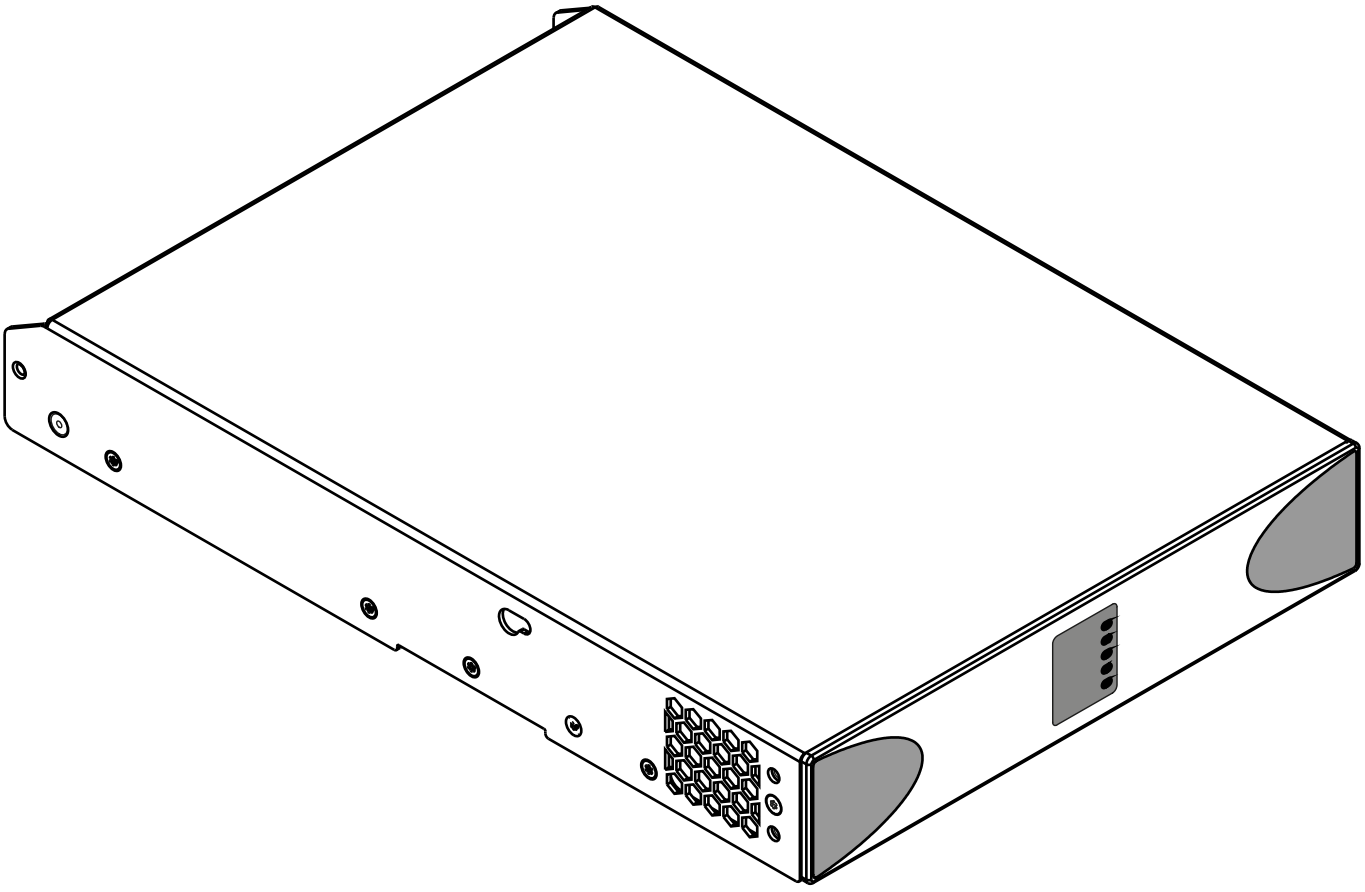
BLAZE
BY SONANCE



INSTALLATION GUIDE / USER MANUAL

PowerZone™ Connect

122 / 122D • 252 • 254 • 504 / 504D • 508 • 1008 / 1008D

Technical and Safety Notices

Please read the following important technical, safety and environmental notices before installing and using your amplifier.

Technical Notices

All reasonable design and engineering steps have been taken to ensure that these amplifiers always perform satisfactorily in their intended application and environment and will provide appropriate levels of support to ensure that all reasonable customer needs and expectations are met. Such support however is contingent on the following provisions.

- These amplifiers are Class-I products and should be installed with a mains cable including the required earth connection to comply with the Safety Class-I.
- These amplifiers should always be installed by competent and qualified personnel. Amplifier damage or failure caused by installation or operational errors may invalidate support, warranty or guarantees of performance.
- These amplifiers are not suitable for use in locations where they may be accessible to minors.
- These amplifiers are intended to be used specifically for the amplification of audio signals and for connection to moving-coil loudspeaker systems. Use of these amplifiers for amplification of signals outside the audio band (20Hz to 20kHz) or to drive transducers other than moving-coil loudspeakers may invalidate support, warranty or guarantees of performance.
- These amplifiers should only be used within professionally installed and configured audio systems comprising input and output ancillary equipments that is known to be of an appropriate level of performance and in good operating condition. Any damage to, or unsatisfactory performance from, these amplifiers caused by inadequate or failed input or output ancillaries may invalidate support, warranty or guarantees of performance. en-G236 306.8084001301an

afety Notices

Important Safety In

- Read these instruction
- Keep these instructi
- Heed all warnings.
- Follow all instructi
- Do not use this ap
- Do not submerge
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  fumigant on, nea
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  particularly at plugs, convenien
  where they exit from the apparat
- Do not unplug the unit by pulling on t
- Only use attachments/accessories specifie
  manufacturer.
- Unplug this apparatus during lightning storms or wh
  unused for long periods of time.
-

Introduction and Overview

1. Introduction

PowerZone™ Connect power amplifiers have been designed to provide configurable, consistent and reliable high performance audio power amplification for residential, commercial and entertainment applications. Please read this manual fully before installing and using an amplifier. If you have any questions regarding amplifier configuration, installation or operation please contact the appropriate customer support portal.

Following this introduction, the manual is divided into sections covering the following topics:

- 2. Overview
- 3. Carton Contents
- 4. Installation
- 5. Configuration
- 6. Connections
- 7. Operation
- 8. Specifications

2. Amplifier Overview

PowerZone™ Connect 122/122D, 252, 254, 504/504D, 508 and 1008/1008D amplifiers are **half rack** and **full rack** width, 1U format power amplifiers that can drive both conventional low impedance (Lo-Z, 4 Ω to 16 Ω) loudspeakers and high impedance (Hi-Z, 70 V / 100 V) transformer coupled loudspeakers.

