



Designer

System Configuration Software

Shure Designer software user guide for Mac and PC. Learn how to control hardware, design rooms, adjust DSP, set passwords, encrypt devices, and troubleshoot.

Version: 1.0 (2024-B)

Table of Contents

Designer System Configuration Software	4	Online Devices	19
Note:	4	Edit an Online Room	20
Getting Started	4	Clear an Online Room	20
Overview	6	Device Identification	20
Features	7	Mute All Devices	21
Supported Devices	7	Set Up Services for Device Security	21
Downloading the Application	7	Copy a Design or an Online Room	21
Software Releases	7	Save and Apply Presets	22
Operating System	8	Firmware Updates	24
Hardware	8	Reset	24
System Requirements	8	Room Settings	27
Prerequisites	8	Device Passwords	27
Designer Preferences	9	Encryption	27
Set Up Services for Device Security	9	Call Status	28
Setting Up the Design	10	Set Up the 802.1X Protocol for a Device	28
Add or Remove Devices	10	Parametric Equalizer	29
Using the Coverage Map	10	Setting Filter Parameters	29
Add a Background Image	11	Copy and Paste Equalizer Channel Settings	31
Redraw the Image to Scale	12	Equalizer Applications	31
Position Devices Using the Grid and Guides	13	Schematic View	31
Move, Rotate, and Resize Objects	14	Adjusting Settings	32
Open Files	16	Customizing the Workspace	32
Use Designer's Auto Route	16	Metering and DSP Blocks	32
Manual Routing	17	DSP Settings	32
Deploy Design to Online Devices	18	Acoustic Echo Cancellation	33
Pushing Names to the Dante Network	19	Delay	34
		Compressor	34
		Noise Reduction	34
		Automatic Gain Control (AGC)	34
		Automix Properties	35

Automix Modes	36	Keyboard Shortcuts	37
Routing Channels to the Automix Channel	36		
Automixer Direct Out Tap Points	36	Troubleshooting	38
		Error Messages	41
Matrix Mixer	37	Additional Resources	41
Crosspoint Gain	37		
Routing Channels	37	Contact Customer Support	42
Mute and Fader Groups	37		

Designer

System Configuration Software

Note:

If you have Designer version 5.0 or earlier, refer to [the earlier Designer documentation](#).

Getting Started

At the end of this basic room setup, you should be able to:

- Place devices in a virtual design for your room
- Adjust device DSP settings, audio routes, and coverage areas
- Deploy the virtual design to online devices

1. Add Devices to Your Design

Open Designer. Check that you're connected to the correct network in **File > Designer preferences**

Create a new design and drag the virtual devices that you want to work with into the routing page. After you design the room, you can associate with online devices and deploy.

2. Route Your Design

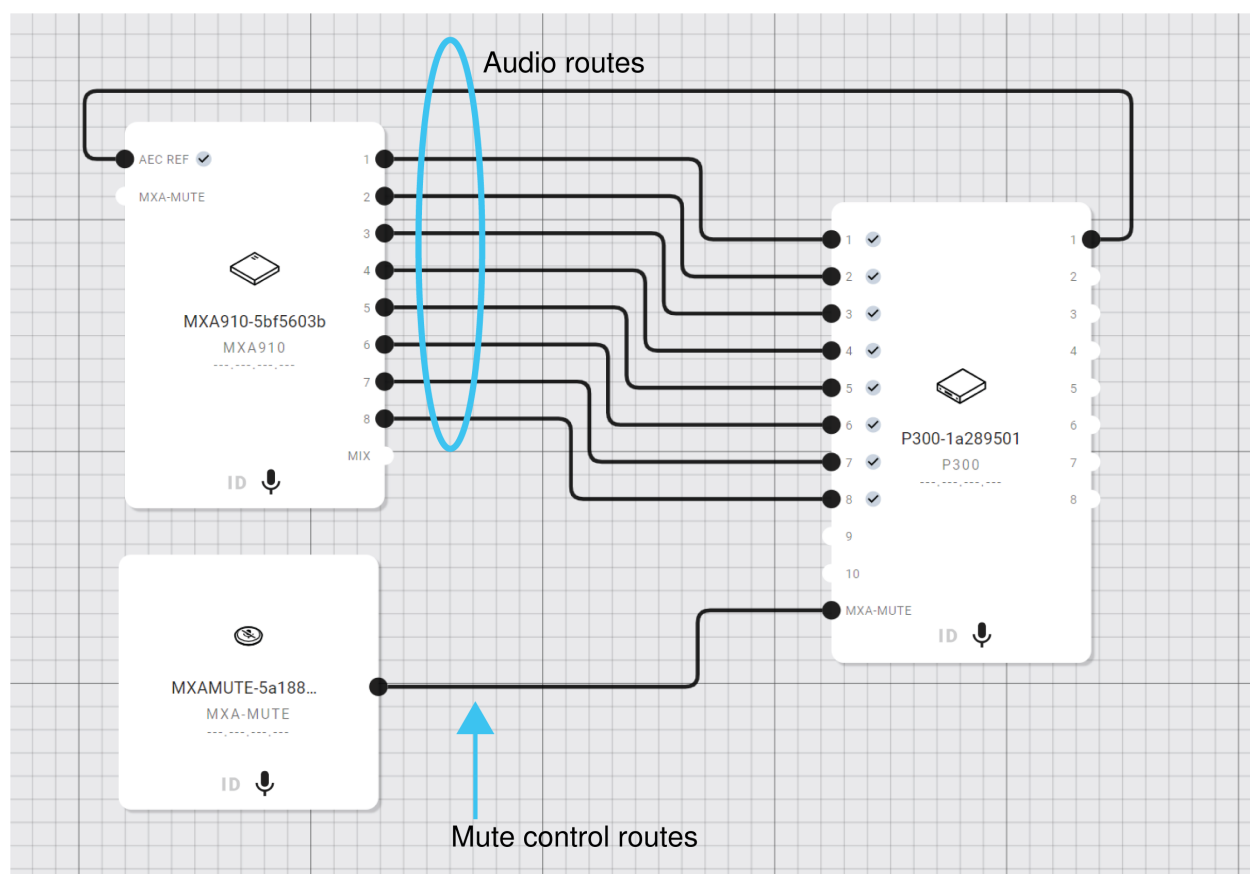
The easiest way to route audio and apply DSP is with Designer's auto route feature. Select **Auto route** to let Designer:

- Create audio routes and mute control routes between your Shure devices
- Turn on mute synchronization
- Adjust DSP and gain settings
- Enable LED control for connected devices

You must have 1 processor and at least 1 microphone in a room to use auto route. You can customize settings further, but auto route gives you a good starting point. [Learn more about auto route](#).

To create routes manually, click on the input or output channel of one device and then click the input or output of another device.

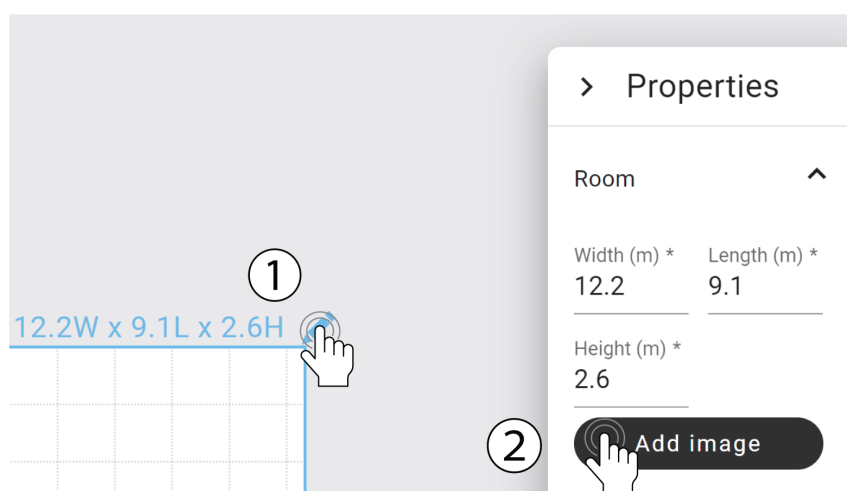
Important: The auto route process clears any manual routes you may have made in your design.

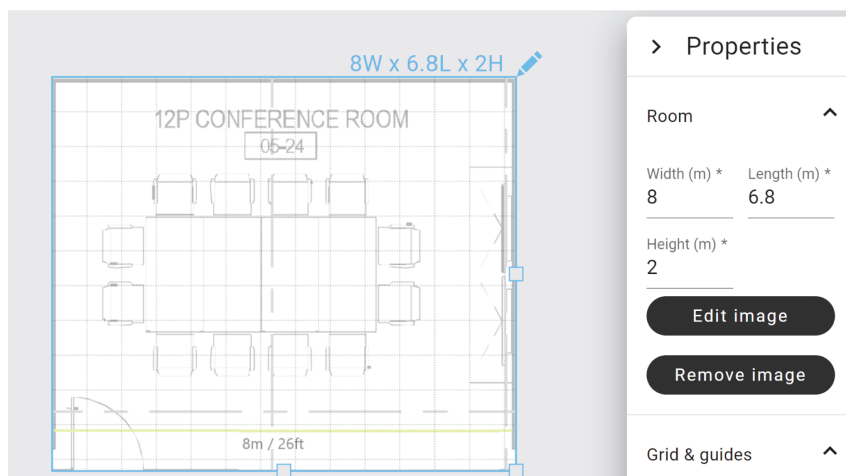


3. Set Up Coverage

Go to Coverage to adjust the microphone coverage areas in your room. In the coverage view, you can:

- Create a Designer room that matches your physical room's dimensions and specifications.
- Focus microphone coverage on participant areas.
- Add a floor plan or reference image.
 1. Select the room measurements for your grid.
 2. Go to properties to Add image and import your floor plan.
 3. Scale the image to a reference point on the drawing.





Note: See [additional information about the coverage map](#) or refer to your device's user guide at pubs.shure.com.

4. Deploy

When you are ready to send your design settings to online devices, select Deploy and connect. Use ID to identify the online devices you want to associate with the devices in your design. When you deploy, you can set passwords, change device names, and edit the room name and description. For more information, see [Deploy Design to Online Devices](#).

5. Make Final Adjustments

Fine-tune each device and channel in your room. Select individual devices to adjust their properties or double-click the device to access and change more advanced settings. You may need to:

- Delete unnecessary routes.
- Check levels and adjust gain.
- Verify that AEC reference signals are correctly routed and received in a test call.
- Fine-tune DSP blocks.
- Adjust your processor's matrix mixer routes.

