

# FreeSpace® DXA 2120 Digital Mixer/Amplifier



## Owner's Guide







## Safety Information

### Please read this owner's guide

Please take the time to follow the instructions in this owner's guide carefully. It will help you set up and operate your system properly and enjoy all of its advanced features. Please save this owner's guide for future reference.

-  **WARNING:** To reduce the risk of fire or electrical shock, do not expose the product to rain or moisture.
-  **WARNING:** The apparatus shall not be exposed to dripping or splashing, and objects filled with liquids, such as vases, shall not be placed on the apparatus. As with any electronic products, use care not to spill liquids into any part of the system. Liquids can cause a failure and/or a fire hazard.

	<b>CAUTION</b> RISK OF ELECTRICAL SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.		




	<b>AVIS</b> RISQUE DE CHOC ÉLECTRIQUE NE PAS OUVRIR	
ATTENTION : POUR RÉDUIRE LE RISQUE DE DÉCHARGE ÉLECTRIQUE, NE RETIREZ PAS LE COUVERCLE (OU L'ARRIÈRE). IL NE SE TROUVE À L'INTÉRIEUR AUCUNE PIÈCE POUVANT ÊTRE RÉPARÉE PAR L'USAGER. S'ADRESSER À UN RÉPARATEUR COMPÉTENT.		






The lightning flash with arrowhead symbol within an equilateral triangle alerts the user to the presence of uninsulated, dangerous voltage within the system enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.



The exclamation point within an equilateral triangle, as marked on the system, is intended to alert the user to the presence of important operating and maintenance instructions in this owner's guide.

-  **WARNING:** No naked flame sources, such as lighted candles, should be placed on the apparatus.
-  **CAUTION:** Make no modification to the system or accessories. Unauthorized alterations may compromise safety, regulatory compliance, and system performance.
-  **CAUTION:** This product shall be connected to a mains socket outlet with a protective earthing connection.

 This product conforms to the EMC Directive 89/336/EEC and to the Low Voltage Directive 73/23/EEC. The complete Declaration of Conformity can be found on [www.Bose.com/static/compliance/index.html](http://www.Bose.com/static/compliance/index.html).

-  **Note:** Where the mains plug or appliance coupler is used as the disconnect device, such disconnect device shall remain readily operable.
-  **Note:** The product must be used indoors. It is neither designed nor tested for use outdoors, in recreation vehicles, or on boats.
-  **Note:** Provide an earth connection before the main plug is connected to the mains.

# Safety Information

## Important safety instructions

1. Read these instructions.
2. Keep these instructions – for future reference.
3. Heed all warnings – on the product and in the owner's guide.
4. Follow all instructions.
5. Do not use this apparatus near water or moisture.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions – To ensure reliable operation of the product and to protect it from overheating, put the product in a position and location that will not interfere with its proper ventilation.
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 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 third prong are provided for your safety. If the provided plug does not fit in 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 the 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 – to prevent damage to this product.
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 – Do not attempt to service this product yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Please call Bose to be referred to an authorized service center near you.



15. To prevent risk of fire or electric shock, avoid overloading wall outlets, extension cords, or integral convenience receptacles.
16. Do not let objects or liquids enter the product – as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.
17. See product enclosure for safety related markings.
18. No naked flame sources, such as lighted candles, should be placed on the apparatus.

## Information about products that generate electrical noise

If applicable, this equipment has been tested and found to comply with the limits for a Class A 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, this 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, you are 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 receiver.
- Connect the equipment to an outlet on a different circuit than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Note:** *Unauthorized modification of this product could void the user's authority to operate this equipment.*

This product complies with the Canadian ICES-003 Class A specifications.

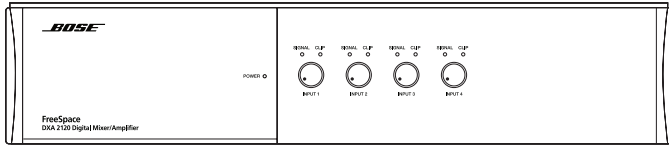
The information furnished in this user's guide does not include all of the details of design, production, or variations of the equipment. Nor does it cover every possible situation which may arise during installation, operation, or maintenance.

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# 1.0 Introduction

## 1.1 The Bose® FreeSpace® DXA 2120 Digital Mixer/Amplifier



The Bose® FreeSpace® DXA 2120 Digital Mixer/Amplifier integrates digital signal processing with two powered output channels. Designed as a mixer or router for business music applications, it features an LCD panel and controls behind the front cover for easy access.

The mixer/amplifier provides six inputs, including four Mic/Line inputs, one Page input, and one Direct input. The Direct input overrides all sources playing on the output channels. Each Mic/Line input provides both RCA and Euroblock jacks.

Two output channels are wired for 120 watts at 4 ohms each. For 70/100 volt applications, a jumper is required for proper configuration. In 70/100V applications, the two outputs will operate at 100 watts per channel. A third output is available for an auxiliary line out.

Additional features include:

- **Signal Mixing:** In Mixer Mode, simultaneously combines up to four inputs for any of the three outputs.
- **Signal Routing:** In Dual Mono Select Mode, one or two inputs go to each of two outputs in different zones and can be remotely selected. In Stereo Select Mode, two stereo sources go to one output zone and can be remotely selected.
- **Opti-voice® Paging:** Provides a smooth transition between music and page signals.
- **Dynamic Equalization:** Maintains tonal balance at all listening levels.
- **Bose Loudspeaker EQs:** Provide equalization for Bose loudspeakers.
- **AGC (Automatic Gain Control):** When enabled, automatically compensates for low-level sources (i.e., microphone with low sensitivity).
- **Room Equalization:** Allows easy adjustment of tonal balance in each zone.
- **Communications Port:** Includes an RS-232 serial port reserved for system updates.
- **Backup power:** Provides an input terminal for a +24V DC backup power source.

## 1.2 Supplied with the product

Included connectors:

- **3-terminal input connectors:** (4) for wiring source equipment to the four Mic/Line input Euroblock jacks.
- **4-terminal input connectors:** (2) for wiring to the Page and Direct input jacks.
- **6-terminal input connector:** (1) for wiring user interfaces to the Remote input jack.
- **5-terminal output connectors:** (2) for wiring to the loudspeakers.
- **3-terminal output connector:** (1) for wiring to the AUX output jack.

Included placement aids:

- **Non-skid rubber feet:** (4) for stable placement on a solid, level surface.
- **Rack ears:** (2) with mounting hardware for installation in a rack.

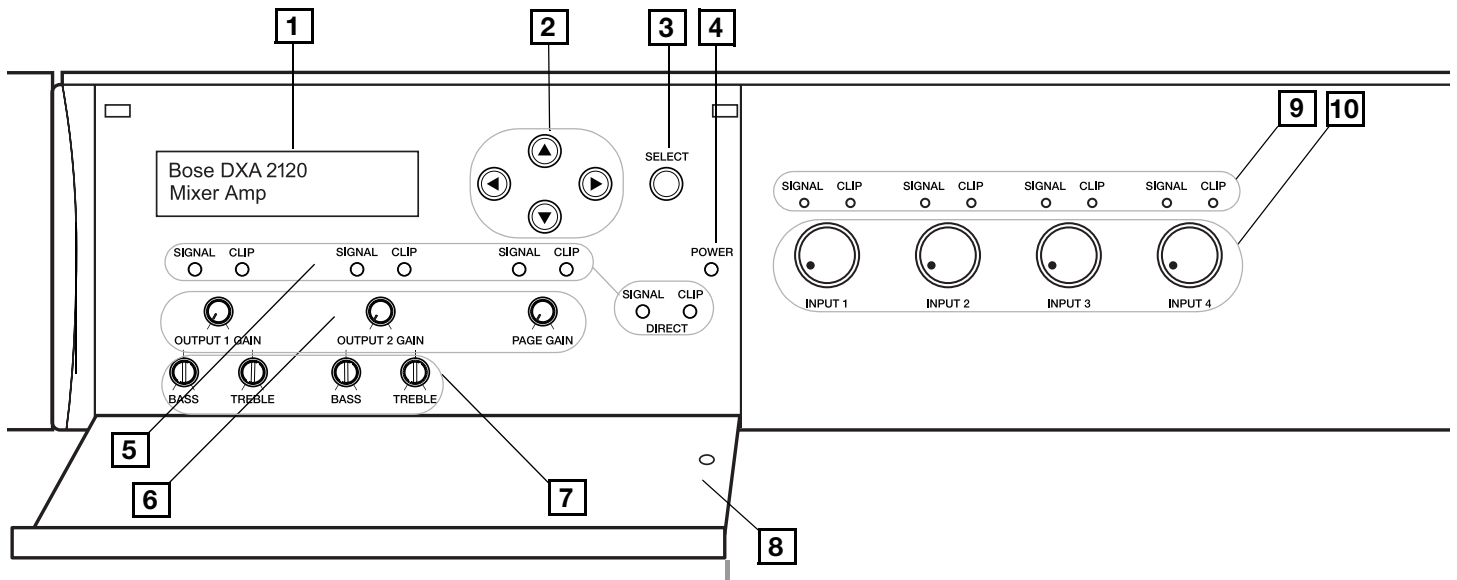
## 1.3 Mixer/Amplifier accessories

Application-specific Bose accessories:

- **Bose® Volume Control User Interface**  
A user interface with a volume control knob that fits into a standard U.S. double-gang junction box.
- **Bose® Volume Control with A/B Select User Interface**  
A user interface that fits into a standard U.S. double-gang junction box. It features volume control and A/B select knobs for remote source selection.

## 2.0 Hardware Description

### 2.1 Front panel with open compartment



#### 2.1.1 System Controls

- 1 LCD panel** – Displays menu selections for configuring and viewing system settings.
- 2 Directional buttons** – Navigates system menus and setting options shown on the LCD.
- 3 SELECT button** – Confirms selections and settings in the system menus.
- 4 POWER LED** – Blue light indicates the system is on. No light when unit is off.
- 5 SIGNAL and CLIP LEDs** – Shows signal states for OUTPUT 1, OUTPUT 2, PAGE, and DIRECT.  

Signal Unlit = No signal	Clip Unlit = No clipping
Signal Green = Signal present	Clip Red = Clipping

- 6 GAIN knobs** – Adjusts gain for OUTPUT 1, OUTPUT 2, and PAGE.

- 7 BASS and TREBLE knobs** – Adjusts tonal balance for OUTPUT 1 and OUTPUT 2.

#### 2.1.2 Control Compartment

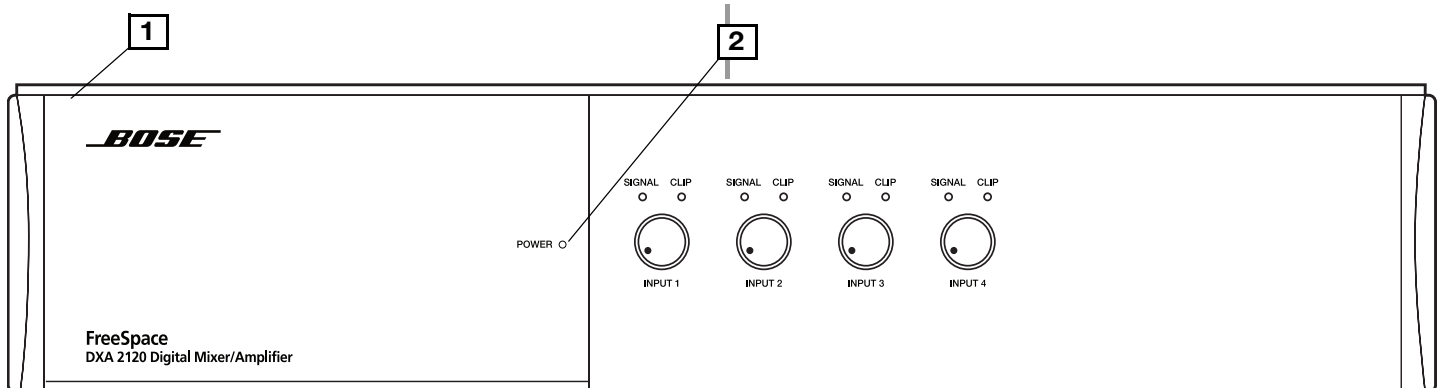
- 8 Enclosure door** – Conceals system controls.

#### 2.1.3 Input Controls

- 9 SIGNAL and CLIP LEDs** – Shows signal states for Inputs 1-4.  

Signal Unlit = No signal	Clip Unlit = No clipping
Signal Green = Signal present	Clip Red = Clipping
- 10 Gain knobs** – Adjusts gain for INPUT 1- INPUT 4.

### 2.2 Front panel with compartment closed

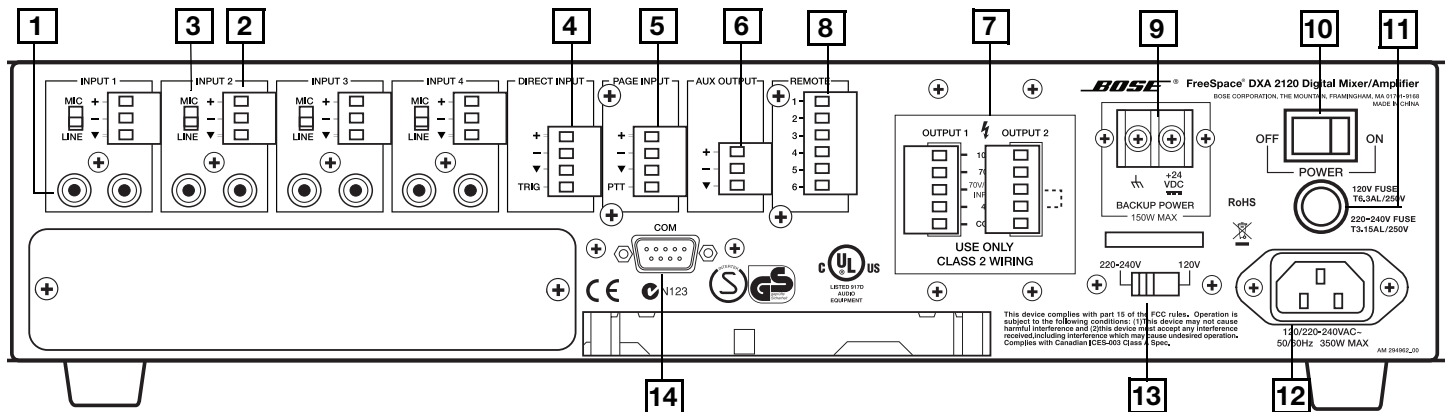


- 1 Door** – Provides access to system controls.

- 2 Power status window** – Reveals Power LED.

## 2.0 Hardware Description

### 2.3 Rear panel



#### 2.3.1 Audio source inputs

- 1 **LINE INPUTS** – Two unbalanced RCA audio jacks per input (summed to mono).
- 2 **MIC/LINE INPUTS** – Balanced Euroblock input jacks. One per input.
- 3 **MIC/LINE switch** – Adjusts for the proper signal level being used with the four Euroblock input connectors. (Mic connections require using the Euroblock input jacks.)
- 4 **DIRECT INPUT** – Balanced override input jack.
- 5 **PAGE INPUT** – Balanced audio input jack.

#### 2.3.2 Outputs

- 6 **AUX OUTPUT** – Line-level signal output for other amplified equipment.
- 7 **OUTPUTS 1 and 2** – Speaker connections for two powered outputs (70V, 100V, or 4 ohms operation).

#### 2.3.3 Control input

- 8 **REMOTE** – Input jack for volume-only control and volume control with A/B select user interfaces.

#### 2.3.4 Power

- 9 **BACKUP POWER** – For connection to backup power source.
- 10 **POWER OFF/ON** – AC power switch.
- 11 **FUSE** – 120V T6.3AL/250V or 220-240V T3.15AL/250V.
- 12 **AC mains line cord jack** – AC line voltage input.
- 13 **120V/220-240V switch** – Switches between 120V and 220-240V AC input voltage. This switch is not provided on 100V AC input voltage models.

