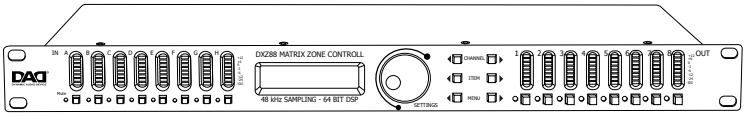
DYNAMIC AUDIO DEVICE

DXZ88

MATRIX ZONE CONTROL



USER MANUAL

EN

REV.02-05/21

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WARNING! Before carrying out any operations with the unit, carefully read this instruction manual and keep it with cure for future reference. It contains important information about the installation, usage and maintenance of the unit.

SAFETY

General instruction

- The products referred to in this manual conform to the European Community Directives and are therefore marked with CE.
- The unit is supplied with hazardous network voltage (240V~). Leave servicing to skilled personnel only. Never make any modifications on the unit not described in this instruction manual, otherwise you will risk an electric shock.
- Connection must be made to a power supply system fitted with efficient earthing (Class I appliance according to standard EN 60598-1). It is, moreover, recommended to protect the supply lines of the units from indirect contact and/or shorting to earth by using appropriately sized residual current devices.
- The connection to the main network of electric distribution must be carried out by a qualified electrical installer. Check that the main frequency and voltage correspond to those for which the unit is designed as given on the electrical data label.
- This unit is not for home use, only professional applications.
- Never use the fixture under the following conditions:
  - in places subject to vibrations or bumps;
  - in places with a temperature of over 45 °C or below 2°C.
- Make certain that no inflammable liquids, water or metal objects enter the fixture.
- Do not dismantle or modify the fixture.
- All work must always be carried out by qualified technical personnel. Contact the nearest sales point for an inspection or contact the manufacturer directly.
- If the unit is to be put out of operation definitively, take it to a local recycling plant for a disposal which is not harmful to the environment.

Warnings and installation precautions

- This product in combination with amplifier, may be capable of producing dangerous sound levels that could cause permanent hearing loss. Do not operate for a long period of time at high volume level or at a level that is uncomfortable.
- Do not install the fixture near sources of heat.
- If this device will be operated in any way different to the one described in this manual, it may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short circuit, burns, electric shock, ect.
- The fixture must be located in a place where a proper ventilation or thermal dissipation is not impeded. Do not install the fixture in a confined space.
- Do not link the output of any processor channel back into another channel 's input. Do not parallel or series connect an processor's output with any other processor's output.
- Please turn off the power switch before pulling off the power cord.
- Before starting any maintenance work or cleaning the unit, cut off power from the main supplyThis product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
- We decline any liability deriving from improper use of the product.

- 1 - INTRODUCTION

Congratulations on the purchase of your DXZ88. DXZ series Strives to be the best in high end digital audio processing. After you have become familiar with your processor, we encourage you to experiment and find the most effective and efficient way to run your system by utilizing the powerful processing of the DXZ88.
The DXZ88 is a powerful processor with eight analog inputs, eight outputs (12dBu), 10 PEQ bands per input and output and a frequency range to 20kHz. The rugged analog input stage accepts input voltages of up to +23dBu thus matching any source on the market today, with an excellent dynamic range of 110dB. Using a switch-mode power supply for clean power supply rails and superior ruggedness, 64-bit digital processing and some of the best converters available on the market today, the DXZ88 offers sound quality that sets standards in professional as well as high-end home audio.
This User Manual describes how to operate the DXZ88's settings via the front panel controls. Alternatively, the DXZ88 can be configured completely via a remote connection to a PC, iPad or iPhone. Please refer to the Software User Manual for details on the remote control application.
Controlled via the front panel or via the remote control application, the DSP settings and coefficients are calculated on-the-fly at the moment of changing the parameters. Frequencies can be set with 1Hz accuracy, delays with 20 microseconds accuracy, and gains with 0.01dB accuracy. When editing values via the front panel, some values are limited in granularity; e.g. gain is set via 0.25dB steps in this case

