SMA-8300
SMA-4750

8 & 4-Channel Bridgeable Class D Amplifier

Owners Manual

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 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 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 wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Use the mains plug to disconnect the apparatus from the mains. The mains plug inlet is the disconnect device for this product.
16. WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
17. DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN.
 THIS SYMBOL ON THE PRODUCT MEANS THERE IS UNINSULATED, DANGEROUS VOLTAGE WITHIN THE PRODUCT ENCLOSURE THAT MAY PRESENT A RISK OF ELECTRICAL SHOCK.
 THIS SYMBOL ON THE PRODUCT MEANS THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THIS GUIDE.

Correct disposal of this product (Waste Electrical & Electronic Equipment)

This symbol means the product must not be discarded as household waste and should be delivered to an appropriate collection facility for recycling. Proper disposal and recycling help protect natural resources, human health and the environment. For more information on disposal and recycling of this product, contact your local municipality, disposal service, or the shop where you bought this product.

Table of Contents

Introduction

Congratulations, and thank you for purchasing a JBL Synthesis SMA series high-performance amplifier. The SMA8300 & SMA-4750 amplifiers are designed, engineered, and manufactured to the industry's highest quality standards and provide cinema system integrators the advanced features and flexibility required for challenging, 21st-century cinema-sound applications.

Please take the time to study the owner's manual so that you can obtain the best possible performance from your amplifier. For more information and other languages, visit https://www.jblsynthesis.com/.

Should further assistance be required feel free to contact JBL Synthesis technical support at the numbers below.

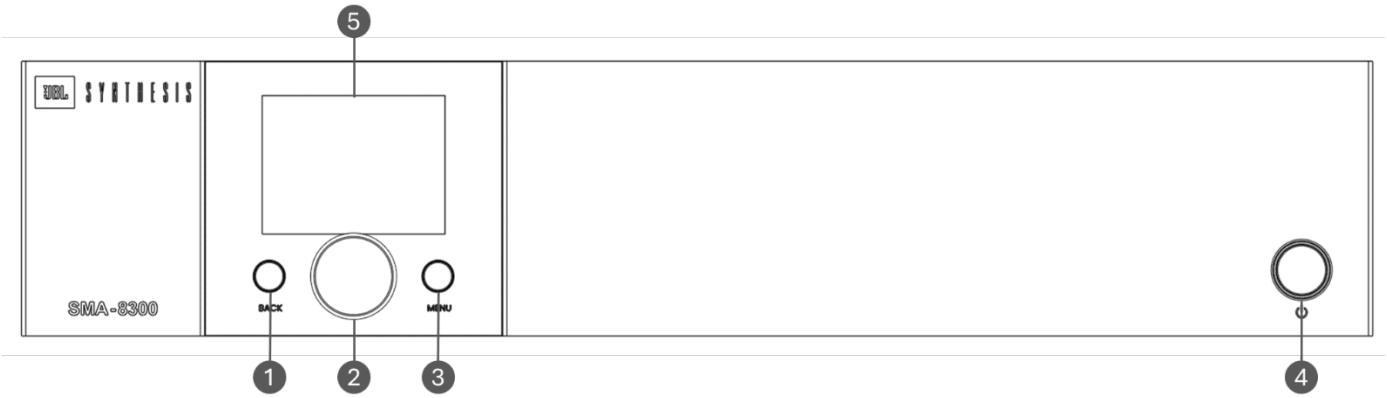
Inside the US and Canada: +1 888.691.4171

Outside the US and Canada: +44 1707 668 012

What's in the Box

1. JBL Synthesis SMA Amplifier
2. Quick-start guide and safety sheet
3. Rackmount brackets and fastening screws
4. AC Power Cord(s) – quantity and type vary by region

Front Panel Overview



1 BACK BUTTON
Press this button to navigate back one level when navigating menus.

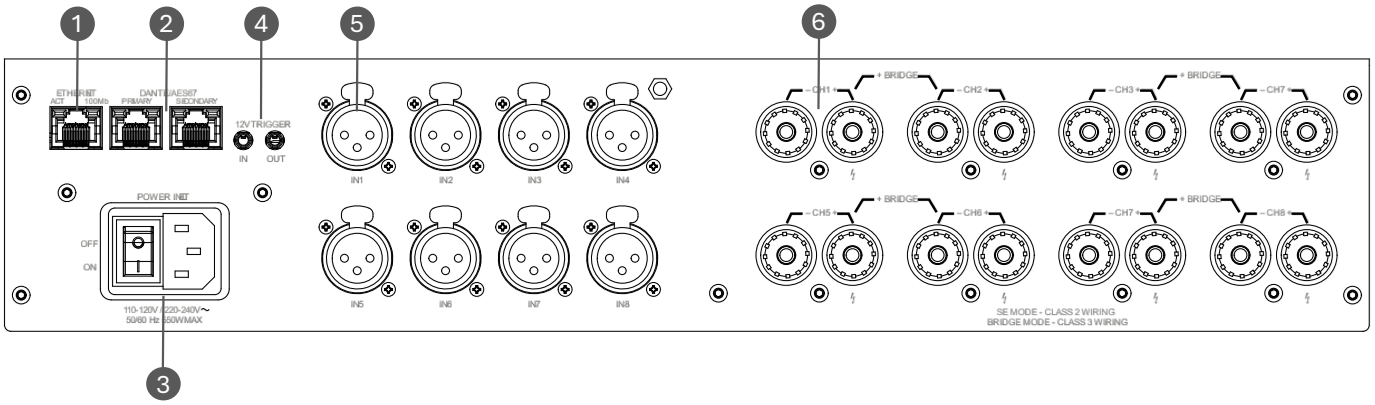
2 ENCODER
This encoder supports rotary and pushbutton operation. It is used to navigate the menus and select on-screen options. It is also used to adjust individual channel or overall system volume.

3 MENU BUTTON
Pressing this button will enter the Main menu, where amplifier settings can be edited.

4 STANDBY BUTTON
Turns the amplifier power on or off. The Power button has an integrated power LED that illuminates blue when the power is on and red when the power is off.

5 LCD (DISPLAY)
This color LCD provides product information and visual feedback for operating the amplifier from the front panel.

Rear Panel Overview



1 ETHERNET (NETWORK CONTROL) PORT
Connect this RJ45 port to a computer or network for monitoring and controlling the amplifier over Category 5e wiring via the web client.

2 DANTE/AES67 PRIMARY & SECONDARY PORTS
This implementation of DANTE/AES67 allows for up to 64 channels of digital audio over Category 5e wiring.

3 AC POWER INLET
Connect the included AC power cord to this standard 15A, IEC type 320 inlet. Supported mains voltage range is 100-240V~.

4 12V TRIGGER IN/OUT
Trigger In allows the amplifier to be turned on or off by an external source.
Trigger Out allows the amplifier to control the power state of other connected equipment.

NOTE: Trigger Out is pass-thru only; the amplifier does not supply a 12V signal on its own.

5 ANALOG AUDIO INPUT CONNECTORS
Connect your audio source outputs to these inputs using balanced analog XLR cables.
These inputs are high impedance, balanced connections.

6 OUTPUT TERMINAL (BINDING POST) CONNECTORS
Accepts up to 10 AWG wire, banana connectors, or terminal forks. See the "Wiring Output Connectors" section for information on wiring these connectors.

⚠ **NOTE**: Custom wiring should only be performed by qualified personnel. Class 2 output wiring is required in Single Ended mode. Class 3 output wiring is required in Bridge mono operation.

Installing the Amp

UNPACKING

Unpack your amplifier and inspect for any damage that may have occurred during transit. If damage is found, notify the shipping company immediately. Only you can initiate a claim for shipping damage, though JBL will be happy to help as needed. If the product arrived showing signs of damage, save the shipping carton for the shipper's inspection.

We also recommend that you save all packing materials for use if you ever need to transport the unit. Never ship the unit without the factory carton and packing materials.

ADDITIONAL MATERIALS

For installation, you will need the following (not supplied):

- Input wiring cables
- Output wiring cables
- Phillips screwdriver
- Rack for mounting amplifier (or a stable surface for stacking)
- Category 5e or higher cabling

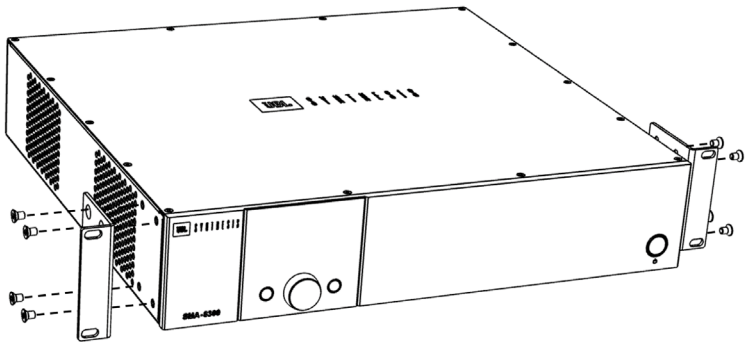
> WARNING: Before you start to set up your amplifier, read and observe the Important Safety Instructions included in the box. These instructions can also be downloaded from the product page at www.jblsynthesis.com

CAUTION: Before you begin, make sure your amplifier is disconnected from the power source.

It is recommended that you mount the unit in a standard 19-inch (48.3 cm) equipment rack (EIA RS-310B). You may also place a single amp on a solid, stable surface or stack multiple amps.

RACK MOUNTING

1. Attach the rack ear brackets to the sides of the amplifier using the provided machine screw fasteners into the threaded holes (1 ± 0.1Nm recommended torque).



2. Install into rack and connect cabling.

PROPER COOLING

When using an equipment rack, mount units directly on top of each other. Close any spaces in the rack with blank panels (open spaces will reduce cooling efficiency). Once mounted in the rack, ensure the sides of the amplifier are well ventilated and that the fan openings are not obstructed, as air flow is side-to-side. The rack should be a minimum of 2 inches (5.1cm) away from the sides of the amplifier. Ensure that the ambient temperature does not exceed 45 degrees Celsius (113 Fahrenheit).

Hardware Setup

CONNECTING THE AC POWER CORD

Connect your amplifier to the AC mains power outlet using the supplied AC power cord. First, connect the IEC end of the cord to the IEC connector on the amplifier. Then plug the other end of the cord to the AC mains.

The third (ground) prong of the supplied AC power cord connector is a required safety feature. Do not attempt to disable this ground connection by using an adapter or other methods.

Make certain the AC mains voltage and current ratings are sufficient to deliver full power to all amplifiers. SMA Series amplifiers use a universal power supply. The AC voltage requirements are 100V-240V~, 50/60Hz. If power is lost, when power returns, the amplifier will automatically boot into the last known state.

POWER UP PROCEDURE

When turning on the amplifier for the first time:

1. Ensure all connections are disconnected (except the power cord).
2. Turn on the amplifier by using the rear AC mains rocker switch. The Power indicator will light blue and the amplifier will boot as long as sufficient mains power is provided.
3. Configure the amplifier via the front panel display or the Web UI as described in this manual.
4. Once the amplifier has been properly configured for the application, turn off the power — by using the rear AC mains rocker switch — then disconnect the power cord.
5. Turn down the level of your audio source.
6. Make all connections as described in "Wiring Input Connectors" and "Wiring Output Connectors."
7. Once all connections have been made, reconnect the power cord and turn on the amplifier power.
8. Using the ENCODER, reduce the output volume of the amplifier to its minimum.
9. Turn your audio source up to an optimum level.
10. Now, increase the output volume of the amplifier to your liking.
11. Refer to all device meters and ensure that at no point in the signal chain is the signal being clipped in any way. If any of the amplifier's Clip indicators light yellow, reduce the source level until the RED clipping meters no longer light.
12. Turn the amplifier's ENCODER clockwise until the desired loudness or power level is achieved, while making sure the amplifier's clip LEDs do not light.

IMPORTANT: Always turn off the amplifier — by using the rear AC mains rocker switch — and disconnect the power cord before making any wiring or installation changes.

IMPORTANT: When powering a fully configured Cinema system, always turn the amplifiers ON last and OFF first.

PRECAUTIONS

Your amplifier is protected from internal and external faults, but you should still take the following precautions for optimum performance and safety:

1. Configure the amplifier for proper operation, including input and output wiring hookup. Improper wiring can result in serious operating difficulties. For information on wiring and configuration, please consult "Wiring Input Connectors" and "Wiring Output Connectors."
2. Use care when making connections, selecting signal sources, and controlling the output level.
3. Do not short the ground lead of an output cable to the input signal ground. This may form a ground loop and cause oscillations.

Never connect the output to a power supply, battery, or power main Electrical shock may result.

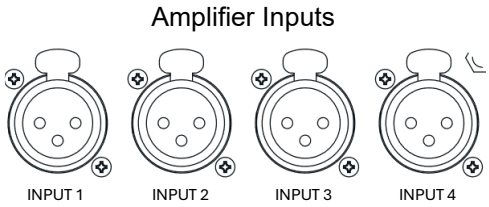
4. Tampering with the circuitry or making unauthorized circuit changes may be hazardous and invalidate all agency listings.
5. Do not operate the amplifier with the Clip LEDs constantly flashing.
6. Do not overdrive the preamplifier/processor, which will cause clipped signal to be sent to the amplifier. Such signals will be reproduced with extreme accuracy, and loudspeaker damage may result.
7. Do not operate the amplifier with less than the rated load impedance. Due to the amplifier's output protection, such a configuration may result in premature clipping and speaker damage.

REMEMBER: JBL/ HARMAN is not liable for damage that results from overdriving other system components.

WIRING INPUT CONNECTORS

JBL Synthesis recommends using pre-built or professionally wired balanced cables (two-conductor plus shield). Balanced wiring provides better rejection of unwanted noise and hum, however, an unbalanced line may also be used.

The cables used for input at the amplifier side must be XLR male, as the amp input connectors are female. The images below show the amplifier inputs and corresponding male XLR connector for balanced wiring.



This amplifier comes Dante Ready. To activate Dante, use the Dante Activator tool from Dante Controller software (v4.5 or later). Once your device is discovered in the software, you will see your purchase options.

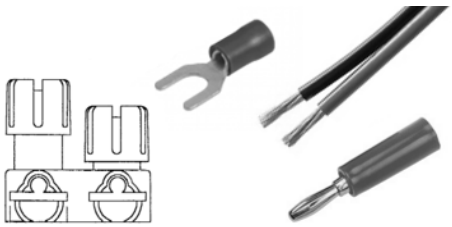
The primary and secondary RJ45 connectors are used to send/receive network audio channels.

WIRING OUTPUT CONNECTORS

Before making any output connections, ensure the power cord is disconnected from the amplifier and carefully review the total impedance for loudspeakers connected to each amplifier output. If multiple loudspeakers are connected to an output (i.e., in series, parallel, or series-parallel), be certain the total system impedance is within allowed specification for the output. See "Specifications" for supported load specifications.

JBL Synthesis recommends using two-conductor or four-conductor, heavy gauge speaker wire. As shown in the image below, you may use terminal forks, banana plugs, or bare wire up to 10 AWG for your output connectors. When using bare wire, JBL recommends that output wiring is tinned. To reduce strain on input and output wiring, horizontal lacer bars such as the Middle Atlantic® part# LBP-4R90 are recommended.

Distance	Wire Size
Up to 25 ft. (7.6m)	16 AWG
26-40 ft. (7.9-12.2m)	14 AWG
41-60 ft. (12.5-18.3m)	12 AWG
> 60 ft (18.3m)	10 AWG



For low-impedance loads, refer to the table above and select the appropriate size of wire based on the distance from amplifier to speaker.

CAUTION: Never use shielded cable for output wiring.

CAUTION: Never connect the speaker return to the chassis of the amplifier, or damage to the amplifier may result.

NOTE: Custom wiring should only be performed by qualified personnel. Class 2 output wiring is required in Single Ended mode. Class 3 output wiring is required in Bridge mono operation.

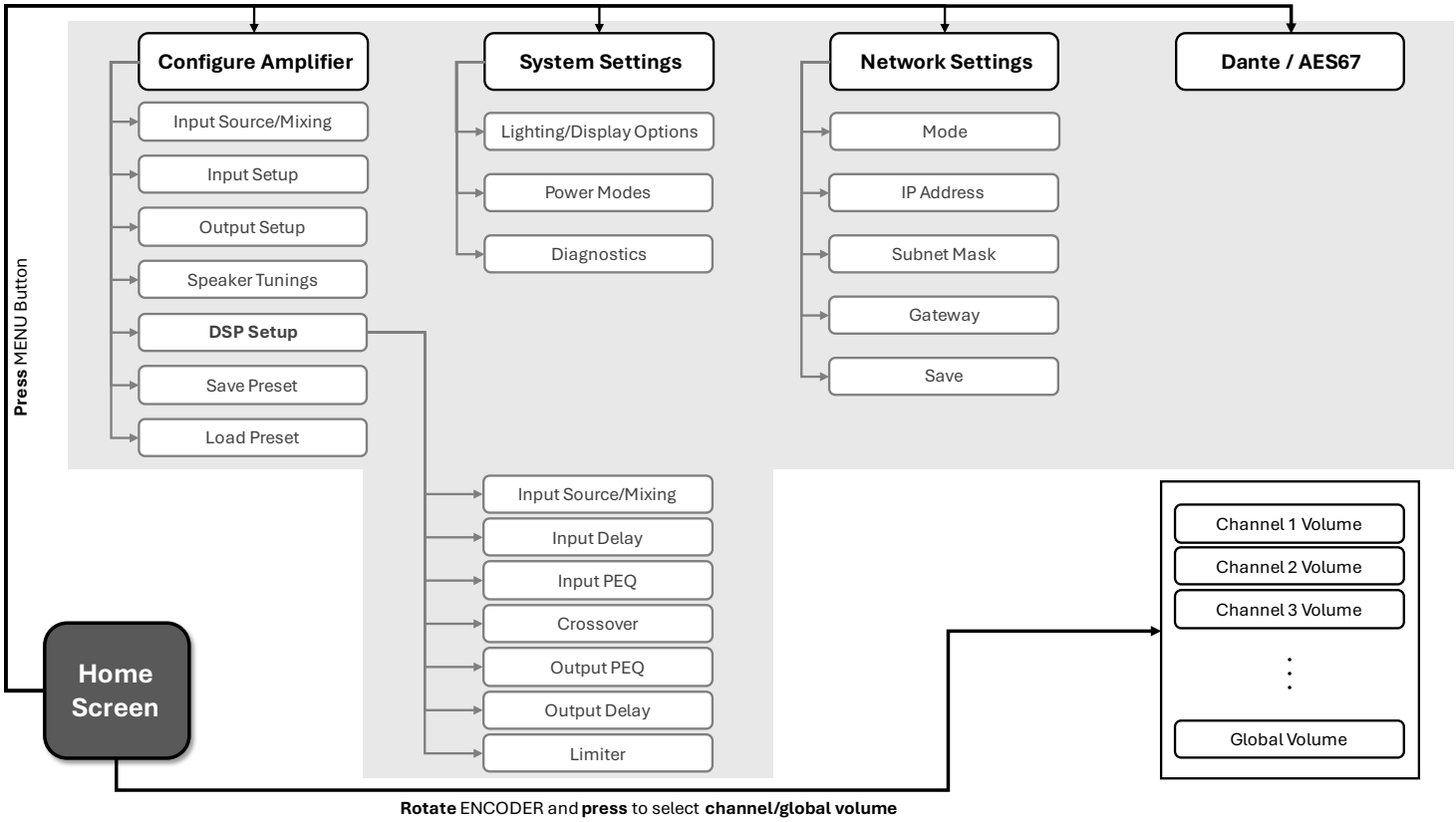
For application-specific output connection diagrams, including how to wire outputs for bridge mono operation, see "Application Examples."