#### 2.3.5 Communication

- 14 **COM** – RS-232 serial port is reserved for system updates.

## 3.0 Operation Mode Options

### 3.1 Operation mode options

Before making connections, decide how you want the sound sources distributed throughout the site. This depends on whether the area is specified for one or two zones, the kind of coverage needed, and the sources to be used.

The mixer/amplifier provides three different modes of operation.

- Mixer Mode

In Mixer Mode, the system can mix up to four mic/line inputs to each of the two output channels for use in one or two zones.

- Stereo Select Mode

In Stereo Select Mode, with up to two stereo sources connected and using both output channels, the system provides stereo sound to a single output zone. Refer to “Stereo Select Mode” on page 9.

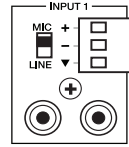
- Dual Mono Select Mode

In Dual Mono Select Mode, with up to two input sources connected to each of the two output channels, the system provides audio in two zones. Refer to “Dual Mono Select Mode” on page 9.

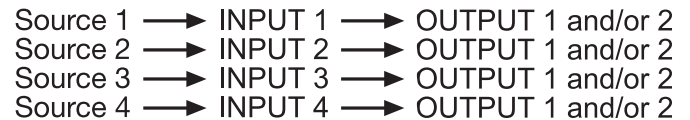
#### 3.1.1 Mixer Mode

Line-level sources can be connected using the RCA jacks or Euroblock connectors. The system sums the two RCA jacks for each input to mono.

Microphones must be connected using the Euroblock connectors. Make sure the MIC/LINE switch is set to MIC.



Mixer mode sources can be routed to either or both outputs, as shown below.

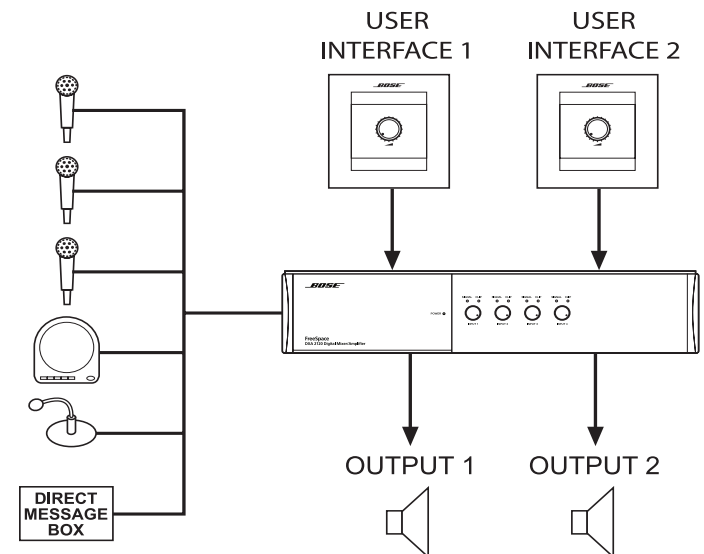


Sources can be independently routed to the auxiliary output.

In normal operation, the OUTPUT 1 and 2 gain controls are used to control the gains of OUTPUT 1 and 2, respectively. In this mode, you have the MASTERVOL LINKED option, which allows you to configure the OUTPUT 1 gain control to control the gains of OUTPUT 1 and 2 simultaneously.

**Note:** With use of a user interface, the chassis output gain knob is disabled.

Use of one or two volume control user interfaces is optional. For further detail, see “Mode user interface requirements” on page 31.

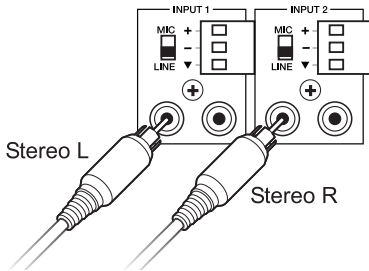




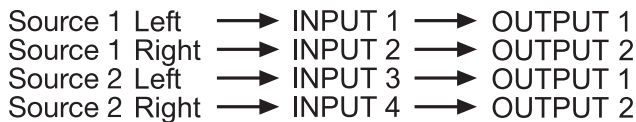
## 3.0 Operation Mode Options

### 3.1.2 Stereo Select Mode

Line-level sources can be connected using RCA jacks or Euroblock connectors. To connect a stereo source to RCA jacks, use either the left or right RCA jack of each INPUT.



Stereo Select Mode source routing is fixed, as shown below.



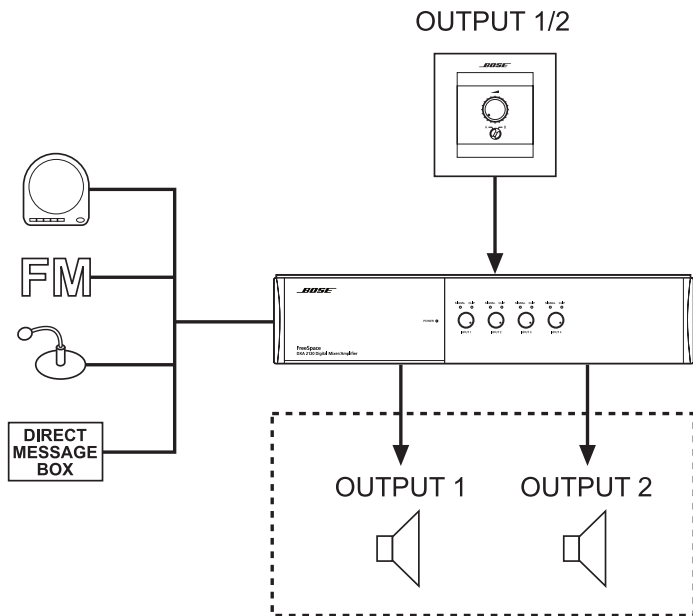
Auxiliary output can be set up to:

- Play constant audio from Inputs 1 + 2 (summed to mono), Source 1.
- Play constant audio from Inputs 3 + 4 (summed to mono), Source 2.
- Track source selected using A/B select on user interface.

This mode supports the use of one user interface in a single zone using the volume control with A/B select user interface.

**Note:** With use of a user interface, the chassis output gain knob is disabled.

For further detail, see “Mode user interface requirements” on page 31.



### 3.1.3 Dual Mono Select Mode

Line-level sources can be connected using RCA jacks or Euroblock connectors. The system sums the two RCA jacks for each input to mono.

Dual Mono Select Mode source routing is fixed, as shown below.

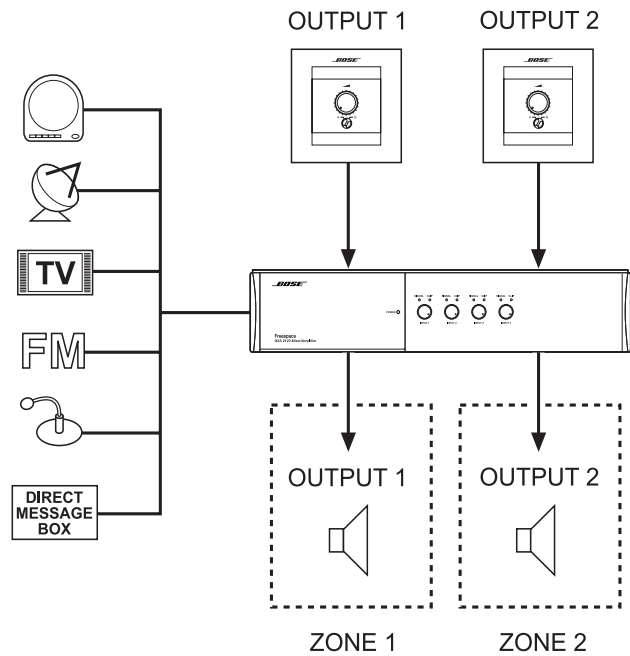


Auxiliary output can be set up to track Output 1 or constant audio from Input 1.

This mode supports the use of one user interface for each output channel using a volume control with A/B select user interface.

**Note:** With use of a user interface, the chassis output gain knob is disabled.

For further detail, see “Mode user interface requirements” on page 31.



## 4.0 Hardware Installation

### 4.1 Introduction

This section provides instructions for installing and wiring the Bose FreeSpace® DXA 2120 Digital Mixer/Amplifier.

### 4.2 Included accessories

- **3-terminal input connectors (4)** – For wiring equipment to the **MIC/LINE INPUT** Euroblock jacks.



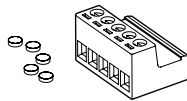
- **4-terminal input connectors (2)** – For wiring equipment to the single **PAGE INPUT** and single **DIRECT INPUT** jacks.



- **6-terminal input connector (1)** – For wiring to the **REMOTE** jack.



- **5-terminal output connectors (2) with screw caps** – For wiring speakers to **OUTPUT 1** and **OUTPUT 2**.



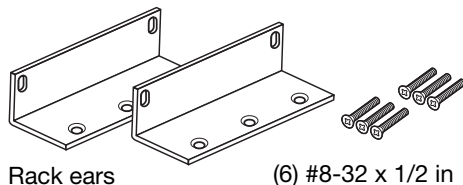
- **3-terminal output connector (1)** – For wiring to the **AUX OUTPUT** jack.



- **Rubber feet (4)** – For installing the chassis on a level surface.



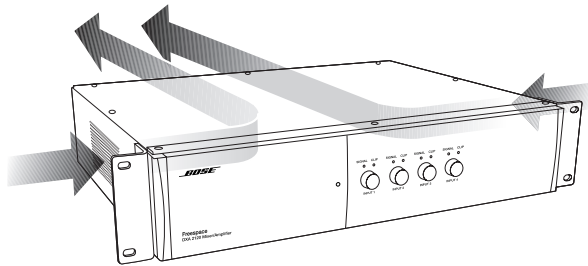
- **Rack ears with mounting hardware (2)** – For installing the mixer/amplifier chassis (2U) in a rack.



### 4.3 Placement guidelines

For placement of the mixer/amplifier chassis, keep the following in mind:

- Make sure that air can circulate freely behind, beside, and above the chassis for adequate ventilation. There are intake vents on the sides and an exhaust vent on the back of the unit. Do not cover or block the vents.



- Make sure the chassis is protected from heat and kept away from direct heat sources, such as heating vents and radiators.

**CAUTION:** Do not allow the chassis to exceed the maximum operating temperature of 50° C (122° F). Be aware of conditions in an enclosed rack that may increase the temperature above room-ambient conditions.

### 4.4 Shelf mounting the chassis

The Bose® FreeSpace® DXA 2120 Digital Mixer/Amplifier has rubber feet for use when positioning the chassis on a shelf or counter top. They help to protect the surface that supports the unit and to prevent chassis movement. Be sure to follow the “Placement guidelines” previously described when choosing a location for the unit.

1. Place the mixer/amplifier upside-down on a solid, level surface on a protective covering to avoid scratching the top of the chassis.
2. Insert the supplied rubber feet to the four existing holes on the bottom of the chassis. Use a screwdriver to push the locking pins fully into the chassis, securing the feet.

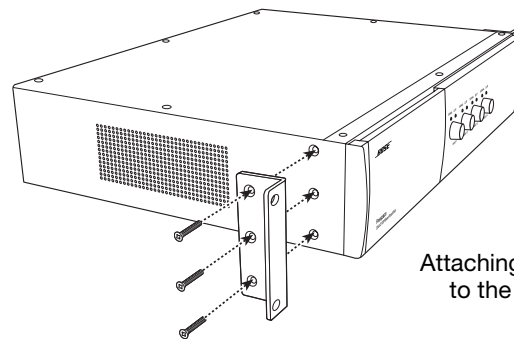
**Note:** The rubber feet may be removed by inserting a screwdriver into the screw and turning counterclockwise until the screw backs out of the hole.

### 4.5 Rack-mounting the chassis

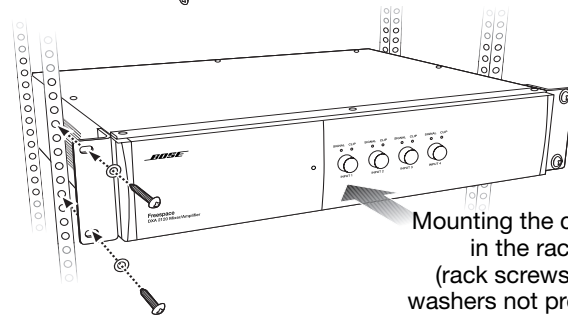
The chassis requires two 1.75" (4.4 cm) rack-space units with a 16" (40.6 cm) inside depth (including the rear supports).

1. Use the supplied rack ears and hardware for attachment to the chassis.
2. To secure the chassis to the rack, use four screws with washers (not provided) to prevent marring the front panel.

**Note:** Neoprene rubber washers are a good choice because they grip the screw head and prevent the screws from backing out from vibration or during transportation.



Attaching rack ears to the chassis



Mounting the chassis in the rack (rack screws and washers not provided)

**CAUTION:** To transport the rack-mounted chassis, be sure the rear of the chassis is supported mechanically in the rack. Install a shelf under the unit or use brackets for rear support. Lack of proper support may result in damage to the chassis.

# 4.0 Hardware Installation

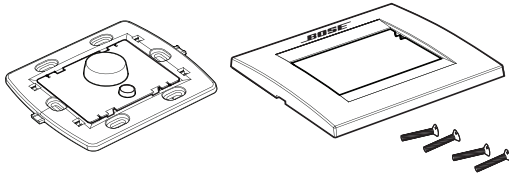
## 4.6 User interface (accessory)

The FreeSpace® DXA 2120 Digital Mixer/Amplifier is designed to be compatible with the following Bose® user interfaces:

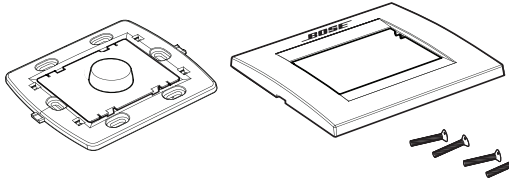
- Bose® Volume Control User Interface (PC 041966)
- Bose® Volume Control with A/B Select User Interface (PC 041967)

### 4.6.1 User interface installation

Volume control with A/B select user interface

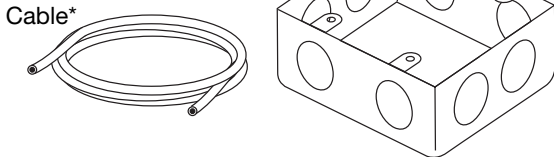


Volume control user interface



#### 4.6.1.1 Additional equipment required (not supplied)

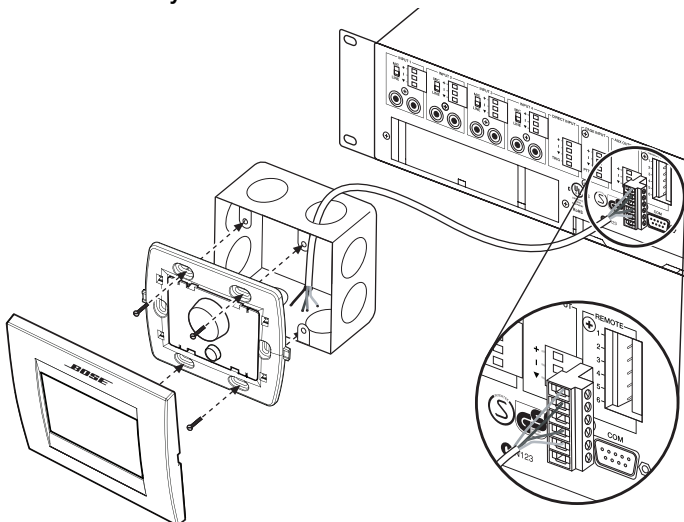
Double-gang electrical box



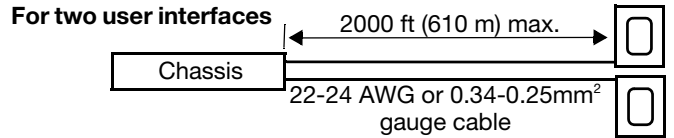
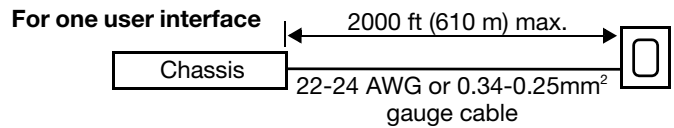
\*For the volume control user interface, use a single twisted pair of data-grade cable (22-24 AWG or 0.34-0.25mm<sup>2</sup>).