1.2 OPERATING ELEMENTS AND CONNECTIONS

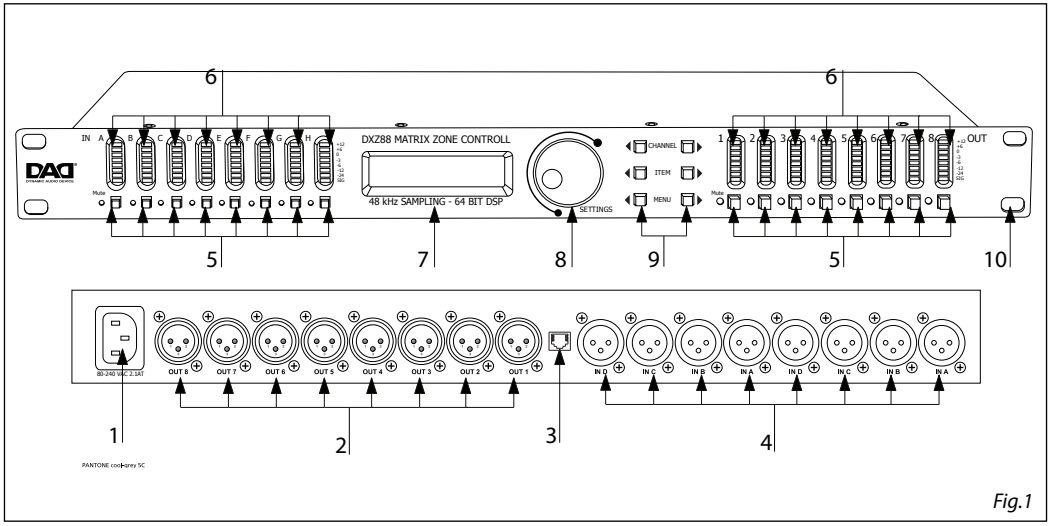


Fig.1

In addition to the available features described in this manual, you also have the option of controlling the processor remotely over your network. Please refer to the Software Manual for details.

1. POWER IN: mains plug for connection to a socket (80 to 240V 50/60Hz) via the supplied mains cable. The support for the mains fuse is located under the mains plug. Only replace a blown fuse by one of the same type. Be sure your amplifier is turned off before you plug in the mains supply cable into an electrical outlet.
2. OUTPUT 1÷8: XLR male connector with a balanced line level input. - Pin 1 = shield or ground; - Pin 2 = + positive or "hot"; - Pin 3 = - negative or "cold".
3. NETWORK: RJ45 connector; Connect to a router/wifi router with DHCP to enable automatic setup of the IP address. Connect to a PC/switch without setting a fixed IP and the unit will perform zero config. Setup a fixed ip to the unit, you need to connect by a DHCP or zero config network before to be able to change the ip address.
   Note: Only enable one of your network interfaces of the computer to avoid any issues.
4. INPUT A-B-C-D: XLR female connector with a balanced line level input. - Pin 1 = shield or ground; - Pin 2 = + positive or "hot"; - Pin 3 = - negative or "cold".
5. MUTE : press any of the front panel Mute keys to toggle the channel in and out of mute. The button will light red when the output is muted.
6. LED OUTPUT BAROGRAPHS : the Output barographs represent signal level relative to limiter threshold. These show the output level: SIG, -24dB, -12dB, -6dB, -3dB, 0dB (Limit), +6dB (CLIP).
7. DISPLAY LCD.
8. THE ROTARY ENCODER: to the right of the display screen there is a continuous rotary encoder that, when turned, changes the values in the value area of the screen. If this control is pushed in it will step through the inputs and outputs modes. If held down and turned it will enable fast switching through the available modes.
9. FUNCTION BUTTONS: The function buttons allow direct access to all editing and navigating functions. See section three for a detailed description on the functions of each of these buttons.
10. MOUNTING HOLES for fixing the rack.

- 2 - FUNCTION AND SETTINGS

2.1 SYSTEM SETUP AND GAIN STRUCTURE

This product offers a wide range of tools for sound system design and setup. These tools can make your system more efficient and better sounding, but to get the best possible sound it is important to use these tools properly.

The following section explains how to maximize system gain and how to use the limiters to protect your amplifiers from clipping. In traditional system design, the output of your console would be routed to a system EQ, a compressor, and a crossover with output level control. From the crossover, there may be additional filters that are employed to improve the response of your speakers. There may also be limiters set up to keep

your amplifiers from going into clipping and protect your speakers from the hazards of a clipped signal. Your amplifiers play a vital role in system setup, because they are last item in the chain before your speakers and offer the greatest amount of gain (that is their job after all). If your limiters and amplifiers are incorrectly setup you will not be using your system to its fullest potential and could be harming your speakers.

To ensure an optimal gain structure:

Play a signal at the nominal level from your mixing desk, and set the input gain of your processor to 0.

Set the crossovers that you want to use, while keeping the output gains also at 0.

With DISCONNECTED loudspeakers, turn up the volume of the power amplifiers entirely clockwise (full volume).