Note: Changes to an online room may cause audio to drop out briefly.

Overview

Designer System Configuration Software enables integrators and system planners to design and implement accurate networked audio coverage for installations using select Shure devices. Designer allows online and offline design, routing, configuration, and push to online devices, all in one tool. You can accurately model meeting and presentation spaces by importing a floor plan, scaling your room, positioning devices around participant areas, and arranging the coverage areas over the room diagram for precise coverage.

Designer allows you to create and edit coverage parameters before your devices are installed:

- Identify the microphone positioning, room size, and ceiling height
- Add channels
- Create accurate coverage areas
- Adjust equalizer settings
- Manage signal routing

After completing your design offline, you can push the settings to online devices and fine-tune on-site, all from within Designer. If you prefer, you can export device presets for use with device web applications.

Features

- Accurately scale floor plans and reference photos for precise device setup
- Add multiple devices to create larger and more complex installations
- Perform the signal routing for multiple Shure products in one software tool
- Create and reuse templates across multiple locations
- Push settings to a group of devices
- Export device presets for an individual location
- Organize installations for multiple rooms, buildings, and clients
- Save time by importing a floor plan and using virtual devices to design your system
- Share design files with other Designer users so that multiple people can work on a project

Supported Devices

The following Shure devices are supported in Designer. Whenever possible, upgrade to the latest supported firmware version to take advantage of new features and system improvements.

- MXA901 Conferencing Ceiling Array Microphone ([User Guide](#))
- MXA902 Integrated Conferencing Ceiling Array ([User Guide](#))
- MXA910 Ceiling Array Microphone ([User Guide](#))
- MXA920 Ceiling Array Microphone ([User Guide](#))
- MXA710 Linear Array Microphone ([User Guide](#))
- MXA310 Table Array Microphone ([User Guide](#))
- P300 IntelliMix[®] Audio Conferencing Processor ([User Guide](#))
- ANIUSB-MATRIX Audio Network Interface ([User Guide](#))
- Microflex Networked Ceiling Loudspeaker: MXN5-C ([User Guide](#))
- MXA Network Mute Button ([User Guide](#))

Important:

- Refer to the release notes and [the software and firmware archives](#) for a list of compatible firmware versions
- To open exported .dprj project files from earlier versions of Designer, select File > Open and choose a file location for Designer to import the project files as room design files (.rdf). Your original .dprj files will be preserved. See more about [opening different Designer file types](#).

Downloading the Application

Download the application and learn more at www.shure.com/designer.

Software Releases

New versions of this software are periodically released to include new features and performance improvements. This documentation supports the latest version of the software. For more information on individual releases, see the [release notes](#) on www.shure.com.

Operating System

The following operating systems are supported on a physical or virtual machine:

- Windows 10 or 11 (Professional or Enterprise), 64-bit edition
- macOS version 12 or later

Hardware

System memory	8 GB of RAM available, 16 GB recommended
Hard-disk space	5 GB available. Solid-state drive recommended.
Processor	i5 class processor, quad-core, 2.0 GHz*
Ethernet network connection	Required to work with the application. Not required for installation.

*Only Intel and AMD x64 architecture (64-bit) supported.

System Requirements

Prerequisites

Note: You will need admin rights to install Designer.

Firewall

Local port (UDP) 8427

IP Ports and Protocols

Shure Control

Port	TCP/UDP	Protocol	Description
21	TCP	FTP	Required for firmware updates (otherwise closed)
22	TCP	SSH	Secure Shell Interface
23	TCP	Telnet	Not supported
53	UDP	DNS	Domain Name System
67	UDP	DHCP	Dynamic Host Configuration Protocol
68	UDP	DHCP	Dynamic Host Configuration Protocol
80*	TCP	HTTP	Required to launch embedded web server
443	TCP	HTTPS	Not supported

Port	TCP/UDP	Protocol	Description
2202	TCP	ASCII	Required for 3rd party control strings
5353	UDP	mDNS [†]	Required for device discovery
5568	UDP	SDT (multi-cast) [†]	Required for inter-device communication
57383	UDP	SDT (unicast)	Required for inter-device communication
8023	TCP	Telnet	Debug console interface
8180	TCP	HTML	Required for web application (legacy firmware only)
8427	UDP	SLP (multi-cast) [†]	Required for inter-device communication
64000	TCP	Telnet	Required for Shure firmware update

*These ports must be open on the desktop or control system to access the device through a firewall.

[†]These protocols require multicast. Ensure multicast has been correctly configured for your network.

See [Audinate's website](#) for information about ports and protocols used by Dante audio.

For more on ports and protocols, see [Shure's product security page](#).

Designer Preferences

Select File > Designer preferences to:

- Choose the network interface to access devices
- Switch between light and dark themes
- Select your preferred language
- Switch units of measurement
- Turn online room editing on
- Adjust other app settings

Set Up Services for Device Security

You can turn on or turn off specific network protocols on your devices with Designer. Double-click an online device and choose Settings > Services from the drop-down menu. The configuration options are:

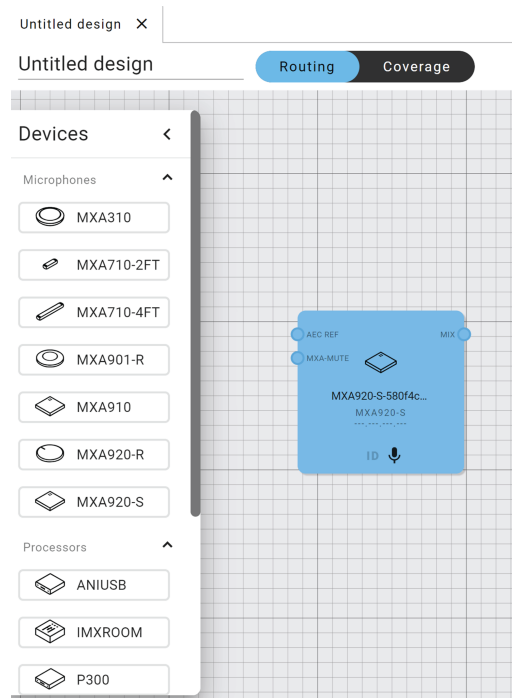
- HTTP - If you turn off HTTP, you will no longer be able to connect to this device via a web browser. Designer's device network protocols will be unaffected.
- mDNS - If you turn off mDNS, you will no longer be able to discover this device in the Shure Web Device Discovery application. Designer and Shure Update Utility can still discover this device normally.
- Command Strings - If you turn off command strings, third-party control systems cannot communicate with this device on port 2202.

Setting Up the Design

Add or Remove Devices

Add virtual devices by double-clicking or dragging them to the routing page from the devices menu.

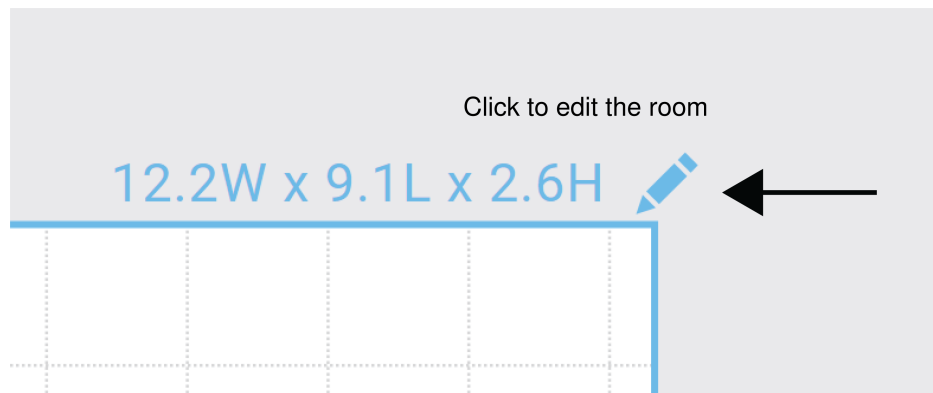
To remove a device from your design, click the device and then press the delete key on your keyboard, select **Edit > Delete** from the menu, or go to **Properties > Device control > Remove device**.



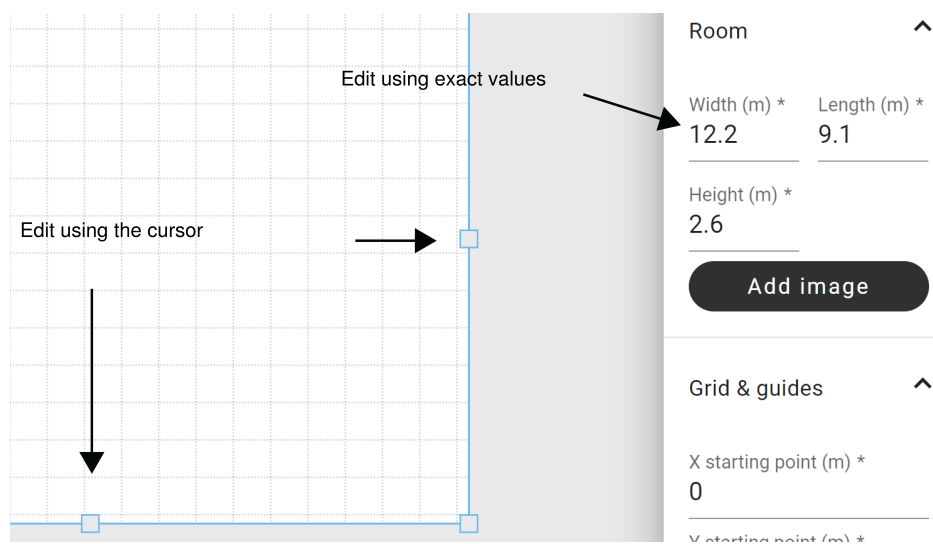
Using the Coverage Map

The coverage map is for MXA710, MXA901, MXA902, MXA910, MXA920, and MXN5-C. When you add an image of your room, you can use coverage to position microphone channels and visualize what areas your devices cover. Drag devices to the desired position or type the exact coordinates for them in the properties panel.

To create more accurate layouts, match your room's specifications in **Properties > Room**. To edit room dimensions, click the dimensions above the room grid.



