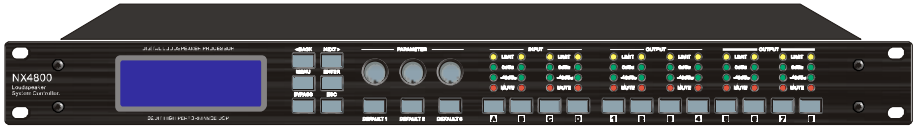
USER'S MANUAL

NX4800

Loudspeaker System Controller



Service

This unit has very sophisticated circuitry and should only be serviced by a fully trained technician. This is why each unit bears the following label:

⚠ CAUTION ⚠

To prevent electric shock, do not remove covers. No user serviceable parts inside. Refer servicing to a qualified technician.

Worldwide Service

Service may be obtained from your local authorized service center. To obtain service, simply present your sales receipt as proof of purchase along with the defective unit to an authorized service center. They will handle the necessary paperwork and repair. Remember to transport your unit in the original factory packaging.

1. When sending an NX4800 products to the authorized service center for service, be sure to fill out the service information form that is enclosed at the end of this manual and include it inside your unit's shipping pack. Do not send the service information form separately.

2. To ensure the safe transportation of your unit to the authorized service center, ship it in an original factory-packing container.

3. Do not ship the unit in any kind of rack. Ignoring this warning may result in extensive damage to the unit and the equipment rack. Accessories are not needed. Do not send the instruction manual, cables and any other hardware.

WEEE Mark

If you want to dispose of this product, do not mix with general household waste. There are separate collection systems for used electronic products in accordance with legislation under the WEEE Directive (Directive 2002/96/EC) and is effective only within the European Union.

LIMITED WARRANTY

THE WARRANTY

For a period of one (1) year from the date of delivery to the original purchaser (as shown on the original invoice or sales receipt), NX4800 warrants to the ORIGINAL OWNER of each new product (provided it was purchased at an Authorized NX4800 Dealer) that it is free of defects in materials and workmanship and that each product will meet or exceed all factory published specifications for each respective model. NX4800 agrees to repair or replace (at its discretion) all defective parts at no charge for labor or materials; subject to following provisions:

WARRANTY VIOLATIONS

NX4800 shall take no responsibility for repair or replacement as specified under this warranty, if the damaged product has been subject to misuse, accident, neglect or failure to comply with normal maintenance procedures; or if the serial number has been defaced, altered or removed. Nor will NX4800 accept responsibility for, or resulting from, improper alterations or unauthorized parts or repairs. This warranty does not cover any damage to speakers or any other consequential damage resulting from breach of any written or implied warranty.

NX4800 WARRANTY PROVISIONS

NX4800 will remedy any defect, regardless of the reason for failure (except as excluded) by repair, or replacement. NX4800 will remedy the defect and ship the product within a reasonable time after receipt of the defective product at an NX4800 Authorized Service Center.

TO OBTAIN WARRANTY SERVICE

In the event that an NX4800 product requires service, the Owner must contact NX4800 or an Authorized NX4800 Service Center to receive an R.A.N. (Return Authorization Number) and instructions on how to return the product to the NX4800 Authorized Service Center, or to the factory. NX4800 (or its Authorized Service Center) will initiate corrective repairs upon receipt of the returned product. Please save original carton and all the packing materials in case shipping is required. All products being returned to the factory or service center for repairs must be shipped pre-paid.

If the repairs made by NX4800 or the NX4800 Authorized Service Center are not satisfactory, Owner is instructed to give written notice to NX4800. If the defect or malfunction remains after a reasonable amount of attempts by NX4800 to remedy the defect or malfunction, the Owner shall then have the option to elect either a refund or replacement of said NX4800 product free of charge. The refund shall be an amount equal to but not greater than the actual purchase price, not including any taxes, interest, insurance, closing costs and other finance charges (minus reasonable depreciation on the product). If a refund is necessary, the Owner must make the defective or malfunctioning product available to NX4800 free and clear of all liens or other restrictions.

