

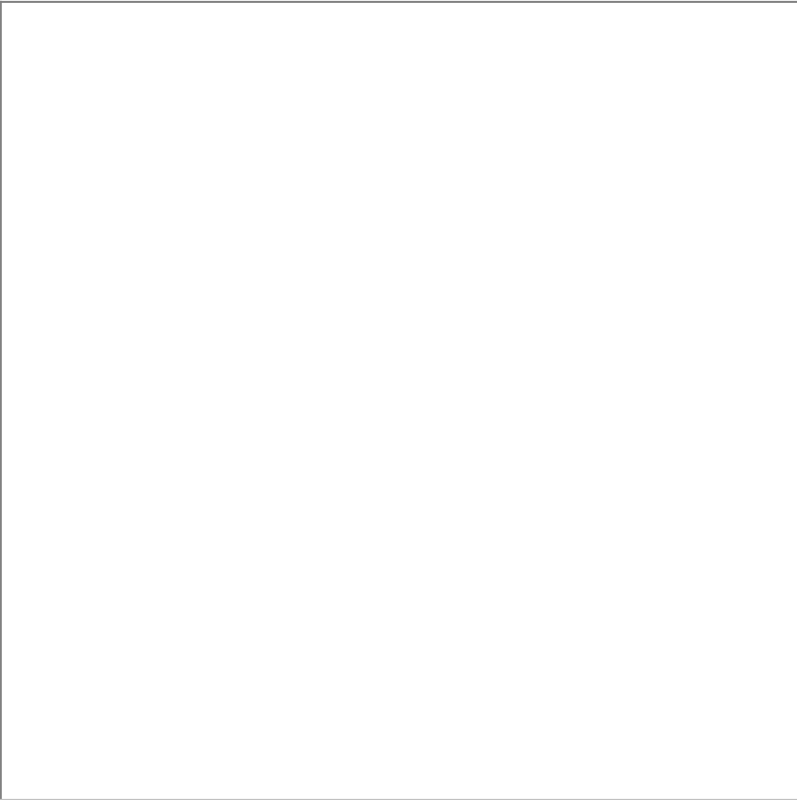
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# MXCW -- Microflex® Complete Wireless

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## General Description

The Microflex® Complete Wireless system offers full conference functionality with the added convenience of encrypted digital wireless transmission for up to 125 conference units. It overcomes cable limitations at off-site meetings, in rooms with flexible seating, or in historic buildings where drilling holes in furniture is impractical. Proven Shure RF interference detection and avoidance technology delivers reliable transmission that protects against signal dropouts, and robust audio encryption keeps meeting content private. Each wireless conference unit is powered by a smart lithium-ion rechargeable battery whose remaining charge (in hours and minutes) can be checked remotely by a technician.



## Features

RF Efficiency	Sound quality is consistent with one speaker or several, and up to 125 units are supported with just one access point transceiver and one RF channel.
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Automatic Frequency Co-ordination	The system automatically scans the available spectrum and selects clean transmission channels for best performance. Setting up the system is as easy as setting up a wireless router.
Interference Avoidance	While in use, the system automatically moves away from unexpected interference. Channel adjustment protects against disruption to the audio.
Encryption	Standard AES-128 encryption of audio and data keeps meeting content private.
Bi-Directional Wireless	Provides return channels for interpretation audio to conference units and enables real-time remote control of conference unit settings.

## System Overview

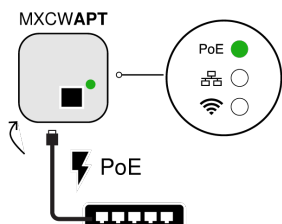
The Shure Microflex® Complete Wireless (MXCW) system provides a steady, reliable audio experience for off-site meetings, flexible meeting rooms, or historic buildings. The system features automatic RF interference detection and avoidance, rechargeable batteries for wireless conference units, encrypted digital wireless transmission, and digital audio networking using Dante™.

The MXCW access point has multiple mounting options for discreet communication between wireless conference units and the digital audio network. The access point works within the 2.4 GHz and 5 GHz frequency bands to support up to 125 conference units. Conference units have configurable roles for meeting participants, and can be routed to the floor audio or an interpretation channel. The MXCW networked charging station charges and stores up to 10 Shure rechargeable batteries that can be monitored through its own web application. Use the access point web application for system setup, and to monitor and control conference units.

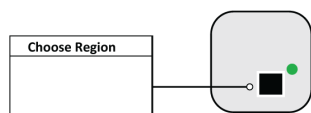
## Getting Started

### Set Up the System Access Point (MXCWAPT)

1. Connect the access point to a Power over Ethernet (PoE) source to turn on the device.



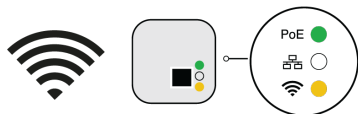
2. If prompted, select the operating region on the menu for RF coordination (some model variations).



3. Wait while the access point scans the area for the best available channel.

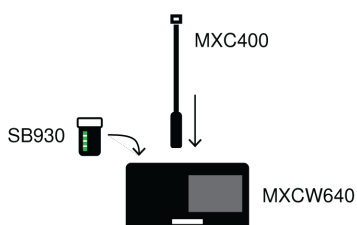


4. Once the channel is selected, the default wireless network (00) is ready for the MXCW microphones.

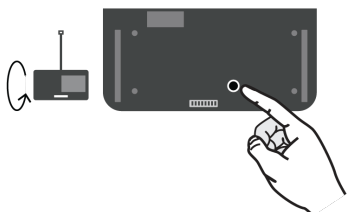


## Set Up Wireless Conference Units (MXCW640)

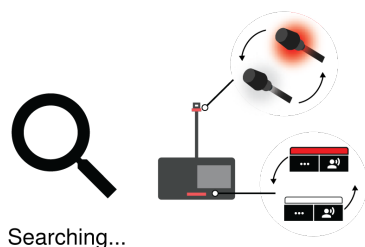
1. Insert a fully charged Shure SB930 rechargeable battery and connect the MXC400 series microphone.



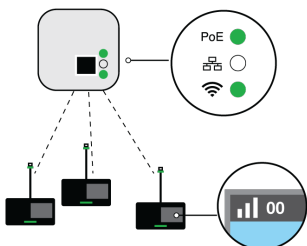
2. Press and hold the power button on the bottom of the device until the screen powers on.




3. Wait while the microphone device searches for the default access point network (00).

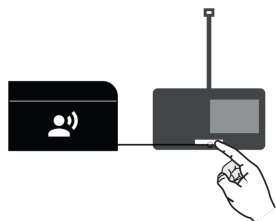


4. The devices are ready when the LEDs briefly flash green and the touchscreen displays the home-screen.

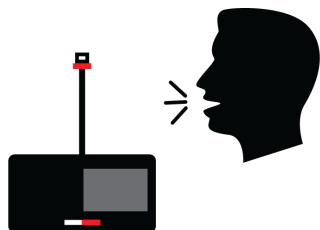


## Perform a Soundcheck

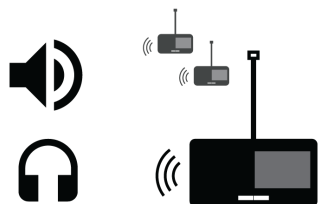
1. Press the  speak button on one of the devices to activate the microphone.



2. Speak into the microphone to check the audio.



3. Listen to the sound check on the loudspeakers or headphone output.



4. For more information, visit [www.pubs.shure.com](http://pubs.shure.com) (<http://pubs.shure.com>) for the full user guide.

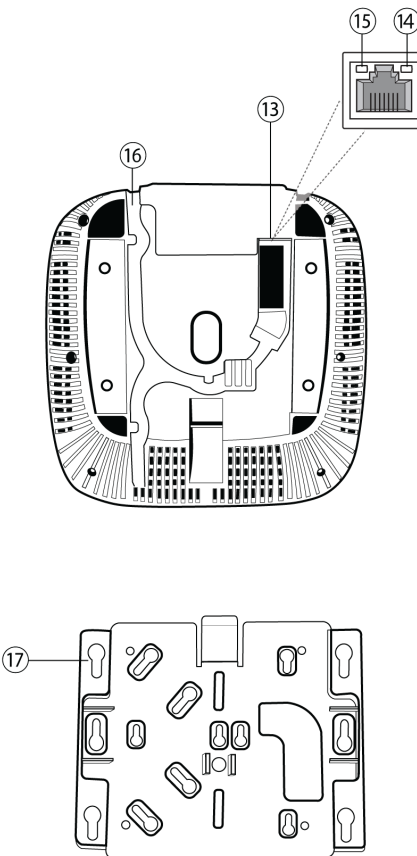


## Access Point Transceiver (MXCWAPT)

The access point transceiver is the hub of the audio signal flow and manages the RF stability of each microphone in the group. The access point performs the following functions:

- Receives and decrypts wireless audio signals from microphones in the group
- Delivers audio signal to the digital audio network
- Hosts an embedded web server that provides access to the control software used to manage the system
- Sends and receives control information (such as gain adjustment and link settings) between the components, control software and 3rd party controllers
- Transmits an encrypted audio signal to the microphone's headphone output for listening to translated audio or other external sources.





## ① Display

Shows menu screens and settings.

## ② Enter Button

Use to enter menu screens and save parameter changes.

### ③ Exit Button

Use to return to previous menu screens or cancel parameter changes.

#### ④ Arrow Buttons

Use to scroll through menu screens and change menu parameters.

## ⑤ Power LED

Illuminates green to indicate the presence of Power over Ethernet (PoE).

## ⑥ Network Audio LED

Indicates status of connected Dante network audio channels.

### ⑦ Wireless Audio LED

Indicates status or wireless connection.

## ⑧ Analog XLR Audio Input

Connect an external output.

## ⑨ Analog XLR Audio Output

Connect to an external input.

## ⑩ Ground Lift Switch

Lifts the ground from pin 1 of the XLR connector and the sleeve of the ¼" Audio Output to minimize ground-related noise that can occur when connecting the XLR Audio Output or Input to a third-party device. The ON position of the switch is labeled **lift**.

## ⑪ Reset Button (recessed)

Press and hold the reset button for 10 seconds to reset the MXCW system to factory default settings.

## ⑫ Access Point Cover

Paint to match the surrounding decor and snap onto the front plate of the device.

The LCD menu and navigation buttons are inaccessible with the cover.

## ⑬ Ethernet Port

Connect a Cat5e (or higher) cable to a PoE source and the network.

## ⑭ Ethernet Status LED (Green)

- Off = no network link
- On = network link established
- Flashing = network link active

## ⑮ Ethernet Link Speed LED (Amber)

- Off = 10/100 Mbps
- On = 1 Gbps (required for digital audio routing)

## ⑯ Cable Routing Path

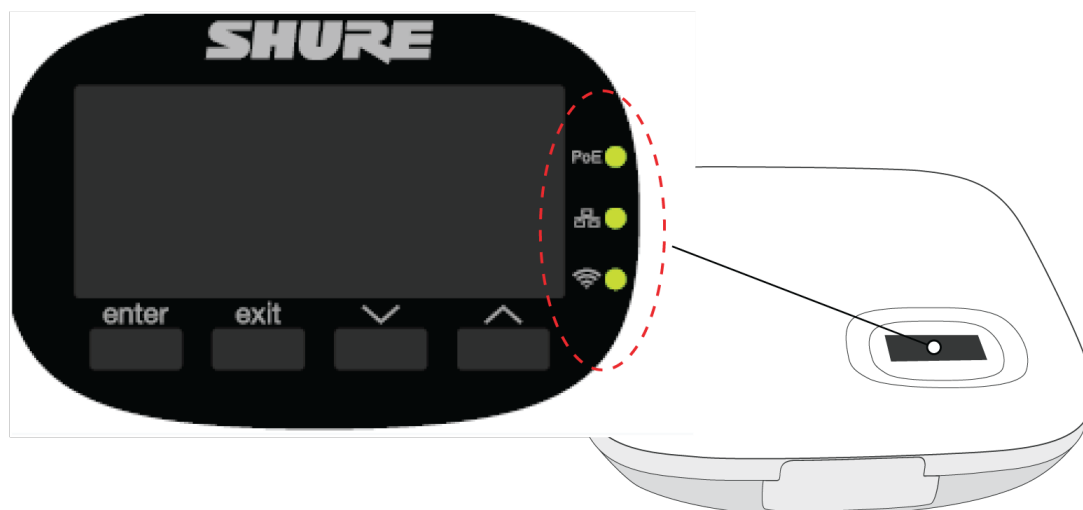
Provides a path for the Ethernet cable to enable a flush-mount.

## ⑰ Mounting Bracket



Allows for optional mounting to a wall, ceiling, or mic stand.



## LED Status Indicators



Reference the LED indicators on the access point to quickly verify or troubleshoot the system status.



## PoE Power

Off	Powered off (disconnected from network or PoE not present on port).
Green	Unit is receiving power.
Green (flash- ing)	A system reset is in progress.
Amber (flash- ing)	A network reset is in progress.
Green (flash- ing) +  RF LED green (flashing) +  Network Audio LED green (flash- ing)	<ul style="list-style-type: none"> <li>Simultaneous LEDs: Device identify from the software is in progress</li> <li>Alternating LEDs: Firmware update is in progress</li> </ul>

 Network Audio	Off	No Dante channels are routed (receive or transmit). Dante Controller software displays no marks for these channels.
	Green	All connected Dante network audio channels are functional (receiving digital audio as expected). Dante Controller software displays green check marks for these channels.
	Amber	One or more connected (receiving) Dante network audio channels are experiencing a subscription error, or unresolved (transmitting device is off, disconnected, renamed or has incorrect network setting). Dante Controller software displays yellow triangle marks for these channels.
	Amber (flashing)	A network reset is in progress.
	Green (flashing) +  RF LED green (flashing) + <b>PoE</b> Power LED green (flashing)	<ul style="list-style-type: none"> <li>• Simultaneous LEDs: Device identify from the software is in progress</li> <li>• Alternating LEDs: Firmware update is in progress</li> </ul>

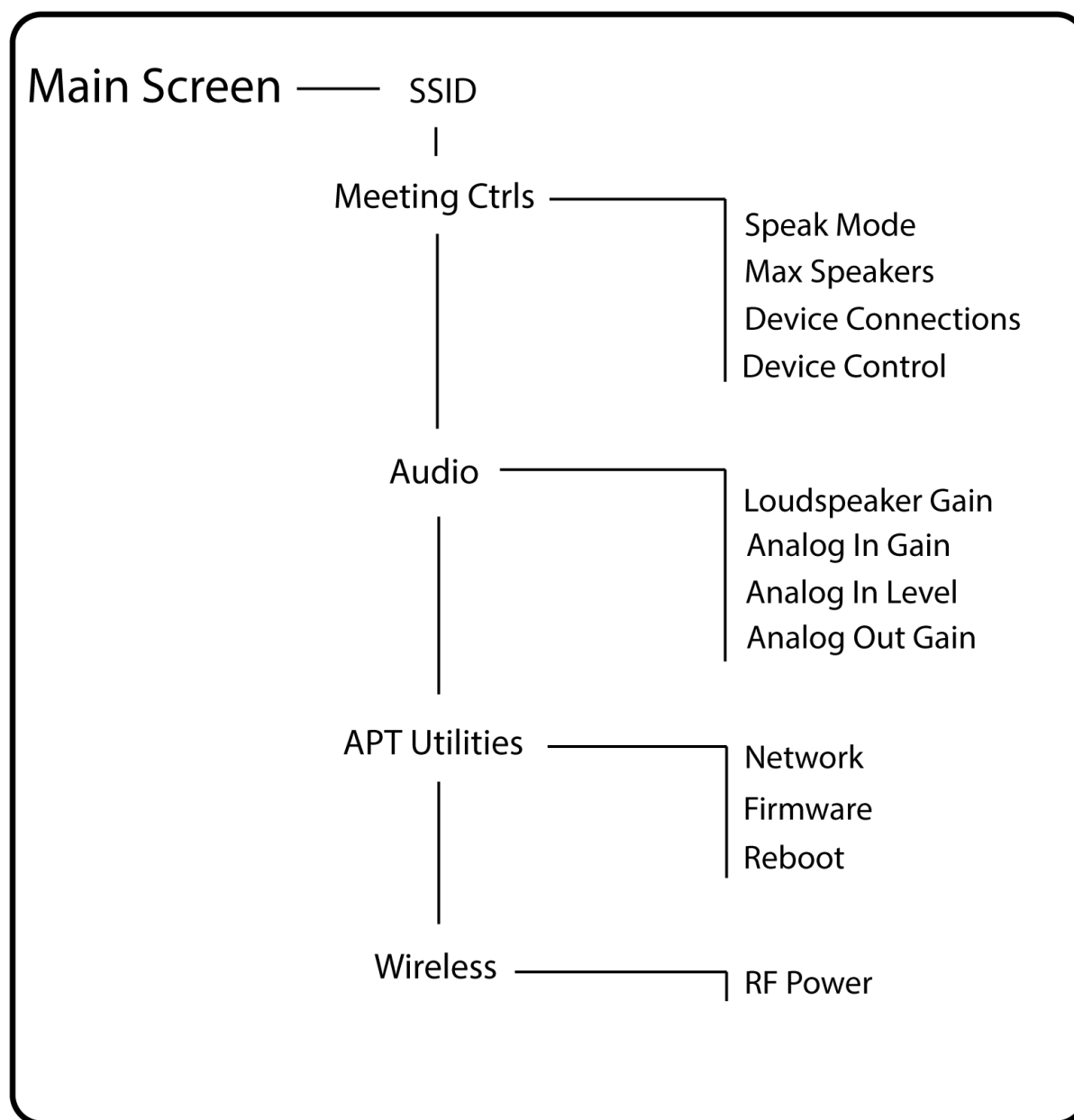
 RF/ Wireless Audio		
	Off	No connection or set to RF mute.
	Green	Wireless channel secured and RF/wireless audio connected for 1 or more devices.
	Amber	Wireless channel selection in progress
	Green/ red (flashing)	Detecting wireless interference.
	Green (flashing) + <b>PoE</b> Power LED green (flashing) +  Network Audio LED green (flashing)	<ul style="list-style-type: none"> <li>• Simultaneous LEDs: Device identify from the software is in progress</li> <li>• Alternating LEDs: Firmware update is in progress</li> </ul>

## Access Point Menu

Use the access point LCD menu to monitor and adjust system settings without a computer.



enter	Enter a menu or save a new setting.
exit	Exit a menu or cancel changes.
Up/ Down arrows	Scroll to a menu item or make a change to a setting.



### SSID Menu

Select an access point network ID for easy recognition and control of connected conference units. The default SSID is 00.

### Meeting Ctrls Menu

Speak Mode	Select a mode to determine how microphones are activated for participants.
Max Speakers	Change the maximum number of delegates and the total speakers. Total speakers includes the number of chairmen.

Device Connections	Determine the access of additional conference units connecting and registering to the network audio.
Device Control	Reboot or power off all connected devices.

## Audio Menu

Loudspeaker Gain	Adjust the loudspeaker gain from a range of -30 dB to 6 dB, or select enter to mute.
Analog In Gain	Adjust the input gain from a range of -30 dB to 10 dB, or select enter to mute.
Analog In Level	Select line or aux level.
Analog Out Gain	Adjust the output gain from a range of -30 dB to 10 dB, or select enter to mute.

## APT Utilities Menu

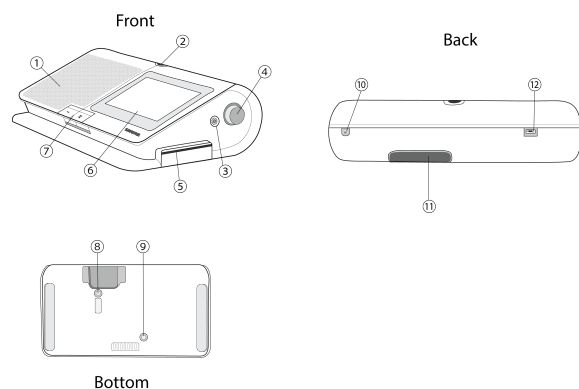
Network	Shure Control displays the IP address, Subnet, Gateway, and MAC address of the access point, while Audio Network shows this information for Dante. Set the IP address for each network interface to automatic for an assigned IP address, or manual to edit the IP address.
Firmware	Display the access point firmware version and serial number.
Reboot	The unit performs a power cycle.

## Wireless Menu

RF Power	Select the RF coverage level of the access point, or turn it off.
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# Conference Unit (MXCW640)

MXCW conference units facilitate communication between participants in group meetings and conferences. The multifunctional units enable participants to speak and be heard with clarity, even in large multilingual events, by combining a gooseneck microphone, loudspeaker, headphone jack, and user controls. For advanced meeting tasks, MXCW microphone units include features for voting, following along to the agenda, managing speakers, and more.



### ① Loudspeaker

Provides a clear audio signal of the floor mix.

### ② Microphone Output

Lockable 10-pin XLR connector for MXC gooseneck microphones.

### ③ Headphone Output

Two TRRS 3.5 mm ports on each side of the unit allow participants to listen to an interpretation channel or the floor audio over headphones.

### ④ Volume Control

Two knobs on each side increase and decrease audio playback volume for headphones.

### ⑤ NFC Card Slot

Insert a dual interface card to provide participant identification.

### ⑥ Touchscreen

View and select menu options on the display.

### ⑦ Microphone Buttons

Press to control the microphone. The buttons are customizable and function differently depending on the participant role and meeting setup. See **Conference Unit Buttons** for more details.

### ⑧ Power Button

Press and hold to power the unit on or off. The button LEDs on the front of the unit light up red when it is powered on.

### ⑨ Battery Status Button

Press to check the remaining charge of the battery in the unit.

### ⑩ TRRS Port

Enables a remote caller to listen and be heard over the floor mix when a cell phone is connected.

### ⑪ Battery Slot



Insert an SB930 rechargeable battery to power on the unit.


## ⑫ USB Micro-B Connector

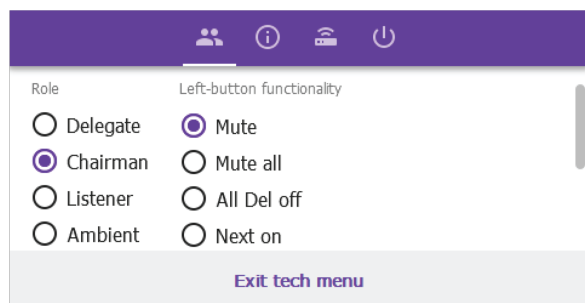
Connect a USB Micro-B cable to charge the battery in the conference unit.

## Conference Unit Buttons

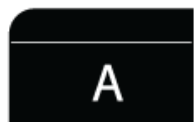
Both hardware buttons on the conference unit are customizable, and you can change the left-button functionality depending on the participant role.

To change the left-button functionality:

1. Access the technician menu by tapping the  gear icon then tap the right side of the screen while holding down the volume control knobs.
2. Assign a role to the conference unit.
3. Select the function for the left button of the conference unit.



### Left Button Icons





## Right Button Icons



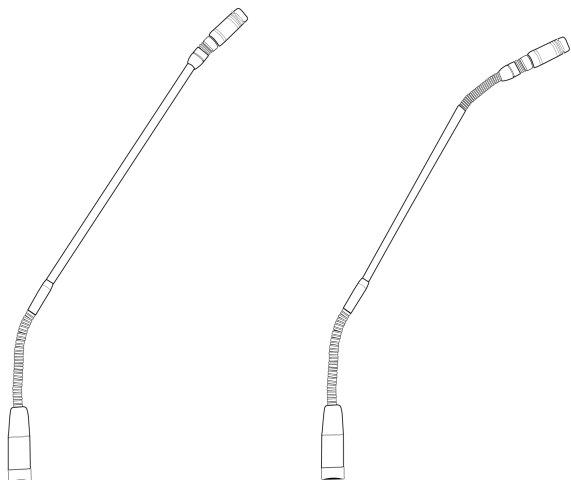
	Name	De- scrip- tion	LED Status
<b>Right- Button Func- tionality</b>	Speak	Press to activate the goose-neck microphone.	<ul style="list-style-type: none"> <li>• Solid red: The microphone is on.</li> <li>• Solid green: The participant is placed in the request queue.</li> <li>• Flashing green: The request to speak has been denied.</li> </ul>
<b>Left- Button Func- tionality</b>	Mute	Press and hold to mute the microphone without removing the right to speak.	Solid blue
	All del off	Turn off all delegate microphones.	Solid blue
	Next mic on	Turn on the first microphone in the request list.	Solid blue

	Name	Description	LED Status
	Exclusive	Press and hold to mute all delegate microphones and activate the chairman microphone only.	Solid red

## Gooseneck Microphone (MXC416, MXC420)

The MXCW microphone delivers excellent audio performance with a frequency response specifically tailored for speech. There are single and dualflex gooseneck options, providing flexible positioning. The gooseneck microphone also contains the following features:

- Commshield® Technology eliminates RF noise
- Locking 10-pin modular connector
- Built-in LED status indicator (LED ring)
- Compatible with the Microflex series cardioid, supercardioid, and omnidirectional cartridges
- Available in 40 cm (15.75 in) or 50 cm (19.69 in) lengths



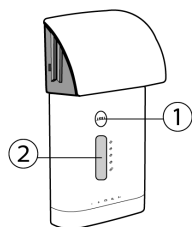
## Securing the Microphone to the Conference Unit

1. Insert the microphone into the XLR socket.
2. Insert the hex wrench into the hole next to the microphone on the conference unit and turn counterclockwise.

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## Rechargeable Battery (SB930)

The SB930 is a smart, lithium-ion rechargeable battery that powers the MXCW640 conference unit. An integrated battery level indicator allows you to quickly check the battery status.



### ① Battery Status Button

Press the button to check the remaining charge of the battery in the unit.

### ② LED Status Indicator

Shows battery state when battery status button is pressed.

