



OWNER'S MANUAL

HPA4
4-CHANNEL HEADPHONE AMPLIFIER



www.altoproaudio.com
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English

IMPORTANT SAFETY INSTRUCTION



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 U.S. 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.

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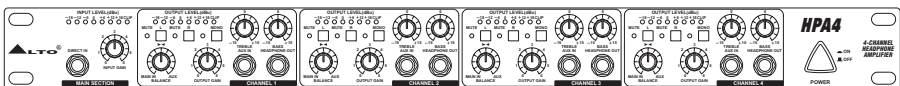
1. INTRODUCTION

Thank you for your purchasing of the HPA4, 4-channel headphone amplifier. It is just one of the many Alto products that a talented, multinational Team of Audio Engineers and Musicians have developed with their great passion for music. Your HPA4 has been designed for applications such as recording, broadcast and Live events. It is a very flexible tool allowing personal headphone mix for up to four musicians.

Enjoy your HPA4 and read this Manual carefully before operation!

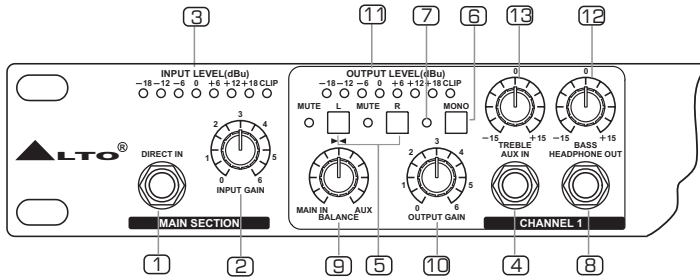
2. FEATURES

- ▲ Mountable in a 19" Rack Unit
- ▲ 4 individual headphone channels
- ▲ Input gain control, and individual output gain control
- ▲ Up to 3 headphone outputs per channel for a total of 12 headphones
- ▲ Direct In and Headphone Output on the front panel for easy operation, when mounted in a rack
- ▲ Input and Output Level Led Meter
- ▲ Balance Control to mix up the Main In and the Aux In signal
- ▲ Main Outputs for linking additional HPA4 headphone amplifiers
- ▲ High-end quality even at high volume levels
- ▲ Exceptionally rugged construction ensures long life and durability
- ▲ Universal and professional headphone amplification system for studio and stage application
- ▲ Manufactured under QS9000 certified quality system





3. CONTROL ELEMENTS



MAIN SECTION:

1 DIRECT IN

You can use this socket to feed an additional stereo signal into your HPA4. This socket is in "priority". It means that when you insert the jack, the signal fed into the MAIN input on the rear panel will be disconnected.

2 INPUT GAIN

This knob controls the level of the signal applied to the MAIN or DIRECT IN inputs.

3 INPUT LEVEL

This Led Meter informs you about the level of the input signal. The range goes from -18 dBu to +18 dBu. For the best quality of input signal the operating leds should be those from +6 to +18 dBu. The CLIP led should light up only occasionally. If CLIP led is always on, you must reduce the input level through the input gain control. If only -18 and -12 dBu leds are operating, you will experience a bad S/N ratio and increase the input level.

CHANNEL SECTION

There are 4 identical channels on your HPA4 with identical functions and performance.

4 AUX IN

This stereo input is useful when you want to feed an additional signal with the signals applied to MAIN or DIRECT IN inputs. If you have a stereo signal depress the MONO switch. If you have a mono signal, press the MONO switch if you want such signal to appear on both ears.

5 L & R MUTE SWITCHES

Through these switches, you can mute the respective input signals one at a time or both at the same time.



3. CONTROL ELEMENTS

6. MODE SWITCH

Depress the switch if you want to hear a stereo signal. Press it again if you want to hear a mono signal.

7. MONO Led:

When the MODE switch is engaged, this Led will light up.

8. HEADPHONE OUT

This connector is wired in parallel with the correspondent output connector on the rear panel. It is useful to connect headphones when your HPA4 is installed into a rack.

9. BALANCE CONTROL

This knob has a double function. When the AUX IN input is not in use it will regulate the stereo imaging of the input signal. When a signal is fed into the AUX IN input, the balance control will regulate the ratio of MAIN IN (or DIRECT IN) and AUX IN input signals.

10. OUTPUT GAIN

This knob controls the output volume of the channel. Both right and left signals are regulated at the same time.