Configuring the Amp Using the Front Panel Display

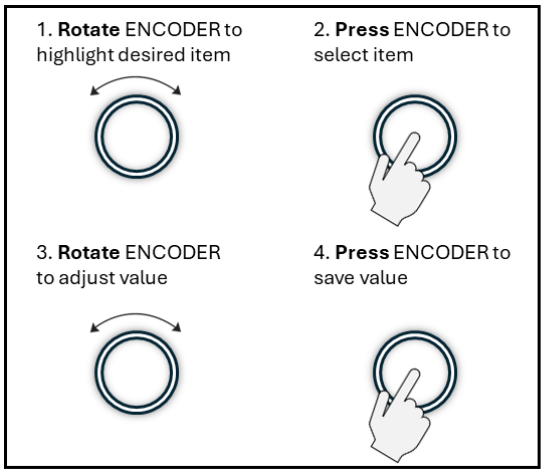
The SMA amplifiers can be configured in two ways: via the Web UI, and via the front panel display. While both methods are sufficient, setup using the Web UI is recommended as it tends to be more efficient.

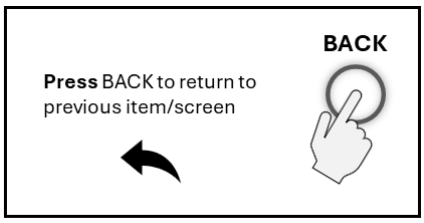
MENU STRUCTURE

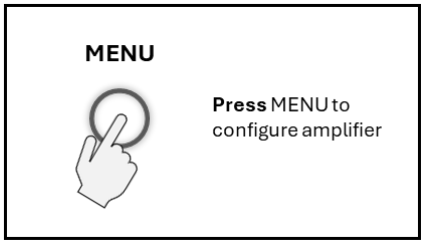
This diagram shows the high-level SMA-8300 & SMA-4750 front panel menu structure.



Below is a general guide as to how to navigate the menu using the front panel display.

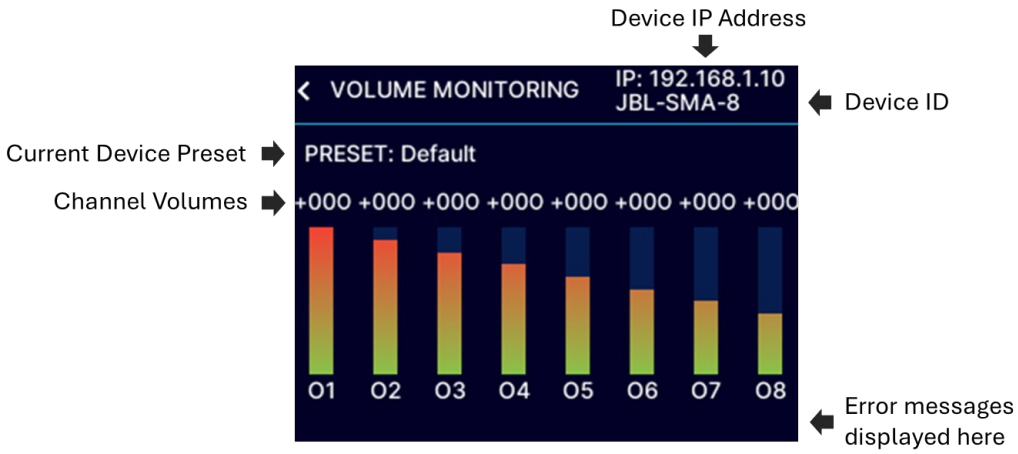




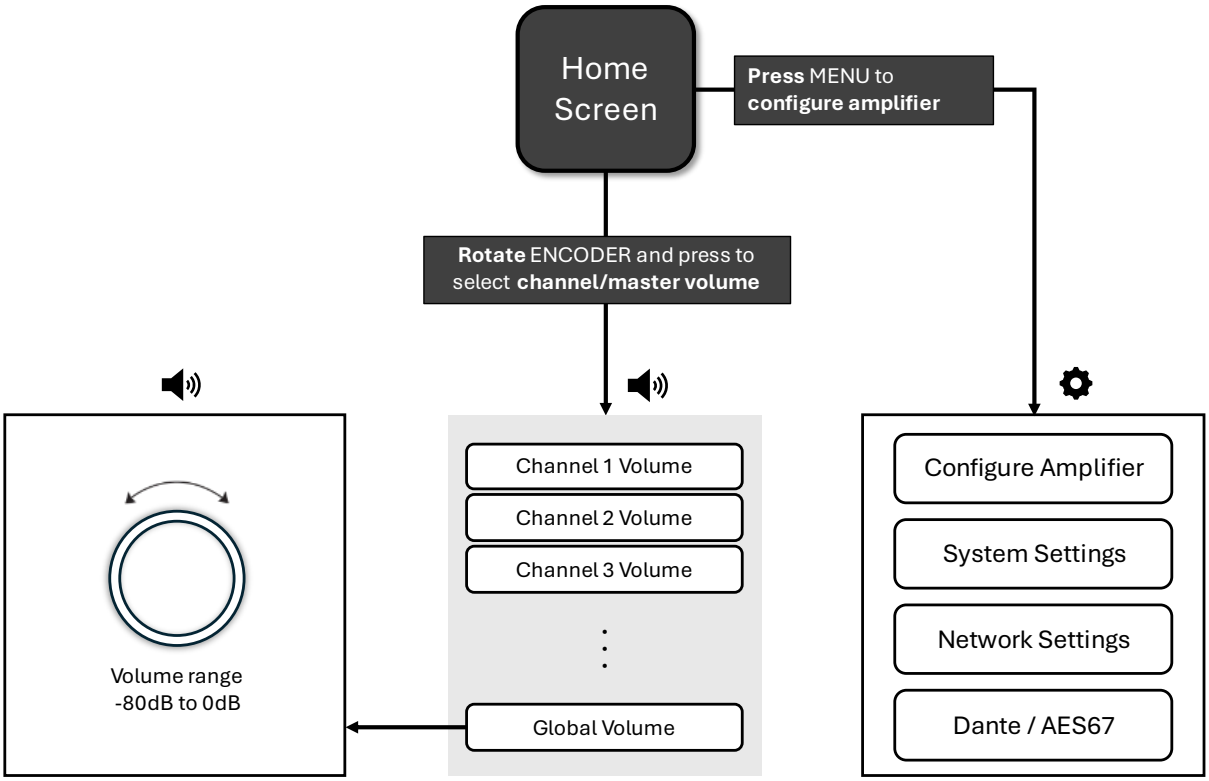


THE HOME SCREEN

The Home Screen (shown below) is the first screen displayed in the amplifier's front panel display once the amplifier has completed the boot sequence.



This diagram illustrates how to navigate the menu from the Home Screen using the front panel display.

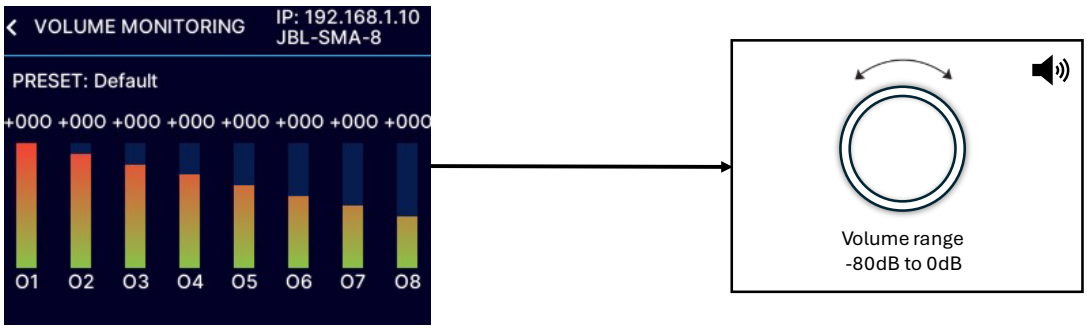


ADJUSTING CHANNEL VOLUME

Channel volume can either be controlled globally or independently per channel. The volume range is from -80dB to 0dB. The minimum/maximum global volume limits are governed by the channel with the highest or lowest volume setting. For gain structure purposes, it is important to note that volume adjustment occurs at the end of the DSP signal chain and before output limiting.

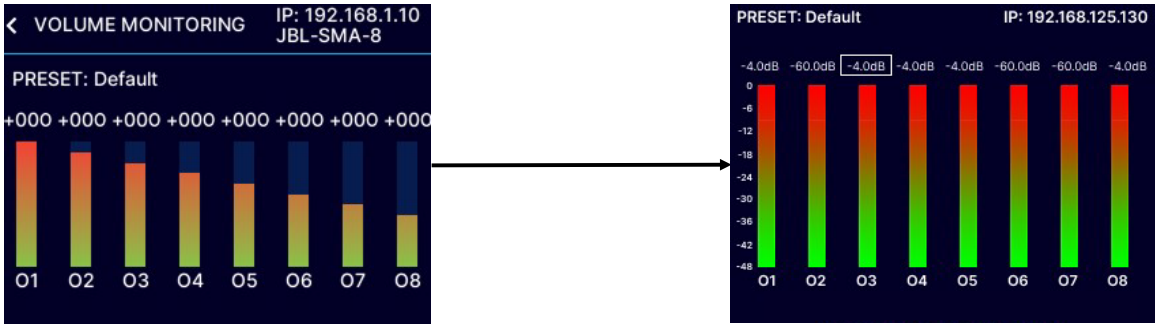
To adjust system (global) volume:

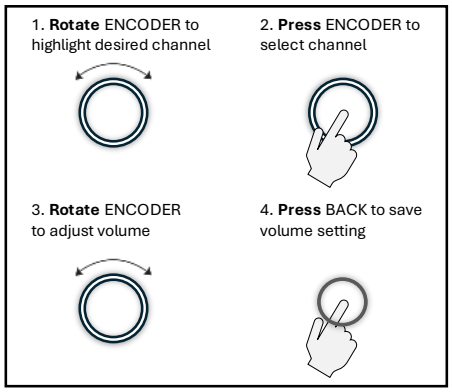
From the Home screen, turn the ENCODER until “all channels” are selected. Press the ENCODER, then rotate the ENCODER to adjust the global (master) volume. The volume levels for all channels will be adjusted respectively.



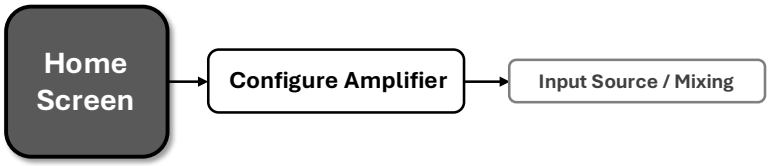
To adjust the volume of a particular channel:

From the Home screen, rotate the ENCODER until the desired channel is highlighted. Press the ENCODER, then rotate the ENCODER to adjust the individual channel volume.





INPUT SOURCE / MIXING



The amplifiers ship from the factory with each output channel sourced from its respective analog input (analog input 1 goes to output 1, analog input 2 goes to output 2, etc.).

To edit Input Source / Mixing settings:

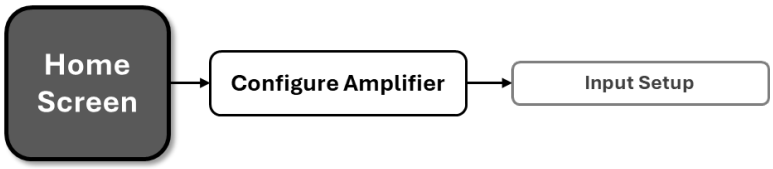
- From the Home screen, press the MENU button.
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Input Source/Mixing" option from the menu.
- Turn the ENCODER to navigate to the desired input channel and press the encoder to select.
- If a channel is already selected and you wish to deselect it, navigate to it and press the encoder
- When finished, press the “BACK” button to exit the menu.

If desired, one additional input channel can be assigned and consequently mixed to each output channel. Use the same process to select an additional input channel to be mixed to one output channel. When performed successfully, the front panel display will appear with two highlighted channels as shown below.

To add a 2nd input channel to an output channel:

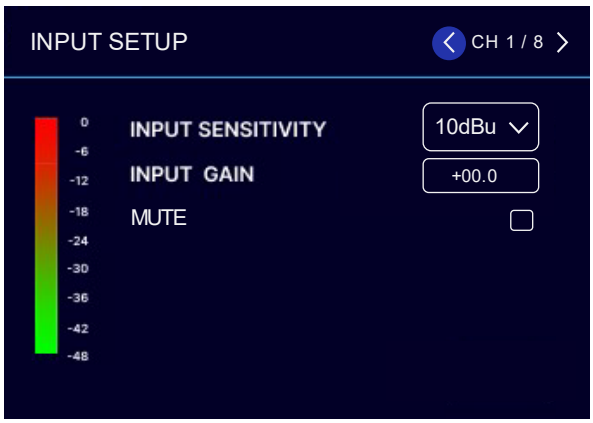
- From the Home screen, press the MENU button.
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Input Source/Mixing" option from the menu.
- Turn the ENCODER to navigate to the desired additional input channel and press the encoder to select.
- When finished, press the “BACK” button to exit the menu.

INPUT SETUP



Input sensitivity selects the input voltage level that's required to generate a full-rated, amplified output. One way that this feature may be used is to match input levels between balanced and unbalanced connections. Input Gain, on the other hand, is used to make additional adjustments beyond what input sensitivity can do.

NOTE: Input settings will also affect Dante / AES67 signal flow.



Input Sensitivity:

- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Input Setup" option from the menu using the ENCODER
- Scroll and select the channel at the top right of the screen using the ENCODER
- Select the "Input Sensitivity" option from the menu
- Turn the ENCODER to select the desired input sensitivity (+4dBu, +10dBu, or +16dBu)
- Use the ENCODER to make the selection
- When finished, press the BACK button to exit the menu

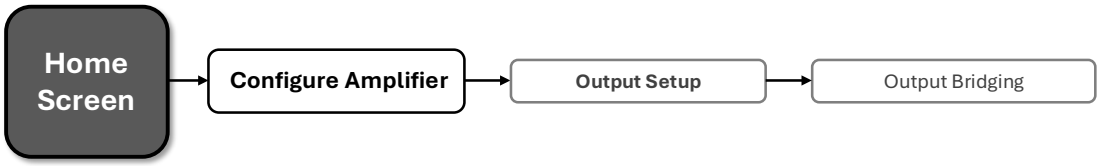
Input Gain:

- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Input Setup" option from the menu using the ENCODER
- Scroll and select the channel at the top right of the screen using the ENCODER
- Select the "Input Gain" option from the menu
- Use the ENCODER to edit
- Press the ENCODER to make the selection
- When finished, press the BACK button to exit the menu

OUTPUT SETUP

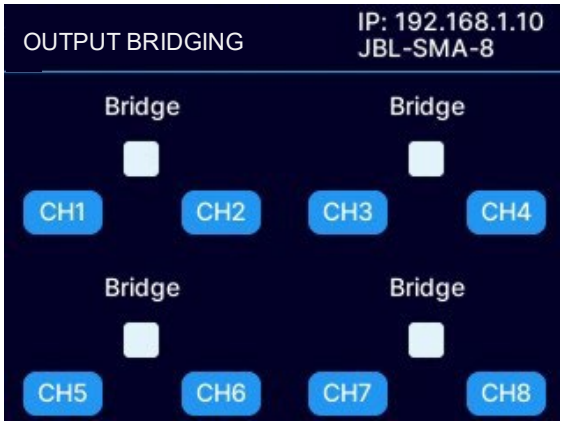
SMA Series amplifiers are extremely capable and flexible. In the Output Setup menu, the following items can be adjusted:

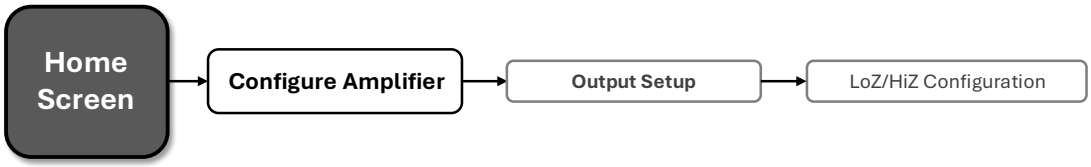
- Hi-Z/Low-Z on an individual channel basis (SMA-8300 must be bridged to support HiZ)
- 70Vrms or 100Vrms operation
- Channel assignments - Any input can be sent to any amplifier output
- Mono Bridge Output - Output pairs can be bridged for mono operation
- Output faders can be paired
- Volume & Polarity can be adjusted