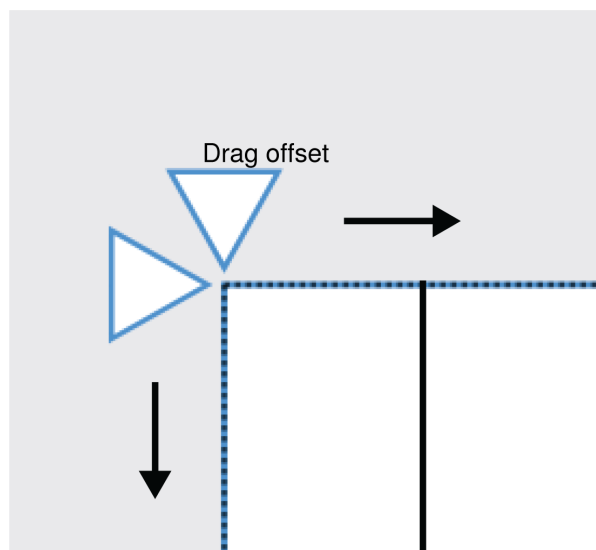
Set the length and width of your room in meters or feet, along with the ceiling height. To change the unit of measure, go to **File > Designer preferences > Unit preference**.



Grid Offset

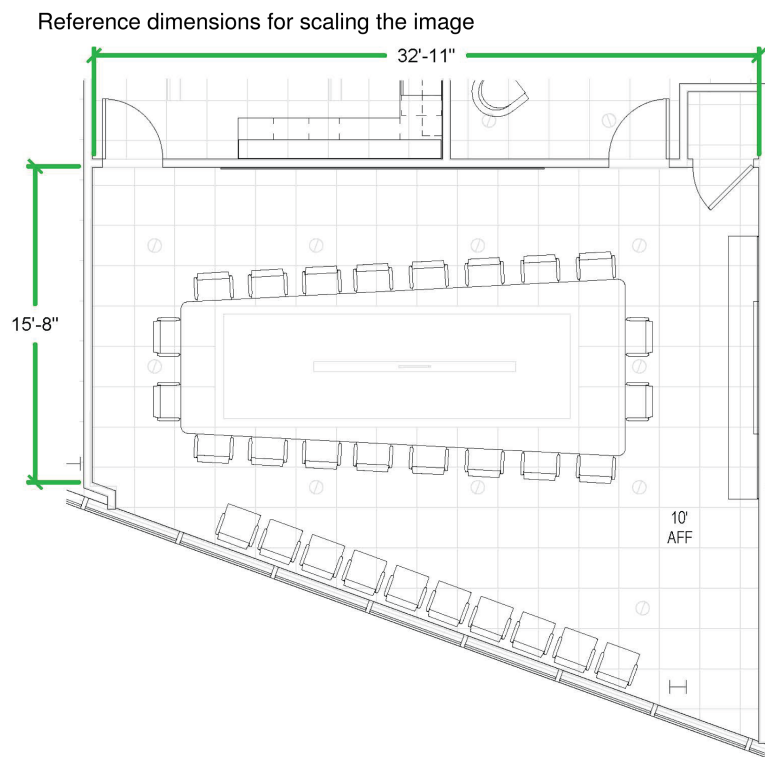
Align the grid with a reference point in your image, such as a ceiling tile or door frame, by adjusting the grid offset.

1. Click the dimensions above the room grid.
2. Grab the grid offset tool and move it to the reference line.



Add a Background Image

Add a background image to your room to help focus the design around the participant seating and presentation areas. Images can be scaled to represent real room dimensions for accurately positioning devices and audio coverage.



Background image

1. Open a room design file and select the Coverage view.
2. Edit the workspace by clicking the dimensions above the grid.
3. Select Add image and browse to the image on your computer.
4. Select Open to add it to your room.

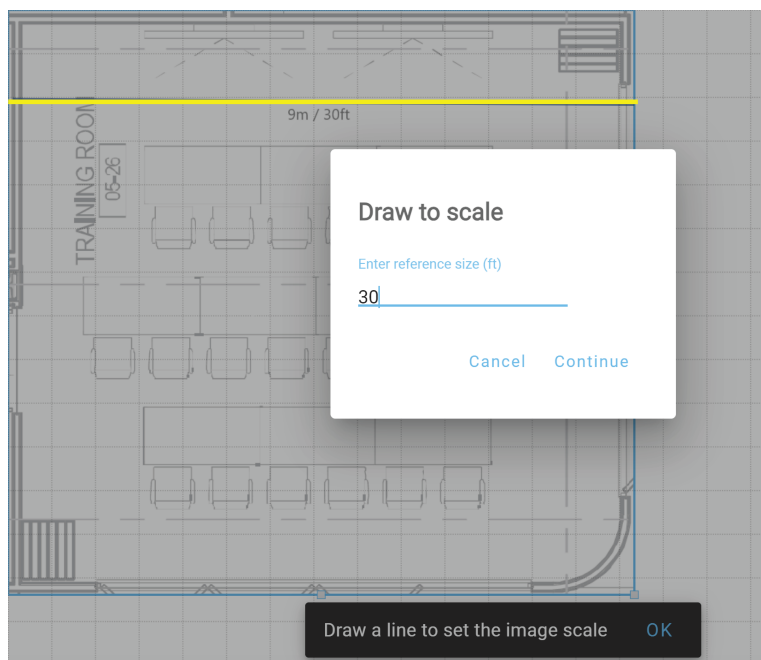
Supported file types:

- .jpg/.jpeg
- .png
- .gif

Redraw the Image to Scale

After you add an image to Designer, you can scale it based on a reference point in the drawing. If you do not know an actual measurement in your image, you can always scale the image later.

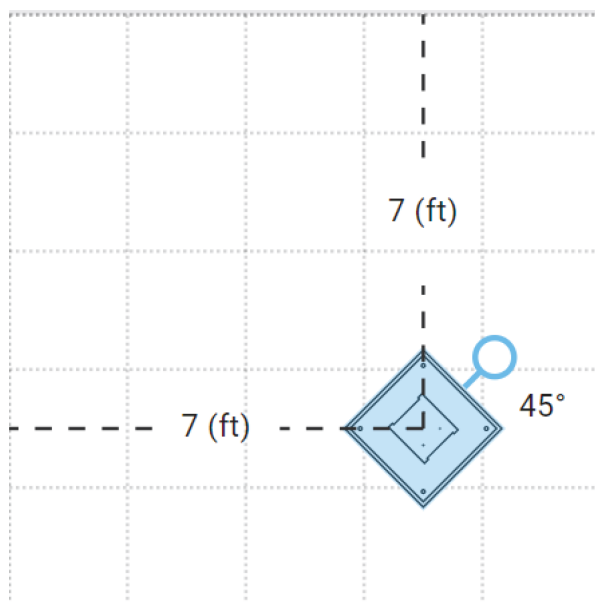
1. Add the image to the grid.
2. Go to **Properties > Edit Image > Draw to Scale**.
3. Find an object in your drawing with a known length.
4. Draw a line and enter the object's length.



5. Resize the room to fit the scaled image.

Position Devices Using the Grid and Guides

Use the grid in Designer to move objects to an exact point on the grid. When Snap to grid is selected, the device reference corner aligns with the closest grid corner.



To adjust the grid and guides on the coverage page:

1. Click the dimensions above the grid.
2. Go to **Properties > Grid & guides**.

The grid and guides tools include:

- Grid starting point (X and Y): Start the grid from a different point to align with a reference object, such as a ceiling tile in the background image.
- Show grid assists with aligning objects.
- Show guides displays the X and Y coordinates to the device reference point from the grid's 0,0 coordinates.
- Snap to grid ensures that objects align precisely.
- Snap rotation 45° restricts device rotation to 45 degree increments. Pressing the shift key and grabbing the rotation handle also restricts rotation to 45 degree increments.

Move, Rotate, and Resize Objects

You can make changes to the devices in Coverage.

Images

Click the room dimensions above the grid, then go to **Properties > Edit image** to make changes to the imported image. To exit, select anywhere outside of the image.

Adjusting Images

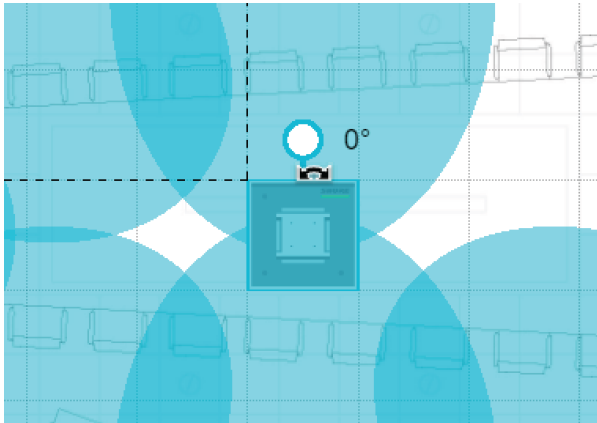
Adjustment	How to Access
Resize the image	Drag the corner of an image or enter a value into the properties panel. The ratio is locked so that changes to one dimension proportionally affect the other.
Move the image	Click and drag to change the position of an image.
Rotate the image	Click and drag the handle to rotate the image into position. Tip: Hold the shift key to rotate in 45 degree increments.
Change the opacity	After you add an image, go to Properties > Edit image . Lower opacity gives you a more transparent image, while higher opacity results in a darker image that matches the original file.

Devices

Important: Check that the devices in your design are facing the same way as the devices installed in your actual room.

Adjusting Devices

Adjustment	How to Access
Add a device	Double-click or drag a device from the devices panel into the room.
Select a device	Click on a device in the room or the layers panel to select it and edit its properties. To exit, click anywhere outside of the device.
Remove a device	Select the device and press the delete key on your keyboard or Properties > Device control > Remove device .

Adjustment	How to Access
Position a device	Drag or nudge a device into position. The properties display device position in relation to the grid's 0,0 point.
Rotate a device	<p>Click and drag the handle to rotate the device into position.</p> <p>Tips:</p> <p>Position devices in your design so that the logos and LEDs face the same direction as your hardware.</p> <p>Hold the shift key to rotate in 45 degree increments.</p> 

Channels

Adjust the channels of microphones with lobes.

Adjusting Channels

Adjustment	How to Access
Select a channel	Click on a channel in the room or the layers panel to select it and edit its properties. To exit, click anywhere outside of the channel.
Add a channel	Select the device and click Properties > Coverage > Add channel .
Remove a channel	Select the channel in the room or the layers panel and press the delete key or Remove channel .
Position a channel	Drag or nudge a channel into position. The channel properties display position in relation to the device and the grid's 0,0 point.
Resize a channel	Channel size is based on the layout specifications of your design and a selectable width setting. For more details, see your device's user guide.