11. OUTPUT LEVEL

This 8-digit led meter tells you about the level of the output signal, and the range goes from -18 dBu to +18 dBu. When the Clip LED lights up, please turn down the Output Gain Control to avoid any distortion.

12. BASS CONTROL

This knob is used to attenuate or boost the low frequency signal by +/-15 dB.

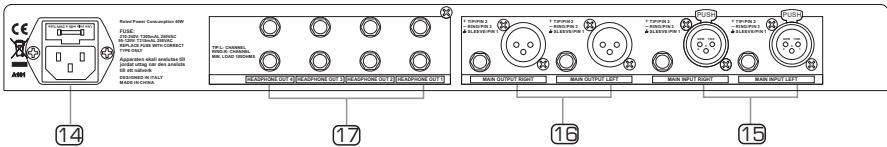
13. TREBLE CONTROL

This knob is used to attenuate or boost the high frequency signal by +/-15 dB.



3. CONTROL ELEMENTS

Rear Panel



14. AC Inlet and Fuse Holder

This connector is used to connect the supplied power cord. Please check the Voltage accepted by the unit and the Voltage available from your AC sockets before connecting the unit to the Mains.

If the fuse blows, replaced with a fuse of the correct type only.

15. MAIN INPUT LEFT & RIGHT

These connectors are used to input the stereo signal. You can input the main signal via the balanced 1/4" TRS phone jack or XLR connector:

16. Main Output Connectors

These connectors are used to output the stereo signal via the balanced 1/4" TRS phone jack or XLR connector. You can also use these connectors to link as many additional HPA4 as you wish if you need to use many headphones channels.

17. HEADPHONE OUT (1 to 8)

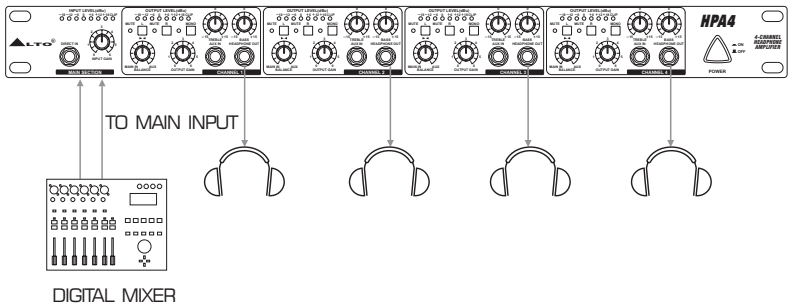
These are totally 8 additional outputs for headphone (two for every channel) wired in parallel with the output available on the front channel.



4. APPLICATIONS

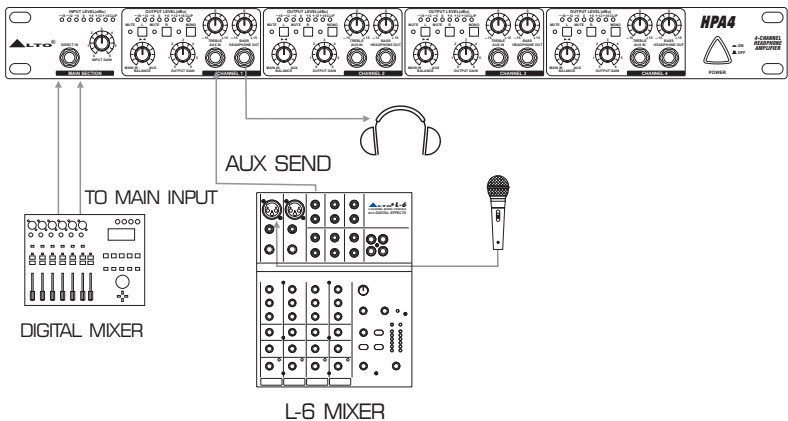
USING THE MAIN IN CONNECTORS

First, connect a signal source to the MAIN IN connectors on the rear panel of your HPA4. Set the Input Gain (Main section) and the Balance control (Channel section) on centre position. Output gain of each channel must be turned down at this stage. Check the input level Meter for optimal operation as described earlier on in this Manual. Connect the headphones you want to use and start to raise the output gain of each channel for the desired listening volume. Adjust Bass and treble control as you wish.



