MXA-MUTE

Network Mute Button

Shure MXA Network Mute Button user guide. Learn how to connect 1 or many PoE-powered mute buttons to Shure mics and processors to control muting and unmuting.

Version: 2.9 (2024-C)

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MXA Network Mute Button Overview

The MXA Network Mute Button is a configurable PoE-powered mute button accessory designed for muting and unmuting Shure networked products, including Microflex®Advance™ array microphones, IntelliMix® P300, IntelliMix Room, and ANIUSB-MATRIX. One or many of the low-profile, touch-sensitive mute buttons can be configured to mute one or multiple MXA microphones, depending on user needs or room configurations.

- Designer system configuration software for easy setup and configuration
- PoE powered
- Compatible with third-party control systems via programmable command strings
- LED status with configurable colors and brightness
- Easy table installation in 1 inch (25 mm) or 7/8 inch (22 mm) holes

MXA Network Mute Button Parts
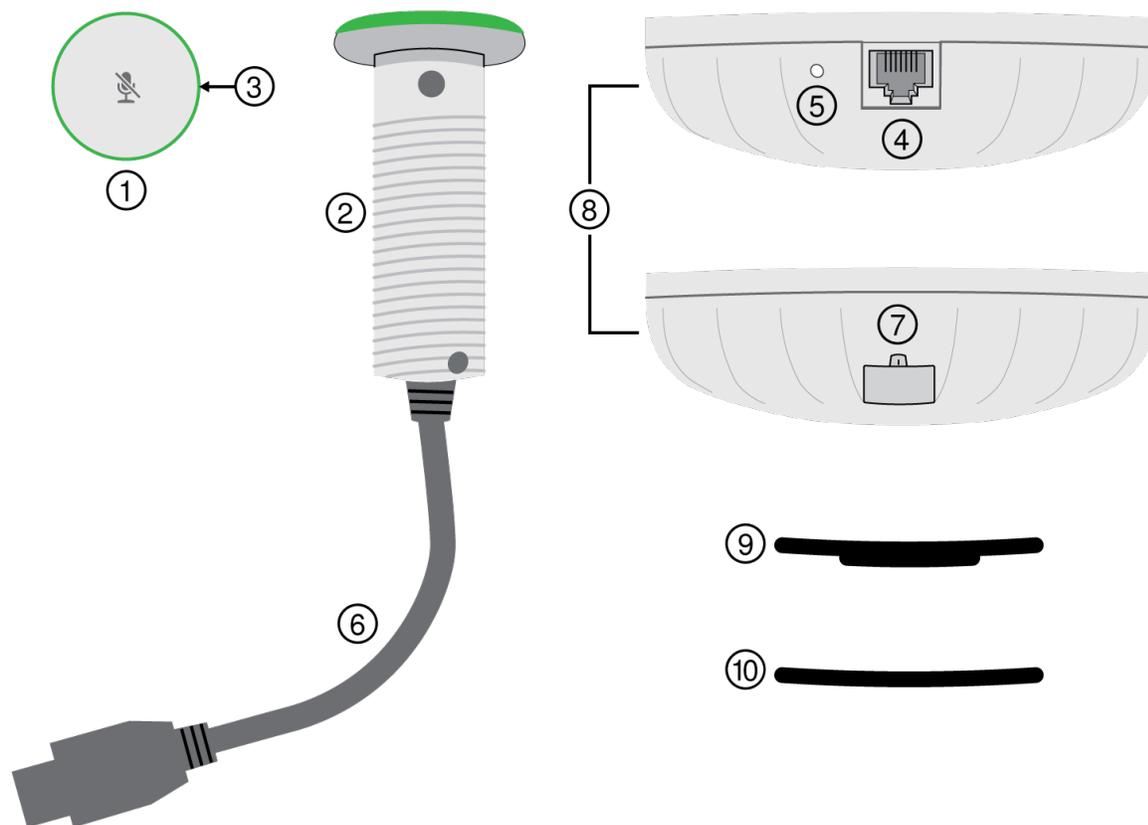
1. Mute button

   Press to mute connected devices. Toggle, push-to-talk, and push-to-mute modes are also available.

2. Mute button tube

   Insert into the hole on the table.

3. Light ring

   Open the mute button in Designer to control color and brightness.

4. Network port

   Connect a Cat5e (or better) cable supplying Power over Ethernet (PoE) here.