Coverage Areas


Adjust the coverage area of microphones without lobes.

Adjusting Coverage Areas

Adjustment	How to Access
Select a coverage area	Click on a coverage area in the room or the layers panel to select it and edit its properties. To exit, click anywhere outside of the channel.
Position coverage area	Drag a coverage area into position. The coverage area properties display position in relation to the device and the grid's 0,0 point.
Resize coverage area	Drag the corners of a coverage area to adjust the size.
Add coverage (MXA920 only)	Select the device and go to Properties > Coverage > Add coverage .
Remove coverage (MXA920 only)	Select the coverage area and press the delete key or Remove coverage .

Layers

With multiple devices in a design, it can become crowded when trying to select a device or channel. Use the layers menu to:

- Select the device you want to work with
- Show or hide device channels and coverage by clicking 

Open Files

Open Room Design Files (.rdf)

Double-click a Designer file or go to **File > Open** to open a previously saved design.

Open Project Files from Designer 5.0 and earlier (.dprj)

The current version of Designer extracts the rooms from exported project files (.dprj) created in Designer versions 5.0 and earlier.

Select **File > Open** and choose a file location for Designer to import the project files as room design files (.rdf). Select which rooms to convert and Designer extracts the rooms from the project, saving them as room design files (.rdf).

This extraction converts your files to .rdf while preserving the original .dprj files.

Note: To use files from Designer 4.6 and earlier, first open them with Designer 4.7 or 5.0, and then open the files in Designer 6.0 or newer.

Use Designer's Auto Route

Designer's auto route speeds up the process of connecting systems with 1 audio processor and at least 1 microphone. Auto route also creates mute control routes in rooms with MXA network mute buttons. When you select Auto route, you can direct Designer to:

- Create audio routes and mute control routes
- Adjust audio settings

- Turn on mute synchronization
- Enable LED logic control for applicable devices

The settings are optimized for your particular combination of devices. You can adjust settings further, but auto route gives you a good starting point. Auto route works with any device in Designer.

To use auto route:

1. Place all relevant devices in a design.
2. Select Auto route. Designer optimizes microphone and DSP settings for your equipment combination.

If you remove or add devices, select Auto route again.

Note: The auto route process clears any manual routes you may have made in your design.

After auto routing a room, check and adjust settings to fit your needs. You may need to:

- Delete unnecessary routes.
- Check levels and adjust gain.
- Check that AEC reference signals are correctly routed and received in a test call.
- Fine-tune DSP blocks.
- Adjust your processor's matrix mixer routes.

If you want to auto route an online room, turn on online room editing in **File > Designer preferences**.

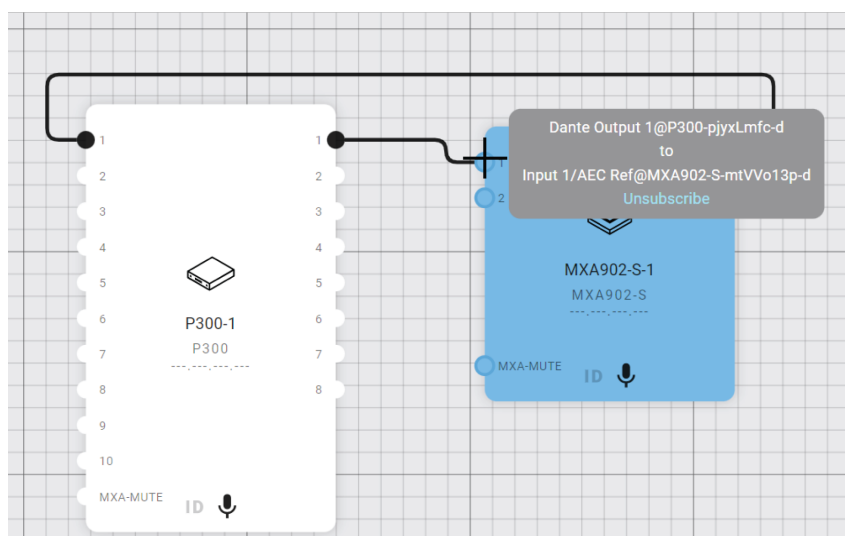
Note: Changes to an online room may cause audio to briefly drop out.

Refer to Designer's [Troubleshooting section](#) for help with routing.

Manual Routing

You can create Dante audio routes for the supported Shure devices by clicking and dragging to make connections between device inputs and outputs.

- You can drag the devices to arrange them on the routing page. The Shure device names identify the device type.
- Hovering over the input or output on a device displays the Dante name, the Dante channel, and identifies it as an input or an output.
- Click on the input or output channel of one device and then click on or drag to the input or output of the other device to create the route.
- After Designer creates the route, hovering over either device identifies the Dante device and channel connections.



Deploy Design to Online Devices

After adding devices to your design, routing, and configuring your audio coverage, you can deploy your design to push the settings to online devices. Check that you're connected to the correct network in **File > Designer preferences**

1. Click Deploy and connect.
2. Associate the devices from your design with online devices. Designer does not push the design to online devices until you confirm all deployment settings.

Tip: Click ID to flash the lights of online devices and identify the device you want to deploy to.

	MXN5-C-1	✓
	MXA-MUTE-1	✓
	MXA920-S-1	Unassociated
	P300-1	Unassociated

[Clear all associations](#)

Q Search	
Device model	Device name
	MXA920-S
	MXA920-S-SmallCo...
	MXA920-S-1

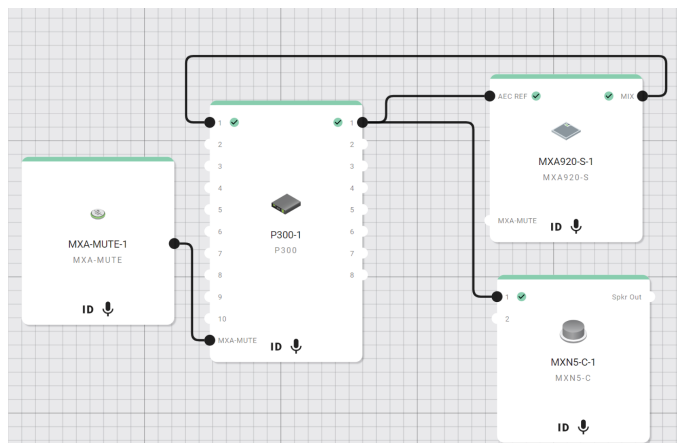
↓

ID

ID

3. When you've made all your associations, you can assign device and room names, add passwords and a room description, and deploy.

The green banners identify that you are in an online room and working with online devices.



Pushing Names to the Dante Network

You can edit device and channel names by double-clicking on the device. You can also edit the device name on the routing page or in the properties panel.

To send Designer device and channel names to Dante Controller, double-click on a device and go to **Settings > General**, then select **Push to Dante**. You can also push these names to Dante when you deploy.

Note: Names appear in Dante Controller with "-d" attached.

Online Devices

Designer's Online devices page lists all devices that have been discovered on your network. Designer automatically discovers supported Shure devices on the same subnet.


When you select an online device, you can identify it, change its name, or view its properties.

Add Devices across Subnets


To discover, control, and filter for devices on different subnets, click **Add by IP**. Type an IP address, copy and paste a list in the text box, or import a list of IP addresses. The imported list must be in a .csv or a .txt file. Any lists must use one of the following delimiters:

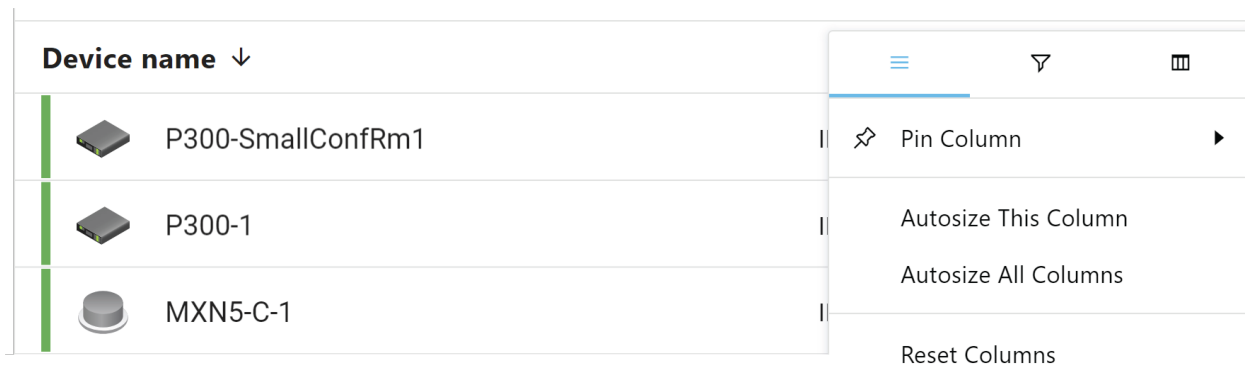
- Space
- New line
- Comma

When adding devices by IP address, you must create an IP group for Designer to discover the devices under. This does not add a device to a room. It only displays the online devices in that IP group. To edit or export devices in an IP group, select the

drop-down menu for IP group, then the 3 dots  .

Set Row Groups and Filter Devices

To organize online devices by model, room, or firmware version, drag the column header to the filter. You can also filter, size, search, pin, and add/remove columns by selecting  .



To filter for currently online devices, turn on Hide offline devices.

Online devices

Search Add by IP IP Group: SAI Lab

Drag column headers here to set row groups

Device model	Device name	IP address	Room
MXA-MUTE	MXA-MUTE-1	ID	FD Sales Room
MXA310	MXA310-53f1b3	ID	
MXA310	MXA310-1	ID	
MXA710-2FT	MXA710-2FT-1	ID	
MXA710-4FT	MXA710-4FT-61f283	ID	
MXA920-S	MXA920-S-1	ID	FD Sales Room

Edit an Online Room

To add or remove devices or change routing in an online room, go to **File > Designer preferences** and turn **Online room editing**: On.

Note: Making changes to an online room can cause the audio to briefly drop out.

Clear an Online Room

To remove all devices, control routes, and audio routes in an online room, click **Clear Room** on the routing or coverage pages or **Room > Clear room**.

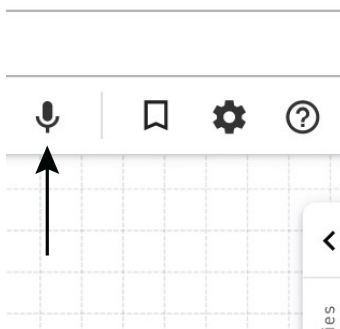
Device Identification

You can flash the lights to identify an online device by selecting **ID** anywhere it appears, such as in the properties panel or next to the device name in online devices.

