XT series

USER MANUAL

LYNX pro-audio

V. 07. 24

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LYNX Pro Audio S.L.
Calle 1. Pol. Ind. Picassent, Picassent, Valencia 46220 España
+34 961 109 601

CE

CE CERTIFICACTION, EUROPEAN PRODUCT

CONTENTS

WELCOME

Just contact the new generation of digital amplifiers XT, designed and manufactured by Lynx Pro Audio S.L.

Before working with the amplifier we recommend that you read this manual, in its pages you will find instructions for use, programming examples and practical advice that will be of great help.

This XT amplifier become a working tool of great value, providing the user with the best solutions in the market with the highest level of accuracy and a host of features for the professional.

We hope that as a user you will be completely satisfied. We are sure that the XT amplifier will meet your expectations and make it easier for you to get the most out of your system.

IMPORTANT SAFETY INSTRUCTIONS

The CE mark of the **XT** amplifier shows that it is verified and tested to accomplish the European Norms and International Norms about Electromagnetic Compatibility and Electrical Safety.

CE

Radiated Emisions :	EN55013-1 (1996)
RF Immunity:	EN55103-2 (1996)
Electical Safety:	EN60065 (1993)
	IEC65 (1985) and emendation 1, 2 and 3

This product also meets the specifications of the following safety directives:

Low Voltage Directive 73/23/EEC
EMC Directive 89/336/EEC

EUROPEAN PRODUCT

Product Developed and Manufactured in the European Union.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that is necessary for the user to refer to the owner's manual.

Warning :

Do not expose the amplifier to humidity and dust.
Do not take off the top cover.
Do not handle internal elements to avoid electrical shock.
Use only power cords in good condition.

Unpacking the XT

Before unpacking your new amplifier, verify that the box does not show any damage or deformation. If this happens, please claim the damage to your fordwarder. Once unpacked and verified its correct operation, keep the original box in case you need to ship it back to your provider.

1. INTRODUCTION

XT Series is a multipurpose series of power amplifier for touring and installation applications, based on the legendary QuantaPulse™switching mode power supply with an innovative class H 3 steps topology.

It includes a completely renewed PMS™ which incorporates a set of protection systems which works in real time continuously maintaining all variables of the amp within safe working thresholds always.

XT series have been designed with a non symmetrical class H topology which allows working with very high voltages given incredible headroom and a great punch. All these characteristics make XT amplifier an interesting device to work with asymmetric loads to squeeze every last drop of power in each way of the sound system.

XT series has an extra-large 4.3" display with capacitive touch panel whereby it is possible to control and manage every parameter of the amplifier and its powerful FIR DSP, also controleld by our OCS software.

Main characteristics

- Unmatched audio quality high efficiency Class H 3-steps design.
- 4 Channels models from 6000W up to 10000W.
- Last generation QuantaPulse™ SMPS.
- High voltage output for high headroom performances.
- Advanced Power Management System (PMS EVO™) with high effective protections system acting in real time.
- Up-side-down design to avoid fan dust acumulation.
- Industry standard Neutrik® XLR and Speakon® connectors.
- Powerful and fast response cooling system.
- 64 bits double-precision 96kHz FIR DSP.
- Extra-large 4.3" IPS display, capacitive touch panel user interface.
- Dante™ and AES3 inputs versions.
- Two Ethernet ports for daisy chain connection.
- USB port for firmware update and DSP control.

2. CONTROLS

Front panel

01. MAIN POWER SWITCH:

- **Position I:** Connects the amplifier's current feed.
- **Position O**: Disconnects the Power.

