MXWneXt

MXW neXt

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Important Safety Information

Explanation of Symbols

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

Important Safety Instructions

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

13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.

17. The airborne noise of the Apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
21. Operate this product within its specified operating temperature range.
22. Follow local regulations and consult qualified personnel if the product installation or relocation requires construction work. Choose mounting hardware and an installation location that can support the weight of the product. Avoid locations subject to constant vibration. Use the required tools to install the product properly. Inspect the product periodically.

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.
- If water or other foreign objects enter the inside of the device, fire or electric shock may result.

Safety and Regulatory Information for Battery Chargers

1. This equipment is intended to be used in professional audio applications.
2. Use this battery charger only with the Shure charging modules and battery packs for which it is designed. Use with other than the specified modules and battery packs may increase the risk of fire or explosion.
3. Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

Important Safety Instructions for Listening and IEM Products

1. If water or other foreign objects enter the inside of the device, fire or electric shock may result.
2. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
3. Do not use when a failure to hear your surroundings could be dangerous, such as while driving, or when biking, walking, or jogging where traffic is present and accidents could occur.
4. Keep this product and its accessories out of reach of children. Handling or use by children may pose a risk of death or serious injury. Contains small parts and cords that may pose risk of choking or strangulation.
5. Prior to inserting the earphone, always recheck the sleeve to make sure it is firmly attached to the nozzle to decrease the risk of sleeves detaching from the nozzle and becoming lodged in your ear. If a sleeve becomes lodged in your ear, seek professional medical assistance to remove the sleeve.
6. Stop using the earphones/headphones and consult a medical professional if you experience irritation, excessive wax buildup, or other discomfort.

CAUTION

- Never disassemble or modify the device, as failures may result.
- Do not subject to extreme force and do not pull on the cable or failures may result.
- Keep the earphone dry and avoid exposure to extreme temperatures and humidity.
- If you are currently receiving ear treatment, consult your physician before using this device.

WARNING:

Use, clean, and maintain earphones according to manufacturer's instructions

High sound pressure

Hearing damage risk

To prevent possible hearing damage, do not listen at high volume levels for long periods.

WARNING FOR IN-EAR-MONITORS (IEM product_ONLY)

This device is able to produce sound volume higher than 85 dB SPL. Please check your maximum allowed continuous noise exposure level based on your national employment protection requirements.

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.

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

Overview

MXW neXt System

MXW neXt is a complete solution for meeting room and presentation applications. Developed with Dante® technology by Audinate, digital audio is routed over standard IP equipment across a network of access points, digital-to-analog converters, and computers. Access points add wireless, analog, and USB audio to the network. RF coordination is automatic and continuous, offering worry-free wireless audio transmission for every event.

MXW neXt System Components

① **MXW-X Microphones**

Wireless microphones are available in boundary, handheld and bodypack models.

② **"All-In-One" Two Channel Transceiver/Docking Station/DSP**

Featuring Dante, USB, and analog audio connections, acoustic echo cancellation (AEC) and Automix technology, wireless microphone linking, and transmitter charging ports, the APXD2 allows for networked or standalone operation.

③ **Control Software**

The control software allows comprehensive remote management of the MXW neXt system. It operates in a web browser when networked to a computer.

System Components

Microphone Transmitters

MXW neXt microphones transmit an encrypted, wireless audio signal to the access point. Three form factors are available:

Hybrid Bodypack (MXW1X)

The bodypack secures to a belt or strap for hands-free, mobile communication. It features a TQG input for lavalier connection and an integrated omnidirectional microphone.

Handheld (MXW2X)

The handheld enables presenters to communicate using legendary Shure SM58, SM86, BETA58 and VP68 microphone cartridges.
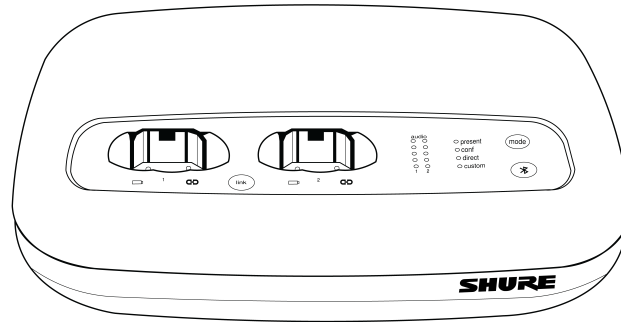
Boundary (MXW6X)

The boundary transmitter sits on a table or desk to transmit speech while discreetly blending into any conference environment, and is available with cardioid or omnidirectional microphone cartridges.

MXW1X   MXW2X   MXW6X
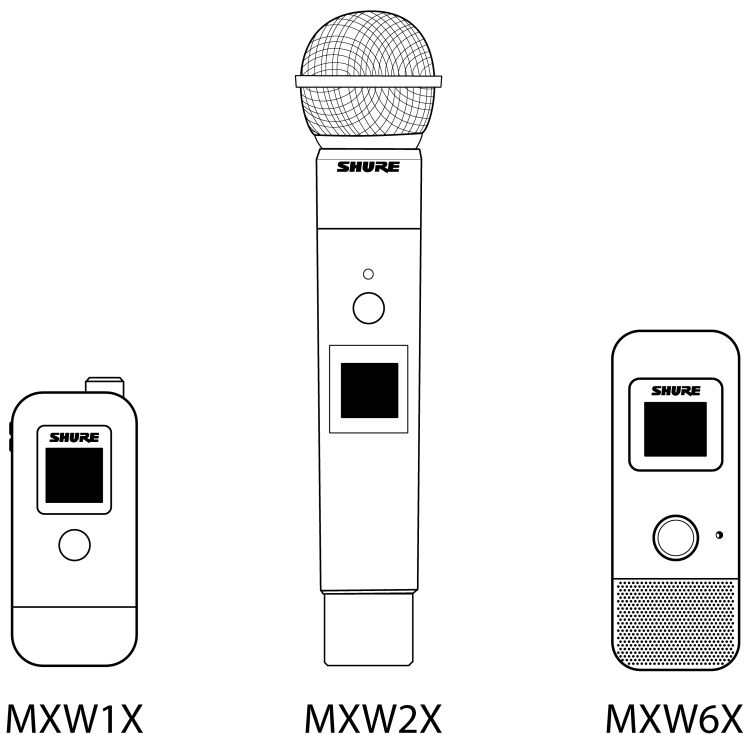
All-In-One APT/Charger/DSP (APXD2)

The APXD2 serves as a 2-channel APT (access point transceiver), networked charger, and DSP (digital signal processing) unit. As a system hub, it transports digital audio from wireless microphones and other Dante devices on the same network, charges docked MXW neXt microphones, networks battery statistics to the control software, and allows direct control over sound quality through digital signal processing. Analog and USB audio I/O capabilities enable it to connect directly to your room's AV system or videoconferencing device.

MXW neXt Control Software

The MXW neXt control software offers comprehensive remote control of key setup, monitoring and management functions.
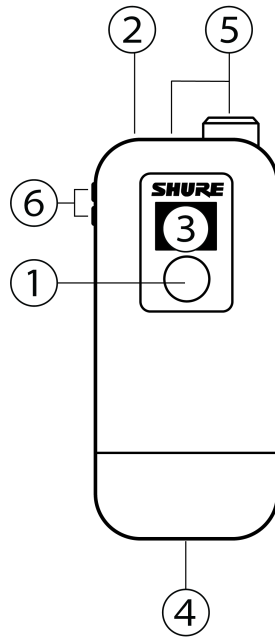

Hardware Description

Transmitters

Hybrid Bodypack (MXW1X)

The bodypack secures to a belt or strap for hands-free, mobile communication. It features a TQG input for lavalier microphone connection and an integrated omnidirectional microphone.
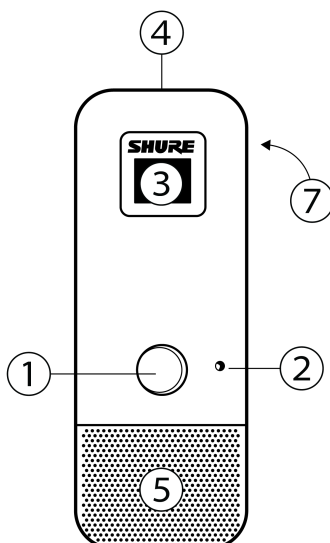
Handheld (MXW2X)

The handheld enables presenters to communicate using legendary Shure SM58, SM86, BETA58 and VP68 microphone cartridges.
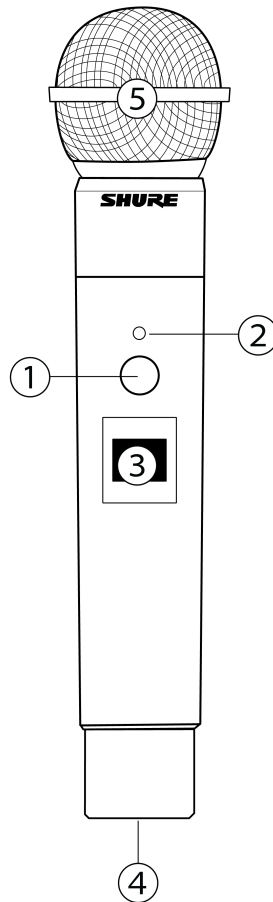
Boundary (MXW6X)

The boundary transmitter sits on a table or desk to transmit speech while discreetly blending into any conference environment. Cardioid and omnidirectional versions are available.