The amplifiers provide four analog inputs, one stereo S/PDIF digital input, and either two, four or eight outputs (Lo-Z mode), or one, two or four outputs (Hi-Z mode).

PowerZone™ Connect amplifiers also incorporate automatic power sharing technology that enables power to be shared proportionately as required between pairs of outputs in Lo-Z mode.

PowerZone™ Connect

Introduction and Overview

2.1 Connections

PowerZone™ Connect signal input and output connections are accomplished via RCA Phono and Euroblock style connectors. A GPIO (General Purpose In/Out) Euroblock connector enables some amplifier functions to be controlled, and wireless or RJ45 socket Ethernet network connection options are also provided.

PowerZone™ Connect amplifiers have no mains power switch and are operational as soon as mains power is connected via the IEC 60320 mains socket.

2.2 Network Features

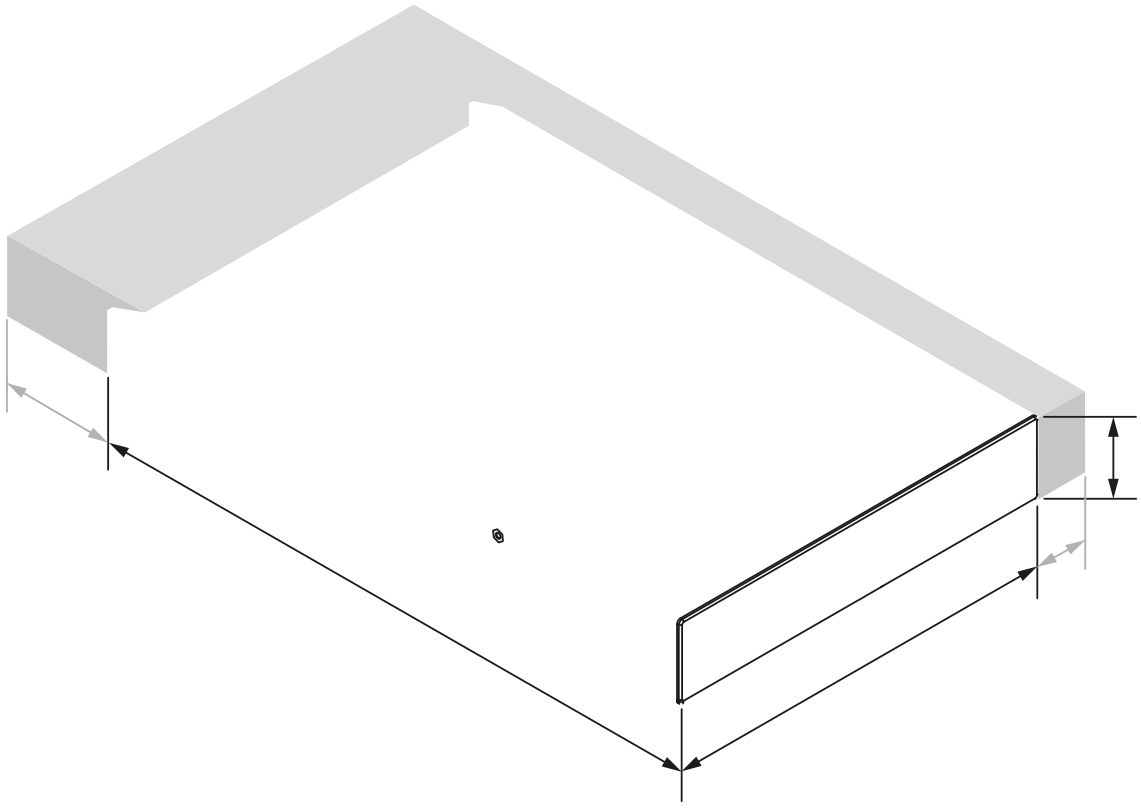
PowerZone™ Connect amplifiers are TCP/IP network connected devices that require a wired or wireless network connection to access their configuration menus. The configuration menus are accessed via the **PowerZone™ Control** web app interface and cover Input, Zone, Output and General Settings functions. The configuration menus are fully described in **Section 6** of this manual.

Audinate Dante®

Half rack width **PowerZone™ Connect** amplifiers are optionally compatible with Audinate Dante® audio over IP (AoIP) networks and installations.

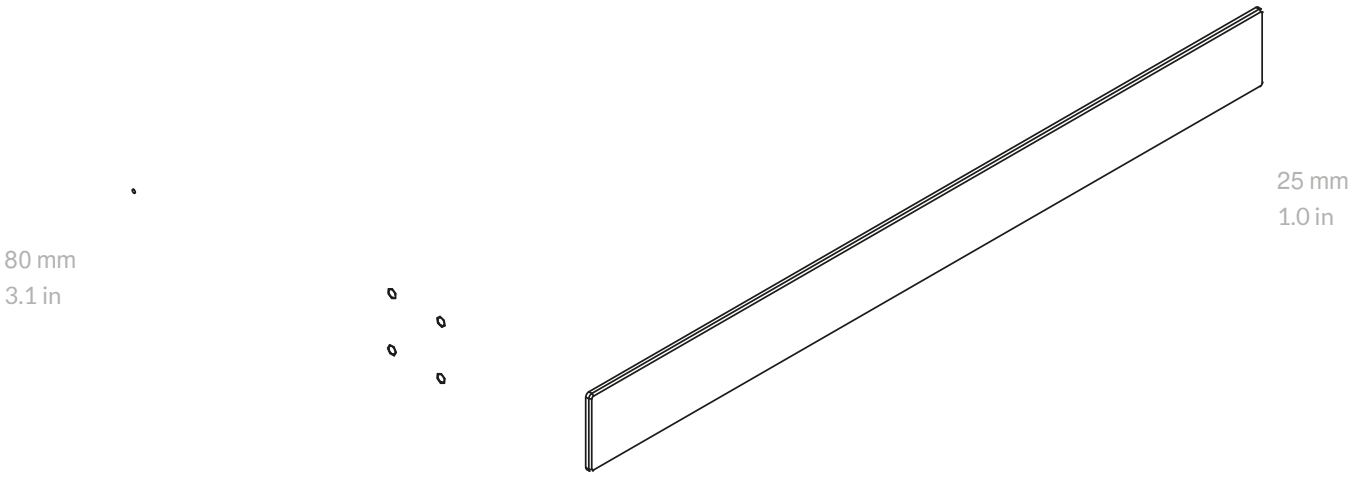
Dante® equipped versions of **PowerZone™ Connect** amplifiers enable the transmission and receipt of digital audio over an Ethernet network using the IP based Dante® protocol. Configuration and management of the IP routing for Dante® digital audio, including the setting of network parameters such as IP addresses and subnet masks, is administered by Audinate's Dante® Controller software application. Dante®

Overview



Overview

Diagram 2C
PowerZone™ Connect eight channel amplifier dimensions.
(Shaded area defines ventilation space.)