## Important Tips for Care and Storage of Shure Rechargeable Batteries

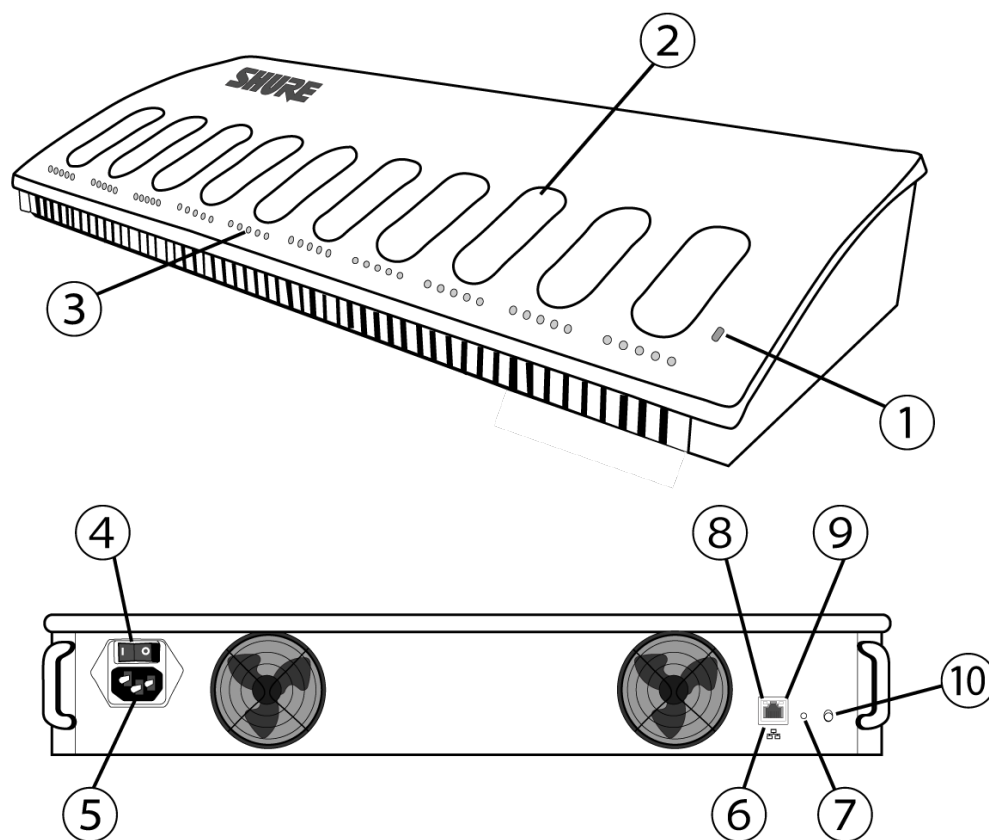
Proper care and storage of Shure batteries results in reliable performance and ensures a long lifetime.

- Always store batteries and transmitters at room temperature
- Ideally, batteries should be charged to approximately 40% of capacity for long-term storage
- Periodically clean the battery contacts with alcohol to maintain ideal contact
- During storage, check batteries every 6 months and recharge to 40% of capacity as needed

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## Networked Charging Station (MXCWNCS)

The MXCW networked charging station (MXCWNCS) provides charging and storage for up to ten SB930 rechargeable batteries. Installation options include mounting in a rack, to a wall, or on a table surface.



### ① Status LED

Indicator		Description
Color	Status	
Off	Off	Powered off
Green	Solid	Powered on
	Flashing	Factory default reset in progress
Amber	Solid	Storage mode enabled
	Flashing	Network reset in progress

### ② Charging Slots

For charging and storing SB930 batteries.

### ③ Charging Status LEDs

Each charging slot has 5 LEDs that illuminate to show the battery's charge level:

LED	% Battery Charge
1	<ul style="list-style-type: none"> <li>Flashing: &lt;10%</li> <li>Solid: &gt;10%</li> </ul>
2	>25%
3	>50%
4	>75%
5	>95%

Charging error details are available in the web application and the full online system guide at [www.pubs.shure.com](http://www.pubs.shure.com)

#### ④ Power Button

Flip the switch to turn the unit on or off.

#### ⑤ Power Input

Connect to the included power supply.

#### ⑥ Ethernet Port

Connect to an Ethernet network to enable remote monitoring from the web application.

#### ⑦ Reset Button

Press and hold to reset the device to default settings. The length of the button press determines the type of reset:

- **Network reset:** Press and hold for 4 seconds to reset any network settings and refresh the network connection.
- **Factory default settings:** Press and hold for 8 seconds to reset the device to factory default settings.

#### ⑧ Ethernet Link Speed LED (Amber)

- Off = 10 Mbps
- On = 100 Mbps

#### ⑨ Ethernet Status LED (Green)

- Off = No network link
- On = Network link established
- Flashing = Network link active

#### ⑩ Storage Mode Button

Press to preserve battery health for batteries being stored for an extended period of time.

## Powering On the Device

1. Connect the device to a power source using the supplied power cable.
2. Flip the power switch to turn on the device.

## Storing Batteries

Use the MXCW charging station to store batteries for long periods of time (weeks and months). Storage mode protects batteries by storing them at a safe charge level that preserves battery health over time. When you are ready to use the batteries again, simply turn off storage mode and wait for the batteries to fully charge.

1. Insert batteries in the charging station.
2. Place the charger in storage mode:
  - **From the hardware:** Press and hold the Storage mode button for 5 seconds.
  - **From the software:** Open the charger web application to the home page and turn on storage mode.

## Charge Status LEDs

Each charging slot has a row of LEDs that illuminate to indicate the status of the battery. See the networked charging station web application for more details.

LED Segment	LED State	Description
1	Green (flashing)	<10% battery charge
	Green	>10% battery charge
	Red (flashing)	<ul style="list-style-type: none"><li>• Invalid battery</li><li>• Recovery failed</li><li>• Charge failed</li><li>• Check battery</li><li>• Check charger</li><li>• Battery read error</li></ul>
	Red	<ul style="list-style-type: none"><li>• Battery cold</li><li>• Battery hot</li></ul>
	Green + Amber (alternate flashing)	In recovery
2	Green	>25% battery charge
3	Green	>50% battery charge



LED Segment	LED State	Description
4	Green	<ul style="list-style-type: none"> <li>• &gt;75% battery charge</li> <li>• Battery warm. See web application for details.</li> </ul>
5	Green	<95% battery charge

## Average Charging Times

Time Charging	Operating Runtime	Capacity
30 minutes	1 hour	10%
1.5 hours	5 hours	50%
4 hours	10 hours	100%

\*based on battery with 100% health

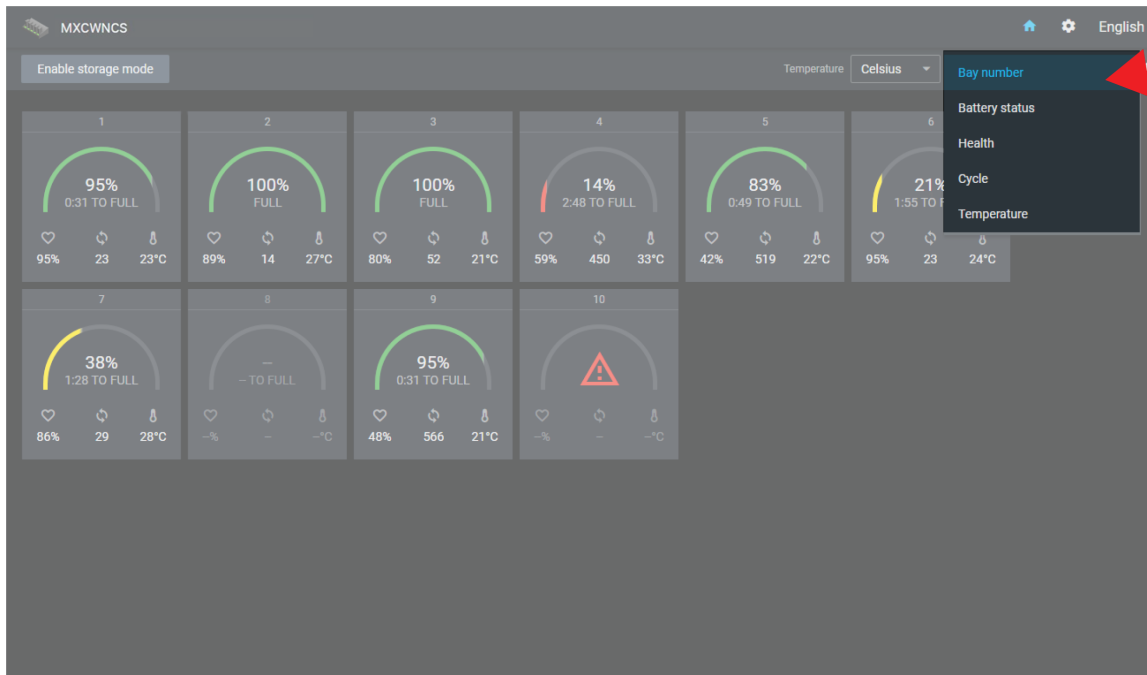
## Monitoring Battery Charge

The MXCW power management system combines intelligent, rechargeable technology with a variety of monitoring options for the SB930 batteries.

In Use	<ul style="list-style-type: none"> <li>• View remaining battery runtime on in-use microphones from the touchscreen or under the Devicestab in the MXCW system web application. The remaining time is displayed in hours:minutes.</li> <li>• Check the battery LEDs by pressing the battery status button on the bottom of the conference unit.</li> </ul>
Charging	<ul style="list-style-type: none"> <li>• View the charging status from the charging station web application.</li> <li>• Monitor the LEDs on the charger.</li> </ul>

## Battery Statistics

The charging station web application provides detailed information for each battery in the charger. Sort battery statistics by selecting one of the following statistics from the dropdown:



## Bay number

Displays the order of the batteries based on which slot they are placed in.

## Battery status

Displays charge as a percentage of the total battery capacity. Also shows time remaining to full charge.

## Health

Displays health of selected battery as a percentage of the charge capacity of a **new** battery. Charge capacity (battery life when fully charged) will decline as a result of repeated charge cycles, age, or storage conditions.

## Cycle

Displays total number of times that the battery has undergone one full count of discharge and charge. Recharging after discharging halfway counts as one half of a cycle. Recharging after discharging a quarter of the way counts as one quarter of a cycle.

## Temperature

Displays battery temperature.

## Charging Batteries with USB

Use the USB port on the conference unit to charge the battery during operation. This can be especially useful for long meetings or when backup batteries are not available. The battery status appears as a lightning bolt on the touchscreen when plugged into USB.

When a battery is being charged while the unit is turned off, the charging status shows on the touchscreen. If the battery is fully charged, the conference unit powers off after 10 minutes.

## Time to fully charge (hr:min)

**Powered on:** 3:30

**Powered off:** 2:30

## USB Cable Requirements

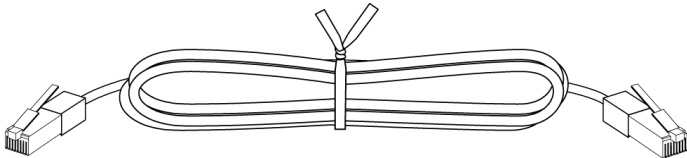
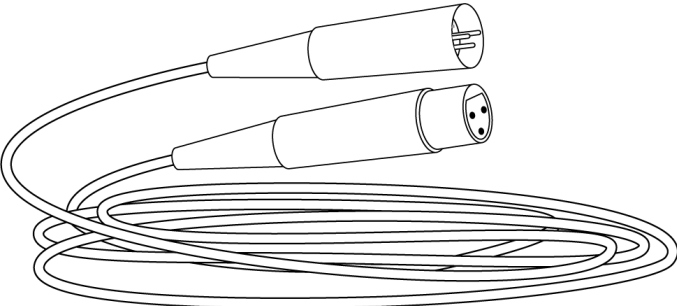
Use a micro USB cable that can supply at least 2 amps of power to the conference unit.

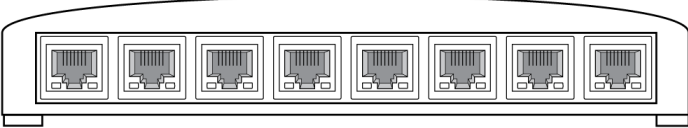
If an insufficient power supply is plugged in while the conference unit is powered on, the battery status alternates between the status and a warning symbol. If the unit is powered off, the touchscreen shows it is not charging due to an insufficient power supply. The conference unit powers off again after 10 minutes.

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## Installation

### Additional Equipment

Network Cables	<p>Use shielded Cat5e (or higher) Ethernet cables, limiting cable runs to 100 meters maximum between network devices.</p> 
Audio Cables	<p>Balanced XLR cables to use analog input/output from the access point.</p> 

<p>Gigabit DHCP Router (systems with &gt;1 APT)</p>	<p>A DHCP router is recommended to connect multiple access points in the same installation. Ensure that it meets the following requirements:</p> <ul style="list-style-type: none"> <li>• Gigabit ports</li> <li>• Provides Class 0 PoE with at least 6.5W (for powering the MXCW access point)</li> <li>• Quality of Service (QoS) with 4 queues</li> <li>• Diffserv (DSCP) QoS, with strict priority</li> <li>• If the router features Energy Efficient Ethernet (or Green Ethernet), ensure it is disabled from the ports dedicated for the MXCW system.</li> <li>• Recommended: A managed switch to provide detailed information about the operation of each network link: port speed, error counters, bandwidth used, etc.</li> </ul> 
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## Requirement Checklist

Make sure your equipment meets these requirements before installing the system:

- Use shielded Cat 5e or higher Ethernet cables.
- Use Gigabit networking equipment between network audio devices.
- Limiting cable runs to  $\leq 100$  m between devices.
- Same firmware version\* for all devices in your system
- Ensure MXCW components and the PC are on the same network and set to the same subnet.

**Tip:**\*Keep the system upgraded to the latest available firmware version to ensure proper system compatibility and take advantage of new features. See **Firmware Updates** for more information.

## Mount the Access Point Transceiver

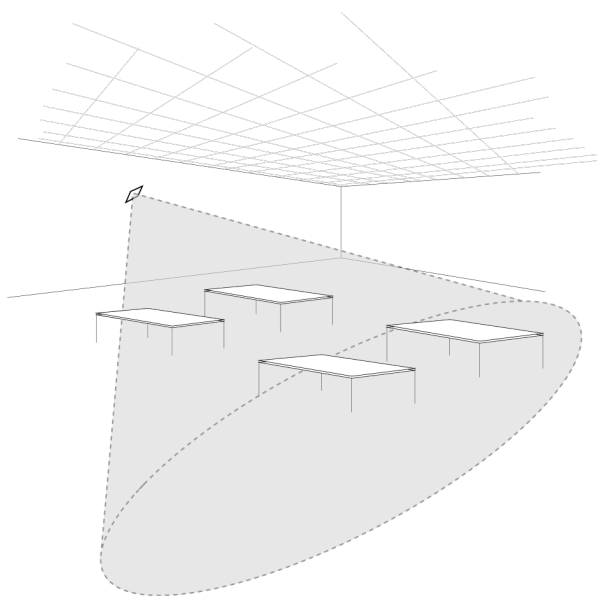
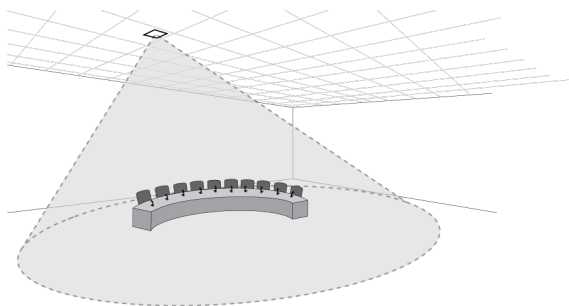
The directional antennas of the access point send and receive the RF signal in a cardioid pattern with the greatest sensitivity toward the face of the device. Always aim this side toward the microphone coverage area.

### Select a Location for the Access Point

The access point is typically mounted to a ceiling or wall near the microphone coverage area.

Use the following best-practices when selecting a location for the device:

- Direct the face of the access point toward the intended microphone coverage area.
- Position the access point so there is nothing obstructing a line of sight to the microphones.
- Keep the device away from large metal objects.
- Keep at least eight feet between access points.
- Mount with the reset button accessible, as it may be useful for troubleshooting.



**Important:** Always perform a "walk around" test to verify coverage before using a wireless system during a speech or performance. Experiment with placement to find the optimum location. If necessary, mark "trouble spots" and ask presenters or performers to avoid those areas.

### External Cover for Painting

The access point is supplied with an external cover that can be painted to match the decor of the installation. After it has been painted and dried, it snaps onto the front plate of the device.



### Securing to a Wall or Ceiling

#### Required Equipment

- Two #8 screws at appropriate length\*

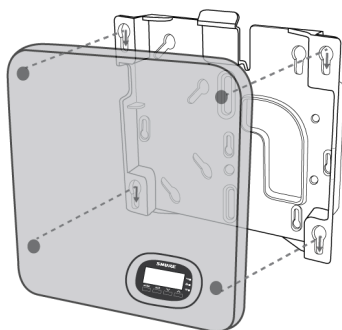
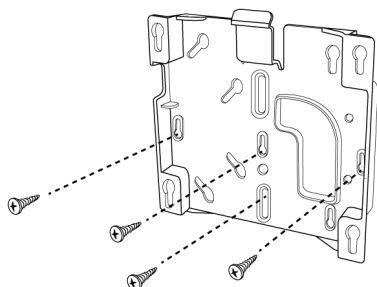
\*Screw Length = Surface thickness + thread engagement (4.75 mm max.) + thickness of flat washer + the thickness of the split lock washer

#### General Installation Steps

1. Use the mounting plate as a template and mark the location for the holes.
2. Drill the holes into the mounting surface.
3. Secure mounting plate to the surface.

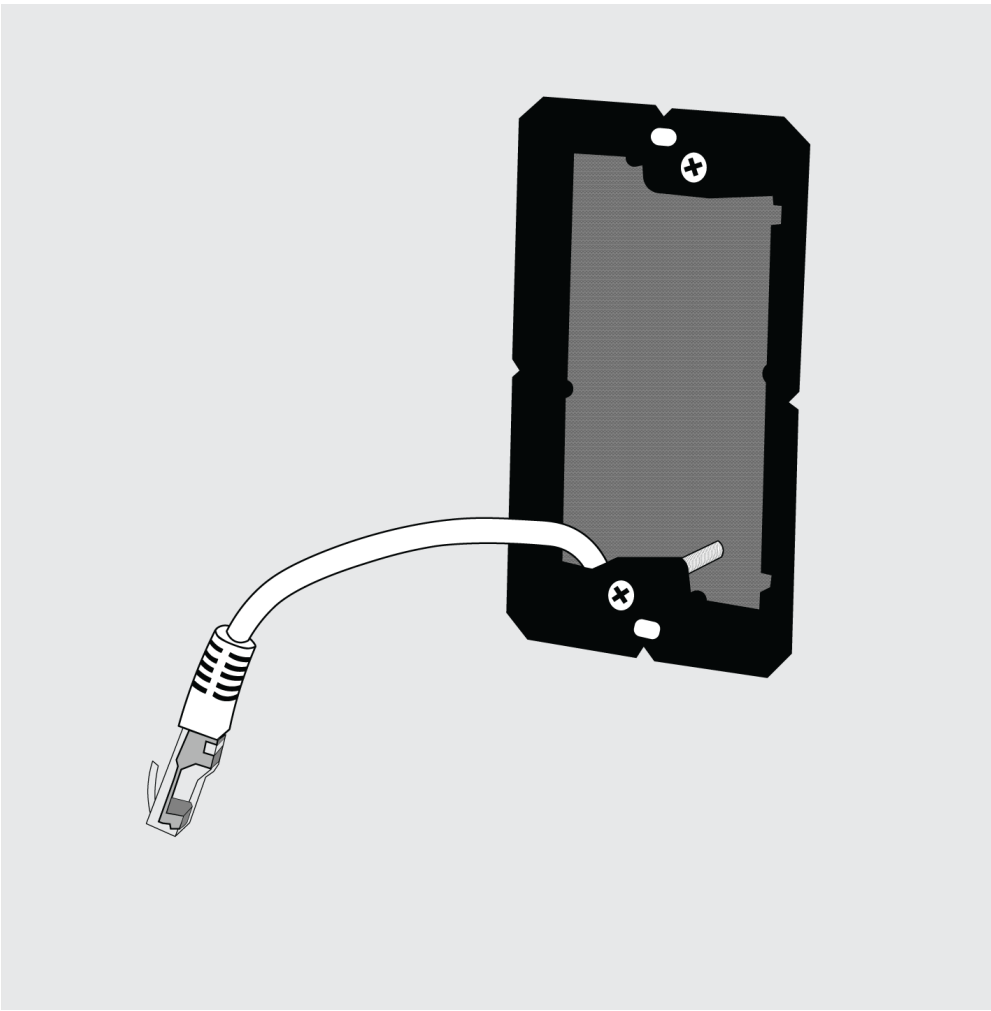
**CAUTION:** Do not over-tighten screws, as this could cause permanent damage to the charging station

4. Connect of the Ethernet cable to the access point using the cable route path.
5. Position the access point over the keyway slots of the mounting plate and slide it down into the locked position.

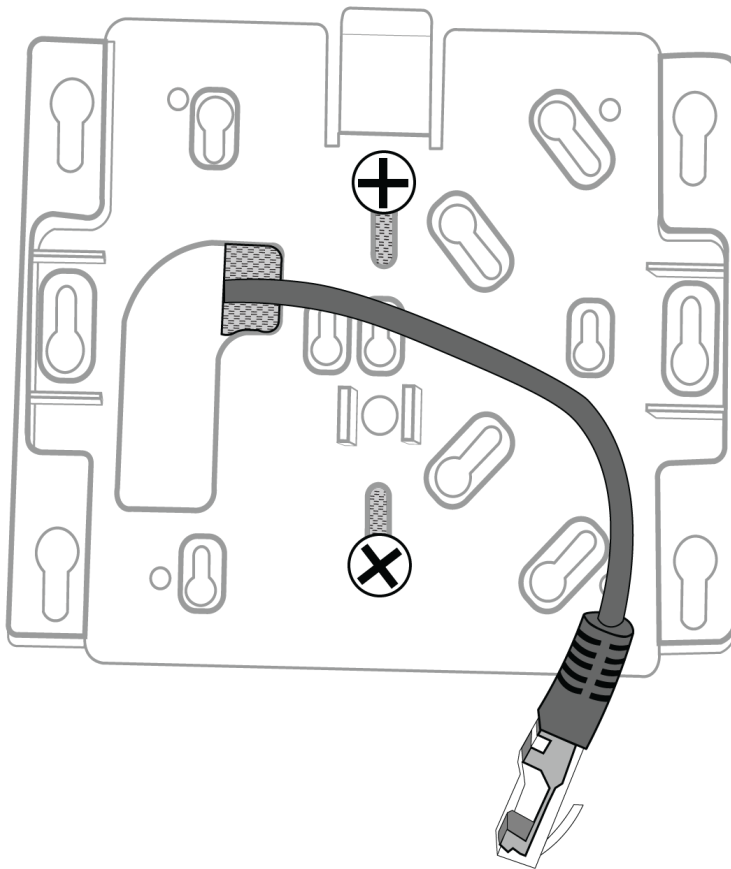


#### Mounting at an Electrical Box

1. Feed the Ethernet cable through the electrical box.



2. Mount the bracket to the electrical box using #6-32 screws (not included).



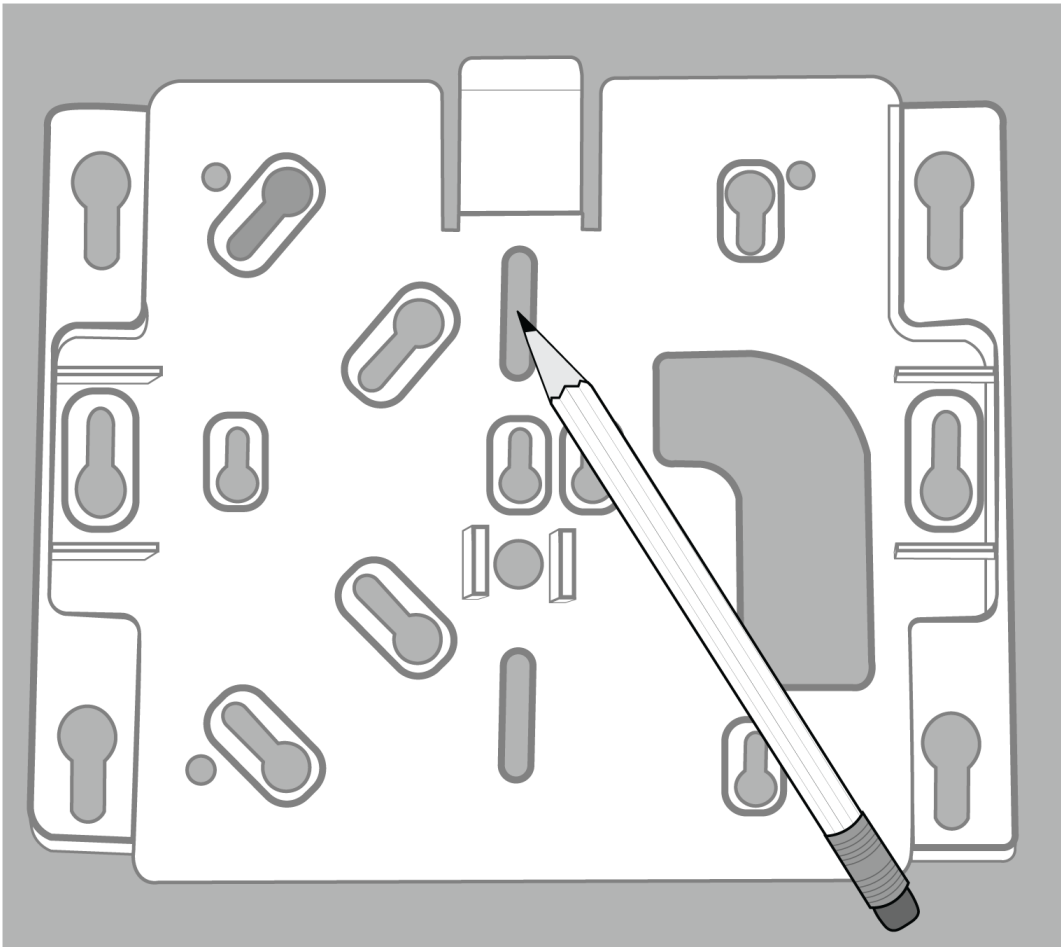
3. Connect the Ethernet cable to the MXCWAPT and mount the MXCWAPT to the bracket.



