DCA901

Planar Array Microphone

Shure DCA901 broadcast microphone manual. Learn how position and control the microphone array's 8 steerable lobes in the browser-based control software

Version: 0.5 (2025-K)

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DCA901 Overview

The DCA901 redefines how sound is captured for broadcast. As the first digital array microphone tailored for broadcast, it recreates the front-row experience by delivering immersive, natural audio that pulls the viewer closer to the action.

Whether covering a fast-paced game or a live studio production, the DCA901 streamlines deployment and gives engineers more control to shape a rich, detailed mix that keeps every moment in focus.

Digitally steerable lobes cover more ground than traditional analog setups, capturing everything from fast-paced movements to subtle exchanges with fewer physical mics and cables. One network connection delivers up to 8 channels of focused, high-fidelity audio with built-in DSP and direct outputs.

Features

- Capture up to 8 isolated audio channels from a single broadcast array microphone.
- Steerable lobes let you virtually adjust pickup zones, reducing mic count and eliminating the need to reposition gear.
- A single Dante or AES67 connection delivers audio, power, and control, simplifying routing and minimizing failure points.
- Built-in DSP handles EQ, compression, delay, and automixing, giving you more time to focus on creative sound design.
- Actively supports REMI workflows and alternate feeds with flexible routing and remote lobe control.
- Presets streamline deployments and ensure consistent configurations across shows or seasons.
- Supports seamless 5.1 immersible capture and stereo conversion for both modern and legacy formats.
- Low-profile design installs cleanly in stadiums, studios, or mobile setups and blends into camera-ready environments.

In-Depth Training from Shure Audio Institute

For expert training on Shure products, take a free course from the Shure Audio Institute. Virtual and in-person options are available depending on the course. Some courses also count toward AVIXA RUs.

Set Up the DCA901

After completing these steps, you should be able to:

- Access the DCA901's web application to control microphone settings
- Adjust microphone coverage
- Route audio to other Dante devices using Dante Controller

This example uses:

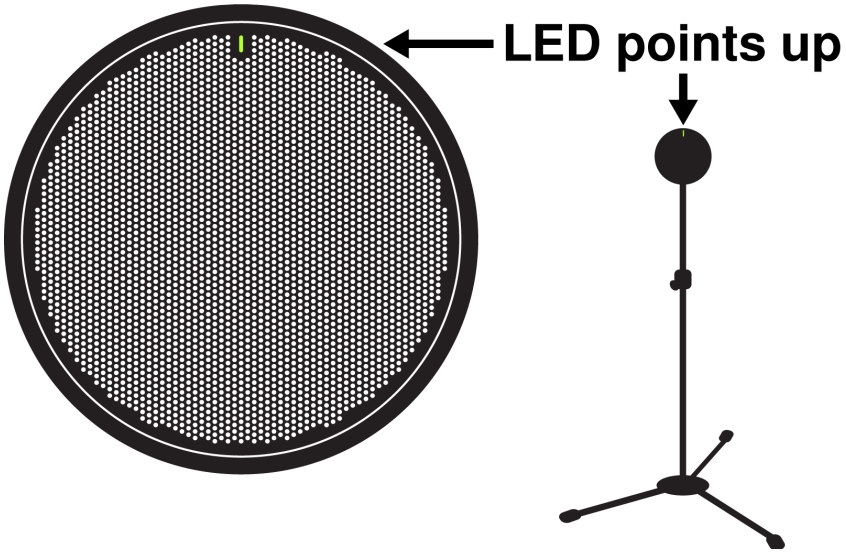
- Ethernet cable, Cat5e or better (shielded cable recommended)
- Network switch that provides Power over Ethernet (PoE)
- Shure Discovery and Dante Controller software

Before proceeding, check for any firmware updates using Shure Update Utility.

Step 1: Install

1. Install the microphone pointed toward the sound source.

   Tip: The control software shows the microphone with the status LED pointed up. For vertical installations, try pointing the status LED toward the ceiling. This technique makes it easier to understand coverage in the control software.



2. Connect the microphone to a PoE source using Ethernet cable (Cat5e or better, shielded cable recommended).

Step 2: Open the Control Software

1. Install Shure Discovery to find the microphone's web application. The computer with Shure Discovery and Dante Controller should be connected to the same network as the microphone.
2. Open Shure Discovery. Check that you're using the correct NIC to discover the DCA901 in `Tools` > `Preferences` > `Network`.
3. Find the DCA901 in the list of devices and double-click the IP address to open the web application. Supported browsers: Google Chrome.

   The web application uses an HTTPS connection with self-signed certificates. You may see a warning message in your browser the first time you open the web application. To proceed, click Advanced and then select the option to trust the connection. For help with HTTPS connections, refer to our step-by-step video.

In the Channels tab, you can:

- Change input and automix gain for each channel
- Create mono and stereo automixes and pan channels
- Monitor channels before the faders with pre-fade listen (PFL)
- Move microphone channels to different Dante outputs

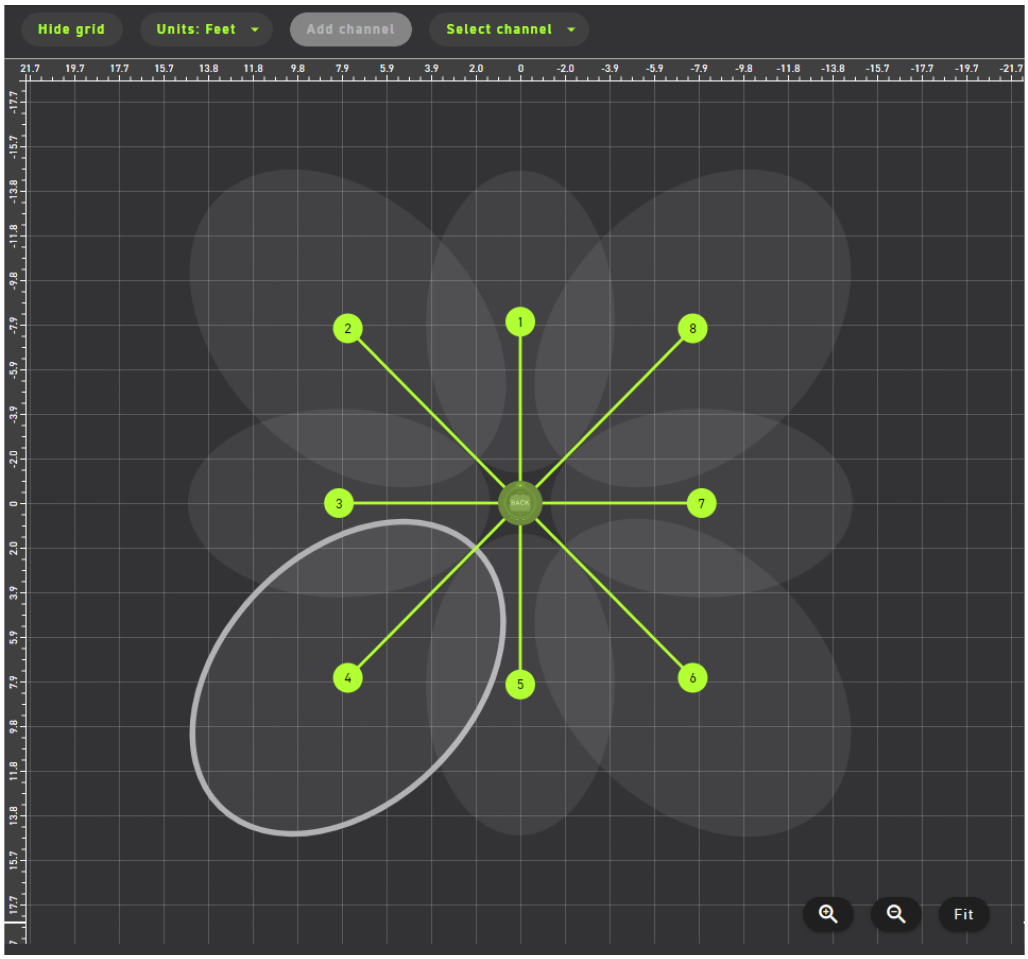
Learn more about adjusting levels, mono and stereo automixers, and onboard DSP.

Step 3: Adjust Microphone Coverage

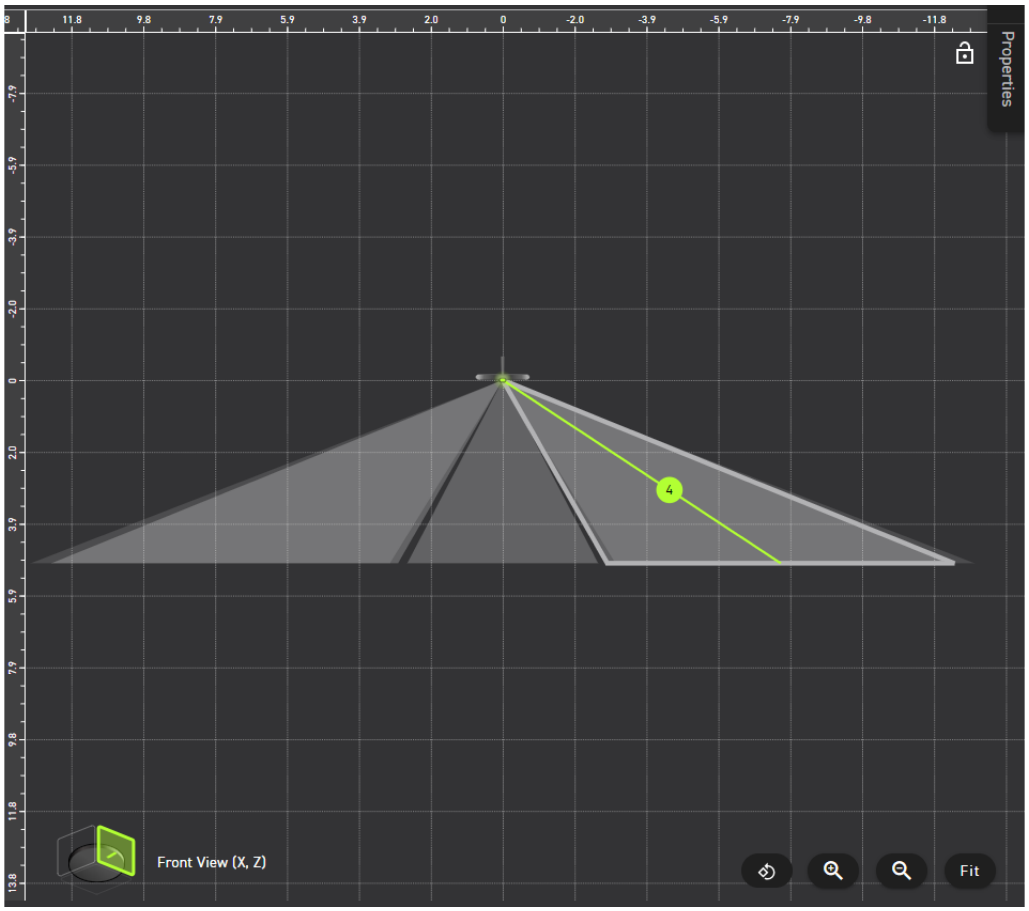
Go to the Coverage tab. Microphone coverage is shown as up to 8 separate "lobes" (channels). Each lobe has a separate Dante output channel.

There are 2 main windows:

- **Left side:** Fixed view of the microphone's lobes from behind



- **Right side:** 4 view options showing microphone coverage in different positions



Click and drag a lobe to move it. For each lobe, you can:

- Change its width (wide, medium, or narrow)
- Rename it
- Lock lobe positions to prevent accidental changes (lock icon)

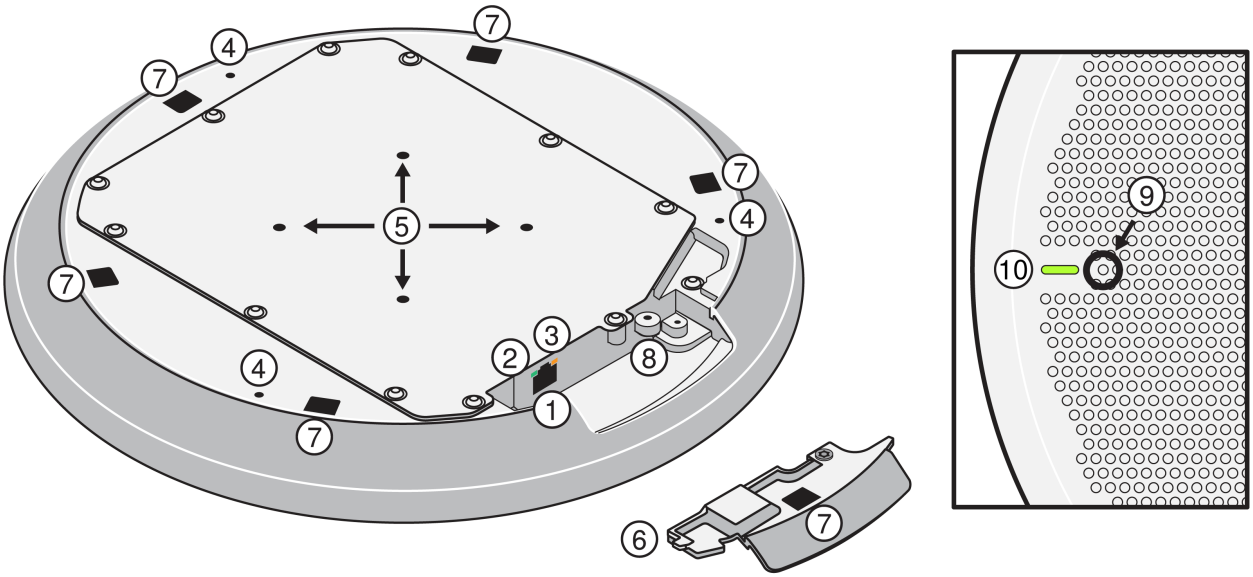
Learn more about how to position coverage or use presets.

Step 4: Route Audio

To route audio to other Dante devices, use Dante Controller.

1. Open Dante Controller and find the DCA901 in the list of transmitters. The DCA901 has 12 channel outputs:
   - Channels 1-8: Channel outputs
   - Channel 9: Mono automix output
   - Channels 10 and 11: Stereo automix left and right outputs
   - Channel 12: PFL output
2. Use the checkboxes to make routes between DCA901 outputs and other Dante devices.
3. Listen to each lobe and make position adjustments in the Coverage tab.