5. Reset button
   - **Network reset** (press for 4-8 seconds): Resets all Shure control IP settings to factory defaults.
   - **Full factory reset** (press for more than 8 seconds): Resets all network and configuration settings to the factory defaults.
6. Power cable

   Connect to the 8-pin power connector on the base.

7. Power cable connector

Connect the 8-pin power cable here.

8. Base

Sits underneath the table surface and provides power and control signals to the mute button.

9. Grommet

Use to adjust the fit of the tube in 7/8 or 1 inch (22 or 25 mm) holes.

10. Spacer

Use the spacers to adjust the position of the network port on the base under the table.

What's in the Box

- Mute button
- Base
- Grommet
- Spacers (2)

Model Variations

SKU	Description
MXA-NMB	Network Mute Button
MXA-NMB/BLANK	Network Mute Button without mute icon

How the Network Mute Button Works

The network mute button is a simple muting solution for rooms with no microphone on the table, for when the microphone has no mute button, or for when you need another way to control muting. Use Shure Designer software to link mute buttons to a compatible device.

You can link mute buttons to Shure microphones or processors (such as DSPs or audio network interfaces). When you link mute buttons to a processor, any supported devices connected to the processor match the button's mute status.

For example, in this room, 2 mute buttons are linked to a P300. Two MXA920 microphones are connected to the P300, and the P300 sends the near-end signal to a soft codec running on a computer. When you press one of the mute buttons, all connected devices show the correct mute status. The signal gets muted at the best point in the signal chain for DSP performance.
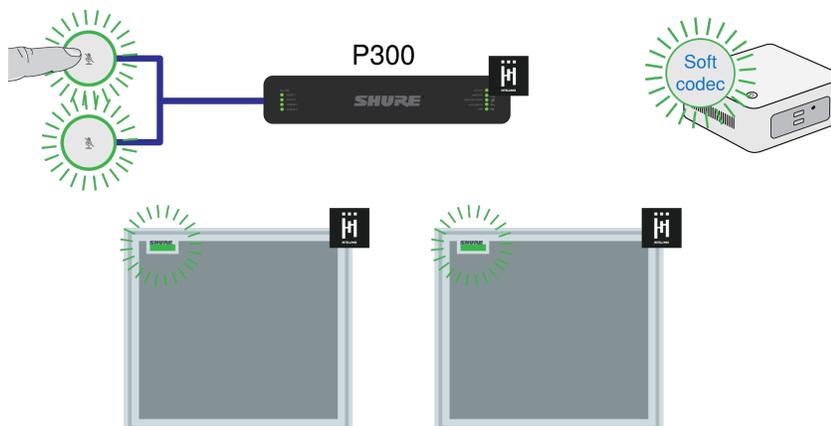
Link Mute Buttons to a Device

Use Designer to link 1 or more mute buttons to a device. When you link the mute button to Shure devices with IntelliMix DSP, the AEC stays converged to deliver the best performance.

In most rooms, all mute buttons control muting for the same device. To set this up:

1. Create a new room design in Designer.
2. Drag the mute buttons and other Shure devices into the design.
3. Select Auto route. Designer creates mute control and audio routes for all devices in the design. Alternatively, you can manually drag mute control routes from mute buttons to a device.
4. When you're ready, use the Deploy and connect button to send the settings to physical devices.

If you're manually setting up mute control routes, use these guidelines to choose what device to the link the mute button to:

Microphone with IntelliMix DSP (MXA920, MXA910, MXA902, MXA901, or MXA710), no separate DSP: Link the mute buttons to the microphone.
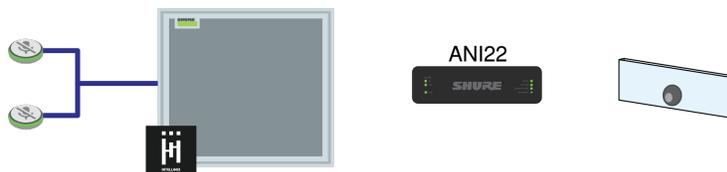
Microphone(s) connected to separate DSP (P300, IntelliMix Room, or ANIUSB-MATRIX): Link the mute buttons to the DSP.
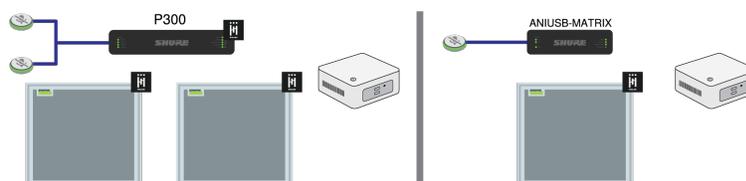
Microphone connected to third-party DSP:

- IntelliMix output: Link the mute button to the microphone.
- Microphone channel outputs: Use third-party command strings to set up muting.