02. DISPLAY

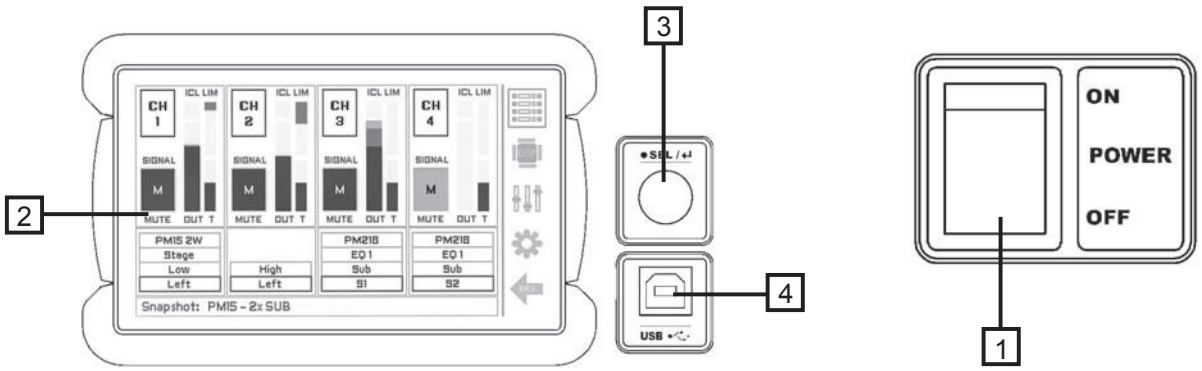
03. ENCODER

To control de display menus.

04.USB CONNECTOR

For firmware update and DSP control.

1 **Front Panel**



Rear panel

01. **SIGNAL INPUT:** Female Neutrik® XLR Connectors for the amplifier's signal input.

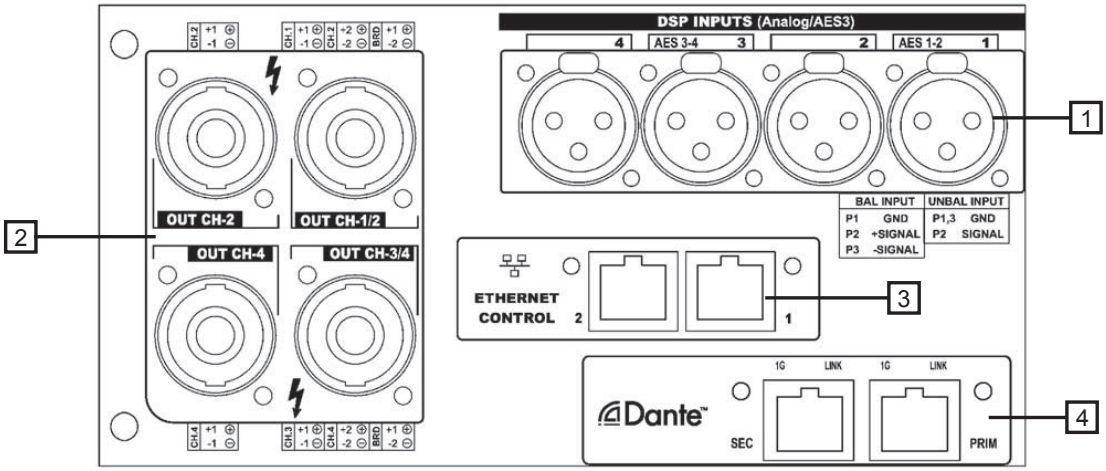
02. SPEAKER CONNECTORS
Neutrik®. Speakon to connect the speakers.

03. ETHERNET PORTS
For daisy chain connection.

04. DANTE INPUTS
(only in Pi+Networking AES67 version): Digital Inputs Networking (AES67 and DDM compatible).

MAIN POWER CORD: to connect the amplifier to the mains network. The colour code is:
- **Blue:** Neutral
- **Brown:** Live, single phase
- **Yellow-green:** Protective Earth

2 **Rear Panel**



3. INSTALLATION AND OPERATION

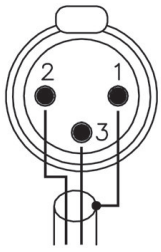
Connections

The Power switch must always be on the “Off” position before plugging the amplifier to a properly earthed mains socket (170-265V AC). The colour code is:

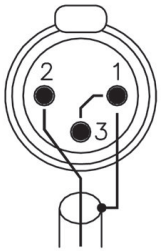
- **Blue:** Neutral
- **Brown:** Live, single phase
- **Yellow-green:** Protective Earth

The input signal fed to the amplifier can be either balanced or un-balanced. The drawing below describes both ways to wire an XLR connector for the purpose.

- **Balanced Signal:** Connect pin 1 to Ground, pin 2 to Signal + (hot) and pin 3 to Signal - (cold).
- **Unbalanced Signal:** Connect Pin 1 to Ground, pin 2 to Signal and pin 3 to Ground.