MODIFICTTIONS OF EQUIPMENT

NX4800 reserves the right to modify or change equipment (in whole or part) at any time prior to delivery thereof, in order to include therein electrical or mechanical improvements deemed appropriate by NX4800; but without incurring any liability to modify or change any equipment previously delivered, or to supply new equipment in accordance with any earlier specifications.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU, THE OWNER, ARE NOT ENTITLED TO RECOVER FROM NX4800 ANY INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE NX4800 PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT.

WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Warranty. This Warranty is not extended by the length of time which the Owner is deprived of the use of product. Repairs and replacement parts provided pursuant to the Warranty shall carry only the non-expired portion of the Warranty.

THIS STATEMENT OF WARRANTY SUPERSEDES ALL OTHERS CONTAINED IN THIS MANUAL

The information furnished in this manual does not include all of the details of design and engineering of this particular product; not does it cover every possible application or situation concerning its usage, which may occur during the installation, operation or maintenance of said NX4800 product.

IMPORTANT
THE PRODUCT REQUIRES
CLASS 2 OUTPUT WIRING.

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. DISCONNECT POWER CORD BEFORE REMOVING REAR PANEL COVER TO ACCESS GAIN SWITCH.

Shock Hazard - Do Not Enter
Choc Hasard - N*entrent
Schocke Hazard - Test Nicht Betrete
Urto Hazard - Do Non Entrano

WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE!

Magnetic Field
CAUTION: Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below this unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. This field is strongest just above and below the unit. If an equipment rack is used, we recommend locating the amplifier(s) at the bottom of the rack and the preamplifier or other sensitive equipment at the top.

The lightning bolt triangle is used alert the user to the risk of electric shock.

The exclamation point triangle is used to alert the user to important operating and/or maintenance instructions.

Printed on recycled paper.

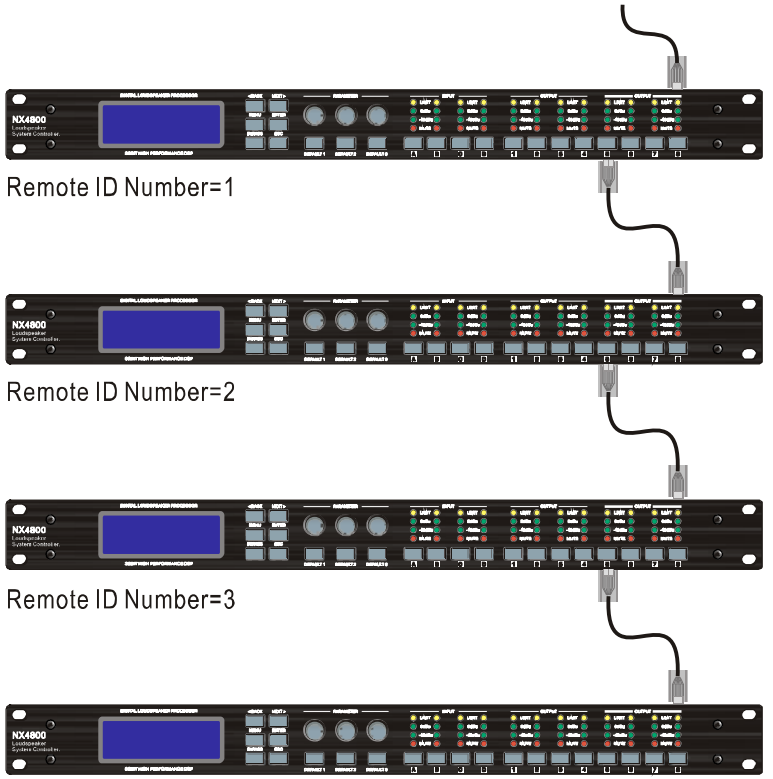
Shadow ID Numbers

Shadow ID numbers allow extra units to share the same ID and follow the settings of the main ID. This is useful for larger systems (for example anything above a 4-way stereo system) where it is only necessary to set up one side of the system, and allow the other unit to track it identically.