Installation

4. Half Rack Width Amplifier Installation

PowerZone™ Connect 122/122D, 252, 254 and 504/504D

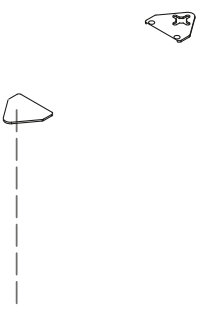
Note: The rack mounting and desk/wall mounting components described and illustrated in Sections 4.1 to 4.3 are not supplied with **PowerZone™ Connect** *amplifiers but are available to purchase as accessories. Contact your amplifier re-seller for more information.*

4.1 PowerZone™ Connect Mounting

PowerZone™ Connect half rack width amplifiers are shipped without rack mount hardware attached but can be configured for rack installation using one standard rack 'ear' and one half-rack extension piece as illustrated in **Diagram 4A**. The installation and equipment rack should be configured to provide appropriate ventilation airflow space around the sides and rear of the amplifier. Ventilation airflow space of at least 25 mm (1 in) should be maintained along at least one side of the amplifier at all times. Ventilation apertures are also located on the rear panel of the amplifier and must not be obstructed. It is important to retain at least 80 mm (3.1 in) free space for airflow behind the amplifier rear panel.

In addition to rack mount ears, rack mount rear support hardware is optionally available and can be attached to the amplifier. Rear support hardware may be appropriate if the amplifier is to be used in a mobile rack or potentially be subject to significant movement. **Diagram 4B** illustrates the use of rack mount rear support hardware.

Multiple **PowerZone™ Connect** half rack width amplifiers can also be mechanically connected using accessory connecting plates. **Diagram 4C** illustrates the use of connecting plates.at



Installation

5. Full Rack Width Amplifier Installation

PowerZone™ Connect 508 and 1008/1008D

Note: Full rack width PowerZone™ Connect amplifier models are intended for rack mount or free-standing installation only.

5.1 Rack Mounting

P**owerZone™ Connect** full rack width amplifiers are supplied with rack ears fitted. The installation and equipment rack should be configured to provide appropriate ventilation airflow space around the sides and rear of the amplifier. Ventilation airflow space of at least 25 mm (1 in) should be maintained along at least one side of the amplifier at all times. Ventilation apertures are also located on the rear panel of the amplifier and must not be obstructed. It is important to retain at least 80 mm (3.1 in) free space for airflow behind the amplifier rear panel.

In addition to the use of rack mount ears, rack mount rear support hardware is optionally available that can be attached to the amplifier. Rear support hardware may be appropriate if the amplifier is to be used in a mobile rack or potentially be subject to significant movement. **Diagram 5A** illustrates the use of rack mount rear support hardware.

6. Configuration

Before making input, output and GPIO connections, an initial PowerZone™ Connect amplifier configuration should be established. It is particularly important that the amplifier output format is configured appropriately for the speakers that are to be connected.

Configuration requires that PowerZone™ Connect amplifiers are connected to mains power and network services. These connections are described in the following two sections.

6.1 Mains Power Connection

PowerZone™ Connect amplifiers incorporate a power factor corrected power supply and can be used with mains input voltage from 100 V AC to 240 V AC, 50 / 60 Hz. Use the mains cable supplied with the amplifier and connect it to a switched mains supply.

PowerZone™ Connect amplifiers have no mains power switch and are operational as soon as mains power is connected.

6.2 Network Services

PowerZone™ Connect amplifiers are configured via a web page interface called PowerZone™ Control. Before the configuration menus can be accessed, PowerZone™ Connect amplifiers must be connected to the same TCP/IP network as the computer or mobile device that is to be used for configuration access.

6.2.1 Wired (Ethernet) Network Connection

To connect a **PowerZone™ Connect** amplifier to a TCP/IP network using a wired connection (Ethernet) follow the steps below.

1. Use an Ethernet cable to connect the **PowerZone™ Connect** amplifier rear panel Network Control socket (upper socket) to a free socket on a network router or switch, or directly to an Ethernet equipped laptop or desktop computer.

2. Connect the **PowerZone™ Connect** amplifier to mains power using the supplied mains cable. Wait for the front panel Network indicator to illuminate green to indicate that the amplifier has network connectivity.

3. The **PowerZone™ Connect**

Configuration

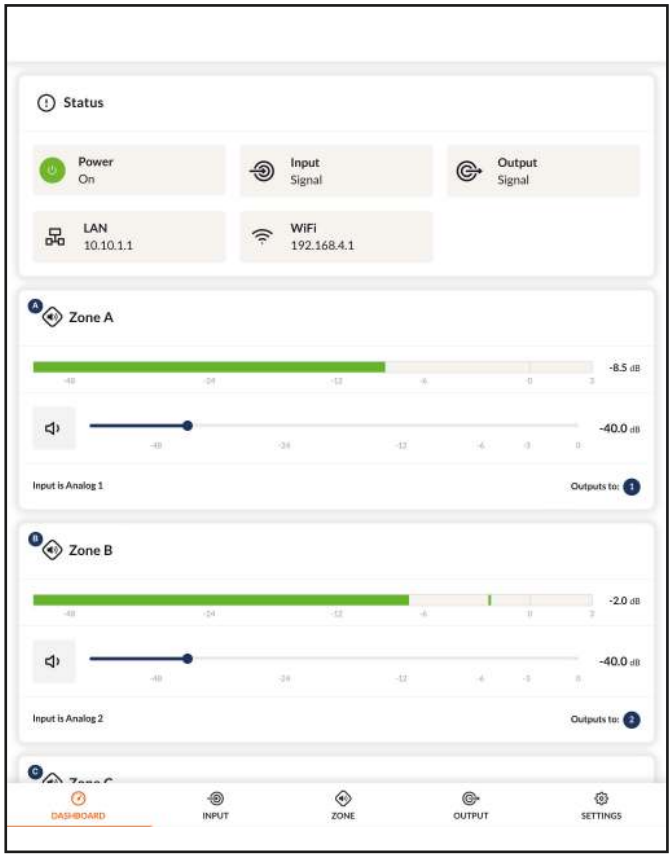


Diagram 6A
Configuration Dashboard display

6.3.1 Input Tab

The **Input Tab** provides the following configuration parameters for each amplifier input channel:

- **Input name**
- **Mono/Stereo selection**
- **Input sensitivity**
- **High-pass filter**
- **Gain trim**
- **Five band equalisation**

