ALTO®

User's Manual

MAXIDRIVE3.4+

3 – WAY STEREO
DIGITAL CROSSOVER

IMPORTANT SAFETY INSTRUCTION

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT. THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.

This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.

⏚ Protective Ground Terminal

∼ AC mains (Alternating Current)

⚡ Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

CAUTION

Describes precautions that should be observed to prevent damage to the product.

1. Read this Manual carefully before operation.

2. Keep this Manual in a safe place.

3. Be aware of all warnings reported with this symbol.

4. Keep this Equipment away from water and moisture.

5. Clean it only with dry cloth. Do not use solvent or other chemicals.

6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufacturer's instructions.

7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electrician. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do not place heavy objects on the power cord. This could cause electric shock or fire.

8. Unplug this equipment when unused for long periods of time or during a storm.

9. Refer all service to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.

10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

WARNING
To reduce the risk of electric shock and fire, do not expose this equipment to moisture or rain.

Dispose of this product should not be placed in municipal waste and should be separate collection.

11. Move this Equipment only with a cart, stand, tripod, or bracket, specified by the manufacturer, or sold with the Equipment. When a cart is used, use caution when moving the cart / equipment combination to avoid possible injury from tip-over.

12. Permanent hearing loss may be caused by exposure to \ extremely high noise levels. The US. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible exposure to noise level.

These are shown in the following chart:

HOURS X DAY	SPL	EXAMPLE
8	90	Small gig
6	92	train
4	95	Subway train
3	97	High level desktop monitors
2	100	Classic music concert
1,5	102	
1	105	
0,5	110	
0,25 or less	115	Rock concert

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

IN THIS MANUAL:

1. INTRODUCTION

Thank you for purchasing the ▲LTO MAXIDRIVE3.4+.

Your MAXIDRIVE3.4+ is a 3-way stereo digital crossover and it is a powerful versatile signal processor.

The apparatus will provide 3, 4, 5 or 6-way mono X-over with 6 outputs. Thanks to the use of selected and expensive components, the performances of MAXIDRIVE3.4+ are worth much more than its price:

you can set the input and output routing configuration only through recalling one of the Presets included in the internal memory.

Enjoy your MAXIDRIVE3.4+ and make sure to read this Manual carefully before operation!

2. FEATURES

▲ Mountable in a 19" Rack Unit

▲ Delay lines up to 2.5s for each input and up to 300ms for each output

▲ Stereo digital input in AEX/EBU format

▲ A/D and D/A converters for a 117dB dynamic range

▲ Slot for a memory card for the storage of more presets and an easier upgrade of other units

▲ 10 Factory presets, 64 user presets and 128 card presets by large memory capacity

▲ Switching power supply

▲ Remote control

▲ Manufactured under QS9000, VDA6.1 certified management system

3. CONTROL ELEMENTS

Front Panel
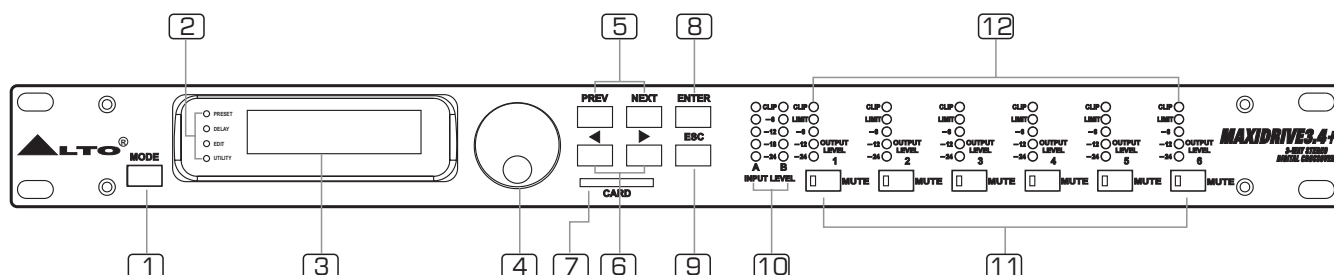
1 MODE button

The button allows you to select four modes: PRESET, DELAY, EDIT and UTILITY. Pressing MODE key repeatedly to reach to the required menu and the corresponding LED will light up. You can edit the parameters of the selected menus. If none of the menu LEDs is lit, the Display shows the name of the current PRESET and no parameters can be modified.

2 LEDs

These LEDs indicate the selecting status of the menus.

3 Display

Rear-lit 2x16 display.

It shows the pages of the various menus and the relative parameters.

4 DIAL knob

The knob allows you to edit value of the selected parameter. The value raises while turning the DIAL knob lockwise and lowers counterclockwise.

5 PREV/NEXT button

Each menu comprises several pages. These buttons allow you to turn over the pages and/or a variable number of parameters.

6 Navigation cursor keys

Each editing page comprises a variable number of parameters (fields).

The right and left keys allow you to select the various required parameters via controlling the movement of the cursor in the page.

7 Memory Card Slot

The Slot allows you to insert the Memory Card which is very useful for safe storage of PRESETS and for their transfer from one MAXIDRIVE3.4+ to another.

8 ENTER key

The key allows you to access to the selected editing page. Pressing this key, you can edit and confirm the required value of parameter.

9 ESC key

The key allows you to exit the selected editing page. It is also used to reject the value to enter and return to the stored value.

10 Input Level LEDs

The LEDs are used to indicate the level of input A/B. In order to get an up-front distortion-free signal, you keep the signal quite high, but do assure that the red CLIP LED doesn't light up continually.

11 Mute switches

There are six mute switches (1-6). They are used to mute the signal of the respective outputs. When the switch is on, the corresponding LED will light up. These switches can avoid signal peaks when switching on and off the sound system and isolate the individual audio sections during testing or checking sound, etc.. The restored Mute function can be set to use the Wake Up Function (Utility menu Misc. Setup submenu) and can be set as Normal (last setting before the unit was switched off) or Mute (all outputs automatically forced into Mute status).

12 Output Level LEDs

These LEDs indicate the level of the respective outputs (you can adjust the output via adjusting the Output Gain parameter of Edit menu.)

Note: The LIMITER on any output will change the way in which the level is displayed on the corresponding LED. In fact, the level shown on the ladder is no longer the "absolute" output level, but the level of the signal at -24dB, -12dB, -6dB compared to the limiter threshold (indicated by the orange LIMIT LED).

Rear Panel
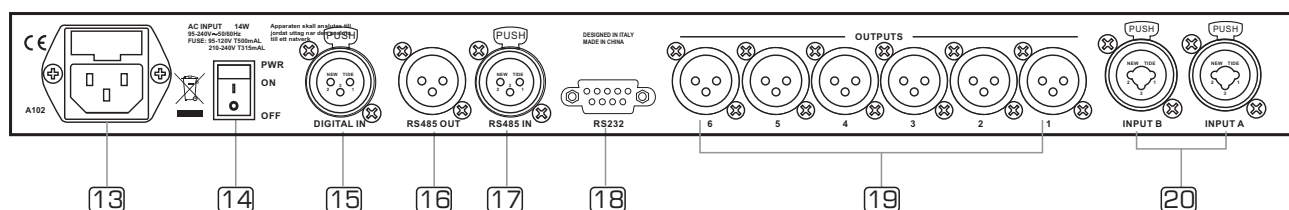
13 AC Inlet and fuse holder

Use it to connect your MAXIDRIVE3.4+ to the supplied AC cord. Please check the Voltage in your country and what voltage for your MAXIDRIVE3.4+ is configured before attempting to connect the unit for the main AC. The fuse can protect the AC supplies circuit of the equipment.

CAUTION: If there is something wrong with the fuse or the fuse needs to change, please refer to a qualified technician. If the fuse continues to blow after replacing, discontinue using of this unit before being repaired.

14 Power Switch

The switch is used to turn the main POWER on and off.

Note: Before turning on the unit, please make sure the amplifiers of the sound system are off to avoid the annoying and sometimes dangerous signal peaks.

15 **Digital In**

Use the balanced XLR-F connector (one cable is enough to feed both inputs connect the processor to units fitted with AES/EBU digital outputs. In this case, the two bypassed convention will improve the quality of the signal. A signal connected to the digital input has the same processing as that connected to analog input. The Digital/Analog input selection can be set by using the Input Select function (Utility Menu-Misc. Setup Submenu).

16 **Rs485 OUT**

This is the standard serial communication interface port. It allows outgoing communication between a MAXIDRIVE3.4+ and PC or other MAXIDRIVE3.4 units. The RS485 interface is very suitable for remote control over long distances (difficult with RS232 standard ports) and daisy-chaining several MAXIDRIVE3.4+.

17 **RS485 IN**

The function of the RS485 IN port is opposite to RS485 OUT. It allows incoming communication between a MAXIDRIVE3.4+ and PC or other MAXIDRIVE3.4 units. The RS485 interface is very suitable for remote control over long distances (Difficult with RS232 standard ports) and for daisy-chaining several MAXIDRIVE3.4+.

18 **RS 232**

This is the serial communication interface port. It allows incoming and outgoing communication between a MAXIDRIVE3.4+ and a PC or other MAXIDRIVE3.4 units.

Communication protocol includes:

-Remote control: 1). Connect the MAXIDRIVE3.4+ to a PC; 2). It is possible to use the ▲LTO editing software to control functions of all the processor remotely.

-Preset Dump: 1). Connect two MAXIDRIVE3.4+; 2). It's possible to Dump the single Presets from one unit to another (refer to Dump procedure).

-Program Change commands send/receive: 1). Connect two DAXIDRIVE3.4+; 2). When a Preset is recalled on the first one, it's possible to send a Program Change command to the second one to recall the same Preset number (refer to Load Preset procedure).

19 **OUTPUTS**

These (Outputs1~6) are balanced XLR-M connectors. The high quality, low noise, 20 bit converters can make A/D conversion.

20 **INPUTS**

INPUT A and INPUT B are compatible with balanced XLR and JACK. They are audio connectors of the respective sections. The high quality, low noise, 20 bit converters can make A/D conversion.

4. GETTING STARTED

The powerful versatile signal processor MAXIDRIVE3.4+ is mainly designed for use with audio systems. Its routing configurations of the input and output can be only set by recalling one of the PRESETS included in the internal memory. So the user must be very clear about the main function of the unit in order to get a best operation of your MAXIDRIVE3.4+.

Before you start your operation, please read the following parts carefully:

4.1 Configuration of the system

At first, switch off the equipment, carry out the audio and power connection from the various components of your sound system.

Then, connect the main cord and only switch on the MAXIDRIVE3.4+. The display will show the data regarding with the operating system release for a few seconds.

```
M A X I D R I V E       3 . 4
-   R e l e a s e     1 . 0 -
```
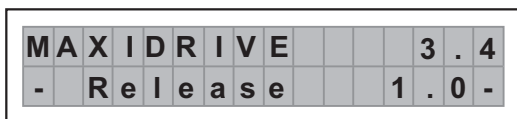
Meanwhile, the system will restore the exact operating conditions at the time of switching off.

And the system will enter into default status, showing the main operating information on the display.

```
      A 1 3   B 2 4   S 5 6
    2 F 2 x 2 W + 2 M A X
```

- Set all the MAXIDRIVE3.4 outputs in **MUTE** status (LEDs lit) by pressing the relative keys.
- Load the **Factory PRESET** containing the **configuration** you've found.
- Press the **MODE** Key until the **PRESET** menu LED lights up.

The display will show the **Load PRESET** page:

```
L o a d   P r e s e t
      3 F 2 x 3 W
```
(Example)

- Use the **DIAL** to find the necessary Factory PRESET (indicated by the letter F). Check that if, among the PRESETS available, there are already some optimised for the specific speaker enclosures being used.

- Press **ENTER**.

The display shows the PRESET loaded in the units memory and the relative configuration:

```
      A 1 3 5   B 2 4 6
    3 F 2 x 3 W
```
(Example)

4.2 Adjusting the input signal

It is much more important to set the input signal of a digital unit than that of an analog unit, because excessively high input signals will make any saturation of the A/D converters cause a typical particularly distinct noise (high level square wave).
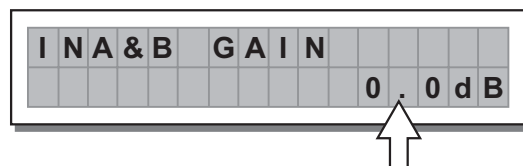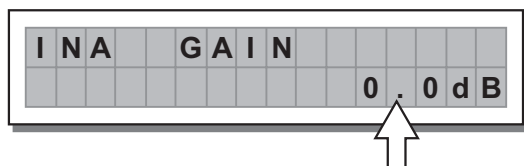
Proceed as follows:

- Keep the MAXIDRIVE3.4+ outputs in **MUTE** status (LEDs light on).
- Feed a signal in on the MAXIDRIVE3.4+'s input and watch the **INPUT LEVEL A-B** LED ladders. To obtain a good signal/noise ratio, i.e. an up-front distortion-free signal, keep the signal quite high, but make certain the red **CLIP** LED doesn't light up continually.
- Find out the output level setting for your mixer (or other unit) and connect it to the input of the MAXIDRIVE3.4+.
- Adjust the MAXIDRIVE3.4+ input gain if necessary: Press the **MODE** key until the **EDIT** menu LED lights up. Use the **PREV** and **NEXT** keys to go to the **Input Gain** page:
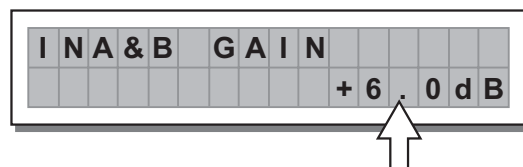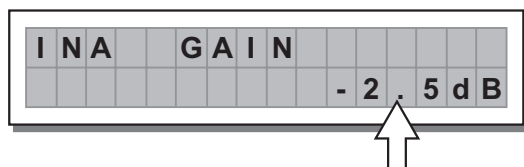
```
→   I n p u t   G a i n

```

- Press **ENTER**.
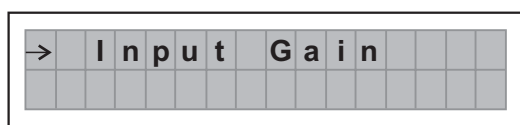
The display will show the **INA Gain** or **INA&B Gain** page (according to the configuration and other utilities loaded in the memory):

```
┌─────────────────────────┐     ┌─────────────────────────┐
│ I N A    G A I N         │     │ I N A & B   G A I N      │
│              0 . 0 d B   │     │              0 . 0 d B   │
└─────────────────────────┘     └─────────────────────────┘
              ⬆                                 ⬆
```

Use the **DIAL** to change the gain value and watch the level of the signal on the LED ladders until the ideal values are reached.

```
┌─────────────────────────┐     ┌─────────────────────────┐
│ I N A    G A I N         │     │ I N A & B   G A I N      │
│            - 2 . 5 d B   │     │            + 6 . 0 d B   │
└─────────────────────────┘     └─────────────────────────┘
              ⬆                                 ⬆
```

Then use the **PREV** and **NEXT** keys to access to the **INB Gain** page (if there is one, this will depend on the configuration and the other utilities loaded in the memory).
Repeat the settings as explained above.

4.3 First Setup

At this point, the first custom setup can be prepared.
The following is only the description of setup procedure.
The detailed specifications of each parameter are shown in the respective paragraphs of the manual.

- Firstly, set the following parameters shown in order:
  Output Pol. Polarity of the outputs
  Xover Crossover frequencies (separation of the speaker channels)
  Output Delay Alignment of the speaker enclosure components
  Output Gain Levels of the outputs

  Note: The regulation of the MAXIDRIVE3.4+'s parameters is closely related to the characteristics of the components of the sound system. So if you're not the expert, please refer to the documentation and technical Specifications of your power amplifiers, loudspeaker enclosures, monitors, etc.. This will enable you to work faster and safely.

- Disable the MUTE function on the outputs you intend using and listen the sound, carry out instrumental checks (if you have the necessary equipment) and any corrections required.

- Then, if necessary, adjust the values of the following functions:
  Output EQ Output equalizers
  Output Limiter Output limiters

  Note: In this first phase of setting up your sound system, the adjustment of these functions (which if not indispensable during installation) can wait. But do remember that adjusting the equalizers can also affect the signal level. So if considerable equalization changes are made, remember to check and adjust the output levels too, if necessary.