Callouts

① Mute/Active Button

Changes the audio status from Active to Mute, or Mute to Active. Button behavior for some transmitter types can be set independently from the Preferences tab of the control software.

Note: For MXW1X and MXW2X, press and hold the Mute/Active button for 3 seconds to turn the transmitter on or off.

② Status LED

Indicates the transmitter's status. The color indicators for Mute and Active can be customized from the Preferences tab. See the Status LED table for the default LED behavior for MXW neXt transmitters.

③ Display

Shows receiver and transmitter settings and information, including battery and RF status, microphone and base unit name, and menu options.

④ USB-C Connector

Connects to the docking station charger slot, or to the USB Charger. Can be used with the USB-C-to-3.5mm dongle to provide a headphone output.

⑤ Microphone

MXW1X hybrid bodypack has a TQG connector for an external lavalier or headset microphone, as well as an internal microphone.

MXW2X handheld transmitter is compatible with SM58, Beta 58, SM86, and VP68 cartridges.

MXW6X features an internal microphone, available with cardioid or omnidirectional microphone cartridges.

⑥ + / - Buttons (MXW1X)

Adjusts the MXW1X back-channel audio volume when a headphone is connected. Also selects between internal and external microphone.

⑦ Power On/Off (MXW6X)

Press and hold the dedicated power button for 3 seconds to turn the transmitter on or off.

*Note: For MXW1X and MXW2X, press and hold the Mute/Active button for 3 seconds to turn the transmitter on or off.*

Status LEDs*

Status	LED	Description
Active	Green	Ready to pass audio to network.
Mute	Red	Audio is muted.
Identify	Flashing Yellow	The Identify button has been pressed from the control software.
Initialization/ RF channel acquisition	Alternating Red and Green	The transmitter is initializing and acquiring the RF connection to the linked access point. Standard density mode has a slow alternating rate. High density mode has a fast alternating rate.
Out of RF Coverage Range	Red Pulsing (short on/off)	The transmitter is out of the RF coverage range to the linked access point.
Charging	Off	The transmitter is charging.
Off	Off	No connection to the network. The transmitter must be turned on using the power button on the mic.

* Default behavior. Customize LED behavior from `Settings > Lights`.

APXD2

Front Panel
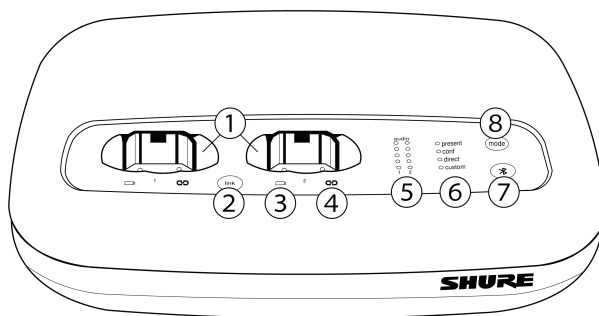
① Docking Bays

Connect and charge up to two MXW neXt handheld, bodypack, or boundary microphones.

② Link Button

Press and hold to link docked microphones. Microphones are successfully linked when the link LED stops flashing and the microphone display confirms successful link.

Note: Pressing the Link button when mics are present in the charging bays will overwrite any previously-linked microphones.

③ Battery LED

Indicates charging status for docked microphone.

④ Link Indicator LED

Illuminates when the audio channel associated with the charging bay is linked to a wireless transmitter (even if linked transmitter is powered off).

⑤ Audio Signal Strength LED (sig/clip)

Indicates audio signal strength for each channel:

- Green = Normal
- Amber = Strong
- Red = Clipping (to eliminate clipping, attenuate the signal level at the audio source)

Note: The bottom LED for each channel indicates the status of the connected microphone: Green = active, Amber = standby, Red = mute, Off = inactive

⑥ Mode Indicator

Shows the selected preset mode.
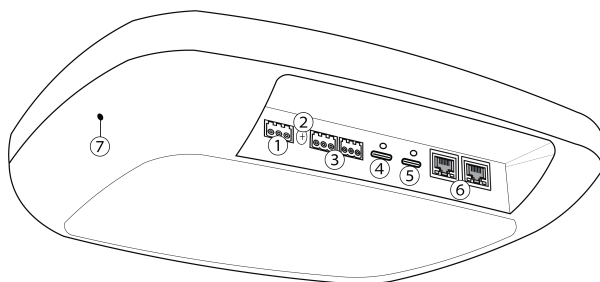
⑦ Bluetooth Button

Bluetooth connectivity reserved for future use.

⑧ Mode Selector

Selects a preset operation mode:

Mode	Details
Presentation	Share your presentation, with the option of adding a third audio source Automix and AEC are enabled A wired microphone can be connected to the analog input for a three-mic setup
Conference	Connect to your preferred videoconferencing software Automix and AEC are enabled If far-end conference audio is connected to the APXD2, the analog audio input provides reference audio for internal echo cancellation only **Note:** To avoid audio distortion, remove any wired microphones from the analog input when using Conference mode
Direct	Bypass most DSP and route your audio channels directly (Automix and AEC are disabled)
Custom	Custom configuration button is reserved for future use.

Back Panel

① **Analog Audio Input**

Three-pin, low-voltage differential input connector adds line- or aux-level analog signals for sound reinforcement.

Note: This input is meant for balanced connection. If an unbalanced source is used, such as an IPOD or MP3 player, only use pins 1 (signal) and 3 (ground) of the block connector. See the Specifications section for wiring diagrams.

② **Chassis Ground Screw**

Provides an external connection point to the chassis ground of the device.

③ **Analog Audio Output**

Connect to a signal processor, amplifier, or recording system. OUT1 provides the full mix (all audio inputs), OUT2 provides mix-minus (far-end audio inputs only, minus local audio).

④ **USB-C Audio**

Connect to a laptop, videoconferencing unit, or control device.

⑤ **Power**

USB-C power connector, for use with included 5V 3A power supply.

⑥ **Ethernet Ports**

Connect to external control software, or Dante audio network.

⑦ **Reset Button**

Press and hold for 5-8 seconds to reset network settings.

Press and hold for more than 8 seconds to reset the device to factory default settings.

Software

Control Software for MXW neXt

The MXW neXt access points feature a control software to manage the audio inputs and outputs of the MXW neXt system.

When logging in for the first time, you can set a password to restrict access, or choose to continue with no password. Set or change the password from `Settings > Permissions`.

Note: For optimal system performance, the control software should not be open to more than seven tabs or windows.

Open the MXW neXt Control Software

Access the MXW neXt control software from any computer on the MXW neXt network. The software is hosted from a webserver embedded in the MXW neXt devices.

1. **Download software.**

   Download the Shure Update Utility or Shure Device Discovery software from shure.com/software.

2. **Connect the computer to the MXW neXt.**

   The computer accesses the control software from an embedded web server on the device. All networked devices must be connected via Ethernet cable, or wirelessly to the same network (set to the same subnet).

   Note: For wired connections, turn off the PC's WiFi to force the wired network interface.

3. **Open the Shure Web Device Discovery application.**

   Open the application to view Shure devices on the network that use an embedded server for control software, such as the MXWAPXD2. You can use the Identify button to flash a device's LEDs for easy identification.

4. **Open the MXW neXt Control Software**

   Double-click an MXW neXt device to open the MXW neXt System control software. The application can be set to open by IP address or DNS name (selectable from the Preferences drop-down).

5. **Bookmark the Webpage (recommended)**

   Bookmark the IP address of the device when it is set to a Static IP address. Bookmark the device's DNS name when the IP mode is set to Automatic (DHCP).

Schematic

The MXW neXt Control Software opens by default to the Schematic view.
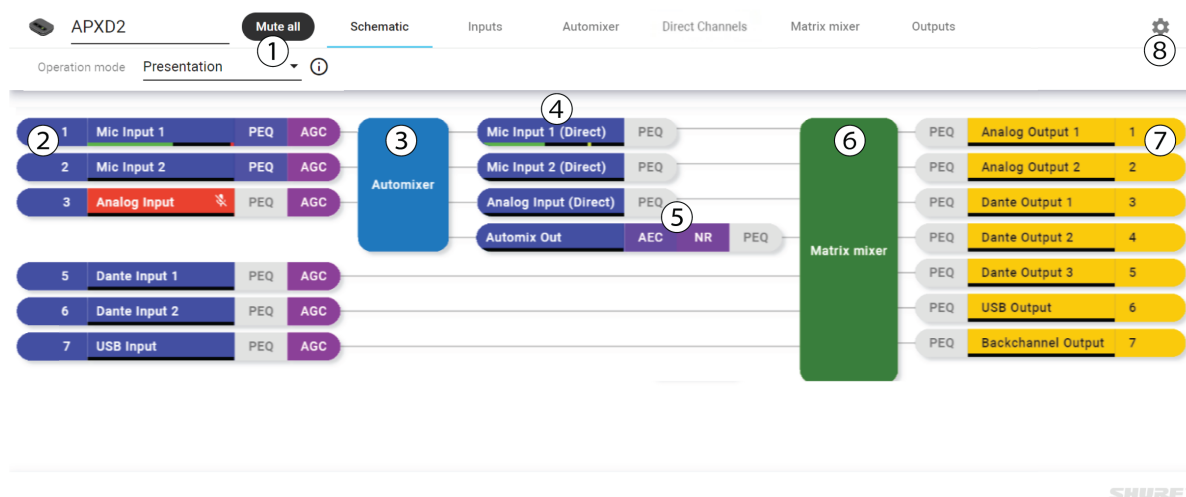
① Global Settings	Mute all channels, or change the operation mode preset.
② Inputs	The connected input channels, device names, and input digital signal processing (DSP).