DCA901 Parts



1. RJ-45 network port
2. Network status LED (green)
   - Off = No network link
   - On = Network link established
   - Flashing = Network link active
3. Network speed LED (amber)
   - Off = 10/100 Mbps
   - On = 1 Gbps
4. Eyelet screw holes for suspension mounting
5. VESA MIS-D mounting holes (75 mm square)
6. Removable cover for network port
7. Holes for pole mount and Gripple mount cover clips
8. Screw hole for network port cover or optional secondary attachment point
9. Reset button
10. Status LED

Customize LED color and behavior in the control software: `Settings` > `Lights`.

The DCA901 does not have a device mute button. The mute option in a channel's automix section is pre-gate and does not affect the status LED, direct outputs, or PFL output.

DCA901 Status LED Default Settings

Microphone Status	LED Color/Behavior
Active	Green (solid)
Hardware identification	Green (flashing)
Firmware update in progress	Green (progresses along bar)
Reset	**Network reset:** Red (progresses along bar)

Microphone Status	LED Color/Behavior
	Factory reset: Triggers device power-up
Error	Red (split, alternate flashing)
Device power-up	Blue (moves quickly back and forth across bar)

Note: *If LEDs are off, they will still turn on when the device powers up or when an error state occurs.*

Power Over Ethernet (PoE)

This device requires PoE to operate. It is compatible with **Class 0** PoE sources.

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

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

Dante Channels

The DCA901 has 12 total channels:

- Up to 8 direct output channels that correspond to the microphone's steerable lobes
- 1 mono automix output with onboard DSP (channel 9)
- Stereo left and right automix outputs with onboard DSP (channels 10 and 11)
- 1 pre-fade listen channel (channel 12)

What's in the Box

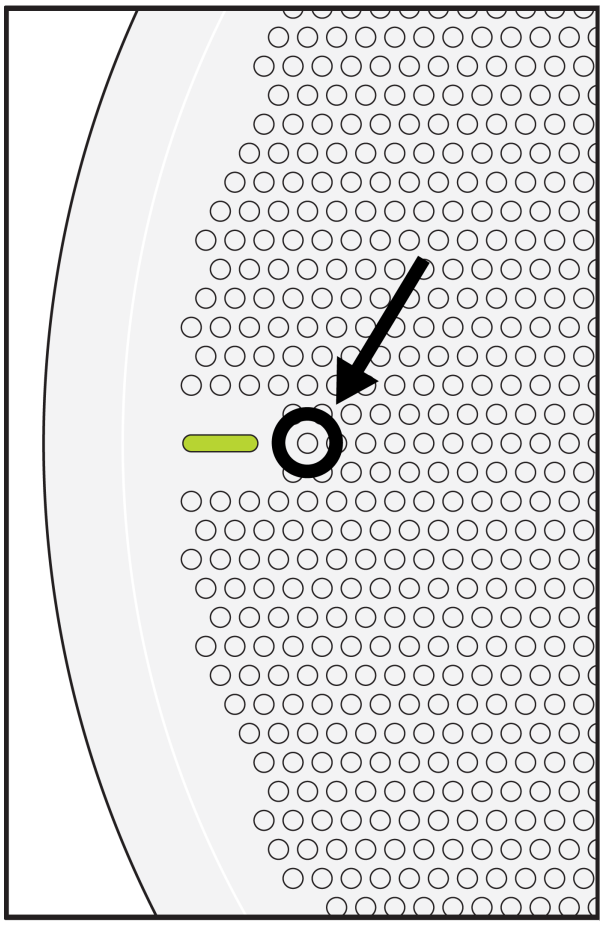
- DCA901 array microphone
- Network port cover

Optional Accessories

- A901-JMR: Windscreen accessory
- A901B-R-GM: Gripple suspension mount kit with black cover
- A901B-R-PM-1.5IN: 1.5-in. pole mount kit with black cover

Reset Button

The reset button is behind the grille. To push it, use a paper clip or other tool. You can also use the control software to reset the device.



Reset Modes

- **Network reset** (press for 4-8 seconds): Resets all Shure control and audio network IP settings to factory defaults. Red LED along bar.
- **Full factory reset** (press for more than 8 seconds): Resets all network and configuration settings to the factory defaults. Blue LED along bar.

DCA901 Control Software

There are 3 pieces of software that can be used with the DCA901:

- **Find the microphone's web application:** Shure Discovery
- **Update Shure device firmware:** Shure Update Utility
- **Audio routing:** Dante Controller

Use the browser-based web application to control the DCA901's settings. Supported browsers: Google Chrome.

To open the web application:

1. Download Shure Discovery on a computer connected to the same network as the device.
2. Check that you're using the correct NIC to discover the DCA901 in `Tools` > `Preferences` > `Network`.
3. Double-click the IP address to open the web application in a new browser tab.

4. The web application uses an HTTPS connection with self-signed certificates. You may see a warning message in your browser the first time you open the web application. Click Advanced and select the option to trust the connection.

   For help with HTTPS, refer to our step-by-step video.

Use Dante Controller to create Dante audio routes to other Dante sources.

Firmware Updates

Firmware is embedded software in each component that controls functionality. Periodically, new versions of firmware are developed to incorporate additional features and enhancements. You can install firmware using Shure Update Utility.

Download Shure Update Utility at shure.com.

Microphone Coverage

Unlike traditional shotgun microphones, the DCA901 provides 8 independently steerable channels that you can control using the web application. Each channel can be treated as a separate microphone with its own coverage, input gain, and PEQ.

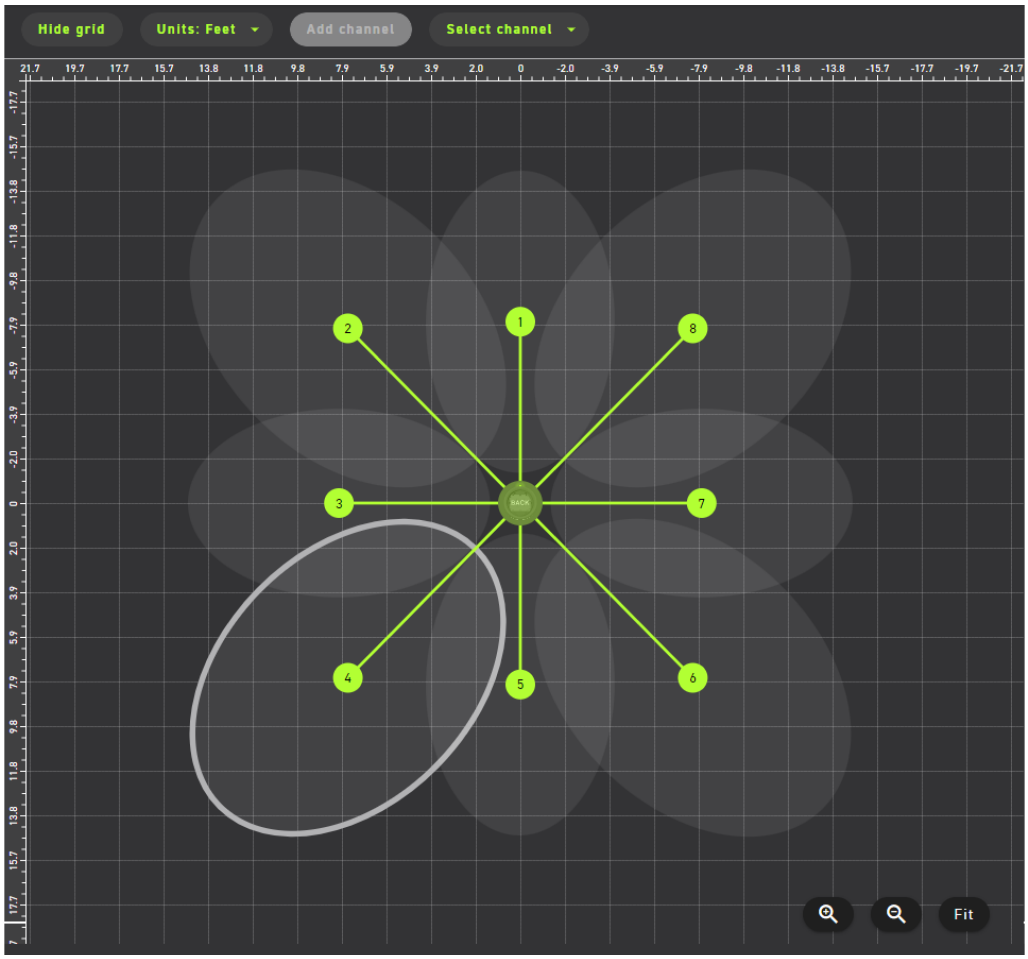
Install the DCA901 in the venue and use the web application to adjust coverage, all without leaving your desk to reposition the microphone.

Web Application Coverage View

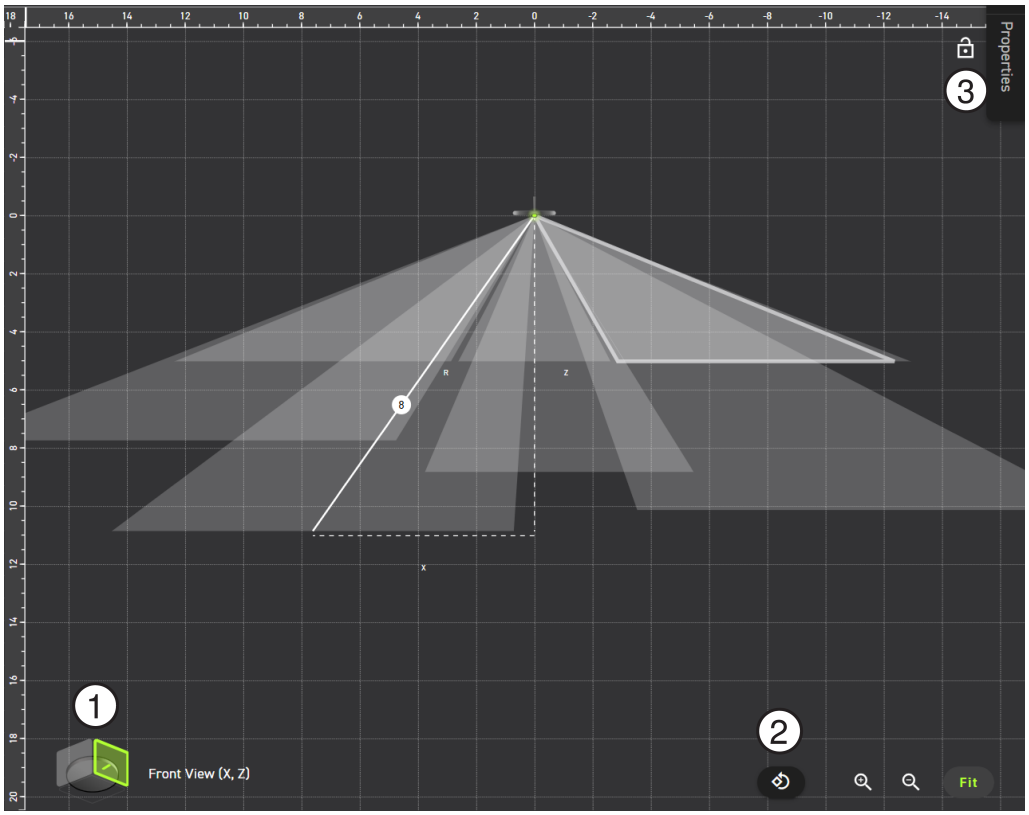
The DCA901's web application shows 2 side-by-side views of microphone coverage. Use both to understand the microphone's coverage along the X, Y, and Z axes.

You can change the zoom level for each view independently.

Left side view: Fixed view of the microphone's lobes from behind showing the X-axis and Y-axis

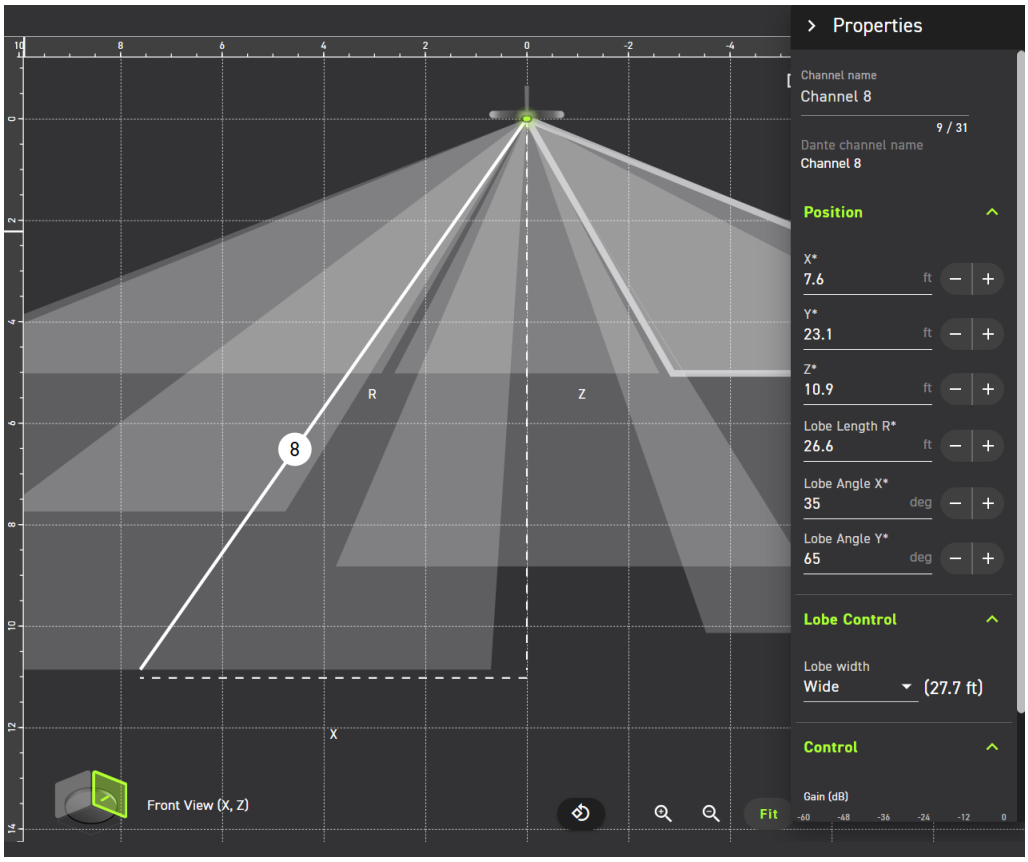


Right side view: Shows microphone coverage in different positions



1. Front or side view selector: Changes the view to show coverage from the front or the side of the microphone
   - **Front view:** Shows X-axis and Z-axis
   - **Side view:** Shows Y-axis and Z-axis
2. Rotate: Changes the representation of the microphone's position on the right side of the coverage view
3. Lock lobe positions: Locks all current lobe positions

Properties panel: Shows additional settings for the selected channel

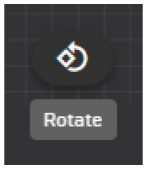


Position Microphone Channels

After installing the DCA901, use the Coverage tab to position microphone channels. You should set up a way to listen to the microphone directly while you position each channel.