Balanced Wiring
1- Ground
2- Signal +
3- Signal -



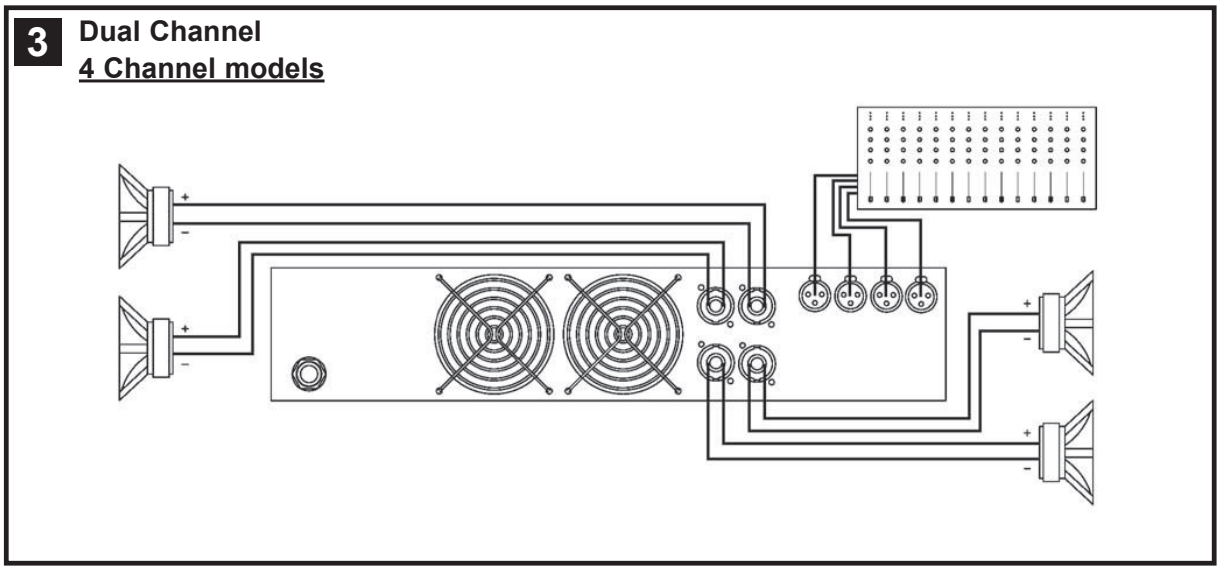
Unbalanced Wiring
1- Ground
2- Signal
3- Ground

Important!: If a connection is done with a un-balanced line and pin 3 on the XLR is not connected to ground, a 6 dB loss occurs in the line and only a quarter of the amplifier power is produced.

The amplifier can operate on two different configurations: DUAL, or BRIDGE.
The connections for the two modes are different.

DUAL Channel mode

- By means of the display, set the Amplifier Mode to “DUAL”.
- Connect the signal lines to the female XLR connectors on all channels.
- Connect the speakers’ lines to the corresponding Speakon on the amplifier respecting the polarity.
- Use the level control knob on the front panel to adjust each channel independently.