③ **Automixer**	Input channels can be sent to automixer, which gives an additional "automix out" audio track.
④ **Direct Channels**	Independently adjust gain and mute status from the Direct Channels tab. Allows multiple mixes to be sent to different outputs (e.g. provide sound reinforcement for videoconferencing, while excluding that microphone from the local mix to avoid feedback).
⑤ **Digital Signal Processing**	Indicates DSP settings applied to the direct channels and automix out.
⑥ **Matrix Mixer**	Multiple input channels can be routed to multiple output channels.
⑦ **Outputs**	The available output channel names, numbers, and output DSP.
⑧ **Settings**	Open the global Settings menu.

Inputs

|	
① **Input Channel**	Shows whether the channel is associated with a wireless, analog, Dante, USB, or return audio source. The channel name customizable, and is independent from the microphone linked to that channel.
② **Microphone Type**	Indicates the microphone type and customizable device name.
③ **RF Meter**	Indicates the average RF signal quality for wireless input devices.
④ **Battery Meter**	Displays estimated battery information for wireless input devices.
⑤ **Channel Status**	Select whether connected wireless input devices are active or inactive.
⑥ **Digital Signal Processing (DSP)**	Configure and apply parametric equalizer (PEQ) and automatic gain control (AGC) to the audio input signal.
⑦ **Gain Control**	Adjust the output gain.
⑧ **Audio Output Meter**	Indicates the average output signal level.
⑨ **Gain Group**	Link devices for simultaneous gain adjustment.
⑩ **Attenuation**	Adjust input attenuation in 0.1 dB increments.
⑪ **Mute**	Mute or unmute the audio channel.
⑫ **Link / Unlink**	Link or unlink wireless microphones from input channels and determine input source information.
⑬ **Input Source**	Remotely switch between the internal and external microphone, and lock or unlock the input source (MXWX1 only).
⑭ **Properties Pane**	Expand to view global properties for all output channels.
⑮ **Input Metering**	Determine whether the input level is measured pre- or post-gain.

Automixer

① Input Channel	The channel for the connected input device.
② Gain Control	Adjust the channel gain.
③ Audio Meter	Indicates the average audio signal.
④ Attenuation	Adjust attenuation in 0.1 dB increments.
⑤ Mute Button	Mutes or unmutes the channel's audio.
⑥ Automix Channel	The automix output channel.
⑦ Output DSP (Digital Signal Processing)	Configure and apply automatic echo cancellation (AEC), noise reduction (NR) and parametric EQ (PEQ) to the automix output channel.
⑧ Properties Pane	Expand to view global properties for all output channels.

Direct Channels
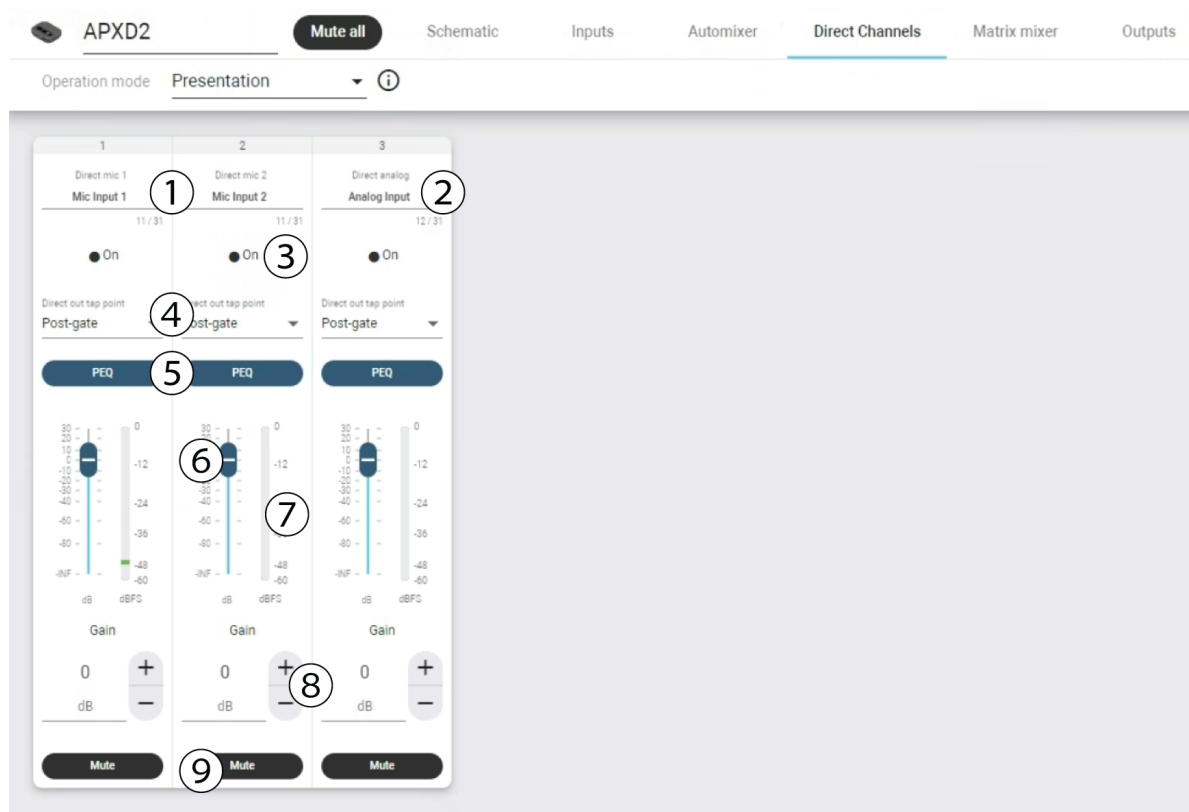
① Direct Input Channels	The channel for the connected MXW neXt microphone.
② Analog Input Channel	The channel for the connected analog input device, if available.
③ Channel Status	Indicates whether the channel is active.
④ Direct Out Tap Point	Determine whether the channel audio is taken Pre-gate (direct audio, no level adjustments) or Post-gate (after Automix level adjustments).
⑤ Input EQ	Configure and apply parametric EQ (PEQ) to input channels.
⑥ Gain Control	Adjust the channel gain.
⑦ Audio Meter	Indicates the average audio signal.
⑧ Attenuation	Adjust attenuation in 1 dB increments.
⑨ Mute Button	Mutes or unmutes the channel's audio.