Compatible Devices

You can link the mute button to the following devices to control muting:

- MXA310
- MXA710
- MXA901
- MXA902
- MXA910
- MXA920
- ANIUSB-MATRIX (Also mutes supported soft codecs connected by USB)
- IntelliMix P300 (Also mutes supported soft codecs connected by USB)
- IntelliMix Room (Also mutes supported soft codecs connected by USB)

Mute Sync

It's important to be able to see if a room is muted or unmuted during a call. You want devices to show the same mute status as the videoconferencing software. Shure devices use logic and mute sync to make this happen.

- **Logic:** Aligns mute status across Shure devices in the room. The processor (such as a P300, IntelliMix Room software, or an ANIUSB-MATRIX) is the controller.
- **Mute sync:** Aligns mute between the processor and the videoconferencing software, which is on a computer connected to the processor by USB. The processor's automix output is muted or unmuted to change the mute status of the system.
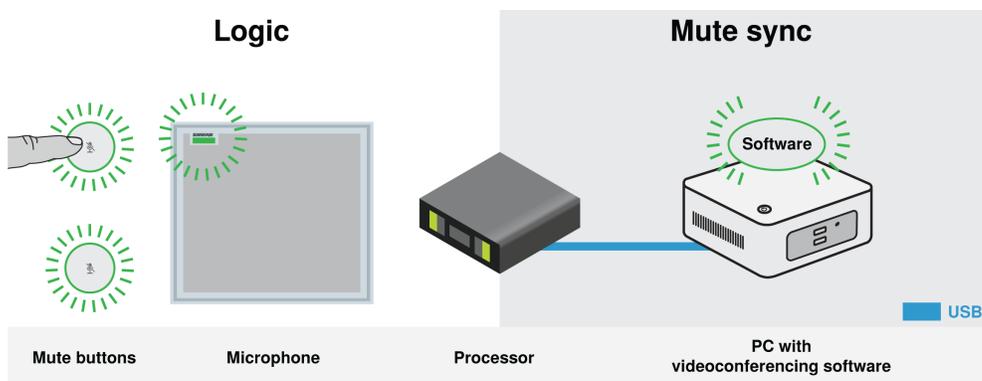
When mute sync is working correctly, you can mute a device (mute button or microphone mute button) or the videoconferencing software to mute the room.

To use mute sync:

1. In Designer, create audio and mute control routes between devices in the room.
2. Connect a computer with videoconferencing software to the processor's USB port.
3. Turn on mute sync and logic:
   - Processors: `[Your device] > Settings > Mute control`
   - Microphones without physical mute button: Logic is always on

◦ MXA310 and MXA mute button: `Settings` > `Logic control` > `Mute control function` > `Logic out`

Designer's auto route process configures all necessary mute sync and logic settings for you.

For help with specific mute sync implementations, see our FAQs.

Installing the Mute Button

The mute button fits in tables that are between 0.31 and 2.05 inches (8 to 52 mm) thick.

To get started, you will need:

- Drill with 7/8 or 1 inch (22 or 25 mm) drill bit

1. Drill a hole in the table. You can use a 7/8 or 1 inch (22 or 25 mm) drill bit, because the grommet accommodates both sizes. The mute button tube is 7/8 inches (22 mm) wide.

