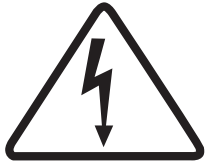


**A T H E M<sup>®</sup>**  
**MDX-16**  
**MDX-8**

**Operating Manual**



**CAUTION**  
RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture, and objects filled with liquids, such as vases, should not be placed on this apparatus.

**CAUTION:** To prevent electric shock, match wide blade of plug to wide slot, fully insert.

**CAUTION:** For continued protection against risk of fire, replace the fuse only with the same amperage and voltage type. Refer replacement to qualified service personnel.

**WARNING:** Unit may become hot. Always provide adequate ventilation to allow for cooling. Do not place near a heat source, or in spaces that can restrict ventilation.

### 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 a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized plug. A polarized plug has two blades with one wider than the other. The wide blade is provided for your safety. When 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 the 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.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Avoid installing this unit where foreign objects may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:

- Burning objects (i.e. candles), as they may cause fire damage to this unit, and/or personal injury.
- Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Do not install this equipment in a confined space such as a case or similar. Install it away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold.

Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.

Install this unit near the AC outlet and where the AC power plug can be reached easily.

This unit is not disconnected from the AC power source when it is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.

**NOTE:** This product is not an auto voltage device. Connect only to the prescribed AC outlet, i.e., 120V 50/60Hz or 240V 50/60Hz.

**CAUTION:** Top surface can become hot.

**CAUTION:** These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

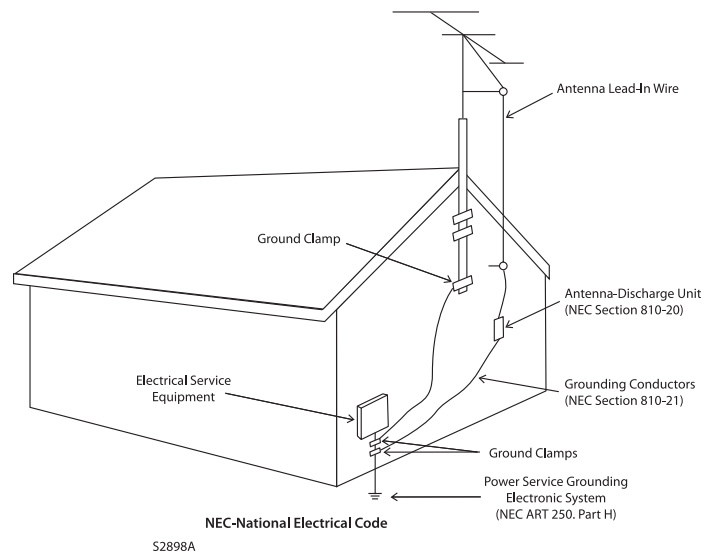
**CAUTION:** Changes or modifications to this equipment not expressly approved by Paradigm Electronics for compliance could void the user's authority to operate this equipment.

**FCC WARNING:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 MDX.
- Connect the equipment into an outlet on a circuit different from that to which the MDX is connected.
- Consult the dealer or an experienced radio / TV technician for help.

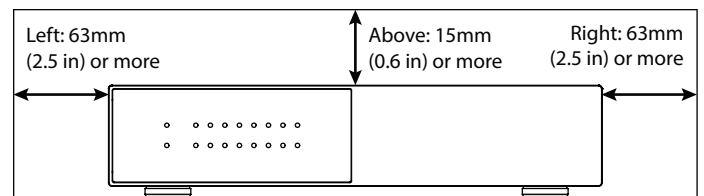


**DO NOT LOCATE IN THE FOLLOWING PLACES:**

To ensure long-lasting use, do not locate the unit:

- Exposed to direct sunlight.
- Near sources of heat such as heaters.
- Highly humid or poorly ventilated.
- Dusty.
- Subjected to mechanical vibrations.
- On wobbly, inclined, or otherwise unstable surfaces.
- Near windows where there is a chance of exposure to rain, etc.
- On top of an MDX or another component which dissipates a great deal of heat.

To ensure proper heat radiation, ensure clearance from walls and other equipment according to the diagram.



**IMPORTANT INFORMATION FOR UK CUSTOMERS:** DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer. If, nonetheless, the mains plug is cut off, REMOVE THE FUSE and dispose of the PLUG immediately, to avoid possible shock hazard by inadvertent connection to the mains supply. If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

**IMPORTANT:** DO NOT make any connection to the larger terminal which is marked with the letter "E" or by the safety earth symbol or colored GREEN or GREEN AND YELLOW.

---

### NOTES ON ENVIRONMENTAL PROTECTION

At the end of its useful life, this product must not be disposed of with regular household waste but must be returned to a collection point for the recycling of electrical and electronic equipment. The symbol on the product, the user's manual, and the packaging point this out. The materials can be reused in accordance with their markings. Through reuse, recycling of raw materials or other forms of recycling of old products, you are making an important contribution to the protection of our environment. Your local administrative office can advise you of the responsible waste disposal point.

---

### RECYCLING AND REUSE GUIDELINES (Europe)

In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) directive effective August 13, 2005, we would like to notify you that this product may contain regulated materials which, upon disposal, require special reuse and recycling processing. For this reason, Paradigm Electronics Inc. (the manufacturer of Paradigm speakers and Anthem electronic products) has arranged with its distributors

Anthem and any related party assume no liability for the user's failure to comply with any requirements.

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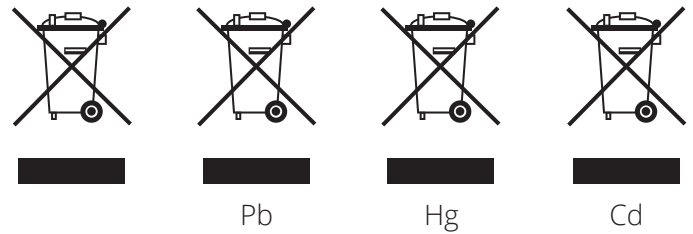
The wires in the mains lead on this product are colored in accordance with the following code:

- BLUE – NEUTRAL
- BROWN – LIVE

As these colors may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The BLUE wire must be connected to the terminal marked with the letter "N" or colored BLACK.
- The BROWN wire must be connected to the terminal marked with the letter "L" or colored RED.

When replacing the fuse, only a correctly rated and approved type should be used, and be sure to refit the fuse cover. If in doubt, consult a competent electrician.



in European Union member nations to collect and recycle this product at no cost to you. To find your local distributor, please contact the dealer from whom you purchased this product or go to our website at [www.AnthemAV.com](http://www.AnthemAV.com).

Please note that only the product falls under the WEEE directive. When disposing of packaging and other shipping material, we encourage you to recycle through the usual channels.

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# 1. INTRODUCTION AND QUICK START

Thank you for purchasing the Anthem MDX. All Anthem products are engineered to recreate the passion of a live musical performance and emotional involvement experienced in the best movie theaters by utilizing the highest level of circuit design, superior parts and manufacturing techniques, innovative features, and intuitive ergonomics. We are confident that their inclusion in a system significantly enhances the enjoyment of recordings.

## 1.1 BEFORE MAKING CONNECTIONS

Check that you have received all items listed below and report discrepancies to your dealer as soon as possible. In case the MDX needs to be transported in the future, keep the packing materials. Retain the invoice that you received from your authorized Anthem dealer at time of purchase. The invoice is necessary to obtain service under warranty.

## 1.2 BOX CONTENTS

- MDX-8 or MDX-16
- Dual-jack microphone
- USB mini (Type B) cable for ARC microphone
- 3.5mm cable for ARC microphone (for future ARC Mobile app support)
- 3.5 mm trigger cable
- IEC power cord(s) (US type for 120V model, EU/UK/AU type for 230V model)
- 2x Rack brackets (preinstalled)
- 4x Feet (if tabletop operation required)
- 4x Phillips head screws (for attaching feet)
- MDX-16: 8x Euroblock Connectors (preinstalled)
- MDX-8: 4x Euroblock Connectors (preinstalled)

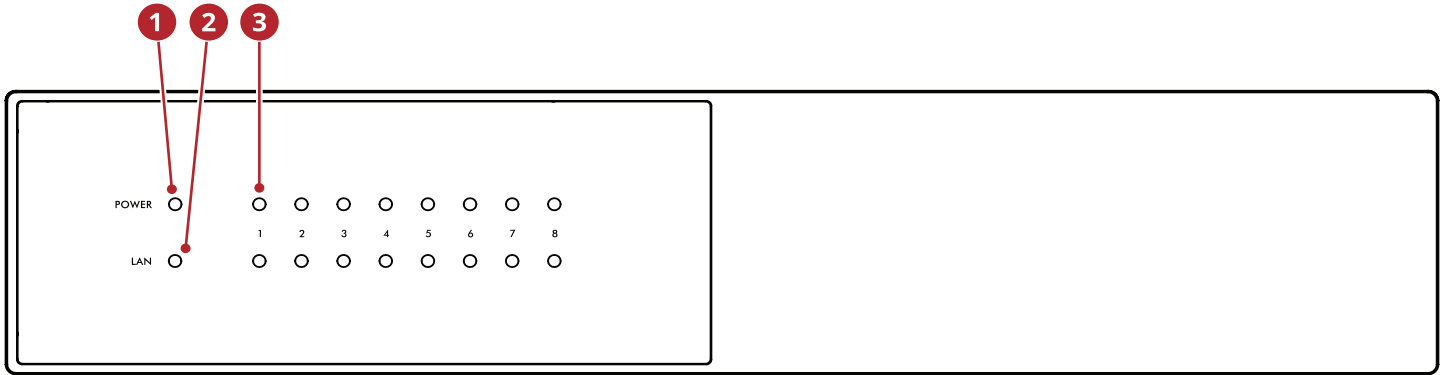
## 1.3 IN-USE NOTICES

- Disconnect the power cord or flip the AC switch to OFF before connecting or disconnecting any components.
- If the MDX was transported or stored in the cold, let it reach room temperature before use.
- Do not remove the top cover.
- Do not modify the product.
- Due to continuing advances, operational characteristics may change. If this manual contains discrepancies, please check [www.AnthemAV.com](http://www.AnthemAV.com) for the latest manual.

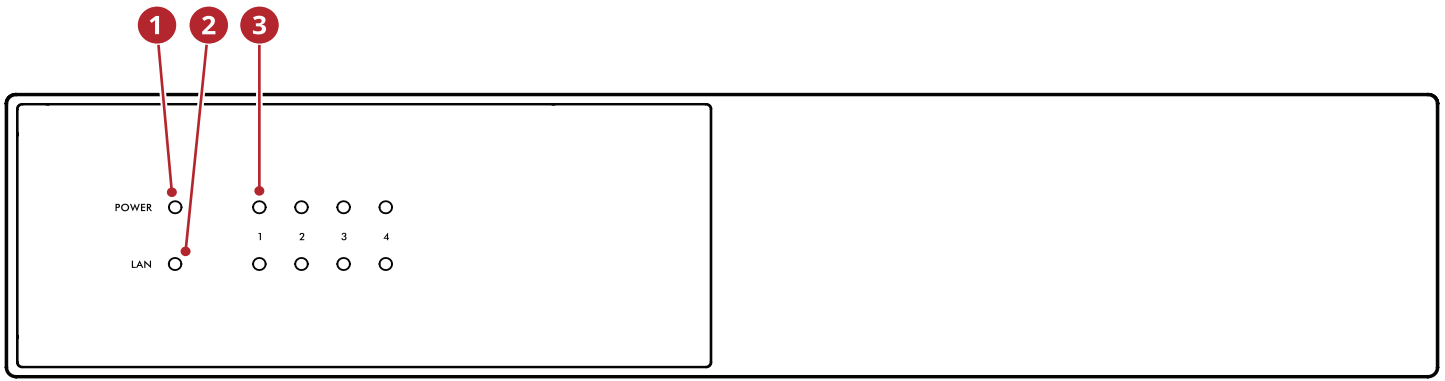
## 1.4 RACK AND SHELF MOUNTING

These MDXs ship with rack brackets installed. If shelf mounting is desired, you can remove the rack brackets using a T10 Torx driver. Using a Phillips screwdriver, attach four feet to the bottom of the MDX using the included screws.

## 1.5 FRONT PANEL (STATUS LIGHTS)



**MDX-16 Front Panel**



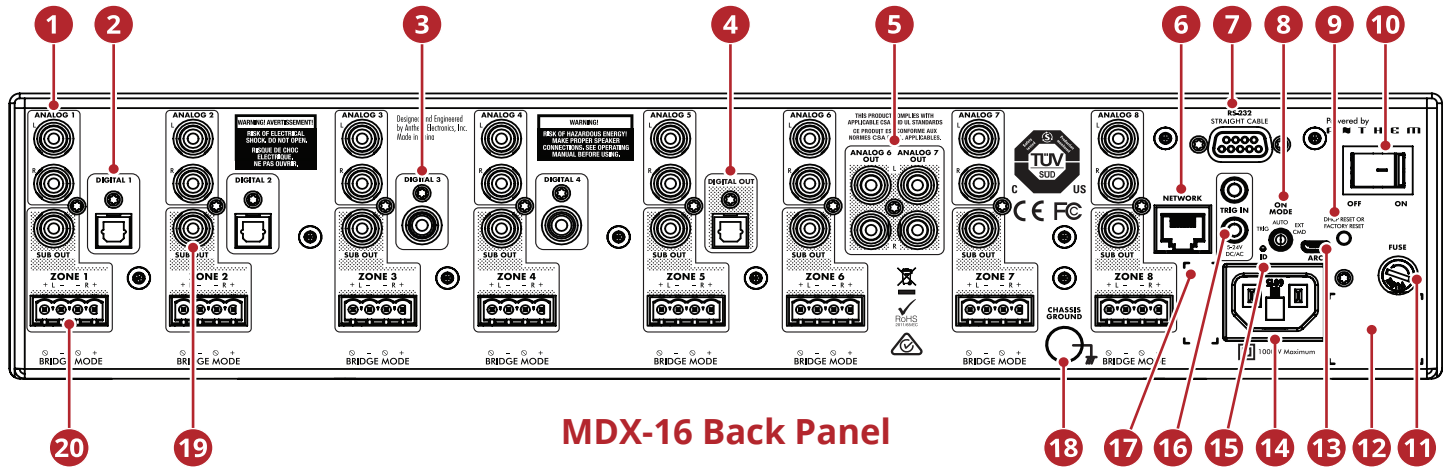
**MDX-8 Front Panel**

- ❶ **Power:** When blue, the MDX is on and ready to play. When red, the MDX has entered network standby mode.
- ❷ **LAN:** When blue, a 100M or faster network is connected. Red indicates a 10M connection. When off, there is no network connection.

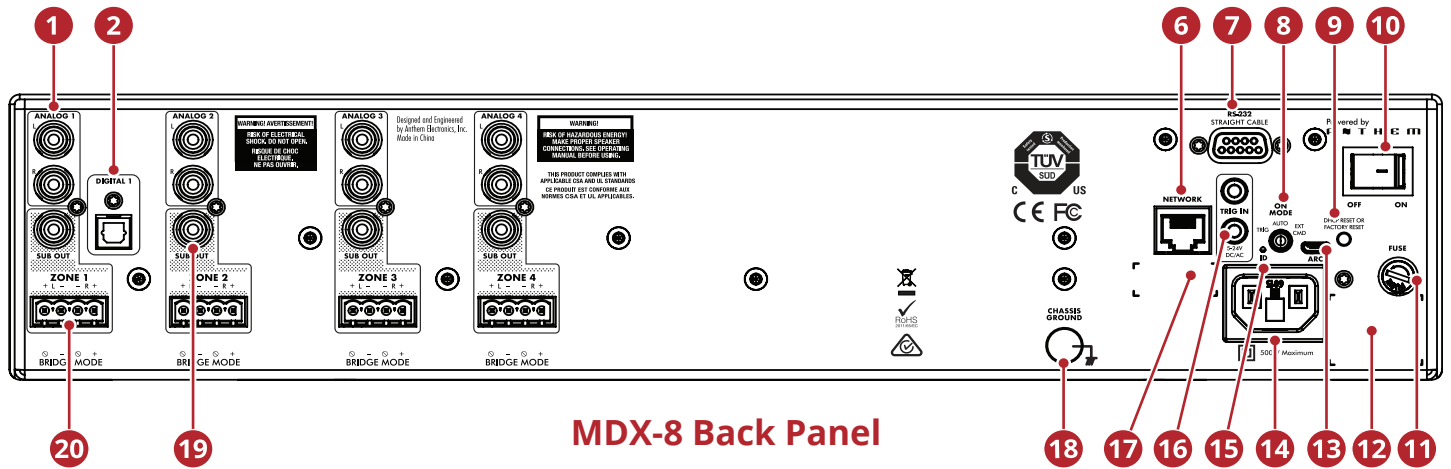
- ❸ **Numbers:** When the top indicator turns blue, the indicated channel is active. The bottom indicator turns blue when audio is detected. When flashing blue or red, it is in fault mode.

For more information, please refer to sections 6 (Fault Modes) and 7 (Troubleshooting).