To position microphone channels:

1. In the web application, go to Coverage.
2. Adjust the view on the right side so that you can see what you need to see for each channel. This may include:
   - Using the Rotate button to change what you see



   - Switching between a front view and a side view

   - Selecting a channel and checking lobe position, angle, and length information in the Properties panel

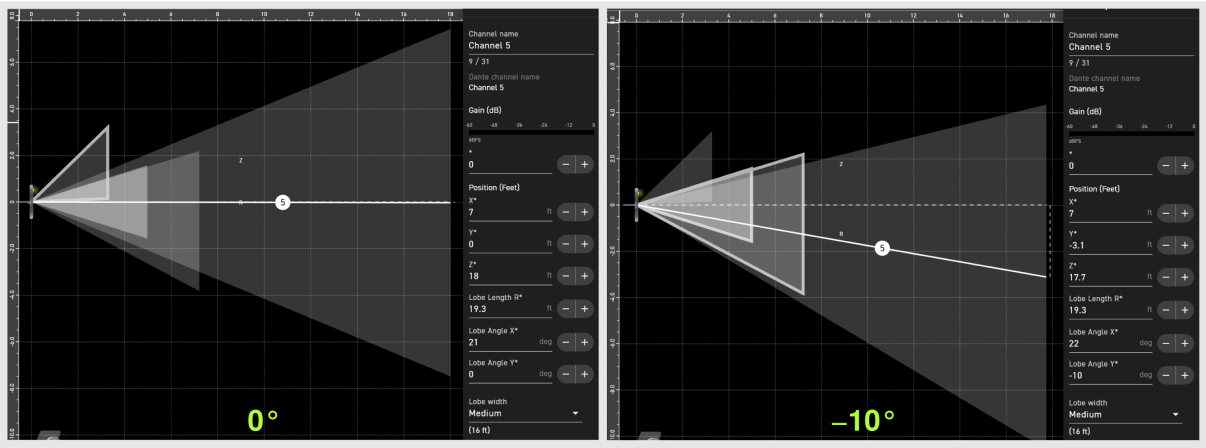
3. Select a channel and move it into position, aiming it at your sound source. You can click and drag to move lobes from either the left or right views. Use your ears to help position each channel. For more precise adjustments, use the Properties panel to change:
   - X, Y, or Z position
   - Lobe angle
   - Lobe width
   - Lobe length (R). This is shown with the solid line at the center of each lobe on the right view
4. Adjust the channel's input gain and PEQ as needed. Consider changing mic/line settings depending on the target sound source's volume.
5. If you're using automix outputs, check the channel gating behavior and adjust input gain as needed. Adjust the channel's post-gate automix gain after you're satisfied with the gating behavior.

After coverage is finalized, it's strongly recommended that you save a preset and export it off the device to serve as a backup in case you ever need to replace the microphone or change coverage.

You may want to use the lock icon to lock lobe positions to prevent accidental changes during a show.

Coverage Tips

- If possible, install the DCA901 perpendicular or parallel to the floor. The Coverage tab shows coverage from these vantage points, so it's easier to understand lobe placement if the microphone isn't installed on an angle.
- Experiment with lobe width and placement. Use your ears to help pick out settings and position.
- Use the Coverage visualizations to aim mic channels to the correct general area. Then use your ears to fine-tune each channel's position.
- Coverage does not "end" or immediately cut off at the edge of Lobe Length R as shown in the Coverage tab. Coverage extends beyond this boundary because the array system still behaves like a traditional microphone: each lobe captures audio along the path it is steered to. You may find that you need to change a lobe's width or move it in closer to the microphone. Use your ears to help make these adjustments.
- Example: For a vertical installation on the side of a soccer field, angle lobes down toward the field (this changes the Lobe Angle Y value). The lobe will pick up less sound from above the field and more sound from on the field.

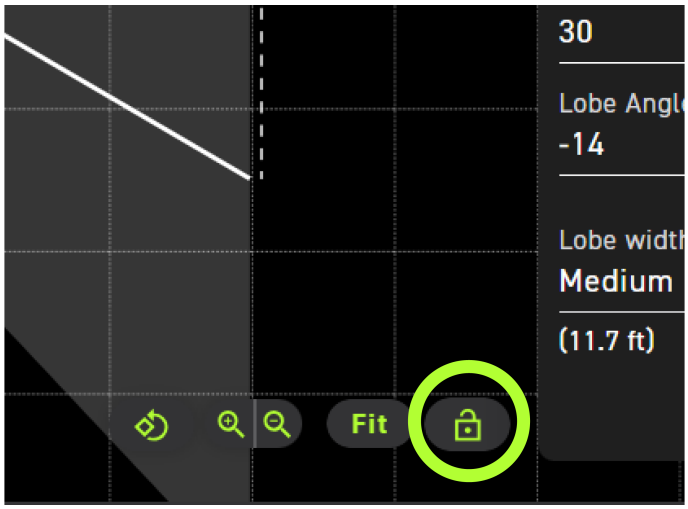


Example: Channel 5 with 0° lobe angle Y (left) and −10° lobe angle Y (right)

Lock Lobe Positions

To lock DCA901 lobe positions, do the following:

1. Go to the Coverage tab.
2. Select the lock icon. Lobe positions are locked until you press the lock icon to unlock.



Locking lobe positions prevents accidental changes to coverage during a broadcast or a live event.

Change a Lobe's Width

Each lobe has 3 width options: narrow, medium, and wide. To change a lobe's width:

1. Go to the Coverage tab and select a lobe.
2. Open the Properties panel. Use the lobe width menu to pick a new width.

Tips for Using Lobe Width

- Narrow lobes are useful if you're looking for a directional, focused sound.
- When the mic is installed vertically (status LED pointed at ceiling), use the side view setting to understand a lobe's conical shape when viewed from the side.

Use Auto Position to Place Lobes

The DCA901's auto position feature can help you place lobes in a space. For best results, have someone else help you with the process.

Tip: Auto position is not recommended for live or noisy environments. The microphone's processing must be able to clearly distinguish the sound you want to capture above other sounds in the space.

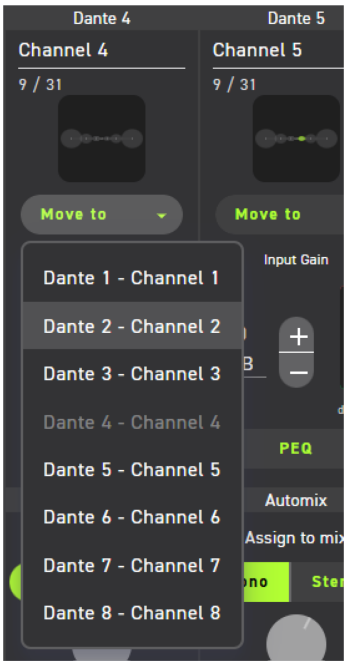
To use auto position:

1. Go to Coverage in the web application.
2. Select a channel to auto position. Have the other person move to where you want to position the channel.
3. Have the other person make noise, then click Auto position. The microphone's processing uses the sound to position the lobe. You can fine-tune the lobe's position manually or try auto position again if needed.

Move a Lobe to a Different Channel

When setting up coverage, you may want to move a lobe to a specific Dante output channel. To move a lobe, go to the Channels view in the web application.

1. Find the lobe you want to move to a new channel.
2. On the lobe's channel strip, select Move to. Choose the new channel for the lobe.



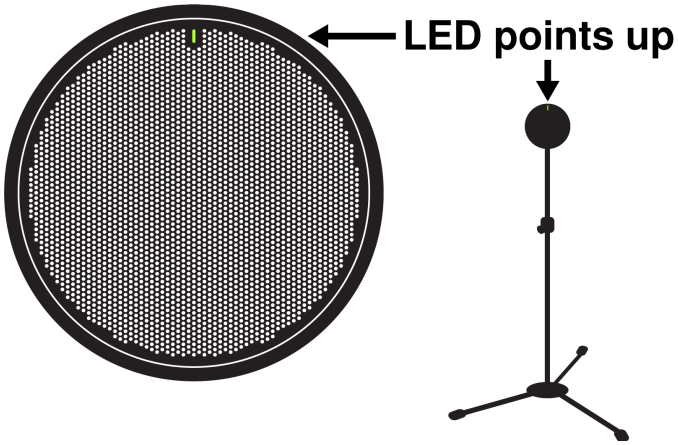
3. There are 2 options for how to handle the 2 lobes. You can:
   - Swap: The 2 lobes trade places. Example: The lobe currently on Dante 1 moves to Dante 6, and the lobe currently on Dante 6 moves to Dante 1.
   - Replace: The lobe that is being moved replaces whatever is currently on the new channel. Example: The lobe currently on Dante 1 moves to Dante 6, replacing the lobe currently on Dante 6.

How to Install the DCA901

Microphone Placement

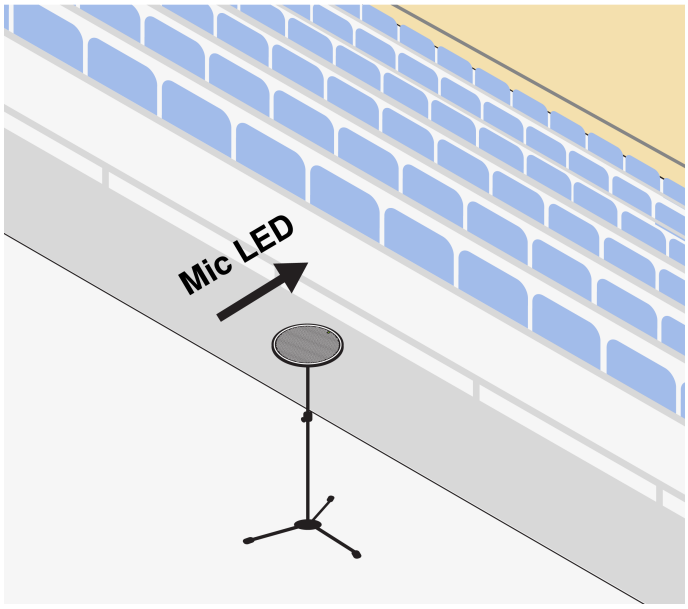
You can install the DCA901 in a variety of orientations to fit your needs. Common options include:

- **Perpendicular to floor**



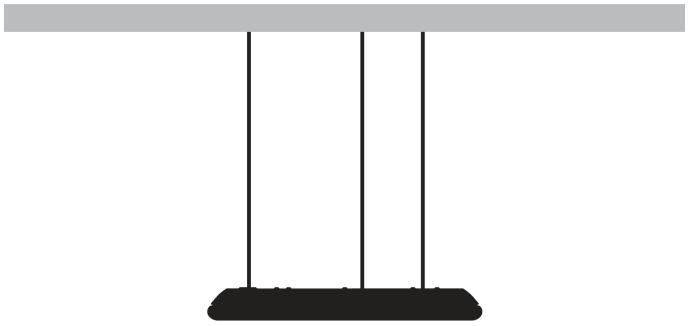
Tip: Install with the status LED pointed at the ceiling to match the control software. This technique makes it easier to understand coverage in the control software.

- **Parallel to floor, grille pointed up for 5.1 capture**



For more, see Record 5.1 Sound.

- **Suspended from ceiling**



If possible, try to avoid installing the microphone on an angle. The web application's Coverage view shows coverage from perpendicular and parallel vantage points, so it's easier to understand lobe placement if the microphone isn't installed on an angle.

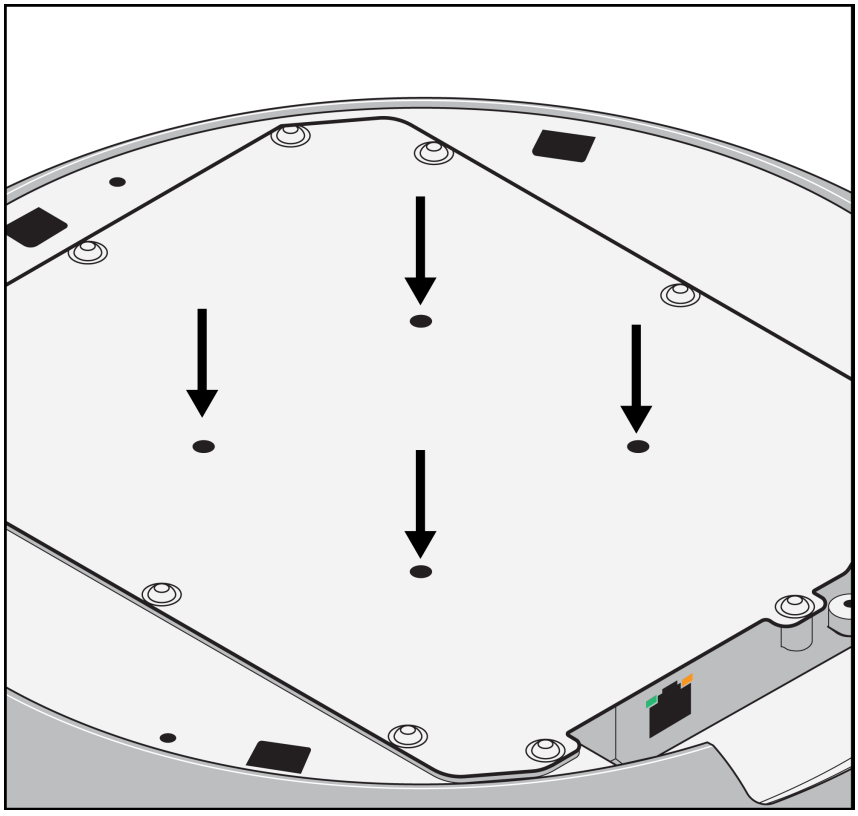
Install with VESA MIS-D

The rear plate has 4 threaded holes for attaching the microphone to a VESA mounting device. You can mount the microphone on anything with a VESA MIS-D pattern.