Configuring Output Bridging

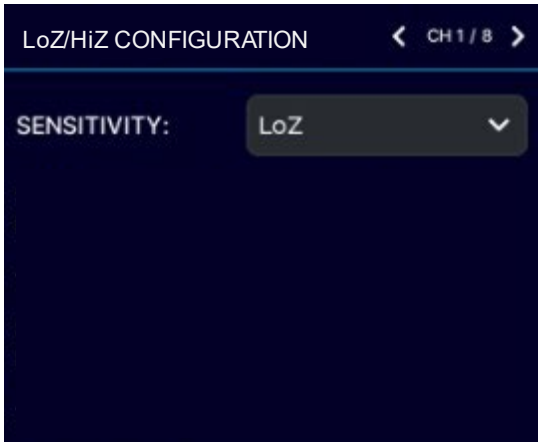
- From the Home screen, press the MENU button.
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Output Setup" option from the menu using the ENCODER.
- Use the ENCODER to select “Output Bridging”
- Use the ENCODER to navigate and engage the bridging of adjacent amplifier output channels



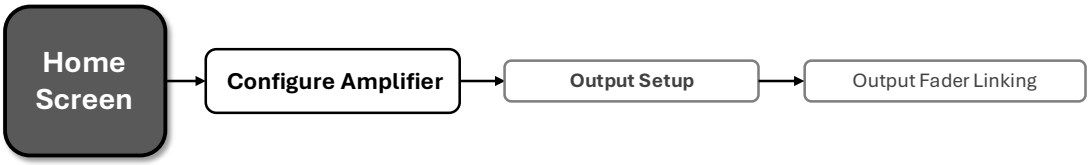


LoZ/HiZ Configuration

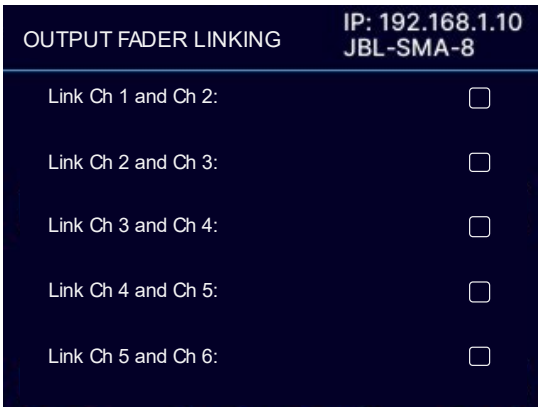
- From the Home screen, press the MENU button.
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Output Setup" option from the menu using the ENCODER
- Use the ENCODER to select “LoZ/HiZ Configuration”
- Scroll and select the channel at the top right of the screen using the ENCODER
- Use the ENCODER to select between LoZ and HiZ



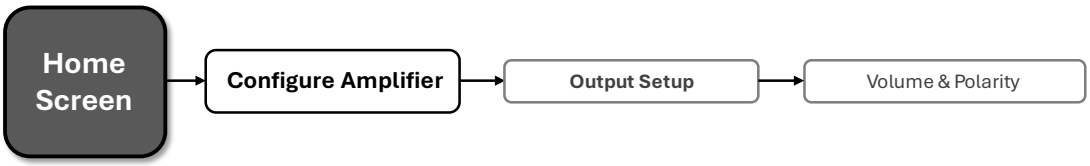
MODEL	SINGLE-ENDED CONFIGURATION	BRIDGED CONFIGURATION
SMA-4750	LoZ / 70V	LoZ / 70V / 100V
SMA-8300	LoZ	LoZ / 70V / 100V



Output Fader Linking

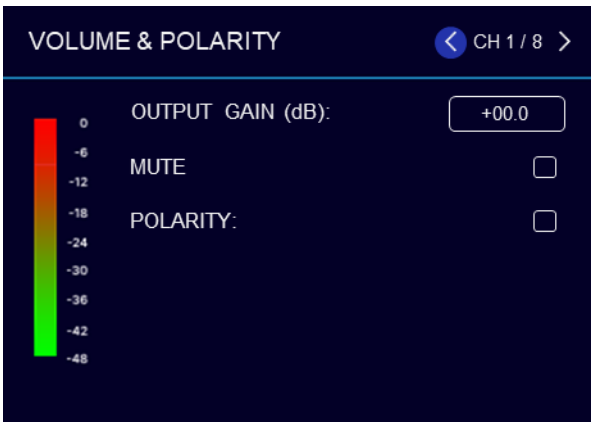


- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Output Setup" option from the menu using the ENCODER
- Use the ENCODER to select “Output Fader Linking”
- Select which channel faders to link using the ENCODER



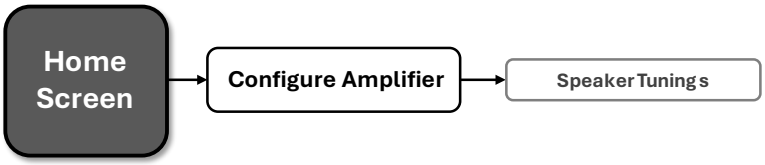
This screen allows for controlling individual channel output gain and mute, as well as the selection of inverted or normal polarity.

Volume & Polarity



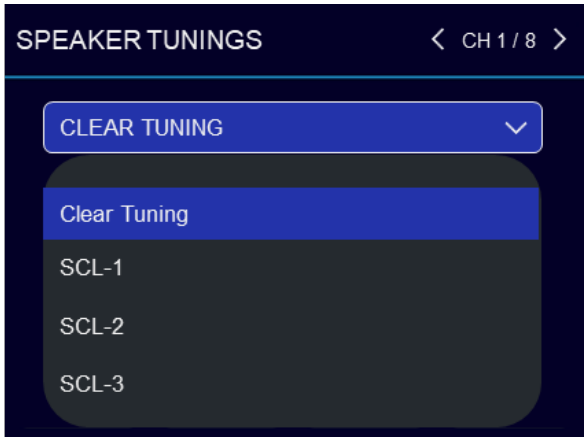
- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "Output Setup" option from the menu using the ENCODER
- Use the ENCODER to select “Volume & Polarity”
- After selecting the channel, use the ENCODER to select from the available parameters
- Press the ENCODER to change the state of a checkbox
- Press the ENCODER and rotate to change the gain

SPEAKER TUNINGS



Speaker tunings can be selected from the Speaker Tunings screen.

Speaker tunings apply DSP settings to a particular output channel, making it easy to optimize a speaker's performance.

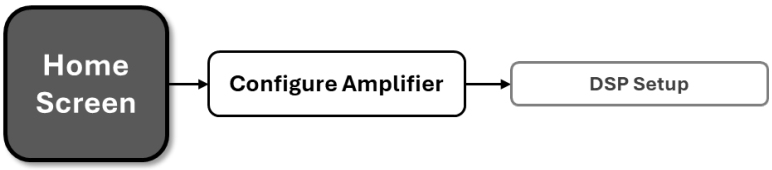


To select a speaker tuning for a channel:

- From the Home screen, press the **MENU** button
- Select the "Configure Amplifier" option from the menu using the **ENCODER**
- Use the ENCODER to select the "Speaker Tunings" option from the menu
- At the top of the screen, use the ENCODER to select the channel for which you wish to select a speaker tuning
- A box will appear that reads “Clear Tuning”
- Press the **ENCODER**. A list of available speaker tunings will appear on the screen
- Use the **ENCODER** to navigate the list then press the **ENCODER** to select the matching speaker series/model
- If applicable, additional prompts will appear to allow selection of the specific speaker model and additional options
- Repeat for any additional channels

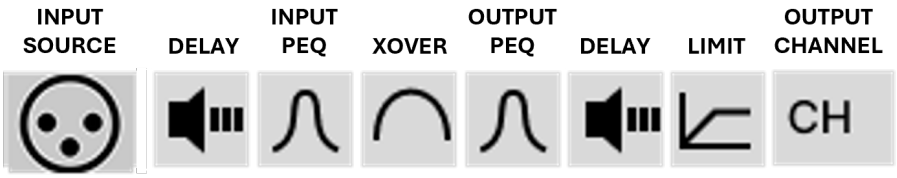
NOTE: For active bi-amp configurations with the JBL Synthesis SCL-1, please refer to the SCL-1 owner’s manual

DSP SETUP



From the DSP Setup menu, input level, PEQ, crossover, delay, and limiter settings can be adjusted to optimize the loudspeaker performance. To easily optimize DSP settings for a particular JBL Synthesis Custom Loudspeaker (SCL) model, see the "Speaker Tunings" section.

This screen shows the status of each DSP module (block). When a module is highlighted, it is enabled.



To edit DSP settings manually:

- From the Home screen, press the MENU button 

- Select the "Configure Amplifier" option from the menu using the ENCODER 

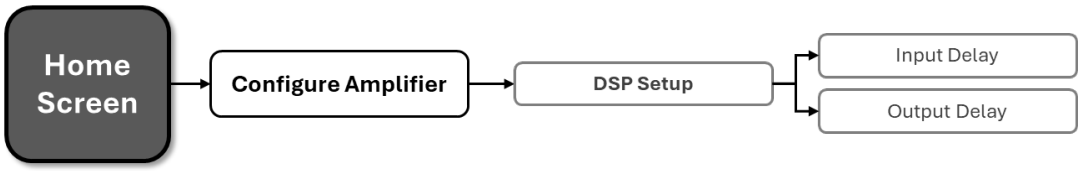
- Press the ENCODER to select the "DSP Setup" option from the menu 

- Use the ENCODER to select the module you wish to edit 

- Continue using the ENCODER to navigate, make selections, and edit settings
- When done, select "Done" at the bottom of the screen

NOTE: "Input Source / Mixing" is also accessible from the CONFIGURE AMPLIFIER screen.

Delay



The amplifiers have an Input Delay (pre-crossover) and Output Delay (post-crossover) DSP module for each channel.

The Output Delay can be used to time-align the various drivers in a multi-way speaker system or for close-proximity zone delay (to compensate for the slap-delay artifacts caused when bleed from an adjacent channel is audible). A total of up to 2000ms of delay time is available for each output channel.

The Input Delay can be used for delaying the system to the reference, or whenever more delay time is required than the Output Delay has to offer. The Input Delays provide an additional 2 seconds of delay time for each channel. Delay can be adjusted in milliseconds, feet, or meters.

To edit delay settings manually:

- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER
- Select the "DSP Setup" option from the menu
- Select the "Input Delay" or "Output Delay" icon for the channel you wish to edit
- Use the ENCODER to navigate, make selections, and edit settings
- When finished, press the “BACK” button to exit the menu

Available options/parameters:

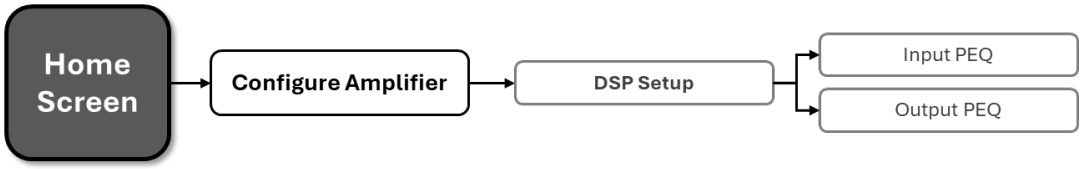
• Enable (Off, On)
Turns the Delay on or off

• Seconds (Input Delay: 0 – 2000ms, Output Delay: 0 – 2000ms)
Adjusts the delay time in ms.

• Feet (Input Delay: 0 – 2250ft, Output Delay: 0 – 2250ft)
Adjusts the delay time in fee.

• Meters (Input Delay: 0 – 646m, Output Delay: 0 – 646m)
Adjusts the delay time in meters

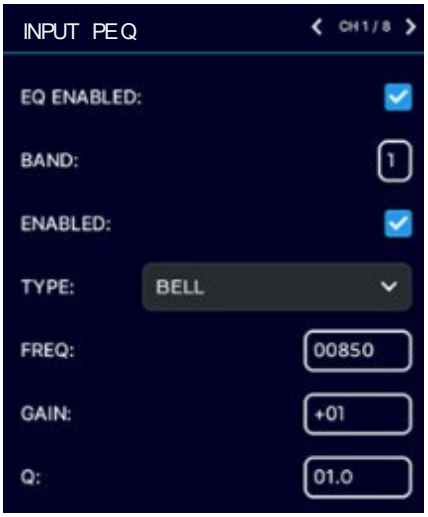
PEQ (Parametric EQ)



Input and Output PEQs are available. Each PEQ section contains 8 configurable biquads. The Output (post-crossover) PEQs are typically used for speaker tuning settings, and the Input (pre-crossover) PEQs provide additional EQ filtering for the system if required.

To edit PEQ settings manually:

- From the Home screen, press the MENU button.
- Select the "Configure Amplifier" option from the menu using the ENCODER.
- Select the "DSP Setup" option from the menu.
- Select the pre or post-crossover "PEQ" icon for the channel you wish to edit.
- Use the ENCODER to navigate, make selections, and edit settings.
- When finished, press the “BACK” button to exit the menu.



Available options/parameters:

Enable (Off, On)
Turns the PEQ on or off.

Band (Band 1 – Band 8)
Selects the filter band for editing.

Type
Selects the type of filter for the band.

Frequency (20Hz – 22kHz)
Sets the center/corner frequency of the band.

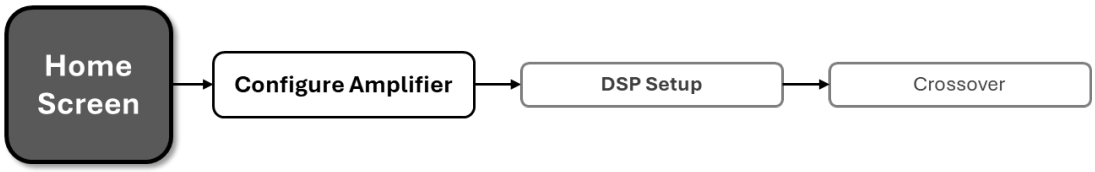
Gain (±20dB)
Sets the amount of gain (boost/cut) applied to the band.

Q (0.10 – 10)
Sets the Q of the band for Bell-type filters or adjusts the resonant peak for 2nd Order low-pass/high-pass filters (only visible when one of these filter types is selected).

Available filter types:

- Bell
- Low-shelf
- High-shelf
- LP 1st Order (6dB/oct low-pass filter)
- HP 1st Order (6dB/oct high-pass filter)
- LP 2nd Order (6-12dB/oct low-pass filter with variable resonant peak using the Q parameter)
- HP 2nd Order (6-12dB/oct high-pass filter with variable resonant peak using the Q parameter)
- All-pass 1st Order (90º phase shift)
- All-pass 2nd Order (180º phase shift)

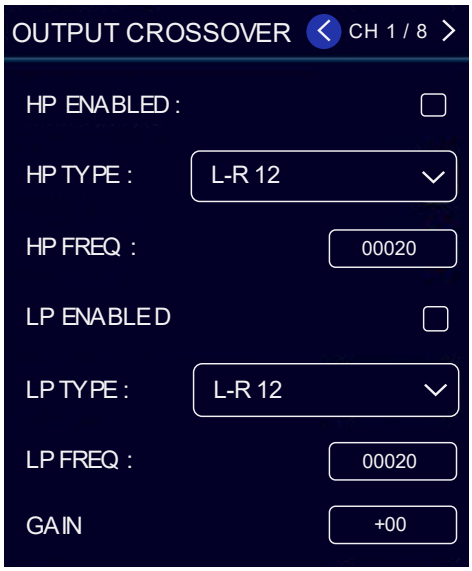
Crossover



Crossover filter settings can be edited from the Crossover screen. Crossover filters are used to restrict the range of frequencies sent to a loudspeaker or driver for protection and sound optimization.

To edit crossover settings manually:

- From the Home screen, press the MENU button.
- Select the "Configure Amplifier" option from the menu using the **ENCODER**.
- Select the "DSP Setup" option from the menu.
- Select the "XOVER" icon for the channel you wish to edit.
- Use the **ENCODER** to navigate, make selections, and edit settings.
- When finished, press the “BACK” button to exit the menu.



Available options/parameters:

HP Enable (Off, On)
Enables or disables the high-pass filter

HP Type (Butterworth 12 – 24 – 36dB/octave, Linkwitz-Riley 12 – 24 – 36dB/octave)
Selects the high-pass filter type and slope rate in dB/octave

HP Freq (20Hz – 20kHz)
Sets the high-pass filter corner frequency

LP Enable (Off, On)
Enables or disables the low-pass filter

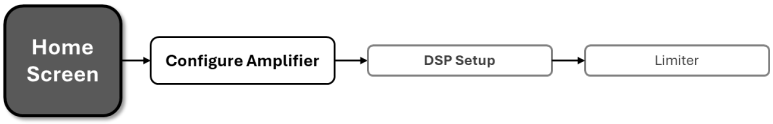
LP Type (Butterworth 12 – 24 – 36dB/octave, Linkwitz-Riley 12 – 24 – 36dB/octave)
Selects the low-pass filter type and slope rate in dB/octave

LP Freq (20Hz – 20kHz)
Sets the low-pass filter's corner frequency

Gain (-80 to 24dB)
Adjusts the crossover output gain, pre limiter

Polarity (Normal, Inverted)
Selects between normal or inverted polarity for the selected output

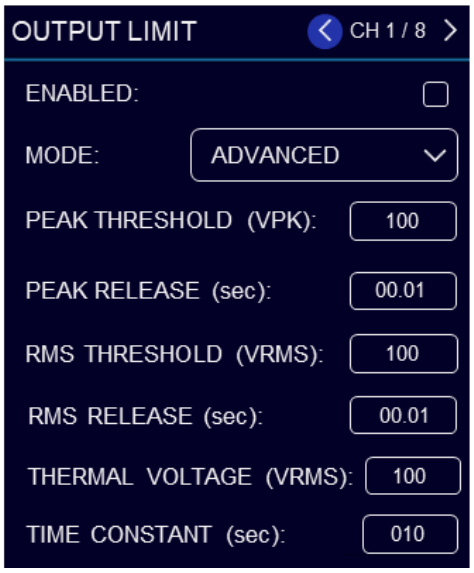
Limiter (LevelMAX™)



Limiters are used to set a "ceiling" on the output level to protect drivers from over-excursion. The thermal limiters in the amplifiers can also protect against thermal driver failure (overheating). For advanced users, LevelMAX can be configured manually using the information found in this guide. If you are not already familiar with how to configure the parameters in the figure below, it is NOT recommended that you configure LevelMAX manually.