Outputs
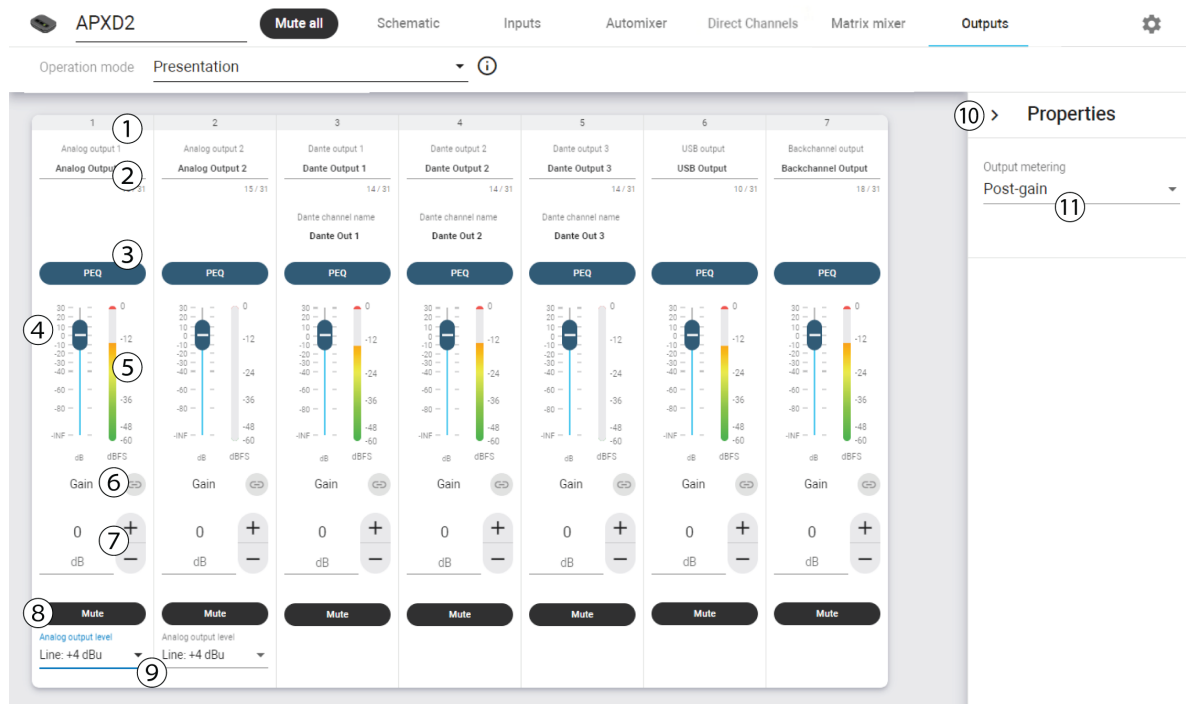
| ① Output Channel	Shows whether the channel is associated with an analog, Dante, USB, or backchannel output.
② Device Name	Customize device names for RF and Audio channel identification. The name is associated with the channel on the APX, will be stored on it, and is independent from the microphone linked to that channel.
③ Digital Signal Processing (DSP)	Configure and apply parametric equalizer (PEQ) to the output channel.
④ Gain Control	Adjust the output gain.
⑤ Audio Output Meter	Indicates the average output signal level.
⑥ Gain Group	Link devices for simultaneous gain adjustment.
⑦ Attenuation	Adjust output attenuation.
⑧ Mute	Mute or unmute output channels.
⑨ Analog Output Level	Boost or pad the output level for analog audio sources.
⑩ Properties Pane	Expand to view global properties for all output channels.
⑪ Output Metering	Determine whether the output level is measured pre- or post-gain.

Settings Pane

Open the Settings pane to modify system and device settings, including microphone preferences, IP configuration, audio encryption, cloud connectivity and LED behavior, or to factory reset your device.

General Settings
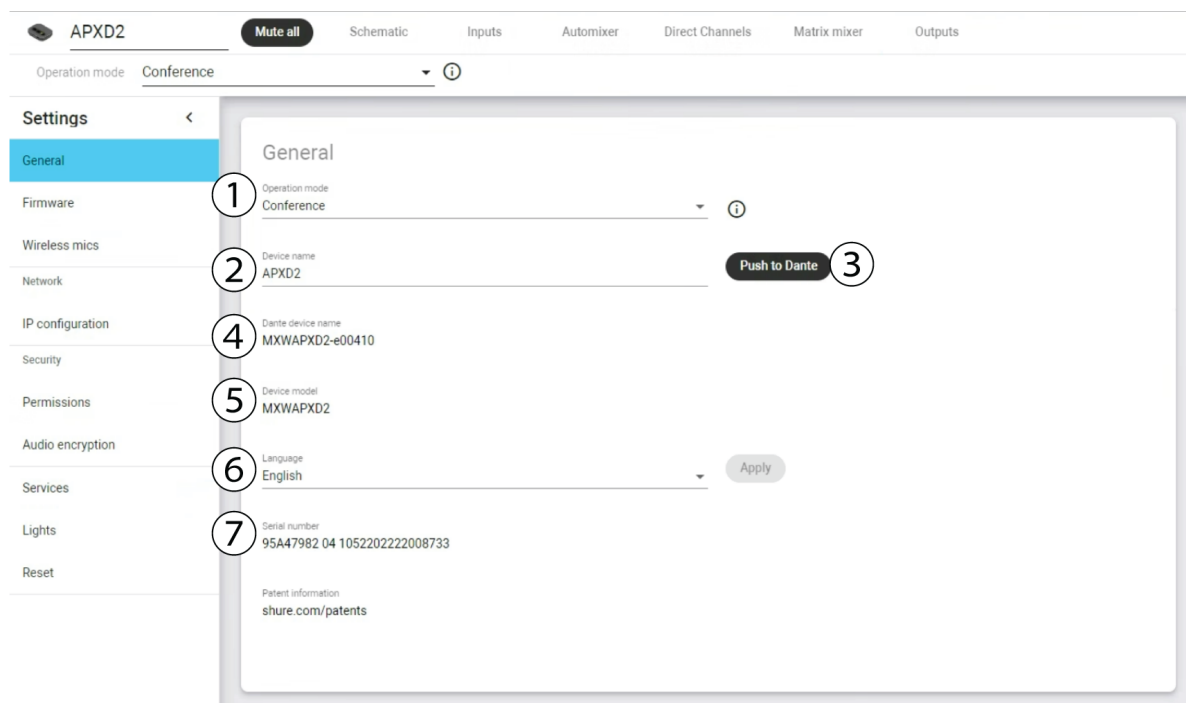
① Operation Mode	Select the preset operation mode: Presentation, Conference, Direct, or Custom.
② Device Name	Device names can be customized with up to 31 characters, except '=',',' or '@'.
③ Push to Dante	Uses the device name from the MXW neXt control software to overwrite the names in the Dante Controller (DC) software by Audinate.
④ Dante Device Name	The current device name as registered in the Dante Controller software by Audinate.
⑤ Device Model	The device model number.
⑥ Language	Set and apply language for the MXW neXt control software.
⑦ Serial Number	The unique identifier used to register the device at the Shure website, guarantee the warranty, and troubleshooting with customer support.

Network Settings
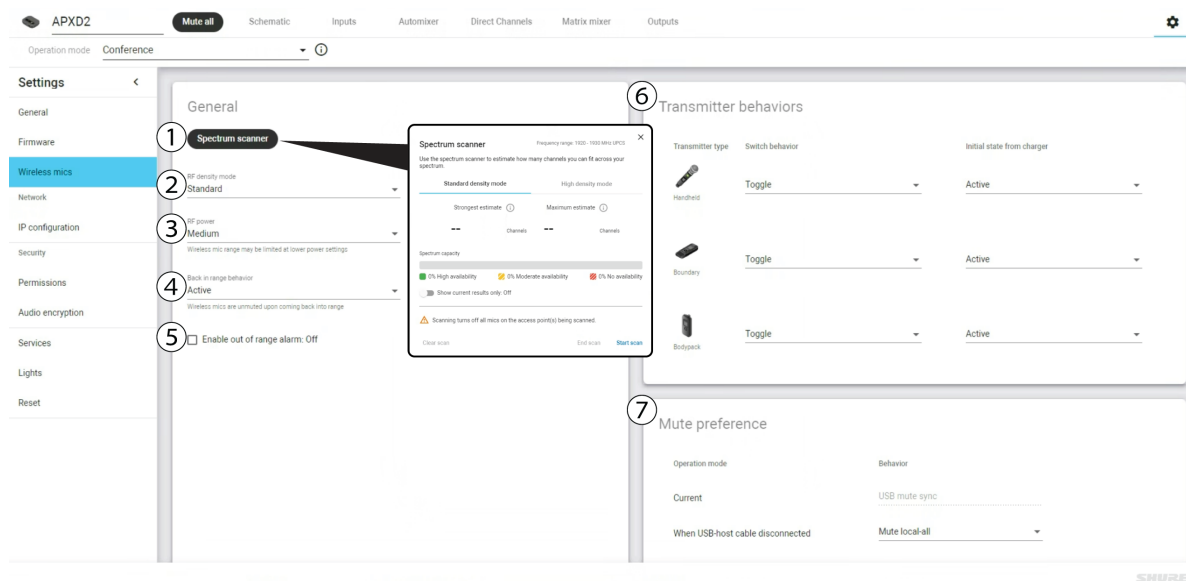
| ① **Spectrum Scanner**	Opens the spectrum scanner to estimate how many channels you can fit across your available wireless spectrum.
② **RF Density Mode**	Set your system to Standard (SD) or High Density (HD) modes, depending on the number of channels you need.
③ **RF Power**	Set your system's RF power level.
④ **Back In Range Behavior**	Determine what happens when a paired microphone comes back in range of your access point.
⑤ **Enable Out Of Range Alarm**	Check to enable an alert when a paired microphone is disconnected.
⑥ **Transmitter Behaviors**	Configure the switch behavior and initial state when removed from the chager, for each transmitter type.
⑦ **Mute Preference**	Set mute preferences for your devices.