7/8 or 1 inch (22 or 25 mm)
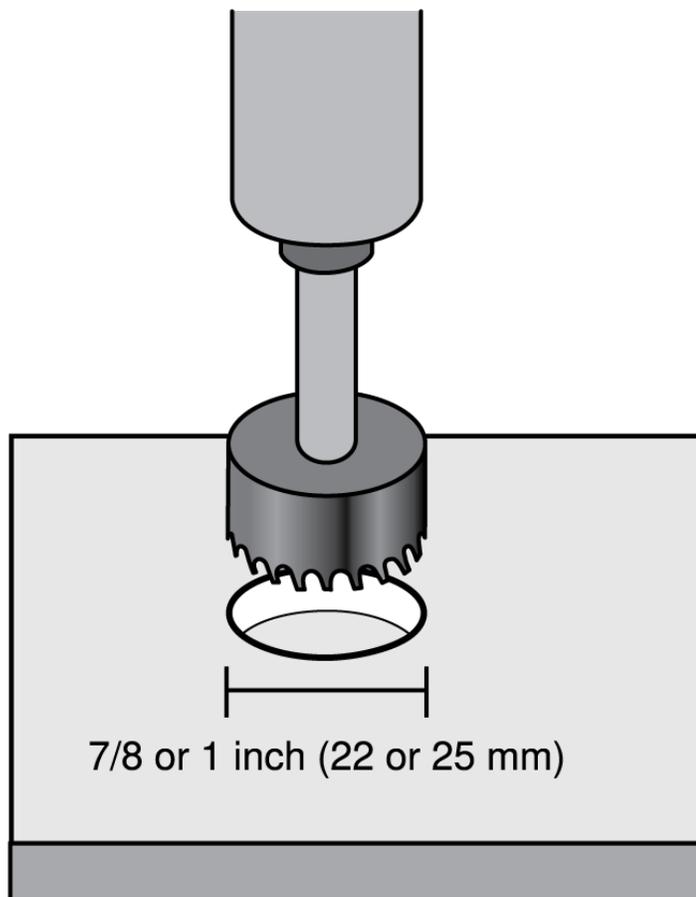
2. Insert the mute button tube into the hole.
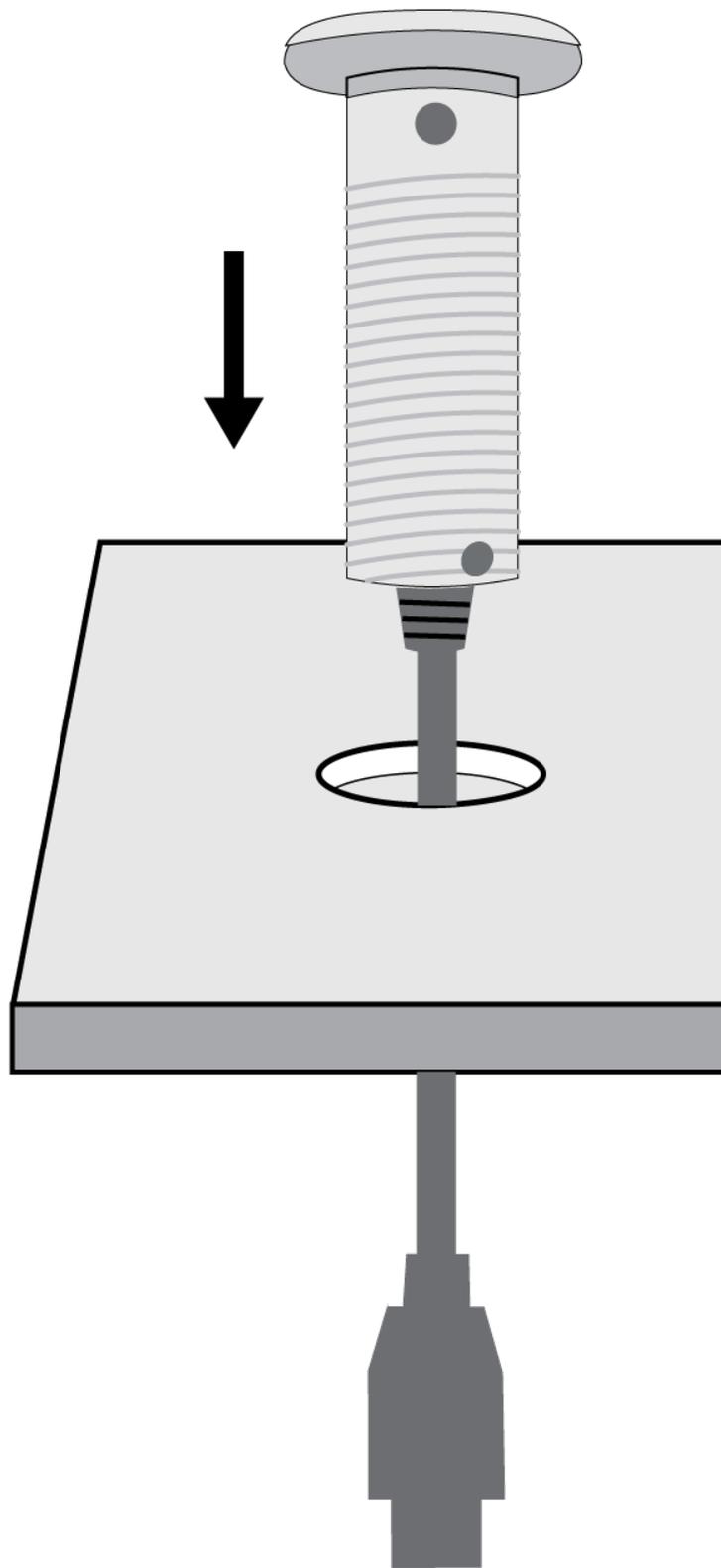
3. Slide the grommet onto the tube so it's flush against the bottom of the table.
    - ◦ **7/8 inch (22 mm) hole:** Grommet pointing down
    - ◦ **1 inch (25 mm) hole:** Grommet pointing up