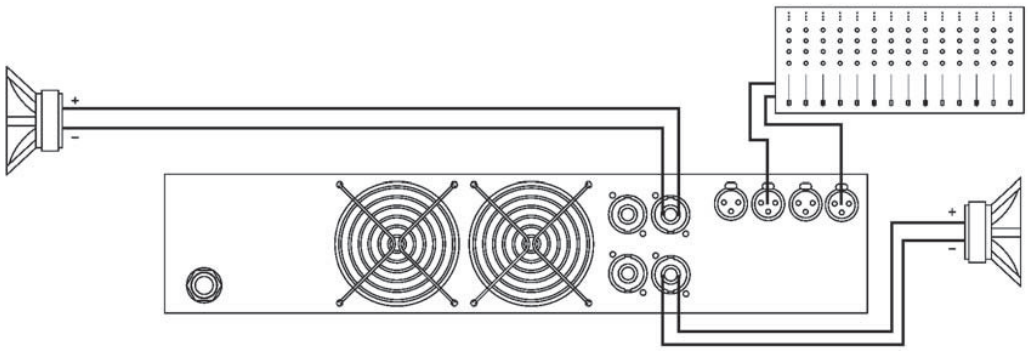


BRIDGE Channel mode

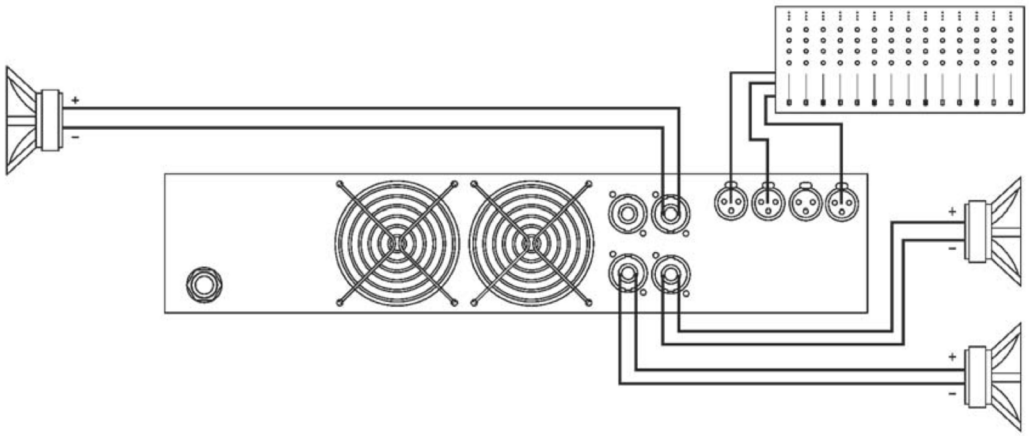
- By means of the display, set the configuration mode to “BRIDGE”
- Connect a signal line to input female XLR Channel “A” (or Ch-C in 4 channel models).
- Connect the speaker line to the Channel A Speakon (or Ch-C in 4 channel models) wired to +1 and -2. In this way pin +1 is positive.
- Use Channel-A (or Ch-C in 4 channel modes) control knob to adjust the amp’s output.

Warning! The “-” pins, do not have to be Ground!

4 **Bridge Mode**
4 Channel models



Bridge + Dual Mode
3 Channels Mode

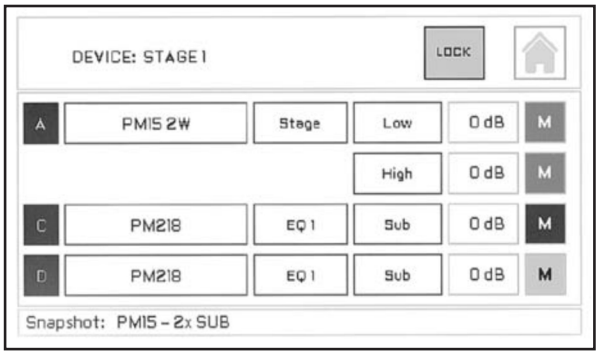


Configuration

By means of the display, user can configure amplifier and DSP parameters and moritoring them.

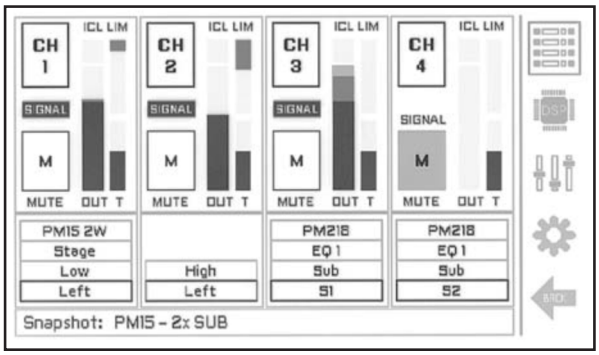
There are six different screens as follows:

1. Default Screen



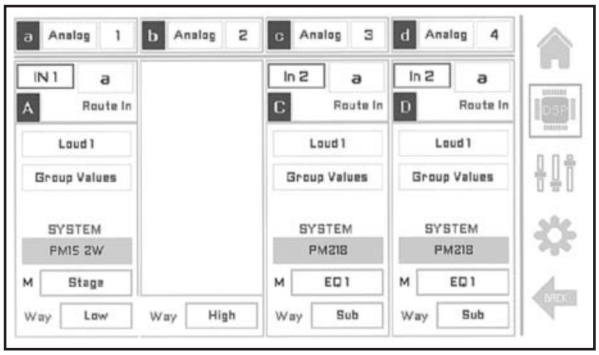
- **Device Name:** asigned by user via OCS
- **Lock Button:** to lock touch screen
- **Home Button:** to acess to Home screen
- **System Input Signal:** shines green with signal presence
- System Preset, Mode and Way names of current process
  Level Control for amplifier channel output
- **Output Mute / Signal:** shines green with output signal presence
- **Snapshot:** shows the name of current Snapshot (if loaded one)