\*For the volume control with A/B select user interface, use two twisted pairs of data-grade cable (22-24 AWG or 0.34-0.25mm<sup>2</sup>).

#### 4.6.1.2 Assembly



#### 4.6.1.3 Recommended cable lengths

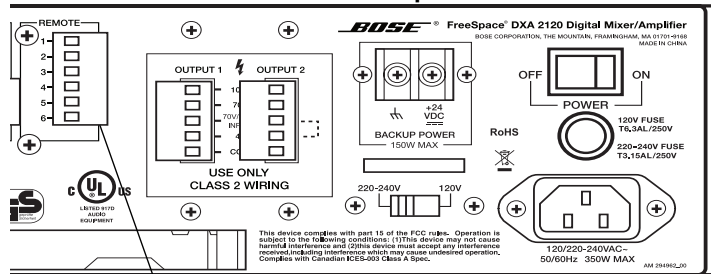


#### 4.6.1.4 User interface connections

Connect the user interface wires to the appropriate terminals on the 6-pin connector, and insert it into the REMOTE jack.

**CAUTION:** Use only 22-24 AWG or 0.34-0.25mm<sup>2</sup> gauge cable to connect the user interface to the mixer/amplifier.

#### Rear connection panel



User interface jack with Euroblock connector

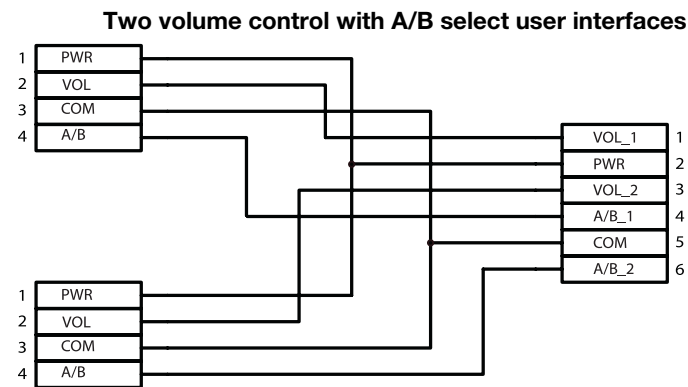
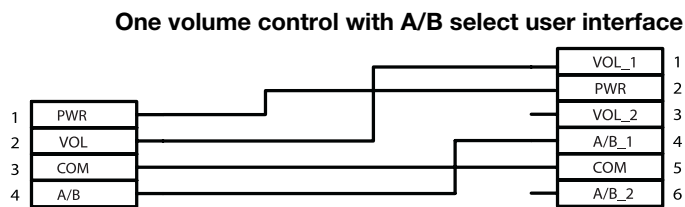
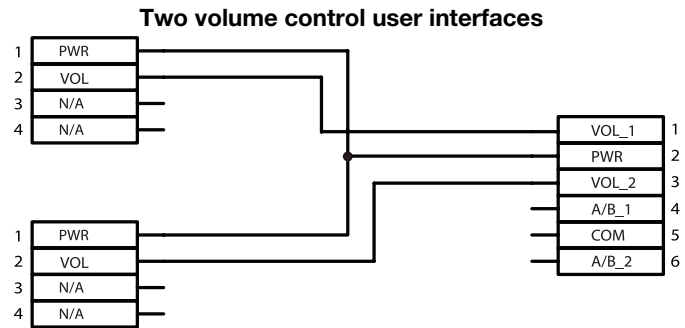
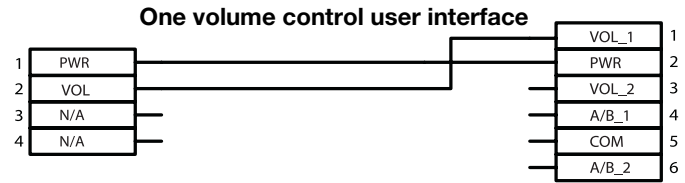
See section 4.6.1.5 for wiring diagrams.

# 4.0 Hardware Installation

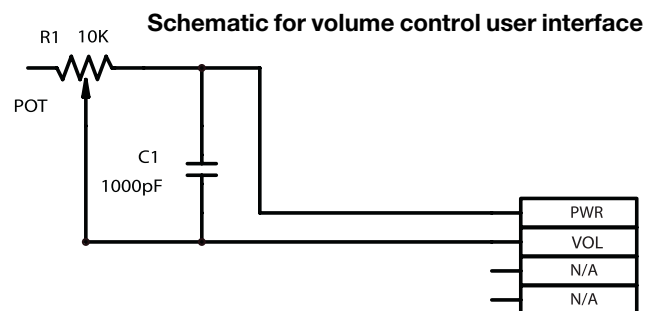
## 4.6.1.5 User interface wiring

6-terminal input connector mounts to REMOTE jack on the chassis

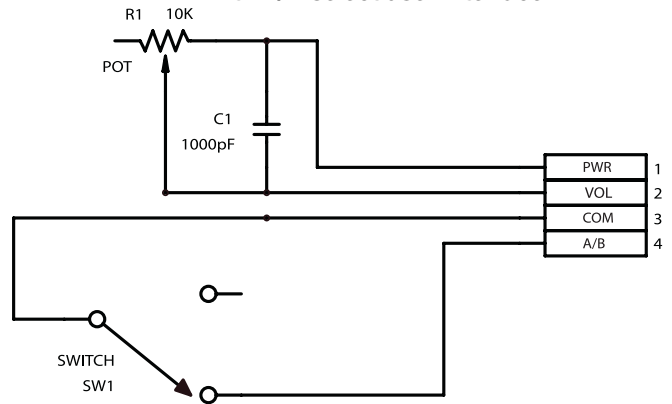
User interface connector



## 4.6.1.6 Detailed schematics of user interfaces



## Schematic for volume control with A/B select user interface



## 4.7 System wiring

Input and Output wiring information and illustrations are provided on pages that follow.

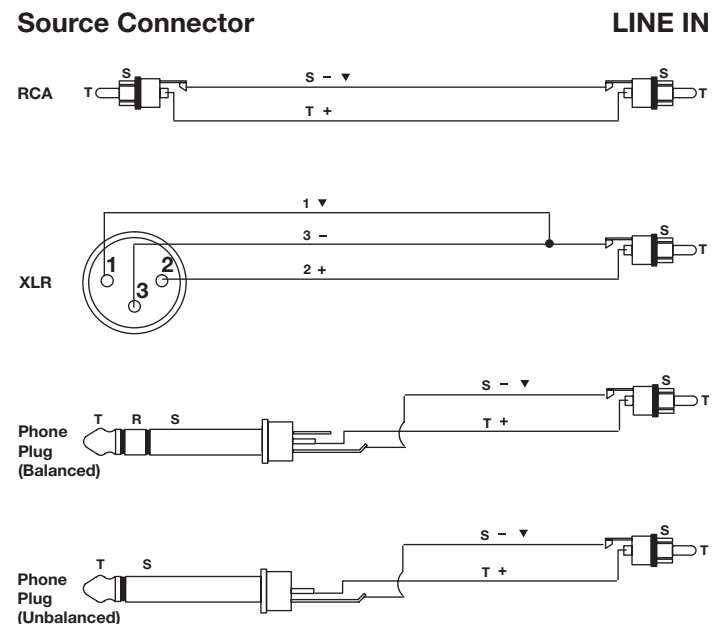
**WARNING:** Be sure the mixer/amplifier is disconnected from the AC (mains) power before making any connections.

### 4.7.1 LINE 1-4 source inputs

There are two sets of line input jacks for use with varied connector types.

#### 4.7.1.1 RCA connections

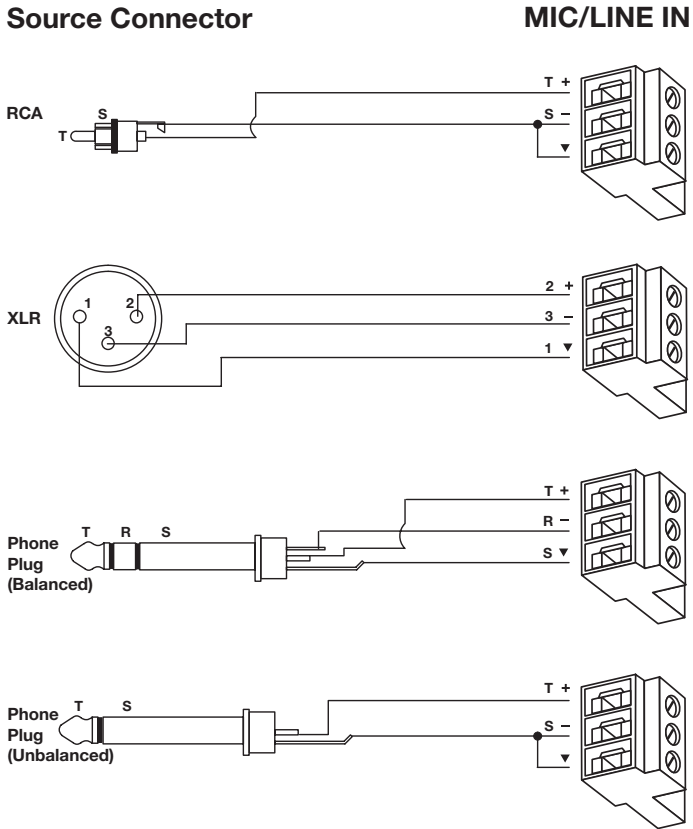
Audio sources can be connected to the LINE INPUT 1-4 RCA jacks using one of the following cable types:



# 4.0 Hardware Installation

## 4.7.1.2 Euroblock connections

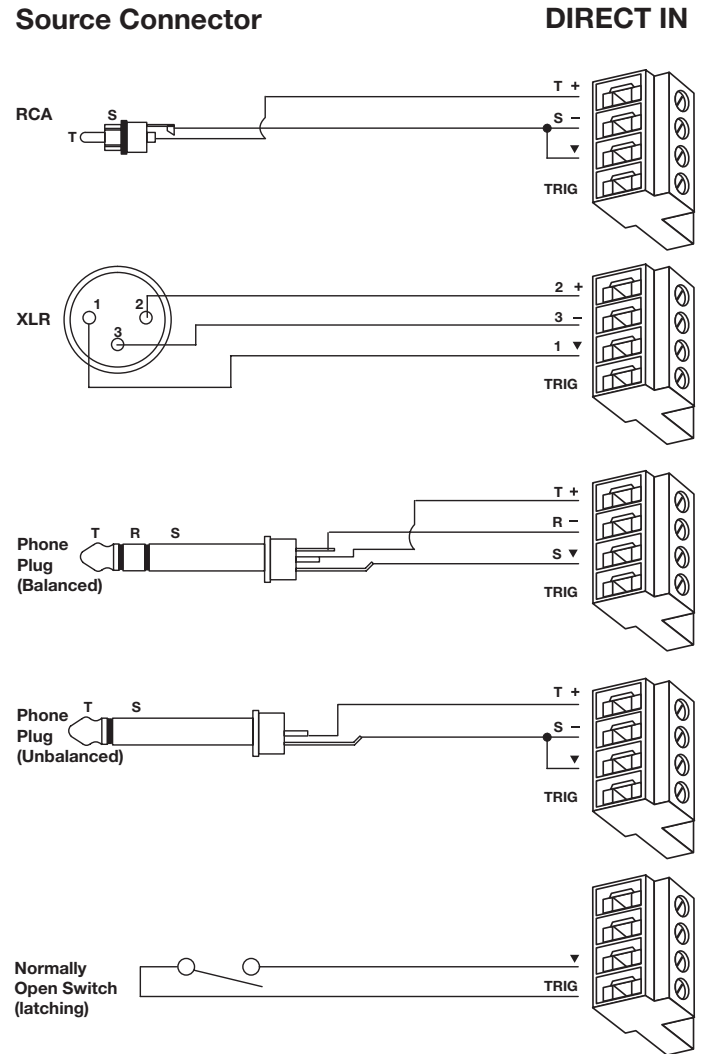
A microphone or other balanced audio source can be connected to the MIC/LINE INPUT 1-4 Euroblock terminals input using one of the following cable types.



## 4.7.2 DIRECT source input

A microphone or other audio source can connect to the DIRECT INPUT jack using one of the following cable types.

The control input requires a normally open switch.



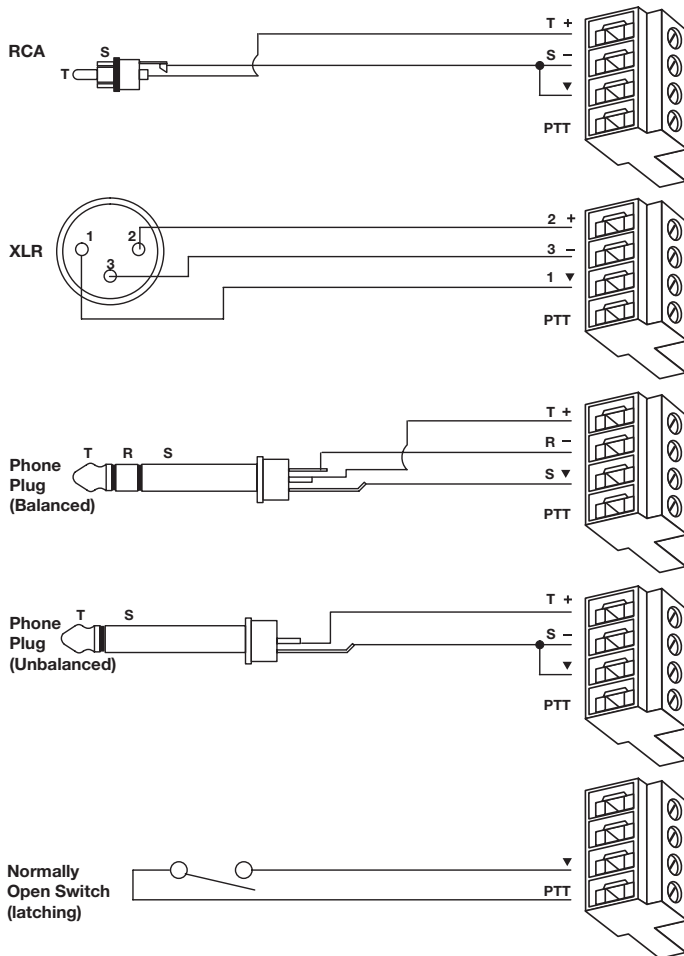
# 4.0 Hardware Installation

## 4.7.3 PAGE source input

A microphone or another paging source can be connected to the PAGE INPUT jack using one of the following cable types.

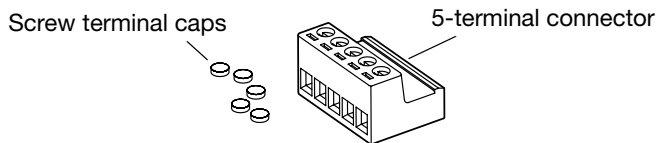
### Source Connector

### PAGE IN



## 4.7.4 OUTPUT connections

Use the supplied 5-terminal connectors for wiring loudspeakers to the output jacks on the rear of the mixer/amplifier.



Insert the speaker wire into the proper terminals for the type of voltage needed, as shown in the figure on the right.

Tighten the screws to hold the wires in place, and insert the screw terminal caps to cover each screw. These caps prevent making contact with the screws, which could cause an electrical shock.