IP Configuration

The MXW neXt control software coordinates IP updates across the entire system of devices. The default setting is Auto, which enables the devices to accept IP settings from a DHCP server, or automatically fall back to Link-Local settings when no DHCP is available. To manually set the IP address of an interface, select Manual. Configure the IP properties from the Settings menu:
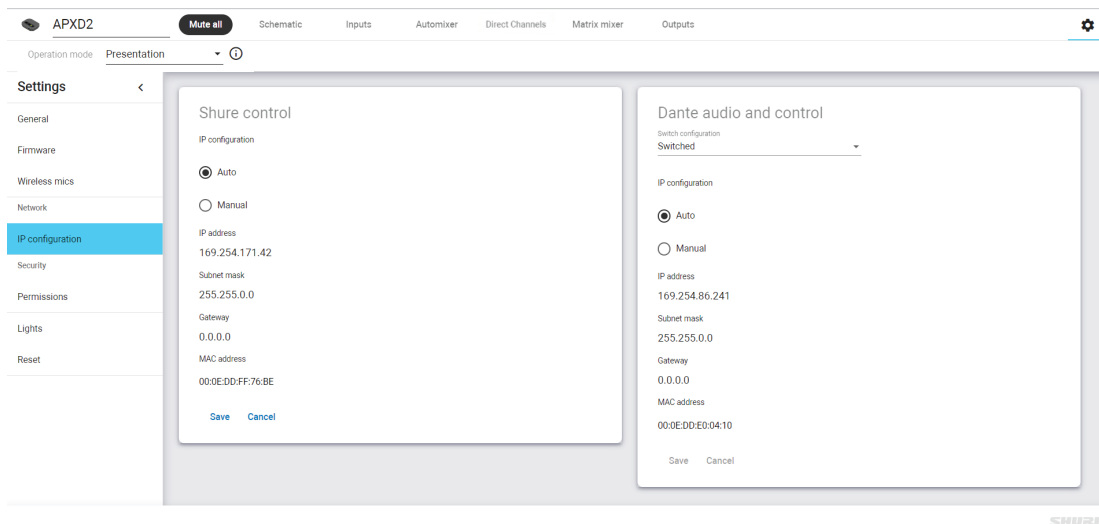
1. Go to the Settings tab for the device.
2. After adjustments have been made, click Save.

Rechargeable Batteries

MXW neXt lithium-ion rechargeable batteries use advanced chemistry that maximizes transmitter runtime. Power management from the control software provides detailed visibility to critical battery parameters such as charge status, battery capacity, and cycle count.

Battery: SB906
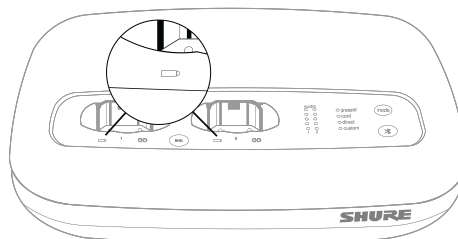
- **Transmitter:** MXW1X bodypack
- **Transmitter:** MXW6X boundary

Battery: SB908

- **Transmitter:** MXW2X handheld

Charge Status LEDs

Each APXD2 has an LED that illuminates to indicate the charging status for the docked microphone:
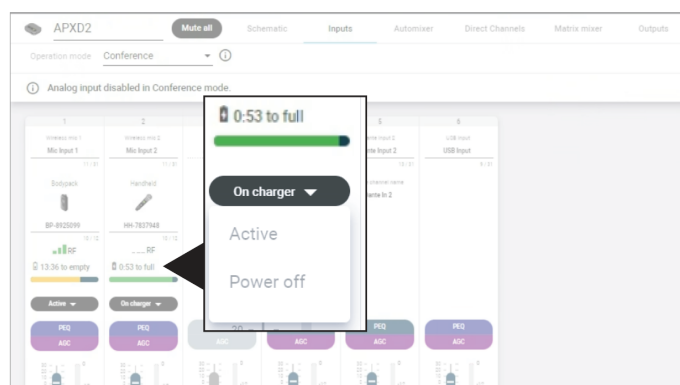
Charging Status LEDs

Color	State
Green (solid)	Battery is >85% charged
Yellow (solid)	Battery is 51% to 85% charged
Red (solid)	Battery is 15% to 50% charged
Red (flashing)	Battery is 0% to 14% charged
Off	Microphone is not inserted into the charging bay, or power supply is not connected

Battery Statistics on Control Software

The MXW neXt control software is used to manage battery information. Use the Inputs tab to view battery status and remotely control the power setting for connected microphones:

Monitoring Battery Charge Status

In the Charging Station

   Displays the remaining time until the microphone battery is fully charged.

During Use

   Displays the remaining battery runtime of the microphone, if available.

Maximizing Battery Life

While the rechargeable Li-Ion batteries for MXW1X and MXW6X transmitters are designed to last up to 17 hours or more on a charge, and MXW2X up to 28 hours, variance in battery health and use-case may result in significant differences in battery runtime. Specifically, consistency and overall runtime decrease with the number of charge cycles. Battery health of 80% or less is an indicator that a battery is nearing or at the end of its designated life cycle and should be replaced. Health percentage and number of charge cycles are available from the Utility tab of the MXW neXt control software.

High Density Mode

High Density (HD) mode reallocates system resources to create additional channels when needed. In applications where latency and back-channel audio monitoring aren't major considerations, switching to HD mode can also provide up to an hour of additional battery runtime.

Density mode is set from the Utility tab of the MXW neXt control software.

Battery Replacement

Lithium Ion Batteries experience a linear reduction in capacity. Shure recommends establishing a battery replacement schedule customized to the client requirements and replacing batteries when the capacity is no longer acceptable.

Important: After installing a new battery, reset the battery health statistics that are stored in the microphone following the steps in Reset the Microphone Battery Statistics in the previous section.

MXW1X, MXW6X Battery Replacement

1. Unscrew and open the battery door on the bottom of the transmitter.
2. Remove battery by gently disconnecting the battery connector from the transmitter.
3. Connect the replacement battery's connector to the transmitter.
4. Replace the battery with the label facing out.
5. Close the door and tighten the screw.
6. Dispose of batteries properly. Check with your local vendor for proper disposal of used batteries.

MXW2X Battery Replacement

MXW2X batteries should be replaced by qualified service personnel only.

Linking Microphones to APXD2

Up to two MXW neXt microphone transmitters can be linked to an APXD2 docking station at a time. Placing a transmitter into an APXD2 docking bay and pressing the Link establishes a link on the corresponding microphone channel.

The same procedure is done to exchange a transmitter in a group. Place the new transmitter in the docking bay that corresponds to the desired channel and press the Link button. This maps the new transmitter to that channel, overwrites any previously-established Links.

If an APXD2 docking bay is empty during the Link procedure, that channel remains unaffected. This means a devices on one channel can be exchanged without interrupting the audio on the active channel.

Connection Diagrams

The following system diagrams illustrate potential use-cases for connecting your MXW neXt system. For more help on system configuration, please contact your local service representative.

APXD2 Connection Overview

APXD2 can be operated with or without a computer, and features analog, USB and Dante connections as well as wireless pairing with MXW neXt microphones. Systems can be configured for sound reinforcement, videoconferencing, or both.
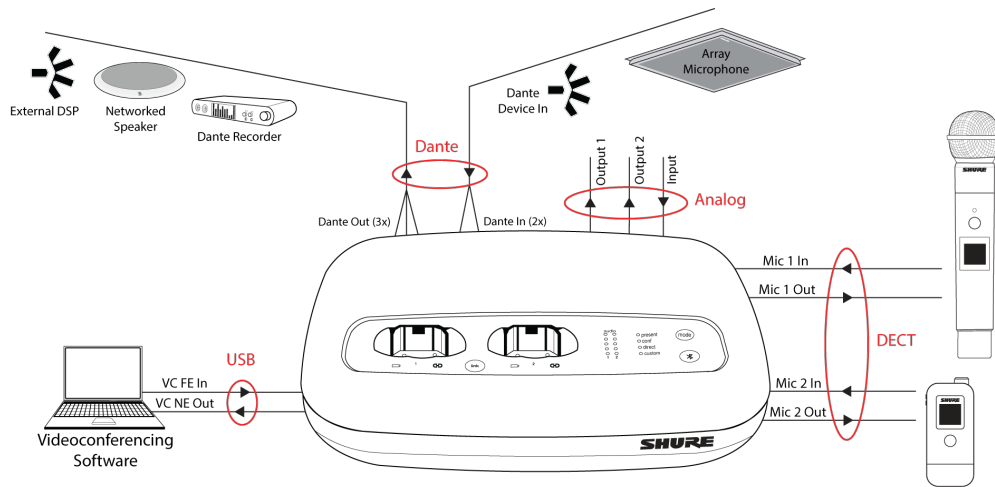
Sound Reinforcement

Connect additional audio devices to ensure presenters can be heard clearly anywhere in the room.

