MX150 Auxiliary Output Guide

RoomPerfect

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Introduction

The MX150 offers additional Zone A Left Front Channel and Right Front Channel Outputs, two balanced outputs and two unbalanced outputs. These Auxiliary Outputs (1 thru 4) may be used for additional subwoofer outputs or for using the MX150 built-in electronic crossover circuitry. In this guide, the example will illustrate connections along with Setup Mode Settings for using the MX150 Electronic Crossover Circuitry.

Almost all Loudspeakers incorporate acoustic drivers and a passive crossover network. The passive crossover network channels the various audio frequencies to the appropriate acoustic driver taking into account the amplitude and phases of the audio signals the Loudspeaker reproduces. When an electronic crossover circuitry in the MX150 is used together with multiple Power Amplifiers and Loudspeakers, it is very important to maintain the correct amplitude and phases of the audio signals for accurate sound reproduction.

McIntosh's Acoustics Laboratory has measured McIntosh Loudspeakers (with separate Low Frequency/High Frequency connections) when used with the MX150 and has arrived at the optimum settings. There are two different settings. The first setting is for use with McIntosh Loudspeakers with a Low Frequency (Woofer) to High Frequency (Midrange/Tweeter) crossover frequency of 250Hz. The second setting is when the McIntosh Loudspeaker has a crossover of 80Hz. It is suggested to use these settings.

When the MX150 is used with non-McIntosh Loudspeakers it is highly recommended to contact your Dealer for assistance. Your Dealer has the necessary measurement equipment and knowledge to properly set up the electronic crossover in the MX150 for your Loudspeakers.

Connecting the MX150 when using the Electronic Crossover

The following connection instructions and illustration on the next page are a supplement to the MX150 Zone A Output Connection instructions on page 11 of the Owner's Manual and the separate folded sheet "**Mc2B**" Diagram. It is an example of a typical Home Theater System. Your system may vary from this, however the actual components would be connected in a similar manner. For additional information refer to "Connector and Cable Information" on page 5 of the MX150 Owner's Manual.

Power Control Connections:

1. Connect a Control Cable from the MX150 ZA PC (Power Control) OUT Jack to the Power Control In on Zone A Power Amplifier One.
2. Connect a Control Cable from Zone A Power Amplifier One Power Control Out to Zone A Power Amplifier Two Power Control In Jack.

Perform additional Power Control Connections starting with step 3 on page 11 of the MX150 Owner's Manual.

Analog Audio Connections:

3. Connect Balanced Audio Cables from the MX150 Zone A - L (Front Left Channel) and R (Front Right Channel) to Zone A Power Amplifier One (High Frequencies) Inputs 1 and 3 respectively.

   Note: Unbalanced Audio Connections may be used in place of the Balanced Connections.
4. Connect Balanced Audio Cables from the MX150 Zone A - AUX 1 (Left Front Channel) and AUX 2 (Right Front Channel) to Zone A Power Amplifier Two (Low Frequencies) Inputs Left and Right respectively.

Perform additional Analog Audio Connections for the remaining channels, HDMI Connections and AC Power Cords by refering to steps (6 thru 11) on page 11 of the MX150 Owner's Manual.

Note: Refer to the MX150 Owner's Manual pages 10 and 11 for additional connection information.