## 1.6 BACK PANEL



**MDX-16 Back Panel**



**MDX-8 Back Panel**

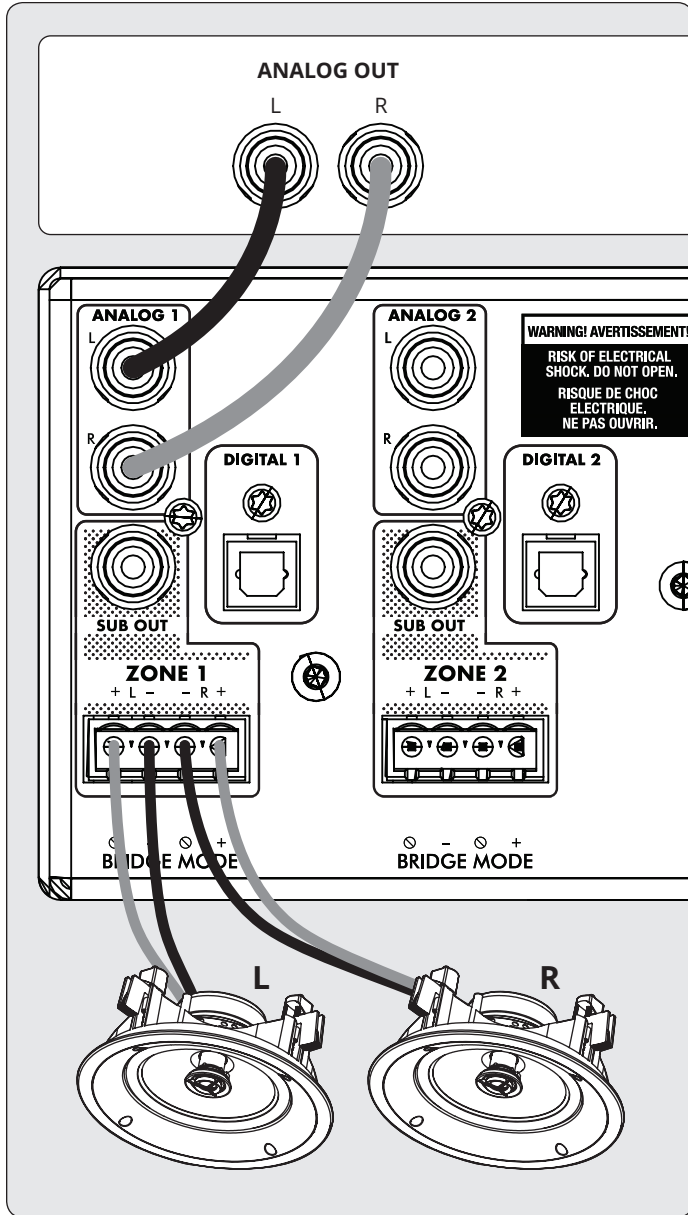
- 1 Analog RCA stereo inputs (MDX-16 has eight, MDX-8 has four)
- 2 Optical digital audio inputs (MDX-16 has two, MDX-8 has one)
- 3 Coaxial digital audio inputs (MDX-16 only)
- 4 Optical digital audio output (MDX-16 only)
- 5 Zone 6 and 7 analog outputs (MDX-16 only)
- 6 Ethernet connection for ARC (Anthem Room Correction), software installation, and control
- 7 RS-232 (serial) connection for legacy control
- 8 On mode switch (trigger / auto / external command)
- 9 DHCP reset / factory reset
- 10 Master power switch
- 11 Fuse
- 12 Serial number label
- 13 Micro USB type B for ARC via PC or Mac (if LAN is not available)
- 14 Power cord inlet (IEC C18 type)
- 15 Rear ID (identify) light
- 16 5–24V DC/AC 3.5 mm trigger input/loop
- 17 MAC address label
- 18 Chassis ground terminal
- 19 Subwoofer outputs (MDX-16 has eight, MDX-8 has four)
- 20 Euroblock speaker terminals

For more information, please refer to section 3 (Connections and Back Panel Controls).



## 1.7 QUICK START

This quick start section includes just enough information to get the MDX operational and to run Anthem Room Correction. For a deeper understanding of speaker and subwoofer connection options, advanced configuration settings, and control system integration, please review the rest of this manual.



1. Install the MDX in a rack or install the feet using a Phillips screwdriver for tabletop operation. (Rack brackets can be removed using a T10 Torx driver).
2. **Speaker Connection(s):** Connect a pair of speakers to Zone 1 using a Euroblock (aka Phoenix™) connector (included) which accepts speaker wire from 28 up to 12 gauge.
  - a. Pull both sides of the Euroblock connector from Zone 1 to remove it from the MDX.
  - b. Use a small slotted screwdriver to loosen and tight-

en each contact on the Euroblock when inserting the speaker wire.

- c. Follow positive (+) and negative (-) indications shown on the Euroblock connector.
  - d. After attaching speaker wires to the Euroblock connector, insert it back into the MDX.
3. Repeat to connect speakers in additional zones.
  4. **Input Connections(s):** Connect analog sources using RCA cables. By default, Analog 1 plays in Zone 1, Analog 2 in Zone 2, and so on. You can change source assignments later if so desired.
  5. **Power Connection:** Insert a power cord into the MDX's AC input. Plug the cord into a wall outlet. Make sure to respect the voltage rating shown beside the AC receptacle.

### BASIC CONFIGURATION

1. **Control Settings:**
  - a. **On Mode Switch:** Set to Auto.
  - b. **Master AC Power Switch:** Set to On.
2. When the MDX detects audio in a zone, the corresponding indicator light (at the bottom) turns blue, and the zone's power indicator light (at the top) turns blue. You should now hear the music.

### ADVANCED CONFIGURATION AND CONTROL SYSTEM INTEGRATION

1. **Control Settings:**
  - a. **On Mode Switch:** Set to Ext Cmd.
  - b. **Master AC Power Switch:** Set to On.
2. **Network Connection:** Connect the MDX's Network connection to a LAN using an Ethernet cable. The network router should support DHCP and will automatically assign an IP address to the MDX.
3. **Powered subwoofer connection(s) [optional]:** Connect a powered subwoofer to Zone 1 using an RCA cable. Repeat to connect subwoofers in additional zones.
5. **Input Connections(s):** Connect each audio source using the desired connection method.
  - a. **Analog Left/Right RCA:** Connect to Analog inputs.
  - b. **Digital, Optical (aka Toslink):** Connect to Digital 1 or 2 (Digital 1 only on MDX-8).
  - c. **Digital, Coaxial:** Connect to Digital 3 or 4 (not available on MDX-8).

### ACCESSING THE CONFIGURATION INTERFACE

For initial setup, the MDX should be connected to a network and plugged into the wall with the On Mode switch set to EXT CMD. Turn on the MDX by setting the master power switch to On. The Power light on the front panel indicates that the MDX has powered up. Once the LAN light on the front panel turns blue or red, the MDX has connected to your network and acquired a network address.

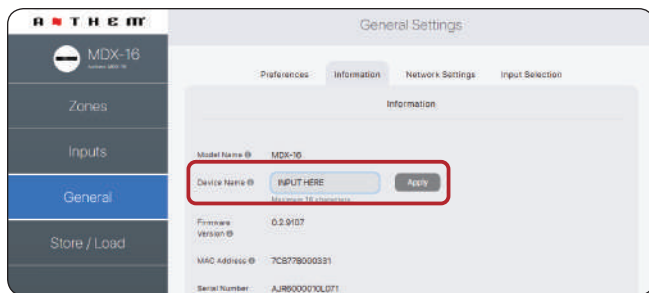
The MDX is configured using an interface accessed using a web browser. Identify the MDX's IP address to proceed. You can discover the MDX's IP address using the ARC Genesis software (available on [AnthemARC.com](http://AnthemARC.com)). Start the program, choose Launch ARC, and hover your mouse cursor over the MDX, wait for a second, and it shows the IP address in the device discovery screen. Note that the last few characters of the unit's name correspond to the end of the MAC address printed at the back of the MDX.

To access the MDX's configuration interface, open a web browser (we recommend Chrome or Safari), type the IP address into the browser's address bar, and hit enter.

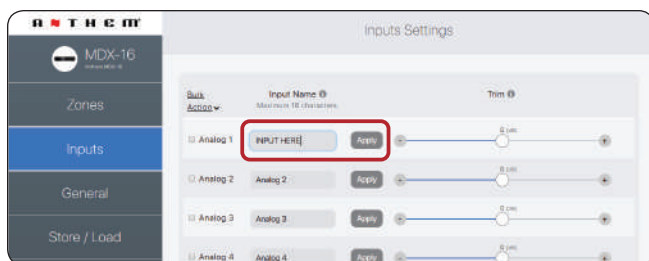
When installing more than one MDX, there are multiple IP addresses. To identify each MDX, use a web browser to connect to the first one and click General > Preferences > Unit ID. The ID light on the back panel flashes as will the Power indicator on the front of the MDX. The MAC Address displayed under General > Information matches the unique MAC Address printed on the back of the MDX.

## CONFIGURING THE MDX

1. Access the configuration interface by entering the MDX's IP address in a web browser's address bar.
2. **General > Information > Device Name:** Create a name for the MDX and click Apply.

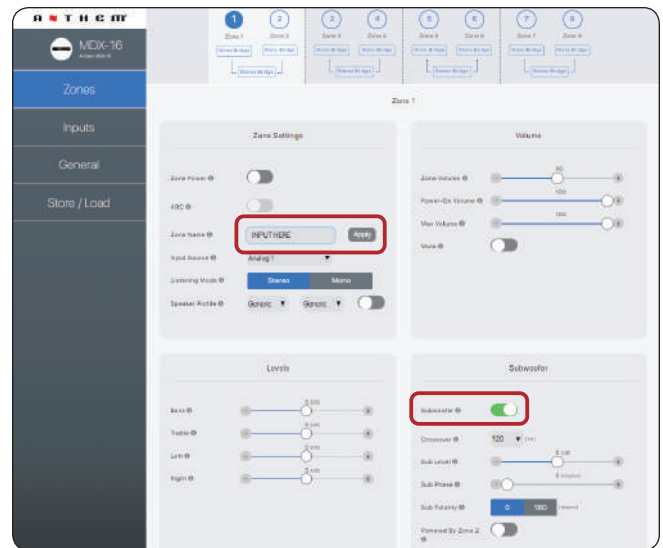


3. **Inputs > Analog 1 (or other input) > Input Name:** Create a name and click Apply
4. Repeat for additional inputs.



5. **Zones > Zone 1 > Zone Settings >**
  - a. **Zone Name:** Create a name and click Apply.
  - b. **Input Source:** Choose the input you want to hear in this zone.

- c. **Speaker Profile:** Select the type of speaker connected or keep them as Generic type if not shown in the list.
6. **Zones > Zone 1 > Subwoofer > Subwoofer:** When there is a sub connected to the zone's Sub Out, set the toggle to on.
  7. Repeat for additional zones.



## RUNNING ANTHEM ROOM CORRECTION (ARC®)

Once speakers and subwoofers are connected and configured, and sources and zones are named, you can run room correction for each zone that is being used. Download the ARC Genesis software from [AnthemARC.com](http://AnthemARC.com) and follow the on-screen instructions. See section 4 for additional details.

## CONTROLLING THE MDX

Play music using one of the sources connected to the MDX. In most installations, a custom integrated control system is used to adjust the volume and change which source is playing in which zone. You can also adjust volume and change inputs using the configuration interface.

- Access the configuration interface by entering the MDX's IP address in a web browser's address bar.
- Zones > Zone 1 (or another zone) > Zone Settings > Input Source: Choose the input you want to hear in this zone.
- Zones > Zone 1 (or another zone) > Volume > Zone Volume: Adjust the volume here.

## 1.8 SETTING UP A CONTROL SYSTEM

MDXs are compatible with IP and RS232 command protocols. A detailed command set and discovery protocol are available on [AnthemAV.com](http://AnthemAV.com). A variety of Anthem developed automation drivers are also available for download free-of-charge from our web site for easy integration into a smart-home powered by Crestron, Savant, and other similar controllers.

## 2. THE USER INTERFACE

For optimum performance and enjoyment, your MDX should be appropriately set up. If you're using a subwoofer or subwoofers, ARC (Anthem Room Correction) sets crossovers and levels for a perfect blend with the main speakers. The rest of the settings mostly relate to your preferences. Please fully configure all zones with the proper output modes (single-ended, stereo or mono bridge), speaker profile and subwoofer settings (present or not, active or passive) before running ARC.

### 2.1 ACCESSING THE USER INTERFACE

For initial setup, the MDX should be connected to a network and plugged into the wall with the On Mode switch set to Auto.

Turn on the MDX by setting the master power switch to On. The Power light on the front panel indicates that the MDX has powered up. Once the LAN light on the front panel turns blue or red, the MDX has connected to your network and acquired a network address.

### 2.2 FINDING THE MDX'S IP ADDRESS

The MDX is configured using an interface accessed using a web browser. Identify the MDX's IP address to proceed.

You can discover the MDX's IP address using the ARC Gene-

sis software. Start the ARC program on a PC or Mac, choose Launch ARC, and hover your mouse cursor over the MDX, wait for a second, and it shows the IP address in the device discovery screen.

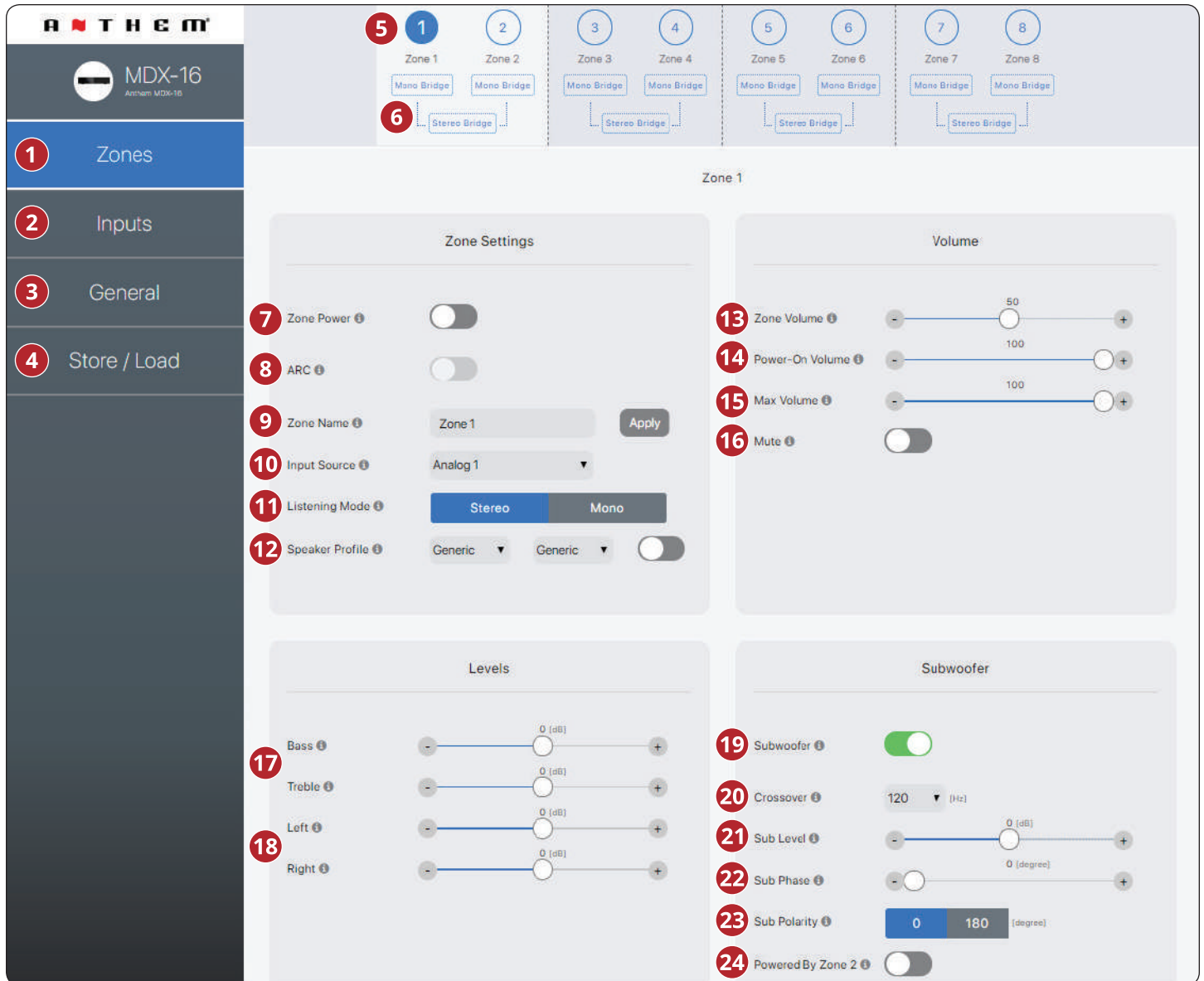
We also recommend using Fing, a free network device detection app available on iOS, Android, and Windows. This app identifies devices on a network and shows their IP addresses. These identify with MDX-8 or MDX-16 or Paradigm Electronics.