The mounting holes follow the VESA MIS-D standard:

- Screw specification: M4 thread
- Hole spacing: 75 mm square
- Hole depth: 8.5 mm

Warning: Do not use screws that are too long for the mounting holes and require a shim. The VESA mounting device should sit flush against the microphone.

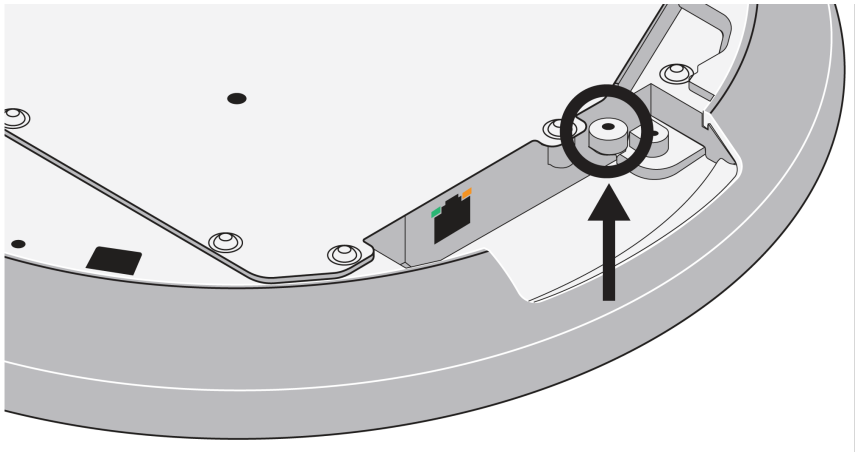


There are many VESA brackets that attach to other equipment available from other manufacturers. The Manfrotto TetherGear Monitor Mount is a good example of a compatible mounting device.

Suspend from the Ceiling

You can use the Shure A901-R-GM Gripple suspension mount kit to suspend the microphone from the ceiling.

If you plan to suspend the microphone from suspension cable: For additional mounting security, attach suspension cable to the secondary attachment point and another attachment point on a solid structure in the ceiling. Follow any local regulations.



Shure also sells a A901-R-PM pole mount kit to install the microphone on NPT poles.

A901-JMR Windscreen

The optional A901-JMR accessory fits over the DCA901 and reduces wind noise.

Installation Examples

The DCA901's low-profile design blends into camera-ready environments of all kinds. With VESA MIS-D compatibility, the mic connects to a wide range of mounting accessories for use in stadiums, studios, or mobile setups.

On a Stanchion

In this example, the microphone is installed vertically on the stanchion.

Mounted on a basketball stanchion

Coverage: Use the 7-channel fan out preset as a starting point. Move, add, or remove channels as needed.

In the Stands

Another option is to install the microphone in the stands to capture sounds of the game. Here, the microphone is installed vertically on a VESA bracket attached to a ledge.

Mounted on a VESA bracket behind arena seats

Coverage: Use the 7-channel fan out preset as a starting point. Move, add, or remove channels as needed.

Use Presets

Use presets to save device settings so that you can quickly recall them later. Presets capture all current device settings but do not save routing information.

Tip: After you're satisfied with coverage, gain, and DSP settings, save a preset and export it off the device. The saved preset serves as a backup for your settings in case you ever need to replace the microphone.

There are 10 preset slots available. The DCA901 comes pre-loaded with 2 helpful presets: 5.1 SMPTE and 7-channel fan out.

Save a Preset

1. Go to Presets.
2. Select an open preset slot.
3. Enter a name for the preset and save.

Apply a Preset

1. Go to Presets.
2. Choose the preset you want to apply.
3. Select Apply. The applied preset has a check mark next to it.

Note: 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.

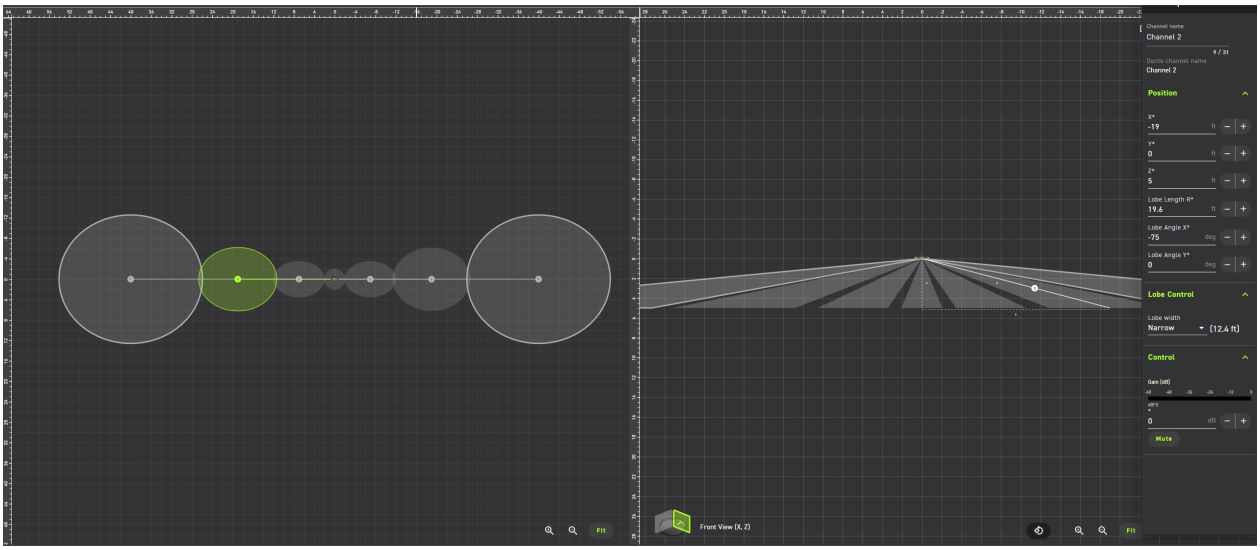
7-Channel Fan Out Preset

The 7-channel fan out preset sets up a mix of 7 medium and narrow lobes fanned out in front of the microphone. This preset is designed for DCA901s that are installed vertically with the status LED pointed at the ceiling.

The Y value is set to 0 feet for this preset, but you can adjust lobe positions as needed.

To use the 7-channel fan out preset:

1. Install the DCA901 vertically so that the status LED is pointed at the ceiling.
2. In the web application, go to `Presets` > `7ch Fan Out` and click Apply.
3. Adjust lobe positions as needed.

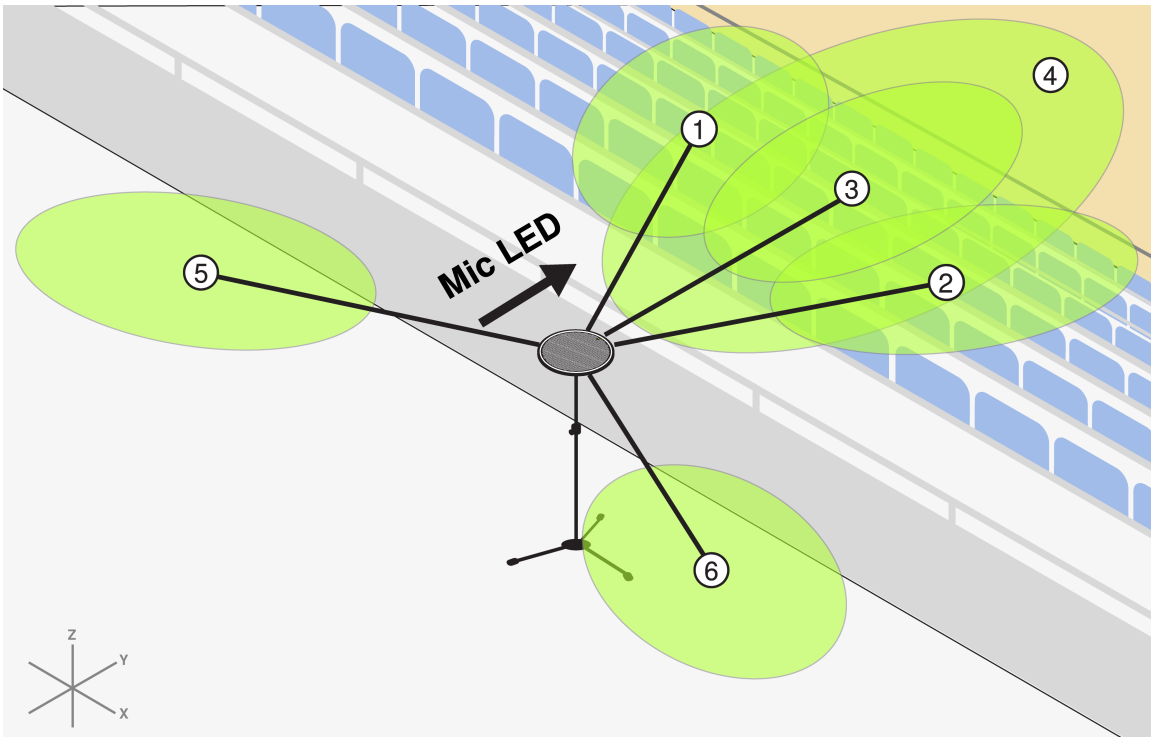


Default coverage for the 7-channel fan out preset

Record 5.1 Sound with 5.1 SMPTE Preset

Use this preset as a starting point to record for 5.1 surround sound. The microphone has 6 lobes set up for left, right, center, low frequency effects (LFE), left surround, and right surround. The LFE channel has a low-pass filter applied to it.

Important: In this preset, the Z value is set to 0 because it assumes that the microphone is installed parallel to the ground with the grille pointing up.



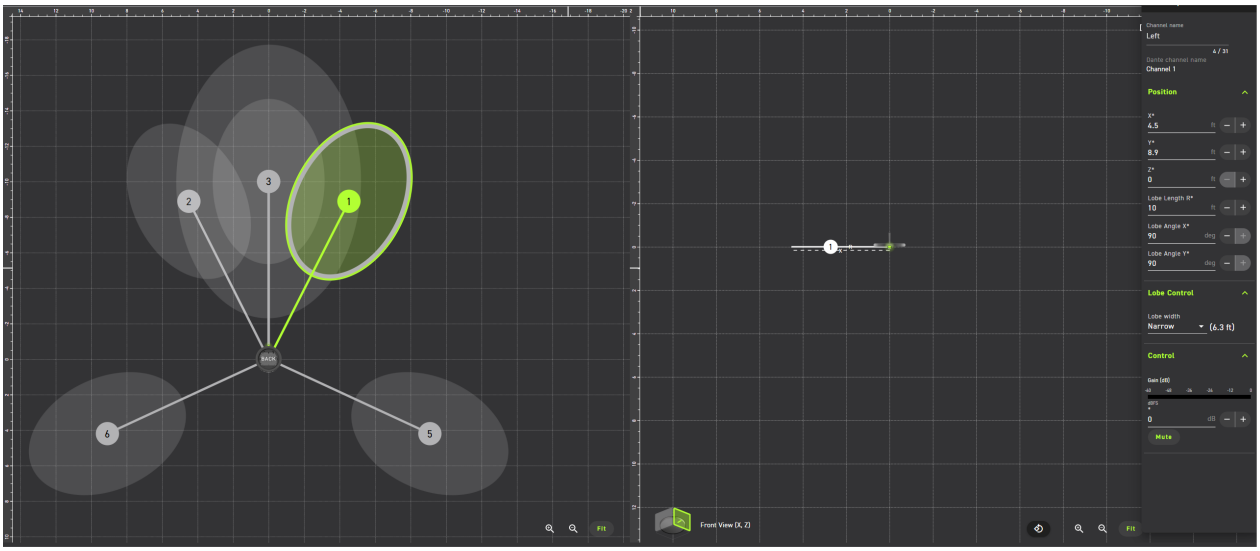
DCA901 installed in an arena with default 5.1 lobe positions

Channels:

1. Left
2. Right
3. Center
4. LFE
5. Left Surround
6. Right Surround

To use the 5.1 SMPTE preset:

1. Install the DCA901 so that the status LED points toward the center channel sound source. The microphone should be parallel to the ground with the grille pointing up.
2. In the web application, go to `Presets` > `5.1 SMPTE` and click Apply.
3. Adjust lobe positions as needed.



Default coverage for the 5.1 SMPTE preset

Adjust Levels

Before adjusting levels, set up a way to listen to the microphone directly. Two common options are:

- With a Dante® headphone amp or
- With Dante Virtual Soundcard

To adjust levels, go to Channels. Each channel has 2 sets of gain faders:

Input gain (pre-gate):

- Affects a channel's gain before it reaches the automixer and affects the automixer's gating decision
- Boosting input gain makes the lobe more sensitive to sound sources and more likely to gate on when you use the stereo or mono automix outputs.
- Lowering input gain makes the lobe less sensitive and less likely to gate on.
- If you're only using direct outputs for each channel without an automixer, you only need to use these faders.

DCA901 input gain section

Automix gain (post-gate):

- Adjusts a channel's gain after the lobe has gated on
- Does not affect the automixer's gating decision
- Use these faders to adjust the gain of a channel after you are satisfied with the automixer's gating behavior.

DCA901 automix gain section

The mute option in a channel's automix section is pre-gate. Muting occurs before the channel contributes to the automixing decision and before it is mixed with signals from other channels. This mute option does not affect the mic's direct outputs or the PFL output. There is no device mute option on the DCA901.

Always on keeps a channel open at all times.

You can also adjust each automix output's overall gain using the automix output faders.

Mic/Line Switch

The microphone's output gain is set to mic level (−32 dB attenuation) by default. The line level setting bypasses the −32 dB attenuation. To switch all channels to line level, go to `Channels` > `Properties`.

You might set the DCA901 to line level if you want downstream devices to receive a line-level Dante signal.

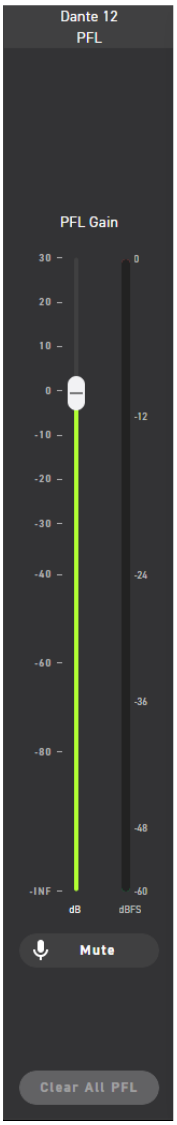
Pre-Fade Listen (PFL) Channel

Use the PFL channel 12 to monitor 1 or more direct output channels independently before sending them elsewhere. The PFL channel is a summed signal of any channels that are sent to it.