4.4 System configuration

```
                      ⬆
┌─────────────────────────┐
│       A 1 3   B 2 4   S 5 6 │
│  2 █U█ 2 x 2 W + 2 M A X    │
└─────────────────────────┘
```
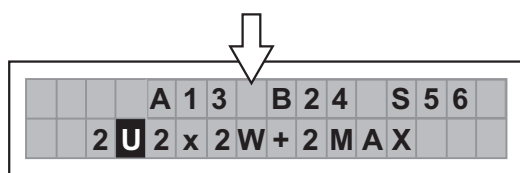
The bold letters indicate the inputs:
A = Input A
B = Input B
S = SUM (sum of inputs A and B)

Numbers **1**, **2**, **3**, **4**, **5** and **6** indicate the respective outputs.

In the example:

The signal connected to Input **A** is assigned to outputs **1** and **3**.
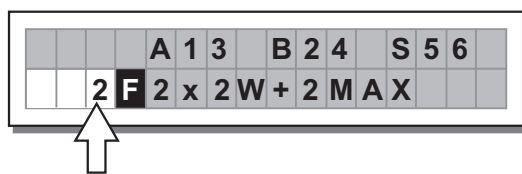
The signal connected to Input **B** is assigned to outputs **2** and **4**.

The Sum of the signal on inputs **A** and **B** is assigned to outputs 5 and 6.

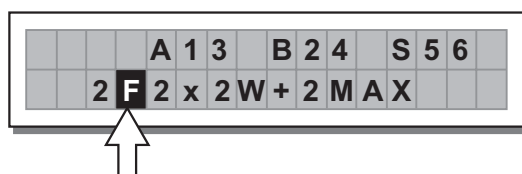The system is therefore configured as shown in the following diagram.

A13 B24 S56   2-WAY STEREO + 2 MONO AUX (2X2W + 2MAX)
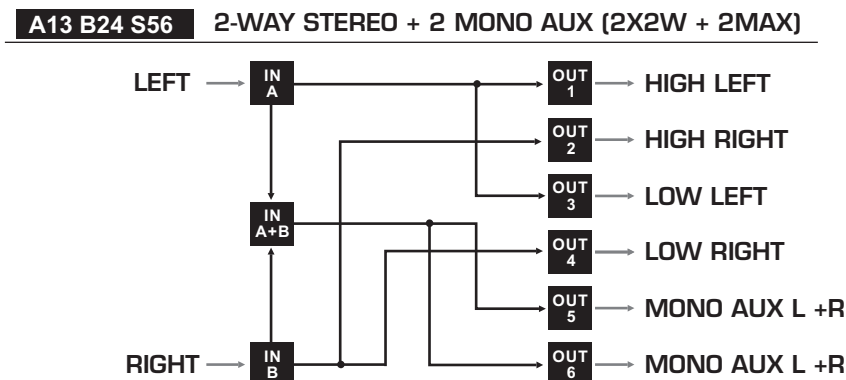
4.5 Number Of PRESETS

10 Factory PRESETS, 64 User PRESETS and 128 Card PRESETS are available.

4.6 Type of PRESET

There are 3 categories of PRESETS:

F = Factory PRESETS   factory programmed, cannot be permanently changed.
These include all the system's usable configurations.
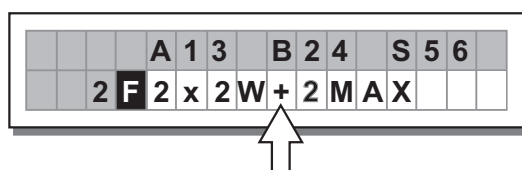These are the starting points for Creating User PRESETS and Card PRESETS from scratch.

U = User PRESETS   can be programmed by users.

C = Card PRESETS   can be programmed by users and stored on a Multimedia Memory Card.
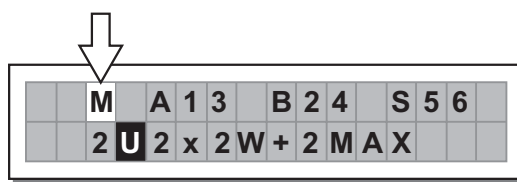
4.7 Name of the PRESET

In the example, the name indicates a two-way stereo system + two auxiliary mono outputs.

4.8 PRESET Modifications

This indicates that the value of one or more parameters has been temporarily modified with respect to the stored in the PRESET shown.

Practically speaking, this indication means that the changes made to the PRESET have not been stored.

Note: Once it has been enabled, the indication remains even if the "original" values are reset manually. The indication disappears as soon as the PRESET is saved or as soon as a new PRESET is loaded (including this same PRESET).

In other words, the indication disappears as soon as stored values are accessed.

If the PRESET isn't saved, temporary changes are lost as soon as a new PRESET is loaded (including this same PRESET).

Note: Temporary changes are kept on the other hand in the "buffer memory": when the unit is switched on, the system maintains exactly the same settings as when the unit was switched off, including temporary changes.
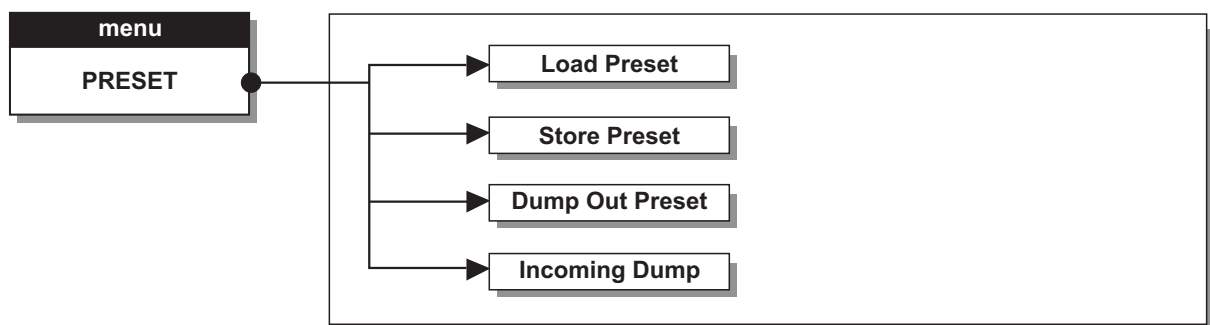
4.9 System Protection
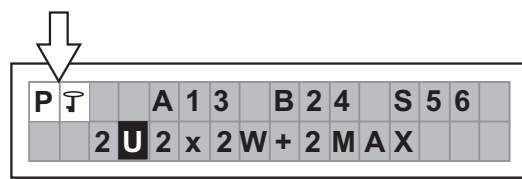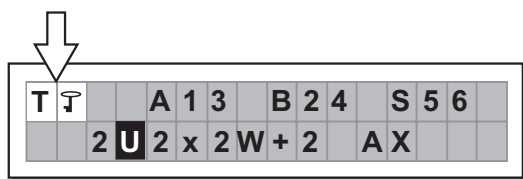
These indications appear when the **LOCK** function (**UTILITY** menu) is enabled, i.e. when the system is totally (**T**) or partially (**P**) protected against accidental or unauthorized changes (even if temporary). Protection is ensured by a **password**, without which editing procedure can't be unlocked.

5. THE MENU MAP CONFIGURATION DESCRIPTION

The control software is organized in **PRESET**, **DELAY**, **EDIT** and **UTILITY** menus, each of which contains the relative types of parameters and functions.

5.1 Preset Menu

There are 3 distinct categories of PRESETS:

Factory PRESETS   Factory-programmed storage.
Factory PRESETS can be used normally, temporarily modified, but can't be cancelled, overwritten or permanently modified. Factory PRESETS contain some specific settings for certain types of enclosures and all the system's usable configurations. For this reason they're the ideal starting point for creating custom PRESETS.

**User PRESETS**   Stored data that can be programmed by users.
User PRESETS are internal memory areas in which your own personal settings can be saved.

Card PRESETS   Stored data which can be programmed by users on a Multimedia Memory Card. Card PRESETS are external memory areas in which your own personal settings can be saved.

5.1.1 Load PRESET

This menu page allows the required PRESET to be loaded and made operatively.

```
Load    Preset
    2U2x2W+2MAX
```
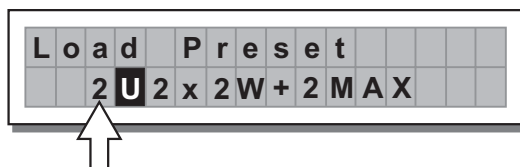
To load a PRESET:

• Use the **DIAL** to reach the required PRESET.
  10 Factory PRESETS, 64 User PRESETS and 128 Card User PRESETS are available.

Note: since the system must always be configured, there are no empty memory areas. All the User and Card Areas unused by custom **PRESETS** are automatically occupied by the ***Default* PRESET**, which contains a standard start configuration with all the values of the various parameters at zero.

```
Load    Preset          
  64U   *Default*
```

```
        A135   B246
  64U    *Default*
```
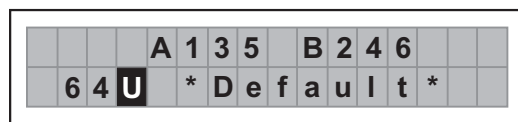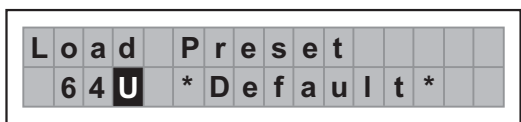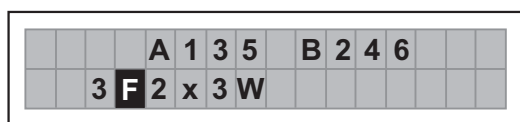
Scrolling through the 128 memory areas reserved for the Card when the Multimedia Memory Card isn't inserted, the display shows the following message:

```
Load    Preset
128C     NO   CARD
```
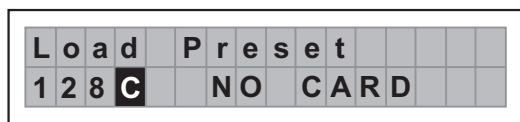
• Press **ENTER**.

The system returns to default status and the display shows the information on the PRESET that has just been loaded.

```
        A135    B246
    3F2x3W
```

Note: In the example, **Factory PRESET #3**, named "2x3W" has been loaded: Its system configuration is Input A signal assigned to outputs 1, 3 and 5; Input B signal assigned to outputs 2, 4 and 6.

Loading a PRESET, a PRESET Change command is also automatically sent to the serial ports and can be used to automatically load a PRESET with the same number to any other MAXIDRIVE3.4+ units connected and enabled (Refer to **UTILITY** menu-**Comm. Setup** submenu-**PRESET Change RX** option).

5.1.2 Store & Naming PRESTE

Use this menu to create new PRESETS, i.e. to save all the current system settings.

```
S t o r e   P r e s e t
    2 U 2 x 2 W + 2 M A X
```
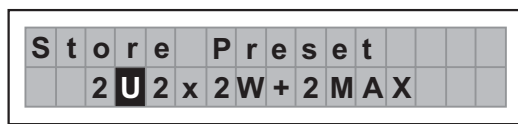
To save a PRESET:

Use **DIAL** to reach the memory area in which the PRESET is to be saved.

Note: In this procedure, the **Factory PRESET** areas aren't available, since the **Factory PRESETS** can not be permanently remember that it is possible to load a Factory **PRESET**, modified. Nevertheless save it in a **User PRESET** or **Card PRESET** area, modify it as required and then store it again in the same **User or Card** area.

Note: Scrolling through the memory areas, the display shows the number, type and name of the **PRESETS** contained in them; scrolling through the 128 Card memory areas without the Multimedia **Memory Card**, a warning appears on the display:

```
S t o r e   P r e s e t
    3 U   O p e r a H a l l   1
```

```
S t o r e   P r e s e t
1 0 1 C   N O   C A R D
```
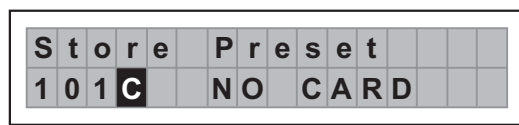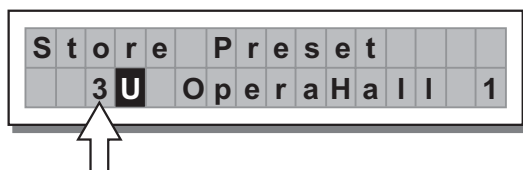
Press **ENTER**. The **PRESET Naming** page appears, by means of which it is possible to edit the name of the PRESET to be saved.

Note: If you're in one of the 128 memory areas reserved for the Card and you remove the Multimedia Memory Card before pressing **ENTER**, nothing happens: the display remains unchanged and Store **PRESET** procedure remains unvaried.

The name of the start PRESET (i.e. of the PRESET currently loaded) is proposed as default. The cursor takes up position on the first of the twelve character spaces available.

```
P r e s e t   N a m i n
[ 2 × 2 W + 2 M A X       ]
```
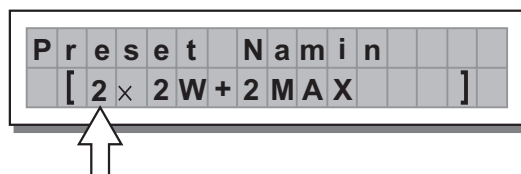
At this point:

- If you decide to accept and confirm the name suggested, press **ENTER**.
- If you want to abort **Naming** procedure (for example because you've chosen the wrong memory area) and return to Store PRESET procedure, press **ESC**.
- If you want to assign a new name to the PRESET you're storing:
  - use the ◄ and ► keys to position the cursor on the required character
  - use **DIAL** to enter the alphanumeric value wanted
 - after finishing, press **ENTER**.

```
P r e s e t   N a m i n
  [ M x 2 W + 2 M A X      ]
```

5.1.3 Dump Out PRESET

Use this menu page to download a PRESET via the serial ports.

It is also used to immediately "copy" the settings of the various PRESETS of a MAXIDRIVE3.4+ to another MAXIDRIVE3.4+.

```
D u m   O u t   P r e s e t
     2 U 2 x 2 W + 2 M A X
```

To download a PRESET:

Use **DIAL** to reach the required PRESET.

Press **ENTER**.

Note: The menu page remains unchanged to allow other **PRESETS** to be dumped.

All the Presets data (name, configuration, parameter values, etc.) are immediately transmitted to the units connected to the serial ports (other **MAXIDRIVE3.4+**, computers, etc.).

Note: In order for the transfer to have effect, the receiving units must be able to identify and accept Incoming Dump operations.

When two or more **MAXIDRIVE3.4+** are connected, the PRESET sent by the transmitting **MAXIDRIVE3.4+** (TX) overwrites (and therefore cancels), the existing PRESET in the same memory position of the receiving **MAXIDRIVE3.4+** (RX).

MAXIDRIVE3.4+ #1		MAXIDRIVE3.4+ #2		MAXIDRIVE3.4+ #3
Incoming Dump		Incoming Dump		Incoming Dump
SEND	DUMP	**ACCEPT**	DUMP	**IGNORE**
..		..		..
Preset #2	PORT	#2 MySetup	PORT	#2 SideField
Preset #3		#3 MySetup5		#3 Concert1
Preset #4		#4 LiveSet		#4 Concert2
Preset #5		Preset #5		#5 Concert3
Preset #6		#6 Monitor		#6 Concert4
Preset #7	SERIAL	#7 Monitor2	SERIAL	#7 Remote1
Preset #8		#8 Monitor3		#8 Remote2
Preset #9		#9 Side		#9 Remote2
..		..		..

5.1.4 Incoming Dump

Used to accept or ignore the Dump of a PRESET sent from another **MAXIDRIVE3.4+** or from a computer via serial.

Ports settings can be:

Ignore the data received via the serial ports.   Accept the data received via the serial ports.
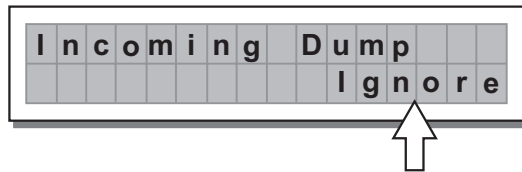
```
Incoming  Dump
           Ignore
```

```
Incoming  Dump
           Accept
```
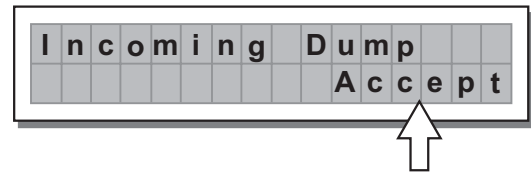
5.2. Delay Menu

Use this menu to work on the systems delay lines.
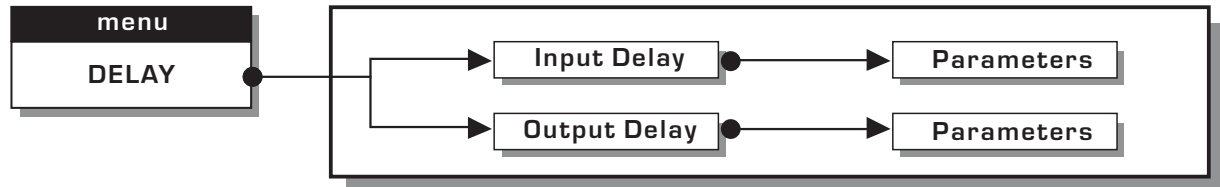
Parameters   In these pages, the number of the parameters and how they are presented varies according to the configuration of the PRESET and according to **Ganging** and **Units** settings (**UTILITY** menu). In fact, these pages only show the parameters that can actually be used, in the most suitable form of editing.