Using the shadow IDs in this way also reduces the apparent system complexity within software. **This is due to the fact that shadow IDs NEVER send back any settings to software and because of this will NOT appear in the list of connected units.**

They can be thought of as listening to and acting upon all information addressed to them, but not replying. Up to 256 shadow units may be connected and assigned the same ID as the main unit, but remember that the maximum total units on any one RS485 network is 256.

Shadow ID numbers are accessible when the units interface is configured, and will appear after ID number 256, starting from 1 again, but designated shadow IDs 2,3,4,5....



4. Technical Specifications

FEATURES:

Inputs

* 4 x XLR IN, electronically balanced
* Input voltage (MAX) 7.55 V / + 20dBu
* 8 bands parametric equalizers, 16 shelving equalizer
* 8 bands Low-Shelving equalizer, Hi-Shelving equalizer
* Input impedance 20 kohms
* Common mode rejection > 70 dB (1kHz)
* AD-conversion 24-bit, Sigma-Delta, 128 times oversampling, linear phase

Outputs

* 8 x XLR OUT, electronically balanced
* Output voltage (MAX) 7.55 V / + 20dBu
* 6 bands parametric equalizers, 16 shelving equalizer
* 6 bands Low-Shelving equalizer, Hi-Shelving equalizer
* Output impedance < 100 ohms
* Min. load impedance 600 ohms
* DA-conversion 24-bit, Sigma-Delta, 128 times oversampling
* Frequency response 10 Hz - 30 kHz (- 0.5 dB)
* S/N ratio 110 dB (typical)
* Distortion < 0.01 %

5. RS485 Connection

To use RS485 communication directly from a computer, a master unit must be configured to receive RS485. You must have a suitable RS485 port on your computer, or a converter connected to the serial port in use. This configuration is shown below, along with the required unit setup.

Both the converter and the required adapter cables are available from **NX4800**.
The adapter is available in a kit, which includes an RJ-45 adapter, and the converter itself. This complete kit is part number URC-1.

If you need to make up one of RJ-45 adapters, the pin-out is:

IN RJ-45	OUT RJ-45
4	5
5	4

WARNING

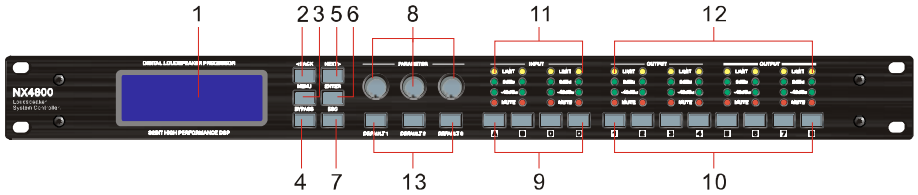
1. Read all the SAFETY INSTRUCTIONS before using the product.
2. This product must be earthed. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce risk of electric shock.
This product is equipped with a cord having an equipment-grounding conductor and a grounding plug; The plug must be plugged into an appropriate outlet that is properly installed and earthed in accordance with all local codes and ordinance.
DANGER- Improper connection of the equipment-grounding conductor can result in a risk of electric shock.
3. Do not use this product near water - for example, near a bathtub, washbowl, kitchen sink, in wet basement or near a swimming poor or the like.
4. This product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
5. The product should be connected to a power supply only of the type described on the operating instructions or as marked on the product.
6. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power-supply cord, do not pull on the cord, but grasp it by the plug.
7. Care should be taken so that object do not fall and liquid are not spilled into the enclosure through openings.
8. The product should be serviced by qualified service personnel when:
   A. The power-supply cord or the plug has been damaged; or
   B. Objects have fallen, or liquid has been spilled into the product; or
   C. The product has been exposed to rain; or
   D. The product does not appear to operate normally or exhibits a marked change in performance; or
   E. The product has been dropped or the enclosure damaged.
9. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

WARNING - Do not place objects on the product's power cord or place it in a position where anyone could trip over, walk on or roll anything over it. Do not allow the product to rest on or to be installed over power cords of any type. Improper installations of this type create the possibility of fire hazard and/ or personal injury.