To edit limiter settings manually:

- From the Home screen, press the **MENU** button
- Select the "Configure Amplifier" option from the menu using the **ENCODER**
- Select the "DSP Setup" option from the menu
- Select the "Limit" icon for the channel you wish to edit
- Use the **ENCODER** to navigate, make selections, and edit settings
- When finished, press the “BACK” button to exit the menu



Available options/parameters:

Enable (Off, On)
Turns the Limiter on or off

Mode (Automatic, Advanced)
Sets the operation mode. In automatic mode, the software determines the best settings based on the signal characteristics

RMS Voltage (1 – 200VRMS)
Sets the RMS voltage limit for the output

Thermal Voltage (1 – 200V)
Sets the long-term output power limit of the amplifier to what the loudspeaker load can handle without overheating and going into thermal compression. This is based on the AES power/voltage ratings of drivers outlined in the AES2-2012 standard

Time Constant (1 – 600 sec)
Sets the time it takes for the thermal limiter to adjust output voltage. This is based on the AES power/voltage ratings of drivers outlined in the AES2-2012 standard

Device Presets

Device presets allow configuration, DSP, channel assignment, gains, and other settings to be stored for later recall. A device preset can be used to configure the amp for a specific application and speaker model. For example, you may wish to use one device preset that optimizes the DSP settings for a JBL Synthesis bi-amplified speaker whilst using another preset for a pair of loudspeakers with different characteristics. Subtle changes can also be made between device presets, such as a change of input channel assignments. Device presets can be stored within the amplifier as well as backed up to a PC using the web client.

DEFAULT is the factory default device preset and cannot be overwritten. It sets up the amplifier for pass-thru operation with no DSP features enabled. Presets 1-20 are user device presets and can be overwritten.

The following bullets outline which settings are stored to device presets and which are not:

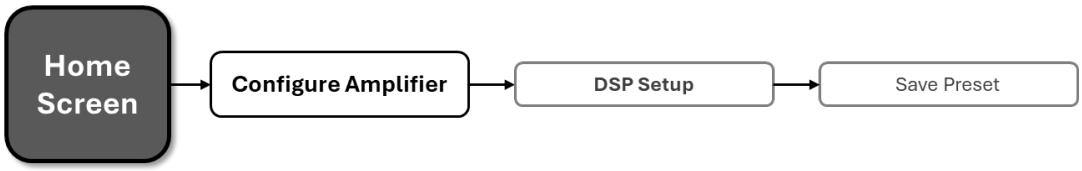
Settings Stored to Device Presets

- DSP Settings
- Levels
- Mutes
- Internal Amp Wiring (channel assignment, dual-mono/bridge mode)
- Input Source Assignments (analog and network)

Settings NOT Stored to Device Presets

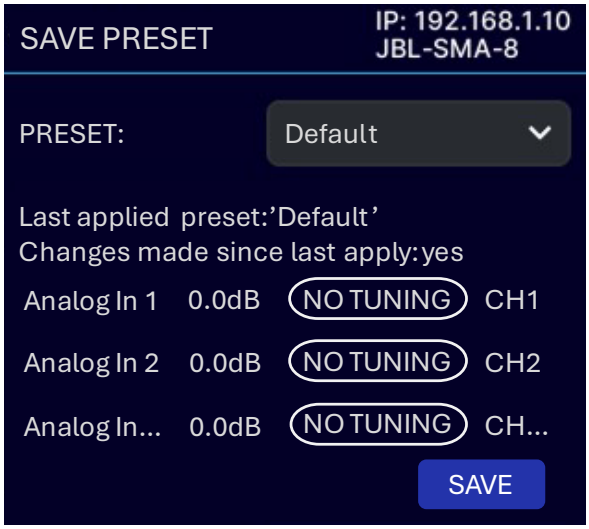
- Front Panel Lighting/Display Options
- Front Panel Security
- Network Settings

SAVE PRESET



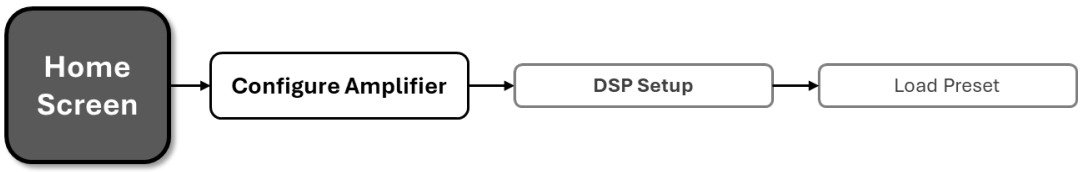
To save the current settings as a device preset from the front panel:

- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER
- Select the Preset ID to which you wish to save the preset
- Select the "Save" option
- Select "YES"



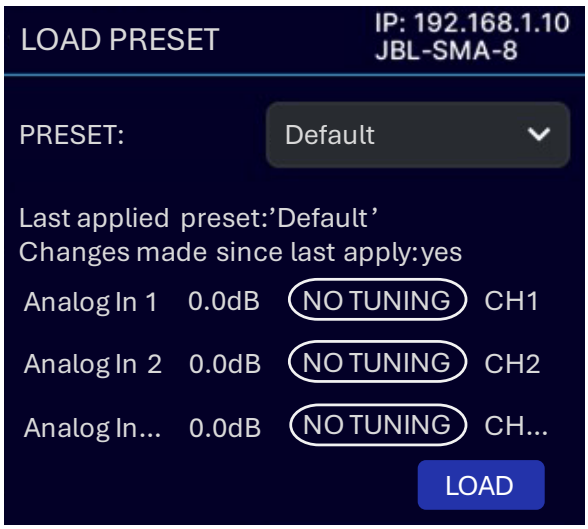
NOTE: Any unsaved settings will be retained in the amplifier after a power cycle. However, settings should be saved before loading another device preset if you wish to recall them later. Otherwise, they will be lost.

LOAD PRESET



To load a device preset from the front panel:

- From the Home screen, press the MENU button
- Select the "Configure Amplifier" option from the menu using the ENCODER
- Select the "Load Preset" option
- Use the ENCODER to navigate presets. As each preset is selected, the preset number, name, and configuration will be displayed on-screen
- Once the desired preset has been selected, use the ENCODER to select "LOAD"



Application Examples

SINGLE-ENDED MODE

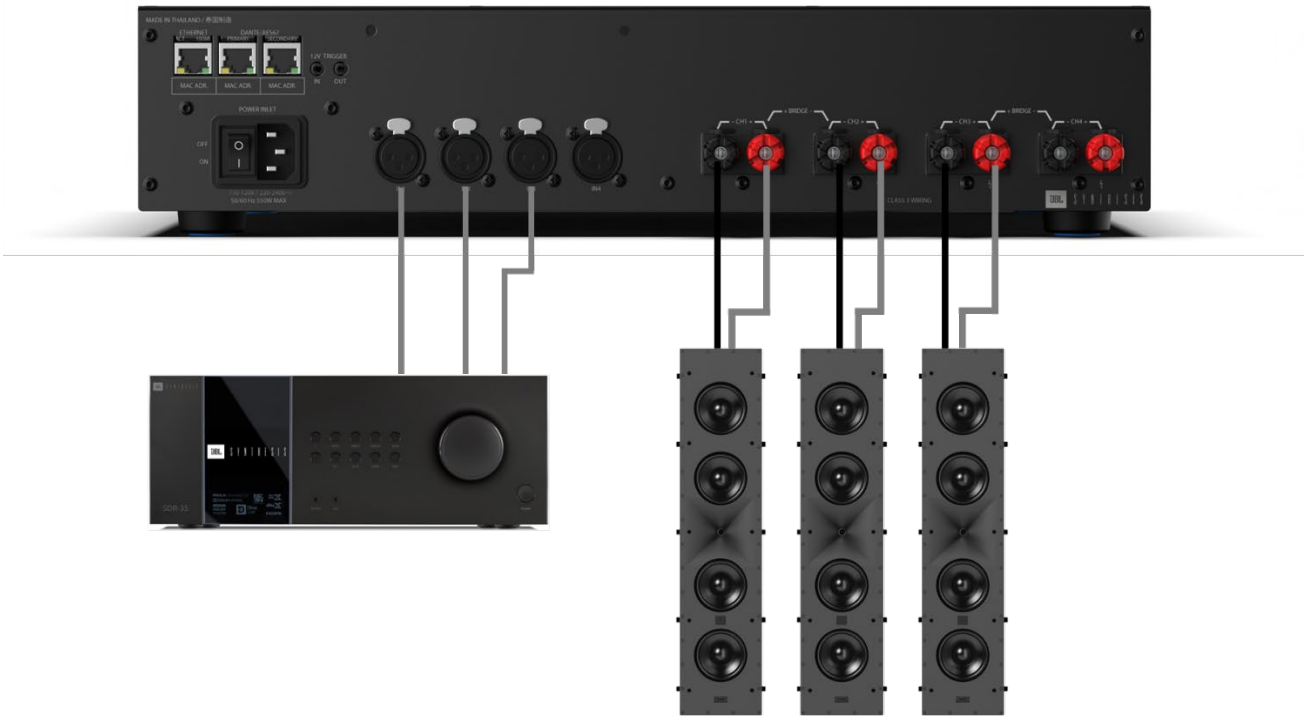
Typical input/output wiring is shown in the image below.

INPUTS: Connect the input wires for each channel. See "Wiring Input Connectors" for further information on analog input wiring.

If an input signal is intended to drive multiple outputs, it can be routed as such using the procedure in the “Input Source / Mixing” section.

OUTPUTS: Be sure to maintain proper polarity (+/–) between the amplifier terminals and the speakers. Connect the positive (+) lead of the Channel 1 speaker to the positive (+) terminal of Channel 1 of the amp. Repeat this process for the negative (–) lead. Repeat for all remaining speakers that will be in use. See "Wiring Output Connectors” for additional information on output wiring.

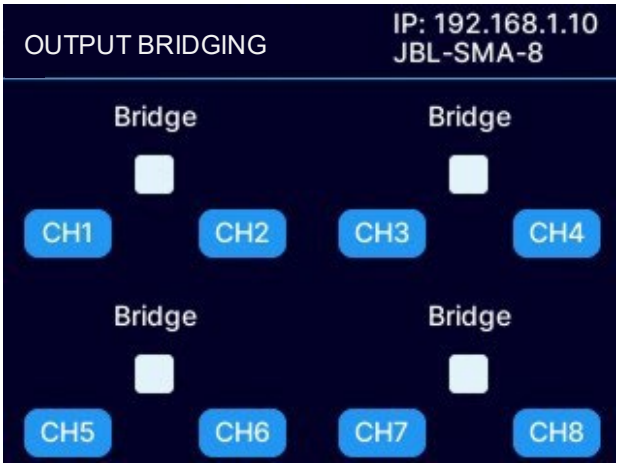
System Wiring in Single-Ended Mode



NOTE: Always route the input and output wires in separate bundles.

BRIDGE MONO MODE

INPUTS: See “Wiring Input Connectors” and “Input Source / Mixing” for further information on analog input wiring.



Front panel amplifier mode settings

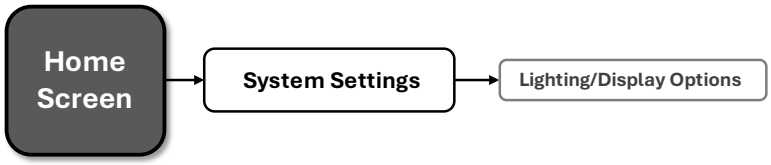
OUTPUTS: Be sure to maintain proper polarity (+/–) between the amplifier terminals and the speakers. Connect the positive (+) lead of Speaker 1 to the positive (+) terminal of Channel 1 of the amplifier. Next, connect the negative (–) lead of Speaker 1 to the negative (–) lead of Channel 2 of the amplifier. Repeat for all remaining speakers that will be used in bridge mode. See “Wiring Output Connectors” for additional information on output wiring. See "Output Setup" for information on configuring an output pair for bridge mono operation.

System Wiring in Bridge Mono Mode (JBL Synthesis SSW-1 shown)

NOTE: Always route the input and output wires in separate bundles.

System Settings

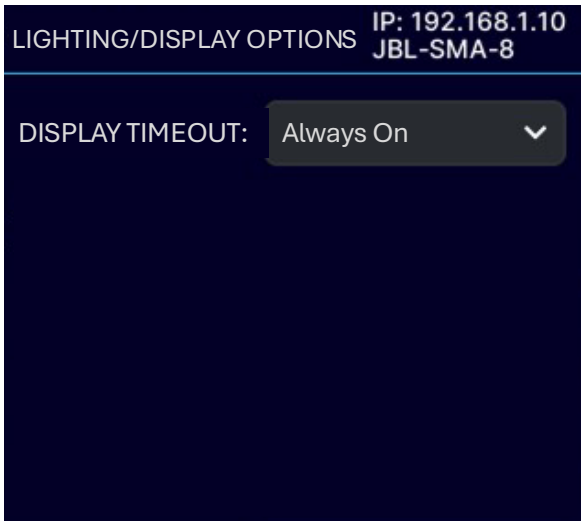
LIGHTING / DISPLAY OPTIONS



These options can be used to turn off the front panel LCD.

To Edit Lighting Options:

- From the Home screen, press the MENU button
- Select the “System Settings” option from the menu using the ENCODER
- Select "Lighting/Display Options" from the menu
- Scroll and select the setting using the ENCODER
- When done, press the BACK button to exit this menu



Available options/parameters:

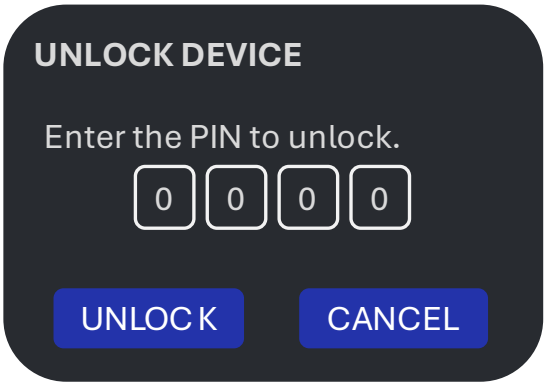
- **LCD Display (Always On, 30 sec, 5 min, 30 min)**
  This option allows the LCD to go to sleep after a specified period of inactivity. Once asleep, any button press will wake up the LCD

SECURITY / FRONT PANEL LOCKOUT

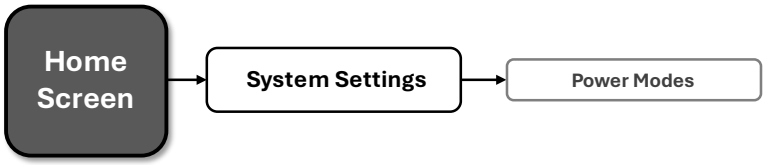
The front panel can only be locked via the Web UI. If it has been locked, it can be unlocked using the Web UI or by pressing any button on the front panel of the amplifier and following the unlock procedure as described below:

To Unlock the Amp using the front panel display:

- From the Home screen, press any button
- Using the ENCODER, enter the PIN
- When finished, use the ENCODER to select “UNLOCK”

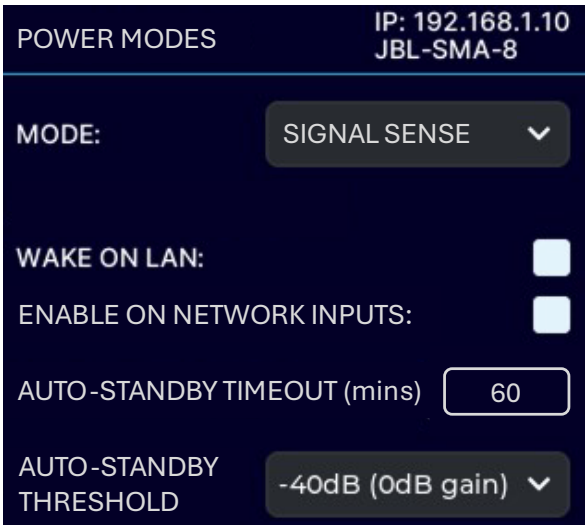


POWER MODES



To Edit Power Mode Settings:

- From the Home screen, press the MENU button
- Select the "System Settings" option from the menu using the ENCODER
- Select the "Power Modes" option from the menu
- Turn and press the ENCODER to select the desired settings
- When done, press the BACK button to exit this menu



Available Options:

- **SIGNAL SENSE**

  The SIGNAL SENSE power mode allows the SMA amplifiers to conserve power during periods of inactivity. The amplifier will automatically enter standby after a period of inactivity. By default, this will occur 60 minutes after audio is no longer present at the input of the DSP for a given channel. The unit will exit standby when audio is sensed again at the input of the amplifier.

  Available options/parameters:

  Wake-on-LAN: Allows amplifier to be turned on from standby by a network message via 3rd party controller (received on the ethernet port)

  Enable On Network Inputs: Amplifier will wake upon the presence of a signal on a network input

  Auto-Standby Timeout: Determines how many minutes the amp will remain on without a signal

  Auto-Standby Threshold: Sets the threshold to determine the signal/no-signal condition

- **12V TRIGGER**

  The state of the device is controlled solely by the external 12V trigger signal (this mode will be automatically selected when a 12V trigger signal is present).

  NOTE: The front panel standby button will be non-operational in 12V trigger mode. The standby button will briefly flash blue for 10 seconds when pressed, and the amplifier will power on for a 5-minute window to allow the power mode to be changed.

- **ALWAYS ON**

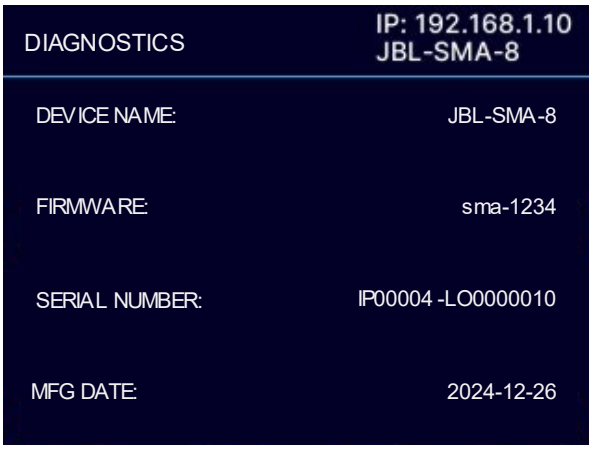
  The state of the device is controlled solely by the standby button and WakeOnLan.