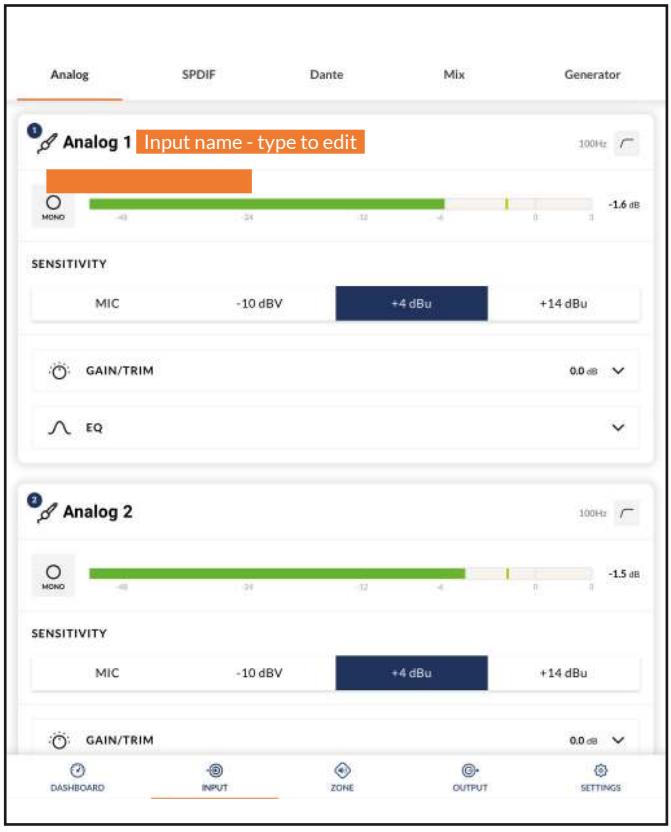
The **Input Tab** also enables input signals to be mixed and routed to specific amplifier zones. The mix function enables any amplifier input, including stereo or split mono S/PDIF inputs, to be grouped with any other input or inputs to create multiple predefined mixes.

Note: The number of individual mixes possible is equal to the number of amplifier analogue outputs (two outputs enables two mixes, four outputs enables four mixes, eight outputs enables eight mixes).

Note: Mix inputs are muted by default with their level adjustment sliders set to zero.

Mix operations take place following high-pass filter, input equalisation and mono/stereo selection.

Diagram 6B
Input Tab display
(two inputs only shown)



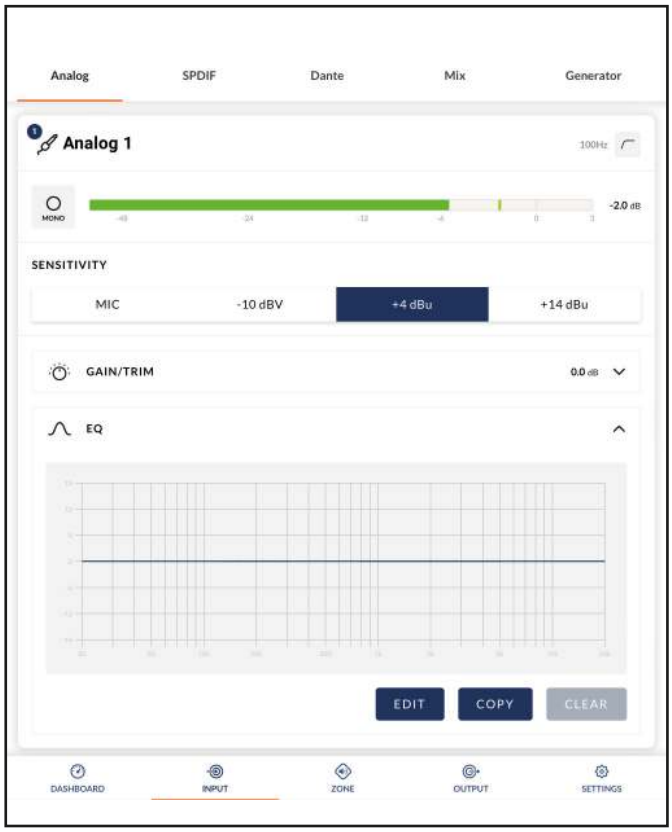


Diagram 6C
Input EQ display

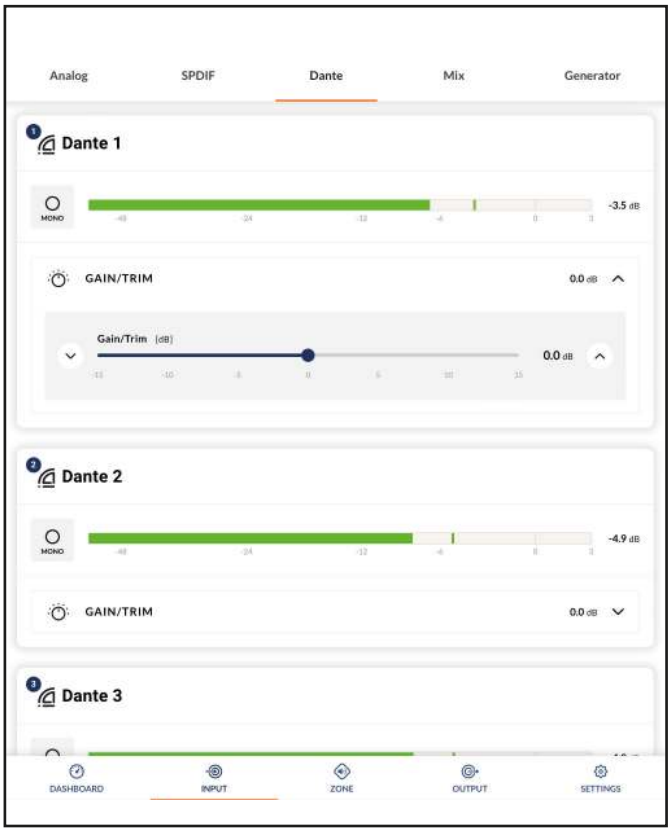


Diagram 6D
Dante® Input display

A pink noise or sine wave audio signal **generator**, appropriate for audio system testing and set up, can also be enabled, disabled, and adjusted for gain and frequency via the **Input Tab**. **Diagrams 6B, 6C, 6D and 6E** illustrate the **Input Tab, Dante® Input Tab, Input EQ** and **Input Mix** displays respectively.

Note: The inputs displayed in the Dante® input tab will correspond to those configured and enabled in the Dante® Controller Mac OS or Windows application. If no inputs are displayed they must first be enabled in Dante® Controller.