The practical differences between **Delay Input** and **Delay Output.**

A Delay is only a processor by means of which a signal is deliberately delayed by a programmable length of time. From a technical point of view, the Delays applied to the inputs and outputs are equivalent. Nevertheless, their application is different:
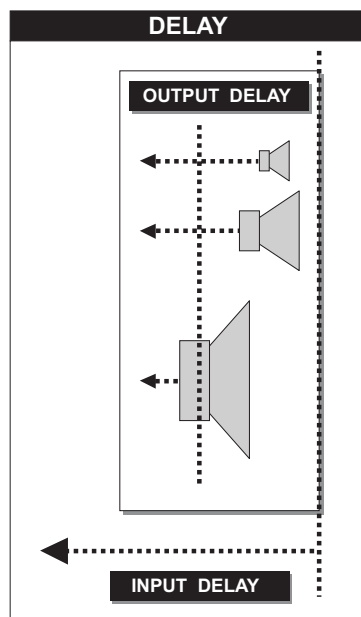
Input Delay   Delays the signal of an input (or the sum of the inputs) before sending it to the routing system. In this way, all the outputs which depend on that input are delayed by the same length of time. Also called **Master Delay**, input Delay is mainly used to compensate for the effects dues to the distance between the various speaker enclosures or between various blocks of a complex sound system (for example in large concert halls, stadiums, etc.), Thus achieving virtual alignment.

Output Delay   only delays the signal of a specific output.
Also called Channel Delay, output delay is mainly used to compensate for the distance between different blocks of the same sound system (for example clusters) or to correct internal alignment of a speaker enclosure components.

5.2.1 Input Delay

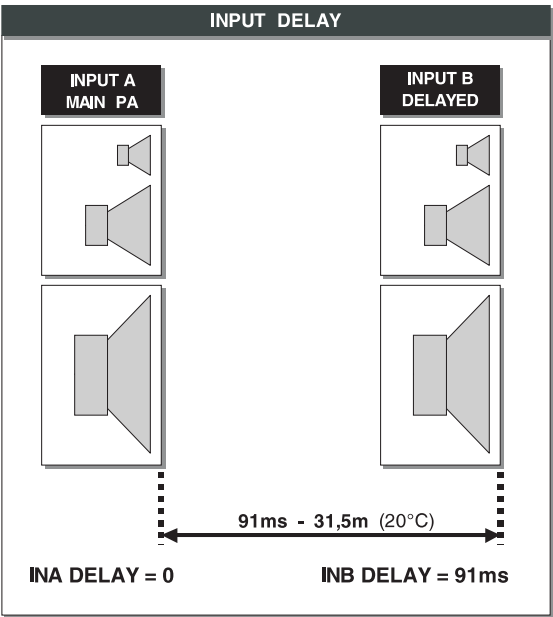Use this menu page to adjust the delay lines of Input A, Input B and SUM.
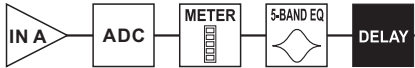
The values can be set in the following ranges:

INPUT DELAY		
unit	range	step
m	0.0 ~ 900.0	0.5
mm	0 ~ 900000	7
ms	0 ~ 2621	1
us	0 ~ 2621438	21

The measurement unit can be chosen with the function **Delay Unit** (**UTILITY** menu-**Units** submenu).
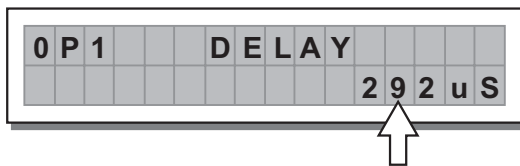

5.2.2 Output Delay

Use this menu page to adjust the delay lines of outputs 1, 2, 3, 4, 5, and 6.
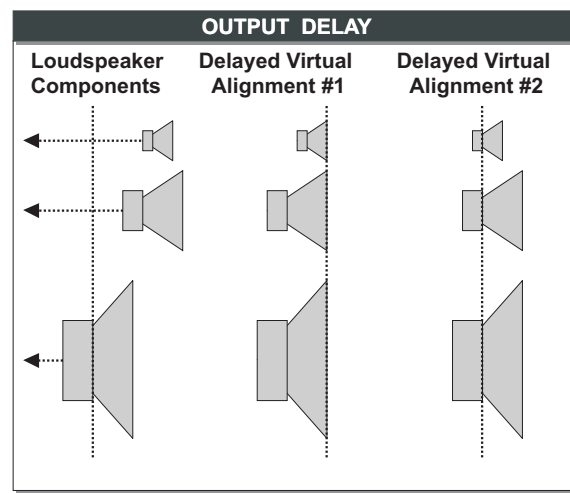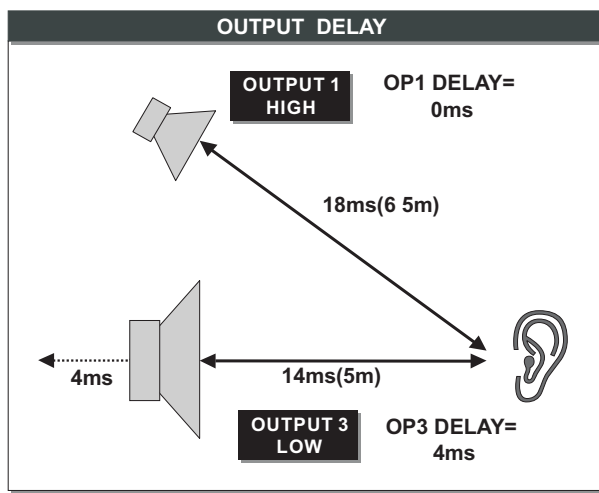
The values can be set in the following ranges:

```
0 P 1      D E L A Y
                    2 9 2 u S
```

OUTPUT DELAY		
unit	range	step
m	0.0 ~ 100.0	0.5
mm	0 ~ 100000	7
ms	0 ~ 291	1
us	0 ~ 291271	21

The values can be set in the following ranges:

OUTPUT DELAY

OUTPUT 1 HIGH — OP1 DELAY= 0ms

18ms(6 5m)

4ms

14ms(5m)

OUTPUT 3 LOW — OP3 DELAY= 4ms

OUTPUT DELAY

Loudspeaker Components   Delayed Virtual Alignment #1   Delayed Virtual Alignment #2

5.3 Edit menu

The values can be set in the following ranges:
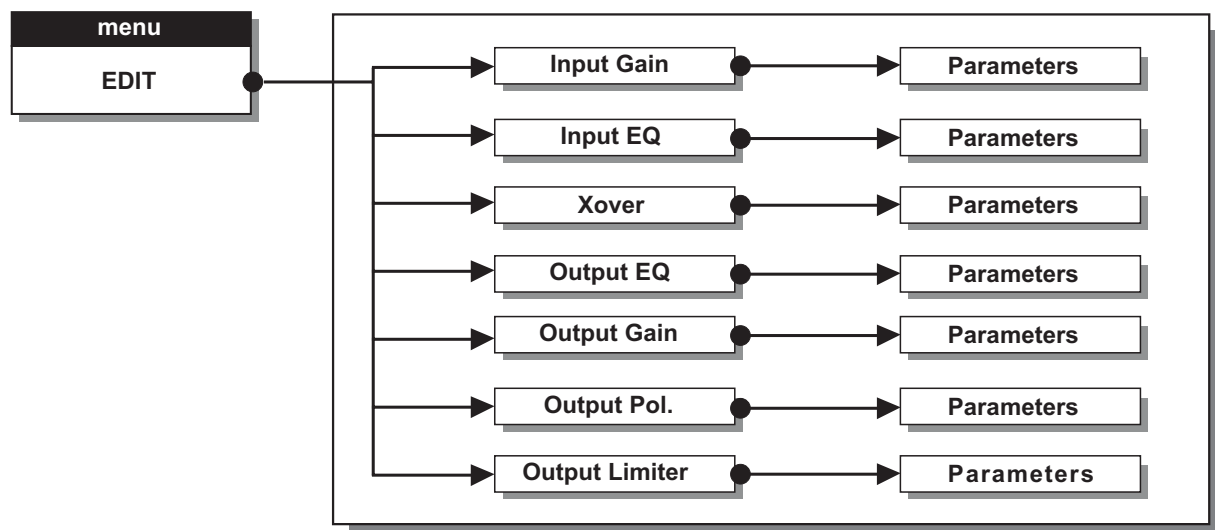
```
menu
EDIT
```

- Input Gain → Parameters
- Input EQ → Parameters
- Xover → Parameters
- Output EQ → Parameters
- Output Gain → Parameters
- Output Pol. → Parameters
- Output Limiter → Parameters

Parameters   In these pages, the number of the parameters and how they are presented varies according to the configuration of the PRESET and according to **Ganging** and **Units** settings (**UTILITY** menu). In fact, these pages only show the parameters that can actually be used, in the most suitable form of editing.

5.3.1 Input Gain

Input gain control.

```
→   I n p u t   G a i n
```

Allows to adjust the amplification of the signal fed in through Inputs A and B.
Editing values are in the range **+6dB ~ -30dB**, with **0.5dB** steps.

```
I N A     G A I N
               - 2 . 5 d B
```

Note: Setting the input signal of a digital unit is particularly important, much more than on an analog unit, as any saturation of the A/D converter due to an excessively high input signal causes a typical particularly distinct noise. To achieve a good signal/noise ratio, i.e. an up-front distortion free signal, feed a signal in on the MAXIDRIVE3.4+'s input and watch the **INPUT LEVEL A-B** LED ladders. Keep the signal quite high, but make certain the red **CLIP** LED doesn't light on continually.

5.3.2 Input Noise Gate

Noise reduction filter on the inputs
Allows to cut or reduce the background noise generated by the unit connected to the processor's inputs (the mixer, for example). The filter is active when the input signal is below a certain threshold and reduce its level cutting the undesired background noises.

```
→   N o i s e   G a t e
```

The following editable parameters are available, in two different pages:

a. Noise Gate ON/OFF

```
I N A     G a t e     O n
A T 1 . 0 m s     R L 0 . 5 0 S
```

b. Reaction times

Allows to set the Noise Gate attack and release times.

- ATTACK (AT): is the time needed by the filter to bring back the signal to its normal level when it goes above the threshold.

- RELEASE (RL): is the time needed by the filter to cut the signal once it goes below the threshold.

```
I N A     G a t e     O n
A T 1 . 0 m s     R L 0 . 5 0 S
```

Threshold

Allows to set the threshold level: if the signal goes below this threshold the Noise Gate reduces the level. The editing values are within the following ranges: +8dBu÷-60dBu, with 2dBu steps.

Rage

Allows to set the amount of the signal level reduction.
The editing values are within the following ranges: 0dBu÷-80dBu, with variable steps.

```
I N A     G a t e     O n
T H R - 6 0 . 0   R G - 8 0 . 0
```

5.3.3 Input EQ

Input equalizer with 5 parametric filters.
Allows to alter the overall tone of the signal connected to the respective input.
Also called **Master EQ**, the equalization of the input signal effects all the outputs connected to
The input and the input SUM.
This component's characteristic quality and programmability (identical to the output Equalizer)
enable it to be used so effectively and flexibly as to make the use of graphic equalizers often

unnecessary.

```
→   I n p u t   E Q
```

```
IN A ▷ ADC  METER  5-BAND EQ  DELAY
```
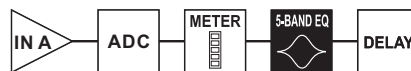
Each equalizer has 5 pages (one for each filter), showing the name of the input it affects and the
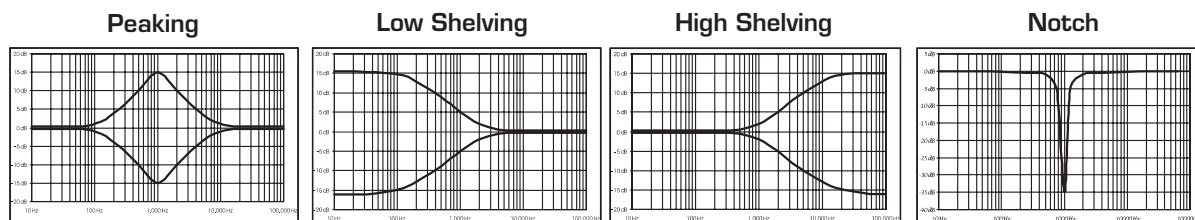number of the filter.

```
I N A       E Q 1     P e a k
2 k 0 0   1 . 0       - 5 . 0
```

The following editable parameters are available for each filter:

a. Type of filter

Allows to choose among Peaking, Low or High Shelving with a slope of 6 or 12 dB per octave and
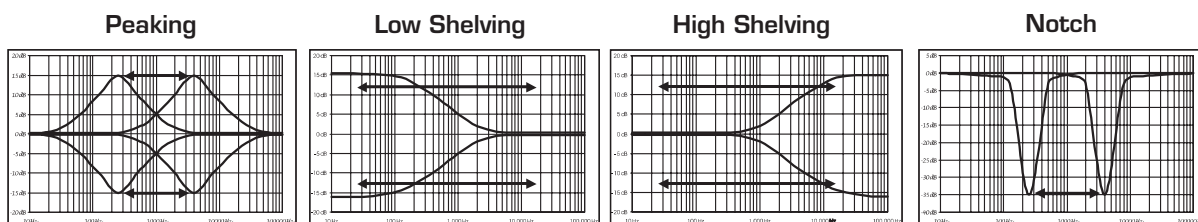Notch filter.

```
I N A       E Q 1     P e a k
2 k 0 0   1 . 0       - 5 . 0
```

Peaking	Low Shelving	High Shelving	Notch

b. Centre Frequency/Cutoff Frequency

Allows to choose the centre frequency of the Peaking curve and Notch filter, or the cutoff frequency of
Shelving curves.

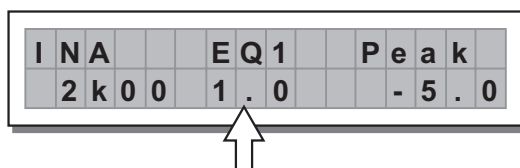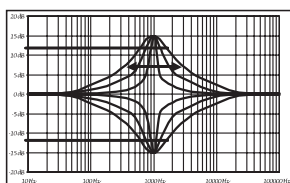```
I N A   E Q 1   P e a k
2 k 0 0   1 . 0   - 5 . 0
```

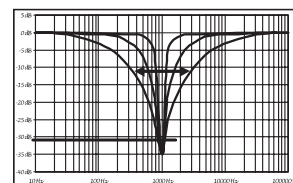| Peaking | Low Shelving | High Shelving | Notch |
|---------|--------------|---------------|-------|

### c. Bandwidth

Allows to choose the width in octaves of the Peaking or Notch type curve. It s not used with Shelving curves.

```
I N A   E Q 1   P e a k
2 k 0 0   1 . 0   - 5 . 0
```
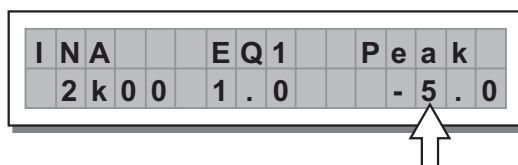
**Peaking**



**Notch**
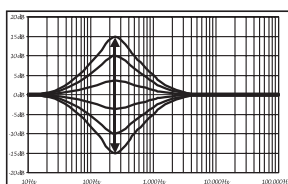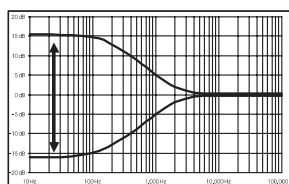


### d. Gain

Allows to control the boost or cut of the selected frequencies.
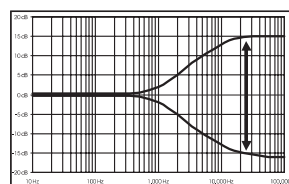It's not used with the **Notch Filter**, which has a fixed cut.