SAVE THESE INSTRUCTIONS

1. Functions

- Front panel



1. LCD Screen: Shows, by default, the name of the last recalled memory on the bottom line of the screen, Also used to show all parameters as they are edited, and all menu selections.
2. BACK key moves backwards through list of parameters.
3. MENU key activates the main menu .
4. BYPASS will flatten the currently selected parametric sections, or input graphic equalisers.
5. NEXT key moves forward through list of parameters.
6. ENTER key enters the chosen menu, confirms selections, and changes filter types when editing parametric sections.
7. ESC exits menus back to the default screen.
8. Rotary Encoders: Three encoders adjust the relevant parameters as displayed on the screen.
9. INPUT EDIT buttons illuminate red when pressed, and go into mute mode. if press for I second, it go in to every input channel EDIT mode.
10. OUTPUT EDIT buttons illuminate red when pressed, and go into mute mode. if press for I second, it go in to every output channel EDIT mode.
11. INPUT METERS: show dBu clipping point of digital to analogue converters, Green LED illuminates from -48dBu to 0dBu, yellow LED illuminates the clipping.
12. OUTPUT METERS: show dBu clipping point of digital to analogue converters, Green LED illuminates from -48dBu to 0dBu, yellow LED illuminates the clipping.
13.Scene change recall key. Press switch for 1 second， processor will load default set program.

9. Choose copy menu to copy data from the edited one to other input/output channel

Fig 2.7

10. Modify Device
choose interface menu to set up the start up information of the device

Fig 2.8

7. Downoad data to Device. Choose ‘Program’ menu ------
communications then choose the program from PC and which memory you want to put at the device

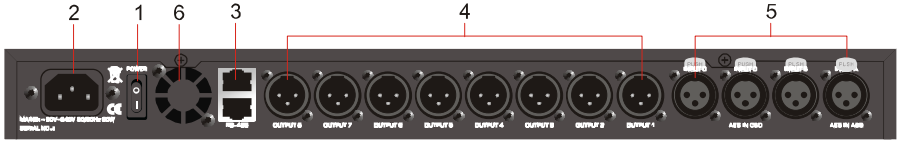
***program 20 to 30 is protected , you can down load data to these 10 memories with input password .

please get the password from your dealer

8. Upload data from device, firstly the data will be uploaded when connecting to device.
you can choose ‘recall progran from device’ from the menu------
communications, and do the same process as Fig 2.6.

Fig 2.6

- Rear Panel



1. Power Switch.
2. Power Cord Receptacle, accepted voltage:90~240V 50/60Hz.
3. RS485 In-Out: RJ45 sockets. Used for transmission of remote control data over long distance or multiple unit applications.
4. Outputs balance XLR connectors.
5. Inputs balanced XLR connectors.
6. Fan.

AES Input

The NX4800 have a full AES implementation built in as standard. This allows the unit to both receive digital audio directly. The switching of input can be performed independently, and the inclusion of sample rate converters on the inputs allows the unit to accept sample rates from 32kHz up to 192kHz.

The AES inputs are marked on the rear panel - for channels A & B use input A, and for channels C & D use input C.

AES/*EBU* inputs are selected through the AES menu:

Input Sub-Menu Output Selection

Pressing **ENTER** and then using the first control chooses either Analogue or Digital. Press ENTER again to confirm Selection.

2. Preliminary Set-up

1. Design your crossover! To do this, press MENU, and use the BACK or NEXT key to select ‘Xover sub-menu’ and then press ENTER. Use the BACK or NEXT key to select ‘Program’ and then press ENTER.
2. Note that when in a menu, ENTER is always used to confirm selections.
3. Use the EDIT keys on each output channel with the BACK and NEXT keys to select the high pass filters, low pass filters, parametrics etc. Note that when designing a new crossover, the high and low pass filters will be set to default values.
4. Use the EDIT keys on each input channel with the BACK and NEX T keys to select the gain, delay and parametrics available on each input.