6.3.2 Zone Tab

The **Zone Tab** enables installation zones to be defined and named, and provides access to further sub-menus. Zones might be bar or restaurant areas for example, or different rooms in a home. For all Zone Tab menus, the installation zone under configuration is selected by highlighting one of the zone identifiers (A to H depending on amplifier output count) at the top of the display. **Diagram 6F** and **6G** illustrates the **Zone Tab** and

Diagram 6E
Input Mix display

exceed(s) a preset level. The **Primary Input** is the main input, such as background music played in a shopping centre. 1. **Priority Low**, for example commercials, takes priority over the Primary Input. 2. **Priority Mid**, e.g. paging, takes priority over both background music and commercials. 3. **Priority High**, such as an emergency alarm, takes priority over and mutes all other inputs.

The **Input Ducking** function enables an alternative input, **Ducking Low**, to replace and attenuate the **Primary Input** routed to the zone under configuration when the alternative input exceeds a preset level.

***Note**: The **Priority Low** parameters can be either set to default values or to its Threshold, Attack, Hold and Release values as required (Manual). The **Priority Mid** and **Priority High** parameters can be either set to default values or to their Threshold and Hold*

ameters c M d

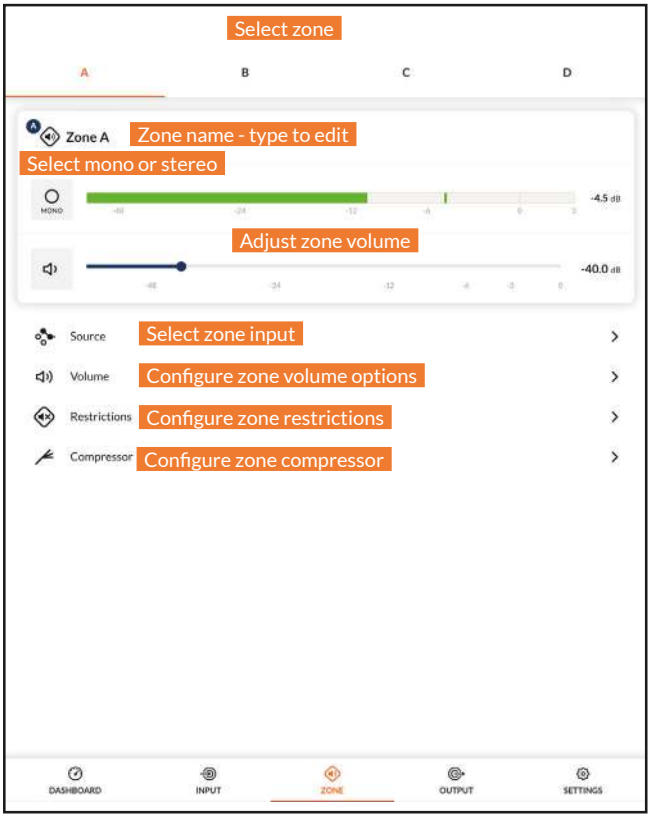


Diagram 6F
Zone Tab display

Configuration

6.3.3 Output Tab

The **Output Tab** enables amplifier outputs to be named, linked to zones, and provides access to **Delay**, **Room Equalizer** and **Speaker Preset** menus. **Diagram 6H** illustrates the **Output Tab** display.

For all **Output Tab** menus, the amplifier output under configuration is selected by highlighting one of the output identifiers at the top of the display.

Note: The number of individual outputs available for configuration will depend on the **PowerZone™ Connect** *amplifier model and the*

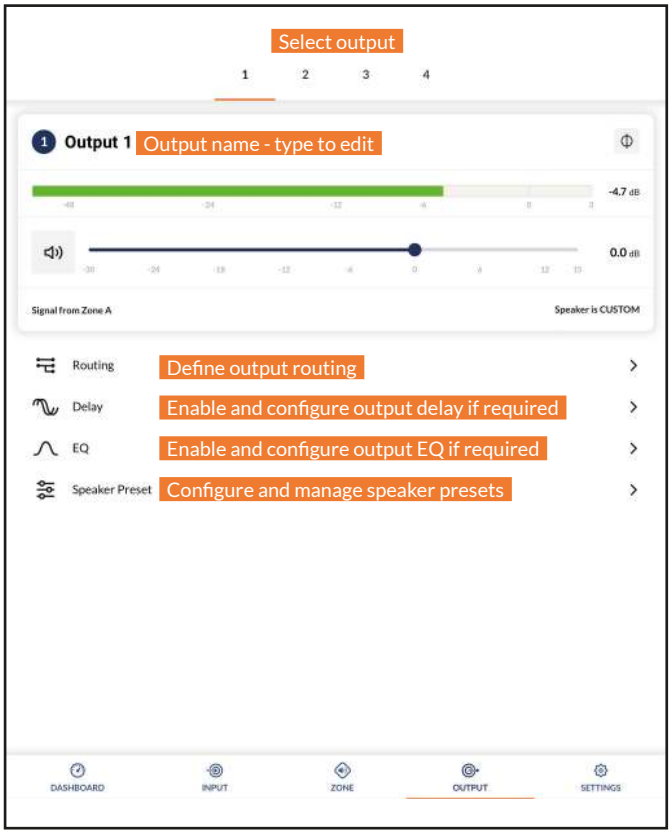


Diagram 6H
Output Tab display

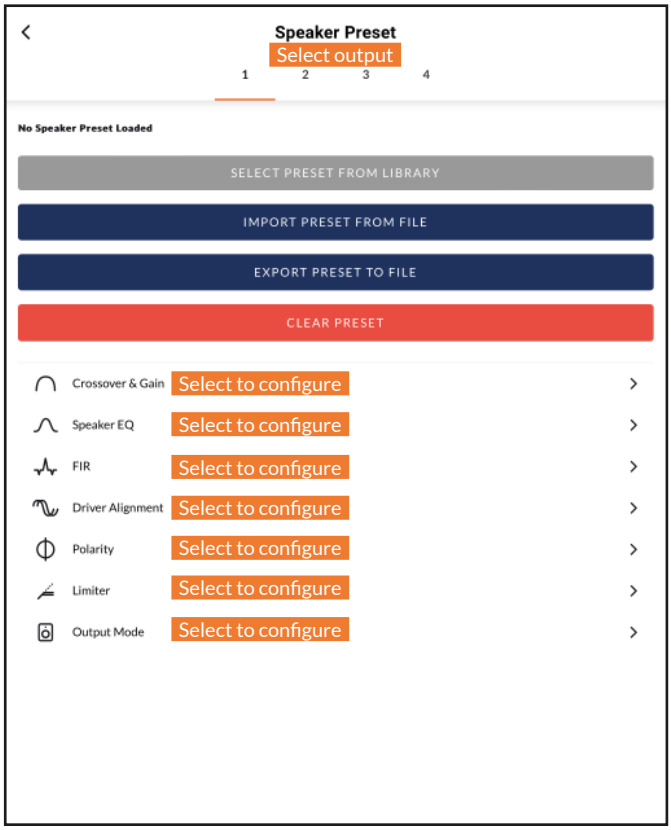
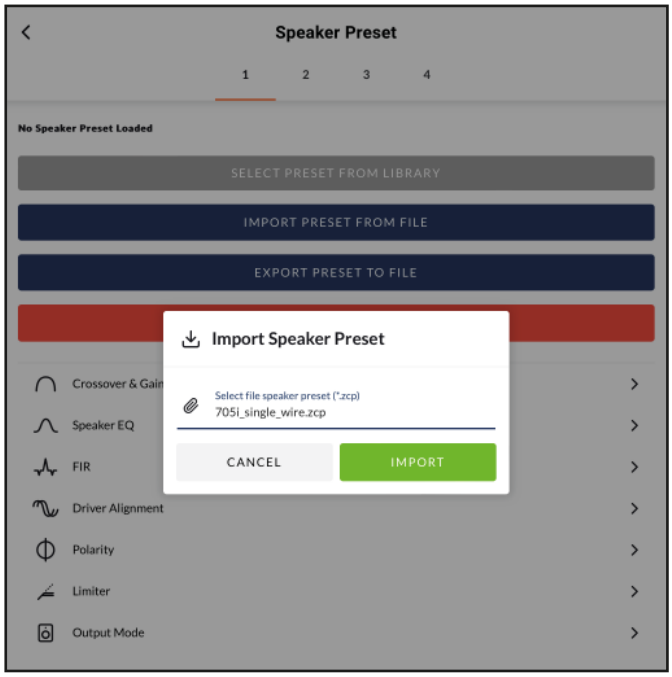