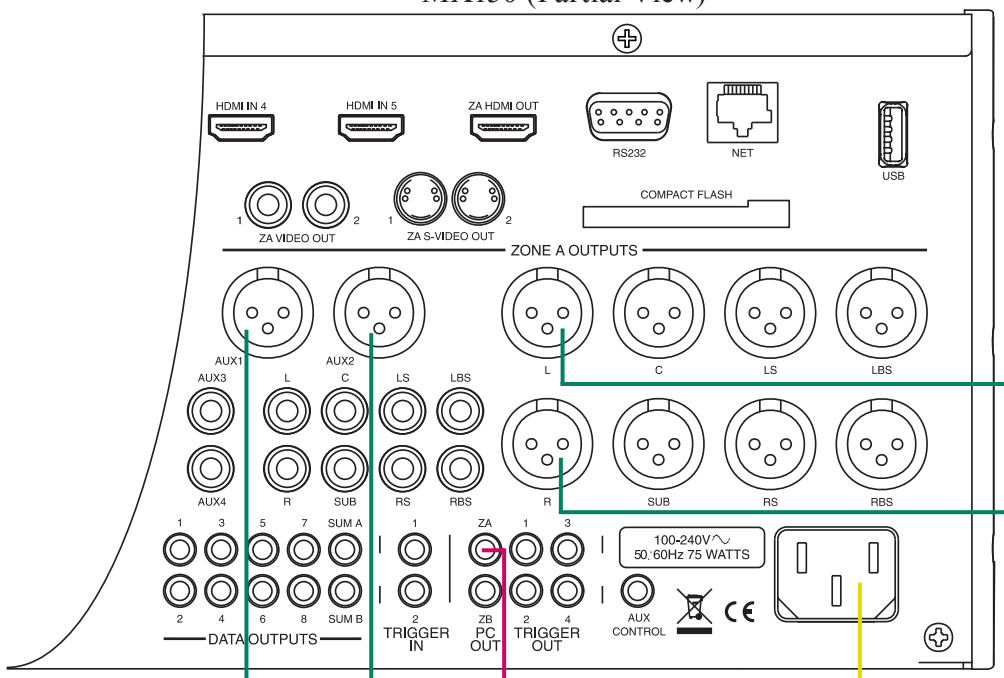
Connection Legend:

Power Control Cable -* *AC Power Cords -*

Audio Signal Cable -

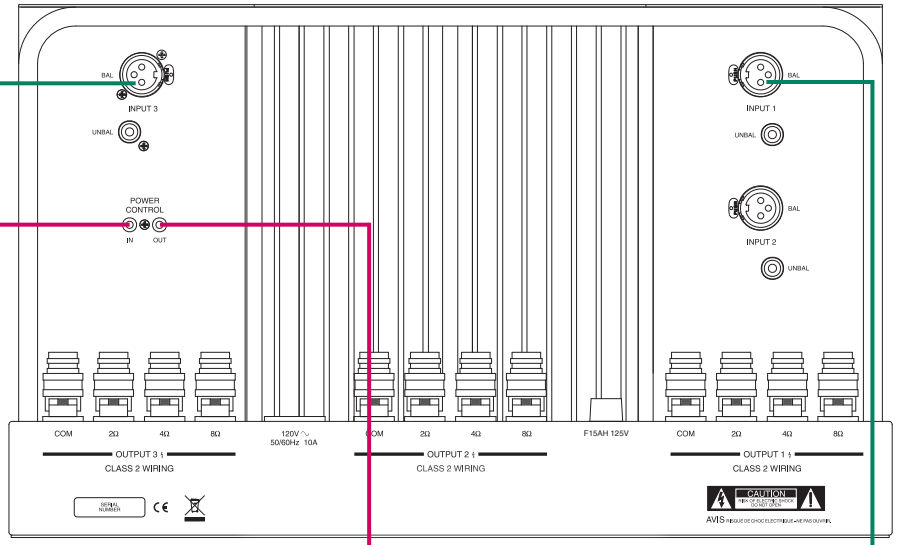
** 2 conductor shielded with 1/8 inch stereo mini phone plug on each end.*

MX150 (Partial View)

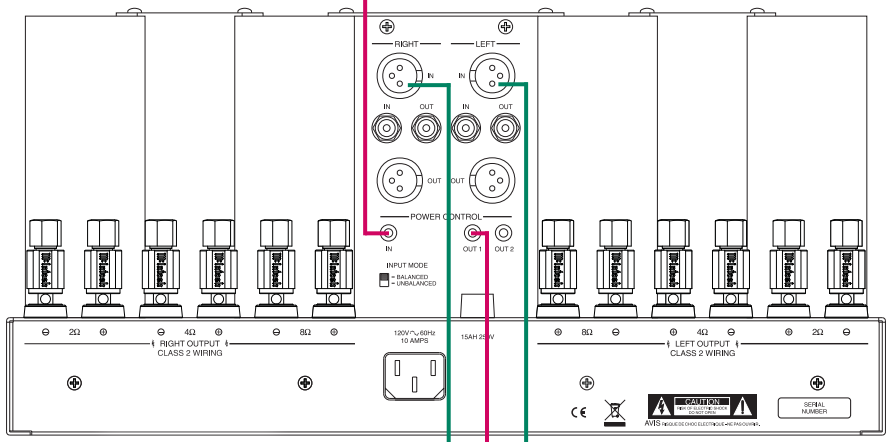


Connect to AC Outlet

Zone A - Power Amplifier One
High Frequencies
Left Front and Right Front Channels; Center Channel



Zone A - Power Amplifier Two
Low Frequencies
Left Front and Right Front Channels



Connect to the next Power Amplifier, Power Control IN

Output Settings

Operation and Installer Menu:

In order to use the AUXiliary Audio Output in the MX150, for either additional Subwoofer Outputs or the Electronic Crossover Circuitry, the settings in the "Installer Speaker Configuration Menu" need to be changed from their default setting.