To access the MDX's configuration interface, open a web browser (we recommend Chrome or Safari), type the IP address into the browser's address bar, and hit enter.

### 2.3 IDENTIFYING MULTIPLE MDXs

When installing more than one MDX, there are multiple IP addresses. To identify each MDX, use a web browser to connect to the first one and set General > Preferences > Unit ID to On. The ID light on the MDX's back panel and the Power indicator on the front flash. The MAC Address displayed under General > Information also matches the unique MAC Address printed on the back of the MDX. Note that the last few characters of the factory default unit's name correspond to the end of the MAC address printed at the back of the MDX.

## 2.4 ZONES



- 1 **Zones:** Adjusts the settings of individual zones, allowing zone naming, source selection, mode setup, listening mode, speaker profile, level adjustment, tone control, volume configuration, and subwoofer setup. The top of the page shows the individual zones.
- 2 **Inputs:** Allows input naming and level balancing (trim). See section 2.5 for additional details.
- 3 **General:** Displays device information and allows device naming, network configuration, and displays input selection. See sections 2.6 – 2.9 for additional details.
- 4 **Store/Load:** Allows import/export of device settings from files saved on your PC or Mac. Also allows storing and loading from 2 local storage areas (user's or installer's settings).

See section 2.10 for additional details.

- 5 The Zone taskbar shows available zones and highlights the currently selected zone (MDX-16 shows 8 zones, and MDX-8 shows 4 zones). Stereo Bridge and Subwoofer Powered by Zone 2 (4, 6, or 8) turn the even-numbered zones grey, indicating they are disabled. In this case, settings and controls of the odd-numbered zone transfer automatically to the even-numbered zone.
- 6 **Mono Bridge:** Sets a single zone into a high output mode for a single speaker. The listening mode is automatically set to Mono when selecting Mono Bridge mode. See section 3.4 for additional details.

**Stereo Bridge:** Sets a zone pair (1 & 2, 3 & 4, 5 & 6, or 7 & 8) into

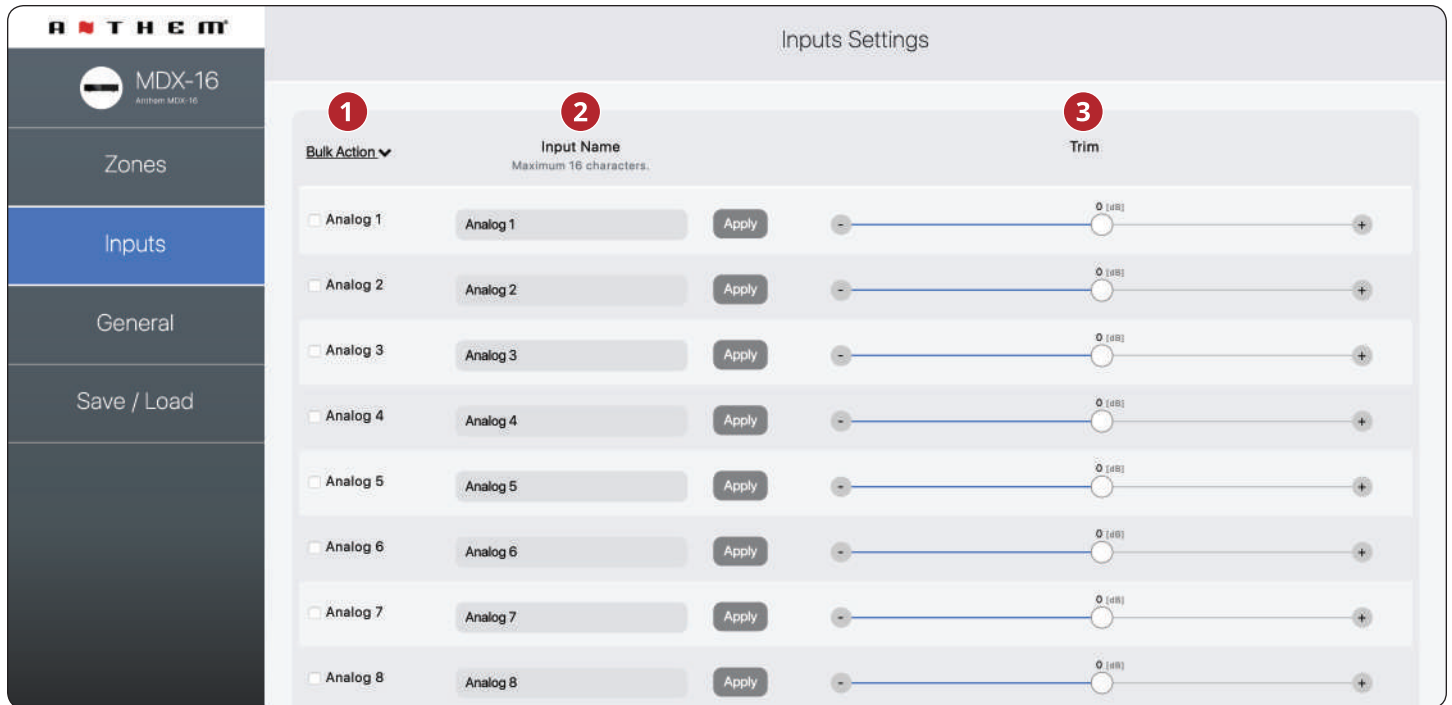
a left and right configuration. When activated, the even-numbered zone turns grey, and the odd-numbered zone controls the settings. This setting allows a high output mode for a pair of speakers with each zone acting as a discrete channel. The listening mode is automatically set to stereo when selecting Stereo Bridge mode. See section 3.5 for additional details.

- 7 **Zone Power:** Toggles the zone between active and standby. When set to Auto mode and music is playing in that zone, the toggle automatically goes back ON when analog or digital audio is detected.
- 8 **ARC:** Turns ARC on and off for the zone (only available if ARC software has been used to upload corrections for the zone).
- 9 **Zone Name:** Assign a name to the zone (up to 16 characters) and click Apply to save this setting. The names of the zones appear in ARC, allowing easy identification.
- 10 **Input Source:** Selects the desired input source. An input can be assigned simultaneously to multiple zones. If you are not using the built-in matrix switching this remains static until altered either through the web interface or IP/RS232 control. Selecting a source here does not prevent you from changing source dynamically during use through a compatible home automation system.
- 11 **Listening Mode > Stereo:** The default listening mode. The audio plays in stereo.  
  
**Listening Mode > Mono:** Sums the left and right channels and sends identical signals to both speakers.
- 12 **Speaker Profile:** Selects a specific in-wall or in-ceiling speaker model for each zone. Selecting a particular model allows the DSP to optimize the EQ and limiter settings. Enable a Speaker Profile using the toggle button located right of the drop-downs. If you don't know the model of your speakers, or if your speakers are not listed, select Generic.
- 13 **Zone Volume:** Adjusts the level of the zone. Each zone has independent volume control. Please note that selecting a volume level in the Web UI does not prevent you from changing volume levels dynamically during use with a compatible automation system.
- 14 **Power On Volume:** The volume level for the zone when it turns on.
- 15 **Max Volume:** Prevents the volume of the zone from exceeding the desired level. Please note that an external volume adjustment cannot override this level. If an automation system attempts to adjust the volume level higher than the max volume setting the MDX ignores the command.
- 16 **Mute:** Mutes the zone.

- 17 **Bass / Treble:** Allows fine-tuning of the relative bass and treble levels of the system. Please note that if using a subwoofer, the subwoofer level adjusts the subwoofer level relative to the main channels.
- 18 **Left / Right:** Adjusts the level of the left and right channels to set the balance.
- 19 **Subwoofer:** Activates and deactivates the subwoofer and bass management. Subwoofer output does not function unless this toggle is enabled. By default, the subwoofer signal is output using the Sub Out RCA connection for the zone. If using a subwoofer, enable this before running ARC. See section 3.6 for additional details.
- 20 **Crossover:** Sets the crossover point between the subwoofer and the main speakers. When using ARC, this value is automatically set. To change the crossover value after running ARC, modify the crossover setting in ARC and then re-upload. The crossover should only be manually adjusted if you are not using ARC.
- 21 **Sub Level:** Adjusts the level of the subwoofer relative to the mains. When using ARC, this value is automatically set. Unlike the Crossover setting, manually changing this value after running ARC will not negatively impact subwoofer integration.
- 22 **Sub Phase:** Adjusts the phase of the subwoofer relative to the main channels. Phase is adjustable from 0-180 degrees. If a value higher than 180 degrees is required, adjust Subwoofer Phase in combination with Sub Polarity for a full 360-degree range of adjustment. When using ARC, this value is automatically set using the Automatic Phase Adjustment tool.
- 23 **Sub Polarity:** Adjusts the polarity of the subwoofer to either 0 or 180 degrees. When selecting 180 degrees, the subwoofer signal is inverted when compared to the main channels. As a general guide, set Phase and Polarity to 0 if the subwoofer is near the front speakers and set Phase to 0 and Polarity to 180 if the subwoofer is near the back of the room. When using ARC, this value is automatically set using the Automatic Phase Adjustment tool.
- 24 **Powered by Zone 2 (4, 6, or 8):** Configures two consecutive zones to operate together for a stereo pair of speakers and a dedicated passive subwoofer connected in bridge mode (and must be connected as such on the rear panel of the unit). When engaged, all adjustments are made using the controls in the odd-numbered zone, and the even-numbered zones controls are disabled. For example, when engaged, Zone 1 controls both left and right speakers connected to Zone 1 and the subwoofer connected to Zone 2. Enable this feature before running ARC. See section 3.7 for additional details.



## 2.5 INPUTS SETTINGS

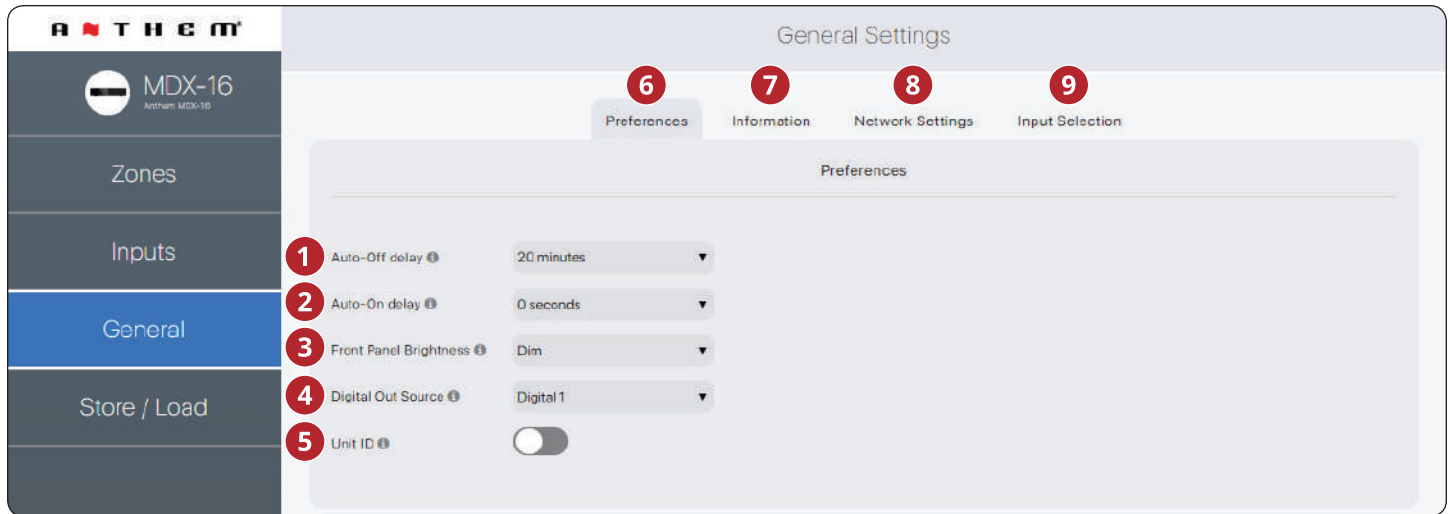


- 1 Bulk Action:** Use this when you want to change input names without clicking apply after each change. Enter names for all applicable inputs, select Check All from under the Bulk Items drop-down, then select Apply from under the Bulk Items drop-down.
- 2 Input Name:** Assign a custom name for each input (up to 16 characters). You must click Apply to save this setting.

This name corresponds with the input list in the MDX's user interface. Please note, this does not necessarily change the input name in associated control systems.

- 3 Trim:** Adjusts the relative level of each input. Use this when one input plays at a different level than the others, causing changes in volume levels during playback while switching between sources.

## 2.6 GENERAL: PREFERENCES



**1 Auto-Off Delay:** Sets the length of time a zone waits to enter standby mode after not receiving an audio signal. This option only applies when you set the On Mode switch on the back of the MDX to Auto.

**2 Auto-On Delay:** Sets the amount of time that the MDX waits to power up when in standby. This delay is useful when controlling multiple MDXs with a trigger, and you want them to power on in a staged pattern. This option only applies when you set the On Mode switch on the back of the MDX to Auto or Trigger.

**3 Front Panel Brightness:** Sets the brightness of the front panel LEDs.

**4 Digital Out Source (MDX-16 only):** Allows you to select which digital (optical or coaxial) to pass to the digital op-

tical output. This setting can be manipulated dynamically through IP/RS232. Selecting an output in the user interface does not prevent this setting from being changed through IP or RS232.

**5 Unit ID (Rear LED):** Setting to On causes the ID light on the back panel and the Power indicator on the front to blink. This control is useful if you're trying to identify a specific MDX in a system with multiple MDXs.

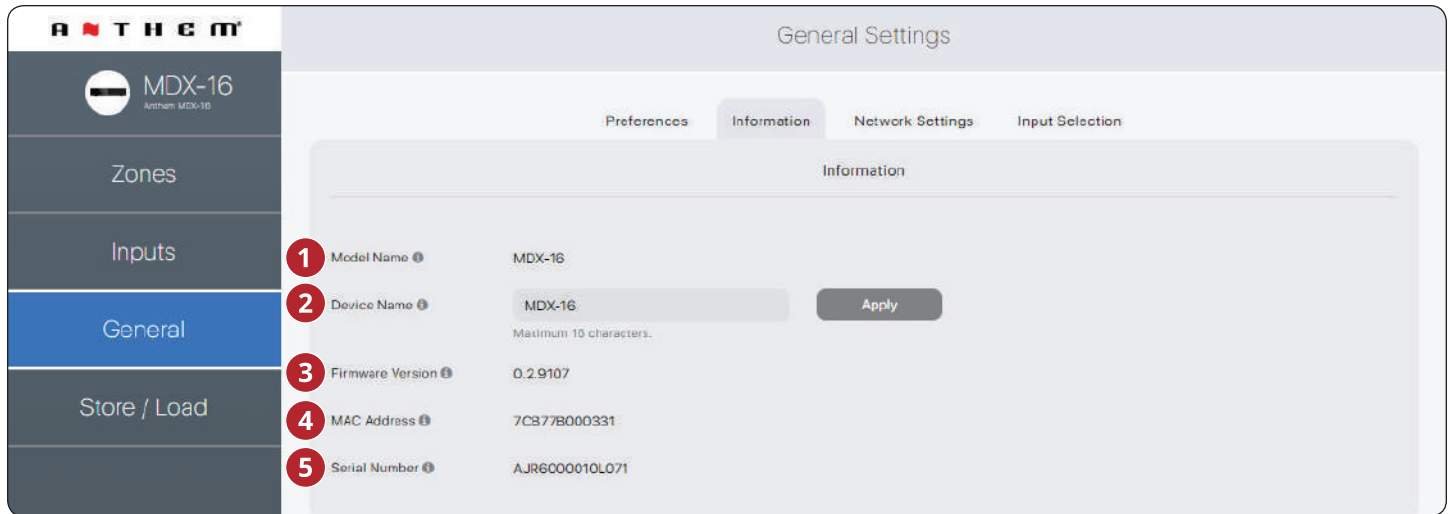
**6 General > Preferences:** This section.

