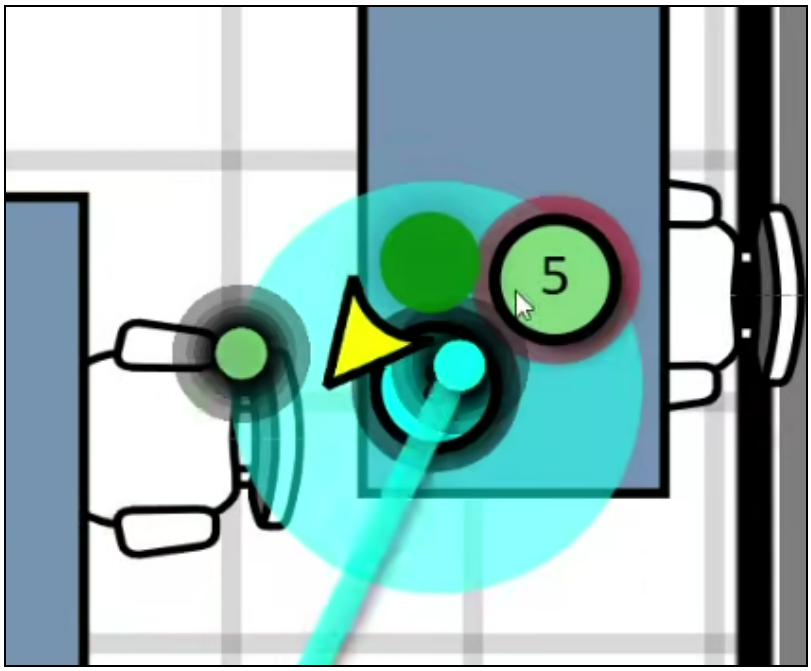
The opacity of the Breadcrumbs indicate the age of the audio data. The more opaque the Breadcrumb is, the more time has passed since the Microphone Device detected audio data from that location.

3D Position Indicators

When Visual AI is enabled, AutoSwitch Preview renders the position of the speaking participant within the Virtual Mic coverage area. For more information on activating and configuring Visual AI, refer to Visual AI on page 173.

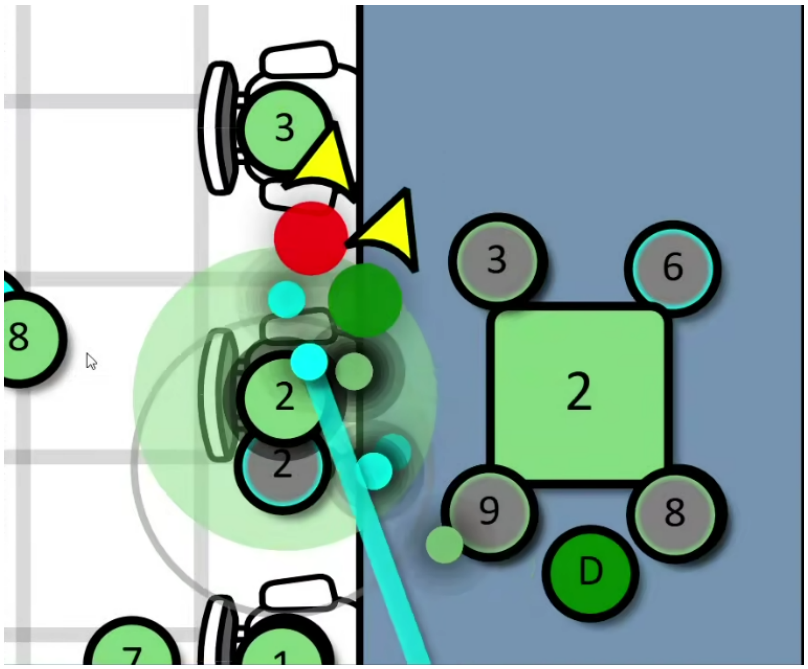
The active speaking participant framed by the camera is shown as a green circle. The yellow arrow protruding from the circle indicates the direction that the participant is looking.

Active Speaking Participant



When there is more than one speaking participant within the Virtual Mic coverage area, the camera continues framing the active participant (or participants depending on the **Number of People** set in the Visual AI settings). Any speaking participants that are not framed with Visual AI are shown as red circles within the Virtual Mic coverage area.

Non-Active Speaking Particpants

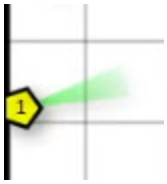


Camera Indicators

The primary and secondary cameras display their status during AutoSwitch Preview:

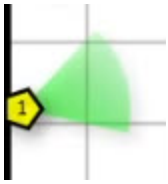
- A green cone extending from the Camera Device indicates the active camera and its camera shot. The direction the cone is facing the same direction as the camera lens.

  Active Camera Shot Indicator

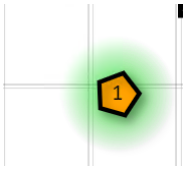
- The width of the cone extending from the Camera Device displays the current Shot Width of the camera shot.

  Wide Camera Shot Indicator

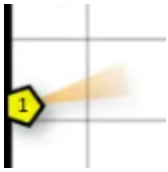
- Intelligent cameras (i20, i12, and AutoTracker 3 cameras) do not have a cone that extends from the Camera Device when it is active. A green circle around the Camera Device indicates that the intelligent camera is active.

  Active Intelligent Camera Indicator

- An orange cone extending from the Camera Device indicates the camera is being prepared to switch to another camera shot. The direction the cone is facing is the direction the camera's lens is facing.

  Prepping Camera Shot Indicator

- A gray cone extending from the Camera Device indicates the camera was previously active on a camera shot. The direction the cone is facing is the direction the camera's lens is facing.

  Inactive Camera Shot Indicator

AutoSwitch Preview provides the capability to fine-tune Virtual Mic locations within the room layout. Adjust Virtual Mic locations so that they are accurate to the audio positions that AutoSwitch Preview is providing.

For optimal performance, perform an AutoSwitch Preview test on each Virtual Mic position. This determines whether the associated microphone is accurately detecting the Virtual Mic position. Verify the following items on each Virtual Mic position with AutoSwitch Preview:

1. Confirm the Virtual Mic is in range of the Microphone Device. The line extending from the Microphone Device should be a solid line (not a dashed line) when interacting with the Virtual Mic position.
2. Ensure that the **Noise Delay** threshold is being met on the Virtual Mic position as desired. For more information about Noise Delay, refer to AutoSwitch Settings on page 166.
3. Confirm that Camera Devices and their **Shot Width** match the Virtual Mic position. For more information on configuring Camera Devices for Virtual Mic positions, refer to Cameras on page 134

Once the Virtual Mic positions are verified with AutoSwitch Preview, select the **Stop AutoSwitch** in the top left of Room Designer to exit AutoSwitch Preview.

Configuration

Refer to the following sections for information on how to configure Automate VX:

- System Configuration
- Shot Setup Tool
- Wirecast Configuration
- Connect to XiO Cloud Service
- Activating Licenses
- DSP Configuration

System Configuration

Automate VX can be configured using its web configuration interface as described in the sections that follow.

> **NOTE:** Most system configurations can be accomplished by using the Intelligent Video Room Designer tool. This tool is available on the Crestron website and locally on the Automate VX. For more information on using the tool, refer to Room Designer on page 44.

Access the Web Configuration Interface

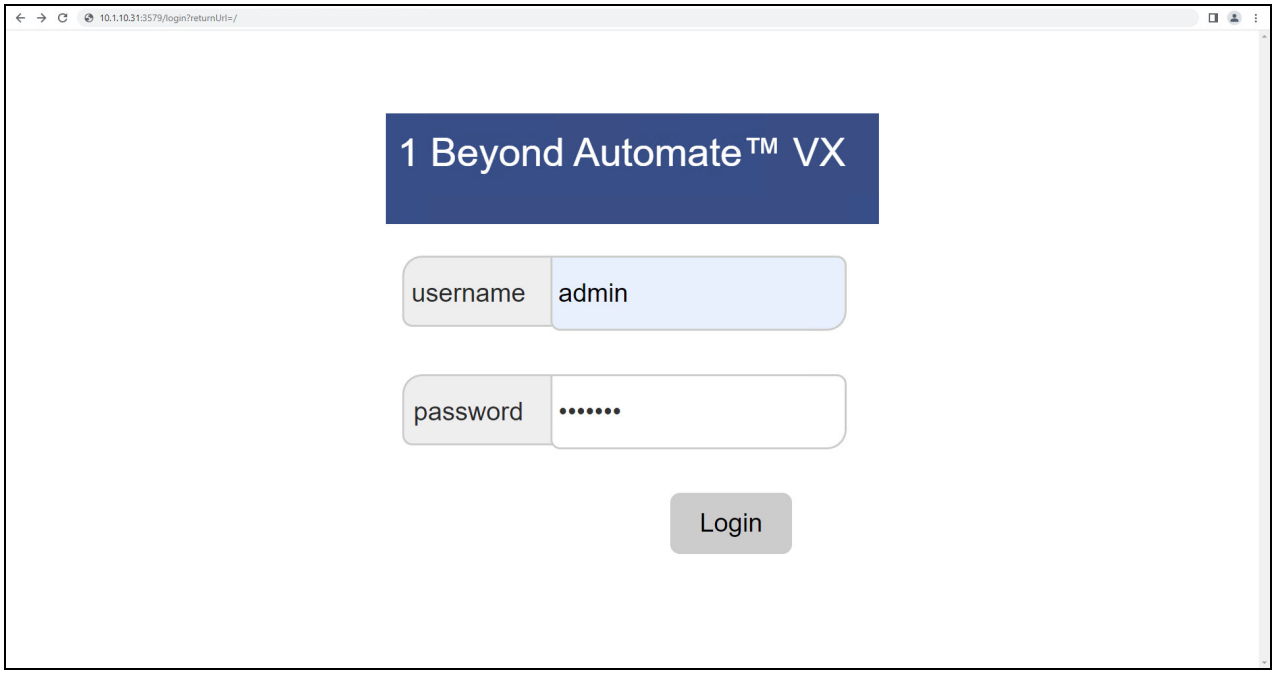
To access the web configuration interface for the Automate VX, open the browser on Automate VX. The web configuration interface loads automatically.

To access the web configuration interface from a different device:

1. Enter the IP address of the Automate VX system with port 3579 appended to the address (for example, "10.1.10.31:3579")

   A login page is displayed.

   Login Page



2. Enter the following login credentials:
   - **username**: admin
   - **password**: 1beyond

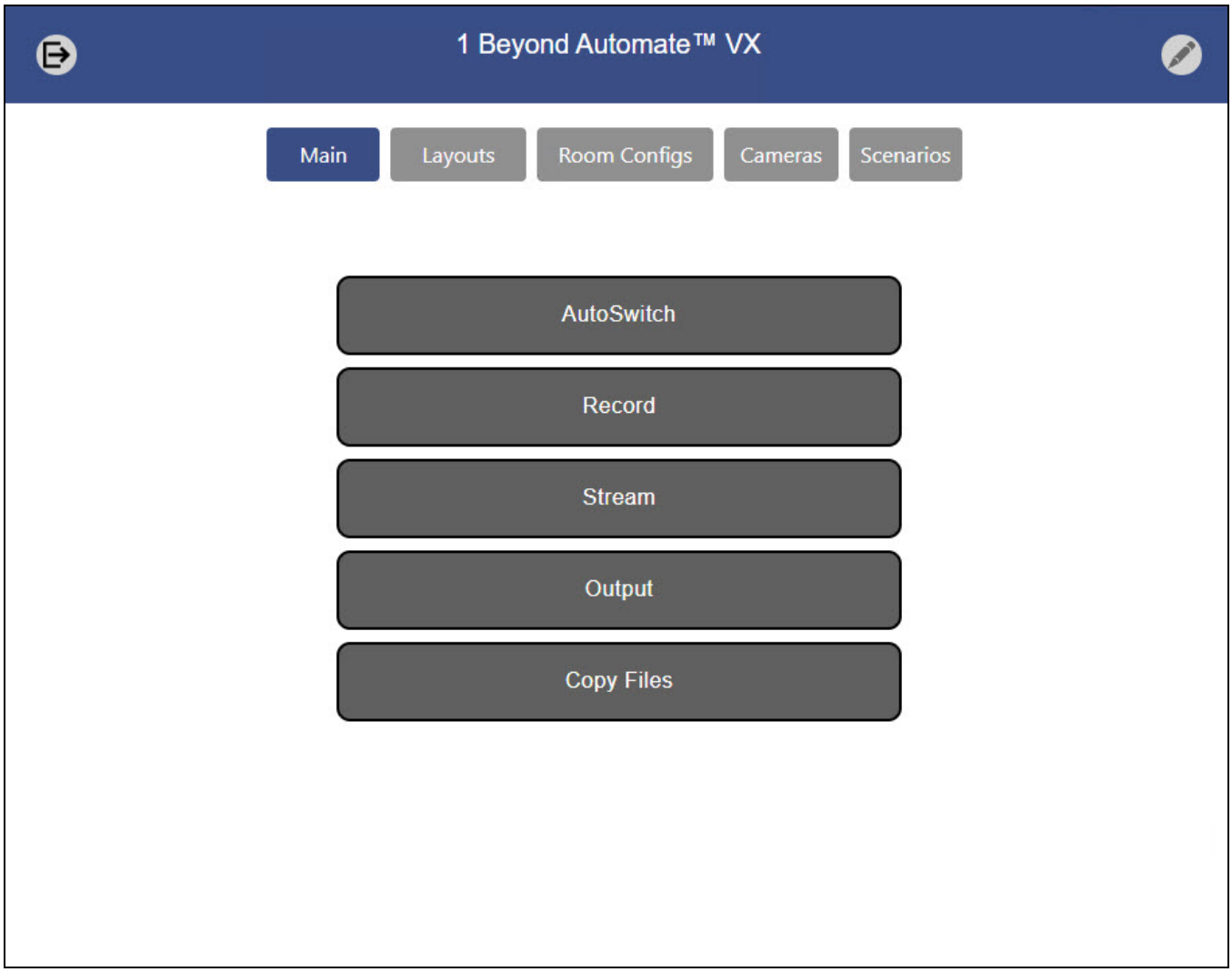
3. Select **Login**.

> **NOTE:** The login credentials above are for the admin user only. If additional users are added to the system, use their respective login credentials to access the system. For more information, refer to Add User on page 184.

The web configuration interface is displayed with the **Main** settings by default.

> **NOTE:** The **Main** settings are also where the operation of the Automate VX occurs. For more information on how to use the **Main** settings for the operation of the Automate VX, refer to Operation on page 261.

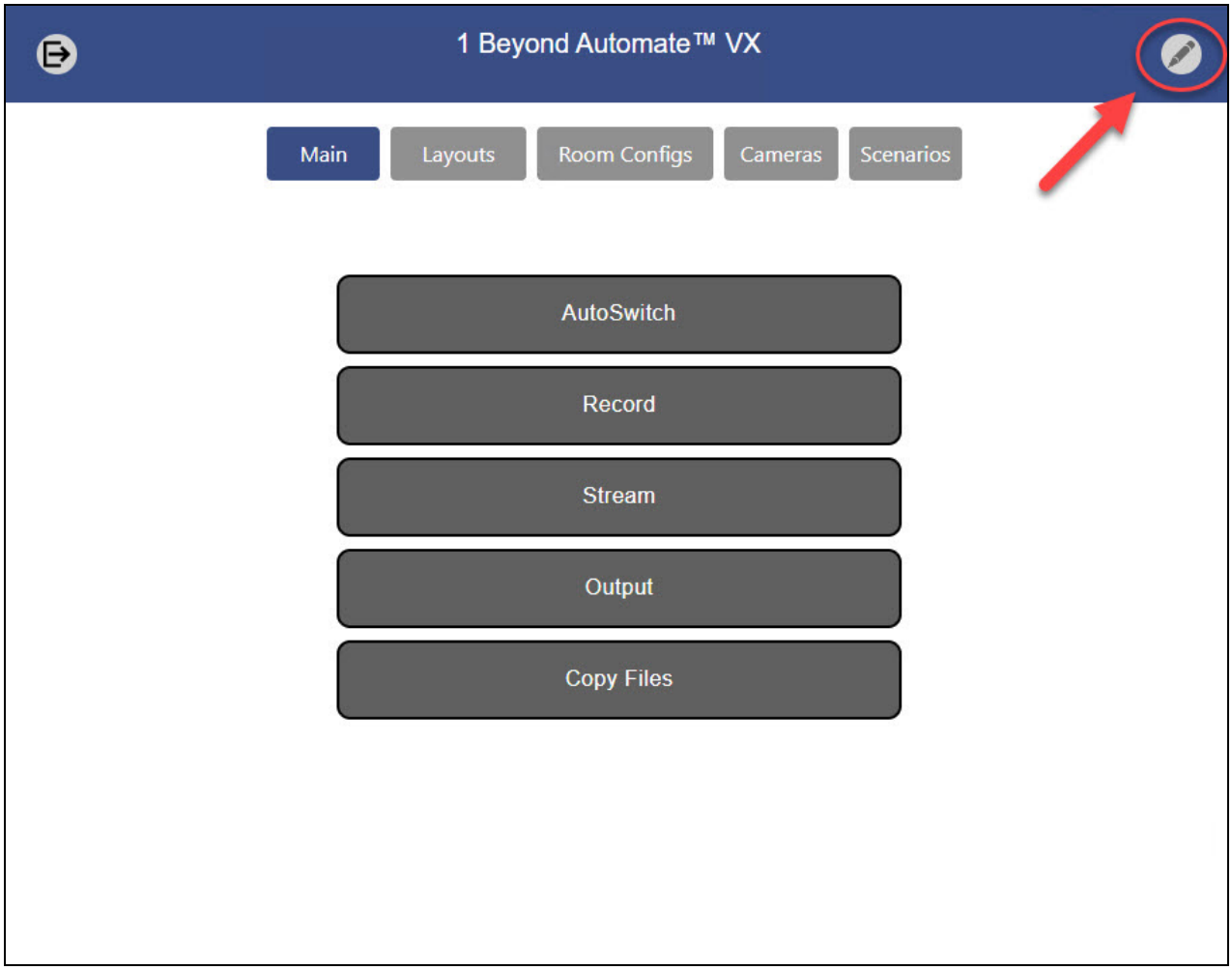
Web Configuration Interface - Main Tab



To access the system settings:

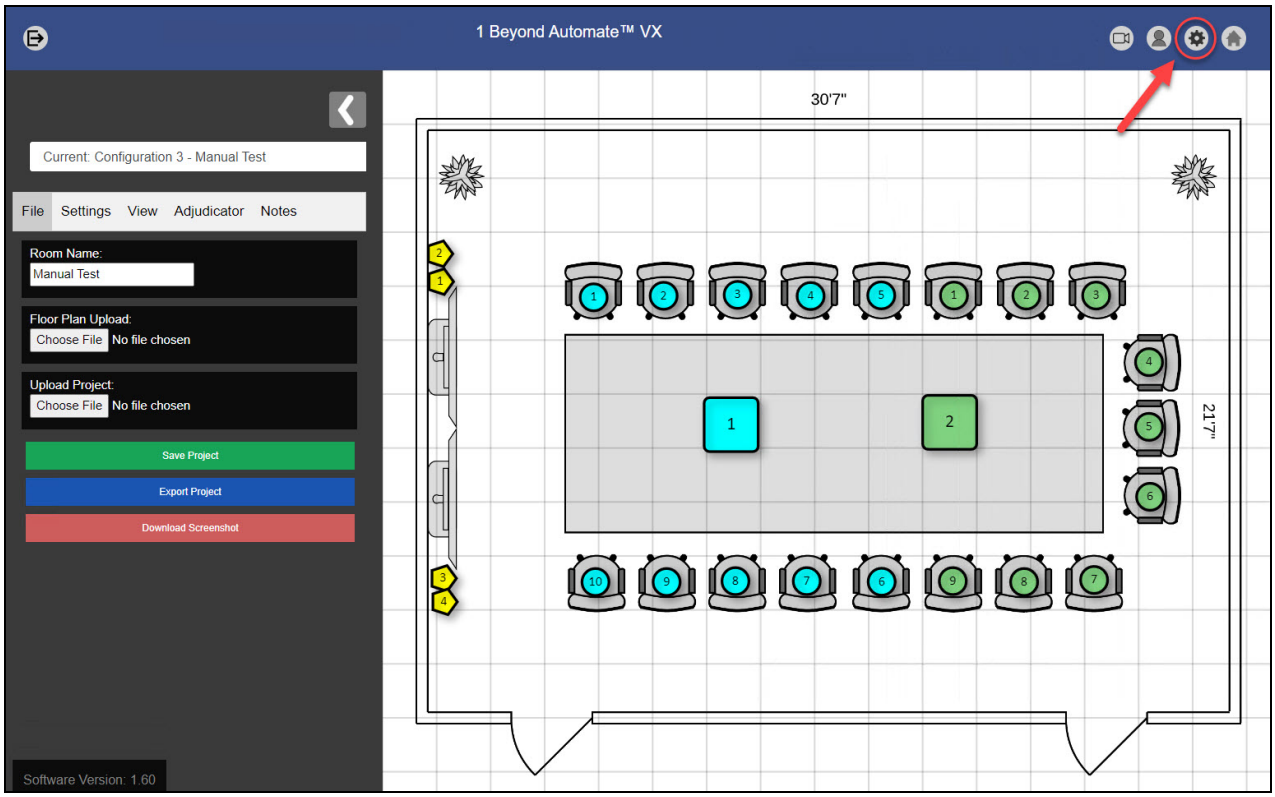
1. Select the pencil icon on the top right of the page to open Room Designer.

Main Settings to Room Designer



2. Select the gear icon at the top right of the page to open the system settings.

Room Designer Page

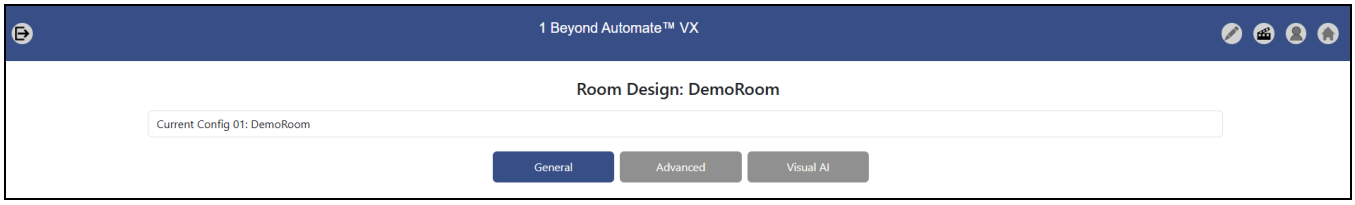


When trying to access the system settings anywhere else besides the **Main** settings, the gear icon is present.

General Settings

Select the **General** tab to view the available general system settings.

General Tab

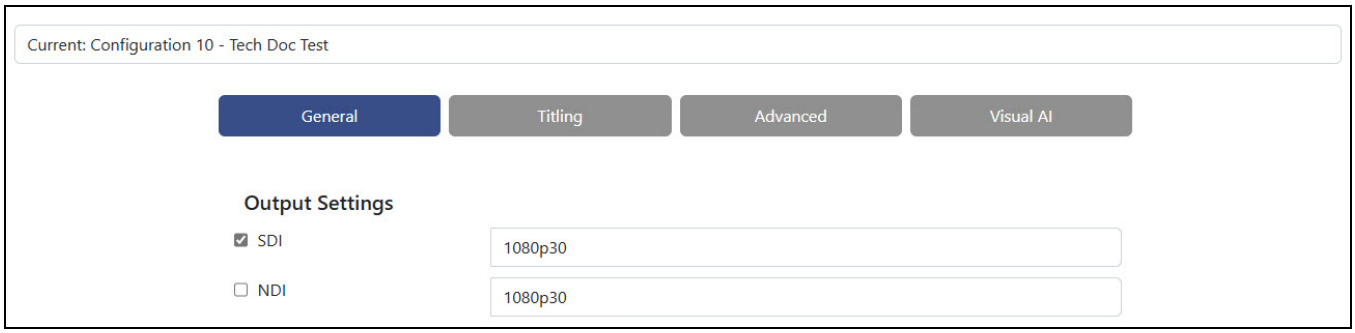


The following general system settings can be configured.

Output Settings

The following settings are used to control over the selected output, and to select the desired resolution for each output.

Output Settings



Two output settings are provided that can be turned on or off: **SDI** or **NDI**.

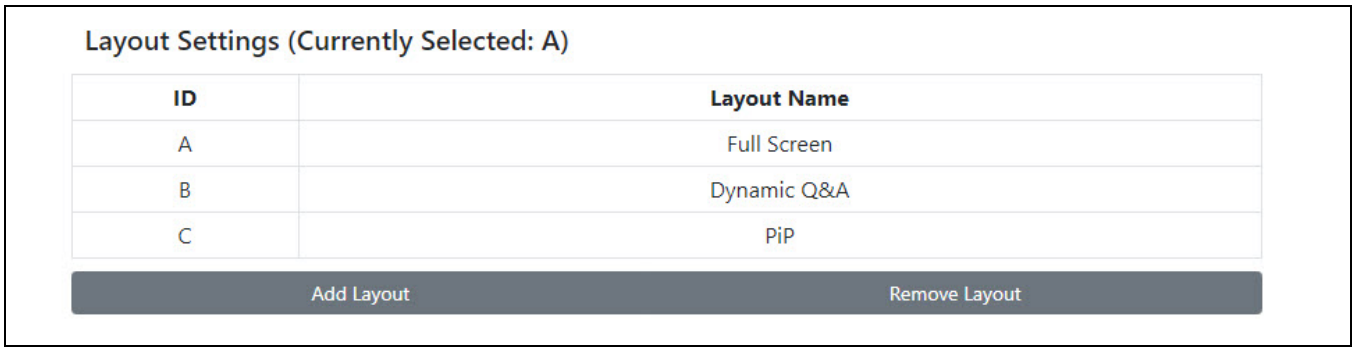
Each output has a drop-down menu with the following resolution output options:

- NTSC
- PAL
- 1080i 50
- 1080i 59.94
- 1080i 60
- 1080p 23.98
- 1080p 24
- 1080p 25
- 1080p 29.97
- 1080p 30
- 1080p 50
- 1080p 59.94
- 1080p 60
- 720p 50
- 720p 59.94
- 720p 60

Layout Settings

Layouts are a way of switching between different composite shots. Composite shots are camera shots with multiple video layers.

Layout Settings



Each layout is given an ID (A to Z) and can be named by selecting the appropriate **Layout Name** text field.

- To add additional layouts, select **Add Layout**. A new layout is added with the next available letter ID.
- To remove layouts, select **Remove Layout**. The last available layout is removed (for example, if Layouts A-D are configured, Layout D will be removed).

> **NOTE:** Removing a layout will always remove the most recent layout. However, it will still exist within Wirecast. If a layout was accidentally deleted in the web UI, simply add a layout that corresponds with the deleted ID to restore the layout.

Layouts are configured through Wirecast. For more information, refer to Wirecast Configuration.

Blackmagic® Design ATEM Switcher Layouts

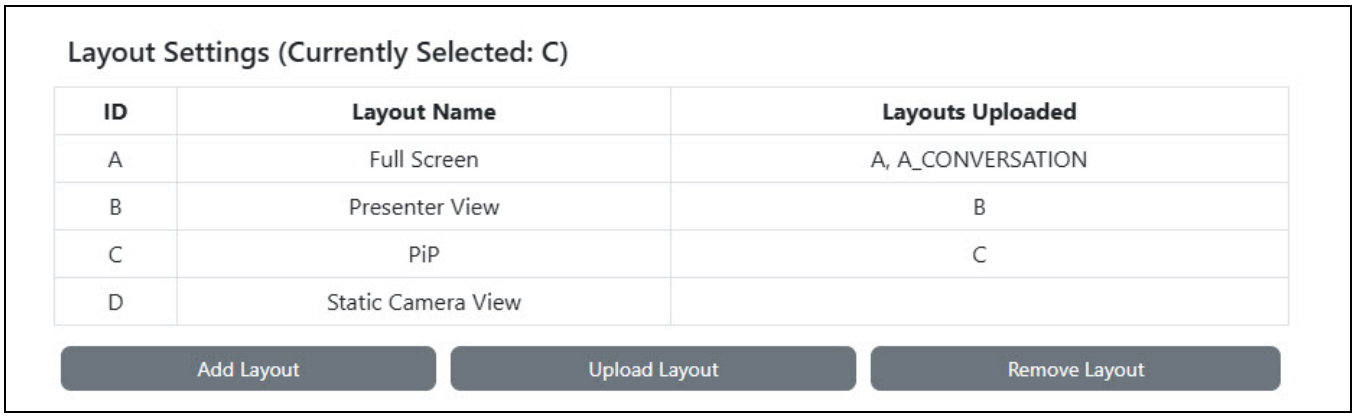
Blackmagic® Design ATEM switcher camera layouts are compatible with Automate VX. Prior to organizing Blackmagic Design ATEM switcher layouts, **Enable Atem** must be selected. For more information on enabling Blackmagic Design ATEM switchers for Automate VX, refer to Video Production Server Settings on page 169.

When a connection is established with the Blackmagic Design ATEM switcher, additional options become available. Initially, Automate VX will automatically route the Blackmagic Design ATEM switcher layouts to existing Automate VX layout IDs.

NOTES:

- Blackmagic Design ATEM switcher and Wirecast layouts have the same operational controls in Automate VX. For more information on changing layouts, refer to Layouts Menu on page 265.
- One SuperSource layout may be used if the Blackmagic Design ATEM switcher supports the feature. The SuperSource must be named **SuperSource** in the Blackmagic Design ATEM switcher to operate with Automate VX.

ATEM Layouts



To upload additional Blackmagic Design ATEM switcher layouts:

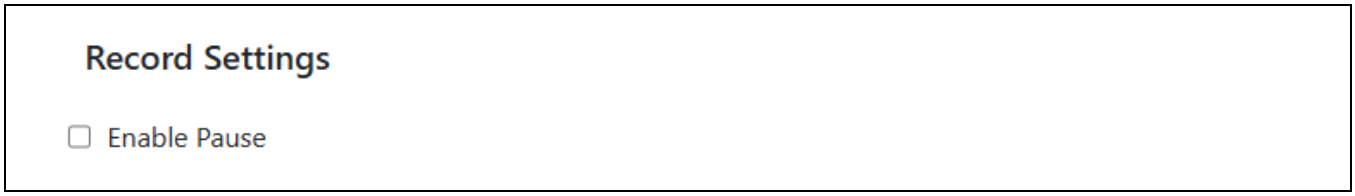
1. Select the **Upload Layout** button. A file explorer window opens.
2. Navigate to the desired Blackmagic Design ATEM switcher .xml file. Select the file to upload it to Automate VX.

The Blackmagic Design ATEM switcher layouts are now uploaded to Automate VX.

Record Settings

Select the **Enabling Pause** check box to provide pausing functionality during recording. Pausing will create incomplete recordings which are stored in **D:/Recording_Temp**. Once a recording has been stopped, the incomplete recordings are joined into a complete recording and saved in **D:/Recordings.**

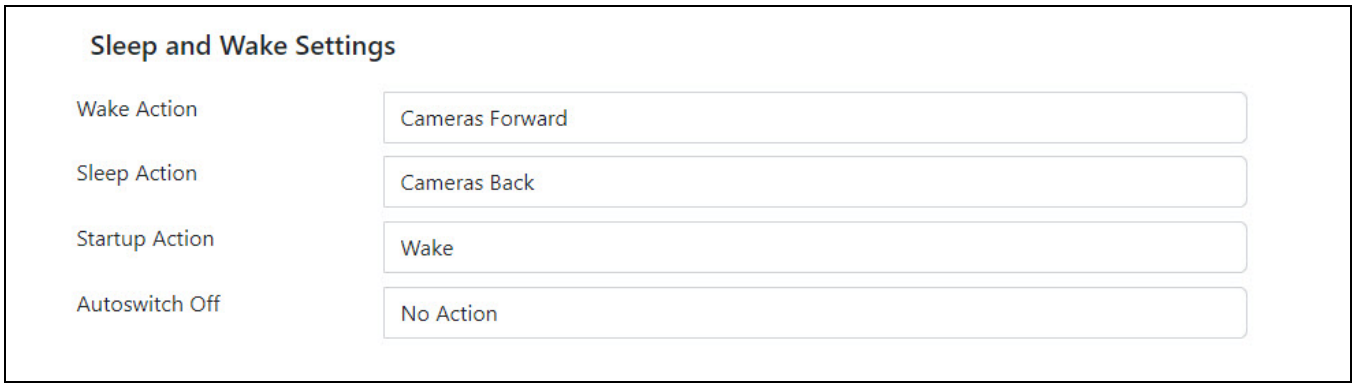
Record Settings



Sleep and Wake Settings

The following sleep and wake settings are provided.

Sleep and Wake Settings



Open the **Wake Action** drop-down menu to select the following camera actions when the camera wakes from sleep mode:

- Cameras Forward
- Start AutoSwitch
- Start AutoSwitch and AutoTrack
- Any Scenarios that have been created

NOTES:

- Camera output is automatically enabled when a **Wake** action is used.
- For more information on AutoSwitch and AutoTrack, refer to Main Tab on page 261

Open the **Sleep Action** drop-down menu to select the following camera actions when entering sleep mode:

- Cameras Back
- Any Scenarios that have been created

Open the **Startup Action** drop-down menu to select the following camera actions upon boot-up of the system:

- Wake
- Sleep

TIP: IV-CAM Series cameras display their wake and sleep status via their light bar. A red light bar indicates that the camera is in sleep mode, a green light bar indicates that the cameras are in wake mode.

Open the **Autoswitch Off** drop-down menu to select the following camera actions when Autoswitching has been disabled:

- No Action
- Any Scenarios that have been created

NOTE: Automate VX reboots daily to better the performance of the system. The system will perform the action selected for **Startup Action** upon reinitialization.

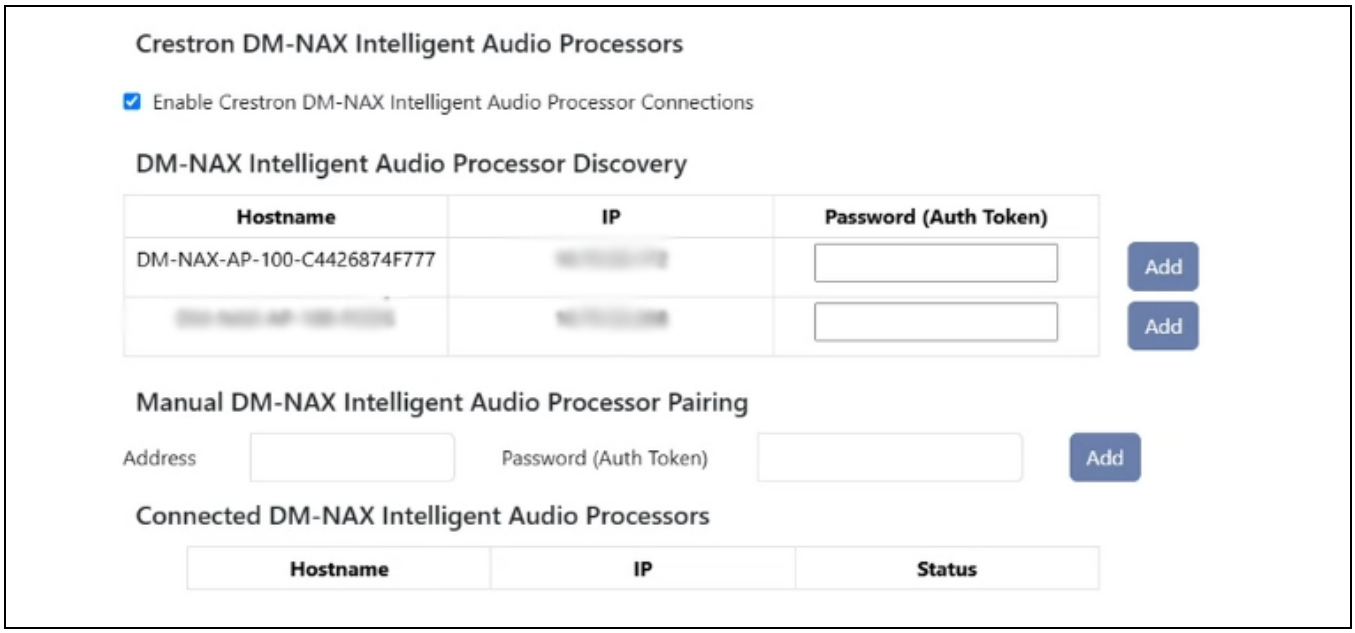
DM NAX Connections to Automate VX

Use the following settings to connect a DM-NAX-AP-100 and its associated devices to Automate VX.

NOTES:

- This section only describes how to connect a DM-NAX-AP-100 to Automate VX. To configure DM-NAX-AP-100 settings, refer to the DM NAX® Intelligent Audio Platform Product Manual.
- For more information on microphones that can be connected through the DM-NAX-AP-100, refer to DM NAX Intelligent Audio Processors on page 11.

DM NAX Connection Settings



Select the **Enable Crestron DM-NAX Intelligent Audio Processor Connections** to allow DM-NAX-AP-100 connections to Automate VX. Once selected, additional settings are shown.

> **NOTE**: It may take up to a minute for devices to populate within the **DM-NAX Intelligent Audio Processor Discovery** fields.

DM NAX Intelligent Audio Processor Discovery

Any DM-NAX-AP-100 devices located on the same network as Automate VX are shown here. Enter the **Auth Token** of the desired DM-NAX-AP-100 into the **Password (Auth Token)** text field. Then, select **Add** to connect the DM-NAX-AP-100 to Automate VX.

> **TIP**: The **Auth Token** is located within the web configuration interface of the DM-NAX-AP-100. For more information on accessing the web configuration interface of the DM-NAX-AP-100, refer to the DM NAX® Intelligent Audio Platform Product Manual

NOTE: A DM-NAX-AP-100 can be added manually if it is not shown in the DM-NAX Intelligent Audio Processor Discovery section.

Manual DM-NAX Intelligent Audio Processor Pairing



To connect a DM-NAX-AP-100 manually to Automate VX:

1. Enter the IP address of the DM-NAX-AP-100 into the **Address** text field.
2. Enter the **Auth Token** for the DM-NAX-AP-100 into the **Password (Auth Token)** text field.
3. Select **Add**.

All devices connected to the DM-NAX-AP-100 are shown under Connected DM-NAX Intelligent Audio Processors.

Connected DM-NAX Intelligent Audio Processors

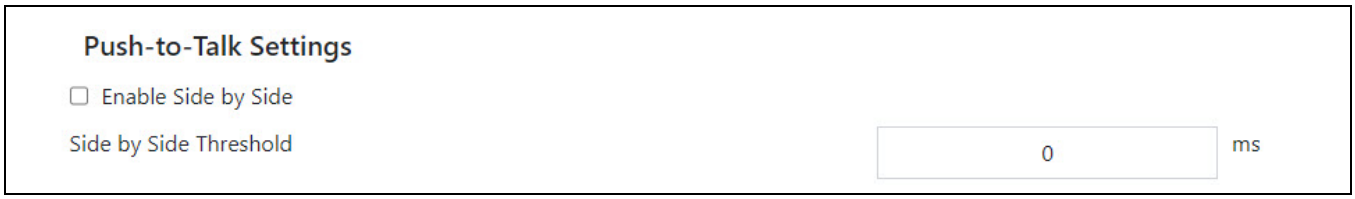


Select **Remove** to remove the DM-NAX-AP-100. All devices connected to the DM-NAX-AP-100 will also be removed with it.

Push-to-Talk Settings

The following push-to-talk settings are provided.

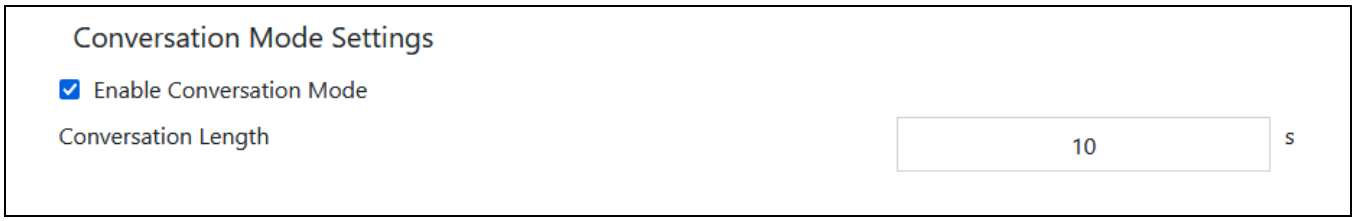
Push-to-Talk Settings



Select the **Enable Side by Side** check box to turn on side-by-side shots. A side-by-side shot is a split screen shot that captures two active participants who are speaking intermittently for a short time frame. This shot will be called after the system detects that two active participants have been speaking for longer than the time set for the **Side by Side Threshold**. For discussion systems, the side-by-side shot will show the two most recent participants who have pressed their unmute button.

> **NOTE:** To move to the next queued speaking participant in a discussion system, one of the two active speaking participants in the side-by-side shot must turn on their mute button. If another participant is waiting in the speaking queue, they will enter the side-by-side shot when one of the two active speaking participants turns on their mute button.

Use the **Side by Side Threshold** text field to determine how long two active participants need to be speaking before the side-by-side shot is called.



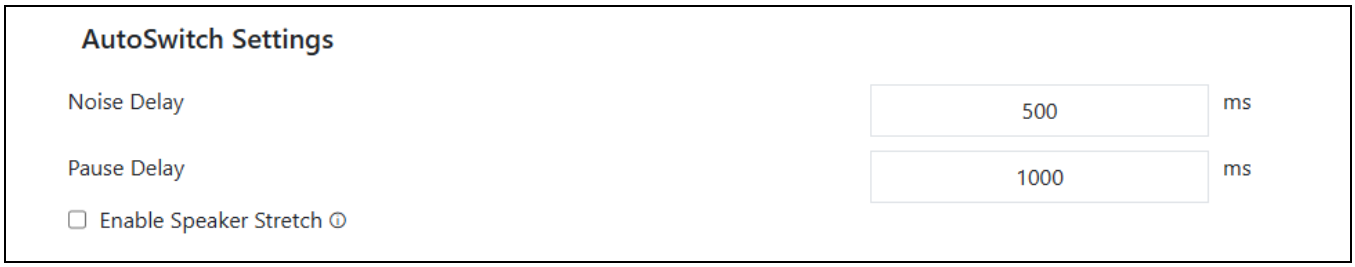
Select the **Enable Conversation Mode** check box to turn on conversational side-by-side shots. A conversational side-by-side shot is a split screen shot that captures two active participants who are speaking.

This shot will be called after the system detects another speaking participant other than the current one, and will place them on a side-by-shot for the duration set in the **Conversation Length** field. Once the duration set for **Conversation Length** is exceeded, the camera shot will transition to a single shot of the last active speaking participant.

AutoSwitch Settings

The following AutoSwitch settings are provided.

Auto Switch Settings

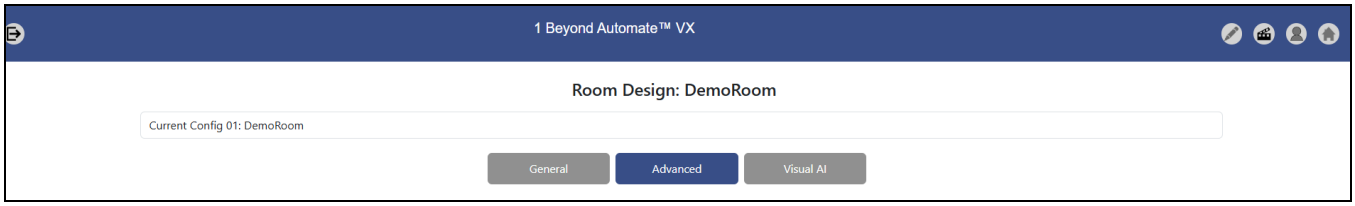


- **Noise Delay**: Determines how long a noise needs to occur before the system recognizes it. This feature helps to avoid switching based on coughs or other short sounds.
- **Pause Delay**: Determines how long after an active participant stops speaking before the camera will switch to another camera or a default shot.
- **Enable Speaker Stretch**: Allows for Virtual Mic positions to stretch up to 18 inches from their original location while the Virtual Mic is active. For more information about Virtual Mics, refer to Virtual Mic and Blocking Zone Configuration on page 127.