DIAGNOSTICS

The Diagnostics screen provides a read-only list of amplifier information.

To Enter the Diagnostics Screen:

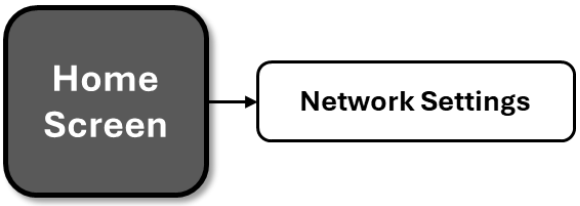
- From the Home Screen, press the MENU button
- Select the "System Settings" option from the menu using the ENCODER
- Select the "Diagnostics" option
- Use the ENCODER to scroll the menu



Information Displayed:

- DEVICE NAME
- FIRMWARE VERSION
- SERIAL NUMBER
- MANUFACTURED DATE

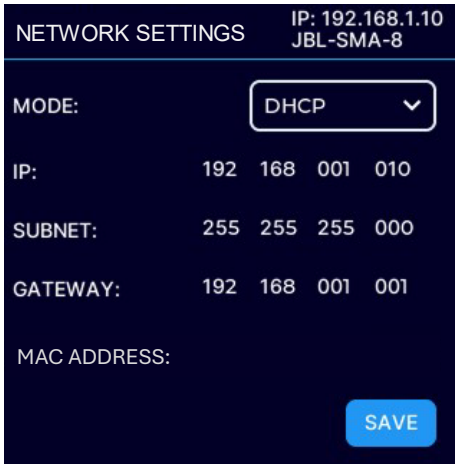
Network Settings



Network settings can be configured from either the front panel display or the Web UI. DHCP is enabled by default, allowing the SMA amplifier to automatically obtain an IP address when connecting to an Ethernet switch or router with an active DHCP server, or when using Auto-IP.

To Enter the Network Settings Screen:

- From the Home Screen, press the MENU button
- Select the "Network Settings" option from the menu using the ENCODER
- Use the ENCODER to select and edit the network settings
- Use the ENCODER to press the SAVE button when finished editing



Available Parameters:

- **MODE**

  “DHCP” - allows the amplifier to automatically obtain an IP address from a DHCP server or via Auto-IP

  “STATIC” – allows manual configuration of the amplifier network settings
- **IP ADDRESS**

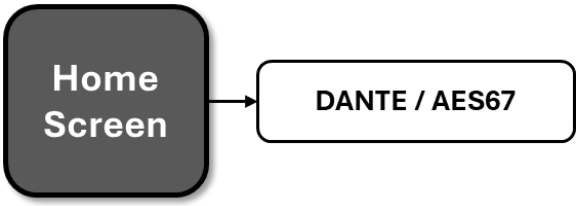
  Allows for viewing and editing the IP address of the amplifier
- **SUBNET**

  Allows for viewing and editing the subnet mask of the amplifier
- **GATEWAY**

  Allows for viewing and editing the gateway address of the amplifier if required to access the network. If using a router, the gateway address will typically be the router address
- **MAC ADDRESS (Informational only)**

  Allows for viewing the MAC Address of the amplifier

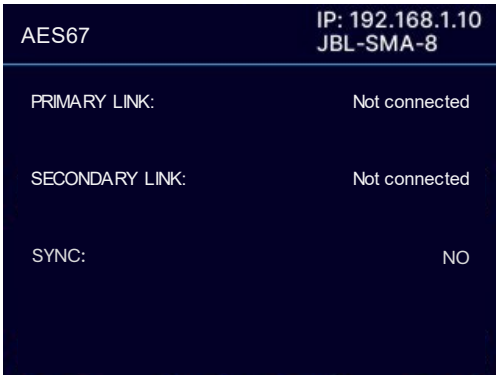
Dante / AES67



The Dante / AES67 page if for informational purposes only. It will show the status of the connection/links.

To Enter the Dante / AES67 Screen:

- From the Home Screen, press the MENU button
- Select the "DANTE / AES67" option from the menu using the ENCODER
- Press the BACK button to exit the menu



Available Parameters

- **PRIMARY LINK**

  Connected/Not Connected
- **SECONDARY LINK**

  Connected/Not Connected
- **SYNC**

  YES / NO

Configuring The Amp Using the Web Client

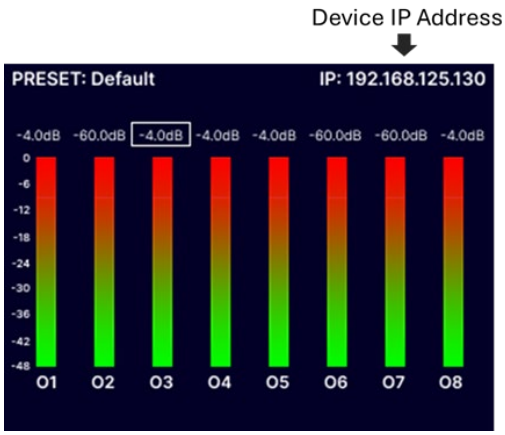
This section of the manual describes how to configure the SMA amplifier for your application using the PC web client. This includes assigning input channels, editing internal routing and DSP settings, and configuring output settings.

ACCESSING THE WEB CLIENT TO CONFIGURE THE AMPLIFIER OVER A NETWORK

To access the web client, the amplifier must be connected to a TCP\IP network via the rear panel Ethernet port and, in some cases, configured for the network. Additionally, your PC must be connected to the same network as the amplifier. When using the same PC to access more than one amplifier through the Web Client, each amplifier can be individually configured using a single tab. Each tab name will show the name of the corresponding amplifier. If the graphics appear incorrect, you may need to clear the cache of your web browser.

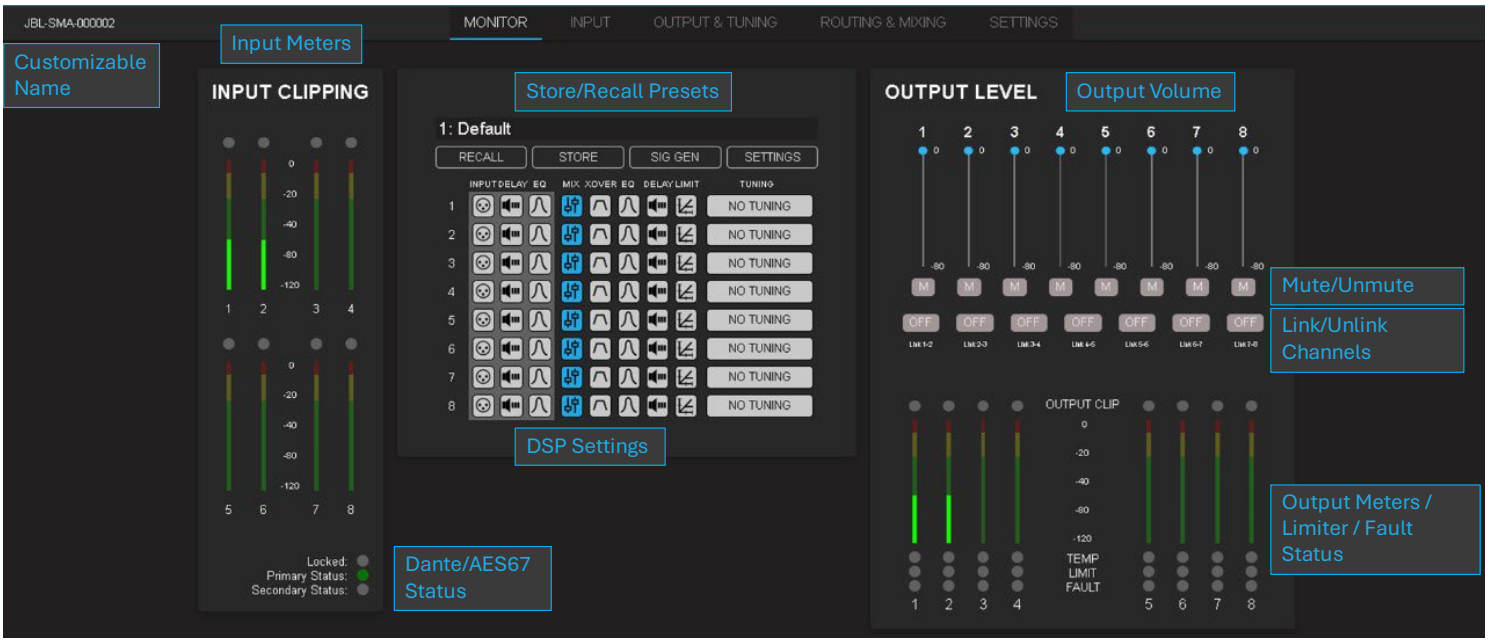
To Access the Web Client:

1. Open a web browser on your PC
2. Locate the IP address of the unit using the front panel display as shown to the right
3. Type the IP address of the unit in the browser address bar and press “Enter”
4. The browser should display the Web interface as shown below



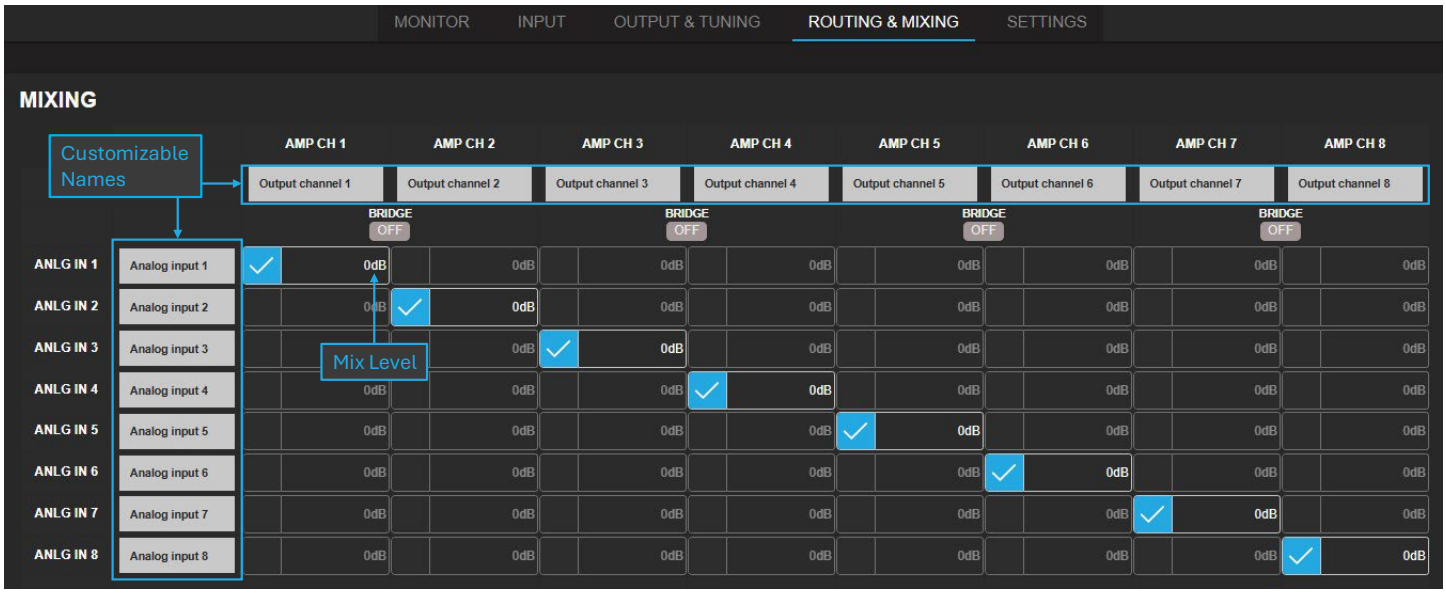
MONITOR PAGE

The monitor page provides a high-level overview of the amplifier settings and status. This includes input and output meters, Dante/AES67 Status, presets, DSP block status, output volume levels, muting, channel fader linking, and limiter and fault status. You can access all of these parameters by clicking on the respective buttons. You can also store and recall presets from this page.



ROUTING AND MIXING

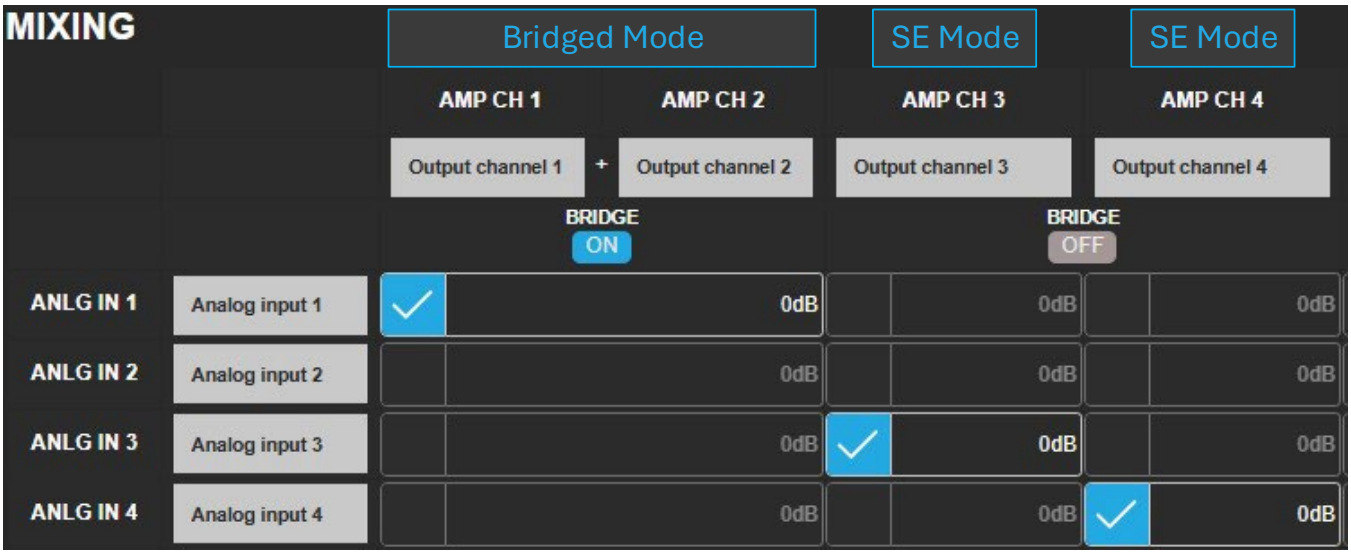
The amplifiers ship with each output channel sourced from its respective analog input (e.g., analog input 1 goes to output 1, etc.) as shown below. A maximum of 2 input channels can be assigned and consequently mixed to each output channel by selecting the checkbox next to the intersection of the desired in/out combination.
Channel names are customizable, and levels can be adjusted to create the desired mix.



NOTE: Network (Dante) input channels will only be shown if the device has an active Dante license. To activate Dante, use the Dante Activator tool from Dante Controller software (v4.5 or later). Once your device is discovered in the software, you will see your purchase options.

Bridged Mode

As shown below, bridged mode can be engaged by clicking the “ON/OFF” button below the word “BRIDGE”. By default, all amplifier channels are set to single-ended (SE) operation.

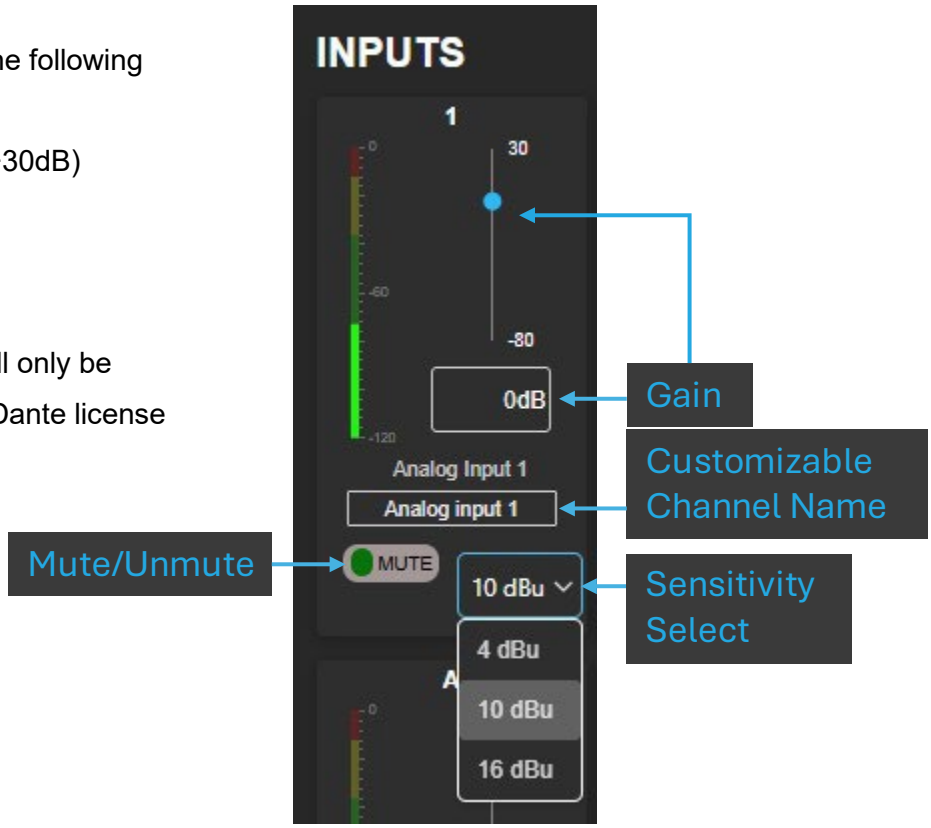


INPUT

The INPUT page is designed to facilitate the configuration of parameters related to input channels, such as input gain, mute/unmute, input sensitivity, delay, and PEQ.

Input Monitor Section

1. As seen in the figure to the right, the following parameters can be adjusted here:
    a. Input Gain (Range: -80 to +30dB)
    b. Channel Name
    c. Mute/Unmute
    d. Input Sensitivity
2. Network (Dante) input channels will only be shown if the device has an active Dante license



DSP & Channel Selection

To select which input channel to configure, simply click on the corresponding number in the “DSP” portion of the INPUT page as shown below (Channel 1 is currently selected).

Delay

Delay can be specified in milliseconds, feet, or meters. When one input field is used to specify the amount of delay, the other two will update to show the equivalent delay in their corresponding units of measurement.