3. Operations

1. Input Box Name

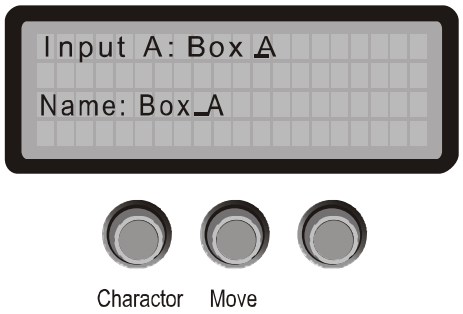


Figure 1

2. Input Delay

The maximum available delay of each input is 1000.00mS.

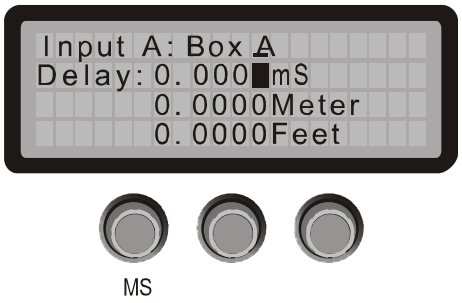


Figure 3

5. Setup output channed EQ parameter

Fig 2.4

6. Setup route of each channel and delay, HPF, LPF, Limit parameter.

Fig 2.5

3. Setup the Input EQ parameter

Fig 2.2

4. Setup input channel delay parameter

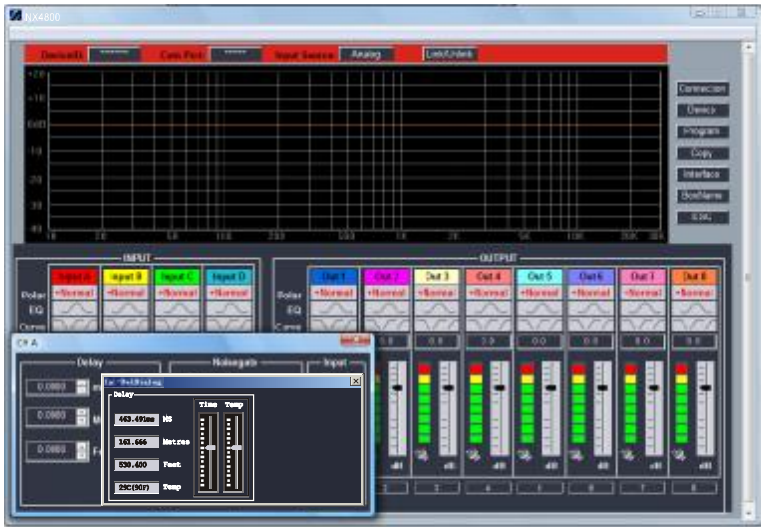


Fig 2.3

3. Input Polarity

The polarity (or phase) of each output may be switched individually as below.

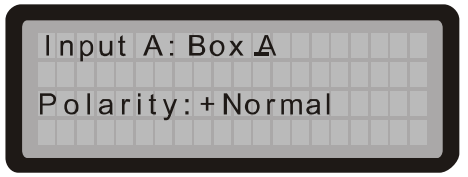


Figure 4

- or +

4. Input Gain

The range of the control over the input gain is -40dB to +6dB in 0.1dB steps.

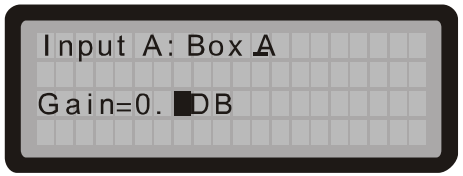


Figure 2

Gain

5. Input Parametric EQ

There are eight bands of parameter equalisation available on every input. The behaviour of each individual band can be changed to a variety of different filter shapes, including high and low shelves, and bandpass. Changing the filter type is achieved by first encoder. Confirm filter type by pressing ENTER.