Mute All Devices

You can mute and unmute all the devices in a design or a room by:

- Selecting the mic icon on the routing or coverage pages.

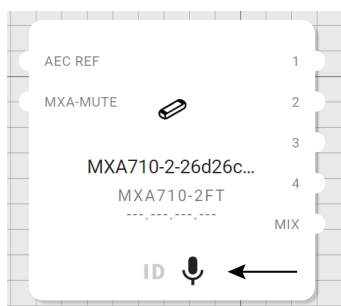


- From the top menu: Room > Mute all Devices

Device microphone icons appear red when muted.



You can also mute and unmute individual devices from the routing page or the properties panel.



Set Up Services for Device Security

You can turn on or turn off specific network protocols on your devices with Designer. Double-click an online device and choose Settings > Services from the drop-down menu. The configuration options are:

- HTTP - If you turn off HTTP, you will no longer be able to connect to this device via a web browser. Designer's device network protocols will be unaffected.
- mDNS - If you turn off mDNS, you will no longer be able to discover this device in the Shure Web Device Discovery application. Designer and Shure Update Utility can still discover this device normally.
- Command Strings - If you turn off command strings, third-party control systems cannot communicate with this device on port 2202.

Copy a Design or an Online Room

There are 2 ways to copy the contents of your room to a new design file.

Option 1: Save as


File > Save as

Use Save as to share an exact room configuration or create a room with identical settings and a different name.

Save as:

- Creates a new design file for you to rename
- Saves the association between the design and online devices
- Copies any presets to the new room
- Copies routes, devices, and device settings to the new room

Option 2: Copy as new design

Tools > Copy as new design or select  in an online room.

You can also copy a room as a new design to use the old design as a starting point.

Copy as new design:

- Creates a new design with the same room name
- Does not save the association between the design and online devices
- Does not copy any presets to the new room
- Copies routes, devices, and device settings to the new room


From here you can associate devices and [deploy the design](#).

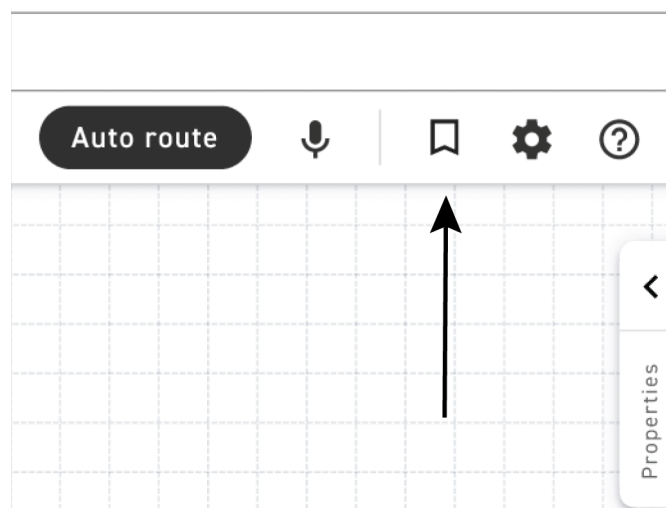
Save and Apply Presets

When your devices are set up for a given room, you might want to save specific settings as a preset. Presets are also useful in a multipurpose room with different configurations. When the room configuration changes, you can apply a preset from 1 of the 10 preset slots available.

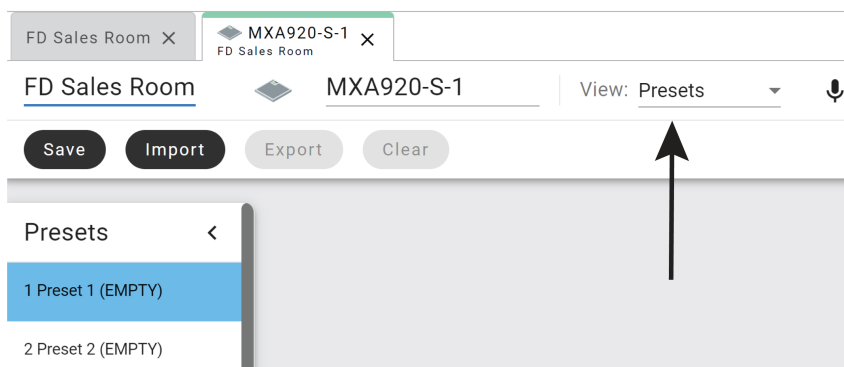
- **Room presets:** retain the settings of each device in the room
- **Device presets:** retain the settings of a particular device

Save Settings as Presets:

1. Select  (Presets)
 - For room presets, this is on the routing and coverage pages.



- For device presets, double-click an online device and then choose presets.



2. Select an open preset slot.
3. Enter a name for the preset.
4. Click Save.

Apply Presets



1. Open the presets view .
2. Choose the preset you want.
3. Select Apply. The applied preset has a check mark next to it.

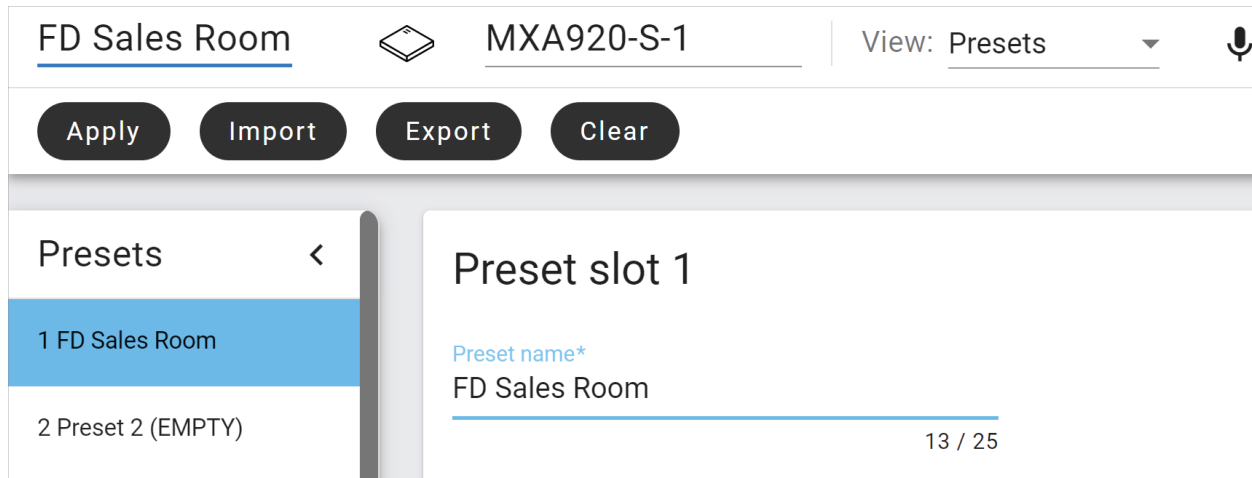
Notes:

- Routing information is not saved in presets.
- If your room is online, preset activity may cause the audio to momentarily drop out.
- Any changes made after applying a preset are not saved to that preset. Save new settings to a new preset slot or overwrite the old preset.
- A preset name conflict happens when 2 or more devices have a different name in the same preset slot. When there's a conflict, you can still pass audio, adjust settings, and create presets. To resolve the conflict, you can rename, overwrite, or clear the preset slot.

Export Virtual Device Presets

You can export a virtual device's settings as a preset file (.json). This allows you to import and apply that preset to an online device in its web application.

1. Double-click the virtual device.
2. Go to the presets view.
3. Select Export.



Firmware Updates

Use the Shure Update Utility (SUU) to update device firmware. Keep device firmware updated to take advantage of additional features and improvements.

Download the SUU from shure.com/SUU.

Reset

Software reset

To revert settings without a manual hardware reset:

1. Double-click the device or select the device.
2. In the device's settings, select Factory reset and use one of the following options:
 - **Reboot device:** Power-cycles the device as if it were unplugged from the network. All settings are retained when the device is rebooted.
 - **Restore factory defaults:** Restores all network and device settings to the factory defaults. This is the same as performing a full factory reset using the reset button on the device.

Manual hardware reset

There are 2 manual reset functions:

1. **Network reset (press button for 4-8 seconds):** Resets all Shure control and audio network IP settings to factory defaults.
2. **Full factory reset (press button for longer than 8 seconds):** Restores all network and Designer settings to the factory defaults.

See *Device reset button locations* to locate the reset button on your device.

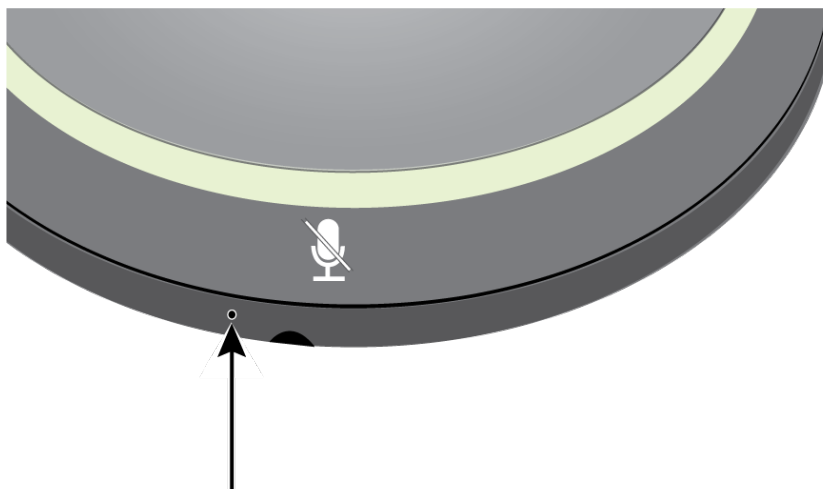
Device Reset Button Locations

ANIUSB

The reset button is located inside a small hole in the rear panel. Use a paperclip or other small tool to press the button.

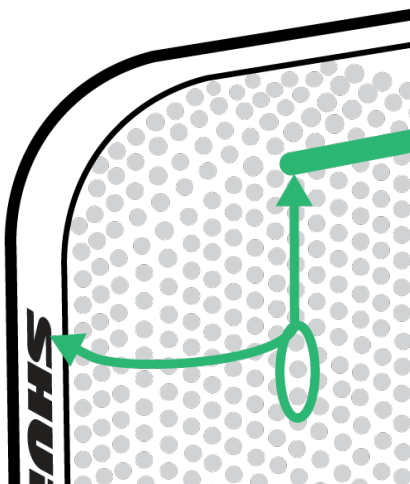
MXA310

The reset button is located inside a small hole in the lower half of the microphone. Use a paperclip or other small tool to press the button.