The following steps are based on having operated the MX150 A/V Control Center, including the Setup Mode. Refer to the MX150 Owner's Manual - pages 17 thru 45 and the MX150 Installer and User Menu separate fold out sheets (supplied in the MX150 Owner's Manual Package) for additional information.

In the following example, the Crossover Setting will be set up for a Bi-Amplified System using McIntosh Loudspeakers with an internal 250Hz crossover point between the Low Frequency Section and the Midrange/High Frequency Section. If your Loudspeakers are not McIntosh, contact your Dealer for assistance. The MX150 Electronic Crossover Circuitry will be activated with a crossover setting of 250Hz using the LinkwitzRiley 4th order filter.

Notes: 1. It is advisable to employ a Real Time Spectrum Analyzer, with at least one third octave resolution, to verify correct levels and overall performance. RoomPerfect™ Circuitry in the MX150 is designed to correct for Room Acoustics and Room/Loudspeaker interactions. It is not intended to correct for Power Amplifiers with different amplifying gains or Loudspeakers with inherent irregular frequency responses.

2. When using the MX150 AUX Outputs to drive multiple Subwoofers instead of using the MX150 Electronic Crossover Feature for Bi-Amplifing a Full Range Loudspeaker, select one of the "Sub _ _ _" crossover point setting" instead of the "Custom" setting" for "AUX perform". Refer to step 6.

1. Switch power On to the MX150 and TV/Monitor.
2. Press the SETUP Push-Button.
3. Select the "Speaker and Room Setup" from the Installer Menu. Then select "Speaker Configuration" from the Speaker and Room Setup Menu. Refer to figures 1 and 2.