2. Home Screen



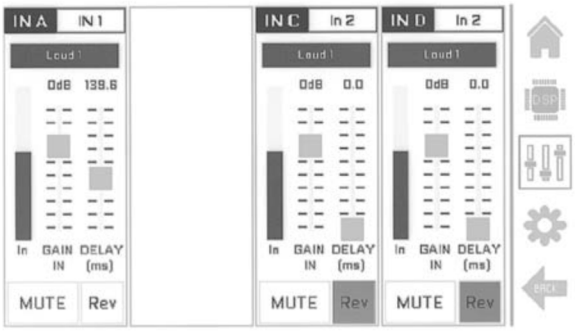
- **Device Output Signal:** Shines green with signal presence
- **Mute Button:** Mutes the amplifier channel output
- **Output Channel Level**
- **ICL Indicator:** Shines when clip limiter system is working
- **LIM:** Shows RMS/Peak limiters compression level
- **T:** Shows the channel temperature (percentage)
- **System Preset/Mode/Way/User ID Out names of current process**
- **Snapshot:** Shows the name of current Snapshot (if loaded one)
- **Default Screen Icon:** button to access to the Default screen.

3. DSP Edit Screen



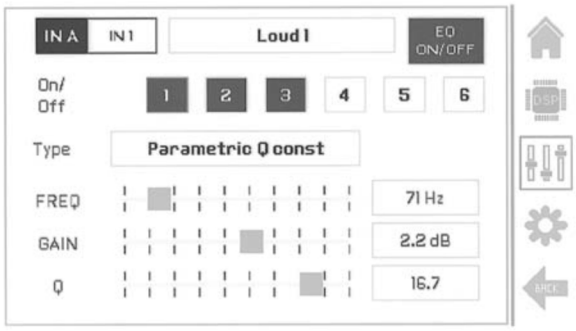
- **Source Input:** to select the analog/digital source input
- **System Input:** to select the input of each system
- **User ID Input Label:** shows the name assigned by the user
- **User EQ:** to select the input EQ User Memory
- **Group Values:** shows the control groups values (green if present)
- **JOIN (optional):** to join different outputs to a single input
- **System Preset Selector**
- **M:** to select the Mode EQ
- **Way:** to optionally select the output way loaded one)
- **Default Screen Icon:** button to access to the Default screen

4. User Input Setting Screen



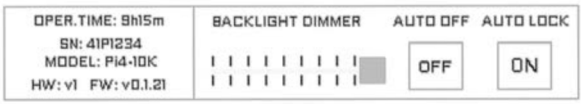
- **User ID Input Label:** shows the name assigned by the user
- **User EQ Access Button** (see 4.1)
- **In:** Input Level VUmeter
- **GAIN IN:** to change the input gain
- **DELAY:** to change the input delay (ms)
. **MIUTE:** to mute input
- **Rev:** to change input polarity

4.1. User EQ Screen



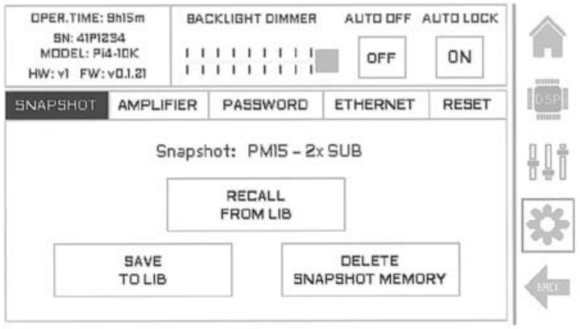
- **EQ Memory Name**
- **EQ ON/OFF:** To anable/disable User EQ
- **On/Off HP 1-6:** To access to specific filter and enable/disable it
- **Type:** To asign the filter type to the selected EQ
- **FREQ:** To asign the frequency to the selected EQ
- **GAIN:** To asign the gain to the selected EQ
- **Q:** To asign the Q to the selected EQ

