

Quick Start Guide



IPX Series

Compact 4800, 2400 and 1200 Watt 2-Channel DSP Controlled Power Amplifiers

EN Important Safety Instructions



Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock.

Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.



Caution

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.



Caution

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.



Caution

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.



Warning

Please refer to the information on the exterior of bottom enclosure for electrical and safety information before installing or operating the device.

1. Please read and follow all instructions and warnings.
2. Keep the apparatus away from water (except for outdoor products).
3. Clean only with dry cloth.
4. Do not block ventilation openings. Do not install in a confined space. Install only according to manufacturer's instructions.
5. Protect the power cord from damage, particularly at plugs and appliance socket.
6. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

7. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other (only for USA and Canada). A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

8. Use only attachments and accessories recommended by the manufacturer.



9. Use only specified carts, stands, tripods, brackets, or tables. Use caution to prevent tip-over when moving the cart/apparatus combination.

10. Unplug during storms, or if not in use for

a long period.

11. Only use qualified personnel for servicing, especially after damage.

12. The apparatus with protective earthing terminal shall be connected to a MAINS socket outlet with a protective earthing connection.

13. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

14. Avoid installing in confined spaces like bookcases.

15. Do not place naked flame sources, such as lighted candles, on the apparatus.

16. Operating temperature range 5° to 45°C (41° to 113°F).

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LIMITED WARRANTY

For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited Warranty, please see complete details online at community.musictribe.com/support.

Introduction

Lab.gruppen IPX Series amplifiers provide exceptionally high power density and powerful integrated DSP features, making them suitable for a broad range of installed and touring sound applications. All IPX Series amplifiers feature both analog and AES3 inputs with link outputs; input mixing; comprehensive DSP functions (crossover, parametric EQ, delay and limiter control); network control via Ethernet on shielded Cat-5 cable or using suitable WiFi access point; IPX Controller software and iPad native app; comprehensive front-panel display and dedicated mute buttons; and both binding post and Neutrik speakON output connectors.

The information contained in this Quick Start Guide is sufficient for proper installation of IPX Series amplifiers, and for configuration of settings in typical applications.

Except as specifically noted, all features, values and connections are identical for all models.

Unpacking and visual checks

Every Lab.gruppen amplifier is carefully tested and inspected before leaving the factory and should arrive in perfect condition. If any damage is discovered, please notify the shipping carrier immediately.

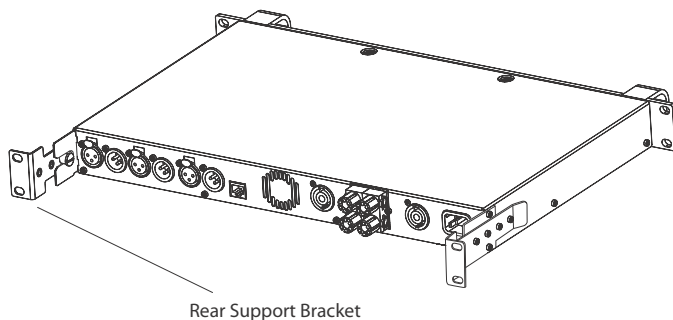
Save the packing materials for the carrier's inspection and for any future shipping.

Installation

IPX 1200 – Depth is 336 mm (13.2") rack ear to back panel. Weight is approximately 5.3 kg (11.7 lbs). Rear support brackets are included and use is recommended in all applications.

IPX 2400 – Depth is 423 mm (16.7") rack ear to back panel. Weight is approximately 7 kg (15.4 lbs). Rear support brackets are included and use is recommended in all applications.

IPX 4800 – Depth is 472 mm (18.6") rack ear to back panel. Weight is approximately 8.4 kg (18.7 lbs). Rear support brackets are included and use is recommended in all applications.



Cooling

Please ensure that there is sufficient space in the front and the rear of each amplifier to allow for a free flow of air. No doors or covers should be mounted either in the front or rear of the amplifiers. Amplifiers may be stacked directly on top of each other with no spacing, though some spacing may enable more convenient installation of rear cabling.