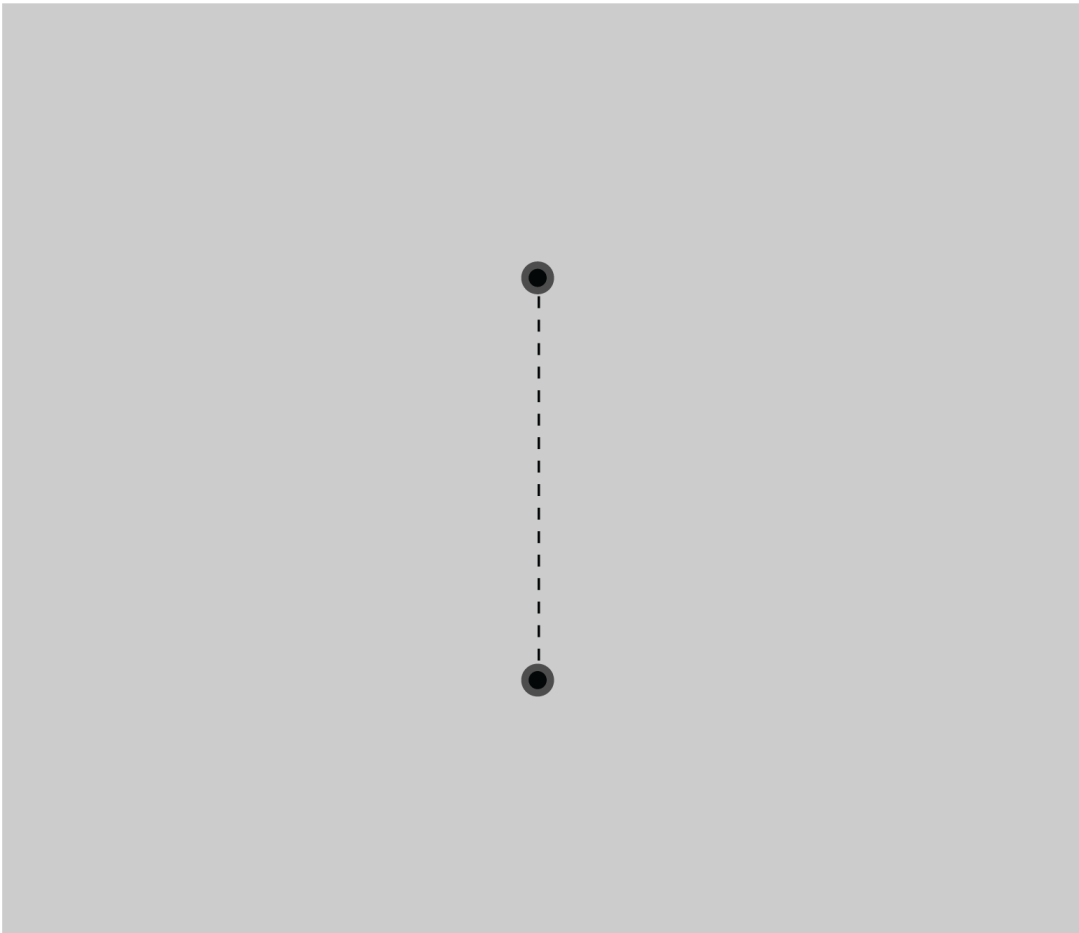


## Mounting in Drywall

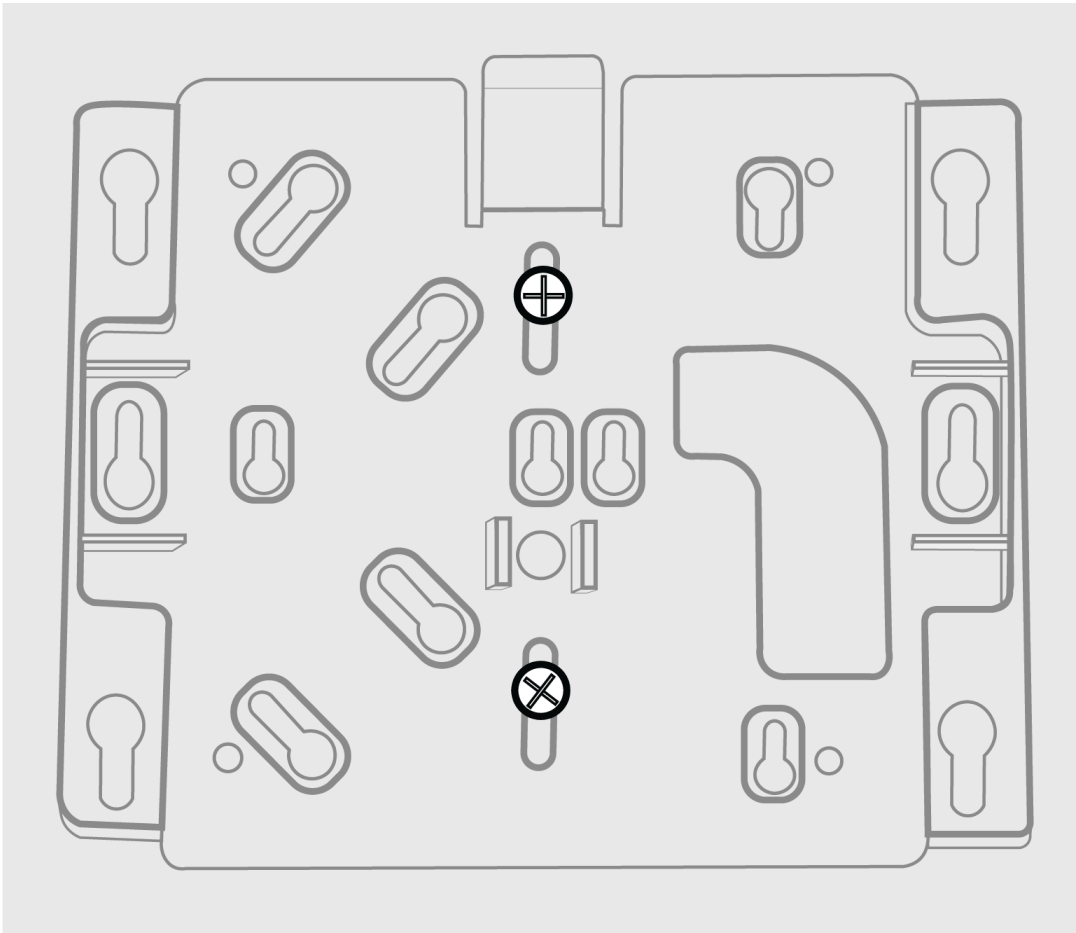
1. Hold the bracket up to the wall and mark the location for the screws.



2. Drill holes and install drywall anchors into the drywall.



3. Mount the bracket to the drywall anchors using #8 screws (not included).

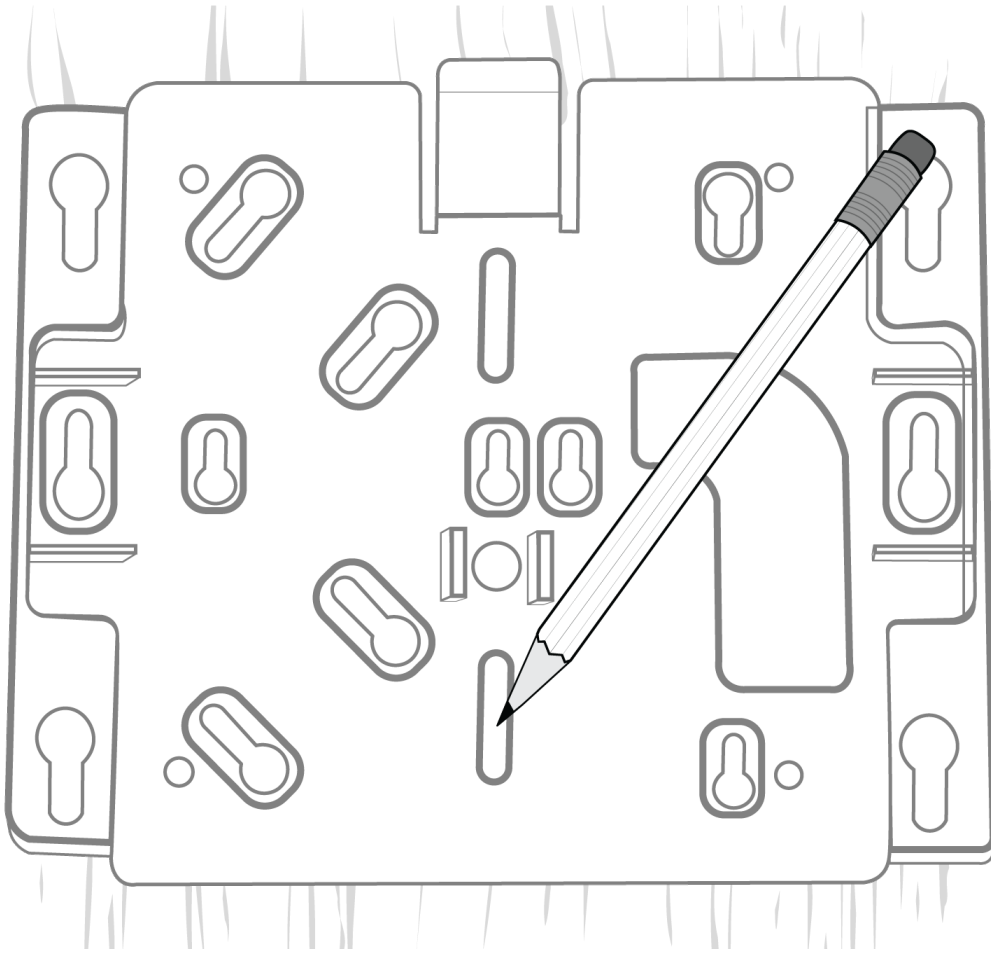


4. Connect the Ethernet cable to the MXCWAPT and mount the MXCWAPT to the bracket. Using the channels in the back of the MXCWAPT, the Ethernet cable can be routed out the top or bottom.

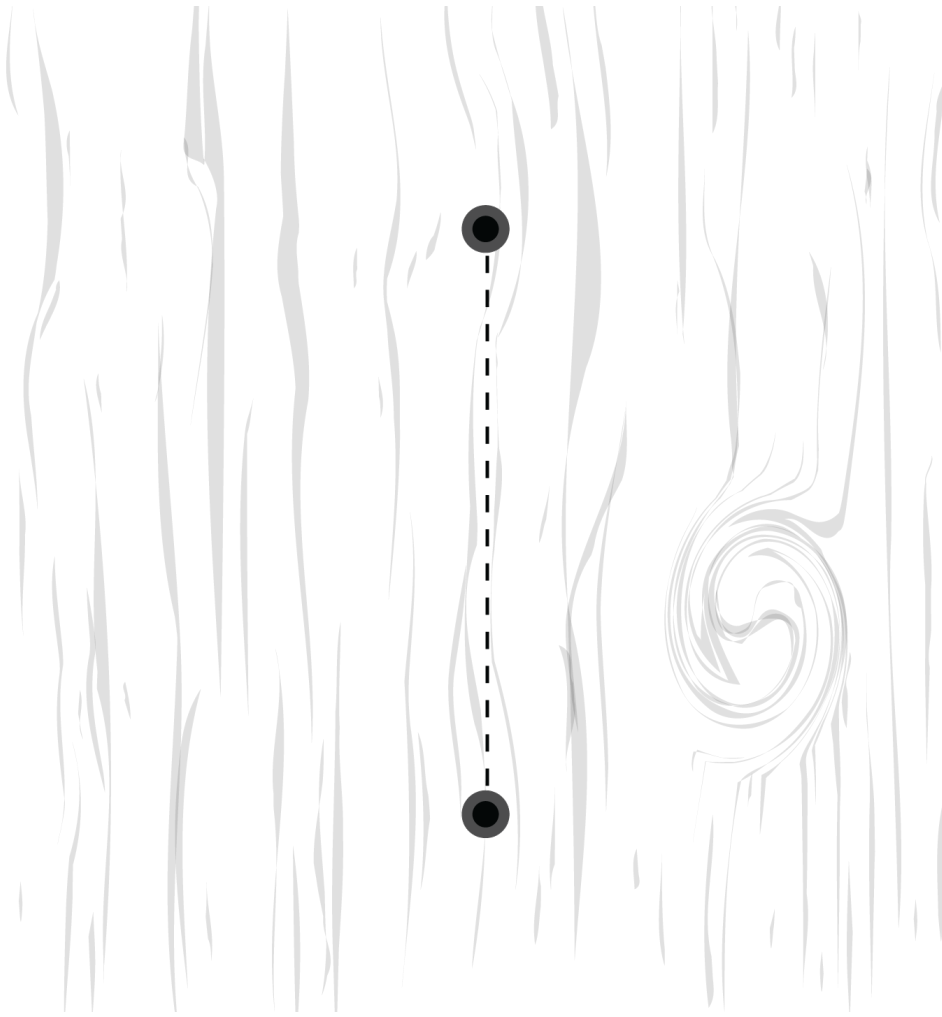


## Mounting on Wood Paneling

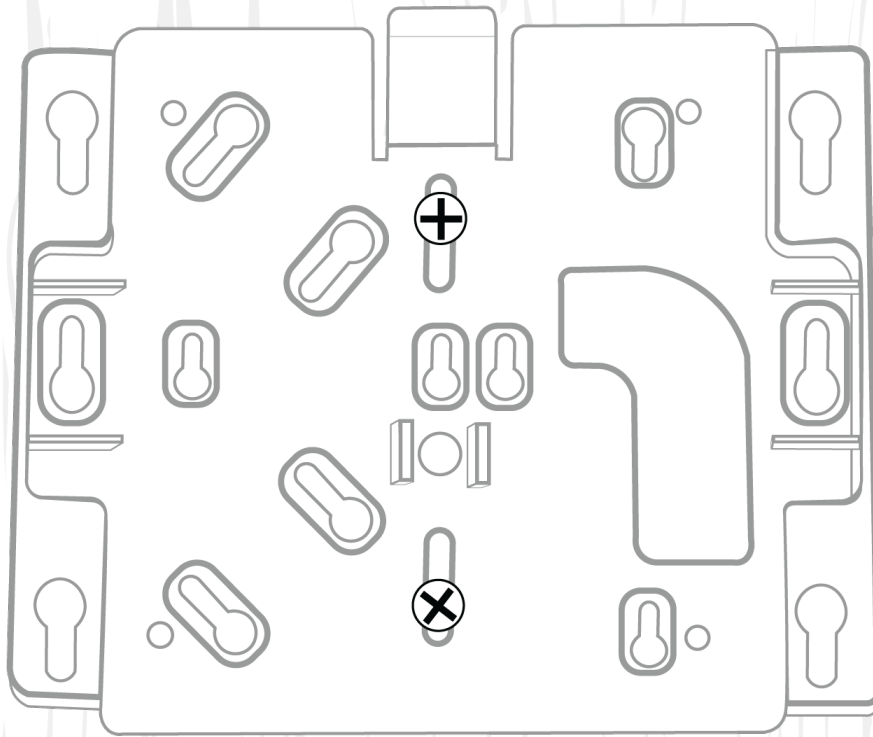
1. Hold the bracket up to the wall and mark the location of the screws.



2. Drill 3/32" pilot holes.



3. Mount the bracket to the wall using #8 screws (not included).



4. Connect the Ethernet cable to the MXCWAPT and mount the MXCWAPT to the bracket. Using the channels in the back of the MXCWAPT, the Ethernet cable can be routed out the top or bottom.



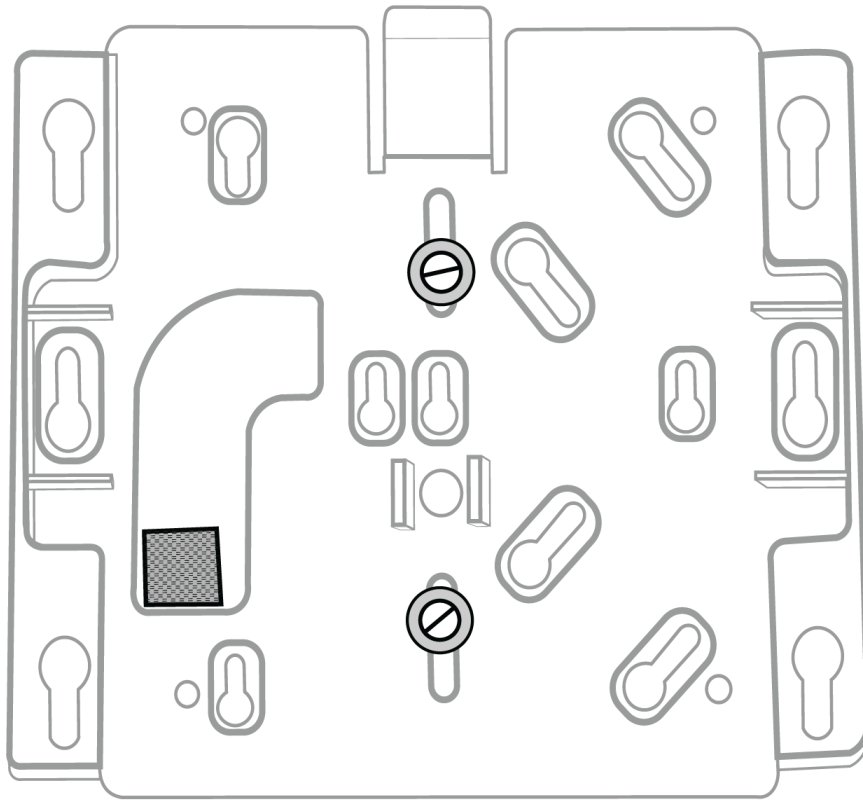




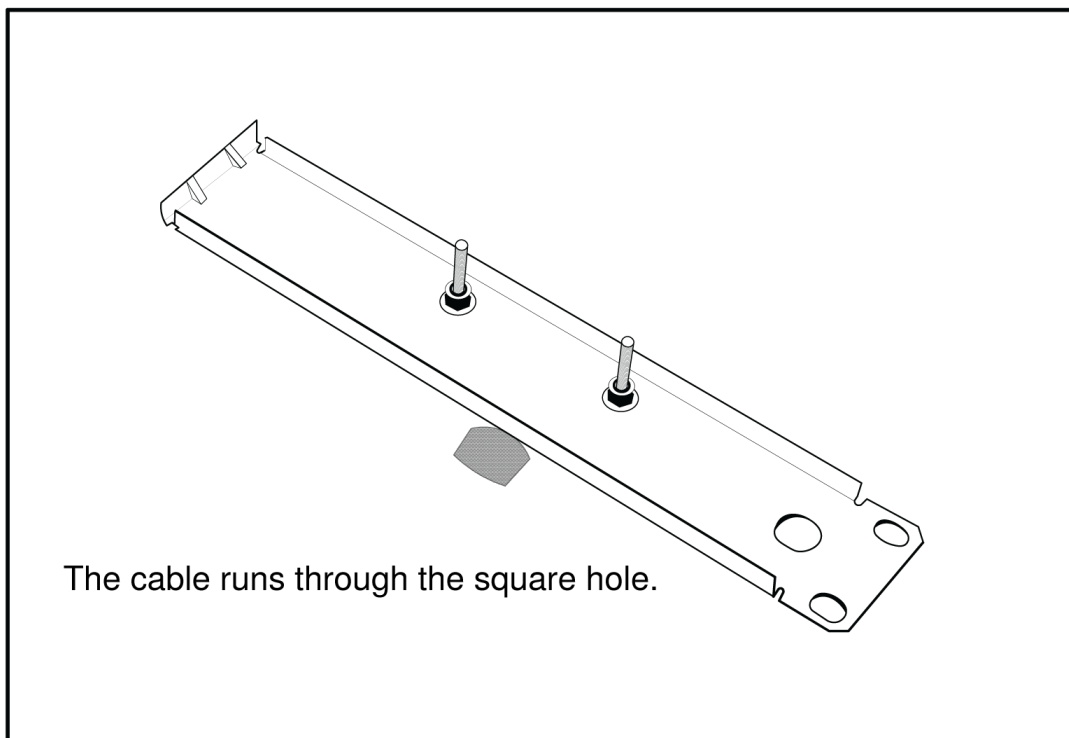
### Mounting to Ceiling Tile

**Important:** Make certain to use large fender washers or a large metal plate on the back side of the ceiling tile to support the weight of the access point.

1. Use the mounting bracket to mark the location of two screw holes and the cable entrance on the ceiling tile.
2. Drill two small holes for #6 screws into the ceiling tile to attach the mounting bracket.
3. Drill or cut a larger opening for the cable. Attach the mounting bracket to the ceiling tile.



Front side of ceiling tile



Back side of ceiling tile with fender washers or metal plate.

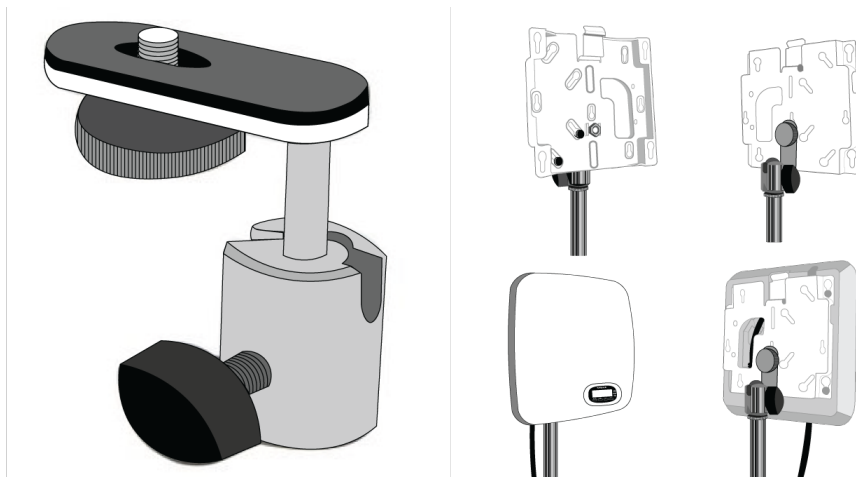
Use lock nuts or blue Locktite on standard nuts to make certain the nuts do not loosen with any vibration.

4. Run the cable through the hole, attach it to the APT and attach the APT to the mounting bracket.



## Mounting on a Tripod

On-Stage offers adapters to bolt the mounting plate to a mic stand or tripod. The CM01 and UM01 both use a 1/4-20 bolt on them. Purchase a 1/4-20 nut from a local hardware store.



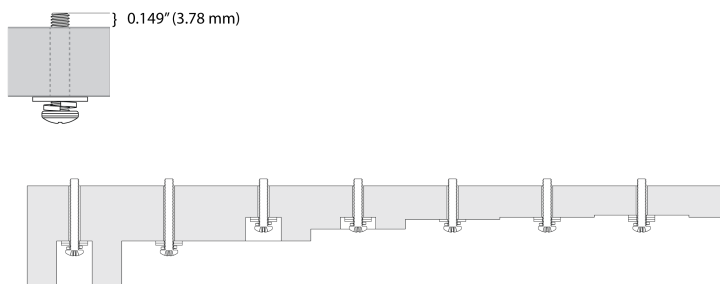
## Mount the Networked Charging Station

### How to Use Screws for Secure Installation

The screws for attaching the mounting brackets to the charger are provided. Screws for securing the charger to another surface must be purchased at a hardware store.

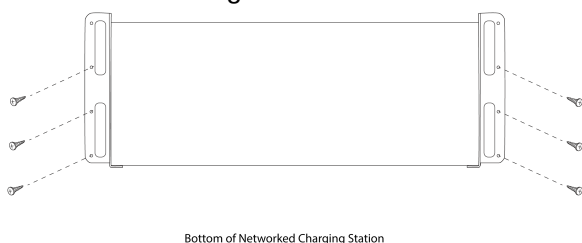
**Important:** The top of the screw must extend **exactly** 9/64 (0.149) inches (3.78 mm) above the surface (about 4 ½ threads).

- Use the screws that best fit the thickness of the surface.
- Use at least 3 screws to secure the mounting brackets to the charger.
- Use at least 3 screws on each side to secure the mounting brackets to the rack or wall.

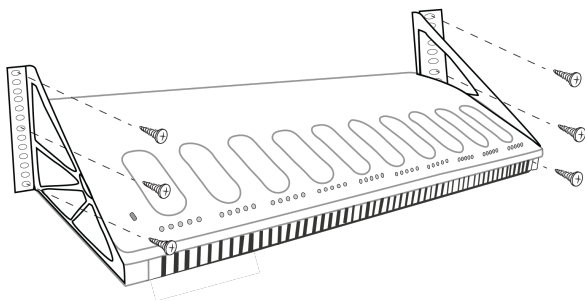


## Installing the Networked Charging Station

1. Screw the mounting brackets to each side of the charging station.



2. Leave room for cabling to the charging station.
3. Attach the mounting bracket to the rack or wall using the appropriate screws for you surface.



**Note:** Use 3 screws on each side of the mounting bracket when installing the charger.

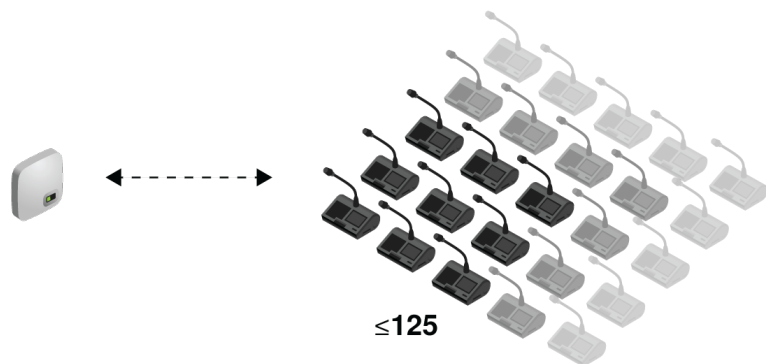
### Best Practices for Rack Installation

- Ambient temperature of the rack should not exceed specified operating temperature range of the device.
- Keep fan inlet and air vents clear from obstruction and provide adequate space for airflow within the rack.
- When possible, provide 1 RU of empty space between each device.