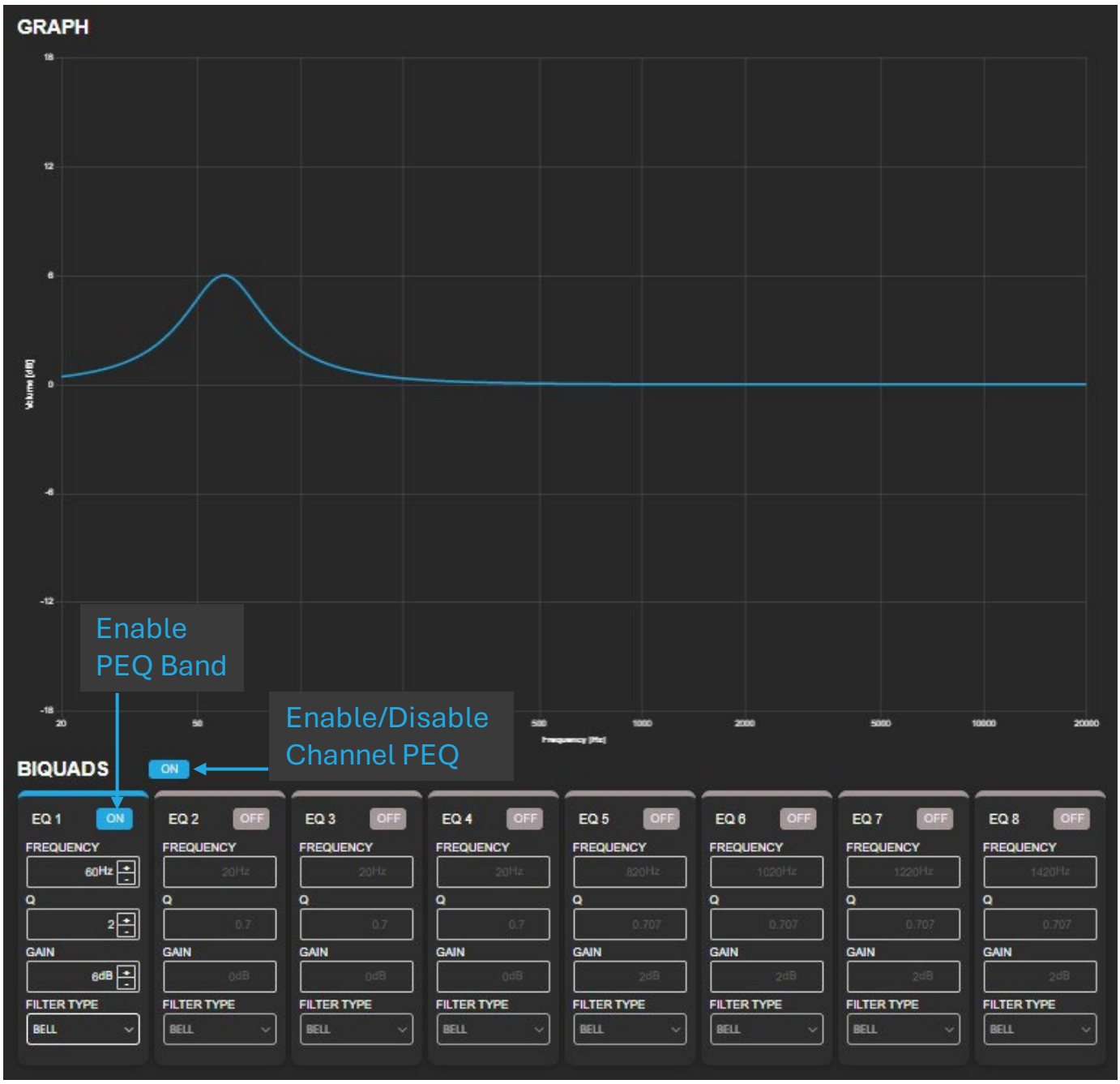
Setting the PEQ

The DSP section includes 8 biquads for each channel that can be configured as the following filter types by using the “FILTER TYPE” drop-down menu:

BELL	**LOW PASS 1ST ORDER**	**LOW PASS 2ND ORDER**
LOW SHELF	**HIGH PASS 1ST ORDER**	**HIGH PASS 2ND ORDER**
HIGH SHELF	**ALL PASS 1ST ORDER**	**ALL PASS 2ND ORDER**

NOTE: The 1st Order Low Pass and High Pass filters have a slope of -6dB/octave. The 2nd Order Low Pass and High Pass filters generally have a slope of -12dB/octave, though that will vary with the Q factor selected. The 1st Order All Pass creates a 90-degree phase shift, and 2nd Order All Pass creates a 180-degree phase shift.

In the figure shown below, the first biquad is configured as a “BELL” with 6dB of gain at 60Hz using a Q factor of 2. The center frequency, Q factor, and gain can all be adjusted via manual entry or by clicking the up/down buttons.



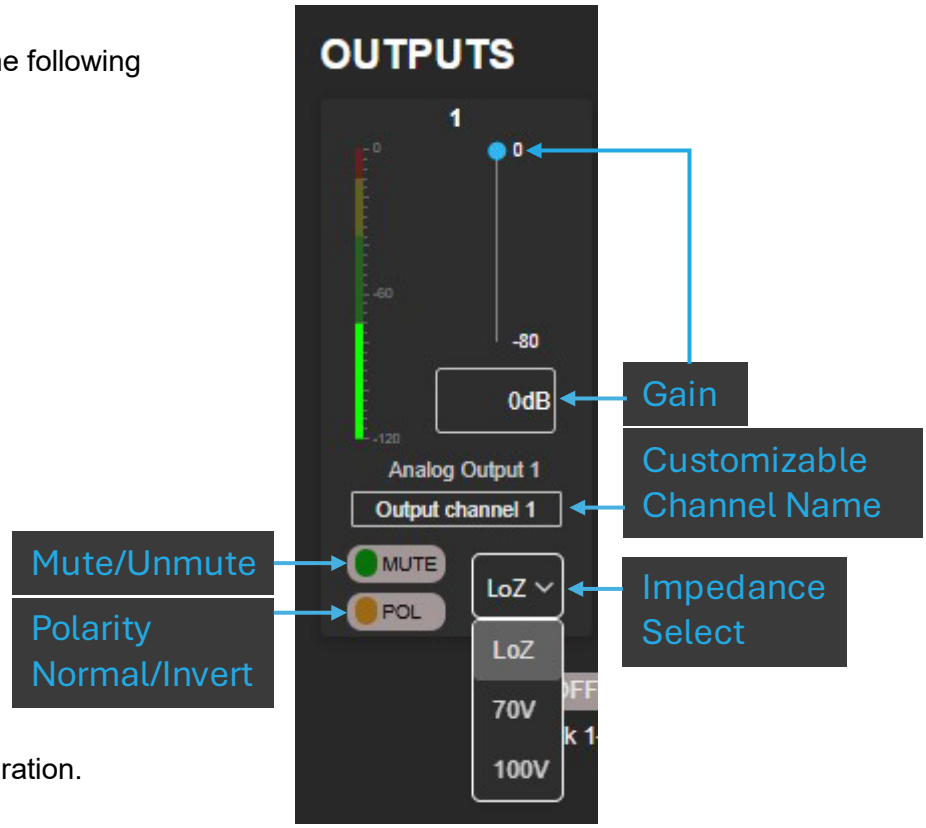
NOTE: The parameters for a specific PEQ band will only be configurable if that PEQ band is ”ON.”

OUTPUT & TUNING

The OUTPUT & TUNING page is designed to facilitate the configuration of parameters related to output channels, such as gain, mute/unmute, polarity, impedance, delay, crossover, limiter, and PEQ.

Output Monitor Section

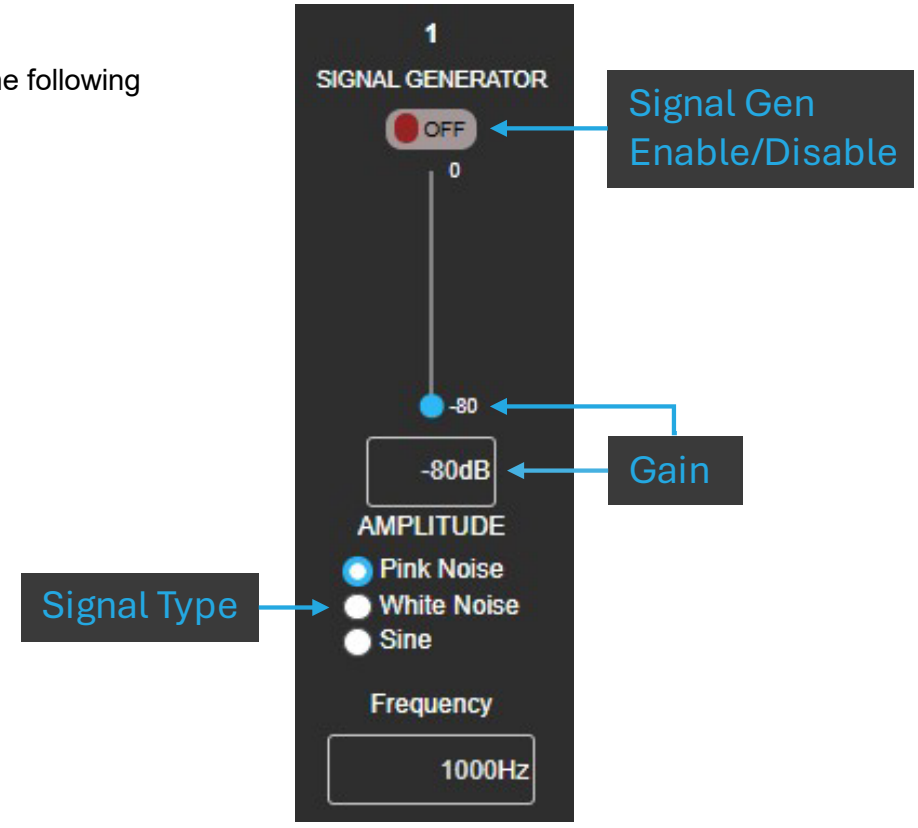
1. As seen in the figure to the right, the following parameters can be adjusted here:
    a. Gain (Range: -80 to 0dB)
    b. Channel Name
    c. Mute/Unmute
    d. Polarity
    e. Impedance
2. Use “Link On/Off” to link output faders



NOTE: The SMA-8300 must be bridged for high impedance 70V/100V operation.

Signal Generator Section

1. As seen in the figure to the right, the following parameters can be adjusted here:
    a. On/Off
    b. Gain (Range: -80 to 0dB)
    c. Signal Type
        i. Pink noise
        ii. White Noise
        iii. Sine Tone



DSP

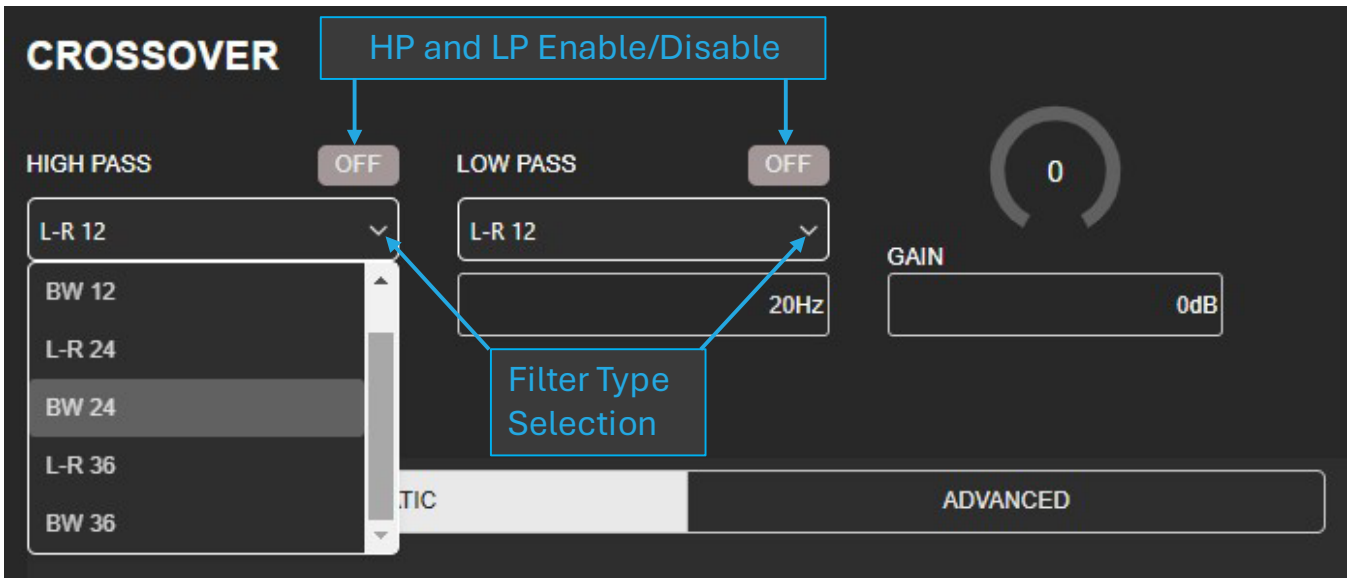
To select which input channel to configure, simply click on the corresponding number in the “DSP” portion of the OUTPUT & TUNING page as shown below (Channel 1 is currently selected).

Setting the PEQ

The output PEQ also contains 8 biquads for use on each output channel. The instructions for configuring the output PEQ are identical to those of the input PEQ. Click here to navigate to the PEQ configuration instructions.

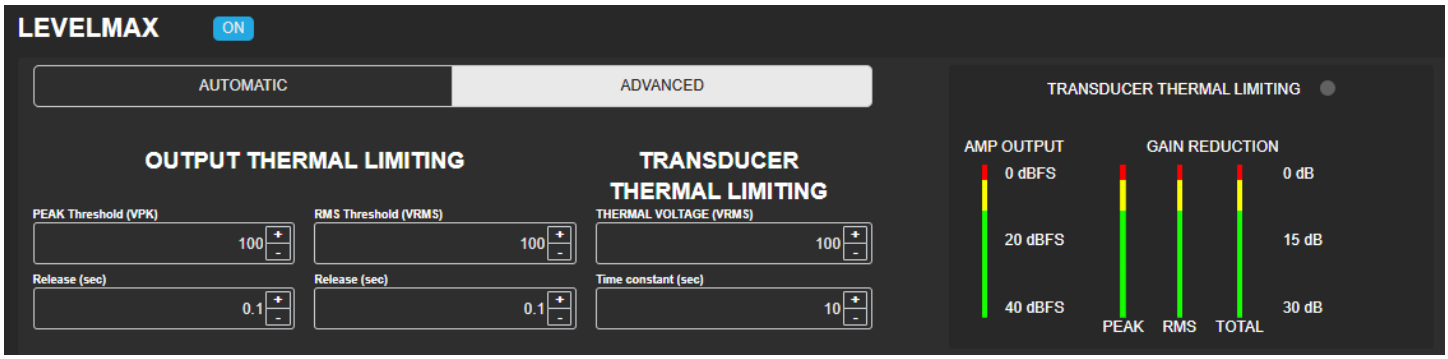
Crossover

Available options for the crossover include Butterworth 12 – 24 – 36dB/octave and Linkwitz-Riley 12 – 24 – 36dB/octave. These can be selected as shown below, along with the corner frequency, gain (-80 to +24dB), and Enable/Disable.



LevelMAX™ (Limiter)

Limiters are used to set a "ceiling" on the output level to protect drivers from over-excursion. The thermal limiters in the amplifiers can also protect against thermal driver failure (overheating). For advanced users, LevelMAX can be configured manually. If you are not already familiar with how to configure the parameters in the figure below, it is NOT recommended that you configure LevelMAX manually.



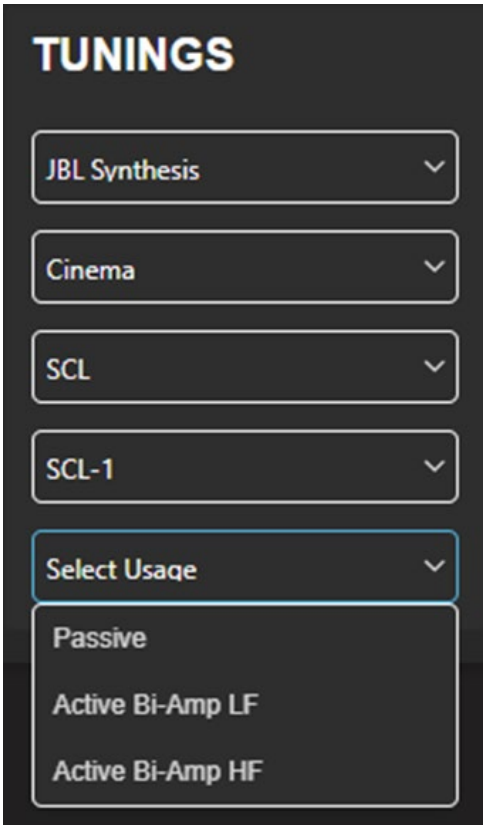
Speaker Tunings

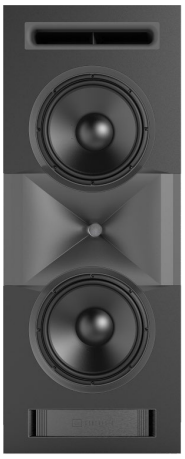
Speaker tunings apply DSP settings to a particular output channel, making it easy to optimize a speaker's performance.