```
I N A      E Q 1     P e a k
2 k 0 0    1 . 0         - 5 . 0
```

Peaking   **Low Shelving**   **High Shelving**

The values can be set in the following ranges:

5-BAND FULL PARAMETRIC EQ				
NAME	**TYPE**	**GAIN**	**FREQ**	**WIDTH**
Peak	**Peaking**			**0.05 ~ 3.00 oct** (step 0.05 oct)
LoSh 6	**Low Shelving 6dB/oct**			
LoSh 12	**Low Shelving 12dB/oct**	**±15dB** (step 0.5dB)	**15.6Hz ~ 16kHz**	
HiSh 6	**High Shelving 6dB/oct**			
HiSh 12	**High Shelving 12dB/oct**			
Notch	**Notch Filter**	**- 45dB** (fix)		**0.05 ~ 3.00 oct** (step 0.05 oct)

5.3.4 Xover
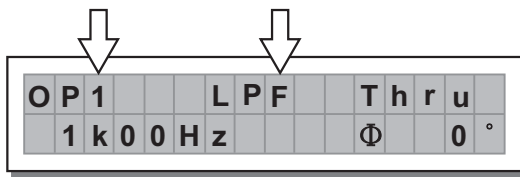
Low-pass and high-pass filters.
Made up of a combination of a low-pass filter and high-pass filter, the crossover allows to divide the audio signal into segments that can be used by the individual section of a sound system (for example High, Mid & Low).
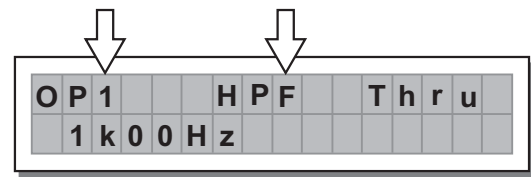
```
→   X o v e r
```
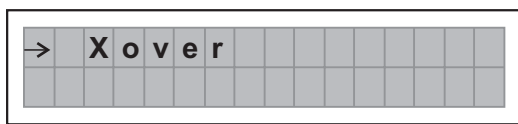
Each Xover has 2 slightly different pages (one for each filter), where the name of the output it affects and the type of filter are shown.

O P 1	L P F	T h r u
1 k 0 0 H z	Φ	0 °

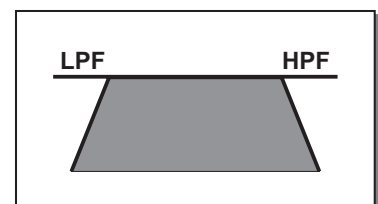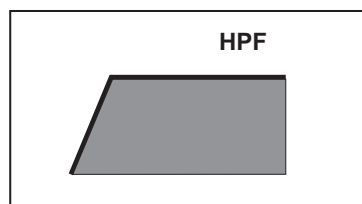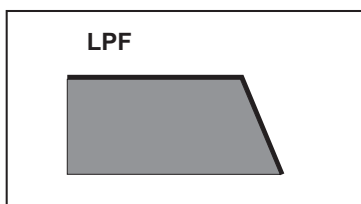| O P 1	H P F	T h r u
1 k 0 0 H z		

Output 1 - Low Pass Filter   Output 1 - High Pass Filter

Low Pass Filter

The low-pass filter allows all the frequencies below a specific frequency to pass, whereas it cuts all the frequencies above it.

High Pass Filter

The high-pass filter allows all the frequencies above a specific frequency to pass, whereas it cuts all the frequencies below it.

Signal segment obtained with the combination of LPF and HPF.

Each filter has the following editable parameters:
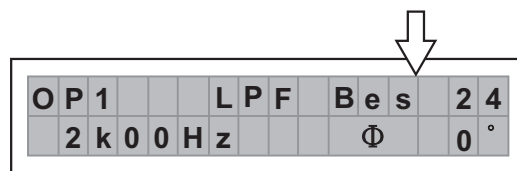
Type of filter

Allows to choose three different types of filter and different attenuation slopes:

Butterworth (But) at 6, 12, 18 or 24dB per octave,
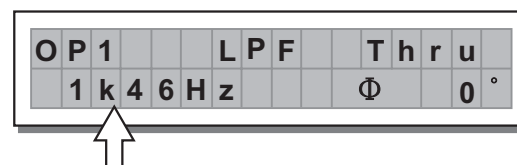**Bessel** (Bes) at 12, 18 or 24dB per octave,
Linkwitz-Riley (LR) a 12, 24 or 48dB per octave.

By setting the **Thru** value, the filter is disabled and the signal passes without its frequency being altered.

O P 1	L P F	B e s	2 4
2 k 0 0 H z		Φ	0 °

Crossover frequency

Allows to choose the filter cutoff frequency.

O P 1	L P F	T h r u
1 k 4 6 H z	Φ	0 °

Phase
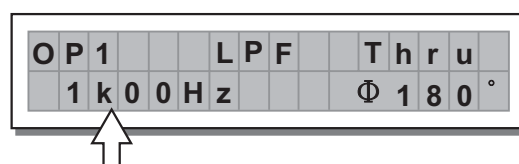
Allows fine control (in 5° steps) of the signal's phase.
The effect of this control is summed with that of the Output Polarity function (0° ~ 180°).
In this way it's possible to adjust the phase of each individual output with 5° steps through a full 360°.

Note: this control is only in the Low-Pass Filter window.

O P 1	L P F	T h r u
1 k 0 0 H z	Φ 1 8 0 °	

The values can be set in the following ranges:

| XOVER					
	NAME	TYPE	SLOPE	FREQ	PHASE
LPF	Thru			15.6Hz ~ 16KHz	0° ~ 180° (Stp 5°)
	But	Butterworth	6, 12, 18, 24 dB/oct		
	Bes	Bessel	12, 18, 24 dB/oct		
	LR	Linkwitz-Riley	12, 24, 48 dB/oct		
HPF	Thru			15.6Hz ~ 16KHz	
	Hish 6	Butterworth	6, 12, 18, 24 dB/oct		
	Hish 12	Bessel	12, 18, 24 dB/oct		
	Notch	Linkwitz-Riley	12, 24, 48 dB/oct		

5.3.5 Output EQ

Output equalizer with 5 parametric filters.

Also called Channel EQ, allows to alter the tone of each individual output.

The characteristics of quality and programmability are identical to those of the Input Equalizer and enable this unit to be used extremely effectively and flexibly.

```
→  Output   EQ
```
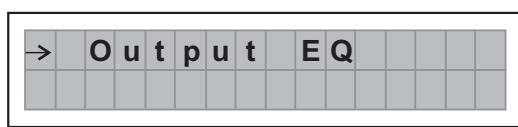

Each equalizer has 5 pages (one per filter), indicating the name of the output it effects and the number of the filter.

```
OP1      EQ1    Peak
  2k00   1.0       +1.5
```
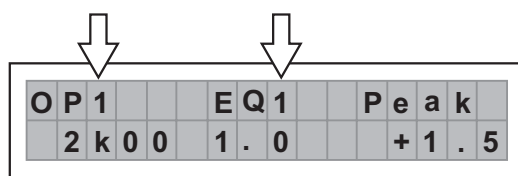
Example: Output 1 - Filter 1

Since technical specifications and editing fields of the Output EQ are identical to those of the Input EQ, please refer to INPUT EQ section for descriptions.
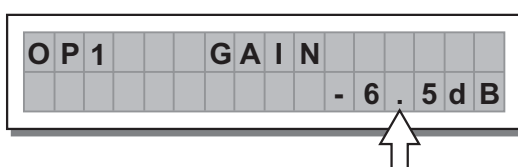
5.3.6 Output Gain

Output level control

Allows to adjust the signal level of each individual output.

```
→  Output   Gain
```

Editing values are between **+6 dB ~ -30 dB, with 0.5 dB steps.**

```
OP1      GAIN
                -6.5dB
```

Note: The level of each output is shown by the respective OUTPUT LEVEL LED ladder. To avoid distortion, don't let the red CLIP LED light up. As automatic protection, you can also enable the LIMITER (EDIT menu) on the outputs that require it. In this case, remember that enabling the LIMITER changes the display mode on the relative LED ladder: in fact, the level shown is no longer the absolute output level, but the level of the signal In relation to the LIMITER threshold.

5.3.7 Output Pol
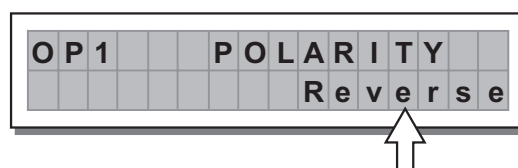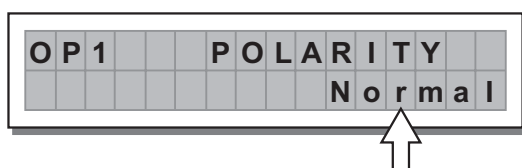
Controls the output's polarity.

Allows to invert the phase of the signal of individual outputs.

```
→  O u t p u t   P o l
```
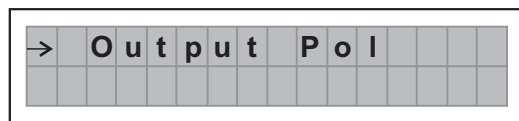
Editing values are:

Normal: leaves the phase unchanged

```
O P 1     P O L A R I T Y
                N o r m a l
```

Reverse: shifts the phase through 180°, inverting it.

```
O P 1     P O L A R I T Y
                R e v e r s e
```

The effect of this control is summed with that of the Φ parameter of the **LPF** filter (**Xover - EDIT** menu), which operates with 5° steps in a range of between 0° and 180°.

In this way it's possible to set the phase of each individual output with 5° steps within a complete 360° revolution, a very useful function when assembling arrays of speaker enclosures, in the control of the interpolation between various enclosures or between sections of the same system.

5.3.8 Output Limiter

a. Output level limiter

Allows to keep the signal of each individual output within a set level.

It can be used effectively to protect the components of a sound system.

```
→  O u t p u t   L i m i t e r
```
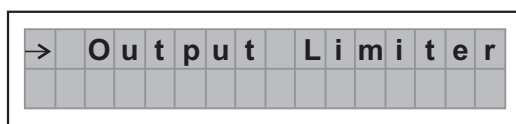
The following editable parameters are available:

b. Reaction times

Allows to choose between 3 types of Limiter reaction speed.

In fact, these are attack and release times that are optimised so that the Limiter reacts more or less rapidly when the signal exceeds or drops below the threshold:

Fast   short times, suited to rapid Limiter operation. Normally more suited to outputs dedicated to high frequencies.

Normal   intermediate times, suited to the majority of applications. Normally more suited to outputs dedicated to mid frequencies or full-range systems.

Slow   long times, suited to avoiding rapid repeated level jumps (pump effect). Normally most suited to outputs dedicated to low frequencies.

```
O P 1     L I M I T E R
    F a s t         o f f
```
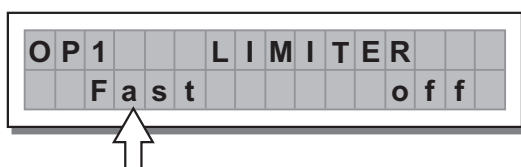
LIMITER	ATTACK	RELEASE
FAST	1 ms	10 ms
NORMAL	8 ms	80 ms
SLOW	45 ms	450 ms

c. Threshold

Allow to set the level above which the Limiter intervenes (limiting the signal) and below which it leaves the signal unchanged.

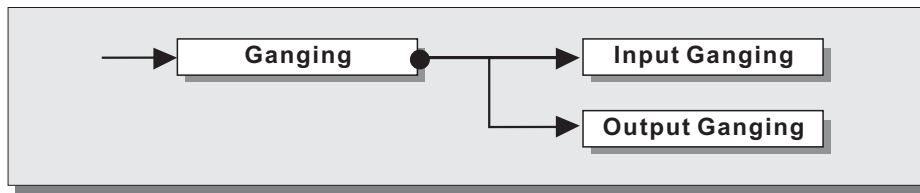The editing values are within the following ranges: **+19.8dBu ~ -10dBu, with 0.2dBu steps**
7.574V ~ 0.245V with variable steps

The measurement unit can be chosen with the Lim. Thresh. Unit function (**UTILITY** menu - **Units** submenu). The Off value disables the LIMITER, whereas any other value enables it.

```
┌─────────────────────┐     ┌─────────────────────┐
│ O P 1      L I M I T E R │     │ O P 1      L I M I T E R │
│   S l o w        5 . 8 │     │   S l o w          O f f │
└─────────────────────┘     └─────────────────────┘
           ⇧                              ⇧
```

IMPORTANT! Enabling the LIMITER on a specific output also changes the way in which the level is displayed on the corresponding **LED ladder:** In fact, the level shown on this ladder is no longer the "absolute" output level, but the level of the signal at -24dB, -12dB, -6dB compared to the **LIMITER's threshold** (orange **LIMIT LED**), no matter what the threshold value is.

5.4 UTILITY Menu

This menu comprises a series of submenus that allow to set a series of system options and access certain utilities, such as the control of the Multimedia Memory CARD or protection against accidental or unauthorized changes:

```
menu
UTILITY ●──┬──► Ganging ●──┬──► Input Ganging
           │               └──► Output Ganging
           │
           ├──► Units ●──┬──► Delay Unit
           │             ├──► Lim. Thresh. Unit
           │             └──► Temperature Unit
           │
           ├──► Misc. Setup ●──┬──► Input Select
           │                   ├──► Output Meters
           │                   ├──► Temperature
           │                   ├──► Wake Up
           │                   └──► LCD Contrast
           │
           ├──► Lock ●──► Lock
           │
           ├──► Memory Card ●──► Format Card
           │
           └──► Comm.Setup ●──┬──► Preset Change RX
                              └──► ID Select
```

5.4.1 GANGING SUBMENU

This submenu allows to group together the treatment of similar inputs and/or outputs.
Similar is intended as meaning elements which have the same properties and/or the same structure.
For example, the right and left sections of a stereo system are similar, as they are made up symmetrically of the same quantity and type of elements (the same components for High, Mid and Low frequencies).
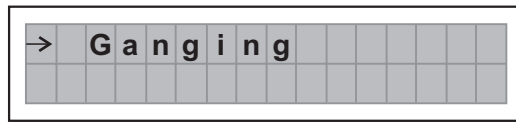
The practical use of the Ganging function consists in the possibility of editing with identical values the parameters of similar elements, carrying out single (instead of double) operations.

For example, it's possible to set the same Delay value or equalization on both inputs with just one operation; or set identical Xover parameters for the various outputs fed to a stereo sound system; or yet again, enable The LIMITER simultaneously on the two outputs dedicated to two mono stage monitors.

The system automatically recognizes incompatible elements contained in the various configurations and only enables the Ganging function where it can effectively be used. Therefore, the Ganging function doesn't have any effect on the MONO setups. The Ganging function can be enabled separately for both groups of input and groups of outputs.

IMPORTANT: Precisely for its characteristics, the Ganging function affects the way in which the relative parameters audio are edited or represented:
As soon as Inputs and/or Outputs are ganged, the various menu pages only show the values that can actually be used. This however doesn't mean that the values change immediately. On the contrary, the values remain unchanged (Even if not shown) until new values are entered. Only at that point ganged, Inputs and/or Outputs assume the same value with the just one operation.

For example, even if the display shows that "Input A&B" are ganged in the page with a certain parameter, the value shown remains that of Input A until a new value is entered, as Input B doesn't automatically assume the values of Input A.

To check this:

1. set Input Gangin=Off, load the *Default* PRESET, set INA Delay=1 and INB Delay=0;
2. set Input Gangin=On, return to the Input Delay menu: the display shows INA&B Delay=1:
a. if you leave the value unchanged and once again set Input Gangin=Off
 going back to the Input Delay menu, the display shows INA Delay=1 and INB Delay=0 ("original" values).
b. if you change the value, for example INA&B Delay=3, and you once again set Input Gangin=Off
 going back to the Input Delay menu, the display shows INA Delay=3 and INB Delay=3 ("new" values).

This condition is used to avoid accidental or temporary enabling of the Ganging function from changing the values of all the stored PRESET. The rule can be summed up as follows: "only the values that have to be intentionally changed are changed".

So generally speaking, to avoid contradictions, oversights and confusion between what is shown and what is effectively carried out, it s advisable to enable the Ganging functions before starting to edit a PRESET. Moreover, it s best to make certain to effectively set the required value, manually confirming all the parameters required.
Note: The elements in Ganging assume the "new" value as soon as the DIAL changes the status of the "old " value. So, if the value which has to be allocated to the elements in Ganging is the same as the old value, it's necessary to use the DIAL, temporarily change the value (even only by one step) and then go back to the "old" value.
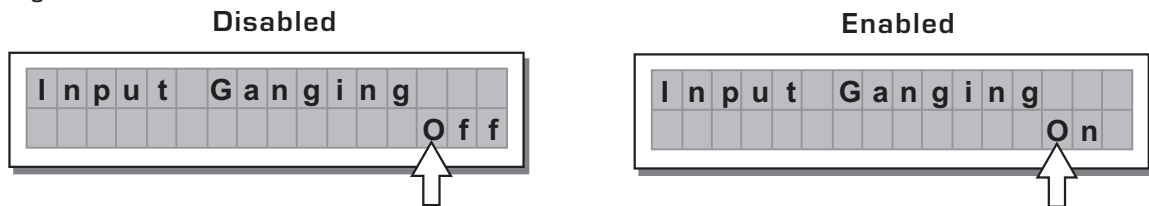
a. Input Ganging

Allows to enable/disable Ganging function on the inputs.

The settings are:

Disabled