USING THE AUX IN INPUTS

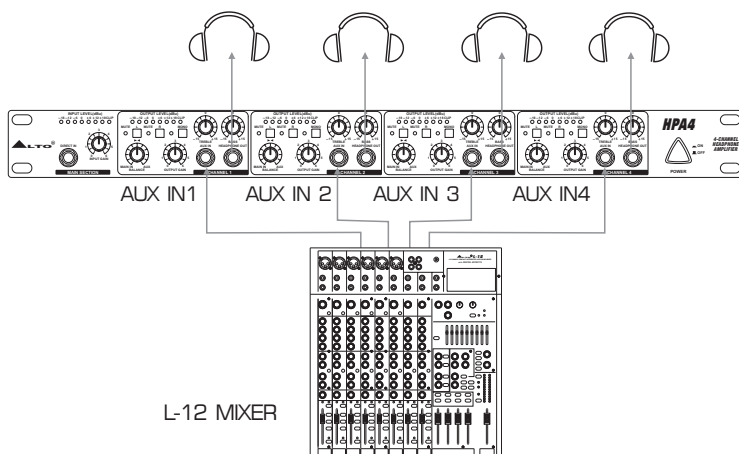
You can playback a signal and feed in additional vocals through a microphone and mixer/preamplifier connected into the AUX IN socket. Use the balance control to give the vocalist the desired mix in between his voice and the playback signal. Use the OUTPUT GAIN control to regulate the overall desired volume.





4. APPLICATIONS

Through the AUX IN inputs you can also use the 4 channels of your HPA4 independently to give individual mixers to 4 different musicians. Connect the Aux Sends or Subgroups outputs directly to the AUX IN input of your HPA4. You need a mixer with 4 Aux sends output or with 4 subgroups such as the Alto L Series mixer: Now rotate the BALANCE control on your HPA4 fully to the left. IN this way you will exclude the MAIN signal and only the AUX IN signal will be sent to the headphones.



SOME FINIAL NOTES

1. RACK MOUNTING

The most secure mounting is on a universal 19" rack available from various rack manufacturers or your Dealer: The HPA4 4-Channel Headphone Amplifier fits into one standard 19" rack unit of space. Please allow at least an additional 4" depth for the connectors on the rear panel. Be sure that there is enough air space around the unit for sufficient ventilation and please do not place your HPA4 the 4-Channel Headphone Amplifier close to high temperature devices such as power amplifiers etc. to avoid overheating.

2. USING MULTIPLE HEADPHONES ON THE SAME CHANNEL

Each channel provides 3 Headphone Outputs. These jacks are all parallel connected. For best results getting from the HPA4, please note the impedance information as following:

1. For each channel connecting with 1 headphone, the minimum impedance of the headphone should be 100 ohms.
2. For each channel connecting with 2 headphones, the minimum impedance of each headphone should be 200 ohms.
3. For each channel connecting with 3 headphones, the minimum impedance of each headphone should be 300 ohms.



5. INSTALLATION AND CONNECTION

Ok, you have got to this point and you are now in the position to operate your HPA4 successfully. However, we advise you to read carefully the following section to be the real master of your own mix. Not paying attention enough to the input signal level, to the routing of the signal and the assignment of the signal will result in unwanted distortion, a corrupted signal or no sound at all. So you should follow this procedure for every single channel:

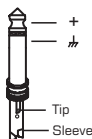
4.1 Mains Connection

Please ensure that the HPA4 is set to the correct supply voltage before plugging the power cord into the wall outlet, use the same fuse as marked on the fuse holder at the AC power connection socket. The mains connection of the HPA4 is made by using the enclosed mains cord and a standard IEC receptacle. It meets all of the international safety certification requirements.

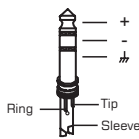
4.2 Audio Connection

The HPA4 presents with balanced XLR and 1/4" TRS phones jack. It can be interfaced by several ways to support a variety of applications without any signal loss. The defective wiring may degrade the performance of HPA4, so please use good quality screened audio cables only. Please follow the guide below to interface HPA4 without experiencing any noise or signal loss.