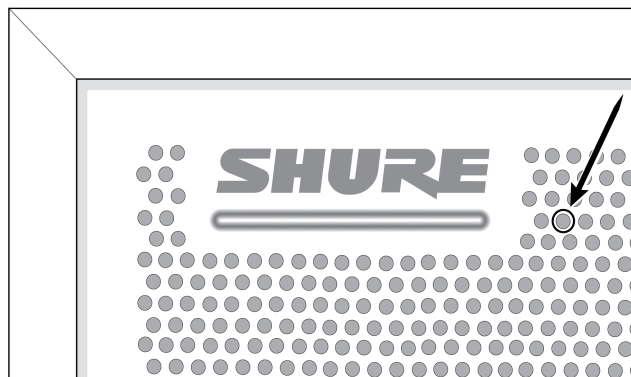
MXA710

The hardware reset button is behind the microphone grille. To access, find a grille hole that aligns with the left edge of the mute status LED and the "S" of the Shure logo. Use a small paperclip or other tool to press and hold the button. You may need to try a few different holes to press the reset button.



MXA910

The hardware reset button is located inside a grille hole and can be pushed with a paperclip or other small tool. The hole is identified with a gray circle. When looking at the Shure logo, it is the second hole in the fourth row from the top.

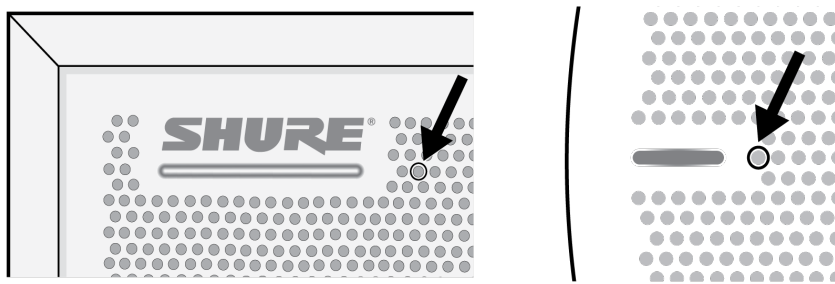


MXA920, MXA901, and MXA902

The reset button is behind the grille. To push it, use a paper clip or other tool.

Button locations:

- **Square array microphones:** Behind the grille hole with a silkscreened circle around it.
- **Circle array microphones:** Behind the first grille hole to the right of the mute status LED.



MXA Network Mute Button

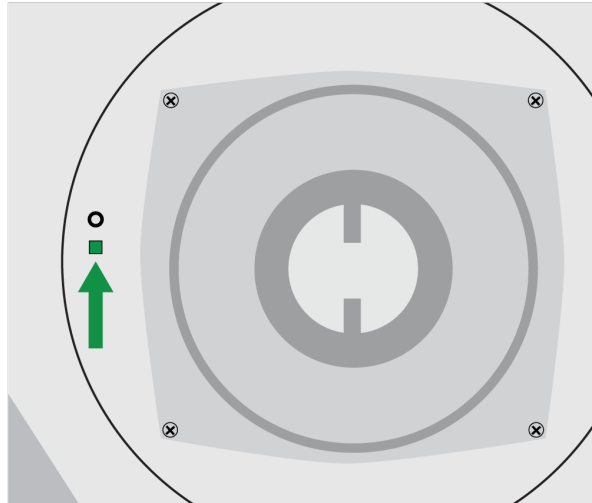
The reset button is located inside a small hole next to the network port.

P300

The reset button is located inside a small hole in the rear panel. Use a paperclip or other small tool to press the button.

MXN5-C

The reset button is located behind the grille. To access the reset button, remove the grille.




Room Settings

Device Passwords

When working with a new online device, you can:

- Set a common password for many online devices
- Set a password for 1 device
- Proceed without a password

To set a common password:

1. In a room, click  (Settings), located in the upper right.
2. Select Device passwords.
3. Select Set common password.

The other options allow you to change the password or to turn the password off for all devices in the room.

If any of your devices in the room had a previous password, you must enter that password before overwriting it with a new one.

Once a password is set, you must enter the password to configure devices. Or, you can view the room in read-only mode. In read-only mode you can see the room and identify devices, but you cannot edit device parameters.

Note: If you forget your password, [factory reset](#) the device.

Encryption

Audio is encrypted with the Advanced Encryption Standard (AES-256), as specified by the US Government National Institute of Standards and Technology (NIST) publication FIPS-197.

Encryption is not supported with third-party devices.


Important: For encryption to work:

- Devices must be online and support encryption.
- Encryption must be turned on for all devices in the room.
- You must disable AES67 in Dante Controller. AES67 and AES-256 can't be used at the same time.

To turn on encryption:

In an online room, select  > Audio encryption > Turn on encryption. You can auto generate a key or enter one manually.

To re-key or turn off encryption:

In an online room, select  > Audio encryption and enter any passwords.

Call Status

When Call status is enabled, the LEDs of microphones routed with the room processor will indicate when a codec call is taking place. When not on a call, the LEDs will be turned off.

Set Up the 802.1X Protocol for a Device

Select Shure devices support the IEEE 802.1X port access protocol for network authentication.

Important: To use the 802.1X security protocol with Shure devices, set the network switch to multiple host authentication. You must also make accommodations to allow the audio NIC to connect to the network. The audio NIC doesn't support the 802.1X protocol.

Setting up 802.1X is a two-part process.

To set up 802.1X, you will need:

- Details about your authentication server's EAP method
- Any required credentials or certificates for that method, for example:
 - MD5 and PWD
 1. User ID and passphrase
 - TLS and PEAP
 1. User ID and passphrase
 2. Certificate (with certificate types) in the .PEM format
- Any passwords to access the devices if they are password locked

Step 1: Configure Settings on Test Network

1. Connect the device to your test network and discover it using Designer.
2. Set a device password if desired.
3. Double-click the device and go to Settings > Network > 802.1X.
4. Choose your EAP method from the menu.
5. Enter any required credentials and load any necessary certificates.
6. Press Save to save the 802.1X settings to the device.
7. Enable 802.1X and select Reboot later.

Step 2: Connect to a Credentialed Network

1. Connect your device to the credentialed network.
2. Ensure that Designer is connected to the credentialed network.
3. Go to Settings > Network > 802.1X and enable 802.1X. Reboot the device for the 802.1X settings to take effect.
4. If the device doesn't appear in Designer after the reboot, reconnect to the test network and check all 802.1X settings for the selected EAP method.

Turn Off or Clear 802.1X Settings

You can turn off 802.1X settings temporarily, or clear them from the device. Open the device and go to **Settings > Network > 802.1X**

- **Disable:** Click the 802.1X switch to turn off 802.1X settings. Click the switch again to enable 802.1X.
- **Clear:** Click Clear 802.1X settings to remove 802.1X settings from the device.

Note: Resetting to factory default clears all 802.1X settings.

Change 802.1X Settings

You may need to change a device's 802.1X settings if the enterprise's 802.1X settings are changing. The best way to do this is to change the 802.1X settings on the devices, and then make changes to the authentication server.

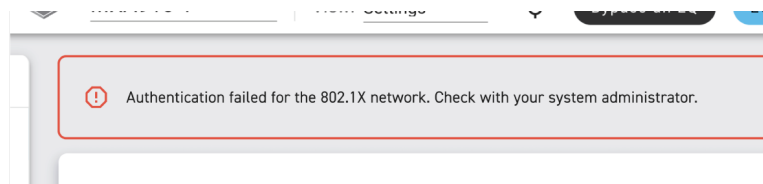
To change device settings:

1. While still connected to the credentialed network, find the device in Designer and go to **Settings > Network > 802.1X**.
2. Make changes and click **Save**.
3. Make any changes to the authentication server.
4. Reboot your devices. The devices should connect to the credentialed network with the updated 802.1X settings.

Troubleshooting 802.1X Setup Issues

If the device doesn't appear in Designer on the credentialed network, there's a problem with the device's 802.1X settings. To troubleshoot, take the device off the credentialed network and connect it to the test network. You can make any necessary changes to the 802.1X settings, and then reconnect to the credentialed network.

If you attempt to enable 802.1X on a device, but the authentication fails, you will see this notification:



If this occurs, check with your system administrator.

Parametric Equalizer

Maximize audio quality by adjusting the frequency response with the parametric equalizer.

Common equalizer applications:

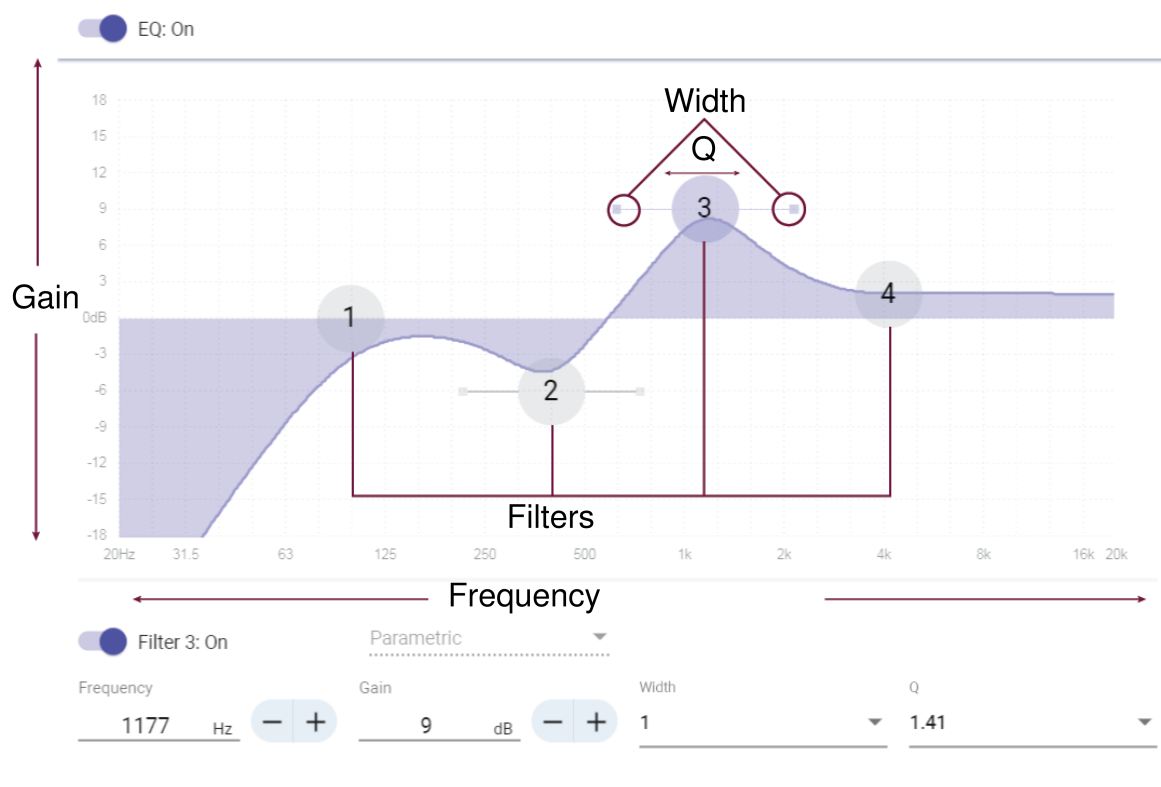
- Improve speech intelligibility
- Reduce noise from HVAC systems or video projectors
- Reduce room irregularities
- Adjust frequency response for reinforcement systems

Setting Filter Parameters

Adjust filter settings by manipulating the icons in the frequency response graph, or by entering numeric values. Disable a filter using the checkbox next to the filter.