Analog Out
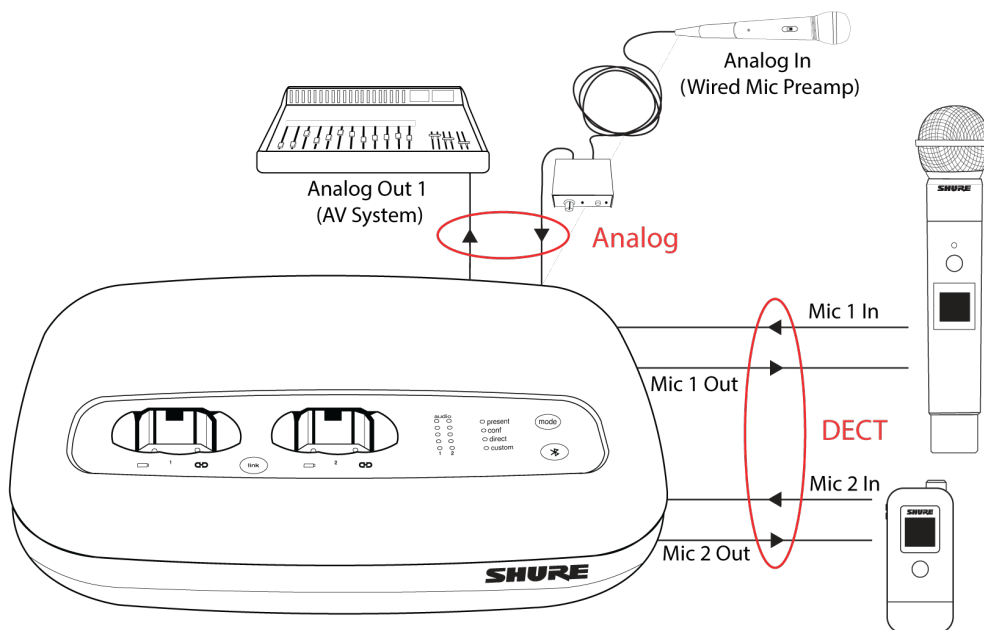
Dante Out

Video Conferencing

Use APXD2 to seamlessly provide high-quality audio to your chosen conferencing software.

Analog Out
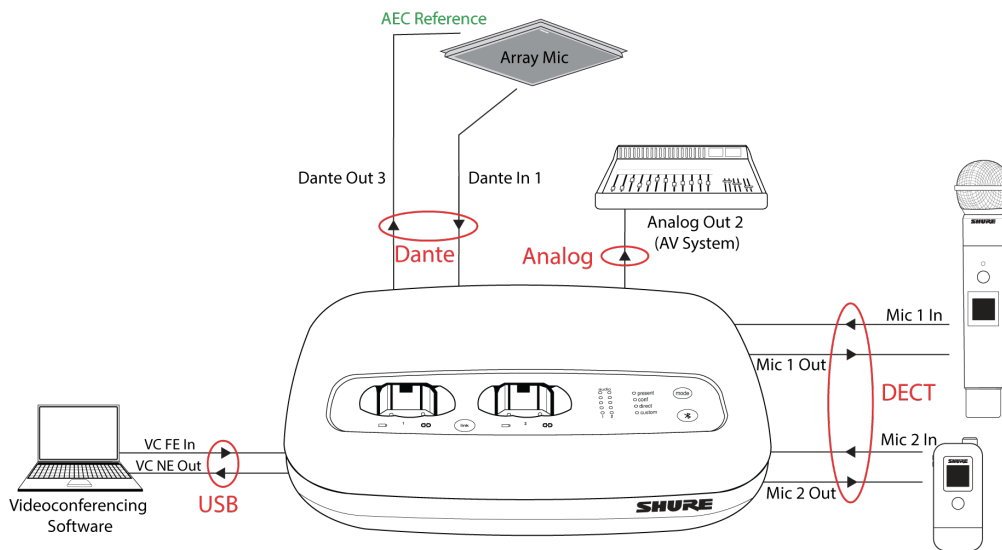
System Preset: Conference

Room TV
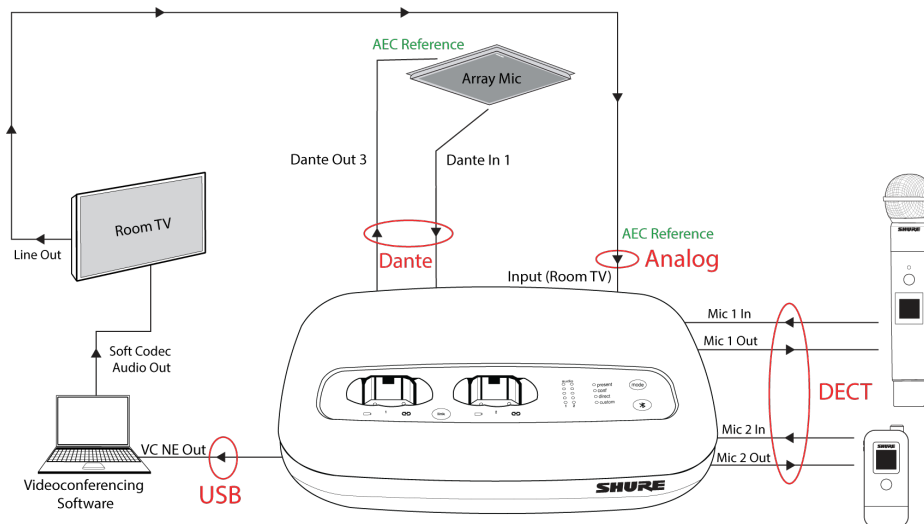
System Preset: Conference

Audio Output Configuration for APXD2 Presets

Use the preset mode buttons on the APXD2 to quickly configure your audio.
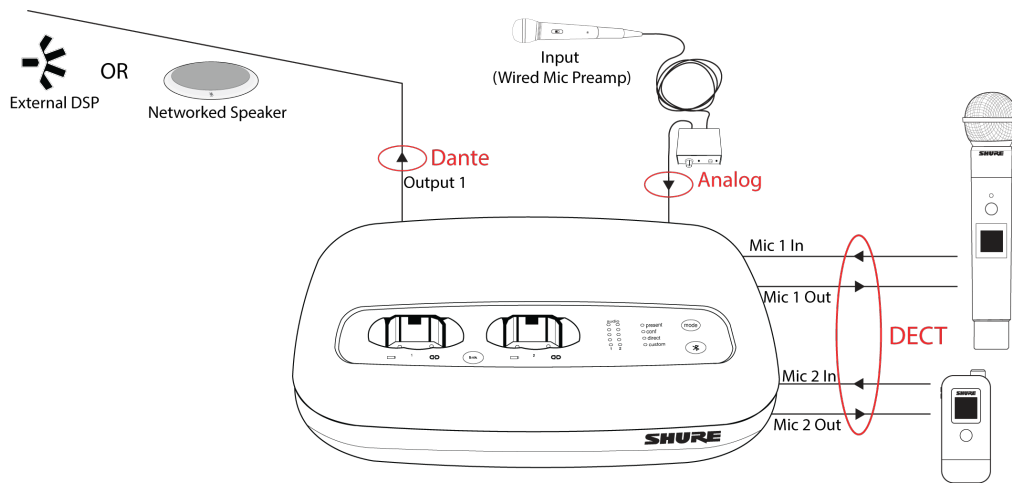
Operation mode: **Presentation**	Analog Output 1	Analog Output 2	Dante Output 1	Dante Output 2	Dante Output 3	USB Output	Backchannel	AEC Reference
Mic Input 1 (Direct)	☑	☐	☑	☐	☐	☐	☑	☐
Mic Input 2 (Direct)	☑	☐	☑	☐	☐	☐	☑	☐
Analog Input (Direct)	☑	☐	☑	☐	☐	☐	☑	☐
Automix	☐	☐	☐	☐	☑	☑	☐	☐
Dante Input 1	☐	☐	☐	☐	☑	☑	☑	☐
Dante Input 2	☑	☑	☑	☑	☐	☐	☑	☑
USB Input	☑	☑	☑	☑	☐	☐	☑	☑

Operation mode: **Conference**

	Analog Output 1	Analog Output 2	Dante Output 1	Dante Output 2	Dante Output 3	USB Output	Backchannel	AEC Reference
Mic Input 1 (Direct)	☑	☐	☑	☐	☐	☐	☑	☐
Mic Input 2 (Direct)	☑	☐	☑	☐	☐	☐	☑	☐
Analog Input (Direct)	☐	☐	☐	☐	☐	☐	☐	☑
Automix	☐	☐	☐	☐	☑	☑	☐	☐
Dante Input 1	☐	☐	☐	☐	☑	☑	☑	☐
Dante Input 2	☑	☑	☑	☑	☐	☐	☑	☑
USB Input	☑	☑	☑	☑	☐	☐	☑	☑

Operation mode: **Direct**

	Analog Output 1	Analog Output 2	Dante Output 1	Dante Output 2	Dante Output 3	USB Output	Backchannel	AEC Reference
Mic Input 1 (Direct)	☑	☐	☑	☐	☐	☑	☑	☐
Mic Input 2 (Direct)	☐	☑	☐	☑	☐	☑	☑	☐
Analog Input (Direct)	☐	☐	☐	☐	☑	☑	☑	☐
Automix	☐	☐	☐	☐	☐	☐	☐	☐
Dante Input 1	☐	☐	☐	☐	☐	☐	☑	☐
Dante Input 2	☐	☐	☐	☐	☐	☐	☑	☐
USB Input	☐	☐	☐	☐	☐	☐	☑	☐

Audio Out	Presentation Mode	Conference Mode	Direct Mode
Analog 1	Full audio mix Sound reinforcement for local mics Hear participants of a video conference		Direct audio output from Mic 1
Analog 2	Videoconference far end only Hear participants of a video conference		Direct audio output from Mic 2
Dante 1	Full audio mix Sound reinforcement for local mics Hear participants of a video conference		Direct audio output from Mic 1
Dante 2	Videoconference far end only Hear participants of a video conference		Direct audio output from Mic 2

Audio Out	Presentation Mode	Conference Mode	Direct Mode
Dante 3	Local mix only Send local audio from automixer to far-end participants		Direct audio output from Analog In
USB	Local mix only Send local audio from automixer to far-end participants		Matrix mix output from Mic 1, Mic 2, and Analog In
Backchannel	Enhanced listening to all audio (for accessibility, etc.) Available on each microphone using USB-C audio		
AEC Reference	Far end only Reference for echo cancelling algorithm	Far end + Analog in Reference for echo cancelling algorithm Analog reference audio (e.g. speakers used for far-end audio)	N/A

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 networked MXW neXt gear to the same network and set to the same subnet. This ensures best system performance and maximum microphone count.
- Use only 1 DHCP server per network. Disable DHCP addressing on additional servers.
- Power on the switch and DHCP server prior to MXW neXt equipment.
- To expand the network, use multiple Ethernet switches in a star topology.
- Connect each device directly to the port of an Ethernet switch. Avoid "daisy-chaining" Ethernet port connections between devices for larger networks.
- Do not loop network connections.
- All devices must be at the same firmware revision level.