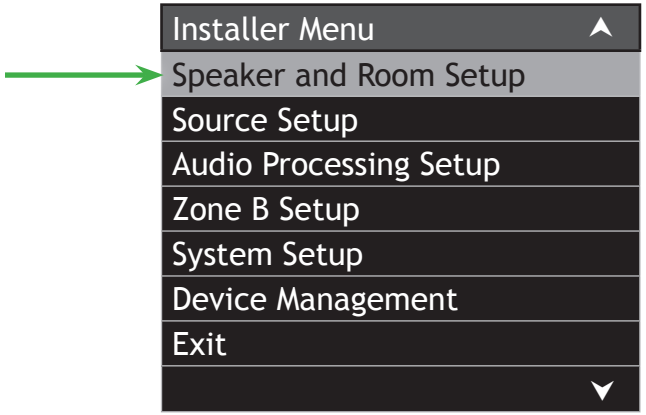


Figure 1

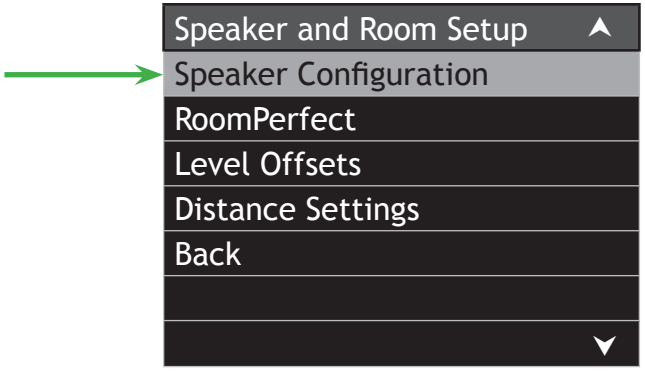


Figure 2

4. To makes changes use the ▲ (up) or ▼ (down) Push-buttons to highlight the "EDIT/SELECT" menu item, then press the SELECT Push-button.
5. Change the "Speaker Configuration" Front Left and Right settings to either "XL" or XXL" if that is not the current setting. Refer to figures 3 and 4. Also refer to page 22 of the MX150 Owner's Manual for additional information on the "XL" and XXL" settings.
6. Refering to figures 3, 5 and 6, select "AUX1/2 (L/R)" listed in the Speaker Configuration menu and change the settings as follows:
   AUX perform - Custom
   AUX cutoff - 250Hz
   AUX order - 4th LiRi
   Note: The "Gain Offset" Adjustments for the LEFT and RIGHT Front Loudspeakers and AUX Outputs may be used to compensate for the differences in Power Amplifier gains.
7. Select "Save Change", followed by Confirm Selection by selecting "Yes". Refer to MX150 separate sheet "Setup 2"
8. Then select "Verify Current Setup" and step thru all the settings using the SELECT Push-button. Refer to figures 7 and 8.

Using the previously mentioned acoustic analyzing equipment, measure and adjust if necessary the gains of the two Power Amplifiers (unless they have the same amplification gain) for the same relative levels across the broad range of frequencies in the Low and High Pass regions. Then perform RoomPerfect Room Correction procedures starting on page 24 of the MX150 Owner's Manual.

Notes: 1. The analyzing circuitry in the MX150 is designed to prevent voids in the frequency response curve. This could occur if the Low Frequency Output AUX1/2 (L/R) had a cutoff setting of 125Hz and the the High Frequency Output (Front L/R) had a cutoff setting of

500Hz. In such a case the MX150 would set the crossover point for both the Low and High Frequency Outputs to 125Hz.

2. *When using both AUX1/2 (Balanced Outputs) and AUX3/4 (Unbalanced Outputs) at the same time, it is important to make sure the settings (AUX perform, AUX cutoff and AUX order) are set the same. This assures matching of the crossover curves Low Pass and High Pass, as there is only one set of Front Left and Front Right Channel Outputs. Refer to figure 6.*
3. *When the Electronic Crossover or Multiple Sub-woofer Mode of operation is active, the signal normally present at the Subwoofer Output is now available at the AUX Outputs only.*