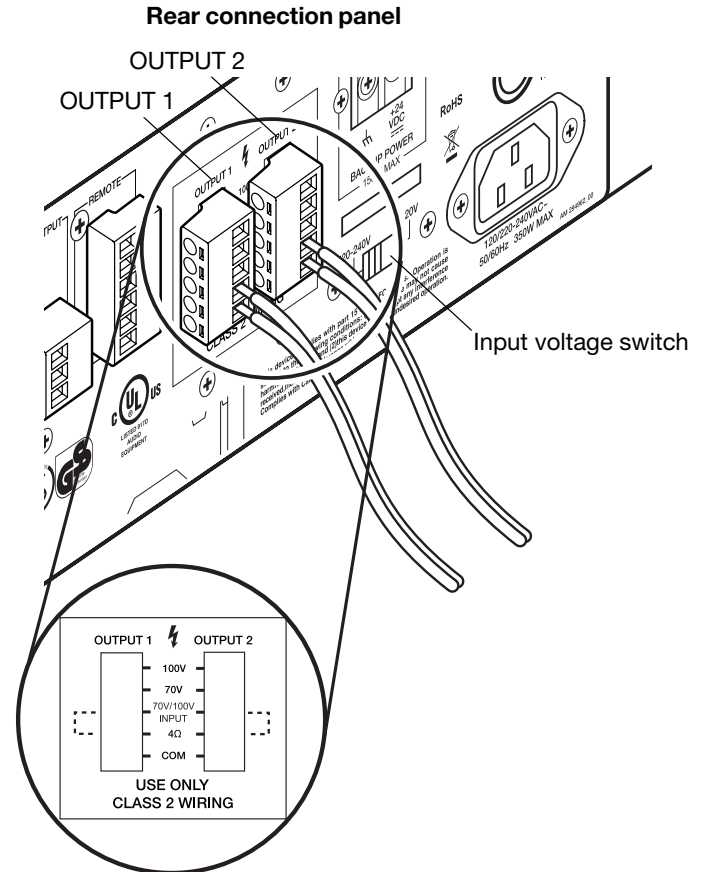
**WARNING:** Terminals marked with ⚡ are hazardous live. The external wiring connected to these terminals should be installed by an instructed person.

**WARNING:** Terminals marked with ⚡ should be connected to the loudspeakers such that the metal parts of its terminal are inaccessible.

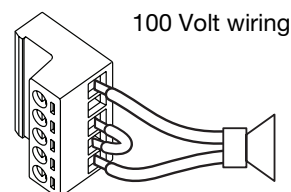
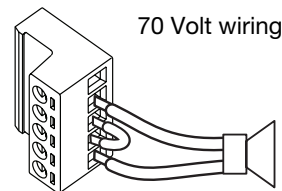
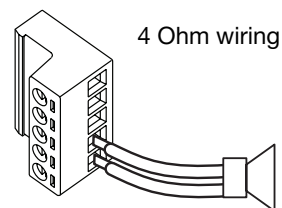
Follow the diagram below to insert the 5-terminal connector into the output jacks on the back of the mixer/amplifier.

Notice the proper wiring for 4 ohm, 70 volt or 100 volt uses. Both 70V and 100V wiring require the use of a jumper cable, as shown.

**Note:** Use 12 AWG (4 mm<sup>2</sup>) to 20 AWG (0.5 mm<sup>2</sup>) gauge wire for the jumper.



### OUTPUT 1 and OUTPUT 2



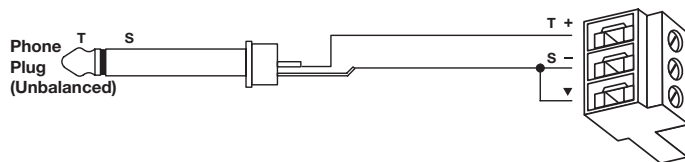
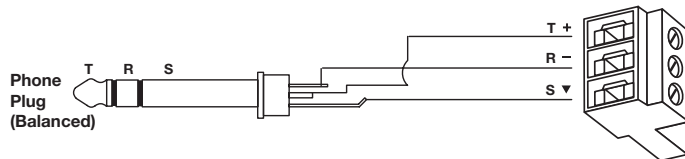
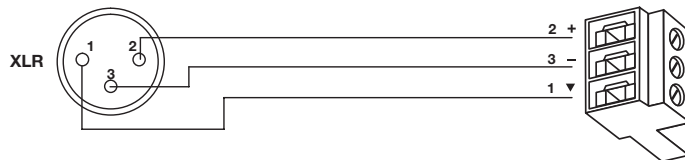
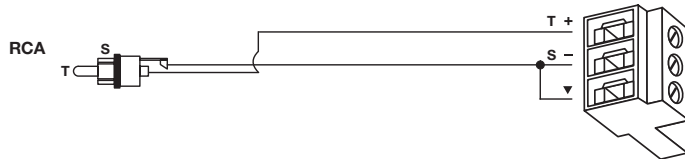
## 4.0 Hardware Installation

### 4.7.5 AUX output connection

The signal and any applied processing from any of the four inputs can be output using the line-level AUX OUTPUT jack. This output can feed into another amplifier or other equipment used in the installation.

#### Connector

#### AUX OUT



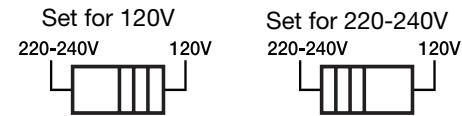
### 4.8 AC POWER connection

#### 4.8.1 Input voltage setting (120 or 220-240V)

The rear connection panel of the mixer/amplifier chassis provides an input voltage switch for 120V or 220-240V use. An input voltage switch is not provided on the 100V version.

Change the setting only as needed.

Check the switch setting to be sure it is appropriate for the local power standard.



**WARNING:** Be sure to disconnect the mixer/amplifier chassis from AC power before changing the input voltage setting on the rear connection panel.

#### 4.8.2 Fuse type

Be sure the proper supplied fuse is inserted in the fuse box. Replace the fuse as needed with the proper type. 120V units require a T6.3AL/250V fuse. 220V-240V units require a T3.15AL/250V fuse.

#### 4.8.3 AC POWER connection

Insert the proper power cord for the voltage used in your region.

### 4.9 DC POWER connection

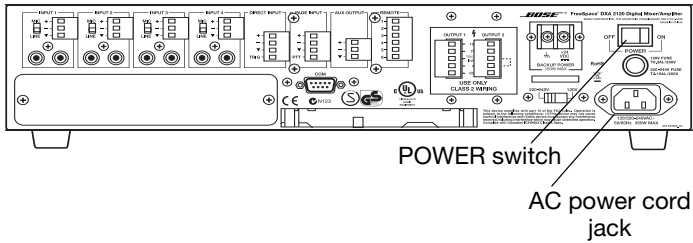
This unit allows for +24V DC battery backup power in case there is a mains power failure. There will be a noticeable reduction in output due to the limited power of this backup power source.

# 5.0 System Setup

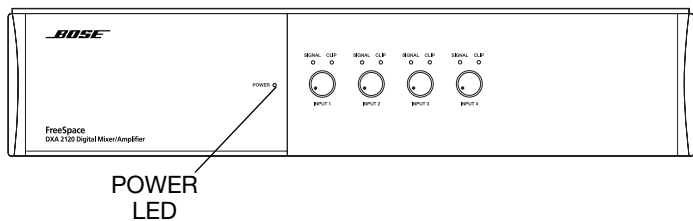
## 5.1 System setup introduction

This section provides instructions on adjusting system settings for preferred operation. To make these settings, the system must be connected to power and the POWER switch set to ON.

Rear connection panel



Front control panel

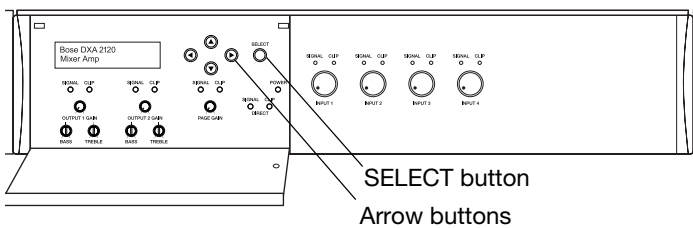


**Note:** When the system is unplugged, or if a power loss occurs, these system settings are retained in flash memory. However, continuous system operation during a power loss requires the use of an optional backup power source.

## 5.2 System setup procedure

When the unit is on, the POWER LED lights. Opening the front control compartment gives you access to the LCD and control buttons. The LCD displays the product model name at startup.

Front control compartment



- If the system is locked, simultaneously press the left and right arrow buttons and hold for five seconds. Lockout Off appears.
- When the system is unlocked, you can navigate to system setup options.
- Use the SELECT button to activate a menu option and to confirm a new setting.
- Use the arrow buttons to the right of the LCD to move forward, back, up, and down through menus.



## 5.2.1 Selecting an operation mode

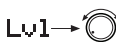



The setting menus available depend on the mode of operation you choose. Use the right arrow button to enter the mode menu. Then use the up or down arrows to select the mode you want. Choose from:

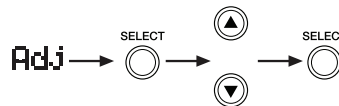
- **Mixer Mode:** The system can mix up to four mic/line inputs to each of the two output channels for use in one or two zones.
- **Stereo Select Mode:** With up to two stereo sources connected and using both output channels, the system provides stereo sound to a single output zone.
- **Dual Mono Select Mode:** With two input sources connected to each of the two output channels, the system provides audio in two zones.
- **Utility:** Includes system lockout, an option to restore all settings to the factory defaults, and the ability to view firmware and EQ versions.

To confirm your selection, press the SELECT button. An asterisk (\*) appears to the left of the selection made.

## 5.2.2 Setting the options for that mode

There are several ways to change settings and particular buttons to use for each type of setting. Such as:

- To adjust **Input Vol Lvl**, use the knobs on the mixer/amplifier front panel only. The level that is set appears in the menu field, but cannot be changed in the menu. 
- For **Output Vol Lvl**, adjust the gain knobs for output, located in the front control compartment. 
- For **Output Bass Lvl** and **Output Treb Lvl**, turn the gain screws for bass and treble, located in the front control compartment. 
- For **Page Vol Lvl**, use the PAGE GAIN knob, located in the front control compartment. 
- To change **Adj** menu fields:
  1. Activate the field by pressing SELECT.
  2. Use the up or down arrow to adjust the value.
  3. Press SELECT to confirm the setting and move on.



**Note:** After a 45 second pause (with no activity), the system resets to the initial menu for the chosen mode.



# 5.0 System Setup

## 5.3 Mixer Mode settings

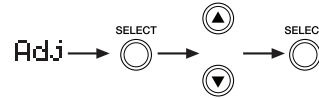
Here is an overview of common steps to follow in setting up the Mixer Mode:

- A.** Choose this mode.
- B.** Set up inputs.
- C.** Set up outputs.
- D.** Choose EQ settings.
- E.** Set up Page Input, if applicable.
- F.** Set up Direct Input, if applicable.
- G.** Set up Master Volume, if applicable.

Setup menus unfold as you move right to the options provided, as shown.

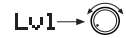
### 5.3.1 A reminder: the settings process

- For various adjustments (designated by **Adj**) use these steps:
  1. Press SELECT to activate the Adj field.
  2. Using the up or down arrow, adjust the value.
  3. Press SELECT to confirm the setting and move on.



- For level changes (designated by **Lvl**), use front panel controls as shown.

- To change **Input Vol Lvl**, use:



- To change **Output Vol Lvl**, use:



- To change **Output Bass Lvl** and **Output Treb Lvl**, use a screwdriver to turn:



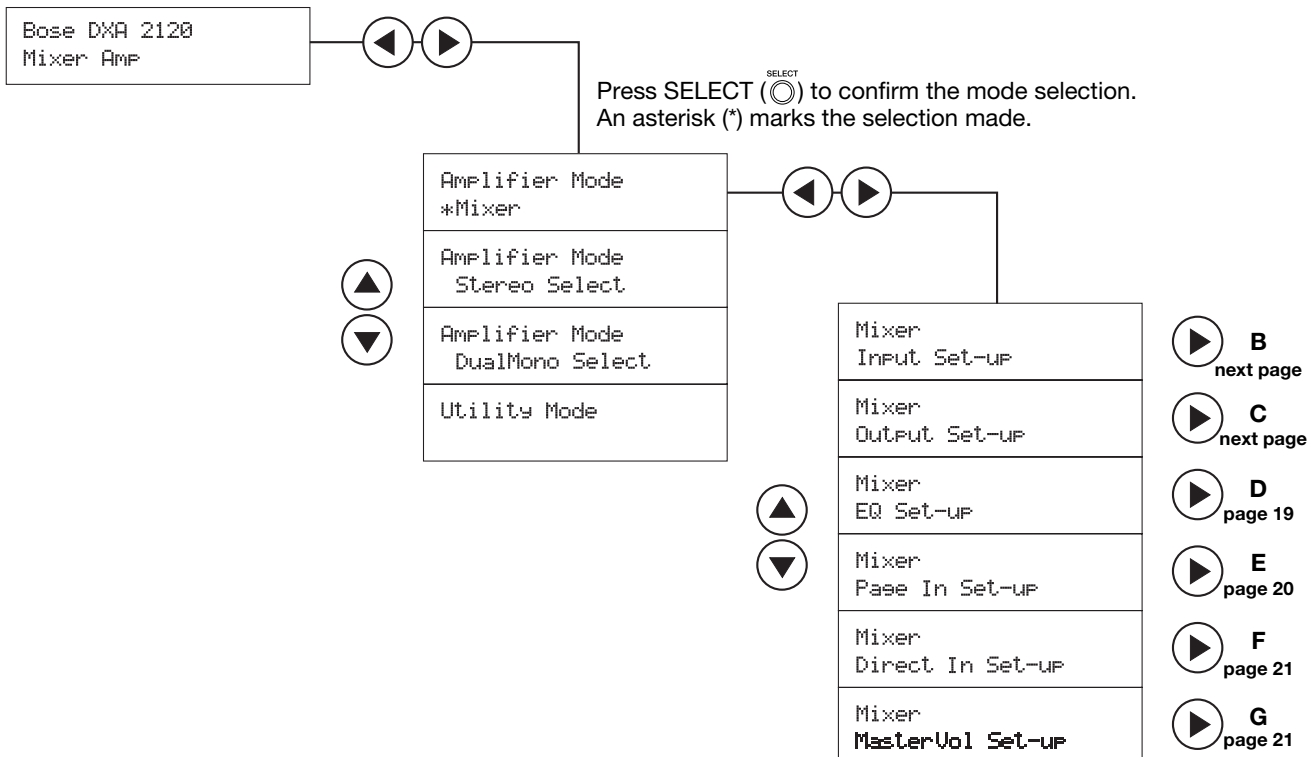
- To change **Page Vol Lvl**, use:



PAGE GAIN

# A

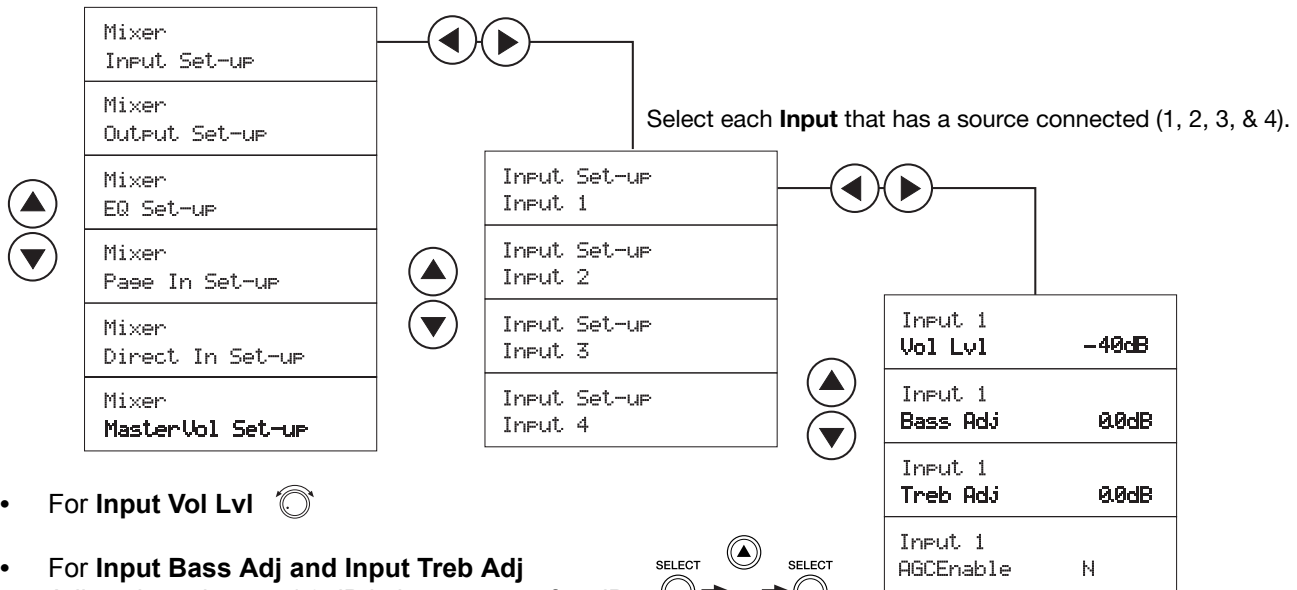
### Choose Mixer Mode



# 5.0 System Setup

## B

### Mixer Input Set-up

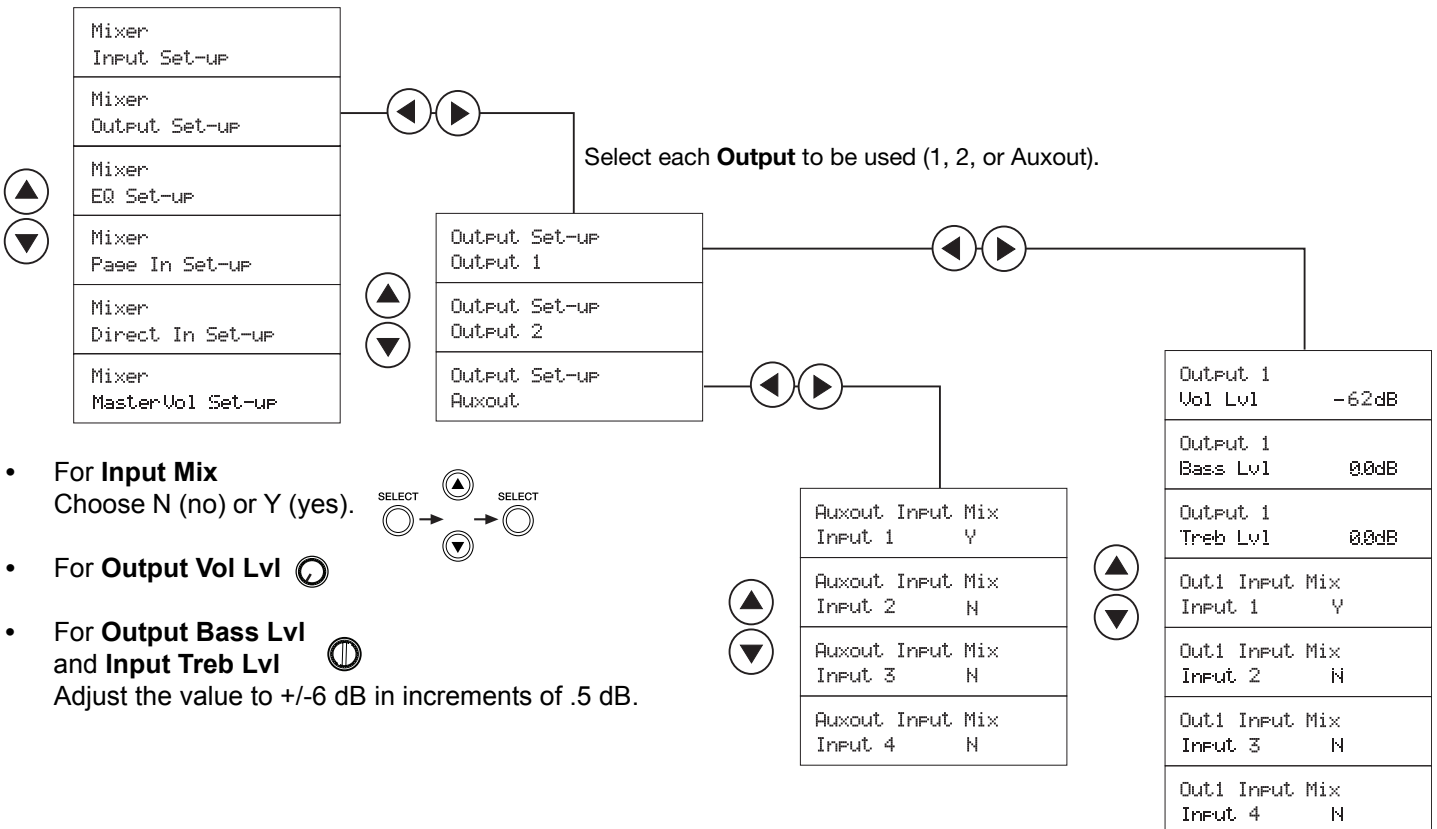


- For **Input Vol Lvl**
- For **Input Bass Adj and Input Treb Adj**  
Adjust the value to +/-6 dB in increments of .5 dB.
- For **AGCEnable**  
Choose N (no) or Y (yes).

**Note:** AGC defaults to N.  
AGC is recommended for use with low-level sources (i.e. microphone with low sensitivity).

## C

### Mixer Output Set-up

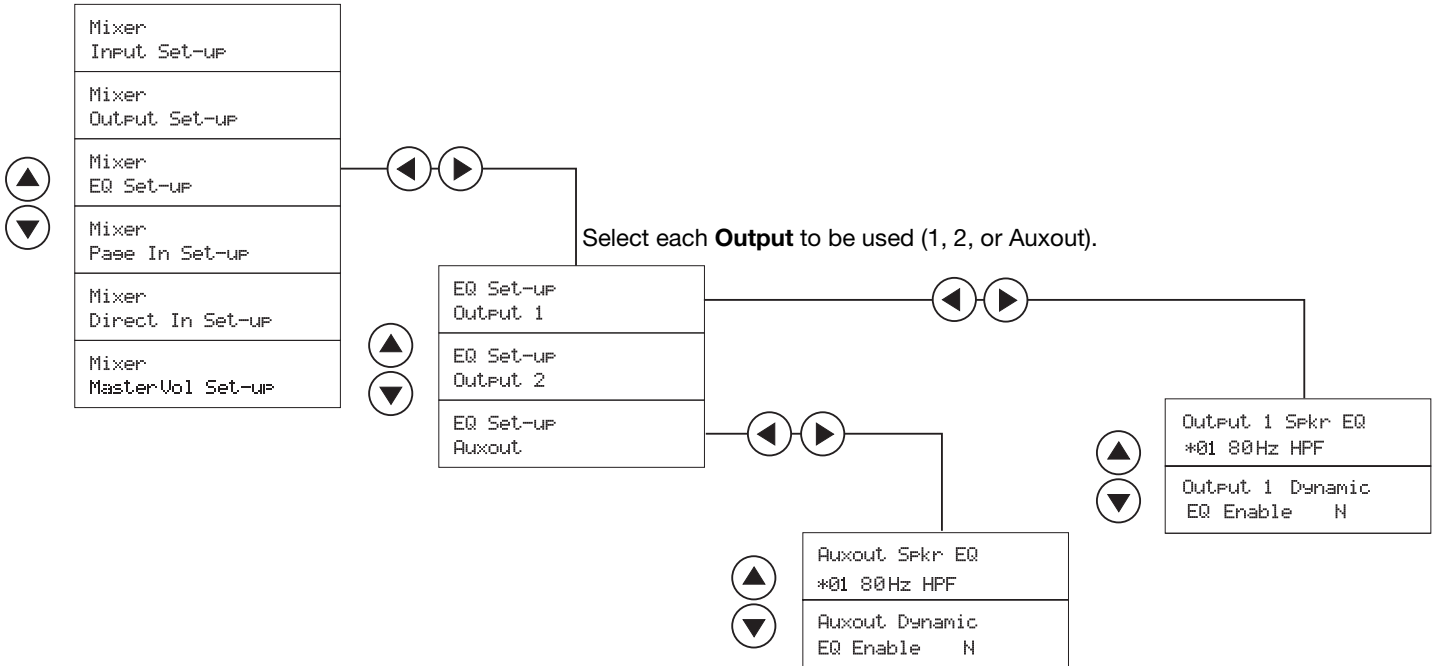


- For **Input Mix**  
Choose N (no) or Y (yes).
- For **Output Vol Lvl**
- For **Output Bass Lvl and Input Treb Lvl**   
Adjust the value to +/-6 dB in increments of .5 dB.

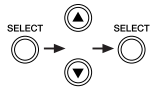
# 5.0 System Setup

## D

### Mixer EQ Set-up

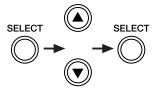


- For **Spkr EQ**  
Move up or down to choose the EQ setting needed.



An asterisk (\*) marks the selection made.

- For **Dynamic EQ Enable**  
Choose N (no) or Y (yes).

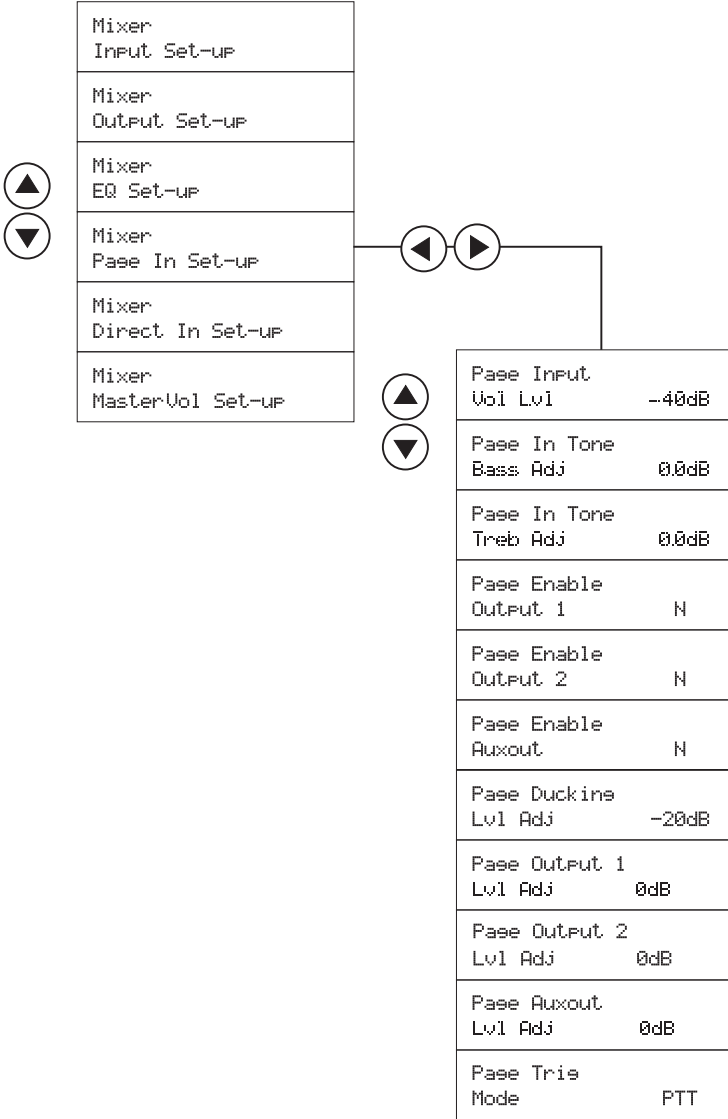



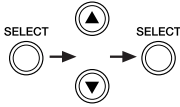
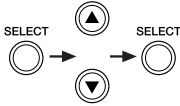
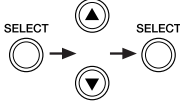
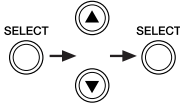
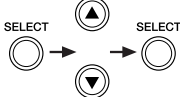
**Note:** Dynamic EQ maintains tonal balance at all listening levels. The equalization adjusts automatically for the output level setting.

# 5.0 System Setup

## E

### Mixer Page In Set-up



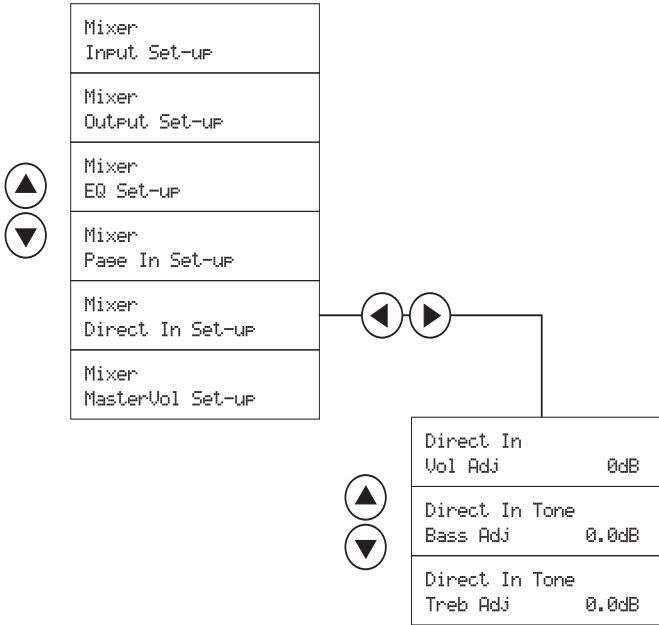
- For **Page Vol Lvl**  PAGE GAIN
- For **Page Bass Adj** and **Page Treb Adj**  Adjust the value to +/-6 dB in increments of .5 dB.
- For **Page Enable**  Choose N (no) or Y (yes).
- For **Page Ducking Lvl Adj**  Adjust the value from -50 dB to 0 dB in increments of 1 dB.
- For **Output Lvl Adj**  Adjust the value to +/-20 dB in increments of 1 dB.
- For **Page Trig Mode**  Choose PTT or Auto.

**Note:** In Page Trig Mode, the page output can be triggered by pushing the button on a push-to-talk-style microphone (PTT), or triggers automatically when a signal is detected at the Page input (Auto).

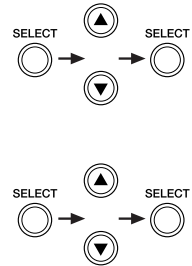
# 5.0 System Setup

## F

### Mixer Direct In Set-up

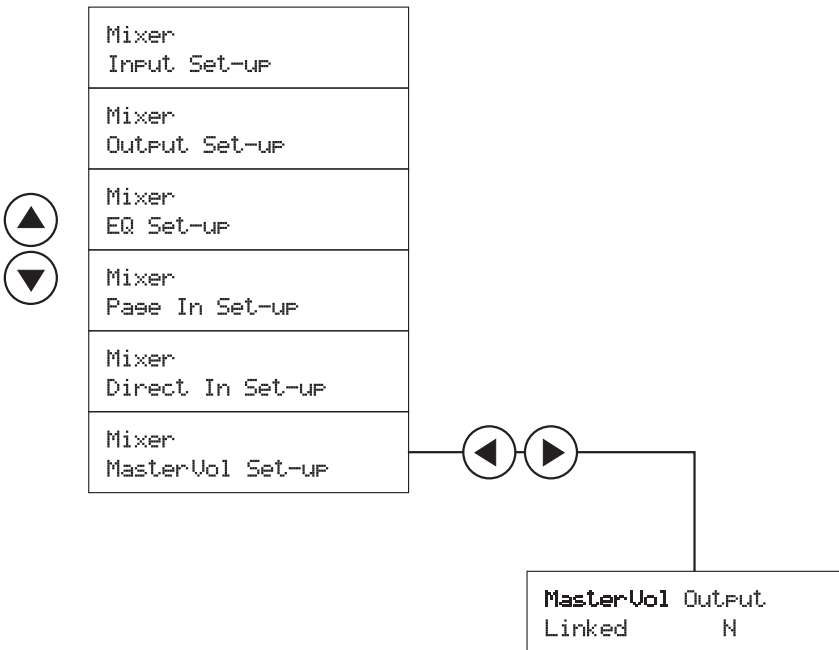


- For **Vol Adj**  
Adjust the value from -40 dB to +10 dB in increments of 1 dB.
- For **Bass Adj** and **Treb Adj**  
Adjust the value to +/-6 dB in increments of .5 dB.