To send a direct output channel to the PFL channel:

1. Go to Channels.
2. Click PFL on any direct output channel that should go to the PFL channel.
3. Adjust PFL gain as needed.

The PFL channel has the same processing as what is applied to any direct output channel sent to the PFL channel. The PFL channel doesn't pass through any automixer.



Mono and Stereo Automix Outputs

This microphone has:

- 1 mono automix output (channel 9)
- Stereo left and right automix outputs (channels 10 and 11)

You can send the 8 mic channels to one or both automixes. To send a channel to an automix output, click the Mono or Stereo options under Assign to mix.

The mono and stereo automixes each have their own set of DSP blocks. For the stereo automix, any DSP is applied to both the left and right channels.

Automixing and Broadcast Production

The DCA901 brings Shure automix technology into the broadcast and live events space.

The mono and stereo automix outputs can be used with speech sources, crowd sounds, game sounds, and other sound sources. All 8 microphone channels can be automatically mixed in real time to give you a single mono output or stereo left and right outputs. Flexible routing actively supports REMI workflows or alternate feeds.

Depending on the event and the automixer's configuration, automixers may be able to:

- Provide an improved signal-to-noise ratio
- Limit the number of microphone channels that pick up a sound source
- Deliver more gain before feedback

How It Works

The automixer uses a gate to decide when a microphone channel should be active or inactive. When a channel's signal reaches a certain level, the channel is gated on.

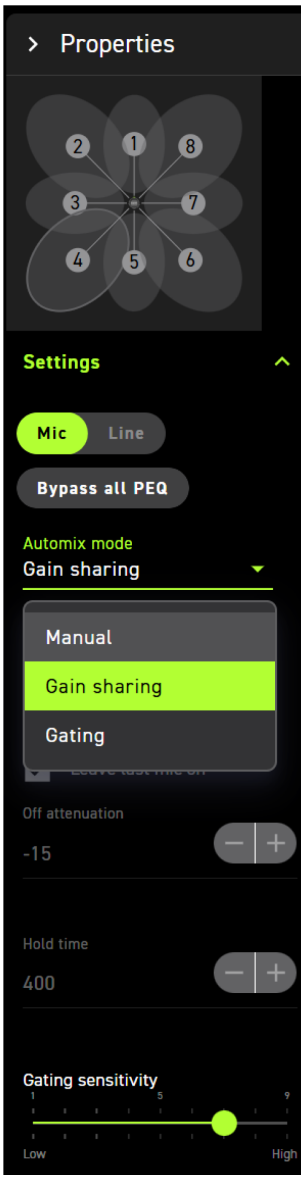
Channels that are lower than the threshold are gated off and do not contribute to the mix sent to the automix output. This design prevents inactive channels from adding extra noise to the mix.

Best Practices

- Test out the automixer's performance at a venue before using it for a live event.
- DCA901 automixers perform better when the overall volume level at an event is lower. If an event is extremely loud, use the direct outputs. The automixer will have difficulty deciding when to gate off in extremely loud environments.
- Use the input gain to adjust mic channel sensitivity. See Adjust Levels for more details.

Automix Modes

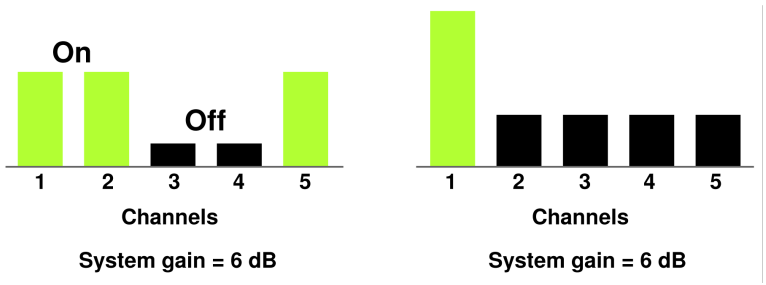
To select an automix mode, go to `Channels` > `Properties` > `Settings`.



Available automix modes:

Gain Sharing

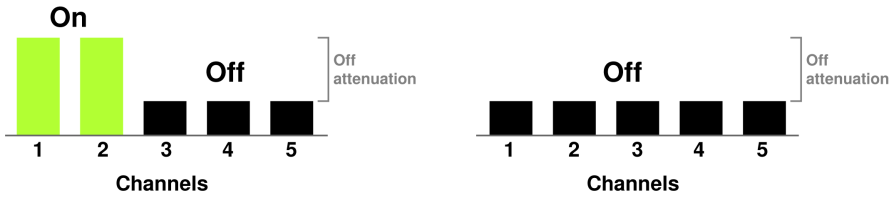
Gain sharing mode dynamically balances system gain between open and closed channels. The system gain remains consistent by distributing gain across channels to equal one open channel. The scaled gain structure helps to reduce noise when there is a high channel count. When fewer channels are used, the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



Both graphs show the same total system gain, regardless of the number of open or closed channels

Gating

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



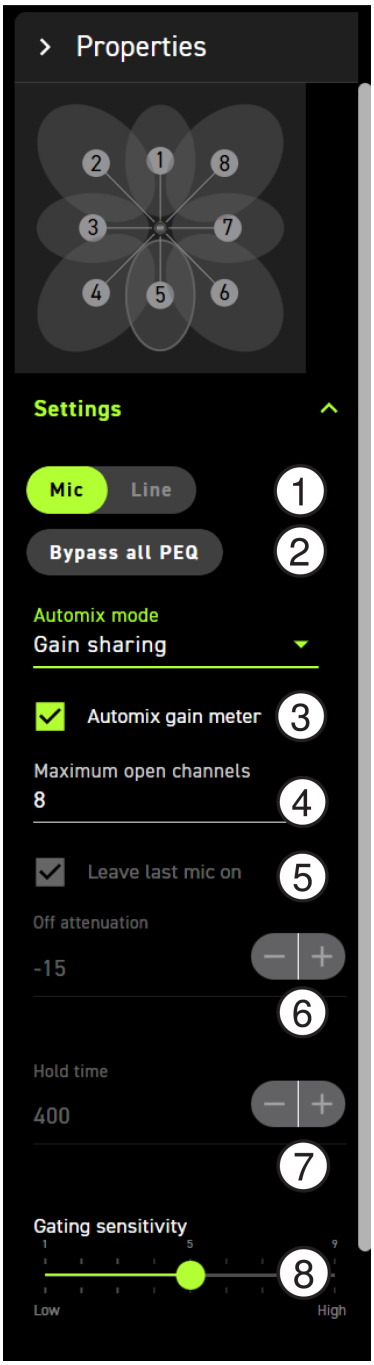
Example showing how off attenuation is applied to all inactive channels in gating mode

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 using automixing. The level from each channel's input gain fader is used for the summed output.

Automix Settings

To adjust automixer settings, go to `Channels` > `Properties`.



1. Mic/line selector: Changes output gain for all channels. Mic level (−32 dB attenuation) is the default setting.
2. Bypass all PEQ: Toggles all PEQ on or off
3. 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.
4. Maximum open channels: Sets the maximum number of simultaneously active channels
5. Leave last mic on: Keeps the most recently used microphone channel active
6. Off attenuation: Sets the level of signal reduction in dB for when a channel is not active
7. Hold time: Sets how long a channel remains open after the level drops below the gate threshold
8. Gating sensitivity: Changes the threshold level at which the gate is opened and a channel becomes active

Pan Controls for Channels

The pan knobs change how much of the selected channel is included in the stereo right and left automix output channels.

To pan a channel:

1. Go to Channels. Click Stereo to send a channel to the stereo automix outputs.
2. To pan left or right, click and drag the channel's pan knob left or right as needed.

Panning is post-gate and pre-mix, so adjustments don't affect the automixer gating decision.

Click and drag the knob left or right to pan a channel

Onboard DSP

The DCA901's mono and stereo automix outputs have the following DSP blocks available:

- Noise reduction
- Parametric equalizer (PEQ)
- Compressor
- Delay

The stereo automix left and right channels have 1 set of DSP blocks. Any DSP is applied to both the left and right channels.

The 8 direct output channels also have per-channel PEQ controls.

Noise Reduction

Noise reduction significantly reduces the amount of background noise in your signal caused by environmental sources such as air handling equipment or generators. Noise reduction is a dynamic processor that calculates the noise floor in a room and removes constant noise sources throughout the entire spectrum with maximum transparency.

To use noise reduction on either automix output, go to Channels and double-click NR on the appropriate automix channel strip. Turn on noise reduction and select a level.

Note: Noise reduction is for constant sources of noise and does not work for fast-occurring transient noise sources (such as slamming a door or a car horn).

Parametric Equalizer (PEQ)

Maximize audio quality by adjusting the frequency response with the parametric equalizer. The DCA901 has PEQ on each direct output channel and on both automix outputs.

Common equalizer applications:

- Adjust frequency response for reinforcement systems or broadcast feeds
- Reduce room irregularities

Set Filter Parameters

Adjust filter settings with the icons in the frequency response graph or by entering numeric values. Turn filters on or off using the toggle switch.

PEQ Filter Settings

Setting	Function
Filter type	Filters 1 and 4 have selectable filter types. **Parametric:** Attenuates or boosts the signal within a customizable frequency range **Low cut:** Rolls off the audio signal below the selected frequency **Low shelf:** Attenuates or boosts the audio signal below the selected frequency **High cut:** Rolls off the audio signal above the selected frequency **High shelf:** Attenuates or boosts the audio signal above the selected frequency
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	Adjusts the range of frequencies affected by the filter. The value is represented in octaves. **Note:** The Q and width parameters affect the equalization curve in the same way. The only difference is the way the values are represented.

Copy and Paste Channel PEQ Settings

Use the Copy and Paste icons to apply the same PEQ setting across multiple channels.

1. Open the PEQ controls of the desired channel.
2. Click the Copy icon.
3. Open the PEQ controls of the second channel. Click the Paste icon.

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 to 6 dB above typical levels so that 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.

Delay

Use delay to synchronize audio and video sources. Delay is applied to the automix outputs.

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

Security

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. Shure devices that support encryption require a password to make a connection. Encryption is not supported with third-party devices.

To activate encryption in the web application, go to `Settings` > `Audio encryption` > `Enable encryption`.

Important: For encryption to work:

- All Shure devices on your network must use encryption.
- Disable AES67 in Dante Controller. AES67 and AES-256 cannot be used at the same time.

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.

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

Setting up 802.1X is a two-part process.

Step 1: Configure Settings on Test Network

1. Connect the device to a test network that *does not* have 802.1X enabled and open the device's web application.
2. Set a device password if desired.
3. 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. Select Save to save the 802.1X settings to the device.
7. Enable 802.1X and select Reboot now.

Step 2: Connect to a Credentialed Network

1. Connect your device to the credentialed network.
2. Verify that you can open the device's web application. If you can't open the web application, 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.

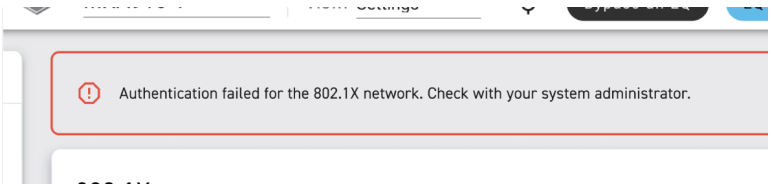
To change device settings:

1. While still connected to the credentialed network, open the device's web application and go to `Settings` > `Network` > `802.1X`.
2. Make changes and click Save.
3. Make any required 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 you can't access the device's web application on the credentialed network, there may be 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.

Networking

Networking Best Practices

When connecting Shure devices to a network, use the following best practices:

- Always use a "star" network topology by connecting each device directly to the switch or router.
- Connect all Shure networked devices to the **same network** and set to the **same subnet**.
- Allow all Shure software through the firewall on your computer.
- Use only 1 DHCP server per network. Disable DHCP addressing on additional servers.
- Power on the switch and DHCP server before powering on the Shure devices.
- To expand the network, use multiple switches in a star topology.
- All devices must be at the same firmware revision level.

Switch and Cable Recommendations for Dante Networking

Switches and cables determine how well your audio network performs. Use high-quality switches and cables to make your audio network more reliable.

Network switches should have:

- Gigabit ports. 10/100 switches may work on small networks, but gigabit switches perform better.
- Power over Ethernet (PoE) or PoE+ ports for any devices that require power
- Management features to provide information about port speed, error counters, and bandwidth used
- Ability to switch off Energy Efficient Ethernet (EEE). EEE (also known as "Green Ethernet") may cause audio dropouts and problems with clock synchronization.
- Diffserv (DSCP) Quality of Service (QoS) with strict priority and 4 queues

Ethernet cables should be:

- Cat5e or better
- Shielded

For more information, see our FAQ about switches to avoid.

Device IP Configuration

This Shure device uses 2 IP addresses: one for Shure control, and one for Dante audio and control. For most installations, the Shure control and Dante audio IP addresses should be in the same subnet range.

- **Shure control**
  - Carries data for Shure control software, firmware updates, and third-party control systems (such as AMX or Crestron)
- **Dante audio and control**
  - Carries Dante digital audio and control data for Dante Controller
  - Requires a wired, gigabit Ethernet connection to operate

To access these settings, go to `Settings` > `IP configuration`.

Setting Latency

Latency is the amount of time for a signal to travel across the system to the outputs of a device. To account for variances in latency time between devices and channels, Dante has a predetermined selection of latency settings. When the same setting is selected, it ensures that all Dante devices on the network are in sync.

These latency values should be used as a starting point. To determine the exact latency to use for your setup, deploy the setup, send Dante audio between your devices, and measure the actual latency in your system using Audinate's Dante Controller software. Then round up to the nearest latency setting available, and use that one.

Use Audinate's Dante Controller software to change latency settings.

Latency Recommendations

Latency Setting	Maximum Number of Switches
0.25 ms	3
0.5 ms (default)	5
1 ms	10
2 ms	10+

QoS (Quality of Service) Settings

QoS settings assign priorities to specific data packets on the network, ensuring reliable audio delivery on larger networks with heavy traffic. This feature is available on most managed network switches. Although not required, assigning QoS settings is recommended.

Note: Coordinate changes with the network administrator to avoid disrupting service.

To assign QoS values, open the switch interface and use the following table to assign Dante®-associated queue values.

- Assign the highest possible value (shown as 4 in this example) for time-critical PTP events
- Use descending priority values for each remaining packet.