**7 General > Information:** See section 2.7.

**8 General > Network Settings:** See section 2.8.

**9 General > Input Selection:** See section 2.9.

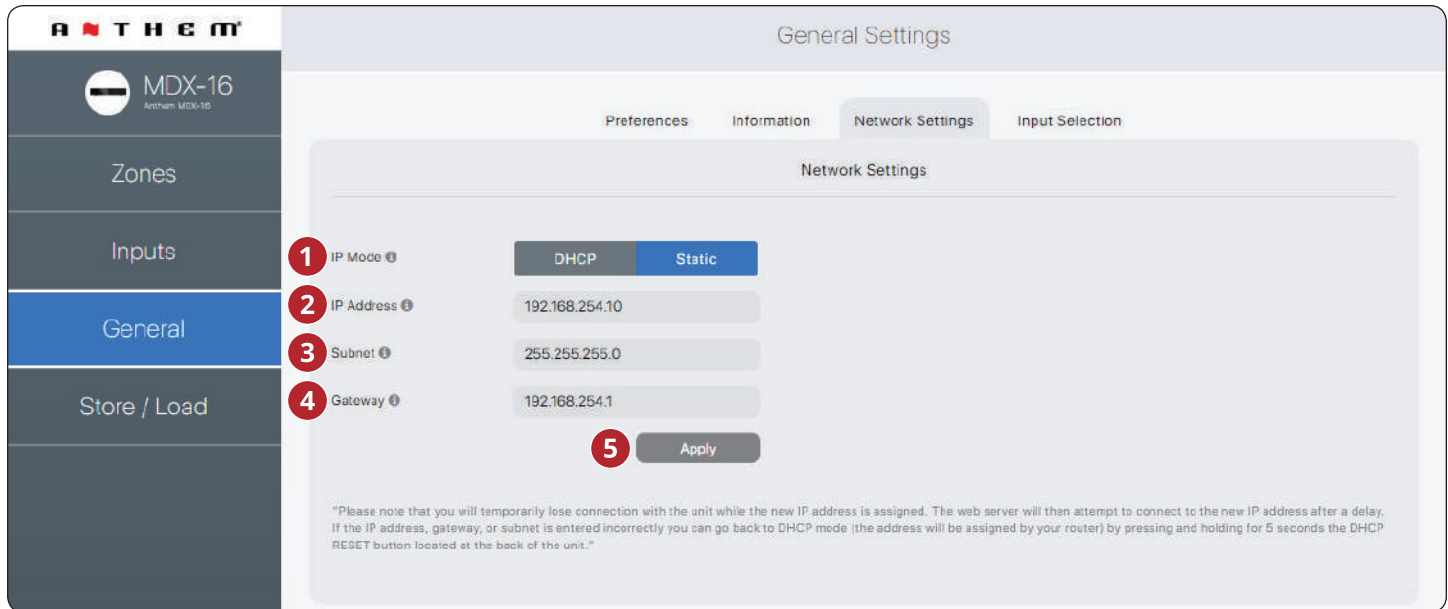
## 2.7 GENERAL: INFORMATION



- 1 Model Name:** Displays the MDX model.
- 2 Device Name:** Assign a name to the MDX (up to 16 characters) and click Apply to save this setting. The name of the MDX appears in ARC allowing easy identification. Note that the last few characters of the unit's name correspond to the end of the MAC address printed at the back of the unit.
- 3 Firmware Version:** Displays the current firmware version of the MDX. When connecting to the MDX's web interface, if there is an active internet connection, the MDX checks our server and displays a notification at the bottom of the screen if an update is available.
- 4 MAC Address:** Displays the unique MAC address of the MDX, which can be used to set a DHCP reservation in your router.
- 5 Serial Number:** Displays the unique serial number of the MDX.



## 2.8 GENERAL: NETWORK SETTINGS

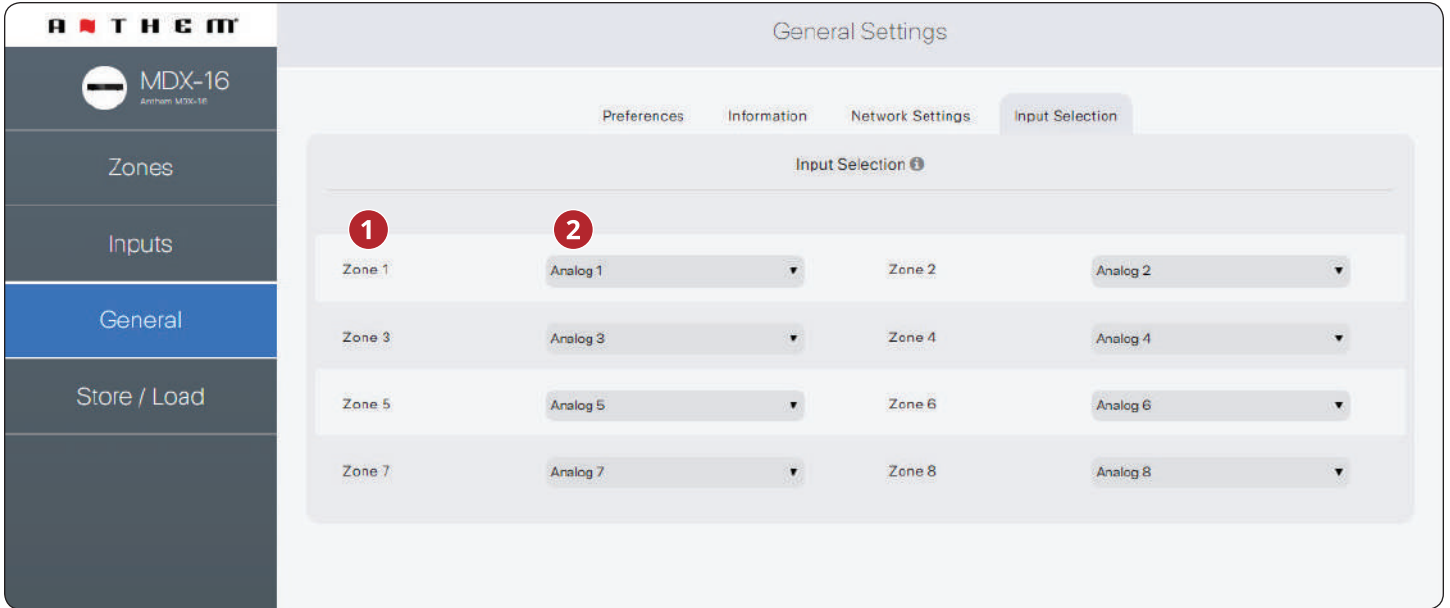


- 1 IP Mode:** Toggles the MDX between DHCP and Static network assignments. Changes take effect after clicking Apply. If errors occur when adjusting static IP settings, the MDX can be manually set back to DHCP using the DHCP Reset / Factory Image button located on the MDX's back panel (refer to troubleshooting).
- 2 IP Address:** Displays the MDX's current IP address. Adjustable if Static is selected. Changes take effect after clicking Apply. Set new values for IP Address, Subnet, and Gateway before clicking Apply.
- 3 Subnet:** Displays the MDX's current subnet mask. Adjustable if Static is selected. Changes take effect after clicking

Apply. Set new values for IP Address, Subnet, and Gateway before clicking Apply.

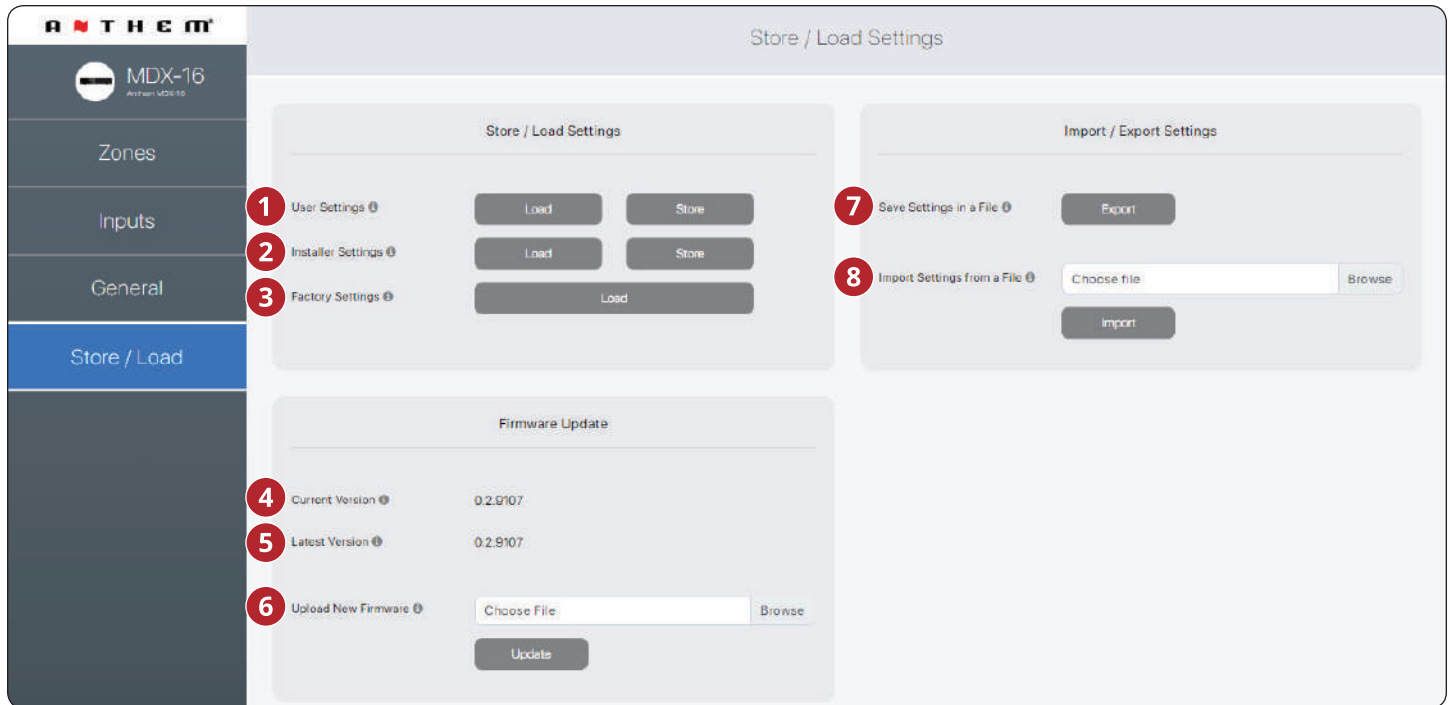
- 4 Gateway:** Displays the MDX's current gateway address. Adjustable if Static is selected. Changes take effect after clicking Apply. Set new values for IP Address, Subnet, and Gateway before clicking Apply.
- 5 Apply:** Save the new network settings (if they have changed). After clicking Apply, the MDX restarts a connection with the server and the web browser should automatically attempt to reconnect to the new address.

## 2.9 GENERAL: INPUT STATUS



- 1 Displays the name assigned to each zone.
- 2 Displays the input playing in the zone and allows you to reassign inputs. This control can be used to confirm that the unit is appropriately responding to commands from a 3rd party automation system, or as an easy way to control which inputs are playing in which zones.

## 2.10 STORE/LOAD SETTINGS



- 1 User Settings:** Allows you to store the current settings to the User Settings and load them back. The User Settings are stored locally on the MDX and don't require an external file.
- 2 Installer Settings:** Allows you to store the current settings to the Installer Settings and load them back. The Installer Settings are stored locally on the MDX and don't require an external file.
- 3 Factory Settings:** Resets the current settings to the factory defaults. The saved user and installer settings remain intact. It also erases ARC corrections (and turns ARC off) in all zones. Loading the factory settings does not revert the MDX firmware to the factory image. To revert the MDX to the factory version of the firmware you need to use the DHCP Reset / Factory Image reset button located on the MDX's back panel (refer section 7, Troubleshooting).
- 4 Current Version:** Displays the current firmware version.
- 5 Latest Version:** Displays the latest available firmware version. If there is an active internet connection, the MDX checks our servers and display a notification at the bottom of the screen if an update is available.
- 6 Upload New Firmware:** If the MDX does not have Internet access, you can download the latest firmware from our support page at [AnthemAV.com](http://AnthemAV.com). Click on Browse and select the file from your computer and then click on Update to start the upgrade process.
- 7 Save Settings in a File:** Saves a backup of the MDX's current settings on your computer, allowing you to copy settings across MDX's for a faster install, or if service is necessary.
- 8 Import Settings from a File:** Allows you to load previously saved settings from an external file.

# 3. CONNECTIONS AND BACK PANEL CONTROLS

## 3.1 LOCAL AREA NETWORK CONNECTION

A network connection is required to access the configuration interface, run Anthem Room Correction, and use IP control. Connect to your router using an Ethernet (CAT5) cable.

## 3.2 SPEAKER CONNECTIONS



Depending on the level of the input signal, the voltage at the outputs can be high enough to cause electric shock – be sure that power is off when connecting or disconnecting anything. As well, be sure to use speakers rated for use with this MDX – an overdriven speaker can pose a fire hazard.

MDXs offer several options for connecting speakers and passive subwoofers:

- Stereo speakers hooked to a single zone.
- For more power, a zone can be bridged to drive a single speaker in either mono or stereo mode. Bridge mode uses the left and right output to drive a single speaker. Mono

bridge mode uses a single zone whereas stereo bridge uses two consecutive zones to drive a stereo pair.

- Bridge a zone to power a passive subwoofer to complement a stereo pair.

When stereo bridge is enabled, you must always use two consecutive zones (zones 1/2, 3/4, 5/6, or 7/ 8).

It is possible to mix-and-match zone configurations within a single MDX. For example:

- **Zone 1 (Kitchen):** left & right speakers
- **Zone 2 (Bathroom):** left & right speakers
- **Zones 3/4 (Den):** left & right speakers bridged for more power in stereo mode
- **Zone 5/6 (Living Room):** left & right speakers with a passive subwoofer (connected to Zone 6)
- **Zone 7 (Hallway):** left & right speakers bridged for more power in mono mode
- **Zone 8 (Bedroom):** left & right speakers with a powered subwoofer (connected via Zone 8 Sub Out RCA)

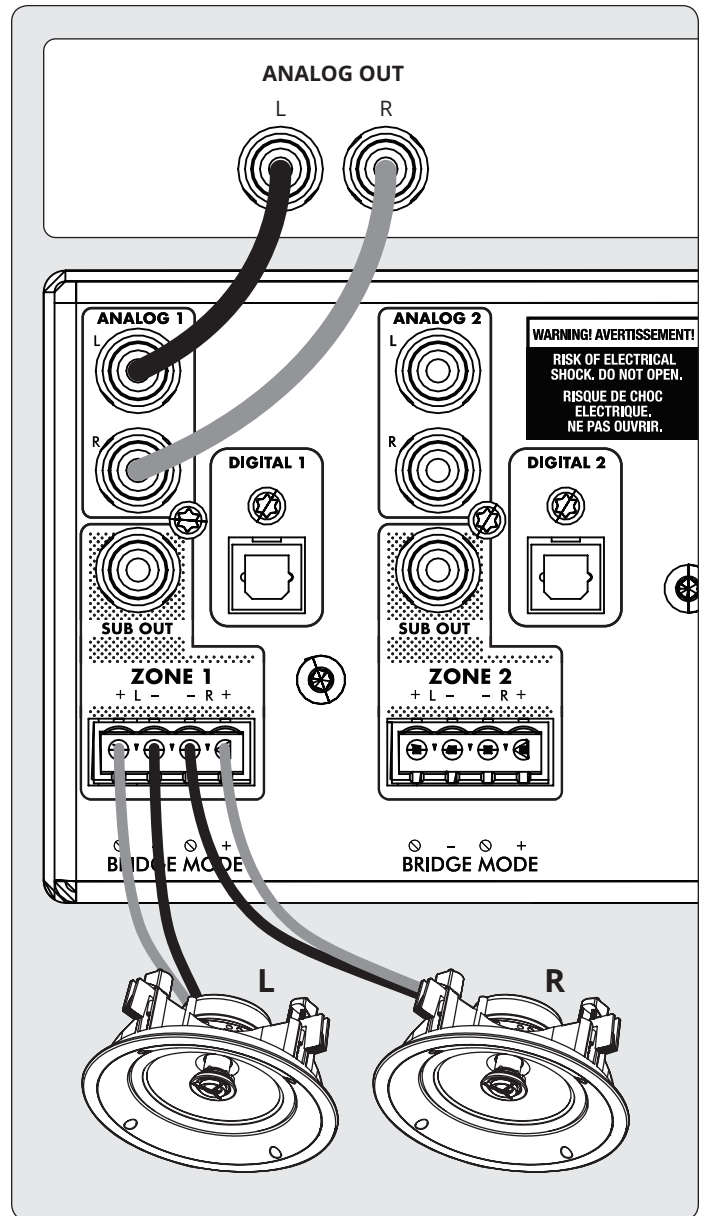
MDX-16	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
<b>Stereo Speakers</b>	Left & Right	Left & Right	Left & Right	Left & Right	Left & Right	Left & Right	Left & Right	Left & Right
<b>Mono Speaker Using Mono Bridged Zone</b>	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)
<b>Stereo Speakers Using Two Bridged Zones</b>	Left (on zone 1) Right (on zone 2) <i>[controlled via zone 1]</i>		Left (on zone 3) Right (on zone 4) <i>[controlled via zone 3]</i>		Left (on zone 5) Right (on zone 6) <i>[controlled via zone 5]</i>		Left (on zone 7) Right (on zone 8) <i>[controlled via zone 7]</i>	
<b>Stereo Speakers and Passive Subwoofer Using a Bridged Zone</b>	Left & Right (on zone 1) Passive Sub (on zone 2) <i>[controlled via zone 1]</i>		Left & Right (on zone 3) Passive Sub (on zone 4) <i>[controlled via zone 3]</i>		Left & Right (on zone 5) Passive Sub (on zone 6) <i>[controlled via zone 5]</i>		Left & Right (on zone 7) Passive Sub (on zone 8) <i>[controlled via zone 7]</i>	

MDX-8	Zone 1	Zone 2	Zone 3	Zone 4
<b>Stereo Speakers</b>	Left & Right	Left & Right	Left & Right	Left & Right
<b>Mono Speaker Using Mono Bridged Zone</b>	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)	Mono (Left + Right)
<b>Stereo Speakers Using Two Bridged Zones</b>	Left (on zone 1) Right (on zone 2) <i>[controlled via zone 1]</i>		Left (on zone 3) Right (on zone 4) <i>[controlled via zone 3]</i>	
<b>Stereo Speakers and Passive Subwoofer Using a Bridged Zone</b>	Left & Right (on zone 1) Passive Sub (on zone 2) <i>[controlled via zone 1]</i>		Left & Right (on zone 3) Passive Sub (on zone 4) <i>[controlled via zone 3]</i>	

### 3.3 CONNECTING STEREO SPEAKERS

Connect a pair of speakers to a zone using a Euroblock (also known as a Phoenix™) connector. These connectors are included with the MDX and come preinstalled. Euroblock connectors accept speaker wire up to 12 gauge. Use speakers as low as 4 Ohms in this configuration.