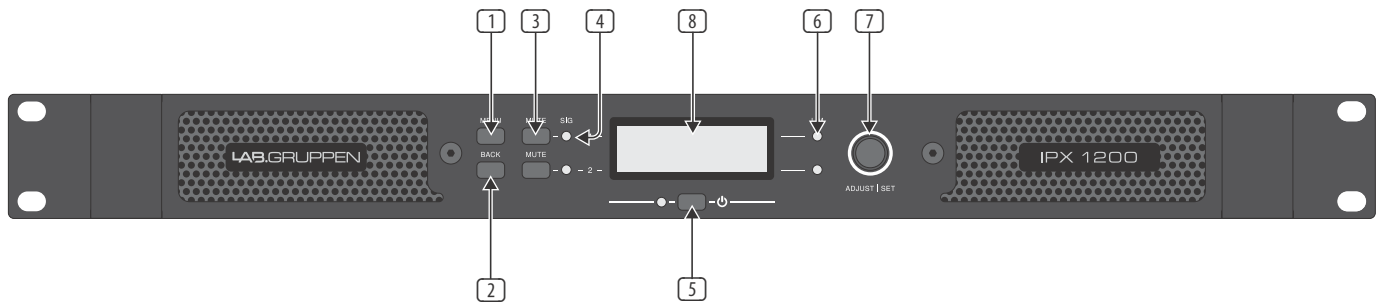
Operating voltage

All IPX Series amplifiers have a universal power supply that operates on mains from 100 – 240 V at 50 or 60 Hz. The IEC receptacle on the rear panel accepts the supplied IEC cord which terminates in a connector appropriate for the country of sale. When AC power is connected, the amplifier goes into standby (red indication on standby LED). The amplifier may be turned on by pressing the front power button or remotely using the IPX Controller software.

Grounding

Signal ground is floating via a resistor to chassis, and therefore grounding is automatic. For safety reasons, never disconnect the earth (ground) pin on the AC power cord. Use balanced input connections to avoid hum and interference

Front Panel



The following indicators and controls are available on the front panel:

- 1 **MENU** – Selects MENU mode and confirms a given preset name.
- 2 **BACK** – Moves backward through menu layers in MENU mode.
- 3 **MUTE** – Mutes corresponding channel as indicated.
- 4 **SIG** – Illuminates green when signal is present. Illuminates red when signal is clipping (pre input mixer)
- 5 **POWER** – Indicates STANDBY (red)
- 6 **LIM (limit)** – Illuminates when the amplifier limits the signal.

Limiting is engaged when the channel:

- Reaches the selected voltage limit
- Mains voltage cannot maintain full rail voltage

- 7 **ADJUST/SET (Rotary Encoder)** – Rotation moves through the menu and adjusts the currently selected parameter when in setup mode. Pressing down on the knob selects a given parameter or advances further into the menu.

In operating mode, rotation of the ADJUST/SET encoder adjusts output gain (outputs ganged).

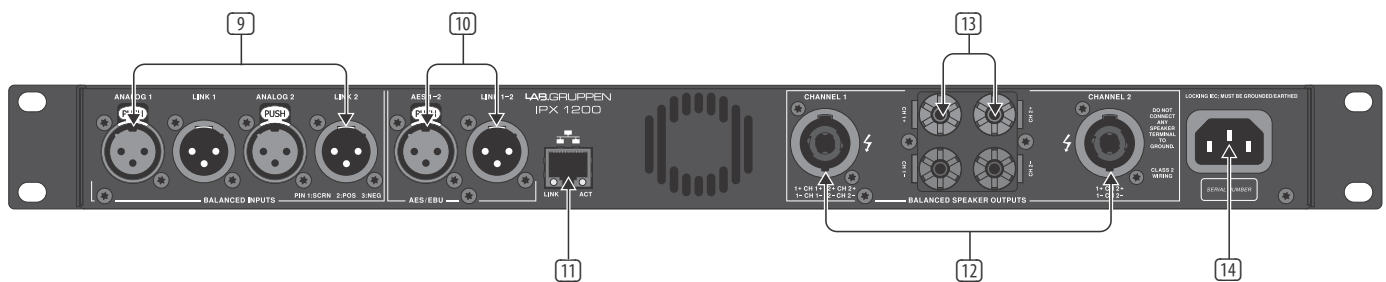
- 8 **BACKLIT DISPLAY**

In operating mode, the display shows the following values and status indicators:

- Level – Horizontal VU meters for each channel
- Device name and Preset name
- Fault/Warning information if active

In setup mode, the display shows currently selected menu locations and parameters.