   **Optional:** Add 1 or more of the included spacers between the grommet and the base to help position the network port under the table. The spacers give you multiple network port positions.

7/8 inch
22 mm

1 inch
25 mm
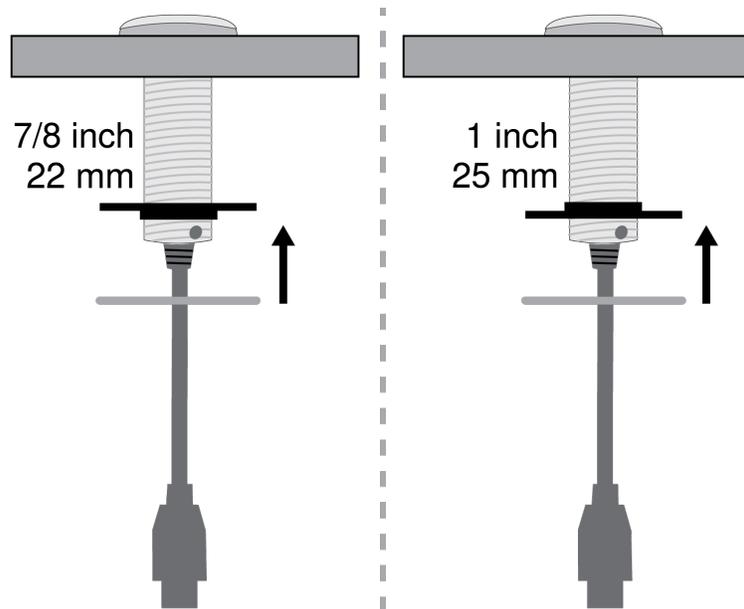
4. Slide the base onto the tube and tighten it by hand until it is snug against the table. You may want to hold the top of the mute button as you tighten the base to keep the mute icon correctly positioned on the table.
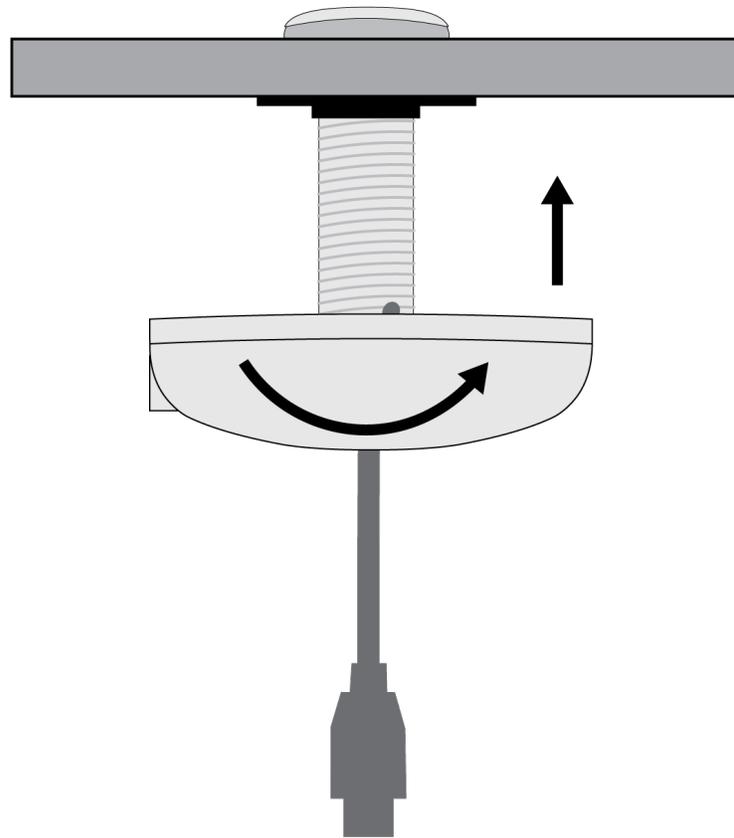