1. Remove the zone's Euroblock connector from the MDX by gently pulling it until it releases.
2. Use a small slotted screwdriver to loosen and tighten each contact on the Euroblock when inserting the speaker wire.
3. Connect the red (+) connection on the left speaker to the positive (L+) contact on the Euroblock connector as indicated by the printing located on the MDX (**above** the connector) or on the connector itself.
4. Connect the black (-) connection on the left speaker to the negative (L-) contact on the Euroblock connector as indicated by the printing located on the MDX (**above** the connector) or on the connector itself.
5. Repeat for the right channel.
6. After attaching speaker wires to the Euroblock connector, insert it into the MDX by gently pressing it into place.



### 3.4 CONNECTING MONO SPEAKERS USING ONE BRIDGED ZONE

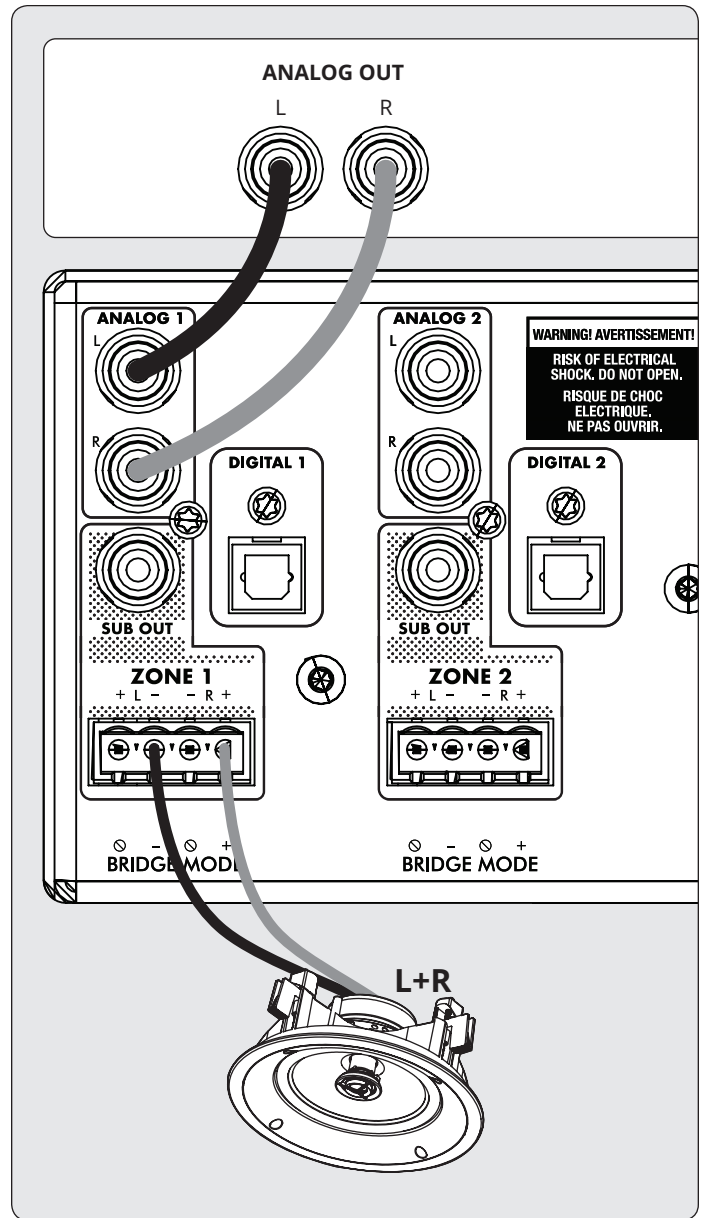
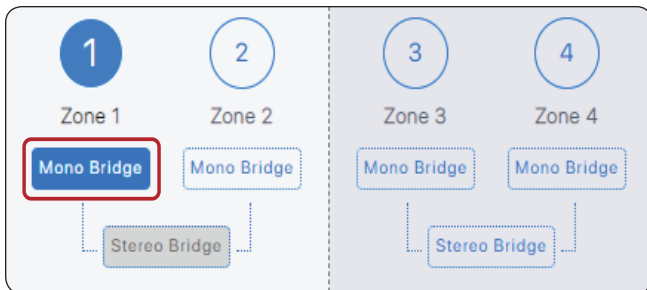
A zone set to mono mode can be used to drive a single speaker, allowing the MDX to deliver more power per channel. Enabling mono bridge sets the listening mode to mono automatically. Bridge mode only supports speakers rated for 8 Ohms or higher. Any zone set to Mono Bridge can use an active sub connected via the zone's Sub Out. An odd-numbered zone set to Mono Bridge can use the matching even-numbered zone to power a passive subwoofer using the Powered by Zone 2 (4, 6, or 8) setting.

#### Speaker Connection:

1. Remove the Euroblock connector by gently pulling it until it releases.
2. Use a small slotted screwdriver to loosen and tighten each contact on the Euroblock when inserting the speaker wire.
3. Connect the red (+) connection of the speaker to the positive (R+) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
4. Connect the black (-) connection of the speaker to the negative (L-) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).

#### Enabling Bridge Mode:

1. Enable bridge mode via the web interface by going to Zones and selecting Mono Bridge in the desired zone. The Listening Mode is set automatically set to Mono.



## 3.5 CONNECTING STEREO SPEAKERS USING TWO BRIDGED ZONES

Using two zones to drive a single stereo pair of speakers allows the MDX to deliver more power per channel. When bridging, two consecutive zones are used to drive the stereo pair (Zones 1 and 2, 3 and 4, 5 and 6, or 7 and 8). Bridge mode only supports speakers rated for 8 Ohms or higher. The only option to use a subwoofer in this configuration is the use of an active sub connected via Sub Out, and the MDX will no longer respond to IP or RS232 commands for the even-numbered zone.

### Left Speaker Connection:

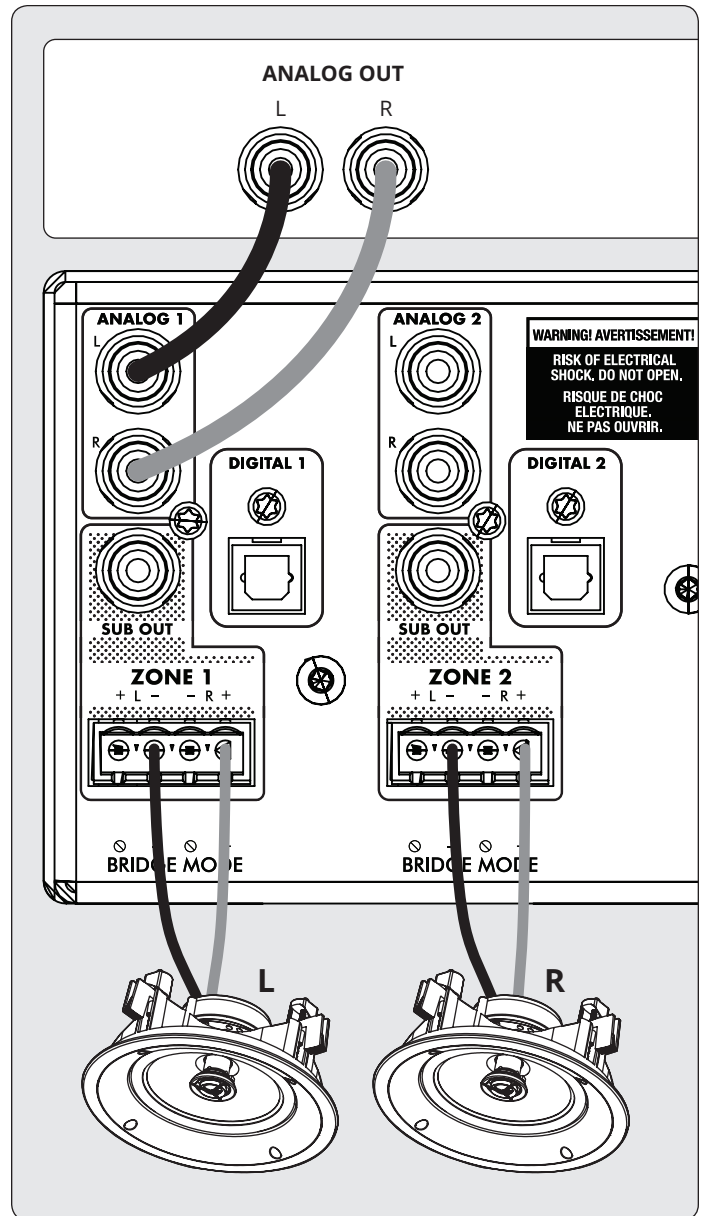
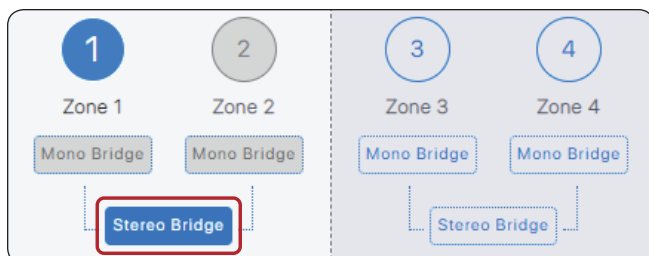
1. Remove the Euroblock connector from the odd-numbered zone by gently pulling it until it releases. The left speaker connects the odd zone.
2. Use a small slotted screwdriver to loosen and tighten each contact on the Euroblock when inserting the speaker wire.
3. Connect the red (+) connection of the left speaker to the positive (R+) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
4. Connect the black (-) connection of the left speaker to the negative (L-) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
5. After attaching speaker wires to the Euroblock connector, insert it into the MDX by gently pressing it into place.

### Right Speaker Connection:

1. Repeat for the right speaker by making a similar connection on the next even zone (for example, if you just attached the left channel to zone 1, connect the right speaker to zone 2).
2. Connect the red (+) connection of the right speaker to the positive (R+) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
3. Connect the black (-) connection of the right speaker to the negative (L-) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
4. After attaching speaker wires to the Euroblock connector, insert it into the MDX by gently pressing it into place.

### Enabling Bridge Mode:

1. Enable bridge mode via the web interface by going to Zones and selecting Stereo Bridge in the desired zone. Controls for the even-numbered zone become unavailable, and the odd-numbered zone now controls settings for both speakers.

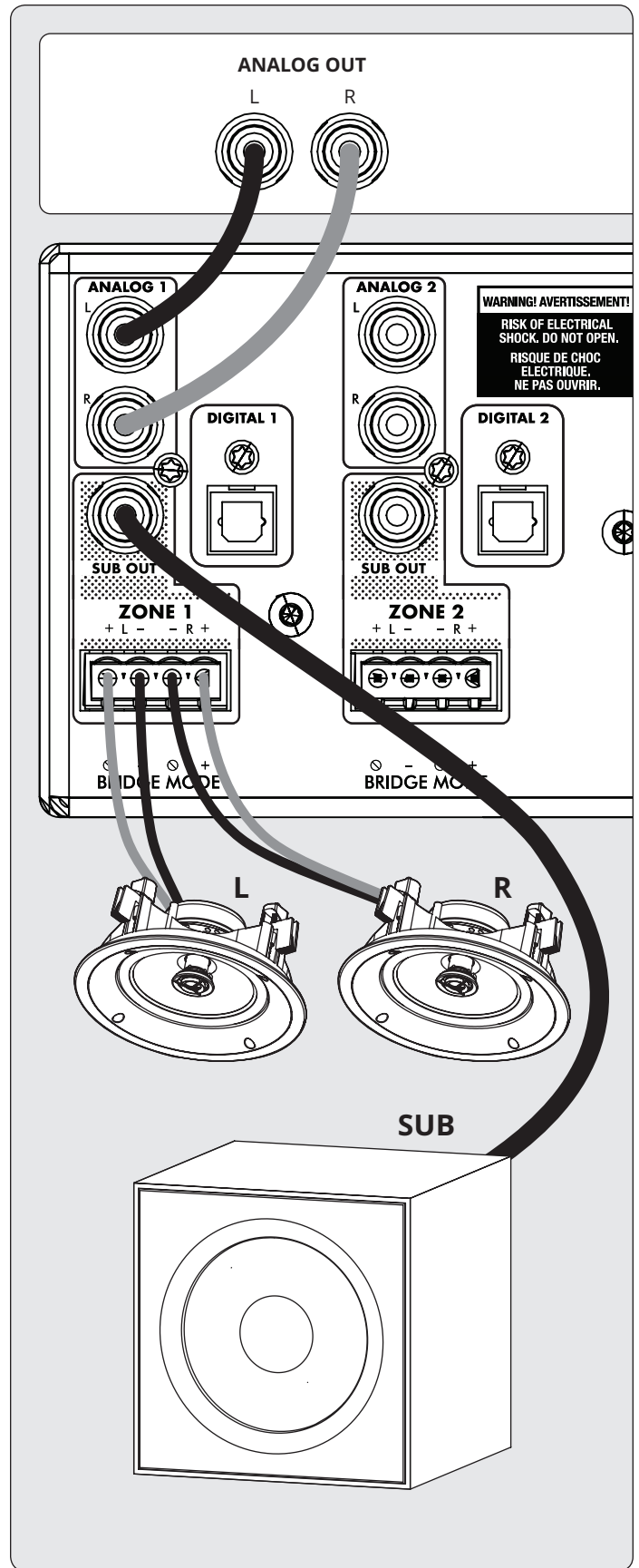
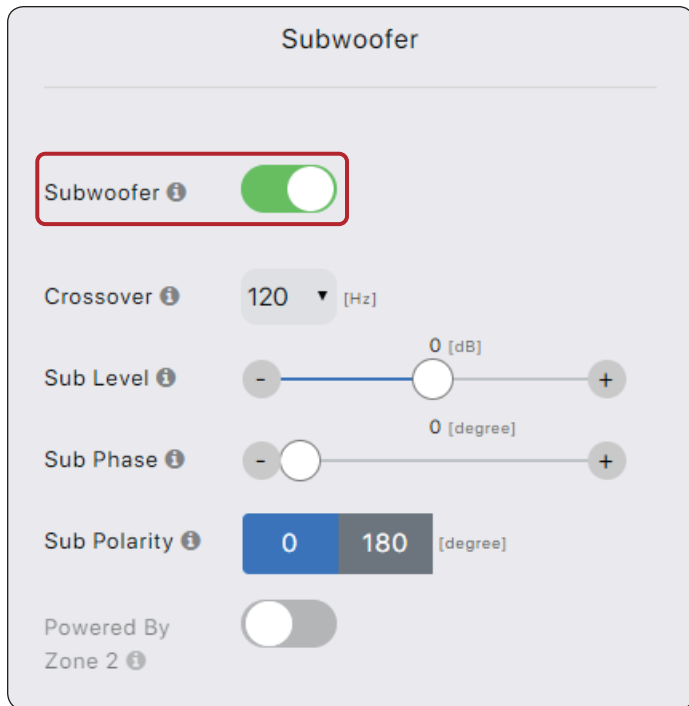




### 3.6 SUBWOOFER OUTPUTS

If you're using this MDX to power a passive (non-powered) subwoofer refer to the next section. To connect a powered subwoofer, use an RCA cable, connect a zone's Sub Out to a powered subwoofer LFE input, and enable the subwoofer using Zones > Subwoofer. If the powered subwoofer doesn't have an LFE input, connect to either the left or right input and set the sub's low-pass filter (commonly referred to as crossover) to its highest or bypass setting. Please refer to your subwoofer's manual for specific connection and control setting instructions.

This control also enables the high pass filter on the left and right outputs. If you are not using ARC and do not have a subwoofer connected, you can enable this control and set the crossover frequency. This will avoid overloading speakers that don't support a full-range signal.