Digital Audio Networking

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

Network Audio and Shure Control Data

MXW neXt devices transport two types of data over the network: Shure Control and Network Audio.

Shure Control

The Shure Control carries data for the control software operation, firmware updates and 3rd party control systems (AMX, Crestron). This data is transported to all MXW neXt components connected to the network.

Network Audio

This network carries both the Dante digital audio and the control data for Dante Controller. This data is transmitted between the APT, the output device and the computer. The network audio requires a wired, gigabit Ethernet connection to operate.

Go to`Settings` > `IP Configuration` to view and edit the IP settings for MXW neXt devices.

Manually Assigning Static IP Address

To manually assign IP addresses to the MXW neXt system, follow these steps:

1. Open the IP Configuration menu in the Settings tab.
2. Select the Manual radio button.
3. Enter the IP settings and click Save. The control software may close if settings have been updated for the access point.
4. Change the computer's IP address to match the subnet of the MXW neXt equipment.
5. Reopen the MXW neXt control interface.

Dante Network Audio

Connect your Dante audio network to the MXW neXt system.
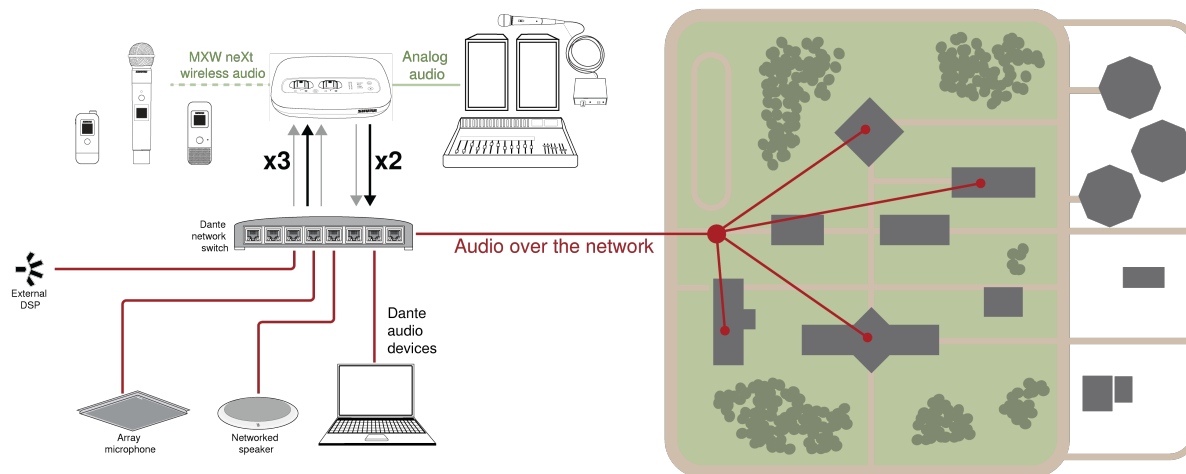
Connect a network of devices

2 input channels, useful for:

- Dante-enabled microphones
- Output from an automatic mixer or room system
- Videoconferencing signal of far-end audio

3 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 MXW neXt 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.

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

Advanced Setup

More information on advanced networking is available at www.shure.com.

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	Access to Linux shell	Closed
53	UDP	DNS		Closed
68	UDP	DHCP	Dynamic Host Configuration Protocol	Open
80*	TCP	HTTP	Required to launch embedded web server	Open
443	TCP	MQTT	Required for inter-device communication	Closed
5353	UDP	mDNS†	Required for device discovery	Open
8023	TCP	Telnet	Access to CLI	Closed
8427	UDP	Multcast SLP†	Required for inter-device communication	Open
57383	UDP	ACN	Required for network control	Open
64000	TCP	Telnet	Required for Shure firmware update	Open

Dante Audio & Controller

Port	TCP/UDP	Protocol	Description
[319-320]*	udp	PTP†	Dante clocking
4321, 14336-14600	udp	Dante	Dante audio
[4440, 4444, 4455]*	udp	Dante	Dante audio routing
5353	udp	mDNS†	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.

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

Connecting to an External Control System

The MXW neXt System connects to an AMX or Crestron control system via the Ethernet. Use only one controller per system to avoid messaging conflicts.

- Connection: Ethernet (TCP/IP; MXW is the client)
- Port: 2202

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 uploaded and installed using the Shure Update Utility. Download the software from www.shure.com/suu.

Perform the following steps to update the firmware:

CAUTION! Ensure the device has a stable network connection during the update. Do not turn off the device until the update is complete.

1. Connect the device and computer to the same network, set to the same subnet. (To update MXW neXt transmitters, place them in a docking station that is connected to the same network.)
2. Open the Shure Update Utility application.
3. Click Check For Updates... button to view new firmware versions available for download.
4. Select the desired firmware and press Download to download it to the Firmware Library.
5. From the Update Devices tab, select the new firmware and press Send Updates... to begin the firmware update, which overwrites the existing firmware on the device.

Firmware Versions and Compatibility

The firmware of all Shure devices has the form of MAJOR.MINOR.PATCH.BUILD (e.g., 1.2.14.0). To ensure interoperability, all components from the same model family (including transmitters) should be updated to the same MAJOR and MINOR firmware version numbers (e.g., 1.2.x.x).

Troubleshooting

The following table offers typical solutions when troubleshooting the Microflex Wireless System.

Network and Device Monitoring

Problem	Indicator	Solution
Control Software is taking a long time to load	Software cannot connect to the control interface	Ensure PC and device are on the same network and subnet Check that Windows firewall settings are not blocking Shure software Set the router to not send default gateway as a part of DHCP Set the Shure Web Device Discovery application to open by IP address Manually set the computer to a static IP address on the same network as the device

Problem	Indicator	Solution
Control Software is performing poorly	Indicators are moving slowly or not displaying in real time	Reduce the number of windows or tabs that are open to the same Configuration See Network section for properly setting up the network

Additional Resources

For additional Troubleshooting assistance or further information on complex installations, visit https://www.shure.com/support or contact your local Shure service center.

For digital audio networking help, advanced networking guidelines and Dante software troubleshooting, visit Audinate's website at www.audinate.com.

Factory Reset

If a device isn't appearing on the network after trying troubleshooting methods, perform a network reset, or a full factory reset.

From the Control Software

Under the `Settings` > `Reset` tab:

Reboot	Reboots the hardware.
Network Reset	Clears all stored network data.
Restore Factory Defaults	Resets the device to factory default settings, designed for automatic compatibility with other Shure networked devices. **CAUTION:** A factory reset deletes all microphone links saved in the device.
Low Power Standby Mode	Enters low power standby mode. Short press the hardware reset button to exit.

From the Hardware

Network Reset	Press and hold the recessed reset button for 5-8 seconds. The audio status LEDs will flash yellow to indicate the network settings have been reset.
Restore Factory Defaults	Press and hold the recessed reset button for more than 8 seconds to reset the device to factory default settings. The audio status LEDs will flash green to indicate the hardware is rebooting.