5. Amp Info & Screen Configuration (top section)



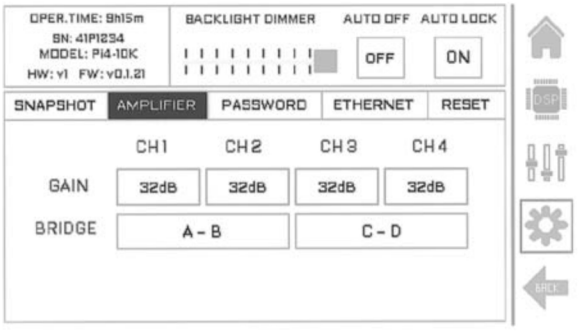
- **OPER. TIME:** Shows the amp operation time
- **SN / MODEL:** Shows serial number and model of the amp
- **HW / FW:** Shows the hardware and firmware versions
- **BACKLIGHT DIMMER:** To change the screen brightness
- **AUTO OFF:** To automatically tuen off the screen (selectable time)
- **AUTO LOCK:** To automatically lock the screen after 60s

5.1. SNAPSHOT Tab



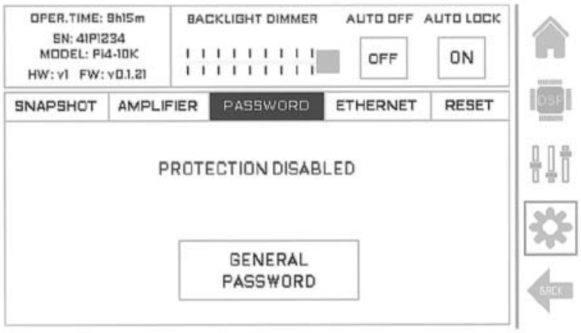
- **Snapshot:** Shows the name of current Snapshot (if loaded one)
- **RECALL FROM LIB:** To recall a Snapshot saved in the library
- **SAVE TO LIB:** To save current amp setup to a Snapshot
- **DELETE SNAPSHOT MEM:** To remove a library Snapshot

5.2 AMPLIFER Tab



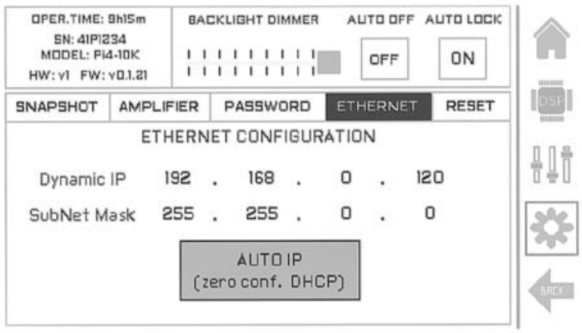
- **GAIN:** To select amp gain (26dB to 44dB)
- **BRIDGE:** To configure a pair of channels in Bridge mode
- **0dB FS IN (optional):** To adjust the input digital reference

5.3 PASSWORD Tab



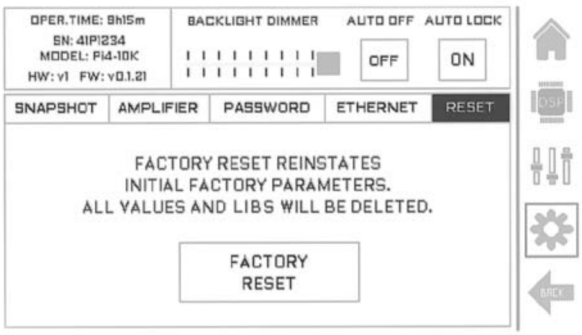
- **GENERAL PASSWORD:** To enable/disable the general password. When enable you have to introduce a 4-digits password and confirm it. When it is active user will limit the access to the amp through the screen and LynxProAudio_OCS PC software.

5.4 ETHERNET Tab



- **Dynamic IP / SubNet Mask:** Information of the current IP address.
- **AUTO IP:** To enable/disable the dynamic IP function:
  - When Auto IP is enabled, amp will receive an IP from an external
- **DHCP server.** When no DHCP server is present in the network, amp will self-asignate an IP with the Zero config protocol.

5.5 RESET Tab



FACTORY RESET: To reinstate initial factory parameters.

Caution! All the amp configurations and libraries will be lost.