Advanced Settings

Select the **Advanced** tab to view the available advanced settings.

Advanced Tab



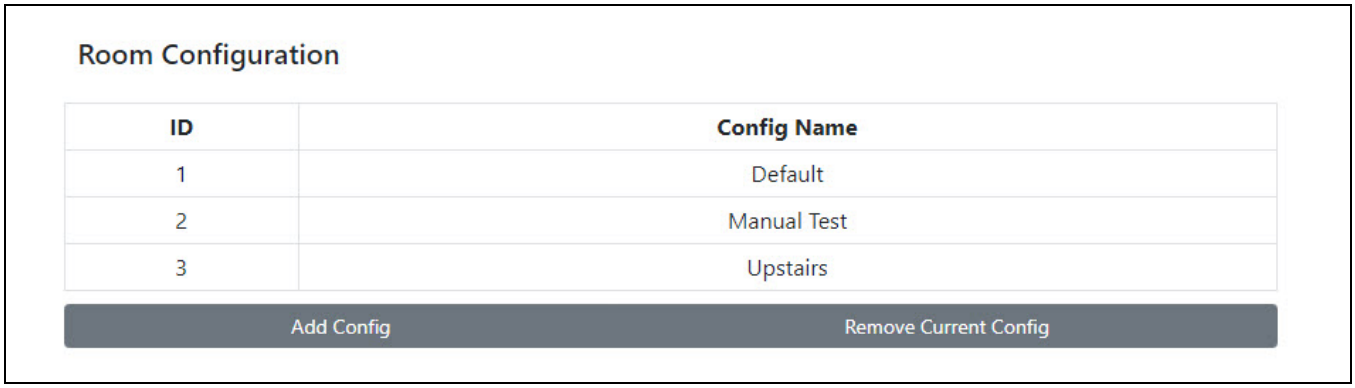
The following advanced settings can be configured.

Room Configurations

The **Room Configurations** setting allows for different microphones and room furniture arrangements to be used. This is especially helpful within divisible and multipurpose rooms.

Each room configuration saves a separate copy of all the settings in the Automate VX.

Room Configuration Settings



Each layout is given an ID number and corresponds to the associated configuration name.

- To add additional configurations, select **Add Config**. A new configuration will be added with the next available numbered ID.
- To remove the active configuration, select **Remove Current Config**. The active configuration is indicated by the drop-down menu on the top of the settings menu. This will remove it from the Automate VX and Room Designer.

  > **NOTE**: Ensure that projects are saved within Room Designer and exported to a local drive before removing configurations. If a configuration is unintentionally removed and needs to be restored, contact Crestron True Blue Support.

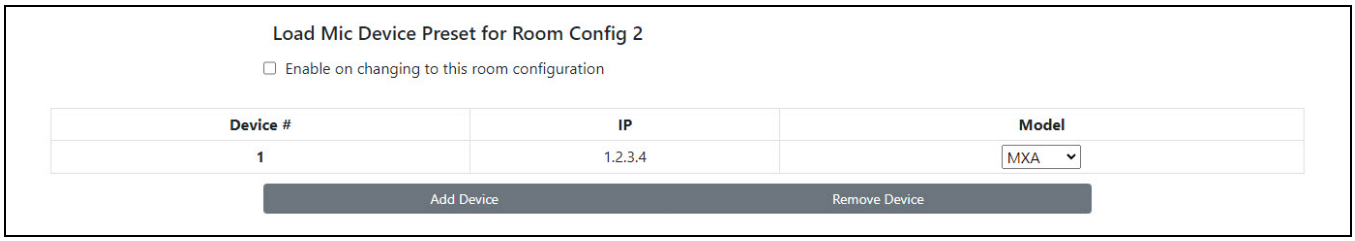
Changing a configuration name must be done within Room Designer. For more information, refer to Room Designer on page 44.

Selecting a room configuration can also be called with an API or Crestron command. For more information on using the Automate VX API, refer to the appropriate documentation at https://developer.crestron.com.

Load Microphone Device Preset

When using multiple room configurations, it is possible to load corresponding presets for Shure Intellimix Devices such as MXA910, MXA310, P300, and Intellimix Room. This is useful when multiple room and lobe layouts are used.

Load Microphone Device Presets



Select the **Enable on changing to this room configuration** check box to load the corresponding numbered microphone array preset when the room configuration is changed.

- Select **Add Device** to add a microphone array. A new microphone array will be added with the next available device number.

  Select **Remove Device** to remove a microphone array. The last available microphone array is removed (for example, if microphone arrays 1-4 are configured, microphone array 4 will be removed).
- Use the **IP** field to enter the IP address of the microphone array.
- Use the **Model** drop-down menu to select the correct device for the microphone array.

Copy Files Settings

The following file copying settings are provided.

Copy Files Settings



By default, all recordings are saved to local storage of the Automate VX at **D:\Recordings\VX**. The **Copy Files** button on the home page copies these files to the specified destination when selected. For more information, refer to Operation on page 261.

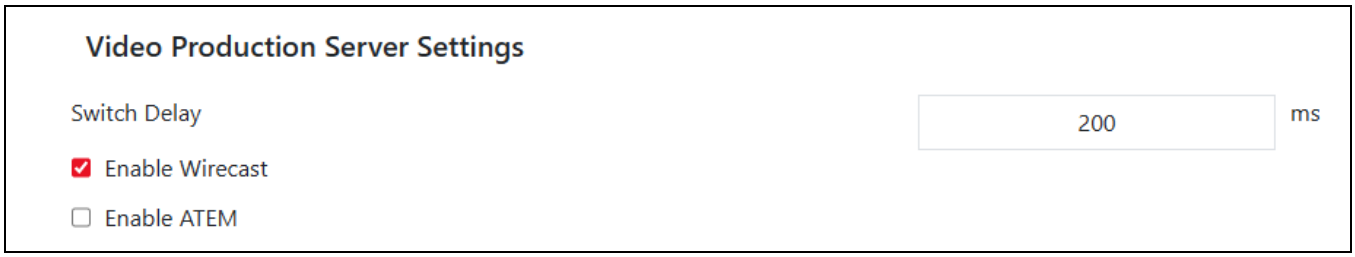
The **Destination** path can be set to a mapped network location, a full network address, or an external drive. A log of the copy will be created at the location set for **Log Dest**.

Select the **Delete files from source after copying** check box to remove files from **D:\Recordings\VX** after a successful copy. When unchecked, copied files are moved to **D:\RecordingsDone**.

Video Production Server Settings

The following video production settings are provided.

Video Production Server Settings



Switch Delay

Use the **Switch Delay** text field to set how long it will take the system to switch to a camera shot. Increasing this value will help prevent camera movement during AutoSwitching.

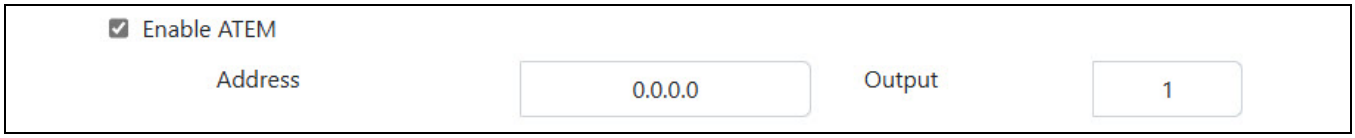
Enable Wirecast

Select the **Enable Wirecast** check box to enable communication between the Automate VX system and Wirecast.

Enable ATEM

Select the **Enable ATEM** check box to to enable communication between the Automate VX system and a Blackmagic® Design ATEM switcher. When selected, connection options appear for the Blackmagic Design ATEM switcher.

Enable ATEM



Complete the following procedure to connect the Blackmagic Design ATEM switcher to Automate VX:

> **NOTE**: Automate VX requires the Blackmagic ATEM Switchers Windows software to be installed on the system for Blackmagic Design ATEM switcher operation. For more information on acquiring the software, refer to Blackmagic Design's website.

1. In the **Address** text field, enter the IP address of the Blackmagic Design ATEM switcher.

   > **NOTE**: The Blackmagic Design ATEM switcher must be on the same network as Automate VX.

2. In the **Output** text field, enter the output channel of the Blackmagic Design ATEM switcher.

The Blackmagic Design ATEM switcher is now connected to Automate VX.

When using a Blackmagic Design ATEM switcher with Automate VX, there are requirements that that need to be made to the configuration of the ATEM switcher.

- For more information on configuring and operating a Blackmagic® Design ATEM switcher, refer to Blackmagic Design's Documentation.
- For more information about enabling a layout to be used in conjunction with the Blackmagic Design ATEM switcher, refer to Blackmagic® Design ATEM Switcher Layouts on page 159.

NOTE: Both **Enable Wirecast** and **Enable ATEM** can be enabled at the same time.

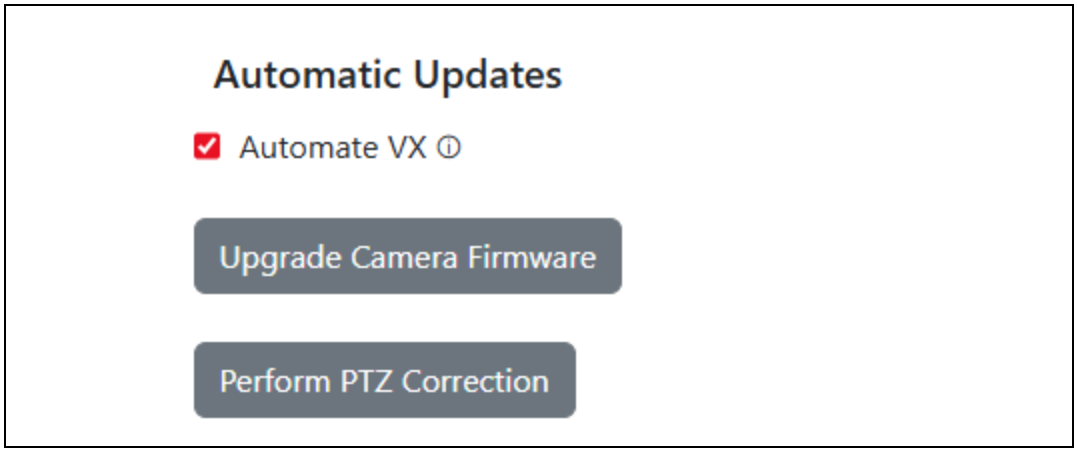
Automatic Updates

> **NOTE**: This feature is only available for Automate VX2 (IV-SAM-VX2-S and IV-SAM-VX2-P).

Automatic firmware updates can be enabled or disabled for Automate VX2. Select the **Automate VX** check box to enable automatic firmware updates.

> **NOTE**: An internet connection is required for automatic updates.

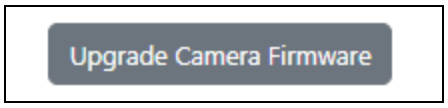
Automatic Updates



Upgrade Camera Firmware

Select the **Upgrade Camera Firmware** button to update Crestron camera's firmware. When selected, all cameras in all Room Configurations are simultaneously updated.

Upgrade Camera Firmware



Perform PTZ Correction

Select the **Perform PTZ Correction** button to recalibrate Crestron cameras back to their default resting positions. When selected, all cameras in all Room Configurations simultaneously spin to recalibrate to their default resting positions.

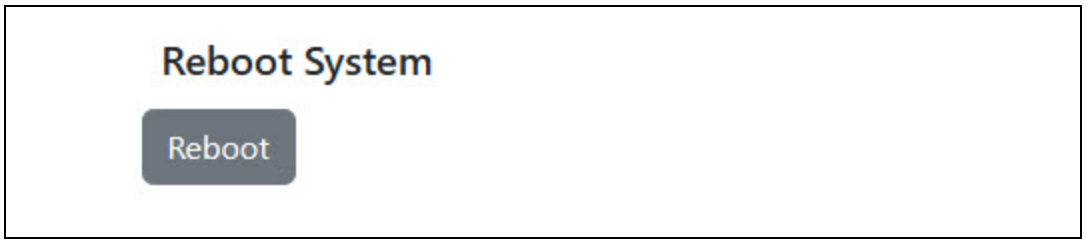
Perform PTZ Correction



Use **Perform PTZ Correction** if a camera's PTZ lens has been physically moved or altered. Cameras that have been physically moved or altered negatively impact AutoSwitching performance due to Automate VX being unaware of the PTZ lens offset.

Reboot System

Select the **Reboot** button to restart Automate VX.



Export Logs

Automate VX can create and save logs of the data that it outputs.

Export Logs

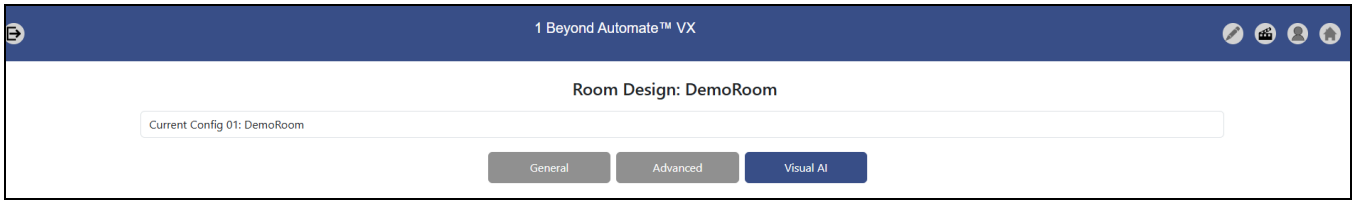


Select **Download Support Package** to export all of the configuration files used on the system. Select **Download All Logs** to export a file with the log data of the system.

Visual AI

Select the **Visual AI** tab to view the available Visual AI settings.

Visual AI Tab



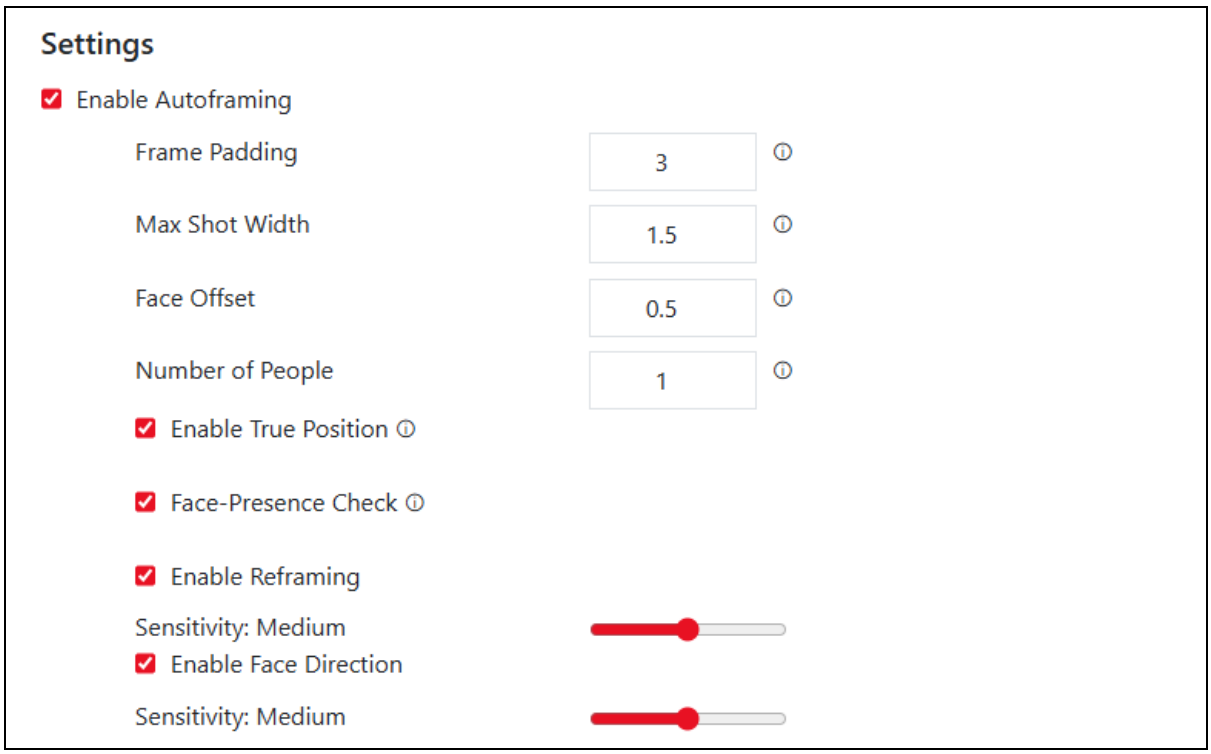
The following **Visual AI** settings can be configured.

Visual AI Settings

Visual AI enables Automate VX to automatically frame optimal camera shots on Virtual Mic positions. Automate VX detects faces at the Virtual Mic location that is activated, and frames the camera shot so that the speaking participant is centered. Refer to the following sections for information on the available Visual AI settings.

> **NOTE**: Visual AI Settings are only available for the p12 (IV-CAM-P12) , p20 (IV-CAM-P20), PTZ-IP 12 (IV-CAMPTZ-12), and PTZ-IP 20 (IV-CAMPTZ-20) cameras. i12 (IV-CAM-I12-B), i20 (IV-CAM-I20), and AutoTracker 3 (IV-CAMA3-20) cameras must be set to **Use as PTZ** for Visual AI Settings to apply. For more information on cameras, refer to Camera Device Configuration on page 105.

Autoframing Settings



Enable Autoframing

Select the **Enable Autoframing** check box to turn on Autoframing. Autoframing enables cameras to center participants in the camera shot when a Virtual Mic is activated. If the participant moves from the position, the camera will not follow and attempt to keep the participant centered in the camera shot. For more information on Virtual Mics, refer to Virtual Mic and Blocking Zone Configuration on page 127.

Enable Autoframing

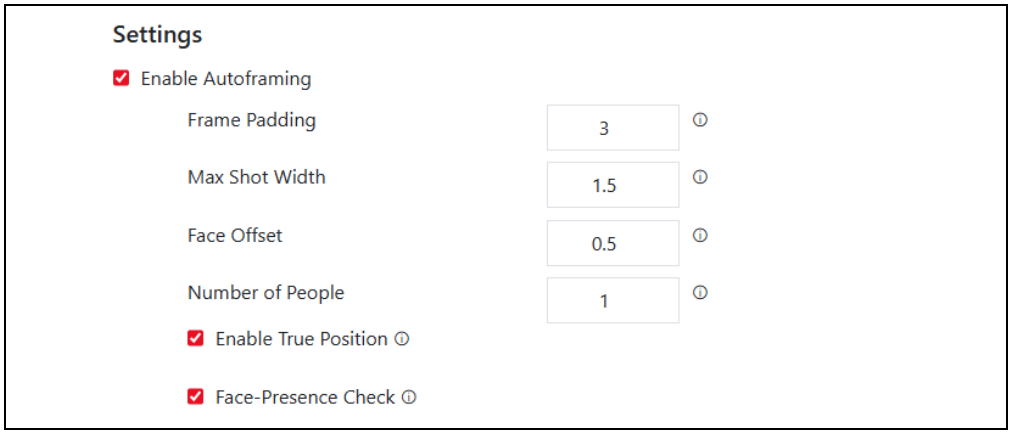


Advanced Autoframing Settings

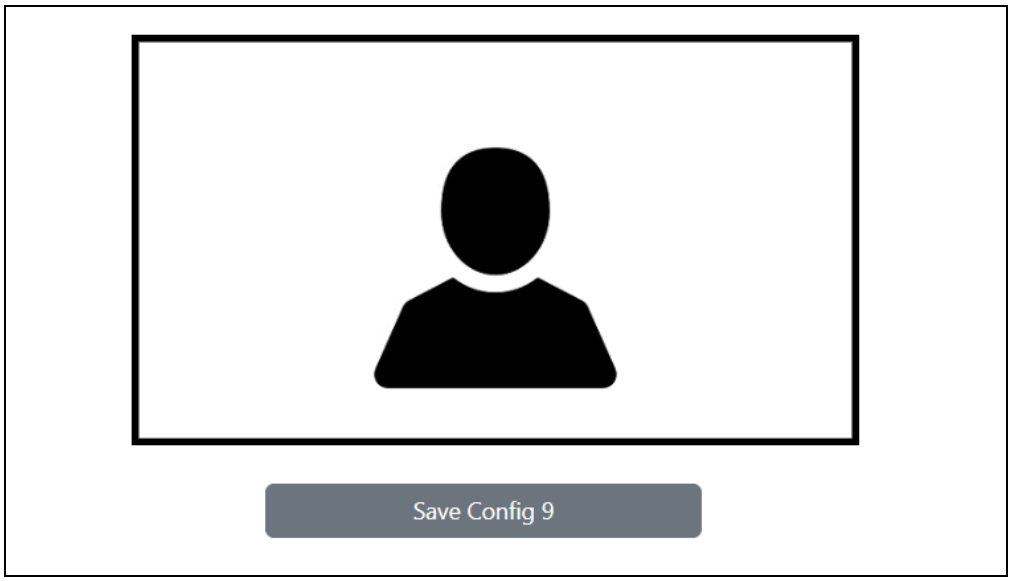
The following settings are available to adjust the Autoframing behavior of Automate VX. Use the camera shot preview graphic on the bottom of the Visual AI page for an approximation of the Autoframing camera shot.

> **NOTE**: In most cases, the default settings provided give the optimal Autoframing and Reframing performance. Change the following settings only if it required to do so.

Advanced Autoframing Settings



Camera Shot Preview



Frame Padding

Use the up and down arrows in the **Frame Padding** field to adjust the space around the participant in the Autoframed camera shot.

Max Shot Width

Use the up and down arrows in the **Max Shot** Width field to adjust the how far the Autoframed camera shot can zoom out.

Face Offset

Use the up and down arrows in the **Face Offset** field to adjust where the Autoframed camera shot places the head of the participant.

Number of People

Use the up and down arrows in the **Number of People** field to determine the number of people included in AutoFraming.

Enable True Position

Select the **Enable True Position** check box to turn on True Position. True Position takes the information from the intelligent array microphone and determines the location of the audio source. The Autoframed camera shot then focuses on the location determined by True Position.

Face-Presence Check

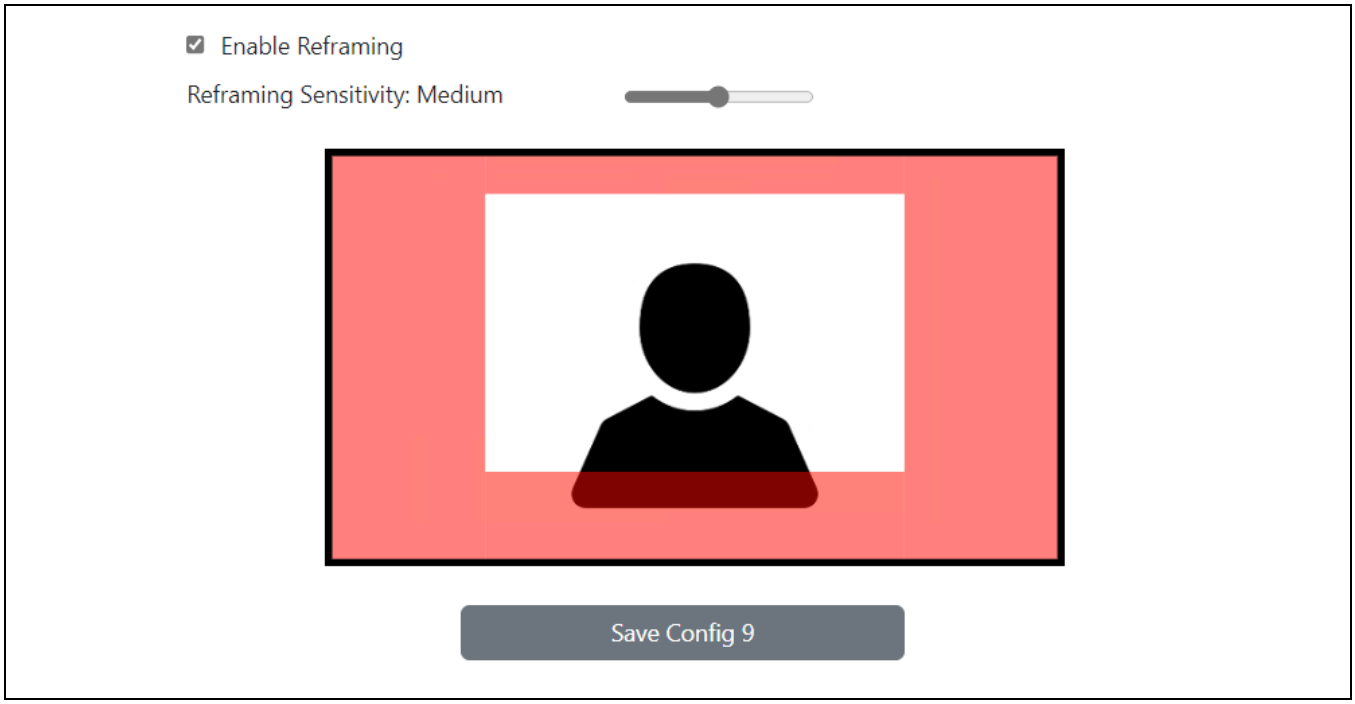
Select the **Face-Presence Check** check box to turn on Face Detection. Face Detection enables Automate VX to check if a face is present in the camera shot before switching the system output. If there is no face present, Automate VX will not switch the camera shot.

Enable Reframing

Select the **Enable Reframing** check box to turn on Reframing. Reframing keeps the speaking participant in the center of the camera shot, even when the participant moves from their initial position.

The camera shot preview displays red edges around the participant, indicating the space where Reframing will occur when the participant enters it.

Enable Reframing

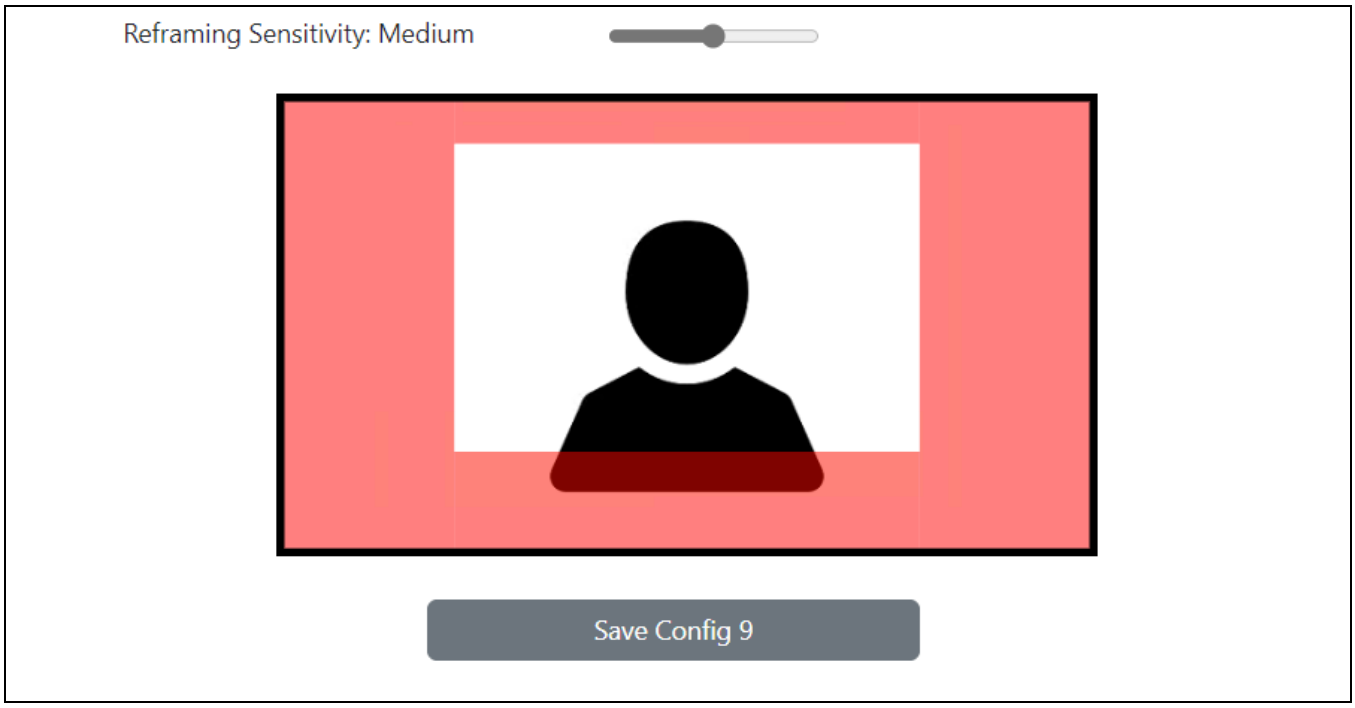


Automate VX continues to keep the camera shot centered on the participant until another speaking participant triggers a different Virtual Mic position, or if the Default Shot timeout duration is met. For more information about Default Shots, refer to Room Designer Settings on page 70.

Reframing Sensitivity

Use the **Reframing Sensitivity** slider to adjust the space on the edges of the camera shot where Reframing occurs. **Low**, **Medium**, and **High** sensitivities are available. The higher the **Reframing Sensitivity** is set, the more often Reframing will occur when the subject moves in the camera shot.

Reframing Sensitivity



Enable Face Direction

Select the **Enable Face Direction** to turn on Face Direction camera switching. Face Direction determines the direction speaking participants are looking, and switches cameras to display the participant's face better. For more information on the Face Direction logic, refer to Face Direction Design on page 39.

> **NOTE**: Any camera used in a Wirecast layout not intended for speaker tracking (a context camera shot for example) must be set as a **generic** Camera Device. Setting the camera to **generic** excludes it from Face Direction switching logic.
>
> - For more information on changing the type of camera used as a Camera Device in Room Designer, refer to Camera Device Configuration on page 105.
> - For more information on configuring layouts in Wirecast, refer to Wirecast Configuration on page 196.

Face Direction Sensitivity

Use the **Face Direction Sensitivity** slider to adjust the frequency of camera switching while Face Direction is active. The higher the Face Direction Sensitivity is set, the quicker camera switching occurs when a better camera shot is available.

Face Direction Settings

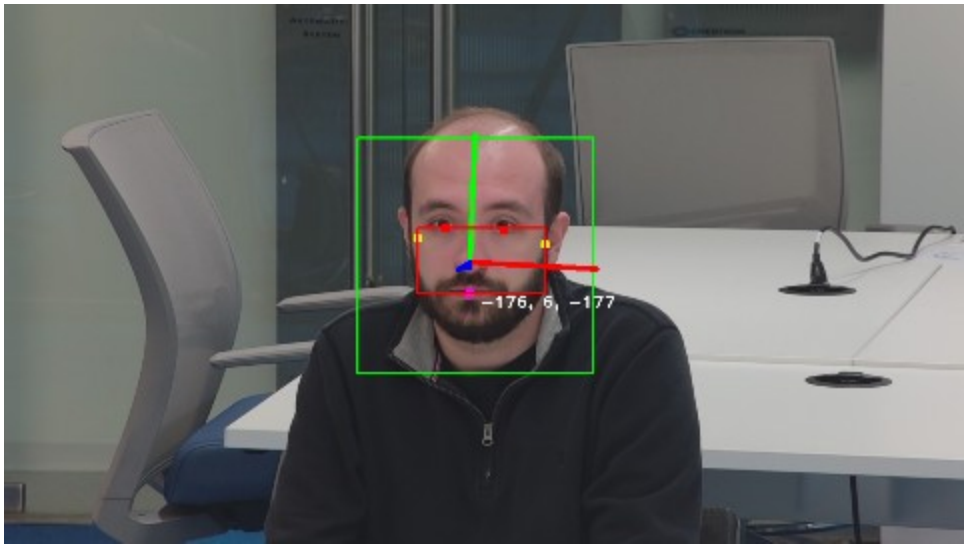


Debug Settings

> **NOTE**: Only use **Debug Settings** if instructed by Crestron True Blue Support to do so.

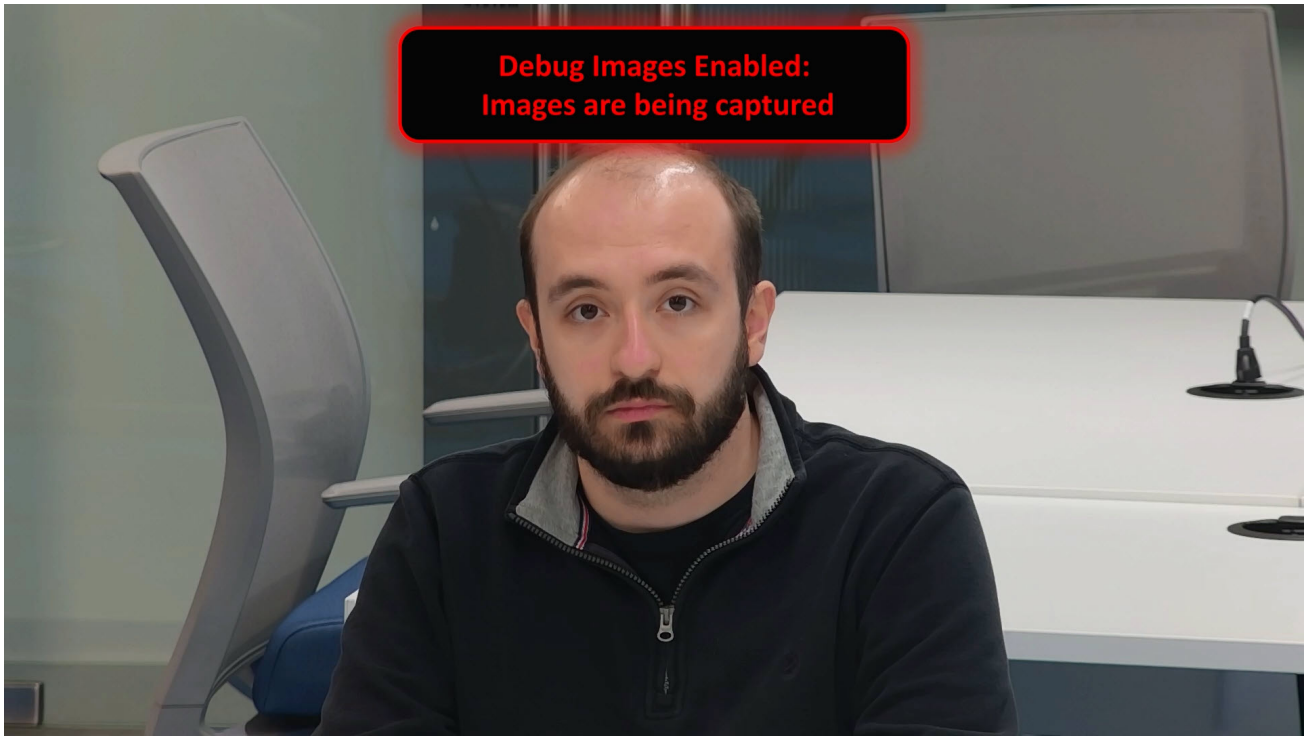
Select the **Store debug images** check box to enable Visual AI debug images to be saved into the **D:/images** folder on the system. Visual AI debug images are a troubleshooting tool that provides information about the framing, facial features, and an XYZ interpretation of their direction.

Debug Image



When Debug Settings are enabled, Automate VX shows an overlay notifying the user that debug images are being captured.

Debug Images Enabled



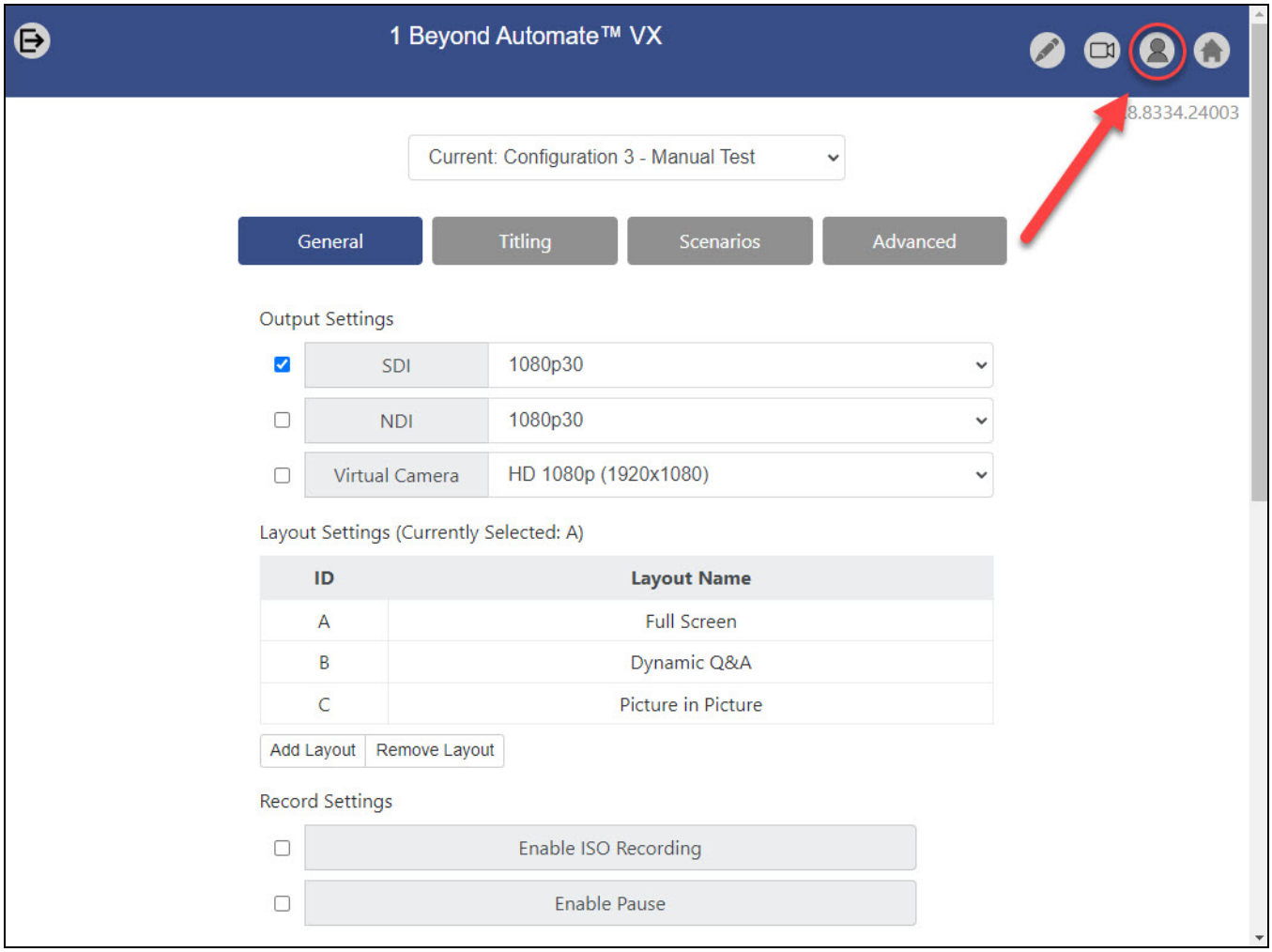
Once debugging is complete, it is recommended to delete debug images from the **D:/images** folder. Additionally, debug images are only stored for 24 hours, after which they will be automatically deleted.

> **NOTE**: Only users with administrator privileges are permitted to enable the **Store debug images** troubleshooting tool. **Store debug images** is disabled upon reboot of the Automate VX system, provided it was not already disabled prior to the reboot.

Admin and User Settings

Admin and User settings are accessible by selecting the **Users** icon at the top right of the page while logged in as an admin.

Users Icon

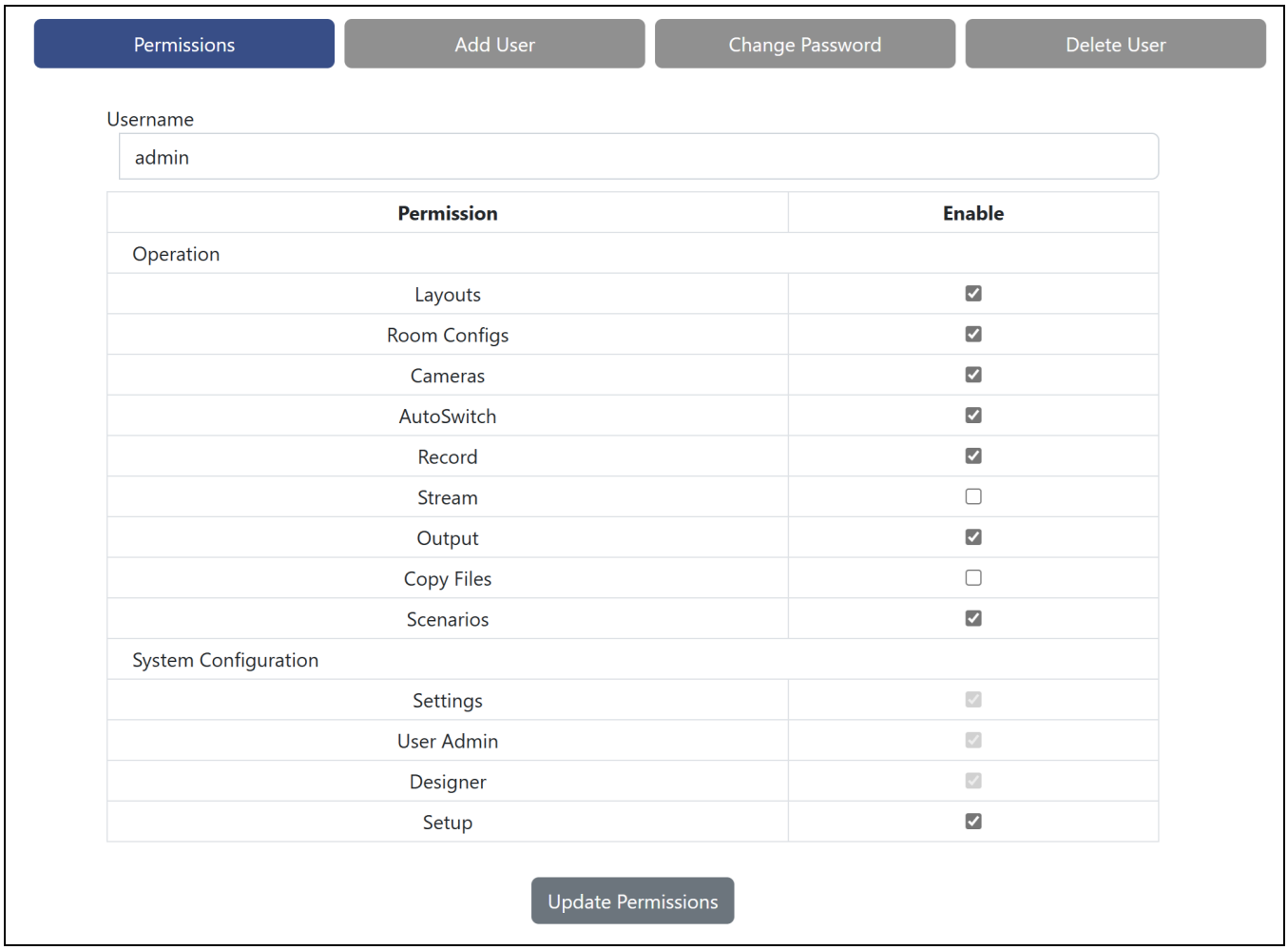


The admin user has full access to all settings. New users can be created with full or limited access to system settings.

Permissions

Select the **Permissions** tab to set permissions for additional users in the system. For example, an end user could be given permission only to operate the AutoSwitch feature. Additional users will need to be created using the **Add User** settings to change permissions for other users. For more information, refer to Add User on page 184.

User Settings - Permissions



Select a user from the **Username** drop-down menu to change permissions for that user.

> **NOTE:** The admin user will always have full permissions.