# System Set Up

## Maximum System Size

Connect up to 125 MXCW wireless conference units to a single access point. Connected devices operate as a self-contained, encrypted audio system for speaking, listening, and contributing to the meeting.



## Wireless Device Network

Setting up wireless MXCW devices is similar to connecting your computer to a wireless network. The MXCW access point acts as the wireless router, broadcasting a network SSID to the wireless devices in range.

The access point includes several customizable network SSIDs that allow you to label MXCW networks for easy recognition and control according to the installation or application. A default network (SSID 00) ensures that new or reset devices automatically connect after powering on.

To add a microphone, simply connect it to the right network.

## Connecting Devices for the First Time

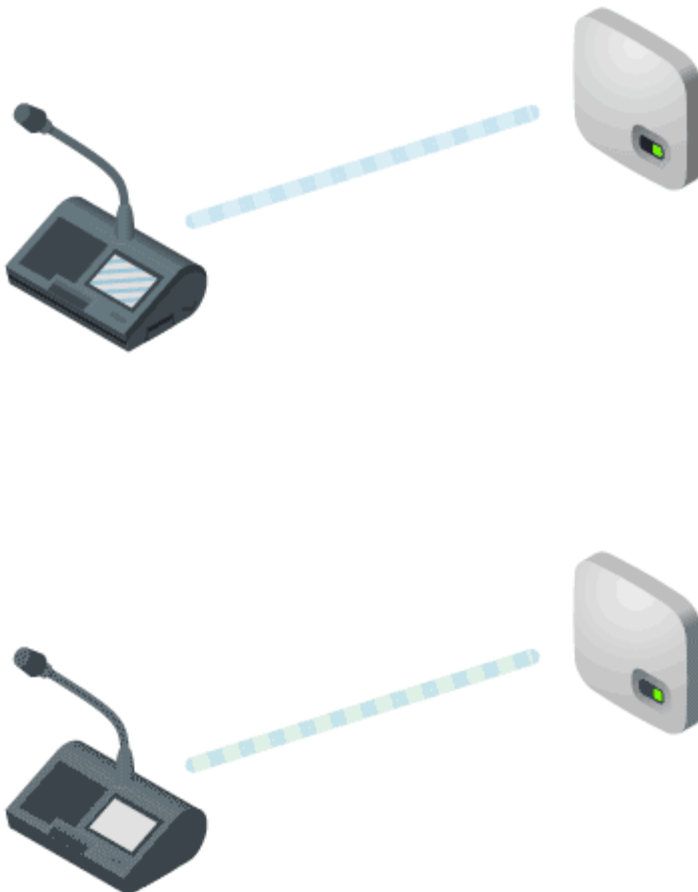
MXCW wireless devices automatically connect and register after power up. The default network SSID 00 ensures new or factory reset devices connect automatically to the access point in range.

To connect to an access point network:

1. Power on the access point. Wait for it to automatically select the best available wireless channel for operation. When the channel is secured, the access point will broadcast its network (SSID 00) to the wireless MXCW devices.
2. Power on the MXCW conference unit. The device automatically scans for the default network.



3. The default access point network (SSID 00) is selected and the devices are ready for use.




4. Add additional microphones until all participants are covered or the system is full.

## Custom Network SSID Labels

It is recommended to change to a custom wireless network after getting up and running on the default network:

- **Recognizable:** Provide distinct names for your installation. Useful names correlate to a room or common use of the system (examples: SSID=Training or SSID=3NW)
- **Security:** Customs SSIDs are less likely to inadvertently connect unwanted wireless microphones.
- **Automatic Updates:** All connected devices automatically update to match the new network label.

To customize the network SSID label:

1. Go to  Settings > SSIDs .
2. Select an SSID and rename it. Choose names (up to 32 characters) that make sense for your installation or use case.  
**Note:** The default SSID 00 is not editable.
3. (Optional) Press Push to devices to update the static SSID list on all devices connected to this access point  
The device startup mode must be set to static list.

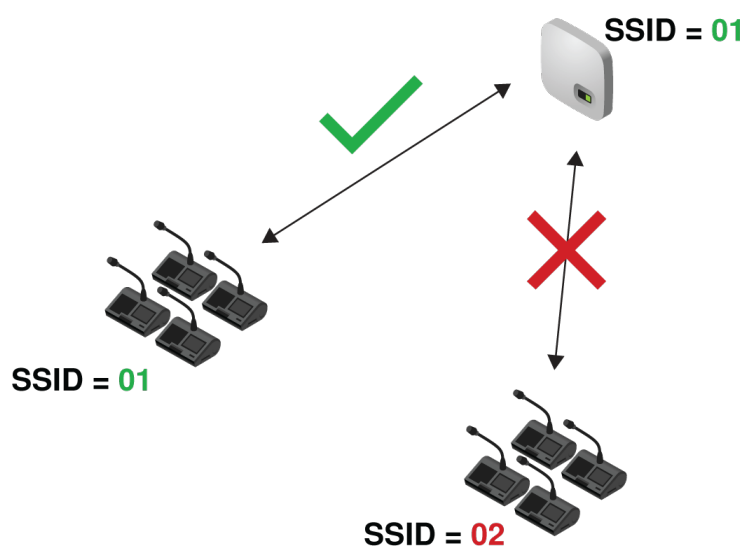
### Resolving Identical Label Conflicts

If multiple access points share the same SSID and are in range of the devices, the system resolves the conflict by choosing one of the following:

- Last connected access point based on its unique MAC address
- Or if none are recognized, the access point with the strongest RF signal

## Separating Networks for Multiple Systems

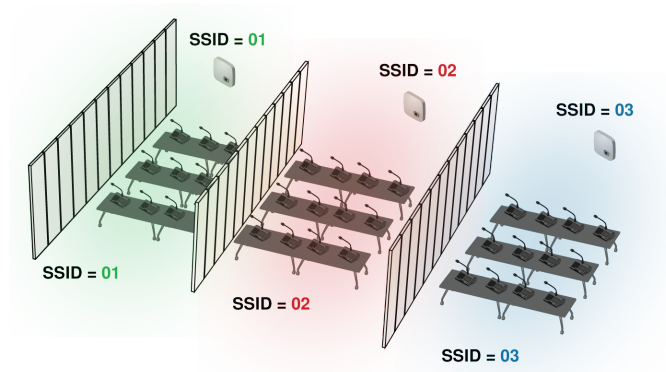
To create separate microphone systems, use multiple access points and set each one to a different SSID. Then connect the conference units to the corresponding network to set up the independent systems.



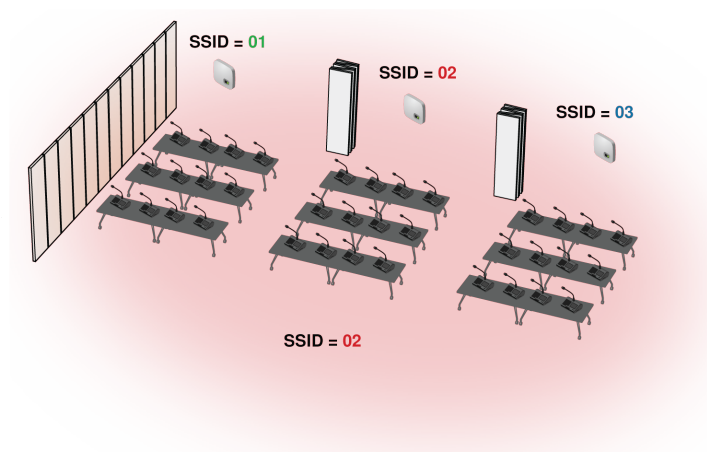
Multiple networks are useful for installations with adjacent meetings or divisible rooms that can be reconfigured depending on the size and needs of the event.



Independent systems




Combined system

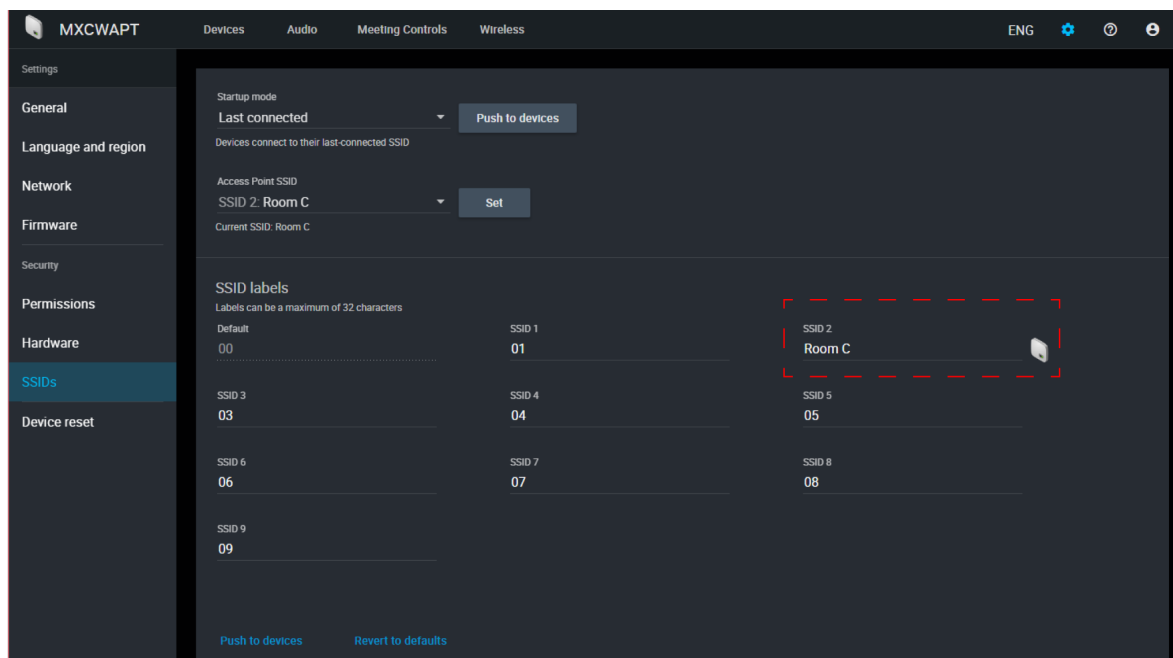


### Divisible Room with Multiple System Options

Use different SSIDs to separate conference units into independent systems for smaller events. When the room opens up to support more participants, simply set all conference units to the same access point network to create a large system.


First, set an access point to a different SSID:

1. Open the MXCW web application and go to  Settings > SSIDs .
2. (Optional) Rename one of the SSIDs network for easy identification, for example: *Room C*
3. Select that network and press Set to confirm the setting.

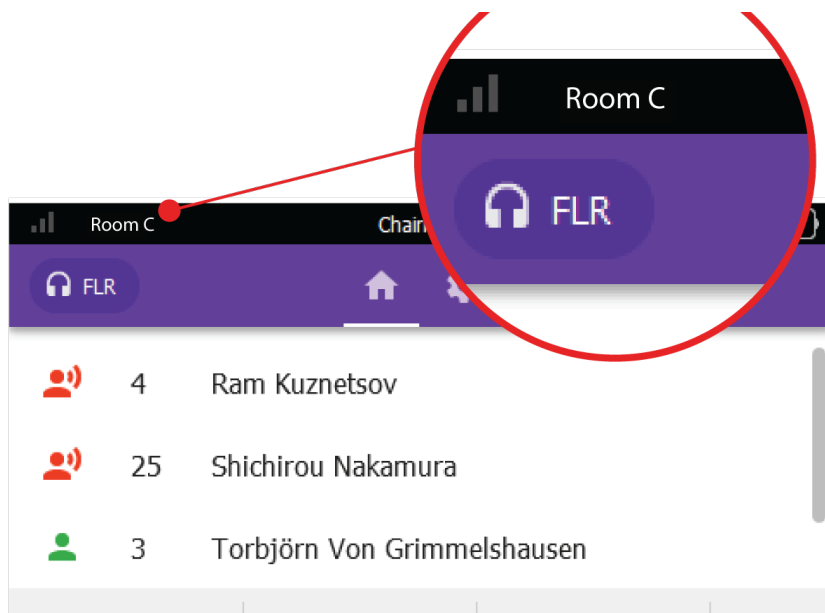


All connected microphones automatically update to the new network.

To update any other devices:

1. Open the technician menu on the MXCW640 by tapping the gear icon, then tap the right side of the screen while holding down the volume control knobs.
2. Go to the  wireless tab.
3. Depending on the Startup mode set on the unit, either scan for a network or view options in the list.
4. Choose an access point network and press Connect.

To combine rooms again, simply change the conference units back to the original network to create the larger system.




Connected Network Name

The device displays the connected network from the toolbar.

## Conference Unit Startup Mode

Set the Startup Mode to determine how MXCW conference units connect to the access point after powering on.

Access the technician menu on the conference unit by tapping the  gear icon then tap on the right side of the screen while holding down both volume control knobs. Choose one of the following Startup Modes:

Last Connected (default)	Automatically selects the network it was last connected to before powering down. New or factory default devices use this setting to access the SSID 00 by default.
List	Manually choose from a prepopulated list of networks. To update the list with custom names, rename the SSID labels in the web application and push the list to the registered wireless devices.
Scan	The device scans for available access point networks and ranks them with strongest signal at top, and weakest at the bottom. Manually select the network from the list.

**Tip:** When choosing the network manually, the list indicates the last connected access point with a star.

## Web Applications for Monitoring and Control

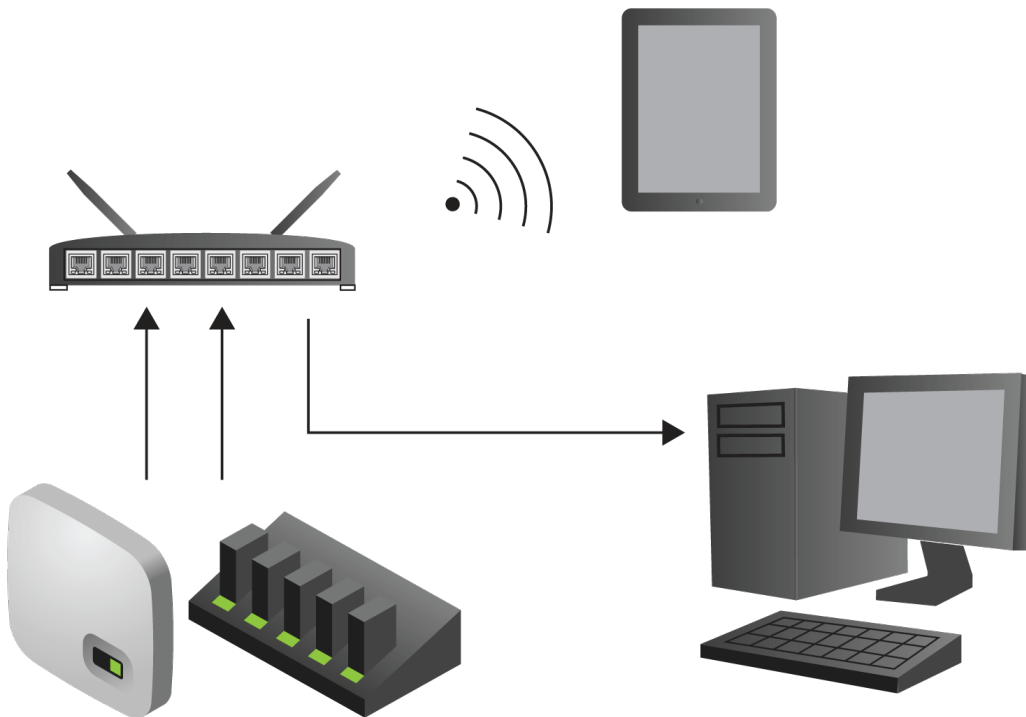
Web applications provide convenient, remote access to configure, monitor, and control the system. The application is hosted in the device on an embedded webserver and can be accessed using the device IP address or DNS name.

### MXCW Web Applications

Application	Host device	Features
MXCW system and meeting control	Access point (MX-CWAPT)	Full configuration and control of the MXCW system, devices, participants, and live meetings.
Charging batteries	Charging station (MX-CWNCS)	Monitor battery charge and statistics.

## Opening the Device Web Application

1. Connect the computer to the device network.

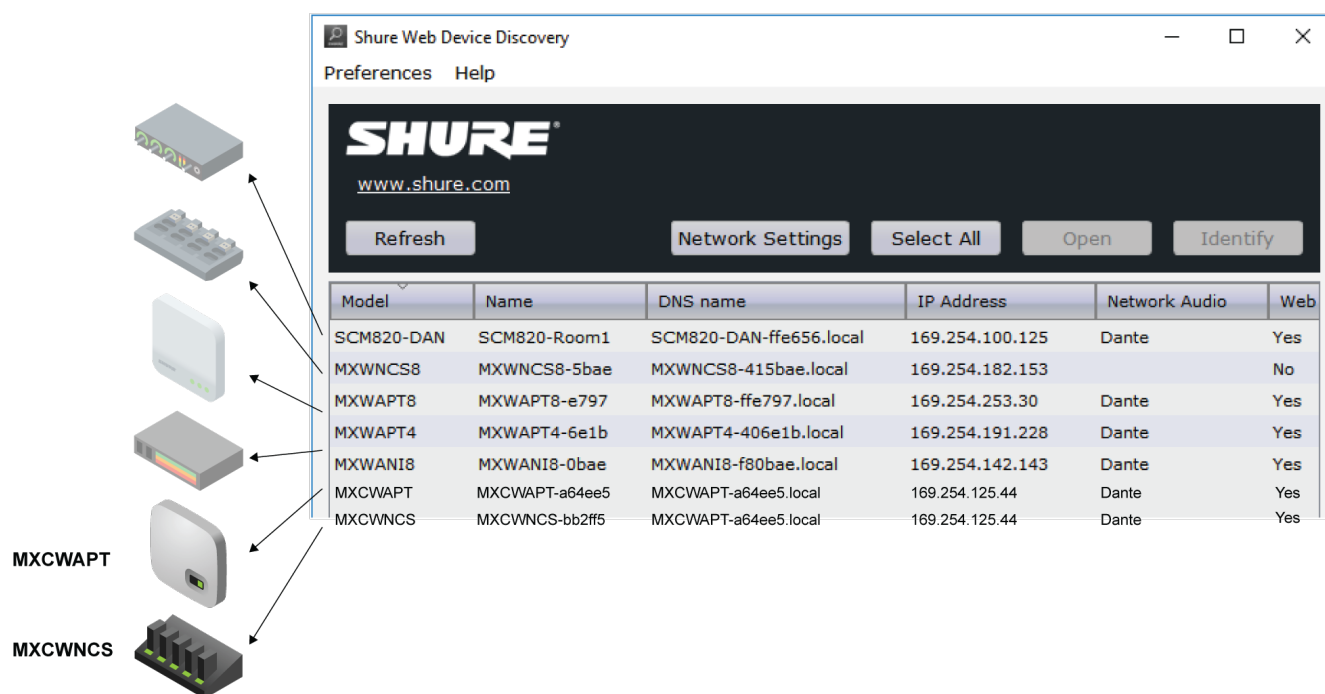


2. Open the Shure Web Device Discovery (<http://www.shure.com/swdda>) application. The application lists Shure devices on the network that provide computer control.



3. Find the device you want to open:

Application	Device host
MXCW system setup, control, and monitoring	MXCWAPT
Batteries currently charging	MXCWNCS



4. Double-click the row or right-click to copy the IP address or DNS name to paste into a browser.

**Tip:** Bookmark the DNS name to bypass the Web Device Discovery application.

## Web Browser Requirements

Web applications are supported by the following browsers:

- Google Chrome
- Safari
- Internet Explorer

## Using DNS to Open Web Application

You can bypass the Web Device Discovery application by entering the device DNS name into an internet browser. The DNS name is derived from the model of the unit (MXCWAPT or MXCWNCS), in combination with the last three bytes (six digits) of the MAC address, and ending in .local.

Format Example: If the MAC address of a unit is 00:0E:DD:AA:BB:CC, then the link is written as follows:

- **MXCWAPT:** <http://MXCWAPT-aabbcc.local> (<http://MXCWAPT-aabbcc.local>)
- **MXCWNCS:** <http://MXCWNCS-aabbcc.local> (<http://MXCWNCS-aabbcc.local>)

## Web Application Views

The access point web application has dedicated views for specific meeting management tasks:

- **Admin view** for meeting setup and configuration (default page). This view has full access to all other views.
- **Chairman view** for the chairman/operator. Signing into this view allows access to the **Display view** as well.
- **Display view** for meeting participants. Signing into this view does not allow access to other views.

Open the web application and sign in to the desired view. To have access to all views, sign in as the administrator and select one of the additional views from the



user dropdown.

## Admin View

This view is dedicated for setting up and controlling meetings. Use this view to manage **Devices**, **Audio**, **Meeting Controls**, and **Wireless** settings.

To access this view, do one of the following:

- Sign in as **Admin**
- Enter the IP address of the access point, followed by /admin (example: <http://192.168.11.137/admin>).

Mic status	Text	Seat name	Role	Gain (dB)	Battery (dB.m)	RF strength	Firmware
<input type="checkbox"/>		1. René Descartes	Delegate	-	AGC	9.18	0.0.6.6
<input type="checkbox"/>		2. Alan Turing	Delegate	-	AGC	9.07	0.0.6.6
<input type="checkbox"/>		3. Sigmund Freud	Delegate	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		4. Mandia Andronikos	Listener	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		5. Admud Farid	Delegate	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		6. Ramel Ogiat Ark	Delegate	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		7. Nevan Chomsky	Delegate	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		8. Joan Med	Chairman	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		9. Edgar Degas	Listener	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		10. Frida Kahlo	Chairman	-	0 -	7.41	0.0.6.6
<input type="checkbox"/>		11. Zhang Jue	Chairman	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		12. Friedrich Nietzsche	Chairman	-	0 -	7.40	0.0.6.6
<input type="checkbox"/>		13. Lefebvre Heam	Chairman	-	0 -	7.41	0.0.6.6
<input type="checkbox"/>		14. Joan Clark	Chairman	-	0 -	7.40	0.0.6.6

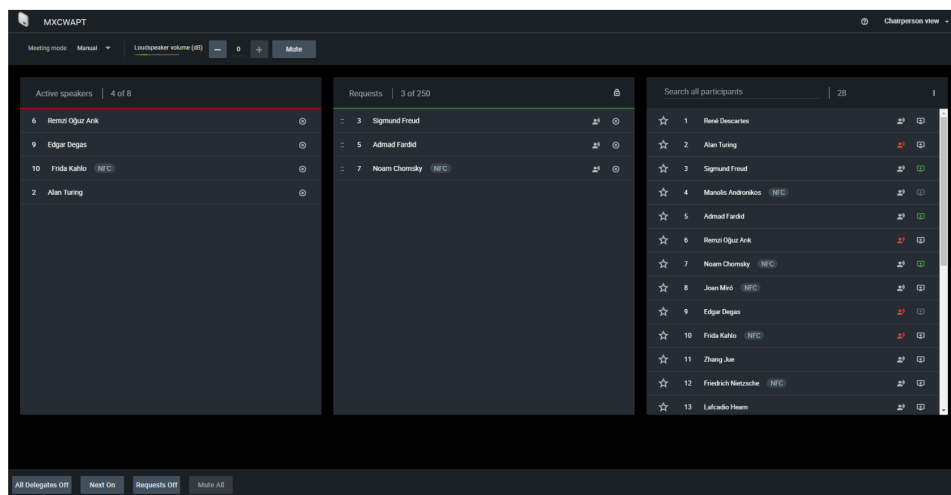
26 registered devices (0 offline) | 2 unregistered devices

## Chairman View

This view is dedicated for microphone control during the meeting. Use this view to manage speakers and speak requests. See **Managing Speakers from the Web Application** for more information.

To access this view, do one of the following:

- Sign in as **Chairman**
- Select it from the administrator page
- Enter the IP address of the access point, followed by /chairman (example: <http://192.168.11.137/chairman>).



## Display View

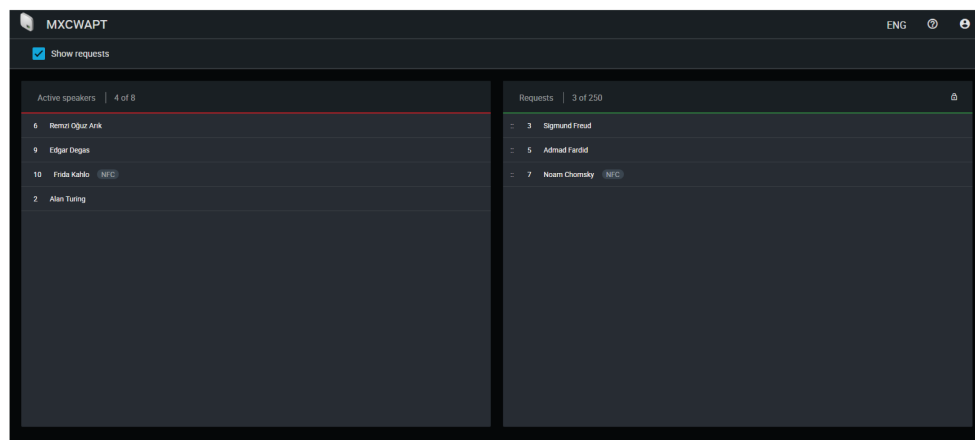
This view shows the speaker and request lists to meeting participants. Use this view to share a screen with the entire meeting space.

To access this view, do one of the following:

- Sign in to **Display**
- Select it from the administrator or chairman page
- Enter the IP address of the access point, followed by /display (example: <http://192.168.11.137/display>).

**Tip:** Put the page in full-screen mode during the meeting:

- PC: F11
- Mac: ctrl + cmd + f



## Using a Password

Anyone can access these views from a computer or mobile device connected to the network.