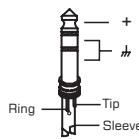
- For 1/4" Phone jack



TS Type Unbalanced

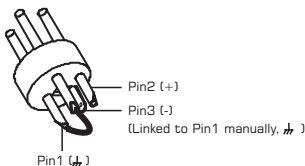


TRS Type Balanced

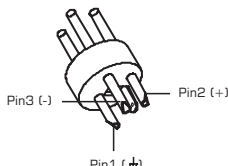


TRS Type Unbalanced

- For XLR Connector



XLR Type Unbalanced

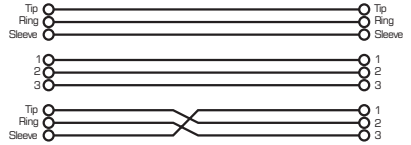
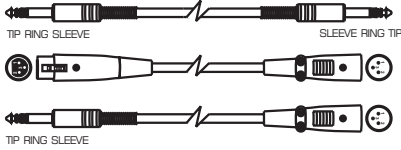


XLR Type balanced

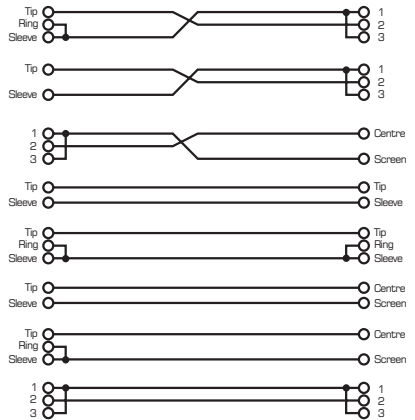
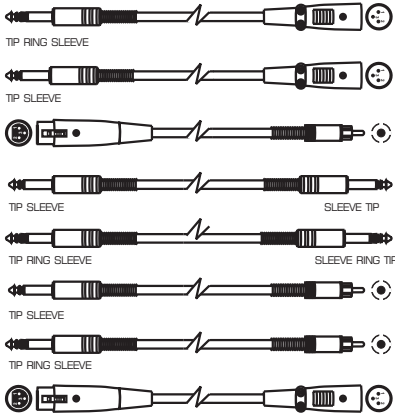


5. INSTALLATION AND CONNECTION

• Balanced



• Unbalanced



6. TECHNICAL SPECIFICATION

AUDIO INPUT

Main Input

Connectors	XLR and 1/4" jack
Type	HF filtered, servo balanced input
Impedance	40 kOhms balanced, 20 kOhms unbalanced
Max.input level	+21 dBu balanced and unbalanced
CMRR	typ.40 dB, >55 dB @ 1kHz

AUX IN and DIRECT IN input

Connectors	1/4" TRS (tip=left, ring=right, sleeve=ground)
Type	Unbalanced
Impedance	> 15 kOhms Unbalanced
Max.input level	+21 dBu unbalanced
CMRR	typ,40 dB, >55 dB @ 1 kHz

AUDIO OUTPUT

Connectors	XLR and 1/4" Jack
Type	Balanced /Unbalanced
Impedance	Dependent on the input impedance
Max. output level	+21 dBu Balanced and Unbalanced

SYSTEM SPECIFICATIONS

Frequency response	10 Hz to 50 kHz, +/-3 dB
Noise	>90 dB, Unweighted, 22 Hz to 22 kHz(>95 dB@+4 dBu)
THD	0.005% typ.@+4 dBu, 1kHz, Gain 1

POWER AMPLIFIER

Max.output power	+21 dBm
Min.output impedance	100 Ohms

FUNCTION CONTROLS

Input level	variable
Balanced per channel	mix between aux and main signal
Output level per channel	variable
Treble	+15/-15
Bass	+15/-15

FUNCTION SWITCHES

Left mute	mutes the left signal of the respective channel
Right mute	mutes the right signal of the respective channel
Mode	switches channel to mono

INDICATORS

Input level	8-digit LED display: -18/-12/-6/0/+6/+12/ +18 dBu/CLIP
Output level	8-digit LED display: -18/-12/-6/0/+6/+12/ +18 dBu/CLIP

POWER SUPPLY

Mains voltage

USA/Canada	120 V~, 60 Hz
U.K./Australia	240 V~, 50 Hz
Europe	230 V~, 50 Hz
General export model	95-120 V~, 210-240 V~, 50-60 Hz

Power consumption

40 W

Fuse

95-120 V~: T315 mA L/210-240 V~: T200 mA L

Mains connection

Standard IEC receptacle

PHYSICAL

Dimension(W x D x H)	483 x 217 x 44 mm(19"x8.54"x1.7")
Net weight	2.9 kg(6.39 lbs)

7. 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 a more effective and efficient after-sales warranty service. Please fill out all the information carefully and genuinely, miswriting or absence of this card will void your 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.

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