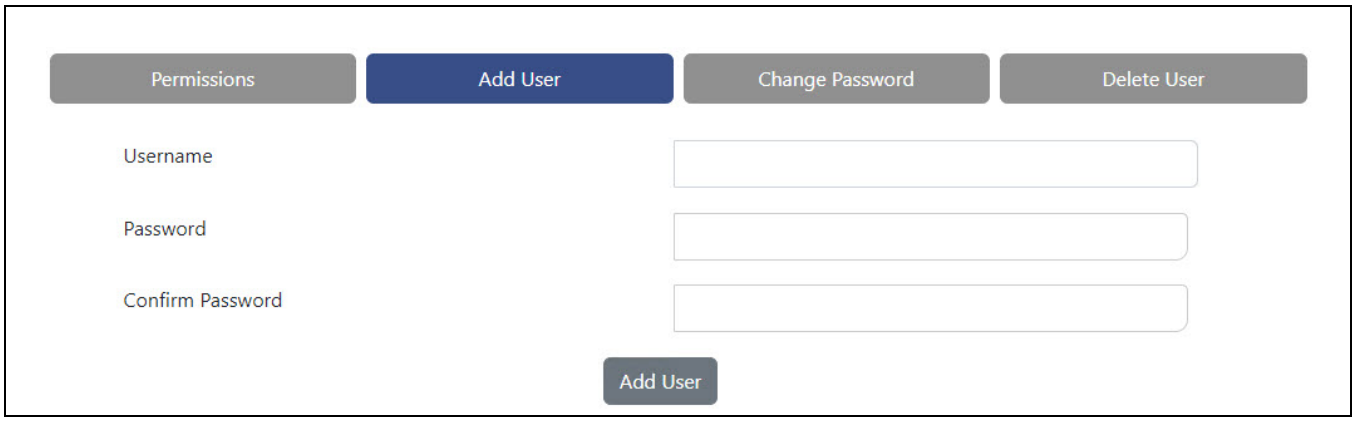
Select the check box next to a setting under the **Enable** column to allow the user to access that setting. Unselect the check box to remove the setting for that user.

Select **Update Permissions** to save any changes.

Add User

The following settings to add a user are provided.

User Settings - Add User



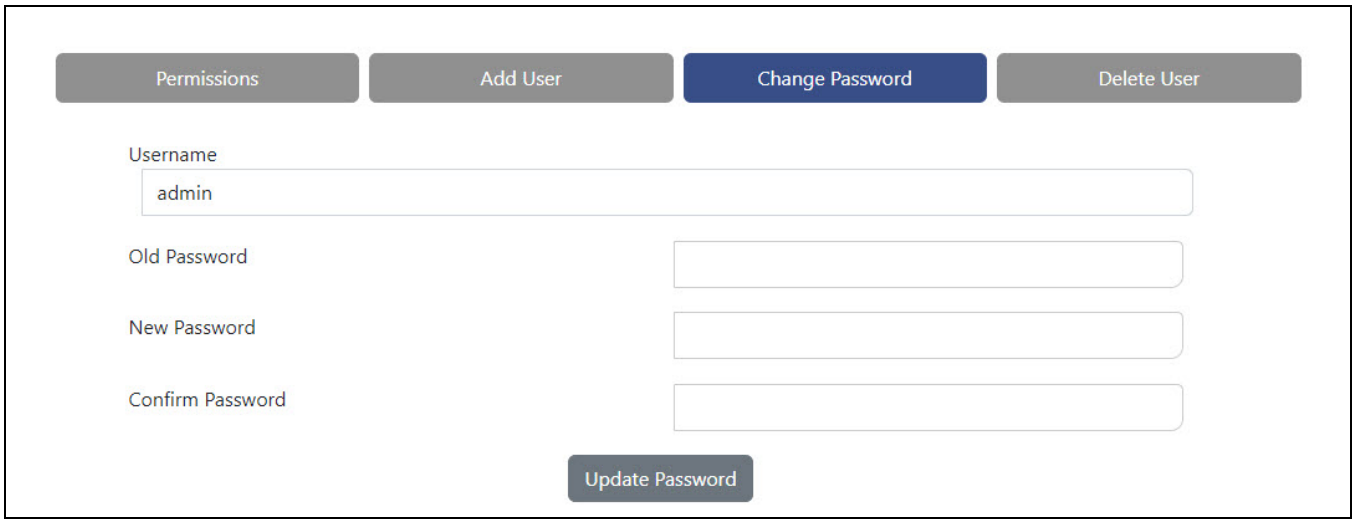
Select the **Add User** tab to add a new user.

Enter the new username and password in the appropriate text fields, then select **Add User**.

Change Password

Select the **Change Password** tab to update the password for an existing user.

User Settings - Change Password

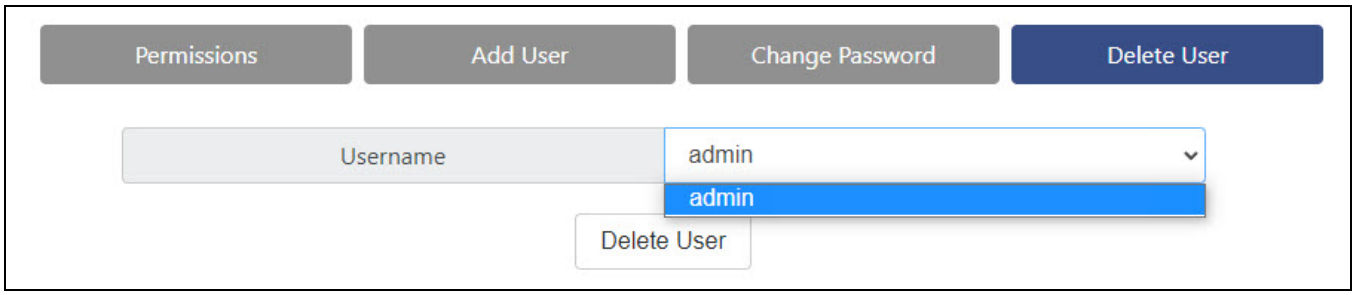


1. Select the user from the **Username** drop-down menu.
2. Enter the existing password in the **Old Password** text field.
3. Enter the new password in the **New Password** and **Confirm Password** text fields.
4. Select **Update Password**.

Delete User

The following settings to delete a user are provided.

User Settings - Delete User



Select the **Delete User** tab to delete an existing user.

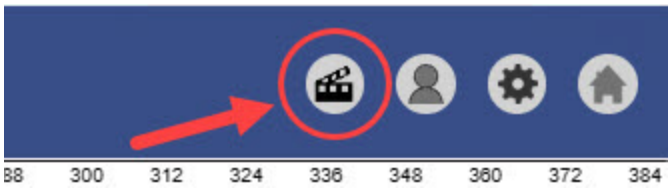
Enter the username of the user to delete, then select **Delete User**.

Shot Setup Tool

Automate VX contains the **Shot Setup** tool that provides customizable Scenarios and Default Shots.

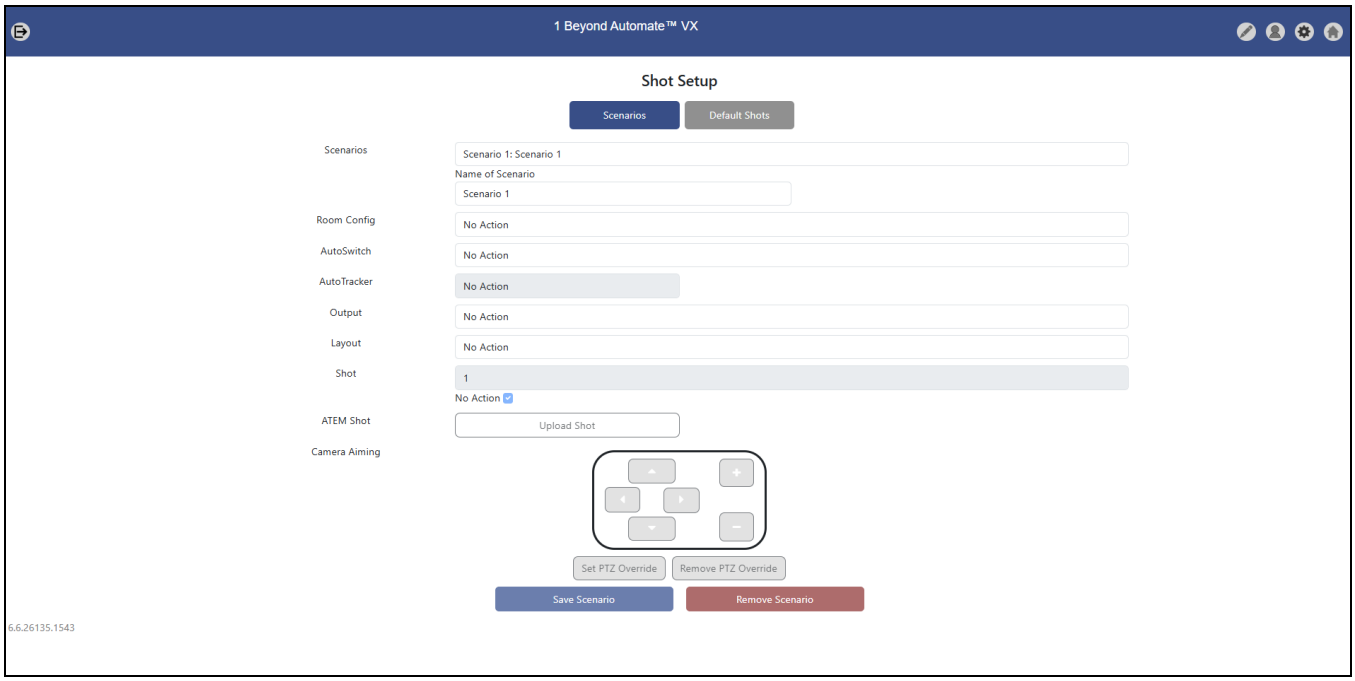
To access the **Shot Setup** tool, select the clapperboard icon within Room Designer. For more information on Room Designer, refer to Room Designer on page 44.

Clapperboard Icon Selection



The **Shot Setup** page is displayed.

Scenario Setup Page



The following settings are provided for configuring a Scenario and Default Shots.

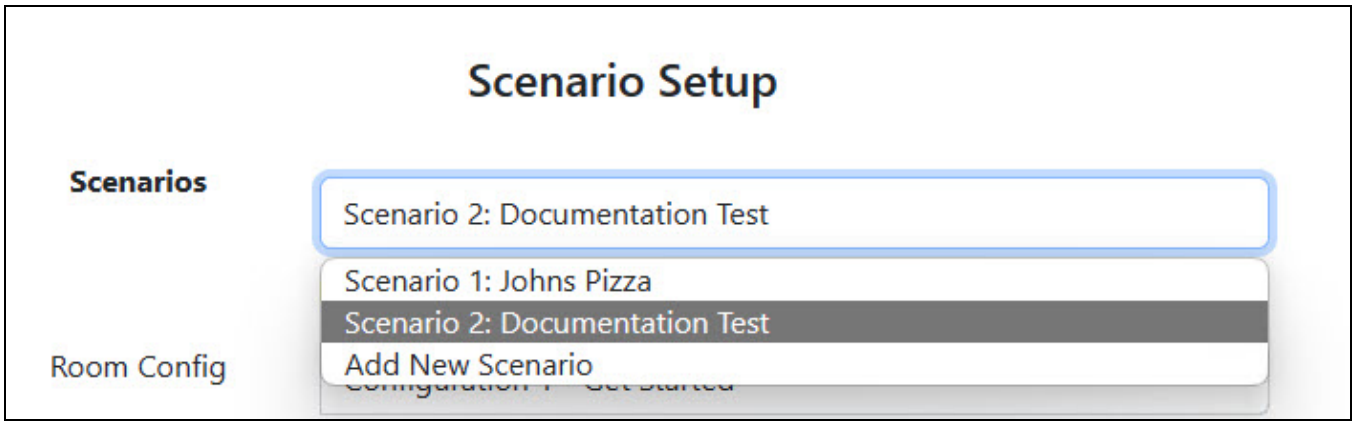
Scenarios

Scenarios are a series of actions that Automate VX can perform when paired with cameras, such as selecting a room configuration, enabling AutoSwitching, and selecting a layout with a single button. Scenarios can also be used to define the sleep and wake actions of Automate VX. For more information, refer to Sleep and Wake Settings on page 161.

Scenario Selection

Use the **Scenarios** drop-down menu to change the Scenario or to create a new Scenario.

Scenario Selection Menu



The following options are available:

- Select the respective **Scenario** to configure the settings for it.
- Select **Add New Scenario** to create a new Scenario. Added Scenarios are assigned numbers in ascending order.

Use the **Name of Scenario** text field to change the name of the selected Scenario.

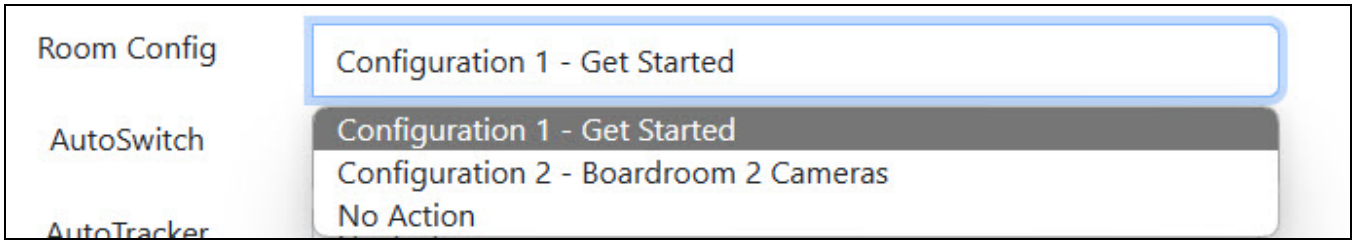
Name of Scenario Text Field



Room Configuration Selection

Use the **Room Config** drop-down menu to select the room configuration to be used with the Scenario. For more information on room configurations, refer to Room Configurations on page 167.

Room Configuration Selection Menu



The following options are available:

- Select the desired room configuration to switch to when the Scenario is activated.
- Select **No Action** to maintain the room configuration used before the Scenario is activated.

AutoSwitch Action

Use the **AutoSwitch** drop-down menu to define the AutoSwitching behavior of the Scenario. For more information on AutoSwitching, refer to Main Tab on page 261.

AutoSwitching Action Menu



The following options are available:

- Select **On** to enable AutoSwitching when the Scenario is activated.
  - This also activates the **Layout** selection drop-down menu in the Scenario. For more information on **Layout** selection, refer to Layout Selection on page 190.
- Select **Off** to disable AutoSwitching when the Scenario is activated.
  - This also activates the **Shot** text field in the Scenario. For more information on the Wirecast shot layer text field, refer to Shot Selection on page 190
- Select **No Action** to maintain the current AutoSwitching status when the Scenario is activated.

> **NOTE**: **AutoSwitch** restarts if the Scenario has **On** or **No Action** selected as the **AutoSwitch** Action. A sudden camera cut to the recent active Virtual Mic may occur. For more information on Virtual Mics, refer to Virtual Mic Settings on page 132.

AutoTracking Action

Use the **AutoTracker** drop-down menu to define the AutoTracking (presenter tracking) behavior of AutoTracker 3 cameras in the Scenario. For more information about AutoTracker 3 cameras in a room configuration, refer to Configuring Camera Devices.

AutoTracking Action



The following **AutoTracker** indicators are shown:

- The numbered buttons on the right side of the **AutoTracker** drop-down menu represent which cameras in the room configuration are AutoTracker 3 cameras. In the image above, camera 8 in the room configuration is an AutoTracker 3 camera.
- When two or more AutoTracker 3 cameras are present, additional buttons appear to the right of the **AutoTracker** drop-down menu, indicating multiple AutoTracker 3 cameras are available.

- A green outline appears around the numbered camera button when selected, indicating that the camera is receiving the AutoTracking action.
    - There is no green outline present if the AutoTracker 3 camera is not selected.
- If there are no AutoTracker 3 cameras available in the room configuration, then the area to the right of the **AutoTracker** drop-down menu remains empty.

Complete the following procedure to change the AutoTracking action of the camera:

1. Select the desired numbered camera button icon on the right side of the **AutoTracker** menu.
2. Open the **AutoTracker** drop-down menu to define the selected camera's presenter tracking behavior in the Scenario.

    AutoTracking Action Menu

    The following options are available:

    - Select **On** to enable presenter tracking on the camera when the Scenario is activated.
    - Select **Off** to disable presenter tracking on the camera when the Scenario is activated.
    - Select **No Action** to maintain the current presenter tracking status on the camera when the Scenario is activated.

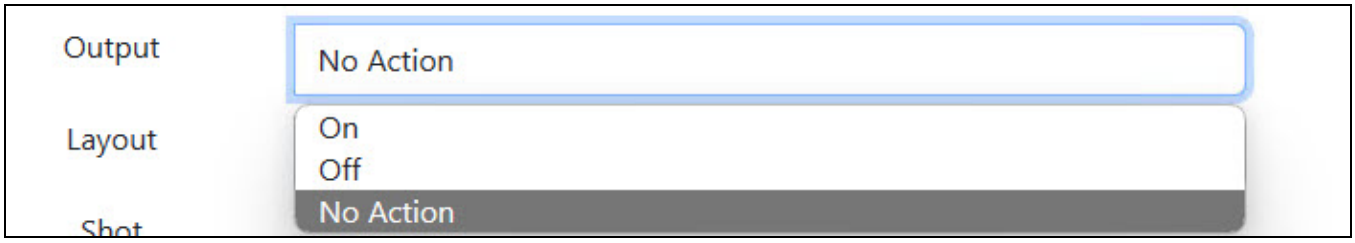
    > **NOTE**: If the current presenter tracking mode on the camera is the same as the **AutoTracker** action set for the Scenario, then the camera mode is not changed when the Scenario is activated.

The presenter tracking status on the camera is now set. Perform the procedure above for each camera in the Scenario.

Output Action

Use the **Output** drop-down menu to define the Automate VX video output status of the Scenario. For more information on Automate VX video output, refer to Main Tab on page 261.

Output Action Menu



The following options are available:

- Select **On** to enable Automate VX video output when the Scenario is activated.
- Select **Off** to disable Automate VX video output when the Scenario is activated.
- Select **No Action** to maintain the current Automate VX video output status when the Scenario is activated.

> **NOTE**: If the current Automate VX video output status matches the **Output** action of the Scenario, then the video output is not affected.

Layout Selection

Use the **Layout** drop-down menu to select the Wirecast® layout to be used with the Scenario. For more information on layouts, refer to Layouts Menu on page 265.

Layout Selection



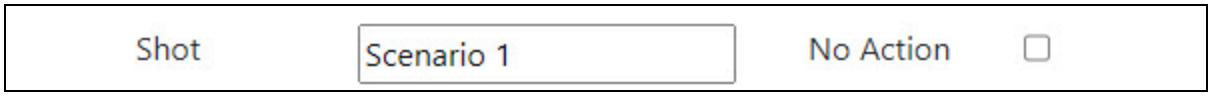
> **NOTE**: This option is only available if **AutoSwitch** is enabled for the Scenario. For more information on how to enable **AutoSwitch** in the Scenario, refer to AutoSwitch Action on page 188

Shot Selection

Use the **Shot** selection options to set a Wirecast shot layer as the Automate VX output. For more information on Wirecast shot layers, refer to Wirecast Configuration.

> **NOTE**: This option is only available if **AutoSwitch** is disabled for the Scenario. For more information on how to disable **AutoSwitch** in the Scenario, refer to AutoSwitch Action on page 188

Wirecast Layout Text Field



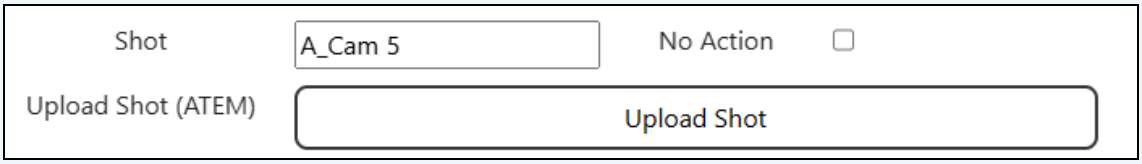
The following options are available:

- Input the Wirecast shot layer into the **Shot** text field to switch to a specific Wirecast shot layer when the Scenario is activated.

  NOTE: Adhere to the following shot naming structure for the video production method used:

  - **Wirecast**: The **Shot** text field must match the Wirecast shot layer exactly. If the **Shot** text field does not match the Wirecast shot layer, Automate VX displays an error when activating the Scenario. For example, if Wirecast shot layer **A_Cam 1** is the desired camera shot for the Scenario, **A_Cam 1** must be entered into the **Shot** text field.
  - **ATEM**: Ensure that the selected camera shot adheres to the following naming structure: (**Letter**)**_Cam** (**Number**). For example, **A_Cam 3** is a valid camera shot (camera 3 on layout A will be called when the Scenario is selected). For a custom layout in the camera shot, refer to Upload Shot (ATEM) on page 191.

    ATEM Shot Example

- Select the **No Action** checkbox to keep the current camera shot active when the Scenario is activated.

Upload Shot (ATEM)

Select the Upload Shot button to use a predefined Blackmagic® Design ATEM switcher camera shot. When the button is selected, a file explorer window opens. Navigate to the desired Blackmagic® Design ATEM .xml file and select it to upload the camera shot to the Scenario.

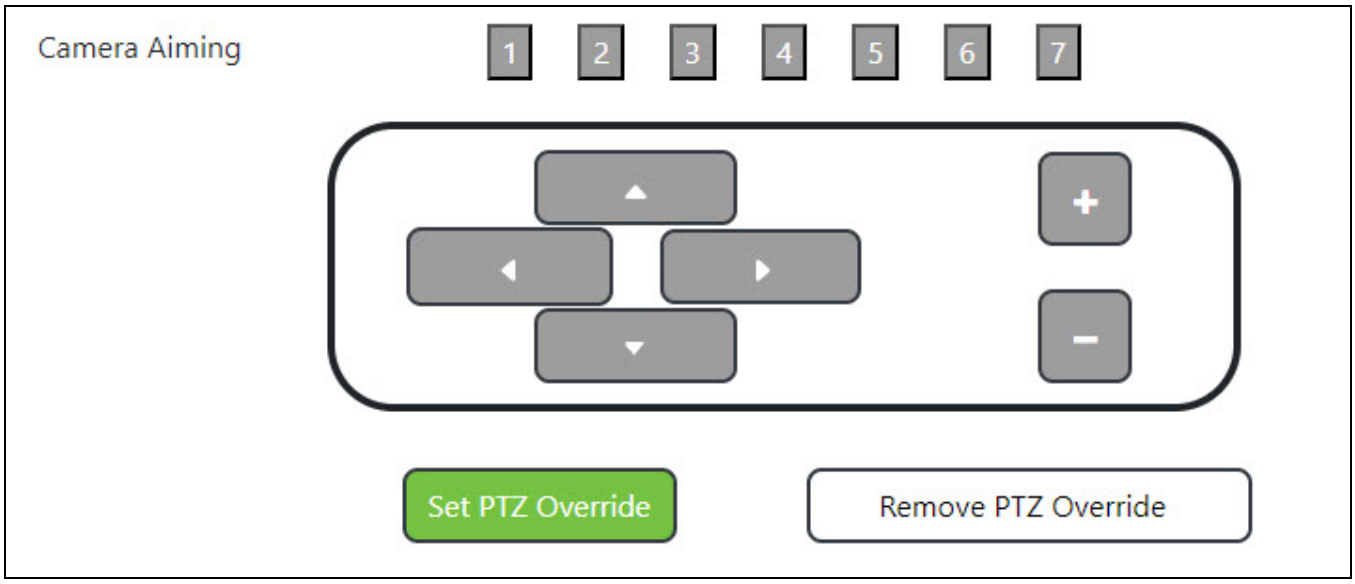
Upload Shot (ATEM)



Camera Aiming

Camera Aiming allows for manual control over the pan, tilt, and zoom of camera shots in the Scenario.

Camera Aiming Controls



Complete the following procedure to create a PTZ Override for the Scenario:

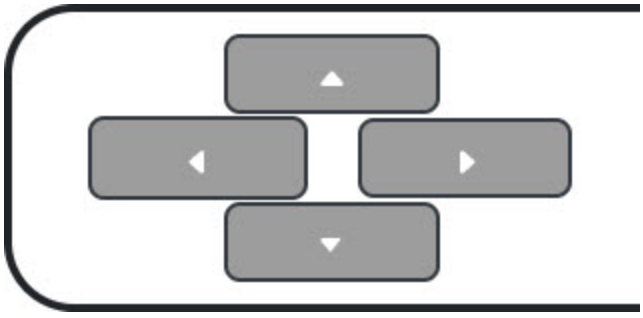
1. Use the **Camera Aiming** numbered buttons to select the camera that should receive the PTZ Override. Each numbered button corresponds to the respective camera in the room configuration. A green outline appears around the numbered camera button when selected.

   Camera Selection

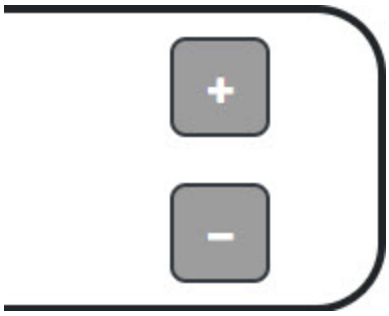
2. Use the arrow buttons to move the camera shot in the desired direction.

   Arrow Buttons

3. Use the plus and minus buttons to zoom the camera in (+) or zoom the camera out (-).

Zoom Buttons



4. After the desired shot for the scenario is created, select **Set PTZ Override** to save the camera shot in the scenario.

> **NOTE**: Select **Remove PTZ Override** to remove any PTZ Overrides associated with the camera. This only affects the current scenario.

The camera now has a PTZ Override for the Scenario. Perform the procedure above for each camera that is receiving a PTZ Override in the scenario.

Save And Remove Scenario

Select **Save Scenario** to save all settings configured for the current Scenario. Select **Remove Scenario** to delete the current Scenario.

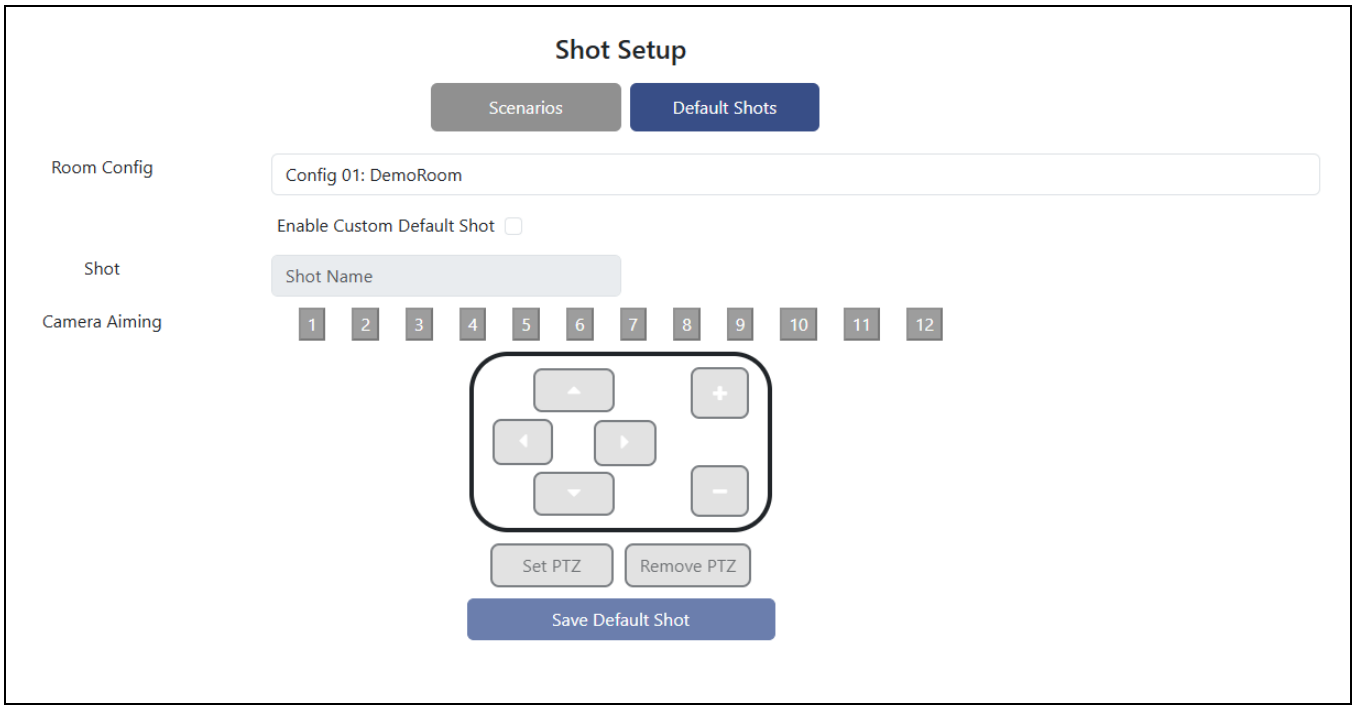
Save and Remove Scenario



Default Shots

A Default Shot is used when no audio is detected in the room for a set duration. The configuration will return from the current shot to the Default Shot after the duration elapses. For information on how to change the duration without audio before the Default Shot is called, refer to AutoSwitch Settings on page 166.

Default Shots



Refer to the following procedure to create a Custom Default Shot for Automate VX:

> **NOTE**: Using a Custom Default Shot overrides any Default Shot settings configured in the Room Designer project. For more information, refer to Default Shot on page 142.

1. Use the **Room Config** drop-menu to select the Room Configuration to be used with the Default Shot. For more information about Room Configurations, refer to System Configuration on page 154.
2. Select the **Enable Custom Default Shot** check box to activate the Default Shot.
3. Input the Wirecast shot layer into the **Shot** text field to switch to a specific Wirecast shot layer when the Default Shot is activated.

   Shot

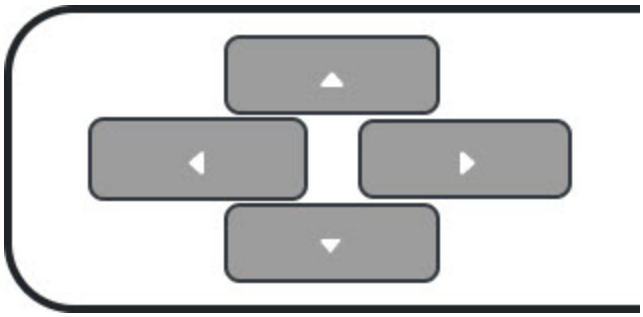
4. Use the **Camera Aiming** numbered buttons to select the camera that should receive the PTZ Override. Each numbered button corresponds to the respective camera in the Room Design. A green outline appears around the numbered camera button when selected.

   Camera Selection



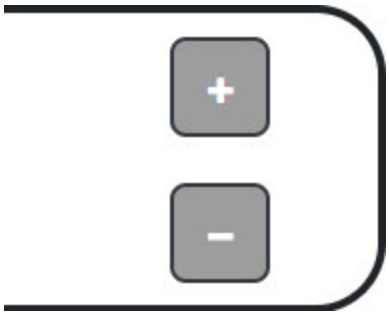
5. Use the arrow buttons to move the camera shot in the desired direction.

   Arrow Buttons



6. Use the plus and minus buttons to zoom the camera in (+) or zoom the camera out (-).

   Zoom Buttons



7. After the desired shot is created, select **Set PTZ Override** to save the camera shot in the Default Shot.

Wirecast Configuration

Automate VX uses Wirecast® streaming software to change live shots, layouts, and output. When Automate VX operates on the administrator account, Wirecast opens automatically.

The Automate Project contains three shot layers by default for layouts; A_Cam, B_Cam, and C_Cam. These shot layers correspond with layouts in Automate VX in the order that they are presented. The three initial template layouts for Automate VX are Full Screen (A_Cam/Layout ID: A), Dynamic Q&A (B_Cam/Layout ID: B), and Picture in Picture (C_Cam/Layout ID: C).

Additionally, there are two Scenarios available for configuration by default. For more information on creating and adding more Scenarios for Automate VX, refer to System Configuration on page 154.

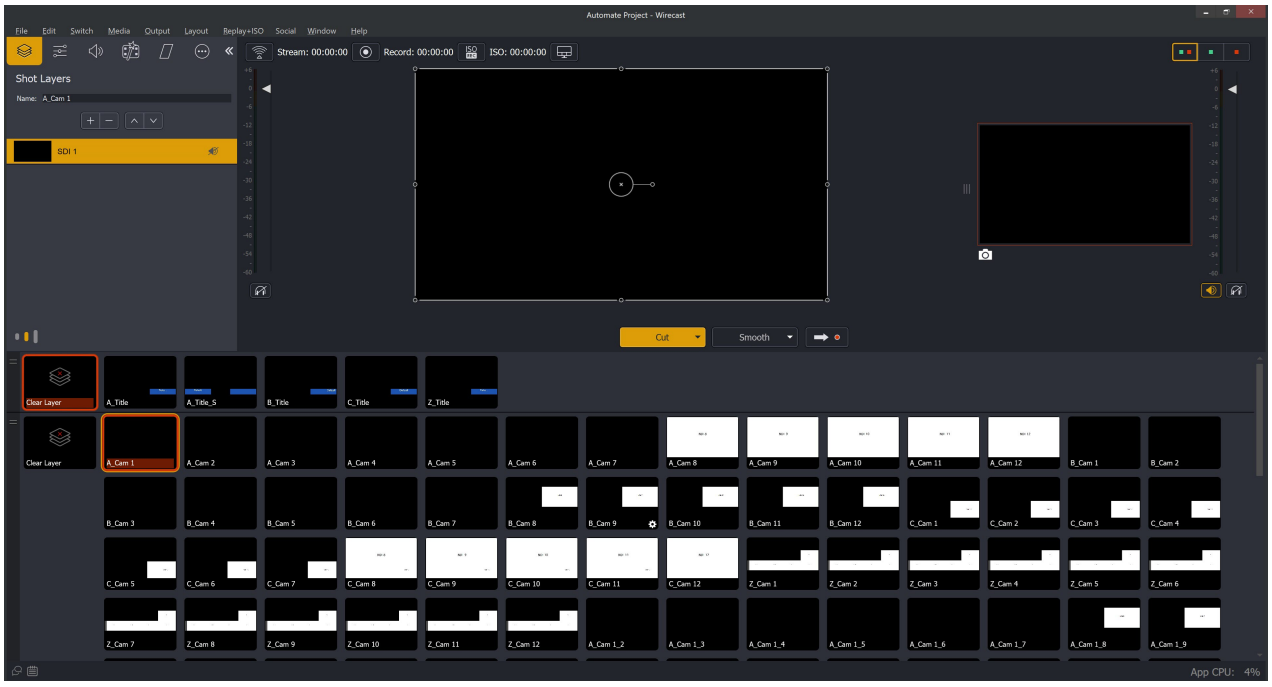
Add Camera Sources to Wirecast Shots

The A_Cam layer (Full Screen Layout) must be configured first before proceeding any further with Wirecast configuration. Complete the following procedure to set camera outputs as Wirecast shots.

> **NOTE**: Do not change the names of the Wirecast layers during this procedure. Automate VX requires specific naming structures (A_Cam 1, A_Cam 2, B_Cam 1, and so forth) for camera shots to be called correctly during AutoSwitching.

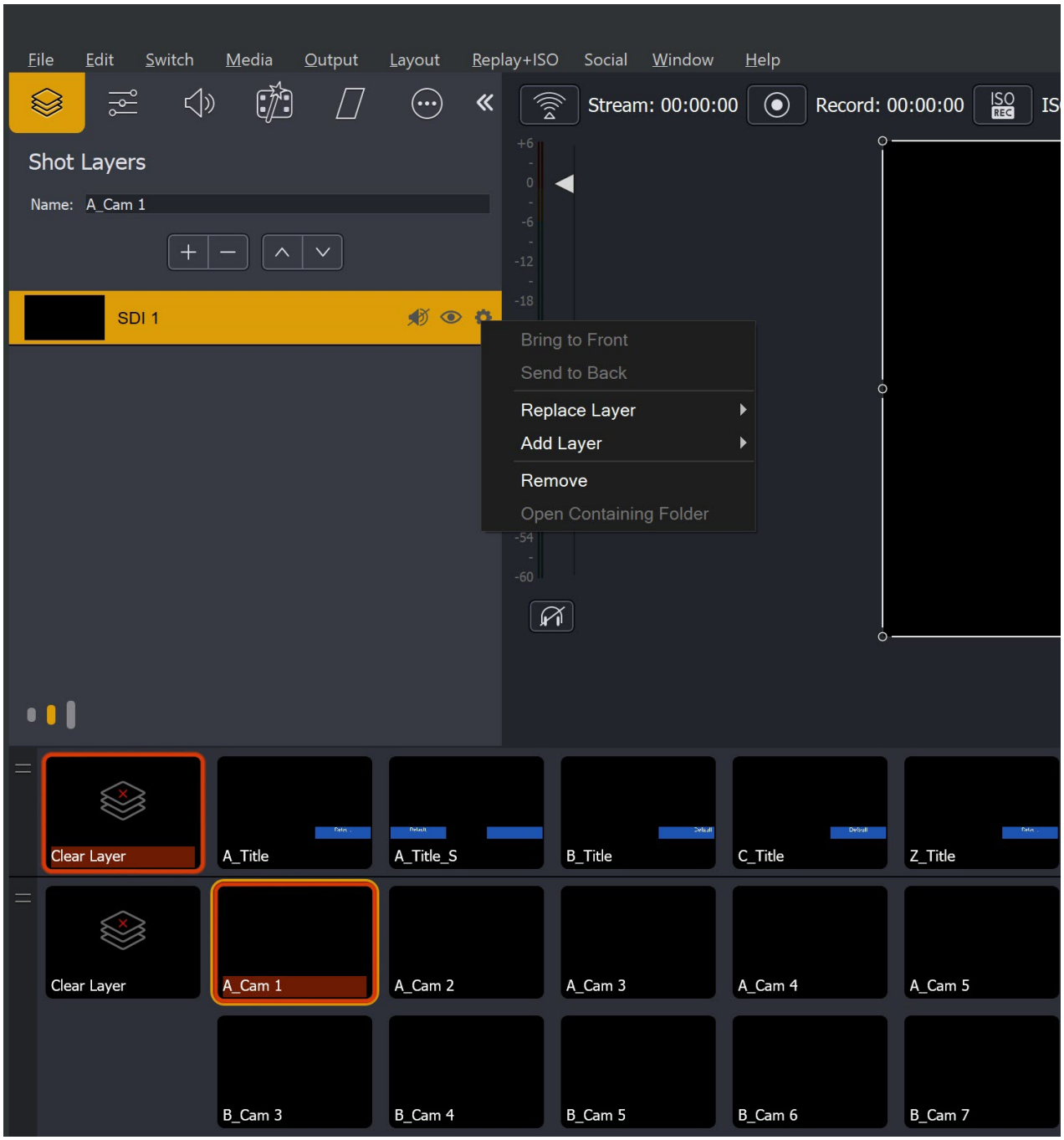
1. Select the **A_Cam 1** Wirecast layer. In the top left Shot Layers menu, SDI 1 is visible.

   A_Cam 1



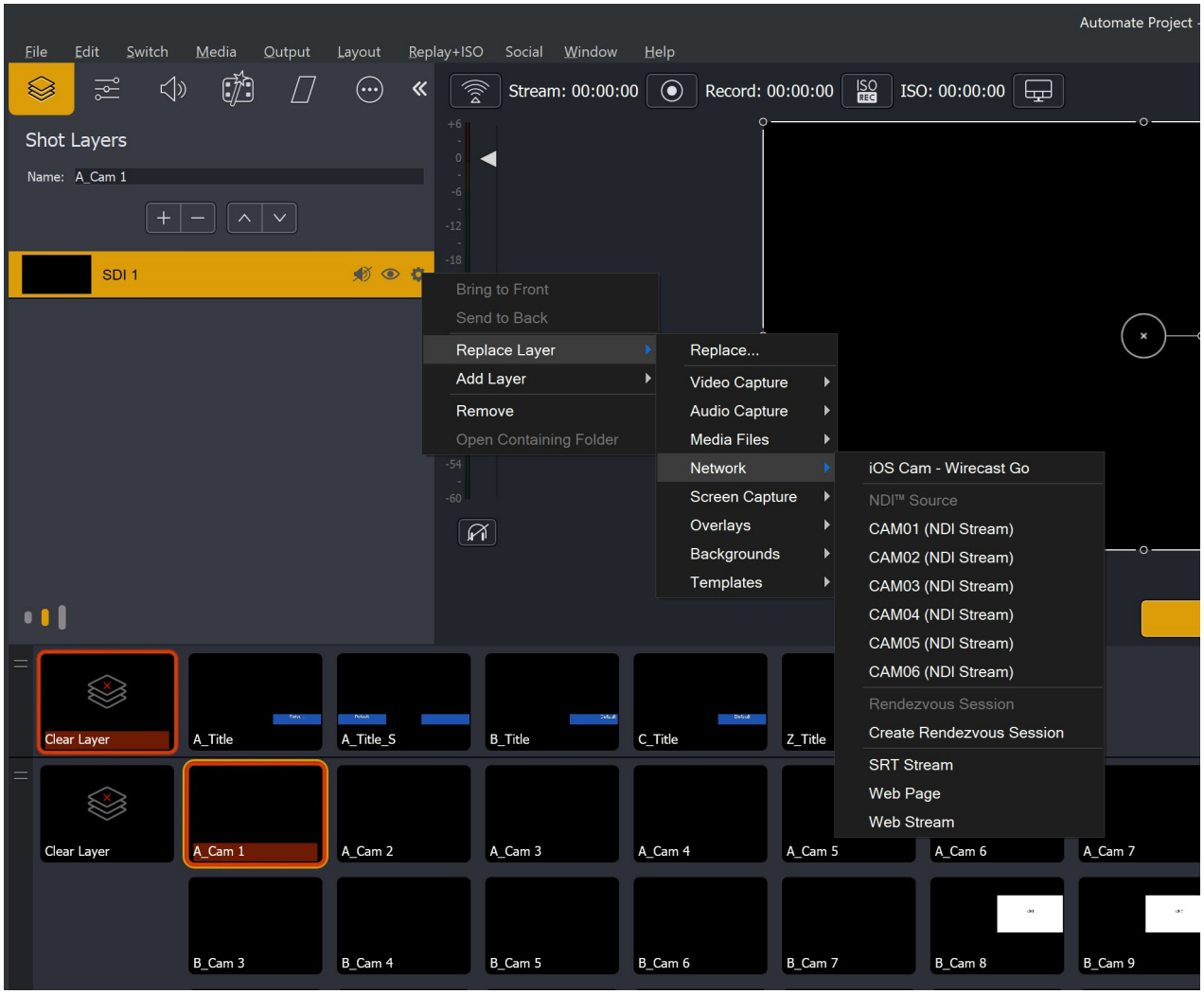
2. Move the mouse cursor over the SDI 1 in the **Shot Layers** menu, then select the gear icon.

Shot Layers



3. Select **Replace Layer**, then select either of the following depending on the camera connection used:
    - If SDI inputs are used, the shot layer automatically populates based on the SDI connection used (SDI 1 populates A_Cam 1, SDI 2 populates A_Cam 2, and so forth). Alternatively, select **Video Capture** if the SDI source does not automatically connect.
    - If NDI inputs are used, select **Network**.