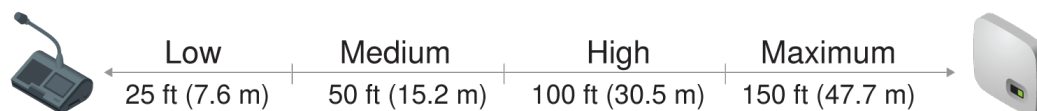
To control access with a password, while in **Admin view** open the ⚙️ Settings menu and select the Permissions tab to create or edit passwords.

# Wireless and RF Management

Microflex Complete Wireless provides automatic, encrypted wireless transmission for up to 125 conference units at a time. The access point scans and selects the best operating channel across the Wi-Fi 2.4 GHz and 5 GHz frequency bands, including DFS channels.

## Wireless Operating Distance

The RF power level determines the operating distance between the access point and conference units. Set the RF power level according to the size of the microphone installation.



### Variable Operating Distance

### Setting RF Power

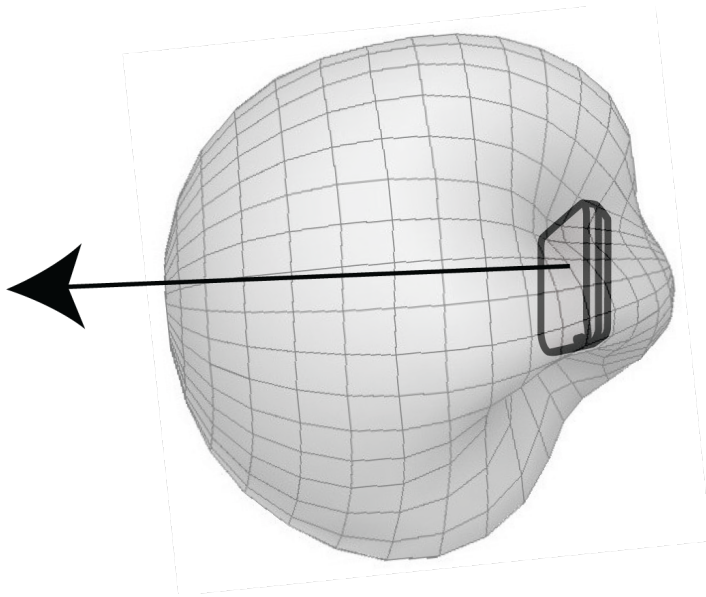
Select the RF power from the web application by going to **Wireless > RF power**.

### RF Coverage from the Access Point

Setting	Transmitter Power (mW)	Coverage Distance from APT	Typical Application
Maximum (default)	25	150 ft (45.7 m)	Ballroom and auditorium spaces
High	13	100 ft (30.5 m)	Large meeting spaces and lecture halls
Medium	5	50 ft (15.2 m)	Conference, training and multipurpose rooms
Low	1	25 ft (7.6 m)	Small video-conference rooms and boardrooms
Mute	0	0 ft (0 m)	Long meeting breaks or access point not in use

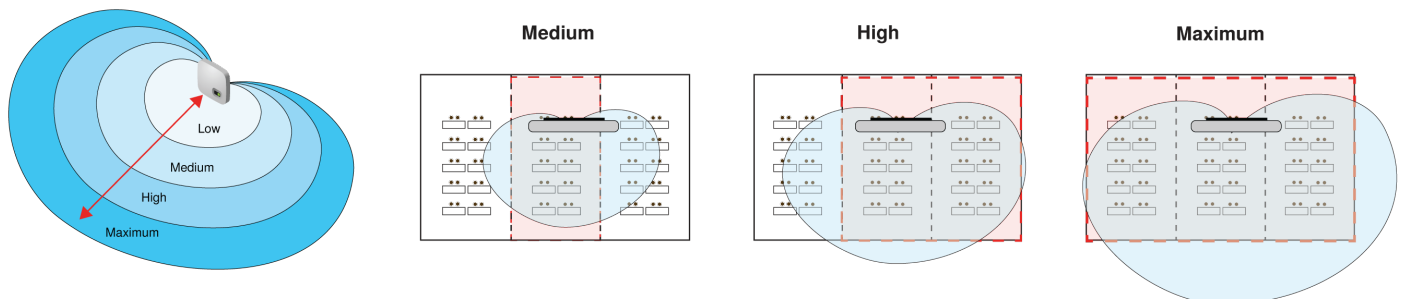
**Note:** Maximum transmitter power varies by region.





### Cardioid RF Pattern

The access point RF pattern is cardioid, picking up equally from the sides to the front cover of the unit.



### Room Combining Example

Increase RF power levels to cover larger combined rooms.

## Reliable Bandwidth Allocation

MXCW easily scales from 2 to 125 microphone units without any change in the audio performance. The bandwidth is strategically divided, allocating the uplink channels only for active speakers, while preserving traffic for continuous downlink monitoring channels.

## Selecting or Excluding Specific Wireless Channels

You can avoid specific wireless channels by deselecting them from the web application. The MXCW system scans all channels in the 2.4 and 5 GHz spectrum and chooses the cleanest one for operation. After deselecting specific channels, MXCW will no longer scan and operate in those frequencies. At least one non-DFS channel must be selected at all times.

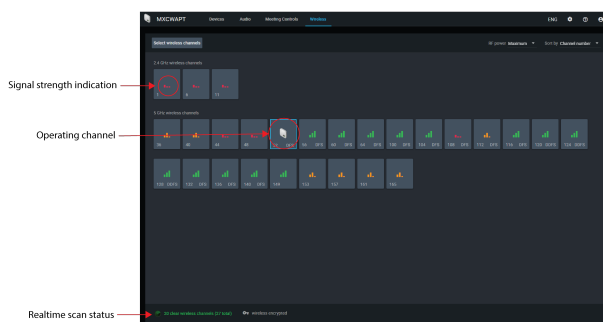
To exclude specific wireless channels:

1. Go to the **wireless** tab.
2. Press **Select wireless channels**.

3. Deselect the channels you do not want to use.
4. Press Apply to save your changes.

## Interference Avoidance

The access point has a built-in spectrum analyzer that continuously scans the Wi-Fi environment and ranks the best channels for operation. If interference is detected, the access point changes to a verified backup channel with minimal disruption to the audio performance.



## Interference Avoidance for Regulated Wireless Channels

MXCW commonly operates in a specific block of 5 GHz channels that require Dynamic Frequency Selection (DFS) or Doppler weather radar Dynamic Frequency Selection (DDFS). These channels reserve priority for weather, aviation, and military devices.

To avoid interference with priority devices, the access point has a built-in spectrum analyzer that continuously scans the wireless environment and ranks the best channels for operation. If interference is detected it will vacate the channel temporarily and change to a verified backup channel with minimal disruption to the audio performance. The channel turns grey in the web application to indicate it is unavailable. When the channel becomes available, the system will resume scanning and verifying the channel for use.

## Tips to Improve Wireless System Performance

If you encounter interference or dropouts, try the following suggestions:

1. Check the installation of access point:
  - Ensure a clear line of sight between access point and the conference units.
  - Mount the access point near or above the microphone units
  - Make sure people do not block the line of sight between receiver and transmitter.
2. Check that other Wi-Fi systems are not causing interference:
  - Ensure at least 3 meters (10 feet) between access point and Wi-Fi routers, computers, or other active 2.4 GHz or 5 GHz sources.
  - Turn on typical Wi-Fi devices prior to the event so the MXCW system has time to select a clean channel.
  - Avoid heavy Wi-Fi traffic activities on nearby networks such as downloading large files or viewing a movie.
3. Additional tips:
  - Make sure the access point is using all available channels (reselect any channels that were manually deselected from the web application)
  - During sound check, mark trouble spots and position participants away from those areas.

- Move access point and microphones away from metal or other dense materials.

## Selecting the Country and Region (MXCWAPT-W only)

For the global MXCWAPT-W variation, set the operating region for the most reliable scans and to comply with local regulations. This is **only** required for the global MXCWAPT-W model variation.

## Setting Up Participants

### Participant Roles

The system facilitates meetings in part by adjusting features and permissions based on the role assigned to each participant device. Participant roles affect:

- **Speaker limits:** The chairman can speak at any time, while delegates may need to wait their turn.
- **Speak priority:** Participants can interrupt another active speaker depending on rank.
- **Hardware controls:** Microphone button options depend on the role of the speaker.

For example, since the chairman is responsible for the meeting, additional controls and permissions are granted to perform additional tasks and to speak at any time without waiting in line. Others are listeners and have minimal speaking permissions.

The following is a summary of the roles in the system:

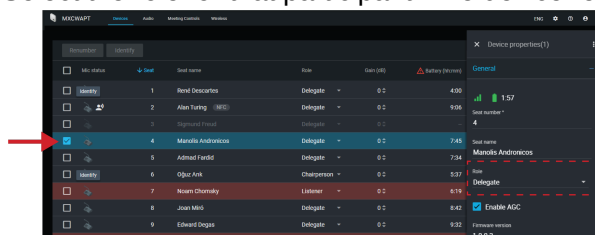
Role	Brief description	Details
Chairman	Moderator or leader of the event	The chairman is a participant with additional permissions for controlling delegate microphones, accessing meeting controls, and overriding delegate speakers at any time.
Delegate	Typical participant	Delegates represent the majority of participants in a meeting. Depending on the microphone operation, delegates may need to wait in the request queue until it is their turn to speak.
Listener	No microphone required	Participants use the device only to listen to the floor mix (using the loudspeaker) or to an interpretation channel (using headphones). There are no speaking permissions in this role, but a chairman can turn on this microphone manually.

Role	Brief description	Details
Ambient	Improves audio mix	<p>A spare, utility device for adding natural room ambient noise to the floor mix to aid during pauses in speech or brief breaks between agenda items when no other participants are on the speaker list. There are no listening or speaking permissions in this role.</p> <p>Go to <b>Meetings Controls &gt; Advanced &gt; Enable ambient microphones</b>.</p>

## Changing the Participant Role


From the MXCW web application:

1. Go to the Devices tab.
2. Find and select the participant (or seat) in the list.
3. Select the role to expand the dropdown and view additional roles.
4. Select the role for that participant. The device reprograms with the corresponding controls and permissions.



**Tip:** To update multiple participants at once: select them and change the role from the side properties panel.

From the device technician menu:

1. Enter the technician menu on the conference unit.
2. From the  role tab, select a new role.

## Identifying a Device from the Software

Before making changes in the software, confirm you are interacting with the correct hardware.

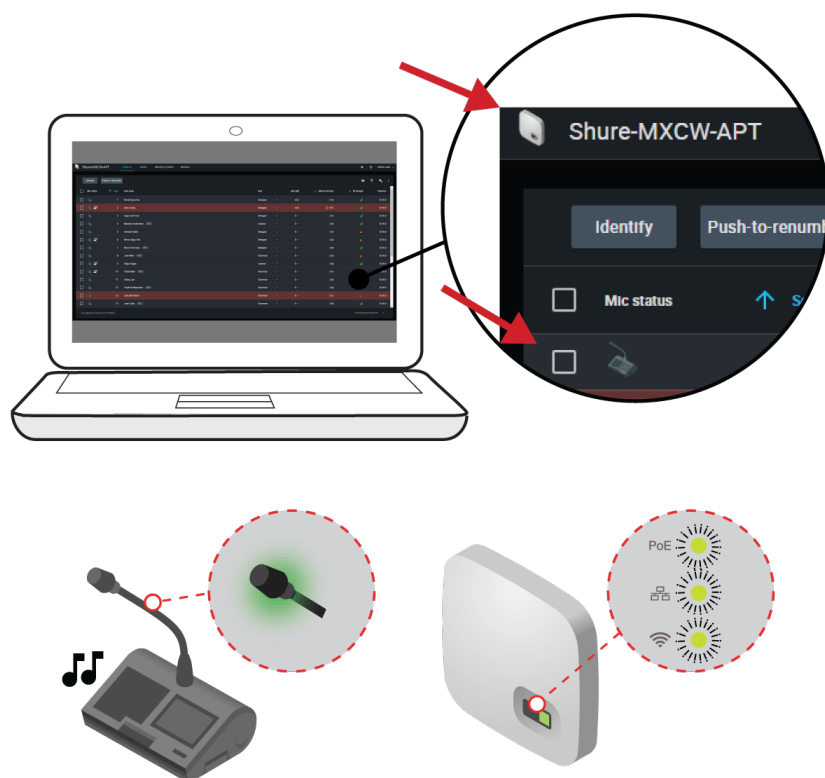
1. Go to the Devices tab.
2. Click the desired device's icon. The device beeps or flashes to confirm your selection.

**Note:** Click the





wrench icon to change the device identification indicator.

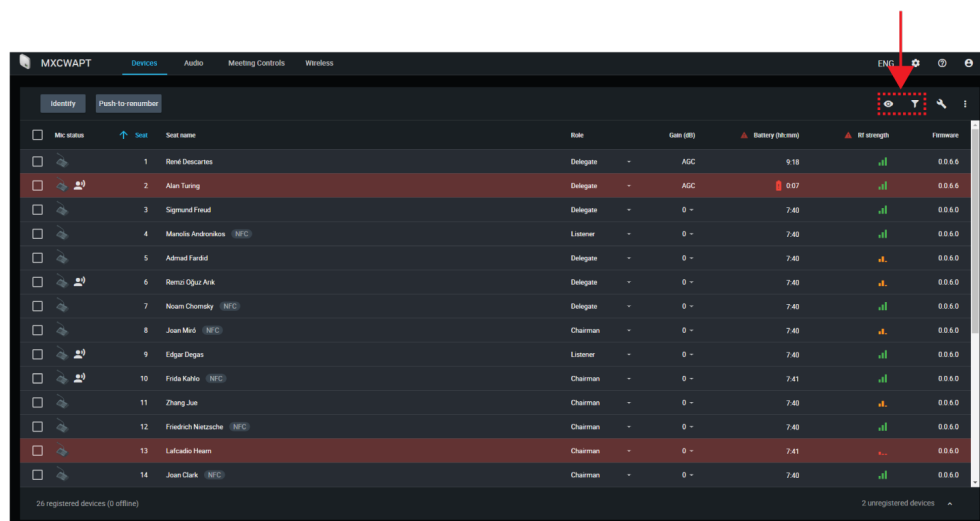
3. Select the icon again to stop identifying or wait until it times out (30 seconds).






## Identify the Hardware

## Customizing the Devices Page

Choose which information you want to see from the Devices tab. Edit the  filter and  visible columns to remove fields that are not useful to your workflow.



 Visible columns	Determine which columns display in the devices table: <ul style="list-style-type: none"> <li>• Seat number</li> <li>• Seat name</li> <li>• Role</li> <li>• Battery</li> <li>• RF strength</li> <li>• Speak priority</li> <li>• Left-button functionality</li> <li>• Firmware version</li> <li>• Serial number</li> <li>• Mic gain</li> <li>• Low-pass filter (12 kHz)</li> <li>• High-pass filter (150 Hz)</li> </ul>
 Filter	Only allow devices with these attributes to display in the devices table: <ul style="list-style-type: none"> <li>• Speak priority</li> <li>• Audio groups</li> <li>• Left button functionality</li> <li>• Firmware version</li> </ul>

To return to default settings, open  more options and select Reset.

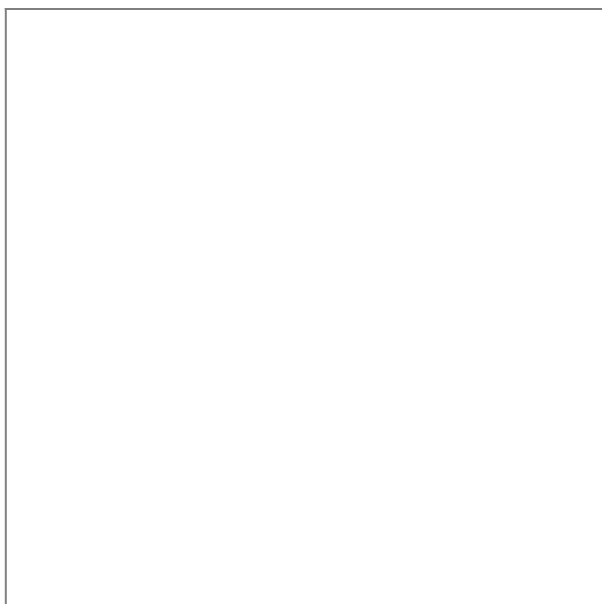
## Assigning Names and Seat Numbers

The chairman and meeting operators will need to refer to the participants by either name, seat number, or both. The proper assignment of names and seat numbers is critical to ensure the continuity of the discussion.

When setting up the installation for the first time, each microphone unit appears with its default name and an automatically assigned seat number according to the order they were powered on. Use the Devices tab to match wireless devices to the anticipated seating chart.

**Note:** Devices already display the participant's name if an NFC card is inserted. See **NFC Card Functionality** for more details.

1. Draw a seating chart, or diagram, that represents the room. Number each seat that requires a microphone. Add participant names to the seating chart.
2. Provide seat names by clicking the seat name field and writing the new name for each unit.



3. Reorder seats to match the actual seat numbers in the room or on your seating chart:
  - To move a single seat, click in the Seat field for that row and enter the new number. If another seat already exists in that number, it will simply swap (exchange) positions with the other seat.
  - To move multiple seats, click **Push-to-renumber**. Enable this mode to rearrange seats by pressing each device's Speak buttons in the preferred order. This will remap devices according to the order the buttons are pressed.

## NFC Card Functionality

Use the free Shure NFC Card Programming application (available on [www.shure.com](http://www.shure.com)) to program NFC identification cards with the names of meeting participants.

The NFC Card Programming application is designed to work with ACOS3 dual interface or contactless cards, such as the MXCDualCard. Use the ACR1252U USB card programmer ([www.acs.com.hk](http://www.acs.com.hk)) to write participant names to the identification cards.

To allow NFC functionality for conference units:

1. Go to `MeetingControls > Advanced > Enable NFC`.
2. Insert an NFC card into the conference unit so participants are identified by their name.

## Speak Priority

When speaker interruption is enabled, participants can override each other in the speaker list based on their speak priority and their role.

Manually adjust the speak priority of each participant to meet the needs of your meeting.

Example speak priority settings:

Multiple Chairmen	<ul style="list-style-type: none"> <li>• Set the highest-ranking chairman to 5</li> <li>• Set the rest of the chairmen to 4</li> </ul>
-------------------	--

High-Ranking Delegates	<ul style="list-style-type: none"> <li>• Leave the normal delegates at 1 (default)</li> <li>• Set the high-ranking delegates to 2</li> </ul>
------------------------	--

## Adjusting Speak Priority

To adjust the speak priority without changing the participant's role:

1. Open the web application to the Devices tab.
2. Select the participant in the table to open the properties panel.
3. Expand the additional properties and adjust the speak priority for that participant.

## Active Speaker Interruption

When interruption is allowed, a participant that turns on their microphone will override the last person in the speaker list. The different modes determine the behavior of microphone activation when the speaker list is full.

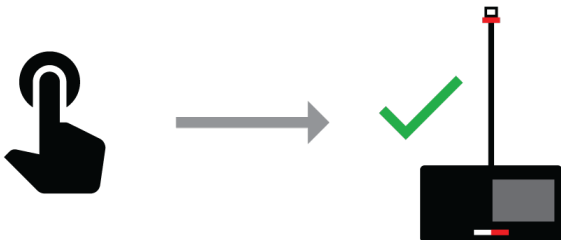
To change the interruption mode:

1. Go to Meeting Controls > Advanced > Active speaker interruption
2. Select a mode:
  - Not allowed
  - Higher speak priority allowed (default)
  - Equal or higher speak priority allowed


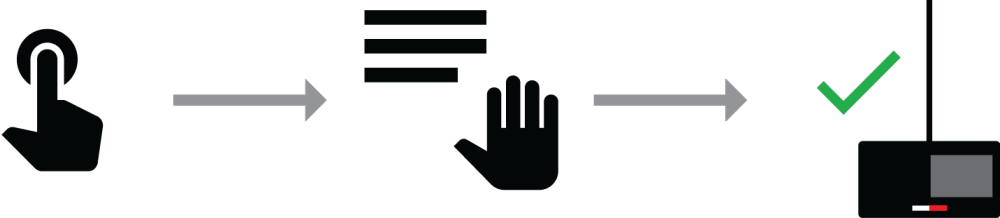
See **Speak Priority** for information on adjusting individual participants' priority.

## Microphone Activation Style

The speak mode determines the way the participants use their microphones in a group setting. Several factors may affect the meeting requirements and the manner in which the meeting is run: room size, number of participants, formality of the event, and amount of technical support on staff. The speak mode addresses these factors with presets to control the microphone behavior.

Mode	Description	How it Works
Automatic (default)	Press to speak 	Speak button turns on participant microphone. There is no request queue: when the speaker list is full, the mic does not turn on.



Mode	Description	How it Works
FIFO (First in, first out)	Automatic request queue 	Speak button adds participant to a queue system. Once the speaker list is full, participants are placed into a chronological request queue. The next microphone in queue turns on automatically once a space is open in the speaker list.
Manual	Managed request queue 	Speak button adds the participant to a request queue that is managed by the chairman or operator.

**Note:** Speak priority may affect the list. A new speaker with higher priority may automatically override the earliest activated microphone if that speaker has a lower priority. See **Speak Priority** for more details.

## Changing the Speak Mode

The speak mode is a system setting that applies to all conference units registered with the access point.

Use one of the following methods to change the speak mode:

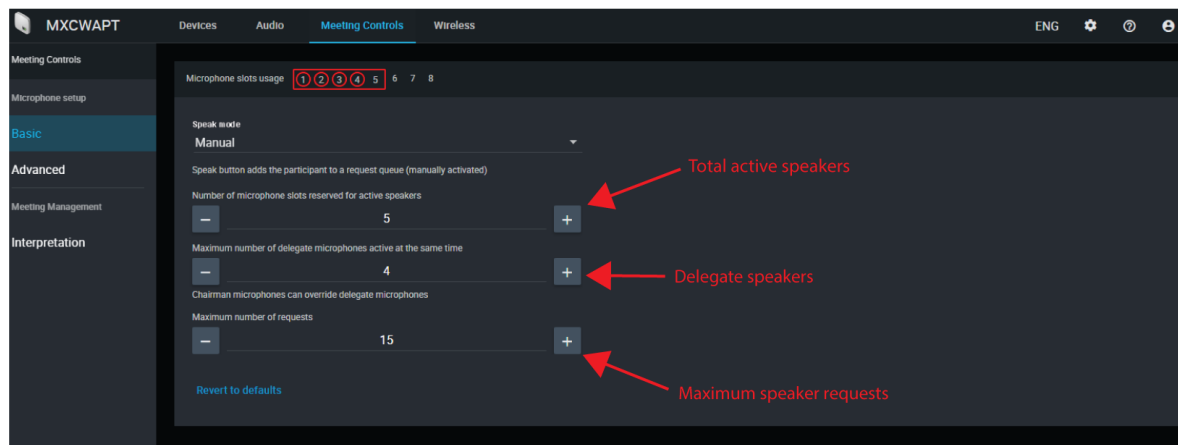
- Web application: Meeting Controls > Basic > Speak mode
- Access point LCD menu: MeetingCtrls > Speak mode

## Setting the Number of Active Speakers

The MXCW system allows up to 8 active speakers. Once the speaker list is full, participants must wait until their turn to speak. If they attempt to speak before their turn, their microphone LED ring flashes momentarily and then turns off as a reminder.

To set the number of speakers:

1. Go to **Meeting Controls > Basic**.
2. Use the plus sign (+) and minus sign (–) to change the number of speakers.
  - **Total:** Total number of active delegate and chairman devices. This is the absolute maximum number of people that can address the floor at the same time.
  - **Delegate:** Number of delegate microphones that can be open at the same time (excludes the chairman).
  - **Maximum Requests:** Total number of participants that can be in the request queue. This is only available in Manual and FIFO mode.



## Best Practices for Setting Active Speakers

- Add an extra participant to the total number of speakers to allow a chairman to speak at any time.
- When using First In, First Out (FIFO) mode, set the maximum number of speakers to 1 so the participants must wait to speak until another has finished.

## Participant Microphone Control by Admin/Chairman

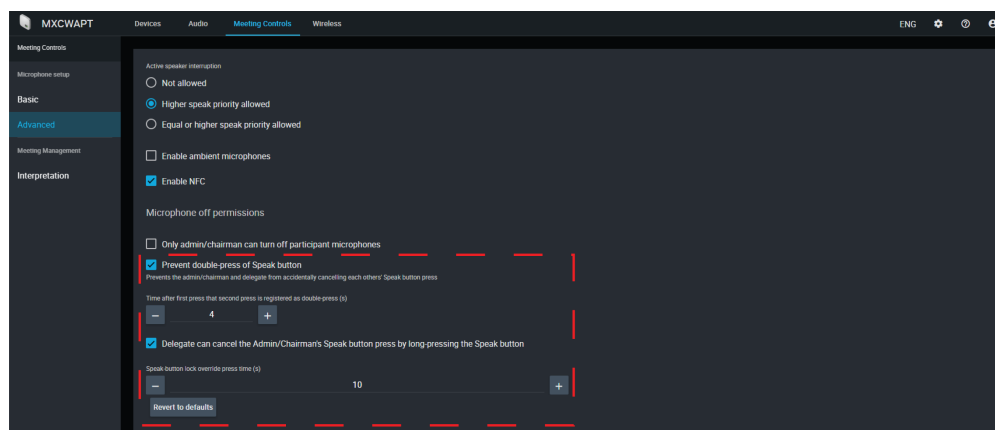
To allow only the administrator or the chairman to turn off participant microphones:

1. Go to **Meeting Controls > Advanced > Microphone off permissions**.
2. Select **Only admin/chairman can turn off participant microphones**.

## Prevent Speak Button Conflicts

To prevent conflicts of a participant and an administrator or chairman attempting to perform the same action on a unit:

1. Go to **Meeting Controls > Advanced > Microphone off permissions**.
2. Select **Prevent double-press of Speak button**.
3. Set the amount of time (in seconds) for a conference unit to register a second press.
4. Optional: Allow a delegate to cancel the administrator or chairman's speak button press by holding the speak button down for an assigned duration between 1 - 120 seconds.