PMS EVO™ - Power Management System

This is a complete set of protections that monitors the main amp parameters (load status, signal input, temperature, current, etc.) in order to draw from the power supply only the precise amount of current required to maintain safe operation during hazardous or extreme working conditions.

This system controls the amount of power that the amp delivers under three basic circumstances:

1.- The power-on sequence, where output is inhibited until the amp circuits are ready to operate. This routine is repeated at every restart, not just when the power switch is activated.

2.- When internal temperatures rise to near thermal shutdown point due to unfavourable operating conditions. Here the system takes control, restricting current so as to maintain operational continuity at the precise power level which the amplifier is capable of withstanding at that particular moment.

3.- Excessive current consumption. This event usually occurs under laboratory conditions (long term sinusoidal signal testing with dummy loads) or, for example, in field applications in conditions of prolonged acoustic howl-round. Here PMS EVO™ system takes control to avoid any damage to the speakers and to prevent the mains breaker from tripping or the fuses blowing.

ICL2™ - Intelligent Clip Limiter

The Lynx Pro Audio ICL2 is an anticlip system to avoid speaker failure and provide more acceptable sound quality even when clipping occurs. With the ICL2 system you don't lose the music "punch" but the speakers are kept under control.

SSP™ - SOA Sentry Protection

SOA Sentry protection effectively limiting the power that the amp could deliver into an incorrect load or to a direct short-circuit. This avoids power transistor failure.

4. TECHNICAL SPECIFICATIONS

	SBA-12000	SBA-12004
Number of channels	4	4
Total output power	6000 W	10000W
Output power (All ch.'s driven/single channel)		
2 ohms	4x 1450 W 4x 1450 W	4x 2500 W 1x 2500 W
4 Ohms	4x 1500 W 1x 1900 W	4x 2500 W 1x 3000 W
8 Ohms	4x 1100 W 1x 1200 W	4x 1600 W 1x 1800 W
4 Ohms Bridget	2x 2900 W	2x 5000 W
8 Ohms Bridget	2x 3000 W	2x 5000 W
Hi-Z 70 V	4x 1500 W	4x 2500
Hi-Z 100 V	4x 800 W	4x 2500 W
Max. output voltage	144 V_{peak}	176 V_{peak}
Max. output current	38 A_{peak}	50 A_{peak}
Total Harmonic Distortion	<0.05%	
Voltage Gain	26dB to 44dB step)	
SNR	106 dBA	
Required AC Mains Operating Voltage (50Hz-60Hz)	170V-265V AC / 90V-140V AC	
1/8 Rated Power (@230V, 4 ohms)	15 A	16 A
Dimensions W x H x D (mm)	483x89x320	
Weight Net (kg - lbs)	8.5-18.7	8.5 - 18.7
Protections	Soft-start, Turn-on Turn-off transients, Muting at turn-on, Over-heating, DC, RF, Short-circuit, Open or mismatched loads, Overloaded power supply, ICL2™, PMS EVO™, and SSP™	

IEC filtered pink noise signal (40Hz-5kHz, 12dB crest factor). 230V AC mains.
PMS can limit output to prevent excessive current draw tripping the mains breaker.
SSP can limit output to prevent excessive heating.

LYNX PRO AUDIO GUARANTEE

Lynx products are guaranteed against every kind of manufacturing fault 2 year after the date of sale. When products are under guarantee, the repairing and the free supplying of the device parts in order to correct any kind of defect are guaranteed by Lynx Pro Audio S.L. In the case that the product could not be returned to the factory for checking and repairing, Lynx Pro Audio S.L. would supply all the necessary parts.

Lynx Pro Audio S.L. is not responsible for any damage or defect caused during the transport or caused by an undue or improper handling by a non-authorized person during the life of this guarantee.

All our products go through rigorous testing and quality controls. We guarantee the characteristics described here within and their quality against any fabrication defect.

The user loses all warranty rights if he incorporates or carries out any modification to the product, if he uses it outside of the stated safe working loads or does not secure the system properly using all the pins in their corresponding holes.

For any question regarding the product, the user must quote the model and serial number.

WEEE Declaration: Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime. Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product please contact Lynx Pro Audio S.L.