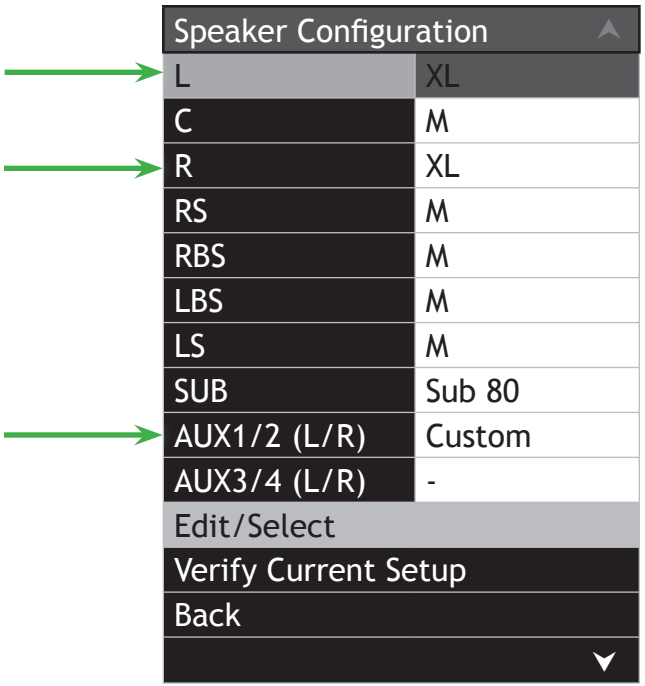


Figure 3

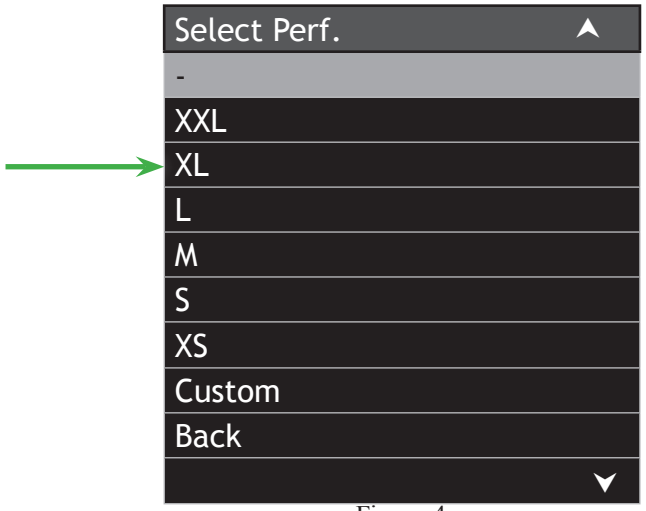


Figure 4

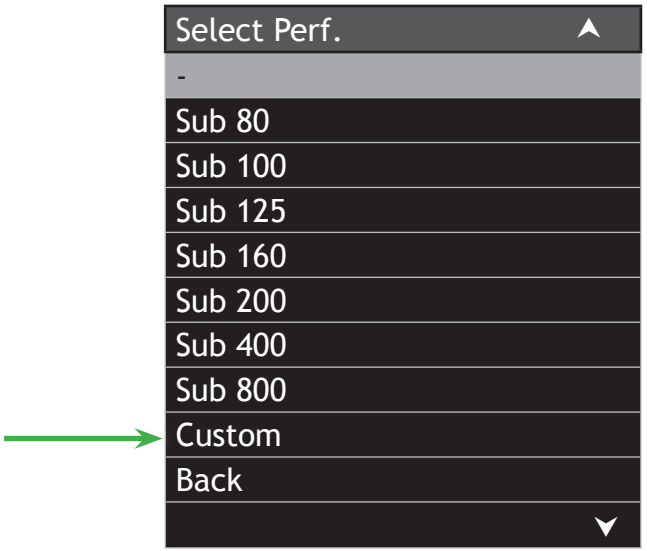


Figure 5

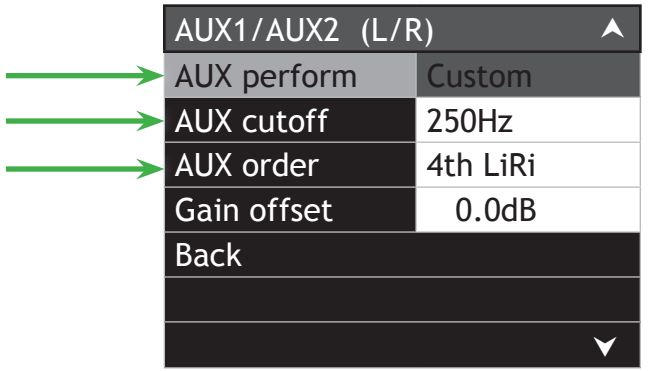


Figure 6

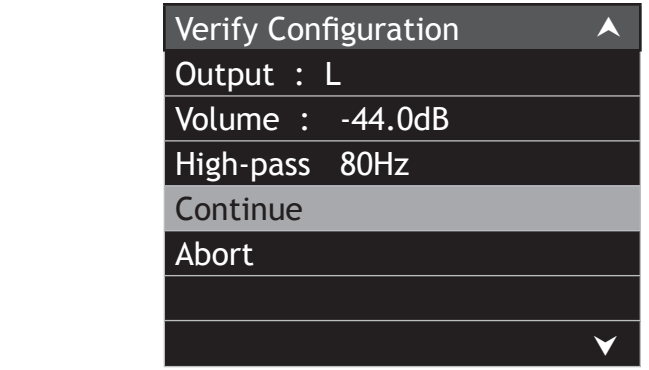


Figure 7

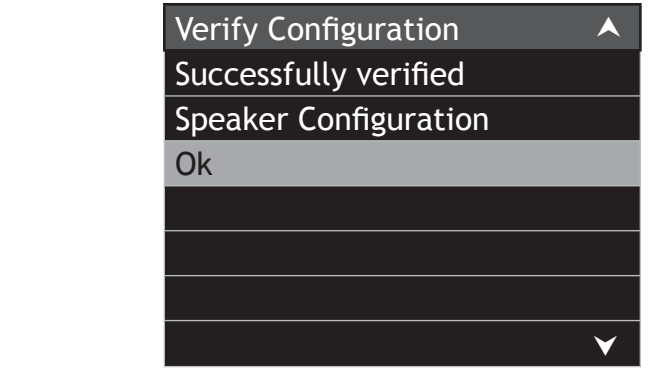


Figure 8

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