## Managing Speakers from the Web Application

For increased control over the meeting, the chairman uses the web application to activate microphones. The chairman page is dedicated for controlling the speaker list and request queue. The chairman can manually turn on/off microphones, or simply monitor the list in automatic mode. Using the interface, the chairman can easily:

- **Click** on a participant name to turn on the microphone, or add them to the request queue.
- **View** who is speaking and who is waiting their turn to speak

There are three lists on the Chairman View page:

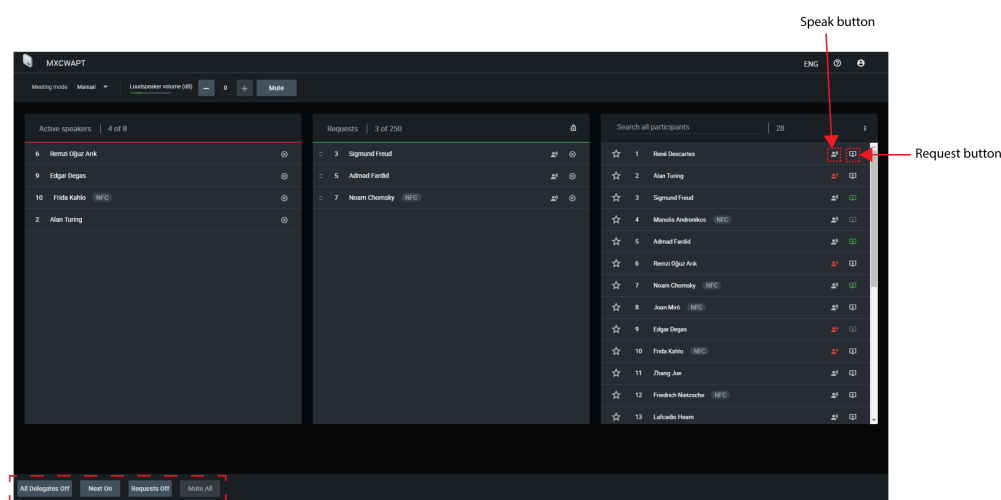
Active speakers List (Red)	The speaker list displays the name and seat number of each active microphone. The list displays in chronological order, with the most recently activated microphone at the top of the list.
Requests (Green)	Delegates in this list are next up for speaking. Primarily useful when operating in First In First Out mode (FIFO), the queue chronologically lists all participants that have pressed their speak button. Once an opening is available in the speak list, the participant at the top of the queue list is automatically turned on.
All participants	This is a full list of meeting participants. Change seat names, sort the participant list, and move delegates to the Active speakers or Requests lists.

## Controlling Participant Microphones

The following buttons are available to the chairman for controlling the microphones during a meeting:

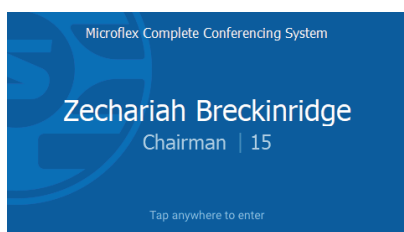
Speak	Instantly turns on a participant's microphone. Select the icon next to the participant name to add them to the Speak list.
Request	Add a participant to the request queue to put them in line for speaking. Select from any participant in the system, excluding the chairman.
All Delegates Off	Turns off all participant units, leaving only the chairman in the speaker list.

Next On	Activates the participant microphone at the top of the request queue. If the maximum speaker count has been reached, the new speaker replaces the last one on the list.
All Requests Off	Removes all participants from the request queue.
Mute All	Turns all participant microphones to mute without affecting the speaker list.



## Conference Unit User Interface

Once the unit has powered on, tap the LCD touchscreen to access the Home screen. Log in using a code or an NFC chip card if prompted.



## Status Bar

The top of the touchscreen contains a status bar to display information about the conference unit:




## Home Screen

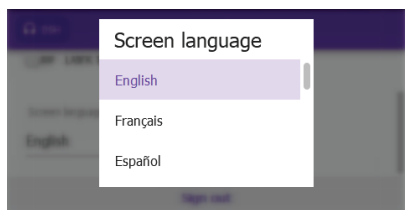
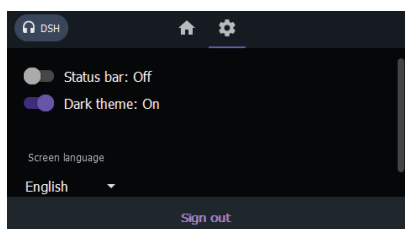
The Home screen displays a combined speaker and request list.

Chairmen have the following software buttons on their screen to control the participant microphones during the meeting:

- Exclusive: Mute all delegate microphones and activate the chairman microphone only
- All Del off: Turn off all delegate microphones
- Next on: Turn on the first microphone in the request list
- Mute all: Mute all microphones without removing the right to speak

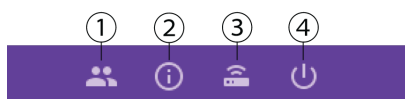
## Settings Menu

Access the Settings menu by tapping on the  gear icon in the navigation pane. From this screen you can hide the status bar, change the screen to a dark theme, and change the screen language.



## Technician Menu

Additional conference unit information and settings are in the technician menu. From this menu you can access 4 different screens to perform the following actions:



### ①

- Assign a participant role
- Change the left-button functionality

### ②

- Display the firmware version of the conference unit and connected access point
- Factory reset the device
- Reboot the device


### ③

- Display the connected access point SSID
- Disconnect from the access point

### ④

- Change the startup mode
- Power off the device

To access the technician menu:

1. Tap the  gear icon to enter settings menu.
2. Hold down on both volume control knobs and tap on the right side of the touchscreen.

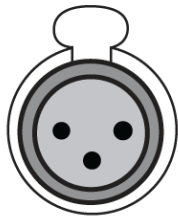
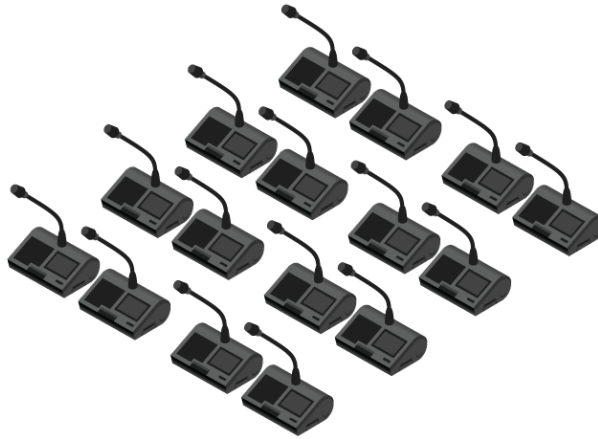
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## Audio Setup and Channel Routing

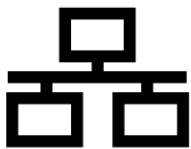
The MXCW system supports wireless, analog, and Dante™ network channels for a wide range of applications and installations. Use the web application to customize the audio system for your meeting.



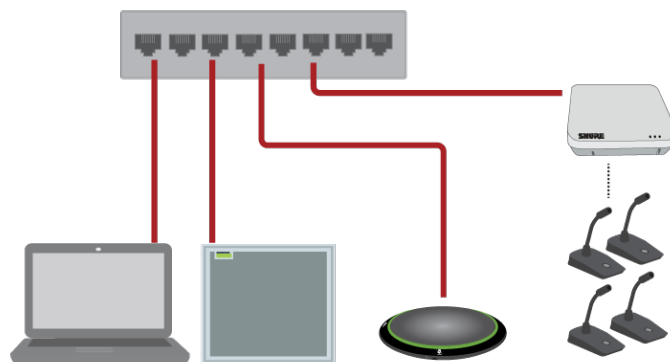
① MXCW devices



② Analog audio



③ Digital network



MXCW Audio Channels

① MXCW Wireless Network	Encrypted wireless audio between the access point and conference units: <ul style="list-style-type: none"> <li>• 8 uplink channels for active speakers</li> <li>• 9 downlink listening channels (1 floor mix + 8 interpretation channels)</li> </ul>
② Analog audio	XLR connectors on the access point: <ul style="list-style-type: none"> <li>• 1 input channel</li> <li>• 1 output channel</li> </ul>
③ Dante network audio	Digital audio channels over the Ethernet network: <ul style="list-style-type: none"> <li>• 10 input channels</li> <li>• 10 output channels</li> </ul>

Once the audio signal is added to the MXCW system, an internal matrix mixer routes audio signals between inputs and outputs, for simple and flexible routing:

- Send the floor mix to multiple outputs for recording, broadcasting, and a spillover listening room.
- Add an external sound source to the floor mix, such as a bodypack microphone for presenters.
- Record each active microphone on a separate audio channel for official record keeping.

## MXCW Routing Descriptions

Reference the table for a variety of MXCW routing options.

### MXCW Audio Routing Description

Route	Description	Available channels	Web application path
Input channels	Monitor and adjust the signal at each input channel: <ul style="list-style-type: none"> <li>• Audio signal</li> <li>• Volume and mute</li> <li>• AGC and EQ</li> </ul>	<ul style="list-style-type: none"> <li>• 1 Analog input</li> <li>• 10 Dante inputs</li> </ul>	web application > Audio > Inputs
Group mixes	1 or more source(s) for each mix group: <ul style="list-style-type: none"> <li>• Seat numbers</li> <li>• Input channels</li> </ul>	<ul style="list-style-type: none"> <li>• Floor mix</li> <li>• 8 group mixes</li> </ul>	web application > Audio > Group mixes

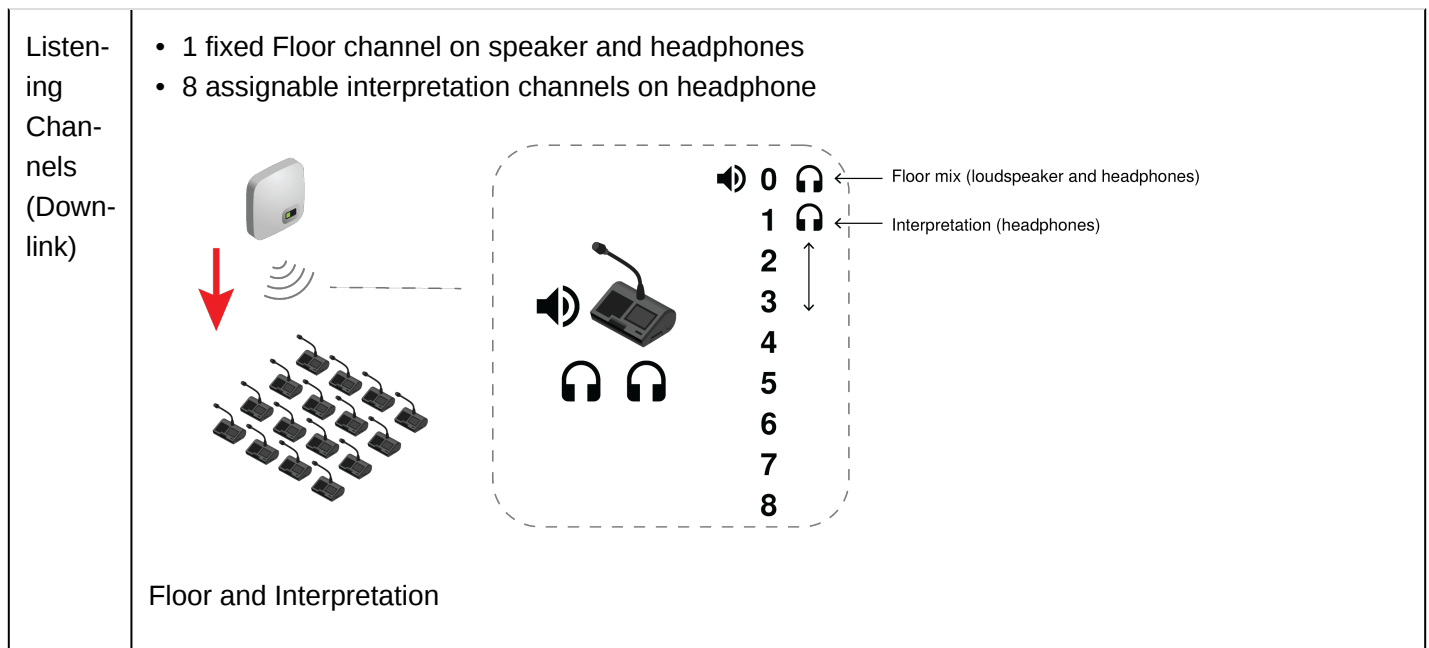


Route	Description	Available channels	Web application path
Output channels	Select source for each output channel: <ul style="list-style-type: none"> <li>Floor or group mix</li> <li>Microphone slot</li> <li>Input channels</li> </ul>	<ul style="list-style-type: none"> <li>1 Analog output</li> <li>10 Dante outputs</li> </ul>	web application > Audio > Outputs

## MXCW Wireless Audio

Encrypted wireless audio between the access point and conference units:

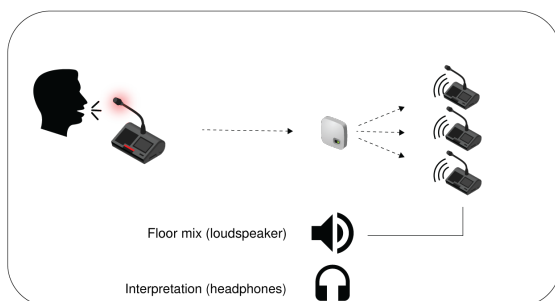
<p>Speaking Channels (Up-link)</p>	<p>8 uplink channels are provided for active microphones. As participants turn on their microphones, they are added to these channels. Depending on your event, you may want to lower the limit on speakers or add chairman role to certain participants. See <b>Setting the Number of Active Speakers</b> for more information.</p> <div style="text-align: center;"> </div> <p>Up to 8 Speakers</p>
------------------------------------	---



## The Floor Mix

Whenever a microphone is turned on, the audio is routed to the floor mix by default. The floor mix combines all active speakers and sends that signal to the other participant units for listening.

Listen to the floor mix on the unit loudspeaker or the headphone channel.



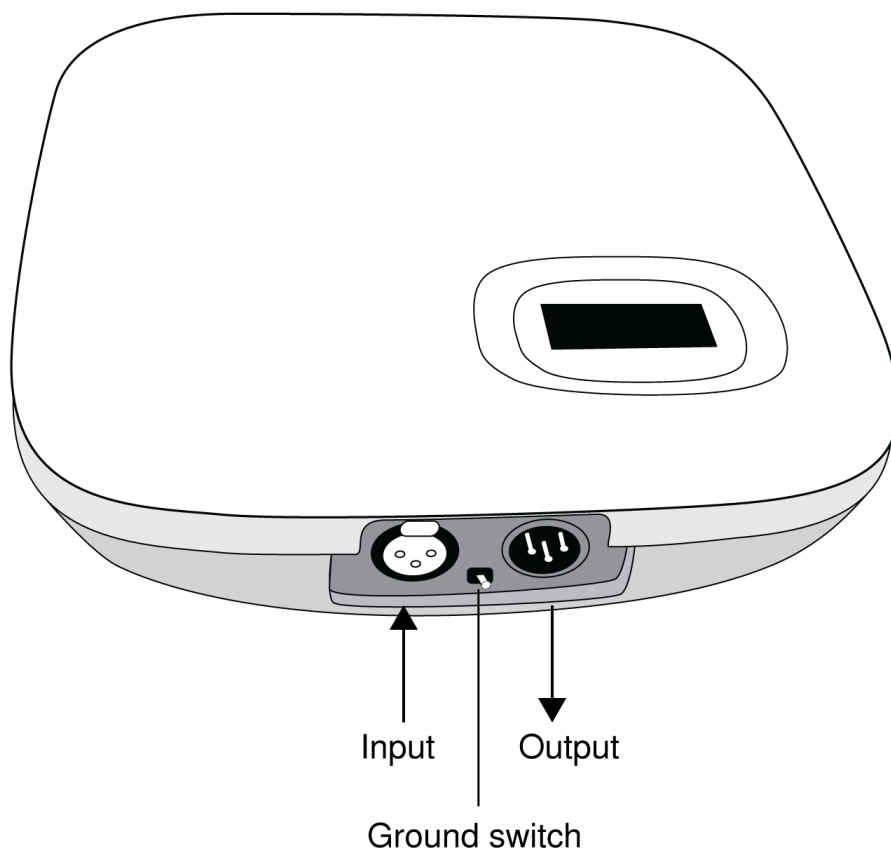
- **Loudspeakers:** The floor mix is **always** the source for the loudspeakers
- **Headphones:** The floor mix is also available on a headphone channel (Ch. 0)

## Monitoring Active Microphones

Use the MXCW system web application to monitor and adjust the microphone slots for audio contributing to the floor mix. Go to **Audio > Active microphones**.

## Analog Connections

Easily connect additional equipment using the XLR analog connectors on the MXCW access point. Common applications include adding a Q&A or presenter microphone, sending audio out to a broadcast feed, or connecting to a teleconferencing system.

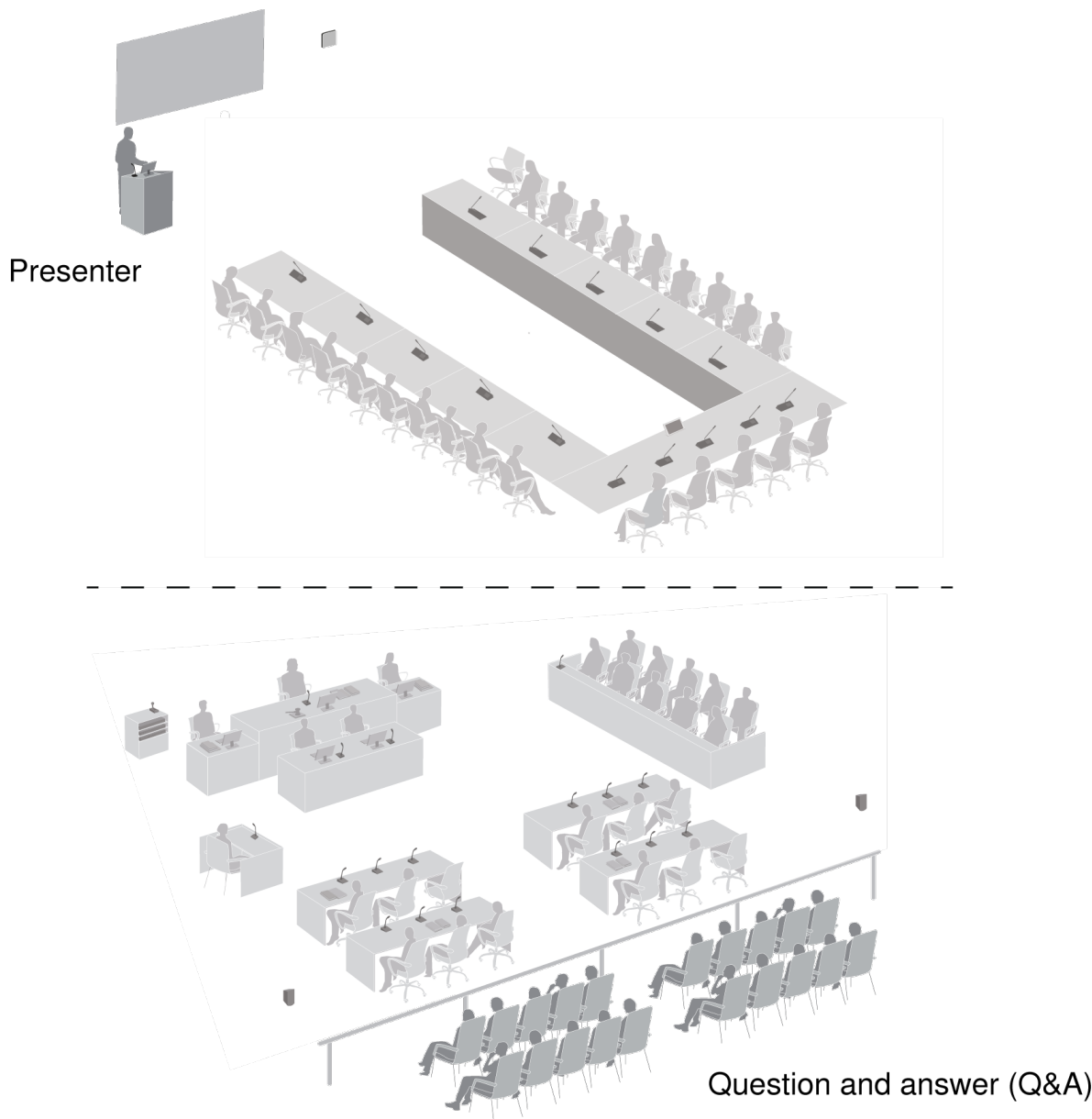


#### Access Point Analog Connectors

Remove the cover to access the analog connectors

## Connecting Analog Devices

1. Connect a line-level audio device:
  - XLR input from a mixer or wireless receiver (default route to floor mix)
  - XLR output to a recording, loudspeaker, or teleconferencing system (default source is floor mix)
2. Perform a sound check using normal speech levels with the rest of the MXCW microphones. For best results:
  - Always leave AGC enabled to make sure the signals blends naturally with other MXCW sources
  - Use the equalization filters to reduce unwanted sounds like HVAC.



### Analog Input Example

## Automatic Gain Control (AGC)

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

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

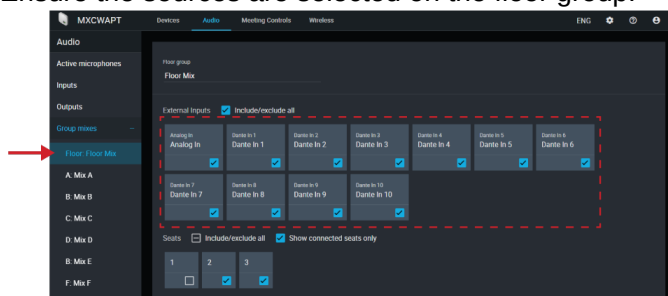
Enable AGC in one of two ways:

- Go to **Audio > Active microphones** and click on the AGC button.
- Select the desired devices from the **Devices** tab and check the **Enable AGC** box.

## Adding Other Sources to the Floor Mix

Add other audio sources to blend with the floor mix of MXCW wireless microphones.

- 1 XLR analog input on the access point is automatically routed to the floor
  - 10 Dante digital network channels are selectable for routing
1. Connect the audio source to the system:
    - Analog input: Connect an audio source to the XLR input on the access point.  
**Tip:** Flip the ground lift switch if a buzzing or humming sound occurs because of a ground loop.
    - Digital audio: Route audio to one of the MXCW Dante channels using Dante Controller software.
  2. Ensure the sources are selected on the floor group.



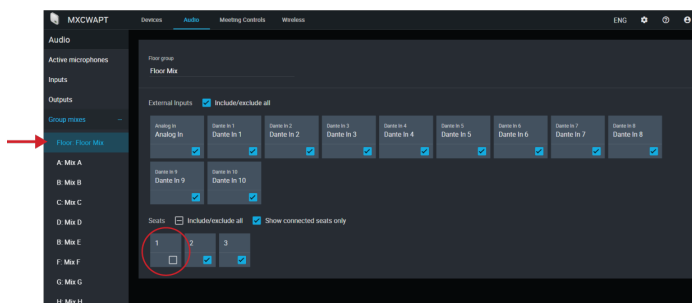
3. If necessary, adjust the volume level or EQ to match the other input levels from `Audio > Inputs`.  
**Tip:** Always use AGC on each channel for automatic, continuous volume optimization.

## Removing a Microphone from the Floor

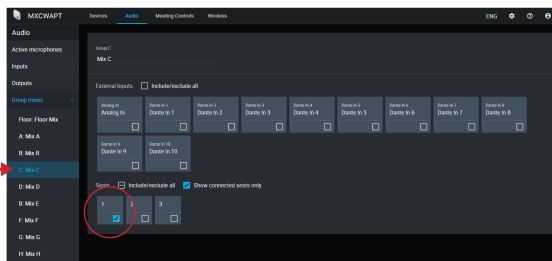
By default, the audio from any active microphone is routed to the floor mix. However, you can remove a conference unit from the floor mix if you do not want it to go to the loudspeakers.

For example, an official's microphone unit can be recorded but kept private (taken out of the floor mix). Remove it from the floor mix and route it another group that is connected to a recording system for archival purposes.

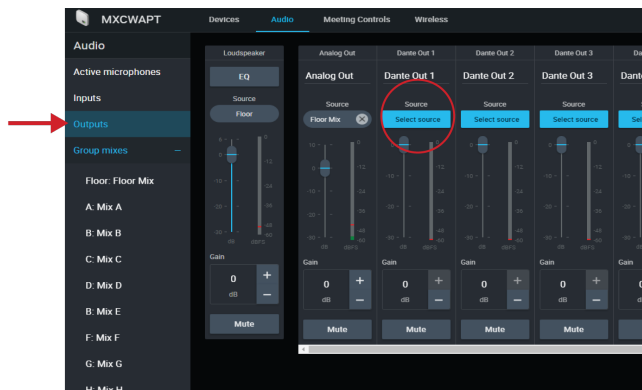
1. Go to `Audio > Group mixes > Floor`.
2. Find the seat you want to remove and deselect it.  
**Tip:** Select `Show connected seats only` to filter out unoccupied seats.



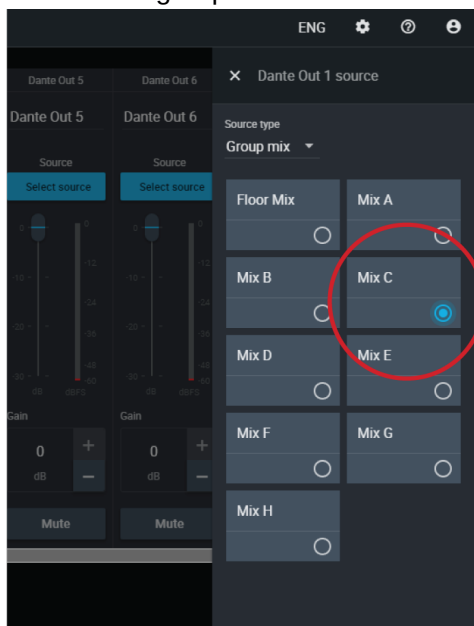
3. Route the audio from that seat to another group. Open the desired group and select the seat.