Selecting a Speaker Tuning

1. As seen in the figure to the right, you can select between different speaker tunings by selecting:
    a. Brand
    b. Market
    c. Series
    d. Model
    e. Usage

2. Regarding Usage: For active bi-amp configurations with the JBL Synthesis SCL-1, please refer to the SCL-1 owner's manual

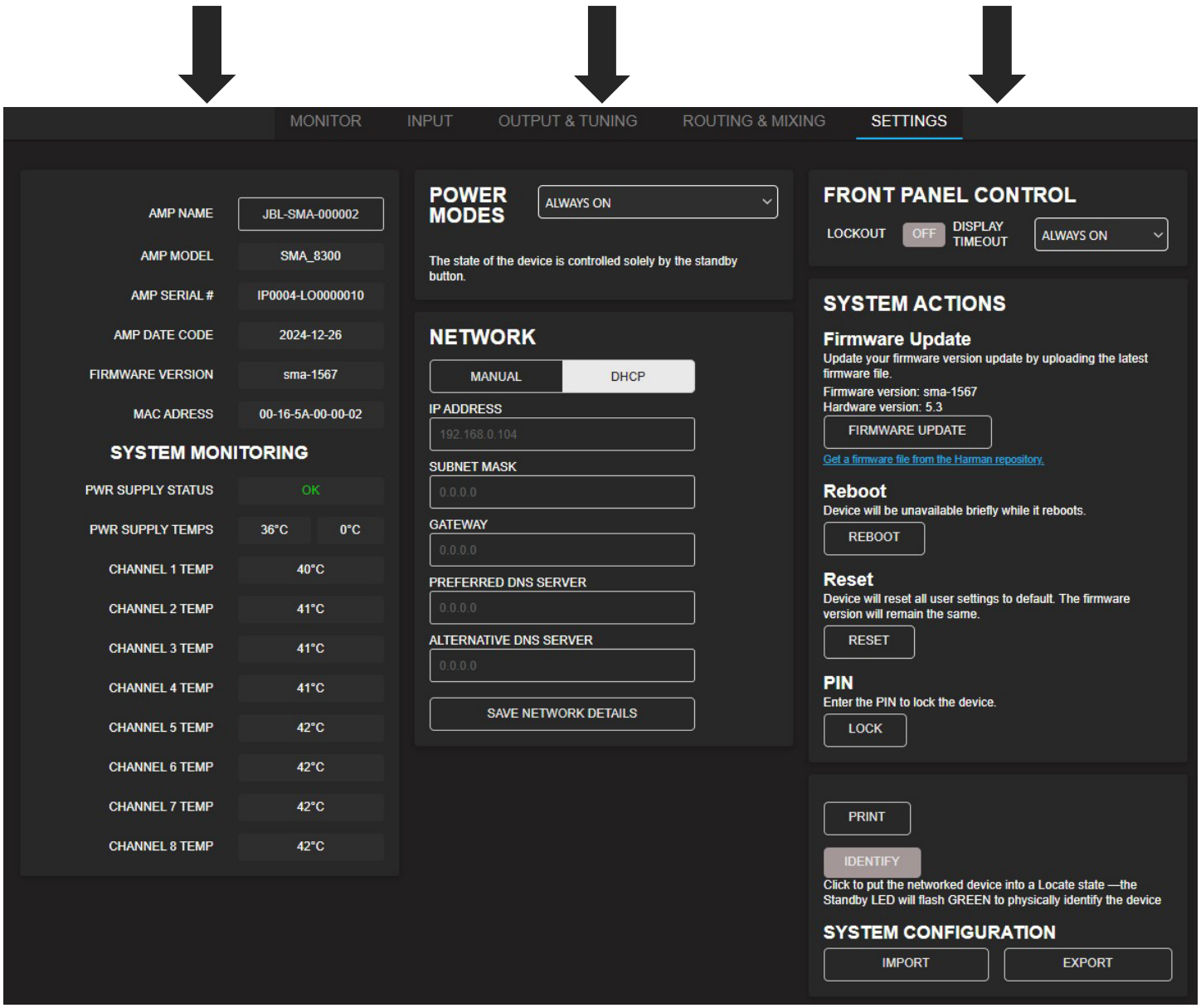




SETTINGS

The SETTINGS page is used to obtain information about your unit, configure system-level settings, and manage network and software details. The following items can be found on this page:

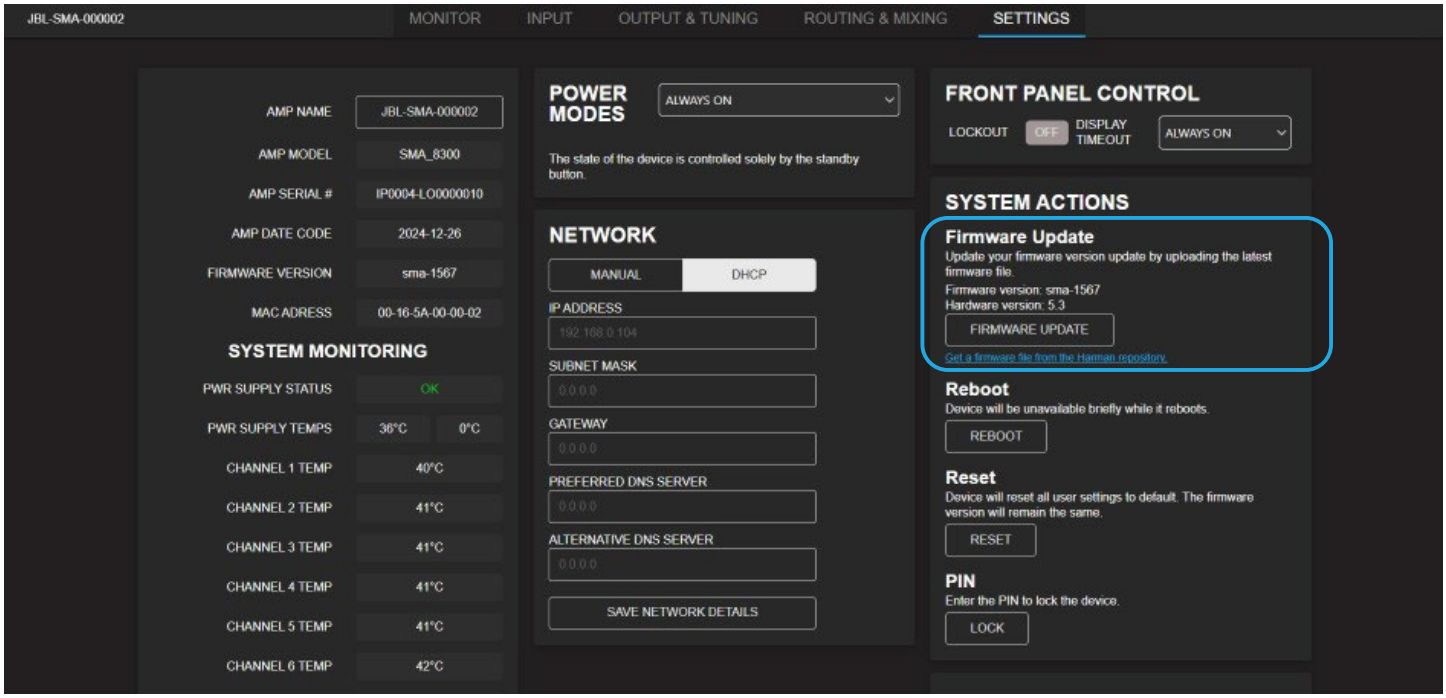
- Amp ID information
- Customizable Amp Name (50 characters or less, no special characters)
- System Monitoring such as temperature and power supply status
- Power modes:
  - Always ON
  - Signal Sense
  - 12V Trigger
- Network Settings
- Front Panel Display Settings
- System Updates
- Reboot, Reset, and PIN setting (recommended)
- Unit Identification Feature
- Import/Export Configuration



NOTE: Depending on the situation, it may be appropriate to set a PIN code to lock the amplifier(s). It is highly recommended in situations where someone other than the responsible installer/technician may accidentally change the settings.

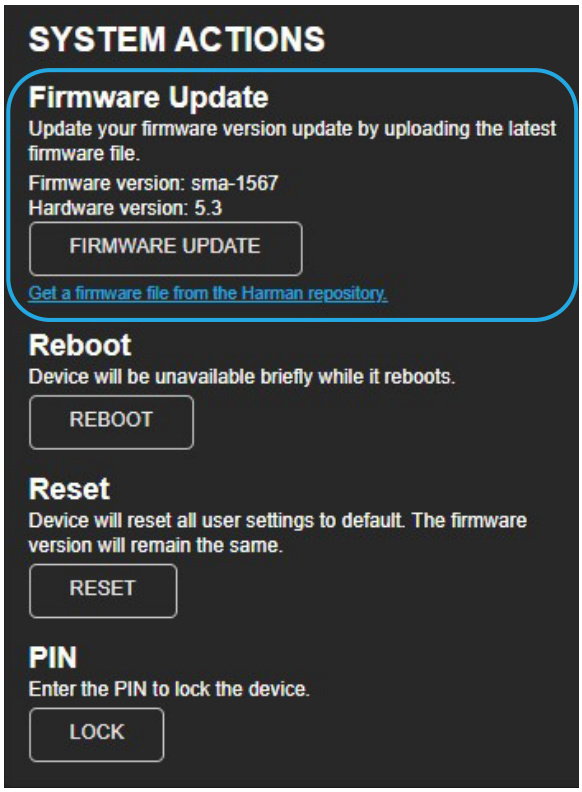
Firmware Update Process

Occasionally, a new version of firmware will become available. When this is the case, it is strongly recommended that you perform the update for your amplifier. You can perform the update via the “SETTINGS” page of the Web UI under “SYSTEM ACTIONS” as shown below.

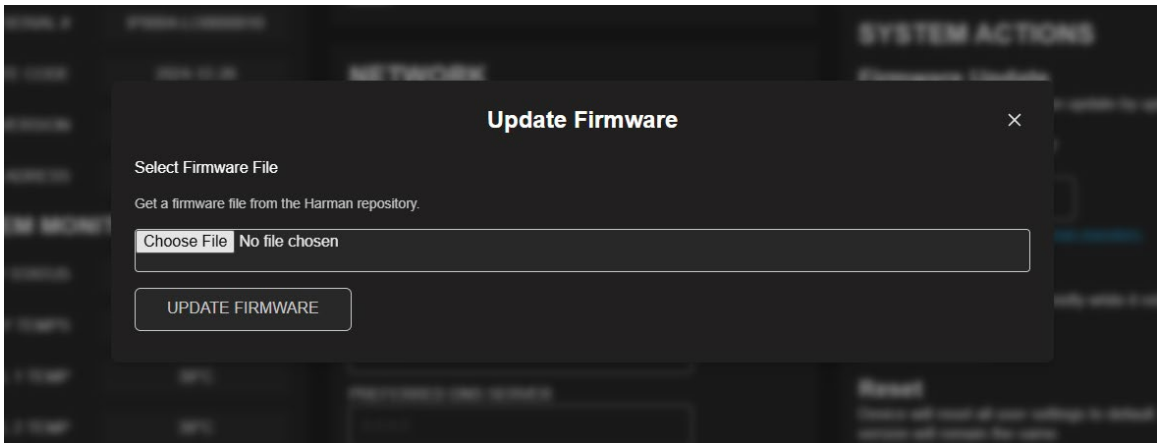


To update the firmware for your amplifier:

1. Click “Get a firmware file from the Harman repository”
2. Download the latest firmware update zip file to your computer
3. Unzip the compressed folder
4. Click the “FIRMWARE UPDATE” button
5. Click “Choose File”
6. Select the firmware file from the unzipped folder (the extension will be “.swu”)
7. Click “UPDATE FIRMWARE” to begin the update process
8. The front panel display of the amplifier will show the firmware update progress bar move from 0% to 100% over a period of a few minutes
9. Allow the amplifier to automatically reboot
10. Once the process is completed, connect to the web client to verify that the firmware version has been updated

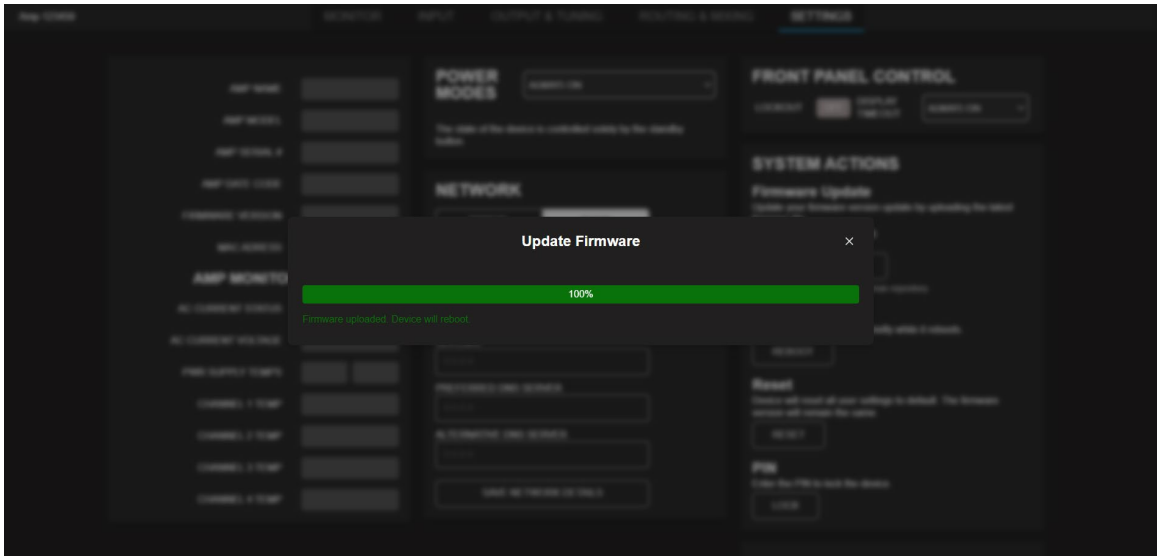


Click to choose a FW update file



Click “UPDATE FIRWMARE” to begin the update

The Update Progress Bar shows that the FW update has been sent to the amplifier



Finally, the front panel display of the amplifier will show the actual firmware update process. The amplifier must be allowed to automatically reboot so that the firmware update can be completed.

NOTE: It is good practice to clear the browser cache after a successful firmware update.

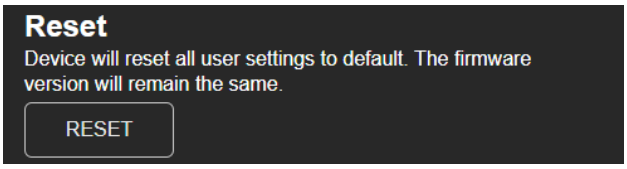
Reset

The Reset function allows an SMA amplifier to be reverted to its default settings. When initiated, it will perform the following tasks:

- Erase all user presets (this includes all user DSP and configuration settings)
- Reset all system settings

To RESET the amplifier:

1. Click the “RESET” button
2. Confirm that you wish to perform a reset



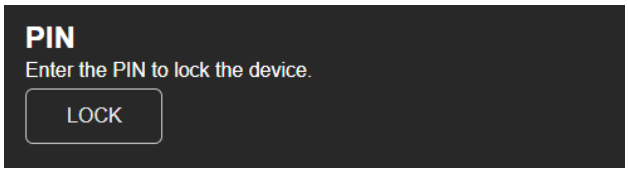
Locking And Unlocking the Amplifier Using a PIN

The amplifiers can be locked and unlocked via the Web UI using a PIN. When an amp is locked, the settings cannot be changed without first unlocking it. Setting a PIN and locking the amplifier is highly recommended in situations where someone other than the responsible installer/technician may accidentally change the settings.

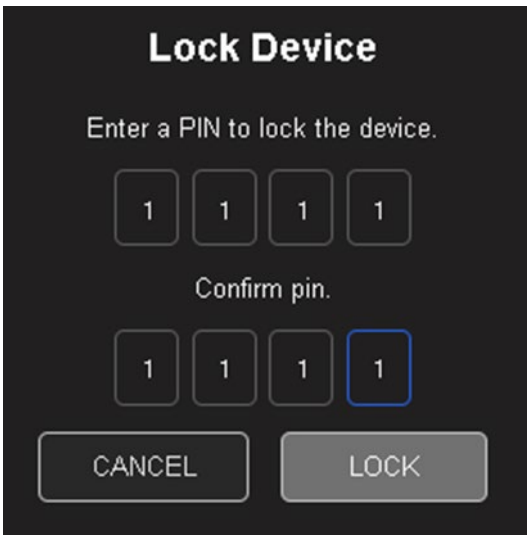
IMPORTANT NOTE: Make sure to store your PIN safely. In order to reset the PIN, press and hold the BACK button in the front panel until the display shows the volume monitoring view.

To LOCK the amplifier using the PIN:

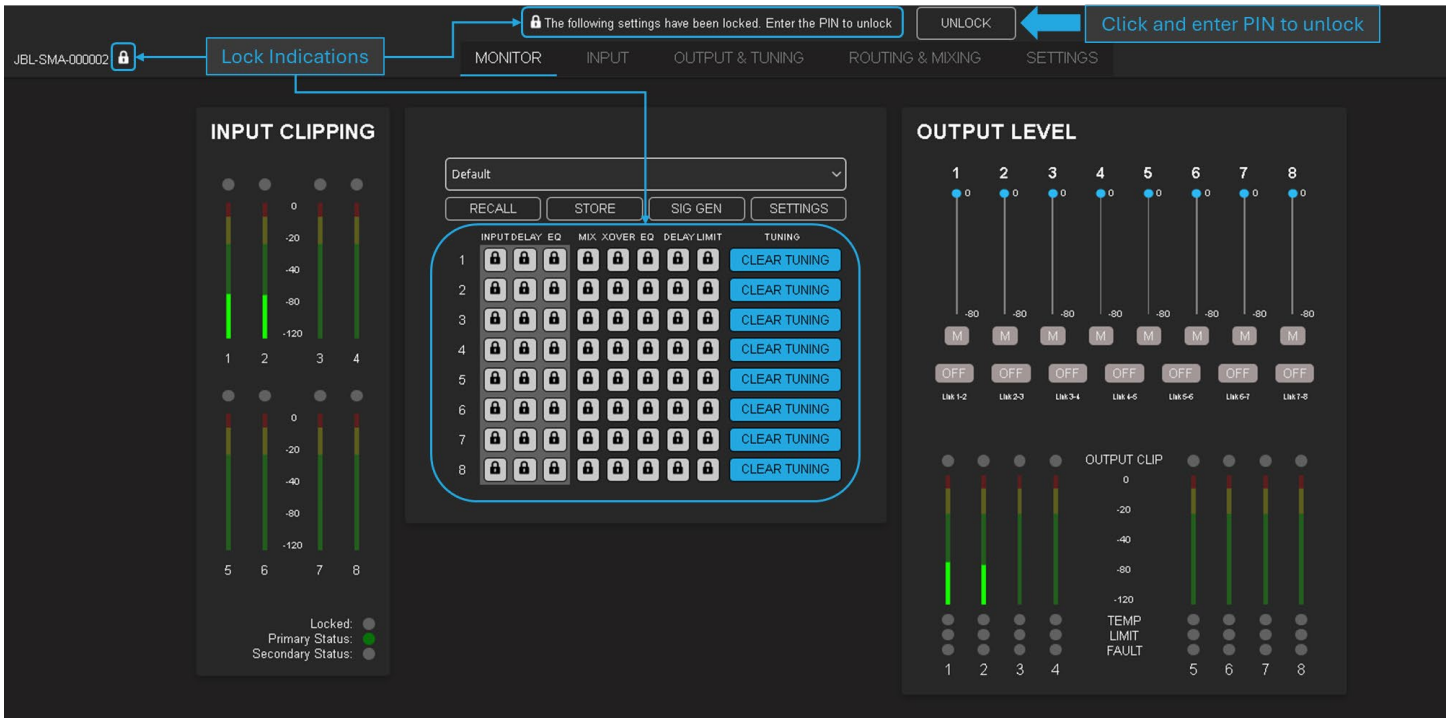
1. Click the “LOCK” button



2. Choose and enter a PIN twice and click “LOCK” to lock the device



When the amplifier is locked, there are several areas on the monitor page that will indicate such (as seen in the image below).