PEQ Filter Settings

Setting	Function
Filter Type	<p>Only the first and last band have selectable filter types.</p> <p>Parametric: Attenuates or boosts the signal within a customizable frequency range</p> <p>Low Cut: Rolls off the audio signal below the selected frequency</p> <p>Low Shelf: Attenuates or boosts the audio signal below the selected frequency</p> <p>High Cut: Rolls off the audio signal above the selected frequency</p> <p>High Shelf: Attenuates or boosts the audio signal above the selected frequency</p>
Frequency	Select the center frequency of the filter to cut or boost
Gain	Adjusts the level for a specific filter (+/- 18 dB)
Q	Adjusts the range of frequencies affected by the filter. As this value increases, the bandwidth becomes thinner.
Width	<p>Adjusts the range of frequencies affected by the filter. The value is represented in octaves.</p> <p>Note: The Q and width parameters affect the equalization curve in the same way. The only difference is the way the values are represented.</p>



Copy and Paste Equalizer Channel Settings

Use to quickly apply the same PEQ setting across multiple channels.

1. Select the PEQ of the desired channel.
2. Click copy.
3. Select the channel to apply the PEQ setting to and click paste.



Equalizer Applications

Conferencing room acoustics vary based on room size, shape, and construction materials. Use the guidelines in following table.

Uses for EQ

EQ Application	Suggested Settings
Treble boost for improved speech intelligibility	Add a high shelf filter to boost frequencies greater than 1 kHz by 3-6 dB
HVAC noise reduction	Add a low cut filter to attenuate frequencies below 200 Hz
Reduce flutter echoes and sibilance	<p>Identify the specific frequency range that "excites" the room:</p> <ol style="list-style-type: none"> 1. Set a narrow Q value. 2. Increase the gain to between +10 and +15 dB, and then experiment with frequencies between 1 kHz and 6 kHz to pinpoint the range of flutter echoes or sibilance. 3. Reduce the gain at the identified frequency (start between -3 and -6 dB) to minimize the unwanted room sound.
Reduce hollow, resonant room sound	<p>Identify the specific frequency range that "excites" the room:</p> <ol style="list-style-type: none"> 1. Set a narrow Q value. 2. Increase the gain to between +10 and +15 dB, and then experiment with frequencies between 300 Hz and 900 Hz to pinpoint the resonant frequency. 3. Reduce the gain at the identified frequency (start between -3 and -6 dB) to minimize the unwanted room sound.

Schematic View

The schematic view in Designer provides an overview of the entire audio signal chain, with the ability to adjust settings and monitor signals.

Adjusting Settings

Right-click an input, output, or processing block to access the following options:

Channel Settings

Setting	Function
Copy / paste	Copy and paste settings between items. For example, set the equalizer curve on the USB output, and then use the same setting for the analog output. Or, copy the gain and mute status from one input channel to several others.
Mute / unmute	Mutes or activates the channel
Enable / disable	Turns processing on or off (does not apply to matrix mixer or automixer)
Edit	Opens the dialog to adjust parameters. You can also double-click a block to edit it.

Right-click in a blank area to access global settings:

- Mute/unmute all input channels
- Mute/unmute all output channels
- Close all open dialogs

Customizing the Workspace

Create a custom environment to monitor and control a set of inputs, outputs, and processing blocks from a single screen. There are 2 ways to break out dialogs:

- Right-click > Edit
- Double-click the input, output, or processing block.

Open as many dialogs as you need to keep important controls available.

Metering and DSP Blocks

A meter appears underneath each input and output to indicate signal levels (dBFS).

DSP blocks have a color when they are turned on. When off, they are gray. Use these tools to troubleshoot audio signals and verify connections and levels.



DSP Settings

Acoustic Echo Cancellation

In audio conferencing, a far-end talker may hear their voice echo as a result of a near-end microphone capturing audio from loudspeakers. Acoustic echo cancellation (AEC) is a DSP algorithm which identifies the far-end signal and stops it from being captured by the microphone to deliver clear, uninterrupted speech. During a conference call, the AEC works constantly to optimize processing while far-end audio is present.

When possible, optimize the acoustic environment using the following tips:

- Reduce loudspeaker volume
- Position loudspeakers farther from microphones
- Avoid pointing loudspeakers directly at microphone coverage areas
- If the microphone is providing AEC from the automix output, turn off AEC on the processor. Designer's auto route applies these settings automatically.

Select a Reference Signal for AEC

To apply AEC, provide a far end reference signal. For best results, use the signal that also feeds your local reinforcement system.

- **P300:** Go to Schematic and click any AEC block. Choose the reference source, and the reference source changes for all AEC blocks.
- **MXA710, MXA901, MXA910, MXA920:** Route a far-end signal to the AEC Reference In channel.
- **IntelliMix Room:** Go to Schematic and click an AEC block. Choose the reference source. Each block can use a different reference source, so set the reference for each AEC block. When stereo audio is on, you can set different left and right channel reference sources as needed.

Designer's auto route process automatically routes an AEC reference source. However, you should check that Designer chooses the reference source you want to use.

Note: Always send an AEC reference signal to microphones with AEC processing, even if you are using a separate DSP for AEC. Designer's auto route feature automatically creates these routes.

AEC Settings

Reference Meter	Use the reference meter to visually verify the reference signal is present. The reference signal should not be clipping.
ERLE	Echo return loss enhancement (ERLE) displays the dB level of signal reduction (the amount of echo being removed). If the reference source is connected properly, the ERLE meter activity generally corresponds to the reference meter.
Reference	Indicates which channel is serving as the far end reference signal.
Non-Linear Processing	<p>The primary component of the acoustic echo canceller is an adaptive filter. Non-linear processing supplements the adaptive filter to remove any residual echo caused by acoustic irregularities or changes in the environment. Use the lowest possible setting that is effective in your room.</p> <p>Low: Use in rooms with controlled acoustics and minimal echoes. This setting provides the most natural sound for full duplex.</p>

Medium: Use in typical rooms as a starting point. If you hear echo artifacts, try using the high setting.

High: Use to provide the strongest echo reduction in rooms with bad acoustics, or in situations where the echo path frequently changes.

Delay

Use delay to synchronize audio and video. When a video system introduces latency (where you hear someone speak, and their mouth moves later), add delay to align audio and video.

Delay is measured in milliseconds. If there is a significant difference between audio and video, start by using larger intervals of delay time (500-1000 ms). When the audio and video are slightly out of sync, use smaller intervals to fine-tune.

Compressor

Use the compressor to control the dynamic range of the selected signal.

Threshold

When the audio signal exceeds the threshold value, the level is attenuated to prevent unwanted spikes in the output signal. The amount of attenuation is determined by the ratio value. Perform a soundcheck and set the threshold 3-6 dB above average talker levels, so the compressor only attenuates unexpected loud sounds.

Ratio

The ratio controls how much the signal is attenuated when it exceeds the threshold value. Higher ratios provide stronger attenuation. A lower ratio of 2:1 means that for every 2 dB the signal exceeds the threshold, the output signal will only exceed the threshold by 1 dB. A higher ratio of 10:1 means a loud sound that exceeds the threshold by 10 dB will only exceed the threshold by 1 dB, effectively reducing the signal by 9 dB.

Noise Reduction

Noise reduction significantly reduces the amount of background noise in your signal caused by projectors, HVAC systems, or other environmental sources. It is a dynamic processor, which calculates the noise floor in the room and removes noise throughout the entire spectrum with maximum transparency.

Settings

The noise reduction setting (low, medium, or high) represents the amount of reduction in dB. Use the lowest possible setting that effectively lowers noise in the room.

Automatic Gain Control (AGC)

Automatic gain control adjusts channel levels to ensure consistent volume for all talkers, in all scenarios. For quieter voices, it increases gain; for louder voices, it attenuates the signal.

Automatic gain control is post-fader, and adjusts the channel level after the input level has been adjusted. Enable it on channels where the distance between the talker and the microphone may vary, or in rooms where many different people will use the conferencing system.

Target Level (dBFS)

Represents the level that you want the gain to reach. This level is different from adjusting the input fader according to peak levels to avoid clipping. Suggested starting points:

- P300: -32 dBFS

- MXA910: -37 dBFS
- IntelliMix Room: -32 dBFS

Maximum Boost (dB)

Sets the maximum amount of gain that can be applied

Maximum Cut (dB)

Sets the maximum attenuation that can be applied

Tip: Use the boost/cut meter to monitor the amount of gain added or subtracted from the signal. If this meter is always reaching the maximum boost or cut level, adjust the input fader so the signal is closer to the target level.

Automix Properties

Note: Not all settings are available on all automixers.

Leave Last Mic On

Keeps the most recently used microphone channel active. The purpose of this feature is to keep natural room sound in the signal so that meeting participants on the far end know the audio signal has not been interrupted.

Gating Sensitivity

Changes the threshold of the level at which the gate is opened

Off Attenuation

Sets the level of signal reduction when a channel is not active

Hold Time

Sets the duration for which the channel remains open after the level drops below the gate threshold

Maximum Open Channels

Sets the maximum number of simultaneously active channels

Priority

When selected, this channel gate activates regardless of the number of maximum open channels.