Replace Layers



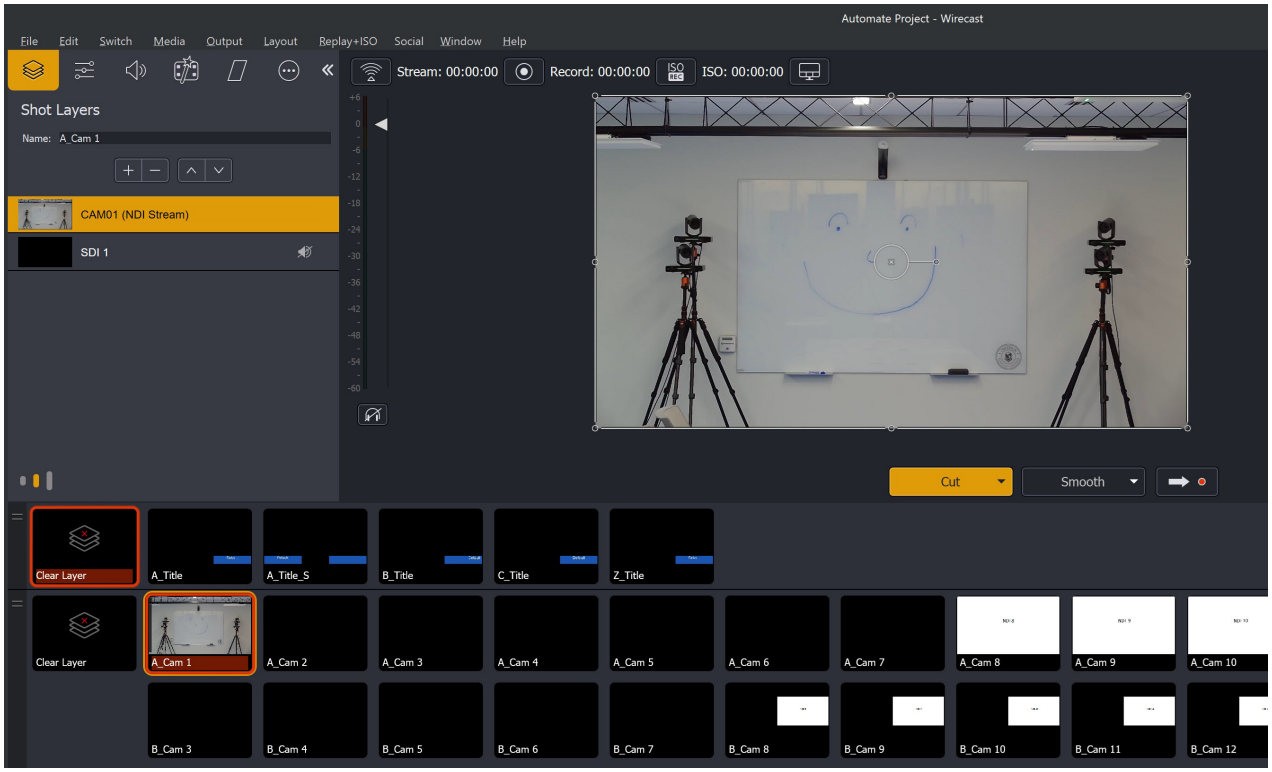
NOTE: It is not recommended to use both SDI and NDI outputs simultaneously with Automate VX. For more information, refer to NDI and SDI on page 17.

4. Select the camera source that is Camera Device 1 in the Room Configuration. Wirecast shot layers are directly associated with the Camera Device within the Room Configuration (A_Cam 1 is Camera Device 1, A_Cam 2 is Camera Device 2, and so forth).

   TIP: It is recommended to name the cameras in the Crestron 1 Beyond Camera Manager to match their associated Camera Device in the Room Configuration. In the image above, CAM01 was named to match Camera Device 1 in the Room Configuration. For more information on changing the name of cameras, refer to the Crestron 1 Beyond Camera Product Manual.

5. The camera source now appears on the A_Cam 1 shot layer. Repeat steps 1 through 4 for each required camera source that is used with the Room Configuration.

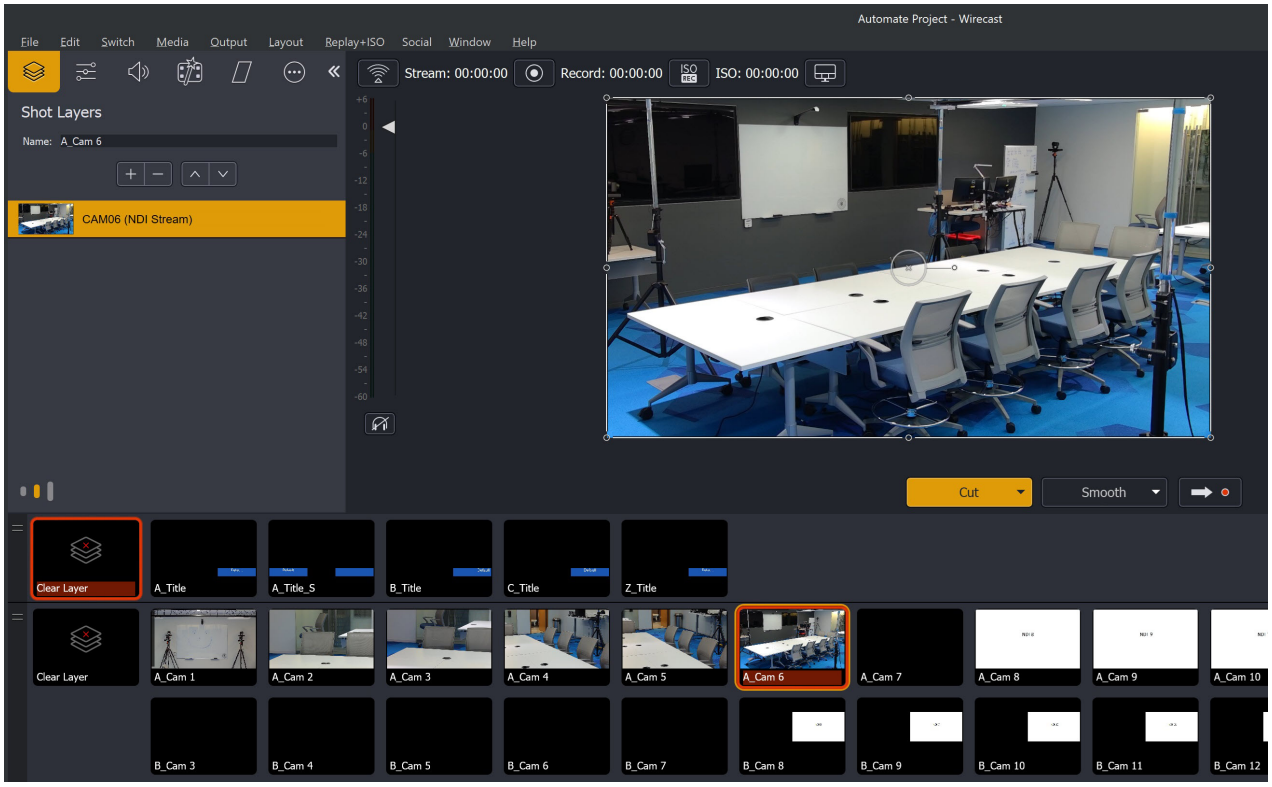
   Camera in Shot Layer



6. Once all camera sources are assigned to the A_Cam shot layer, select **File**, then **Save**.

> **NOTE**: The Wirecast project must be saved as **Automate Project** for Automate VX to operate. If the Wirecast project is not named correctly, Automate VX will open a new blank Automate Project file without camera sources assigned.

Completed A_Cam Layer



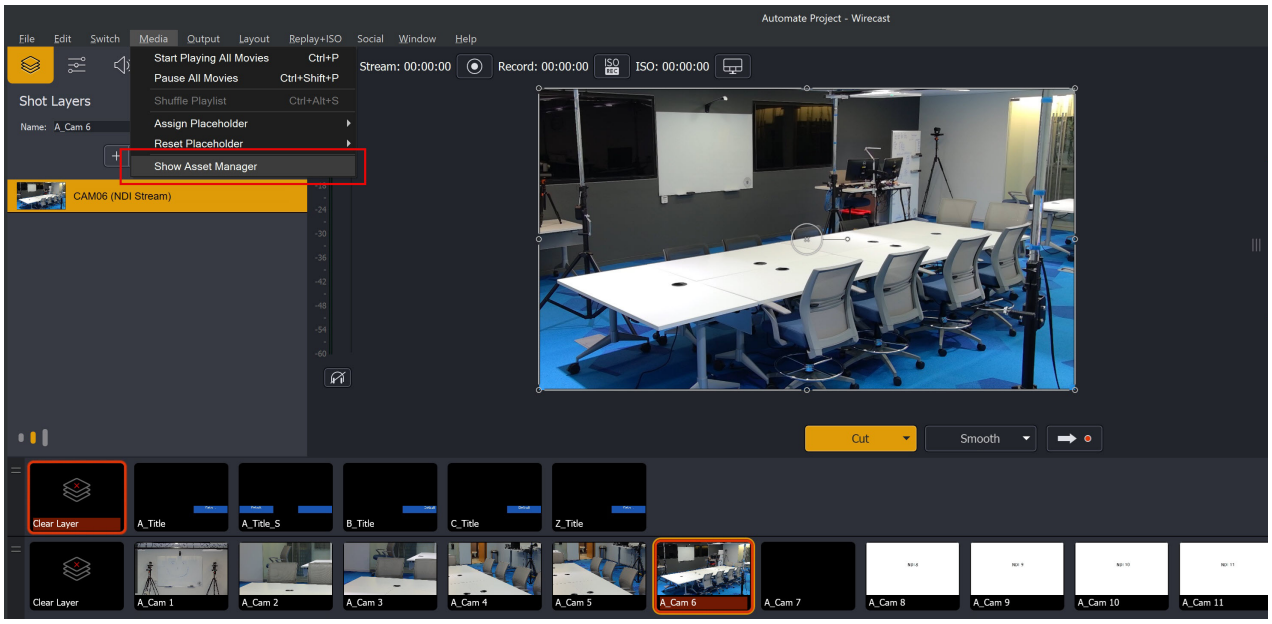
The A_Cam shot layer is now configured for Automate VX.

Assign Camera Shots to All Wirecast Layers

Once the A_Cam shot layer is configured, camera sources can be applied to all existing Wirecast shot layers by utilizing Asset Manager. To assign camera sources to Wirecast shot layers.

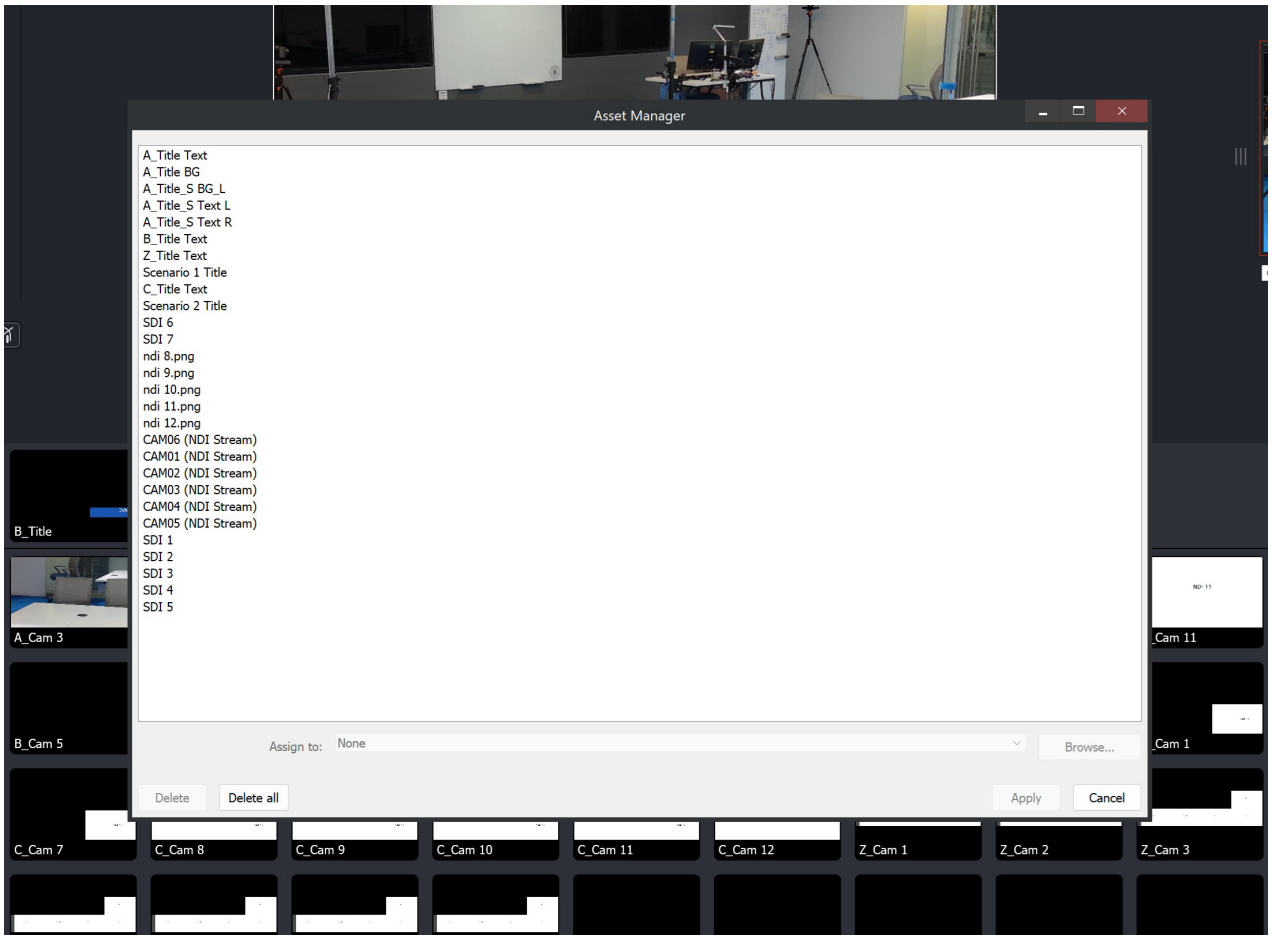
1. On the top toolbar in Wirecast, select **Media**.

Media Tab



2. Select **Show Asset Manager**. The Asset Manager window appears.

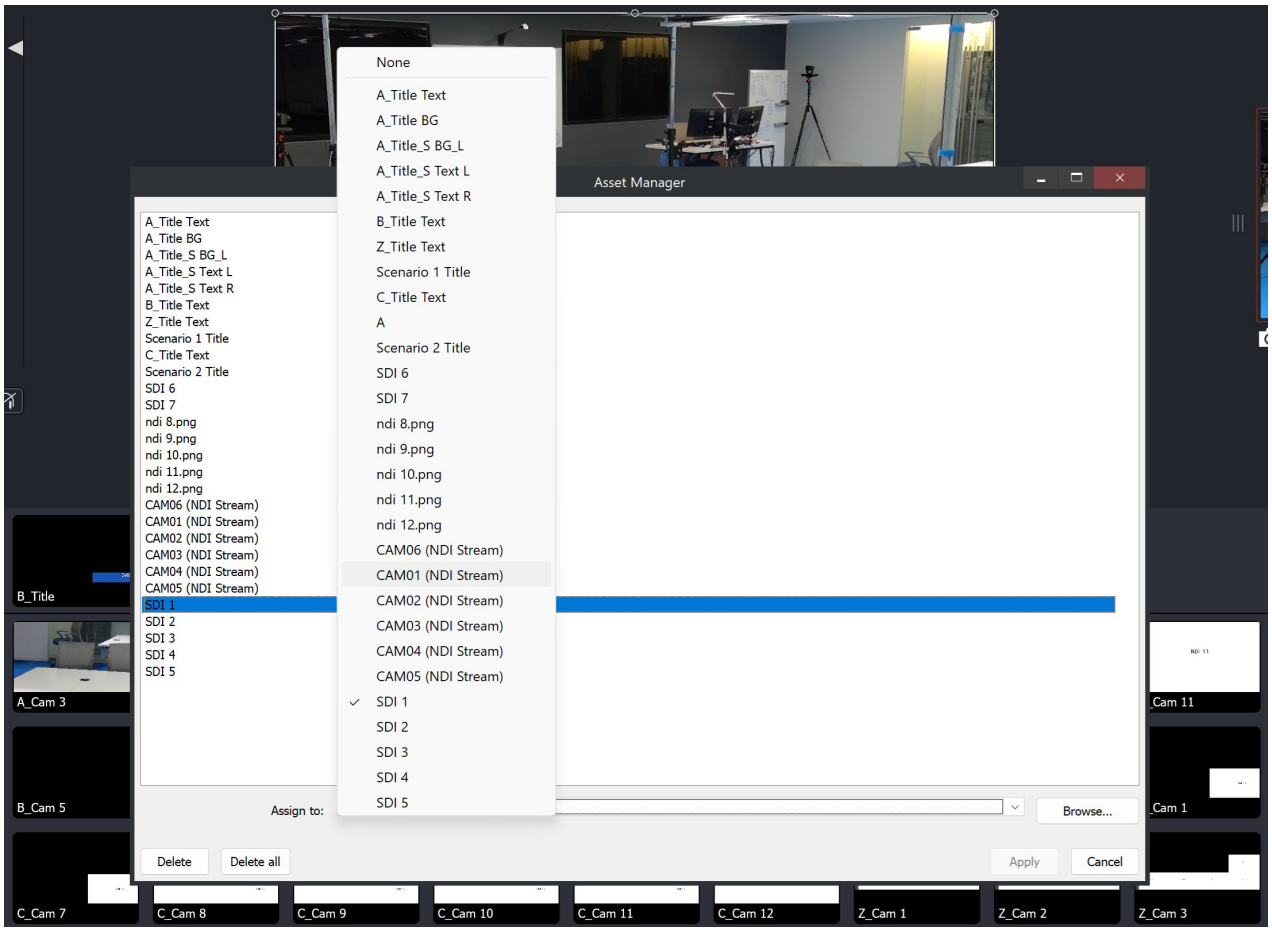
Asset Manager



3. Select the **SDI 1** asset in the menu. Then, select the **Assign to** drop-down menu.

4. Select the camera source that is used for the A_Cam 1 shot layer in the **Assign to** drop-down menu.

Assigning Sources



5. Repeat steps 3 and 4 for all applicable A_Cam shot layers. Refer to the following table for Asset Manager assignment logic:

IV-SAM-VX2-S

Asset To Be Replaced	Assign to Asset with Camera Source From A_Cam Shot Layer
SDI 1	Camera source used in the A_Cam 1 shot layer
SDI 2	Camera source used in the A_Cam 2 shot layer
SDI 3	Camera source used in the A_Cam 3 shot layer
NDI 4	Camera source used in the A_Cam 4 shot layer
NDI 5	Camera source used in the A_Cam 5 shot layer

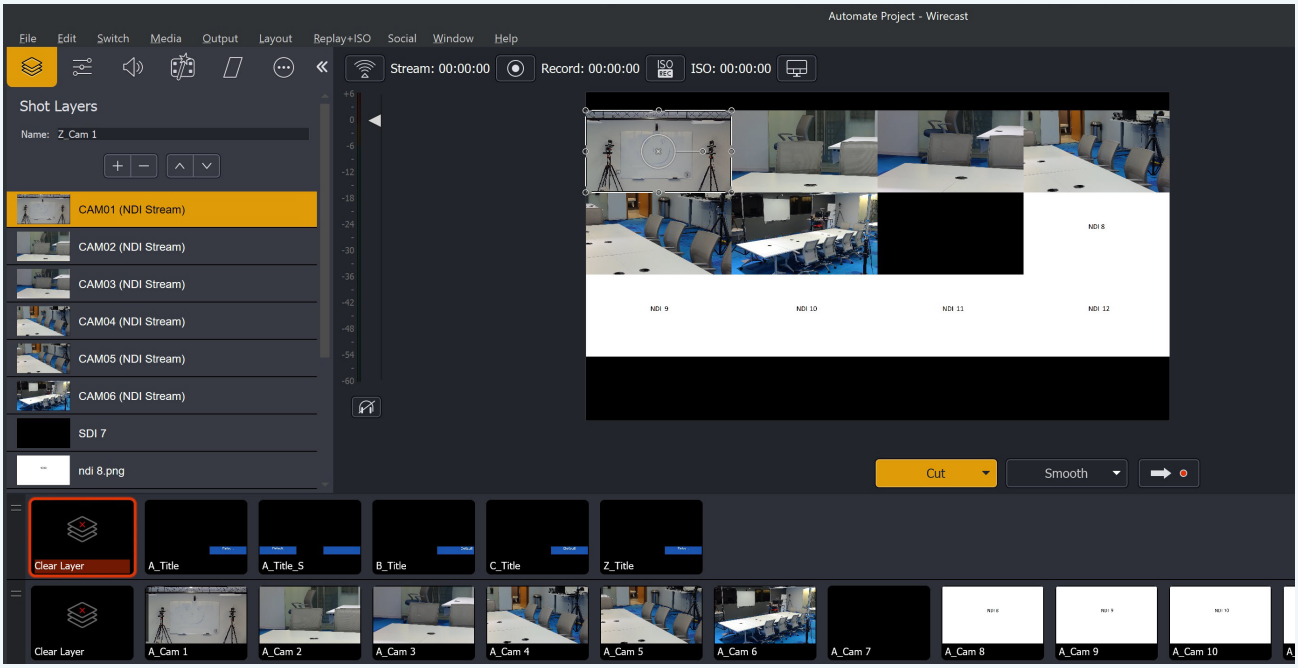
IV-SAM-VX2-P

Asset To Be Replaced	Assign to Asset with Camera Source From A_Cam Shot Layer
SDI 1	Camera source used in the A_Cam 1 shot layer
SDI 2	Camera source used in the A_Cam 2 shot layer
SDI 3	Camera source used in the A_Cam 3 shot layer
SDI 4	Camera source used in the A_Cam 4 shot layer
SDI 5	Camera source used in the A_Cam 5 shot layer
SDI 6	Camera source used in the A_Cam 6 shot layer
SDI 7	Camera source used in the A_Cam 7 shot layer
NDI 8	Camera source used in the A_Cam 8 shot layer
NDI 9	Camera source used in the A_Cam 9 shot layer
NDI 10	Camera source used in the A_Cam 10 shot layer
NDI 11	Camera source used in the A_Cam 11 shot layer
NDI 12	Camera source used in the A_Cam 12 shot layer

Camera sources are now assigned to all other available shot layers in Wirecast. Any additional shot layers added to Wirecast after performing the above procedure require manual camera source assignments. To add camera sources to newly added shot layers in Wirecast, refer to Add Camera Sources to Wirecast Shots on page 196.

NOTE: Assigning camera sources via the Asset Manager also populates the Z_Cam shot layer which is used for Live Mode. For more information about Live Mode, refer to Live Mode on page 94.

Live Mode (Z_Cam Shot Layer) Completed



Creating Layouts in Wirecast

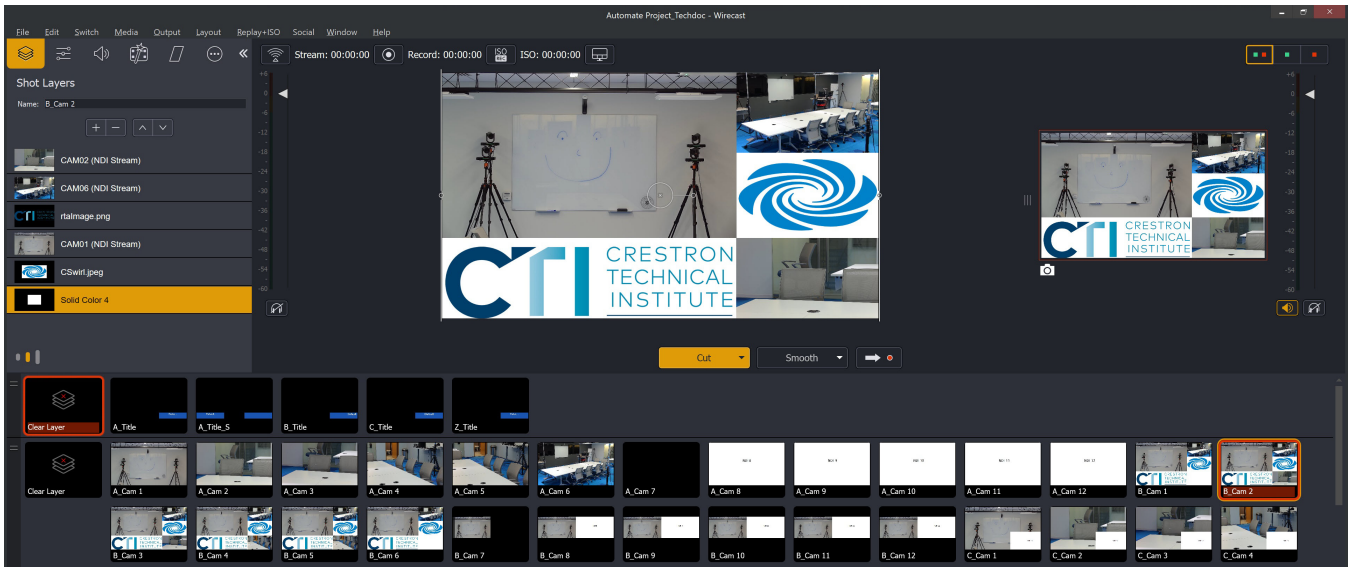
Layouts in Wirecast are the composite shots outputted by Automate VX during AutoSwitching. Automate VX by default has a full screen layout (A_Cam layer/Layout ID: A), Dynamic Q&A layout (B_Cam layer/Layout ID: B), and a Picture in Picture layout (C_Cam layer/Layout ID: C).

Graphics and media files can be put into layouts by adding layers and selecting the desired content. Ensure that the graphics and media files are located in the **D:\Assets** file path.

> **NOTE**: If the graphics or media files used in layout are not located in the **D:\Assets** file path, they will not appear in the Automate VX output during normal operation.

Refer to the following image for an example of a Dynamic Q&A layout with a context camera shot.

Example Layout



Additional layouts can be created manually by adding more shot layers and applying the correct naming to them. Ensure that the correct layout ID is associated with the added shot layers (D_Cam/Layout ID: D, E_Cam/Layout ID: E, and so forth). For more information on adding more layouts to be selectable in Automate VX, refer to Layout Settings on page 159.

Room Setup Scenario

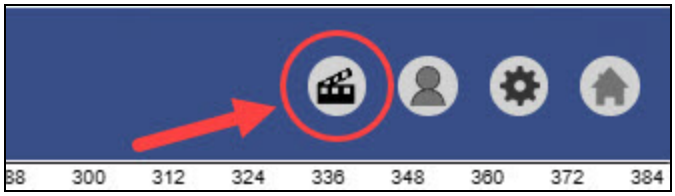
> **NOTE**: It is recommended to view this procedure in the HTML version of this document. Some images and graphics used here are unavailable in the PDF version of the document.

For rooms where furniture locations differ across configurations, all items must be returned to their precise original positions as initially set in the Room Designer project. Failure to do so causes inaccurate camera shots due to the expected shot locations not aligning. It is recommended to create a Room Setup Scenario that can be recalled with an overlay of furniture locations.

Complete the following procedure to create a Room Setup Scenario:

1. Enter the Scenario Setup Tool via the web configuration interface. For more information on accessing and using the Scenario Setup Tool, refer to Shot Setup Tool on page 186.

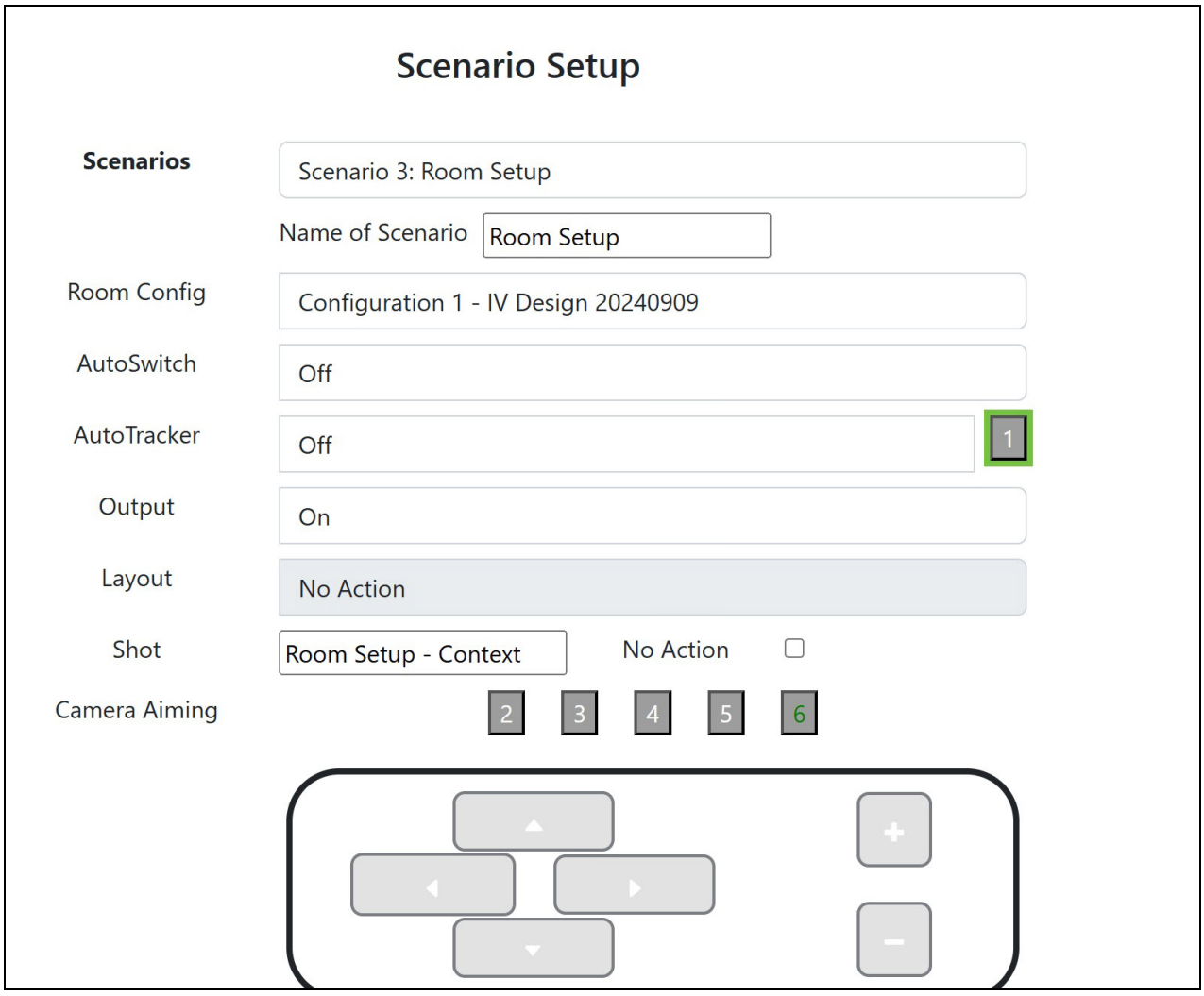
   Scenario Setup Tool Icon

2. In the **Name of Scenario** text field, enter the desired name of the Room Setup Scenario.
3. Select the **Room Config** drop-down menu, then select the desired Room Configuration.
4. Ensure that **AutoSwitch** is set to **Off**.
5. Ensure that **AutoTracker** is set to **Off**.
6. Ensure that **Output** is set to **On**.
7. In the **Shot text** field, enter the desired name of the Wirecast layer that the Room Setup Scenario will be set in.
8. Determine the desired camera that is going to be used for the screenshot. Then, select the corresponding Camera Device number button in the **Camera Aiming** section.
9. Use the arrows and zoom button beneath the **Camera Aiming** section to position the camera for the Room Setup Scenario. It is recommended that all of the furniture is visible from the camera output.
10. Select **Set PTZ Override** once the camera is positioned into the desired location.

11. Select the **Save Scenario** button.

Room Setup Scenario Example

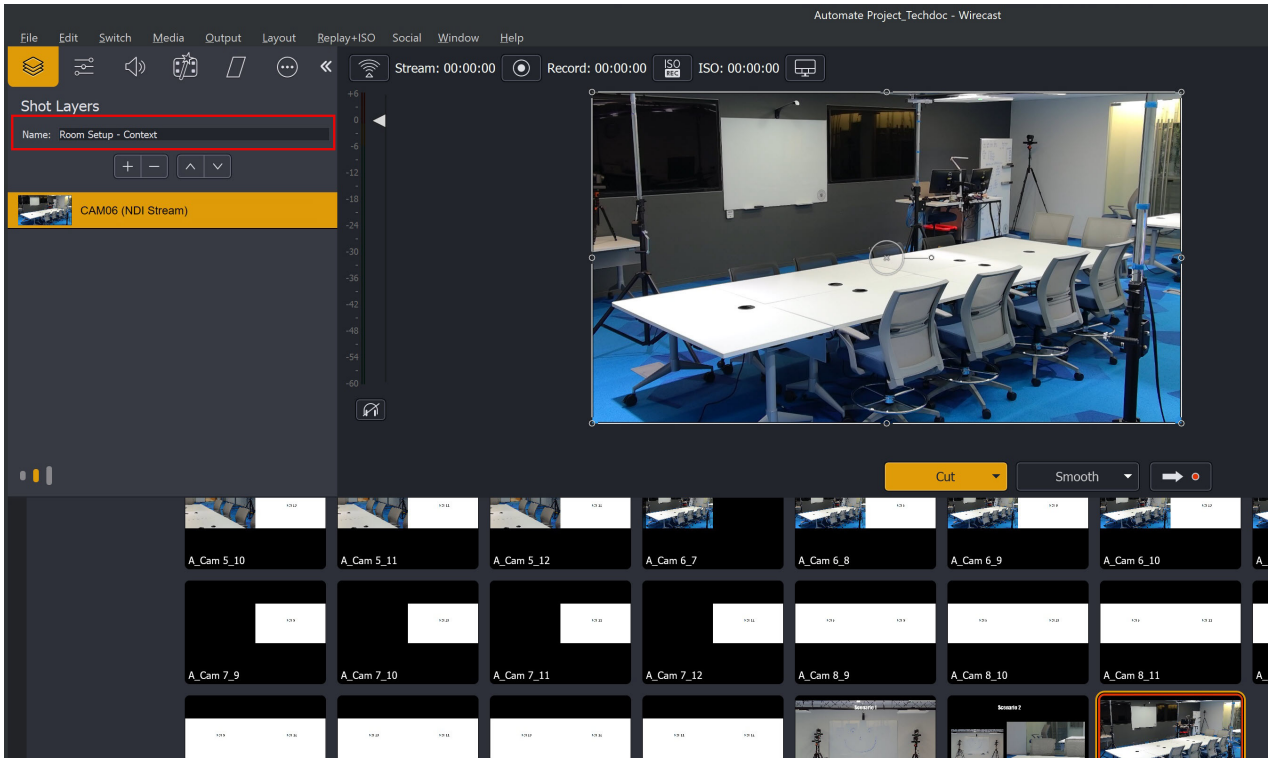


12. Enter the administrator account on the Automate VX by logging in to the account on the server. For more information on switching accounts on Automate VX2 systems, refer to the Automate VX2 Product Manual.
13. In the Wirecast software, add a new shot layer.

14. Enter the name that was used in the **Shot** text field in the Scenario Setup Tool into the **Name** text field on the Wirecast shot layer.

> **NOTE**: The name of the Wirecast shot layer is case and space sensitive. If the names of the **Shot** from the Scenario Setup Tool and the Wirecast shot layer do not match, then the Wirecast shot layer will not be recalled when the Scenario is selected.

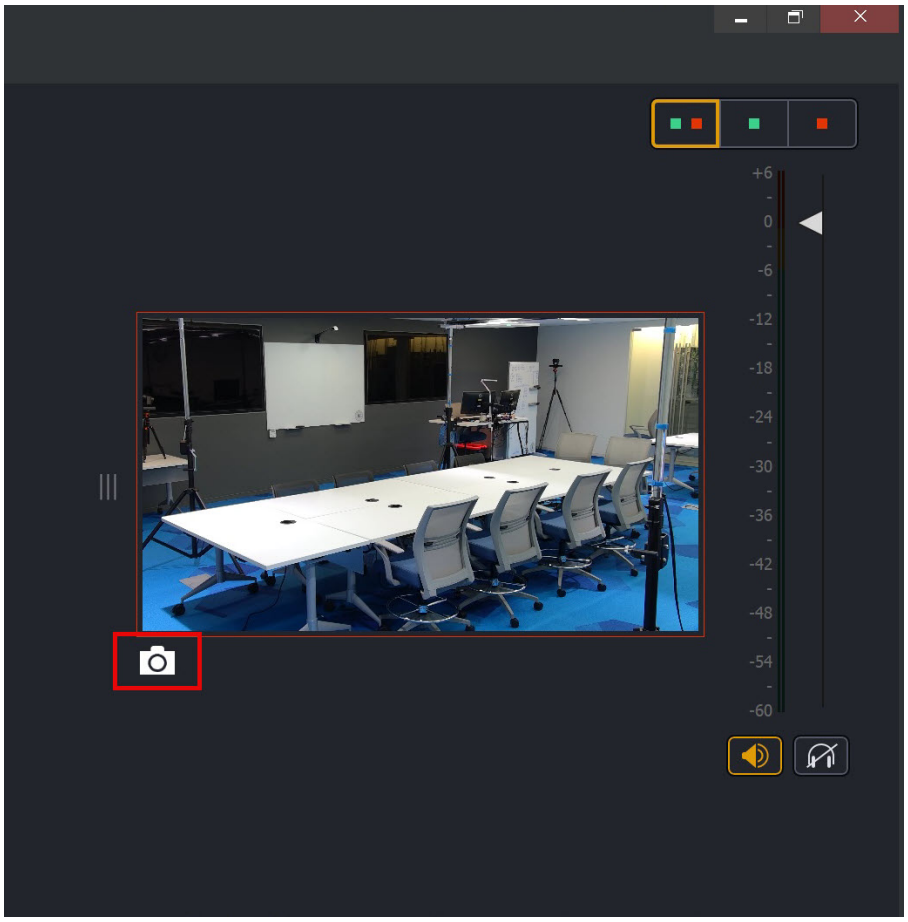
Wirecast Shot Layer



15. Add the Camera Device that was used for the PTZ override in the Scenario Setup Tool.

16. Select the camera icon to take a snapshot of the camera feed. The snapshot is saved in the Wirecast Snapshots folder.

Snapshot Icon



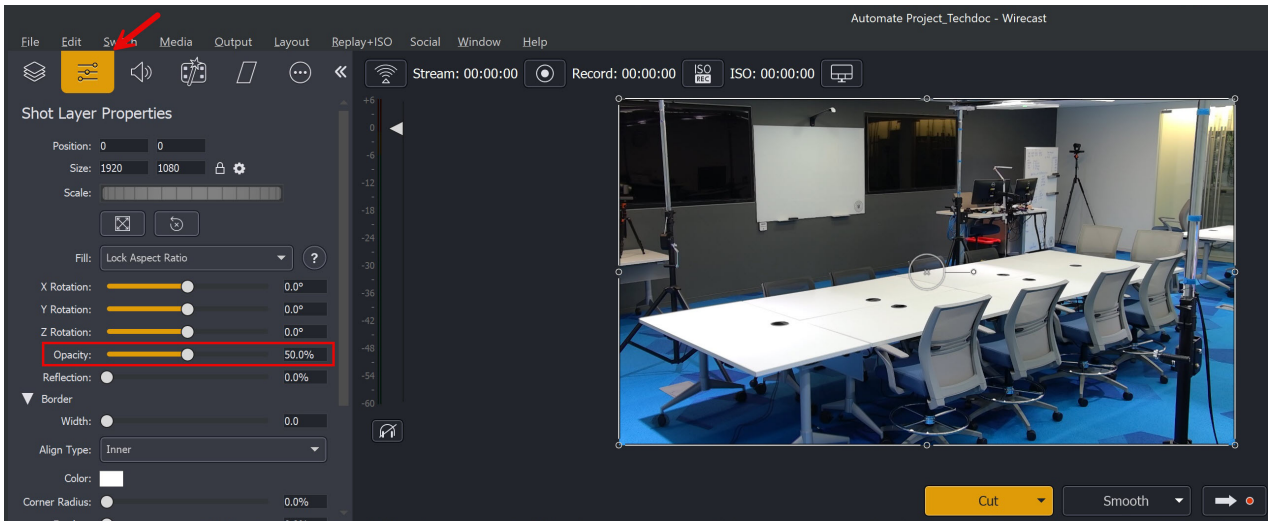
Wirecast Snapshots Folder



17. Take the snapshot that was just taken from the Wirecast Snapshots folder, and place it into the **D:\Assets** folder. An additional folder can be created in the **D:\Assets** file path if desired.
18. Add the snapshot located in the **D:\Assets** folder into the Wirecast shot layer.
19. Place the snapshot above the camera source used in the Room Setup Scenario.

20. Select the **Shot Layer Properties** menu, then set the opacity of the image to 50%.

Snapshot Opacity



21. Restart the Automate VX.

The Room Setup Scenario is now set for the Room Configuration. It is recommended to output the Automate VX feed to a display in the room for ease of use.

Connect to XiO Cloud Service

The XiO Cloud® service is an IoT (Internet of Things) based platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. Built on the Microsoft® Azure® software platform and utilizing Microsoft's industry-leading Azure IoT Hub technology, XiO Cloud enables installers and IT managers to deploy and manage thousands of devices simultaneously. Unlike other virtual machine-based cloud solutions, Azure services provide unlimited scalability to suit the ever-growing needs of an enterprise.

XiO Cloud supports a direct device-to-cloud connection via the Azure IoT Hub without requiring any additional hardware. The service allows for devices to be configured before they are shipped to the installation site. Enterprises can also integrate XiO Cloud into their existing single sign-on (SSO) identity provider to streamline access credentials.

For more information about XiO Cloud, refer to https://www.crestron.com/xiocloud.

For instructions on how to use XiO Cloud, refer to the XiO Cloud Service User Guide.

Use the following procedure to get started with the XiO Cloud service for remote management of the Automate VX2.

1. **Register for an Account**: The XiO Cloud service is available in a free XiO Cloud subscription (SW-XIOC) and a paid XiO Cloud Premium subscription (SW-XIOC-PREMIUM-1YR-1-99, SW-XIOC-PREMIUM-1YR-100-499, and SW-XIOC-PREMIUM-1YR-500+). All XiO Cloud subscriptions require an XiO Cloud account registration. A new XiO Cloud account can be created when a subscription is activated, or an existing XiO Cloud account can be selected. Refer to How to Subscribe in the XiO Cloud Service User Guide for more information.
2. **Log In**: Log in to the XiO Cloud service at portal.crestron.io. For instructions, refer to Log in to the Service in the XiO Cloud Service User Guide.
3. **Build the Environment**: The XiO Cloud service environment consists of groups, rooms, desks, and devices. Build the environment by following the instructions in Build the Environment in the XiO Cloud Service User Guide.
4. **Claim Devices**: The Automate VX2 must be claimed into the XiO Cloud service before it can be managed. Claim the Automate VX2 by following the instructions in Claim Devices in the XiO Cloud Service User Guide.
5. **Manage Devices**: The Automate VX2 may be managed via the XiO Cloud service after it has been claimed by the service and added into a group or room. Manage the device by following the instructions in Manage Devices in the XiO Cloud Service User Guide.

Activating Licenses

The SW-IV-SAM-3RDPARTYCAM is an enablement key that is required to integrate select third-party cameras with an Automate VX Pro System Series 2 Voice-Activated, Multi-Camera Switching Solution processor (IV-SAM-VX2-P). For more information on supported third-party cameras, refer to Third-Party Cameras on page 10.

Each enablement key is a one-time purchase that is applied to a single IV-SAM-VX2-P processor. The enablement key must be associated with the applicable IV-SAM-VX2-P via the Licensing and Registration Hub.

The SW-IV-SAM-3RDPARTYCAM Enablement Key can be applied to the IV-SAM-VX2-P processor through two methods: online licensing via the XiO Cloud® service, or offline licensing via the USB-OFFLINE dongle. Each licensing mode is covered in the following sections:

Manage Licensing with XiO Cloud

The purchased SW-IV-SAM-3RDPARTYCAM Enablement Key can be managed through the XiO Cloud service portal. For more information on using XiO Cloud, refer to the XiO Cloud Service User Guide.

> **NOTE**: Each SW-IV-SAM-3RDPARTYCAM Enablement Key claimed into an XiO Cloud account with an XiO Cloud Premium subscription will be included in the device count total. Visit the Licensing and Registration Hub to associate SW-IV-SAM-3RDPARTYCAM Enablement Keys with an XiO Cloud account.