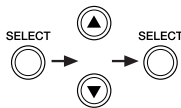


## G

### Mixer Master Vol Set-up



- For **Output Linked**  
Choose N (no) or Y (yes).



**Note:** Y links Output 1 and Output 2 gains for control using the Output 1 gain knob.

# 5.0 System Setup

## 5.4 Stereo Select Mode settings

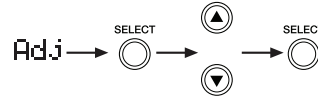
Here is an overview of common steps to follow in setting up the Stereo Select Mode:

- A. Choose this mode.
- B. Set up inputs.
- C. Set up outputs.
- D. Choose EQ settings.
- E. Set up Page Input, if applicable.
- F. Set up Direct Input, if applicable.

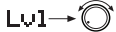
Setup menus unfold as you move right to the options provided, as shown.

## 5.4.1 Remember: for adjustments, use three steps

- For various adjustments (designated by **Adj**), use these steps:
  1. Press SELECT to activate the Adj field.
  2. Using the up or down arrow, adjust the value.
  3. Press SELECT to confirm the setting and move on.




- For level changes (designated by **Lvl**), use front panel controls as shown.

- To change **Input Vol Lvl**, use: 

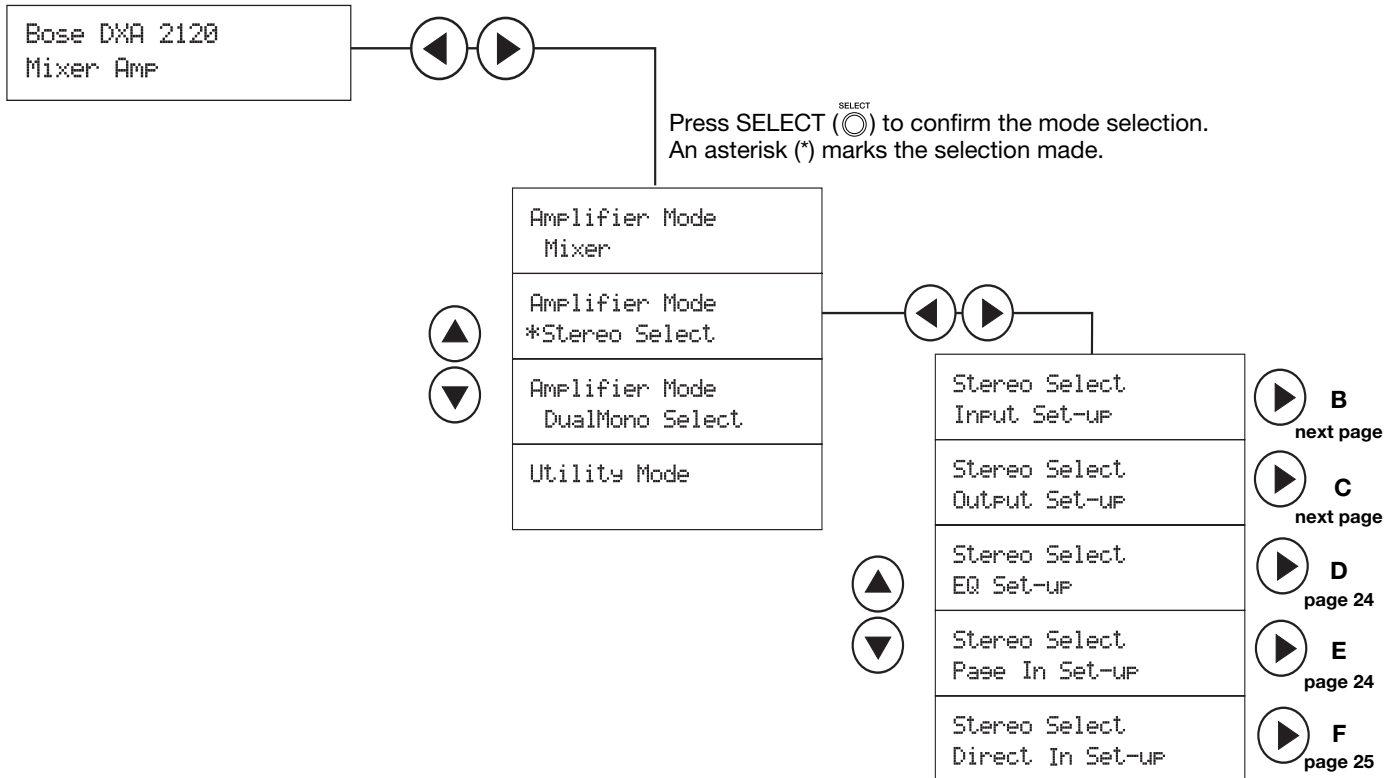
- To change **Output Vol Lvl**, use: 

- To change **Output Bass Lvl** and **Output Treb Lvl**, use a screwdriver to turn: 

- To change **Page Vol Lvl**, use:   
PAGE GAIN

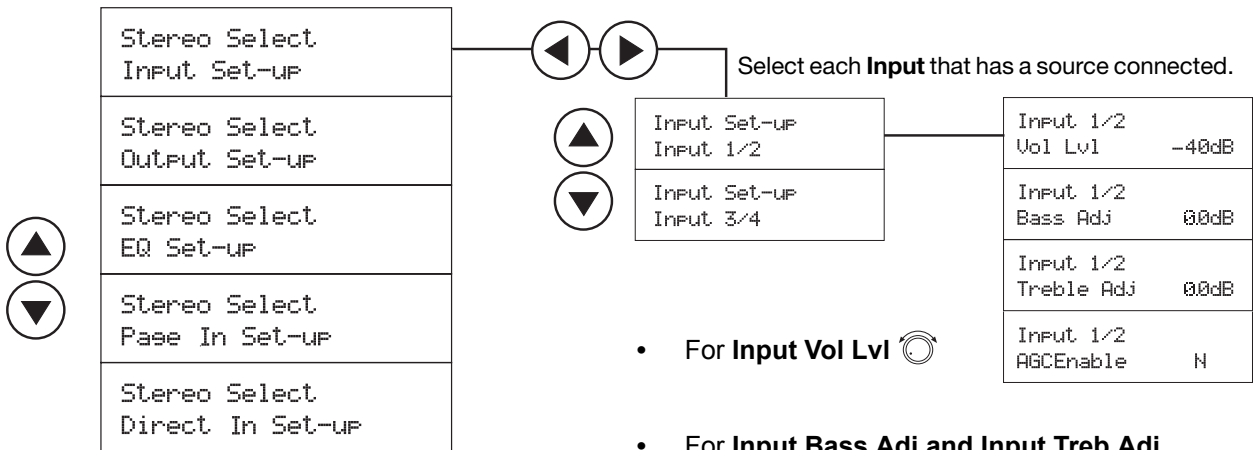
### A

#### Choose Stereo Select Mode



## B

### Stereo Select Input Set-up

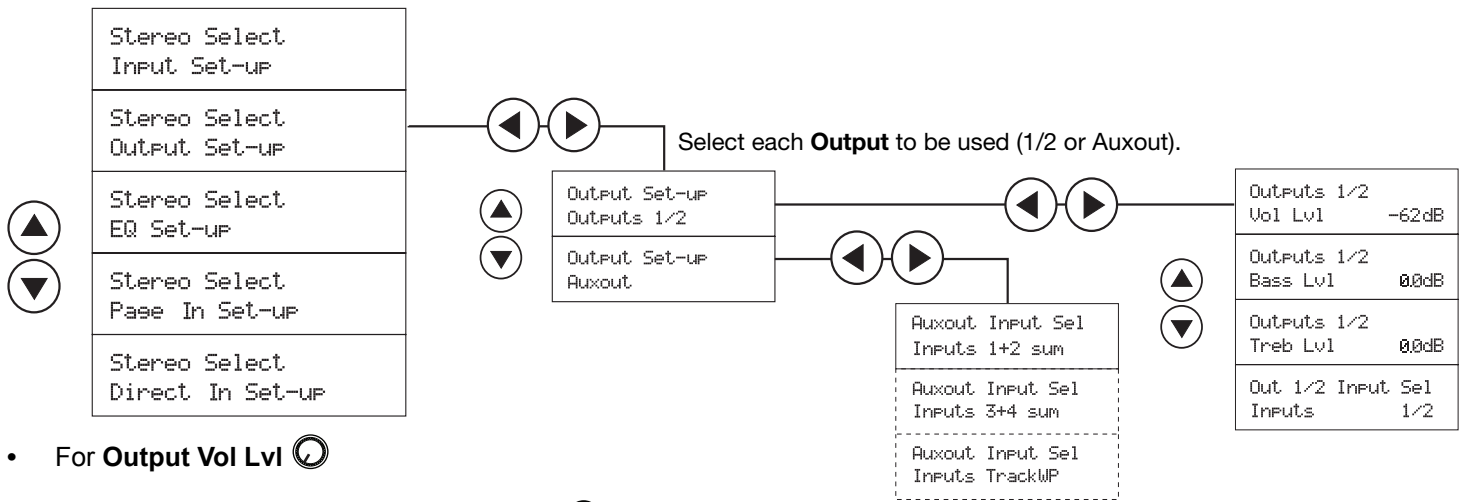


- For **Input Vol Lvl**
- For **Input Bass Adj and Input Treb Adj**  
Adjust the value to +/-6 dB in increments of .5 dB.
- For **AGCEnable**  
Choose N (no) or Y (yes).

**Note:** AGC defaults to N. AGC is recommended for use with low-level sources (i.e., microphone with low sensitivity).

## C

### Stereo Select Output Set-up



- For **Output Vol Lvl**
- For **Output Bass Lvl and Input Treb Lvl**   
Adjust the value to +/-6 dB in increments of .5 dB.

- For **Out 1/2 Input Sel**

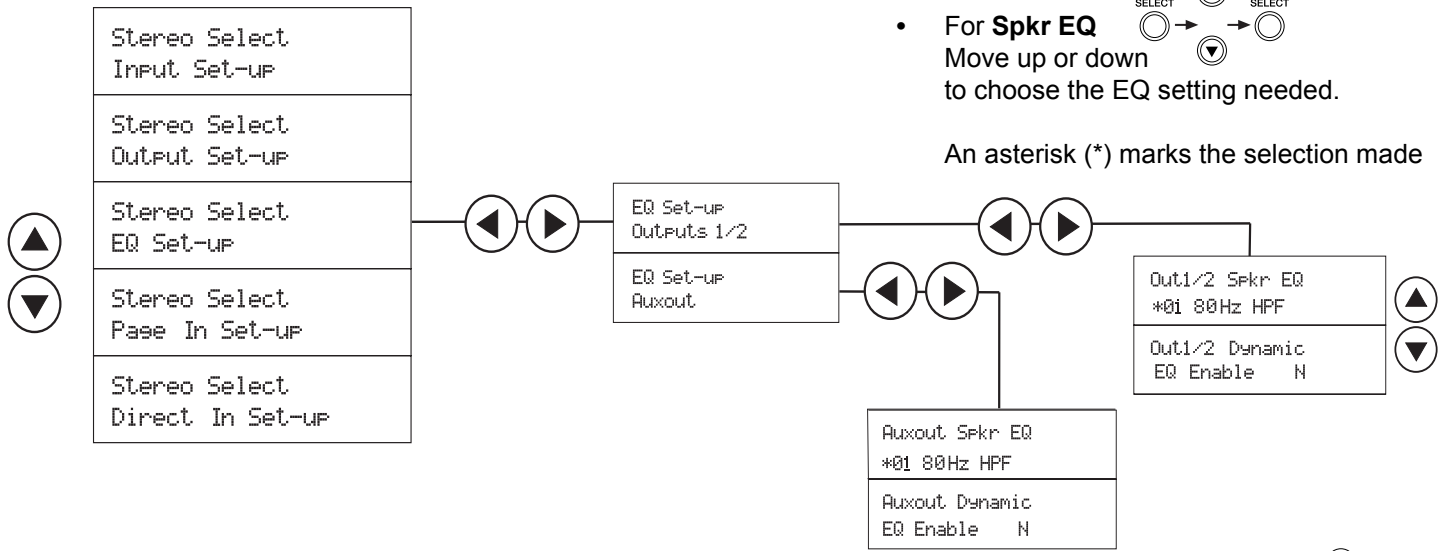
- For **Auxout Input Sel**  
Selects which inputs are routed to the Aux output. Input TrackWP tracks to A/B switch on user interface.

**Note:** If TrackWP is selected and a user interface is installed, the input (A/B) selected on the user interface will be displayed.

# 5.0 System Setup

## D

### Stereo Select EQ Set-up



- For **Spkr EQ** Move up or down to choose the EQ setting needed.

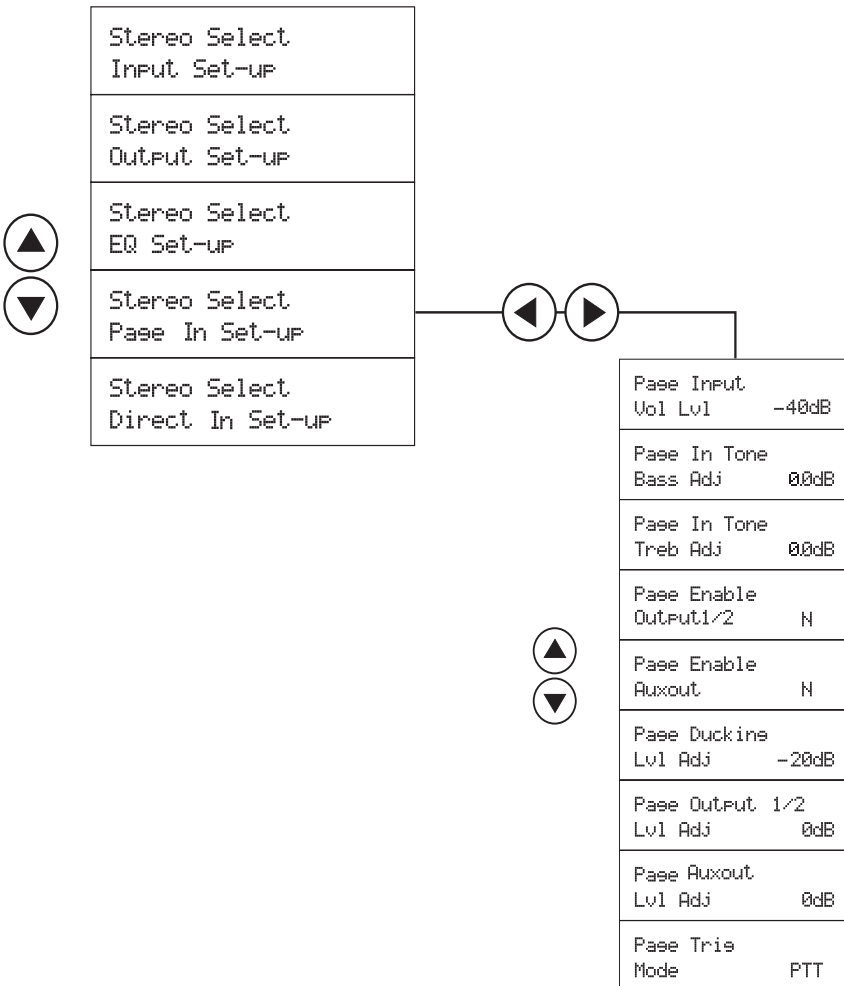
An asterisk (\*) marks the selection made

- For **Dynamic EQ Enable** Choose N (no) or Y (yes).