Rear Panel



The following connectors are available on the rear panel:

- 9 **ANALOG INPUTS and LINK** – female XLR input connectors provided for each channel, with male XLR link output connectors.
- 10 **AES3 INPUT and LINK** – AES3 digital inputs are on a female XLR connector with a link output on a male XLR connector.
- 11 **NETWORK (Ethernet)** – An RJ45 jack is supplied for connection to an Ethernet network for external control and monitoring, either by a direct wired connection or via an external WiFi router to an iPad or tablet. LEDs below the connector indicate valid network connection (LINK) and network activity (ACT).

- 12 **speakON OUTPUT CONNECTORS** – Both channel outputs are available on a four-pole connector at the left; either channel 1 or both channels 1 and 2 may be connected. Only channel 2 is available on the connector to the right.

- 13 **BINDING POST CONNECTORS** – Connectors for channel 1 and channel 2.

- 14 **AC LINE INPUT** – A locking IEC receptacle accepts the AC line input, 50 Hz or 60 Hz, 100 V – 240 V. Use an IEC cable with the proper connector for country of use.

Input connections

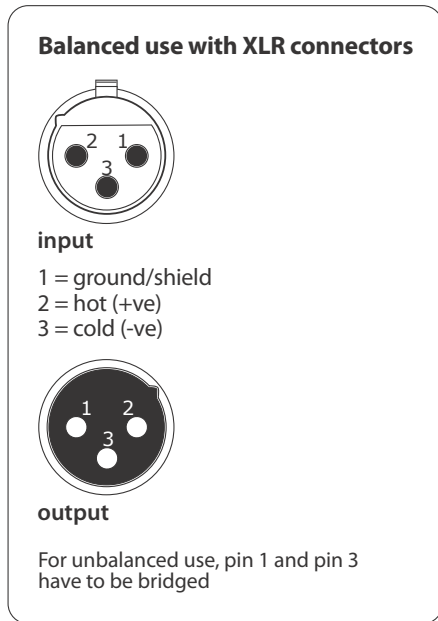
Analog Inputs

Analog inputs are available on two standard female XLR latching connectors.

The inputs are electronically balanced. The impedance is 20 kΩ, and the inputs can accept a maximum input level of +20 dBu.

Polarity is as follows:

Pin 1 = screen (shield), pin 2 = positive (+), pin 3 = negative (-).



Analog Links

Two latching male XLR connectors are adjacent to the analog input connectors and are paralleled to the input connectors to provide an unprocessed analog loop-through to feed additional IPX Series units or other equipment.

AES3 Inputs

A latching female XLR connector accepts an AES3 digital audio signal. Input impedance is 110 Ω. (Ensure that 110 Ω digital audio cables are used; standard XLR microphone cables are rarely suitable for reliable digital audio transmission.)

AES3 is a stereo digital format, and therefore both inputs are fed via a single connector. Selection of the analog or digital inputs is made via the front panel display or IPX Controller software.

AES3 Link

A latching male XLR connector is fitted adjacent to the AES3 input connector. This is an active link which sends an unprocessed AES3 loop-through to feed additional IPX units. The design requires no termination load when the unit is the last connected.

Output connections

Two types of power output connections are available on IPX Series amplifiers: Neutrik speakON and binding post. The two types are connected in parallel. Loudspeakers may be connected to both at the same time, but this is generally not recommended as total impedance may be too low.

Binding Posts

Power outputs for loudspeaker connection are available on two fully enclosed binding posts. Observe signal polarity as indicated.

speakON Connectors

Outputs for both channel 1 and channel 2 are available on a four-pole speakON connector to the left. The two-pole speakON to the right connect to output 2 only (see Fig. 1 below). See the amplifier's back panel for information about the available pin outs for speakON connection.