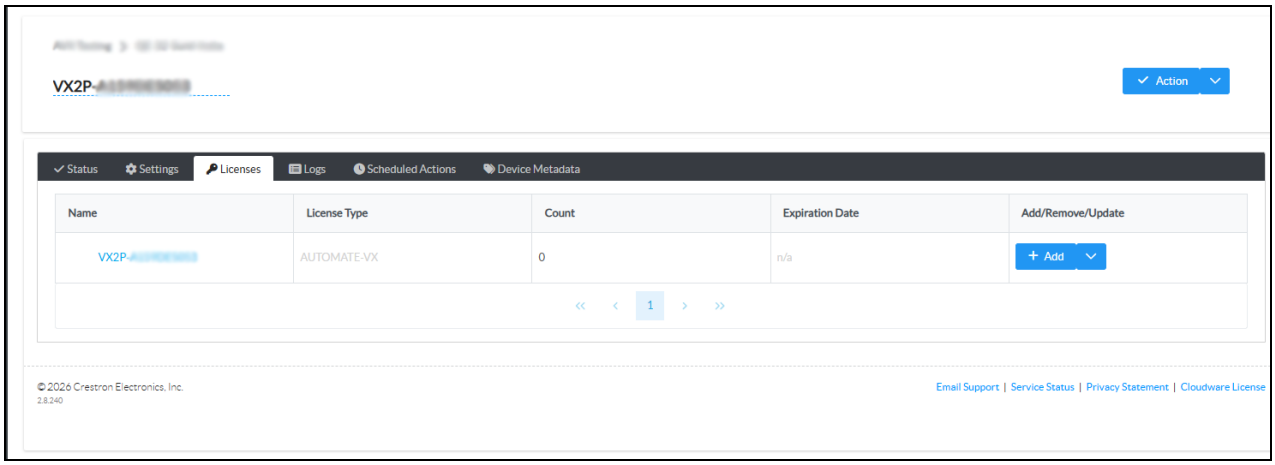
To activate licensing through XiO Cloud:

1. Place your SW-IV-SAM-3RDPARTYCAM Enablement Key order with Crestron using the SW-IV-SAM-3RDPARTYCAM product page.
2. Claim the IV-SAM-VX2-P into an XiO Cloud account. For more information on claiming an Automate VX2 system into an XiO Cloud account, refer to Connect to XiO Cloud Service on page 213.

   > **NOTE**: Ensure that the licensing mode on the IV-SAM-VX2-P is set to **Online**. Automate VX2 systems are set to **Online** by default. To switch the IV-SAM-VX2-P between **Online** and **Offline** licensing modes, input the following command into the Crestron Toolbox™ Text Console:
   >
   > ```
   > AUTOMATE-VX>LICENSEMode online
   > ```

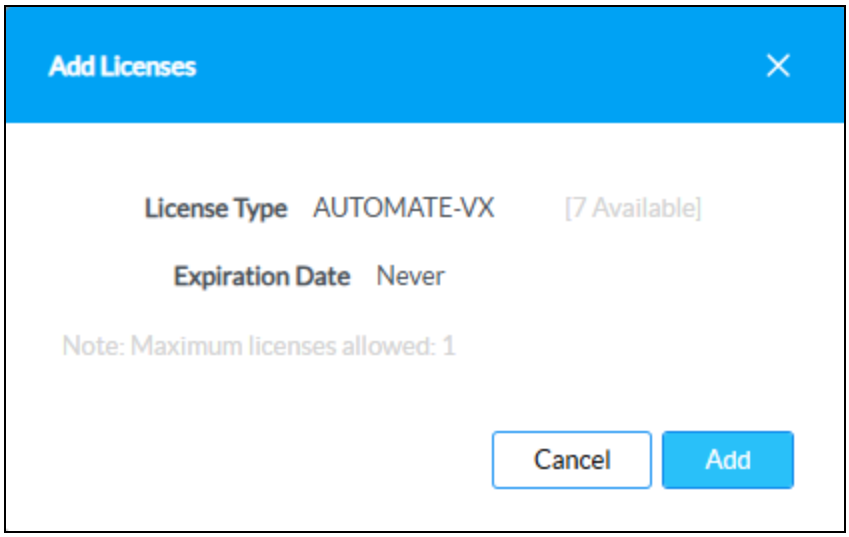
3. Claim the SW-IV-SAM-3RDPARTYCAM Enablement Key to your XiO Cloud account as described in the XiO Cloud Service User Guide.
4. Navigate to the IV-SAM-VX2-P in the **ENVIRONMENT** menu tree in XiO Cloud.
5. Select the **Licenses** tab in the device settings.

   Licenses Tab



6. Select **+ Add** next to the license. The **Add Licenses** dialog box is displayed.

Add Licenses Dialog Box



7. Select **Add**.

The **Licenses** tab updates to show that the selected license has been added.

Select **- Remove** to remove the license. The license is added back to your license pool.

Manage Licenses Offline

The purchased SW-IV-SAM-3RDPARTYCAM Enablement Key can be managed offline via the USB-OFFLINE dongle as described in the following procedures.

NOTES:

- A SW-IV-SAM-3RDPARTYCAM Enablement Key within the XiO Cloud service cannot be converted to offline license. To switch the SW-IV-SAM-3RDPARTYCAM Enablement Key from online to offline licensing mode, a new license must be purchased.
- The USB-OFFLINE dongle with the SW-IV-SAM-3RDPARTYCAM Enablement Key must be connected to the IV-SAM-VX2-P at all times. If the USB-OFFLINE dongle is removed and supported third-party cameras are in the Room Configuration file, AutoSwitching will not start and an error message is displayed within Room Designer indicating that there is no SW-IV-SAM-3RDPARTYCAM Enablement Key detected.

Each IV-SAM-VX2-P that will utilize the SW-IV-SAM-3RDPARTYCAM Enablement Key using offline licensing requires the purchase of one USB-OFFLINE dongle. Once the SW-IV-SAM-3RDPARTYCAM Enablement Key and the USB-OFFLINE dongle have been purchased, the offline mode must be configured using Crestron Toolbox™ software.

To configure the SW-IV-SAM-3RDPARTYCAM Enablement Key for offline licensing:

1. Order one SW-IV-SAM-3RDPARTYCAM Enablement Key and one USB-OFFLINE dongle per IV-SAM-VX2-P system.
2. Connect the USB-OFFLINE dongle into an available USB port on the IV-SAM-VX2-P.
3. Open Crestron Toolbox software. For more information about Crestron Toolbox software, refer to the Crestron Toolbox Help File.
4. Use the **Device Discovery Tool** to locate the IV-SAM-VX2-P system on the network.
5. Open the **Text Console** and connect to the IV-SAM-VX2-P in Crestron Toolbox software.
6. Input the following command into the **Text Console**:

   ```
   AUTOMATE-VX>LICENSEMode offline
   ```

7. Restart the IV-SAM-VX2-P.
8. Once the IV-SAM-VX2-P has completed the restart, reconnect the IV-SAM-VX2-P to the Crestron Toolbox **Text Console**.
9. Input the following command into the **Text Console**:

   ```
   AUTOMATE-VX>SYSTEMKey
   ```

   The IV-SAM-VX2-P responds with the system key, which is required to access the SW-IV-SAM-3RDPARTYCAM Enablement Key.

10. Fill out and submit the offline licensing form to request an offline license key from Crestron.

    The following information is required to request a SW-IV-SAM-3RDPARTYCAM Enablement Key:

    - The IV-SAM-VX2-P system key (as outlined in step 9 of this procedure).
    - The IV-SAM-VX2-P Serial Number located on the unit.
    - The PO (Purchase Order) number or Crestron Order Number for the SW-IV-SAM-3RDPARTYCAM.

    Crestron will send the offline license key via email once the request has been processed.

11. Open **Text Console** and connect to the IV-SAM-VX2-P in the Crestron Toolbox software.

    > **NOTE**: Ensure that the USB-OFFLINE dongle is connected to the IV-SAM-VX2-P system.

12. Input the following command into the Text Console:

    ```
    AUTOMATE-VX>ADDLicense {Input License Key number here}
    ```

The SW-IV-SAM-3RDPARTYCAM Enablement Key is now claimed to the IV-SAM-VX2-P system.

To verify and view the SW-IV-SAM-3RDPARTYCAM Enablement Key on the IV-SAM-VX2-P, enter the following command into the Crestron Toolbox **Text Console**:

```
AUTOMATE-VX>SHOWLicense
```

The IV-SAM-VX2-P responds with the licensing status of the system.

DSP Configuration

Automate VX can utilize a DSP to route audio logic from microphones for AutoSwitching. For more information about AutoSwitching, refer to Main Tab on page 261. The Adjudicator settings in Room Designer must be configured along with the DSP. For more information about the Adjudication settings inside of Room Designer, refer to Adjudicator Settings.

Refer to the following sections for information on how to configure the respective DSP for Automate VX:

- Shure Intellimix® Room and P300 Configuration for Automate VX
- Biamp Tesira™ Configuration for Automate VX
- QSC Q-SYS™ Core Configuration for Automate VX

Shure Intellimix® Room and P300 Configuration for Automate VX

The following items are required to integrate a Shure Intellimix® DSP with Automate VX:

- IV-SAM-VXS-1B, IV-SAM-VXP-1B, or IV-SAM-VXN-1B.
- A computer with the latest version of Shure Intellimix® Room Audio Processing software.
- (Optional) A Shure IntelliMix® P300 Audio Conferencing Processor.

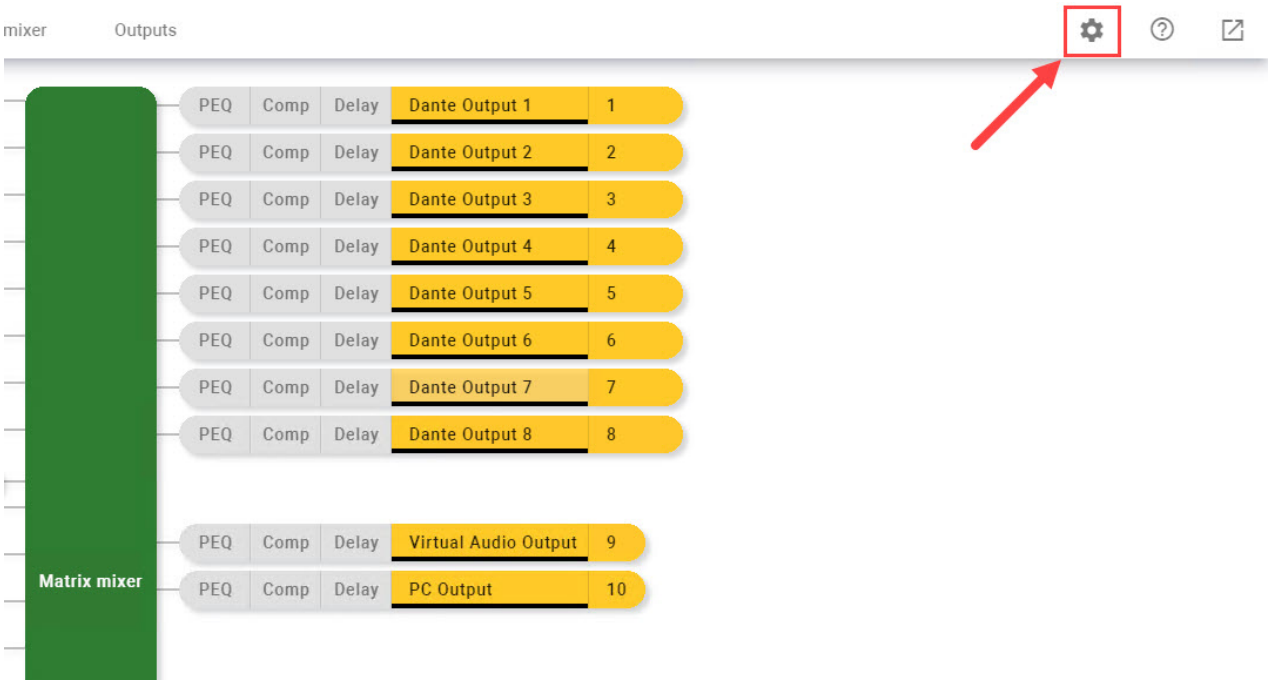
Before configuring the Shure Intellimix DSP to communicate with Automate VX, complete the following procedure to open the Shure Intellimix® project file:

1. Open Shure Intellimix Room Audio Processing software on a computer. Ensure that it is the newest version of the software.
2. Select **File** in the top left corner of the software.
3. Select **Open**, then select the project for the room that is going to be used with Automate VX.

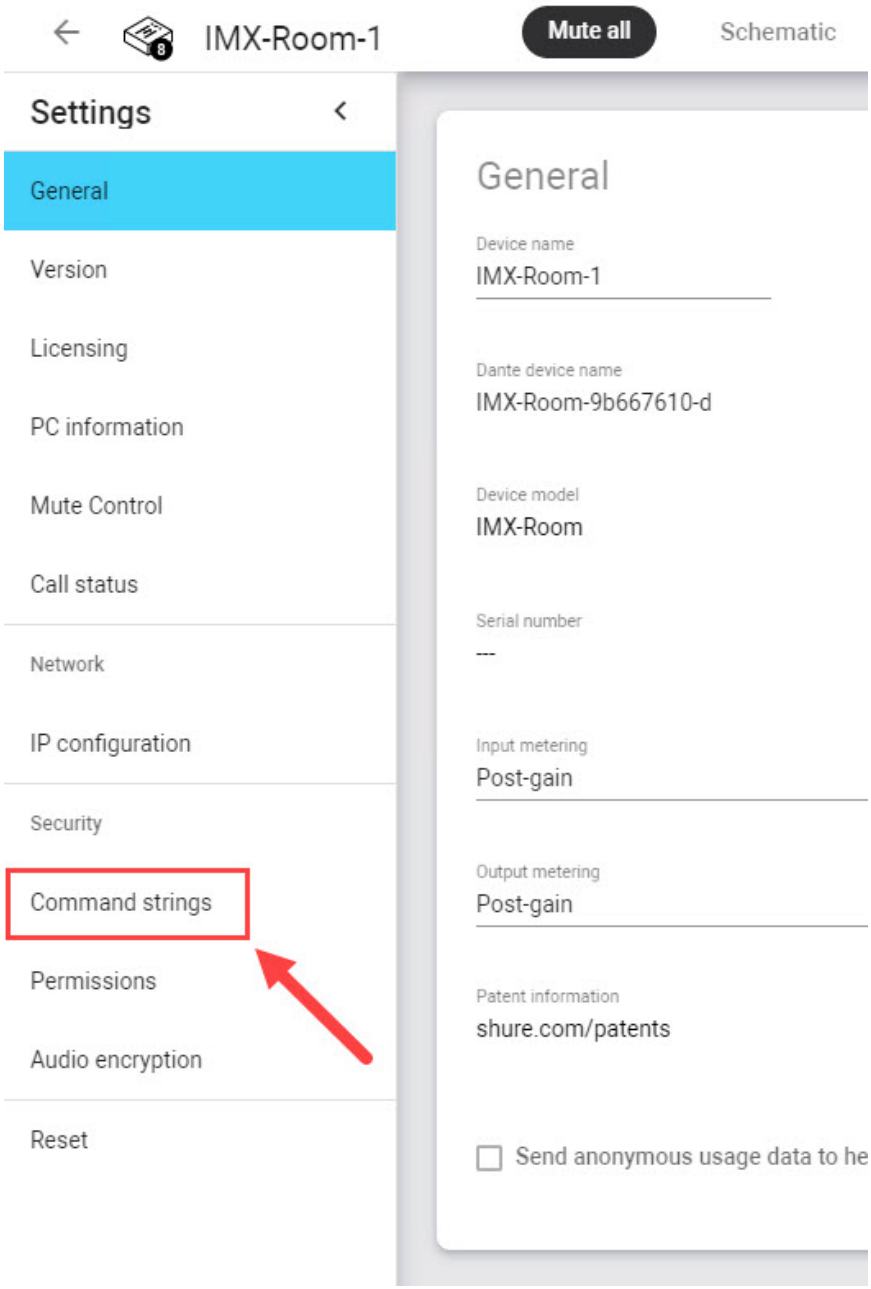
Command Strings

Command strings must be enabled for Shure Intellimix to communicate with Automate VX. To enable command strings:

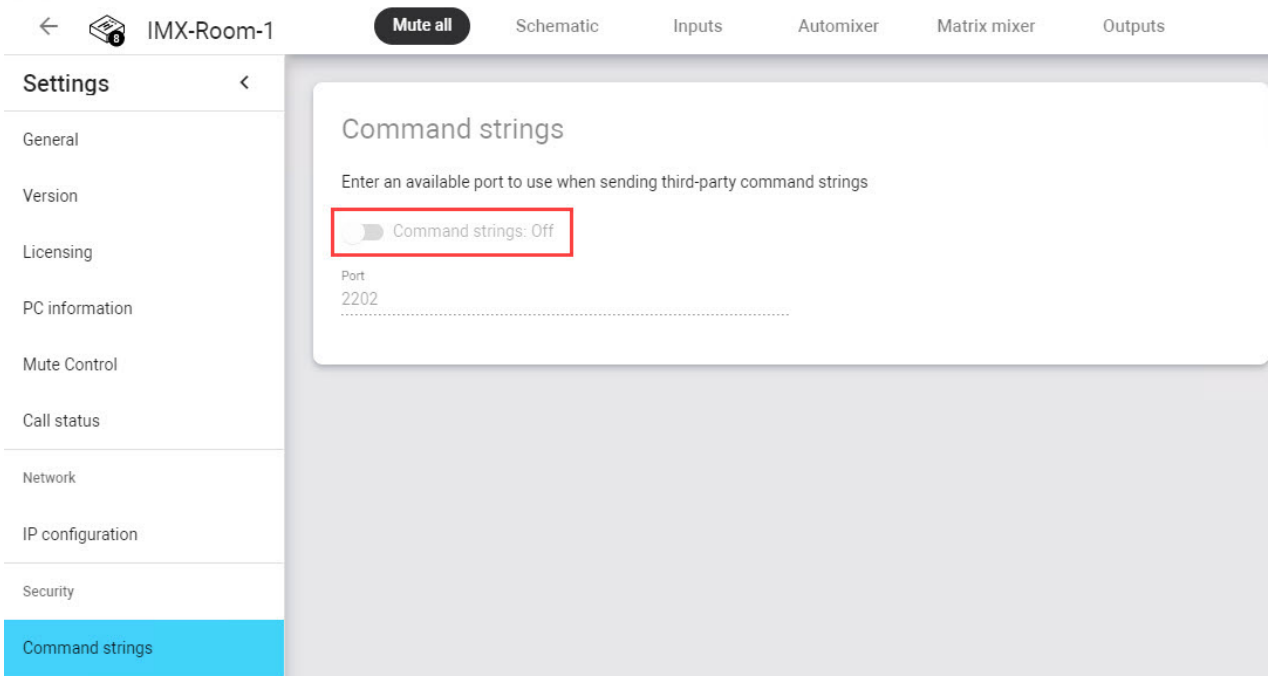
1. Double click with the left mouse button on the DSP device in the project.
2. Select the gear icon on the top right of the software.



3. Select the **Command strings** option under the **Security** header.



4. Enable **Command strings** by selecting the **Command strings:** switch to **On**.

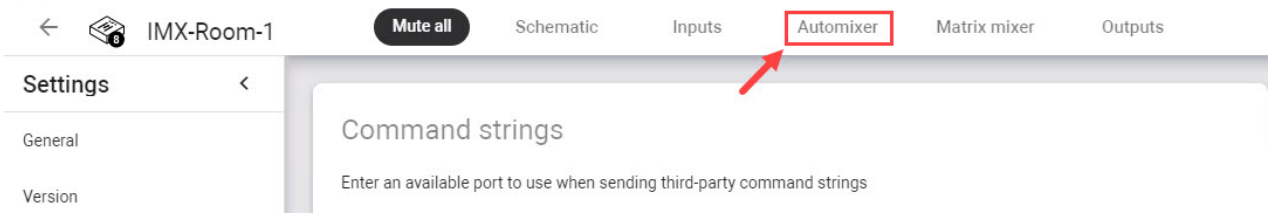


Automixer Settings

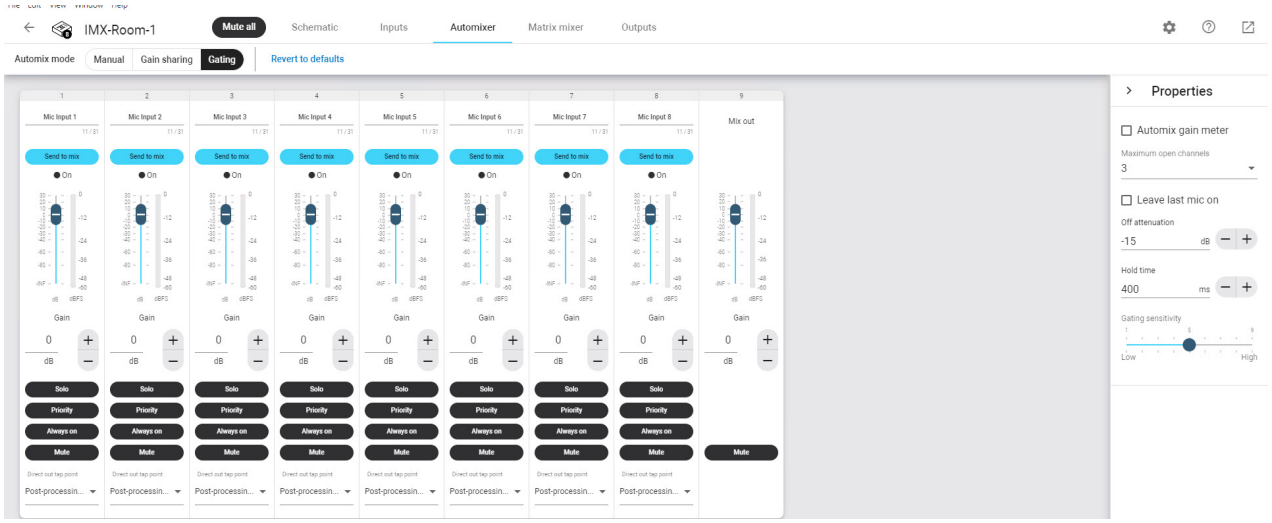
Automixer settings in Shure Intellimix provide a better control of AutoSwitching behavior with Automate VX. For more information about AutoSwitching, refer to Main Tab on page 261.

To change the **Automixer** settings:

1. Select **Automixer** on the top toolbar. This opens the **Automixer** menu.

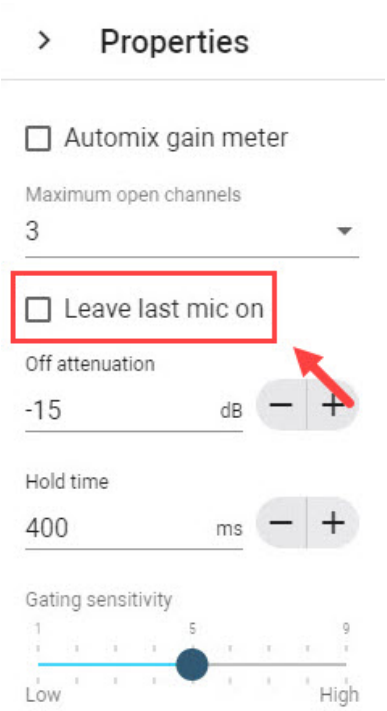


Automixer Menu

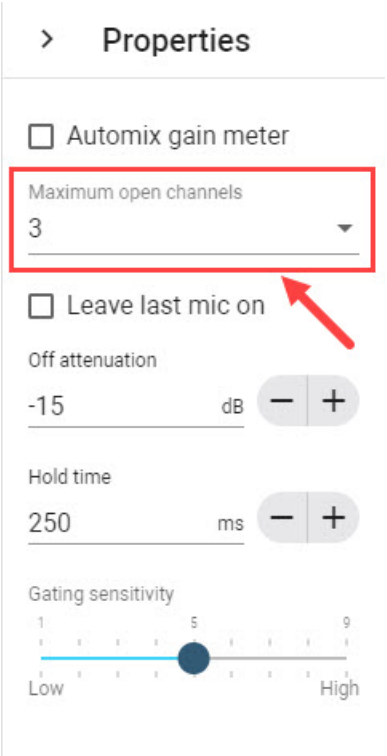


2. In the **Properties** menu, select the **Leave last mic on** check box to disable the setting.

Leave last mic on Disabled

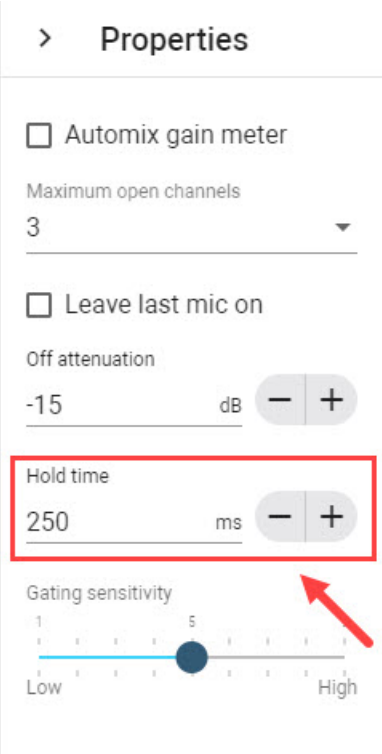


3. Use the **Maximum open channels** drop-down menu to set the limit of open mics to 2 or 3 depending on the number of channels.



4. Input 250 into the **Hold time** text field. A 250 ms hold time ensures that the audio syncs with the Automate VX video feed.

> **NOTE**: If NDI cameras are used with Automate VX, the **Hold time** may need to be increased to 300 ms. This is due to the added latency over the network. Test the video output from Automate VX with this value and adjust the delay accordingly to sync the audio and video.



Biamp Tesira™ Configuration for Automate VX

The following items are required to integrate a Biamp Tesira™ DSP with Automate VX:

- IV-SAM-VXS-1B, IV-SAM-VXP-1B, or IV-SAM-VXN-1B.
- Biamp TesiraFORTÉ™ or Biamp Tesira SERVER™.
- A computer with the latest version of Tesira Design software.

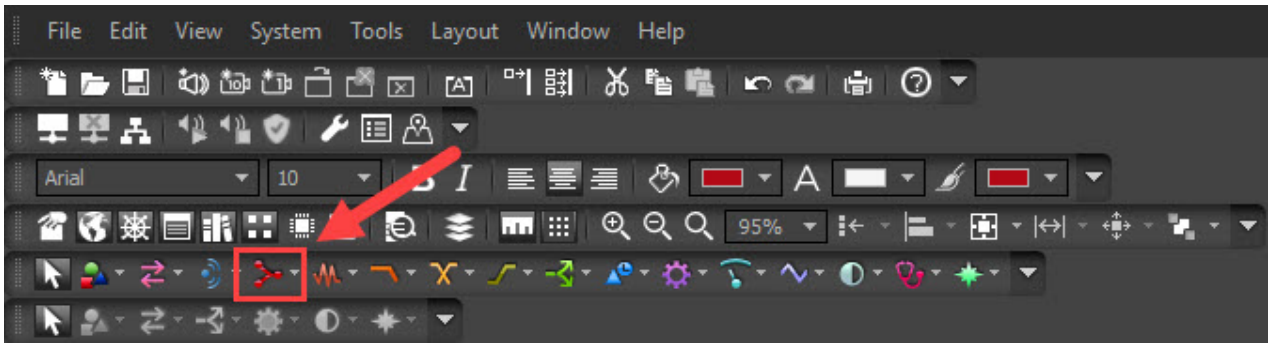
Before configuring the Biamp Tesira DSP to communicate with Automate VX, complete the following procedure to open the Tesira Design project file:

1. Open Tesira Design software on a computer. Ensure that it is the newest version of the software.
2. Select **File** in the top left corner of the software.
3. Select **Open**, then select the project for the room that is going to be used with Automate VX.

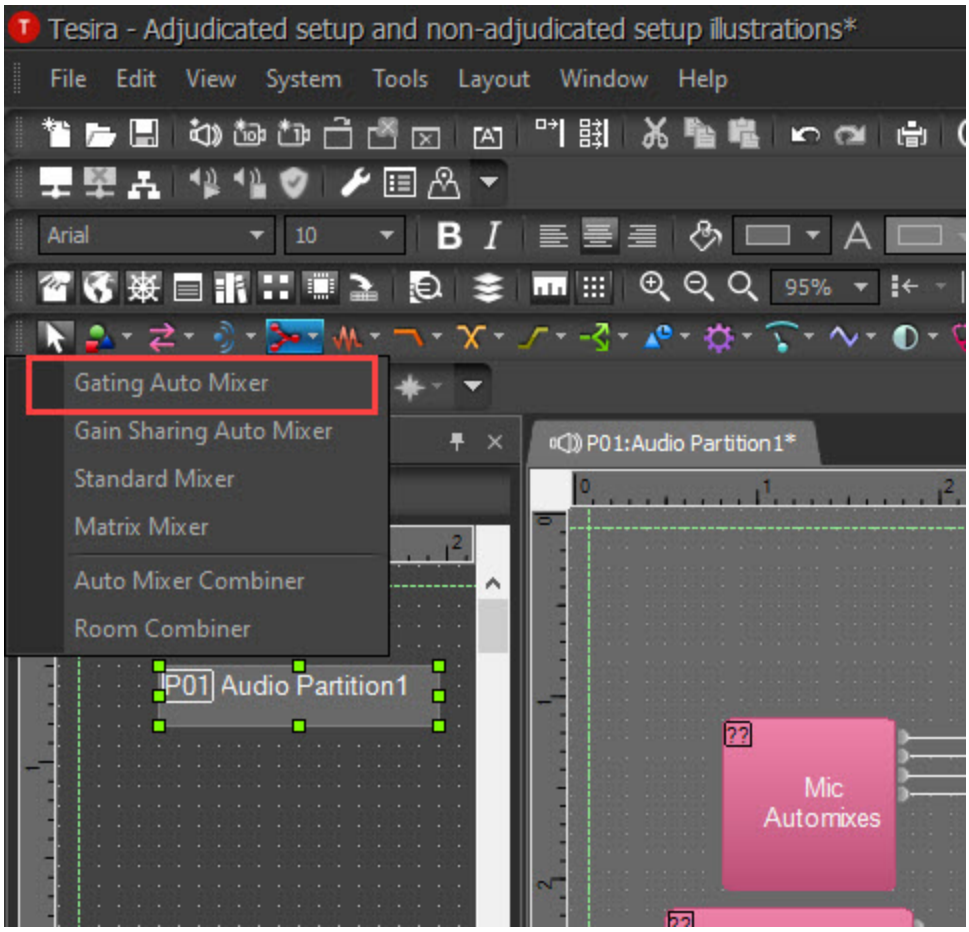
Gating Mixer

A dedicated gating mixer is required in the Tesira project for Automate VX to communicate with the DSP. To add and configure a gating mixer to the Tesira Design project file:

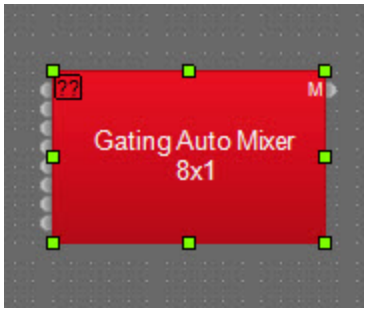
1. On the Object Toolbar, select the **Mixers** button  to open the drop-down menu.



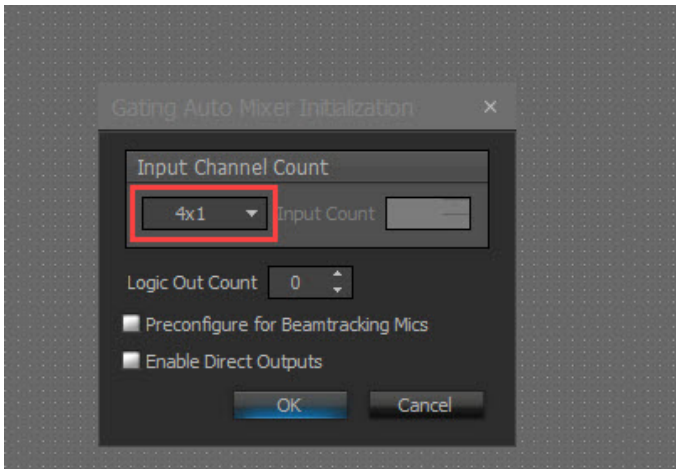
2. Select **Gating Auto Mixer**, then click the left mouse button inside the project to add the **Gating Auto Mixer** block. The **Gating Auto Mixer** block appears in the project.



Gating Auto Mixer Block



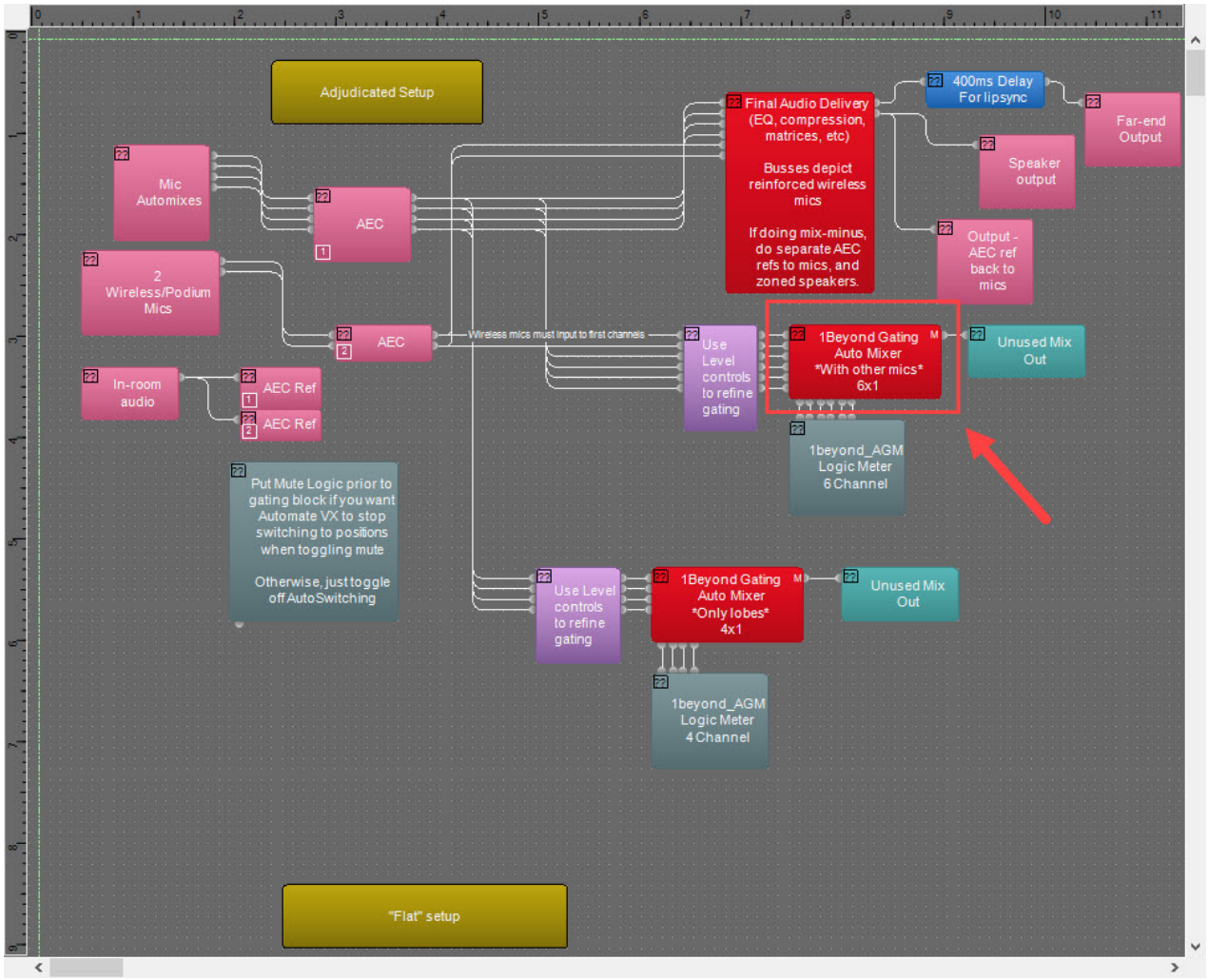
3. In the **Input Channel Count** drop-down menu, select the same number of channels used in the AutoSwitching configuration. For more information about channels in Automate VX, refer to Configuring Adjudicators on page 141.



NOTES:

- The **Gating Auto Mixer** is a separate, but parallel gating mixer to the one used for audio processing.
- The audio is routed into the gating mixer after AEC and room mutes, but before other audio processing (EQ, compression, and so forth).

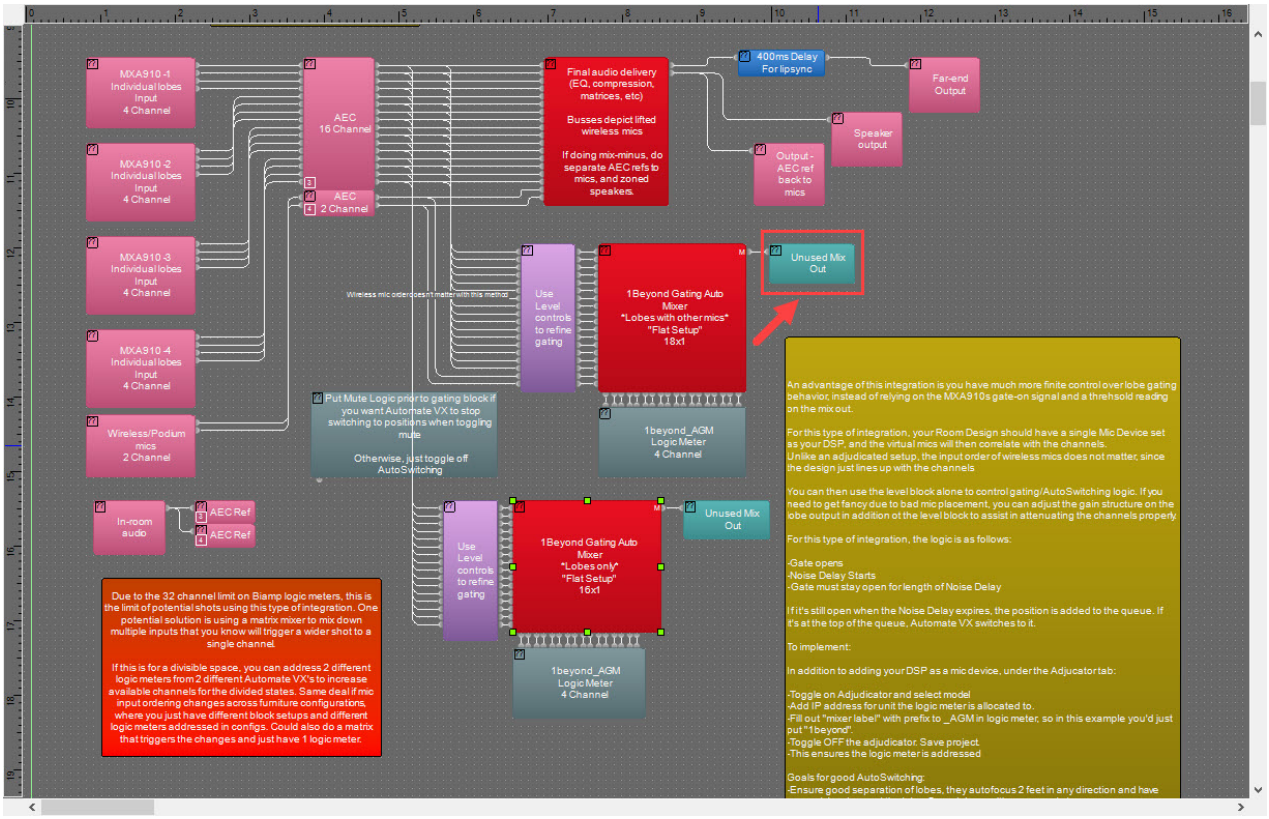
Gating Auto Mixer in Project



4. Place a connection on the output of the gating mixer. Use a **Signal Presenter Meter** if uncertain which connection should be made.

> **NOTE**: The Tesira code will not compile without placing a connection on the output.

Output Connection Example

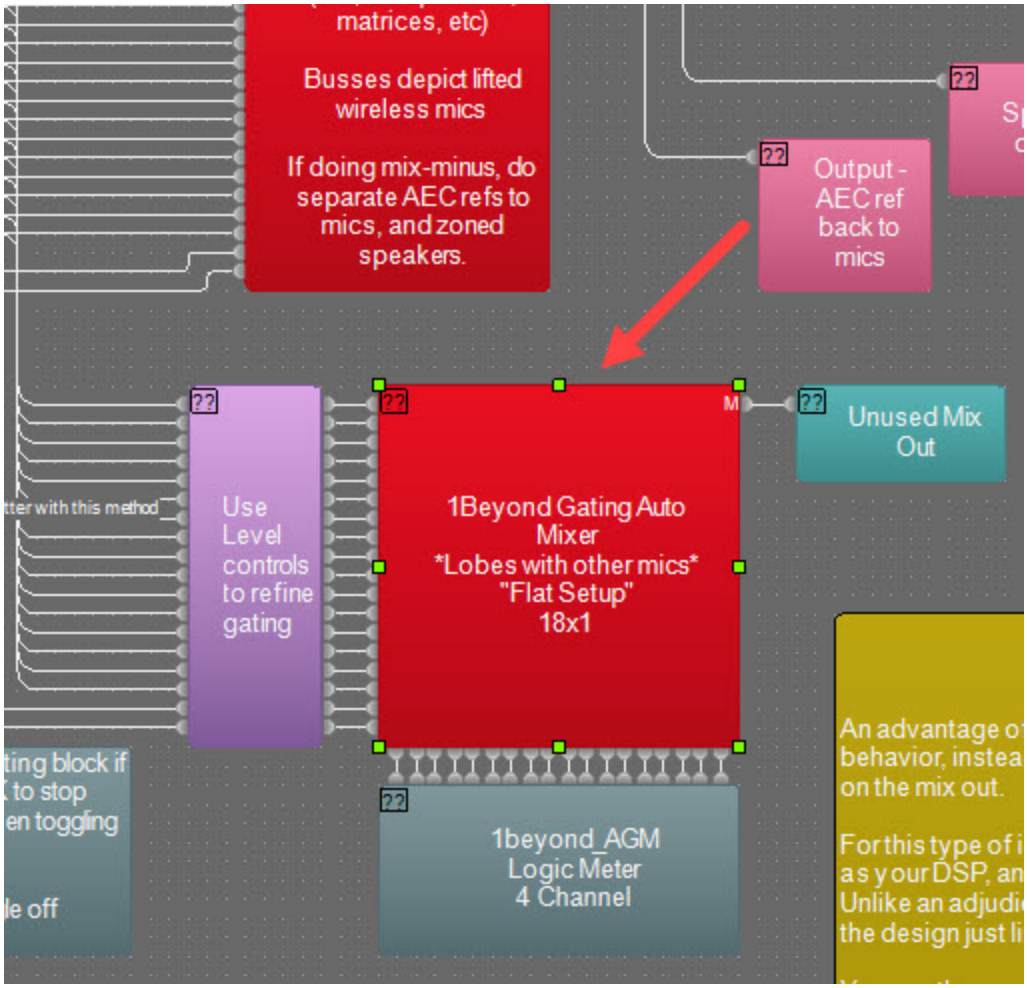


Open Mic Limits

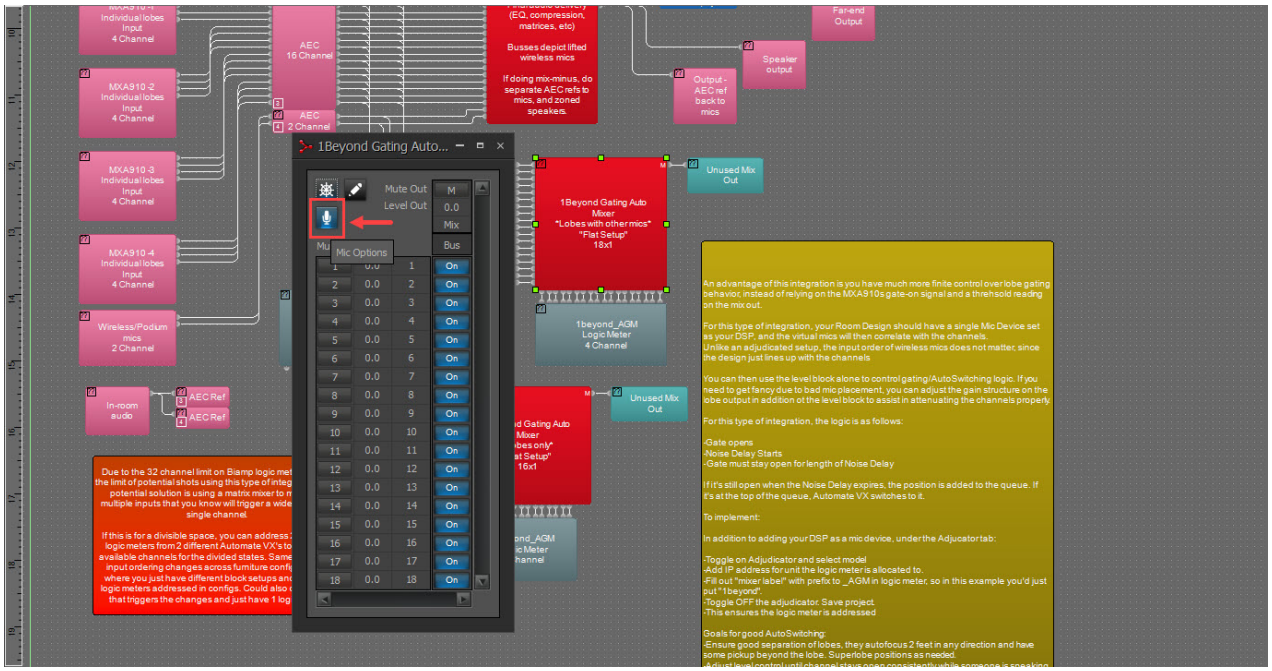
Setting the limit of open microphones at a given time provides a better AutoSwitching experience with Automate VX. For more information about AutoSwitching, refer to Main Tab on page 261.