4. Select that group as the source for the output channel.
  1. Press Select source



2. Choose the group mix that the seat is routed to.



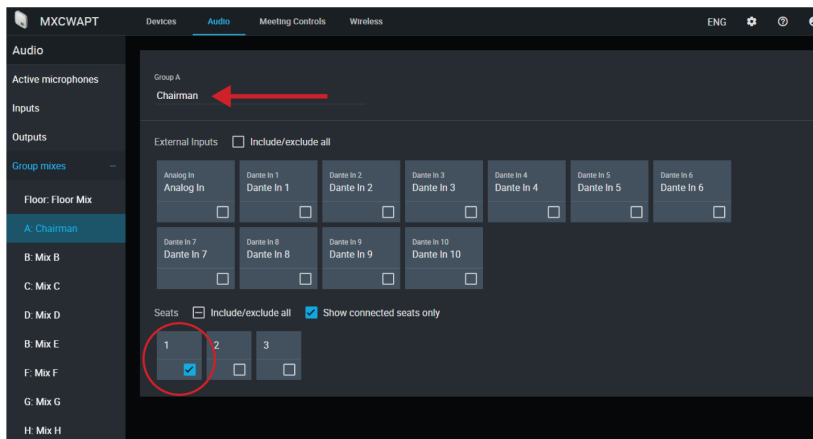
This group (with the seat that was removed from the floor mix) is now routed to the output channel and ready for recording, broadcasting, or another application.

## Isolating Participants on Separate Output Channels

### 8 or Fewer Active Speakers

Assign each participant to their own group mix to record them individually on predetermined channels.

1. Open the first group mix (A). Select the first seat. For easy reference, rename the group according that seat.



2. Repeat for the rest of the group mixes (B - H).
3. Open the Outputs tab.
4. For the first Dante output channel, select Mix A for the input source.



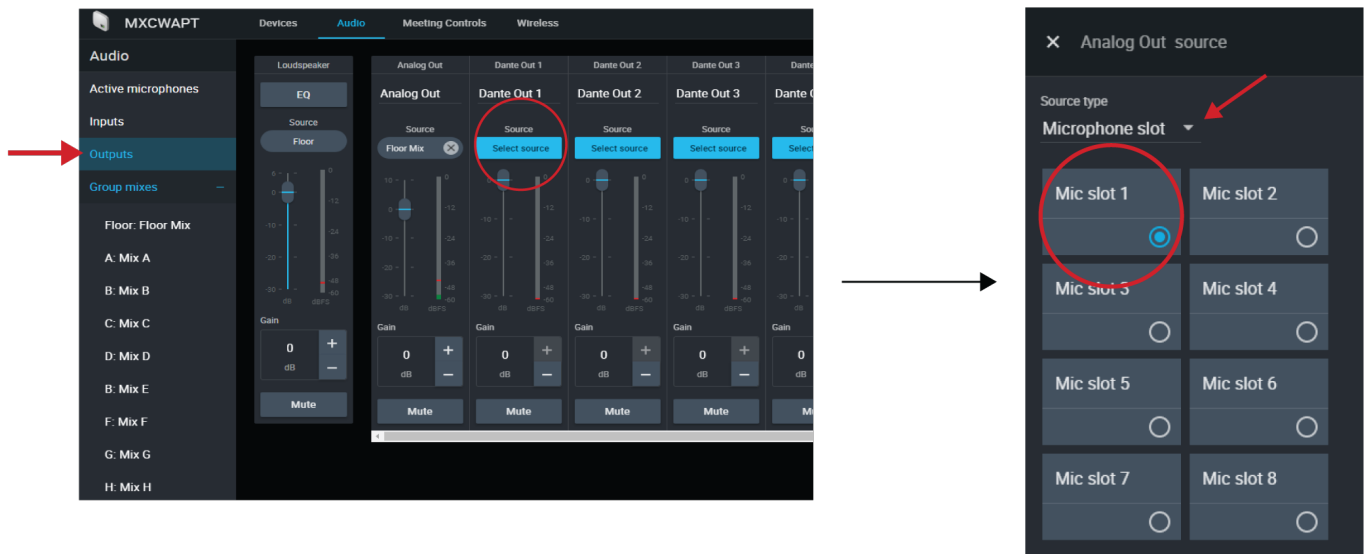
5. Repeat for the rest of the outputs.

#### More than 8 Active Speakers

To record more than 8 active speakers at a time, route the 8 microphone slots (instead of seats routed to mixes) to the output channels.

Keep in mind that the channels will not be permanently assigned to certain participants. The wireless 8 microphone slots 'fill up' starting with slot 1 and increasing with more active microphones. (Slot 1 is always filled whenever a microphone is active.) Therefore this method allows clean recordings, but the labeling will not follow the participants by seat.

1. Set the number of active microphones and delegate microphones to 8 (maximum).
2. Open the Outputs tab.
3. For the first Dante output channel, select Microphone slot **1** for the input source.



4. Repeat for the remaining microphone slots.

## Emergency Audio Signal

To prepare for an emergency, connect an Emergency Evacuation Message (EEM) audio signal to the analog XLR input or one of the 10 Dante input channels. The system will detect when the EEM signal is present and distribute it to the loudspeakers and all output connections.

1. Go to **Audio > Inputs**.
2. Open the dropdown menu and connect the EEM signal to a Dante channel (example: Dante input 1) or the XLR connector on the access point.



**Note:** Audio returns to normal after being below the threshold for 5 seconds.

## Language Interpretation

There are 8 audio channels used for language interpretation. In multilingual meetings, participants speak their native language into the microphone and listen to the interpretation on headphones.

## Headphone Channels

Conference units include a headphone output for listening to interpreter channels or other participants on the floor channel. Each participant chooses their channel from the conference unit touchscreen.



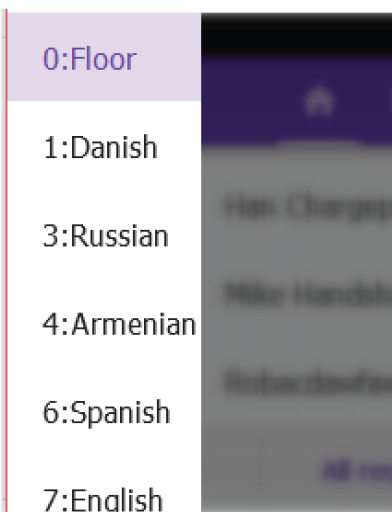
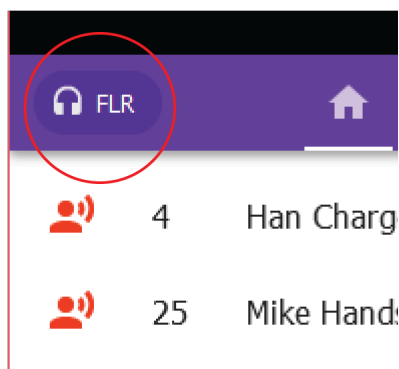
Participants select one of the channels to listen to their language during a multilingual event. The audio source comes from the analog input or one of the Dante inputs.

The floor channel is used by interpreters to provide simultaneous interpretation of the discussion. This channel is also selectable by other participants to listen to the floor channel on headphones.

1. Connect headphones to a headphone jack on one of the sides of the conference unit.
2. Press the



headphone icon on the touchscreen and select a channel from the list.

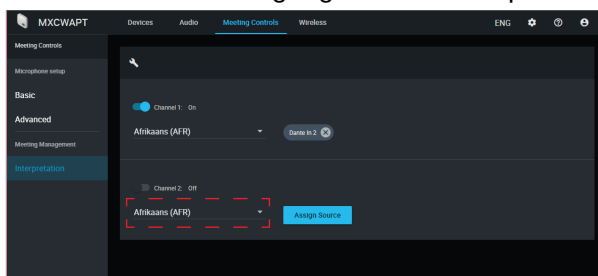


- Floor Mix
  - Channel 1
  - Channel 2
  - Channel 3
  - Channel 4
  - Channel 5
  - Channel 6
  - Channel 7
  - Channel 8
3. Adjust the volume of the headphones using the control knobs on the unit.

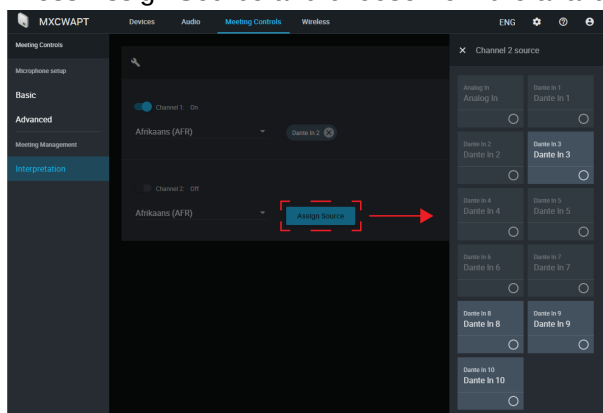
## Set Up Interpretation Channels

Use the access point web application to set up interpretation channels for conference units.

1. Go to Meeting Controls > Interpretation .
2. Select the desired language from the dropdown.



3. Press Assign Source and choose from the available analog input or 10 Dante inputs.



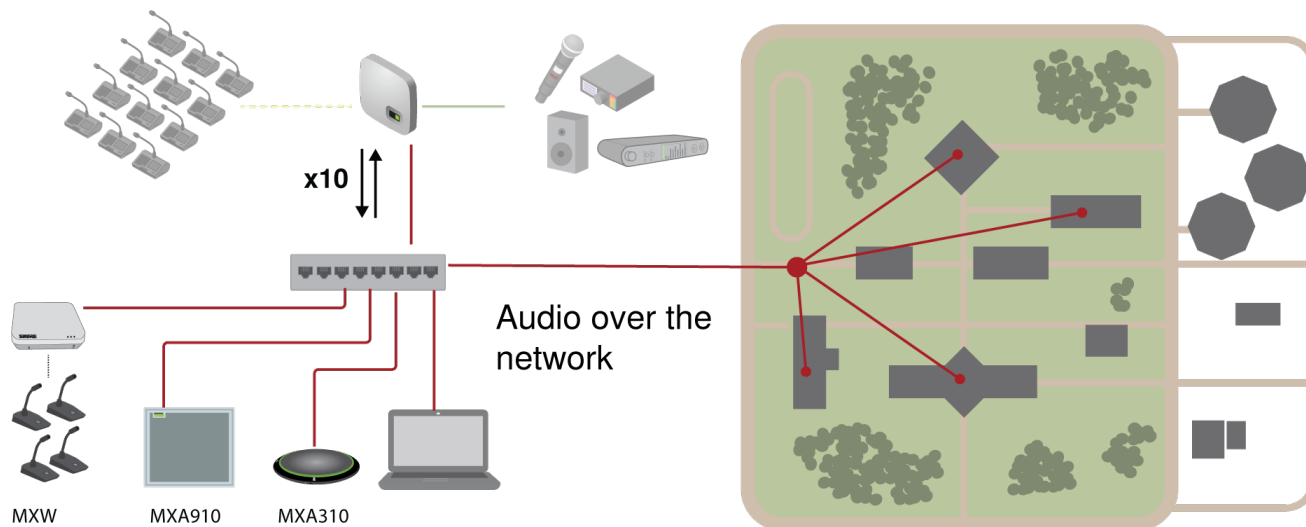
4. Click the channel slider to turn the interpretation channel on.
5. Repeat the above steps to create up to 8 interpretation channels.

## Digital Audio Networking

Dante<sup>™</sup> 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.

### Dante Network Audio

Connect your Dante audio network to the MXCW system.



Connect a network of devices

10 input channels, useful for:

- Dante-enabled microphones, such as Microflex® Advance™ Ceiling and Table Arrays
- Output from an automatic mixer or room system
- Videoconferencing signal of far-end audio

10 output channels, useful for:

- Recording system for archiving
- Live-streaming events
- Videoconferencing feed of near-end audio

### Routing Dante Channels

Use the free Dante Controller software by Audinate® to route Dante channels in and out of the MXCW system.

## Switch Recommendations for Dante Networking

In addition to the basic networking requirements, Dante audio networks should use a Gigabit network switch or router with the following features:

- Gigabit ports
- Quality of Service (QoS) with 4 queues
- Diffserv (DSCP) QoS, with strict priority
- Recommended: A managed switch to provide detailed information about the operation of each network link (port speed, error counters, bandwidth used)

## 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
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](http://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

## Packet Bridge

Packet bridge enables an external controller to obtain IP information from the control interface of a Shure device. To access the packet bridge, an external controller must send a query packet over **unicast UDP\*** to **port 2203** on the Dante interface of the Shure device.

1. Send a UDP packet with a minimum 1-byte payload .

**Note:** The maximum accepted payload 140 bytes. Any content is allowed.

2. The Shure device will send a response packet over unicast UDP to the controller, using a destination UDP port identical to the source port of the query packet. The payload of the response packet follows this format:

Bytes	Content
0-3	IP address, as 32-bit unsigned integer in network order

Bytes	Content
4-7	Subnet mask, as 32-bit unsigned integer in network order
8-13	MAC address, as array of 6 bytes

**Note:** The Shure device should respond in less than one second on a typical network. If there is no response, try sending the query again after verifying the destination IP address and port number.

\***UDP:** User Datagram Protocol

## Networking

### Networking Best Practices

Use the following best practices when setting up a network to ensure reliable communication:

- Always use a "star" network topology by connecting each component directly to the switch or router.
- Connect all Shure networked devices to the **same network** and set to the **same subnet**. This applies to all devices that audio signals must be routed between (managed through Dante Controller). It is also required in order to open the web application for a device.
- Devices on separate networks require an audio processor or conferencing software to carry audio between them.
- Use only 1 DHCP server per network. Disable DHCP addressing on additional servers.
- Power on the switch and DHCP server prior to MXCW equipment.
- To expand the network, use multiple Ethernet switches in a star topology.
- All devices must be at the same firmware revision level.

## Device IP Settings

### Configure IP

Sets IP mode of the selected network interface:

- **Auto (DHCP):** For automatic assignment of IP addresses.
- **Manual (Static):** For Static IP addresses.

### IP Settings

View and edit the IP Address, Subnet Mask, and Gateway for each network interface.

### MAC Address

The network interface's unique identification.

## Configuring IP Settings

IP configurations are managed through the web application or the access point LCD screen. By default, they are set to Automatic (DHCP) mode. DHCP mode enables the devices to accept IP settings from a DHCP server, or automatically fall back to Link-Local settings when no DHCP is available. IP addresses may also be manually set.

To configure the IP properties in the web application:

1. Open the web application.
2. Go to Settings and select Network.
3. Select Automatic or Manual. If Automatic is used, addresses will be automatically assigned. See **Manually Assigning Static IP Address** for Manual setup.

## Manually Assigning Static IP Address

To manually assign IP addresses:

1. Open the web application.
2. Go to the Settings tab and select Network.
3. Select Manual as the IP configuration.
4. Enter the IP address, Subnet mask, and Gateway address.
5. Click Apply when finished.

## 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+

## Using the Web Application with a Wireless Connection

When operating the web application with a wireless connection, it's important to set up the wireless router properly for best performance. The system employs several standard-based protocols that rely on multicast. The wireless connection treats broadcast and multicast packets differently than general packets for backward compatibility reasons. In some cases, the wireless router will limit the multicast packet transmission rate to a value that is too slow for web application to properly operate.

Wireless routers typically support 802.11b, 802.11a/g, and/or 802.11n standards. By default, many wireless routers are configured to allow older 802.11b devices to operate over the network. In this configuration, these routers will automatically limit the multicast data rates (or sometimes referred to as 'basic rate', or 'management rate') to 1-2Mbps.

**Note:** A wireless connection can only be used for the control software. Network audio cannot be transmitted over a wireless connection.

**Tip:** For larger wireless microphone configurations, it's recommended to increase the multicast transmission rate to provide adequate bandwidth.

**Important:** For best performance, use a wireless router that does not limit the multicast rate to 1-2 Mbps.

Shure recommends the following wireless router brands:

- Cisco
- Linksys
- Apple

## 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	Not supported	Closed
23	tcp	Telnet	Standard console interface	Closed
68	udp	DHCP	Dynamic Host Configuration Protocol	Open
80*	tcp	HTTP	Required to launch embedded web server	Open
427	tcp/udp	SLP <sup>†</sup>	Required for inter-device communication	Open
443	tcp	HTTPS	Not supported	Closed
161	tcp	SNMP	Not supported	Closed

Port	TCP/UDP	Protocol	Description	Factory Default
162	tcp	SNMP	Not supported	Closed
2202	tcp	ASCII	Required for 3rd party control strings	Open
5353	udp	mDNS <sup>†</sup>	Required for device discovery	Open
5568	udp	SDT <sup>†</sup>	Required for inter-device communication	Open
8023	tcp	Telnet	Debug console interface	Password
8180*	tcp	HTML	Required for web application	Open
8427	udp	Multicast SLP <sup>†</sup>	Required for inter-device communication	Open
64000	tcp	Telnet	Required for Shure firmware update	Open

## Dante Audio & Controller

Port	TCP/UDP	Protocol	Description
162	udp	SNMP	Used by Dante
[319-320]*	udp	PTP <sup>†</sup>	Dante clocking
2203	udp	Custom	Required for packet bridge
4321, 14336-14600	udp	Dante	Dante audio
[4440, 4444, 4455]*	udp	Dante	Dante audio routing
5353	udp	mDNS <sup>†</sup>	Used by Dante
[8700-8706, 8800]*	udp	Dante	Dante Control and Monitoring
8751	udp	Dante	Dante Controller
16000-65536	udp	Dante	Used by Dante

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

<sup>†</sup>These protocols require multicast. Ensure multicast has been correctly configured for your network.

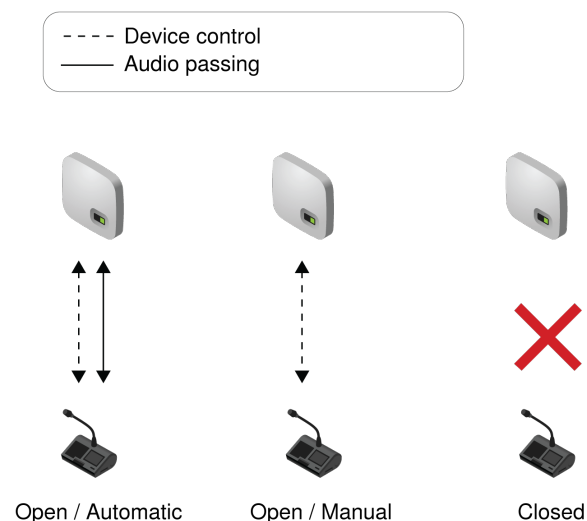


# Security

## Restricting New Device Connections

The system allows any MXCW wireless microphones to connect to the SSID network and automatically join the audio system. But depending on the requirements of your application, you may want to configure the system to restrict connectivity.

These settings only affect **additional** devices not already present in the registered device list. Conference units already connected and registered are allowed to reconnect automatically.



To edit the network and audio connection of additional conference units, open the MXCW web application and go to **Settings > Hardware**.

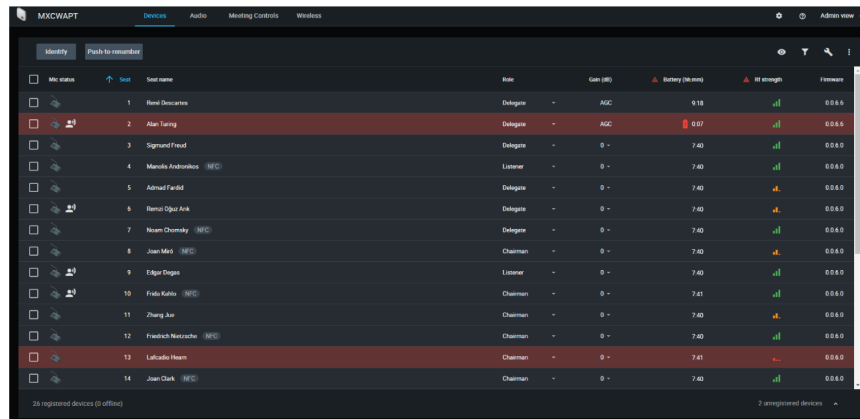
- **Open:** Allow new devices to connect to the access point network. Connected devices can be controlled and edited from the web application.
- **Closed:** Prevent new devices from connecting to the access point network.

## Registration

Registration is the final step that connects the conference unit to the MXCW audio system. By default, conference units automatically register once they are connected.

## Automatic

Additional devices automatically register to the access point (audio passing). This allows devices to quickly join the event without additional set up.



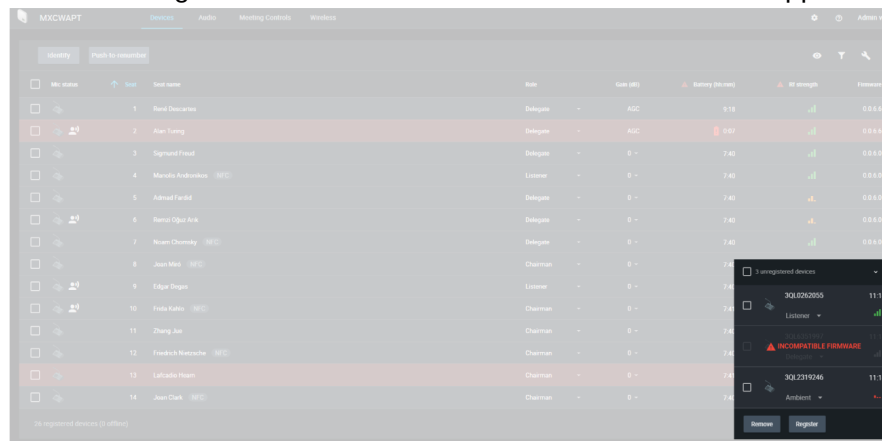
Mic status	Test name	Role	Gain (dB)	Battery (16v rms)	RF strength	Firmware
<input type="checkbox"/>	1 Reed Desautels	Delegate	-	AGC	9.18	0.0.0.0
<input checked="" type="checkbox"/>	2 Alan Turing	Delegate	-	AGC	0.07	0.0.0.0
<input type="checkbox"/>	3 Sigvard Fred	Delegate	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	4 Marika Andriuska (NED)	Listener	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	5 Adnan Farid	Delegate	-	0 -	7.40	0.0.0.0
<input checked="" type="checkbox"/>	6 Ramon Ojeda Ariz	Delegate	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	7 Nuan Chuanxue (NED)	Delegate	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	8 Joan Mei (NED)	Chairman	-	0 -	7.40	0.0.0.0
<input checked="" type="checkbox"/>	9 Edgar Diego	Listener	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	10 Freda Kaku (NED)	Chairman	-	0 -	7.41	0.0.0.0
<input type="checkbox"/>	11 Zhang Jun	Chairman	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	12 Frederick Neuzsche (NED)	Chairman	-	0 -	7.40	0.0.0.0
<input checked="" type="checkbox"/>	13 Leticia Heen	Chairman	-	0 -	7.41	0.0.0.0
<input type="checkbox"/>	14 Joan Clark (NED)	Chairman	-	0 -	7.40	0.0.0.0

20 registered devices (0 offline) 2 unregistered devices



## Manual

Additional devices connect as unregistered (control but no audio). At any time, the administrator can register it from the Devices tab of the MXCW web application.



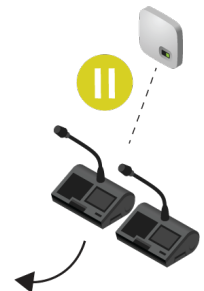
Mic status	Test name	Role	Gain (dB)	Battery (16v rms)	RF strength	Firmware
<input type="checkbox"/>	1 Reed Desautels	Delegate	-	AGC	9.18	0.0.0.0
<input checked="" type="checkbox"/>	2 Alan Turing	Delegate	-	AGC	0.07	0.0.0.0
<input type="checkbox"/>	3 Sigvard Fred	Delegate	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	4 Marika Andriuska (NED)	Listener	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	5 Adnan Farid	Delegate	-	0 -	7.40	0.0.0.0
<input checked="" type="checkbox"/>	6 Ramon Ojeda Ariz	Delegate	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	7 Nuan Chuanxue (NED)	Delegate	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	8 Joan Mei (NED)	Chairman	-	0 -	7.40	0.0.0.0
<input checked="" type="checkbox"/>	9 Edgar Diego	Listener	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	10 Freda Kaku (NED)	Chairman	-	0 -	7.41	0.0.0.0
<input type="checkbox"/>	11 Zhang Jun	Chairman	-	0 -	7.40	0.0.0.0
<input type="checkbox"/>	12 Frederick Neuzsche (NED)	Chairman	-	0 -	7.40	0.0.0.0
<input checked="" type="checkbox"/>	13 Leticia Heen	Chairman	-	0 -	7.41	0.0.0.0
<input type="checkbox"/>	14 Joan Clark (NED)	Chairman	-	0 -	7.40	0.0.0.0

20 registered devices (0 offline) 2 unregistered devices

Unregistered devices

30L020205 11:14  
Listener  
INCOMPATIBLE FIRMWARE  
30L2319246 11:14  
Ambient

Register




Unregistered devices

## Saving Device Connection Settings

Power cycling the access point resets the audio and network connection settings. To remember your setting, set the connections to closed and manual before each power cycle.

## Deregister a Device

To remove a device from registration:

1. Go to the Devices tab.
2. Find the desired device and select the box next to its icon.
3. Open  more options and press Deregister.

# System Maintenance and Troubleshooting

## Troubleshooting

### Basic System Check

Check your system for the following basic hardware and connections:

- Devices are receiving power and are turned on
- Cables are connected
- Devices are on the same network

### Wireless Interference

Select more wireless channels	If any wireless channels are deselected, add them back to the wireless scan in the web application: > SELECT WI-FI CHANNELS .
Adjust RF power	<ul style="list-style-type: none"> <li>• Lower the RF power in the web application: Wireless &gt; RF power .</li> <li>• This improves signal-to-noise ratio but does not eliminate the interference. Go to the web application: &gt; RF power .</li> </ul>
Relocate the MXCW access point	Move the access point to another point in the room. See <b>Select a Location for the Access Point</b> for more details.