To UNLOCK the amplifier using a PIN:

1. Click the “UNLOCK” button
2. Enter the PIN and click “UNLOCK” to unlock the amplifier

System Protection

FAULTS

The amplifier will enter a fault state if it senses an unsafe condition. This protection is for both internal and external faults. Be sure that the load connected to the amplifier is within the 2.7-16 Ohms limit (5.4-16 Ohms in Bridge Mono mode). If wiring and load are verified as correct and the fault condition persists, contact JBL Synthesis technical support. If for any reason a loss of power occurs, the amp will return to its most recent state upon reboot.

Fault	Display Message	Description
High Voltage	“Over Voltage Protection”	The power supply's high voltage rails are no longer within a safe operating range for the amplifier or other components attached
Low Voltage	“Under Voltage Protection”	The power supply's high voltage rails are no longer within a safe operating range for the amplifier or other components attached
OCP	“Over Current protection”	At the amplifier output, either a low resistance load is detected or a short circuit is detected
Thermal	“Over Temperature Protection”	An amp channel and/or the power supply has exceeded the maximum acceptable temperature threshold
DCerror	“DC Error”	DC Voltage has been detected at the output of the amplifier
Power Manager Fault	“PMU Fault”	Power Manager Fault
Power Supply Fault	“PSU Fault”	Power Supply Fault

THERMAL LIMIT

If the amplifier power supply and/or any channels become too hot for safe operation, a thermal fault will occur. If a channel's temperature reaches 80° Celsius, a message will appear in the front panel display to indicate the onset of audio compression. The amplifier will continue to run in this state until either the temperature is reduced to a safe operating range, or if the temperature continues to rise, the channel will shut off to protect itself above 100° Celsius. The amplifier will exit the thermal fault state only when the temperature drops back below the thermal limit.

AC UNDER/OVER-VOLTAGE PROTECTION

If the AC line voltage drops below the acceptable operating voltage of the amplifier, the amplifier’s power supply will turn off and the Power LED will flash red. The amplifier will power on when the AC line voltage returns to safe operating levels.

FAN-COOLED CHASSIS

SMA series amplifiers are cooled by quiet, variable-speed fans. Maximum fan noise level of the SMA amplifier is 51dBA. The fans will pull air from side-to-side. The following fault conditions cause the fan to turn on full speed

- High frequency fault (excessive high frequency signal content has been sensed at the output of the amplifier)
- Thermal fault (excessive power supply or channel temperature is detected)

NOTE: The fan adjusts itself according to the temperature and will automatically ramp up and down based on it.

UNIVERSAL SWITCHING POWER SUPPLY

The SMA Series amplifiers incorporate a switching power supply designed for high efficiency and high output power. They accept AC supply voltages from ~100V to ~240V.

Troubleshooting

Power indicator and LCD are off

- Confirm the amplifier is plugged in to power
- Confirm AC power is supplied to the amplifier
- Ensure rear panel power switch is in the “ON” position

Power indicator is continuously flashing red

- The AC line voltage has dropped below 50V at the power supply. See "System Protection" for information on AC under/over voltage protection

Pressing the standby button does not immediately wake the amplifier. Power indicator flashes blue briefly

- The amplifier is asleep via the 12V trigger
- Confirm that the 12V trigger signal is present
- If needed, press the standby button to allow for a 5 minute window to change the power mode. See “Power Modes” section

Over temperature protection fault is indicated in the display

- The amplifier is becoming too hot for safe operation; allow the amplifier to cool
- Check for loads less than 2.7Ω (SE Operation) or 5.4Ω (Bridge Mono Operation)
- Check for excessive input levels
- Check for proper ventilation. See the "Proper Cooling" section for information on rack mounting and cooling
- See the "System Protection" section for detailed information on thermal limits

Some other fault is indicated in the display

- There are a number of conditions that result in a fault error being displayed: the operating temperature exceeds 100°C, or an output short circuit is detected. See the "System Protection" section for more information on these protection features

Distorted sound

- Load is wired incorrectly, or Dual/Bridge mode is configured incorrectly — both should be verified. See the "Wiring Output Connectors" section and "Output Setup" section for more information
- Input is overloaded by a signal level that is too high. Turn down the amplifier input level controls, or turn down the output of the source signal until the channel input meter is no longer at clip
- If the signal sounds distorted even though the channel input meter does not indicate clipping, the signal may be distorted before it reaches the amplifier input. Check the gain staging and the output levels of the upstream components

No sound, despite Power LED being blue and level meters indicating presence of an input signal

- Speaker not connected. Power off the amplifier, disconnect the AC power cord, then verify speaker connection
- Short circuit due to speaker failure. From the front panel display, determine which channel has the short. Power down the amplifier then disconnect the AC power cable. Remove the shorted load from the channel (and possibly attached cables) and have it checked by a qualified technician. Reconnect the power cord and power up the amplifier. If the shorted condition remains after the load is removed, contact JBL Synthesis technical support

Input meters do not indicate presence of input signal, and audio is being sent to the amplifier's input

- Input signal level is very low. Double check the gain structure of the system and ensure that the amplifier's input levels are set accordingly
- Input routing is not configured correctly for application. See "Input Setup”

If all else fails…

- Contact an authorized JBL Synthesis dealer
- Contact JBL Synthesis technical support

Specifications
SMA-8300

Connectors	
Analog audio input	8x XLR (Balanced)
Digital audio input (Dante/AES67)	2x RJ45
Speaker output	8x Binding Posts, accommodates 10AWG wire, spade and banana termination
12VDC trigger control	1x 3.5mm (in) 1x 3.5mm (out)
Network/monitoring/control	1x RJ45
Power	Standard IEC
Power (2 channels driven, 0.5% THD max)	
Rated Power (8Ω)	300W
Rated Power (4Ω)	600W
Rated Power (8Ω Bridged, one zone driven)	1,200W
Performance	
Digital signal processing	96kHz, 32-bit floating point
Frequency response (4Ω, 20Hz – 20kHz)	±0.1dB
Total harmonic distortion (at full rated power, from 20Hz – 20kHz)	0.02%
Analog input signal to noise ratio (ref. Rated power, ‘a’-wtd.)	>112dB
Analog input signal to noise ratio (ref. Rated power, 20Hz – 20kHz)	>99dB
Damping factor (20Hz to 100Hz)	>1000
Input impedance (nominally balanced, nominally unbalanced)	70 kΩ balanced, 35 kΩ unbalanced
Maximum input level (low amp gain mode)	+21dBU
Load impedance stereo/dual mode	2.7Ω –16Ω load
Impedance bridge mono	5.4Ω – 16Ω
Maximum fan noise (REF. dB SPL @ 1M)	51dBA
Electrical	
Power supply	100–240V, 50/60Hz
Physical	
Dimensions incl. rack ears, connectors, controls (H x W x D)	3.5 x 19.0 x 17.0 in (88.9 x 482.6 x 432.6 mm)
Dimensions excl. rack ears, connectors, controls (H x W x D)	3.5 x 17.0 x 15.7 in (88.9 x 431.8 x 400.0 mm)
Net Weight	23.1 lb (10.5 kg)
Recommended operating ambient temperature range	0° to 45°C
Recommended storage temperature range	-30° to 70°C

Connectors	
Analog audio input	4x XLR (Balanced)
Digital audio input (Dante/AES67)	2x RJ45
Speaker output	4x Binding Posts, accommodates 10AWG wire, spade, and banana termination
12VDC trigger control	1x 3.5mm (in) 1x 3.5mm (out)
Network/Monitoring/Control	1x RJ45
Power	Standard IEC
Power (2 channels driven, 0.5% THD max)	
Rated Power (8Ω)	750W
Rated Power (4Ω)	1,500W
Rated Power (8Ω Bridged, one zone driven)	2,500W
Performance	
Digital signal processing	96kHz, 32-bit floating point
Frequency response (4Ω, 20Hz – 20kHz)	±0.5dB
Total harmonic distortion (at full rated power, from 20Hz – 20kHz)	0.02%
Analog input signal to noise ratio (ref. Rated power, ‘a’-wtd.)	>114dB
Analog input signal to noise ratio (ref. Rated power, 20Hz – 20kHz)	>99dB
Damping factor (20Hz to 100Hz)	>1000
Input impedance (nominally balanced, nominally unbalanced)	70 kΩ balanced, 35 kΩ unbalanced
Maximum input level (low amp gain mode)	+21dBU
Load impedance stereo/dual mode	2.7Ω –16Ω load
Impedance bridge mono	5.4Ω – 16Ω
Maximum fan noise (REF. dB SPL @ 1M)	51dBA
Electrical	
Power supply	100–240V, 50/60Hz
Physical	
Dimensions incl. rack ears, connectors, controls (H x W x D)	3.5 x 19.0 x 17.0 in (88.9 x 482.6 x 432.6 mm)
Dimensions excl. rack ears, connectors, controls (H x W x D)	3.5 x 17.0 x 15.7 in (88.9 x 431.8 x 400.0 mm)
Net Weight	21.8 lb (9.9 kg)
Recommended operating ambient temperature range	0° to 45°C
Recommended storage temperature range	-30° to 70°C

POWER DRAW AND THERMAL

JBL Synthesis SMA-8300 Single Ended Mode

		120V AC/60Hz				230V AC/50Hz			
Condition	Load	Line current (amps)	Power Dissipated as Heat			Line current (amps)	Power Dissipated as Heat		
			watts	BTU	kcal/hr		watts	BTU	kcal/hr
At Idle Awake	N/A	0.634	66.3	226	57.0	0.434	65.4	223	56.3
1/8 Power Pink Noise Typical of program material just at clip	4 ohms	6.69	187	638	161	3.46	166	566	143
	8 ohms	3.52	104	355	89.5	1.83	95.7	326	82.3
1/4 Power Pink Noise Typical of program material at extreme clip	4 ohms	12.9	327	1115	281	6.51	264	900	227
	8 ohms	6.43	156	532	134	3.32	134	457	115

JBL Synthesis SMA-8300 Bridge Mono

		120V AC/60Hz				230V AC/50Hz			
Condition	Load	Line current (amps)	Power Dissipated as Heat			Line current (amps)	Power Dissipated as Heat		
			watts	BTU	kcal/hr		watts	BTU	kcal/hr
At Idle Awake	N/A	0.634	66.3	226	57.0	0.434	65.4	223	56.3
1/8 Power Pink Noise Typical of program material just at clip	4 ohms	14.4	400	1364	344	7.14	300	1023	258
	8 ohms	6.84	202	689	174	3.52	180	614	155
1/4 Power Pink Noise Typical of program material at extreme clip	8 ohms	13.0	337	1149	290	6.57	274	934	236

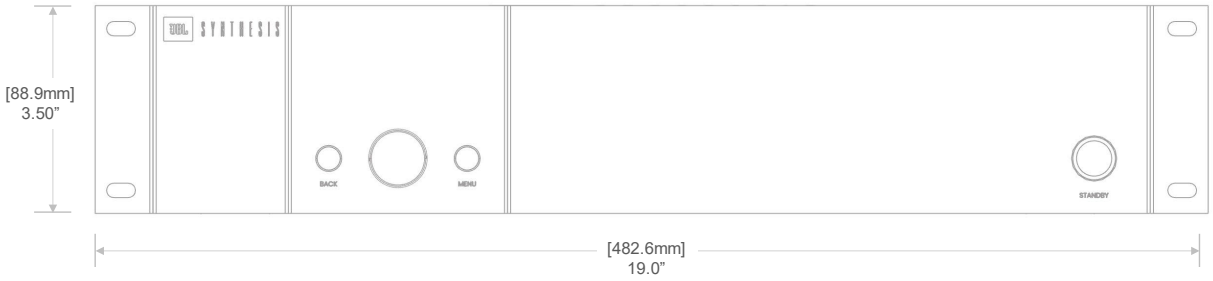
JBL Synthesis SMA-4750 Single Ended Mode

		120V AC/60Hz				230V AC/50Hz			
Condition	Load	Line current (amps)	Power Dissipated as Heat			Line current (amps)	Power Dissipated as Heat		
			watts	BTU	kcal/hr		watts	BTU	kcal/hr
At Idle Awake	N/A	0.55	54.8	187	47.2	0.41	54.5	186	46.9
1/8 Power Pink Noise Typical of program material just at clip	4 ohms	7.93	184	627	158	4.08	156	532	134
	8 ohms	4.12	100	314	86.0	2.14	92	314	79.2
1/4 Power Pink Noise Typical of program material at extreme clip	4 ohms	16.7	381	1299	328	8.81	260	887	224
	8 ohms	7.71	159	542	137	3.97	132	450	115

JBL Synthesis SMA-4750 Bridge Mono

		120V AC/60Hz				230V AC/50Hz			
Condition	Load	Line current (amps)	Power Dissipated as Heat			Line current (amps)	Power Dissipated as Heat		
			watts	BTU	kcal/hr		watts	BTU	kcal/hr
At Idle Awake	N/A	0.55	54.8	187	47.2	0.41	54.5	186	46.9
1/8 Power Pink Noise Typical of program material just at clip	4 ohms	16.6	426	1453	367	8.04	315	1074	271
	8 ohms	8.03	190	648	163	4.12	160	546	138
1/3 Power Pink Noise Typical of program material at extreme clip	8 ohms	16.3	370	1262	318	7.84	270	921	232

DIMENSIONS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SYNTHESIS
BACK
MENU
STANDBY
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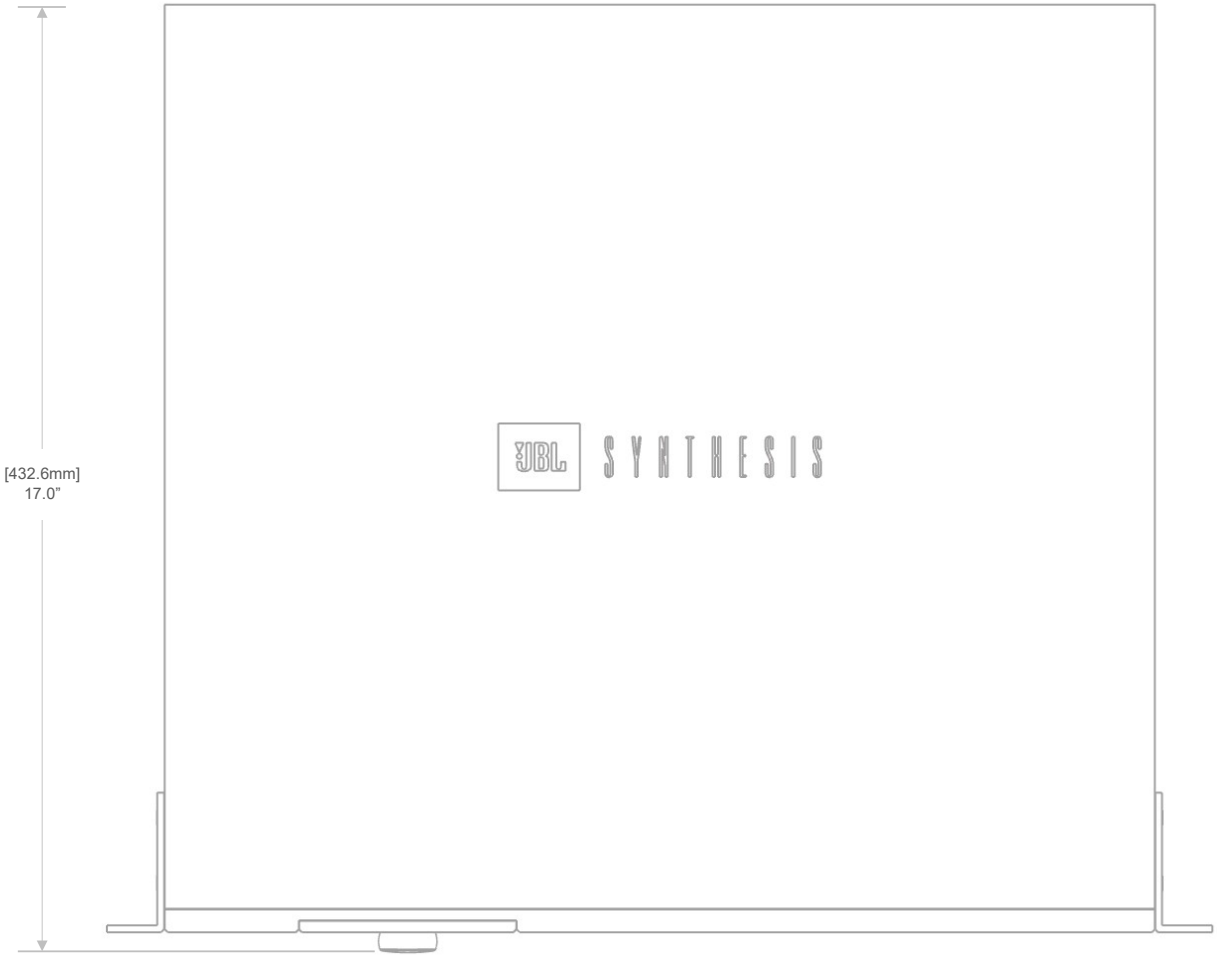
[432.6mm]
17.0”
SYNTHESIS

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