Complete the following procedure to configure the microphone settings of the gating mixer block:

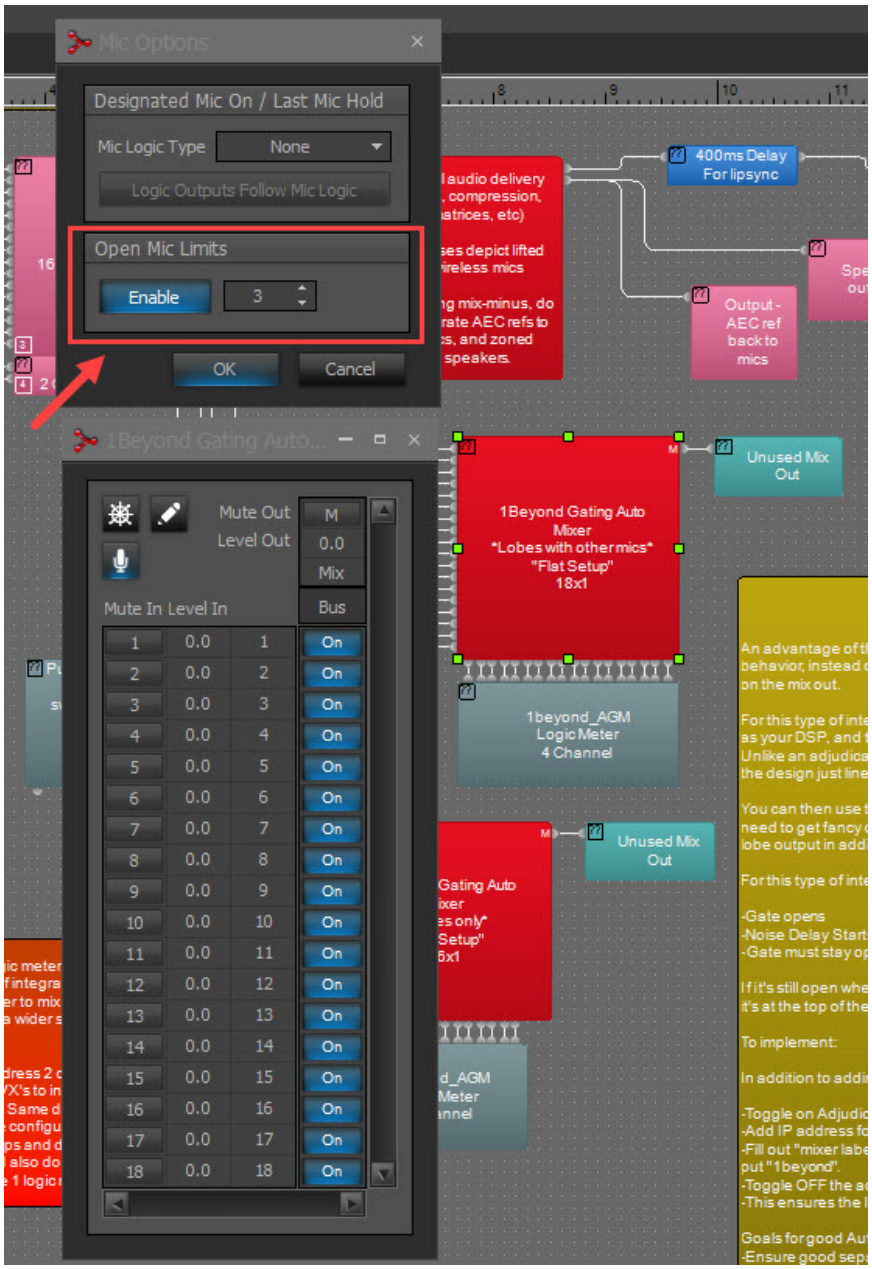
1. Double-click the left mouse button on the **Gating Auto Mixer** block to open the Gating Auto Mixer settings window.



2. Select the mic symbol to open the **Mic Options**.



3. Use the arrow buttons under the **Open Mic Limits** header to set the limit of open mics to 2 or 3 depending on the number of channels used with Automate VX. For more information about channels in Automate VX, refer to Configuring Adjudicators on page 141.

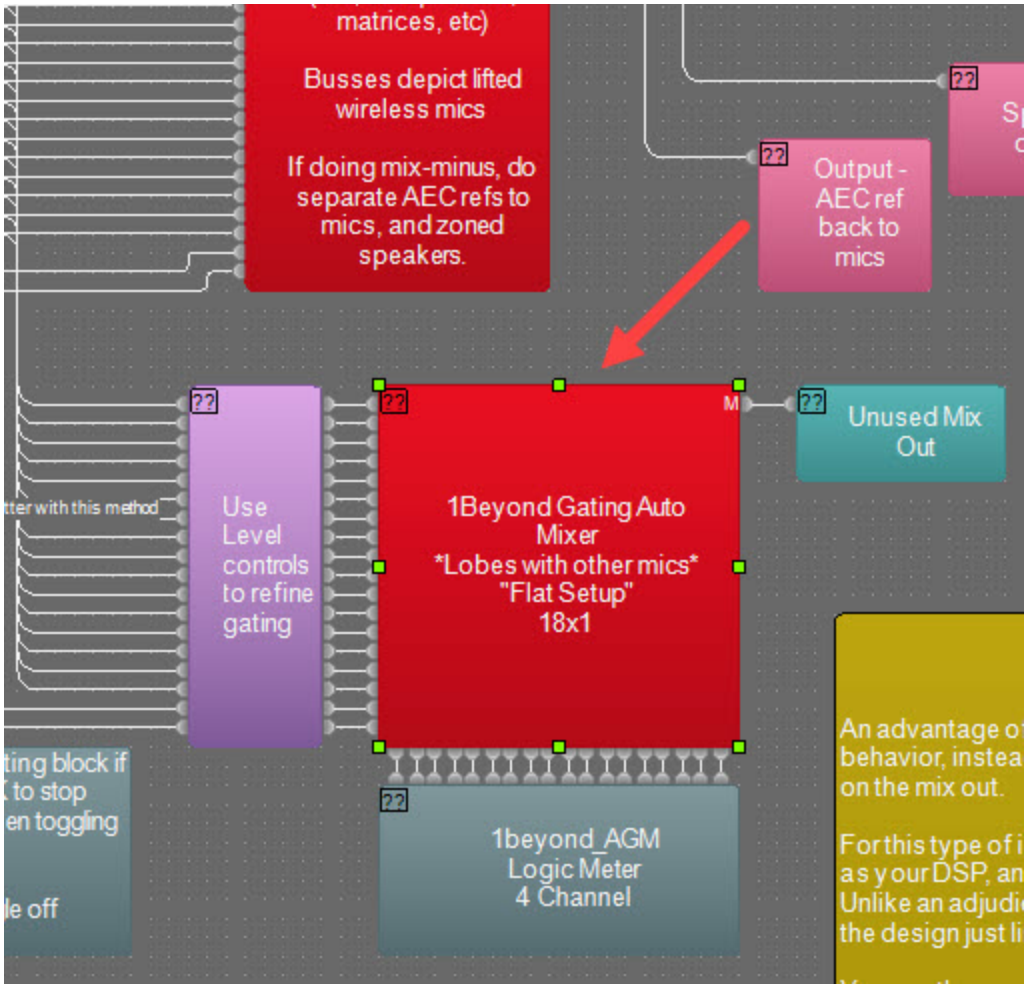


Gate Hold Time

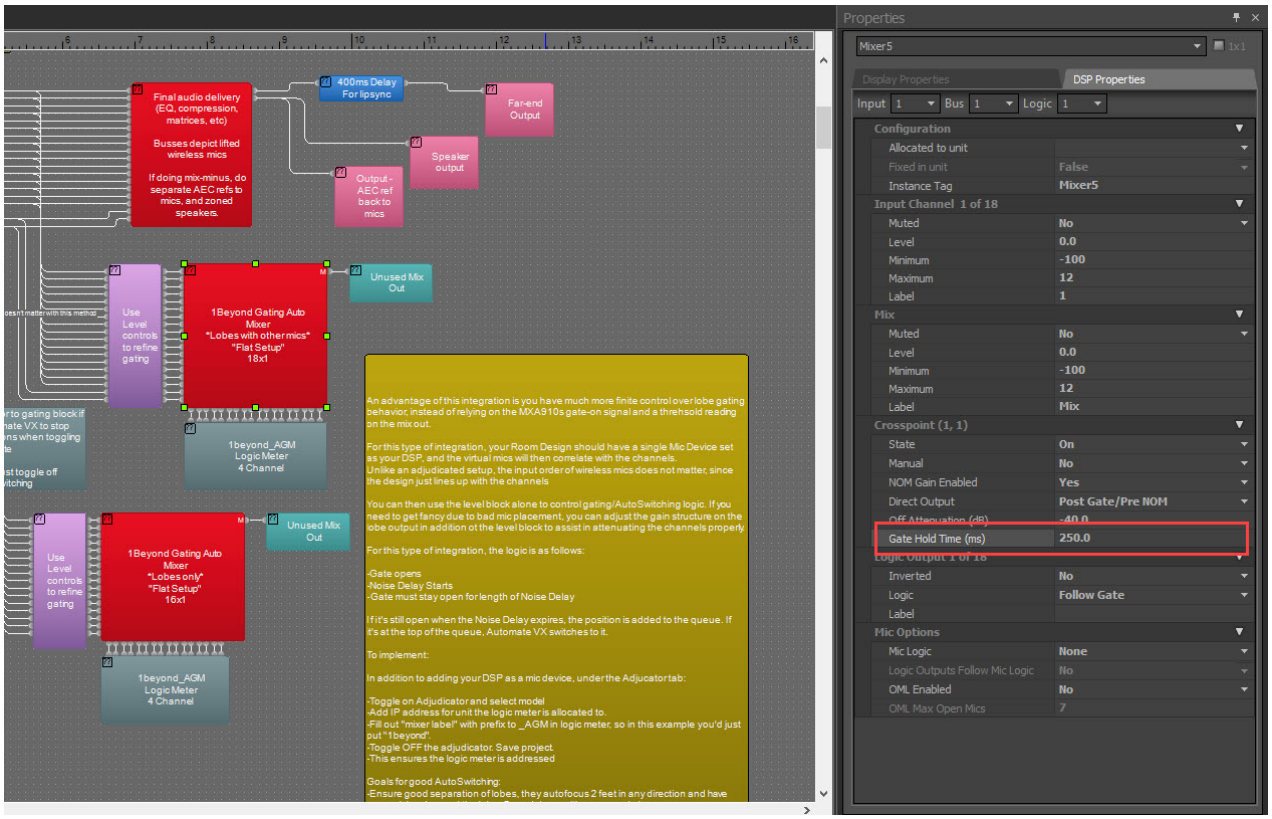
Adjusting the Gate Hold Time value eliminates accidental camera switching due to random audio during AutoSwitching. For more information about AutoSwitching, refer to Main Tab on page 261.

To adjust the Gate Hold Time of a gating mixer channel:

1. Select the **Gating Auto Mixer** block to open the **Properties** menu.



2. Input 250 ms into the **Gate Hold Time (ms)** text field. Do this for all channels on the Gating Auto Mixer block.

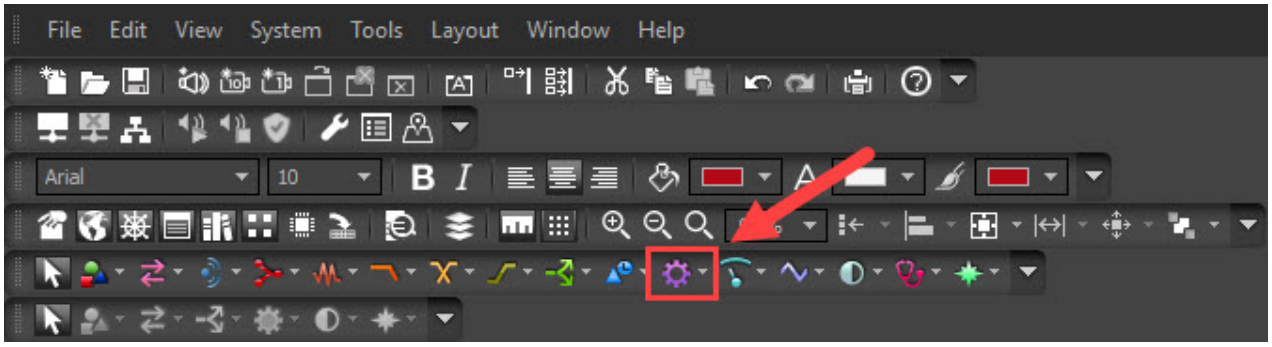


Level Block

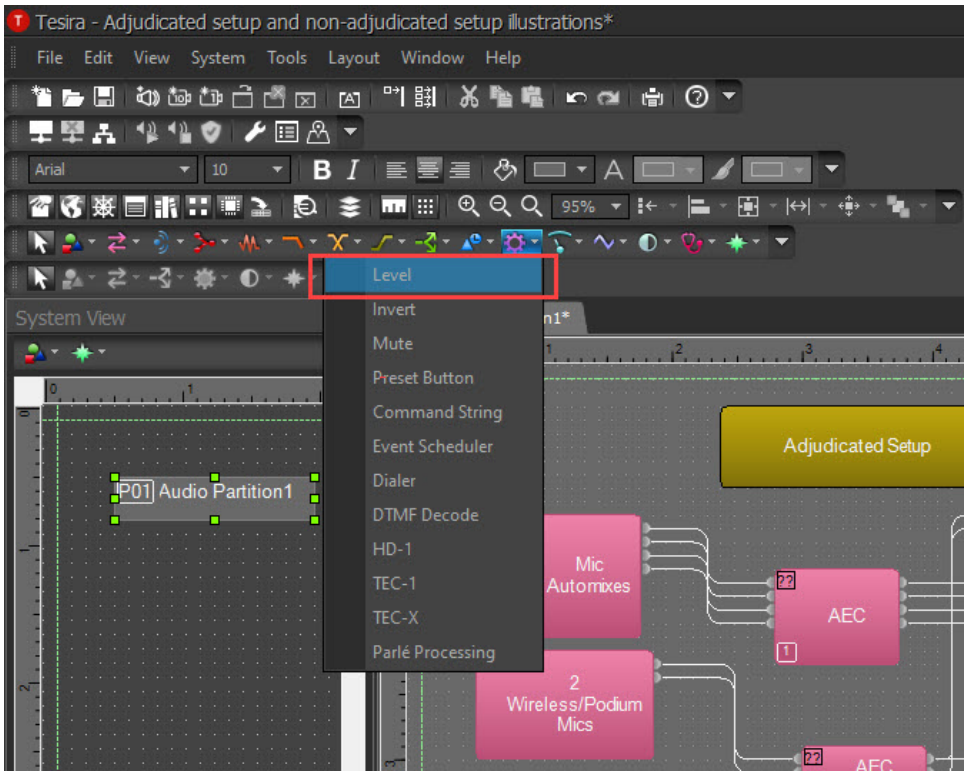
A Level block provides a better control of gating and AutoSwitching behavior with Automate VX. For more information about AutoSwitching, refer to Main Tab on page 261.

To add a Level block to the project:

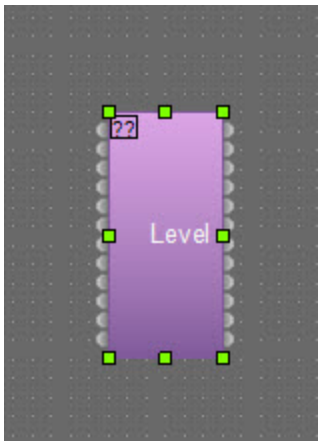
1. On the Object Toolbar, select the **Control Components** button  to open the drop-down menu.



2. Select **Level**, then click the left mouse button inside the project to add the **Level** block. The **Level** block appears in the project.

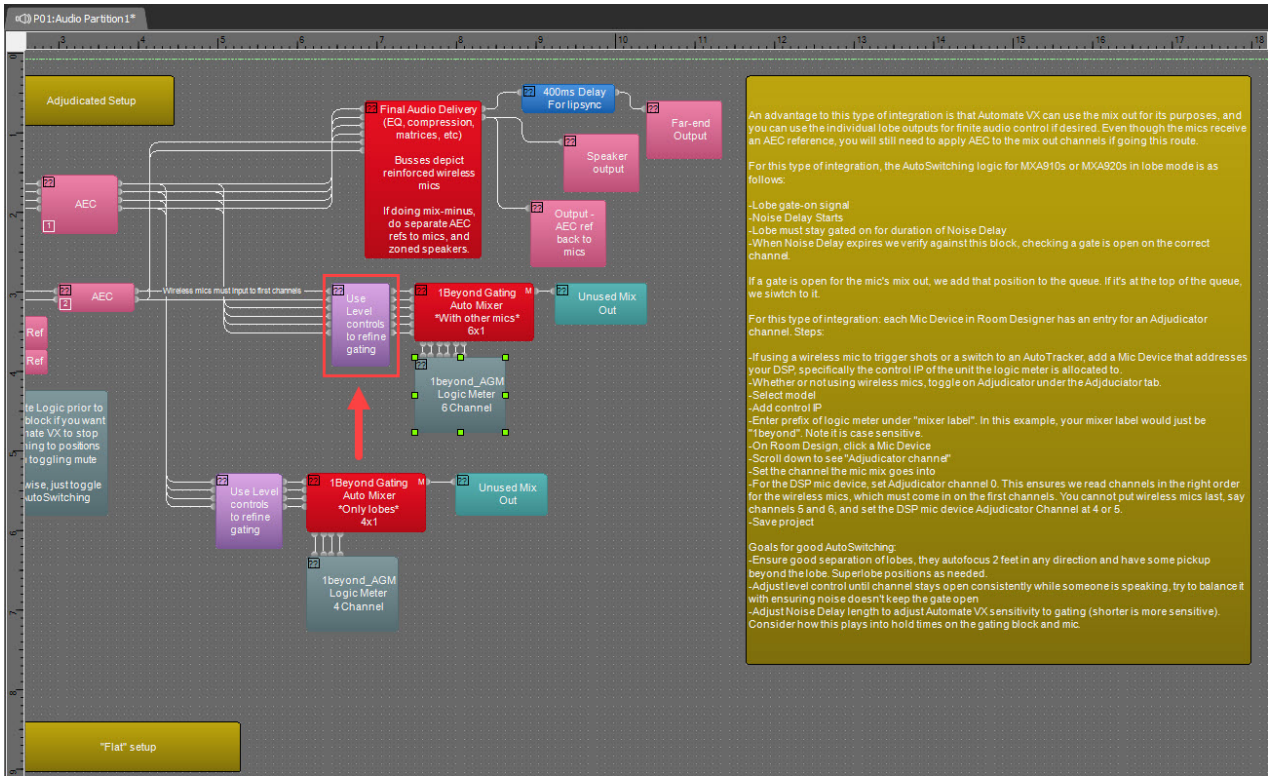


Level Block



3. Place the Level block before the gating mixer.
4. Click and hold the left mouse button on a output node of the **Level** block, then drag the output node to the input node on the **Gating Auto Mixer** block to form a connection. Release the left mouse button once a connection is made. Do this for all output nodes on the **Level** block.

Level Block in Project

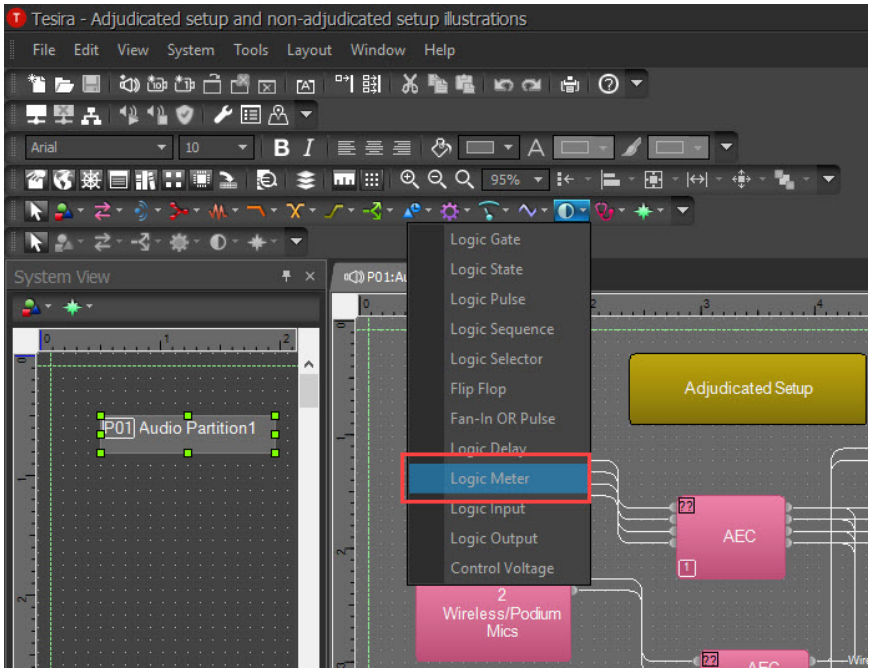


Logic Meter

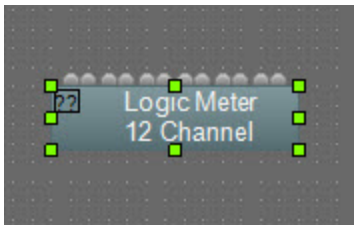
Automate VX requires logic feedback from audio passing through the DSP for AutoSwitching. For more information about AutoSwitching, refer to Main Tab on page 261.

To add a Logic Meter block to the project:

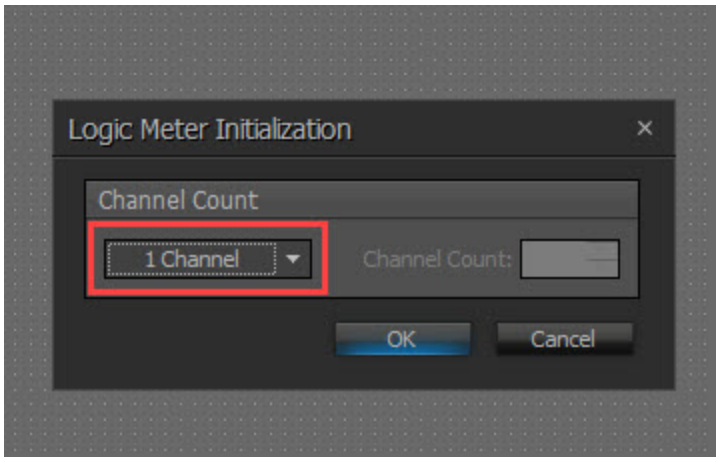
1. Select **Logic Meter**, then click the left mouse button inside the project to add the **Logic Meter** block. The **Logic Meter** block appears in the project.



Logic Meter

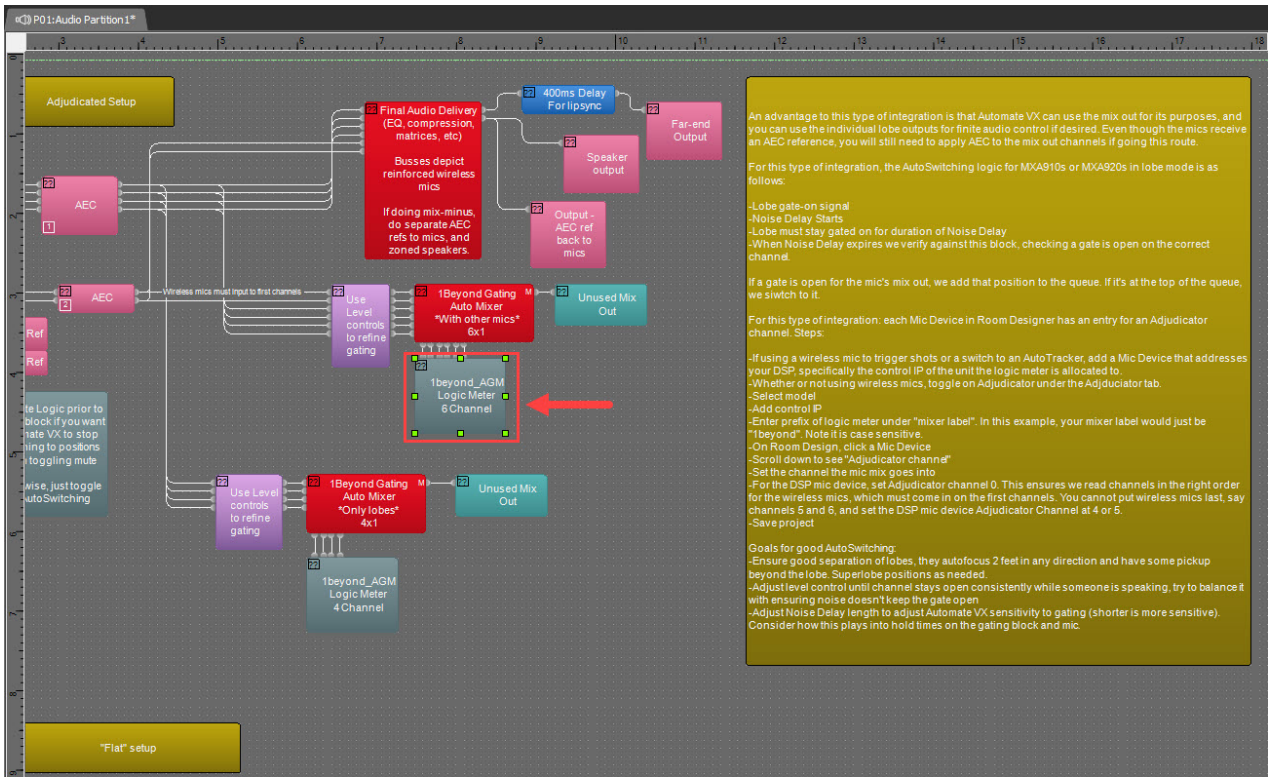


2. In the **Channel Count** drop-down menu, select the exact amount of channels used by the gating mixer.



3. Click and hold the left mouse button on a output node of the **Logic Meter** block, then drag the output node to a input node on the **Gating Auto Mixer** block. Release the left mouse button once a connection is made. Do this for all output nodes on the **Logic Meter** block.

Logic Meter in Project

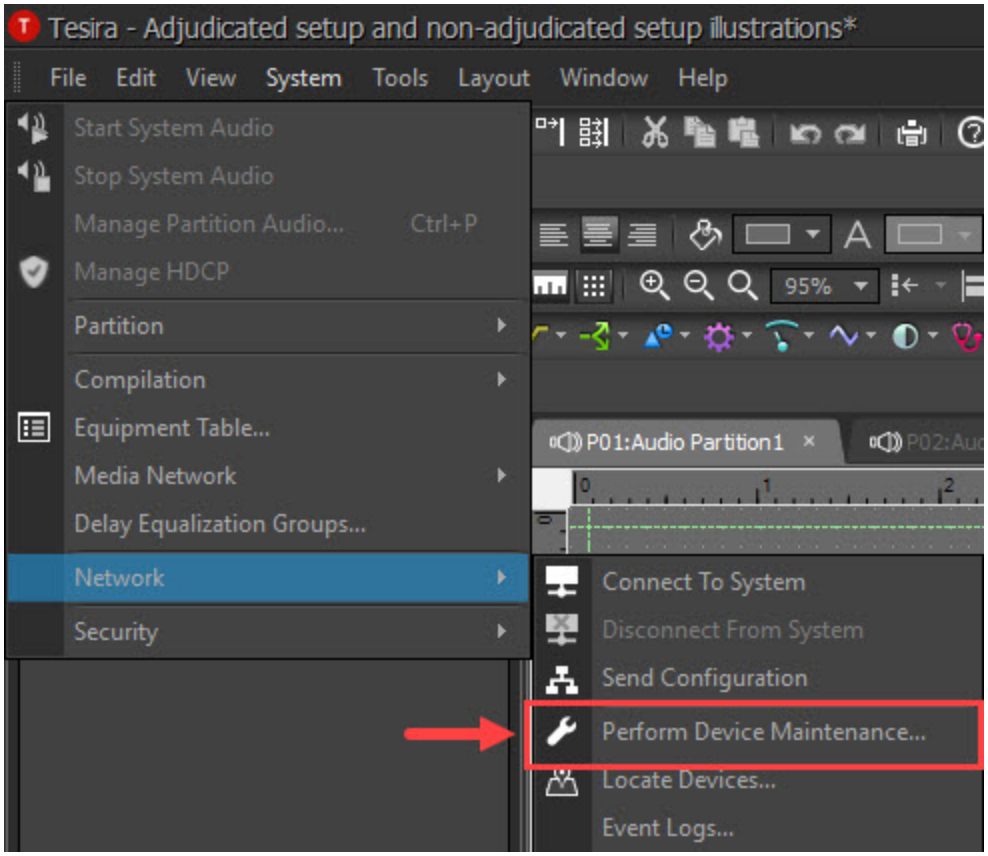


4. Select the **Logic Meter** to open the **Properties** menu.
5. Take note of the **Instance Tag** text field. The text displayed here is required to be input into Room Designer for Automate VX to connect to the DSP. For more information on Microphone Devices, refer to Microphone Device Configuration on page 115.

Enable SSH

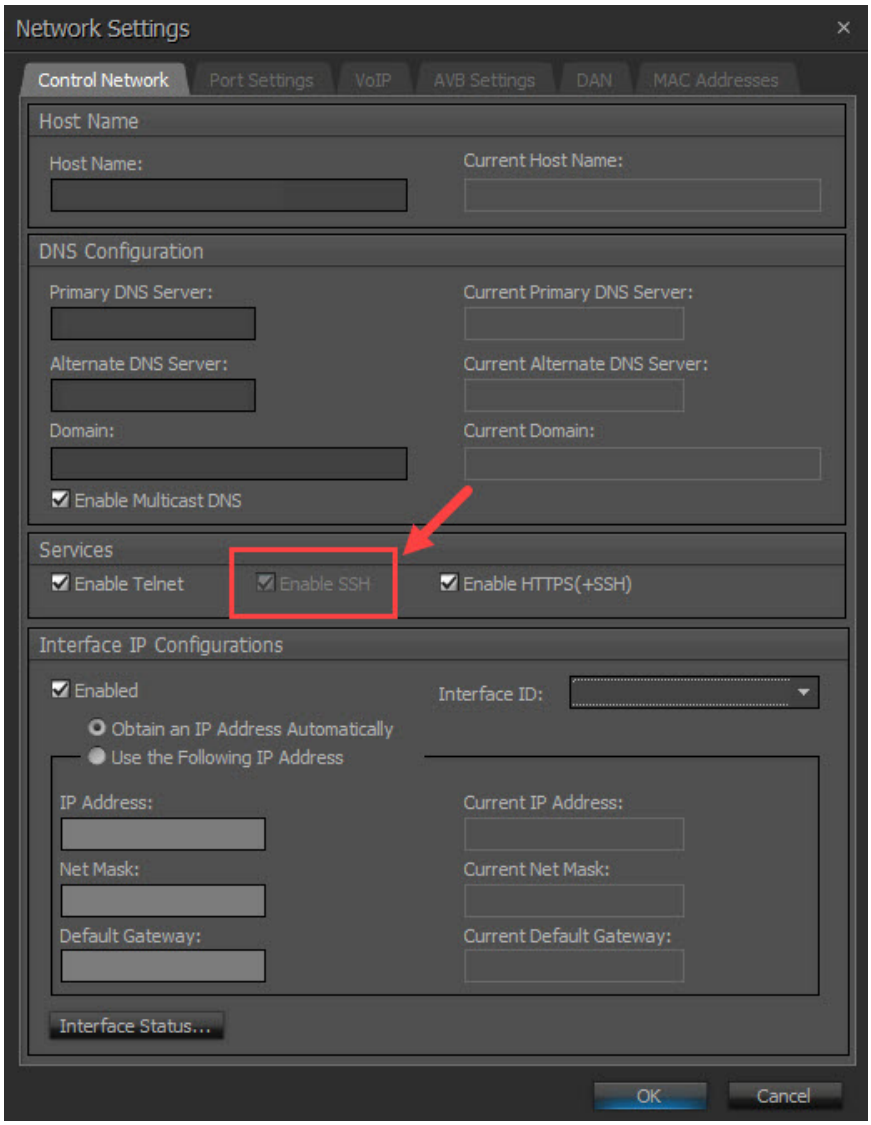
SSH (Secure Shell Protocol) must be enabled on the DSP device for Automate VX to communicate with the DSP. To enable SSH on a Biamp Tesira DSP:

1. On the top toolbar, select **System** to open the drop-down menu.
2. Select **Network**, then select **Perform Device Maintenance...**



3. Select the **Control Network** tab, then select the **Enable SSH** check box under the **Services** header.

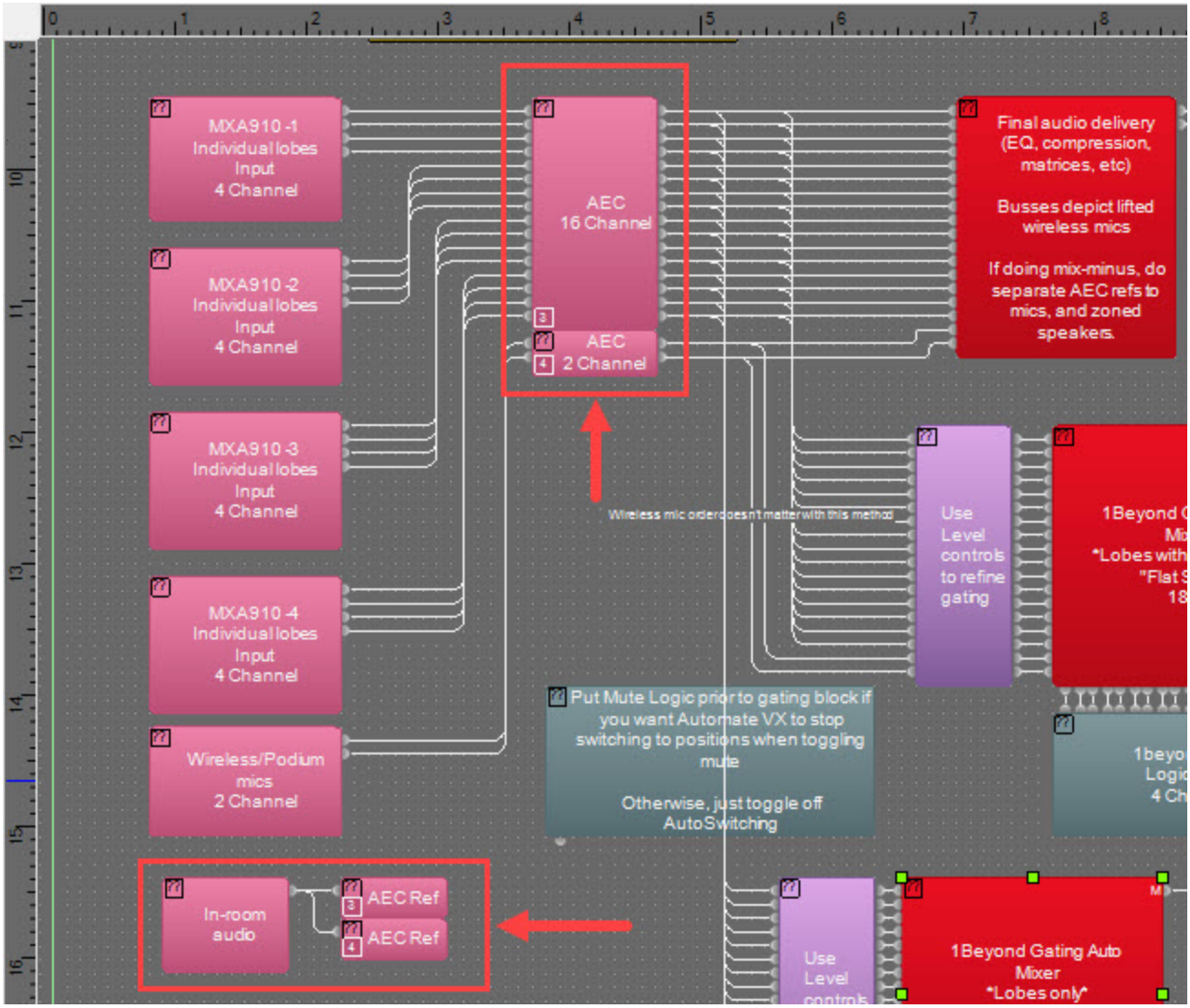
Network Settings



AEC Reference

If a ceiling array microphone is in the room, an AEC (Acoustic Echo Cancellation) reference must be sent for it. If there are multiple ceiling array microphones, ensure that an AEC reference is sent for each ceiling array microphone. For more information about ceiling array microphones, refer to Microphone Device Configuration on page 115

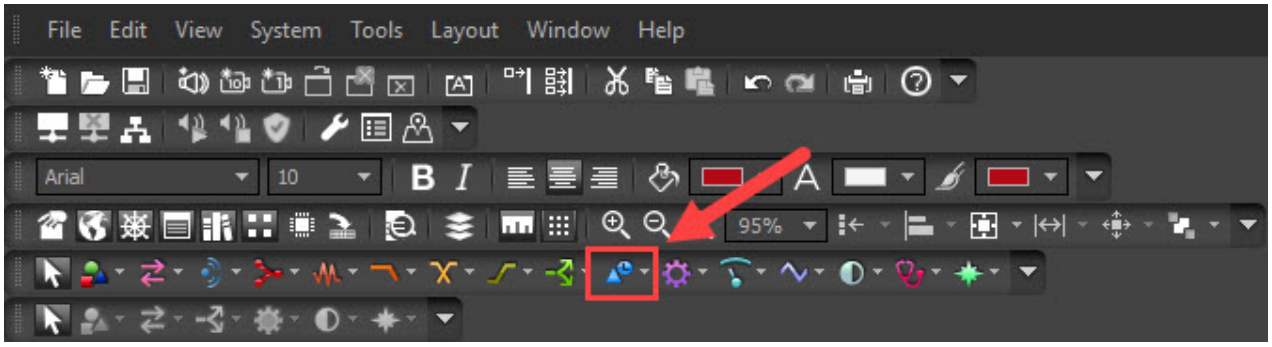
AEC Reference Example



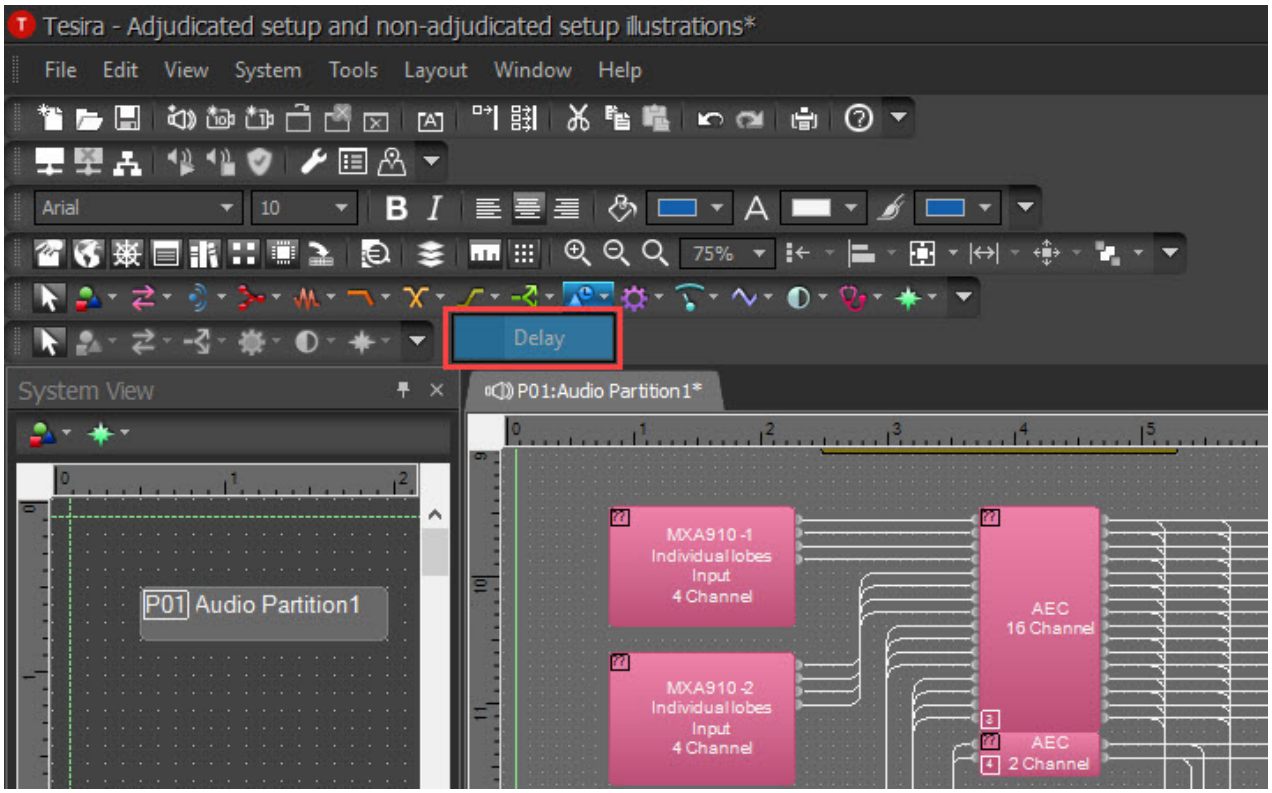
Delay Block

A delay block is required in the project for the audio to properly sync with the video output from Automate VX. To add and configure a delay block in the project:

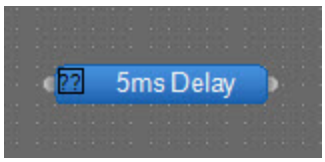
1. On the Object Toolbar, select the **Delay Components** button to open the drop-down menu.



2. Select **Delay**, then click the left mouse button inside the project to add the Delay block. The **Delay** block appears in the project.