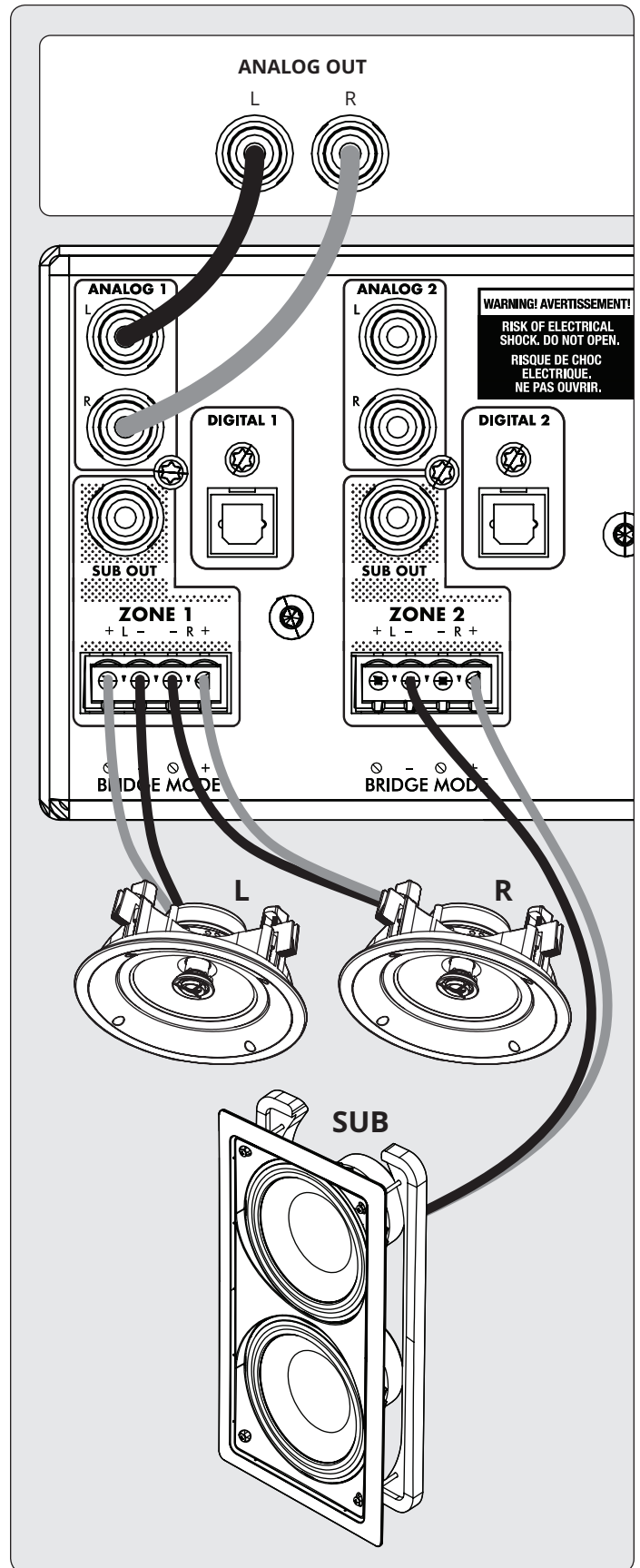
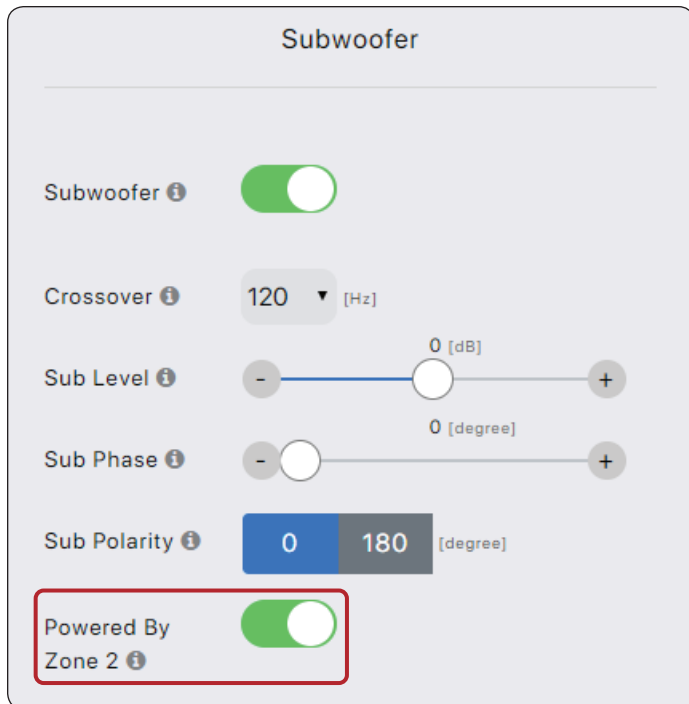


### 3.7 CONNECTING A PASSIVE (NON-POWERED) SUBWOOFER USING A BRIDGED ZONE

If using a passive (non-powered) subwoofer, an even-numbered zone can be configured to power the sub. This mode only supports subwoofers rated at 8 Ohms or higher. The even-numbered zone is bridged to provide more power. For example, in Zone 1 connect the left/right speakers using the stereo pair configuration and in Zone 2 connect the passive subwoofer by following these instructions:

1. Remove the zone's Euroblock connector from an even zone of the MDX by gently pulling it until it releases.
2. Use a small slotted screwdriver to loosen and tighten each contact on the Euroblock when inserting the speaker wire.
3. Connect the red (+) connection of the subwoofer to the positive (R+) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
4. Connect the black (-) connection of the subwoofer to the negative (L-) contact on the Euroblock connector as indicated by the printing located on the MDX (**below** the connector).
5. After attaching subwoofer wires to the Euroblock connector, insert it into the MDX by gently pressing it into place.

Using the web interface enable the subwoofer bridge mode in the Zones > Subwoofer menu and then enable Powered by Zone 2 (4, 6, or 8). Note that the even zone parameters become unavailable when this mode is enabled. The odd zone screen determines the input source, level, crossover, phase, and polarity.



## 3.8 DIGITAL INPUTS

Stereo digital audio sources can be connected using coaxial or optical cables. The MDX-16 has two digital optical inputs, and two digital coaxial inputs and the MDX-8 has one digital optical input. All of these inputs support the PCM stereo format (up to 24-bit / 192kHz). If using sources that have an option for selecting between PCM and Bitstream (or Dolby Digital) audio output, select PCM. If the source outputs a non-PCM stream (such as a Dolby or DTS stream), the audio will mute.

## 3.9 DIGITAL OUTPUT (MDX-16 ONLY)

The digital optical output on the MDX-16 provides a repeat function to feed an additional MDX (or any other component that accepts digital optical input). This output supports up to 24-bit/192kHz and can be configured to output any of the MDX's digital inputs (including digital coaxial). Select any of the digital inputs via the web interface by clicking on Digital Out Source in the General > Preferences screen and selecting the appropriate digital input.

## 3.10 ANALOG INPUTS

Connect stereo analog sources using RCA cables. The MDX-16 has eight stereo RCA line inputs. The MDX-8 has four stereo RCA line inputs.

## 3.11 ANALOG OUTPUTS (MDX-16 ONLY)

The MDX-16 has two stereo analog RCA line outputs. Any audio source connected to the Analog 6 input passes unaltered to the Analog 6 Out. Any audio source connected to the Analog 7 input passes unaltered to the Analog 7 Out. These act as "pass-throughs" and work even when the MDX is in standby or powered off.

## 3.12 POWER

Insert a power cord into the MDX's AC input. Plug the cord into a wall outlet. Ensure that the AC supply matches the voltage rating shown on the back of the MDX. The 230V models support voltages from 220V to 240V.

## 3.13 TRIGGER CONNECTIONS

The trigger connection allows the MDX to be turned on or off via the trigger input. When either Trig In 3.5mm (1/8") mini-jack receives power (5–24 volts DC or AC) from an upstream component, the MDX turns on (Auto-On delay applies). When it stops receiving power, the MDX turns off immediately. The second Trig In jack allows you to run a cable out to daisy-chain and trigger additional MDXs. For this function to work the On Mode switch must be set to Trig. Please note, do not connect triggers from two upstream components at the same time. Always use one as an input and one as an output.

The trigger also works with the On Mode switch set to Auto. See section 3.15 for additional details.

## 3.14 RS-232 CONNECTION

The RS-232 connection allows connection to a compatible control system. The control system should be configured to use 115200/8-N-1, no flow control, protocol. The cable connection should be one to one.

## 3.15 ON MODE SWITCH

With the three-way switch located on the back panel, you set the way the MDX turns on and off.

- **Trig:** This sets the MDX to turn on and off when it receives a signal on its Trig In connection. See section 3.13 for additional details.
- **Auto:** This sets the MDX to turn on when it detects an incoming signal on any of its digital or analog audio inputs. When the MDX stops detecting all incoming audio signals, it enters standby mode after approximately 20 minutes (by default). Off and on times can be adjusted via the web interface. Go to General > Preferences > Auto-Off Delay and Auto-On delay. The trigger input also works in this mode. The MDX will turn on when a signal is applied to Trig In, even if no audio signal is detected. The unit will enter standby mode after the Auto-Off delay once the trig signal is removed and no audio signal is detected.
- **Ext Cmd:** This sets the MDX to ONLY turn on and off when it receives commands from an IP or RS-232 control system.

Note that commands can be sent in any mode of operation. For example, the volume may be changed whether the switch is set to Auto or Trig. You will not be able to turn on a zone using a command if in Trig mode and the trigger input is de-asserted, but a turn on command will work if the On Mode switch is set in Auto mode.

## 3.16 MASTER POWER SWITCH

This switch is wired directly to the AC mains and turns on and off all power going to the MDX.

## 3.17 DHCP OR FACTORY IMAGE RESET

This reset button allows you to manually reset the MDX's network connection DHCP settings or restore the MDX to the original factory image. See section 7 for additional details.

## 3.18 ID INDICATOR

When multiple MDXs are in a rack, you can quickly identify each MDX by making use of the ID indicator. Use a web browser to connect to the control interface of the first MDX and enable Unit ID under General > Preferences. The ID light on the

back panel flashes as will the Power indicator on the front of the MDX. You can also match the MAC Address shown under General > Information with the unique MAC Address printed on the back of each MDX.

### **3.19 ARC MICRO-USB CONNECTION**

If a local area network connection is not available the Anthem Room Correction (ARC) software can still connect to the unit by making use of this micro-USB connector. Connect a USB type A to micro B cable between the MDX and your PC or Mac.

### **3.20 CHASSIS GROUND**

The MDX is powered using a double-insulated power cord and therefore does not have an earth ground connection to avoid hum. If an earth ground connection is required, or if connecting to another chassis ground, you can connect a wire using the thumbscrew.

### **3.21 FUSE**

To replace the fuse, first set the Master Power switch to Off and disconnect the power cord, Using a small slotted screwdriver, remove the fuse cap and replace the fuse with a matching type and rating as shown at the back of the unit.

## 4. ANTHEM ROOM CORRECTION (ARC®)

Please visit [AnthemARC.com](http://AnthemARC.com) for detailed information about using Anthem Room Correction.

The most significant detriment to the sound of an audio system is almost always the room it resides within—especially true in the realm of bass. Even in a professionally treated sound room, bass can quickly become boomy or anemic. Anthem Room Correction helps audio systems sound their best in any space. ARC offers a robust suite of tools to tame your wild sonic frontier, whether you have a tricked-out home theater, a traditional living room with carpet and thick drapes, or a modern floor plan with large open spaces and acoustically reflective furniture and windows.

Have you ever tested the acoustics in an empty room by whistling or clapping? It brings to mind how sound is affected by a room's size, structure, and contents. Even when using optimally positioned speakers of exceptional quality, the room negatively impacts sound quality considerably. Surfaces such as windows and furnishings and the geometry of the walls, floor, and ceiling add unwanted resonance and coloration, making the bass either boomy or less punchy, voices less natural, and the dialogue less intelligible. The effect on frequency response is typically  $\pm 6$  dB in the midrange and  $\pm 10$  dB at low frequencies.

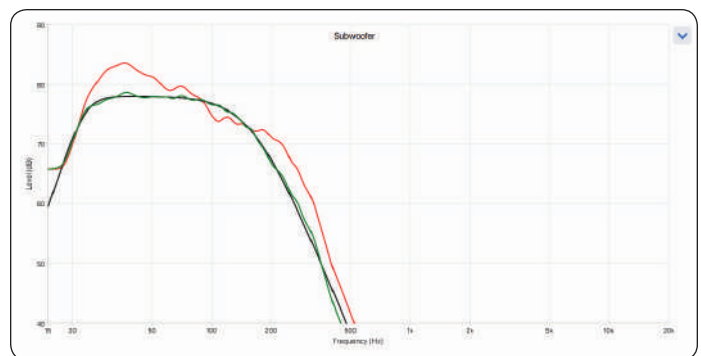
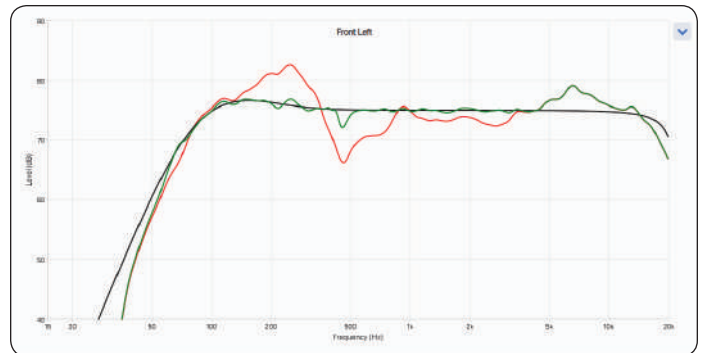
To compensate for this and to optimize the in-room response of your speakers, Anthem Room Correction measures the output of each speaker relative to the listening area then, through a series of calculations, adjusts its output. Not only does ARC correct peaks and dips in a speaker's frequency response, but it also preserves the beneficial acoustic attributes of a room—attributes based on proven psychoacoustic science (the study of how humans hear and experience sound).

In the sample curves provided here, the red curves represent the in-room response before correction, as an average from five measurement positions, whereas the green ones show response with equalization applied. The black curve represents the target response. In this case, a subwoofer and bass management are also in use.

The default correction range, as shown below, is 5,000 Hz. This range can be changed to a higher or lower frequency if desired, although raising it is not recommended. At higher frequencies, the microphone becomes directional, thus affecting measurement accuracy.

Note the rise in the measured and corrected response below 200 Hz. This rise shows the amount of room gain. ARC preserves the natural room gain of the room or allows you to adjust the amount of room gain if you wish.

The subwoofer graph may imply that the subwoofer plays up to the highest frequency shown, but what it plays depends on what the other channels send to it as determined by their crossover setting. The subwoofer graph shows the available correction range, which is not necessarily the range that other channels send to it through bass management.



## 4.1 USING ARC WITH AN MDX

**In addition to correcting the acoustic response of subs and speakers in each zone, ARC also:**

- Adjusts the left/right balance of the speakers.
- Sets the crossover point between the speakers and subwoofer (do not manually change this after running ARC).
- Adjust the subwoofer's level relative to the speakers.
- Sets the phase and polarity of the subwoofer relative to the speakers (requires the additional step of running the Automatic Phase Adjustment tool after uploading corrections to the MDX).

**Before using Anthem Room Correction:**

- Name the MDX.
- Set up and name the zones.
- Enable subwoofers (if applicable).

**To use Anthem Room Correction:**

1. Download and install the program from [AnthemARC.com](http://AnthemARC.com).
2. Start the program and select Launch ARC from the first screen.
3. Select the MDX from the device discovery screen.
4. Select the zone you wish to measure from the drop-down list.
5. Follow the on-screen instructions to measure the zone, calculate correction curves, and upload them to the MDX.
6. After uploading the corrections, run the Automatic Phase Adjustment tool from the Review Summary & Upload screen. This tool sets the phase of a subwoofer to optimize its integration with the speakers.

# 5. UPDATING FIRMWARE

When connecting to the MDX's web interface, the MDX checks our server (if there is an active internet connection) and, if an update is available, displays a notification at the bottom of the screen. Alternatively, an update file can be downloaded from our web site and installed later.

## 5.1 UPDATING FIRMWARE (USING AN INTERNET CONNECTION)

1. Using a web browser on your computer, access the MDX's user interface.
2. The MDX automatically checks to see if there is a new firmware version available and, if found, displays a prompt. Click on Update Now to start the download and installation process.

## 5.2 UPDATING FIRMWARE (WITHOUT AN INTERNET CONNECTION)

1. On [AnthemAV.com](http://AnthemAV.com), locate the software for your model. Proceed if the version number on your MDX is lower than the version shown on the website.
2. Save the .zip file to your desktop.
3. When the .zip file download completes, extract it to your desktop.
4. Connect your computer and the MDX to a router.
5. Using a web browser on your computer, access the MDX's user interface, and navigate to Store / Load > Firmware Update > Upload New Firmware.
6. Click Browse and select the file from your computer.
7. Click Update.