Diagram I
Speaker Preset Parameters

Diagram 6J
Speaker Preset import file selection



2. Select the appropriate '.zcp' format speaker preset data file to import from either a Library or a computer folder. The preset data will be applied to the selected amplifier output as soon as the file import is complete.

3. If the Speaker Preset data requires modification it can be customized by selecting the CUSTOMIZE PRESET option.

Note: If an imported Speaker Preset data file includes locked parameters, they will be unavailable for modification.

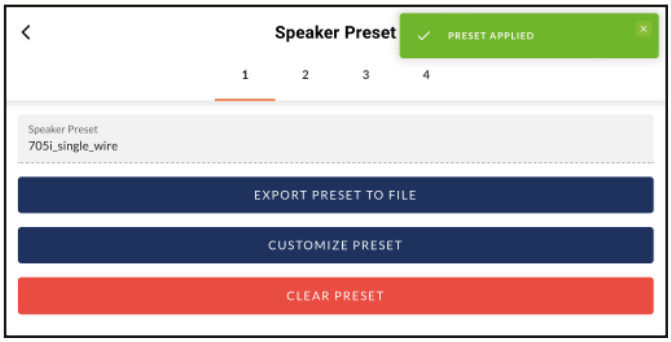


Diagram 6K
Speaker Preset applied

6.3.4 Speaker Preset Menu Parameters

- The **Crossover & Gain** preset menu enables high or low-pass crossover filters and gain adjustment to be applied to individual amplifier outputs.
- The **Speaker EQ** preset menu enables parametric equalization to be applied to individual amplifier outputs.
- The **FIR** preset menu enables FIR (Finite Impulse Response) based equalization filter coefficients generated by external speaker measurement software to be imported and applied to individual amplifier outputs. The FIR filter has 512 taps at 48kHz.

Note: FIR coefficient files in either .csv or .txt format can be imported.

- The **Driver Alignment** preset menu enables delay to be applied to individual amplifier outputs.
- The

- The **Limiter** preset menu enables signal limiting to be engaged or bypassed on individual amplifier outputs. **Clip** limiting, **Peak** limiting and **RMS** limiting can be individually or collectively engaged. The Clip limiting function offers Fast and Normal response time options. The Peak limiting function can be set to either Automatic or Manual parameter values. The RMS Limiter has default parameter values that can be adjusted but has no automatic option.

Note: In automatic mode, the peak limiter parameters adjust automatically in response to Crossover & Gain high-pass filter settings.

- The **Output Mode** preset menu enables individual amplifier outputs to be switched off or configured for Lo-Z or Hi-Z modes. In Hi-Z modes, a high-pass filter can also be configured and applied to the output. The number of outputs available will depend on the amplifier model, input setup and zone setup. For example, a two output amplifier will have two outputs available if Lo-Z mode is selected but only one output available if Hi-Z mode is selected.

Note: Use of a high-pass filter with Hi-Z mode loudspeakers is useful to avoid the possibility of distortion caused by low frequency line transformer saturation. Begin with the default filter setting of 70Hz.

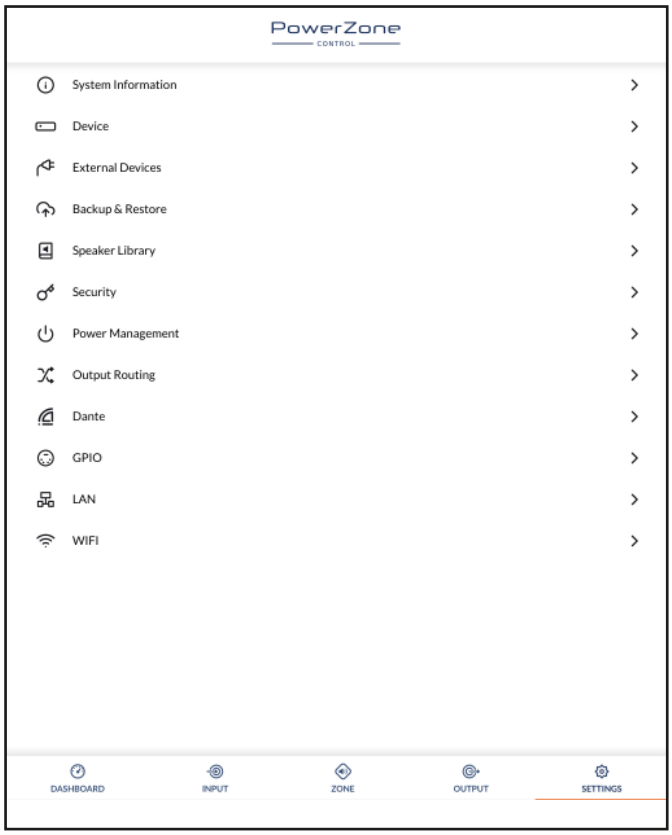


Diagram 6M
Settings Tab menu

Diagram 6N
The External Devices display

product, setup and configuration, each device can remotely control one single or multiple amplifier zones. **Diagram 6N** illustrates the **External Devices** display.