**Note:** Dynamic EQ maintains tonal balance at all listening levels. The equalization adjusts automatically for the output level setting.

## E

### Stereo Select Page In Set-up



- For **Page Vol Lvl**

- For **Page Bass Adj** and **Page Treb Adj** Adjust the value to +/-6 dB in increments of .5 dB.

- For **Page Enable** Choose N (no) or Y (yes).

- For **Page Ducking Lvl Adj** Adjust the value from -50 dB to 0 dB in increments of 1 dB.

- For **Output Lvl Adj** Adjust the value to +/-20 dB in increments of 1 dB.

- For **Page Trig Mode**. Choose PTT or Auto.

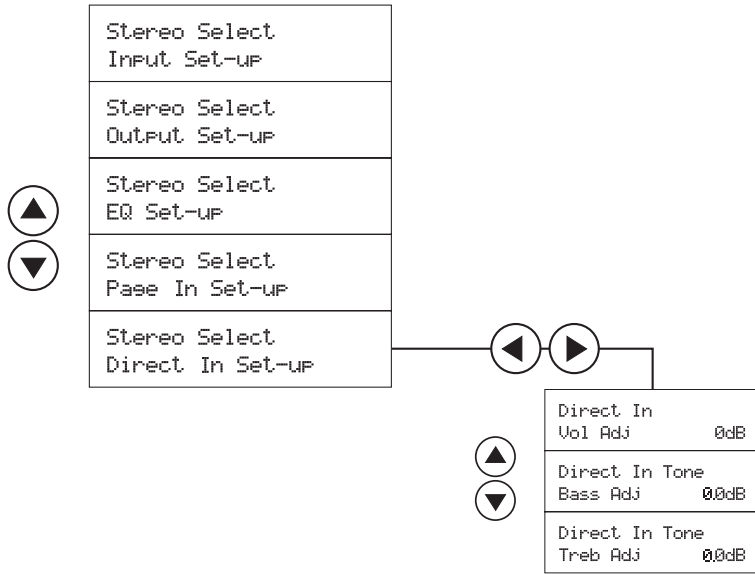
**Note:** In Page Trig Mode, the page output can be triggered by pushing the button on a push-to-talk-style microphone (PTT), or triggers automatically when a signal is detected at the Page input (Auto).



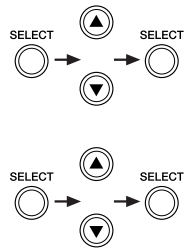
# 5.0 System Setup

## F

### Stereo Select Direct in Set-up



- For **Vol Adj**  
Adjust the value from -40 dB to +10 dB in increments of 1 dB.
- For **Bass Adj** and **Treb Adj**  
Adjust the value to +/-6 dB in increments of .5 dB.



# 5.0 System Setup

## 5.5 Dual Mono Select Mode settings

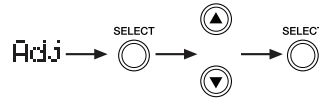
Here is an overview of common steps to follow in setting up the Dual Mono Select Mode:

- A. Choose this mode.
- B. Set up inputs.
- C. Set up outputs.
- D. Choose EQ settings.
- E. Set up Page Input, if applicable.
- F. Set up Direct Input, if applicable.

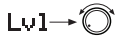
Setup menus unfold as you move right to the options provided, as shown.

### 5.5.1 Remember: for adjustments, use three steps

- For various adjustments (designated by **Adj**), use these steps:
  1. Press SELECT to activate the Adj field.
  2. Using the up or down arrow, adjust the value.
  3. Press SELECT to confirm the setting and move on.




- For level changes (designated by **Lvl**), use front panel controls as shown.

- To change **Input Vol Lvl**, use: 

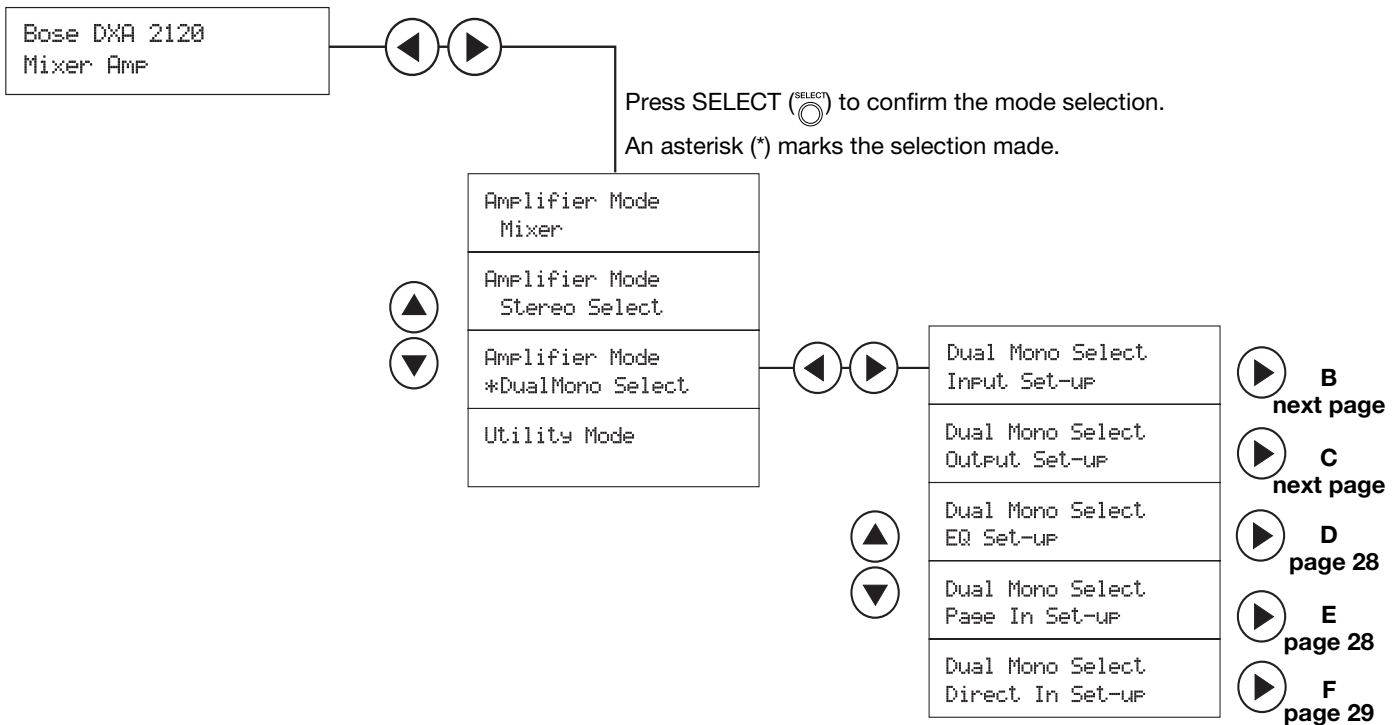
- To change **Output Vol Lvl**, use: 

- To change **Output Bass Lvl** and **Output Treb Lvl**, use a screwdriver to turn: 

- To change **Page Vol Lvl**, use:   
PAGE GAIN

### A

#### Choose Dual Mono Mode

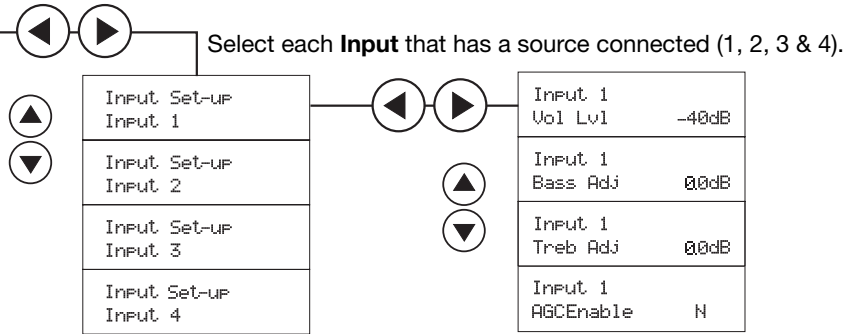


# 5.0 System Setup

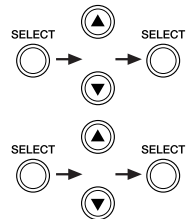
## B

### Dual Mono Select Input Set-up

Dual Mono Select Input Set-up
Dual Mono Select Output Set-up
Dual Mono Select EQ Set-up
Dual Mono Select Page In Set-up
Dual Mono Select Direct In Set-up



- For **Input Vol Lvl**
- For **Input Bass Adj and Input Treb Adj**  
Adjust the value to +/-6 dB in increments of .5 dB.
- For **AGCEnable**  
Choose N (no) or Y (yes).

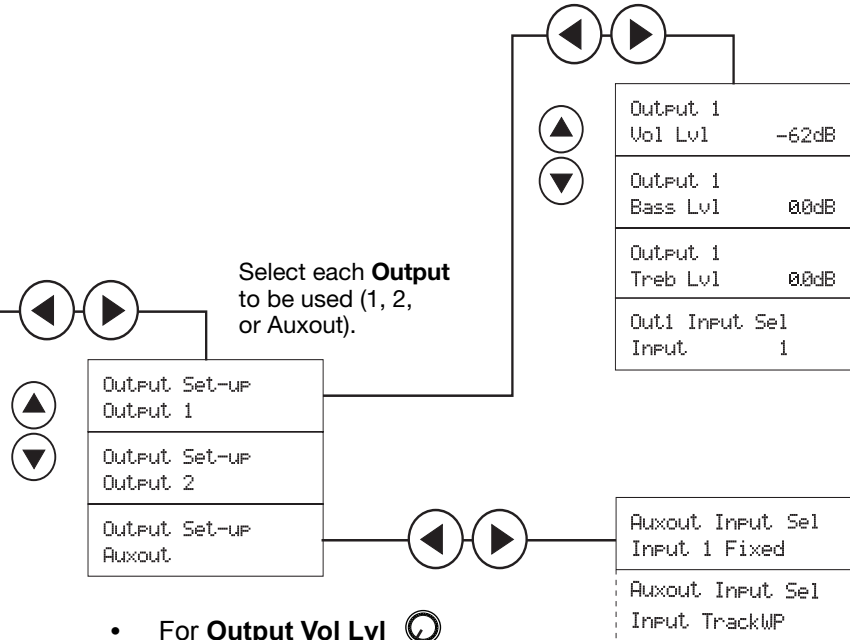


**Note:** AGC defaults to N. AGC is recommended for use with low-level sources (i.e., microphone with low sensitivity).

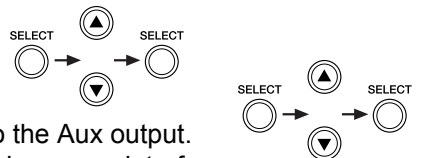
## C

### Dual Mono Select Output Set-up

Dual Mono Select Input Set-up
Dual Mono Select Output Set-up
Dual Mono Select EQ Set-up
Dual Mono Select Page In Set-up
Dual Mono Select Direct In Set-up



- For **Output Vol Lvl**
- For **Output Bass Lvl and Input Treb Lvl**   
Adjust the value to +/-6 dB in increments of .5 dB.
- For **Out 1 and Out 2 Input Sel**
- For **Auxout Input Sel**  
Selects which inputs are routed to the Aux output. Input TrackWP tracks to A/B switch on user interface.

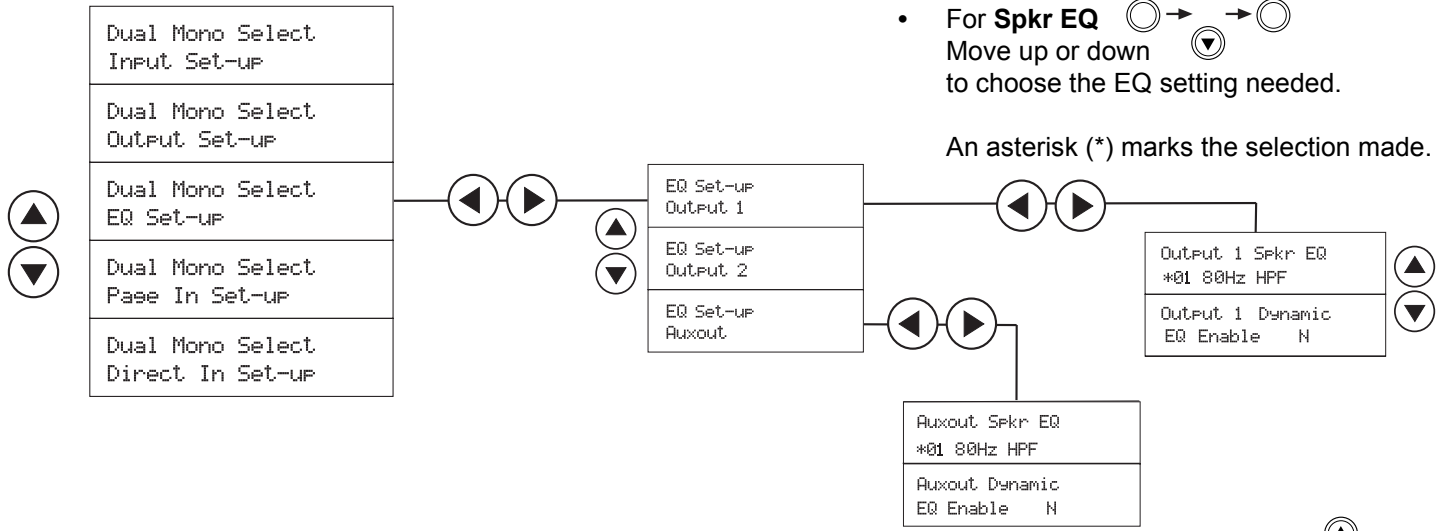


**Note:** If TrackWP is selected and a user interface is installed, the input (A/B) selected on the user interface will be displayed.

# 5.0 System Setup

## D

### Dual Mono Select EQ Set-up

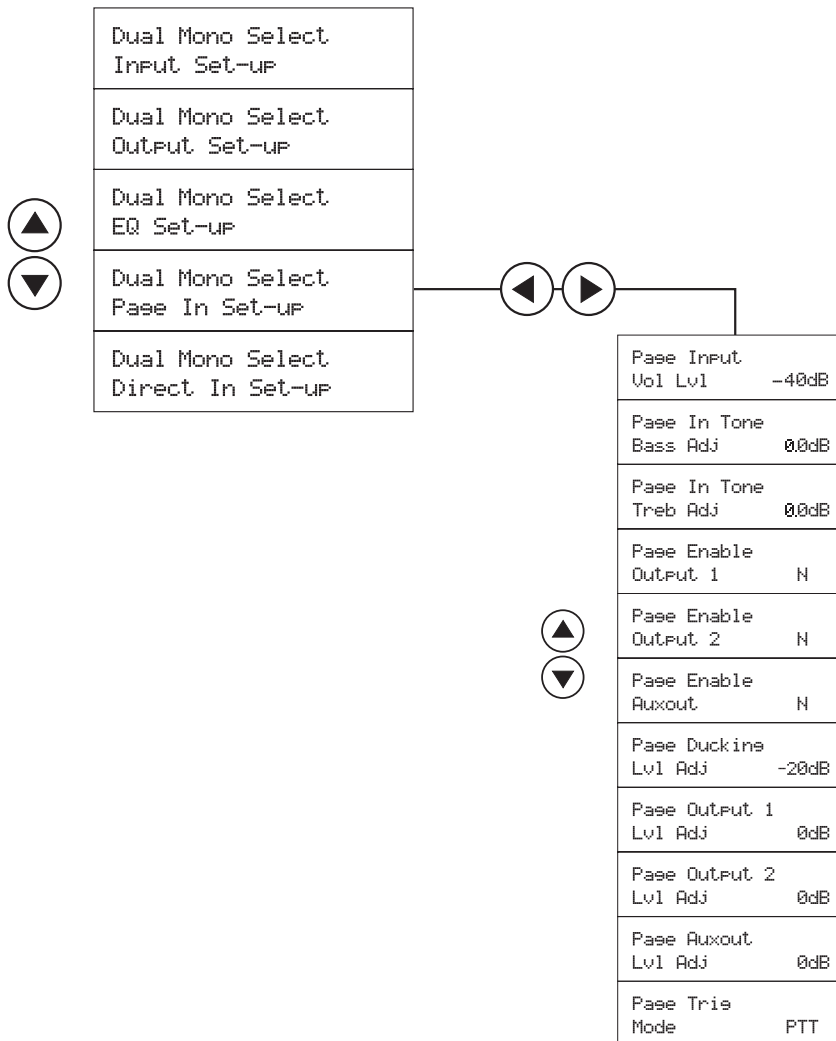


- For **Spkr EQ** Move up or down to choose the EQ setting needed.