# 6. FAULT MODES

## 6.1 FRONT PANEL POWER LED

Power LED	Status or Fault
Blue	On
Red	Network Standby
Off	Standby (no LAN connection) or no AC power
Red (flashing)	Power on error (see section 6.3)

## 6.2 FRONT PANEL LAN LED

LAN LED	Speed or Fault
Blue	100M
Red	10M
Off	No LAN connection

## 6.3 FRONT PANEL ZONE LEDs

Power LED	Top Zone LED	Bottom Zone LED	Status or Fault
Blue	Blue	Off	MDX enabled, no music detected.
		Blue	Normal operation: MDX enabled, music playing.
	Blue flashing	Blue	<b>Zone over temp.</b> The module for a zone pair has exceeded a critical point, and the zone pair is turned off to protect the module. After sufficient cooling time (typically a few minutes) it will automatically resume normal operation if the system is set to Auto or Trig mode. In Ext Cmd mode, a command is required to turn it back on.
		Red flashing	<b>Zone overcurrent</b> has been detected, either due to a low impedance speaker or a faulty speaker. The affected zone will continue to flash its LEDs for at least 10 seconds. Normal operation will resume automatically if the overload is removed.
Red	Red flashing	Blue flashing	<b>Zone thermal foldback.</b> The MDX's die (chip) temperature is approaching a critical point. The affected zone will continue to flash its LEDs for at least 10 seconds. If this state is allowed to persist, the MDX will continue to operate but automatically reduces the output level on that zone to protect itself.
		Red flashing	<b>High-frequency detect.</b> The MDX detected an abnormal high-frequency signal on one of the speaker terminals and shut down that zone to avoid damaging tweeters. The zone at fault will continue flashing its LED's red. To clear this fault condition, cycle the power by turning off AC power. Wait 1 minute before turning the MDX back on or until the front or rear LAN jack LEDs go off. If the fault condition returns after a power cycle, the MDX requires service.
Red flashing	Off	Off	<b>PSU under voltage.</b> This fault can be caused by: <ul style="list-style-type: none"> <li>Inadequate AC line voltage</li> <li>Excessive power drawn by the combined zone outputs</li> <li>Failure of the PSU to reach operating voltage at power-up</li> </ul> For the first two cases, normal operation resumes automatically in Auto and Trig mode, or by issuing a command when in Ext Cmd mode. In the third case, an AC power re-cycle is required.
	Blue flashing	Blue flashing	<b>Power supply over temp.</b> Total combined power output is excessive for the power supply. All zones are immediately turned off, and all their LEDs will be flashing blue for a short period while the fan runs at high speed. Then the system will power down and enter network standby. If in Auto or Trig mode, the system will automatically resume operation once it has cooled sufficiently (normally several minutes). If in Ext Cmd mode a command is required to turn back on the unit.
	Blue flashing: All zones	Red flashing: All zones	<b>Software error.</b> If there is an unrecoverable software error, all the LEDs on the top row will flash blue, and all the bottom row will flash red. It can only be cleared by cycling power. Please note, when power cycling, turn the unit off for a minute before turning it back on or until the front or rear LAN jack LEDs go off to make sure that all capacitors have discharged.
	Red flashing: All zones	Red flashing: All zones	<b>PSU over voltage</b> is detected. An AC power cycle is required to restart the system. Wait 1 minute before turning the MDX back on or until the front or rear LAN jack LEDs go off. If the fault condition returns after a power cycle, the MDX requires service.
	Red flashing: Zone pair	Red flashing: Zone pair	<b>DC Fault.</b> The MDX detected an abnormal DC offset on one of the speaker terminals. The entire system shuts down automatically to protect the speakers; the Zone at fault (and its twin) will continue flashing its LED's red. To clear this fault condition, cycle the power by turning off AC power. Wait 1 minute before turning the MDX back on or until the front or rear LAN jack LEDs go off. If the fault condition returns after a power cycle, the MDX requires service.
Red flashing: During power-up	See text	See text	<b>Initialization error</b> has occurred when the unit powered up. The Power LED will flash red and the front or rear LAN LED will flash blue. The top and bottom LEDs for one of the zones will be flashing red to report the fault: <ul style="list-style-type: none"> <li><b>Zone 1 (both flashing red):</b> DSP failure</li> <li><b>Zone 2 (both flashing red):</b> ADC failure</li> <li><b>Zone 3 (both flashing red):</b> SPDIF receiver failure</li> <li><b>Zone 4 (both flashing red):</b> DAC failure</li> </ul> To clear this fault condition, cycle the power by turning off AC power. Wait 1 minute before turning the MDX back on or until the front or rear LAN jack LEDs go off. If the fault condition returns after a power cycle, the MDX requires service.

# 7. TROUBLESHOOTING

## **Manually Resetting Network IP Mode to DHCP**

If errors occur when adjusting static IP settings, the MDX can be manually set back to DHCP. Using a pin or straightened paperclip, depress the DHCP Reset / Factory Image button for about 1 second. The blue ID LED turns on to indicate the selection of DHCP. It should take a few seconds for the server to reassign an address.

## **Manually Loading the Factory Image**

This function restores the MDX to its original factory image. Any firmware updates you have done are lost and replaced by the version programmed at the factory. The current settings, the saved user settings, and the saved installer settings are

deleted and replaced by the factory default. ARC corrections are also erased from local memory.

To reload the original factory image and remove all settings, set the Master Power switch to Off and wait until the lights above the Network connection stop flashing (this may take over a minute if the unit was in standby). Using a pin or straightened paper clip depress and hold the DHCP Reset / Factory Image button while turning On the Master Power switch. Continue to depress the button until the blue ID LED flashes twice. The Factory Image reloads (this takes about a minute). Front panel indicators turn blue and red using a chasing pattern while the reload is taking place.



# 8. FREQUENTLY ASKED QUESTIONS

## **How do I find the IP address of my MDX?**

We recommend using Anthem's ARC Genesis software or using a utility called Fing. See section 2.2 for additional details.

## **I'm connecting my DVD player to the MDX using a TOS input, but even if the disc is playing, I do not hear any sound.**

The MDX digital input only supports a PCM stream. Access your DVD player setup menu and change the output format to PCM.

## **I have a subwoofer connected to the MDX using an RCA jack, but even if I'm playing music with lots of low-frequency content, the subwoofer does not work.**

Enable the subwoofer (the default setting is off). See section 2.4 for additional information.

## **I'm sending commands to the MDX using the serial port, but the MDX does not react.**

Make sure to configure your controller to 115200/8-N-1. Make sure to send the terminator ";" at the end of the command. CR/LF are not required.

## **I'm configuring a pair of speakers in stereo bridge mode on zones 1 and 2. I have my left speaker on zone 1 and my right speaker on zone 2. My source's left channel is attached to the Analog 1 left input and its right channel connected to the Analog 2 right input. I only hear sound from the left channel. What am I doing wrong?**

Inputs and speakers (even bridged speakers) operate independently of one another. Attach your source's left and right

channels to the Analog 1 inputs and set Zone 1's Input Source to Analog 1. When in bridge mode, Zone 1 becomes the "master," so source selection, volume change, tone control, are all done by accessing the Zone 1 panel. All settings in Zone 2 set before selecting Stereo Bridge mode are no longer relevant.

## **My CD player analog output level cannot be controlled and defaults to a very high level (2 Vrms). When playing music, the MDX seems to be clipping very often. How can this be avoided?**

The MDX allows you to change the trim of any source. Select the Inputs pane and set the trim level between -6 dB to -9 dB for the source where your CD player is connected.

## **How does the MDX work when the On Mode switch is set to Auto?**

When the MDX is in standby, it monitors all analog and digital connectors to check if the unit needs to turn on:

- Analog connectors are monitored for a signal higher than -60 dBV (1 mVrms).
- Digital connectors are monitored by checking if there is any bit toggling on the coaxial or Toslink inputs. The MDX doesn't check for a specific level to achieve <math>1/2W</math> in standby, only activity.

When in operation, the active channels are monitored. When the level drops below -60 dBV (for either analog or digital inputs) for the amount of time programmed in the Auto-Off delay, the zone turns off. If all zones are off, the unit will go in standby.

# 9. SPECIFICATIONS

	MDX-8	MDX-16
Warranty	3 years (parts and labor)	3 years (parts and labor)
Channels / Zones	8 channels / Up to 4 zones	16 channels / Up to 8 zones
Power Output RMS per Channel (8 Ohm)	60 Watts	60 Watts
Power Output RMS per Channel (4 Ohm)	120 Watts	120 Watts
High Output Mode (Bridged) RMS per Channel (8 Ohm)	200 Watts	200 Watts
Frequency Response	10Hz – 20kHz ±0.5dB	10Hz – 20kHz ±0.5dB
THD + N (1 kHz at 50W into 8 Ohms/100W into 4 Ohms)	<0.4% / <0.4%	<0.4% / <0.4%
Digital-to-Analog Converter	PCM up to 24-bit/192kHz	PCM up to 24-bit/192kHz
Inputs (analog)	4x RCA pairs (left & right)	8x RCA pairs (left & right)
Inputs (digital S/PDIF)	1x optical (Toslink)	2x RCA coaxial; 2x optical (Toslink)
Inputs (network)	RJ-45 10Base-T/100Base-TX ethernet port (female)	RJ-45 10Base-T/100Base-TX ethernet port (female)
Inputs (other)	Micro-USB (for ARC); RS-232	Micro-USB (for ARC); RS-232
Input (trigger)	1x 3.5mm (5 – 24V DC/AC)	1x 3.5mm (5 – 24V DC/AC)
Outputs (speaker level)	4x removable Euroblock style (left & right) accommodates wire up to 12AWG	8x removable Euroblock style (left & right) accommodates wire up to 12AWG
Output (analog)	—	2x RCA pair (left & right)
Outputs (subwoofer)	4x RCA (with bass management and room correction)	8x RCA (with bass management and room correction)
Outputs (digital matrix)	—	1x optical (Toslink)
Output (trigger)	1x 3.5mm (5 – 24V DC/AC)	1x 3.5mm (5 – 24V DC/AC)
Audio In-Out Matrix	Yes	Yes
Advanced Load Monitoring	Yes	Yes
Controls (via web-based UI)	Bass Level: ±10dB for each zone Treble Level: ±10dB for each zone Level Balancing: ±12dB for each zone	Bass Level: ±10dB for each zone Treble Level: ±10dB for each zone Level Balancing: ±12dB for each zone
Controls (back panel)	Power Mode: Auto, Trigger, External Command Network Reset (pinhole) Factory Reset (pinhole) Mains Power: On/Off	Power Mode: Auto, Trigger, External Command Network Reset (pinhole) Factory Reset (pinhole) Mains Power: On/Off
Room Correction	Anthem Room Correction (ARC) for each zone	Anthem Room Correction (ARC) for each zone
Microphone (for room correction)	Included dual-input microphone (3.5mm and mini-USB)	Included dual-input microphone (3.5mm and mini-USB)
Setup	Web-based user interface	Web-based user interface
IP Control (via IP or RS-232)	Drivers for Control4, Crestron, Elan, RTI, Savant, and URC	Drivers for Control4, Crestron, Elan, RTI, Savant, and URC
AC Voltage (model dependent)	120V ±10% ~50/60Hz 220-240V ±10% ~50/60Hz	120V ±10% ~50/60Hz 220-240V ±10% ~50/60Hz
Operational Temperature	32° F to 113° F (0° C to 45° C)	32° F to 113° F (0° C to 45° C)
Storage Temperature Range	-22° F to 158° F (-30° C to 70° C)	-22° F to 158° F (-30° C to 70° C)
Humidity Range	5% to 95% non-condensing	5% to 95% non-condensing
Rack Mount Ears & Feet	Included	Included
Rack Space (feet removed)	2U	2U
Dimensions (H x W x D, without feet, rack mount ears mounted, speaker terminal blocks installed)	3.5" x 19.0" x 17.0" (8.9 x 48.3 x 43.2 cm)	3.5" x 19.0" x 17.0" (8.9 x 48.3 x 43.2 cm)
Dimensions (H x W x D, with feet, no rack mount ears, speaker terminal blocks installed)	3.9" x 17.0" x 17.0" (9.9 x 43.2 x 43.2 cm)	3.9" x 17.0" x 17.0" (9.9 x 43.2 x 43.2 cm)
Weight	21 lbs. (9.5kg)	24 lbs. (10.8kg)

# 10. LIMITED WARRANTY

## CANADA & USA

The warranty period on new Anthem product is:

3 years

Please register your product at [www.AnthemAV.com](http://www.AnthemAV.com).

The warranty period begins on the date of purchase from Anthem or an Authorized Anthem Dealer. This warranty is offered only to the original owner and is not transferable. Demonstration and display units are covered by the same warranty except that the period commences on the date of dealer invoice, not the purchaser's invoice, and cosmetic flaws are excluded.

If Anthem determines that the product has a defect in materials or manufacturing during the warranty period Anthem will at its option repair, replace or provide the necessary replacement parts without charging for parts or labor. Repaired or replaced equipment or parts supplied under this warranty are covered by the unexpired portion of the warranty.

Warranty is void if the serial number has been removed, altered or defaced, if the product has been operated, installed or handled other than in accordance with the intended application, tampered with, modified, or damaged by accident, while in transport or by failure of electric power, or has been repaired by a non-authorized party. Anthem shall have no obligation to correct any defect that is not reproducible by Anthem. If inspection by Anthem discloses that the repair required is not covered by this warranty, regular repair charges shall apply.

If a problem is discovered in your Anthem product, please contact the Authorized Anthem Dealer from whom you purchased the product. Your dealer will help to determine the cause of the problem and arrange for the appropriate action. Alternatively, follow the procedure below for factory service.

A Return Authorization (RA) number must be obtained from

Anthem Technical Support before a product can be shipped to Anthem for any reason. Product shipped to Anthem without its RA Number clearly visible on the outside of the shipping carton will be refused and returned to the sender, freight collect. Product shipped to Anthem must have shipping and insurance prepaid by the sender, be packaged in the original carton and packing material and accompanied by a written description of the defect. Service will not be given under warranty without an accompanying copy of the sales invoice. Product repaired under warranty will be returned with shipping and insurance prepaid by Anthem (within Canada and continental USA only).

## Disclaimer of Liability

Under no circumstances shall Anthem, its agents, representatives or employees assume liability or responsibility for injury or damages sustained in the use or operation of Anthem products or for damages to connected products. Some jurisdictions do not allow limitations of incidental or consequential damages, so this exclusion may not apply to you.

Anthem reserves the right to make design changes without obligation to revise prior versions. All specifications are subject to change without notice.