- The **Backup & Restore** menu enables amplifier configuration data to be downloaded to an external archive, and enables previously saved configuration files to be uploaded and adopted by the currently connected amplifier.
- The **Speaker Library** menu enables management of speaker preset libraries. Existing libraries of speaker preset files (.zcl) can be created or imported, and existing libraries edited or fully deleted. **Diagram 6O** illustrates the creation and management of speaker preset libraries.
- The **Security**

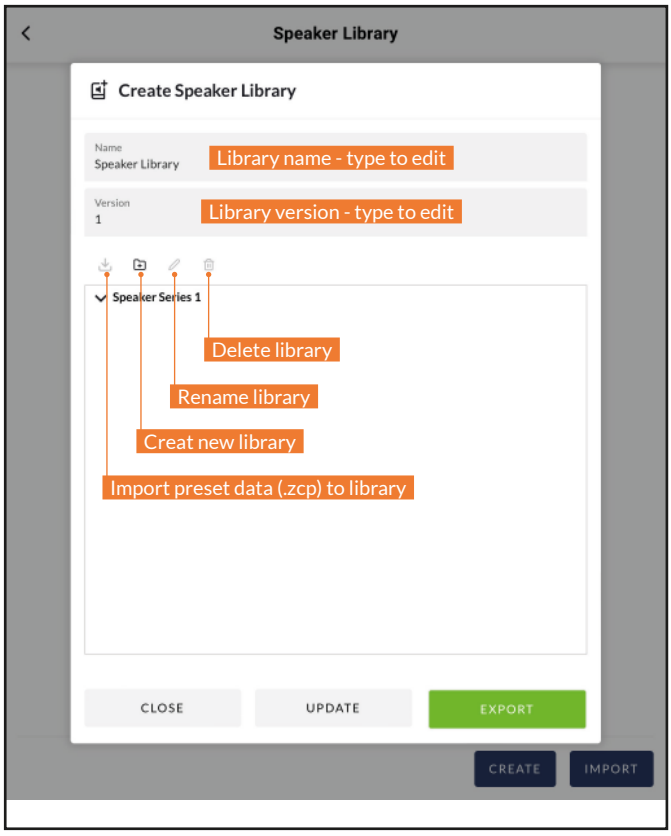
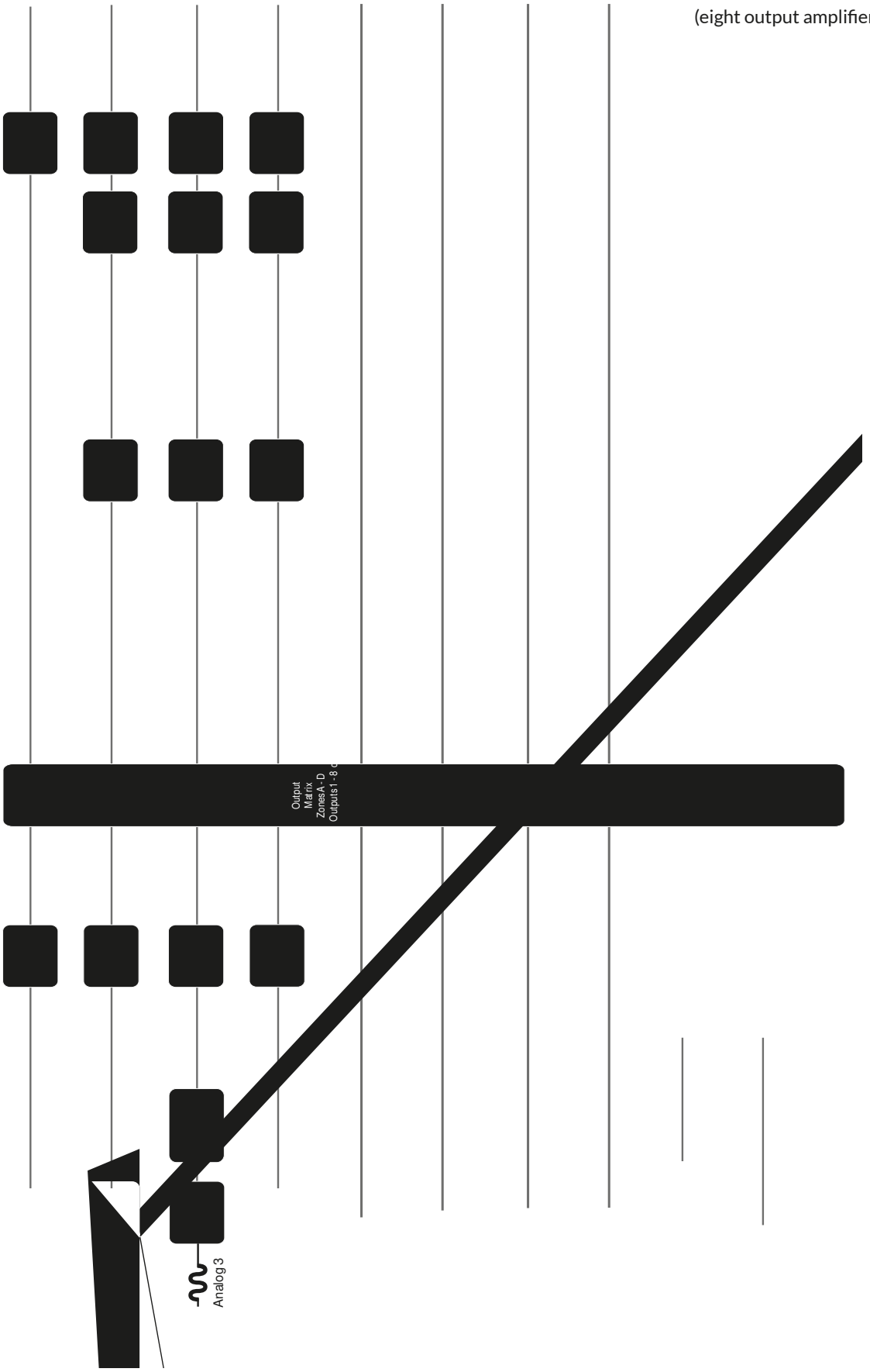


Diagram 6O
Speaker Library Creation and Management

Configuration

Diagram 6P
Signal Flow Schematic
(eight output amplifier)



6.4.1 Input Setup

Open the configuration Dashboard and select the **Input Tab**. The Input Tab is shown in **Diagram 6B.**

- To edit default input names simply select and type in the Input Name field.
- Define a mono or stereo input by selecting the appropriate option. Defining a stereo input will reduce the total number of discrete inputs available.
- Select an input sensitivity option from the drop-down menu: +14dB, +4dB, -10dB and 'microphone' options are available. Generally, the +14dB or +4dB options are appropriate for 'professional audio' source hardware with balanced outputs, while the -10dB option is more appropriate for 'consumer audio' source hardware with unbalanced outputs. The 'microphone' option provides the significantly greater sensitivity required for microphones.