Always On

When selected, this channel will always be active.

Send to Mix

When selected, sends the channel to the automix channel.

Solo

Mutes all of the other channels

Automix Gain Meter

When enabled, changes gain meters to display automix gating in real time. Channels that gate open will display more gain than channels that are closed (attenuated) in the mix.

Mic Optimization Mode (P300 only)

Select the microphone that is used with the automixer for best performance. For best results, auto route with Designer (this automatically selects the correct mic optimization mode).

Use the Off setting when using a Shure Microflex[®] Wireless system, or traditional wired microphones.

Automix Modes

To select an automix mode, go to:

- **MXA710, MXA910, MXA920:**[Your device] > IntelliMix > Properties
- **P300 and IntelliMix Room:**[Your device] > Automixer > Properties

Gating

Gating mode delivers fast-acting, seamless channel gating and consistent perceived ambient sound levels. The off attenuation setting is applied to all inactive channels, regardless of the number of active channels.

Gain Sharing

Gain sharing mode dynamically balances system gain between open and closed channels. The system gain remains consistent by distributing gain across channels to equal one open channel. The scaled gain structure helps to reduce noise when there is a high channel count. When fewer channels are used, the off attenuation setting is lower and provides transparent gating.

Manual

Manual mode sums all active tracks and sends the summed signal over a single Dante output. This provides the option to route an individual signal for reinforcement or recording, without enabling automixing. The settings from the faders in the standard monitoring view apply to the summed output.

Routing Channels to the Automix Channel

Each of the microphone's channels can be routed to the automix channel, or they can be treated as individual direct outputs.

When Send to Mix is selected (blue), that channel will be sent to the automix channel.

To exclude channels from the automix channel, deselect Send to Mix (gray).

If you do not use auto route but want to use the Automix channel output from the MXA910 to the P300, do the following:

- On the MXA910, use the default DSP/EQ settings
- On the P300,
 - Disable the PEQ, AEC, NR, and AGC settings on the P300 channel to which the MXA910 Automix out is routed
 - Turn off Mic optimization mode in the Automixer
 - Turn off the PEQ contour post Automixer

Automixer Direct Out Tap Points

In the Automixer tab, use the menus below each channel to choose where the signal to the matrix mixer should come from.

All options include input channel gain, mute, solo, and PEQ.

Pre-Processing/Pre-Gate

Sends a signal without AEC, noise reduction, automixer gating, or AGC to the matrix mixer.

Post-Processing/Pre-Gate

Sends a signal with AEC and noise reduction but without automixer gating or AGC to the matrix mixer.

Post-Processing/Post-Gate

Sends a signal with automixer gating, AEC, and noise reduction but without AGC to the matrix mixer.

Pre-Processing/Post-Gate

Sends a signal with automixer gating but without AEC, noise reduction, or AGC to the matrix mixer.

Note: Direct out tap points are not available on all Shure automixers.

Matrix Mixer

The matrix mixer routes audio signals between inputs and outputs for simple and flexible routing:

- Send a single input channel to multiple outputs
- Send multiple input channels to a single output

Crosspoint Gain

Crosspoint gain adjusts the gain between a specific input and output, to create separate submixes without changing input or output fader settings. Select the dB value at any crosspoint to open the gain adjustment panel.


Gain staging: Input fader > crosspoint gain > output fader

Routing Channels

Connect inputs and outputs by selecting the box where they intersect.

Mute and Fader Groups

You can link channels to each other to create groups for muting and fader controls. Typically, you might create 1 group for inputs and 1 group for outputs.

Link channels by clicking  for the channels and the controls that you want linked. For example, if channels 1, 2, and 3 are linked for Mute, muting any of those individual channels mutes all of the linked channels.

Keyboard Shortcuts

Designer Shortcuts

Shortcut	Windows	macOS
Delete the selected device, channel, route, or text	Delete or backspace	Delete or backspace
Rotate the selected device or image in 45 degree increments	Shift + Rotate (drag using the mouse)	Shift + Rotate (drag using the mouse)
Zoom in or out	Control wheel or CTRL +/-	Control wheel or ⌘ +/-

Shortcut	Windows	macOS
Fit page to screen	CTRL + 0	⌘ + 0
Create new design	CTRL + N	⌘ + N
Create new online room	CTRL + Shift + N	⌘ + Shift + N
Open design	CTRL + O	⌘ + O
Save design	CTRL + S	⌘ + S
Save as	CTRL + Shift + S	⌘ + Shift + S
Mute all devices in the room	CTRL + M	⌘ + M
Quit Designer	CTRL + Q	⌘ + Q
Move between routing and coverage views	CTRL + T	⌘ + T
Go to Online devices	CTRL + Shift + O	⌘ + Shift + O
Go to Online rooms	CTRL + Shift + R	⌘ + Shift + R
Go to Designer preferences	CTRL + P	⌘ + P
Open the help documentation	CTRL + H	⌘ + H


Troubleshooting

Hardware and Firmware Problems

Problem	Solution
Missing or offline device	<p>Check that your device is plugged into an appropriate PoE source and that its control IP address is in the correct subnet.</p> <p>Turn off other network interfaces not used to connect to the device (including Wi-Fi)</p> <p>Check that DHCP server is functioning (if applicable)</p> <p>See if the computer's firewall or the network are blocking multicast traffic.</p> <p>Replace the missing device with another online device. Click Go to design, remove missing/offline devices and add new online devices, and select Deploy and connect.</p> <p>Reset the device if necessary</p> <p>For more device troubleshooting, see the FAQ.</p>

Problem	Solution
Incompatible firmware	Update device firmware with the Shure Update Utility or update your version of Designer .
Failed firmware update	Reboot or factory reset devices. Press the reset button on the device and hold for 8 seconds.
Failed deployment	Restart Designer. Reboot or factory reset devices. Check third-party tools, such as Dante Controller, for errors.
Devices can't be auto routed.	Route your room manually. Click and drag the input or output of one device to the input or output of the desired device. Check that you have the correct number of inputs, outputs, and Dante flows to support your setup.
PoE deficiency	Use a network switch that provides Power Over Ethernet Plus (PoE+) to access all device features.


Permissions and Network Problems

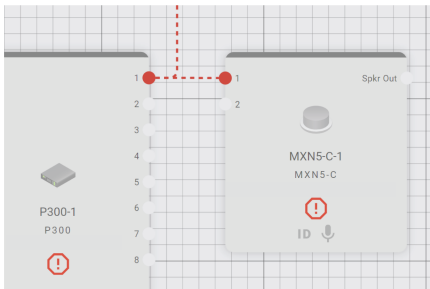


Problem	Solution
Encryption mismatch	Set a common encryption key for all devices in the room: [Your room] >  (Settings). Remove encryption key for all devices. Ensure all devices in the room support encryption. See which Shure devices support encryption .
No online devices appear in Designer	Make sure you are running the most recent software and firmware See if you have the correct network interface (NIC) selected by going to File > Designer preferences Check that devices are on and connected to your network For more online device troubleshooting, see the FAQ .
Devices locked by Dante device lock or Dante Domain Manager (DDM)	Resolve the issues in Dante Controller or DDM.

Audio Problems

Problem	Solution
Sound quality is muffled or hollow	<p>Check that your microphones are aimed towards the desired location or sound source.</p> <p>Use equalizer to adjust frequency response on a single channel or on the automix channel.</p> <p>If using the automix output or an automixer in your DSP, check that the automixers are not bypassed or set to manual. Then adjust settings to improve intelligibility.</p>
Audio is not present or is quiet/distorted	<p>Check cables.</p> <p>Verify that channels are not muted.</p> <p>Where applicable, make sure the microphone's coverage area or lobes are pointed toward the desired sound source.</p> <p>Check audio meters and see if the peak is too high (reaching red in the meter) or too low (hardly reaching green in the meter).</p>
Audio is feeding back	<p>Check the processor's matrix mixer to make sure that the room's mics are not routed to the output you're using for the room's speakers.</p>
Audio is echoing or over-processed	<p>Check devices' AEC (Acoustic Echo Cancellation) settings. For processors, this is in the schematic view. For mics, this is in the IntelliMix view:</p> <p>Check that the proper devices have AEC.</p> <p>Make sure the AEC reference has been selected or routed to the correct devices</p> <p>Verify the ERLE meter responds to audio from the far-end.</p> <p>Set AEC and noise reduction to the lowest settings needed for natural-sounding audio.</p>

Error Symbols

Symbol	Meaning
	Error: Audio is not passing.

Symbol	Meaning
	<p>Error: Audio routes are broken.</p> <p>Check that your device is plugged into an appropriate PoE source and that its control IP address is in the correct sub-net.</p> <p>Check the Dante IP addresses of each device.</p> <p>Check Dante Controller for more details.</p>
	<p>Encryption error: An encryption issue exists between devices.</p> <p>Ensure all devices in the room support encryption and have encryption turned on. See which Shure devices support encryption.</p>
	<p>Warning: You may have to check the device, update firmware, or retry an action.</p>

Hovering over warnings or opening device properties provides additional information.

Error Messages

Error Messages

Message	Solutions
<p>Couldn't create online room</p> <p>Couldn't create mute control routes</p> <p>Unexpected error</p>	<p>See troubleshooting for missing or offline devices.</p> <p>Reenter device passwords.</p> <p>Reboot or factory reset devices.</p>
<p>Couldn't create audio routes</p>	<p>See troubleshooting for missing or offline devices.</p> <p>Reenter device passwords.</p> <p>See if devices need to be unlocked in Dante Controller or Dante Domain Manager (DDD).</p> <p>Reboot or factory reset devices.</p>
<p>Couldn't deploy to devices</p>	<p>See troubleshooting for missing or offline devices.</p> <p>Reenter device passwords.</p> <p>See if devices are currently being used in another room.</p> <p>Reboot or factory reset devices.</p>

Additional Resources

- [Shure Knowledge Base FAQs](#)

- [Command strings for Shure devices](#)
- [Shure Enterprise Networking Troubleshooting Checklist](#)
- [Training from the Shure Audio Institute](#)
- [Shure Systems YouTube channel](#)

Download Shure Software

- [Shure Designer](#)
- [Shure Update Utility](#)
- [Shure Web Device Discovery](#)
- [Software and firmware archive](#)

Contact Customer Support

Didn't find what you need? [Contact our customer support](#) to get help.