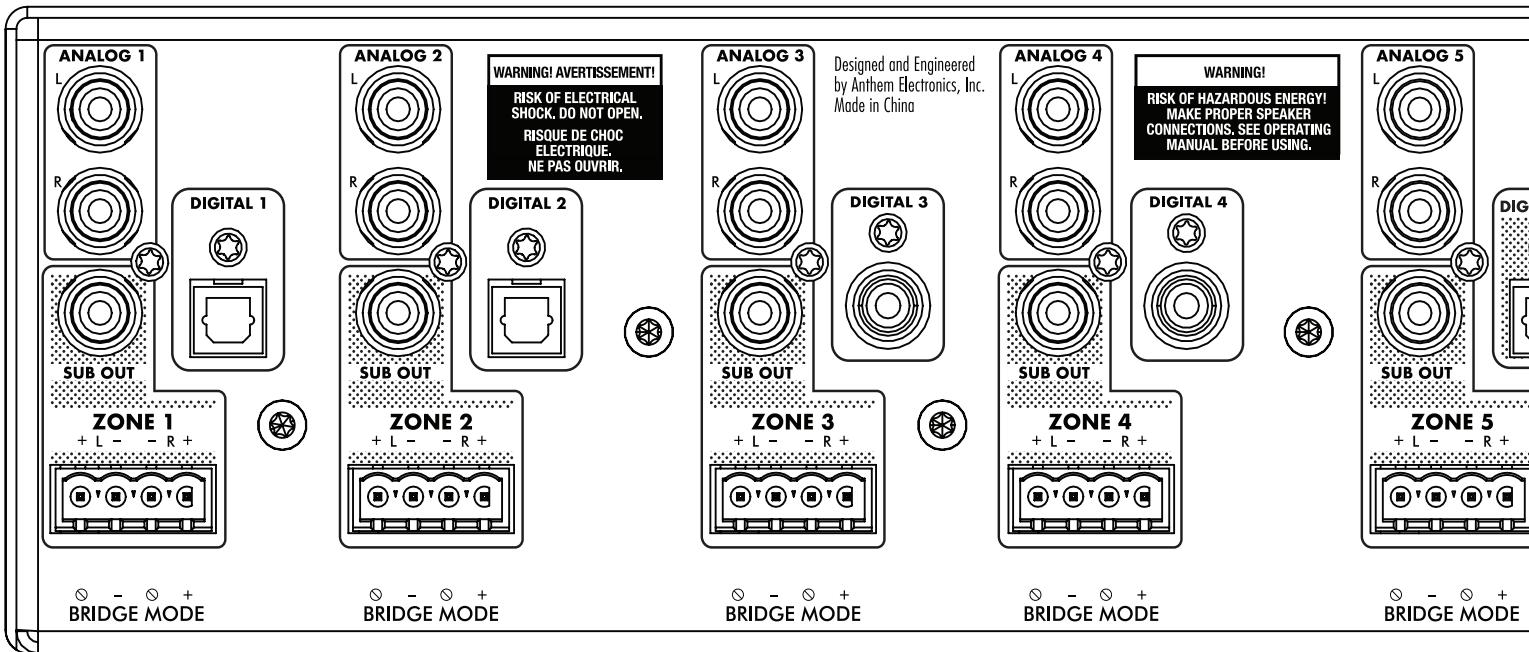
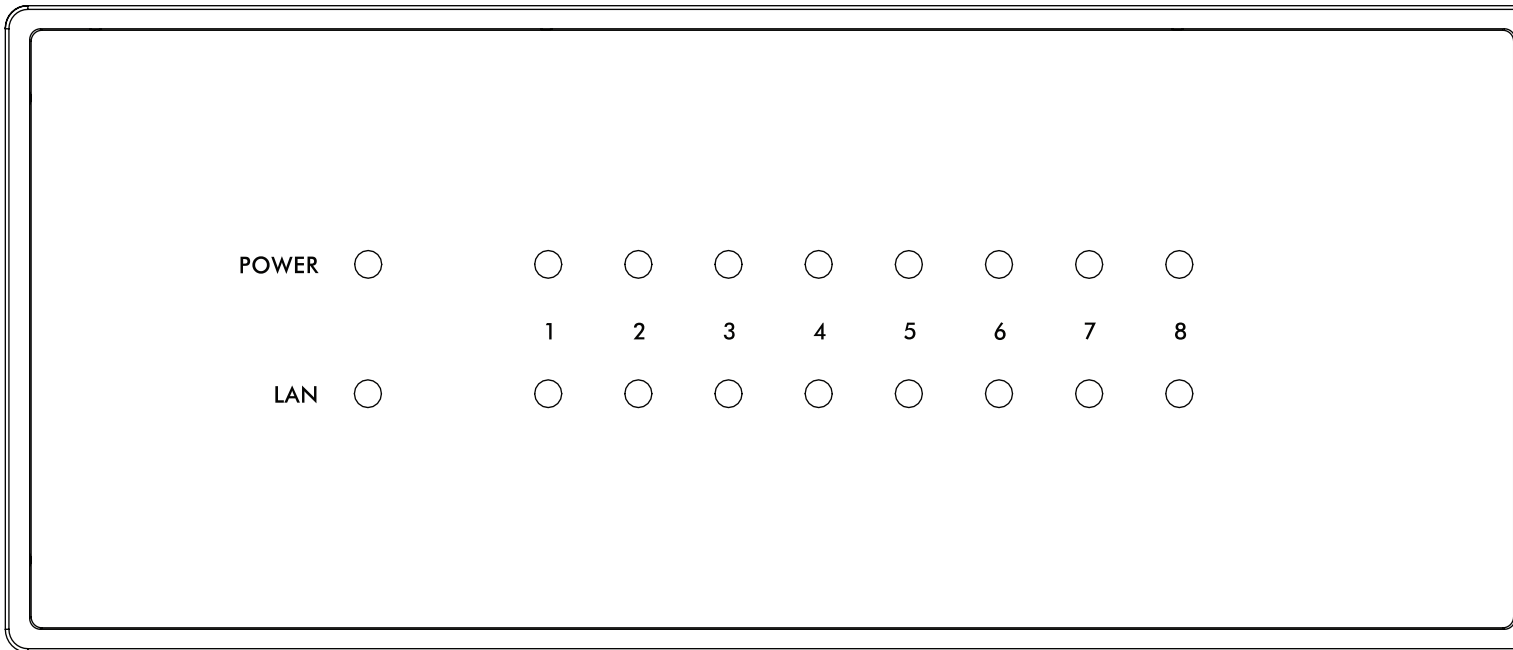
This warranty shall be the sole and exclusive remedy to you. No other warranty or condition, statutory or otherwise, expressed or implied, shall be imposed upon Anthem nor shall any representation made by any person, including a representative or agent of Anthem, be effective to extend the warranty coverage provided herein.

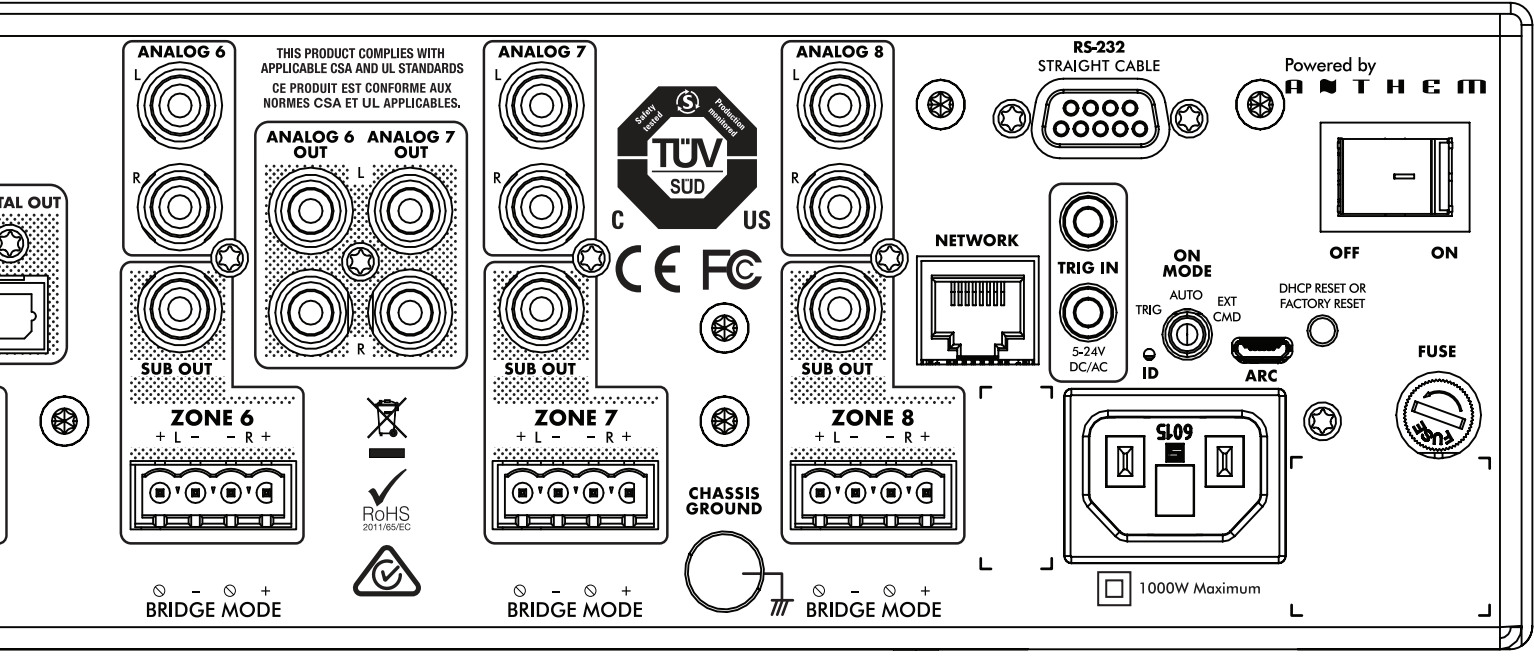
On the expiration of the warranty, all liability of Anthem in connection with the product shall terminate.

## INTERNATIONAL

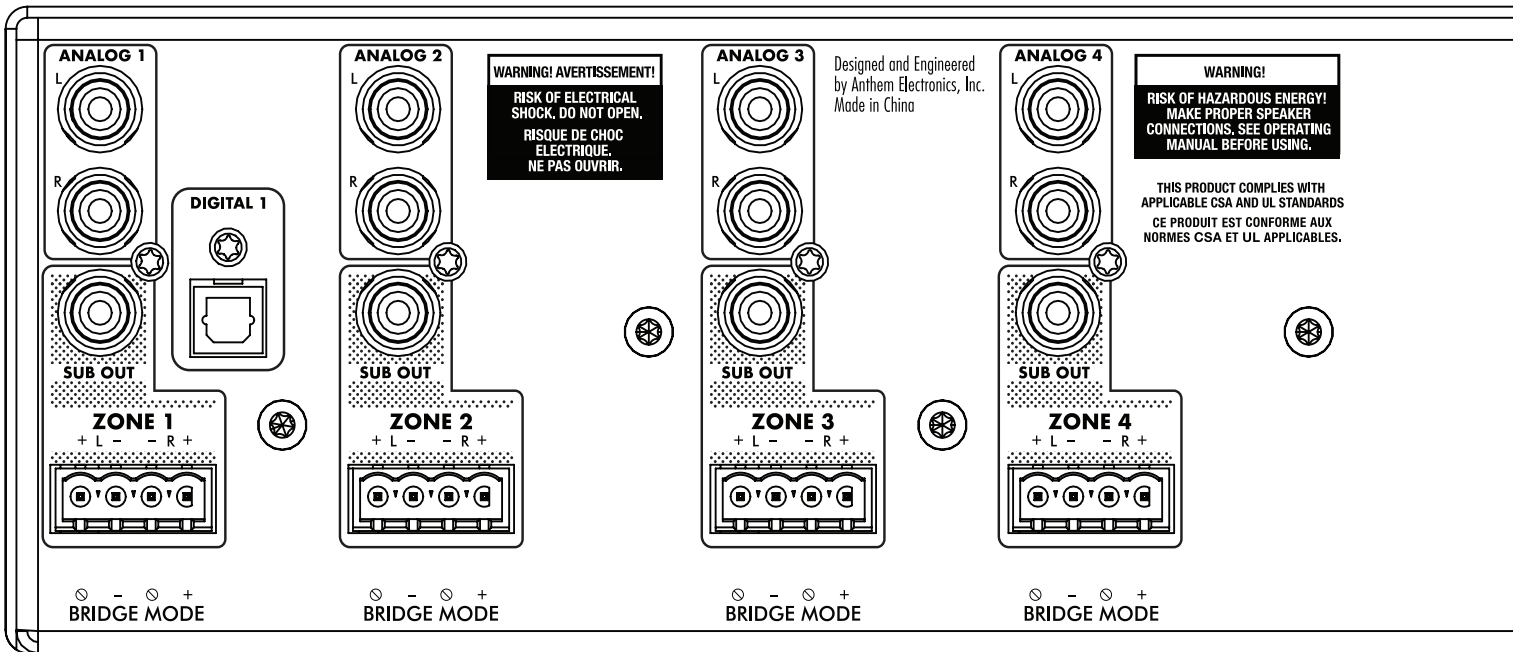
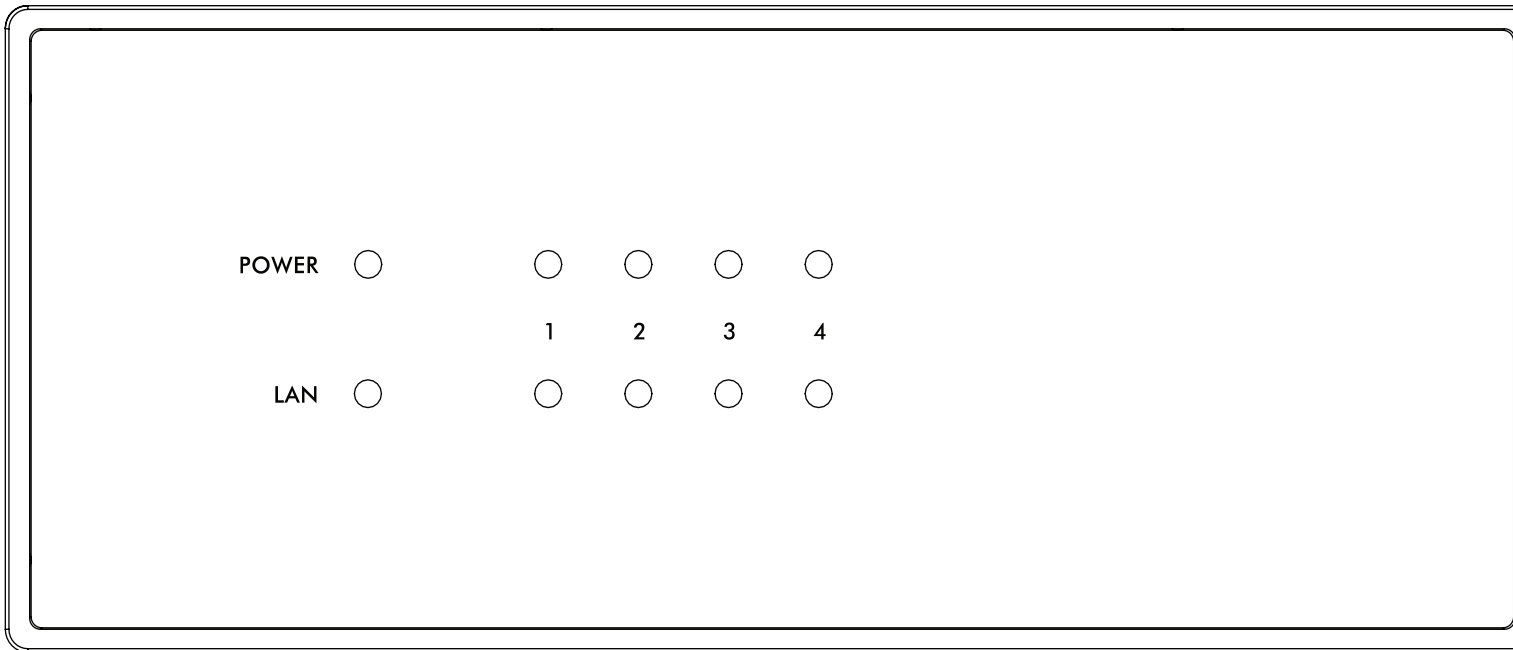
Terms and conditions are set and maintained by the Authorized Anthem Distributor, not Anthem.

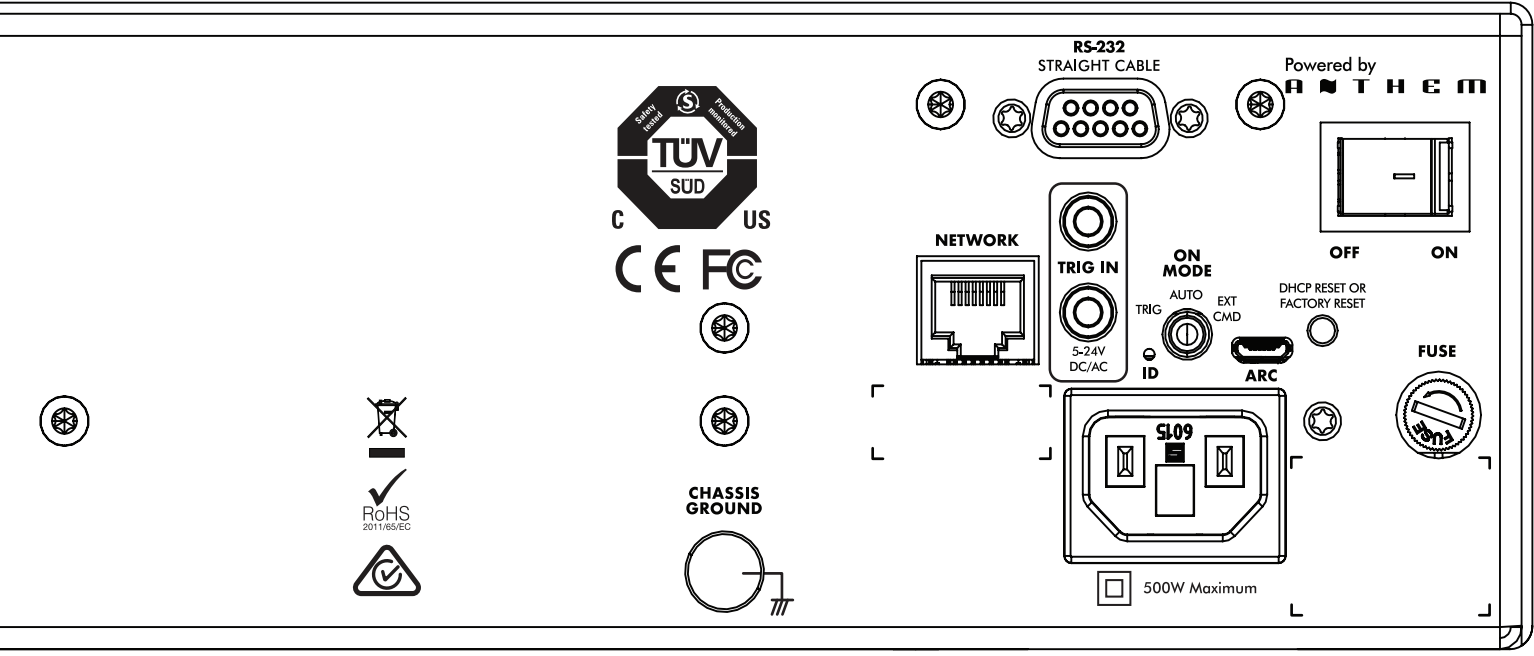
# 11. THE BIG PICTURE: MDX-16





# 12. THE BIG PICTURE: MDX-8







DESIGNED IN NORTH AMERICA

+1 905-564-1994  
8:30 am - 5:00 pm M-F (ET)

[www.AnthemAV.com](http://www.AnthemAV.com)