An asterisk (\*) marks the selection made.

## E

### Dual Mono Select Page in Set-up



- For **Dynamic EQ Enable** Choose N (no) or Y (yes).

**Note:** Dynamic EQ maintains tonal balance at all listening levels. The equalization adjusts automatically for the output level setting.

- For **Page Vol Lvl**



- For **Page Bass Adj** and **Page Treb Adj** Adjust the value to +/-6 dB in increments of .5 dB.

- For **Page Enable** Choose N (no) or Y (yes).

- For **Page Ducking Lvl Adj** Adjust the value from -50 dB to 0 dB in increments of 1 dB.

- For **Output Lvl Adj** Adjust the value to +/-20 dB in increments of 1 dB.

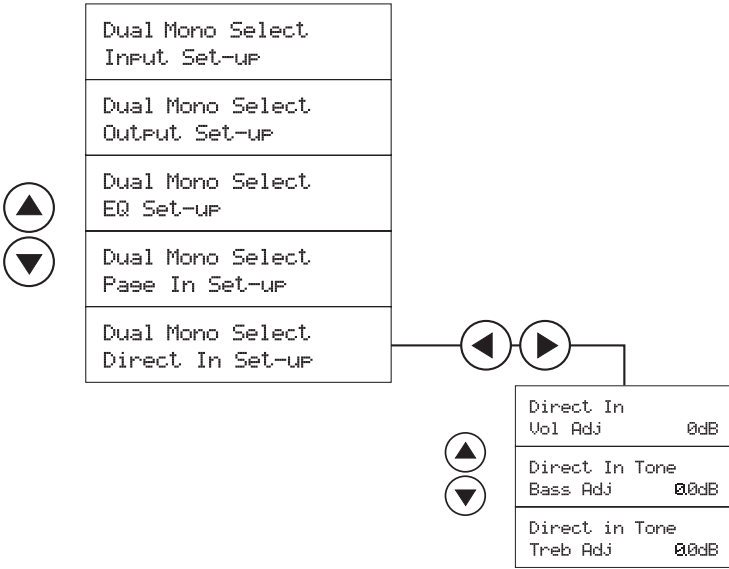
- For **Page Trig Mode**. Choose PTT or Auto.

**Note:** In Page Trig Mode, the page output can be triggered by pushing the button on a push-to-talk-style microphone (PTT), or triggers automatically when a signal is detected at the Page input (Auto).

# 5.0 System Setup

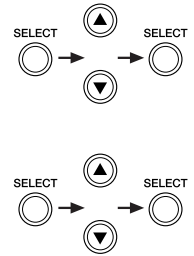
## F

### Dual Mono Select Direct In Set-up



- For **Vol Adj**  
Adjust the value from -40 dB to +10 dB in increments of 1 dB.

- For **Bass Adj** and **Treb Adj**  
Adjust the value to +/-6 dB in increments of .5 dB.



## 5.6 Overview of Utility Mode settings

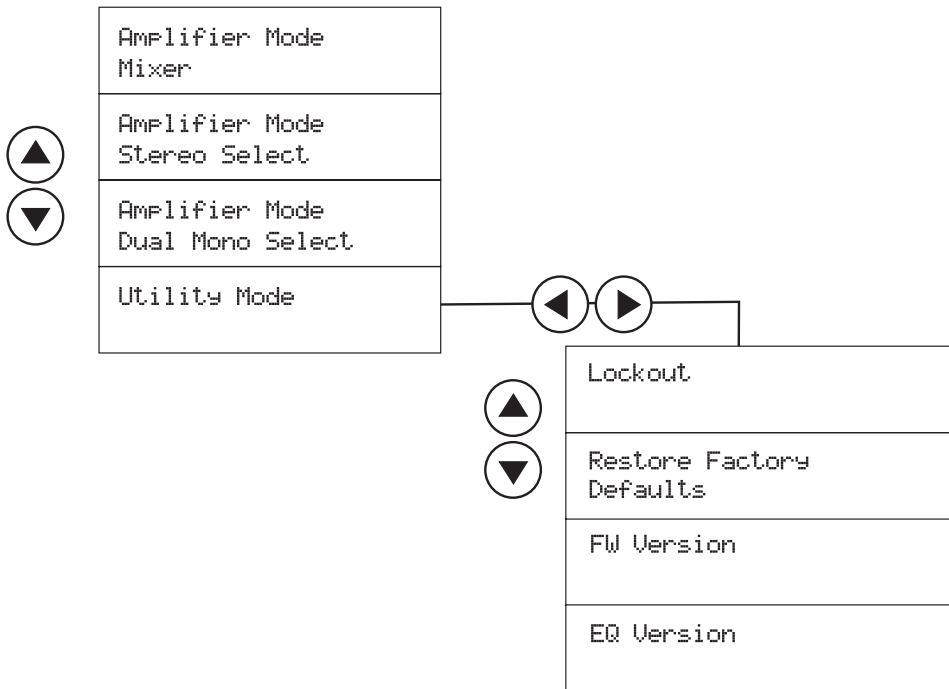
In Utility Mode, there are two global system options: Lockout and Restore Factory Defaults. Also, current system firmware and EQ versions are viewable.

The Lockout option allows the system settings to be locked to prevent unwanted changes. This Lockout function can be disengaged by pressing and holding the left and right arrows simultaneously for five seconds. Lockout Off will appear.

The Restore Factory Defaults option allows all software-selectable settings to be set back to the original factory settings. See “Factory Default Settings” on page 33.

**Note:** Settings made using a control knob are not reset.

### Choose Utility Mode



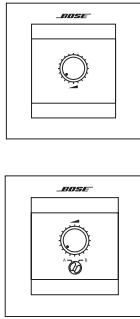
- For **FW Version**  
Version number of system firmware will be displayed.
- For **EQ Version**  
Version number of loudspeaker EQ set will be displayed.

## 6.0 User Interfaces

### 6.1 User interface use

Bose has designed two user interface controls for use with the FreeSpace® DXA 2120 Digital Mixer/Amplifier.

- **Bose volume control** user interface is for use when only volume control is required.
- **Bose volume control with A/B select** user interface is for use in Stereo Select Mode or Dual Mono Select Mode when an output provides audio from more than one input source.

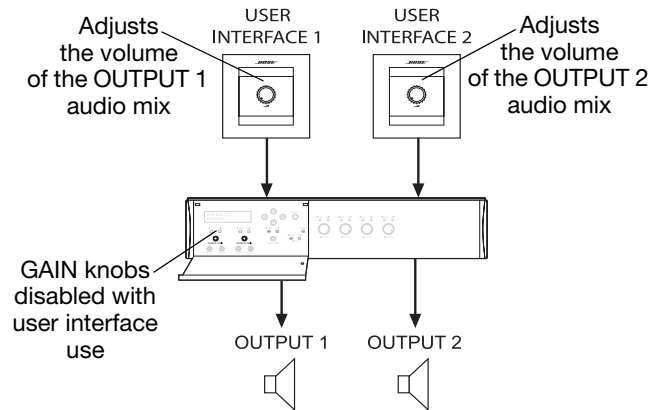


Connection of one or two user interfaces to the chassis disables the output gain knob for the output assigned to that user interface.

#### 6.1.1 Mode user interface requirements

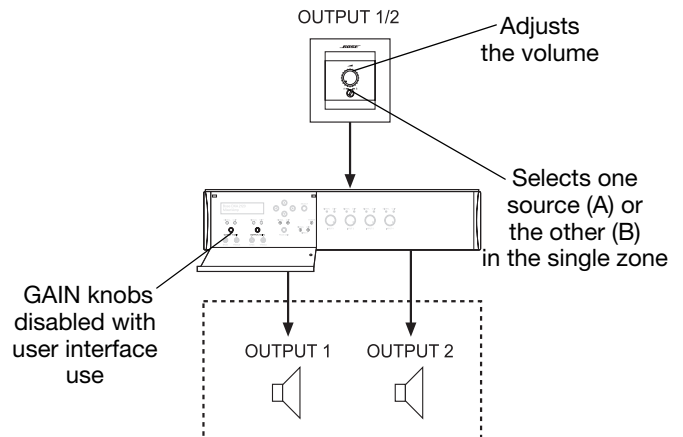
- For Mixer Mode: Sources can be routed to either or both outputs. Use of one or two volume control user interfaces is optional. No user interfaces are required.
- For Stereo Select Mode: Source routing is fixed. This mode supports the use of one user interface in a single zone. Use the volume control with A/B select user interface.
- For Dual Mono Select Mode: Source routing is fixed. This mode supports the use of one user interface for each output channel. Use two volume controls with A/B select user interfaces.

#### 6.1.1.1 Mixer Mode user interface application

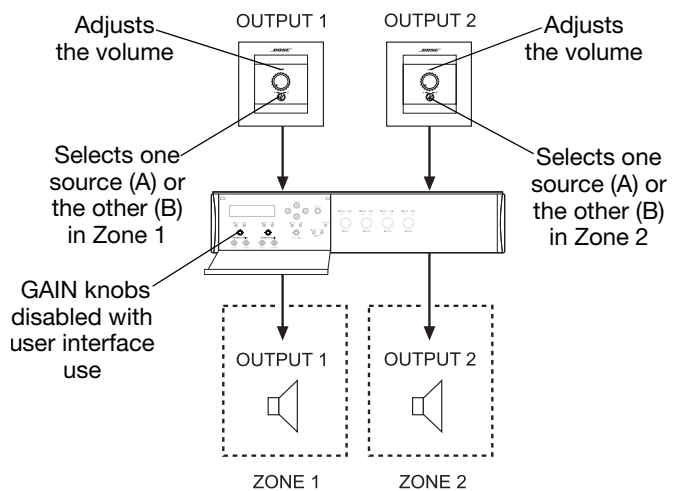


**Note:** Output 1 gain can be configured as the Master Volume, controlling Output 1 and Output 2 gains simultaneously using the MasterVol Linked menu option.

#### 6.1.1.2 Stereo Select Mode user interface application



#### 6.1.1.3 Dual Mono Select Mode user interface application



## 7.0 Troubleshooting Table

No Power	<ul style="list-style-type: none"> <li>• Turn on power.</li> <li>• Make sure the power cord is plugged in.</li> </ul>
Power is on, but no sound	<ul style="list-style-type: none"> <li>• Make sure the source is turned on.</li> <li>• Verify that there is an input signal from the source. The audio input signal indicator on the front of the chassis should be green.</li> <li>• Check the output signal indicators on the system controls. If the LED is not lit (green), the output levels may be too low.</li> <li>• Check the source routing.</li> <li>• Check the cable connections from the source to the chassis.</li> <li>• Verify the user interfaces are of the right type for the operating mode selected.</li> </ul>
Power is on, but sound is low	<ul style="list-style-type: none"> <li>• Verify that the audio input indicator is lit (green). If it is not lit, increase the source output or increase the input gain.</li> </ul>
Sound is distorted	<ul style="list-style-type: none"> <li>• Verify that the Input clipping indicators are not lit (red). If an LED is red, reduce the source output level or reduce the input gain.</li> <li>• Verify that the Output clipping indicators are not lit (red). If one is red, but Input clipping LEDs are not, reduce the output gain.</li> <li>• If the input source signal is clean when it enters the chassis and the Input and Output indicators are green, verify that the loudspeakers are not overdriven or damaged.</li> </ul>
Unnatural sound	<ul style="list-style-type: none"> <li>• Verify that the correct EQ is selected for speakers connected to the Output channel.</li> <li>• Verify that the speakers are wired correctly (+ to + and - to -).</li> </ul>
User interfaces do not operate properly	<ul style="list-style-type: none"> <li>• Verify that the user interfaces are wired correctly and to the proper zone (if there is more than one zone).</li> <li>• Check the wiring for breaks or shorts in the cable.</li> <li>• Verify the user interfaces are of the right type for the operating mode selected.</li> </ul>

### 7.1 Technical assistance

If you need further technical assistance, contact your local Bose® representative, or visit [pro.Bose.com](http://pro.Bose.com).



## 8.0 Reference

### 8.1 Factory Default Settings

Channel	Parameter	Mixer	Stereo	Dual Mono	Parameter Range (if applicable)
Input 1	Bass	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Treble	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	AGC Enable	N	N	N	
Input 2	Bass	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Treble	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	AGC Enable	N	N	N	
Input 3	Bass	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Treble	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	AGC Enable	N	N	N	
Input 4	Bass	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Treble	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	AGC Enable	N	N	N	
Page Input	Bass	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Treble	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Trigger Mode	PTT	PTT	PTT	
	Page Ducking	-20 dB	-20 dB	-20 dB	-50 dB ~ 0 dB
Direct Input	Volume	0 dB	0 dB	0 dB	-40 dB ~ +10 dB
	Bass	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
	Treble	0 dB	0 dB	0 dB	-6 dB ~ +6 dB
Miscellaneous	Master Volume Linked	N	n/a	n/a	
Output 1	*Out 1/2 Input Sel (Stereo only)	n/a	*1/2 (1)	n/a	
	Out 1 Input Sel (Dual Mono only)	n/a	n/a	1	
	Input Mix - Input 1 (Mixer only)	Y	n/a	n/a	
	Input Mix - Input 2 (Mixer only)	N	n/a	n/a	
	Input Mix - Input 3 (Mixer only)	N	n/a	n/a	
	Input Mix - Input 4 (Mixer only)	N	n/a	n/a	
	Spkr EQ Preset	01 80 Hz HPF	01 80 Hz HPF	01 80 Hz HPF	
	Dynamic EQ Enable	N	N	N	
	Page Enable	N	N	N	
	Page Level	0 dB	0 dB	0 dB	-20 dB ~ +20 dB
Output 2	*Out 1/2 Input Sel (Stereo only)	n/a	*1/2 (2)	n/a	
	Out 2 Input Sel (Dual Mono only)	n/a	n/a	3	
	Input Mix - Input 1 (Mixer only)	Y	n/a	n/a	
	Input Mix - Input 2 (Mixer only)	N	n/a	n/a	
	Input Mix - Input 3 (Mixer only)	N	n/a	n/a	
	Input Mix - Input 4 (Mixer only)	N	n/a	n/a	
	Spkr EQ Preset	01 80 Hz HPF	01 80 Hz HPF	01 80 Hz HPF	
	Dynamic EQ Enable	N	N	N	
	Page Enable	N	N	N	
	Page Level	0 dB	0 dB	0 dB	-20 dB ~ +20 dB
Auxout	Auxout Input Sel (Stereo/Dual Mono)	n/a	1+2 sum	1 Fixed	
	Auxout Input Mix - Input 1 (Mixer only)	Y	n/a	n/a	
	Auxout Input Mix - Input 2 (Mixer only)	N	n/a	n/a	
	Auxout Input Mix - Input 3 (Mixer only)	N	n/a	n/a	
	Auxout Input Mix - Input 4 (Mixer only)	N	n/a	n/a	
	Spkr EQ Preset	01 80 Hz HPF	01 80 Hz HPF	01 80 Hz HPF	
	Dynamic EQ Enable	N	N	N	
	Page Enable	N	N	N	
	Page Level	0 dB	0 dB	0 dB	-20 dB ~ +20 dB

\*These parameters are linked and displayed on the same menu screen. The numbers in parenthesis indicate which input is automatically selected and routed to the respective output.



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