```
I n p u t   G a n g i n g
                    O f f
```

Enabled

```
I n p u t   G a n g i n g
                     O n
```

b. Output Ganging

Used to enable/disable Ganging function on the outputs.

The settings are:

Disabled

```
O u t p u t   G a n g i n g
                      O f f
```

Enabled

```
O u t p u t   G a n g i n g
                       O n
```
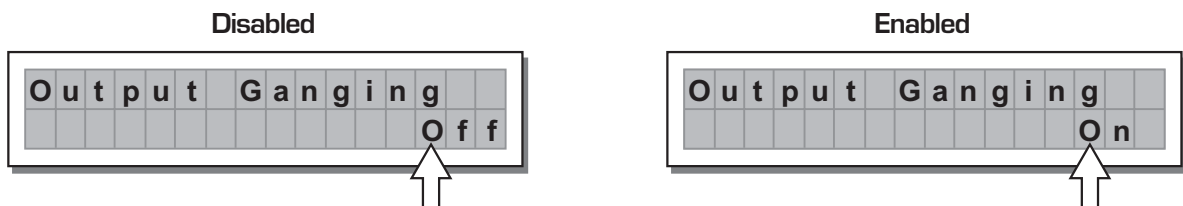
5.4.2 UNITS SUBMENU
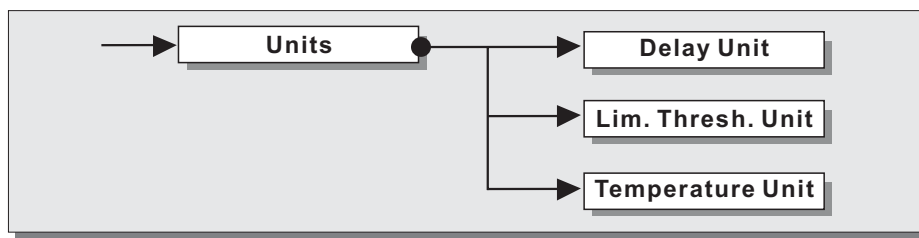
Used this submenu to choose the measurement units to be used with certain functions.

```
→  U n i t s
```
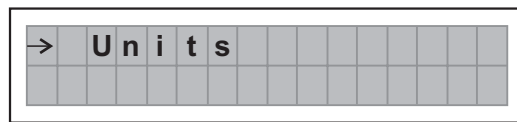
a. Delay Unit

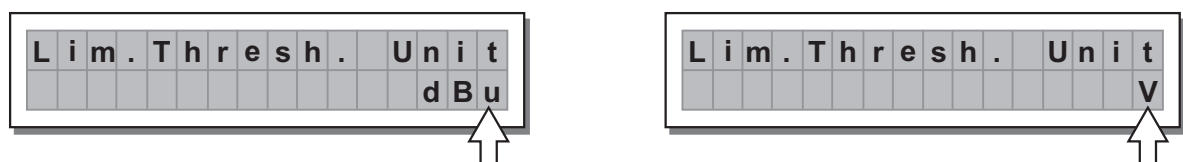Used to set the measurement units in which Delays are expressed (DELAY menu).

The options include: **m** = meters - **mm** = millimeters - **ms** = milliseconds - **ms** = microseconds

Measurement units for Input Delay

```
D e l a y   U n i t
I n   m s          O u t   u s
```

Measurement units for Output Delay

```
D e l a y   U n i t
I n   m            O u t   m m
```
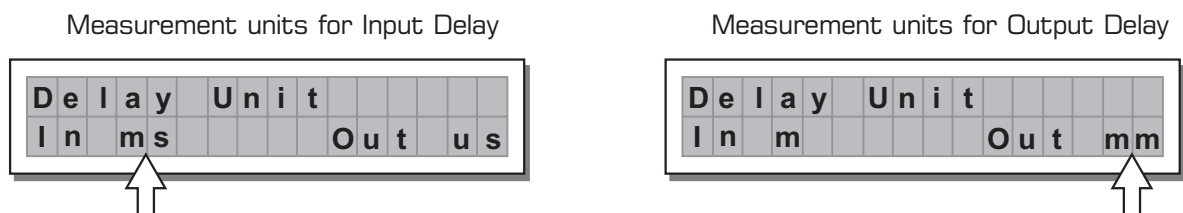
b. Lim. Thresh. Unit

Used to set the measurement units for the threshold of the Limiter (**EDIT** menu - **Output** Limiter).

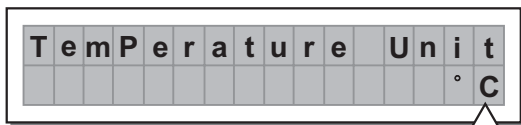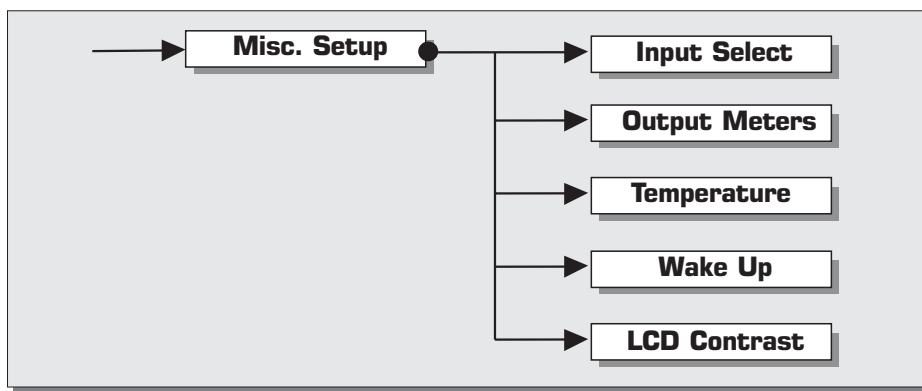The options include: **dBu =** decibel (0 dBu = 0.775 V rms) - **V =** volt

```
L i m . T h r e s h .   U n i t
                          d B u
```

```
L i m . T h r e s h .   U n i t
                            V
```
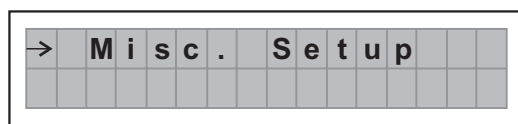
c. Temperature Unit

Used to set the measurement units for the Temperature function (**UTILITY** menu - Misc. Setup submenu).
The options include: **˚C** = degrees Centigrade - **˚F** = degrees Fahrenheit

```
T e m P e r a t u r e   U n i t
                           ° C
```

```
T e m P e r a t u r e   U n i t
                           ° F
```

5.4.3 Misc. Setup submenu

Use this submenu to set a series of system options.

```
→   M i s c .   S e t u p
```

a. Input Select

Used to choose inputs which MAXIDRIVE3.4+ should use.
The options include:

Digital Inputs

```
I n p u t   S e l e c t
                   D i g i t a l
```

Analog Inputs

```
I n p u t   S e l e c t
                   A n a l o g
```
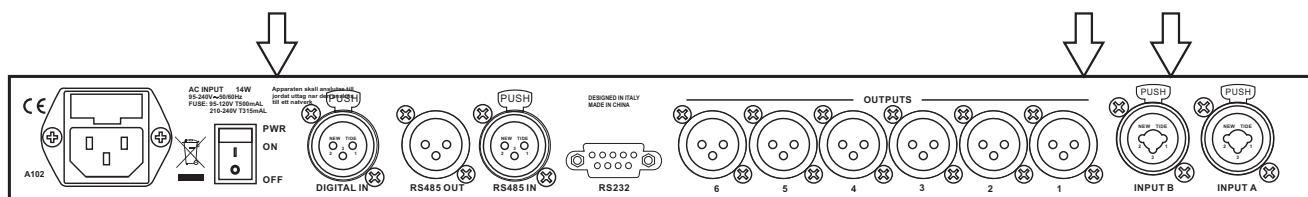

The inputs selected become **Input A** and Input **B**.

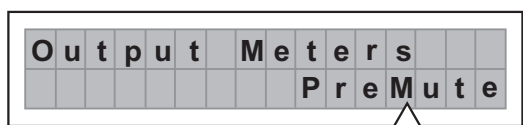Any signal on the inputs not selected is ignored.

b. Output Meters

Used to decide whether to display the outputs signal before or after MUTE.
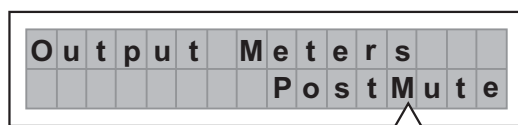The options include:

PreMute
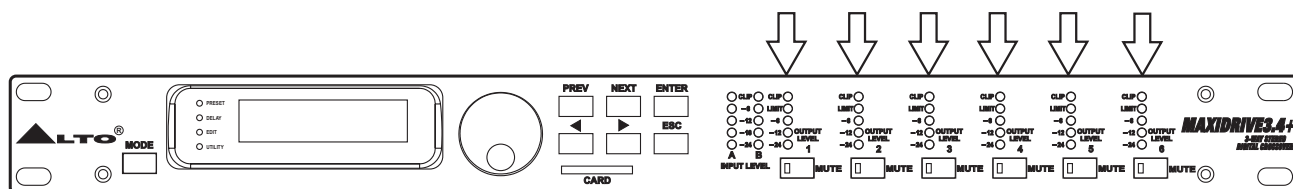the signal is always shown
no matter what the MUTE status

```
O u t p u t   M e t e r s
                 P r e M u t e
```

PostMute
the signal is only shown if
the output isn't in MUTE

```
O u t p u t   M e t e r s
               P o s t M u t e
```
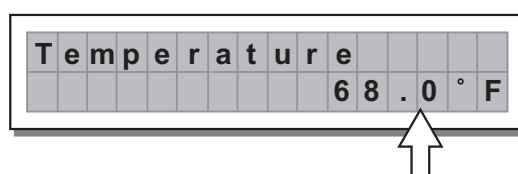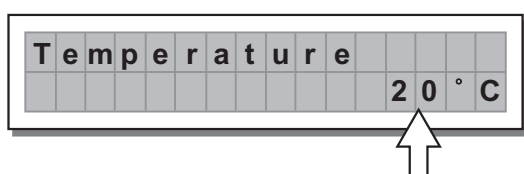
c. Temperature

Be used to key in the value of the environmental temperature of place of installation.

The system uses this value to automatically compensate for the differentials due to the difference speed of sound Transmission according to the air temperature.

This allows to set the delays during the sound-check and only have to reset them automatically when necessary (For example during a concert, in the event of big jumps in temperature, etc.).

The editing values are in the following ranges: **+60°C ~ -30°C** with 1°C steps
140.0°F ~ -22.0°F with 1.8°F steps

```
Temperature
                20°C
```

```
Temperature
              68.0°F
```

Note: the measurement units can be chosen between °C (degrees Centigrade) and °F (degrees Fahrenheit) by means of the Temperature Unit function (UTILITY menu - Units submenu).
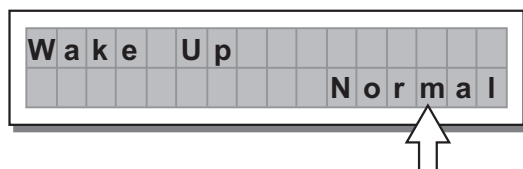
d. Wake Up

Allows to choose the mode in which MUTE functions are restored when the MAXIDRIVE3.4+ is switched on.
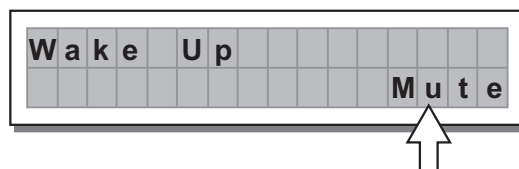
The options include:

Normal	**Mute**
when switched on, the system restores the last MUTE configuration before switching off	when switched on, the system automatically sets all the outputs in MUTE

```
Wake  Up
              Normal
```
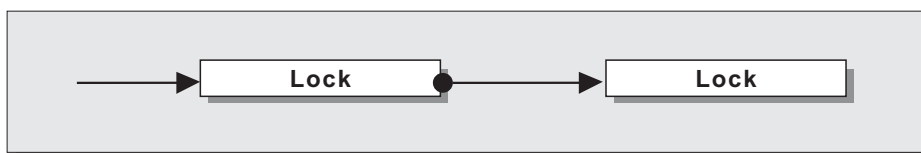
```
Wake  Up
                Mute
```

e. LCD Contrast

Allows to adjust the Display contrast.

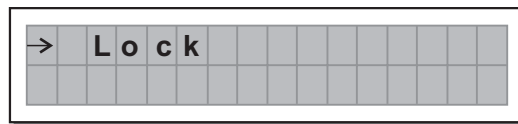The values are in the following range: 0 (minimum contrast) ~ 32 (maximum contrast).

```
LCD  Contrast
                  26
```

5.4.4 LOCK SUBMENU

Be used to enable or disable the protection of the system against accidental or unauthorized changes.

```
→    L o c k
```

This function is very useful whenever even temporary changes or tampering with the settings stored in the system must be prevented. For example: fixed installations used by several operators (discotheques, clubs, conference halls, etc.), sound system rental, etc.
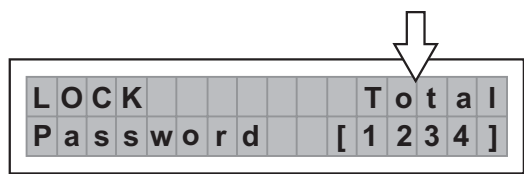
How to enable **protection**

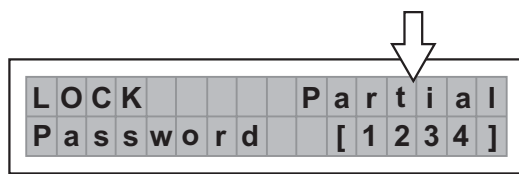• First of all, choose the protection mode:

Two modes are available:

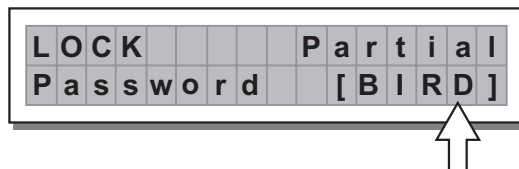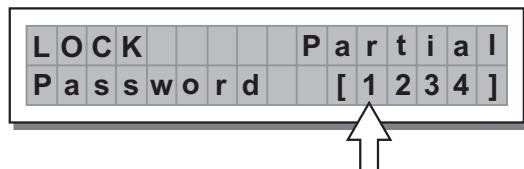| **Total:**	**Partial:**
all editing functions are blocked and access to the PRESET menu is disabled	only the parameters relative to the Inputs can be edited (Delay, Gain, EQ), all other editing functions are blocked and access to the PRESET menu disabled

```
L O C K          T o t a l
P a s s w o r d    [ 1 2 3 4 ]
```

```
L O C K          P a r t i a l
P a s s w o r d    [ 1 2 3 4 ]
```

• Then use the ◄ and ► keys to access the area in which the **password** is entered.

IMPORTANT! The protection cannot be unlocked without the **password**!
So write it down or at least choose a word that is easily remembered.
The password is made up of four alphanumerical characters, obtainable using the ◄ and ► keys and editable with the **DIAL**.