Dante QoS Priority Values

Priority	Usage	DSCP Label	Hex	Decimal	Binary
High (4)	Time-critical PTP events	CS7	0x38	56	111000
Medium (3)	Audio, PTP	EF	0x2E	46	101110

Priority	Usage	DSCP Label	Hex	Decimal	Binary
Low (2)	(reserved)	CS1	0x08	8	001000
None (1)	Other traffic	BestEffort	0x00	0	000000

Note: Switch management may vary by manufacturer and switch type. Consult the manufacturer's product guide for specific configuration details.

For more information on Dante requirements and networking, visit www.audinate.com.

Networking Terminology

PTP (Precision Time Protocol): Used to synchronize clocks on the network
DSCP (Differentiated Services Code Point): Standardized identification method for data used in layer 3 QoS prioritization

Ports, Protocols, and Firewall Rules

For information about IP ports and protocols or firewall rules, go to:

- IP Ports and Protocols for Shure Devices
- Firewall Rules for Shure Software Applications

Digital Audio Networking

Dante digital audio is carried over standard Ethernet and operates using standard internet protocols. Dante provides low latency, tight clock synchronization, and high Quality-of-Service (QoS) to provide reliable audio transport to a variety of Dante devices. Dante audio can coexist safely on the same network as IT and control data, or can be configured to use a dedicated network.

Compatibility with Dante Domain Manager

This device is compatible with Dante Domain Manager software (DDM). DDM is network management software with user authentication, role-based security, and auditing features for Dante networks and Dante-enabled products.

Considerations for Shure devices controlled by DDM:

- When you add Shure devices to a Dante domain, set the local controller access to Read Write. Otherwise, you won't be able to access Dante settings, perform a factory reset, or update device firmware.
- If the device and DDM can't communicate over the network for any reason, you won't be able to control Dante settings, perform a factory reset, or update device firmware. When the connection is reestablished, the device follows the policy set for it in the Dante domain.
- If Dante device lock is on, DDM is offline, or the configuration of the device is set to Prevent, some device settings are disabled. These include: Dante encryption, MXW association, AD4 Dante browse and Dante cue, and SCM820 linking.

Refer to Dante Domain Manager's documentation for more information.

Dante Flows for Shure Devices

Dante flows get created any time you route audio from one Dante device to another. One Dante flow can contain up to 4 audio channels. For example: sending all 5 available channels from an MXA310 to another device uses 2 Dante flows, because 1 flow can contain up to 4 channels.

Every Dante device has a specific number of transmit flows and receive flows. The number of flows is determined by Dante platform capabilities.

Dante Flows for Shure Devices

Dante Platform	Shure Devices Using Platform	Transmit Flow Limit	Receive Flow Limit
Brooklyn II	ULX-D, SCM820, MXWAPT, MXWANI, P300, MXCWAPT	32	32
Brooklyn II (without SRAM)	MXA920, MXA910, MXA902, MXA710, AD4, AD600, APXD2	16	16
IP Core	MXA920-V3, MXA902-V3, MXA901, DCA901	32	32
Ultimo/UltimoX	MXA310, ANI4IN, ANI4OUT, ANIUSB-MATRIX, ANI22, MXN5-C	2	2
DEP	ANIUSB-MATRIX-V3, MXN-AMP, MXN5-C-V3, MXN-6	2	2
DAL	IntelliMix® Room	16	16

Learn more about Dante flows in our FAQs or from Audinate.

AES67

AES67 is a networked audio standard that enables communication between hardware components which use different IP audio technologies. This Shure device supports AES67 for increased compatibility within networked systems for live sound, integrated installations, and broadcast applications.

The following information is critical when transmitting or receiving AES67 signals:

- Update Dante Controller software to the newest available version to ensure the AES67 configuration tab appears.
- Before turning encryption on or off, you must disable AES67 in Dante Controller.
- AES67 cannot operate when the transmit and receive devices both support Dante.

Shure Device Supports:	Device 2 Supports:	AES67 Compatibility
Dante and AES67	Dante and AES67	No. Must use Dante.
Dante and AES67	AES67 without Dante. Any other audio networking protocol is acceptable.	Yes

Separate Dante and AES67 flows can operate simultaneously. The total number of flows is determined by the maximum flow limit of the device.

Sending Audio from a Shure Device

All AES67 configuration is managed in Dante Controller software. For more information, refer to the Dante Controller user guide.

1. Open the Shure transmitting device in Dante Controller.
2. Enable AES67.
3. Reboot the Shure device.
4. Create AES67 flows according to the instructions in the Dante Controller user guide.

Receiving Audio from a Device Using a Different Audio Network Protocol

Third-party devices: When the hardware supports SAP, flows are identified in the routing software that the device uses. Otherwise, to receive an AES67 flow, the AES67 session ID and IP address are required.

Shure devices: The transmitting device must support SAP. In Dante Controller, a transmit device (appears as an IP address) can be routed like any other Dante device.

Paint DCA901 Microphones

The grille of DCA901 microphones can be painted. Shure recommends using professional painters.

Important: Before painting, order the RPM907 painting parts kit.

Required equipment (not included with DCA901):

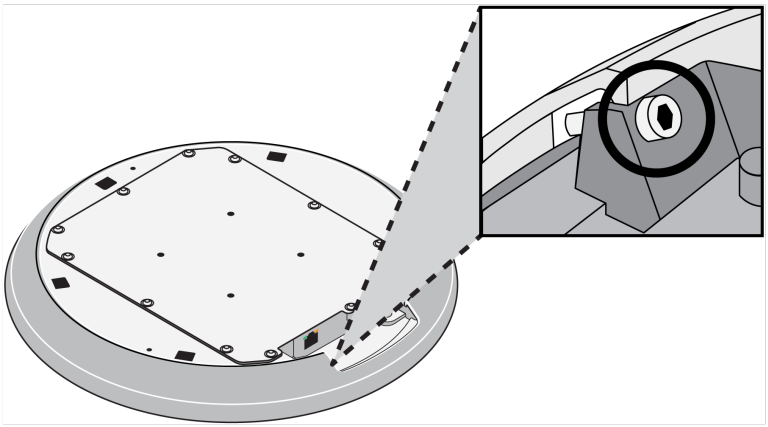
- RPM907 painting kit with:
  - Replacement grille fabric
  - Adhesive strips
  - LED lightpipe
  - Hex wrench
- Adhesive thinning solvent

Definitions:

- **Back panel:** Back part of DCA901 with mounting attachment points. Circuit board is attached to back panel. The back panel can't be painted.
- **Grille:** Detaches from back panel. The grille can be painted.

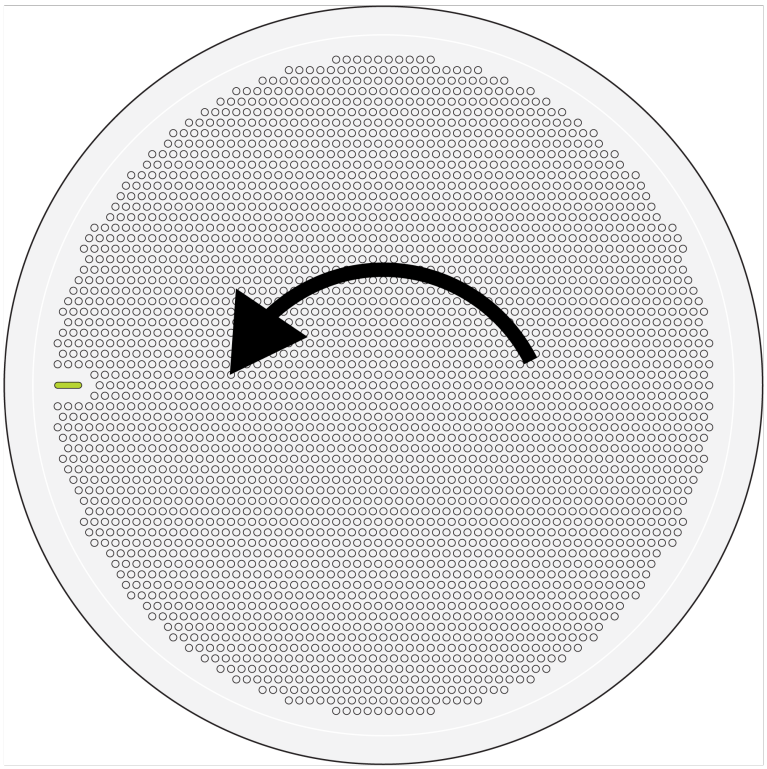
Step 1: Remove the Grille

1. Set the DCA901 on a work surface with the grille facing down. Use the hex wrench to loosen the set screw. You can leave the set screw in place or remove it.

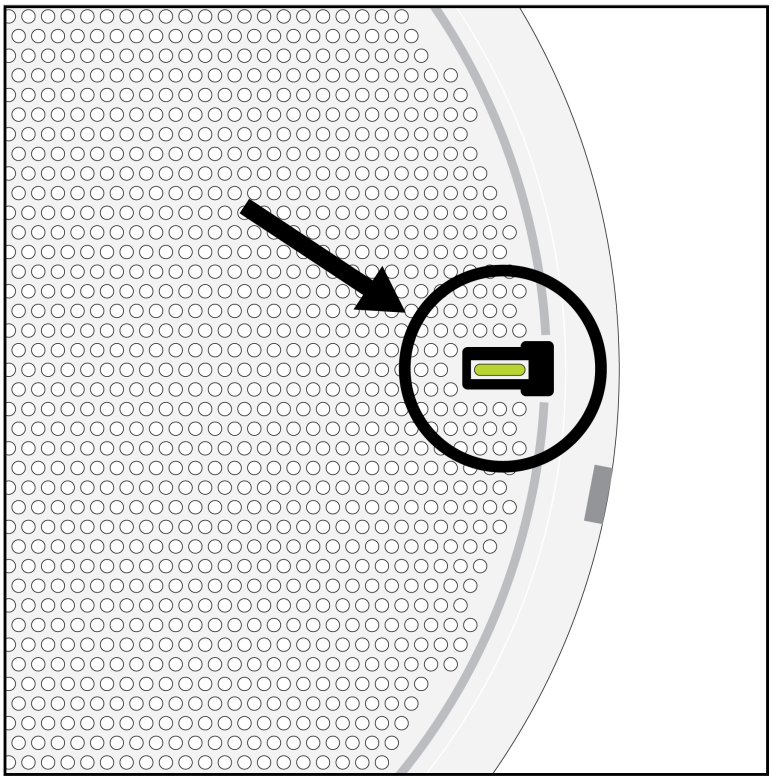


2. Turn the microphone over. Twist the grille counterclockwise. Gently lift the grille off the back panel. Set the back panel aside until finished with painting.

   Important: There are 4 small rubber saddles that sit on ridges around the edge of the back panel. If these saddles fall out while removing the grille, set them aside until reassembling the microphone in step 3.



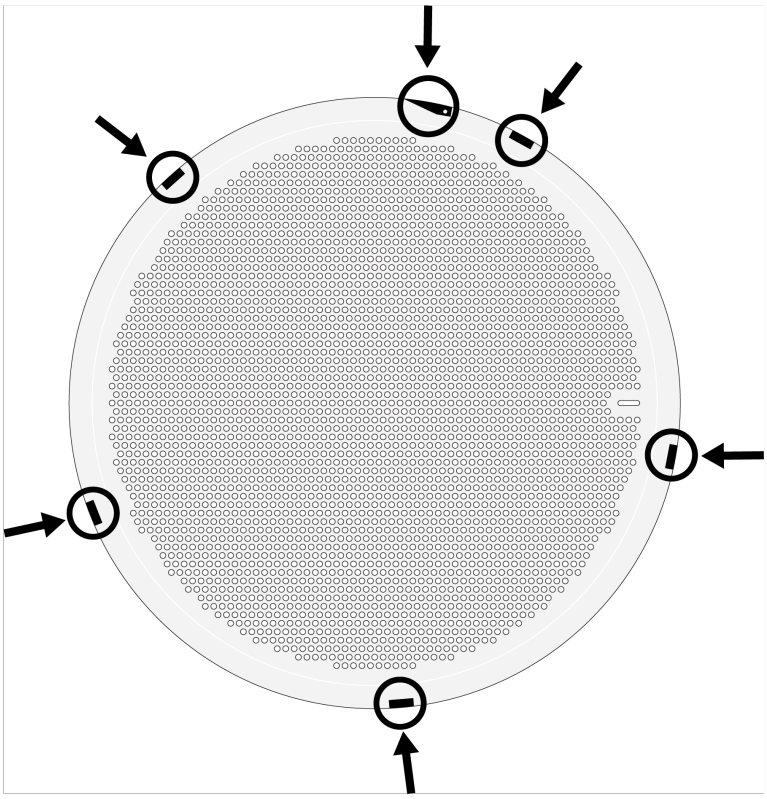
3. Remove the grille fabric using your fingers or a dull tool. The grille fabric is attached with adhesive.
4. Remove the LED lightpipe. The lightpipe is attached near the edge of the grille. It may be easiest to push in the LED lightpipe from the front of the grille.



5. Use thinning solvent to remove all adhesive on the grille.

Step 2: Prep and Paint the Grille

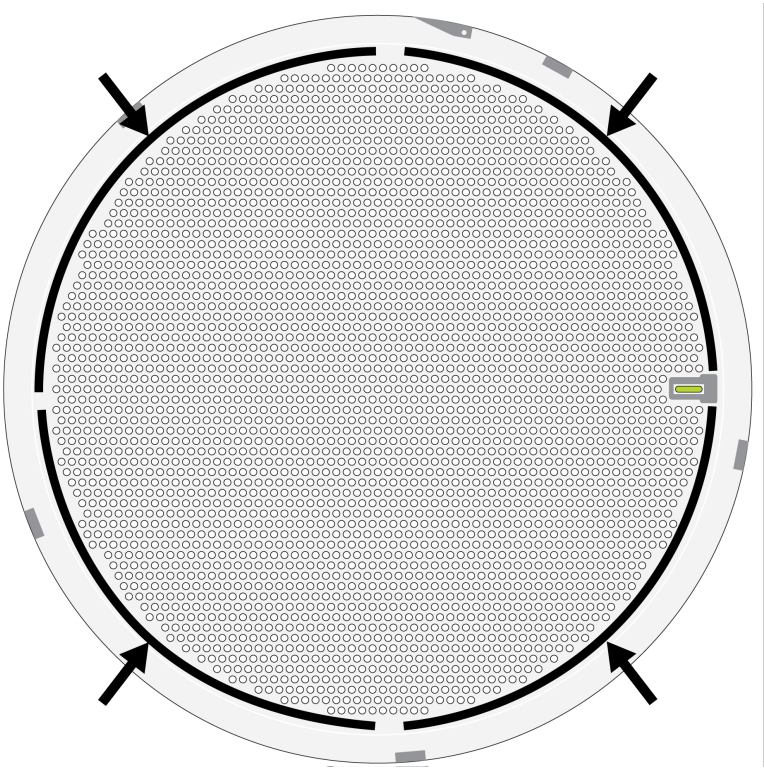
1. Mask any bare metal areas including the tabs and the area near the lightpipe. The back panel with the circuit board can't be painted.