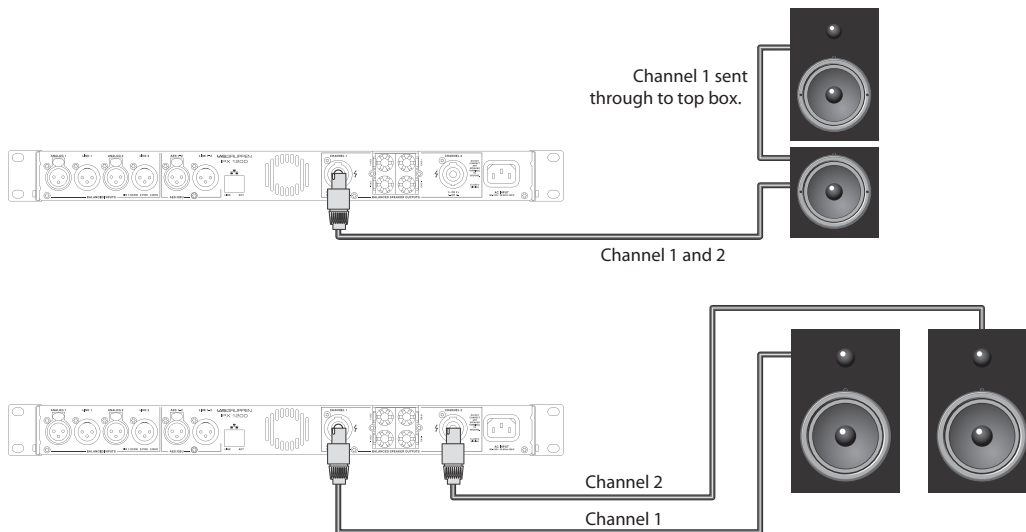


Fig. 1



CAUTION! When connecting wiring to Speaker Terminals, the installation shall be made by an instructed person or ready-made leads or cords shall be used.

Bridge Mode

The IPX Series employs an inherently bridged Class D output topology.



CAUTION! Under no circumstances should the IPX Amplifier be bridged, this may cause undesired operating performance.

DSP configuration

Default configuration

IPX Series amplifiers are shipped with default DSP settings that allow immediate use in many common applications with no need for further DSP configuration. The default mode is suited for use with the stereo program into full range loudspeakers.

The default signal routing and parameter settings are as follows:

- Analog 1 and AES1: Routed to Ch. 1
- Analog 2 and AES 2: Routed to Ch. 2
- AES3 to analog failover: OFF
- Mode: Stereo
- Input levels: 0 dB
- Input EQ: Flat
- Output levels: 0 dB
- Output Mute: Muted
- Output EQ: Flat
- Delay: Off
- Crossover: Off

Signal flow block diagram

The block diagram below (Fig. 2) shows the signal flow from inputs to outputs

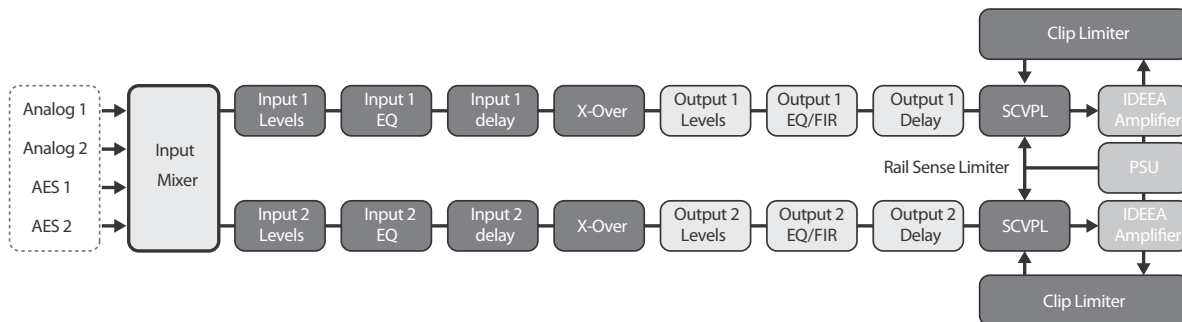


Fig. 2

Front panel configuration

Input mixing and routing, as well as all DSP parameters, may be configured using the Menu and Back buttons and the Adjust/Set rotary encoder (see Fig. 3 below):