## Resetting Devices



Shure devices are designed to work together right out of the box. Prior to a new installation, or during troubleshooting, it may be useful to reset devices to ensure system compatibility.

The system provides 2 reset levels to choose from:




- **Network reset:** Clears only network settings and provides a fresh network connection.
- **System reset:** Clears all device and system settings to reset the device to default factory settings.

### From the Hardware

Access Point	<p>Press and hold the recessed reset button.</p> <ul style="list-style-type: none"> <li>• <b>Network reset:</b> Press and hold for 5 seconds to reset any network settings and refresh network connection.</li> <li>• <b>System reset:</b> Press and hold for 10 seconds to reset the device to default factory settings.</li> </ul> <p>See <b>LED Status Indicators</b> for more details on LED behaviors during a reset.</p>
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Conference Units	<ol style="list-style-type: none"> <li>1. Access the technician menu by tapping the  gear icon, then tap the right side of the screen while holding down the volume control knobs.</li> <li>2. Go to the  information screen and tap <b>Factory reset</b>.</li> </ol>
Networked Charging Station	<p>Press and hold the recessed reset button.</p> <ul style="list-style-type: none"> <li>• <b>Network reset:</b> Press and hold for 4 seconds to reset any network settings and refresh network connection.</li> <li>• <b>System reset:</b> Press and hold for 8 seconds to reset the device to default factory settings.</li> </ul>

## From the Software

Access Point	Go to  Settings > Device reset . Select <b>Reboot device</b> or <b>Restore factory defaults</b> .
Conference Units	Go to Devices and select a device. From the device properties panel, open  more options and select Factory reset.
Networked Charging Station	Go to  Settings > Device reset . Select <b>Reboot device</b> or <b>Restore factory defaults</b> .

## Additional Troubleshooting Resources

For additional troubleshooting assistance or further information on complex installations, contact Shure to speak with a support representative. In the Americas region, call Systems Support group at 847-600-8440. For users in other locations, go to [www.shure.com](http://www.shure.com) to find support contact for your region.

For digital audio networking help, advanced networking guidelines and Dante software troubleshooting, visit Audinate's website at [www.audinate.com](http://www.audinate.com).

## Firmware

### 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. To take advantage of design improvements, new versions of the firmware can be downloaded and installed using the Shure Update Utility tool.

Software is available for download from <http://www.shure.com/update-utility>.

## Using a Third-Party Control System

The access point and networked charging station connect to external control systems such as AMX or Crestron via the Ethernet. These devices receive logic commands over the network. Many parameters controlled through the web application can be controlled through a third party control system, using the appropriate command string. Use only one controller per system to avoid messaging conflicts. For a comprehensive list of command strings, visit <http://www.pubs.shure.com> (<http://www.shure.com>).

- Connection: Ethernet (TCP/IP; select "Client" in the AMX/Crestron program)
- Port: 2202

## Specifications

### System

#### Latency

Microphone Input to Speaker/Headphone Output	16 ms
Microphone Input to Analog Output	9.2 ms
Analog Input to Speaker/Headphone Output	7.7 ms

#### Frequency Response

Headphone Output	100 Hz -20 kHz (+0.5 dB/-3 dB)
Speaker Output	220 Hz -15 kHz (±10 dB)

#### Total Harmonic Distortion

Headphone Output	0.06%, typical
Speaker Output	1%, typical

#### Dynamic Range

Headphone Output	100 dB (A-weighted), 97 dB (Unweighted), typical
Speaker Output (unweighted), typical	94 dB (A-weighted), 91 dB (Unweighted), typical

#### Digital Signal Processing

24-bit , 48 kHz

**Audio Polarity**

Positive pressure on MXCW640 microphone diaphragm produces positive voltage on pin 2 of MXCWAPT XLR output

**Working Range**

8 m (Low), 15 m (Medium), 30 m (High), 45 m (Maximum )

Line-of-sight to the MXCWAPT. Actual range depends on RF signal absorption, reflection, and interference.

**Security**

AES Encryption (Dante and 802.11 a, g)

## MXCWAPT

**Analog Input****Maximum Input Level**

Line	24.9 dBV
Aux	10.3 dBV

1% THD+N , Dante Output

**Frequency Response**

Line	22 Hz - 20 kHz (+0.5 dB/-3 dB)
Aux	22 Hz - 20 kHz (+0.5 dB/-3 dB)

Measured at Dante Output

**Total Harmonic Distortion**

Line	0.03%, typical
Aux	0.02%, typical

Measured at Dante Output

**Dynamic Range**

Line	115 dB (A-weighted), 113 dB (Unweighted), typical
Aux	112 dB (A-weighted), 110 dB (Unweighted), typical

Measured at Dante Output

#### Preamplifier Equivalent Input Noise (EIN)

Line	-92 dBV (A-weighted), typical
Aux	-104 dBV (A-weighted), typical

#### Input Impedance

Line	10 k $\Omega$
Aux	12 k $\Omega$

#### Configuration

Balanced

#### Type

XXXXXX Term: "3-pin femal XLR" not Found XXXXXXXX

#### Pin Assignments

Standard XLR Pinout

1=ground, 2=audio +, 3=audio –

#### GND Lift

Left	Pin 1=GND Connected
Right	Pin 1=GND Disconnected

#### Analog Output

##### Maximum Output Level

4.3 dBV

1%THD+N

##### Frequency Response

1 Hz - 20 kHz (+0.5 dB/-3 dB)

Audio Injected at Dante Input

##### Total Harmonic Distortion

0.01%, typical

Audio Injected at Dante Input

**Dynamic Range**

100 dB (A-weighted), 97 dB (Unweighted), typical

Audio Injected at Dante Input

**Load Impedance**

>600  $\Omega$  , typical

**Type**

3-pin male XLR

**Pin Assignments**

Standard XLR Pinout

1=ground, 2=audio +, 3=audio –

**GND Lift**

Left	Pin 1=GND Connected
Right	Pin 1=GND Disconnected

**RF****WLAN Standard**

IEEE 802.11 a, g

**Frequency Bands**

2.4 GHz ISM , 5 GHz UNII

**Sensitivity**

-80 dBm at 10% PER

**Output Power**

1 mW (Low), 5 mW (Medium), 13 mW (High), 25 mW (Maximum )

**Antenna Type**

Proprietary Internal Bi-level Dual-band (PIFA), patent pending

**Power****Supply Type**

Power over Ethernet (PoE) XXXXXX Term: "802.2 af, Class 0 PD" not Found XXXXXXXX

**Supply Voltage**

37-57 V



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**Power Consumption**

12 .95 W maximum , 6.5 W typical

**Network****Interface**

Gigabit Ethernet , Dante digital audio

**Link Speed**

10/100/1000Mbps

**Network Addressing Capability**

DHCP or Manual IP address

**Cable Length**

100 m maximum

**Cable Type**

Cat 5e or higher

**Connector Type**

RJ45

**Display****Type**

Monochrome FFSTN LCD

**Display Size**

1.84 x .074 in. (46.7 x 18.8 mm)

**Display Resolution**

152 x 78 (78 ppi)

**Mechanical****Dimensions**

47.8 x 242.5 x 241.8 mm (1.88 x 9.55 x 9.52 in.)

**Weight**

1.15 kg

**Housing**

Molded Plastic , Die-casted Aluminum

**Mounting Type**

Ceiling bracket or wall

**Environmental****Operating Temperature Range**

-7°C (19.4°F) to 49°C (120.2°F)

**Storage Temperature**

-29°C (-20.2°F) to 60°C (140°F)

**Relative Humidity**

<95%

**MXCW640****Microphone Input****Nominal Input Level**

-60 dBV

**Maximum Input Level**

-1.5 dBV

Measured at Dante Output

**Frequency Response**

20 Hz - 20 kHz (+0.5 dB/-3 dB)

Measured at Dante Output

**Total Harmonic Distortion**

0.04% , typical

Measured at Dante Output

**Dynamic Range**

112 dB A-weighted, 110 dB Unweighted, typical

Measured at Dante Output

**Preamplifier Equivalent Input Noise (EIN)**

-117 dBV A-weighted, typical

**Input Impedance**

26 kΩ

**Configuration**

Unbalanced

**Type**

Multipin Female Gooseneck Socket

**Pin Assignments**

Proprietary Shure Pinout

**Remote Caller Input****Maximum Input Level**

1.6 dBV

Measured at Dante Output

**Frequency Response**

30 Hz - 20 kHz (+0.5 dB/-3 dB)

Measured at Dante Output

**Total Harmonic Distortion**

0.07%, typical

Measured at Dante Output

**Dynamic Range**

95 dB A-weighted , 93 dB Unweighted, typical

Measured at Dante Output

**Preamplifier Equivalent Input Noise (EIN)**

-106 dBV A-weighted, typical

**Input Impedance**

3.5  $\Omega$

**Configuration**

Unbalanced

**Type**

TRRS 3.5 mm female socket

**Pin Assignments**

CTIA/AHJ Standard Pinout

Tip= Left side earpiece, Ring 1= Right side earpiece, Ring2= Ground, Sleeve= Microphone

---

**Headset Microphone Input****Maximum Input Level**

-5.5 dBV

Measured at Dante Output

**Frequency Response**

20 Hz - 20 kHz (+0.5 dB/-3 dB)

Measured at Dante Output

**Total Harmonic Distortion**

0.07%, typical

Measured at Dante Output

**Dynamic Range**

94 dB A-weighted, 92 dB Unweighted, typical

Measured at Dante Output

**Input Impedance**

2.2 k $\Omega$

**Configuration**

Unbalanced

**Type**

TRRS 3.5 mm female socket

**Pin Assignments**

CTIA/AHJ Standard Pinout

Tip= Left side earpiece, Ring 1= Right side earpiece, Ring2= Ground, Sleeve= Microphone

**Speaker Output****Nominal Output Level**

72 dB SPL at 0.5 m

Measured with an SPL meter using A-weighting and fast averaging

**Maximum Output Level**

89 dB SPL at 0.5 m

3% THD+N

**Frequency Response**

220 Hz - 15 kHz ( $\pm 10$  dB)

Audio Injected at Dante Input

**Total Harmonic Distortion**

1%, typical

Audio Injected at Dante Input

**Dynamic Range**

94 dB A-weighted, 91 dB Unweighted, typical

**Headphone Output****Maximum Output Level**

2.1 dBV

1% THD+N. Audio Injected at Dante Input.

**Frequency Response**

100 Hz - 20 kHz (+0.5 dB/-3 dB)

Audio Injected at Dante Input

**Total Harmonic Distortion**

0.04%, typical

Audio Injected at Dante Input

**Dynamic Range**

101 dB A-weighted, 99 dB Unweighted, typical

Audio Injected at Dante Input

**Load Impedance**

>8  $\Omega$ , typical

Headphone outputs are protected against short circuits

**Configuration**

Dual mono

Will drive stereo and mono headphones

**Type**

TRRS 3.5 mm female socket

**Pin Assignments**

CTIA/AHJ Standard Pinout

Tip= Left side earpiece, Ring 1= Right side earpiece, Ring2= Ground, Sleeve= Microphone

**Remote Caller Output****Maximum Output Level**

-29.1 dBV

1% THD+N. Audio Injected at Dante Input.

**Frequency Response**

4 Hz - 20 kHz (+0.5 dB/-3 dB)

Audio Injected at Dante Input

**Total Harmonic Distortion**

0.07%, typical

Audio Injected at Dante Input

**Dynamic Range**

87 dB A-weighted, 77 dB Unweighted , typical

Audio Injected at Dante Input

**Output Impedance**

2 k $\Omega$

**Type**

TRRS 3.5 mm female socket

**Pin Assignments**

CTIA/AHJ Standard Pinout

Tip= Left side earpiece, Ring 1= Right side earpiece, Ring2= Ground, Sleeve= Microphone

**RF****WLAN Standard**

IEEE 802.11 a, g

**Frequency Bands**

2.4 GHz ISM, 5 GHz UNII

**Sensitivity**

-75 dBm at 10% PER

**Output Power**

1 mW (Low), 3 mW (Medium), 6 mW (High), 10 mW (Maximum )

**Antenna Type**

Proprietary Internal Bi-level Dual-band (PIFA), patent pending

**NFC****Carrier Frequency Range**

13.56 MHz

**Transmission Protocols**

ISO/IEC 14443

**Antenna Type**

Internal NFC Loop Antenna

**Power****Battery Type**

Shure SB930 , Lithium-Ion

**Battery Connector**

Proprietary blade

**Battery Voltage**

3 - 4.2 V

**Nominal Capacity**

35 Wh

**Power Consumption**

3 W, typical

**Operating Time**

> 11 hours, typical

**Charge Time**

6 hours, typical

**USB****Input Voltage Range**

4.5 - 5.25 V

**Power Consumption**

10 W maximum

**Recommended Cable**

28 AWG/1 P + 22 AWG/2 C, <1.5 m

**Display****Type**

Color TFT LCD with Capacitive Touchscreen

**Display Size**

4.3 in. (109.2 mm)

**Display Resolution**

480 x 272 (128 ppi)

**Mechanical****Dimensions**

70.2 x 148 x 257.5 mm (2.8 x 5.8 x 10.1 in.)

**Weight**

1.21 kg with battery , 1.025 kg without battery

**Housing**

Molded Plastic , Die-casted Aluminum

**Mounting Type**

M4 hexagon bolt

**Operating Temperature Range**

0 °C (−32 °F) to 35 °C (95 °F)

**Charging Temperature Range**

0 °C (32 °F) to 33 °C (91.4 °F)

**Storage Temperature Range**

−20 °C (4 °F) to 50 °C (122 °F)

**Relative Humidity**

>95%



# MXCWNCS

**Battery Type**

Shure SB930 Rechargeable Li-Ion

**Battery Connector**

Proprietary blade

**Charge Time**

50% = 1.5 hours ; 100% = 4 hours

**Charge Current**

3.6 A

**Power Requirements**

Input	100 to 240 V AC , 50-60 Hz , 2 A maximum
Output	4.2 V DC maximum , 160W maximum

**Network Connections**

RJ45 (Ethernet)

**Other Connections**

IEC (power)

**Network Addressing Capability**

DHCP or Manual IP address

**Network Interface**

10/100 Mbps Ethernet

**Cable Length**

100 m maximum

**Cable Requirements**

Cat 5e or higher

**Housing**

Molded Plastic , steel

**Mounting Type**

Tabletop , rack , or wall

**Dimensions**

72.4 mm x 438.9 mm x 193.5 mm (2.9 in. x 17.3 in. x 7.6 in.)

**Weight**

2825 g

**Operating Temperature Range/Discharging Temperature Range**

-20 °C (-4 °F) to 35 °C (95 °F)

**Charging Temperature Range**

0 °C (32 °F) to 35 °C (95 °F)

**Storage Temperature Range**

-29 °C (20.2 °F) to 60 °C (140 °F)

**Relative Humidity**

<95%

## SB930

**SB930****Battery Type**

Rechargeable Li-Ion

**Nominal Voltage**

3.6 V

**Output Voltage**

3.0 V to 4.2 V

**Nominal Capacity**

35 Wh

**Charge Voltage**

4.2 V

**Charge Current**

3.6 A

**Dimensions**

31 mm x 65 mm x 101.5 mm (1.2 in. x 2.56 in. x 4 in.), H x W x D

**Weight**

184 g

**Housing**

Molded Plastic

**Discharging Temperature Range**

–20 °C (– 4 °F) to 60 °C (140 °F)

**Charging Temperature Range**

0 °C (32 °F) to 45 °C (113 °F)

**Storage Temperature Range**

–20 °C (– 4 °F) to 50 °C (122 °F)

**Relative Humidity**

&lt;95%

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## Accessories

Mini-shotgun gooseneck microphone for MXC and MXCW	MXC406/MS
Cardioid gooseneck microphone for MXC and MXCW	MXC416/C
Dualflex, cardioid gooseneck microphone for MXC and MXCW	MXC416DF/C
Cardioid gooseneck microphone for MXC and MXCW	MXC420/C
Dualflex, cardioid gooseneck microphone for MXC and MXCW	MXC420DF/C

## Optional Accessories

Dual-Card for MXC, MXCW, and DCS; Quantity 10	MXCDualCard
Chairman button set for MXCW640	MXCW-ACC-CM
A and B buttons for MXCW640; Quantity 10	MXCW-ACC-A/B
Mute button for MXCW640; Quantity 10	MXCW-ACC-M
Reply button for MXCW640; Quantity 10	MXCW-ACC-RPY

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## Access Point Model Variations

Region	Model
United States	MXCWAPT-A
North America	MXCWAPT-B
Japan	MXCWAPT-JP
World-wide	MXCWAPT-W

## Networked Charging Station Model Variations

All include power cable unless otherwise noted.

Region	Model
United States	MXCWNCS-US
Argentina	MXCWNCS-AR
Brazil	MXCWNCS-BR
Europe	MXCWNCS-E
United Kingdom	MXCWNCS-UK
Japan	MXCWNCS-J
China	MXCWNCS-CHN
Korea	MXCWNCS-K
Taiwan	MXCWNCS-TW
Australia	MXCWNCS-AZ
India	MXCWNCS-IN

## Important Product Information

### Safety Information



#### 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.

**WARNING:** Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel. The safety certifications do not apply when the operating voltage is changed from the factory setting.

## SAFETY PRECAUTIONS

The possible results of incorrect use are marked by one of the two symbols—"WARNING" and "CAUTION"—depending on the imminence of the danger and the severity of the damage.

	WARNING: Ignoring these warnings may cause severe injury or death as a result of incorrect operation.
	CAUTION: Ignoring these cautions may cause moderate injury or property damage as a result of incorrect operation.

### WARNING

**LISTENING TO AUDIO AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE. USE AS LOW A VOLUME AS POSSIBLE.** Over exposure to excessive sound levels can damage your ears resulting in permanent noise-induced hearing loss (NIHL). Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.

<b>90 dB SPL</b> at 8 hours	<b>95 dB SPL</b> at 4 hours	<b>100 dB SPL</b> at 2 hours	<b>105 dB SPL</b> at 1 hour
<b>110 dB SPL</b> at ½ hour	<b>115 dB SPL</b> at 15 minutes	<b>120 dB SPL</b> Avoid or damage may occur	

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**Note:** Use this product only with an agency approved power supply which meets local regulatory requirements (e.g., UL, CSA, VDE, CCC, INMETRO).

### WARNING

- Battery packs may explode or release toxic materials. Risk of fire or burns. Do not open, crush, modify, disassemble, heat above 140°F (60°C), or incinerate.
- Follow instructions from manufacturer
- Only use Shure charger to recharge Shure rechargeable batteries
- WARNING: Danger of explosion if battery incorrectly replaced. Replace only with same or equivalent type.
- Never put batteries in mouth. If swallowed, contact your physician or local poison control center
- Do not short circuit; may cause burns or catch fire
- Do not charge or use battery packs other than Shure rechargeable batteries
- Dispose of battery packs properly. Check with local vendor for proper disposal of used battery packs.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like

**Warning:** Before charging, make sure the product is at room temperature, between 0 to 45°C (32 to 113°F).

1. 經審驗合格之射頻電信終端設備，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
2. 射頻電信終端設備之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。所謂合法通信，係指依電信法規定作業之無線電信。
3. 輸入、製造射頻電信終端設備之公司、商號或其使用者違反本辦法規定，擅自使用或變更無線電頻率、電功率者，除依電信法規定處罰外，國家通訊傳播委員會並得撤銷其審驗合格證明。
4. 減少電磁波影響，請妥適使用

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

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

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

EMC conformance to Environment E2: Commercial and Light Industrial. 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.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment is for indoor use only.

Installation personnel: This product is designed for specific application and needs to be installed by qualified personnel with RF and related rule knowledge. The general user shall not attempt to install, or to change the settings.

## 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. 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 equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

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.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation of this device is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Este equipo ha sido diseñado para operar con las antenas que enseguida se enlistan y para una ganancia máxima de antena de [+2.13] dBi. El uso con este equipo de antenas no incluidas en esta lista o que tengan una ganancia mayor que [+2.13] dBi quedan prohibidas. La impedancia requerida de la antena es de [50] ohms.

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Japanese Radio Law and Japanese Telecommunications Business Law Compliance. This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法). This device should not be modified (otherwise the granted designation number will become invalid).

本製品が 5GHz 帯で使用するチャンネルは、下記の W52、W53、W56 の 3 タイプです。

タイプ	チャンネル番号	周波数
W52	36	5,180 MHz
	40	5,200 MHz
	44	5,220 MHz
	48	5,240 MHz
W53	52	5,260 MHz
	56	5,280 MHz
	60	5,300 MHz
	64	5,320 MHz
W56	100	5,500 MHz
	104	5,520 MHz
	108	5,540 MHz
	112	5,560 MHz
	116	5,580 MHz
	120	5,600 MHz
	124	5,620 MHz



	128	5,640 MHz
	132	5,660 MHz
	136	5,680 MHz
	140	5,700 MHz

W52 と W53 の帯域の電波は屋内でのみ使用可能です。

#### 運用に際しての注意

この機器の使用周波数帯では、電子レンジ等の産業・科学・医療用機器のほか工場の製造ライン等で使用されている移動体識別用の構内無線局（免許を要する無線局）及び特定小電力無線局（免許を要しない無線局）並びにアマチュア無線局（免許を要する無線局）が運用されています。

1. この機器を使用する前に、近くで移動体識別用の構内無線局及び特定小電力無線局並びにアマチュア無線局が運用されていないことを確認して下さい。
2. 万一、この機器から移動体識別用の構内無線局に対して有害な電波干渉の事例が発生した場合には、速やかに使用周波数を変更するか又は電波の発射を停止した上、下記連絡先にご連絡頂き、混信回避のための処置等（例えば、パーティションの設置など）についてご相談して下さい。
3. その他、この機器から移動体識別用の特定小電力無線局あるいはアマチュア無線局に対して有害な電波干渉の事例が発生した場合など何かお困りのことが起きたときは、保証書に記載の販売代理店または購入店へお問い合わせください。代理店および販売店情報は Shure 日本語ウェブサイト <http://www.shure.co.jp> (<http://www.shure.co.jp>) でもご覧いただけます。

#### 現品表示記号について

2.4 OF 40

現品表示記号は、以下のことを表しています。この無線機器は 2.4GHz 帯の電波を使用し、変調方式は「DS-SS」方式および「FH-SS」方式、想定干渉距離は 40m です。2,400MHz ~ 2,483.5MHz の全帯域を使用し、移動体識別装置の帯域を回避することはできません。



Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

Este produto está homologado pela ANATEL, de acordo com os procedimentos regulamentados pela Resolução 242/2000, e atende aos requisitos técnicos aplicados. Para maiores informações, consulte o site da ANATEL - <http://www.anatel.gov.br> (<http://www.anatel.gov.br>)

 R-C-SHU-MXCWAPT-W  
 상표권: Shure Incorporated  
 기지국의 명칭: Access Point Transceiver  
 모델명: MXCWAPT-W  
 제조업체(원/제조국명): Shure Incorporated / China  
 제조구분: 별도표기  
 출력: 37 ~ 570m, 350mA  
 서비스센터: 삼성전자 고객센터 02-734-0063  
 \*폐품 유선기기는 전자폐기 가능성이 있으므로, 인형 안전과 관련한 서비스는 할 수 없습니다.\*

 R-C-SHU-MXCW640  
 상표권: Shure Incorporated  
 기지국의 명칭: Conference Unit  
 모델명: MXCW640  
 제조업체(원/제조국명): Shure Incorporated / China  
 제조구분: 별도표기  
 출력: Input Battery: 2800mAh, 1A Input USB: 500mAh, 1A  
 서비스센터: 삼성전자 고객센터 02-734-0063  
 \*폐품 유선기기는 전자폐기 가능성이 있으므로, 인형 안전과 관련한 서비스는 할 수 없습니다.\*

 R-C-SHU-MXCW640  
 상표권: Shure Incorporated  
 기지국의 명칭: Conference Unit  
 모델명: MXCW640  
 제조업체(원/제조국명): Shure Incorporated / China  
 제조구분: 별도표기  
 출력: Input Battery: 2800mAh, 1A Input USB: 500mAh, 1A  
 서비스센터: 삼성전자 고객센터 02-734-0063  
 \*폐품 유선기기는 전자폐기 가능성이 있으므로, 인형 안전과 관련한 서비스는 할 수 없습니다.\*

 R-R-SHU-MXCWNCX  
 HU10XXXXXXX  
 상표권: Shure Incorporated  
 기지국의 명칭: Networked Charging Station  
 모델명: MXCWNCX  
 제조업체(원/제조국명): Shure Incorporated / China  
 제조구분: 별도표기  
 출력: Input: 100-240V~, 50/60Hz, 2.0A MAX; Output: 4.2Vdc MAX, 160W MAX  
 서비스센터: 삼성전자 고객센터 02-734-0063  
 \*폐품 유선기기는 전자폐기 가능성이 있으므로, 인형 안전과 관련한 서비스는 할 수 없습니다.\*

## Environmentally friendly disposal



Old electrical appliances must not be disposed of together with the residual waste, but have to be disposed of separately. The disposal at the communal collecting point via private persons is for free. The owner of old appliances is responsible to bring the appliances to these collecting points or to similar collection points. With this little personal effort, you contribute to recycle valuable raw materials and the treatment of toxic substances.

## Certifications

Hereby, Shure Incorporated declares that the radio equipment is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <http://www.shure.com/europe/compliance> (<http://www.shure.com/europe/compliance>)

Authorized European representative:

Shure Europe GmbH

Headquarters Europe, Middle East & Africa

Department: EMEA Approval

Jakob-Dieffenbacher-Str. 12

75031 Eppingen, Germany

Phone: +49-7262-92 49 0

Fax: +49-7262-92 49 11 4

Email: [EMEAsupport@shure.de](mailto:EMEAsupport@shure.de)

**Note:** See the label located on the bottom side of the charger enclosure for the FCC marking, the CE marking, the RCM marking, and the electrical ratings.

## Trademarks

Audinate®, the Audinate logo and Dante are trademarks of Audinate Pty Ltd.