Now reduce the output gain and / or the output limiter setting to get the desired gain, so that the amplifier is just clipping and the built-in limiters of your processor are just limiting. If the amplifier does not have a built-in clip limiter, set your processor's limiter so that the amplifier does not clip.

Now turn down the volume of the power amplifiers, connect your speakers, and slowly increase the volume while checking the sound.

If all is well, there should be distortion-free sound, and the limiter LEDs are flashing or off, but not continuously on. If they are continuously on, reduce the output gain of your processor.

If you cannot reach enough signal level, increase the processor's input gain or turn up the level from your mixing desk.

2.2 SETUP AND OPERATION

Before plugging the processor in, always make sure that the power supply matches the product specification voltage. Install this device on a flat, stable surface, not bent or curved. Do not supply power before all components of the system are set up and connected properly. Make sure your power amplifiers are switched on last in order to avoid transients, which could damage your speakers or annoy your audience.

2.3 System Check

After connecting all cables, you should mute all outputs first or turn the gain/level setting on your amplifiers to minimum. Activate the HF-outputs first. In case of wrong cabling, High Frequency (HF) audio signals will come out of bass-speakers that cannot be harmed this way. Vice versa, the Low Frequency (LF) audio signals would destroy your HF-speakers. It is advisable to install a large capacitor in series with HF drivers (47 - 100 uF). That way, drivers are somewhat protected against accidental instrumentation errors.

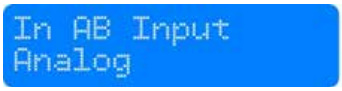
2.4 Input Setup

Press the Channel Up or Down button to select the input channel you wish to edit. Make the first settings with the output turned low or muted.

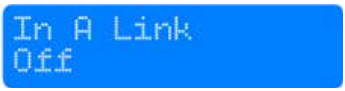
To toggle through the different items, press the Item Up or Item Down buttons.

Gain
Adjust the gain by dialing the rotary encoder. The gain is adjusted in steps of 0.25dB. Smaller steps (0.01dB) can be set via the PC interface.

Input Selection
Select the source (Analog) by rotating the encoder.



Channel Link
By linking 2 channels, the settings are guaranteed to be identical for both channels, except for mixer and mute. Turn the encoder to set the Channel Link on or off.

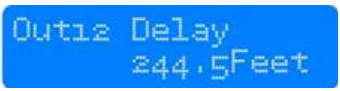


2.5 Output Setup
Press the Channel Up or Down button to select the output channel you wish to edit. Make the first settings with the output turned low or muted.
To toggle through the different items, press the Item Up or Item Down buttons.

Gain
Adjust the gain by dialing the rotary encoder. The gain is adjusted in steps of 0.25dB. Smaller steps (0.01dB) can be set via the PC or interface.

Mixer
Turn the rotary encoder to mix the signal from the selected input to the selected output. Push the rotary encoder to select the input. Attention: The mixer is only available while the outputs are not linked by Channel Link. If the channels are linked, the mixer will be skipped.

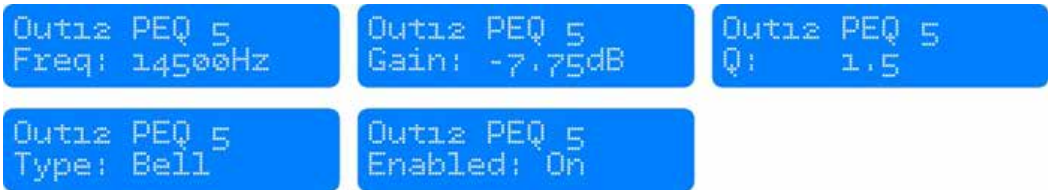
Delay
Set the delay time by turning the encoder. Select the displayed unit (ms or s, mm or m, feet, inches, or mils) by pushing the encoder.



Low Pass Filter
Adjust the Low Pass Filter frequency by turning the rotary encoder. You can switch the low pass filter off by turning the rotary encoder up (clockwise) until the frequency passes 20kHz.
Press the rotary encoder to change the filter type. Select the type by turning the rotary encoder. You can choose from: Butterworth 6dB, Bessel 6dB, Butterworth 12dB, Bessel 12dB, Linkwitz Riley12dB, Butterworth 18 dB, Bessel 18dB, Butterworth 24dB and Bessel 24dB. Higher order filters may be set by adding filter sections in the PEQ blocks (see below).