5. Connect the 8-pin power cable to the power connector on the base.
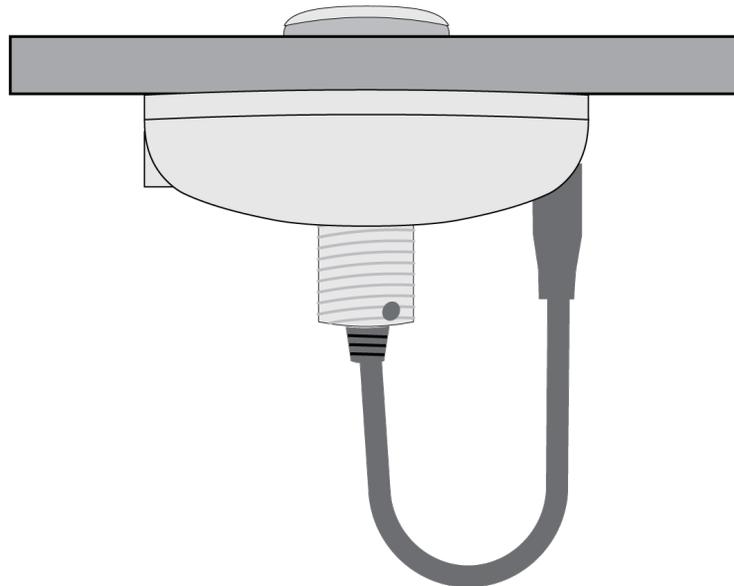
6. Connect a Cat5e (or better) Ethernet cable to the network port. Make sure the cable supplies Power over Ethernet from a network switch or PoE injector.
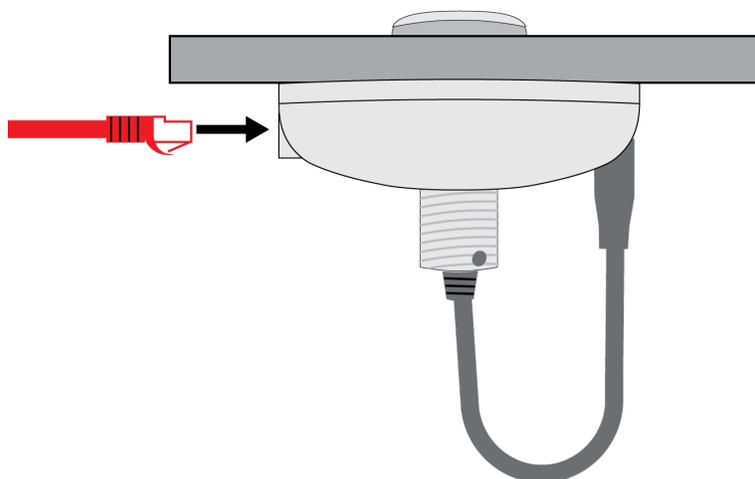
7. Check that the mute button's light ring turns on after you plug in the Ethernet cable.
8. To link the mute button to other devices and control other settings, open it in Shure Designer software.