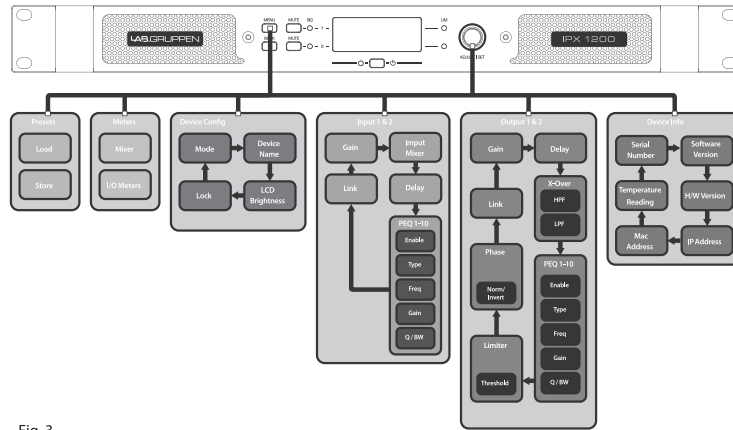


Fig. 3

IPX Controller software and network configuration

Software and App Downloads and Installation

For download of the IPX Controller software for Mac and PC, please visit www.labgruppen.com. Instructions for installation are available via this link.

Network configuration

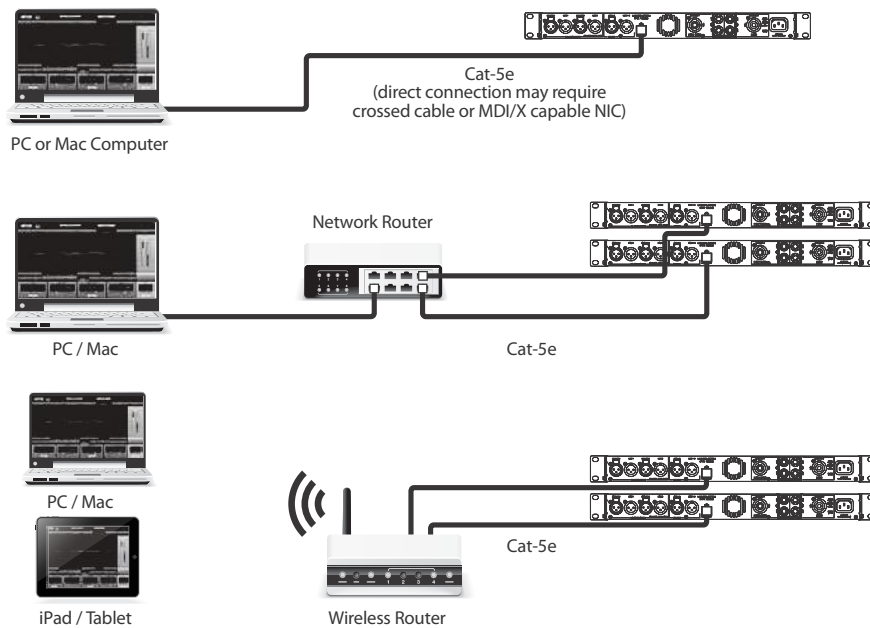
A network of IPX amplifiers may be configured using standard, off-the-shelf Ethernet router and shielded Cat-5 cabling. If the router is WiFi enabled, the IPX amplifier network will be accessible using a laptop computer running IPX Controller software.

The IPX network employs a star topology only. Each amplifier must be connected individually to the router.

Network configuration is automatic. Each amplifier is identified by a unique IP address, which is shown in the Global view and the device header panel of IPX Controller.

Input mixing/routing and DSP configuration using IPX Controller

All input mixing /routing functions and DSP configuration parameters are accessible and adjustable using IPX Controller software. The device header panel appears at the top of each configuration window for a selected device.



Global



The Global view shows all devices on the network and accesses the following functions:

- Naming devices (amplifiers) and groups
- Forming groups of devices
- Creating and deleting groups
- Muting amplifiers individually or in groups
- Power On/Off individually or in groups
- Monitoring of output levels
- Devices selected for a group are controlled simultaneously from any of the device UIs in that group.