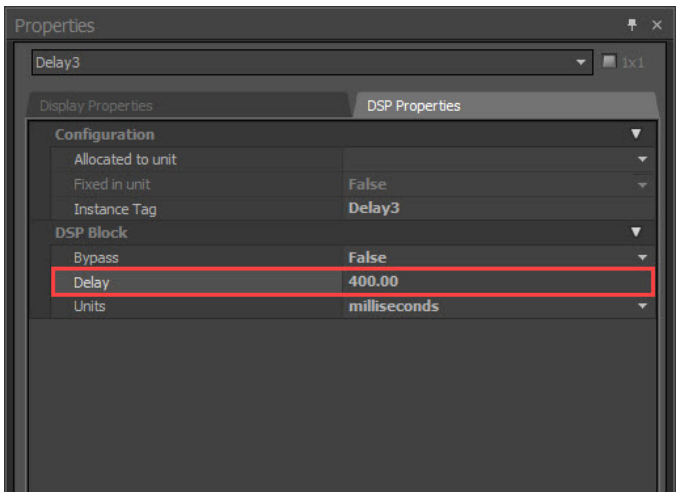
Delay Block



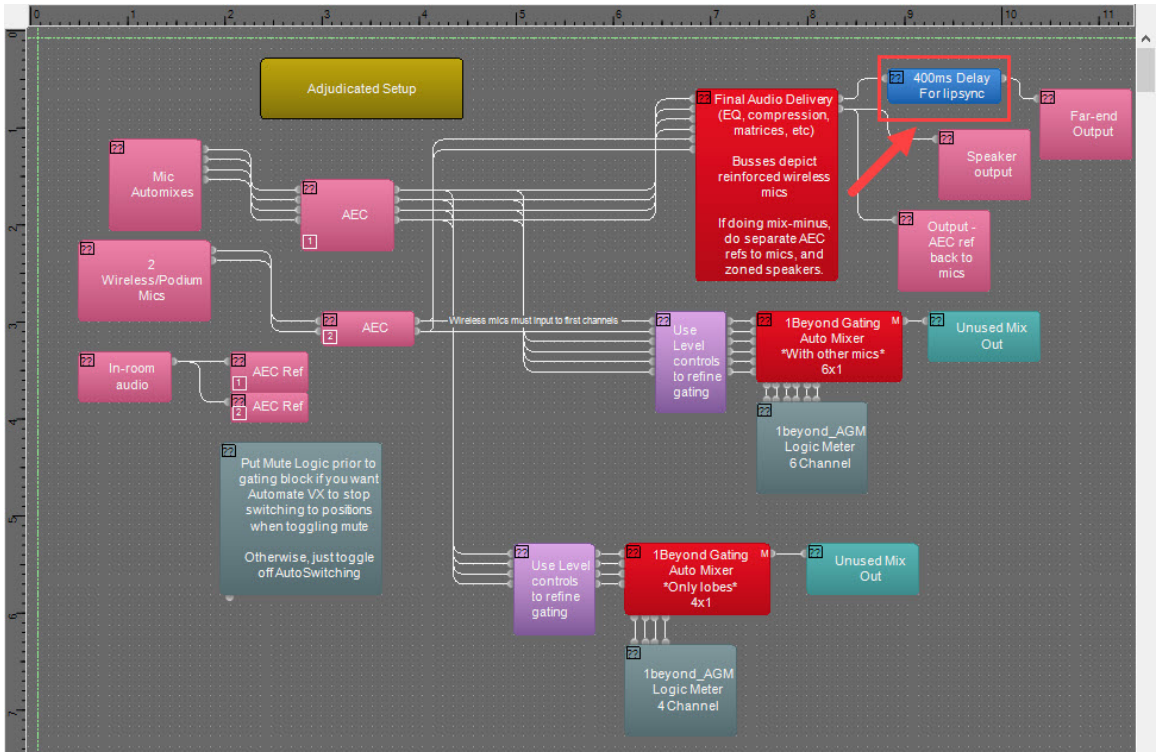
3. Select the **Delay** block to open the Properties menu.

4. Input 400 into the **Delay** text field. A 400 ms delay ensures that the audio syncs with the Automate VX video feed.

> **NOTE**: If NDI cameras are used with Automate VX, the delay may need to be increased to 450 ms. This is due to the added latency over the network. Test the video output from Automate VX with this value and adjust the delay accordingly to sync the audio and video.



Delay Block in Project



QSC Q-SYS™ Core Configuration for Automate VX

The following items are required to integrate a QSC Q-SYS™ Core DSP with Automate VX:

- IV-SAM-VXS-1B, IV-SAM-VXP-1B, or IV-SAM-VXN-1B.
- Any QSC Q-SYS Core DSP.
- A computer with the latest version of Q-SYS Designer software.

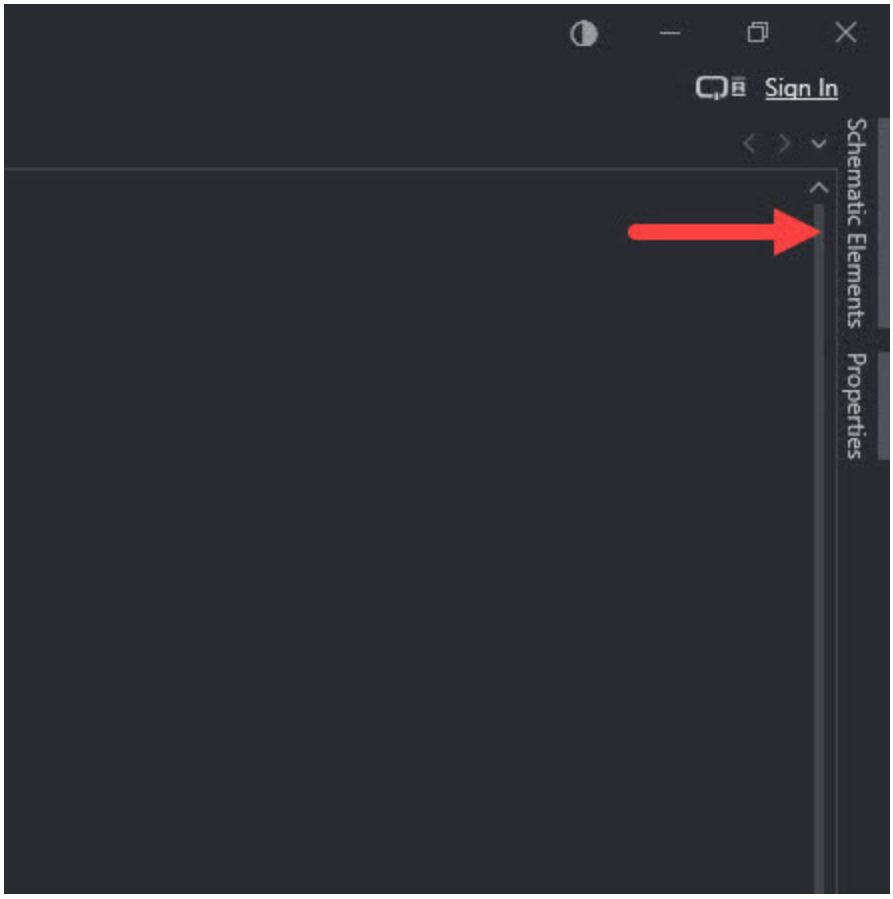
Before configuring the QSC Q-SYS Core DSP to communicate with Automate VX, complete the following procedure to open the Q-SYS Designer project file:

1. Open Q-SYS Designer software on a computer. Ensure that it is the newest version of the software.
2. Select **File** in the top left corner of the software.
3. Select **Open**, then select the project for the room that is going to be used with Automate VX.

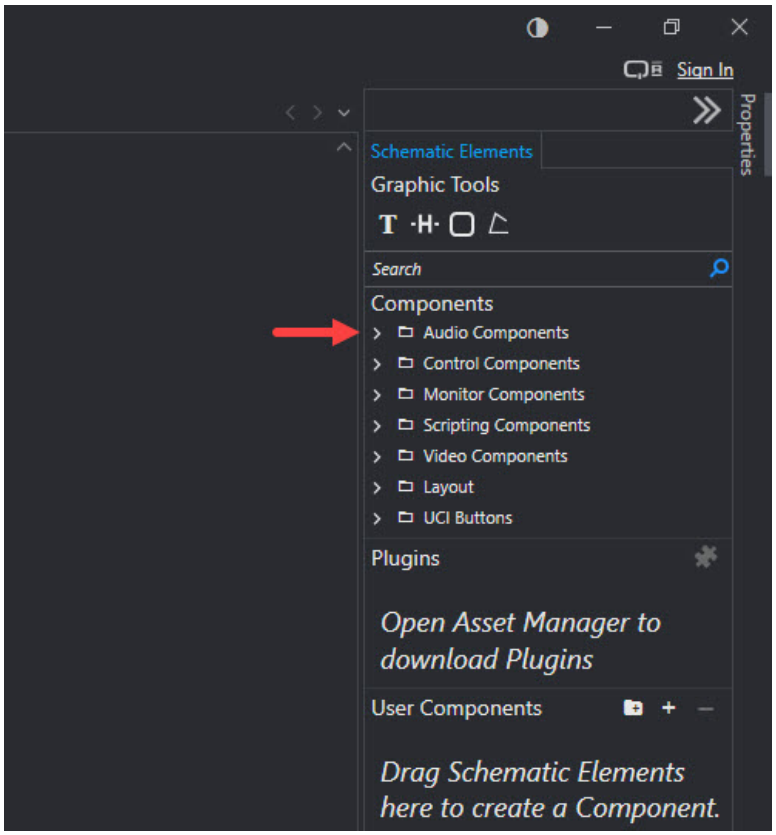
Gating Mixer

A Q-SYS Core DSP requires a legacy gating mixer block to properly communicate with Automate VX. Complete the following procedure to add a legacy gating mixer to the Q-SYS Designer project:

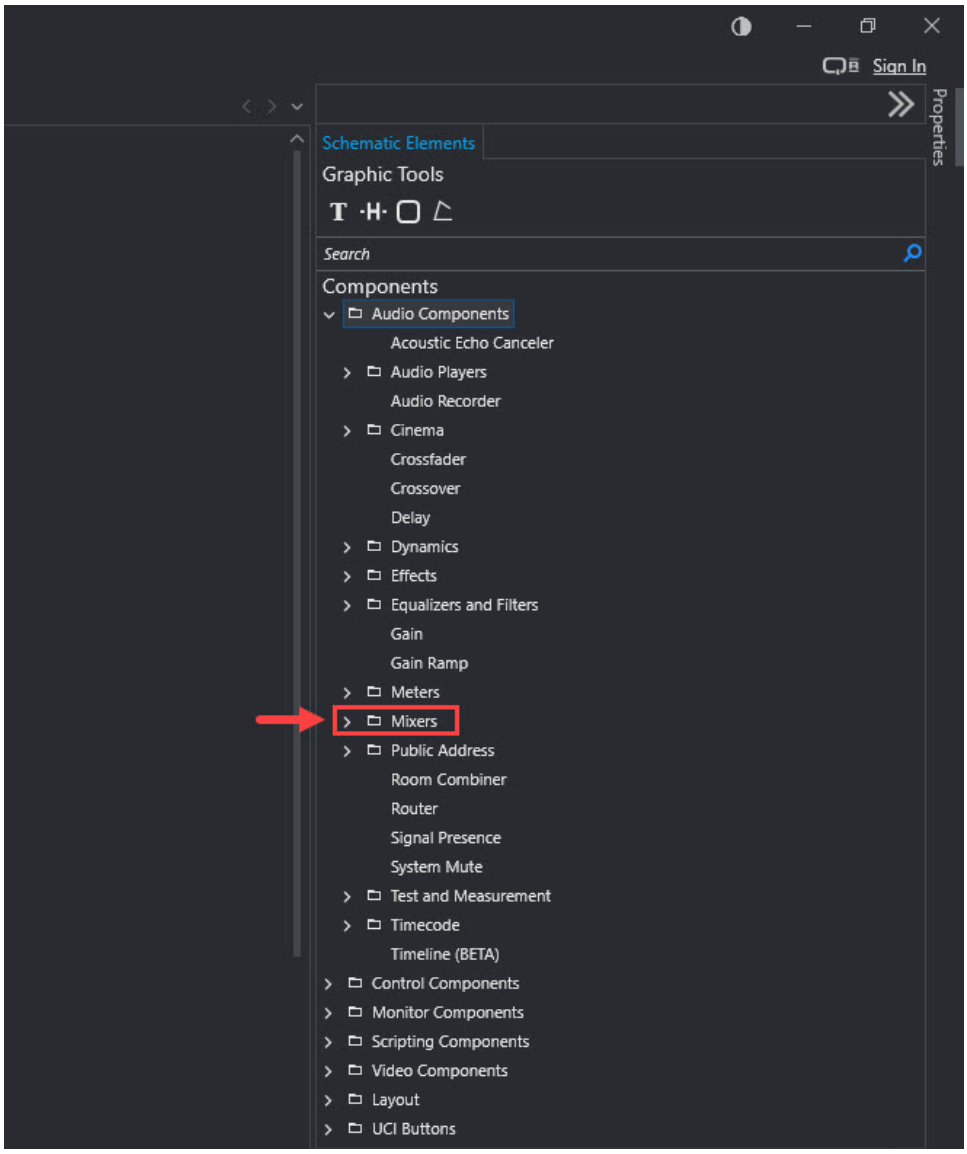
1. Select the **Schematic Elements** menu. The Schematic Elements menu opens, and the Components menu is displayed.



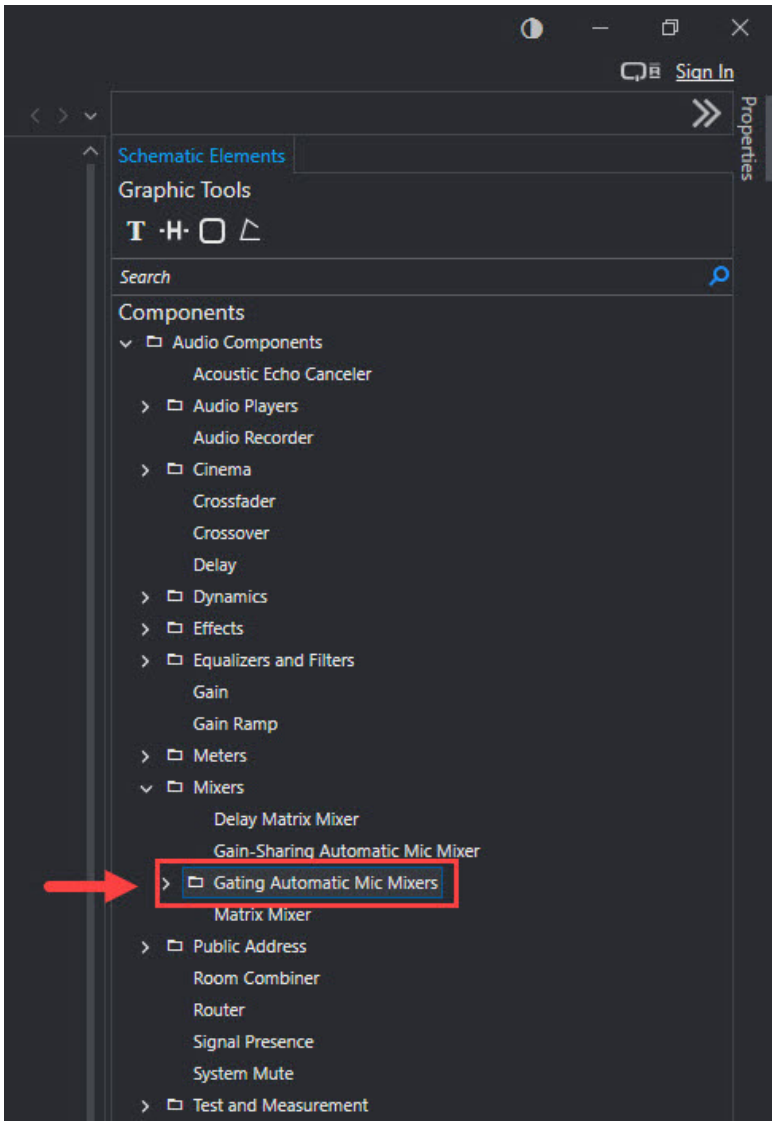
2. Select **Audio Components** to show more components, then select **Mixers** to expand the Mixers menu.



Audio Components Menu



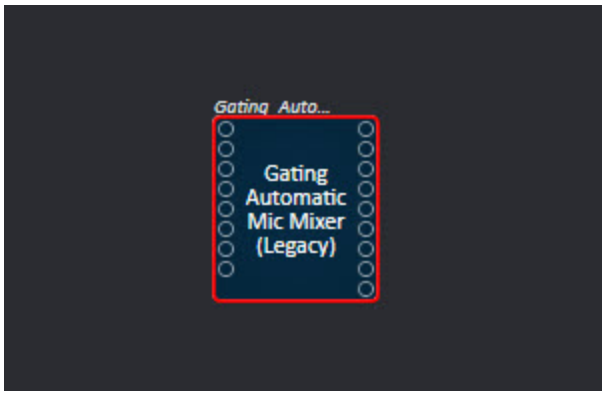
3. In the Mixers menu, select **Gating Automatic Mic Mixers**. The Gating Automatic Mic Mixers menu opens.



4. Click and hold the left mouse button on **Absolute Threshold (Legacy)**, then drag **Absolute Threshold (Legacy)** into the project. Release the left mouse button to insert the **Gating Automatic Mic Mixer (Legacy)** block into the project.



Gating Mixer Block

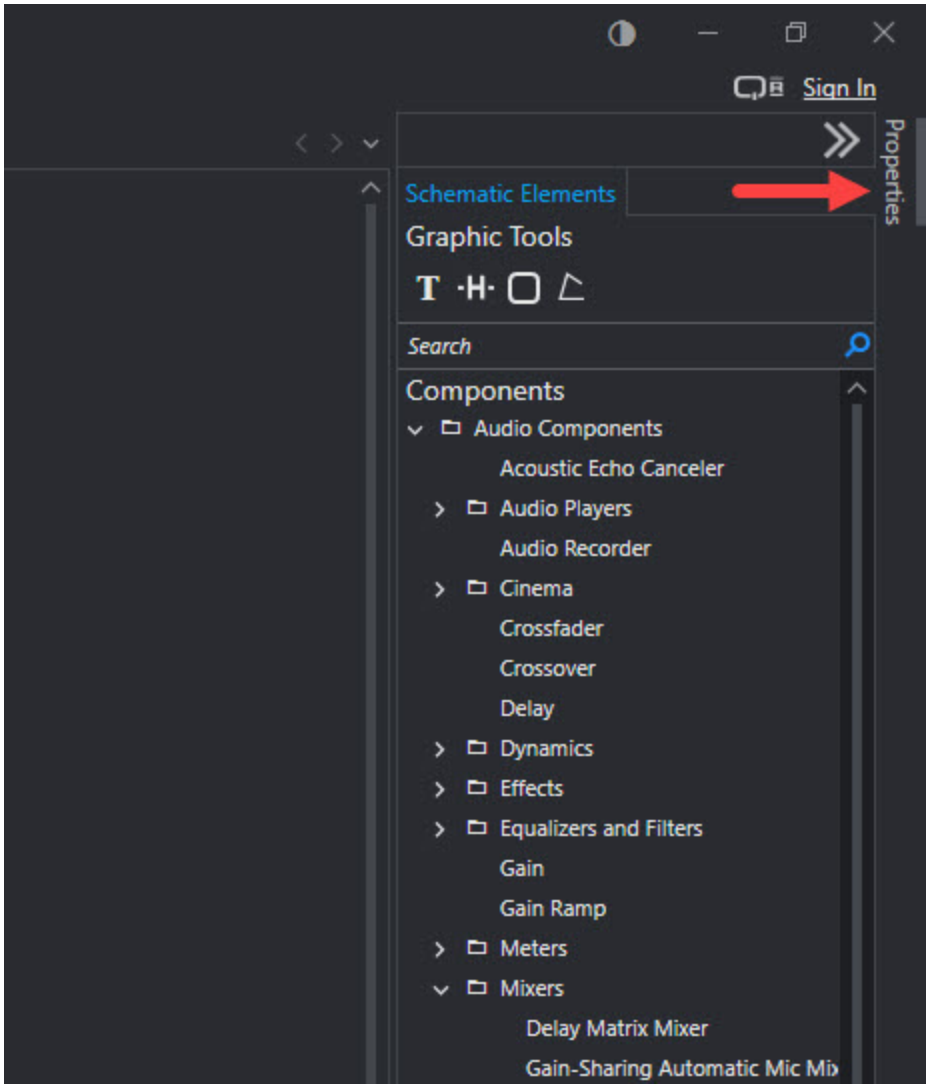


Gating Mixer Properties

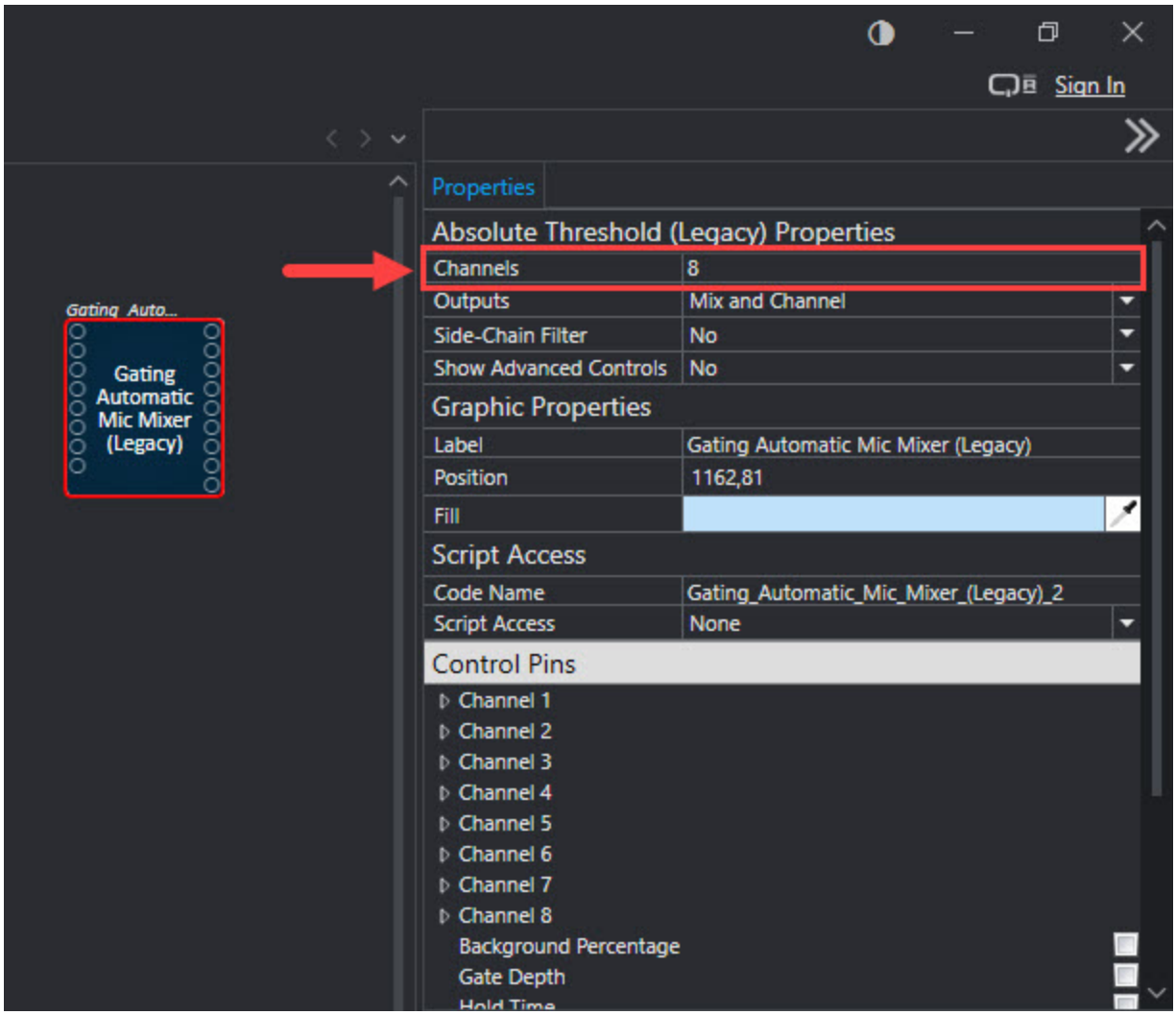
The properties of the gating mixer block must be changed to communicate with Automate VX. To set the properties of the gating mixer block:

1. Select the **Gating Automatic Mic Mixer (Legacy)** block, then select **Properties**.

> **NOTE**: The **Gating Automatic Mic Mixer (Legacy)** block is the **Absolute Threshold (Legacy)** component from the previous section. For more information on adding a **Gating Automatic Mic Mixer (Legacy)** to the project, refer to Gating Mixer on page 245.



2. In the Properties menu, select the **Channels** text field. Input the same number of channels used in the AutoSwitching configuration. For more information about channels in Automate VX, refer to Configuring Adjudicators on page 141.



3. In the Properties menu, take note of the **Code Name** text field. The text displayed here is required to be input into Room Designer for Automate VX to connect to the DSP. For more information on Microphone Devices, refer to Microphone Device Configuration on page 115.

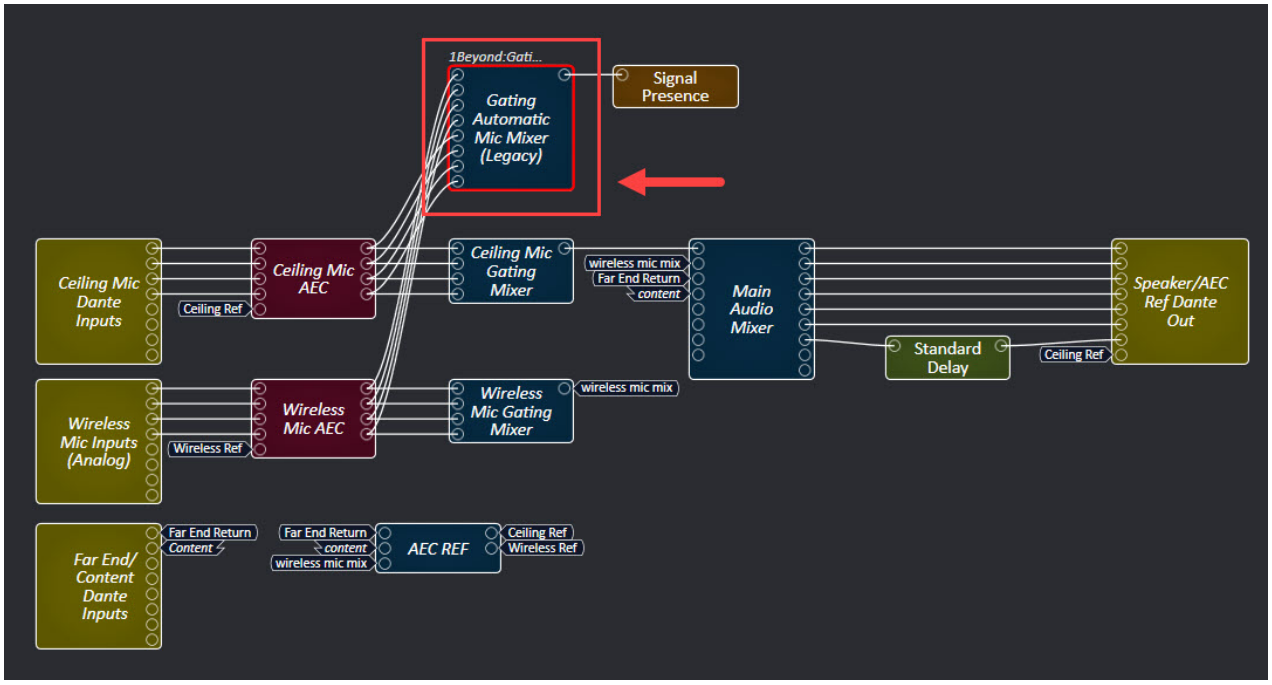
Named Controls

The channels of the gating mixer require a specific naming convention to communicate with Automate VX. To set the named controls for the channels of the gating mixer:

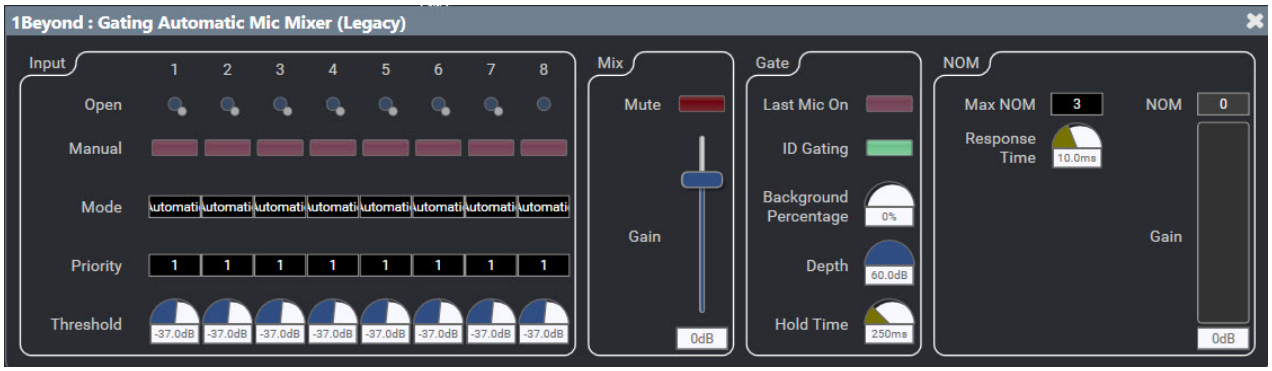
1. Double-click the left mouse button on the **Gating Automatic Mic Mixer (Legacy)** block. The mixer block settings window is displayed.

NOTE: The **Gating Automatic Mic Mixer (Legacy)** block requires the code name **1beyond:GatingAutomaticMicMixer(Legacy)**. For more information on gating mixer properties, refer to Gating Mixer Properties on page 250

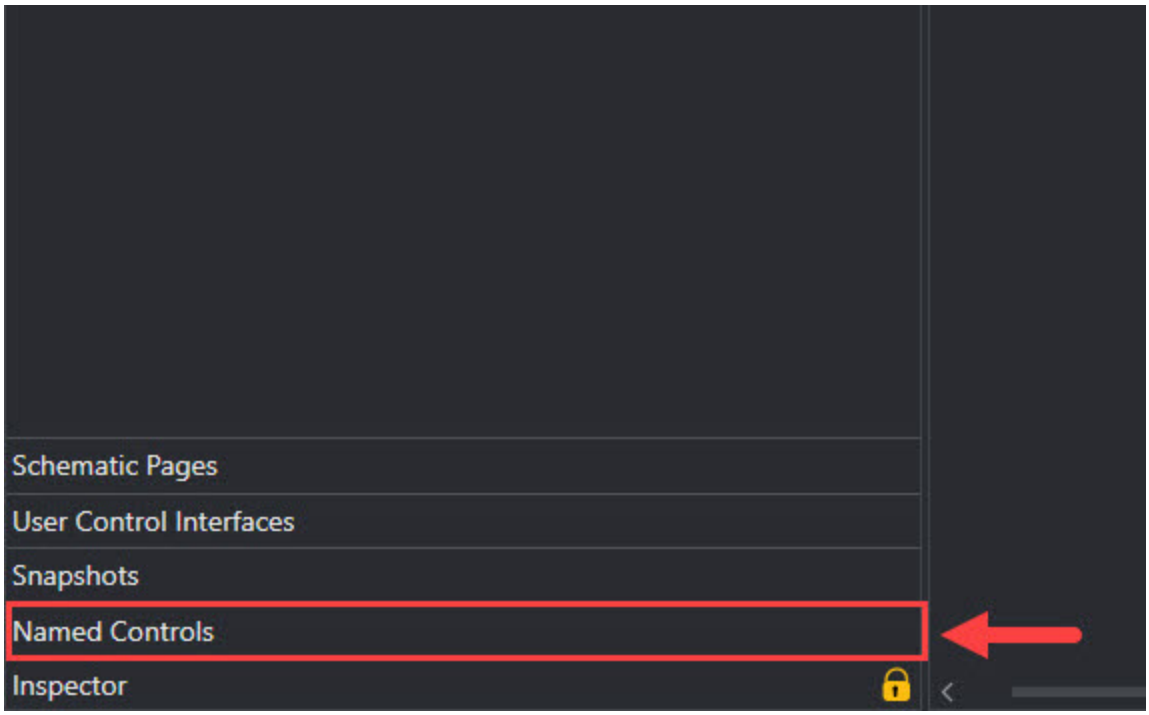
Mixer Block Selection



Mixer Block Settings Window

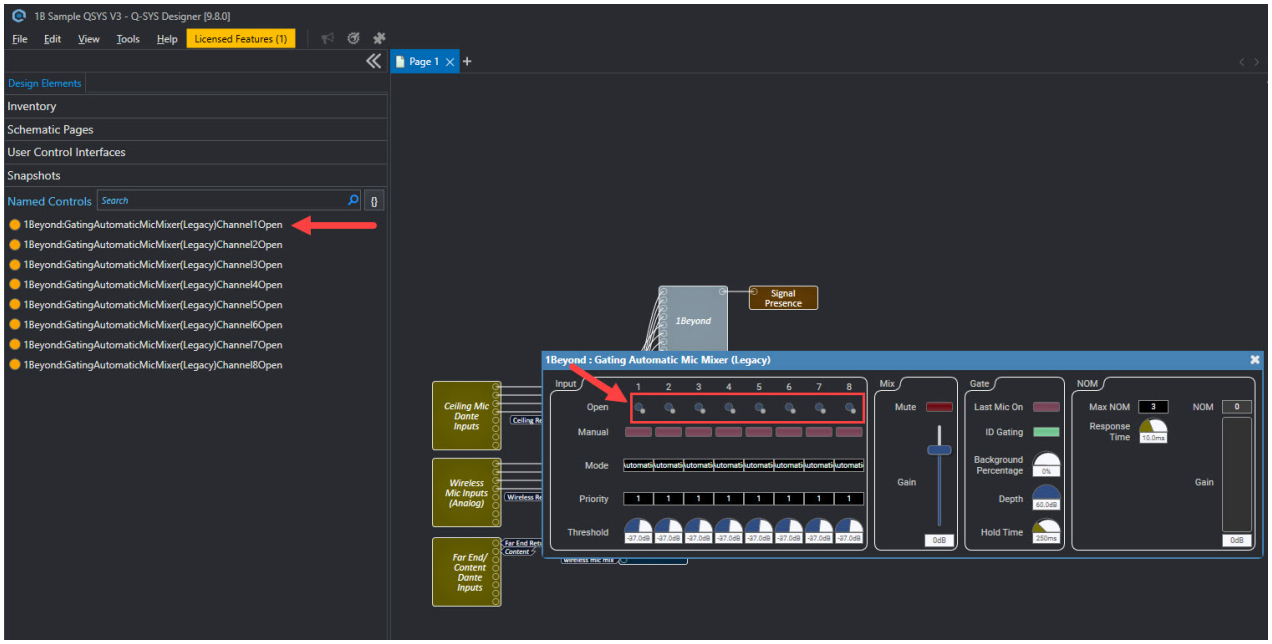


2. Select **Named Controls** on the bottom left side of the software screen. This expands the Named Controls menu.



3. In the mixer blocks settings window, click and hold the left mouse button on an open gate and drag the gate into the named controls. Do this step for each open gate. Each channel within the named controls should have the name **1beyond:GatingAutomaticMicMixer(Legacy)channel#open**.

Named Controls Menu

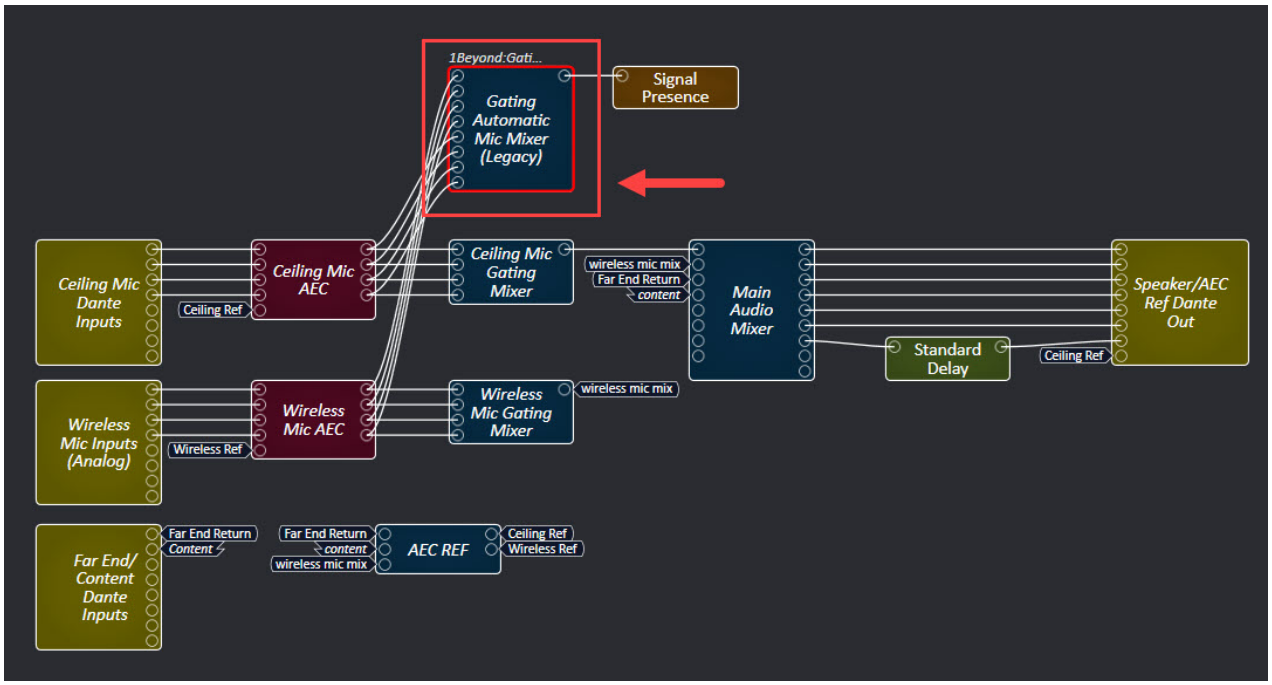


Settings

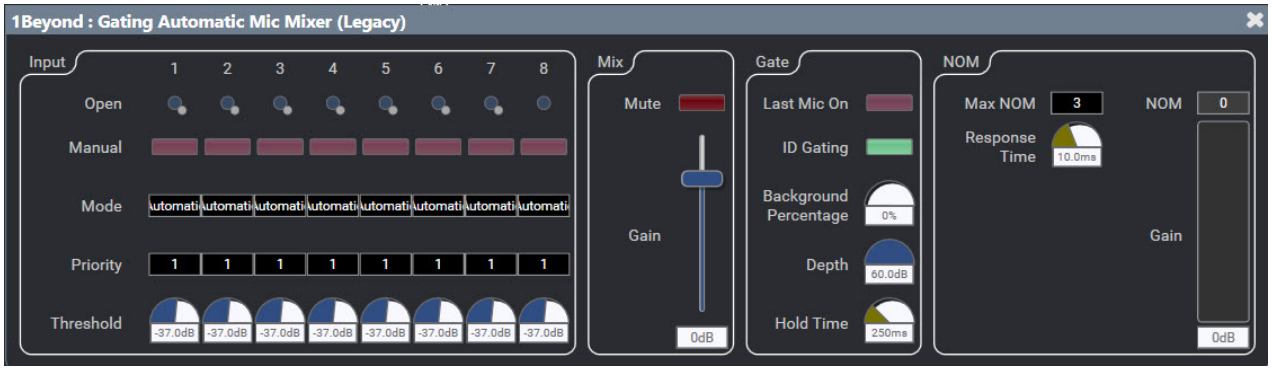
Certain settings of the gating mixer block provide a better AutoSwitching experience with Automate VX. Complete the following procedure to configure the settings of the gating mixer block:

1. Double-click the left mouse button on the **Gating Automatic Mic Mixer (Legacy)** block. The mixer block settings window is displayed.

Mixer Block Selection

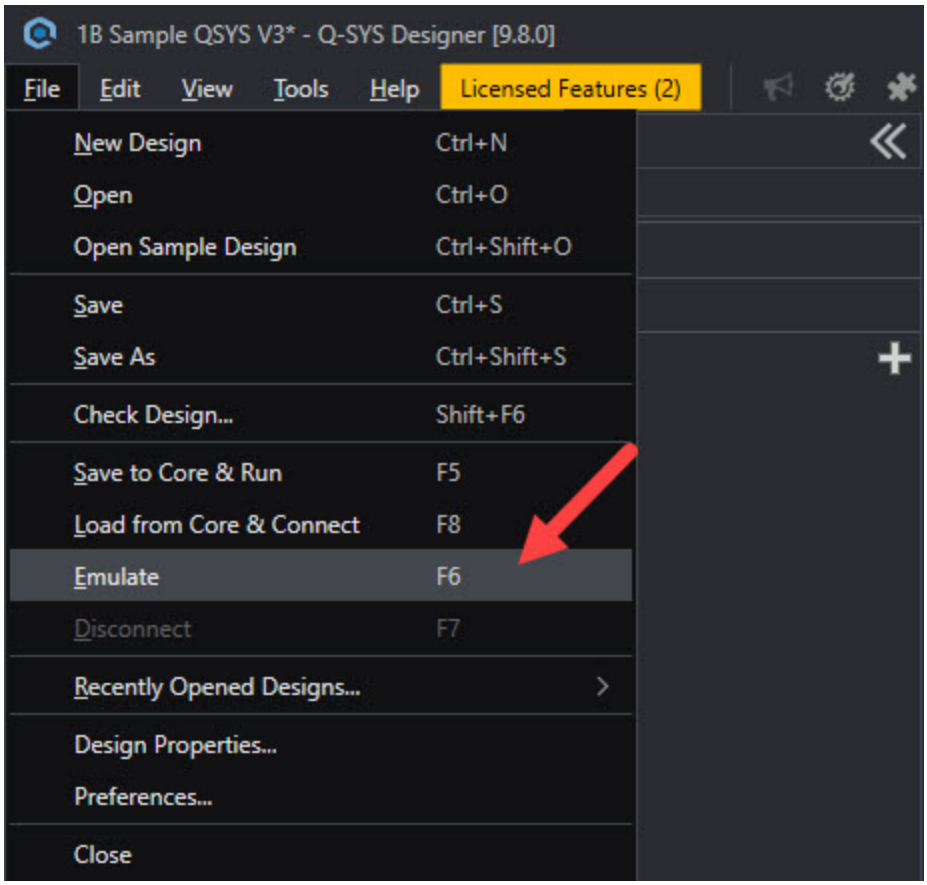


Mixer Block Settings Window

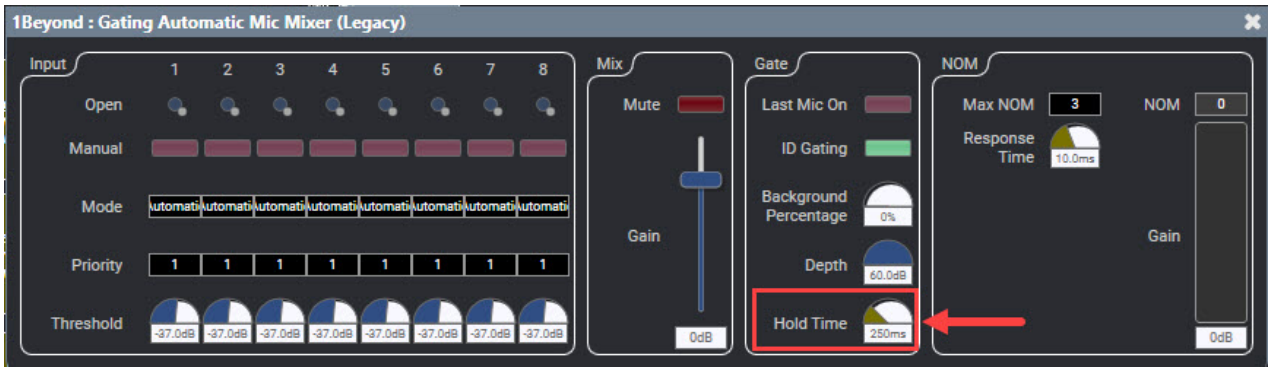


2. Select **File** in the top left corner of the software screen. Then, select **Emulate**.

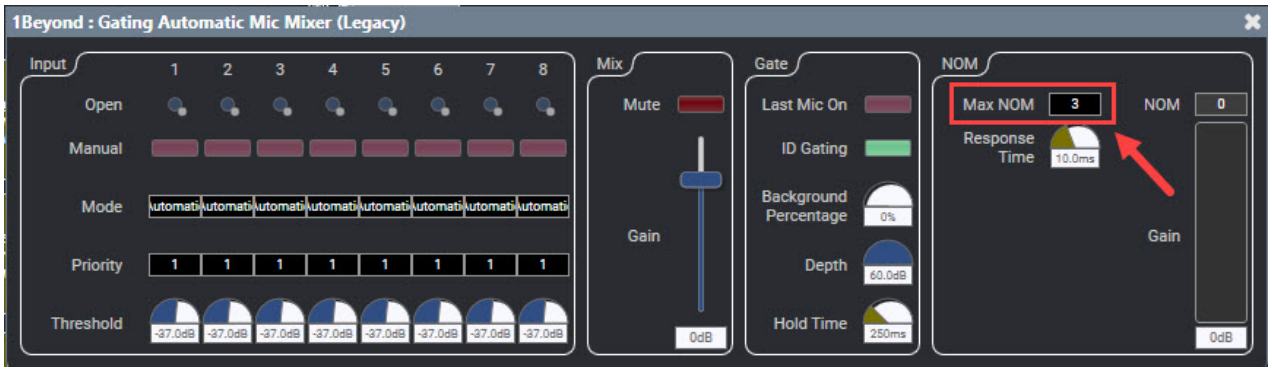
> **NOTE**: Alternately, press the **F6** button on the keyboard to activate **Emulate**.