Power Over Ethernet (PoE)

This device requires PoE to operate. It is compatible with all PoE sources.

Power over Ethernet is delivered in one of the following ways:

- A network switch that provides PoE
- A PoE injector device

Control Devices with Shure Designer Software

To control this device's settings, use Shure Designer software. Designer enables integrators and system planners to design audio coverage for installations using MXA microphones and other Shure networked devices.

To access your device in Designer:

1. Download and install Designer on a computer connected to the same network as your device.
2. Open Designer, and check that you're connected to the correct network in `File` > `Designer preferences`.
3. Click Online devices. A list of online devices appears.
4. To identify devices, select a device and click ID in the Properties menu. Double-click the device to open the settings.

From here, you can add devices to designs or online rooms and route audio to other Shure devices. Learn more at shure.com/designer.

You can also access device settings using Shure Web Device Discovery.

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.

Light Ring

You can control the light ring's color, brightness, and status using Designer. Open the mute button's configuration window, and go to `Settings` > `Lights` to adjust the settings.

Mute Settings

To control mute settings, open the mute button's configuration window in Designer and go to `Settings` > `Logic control`.

Mute Control Function Options

- **Logic out:** Mute button synchronizes mute state for Shure devices connected to it in Designer
  - Use for Shure devices controlled in Designer.
- **Disabled:** Button control is disabled. Mute button reports `MUTE_BUTTON_STATUS` command when button is pressed.
  - Use for systems that include third-party devices controlled by command strings (such as AMX or Crestron).
  - Do not link the mute button to devices in Designer if using third-party devices and command strings.

Note: For best results, don't set the button to Logic out if setting up a system that uses command strings. This use can create mismatched mute states and is not recommended.

Mute Control Modes

- **Toggle:** Press the button to toggle between muted and unmuted.
- **Push-to-talk:** Press and hold the button to unmute the microphone.
- **Push-to-mute:** Press and hold the button to mute the microphone.

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 network interface to connect to the network. The audio network interface 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. Initialize the device if necessary. Open the device and go to `Settings` > `Network` > `802.1X`.
3. Choose your EAP method from the menu.
4. Enter any required credentials and load any necessary certificates.
5. Press Save to save the 802.1X settings to the device.
6. 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:
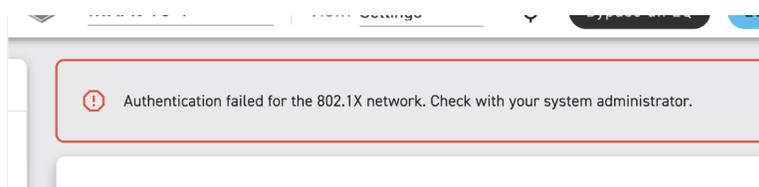
If this occurs, check with your system administrator.

IP Ports and Protocols

Shure Control

Port	TCP/UDP	Protocol	Description	Factory Default
21	TCP	FTP	Required for firmware updates (otherwise closed)	Closed
22	TCP	SSH	Secure Shell Interface	Closed
23	TCP	Telnet	Not supported	Closed
53	UDP	DNS	Domain Name System	Closed
68	UDP	DHCP	Dynamic Host Configuration Protocol	Open
80*	TCP	HTTP	Required to launch embedded web server	Open
443	TCP	HTTPS	Not supported	Closed
2202	TCP	ASCII	Required for third-party control strings	Open
5353	UDP	mDNS†	Required for device discovery	Open
5568	UDP	SDT (multicast)†	Required for inter-device communication	Open
57383	UDP	SDT (unicast)	Required for inter-device communication	Open

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Port	TCP/UDP	Protocol	Description	Factory Default
8023	TCP	Telnet	Debug console interface	Closed
8180	TCP	HTML	Required for web application (legacy firmware only)	Open
8427	UDP	SLP (multicast)	Required for inter-device communication	Open
64000	TCP	Telnet	Required for Shure firmware update	Open

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

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

Using a Third-Party Control System

This device sends and receives logic commands over the network. Many parameters controlled through Designer can be controlled using a third-party control system, using the appropriate command string.

Common applications:

- Mute
- LED color and behavior
- Loading presets
- Adjusting levels

A complete list of command strings is available at:

pubs.shure.com/command-strings/MXA-MUTE.

Specifications

Connector Type
RJ45, 8-pin power cable

Cable Requirements
Cat 5e or higher (shielded cable recommended)

Power Requirements
Power over Ethernet (PoE), Class 1

Power Consumption
2 W, maximum

Weight
0.43 kg (0.95 lbs)

16/19

Control Software

Shure Designer

Ingress Protection Rating

IEC 60529 IPX1

Operating Temperature Range

−6.7°C (20°F) to 40°C (104°F)

Storage Temperature Range

−29°C (-20°F) to 74°C (165°F)