High Pass Filter
Adjust the high pass frequency by dialing the rotary encoder. You can switch the high pass filter off by dialing the rotary encoder down (counterclockwise) until the frequency passes 20Hz.
Press the rotary encoder to change the filter type. Select the type by turning the rotary encoder. You can choose from: Butterworth 6dB, Bessel 6dB, Butterworth 12dB, Bessel 12dB, Linkwitz Riley12dB, Butterworth 18 dB, Bessel 18dB, Butterworth 24dB and Bessel 24dB. Higher order filters may be set by adding filter sections in the PEQ blocks (see below).

Parametric Equalizer (PEQ)
There are 10 bands of parametric equalization. Each band can be adjusted freely over the frequency range of 20Hz to 20kHz. Adjust the frequency by dialing the rotary encoder.
Press the rotary encoder to select the parameters. The available parameters are: Frequency (20Hz to 20 kHz), Gain (-12dB to +12dB), Q (0.2 to 25), Enabled (On or Off), Type (Bell, High Shelf, Low Shelf, Notch, All Pass, Band Pass, High Pass, Low Pass). For the Shelving filters, the Q value sets the steepness of the filter in dB/Oct.



Limiter
The limiter is a zero-attack peak limiter. Only the threshold and release can be set. Press the rotary encoder to select the parameters. The release value is displayed in dB per second.

Phase Inversion
Turn the rotary encoder to switch phase inversion on or off.

Channel Link
By linking 2 channels, the settings are guaranteed to be identical for both channels, except for mixer and mute. Turn the encoder to set the Channel Link on or off.

2.6 System Menu
Push the Menu button to enter the system menu. Push the Menu button again to toggle through the menu items. The available menu items are:

Load Preset
Turn the rotary encoder to select the preset you wish to load.
The system will ask you to give a name to the preset name. Select a character in the cursor position by turning the rotary encoder; pushing the rotary encoder confirms the character selected and moves the cursor to the next character to edit. Pushing the exit/ESC button erases the last confirmed character. Once the name is set up, push the menu button again. If you want to continue storing the preset, select Yes by turning the rotary encoder and confirm by pushing it. To cancel, push the exit button. Now your preset is saved in the selected location.

The presets contain all filter, dynamics, gain settings etc; in other words, everything that makes out a loudspeaker configuration. Presets do NOT contain the name of the unit, network configuration, automatic standby delay, user access rights and passwords.

Access Level

The DXZ88 has the option of locking away the front panel controls to avoid tampering of settings by unauthorized persons. To lock the unit, select "Locked" by turning the rotary encoder, and push it to confirm. The system will ask you to enter a password. Select a character in the cursor position by turning the rotary encoder; pushing the rotary encoder confirms the character selected and moves the cursor to the next character to edit. Pushing the exit/ESC button erases the last confirmed character. Once the password is set up, push the menu button again and the unit will be locked.

ATTENTION: Make sure to remember the password! When the unit is locked and you forgot the password, it is not possible to unlock it without contacting your local service representative.

To unlock the unit select "Unlocked" and enter the password. The password is automatically checked after each entered character, and the unit will exit the system menu when the password is confirmed. The default password is "Password".

Version Information

By pushing the rotary encoder, the display toggles through the version information about the unit (serial number, firmware version), as well as some parameters like IP address, subnet mask, MAC address etc.

TECHNICAL SPECIFICATIONS

Product Type	Matrix Processor
Input	8 way mono
Output	4 way stereo, 8 way mono
Dynamic range	118dB input - 114dB output
Connection	Ethernet port
Max Input Level	+23dBu
Frequency Responce	20Hz to 20kHz
Distortion	<0.01%, (+10dBu, 20Hz to 20kHz, 30kHz bandwidth
DSP	64 bit
Sampling rate	96 kHz
A/D - D/A Converters	24 bit
Gain OUT	+12dB to -48dB and mute, 0.25dB steps
Delay	output 2000ms
Crossover Filters	Bessel, Butterworth, Linkwitz-Riley, All-Pass
Crossover Filters Slope	12, 18 & 24dB/octave Bessel and Butterworth 12 & 24dB/octave Linkwitz Riley
Parametric Filters	10 for input and output: Bell, High Shelf, Low Shelf, Notch, All Pass, Band Pass
EQ frequency	10Hz to 20kHz
EQ gain	+12dB to -12dB, 0.25dB steps
EQ width	Q 25 to 0.2 - BW 4.75 to 0.06
Limiter	High performance limiter, adjustable threshold in 0.25dB steps. Automatic attack time , Release 10-100
Audio Connectors	3-pin XLR
Power supply	80 to 240V AC, 50/60Hz
Weight	1,7 Kg
Dimensions (WxHxD)	482x44x175mm

Note

Note

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