Note: Only dynamic microphones are suitable for connection. Phantom power for condenser microphones is not provided.

- If necessary, adjust the input gain using the slider or up/down icons. Gain adjustment is intended to be used for fine output level adjustment following initial use. If necessary, adjust the input EQ using the 5 band equalizer.

6.4.2 Zone Setup & Routing

Open the configuration Dashboard and select the **Zone Tab**. The Zone Tab is shown in **Diagram 6F.**

- Select the zone to be configured. The number of zones available and their channel format (stereo or mono) will depend on the amplifier model, input setup and output mode (Lo-Z or Hi-Z). For example, a two output amplifier

Configuration

6.5 GPIO Setup and Connection

PowerZone™ Connect amplifiers provide a GPIO socket that enables remote control of volume, standby, mute and trigger functions. The GPIO connector pin functions are described in the **GPIO Settings** menu illustrated in **Diagram 6Q**. The connection of GPIO based remote volume control and standby/mute are illustrated in **Diagram 6R** and **Diagram 6S** respectively.

Note: The GPIO connector must not be used for any unintended purpose. Amplifier damage may result from incorrect use of GPIO.

Note: Shielded cable must be used when connecting standby switches and potentiometers via GPIO.

Note: GPIO Pin 8 has a low output impedance and is able to supply a maximum current of 10mA.

Note: GPIO Pin 1 and Pin 3 both offer ground connections: Pin 1 is connected directly to the amplifier chassis. Pin 3 is connected to the chassis via a 220 Ohm resistor. The 'soft ground' connection of Pin 3 is potentially useful for managing ground loops that may cause audible hum.

Diagram 6Q
GPIO Settings Menu

Diagram 6R
Potentiometer connections for remote volume control via GPIO.

Note: Diagram 7E illustrates use of the GPIO connector.

Diagram 6S
Connections for remote standby/mute switch via GPIO.

Note: Diagram 7E illustrates use of the GPIO connector.

7. Connections

PowerZone™ Connect amplifier rear panel connections are illustrated in Diagrams 7A and 7B.

7.1 Mains Power Connection

PowerZone™ Connect amplifiers incorporate a power factor corrected universal power supply and can be used with mains input voltage from 100V AC to 240V AC, 50/60Hz. Use the mains cable supplied with the amplifier.

PowerZone™ Connect amplifiers have no mains power switch and are operational as soon as mains power is connected. **Ensure that all signal, GPIO and output connections are made before connecting the amplifier to mains power.**

7.2 Input Connection

All **PowerZone™ Connect** amplifier models provide four balanced or unbalanced analog audio inputs and a stereo S/PDIF digital audio input. Any input channel can be routed to any output channel. Input routing options can be configured via the amplifier network interface. See **Section 6** of this manual.

Analog Inputs
PowerZone™ Connect analog inputs are of line level format with a default input sensitivity of +4dBu (full output voltage swing/sensitivity) in all output modes. Input signal levels up to +24dBu can be handled without input clipping. Input sensitivity options can be set via the amplifier network interface. See **Section 6** of this manual.

Balanced input connections to the amplifiers are made via male 'Euro Block' connectors. Connecting cables to the supplied female input connectors is illustrated in **Diagram 7C.**

Unbalanced input connections to the amplifiers are made via RCA phono sockets connected in parallel with the balanced inputs.

Diagram 7A
Half rack width PowerZone™ Connect amplifier rear panel connections.

Connections

Diagram 7B
Full rack width

PowerZone™ Connect amplifier rear panel connections.

Connections

7.5 Speaker Cable Gauge

PowerZone™ Connects speaker connection cable gauge should be chosen appropriately to reflect the type of installation. The adjacent tables specify the appropriate cable gauge for less than 0.5dB cable loss with different installation types and cable lengths.

Cable Gauge Table

7.5 GPIO Connections

If any **PowerZone™ Connect** GPIO functionality is required, cables will need to be connected to the supplied GPIO connector. Connecting cables to the GPIO connector is illustrated in **Diagrams 7E**.

7.6 Network Connections

PowerZone™ Control

PowerZone™ Connect amplifiers are TCP/IP network connected devices that are configured via a web page based interface. Wired (Ethernet) and wireless (WiFi) connection options are available. Connecting **PowerZone™ Connect** amplifiers to a TCP/IP network is described in **Section 6** of this manual. If a wired connection is used, connect an Ethernet cable to the amplifier rear panel Network Control socket.

Audinate Dante®

Half rack width **PowerZone™ Connect** amplifiers are optionally compatible with Audinate Dante® audio over IP (AoIP) networks and installations. Connect to a Dante® network via the amplifier rear panel Dante® socket and configure the network as required using the Audinate Dante® Controller Mac OS and Windows application available for download from: www.audinate.com/products/software/dante-controller.

8. Operation

Once all connections have been made and configuration options selected, PowerZone™ Connect amplifiers are ready for use. If an input signal above -60dB is present on any input, the front panel Input and Standby indicators will illuminate green to indicate normal amplifier operation. Audio will be heard from any connected speakers.

Note: **PowerZone™ Connect** *amplifiers will not switch on from Standby Mode unless an input signal is present, a network 'ON' command is received, or an external standby switch (or 12V trigger) is operated. Standby behaviour can be configured via the Power Management menu of the Settings Tab.*

Amplifier outputs will mute if no input signal is present for 5 minutes, and the amplifier will switch automatically to Standby Mode if no signal is present on any input for more than 15 minutes. Alternative standby and mute delay times can selected via the **Settings Tab**. Amplifier cooling fan speed is temperature controlled. The fan will switch off when the amplifier enters standby mode.

8.1 Front Panel Indicators

PowerZone™ Connect amplifier front panel indicators illuminate to indicate the following operational states:

Status: Off – Mains power disconnected.
Green – Amplifier operational.
Pulse Green – Standby Mode.
Amber – GPIO triggered Standby Mode

Input: Off – No input signal present.

Specifications

1/8th Full Power						
PowerZone™ Connect Model	**Load (Ohms)**	**Power In (W)**	**Power Out (W)**	**Efficiency (%)**	**Thermal Loss (W)**	**Thermal Loss (BTU)**
122/122D	4	32.8	15	45.7	17.8	61
252	4	54.1	31.25	57.8	22.9	78
254	4	58.7	30	51.1	28.7	98
504/504D	4	107	62.5	58.6	44.5	152
508	4	97.3	60	61.9	37.3	127
1008/1008D	4	200	125	62.5		

Specifications

Model	PowerZone™ Connect 122/122D	PowerZone™ Connect 252	PowerZone™ Connect 254	PowerZone™ Connect 504/504D	PowerZone™ Connect 508	PowerZone™ Connect 1008/1008D
Total System Power	125 W	250 W	250 W	500 W	500 W	