Dimensions

Base	3.74 x 3.74 x 1.06 in. (94.96 x 94.96 x 27.04 mm) H x W x D
Mute Button	1.54 x 1.54 x 0.2 in. (39.02 x 39.02 x 5.02 mm) H x W x D
Mute Button Tube	0.87 x 0.87 x 3.03 in. (22 x 22 x 76.98 mm) H x W x D
Grommet	1.97 x 1.97 x 0.31 in. (49.97 x 49.97 x 8 mm) H x W x D
Spacer	1.93 x 1.93 x 0.05 in. (49 x 49 x 1.2 mm) H x W x D
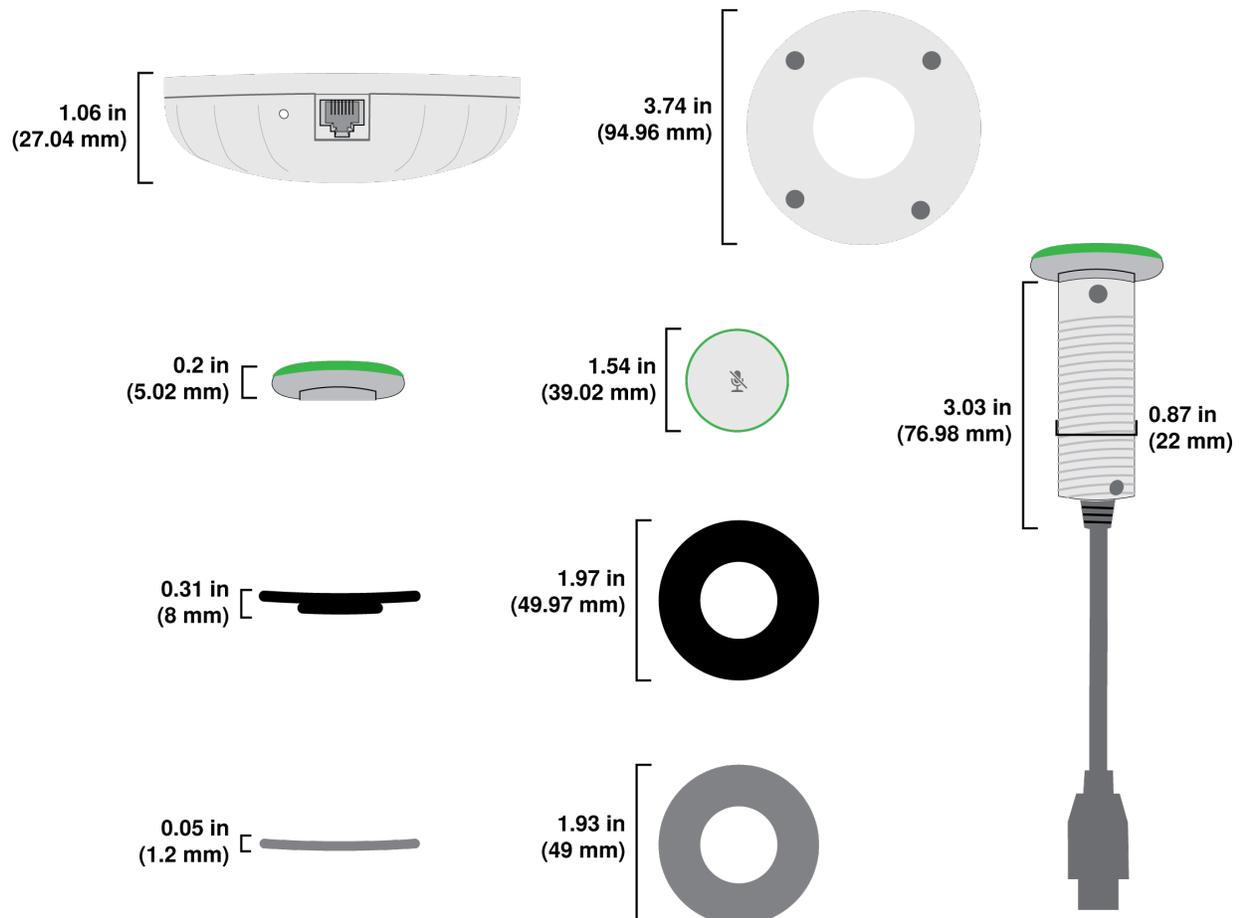
IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Allow sufficient distances for adequate ventilation and install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as open flames, radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not place any open flame sources on the product.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.
17. The airborne noise of the Apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
21. Operate this product within its specified operating temperature range.

	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

Important Product Information

The equipment is intended to be used in professional audio applications.

This device is to be connected only to PoE networks without routing to the outside plant.

Note: This device is not intended to be connected directly to a public internet network.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

Note: Testing is based on the use of supplied and recommended cable types. The use of other than shielded (screened) cable types may degrade EMC performance.

Please follow your regional recycling scheme for batteries, packaging, and electronic waste.

Information to the user

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio and television reception.

Notice: The FCC regulations provide that changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CAN ICES-003 (B)/NMB-003(B)

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Global Compliance
Jakob-Dieffenbacher-Str. 12
75031 Eppingen, Germany
Phone: +49-7262-92 49 0
Email: info@shure.de
www.shure.com

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit www.shure.com