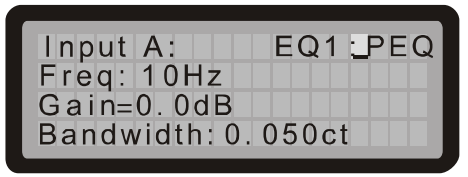


Figure 5

Filter type

6. Output Box Name

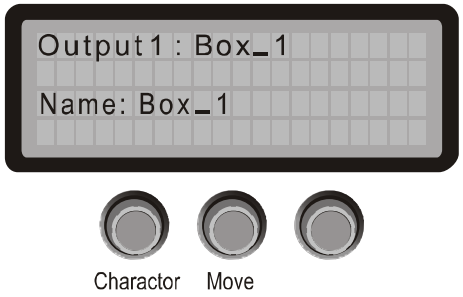


Figure 6

7. Output Gain

The range of the control over the output gain is -40dB to +15dB in 0.1dB steps.

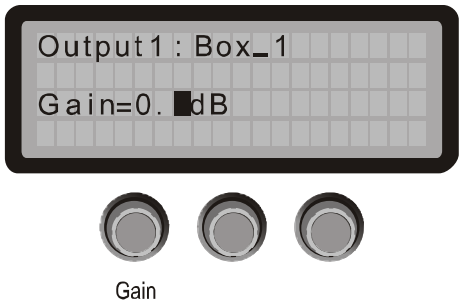


Figure 7

8. Output Polarity

The polarity (or phase) of each output may be switched individually as below.

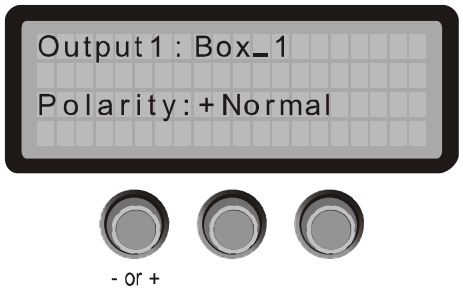


Figure 8

SOFTWARE GUIDE

*** program running

firstly please check the unit is connect to PC by RS485

1. Choose connecting from menu, select comport by clicking ok, You can use Search ID to find the connect devices also you can enter the unit ID manually, It can save your time.

Fig 2.1

2. The Data currently use the unit will upload to Pc when they connected the screen of unit will shows “computer connecting”

Unlocking the Unit

To unlock the unit press **ENTER** and then type the code in. This can be entered by using the first control to select a character, and the second control to move to the next character. Press **ENTER** to confirm.

Forgotten the Password?

Don’ t panic! Your unit can still be unlocked. In an attempt to improve the security system on the NX4800, and prevent a standard master password from becoming common knowledge, the super password is 666666.

9. Output Delay

The maximum delay of each output is 1000.00mS.

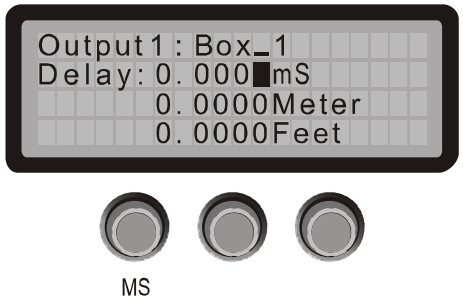


Figure 9

10. Output High Pass Filter

The high pass crossover filter on each output has a frequency range of 10Hz up to 30kHz .

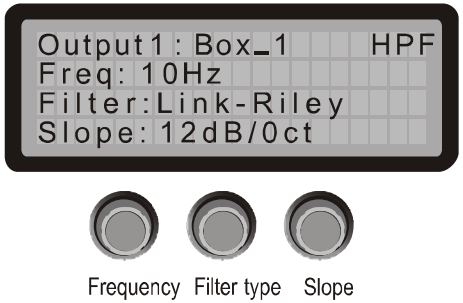


Figure 10

11. Output Low Pass Filter

The low pass crossover filter on each output has a frequency range of 10Hz to 30kHz.