CE

DECLARATION OF CONFORMITY

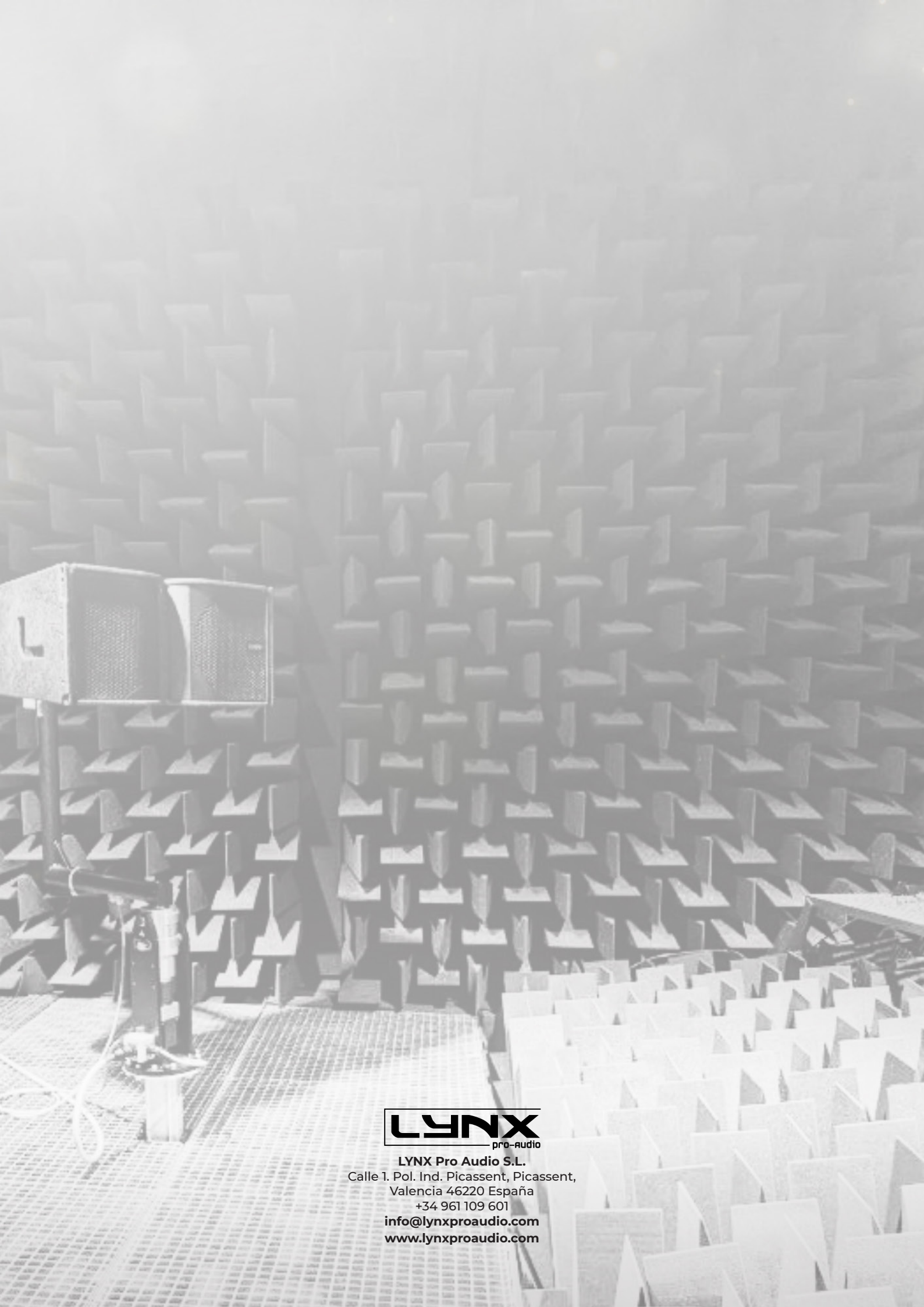
Lynx Pro Audio S.L. declares that XT series are in conformity with the following EC directives:

Low Voltage Directive	2006/95/EC
Electromagnetic Compatibility EMC	2004/108/EC
RoHS Directive	2002/95/EC

In accordance with Harmonized European Norms:

EN 60065:2002	Audio, video and similar electronic apparatus. Safety requirements
EN 55103-1:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.

LYNX pro-audio



LYNX Pro Audio S.L.
Calle 1. Pol. Ind. Picassent, Picassent,
Valencia 46220 España
+34 961 109 601
info@lynxproaudio.com
www.lynxproaudio.com