```
L O C K          P a r t i a l
P a s s w o r d    [ 1 2 3 4 ]
```

```
L O C K          P a r t i a l
P a s s w o r d    [ B I R D ]
```

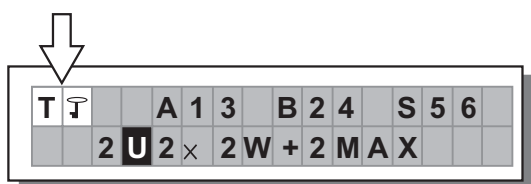• After entering the password, press **ENTER**.

Note: Confirmation is only accepted if the cursor is positioned on one of the passwords four characters. This allows to avoid accidental enabling, without having seen the password.

Protection is enabled and the system takes up default status.
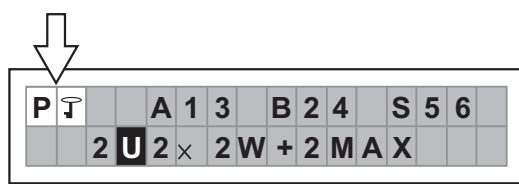How to disable the **protection**
If the protection is enabled, when the system is in default status (i.e. when none menu **LEDs** are lit and therefore no type of editing is enabled), the following appears on the display:
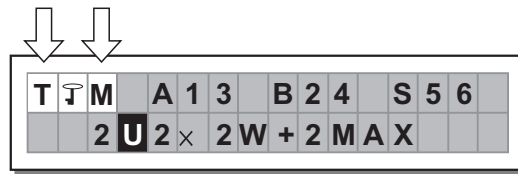
Total Protection enabled

Partial Protection enabled

```
T      A 1 3   B 2 4   S 5 6
     2 U 2 ×  2 W + 2 M A X
```

```
P      A 1 3   B 2 4   S 5 6
     2 U 2 ×  2 W + 2 M A X
```

```
T T M   A 1 3   B 2 4   S 5 6
      2 U 2 × 2 W + 2 M A X
```

Note: alongside the symbol of Total or Partial protection, the letter **M** may also appear. This means that the system is protected, but the PRESET in question has undergone one or more changes that have not yet been stored. You can however switch the system on and off without any problems, as the current settings are kept in the buffer memory.
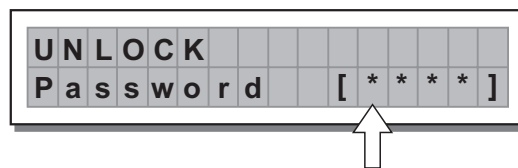
Nevertheless, if this is your work setup, it's advisable to store it in a PRESET.

To unlock the protection:

 • Access the **LOCK** submenu.

The display shows the prompt for entering the password to unlock the protection.

The four alphanumeric characters of the password are encrypted.

```
U N L O C K
P a s s w o r d   [ * * * * ]
```

Enter in the **password** using the combination of the◀ and▶ keys and the **DIAL**, then press **ENTER**.
Note: in the event of an incorrect password, the display prompts again, encrypting all the characters again.

```
U N L O C K
P a s s w o r d   [ B I R D ]
```
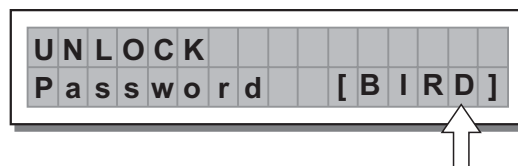
 Protection is unlocked and the system enters default status.

5.4.5 MEMORY CARD SUBMENU
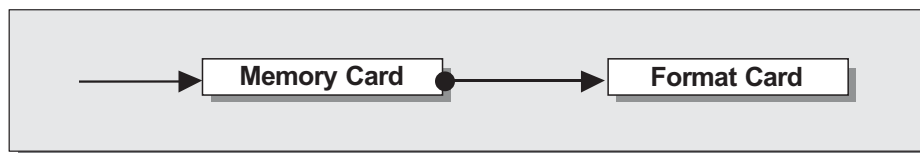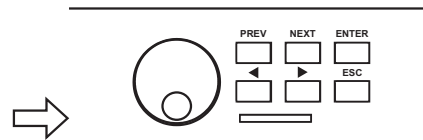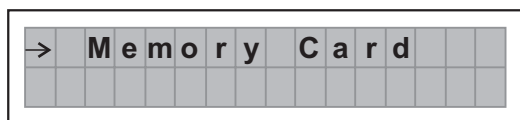

Allows to **format** the Multimedia Memory Card.

Formatting is the preparation of the memory areas of the Card. Without formatting (or without compatible formatting)

The Card can't be used by the system.

```
→ M e m o r y   C a r d
```


How to **format** the Card

 • Insert a Multimedia Memory Card in the slot.
   New or used Cards can be used, providing they are compatible (min 1MB).

ATTENTION! Formatting cancels any data contained in the Card.

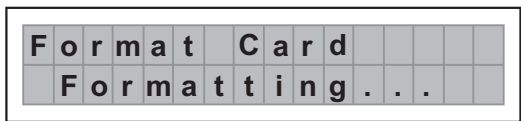In the Memory Card submenu, press **ENTER**.

The Format Card page appears

```
F o r m a t   C a r d
```

• Press ENTER.

The system formats the Card until it communicates that it has completed.

This operation only requires a few seconds.

```
F o r m a t   C a r d
   F o r m a t t i n g . . .
```

The Card is ready to be used.

```
F o r m a t   C a r d
   F o r m a t   D o n e   !
```

Note: in the event of an error or a Card fault, if there is no Card in the slot or if the Card is removed during formatting, the display shows the following message:

```
F o r m a t   C a r d
   F o r m a t   E r r o r   !
```
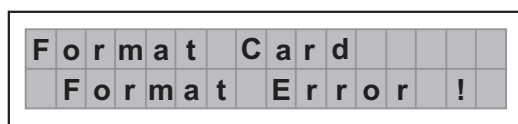
During formatting, the system automatically stores the *Default* PRESET in all the 128 CARD memory areas.

Note: since the system must always be configured, there are no empty memory areas. All the User and Card areas not yet used by stored user data are automatically occupied by the *Default* PRESET, which contains a standard start configuration with all the values of the various parameters at zero.

5.4.6 COMM. SETUP SUBMENU
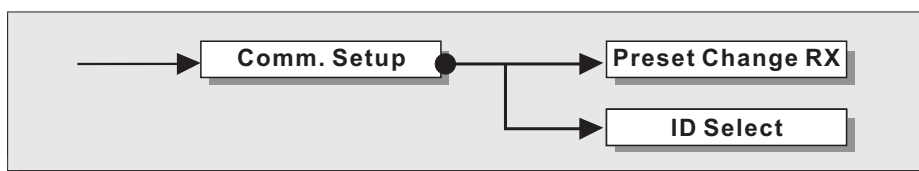
This submenu allows access to the setting of communication with other units via the serial ports.
Note: the **Dump Out Preset** and **Incoming Dump** functions are an exception, as they're controlled directly in the **PRESET** menu.

```
→   C o m m . S e t u p
```
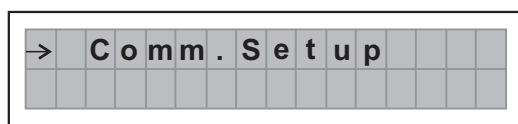
PRESET Change RX

Allows to accept or ignore the PRESET Change command sent via the serial ports from a computer or another MAXIDRIVE3.4+ when it loads a PRESET.
The settings can be:
Ignore PRESET Change commands received. Accept and execute PRESET Change commands.