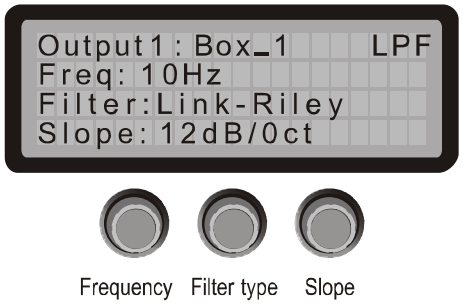


Figure 11

12. Output Parametric EQ

There are six bands of parametric equalization available on every output4. The behaviour of each individual band can be changed to a variety of different filter shapes, including high and low shelves, and bandpass.

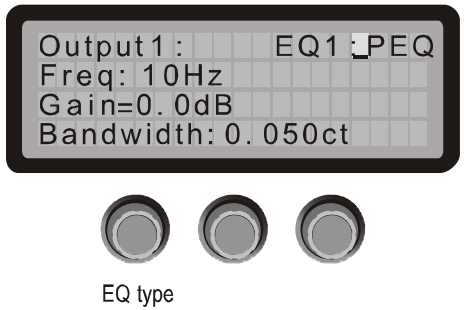


Figure 12

13. Output Limiter

The limiter on each output has adjustable attack and threshold, with a release time that is selectable to be a multiplier of the attack time. For example, as shown below, the attack time is 0.3mS and release is “2X” so 0.6mS.

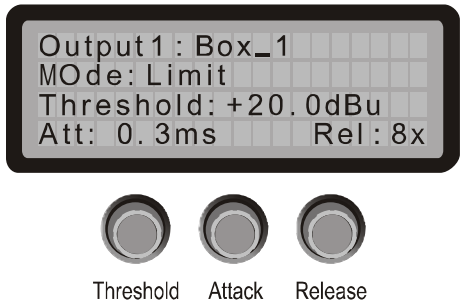


Figure 13

14. Output Compressor

The clip limiter on each output is designed to sit at a threshold just above the standard limiter and has a look ahead attack so that its threshold can never be exceeded. The release time can be automatically linked to the high pass filter frequency, so that it is set to a value appropriate for the outputs frequency range. If this feature is enabled, the display will show compressor: Auto.

14. Output Copressor

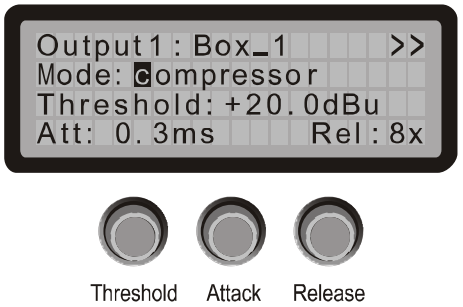


Figure 14-1

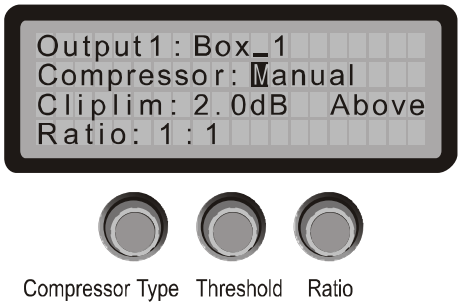


Figure 14-2

Auto mode frequency time ATT/RES list

High Pass Filter	Auto Attack Time	Release Time
<10Hz - 31Hz	45mS	x16 (720mS)
31Hz - 63Hz	16mS	x16 (256mS)
63Hz - 125Hz	8mS	x16 (128mS)
125Hz - 250Hz	4mS	x16 (64mS)
250Hz - 500Hz	2mS	x16 (32mS)
500Hz - 1kHz	1mS	x16 (16mS)
1kHz - 2kHz	0.5mS	x16 (8mS)
2kHz - 32kHz	0.3mS	x16 (4mS)