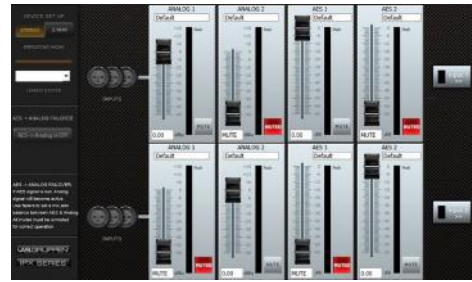
Device Header



The device header panel appears at the top of each configuration window for a selected device. The header panel accesses the following functions and information:

- Return to Global
- Power on/off
- Output mute (per channel)
- Device name
- Online/Offline/Fault/Warning indication
- IP address
- Temperature reading
- Current preset
- Preset store and recall (device or computer)

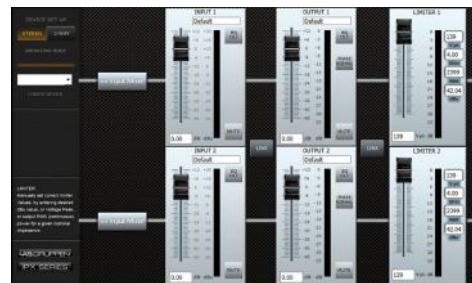
Input Mixer



The Input Mixer view accesses the following functions:

- Device set-up (stereo or 2-way mode)
- Input mixing
- AES3 to analog failover on/off

Levels



The Levels view accesses the following functions:

- Input Mix Bus Levels
- Output levels
- Output limiters
- Linking of inputs and outputs.

Input EQ



Input EQ view is selectable per channel. Input EQ accesses the following functions:

- Parametric equalizer (up to 10 bands)
- Output level status
- Input delay (up to 2 sec)

Crossover and Output EQ



Output EQ view is selectable per channel. The Output EQ view accesses the following functions:

- Parametric equalizer (up to 10 bands)
- Output level status
- Output delay (up to 2 sec)
- High pass filter
- High pass filter type
- High pass filter cutoff frequency
- Low pass filter
- Low pass filter type
- Low pass filter cutoff frequency

FiR-X Mode:

To enable FiR-X Mode device must be in Developer Mode. When FiR-X mode enabled, the normal Output EQ interface is disabled. See "IPX Preset Locking Guide" for further information.

Factory reset

A factory reset can be carried out from the front panel of the device. Disconnect completely from mains power. Press and hold both mute buttons on the front panel while powering the device up. A factory reset menu is now displayed.

Faults and Warnings Overview

Fault or warning conditions are indicated by the brief textual description of the fault or warning on the display and on in the IPX Controller. See full list for all Faults and Warnings and what may have triggered each fault or warning condition.

Faults

IPX Display	IPX Controller	Description
MEMORY FAULT - PLEASE RESTART	MEMORY FAULT	Internal issue to read settings from flash. Reboot device.
PRESET FLT	PRESET FAULT	Error in preset/persistence. Recall the correct preset again from computer and re-store on device.
SETTINGS FLT	SETTINGS FLT	Conflicting settings. This could be a configured Startup preset position >50 in v1, change to a correct position.
SERVICE CH	SERVICE CH	Reboot device. If still present, send device for service
TEMP FLT:PSU	TEMP FLT:PSU	PSU temperature is 100%. Device will unmute once temperature is below 90%.
TEMP FLT:CH	TEMP FLT:CH	Amplifier Output temperature is 100%. Channel will unmute once temperature is below 90%.

Warnings

IPX Display	IPX Controller	Description
TEMP WARN:PSU	TEMP WARN:PSU	PSU temperature is >90%. Improve ventilation or reduce power to prevent device from going into Temperature Fault.
TEMP WARN:CH	TEMP WARN:CH	Amplifier Output temperature is >90%. Improve ventilation or reduce power to prevent device from going into Temperature Fault.