```
P r e s e t   C h a n g e   R X
                   A c c e p t
```

```
P r e s e t   C h a n g e   R X
                   I g n o r e
```

The PRESET Change command is completely identical to MIDI Program Change: the transmitting unit sends an instruction containing a number of PRESETS to load; the receiving units (if they are able to accept the command) each loads into its own memory the PRESET with the corresponding number.
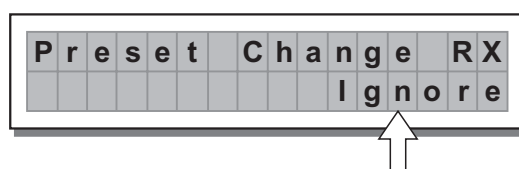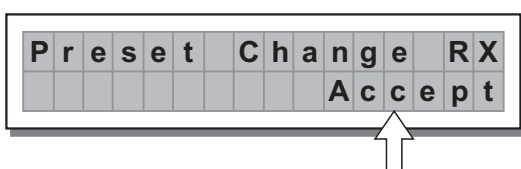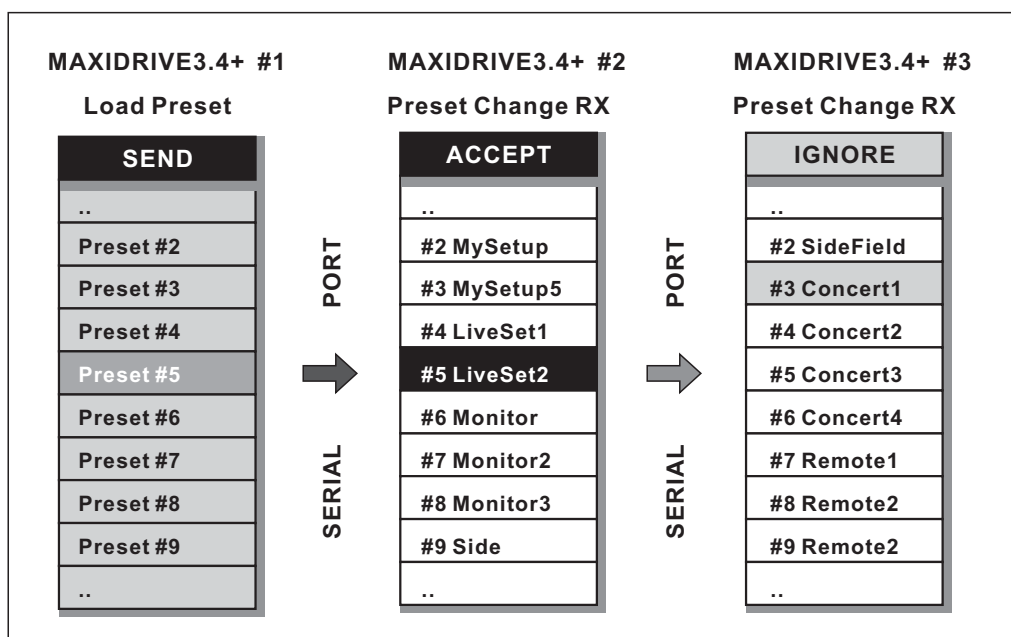
This means that, in a chain of MAXIDRIVE3.4+, all the units set with PRESET Change RX = Accept load the same number of PRESET, in spite of the fact that it corresponds to PRESETS with different contents in the various units.

Note: the PRESET Dump function is used to transmit the same contents.

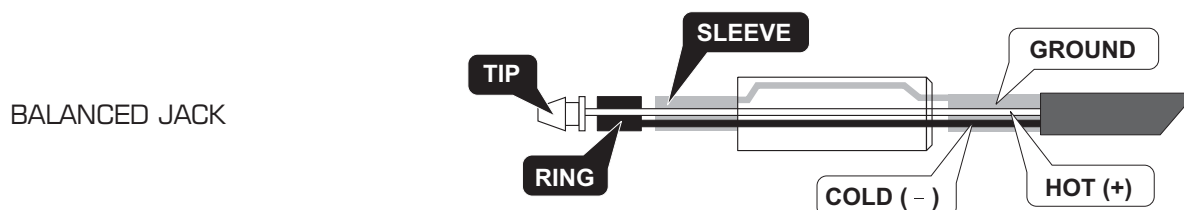| MAXIDRIVE3.4+ #1 Load Preset		MAXIDRIVE3.4+ #2 Preset Change RX		MAXIDRIVE3.4+ #3 Preset Change RX
SEND		**ACCEPT**		**IGNORE**
..		..		..
Preset #2		#2 MySetup		#2 SideField
Preset #3		#3 MySetup5		#3 Concert1
Preset #4		#4 LiveSet1		#4 Concert2
Preset #5	PORT	#5 LiveSet2	PORT	#5 Concert3
Preset #6		#6 Monitor		#6 Concert4
Preset #7		#7 Monitor2		#7 Remote1
Preset #8	SERIAL	#8 Monitor3	SERIAL	#8 Remote2
Preset #9		#9 Side		#9 Remote2
..		..		..

6. CONNECTIONS

The following diagrams show the schemes of the recommended cables and some connection examples referred to various system configurations.
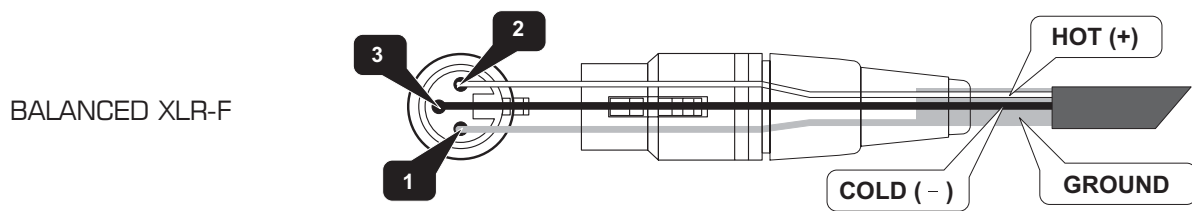
Inputs A & B, Digital IN, RS485 IN

BALANCED XLR-M
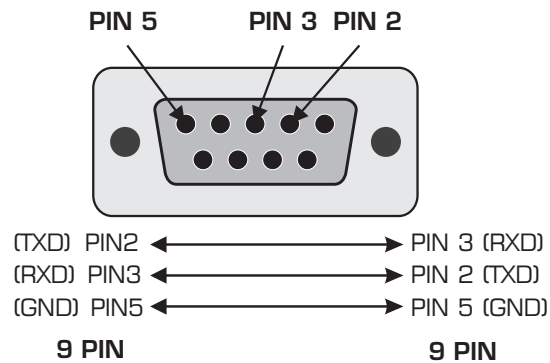
Inputs A & B

BALANCED JACK
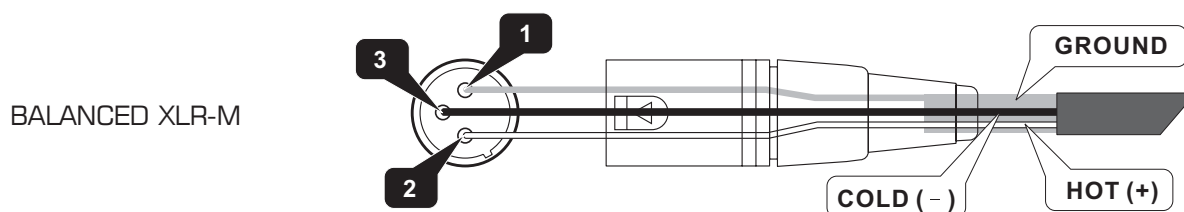
6. CONNECTIONS

Outputs 1 ~ 6, RS485 OUT

BALANCED XLR-F

HOT (+)

COLD (−)

GROUND

RS232

RS232 (9Pin-F)

PIN 5   PIN 3 PIN 2

(TXD) PIN2	←→	PIN 3 (RXD)
(RXD) PIN3	←→	PIN 2 (TXD)
(GND) PIN5	←→	PIN 5 (GND)

9 PIN   **9 PIN**

The wire must be changed between 2,3 pin.

Special attentions for RS232 interface:

1. Be careful not to use the pin-to-pin cable in the system, it may damage the communication part of this unit.
2. Be sure to use the female connector on both sides of the cable.
3. The length of this cable must not exceed 30 meters, or there would be some unexpected communication errors.
4. If you want to use a long distance remote control, it would be better to use shielding wire for this cable.

7.APPLICATION

The following diagrams show the MAXIDRIVE3.4+'s various system configurations, as if to say the various input and output hardware combinations.

7.1.Factory Preset Configuration

#	Name	Configuration	Configuration
01	**DEFAULT**	A135 B246	Default preset - routing = 3-WAY STEREO
02	**2X2W+MAX**	A13 B24 S56	2-WAY STEREO + 2 MONO FULL-RANGE OUT
03	**2X3W**	A135 B246	3-WAY STEREO
04	**2X3W+MSB+MAX**	A13 B24 S56	3-WAY STEREO with MONO SUB + 1 MONO FULL-RANGE OUT
05	**4W+2MAX**	A1324 S56	4-WAY MONO + 2 MONO FULL-RANGE OUT
06	**4W+BSB+2MAX**	A123 B4 S56	4-WAY MONO with B-SUB + 2 MONO FULL-RANGE OUT
07	**5W+MAX**	A12345 S6	5-WAY MONO + 1 MONO FULL-RANGE OUT
08	**5W+BSB+MAX**	A1234 B5 S6	5-WAY MONO with B-SUB + 1 MONO FULL-RANGE OUT
09	**6W**	A123456	6-WAY MONO
10	**6W+BSB**	A12345 B6	6-WAY MONO with B-SUB

7.2.Line Array Preset Parameters: 2S18+6208U11

7.2.1 EDIT→Xover

OP1&2	LPF	LR24	125.0 Hz	Φ0°
	HPF	LR24	41.2 Hz	
OP3&4	LPF	Thru	2K00 Hz	Φ0°
	HPF	LR24	82.5 Hz	
OP5&6	LPF	Thru	2K00 Hz	Φ0°
	HPF	LR24	82.5 Hz	

7.2.2 EDIT→Output EQ

OP1&2	EQ1	PEAK	41.2	1.95	+3.0
	EQ2	PEAK	101.0	1.95	+6.0
	EQ3	PEAK	2K00	1.00	0.0 (Default)
	EQ4	PEAK	2K00	1.00	0.0 (Default)
	EQ5	PEAK	2K00	1.00	0.0 (Default)
OP3&4	EQ1	PEAK	5K10	1.0	-6.0
	EQ2	Hish6	10K93		-3.0
	EQ3	PEAK	10K20	1.95	+3.0
	EQ4	PEAK	2K00	1.00	0.0 (Default)
	EQ5	PEAK	2K00	1.00	0.0 (Default)
OP5&6	EQ1	PEAK	5K10	1.0	-6.0
	EQ2	Hish6	10K93		-3.0
	EQ3	PEAK	10K20	1.95	+3.0
	EQ4	PEAK	2K00	1.00	0.0 (Default)
	EQ5	PEAK	2K00	1.00	0.0 (Default)

7.2.3 EDIT→Output Gain
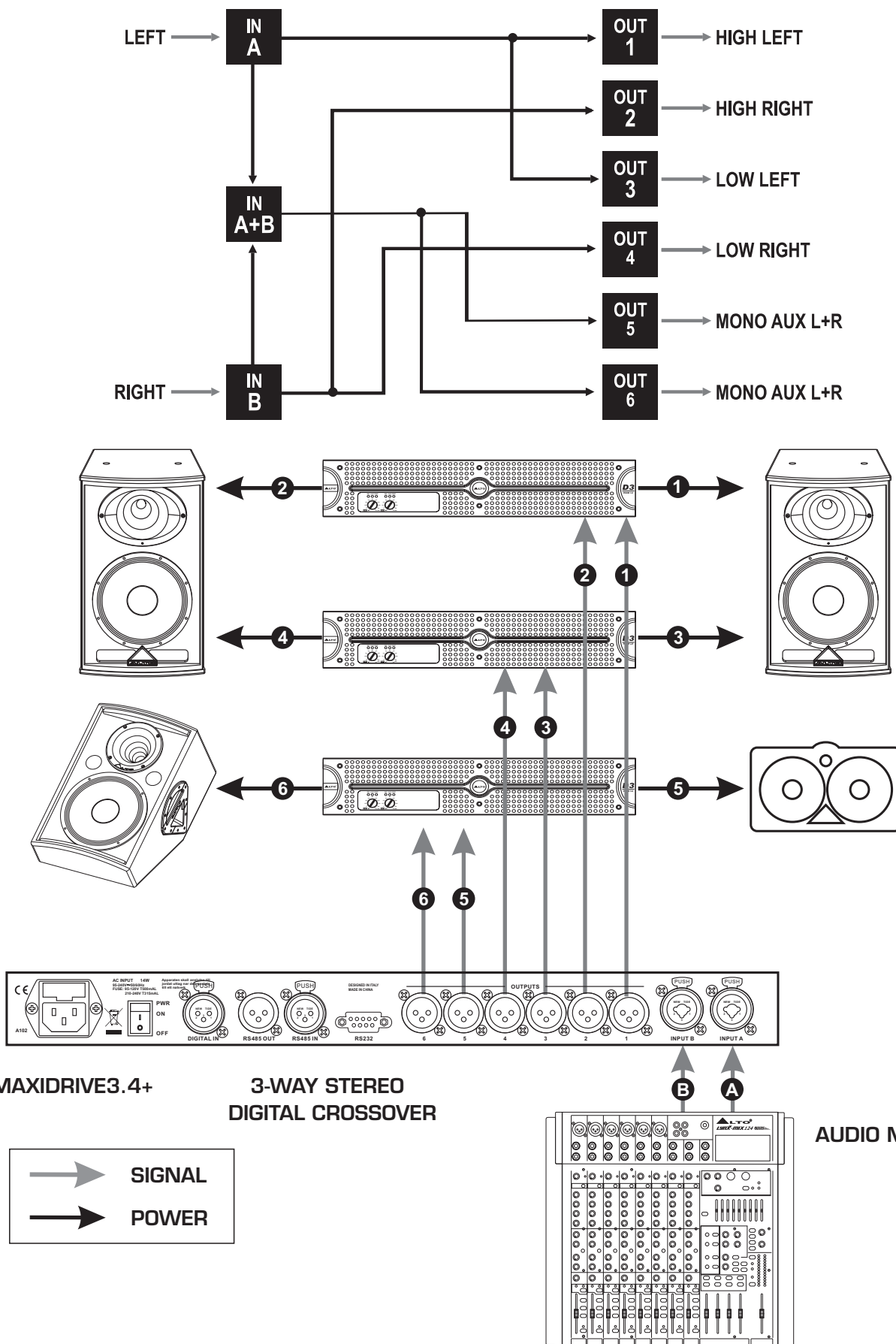
OP1&2 Gain	– 3 dB
OP3&4 Gain	0 dB(Default)
OP5&6 Gain	0 dB(Default)

Note: In All other areas not yet used are automatically occupied by "Default" Preset.

7.3 Hookup
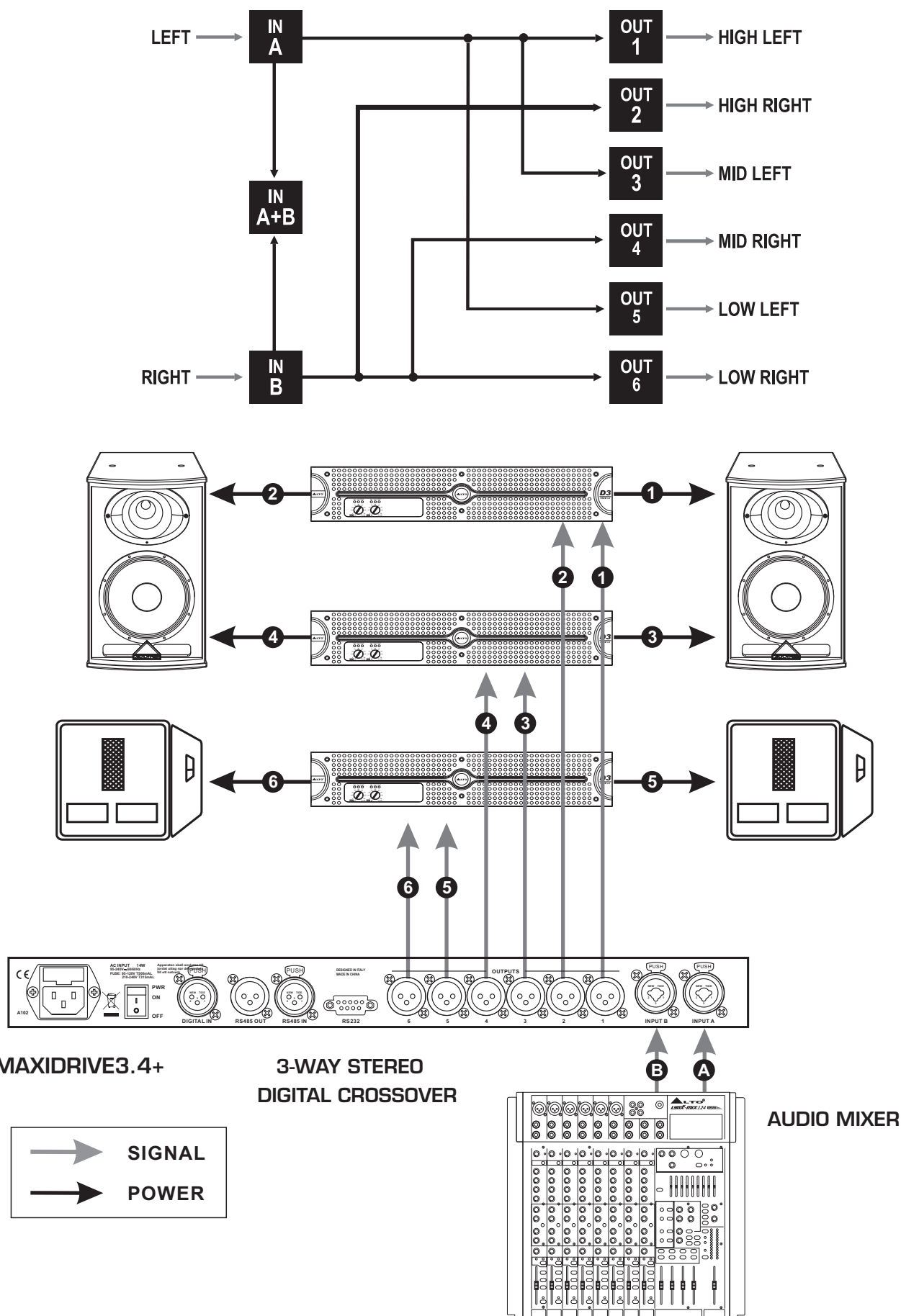
The following examples will help you well use and connect the unit.

a. A13 B24 S56 2-WAY STEREO+2 MONO AUX [2×2W+2MAX]

LEFT → IN A → OUT 1 → HIGH LEFT

→ OUT 2 → HIGH RIGHT

→ OUT 3 → LOW LEFT

IN A+B → OUT 4 → LOW RIGHT

→ OUT 5 → MONO AUX L+R

RIGHT → IN B → OUT 6 → MONO AUX L+R

MAXIDRIVE3.4+   3-WAY STEREO
                     DIGITAL CROSSOVER

AUDIO MIXER

→ SIGNAL
→ POWER

b. A135 B246   3-WAY STEREO [2×3W]

LEFT →	IN A	→ OUT 1 → HIGH LEFT
		→ OUT 2 → HIGH RIGHT
	IN A+B	→ OUT 3 → MID LEFT
		→ OUT 4 → MID RIGHT
		→ OUT 5 → LOW LEFT
RIGHT →	IN B	→ OUT 6 → LOW RIGHT

MAXIDRIVE3.4+   3-WAY STEREO DIGITAL CROSSOVER

AUDIO MIXER

SIGNAL

POWER

c. A13 B24 S56   3-WAY STEREO with MONO SUB+MONO AUX [2×3W+MSB+MAX]

LEFT → IN A → OUT 1 → HIGH LEFT

OUT 2 → HIGH RIGHT

OUT 3 → MID LEFT

IN A+B

OUT 4 → MID RIGHT

OUT 5 → SUB L+R

RIGHT → IN B → OUT 6 → MONO AUX L+R

MAXIDRIVE3.4+

3-WAY STEREO
DIGITAL CROSSOVER

AUDIO MIXER

SIGNAL

POWER

33
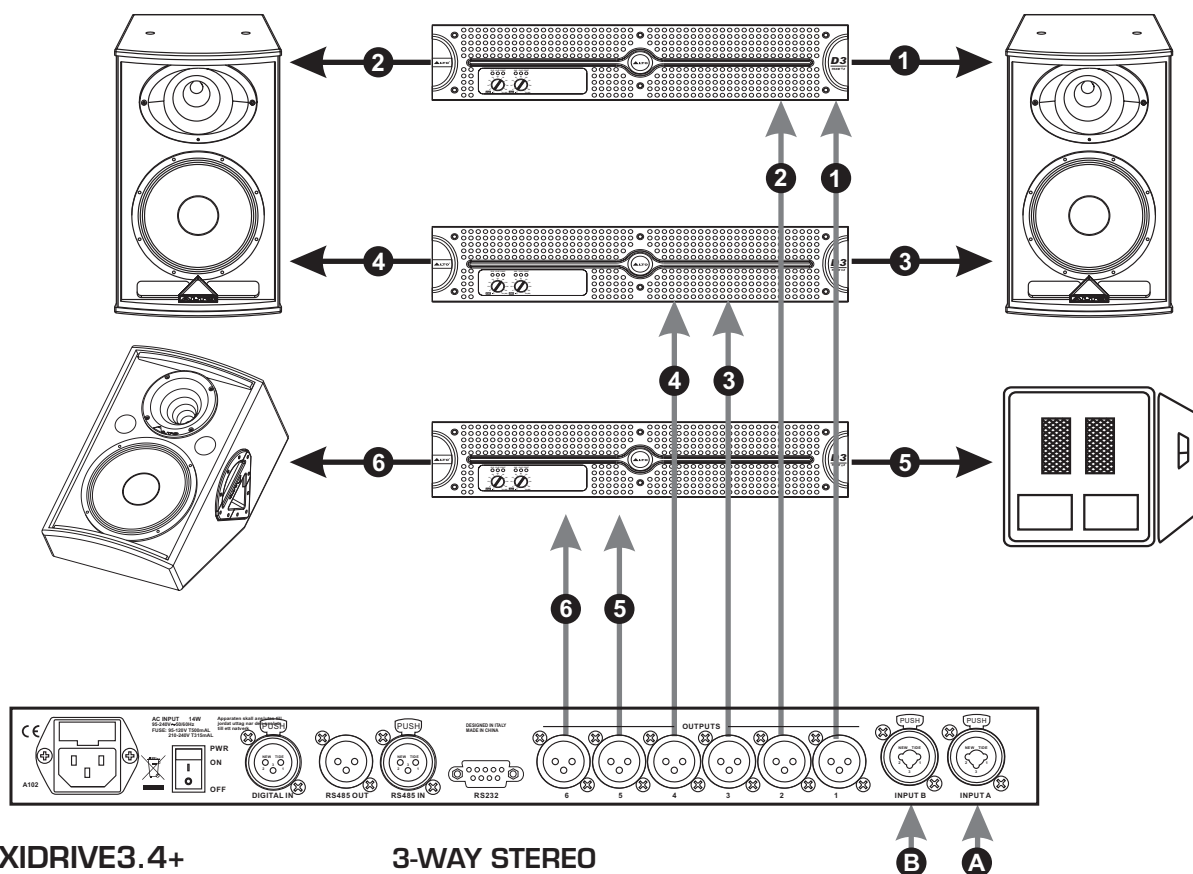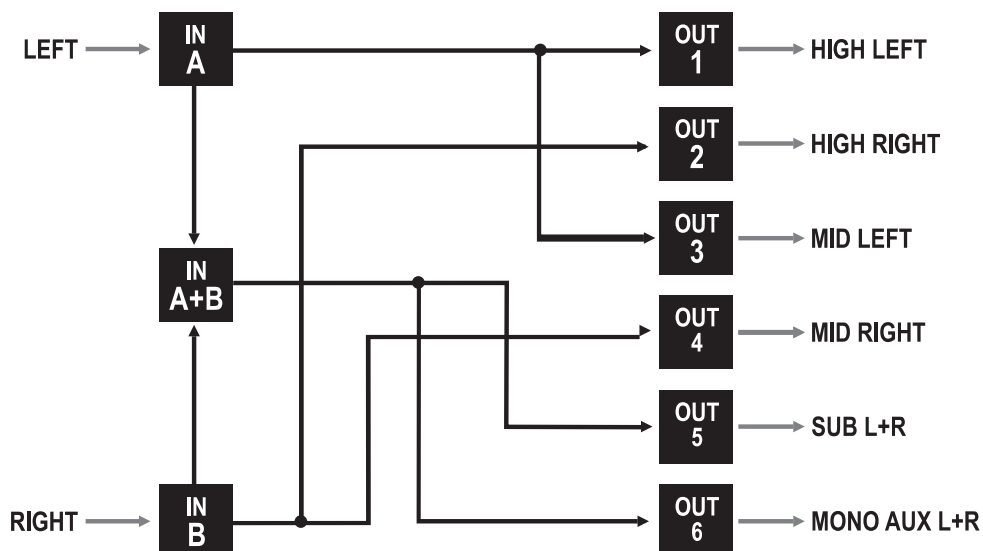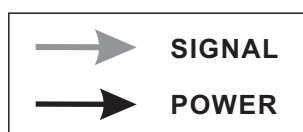