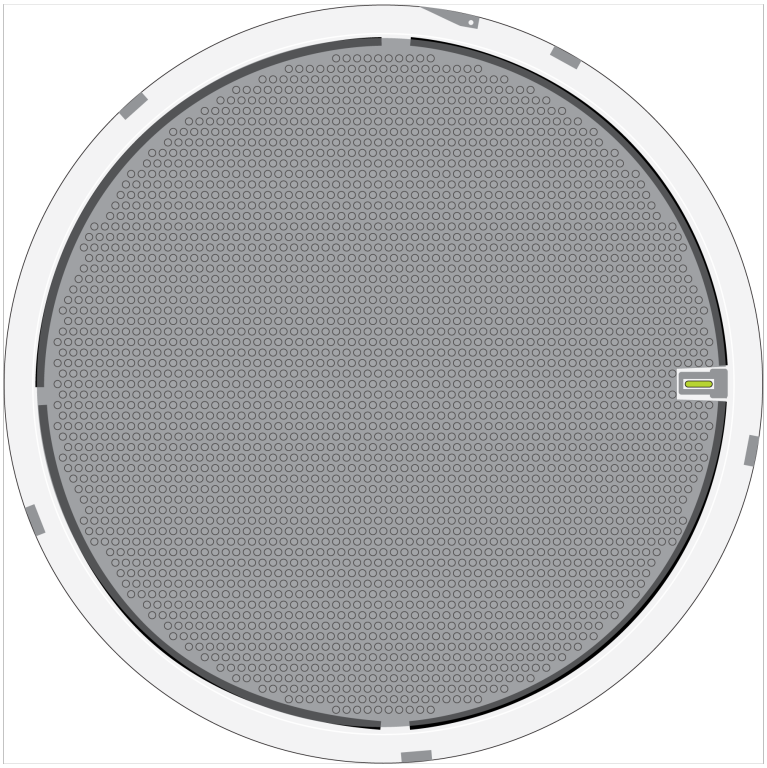
2. Paint the grille. Let paint dry completely before reassembling the microphone.

Step 3: Reassemble the Microphone

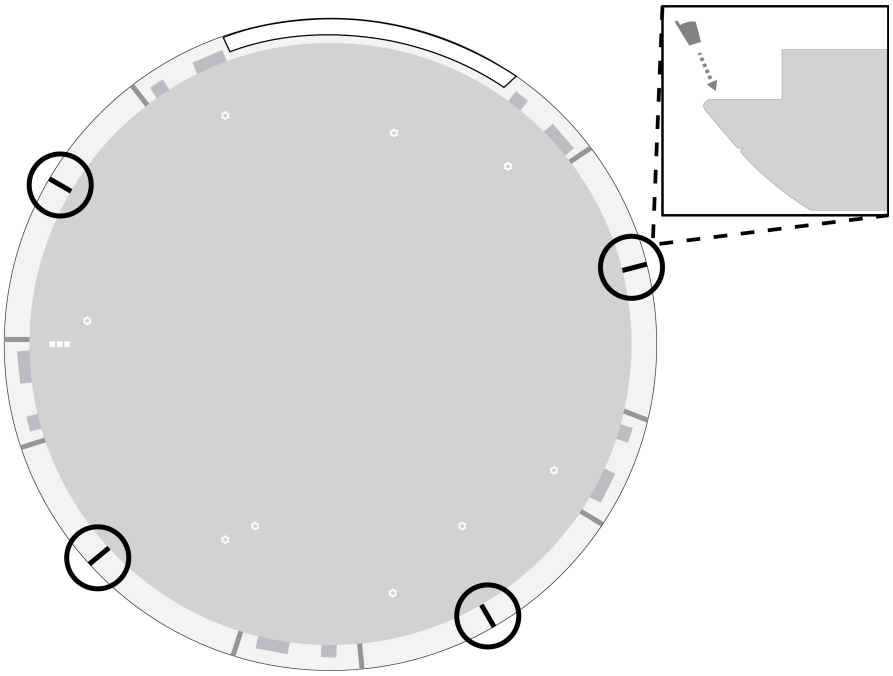
1. Install the new lightpipe so the adhesive is near the edge of the grille.
2. Install the 4 adhesive strips near the grille holes. Don't cover grille holes with adhesive.



3. Align the new grille fabric and attach it to the adhesive strips. The fabric should cover all grille holes.

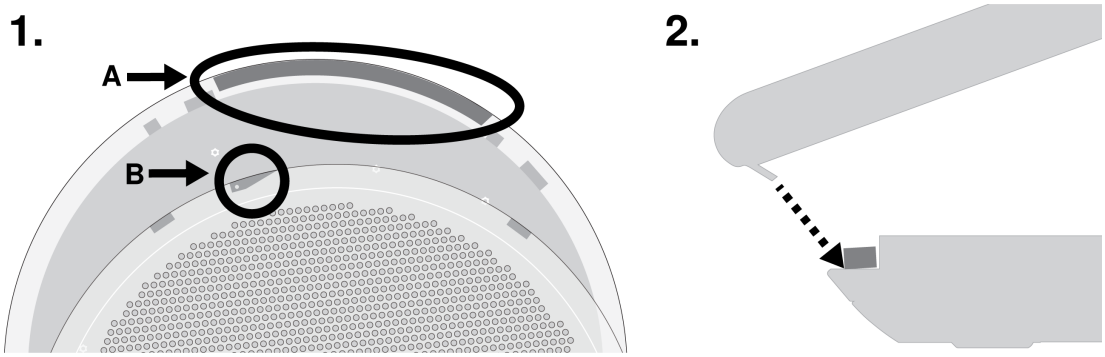


4. Place the back panel so that the board is facing up. If the 4 rubber saddles fell out, reinstall them on the 4 circled ridges with the taller edge facing outward.



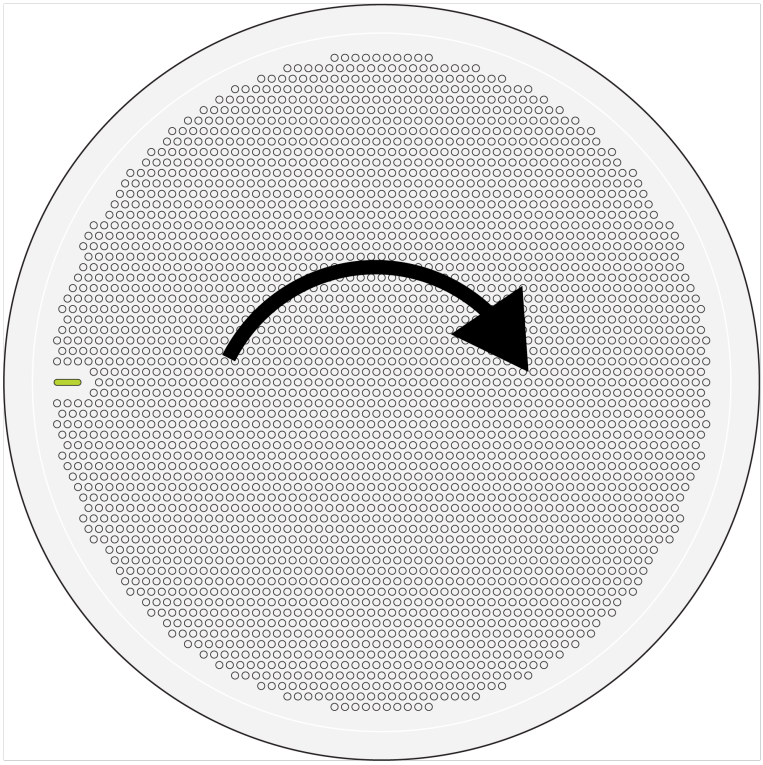
5. Find the long piece of white foam on the edge of the back panel (A) and the angled tab with a hole (B). Tuck the tab (B) under the piece of foam (A).

   Important: Be careful not to cut the foam with the tab. Doing so may cause acoustic issues.



   The other 5 tabs should fit smoothly into the openings. Check around the mic to properly seat the tabs.

6. Turn the grille clockwise until it doesn't turn anymore.



7. Tighten the set screw. This screw doesn't screw into anything. It prevents the grille from moving back and forth.

Troubleshooting

DCA901 Troubleshooting

Problem	Solution
No microphone signal or signal is quiet/distorted	Check that the Mic/Line switch in `Channels` > `Properties` is set appropriately. Verify that a lobe is assigned to the direct output channel. Check that the channel's pre-gate automix mute isn't muted. Check channel gain and adjust as needed.
Microphone sound quality is muffled or hollow	Check that lobes are positioned correctly and gain levels are sufficient. Ensure that grille holes are not blocked. Use PEQ to adjust frequency response.
DCA901 does not power on	Check that DCA901 is plugged in to a PoE source. Test any network cables and connections.

Problem	Solution
DCA901 doesn't show up in Shure Discovery	Ensure that DCA901 has power. Make sure DCA901 is on the same network as the PC. If the DCA901 is on a separate subnet, open Shure Discovery and go to `Tools` > `Preferences` > `Network` > `Remote devices`. Check the box to allow remote devices to be discovered. Then enter the device IP address below. Turn off network interfaces not used to connect to the device (such as Wi-Fi). Check that DHCP server is functioning (if applicable). Reset the device if necessary. Contact Shure if these steps do not resolve your issue.
Flashing red error LED	In the web application, go to `Settings` > `General` > `Export log` to export the event log. Use the event log to get more information, and contact Shure if necessary.
No lights	Go to `Settings` > `Lights`. Check if brightness is set to off or if any other settings are turned off.
DCA901 is picking up audio beyond the edge of the lobe as shown in the coverage view	First, move the lobe closer in toward the microphone. Then use your ears to help find the best position. You can also try adjusting the lobe width setting. In general, use the Coverage view to get each channel into the correct general area. Then use your ears to fine-tune each lobe's position. When looking at the front/side view in Coverage (the right side), the lobe's coverage does not immediately "end" or cut off at the edge of the Lobe Length R. Coverage extends beyond this boundary because the array system still behaves like a traditional microphone: each lobe captures audio along the path it is steered to.
The 5.1 SMPTE preset shows the left and right channels on the wrong sides in the Coverage view	The Coverage view is correct and reflects how the DCA901 should be installed for 5.1 capture. The microphone should be installed parallel to the ground with the grille facing up. Point the status LED at the center channel sound source. Coverage shows the DCA901 from the back, so the left channels appear on the right side and the right channels appear on the left side. See Record 5.1 Sound for more details.

DCA901 Specifications

General

Coverage Type
Steerable

Power Requirements
Power over Ethernet (PoE), Class 0

Power Consumption
10.1 W maximum

Control Software
Browser-based web application

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

Connector Type
RJ45

Plenum Rating
UL2043 (Suitable for Air Handling Spaces)

Dust Protection
IEC 60529 IP5X Dust Protected

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)

Audio

Frequency Response
100 Hz to 20 kHz

AES67 or Dante Digital Output

Channel Count	12 total channels: 8 channel outputs, 1 mono automix output, stereo left and right automix outputs, and 1 PFL output
Sampling Rate	48 kHz
Bit Depth	24

Sensitivity
at 1 kHz

−36.4 dBFS/Pa

Maximum SPL
At 10% THD

500 Hz and higher	130.4 dB SPL
250 Hz	128 dB SPL
125 Hz	120 dB SPL
63 Hz and lower	118 dB SPL

Signal-To-Noise Ratio
Ref. 94 dB SPL at 1 kHz

67.1 dB A-weighted

Latency
Does not include Dante latency

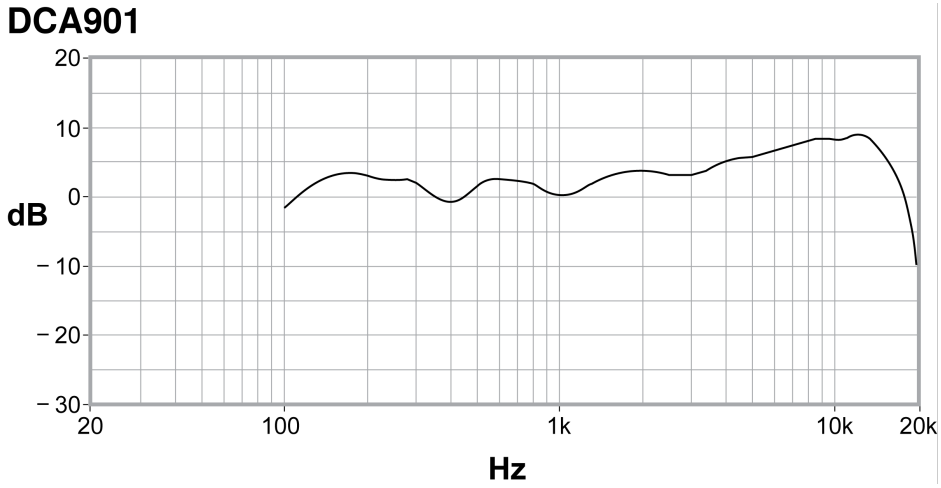
Direct outputs	13.5 ms
Automix outputs	21.5 ms

Self Noise
26.9 dB SPL-A

Dynamic Range
103.5 dB

Built-in Digital Signal Processing
Automatic mixing, noise reduction, compressor, delay, equalizer (4-band parametric), mute, gain (140 dB range)

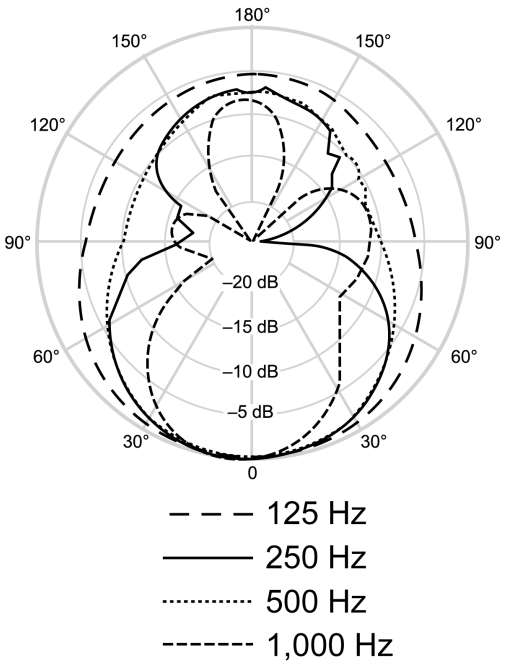
DCA901 Frequency Response
Frequency response measured directly on-axis from a distance of 6 feet (1.83 m).