Specifications

	IPX1200	IPX2400	IPX4800
Maximum Output Power (all ch. driven)*			
2 Ω per channel, stereo	500 W	800 W	2400 W
2.7 Ω per channel, stereo	550 W	1100 W	2400 W
4 Ω per channel, stereo	600 W	1200 W	2400 W
8 Ω per channel, stereo	300 W	600 W	1200 W
Maximum Output Power (single ch. max)*			
2 Ω per channel, single channel	600 W	800 W	2400 W
2.7 Ω per channel, single channel	700 W	1100 W	3400 W
4 Ω per channel, single channel	600 W	1200 W	2400 W
8 Ω per channel, single channel	300 W	600 W	1200 W
Controls			
Front	Power switch DSP section rotary push-encoder Buttons for Menu, Back, Mute (per channel)		
System			
Number of channels	2		
Output voltage	70 V peak / 50 Vrms / 36.2 dBu	100 V peak / 70 Vrms / 39.2 dBu	140 V peak / 100 Vrms / 42.2 dBu
Input sensitivity for maximum output voltage	6 dBu		
Output current	16 Arms	20 Arms	36 Arms
Output circuit type	Class-D		
THD+N	< 0.1%, 20 Hz - 20 kHz @ 1 W < 0.05% @ 1 kHz, 1 dB below clip		
Output noise	-66 dBu, A-weighted	-65 dBu, A-weighted	-64 dBu, A-weighted
Signal-to-noise	> 102 dB	> 104 dB	> 106 dB
Channel crosstalk	> 80dB @ 1 kHz		
Frequency response	10 Hz to 20 kHz, +0.5/-1 dB 5 Hz to 40 kHz, -3 dB		
Common mode rejection (CMR)	> 50 dB		
Gain (all DSP controls set to 0 dB)	30.2 dB	33.2 dB	36.2 dB

	IPX1200	IPX2400	IPX4800
Indicators			
Power		Red LED	
Limit, per channel		Red LED	
Signal / mute, per channel		Green/Red LED	
Digital Signal Processing (DSP)			
Display		LCD 128 x 32, white backlit	
Functions		40 multi-slope parametric equalizers, FIR, Adjustable high- and low-pass filters Input and output delays (up to 2 seconds each) Crossover with multiple filter types	
Presets		Support up to 50 presets	
Connectors			
Analog inputs		2 x XLR	
Analog input impedance		18 k Ω unbalanced, 36 k Ω balanced	
Maximum analog input level		20 dBu	
Digital inputs		1 x XLR (AES3 digital format)	
Link outputs (analog)		2 x XLR	
Link output (digital)		1 x XLR (AES3 digital format)	
Speaker outputs		2 x Neutrik speakON (NLT4) 2 x binding posts	
Network control		1 x RJ45	
Circuit protection			
Cooling		Continuously variable speed fan Front-to-back air flow	
Amplifier protection		Thermal and DC protection Stable into reactive or mismatched loads	
Circuit protection		Controlled start and shutdown behaviour, DC-fault protection	
Power Supply, Voltage, (Breaker)			
Switch-mode autorange power supply		100-240 V~ 50/60 Hz	
Power consumption @ 1/8 rated power	250 W	500 W	1000 W
Standby consumption		< 7 W	
Mains connection		Standard locking IEC receptable	
Dimension/Weight			
Dimension (H x W x D)	44 x 483 x 336 mm (1.7 x 19.0 x 13.2")	44 x 483 x 423 mm (1.7 x 19.0 x 16.7")	44 x 483 x 472 mm (1.7 x 19.0 x 18.6")
Weight	5.3 kg (11.7 lbs)	7.0 kg (15.4 lbs)	8.4 kg (18.7 lbs)

*independent of limiters and driver protection circuits

Other important information

EN Important information

1. Register online. Please register your new Music Tribe equipment right after you purchase it by visiting musictribe.com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.

2. Malfunction. Should your Music Tribe Authorized Reseller not be located in your vicinity, you may contact the Music Tribe Authorized Fulfiller for your country listed under "Support" at musictribe.com. Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at musictribe.com. Alternatively, please submit an online warranty claim at musictribe.com BEFORE returning the product.

3. Power Connections. Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

Lab Gruppen

IPX Series

Responsible Party Name: **Music Tribe Commercial NV Inc.**

Address: **122 E. 42nd St.1,
8th Floor NY, NY 10168,
United States**

Email Address: **legal@musictribe.com**

IPX Series

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This equipment complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Operation of this equipment in a residential environment could cause radio interference.

Important information:

Changes or modifications to the equipment not expressly approved by Music Tribe can void the user's authority to use the equipment.



Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU, Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC.

Full text of EU DoC is available at <https://community.musictribe.com/>

EU Representative: Music Tribe Brands DK A/S
Address: Gammel Strand 44, DK-1202 København K, Denmark

UK Representative: Music Tribe Brands UK Ltd.
Address: 8th Floor, 20 Farringdon Street London EC4A 4AB, United Kingdom



Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same

time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

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