Accessories and Model Variations

MXW neXt Device	Description		Part Number
All-In-One Charger/Ac-cess Point Dock	2-Channel Access Point Transceiver with 2 Charging Ports and Intellimix DSP		MXWAPXD2
Transmitter	Bodypack	Bodypack transmitter (without lava-lier microphone)	MXW1X/O
		Battery	SB906
	Handheld	Handheld transmitter with SM58 cartridge	MXW2X/SM58
		Handheld transmitter with SM86 cartridge	MXW2X/SM86
		Handheld transmitter with Beta 58 cartridge	MXW2X/BETA58
		Handheld transmitter with VP68 cartridge	MXW2X/VP68
		Battery	SB908
	Boundary	Boundary transmitter with omnidi-rectional microphone	MXW6X/O
		Boundary transmitter with car-dioid microphone	MXW6X/C
		Battery	SB906
	3.5mm-to-USB audio dongle		AMXWX-USBC-3.5mm

Lavalier Options

Microphone Description	Part Number
Microflex® 5mm Subminiature Lavalier, Omnidirectional, Black	MX150B/O-TQG
Microflex® 5mm Subminiature Lavalier, Cardioid, Black	MX150B/C-TQG
Microflex® Omnidirectional Subminiature Earset, Black	MX153B/O-TQG
Microflex® Omnidirectional Subminiature Earset, Tan	MX153T/O-TQG
Microflex® Omnidirectional Subminiature Earset, Cocoa	MX153C/O-TQG
Microflex® 1cm Omnidirectional Lavalier, Black	WL183
Microflex® 1cm Supercardioid Lavalier, Black	WL184
Microflex® 1cm Cardioid Lavalier, Black	WL185
Omnidirectional Condenser Miniature Lavalier, Black	WL93

AC Adapter (45W, USB-C, 2m cable)

USB Power Supply by Region	Part Number
USA	SBC10-USB45WPD
UK	SBC10-USB45WPD-UK
Europe	SBC10-USB45WPD-E
India	SBC10-USB45WPD-IN
Japan and Taiwan	SBC10-USB45WPD-UTJ
Argentina	SBC10-USB45WPD-AR
Australia	SBC10-USB45WPD-AZ
Brazil	SBC10-USB45WPD-BR

Microflex Wireless Specifications

RF Carrier Frequency Range

Band	Frequency Range
Z10	1920– 1930 MHz
Z11	1880– 1900 MHz
Z12	1893– 1906 MHz
Z14	1910– 1920 MHz
Z15	1880– 1895 MHz

Operating Temperature Range
  5℃ (41°F) - 40℃ (104°F)

Storage Temperature Range
  -20℃ (-4°F) to 60℃ (140°F)

Microphones

MXW1X, MXW2X, MXW6X

RF Output Power

DECT	20 dBm

Antenna Type
  Internal

Microphone Input Power

5V / 1A

SBC10-USB15WSUSTWJ Power Supply*

Input	100-240 V AC, 50-60 Hz, 0.6 A
Output	5 V DC, 3.0 A, 15.0 W (max)

* USA, Canada, Taiwan, Japan

SBC10-USB Power Supply**

Input	100-240 V AC, 50-60 Hz, 0.2 A
Output	5 V DC, 1.0 A, 5.0 W (max)

** All other countries

Rechargeable Li-Ion Battery Type

MXW1X, MXW6X	SB906
MXW2X	SB908

MXWAPXD2 2-Channel Access Point Dock

RF Output Power

DECT	20 dBm

USB Input Power

5 V / 3 A

USB Power Supply

SBC10-USB45WPD-*

* Varies by region: UTJ, E, UK, IN, BR, AR, AZ

Antenna Type

Internal

Transmitter Output Power

Bands: Z10, Z11, Z14, Z15

MXW1X

Setting	dBm	mW
Low	-2	1
Medium	5	3
High	12	16

Maximum	17	50

MXW2X

Setting	dBm	mW
Low	0	1
Medium	7	5
High	12	16
Maximum	17	50

MXW6X

Setting	dBm	mW
Low	-2	1
Medium	5	3
High	12	16
Maximum	19	80

Band: Z12

MXW1X, MXW6X

Setting	dBm	mW
Low	0	1
Medium	5	3
High	9	8
Maximum	12	16

MXW2X

Setting	dBm	mW
Low	0	1
Medium	7	5
High	9	8
Maximum	12	16

Wiring Diagram

TA4M Connector
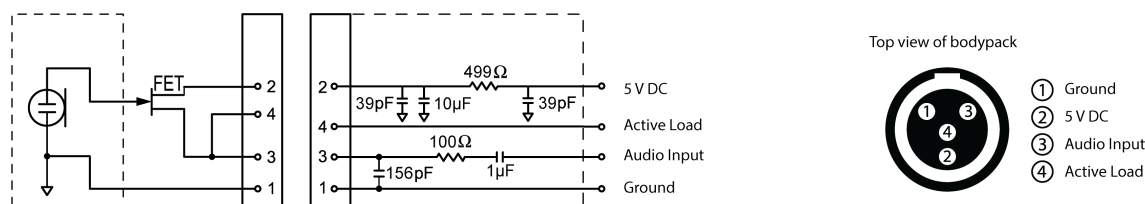
Regulatory Information for Wireless Products Utilizing TV and DECT Frequency Bands

CE Notice

Hereby, Shure Incorporated declares that this product with CE Marking has been determined to be in compliance with European Union requirements.

The full text of the EU declaration of conformity is available at the following site: https://www.shure.com/en-EU/support/declarations-of-conformity.

UKCA Notice

Hereby, Shure Incorporated declares that this product with UKCA Marking has been determined to be in compliance with UKCA requirements.

The full text of the UK declaration of conformity is available at the following site: https://www.shure.com/en-GB/support/declarations-of-conformity.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

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

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

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

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

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada (IC) Notices

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

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

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

Canada Warning for Wireless

This device operates on a no-protection, no-interference basis. Should the user seek to obtain protection from other radio services operating in the same TV bands, a radio licence is required. For further details, consult Innovation, Science and Economic Development Canada's document Client Procedures Circular CPC-2-1-28, Voluntary Licensing of Licence-Exempt Low-Power Radio Apparatus in the TV Bands.

Ce dispositif fonctionne selon un régime de non‑brouillage et de non‑protection. Si l'utilisateur devait chercher à obtenir une certaine protection contre d'autres services radio fonctionnant dans les mêmes bandes de télévision, une licence radio serait requise. Pour en savoir plus, veuillez consulter la Circulaire des procédures concernant les clients CPC‑2‑1‑28, Délivrance de licences sur une base volontaire pour les appareils radio de faible puissance exempts de licence et exploités dans les bandes de télévision d'Innovation, Sciences et Développement économique Canada.

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. L'utilisateur final doit suivre les instructions spécifiques pour satisfaire les normes. Cet émetteur ne doit pas être co-implanté ou fonctionner en conjonction avec toute autre antenne ou transmetteur.

Additional Canadian information on RF exposure also can be found at the following Web address: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html

ANATEL Notice

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores informações, consulte o site da ANATEL – http://www.anatel.gov.br.

IFETEL Notice

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.

NBTC Notice

เครื่องโทรคมนาคมและอุปกรณ์นี้มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดทางเทคนิคของ กสทช.

NCC Notice

Connection and use of this communications equipment is permitted by the Nigerian Communications Commission.

NCC Notice

低功率射頻器材技術規範

取得審驗證明之低功率射頻器材，非經核准，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。低功率射頻器材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。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

614MHz-703MHz: 使用頻段供其他通訊業務使用時，器材應即停止使用

減少電磁波影響，請妥適使用。

Environmental Regulatory Information

Waste Electrical and Electronic Equipment (WEEE) Directive

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

Registration, Evaluation, Authorization of Chemicals (REACH) Directive

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

Recycling Information

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

Certifications

Regulatory Model Number (RMN)

Regulatory Model Number (RMN):

For regulatory identification purposes your product has been assigned a regulatory model number (RMN). This regulatory model number should not be confused with product number.

RMN: MXW1X	**Product Numbers:** MXW1X/O Z10, MXW1X/O Z11, MXW1X/O Z12, MXW1X/O Z14, MXW1X/O Z15
RMN: MXW2X	**Product Numbers:** MXW2X Z10, MXW2X Z11, MXW2X Z12, MXW2X Z14, MXW2X Z15
RMN: MXW6X	**Product Numbers:** MXW6X/C Z10, MXW6X/C Z11, MXW6X/C Z12, MXW6X/C Z14, MXW6X/C Z15, MXW6X/O Z10, MXW6X/O Z11, MXW6X/O Z12, MXW6X/O Z14, MXW6X/O Z15, MXW6XW/C Z10, MXW6XW/C Z11, MXW6XW/C Z12, MXW6XW/C Z14, MXW6XW/C Z15, MXW6XW/O Z10, MXW6XW/O Z11, MXW6XW/O Z12, MXW6XW/O Z14, MXW6XW/O Z15
RMN: MXWAPXD2	**Product Numbers:** MXWAPXD2 Z10, MXWAPXD2 Z11, MXWAPXD2 Z12, MXWAPXD2 Z14, MXWAPXD2 Z15

Energy Efficiency

External Power Supply meets:

1. The U.S. Energy Conservation Standards specified in the Code of Federal Regulations at 10 CFR 430 32(w).

2. EU COMMISSION REGULATION (EU) 2019/1782 of 1 October 2019: Ecodesign requirements for External Power Supply.

3. Australian Standard requirements of AS/NZS 4665.1:2005 and AS/NZS 4665.2:2005.

Battery Charger System meets:

1. The U.S. Energy Conservation Standards specified in the Code of Federal Regulations at 10 CFR 430 32(z)

2. Canada NRCan standard: CAN/CSA-C381.2

Certification and Compliance Markings

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