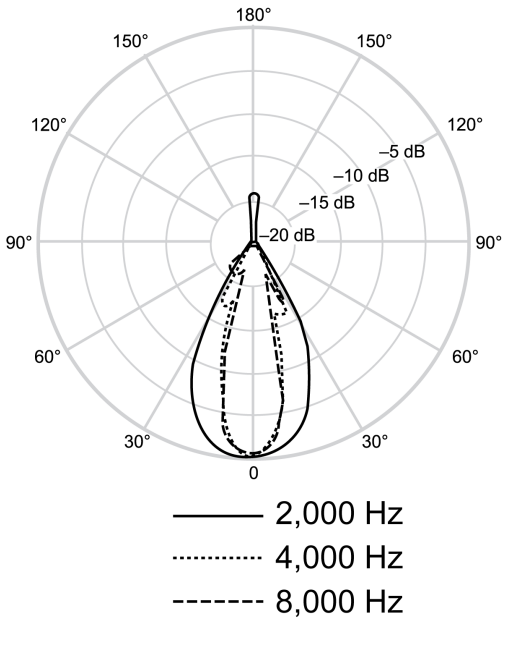


Polar Patterns

DCA901 polar response measured directly on-axis from a distance of 6 feet (1.83 m) at 3 lobe widths.

Narrow

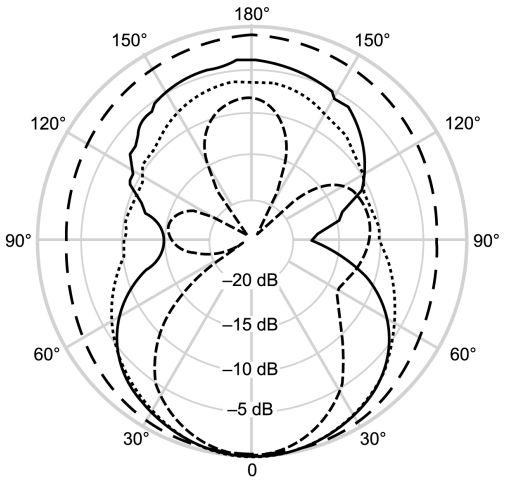


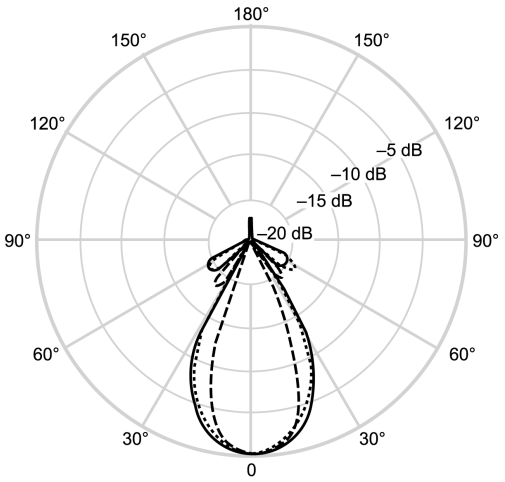


– – – 125 Hz
——— 250 Hz
····· 500 Hz
------- 1,000 Hz

——— 2,000 Hz
····· 4,000 Hz
------- 8,000 Hz

Medium

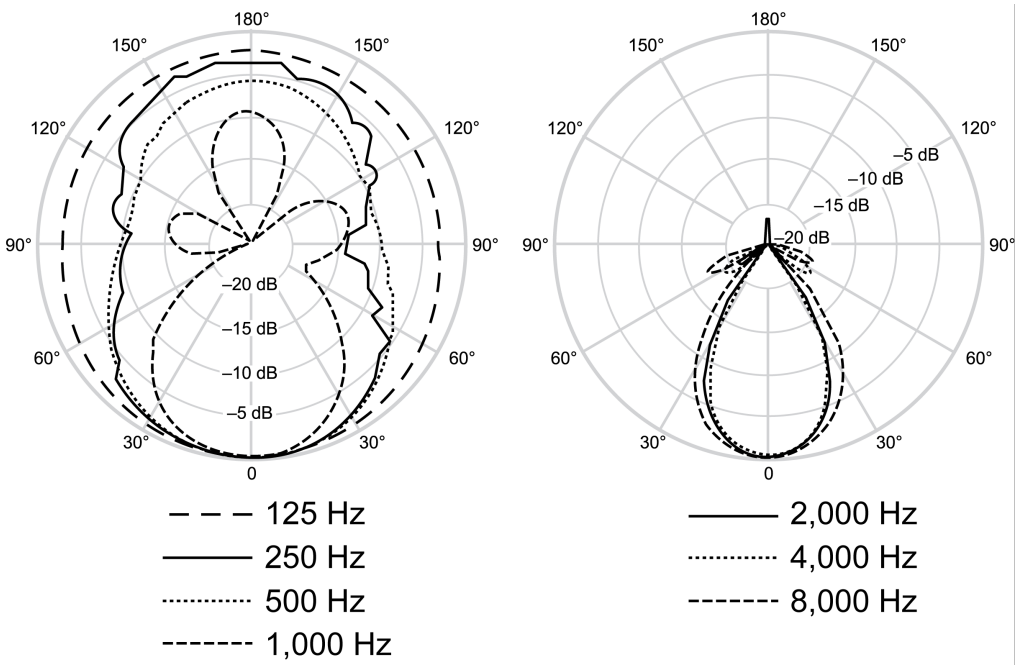




– – – 125 Hz
——— 250 Hz
····· 500 Hz
------- 1,000 Hz

——— 2,000 Hz
····· 4,000 Hz
------- 8,000 Hz

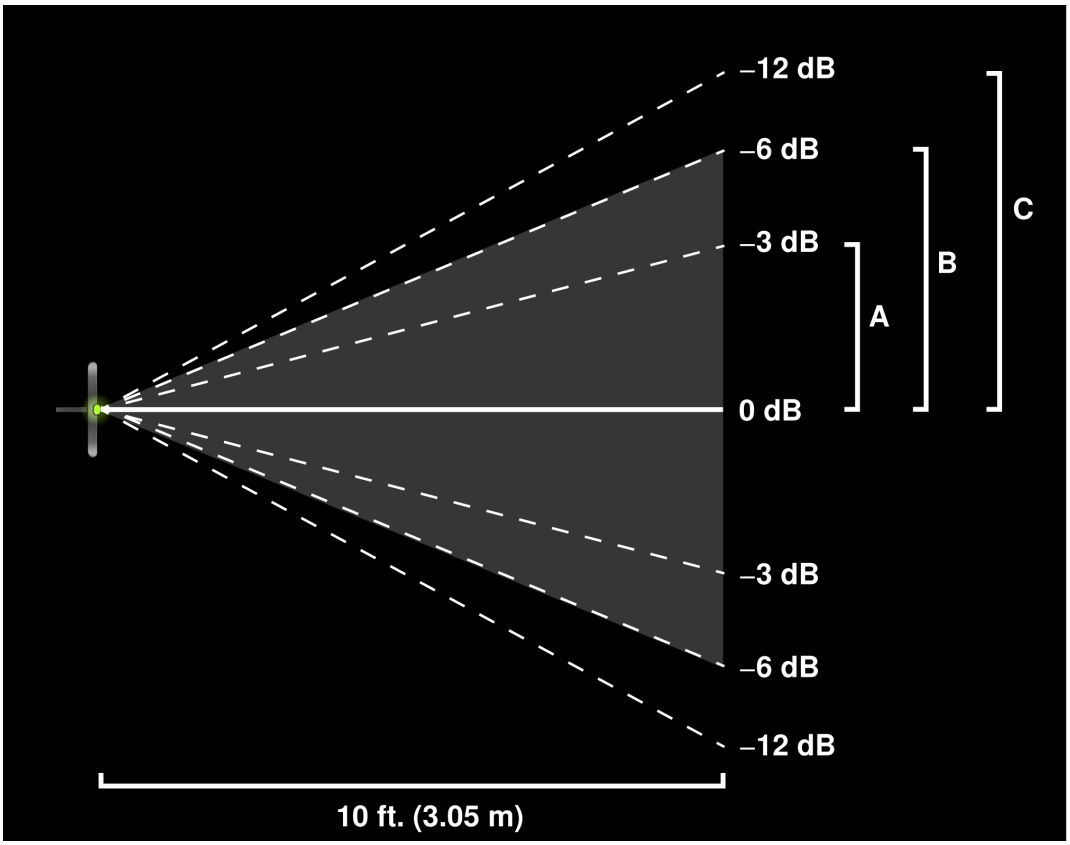
Wide



Lobe Sensitivity

The edge of the gray coverage area for each channel represents where the sensitivity reaches −6 dB. Understanding how lobe sensitivity is displayed helps to:

- Provide complete coverage in a space, either by adding lobes or changing the lobe width. This ensures the sensitivity is within 6 dB in all areas. It is acceptable for lobes to slightly overlap.
- Ensure that spacing and isolation are adequate to reduce noise and maximize automatic mixing performance.

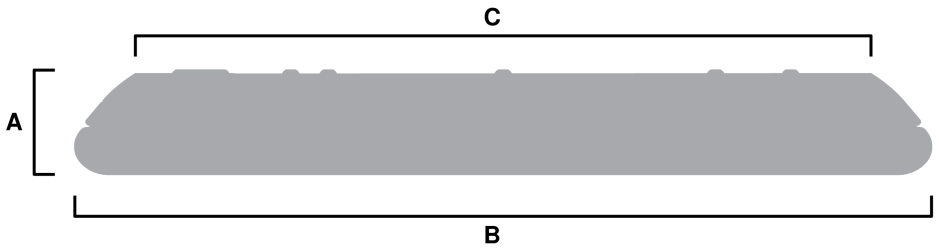


DCA901 lobe sensitivity measured at 2 kHz on-axis. Lobe length is 10 ft. (3.05 m).

DCA901 Lobe Sensitivity Values at 2 kHz On-Axis

dB	Wide	Medium	Narrow
0	0	0	0
–3	A = 43.7 in. (110.9 cm)	A = 36.7 in. (93.2 cm)	A = 32.2 in. (81.7 cm)
–6	B = 66.5 in. (169 cm)	B = 56 in. (142.1 cm)	B = 48.5 in. (123.1 cm)
–12	C = 84 in. (213.4 cm)	C = 72.1 in. (183.1 cm)	C = 66.5 in. (169 cm)

Dimensions



DCA901:

- A (Height): 1.64 in. (41.66 mm)
- B (Diameter): 13.5 in. (342.9 mm)
- C (Smaller top diameter): 11.61 in. (294.89 mm)

Weight

5 lb. (2.3 kg)

Additional Resources

- Shure Knowledge Base FAQs
- Training from the Shure Audio Institute
- Shure Enterprise Networking Troubleshooting Checklist
- IP Ports and Protocols for Shure Devices
- Firewall Rules for Shure Software Applications

Download Shure Software

- Shure Discovery
- Shure Update Utility
- Software and firmware archive

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.
22. Follow local regulations and consult qualified personnel if the product installation or relocation requires construction work. Choose mounting hardware and an installation location that can support the weight of the product. Avoid locations subject to constant vibration. Use the required tools to install the product properly. Inspect the product periodically.
23. If your product has a feature to log in, upon first time start up, you must change your password.

Important Product Regulatory Information

EMC conformance testing is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.

Cybersecurity STATEMENT OF COMPLIANCE

Product Type: Relevant connectable products defined as internet-connectable products or network-connectable products, in line with inter alia Product Security and Telecommunications Infrastructure Act 2022.

Manufacturer Statement: We, Shure Incorporated, certify and declare as manufacturer under our sole responsibility, that the above-mentioned product(s) conform(s) to the legislation as mentioned under Attachment 1 – to Cybersecurity Statement of Compliance listed here: https://www.shure.com/en-GB/about-us/security.

Information on how to report security issues: The latest version of Shure's Disclosure policy can be found at the following link: https://www.shure.com/en-GB/about-us/security

Security update periods: Shure provides support regarding hardware and software updates that continue the integral cyber security safety of Shure products up to 24 months after end of life (AEOL). For the full statement regarding Shure's product support policy, and information regarding products end of life status information can be found at the following link: https://www.shure.com/en-GB/about-us/security

Manufacturer:
Shure Incorporated 5800 Touhy Avenue
Niles, Illinois, 60714-4608 U.S.A. Website: www.Shure.com.

Technical documentation is kept at:
Shure Incorporated, Corporate Global Compliance Engineering Division

UK Importer/Representative:
Shure UK Limited
Unit 2, The IO Centre, Lea Road, Waltham Abbey, Essex, EN9 1AS, U.K.
Phone: +44 (0)1992 - 703058
Email: EMEAsupport@shure.de

On behalf of Manufacturer:

Chad Ayers
08 May 2025 Niles, Illinois
Senior Director, Global Compliance

FCC Notice

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. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated 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 with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the antenna of the radio/television receiver.
- Increase the separation between this equipment and the radio/television receiver.
- Plug the equipment into a different outlet so that the equipment and the radio/television receiver are on different power mains branch circuits.
- Consult a representative of Shure or an experienced radio/television technician for additional suggestions.

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.

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

For information regarding responsible party and other matters relating to FCC compliance, please contact Shure Incorporated, 5800 W. Touhy Avenue, Niles, Illinois 60714-4608 U.S.A. shure.com/contact

Canada, ISED Notice

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

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.

Recycling Information

Please consider the environment, electric products and packaging are part of regional recycling schemes and do not belong to regular household waste.

Waste Electrical and Electronic Equipment (WEEE) Directive

In the European Union and the United Kingdom, this label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

Registration, Evaluation, Authorization of Chemicals (REACH) Directive

REACH (Registration, Evaluation, Authorization of Chemicals) is the European Union (EU) and the United Kingdom (UK) chemical substances regulatory framework. Information on substances of very high concern contained in Shure products in a concentration above 0.1% weight over weight (w/w) is available upon request.