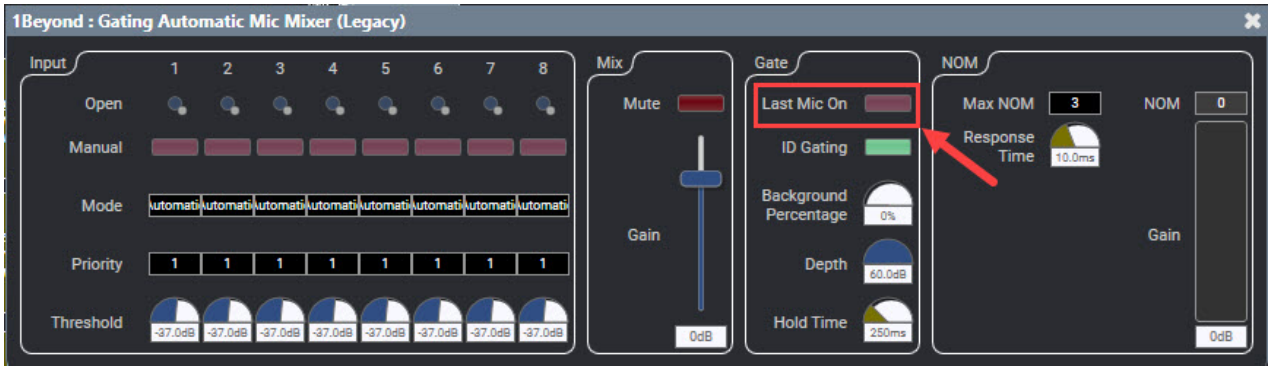
3. In the mixer block settings window, select the **Hold time** dial. Then, type 250 on the keyboard to set the **Hold Time** to **250 ms** for all channels.



4. In the mixer block settings window, use the **Max NOM** text field to set the NOM (Number of Open Mics) to 2 or 3 depending on the number of channels. For more information about channels in Automate VX, refer to Configuring Adjudicators on page 141.

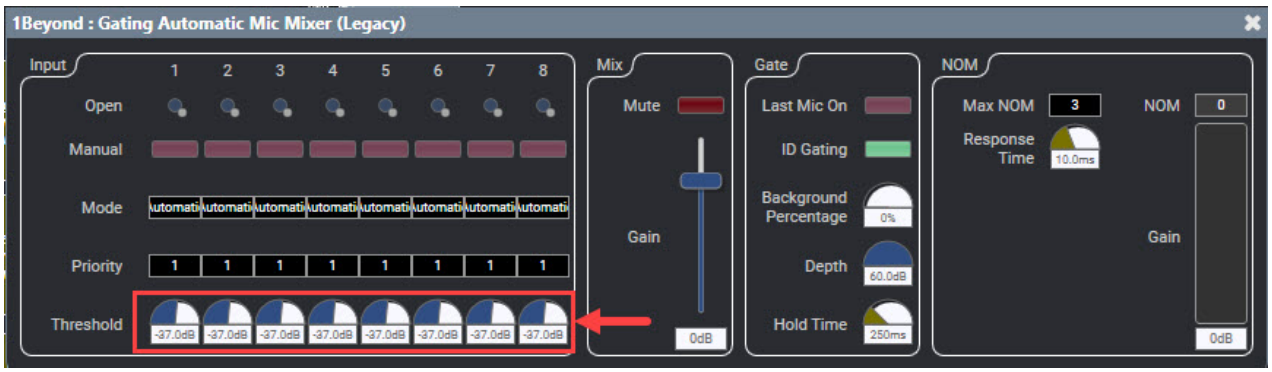


5. In the mixer block settings window, ensure that the **Last Mic On** setting is set to off. The status of the **Last Mic On** setting is determined by the red button, the button glows red when it is on. Select the button next to **Last Mic On** to switch the setting to on or off.



6. In the mixer block settings window, select a **Threshold** dial. Then, type -35 on the keyboard to set the **Threshold** level to **-35 dB**. Perform this step on each channel's **Threshold**.

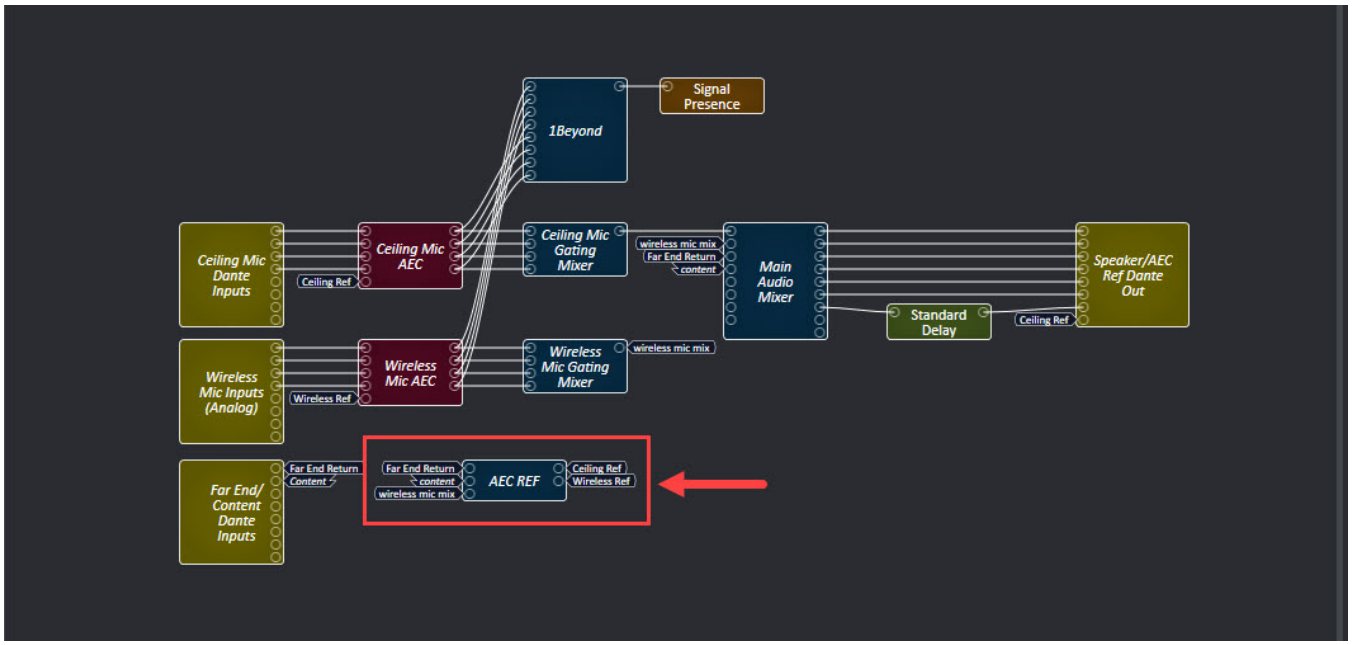
> **NOTE**: Adjust the **-35 dB** value if necessary for correct gating behavior.



AEC Reference

If a ceiling array microphone is in the room, an AEC (Acoustic Echo Cancellation) reference must be sent for it. If there are multiple ceiling array microphones, ensure that an AEC reference is sent for each ceiling array microphone. For more information about ceiling array microphones, refer to Microphone Device Configuration on page 115

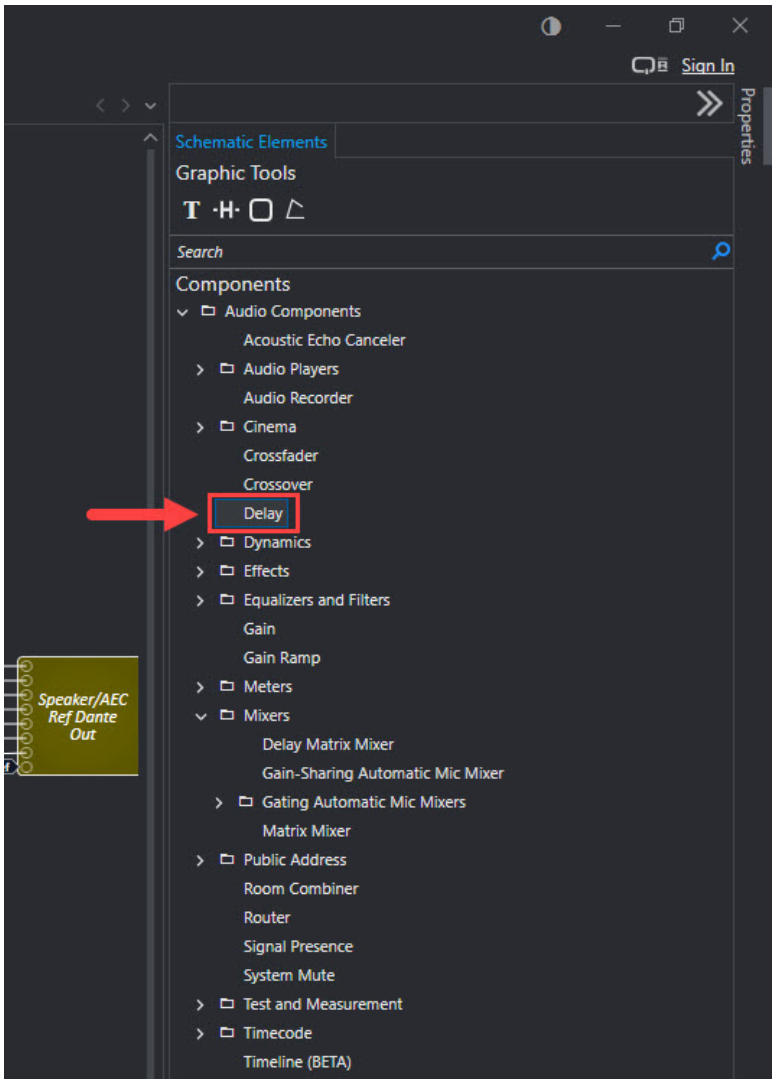
AEC Reference Example



Delay Block

A delay block is required in the project for the audio to properly sync with the video output from Automate VX. To add and configure a delay block into the project:

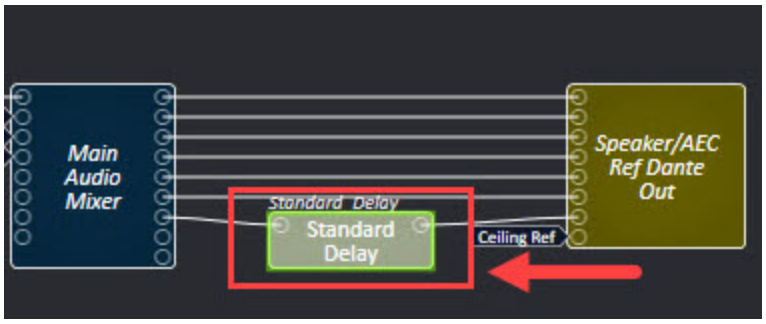
1. In the **Schematic Elements** menu, click and hold the left mouse button on **Delay**. Then, drag **Delay** into the project and release the left mouse button. This adds a **Standard Delay** block to the project.



Delay Block

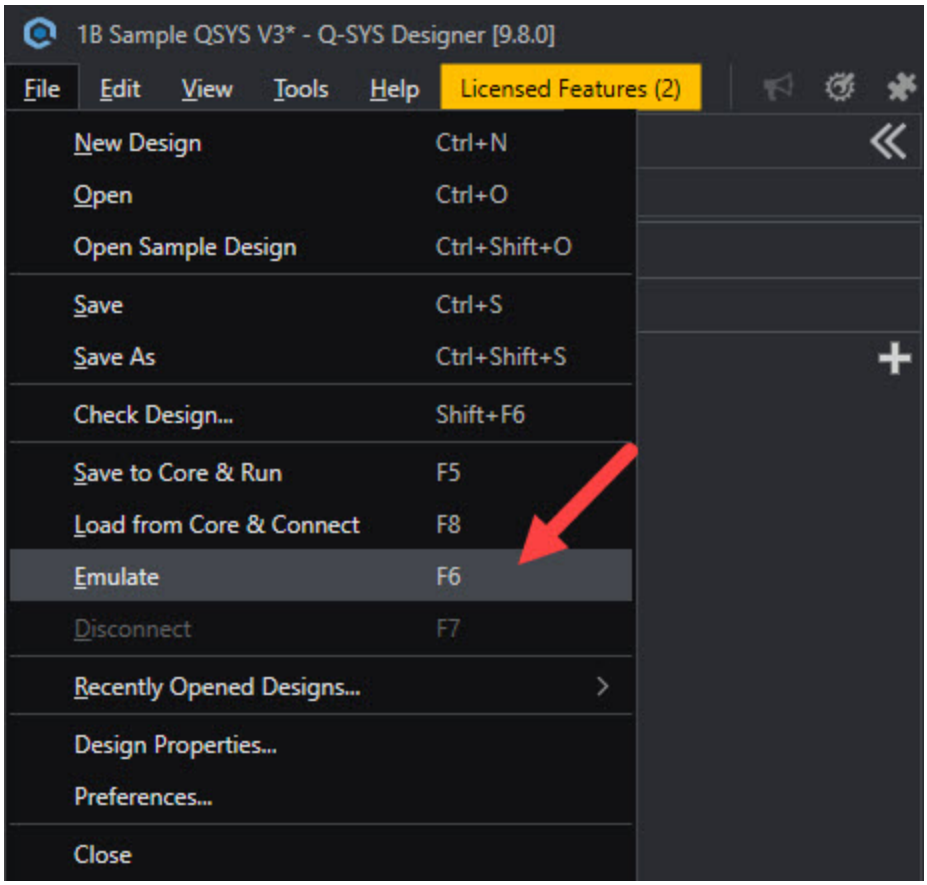


2. Select the **Standard Delay** block to open the mixer block settings window.



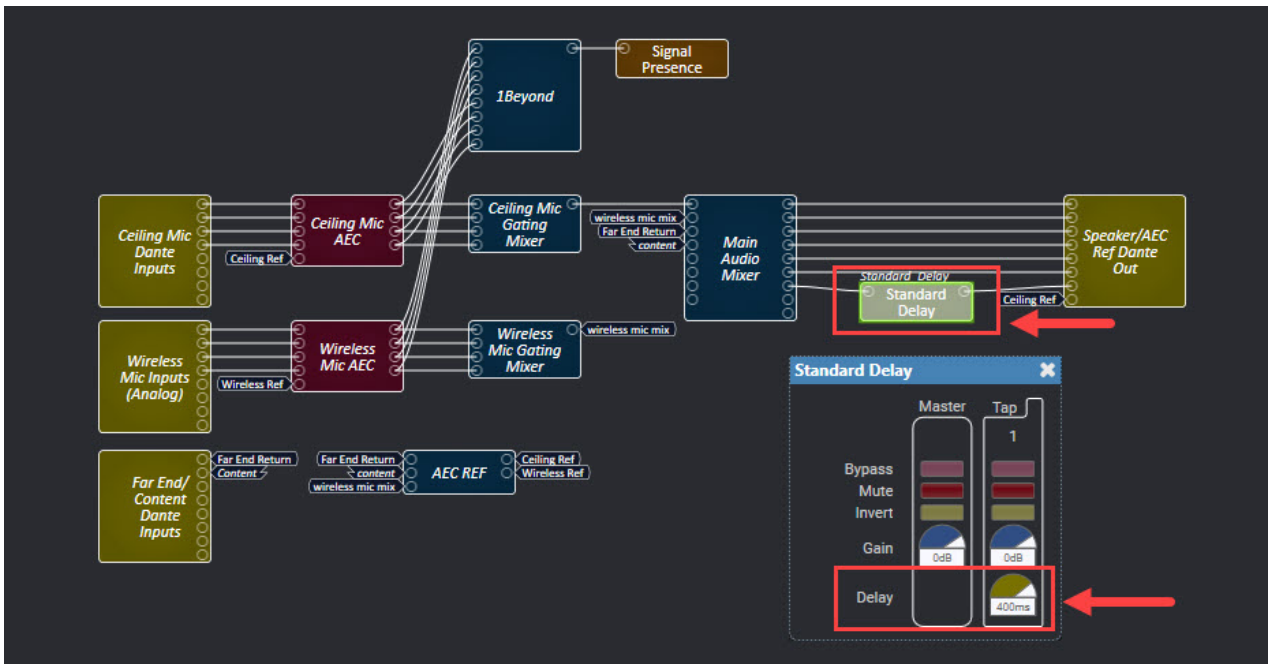
3. Select **File** in the top left corner of the software screen. Then, select **Emulate**.

> **NOTE**: Alternately, press the **F6** button on the keyboard to activate **Emulate**.



4. In the mixer block settings window, select the **Delay** dial. Then, type 400 on the keyboard to set the **Delay** to **400 ms**. This ensures that the audio syncs with the Automate VX video.

> **NOTE**: If NDI cameras are used with Automate VX, the delay may need to be increased to 450ms. This is due to the added latency over the network. Test the video output from Automate VX with this value and adjust the delay accordingly to match the audio.



Operation

The following procedures describe how to operate the basic functions of the Automate VX. For information on how to enter the web user interface, refer to Access the Web Configuration Interface on page 45.

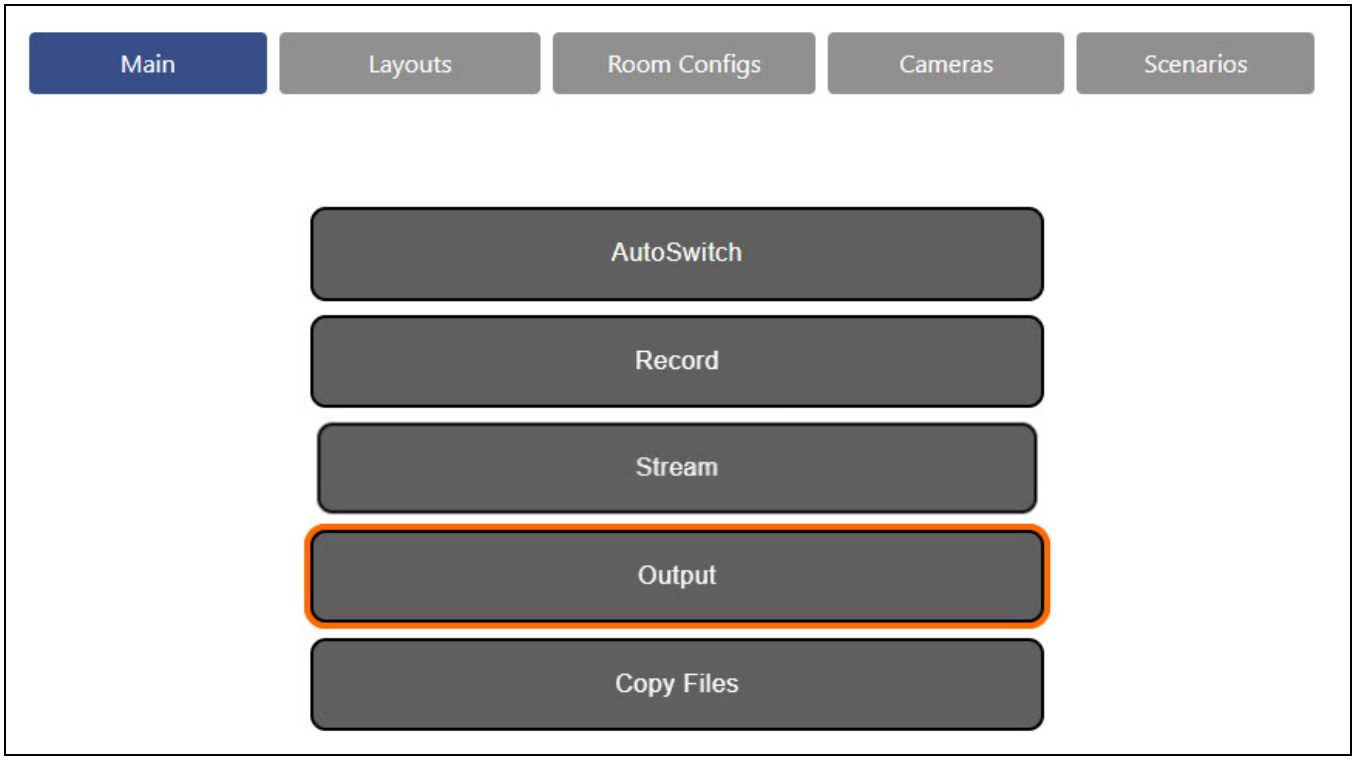
When the web user interface is opened, there are five main tabs that control the operation of the Automate VX system. The contents of these tabs are explained below.

> **NOTE**: Before using these controls, ensure that the Automate VX is configured to the desired specifications. For more information on how to configure the Automate VX, refer to System Configuration on page 154 and Room Designer on page 44.

Main Tab

Select the **Main** tab to view and perform common functions for the Automate VX.

Main Menu Selections



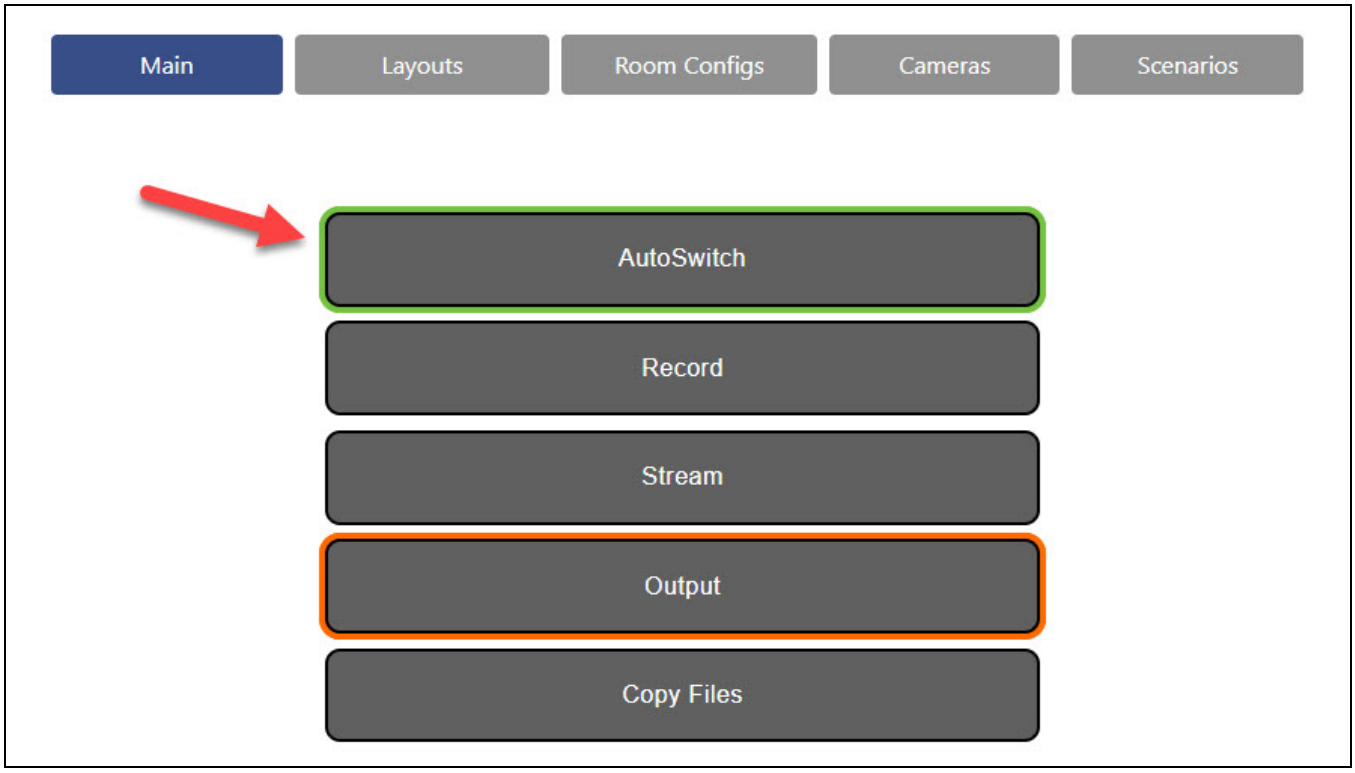
AutoSwitch

Select **AutoSwitch** to start and stop automated switching. AutoSwitching is the Automate VX using the Virtual Mic positions from Room Designer in conjunction with the Microphone Device to switch camera shots automatically. The software only communicates with Microphone Devices when **AutoSwitch** is activated. For more information on setting up a room layout in Room Designer to ensure the best AutoSwitching performance, refer to Room Designer on page 44.

A green outline is shown around the button when AutoSwitching is turned on, and will initially go to the Default Shot of the configuration. With AutoSwitching on, the system output will switch automatically based on the active speaking participant. Select **AutoSwitch** again to stop automated switching.

> **NOTE:** Automate VX may display a connection error when **AutoSwitch** is started and a microphone or camera cannot connect to the system. The error message will display the IP Address of any Microphone Devices or Camera Devices that it is unable to connect to. Additionally, the cameras connected to the system will flash red on their LED lightbar.

AutoSwitch On



Record

Select **Record** to start and stop a recording. A red outline is shown around the button when recording is turned on. Select **Record** again to stop recording.

> **NOTE**: A display or the included EDID emulator must be connected to the system to enable recording.

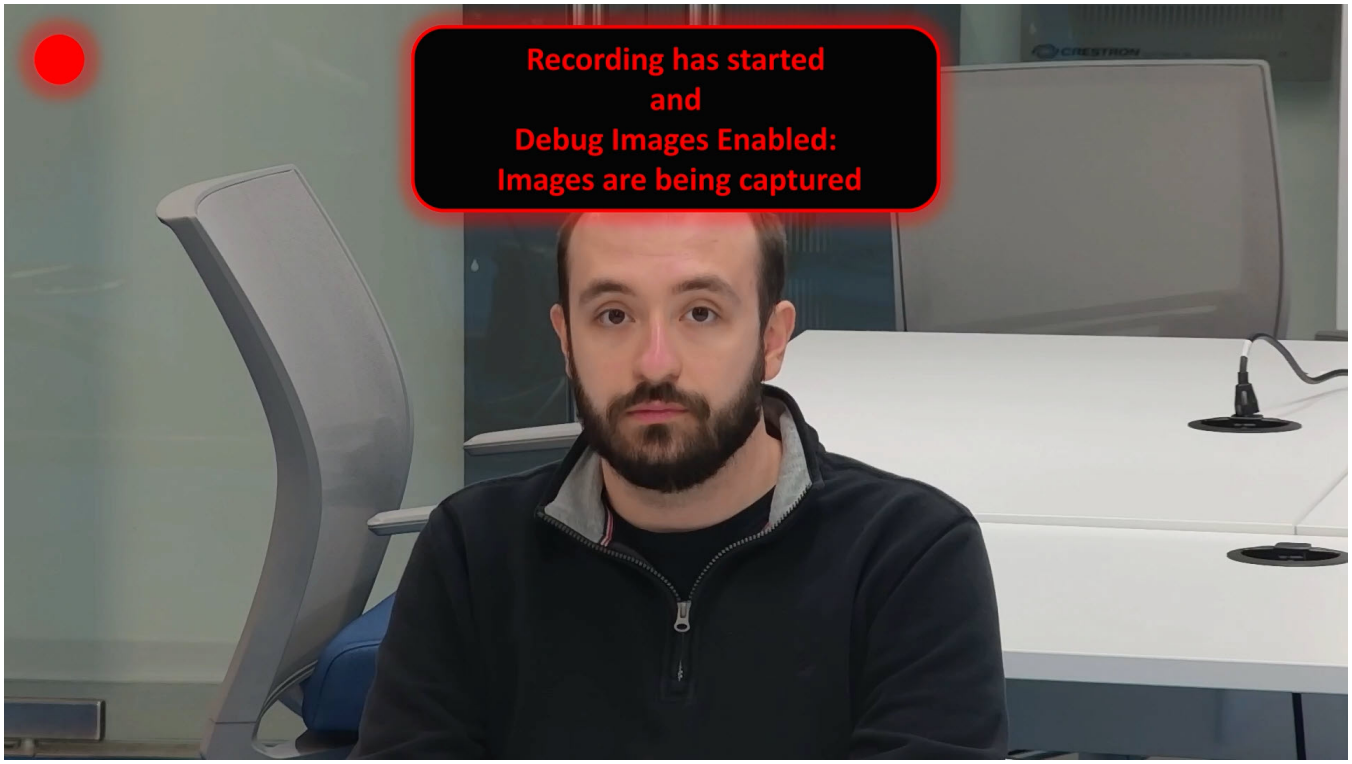
When recording is activated, Automate VX displays a message stating that recording has started. This message remains visible for 30 seconds before disappearing.

Recording Has Started



Recording can be activated with Debug Images enabled as well. For more information on Debug Images, refer to Debug Settings on page 180.

Recording With Debug Enabled



Program recordings and ISO recordings are saved to local storage at **D:\Recordings\VX**.

Output

Select **Output** to start the camera feed of the Automate VX to output in Wirecast. For more information, refer to Wirecast Configuration.

Copy Files

Select **Copy Files** to copy any recordings to the destination specified in the copy file settings.

Stream

Select **Stream** to start or stop a stream from Wirecast to an external streaming source, such as supported social media platforms. Streaming must be initially configured in Wirecast before this option can be used. For more information, refer to the Wirecast documentation.

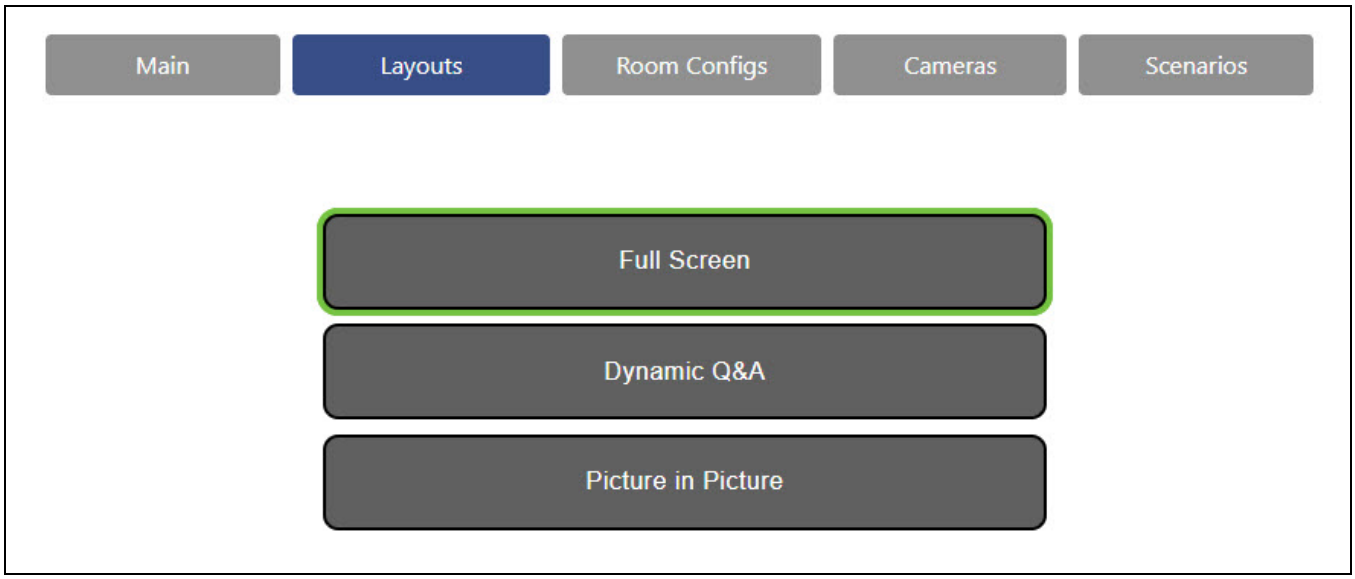
Home Page

Select the **Home** tab to view and select Layouts, Room Configurations, Camera control, and Scenarios.

Layouts Menu

Select the **Layouts** tab to view and select preset layouts for the Automate VX.

Layouts Menu Selections

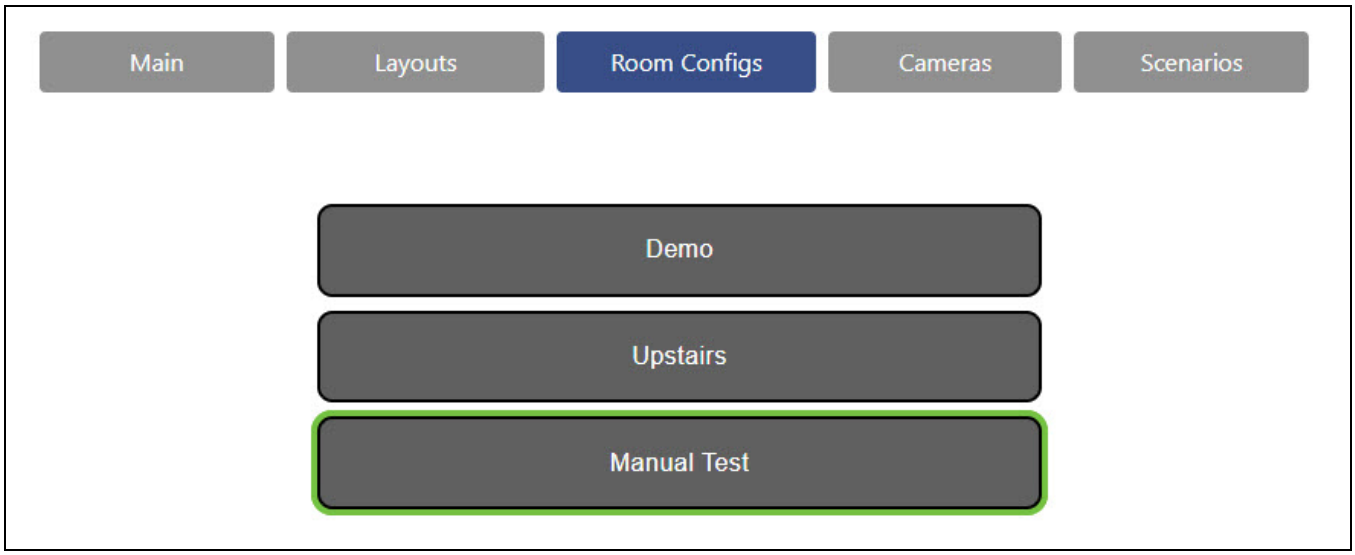


To change layouts during AutoSwitch mode, select the button that corresponds with the desired layout. The layout changes immediately, and the currently active layout is highlighted in green. The layouts are only used when AutoSwitch mode is enabled. For more information about configuring layouts, refer to Layout Settings on page 159.

Room Configs Menu

Select the **Room Configs** tab to view and select preset room configurations for the Automate VX.

Room Configs Menu Selections

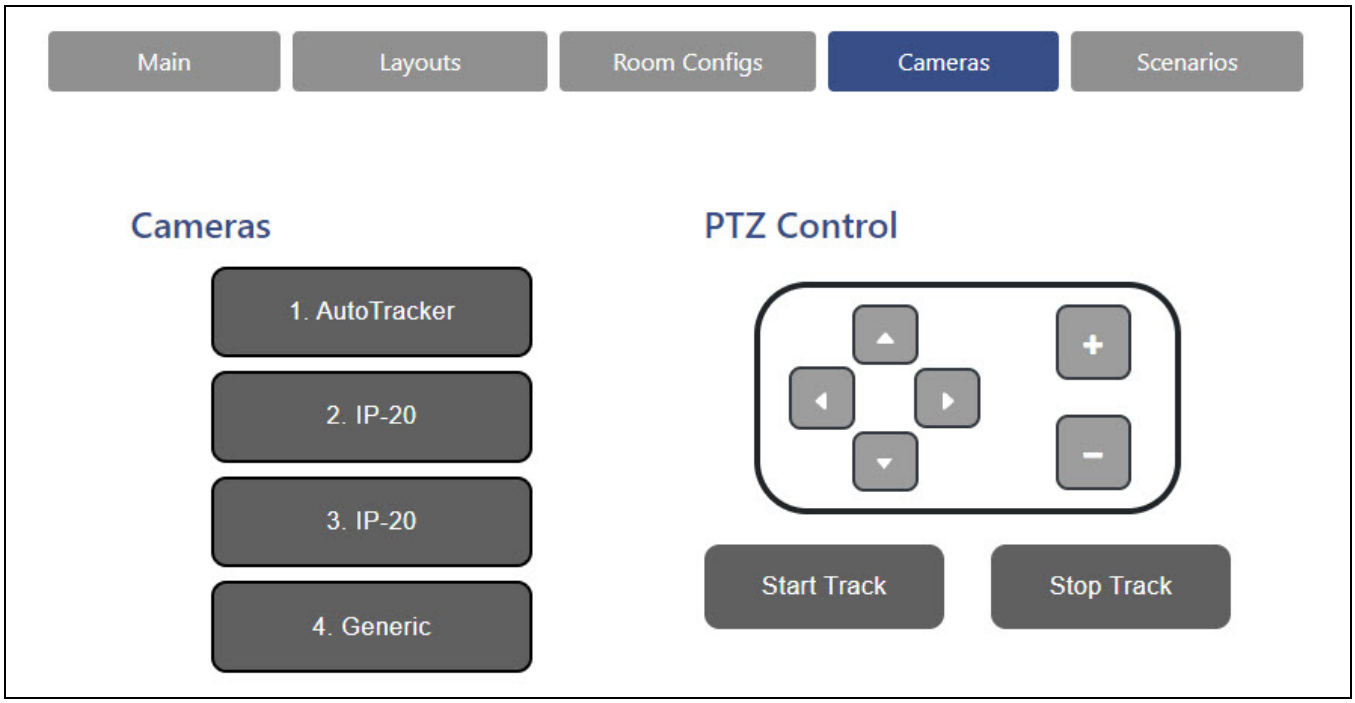


To change room configurations, select the button that corresponds with the desired room configuration. The room configuration changes immediately. For more information about room configurations, refer to Room Configurations on page 167.

Cameras Menu

Select the **Cameras** tab to view and select individual cameras for manual control.

Cameras Menu Selections



To select a camera for manual control, select a button under **Cameras** that corresponds to the desired camera. The live shot will change to the selected camera immediately.

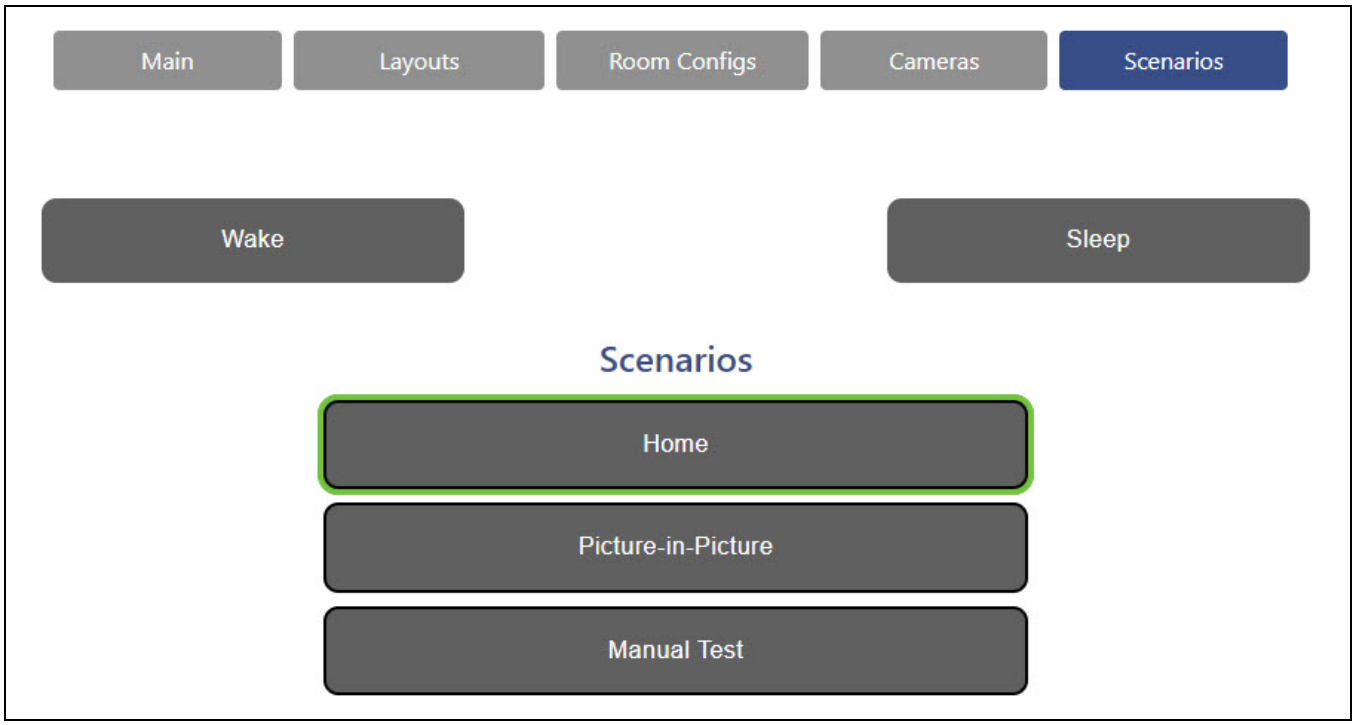
Use the PTZ Control settings to manually change the direction and zoom of the selected camera. These PTZ movements will not save, and once AutoSwitching is enabled, it will override any inputs selected here. To change how cameras interact when AutoSwitching, refer to Room Designer on page 44.

If using a camera that supports tracking, the **Start Track** and **Stop Track** buttons are used to start and stop tracking, respectively.

Scenarios Menu

Select the **Scenarios** tab to view and select available scenarios to choose from.

Scenarios Menu Selections



To change the current output to a scenario, select one of the created scenarios from the **Scenarios** list. This will make the current camera feed switch to the desired scenario. For more information about scenarios, refer to System Configuration on page 154.

Select the **Wake** button to turn the system on from sleep mode. Enabling **Wake** will enable **Output**. It will also call the **Wake Action** defined in the **General** tab in the settings menu.

Select the **Sleep** button to put the system into sleep mode. Enabling Sleep will stop the Output, AutoSwitch, Recording, Streaming, and AutoTracking in any intelligent cameras. It will also call the Sleep Action defined in the **General** tab.

> **NOTE:** To change what the Automate VX does for Sleep and Wake Actions, refer to Sleep and Wake Settings on page 161.

Resources

The following resources are provided for the Automate VX.

> **NOTE:** You may need to provide your Crestron.com web account credentials when prompted to access some of the following resources.

Crestron Support and Training

- Crestron True Blue Support
- Crestron Resource Library
- Crestron Online Help (OLH)
- Crestron Training Institute (CTI) Portal

Product Certificates

To search for product certificates, refer to support.crestron.com/app/certificates.

Related Documentation

- IV-SAM-VX2 Series Product Manual
- Automate VX Software Manual.
- IV-SAM-VX Series Product Manual
- IV-CAM-P12/IV-CAM-P20/IV-CAM-I12/IV-CAM-I20 Series Product Manual
- IV-CAMPTZ-20 Series Product Manual
- IV-CAMPTZ-12 Series Product Manual
- IV-CAMA3-20 Series Product Manual

Crestron Electronics, Inc.
15 Volvo Drive, Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7656
www.crestron.com

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change without notice.