d. A1324 S56   4-WAY4 MONO + 2 MONO AUX [4W+2MAX]

SIGNAL	
POWER	

MAXIDRIVE3.4+   3-WAY STEREO DIGITAL CROSSOVER

AUDIO MIXER

e. A135 B246 3-WAY STEREO [2×2W]

LEFT → IN A

IN A+B

RIGHT → IN B

OUT 1 → HIGH LEFT
OUT 2 → HIGH RIGHT
OUT 3 → MID LEFT
OUT 4 → MID RIGHT
OUT 5 → LOW LEFT
OUT 6 → LOW RIGHT

MAXIDRIVE3.4+

3-WAY STEREO
DIGITAL CROSSOVER

AUDIO MIXER

→ SIGNAL
→ POWER
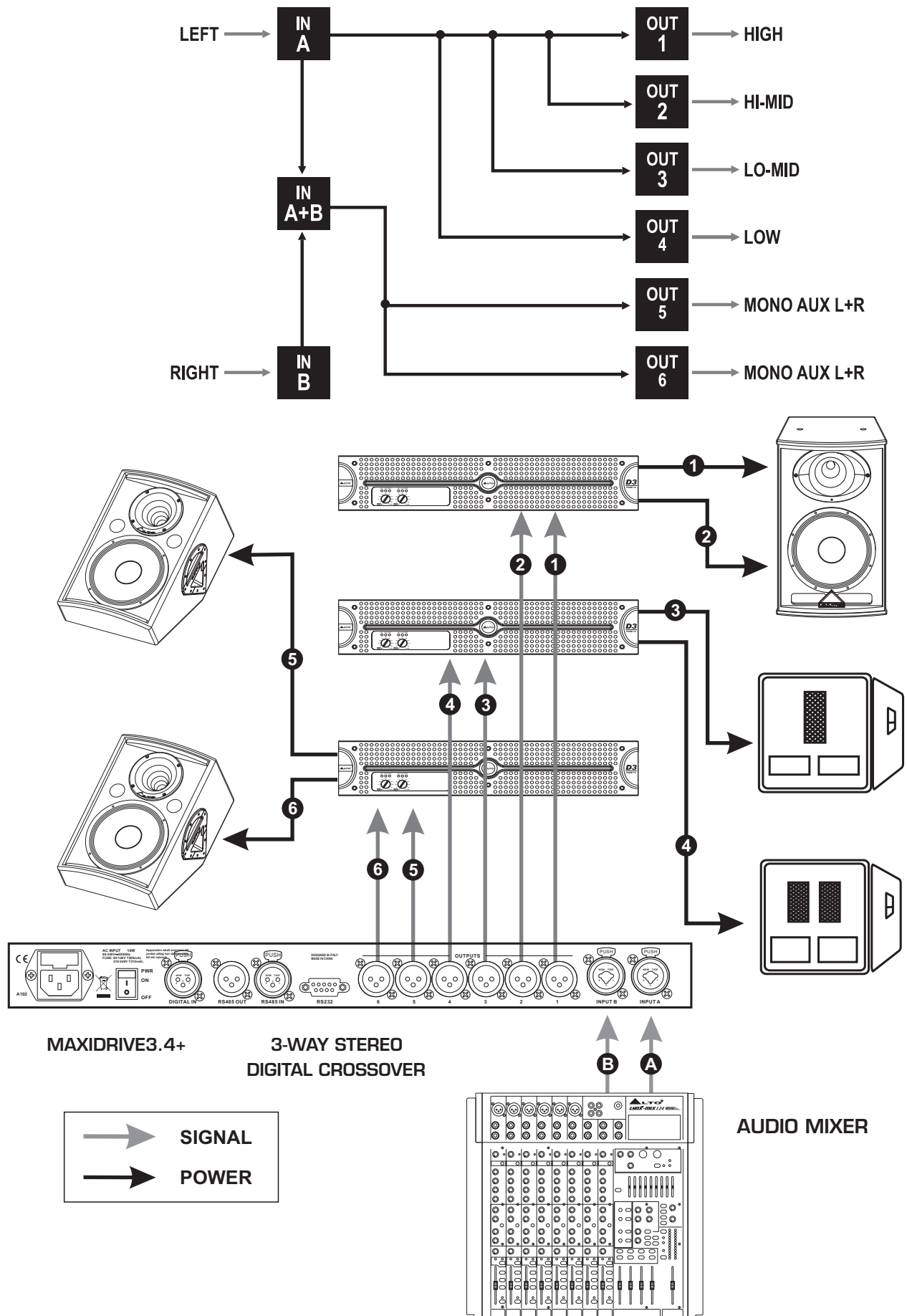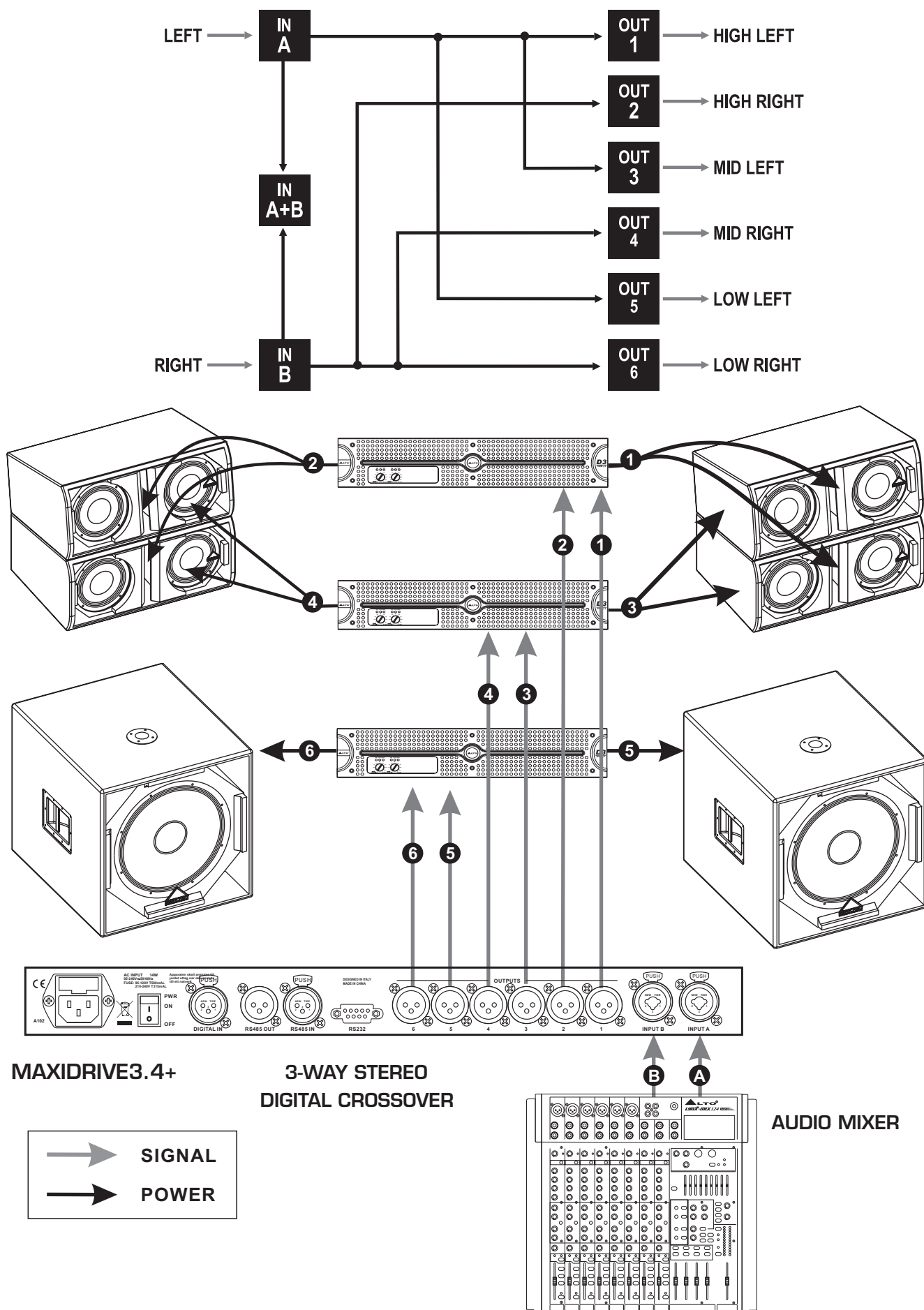
f. Communications: PC & one or more MAXIDRIVE3.4 connection

to / from
RS232 Serial Port

MAXIDRIVE3.4+   3-WAY STEREO
                      DIGITAL CROSSOVER   to / from
                                                RS232

From
RS485 OUT

to
RS485 IN

From
RS485 OUT

to
RS485 IN
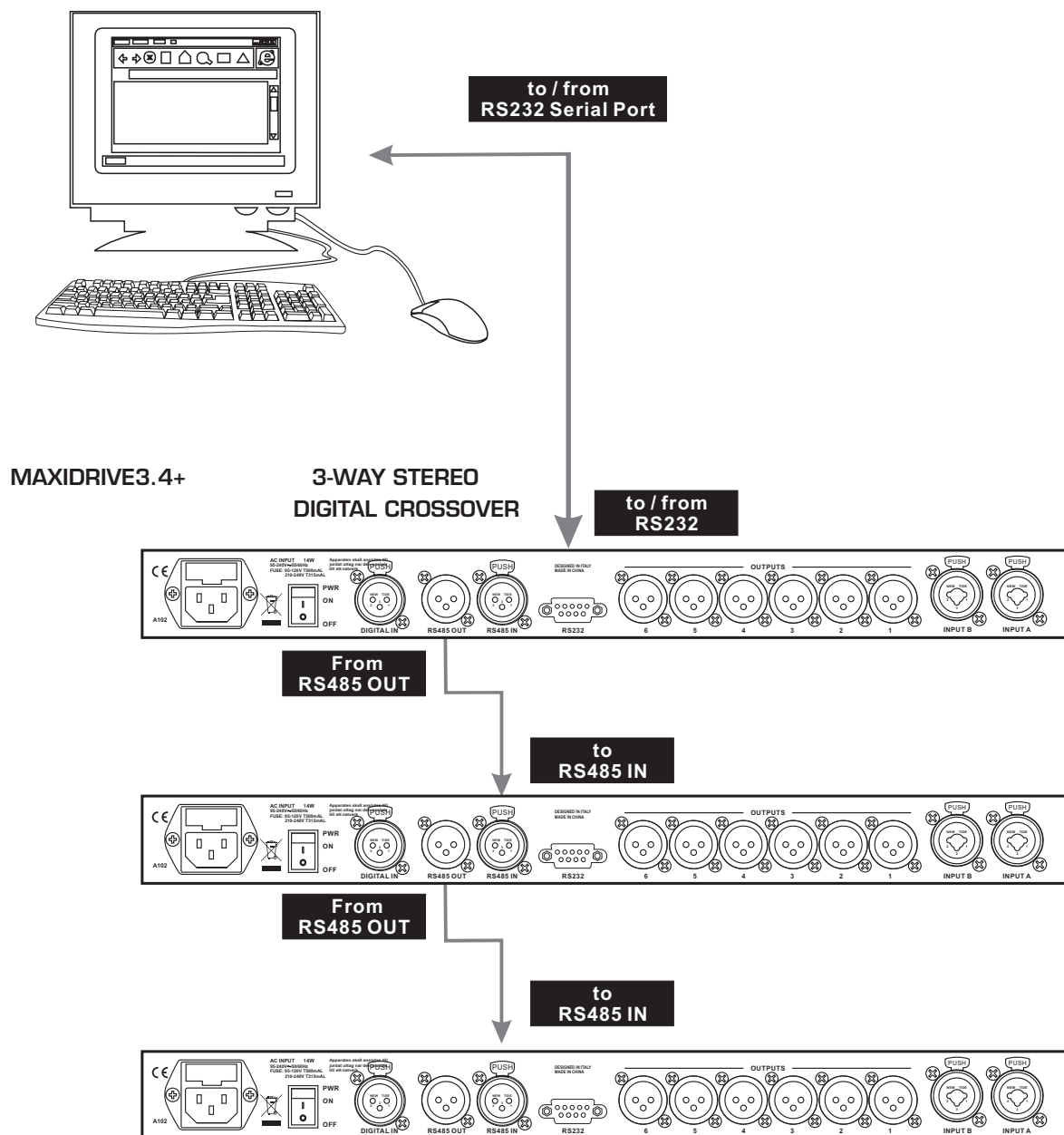
8. TECHNICAL SPECIFICATIONS

INPUT Section

Connectors	2 x COMBO
Nominal input sensitivity	0 dB (0.775 V)
Input Impedance	30 kOhm, electronically balanced
Maximum Input Level	+20 dBu
Input Gain	-30/+6 dB variable in 0.5 dB steps
Digital input	AES/EBU, XLR-F
Digital input sample rate	32 kHz ~ 48 kHz

Output Section

Connectors	6 x XLR-M
Output Impedance	600 Ohms, electronically balanced
Nominal Output Level	0 dBu
Maximum Out put Level	+20 dBu
Output Gain	-30/+6 dB variable in 0.5 dB steps

DSP Section

A/D converters	20 bit
D/A converters	20 bit
Internal dynamics	40 bit
Sampling frequency	48 kHz

Features

Configuration	2-WAY STEREO, 3-WAY STEREO, 2,3,4,5,6-WAY MONO
Crossover Filters Type	Bessel, Butter worth or Linkwitz- Riley
Crossover Filters Slope	6, 12, 18, 24, or 48 dB per octave
Delay Step	21 microseconds minimum
Max Delay time	2621 ms (inputs), 291 ms (outputs)
EQ filters	Up to 40 maximum (depending on the crossover slope)
EQ Type	Peak, 6dB Lo-Shelf, 12dB Lo-Shelf, 6dB Hi-Shelf, 12dB Lo-Shelf, Notch
EQ Gain	+/-15 dB, variable in 0.5 dB steps
EQ Bandwidth	0.05 to 3.00 octaves, variable in 0.05 steps
EQ freq.	15.6 Hz to 16 kHz
Dynamics	Digital limiter on all the output
Memories	FACTORY PRESETS are 10 + 64 USER PRESETS
	+ 128 CARD PRESETS
Communications	9-pin RS232, XLR-F RS485 IN, XLR-F RS485 IN

General Performance

Frequency Response	20 Hz - 20 kHz, 0.25 dB
Dynamic range	>117 dB 20 Hz to 20 kHz
Channel Separation	>120 dB 20 Hz to 20 kHz on AES/EBU input
Distortion (THD)	>100 dB 20 Hz to 20 kHz
S/N Ratio	0.05%, 20 Hz to 20 kHz
Input Meter	>110 dB, 20 Hz to 20 kHz
Output Metering	-24 dB, -18 dB, -12 dB, -6 dB, CLIP relative to Clip point (+20 dBu)
	-24 dB, -12 dB, -6 dB, LIMIT relative to limiter threshold setting, CLIP

General

Dimensions	483 x 44 x 300 mm
Weight	3.8 Kg
Power supply	see label on the unit

9. WARRANTY

1. WARRANTY REGISTRATION CARD

To obtain Warranty Service, the buyer should first fill out and return the enclosed
Warranty Registration Card within 10 days of the Purchase Date.
All the information presented in this Warranty Registration Card gives the manufacturer a better understanding
of the sales status, so as to provide amore effective and efficient after-sales warranty service. Please fill out
all the information carefully and genuinely, miswriting or absence of this card will voidyour warranty service.

2. RETURN NOTICE

2.1 In case of return for any warranty service, please make sure that the product is well packed in its
original shipping carton, and it can protect your unit from any other extra damage.

2.2 Please provide a copy of your sales receipt or other proof of purchase with the returned machine,
and give detail information about your return address and contact telephone number.

2.3 A brief description of the defect will be appreciated.

2.4 Please prepay all the costs involved in the return shipping, handling and insurance.

3. TERMS AND CONDITIONS

3.1 ▲LTO warrants that this product will be free from any defects in materials and/or workmanship for a
period of 1 year from the purchase date if you have completed the Warranty Registration Card in time.

3.2 The warranty service is only available to the original consumer, who purchased this product directly
from the retail dealer, and it can not be transferred.

3.3 During the warranty service, ▲LTO may repair or replace this product at its own option at no charge
to you for parts or for labor in accordance with the right side of this limited warranty.

3.4 This warranty does not apply to the damages to this product that occurred as the following
conditions:

• Instead of operating in accordance with the user's manual thoroughly, any abuse or misuse of this product.

• Normal tear and wear.

• The product has been altered or modified in any way.

• Damage which may have been caused either directly or indirectly by another product / force / etc.

• Abnormal service or repairing by anyone other than the qualified personnel or technician.

And in such cases, all the expenses will be charged to the buyer.

3.5 In no event shall ▲LTO be liable for any incidental or consequential damages.
Some states do not allow the exclusion or limitation of incidental or consequential damages, so
the above exclusion or limitation may not apply to you.

3.6 This warranty gives you the specific rights, and these rights are compatible with the state laws,
you may also have other statutory rights that may vary from state to state.

NF02145-1.1.