

User's Manual

MISTRAL900/1500

STEREO POWER
AMPLIFIER



www.altoproaudio.com
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— English —

SAFETY RELATED SYMBOLS



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.

WARNING

Describes precautions that should be observed to prevent the possibility of death or injury to the user.

CAUTION

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



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

WARNING

• Power Supply

Ensure that the mains source voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user.

Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

• External Connection

Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock/death or fire. If in doubt, seek advice from a registered electrician.

• Do Not Remove Any Covers

Within the product are areas where high voltages may present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed.

Covers should be removed by qualified service personnel only.

No user serviceable parts inside.

• Fuse

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.

• Protective Ground

Before turning the product ON, make sure that it is connected to Ground. This is to prevent the risk of electric shock.

Never cut internal or external Ground wires. Likewise, never remove Ground wiring from the Protective Ground Terminal.

• Operating Conditions

Always install in accordance with the manufacturer's instructions.

To avoid the risk of electric shock and damage, do not subject this product to any liquid/rain or moisture. Do not use this product when in close proximity to water.

Do not install this product near any direct heat source.

Do not block areas of ventilation. Failure to do so could result in fire.

Keep product away from naked flames.

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions

Follow all instructions

Keep these instructions. Do not discard.

Heed all warnings.

Only use attachments/accessories specified by the manufacturer.

• Power Cord and Plug

Do not tamper with the power cord or plug. These 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.

• Cleaning

When required, either blow off dust from the product or use a dry cloth.

Do not use any solvents such as Benzol or Alcohol. For safety, keep product clean and free from dust.

• Servicing

Refer all servicing to qualified service personnel only.

Do not perform any servicing other than those instructions contained within the User's Manual.

Preface

Dear Customer:

Thanks for choosing ▲LTO MISTRAL1500/900 Stereo Power Amplifier and thanks for choosing one of The results of ▲LTO AUDIO TEAM job and researches.

For our ▲LTO AUDIO TEAM, music and sound are more than a job ...are first of all passion and let us say...our obsession! We have been designing professional audio products for a long time in cooperation with some of the major brands in the world in the audio field.

The ▲LTO line presents unparalleled analogue and digital products made by Musicians for Musicians in our R&D Centers in Italy Netherlands, United Kingdom and Taiwan. The core of our digital audio products is a sophisticated DSP (Digital Sound Processor) and a large range of state of the art algorithms which have been developed by our Software Team for the last 7 years.

Because we are convinced you are the most important member of ▲LTO AUDIO TEAM and the one confirming the quality of our job, we'd like to share with you our work and our dreams, paying attention to your suggestions and your comments. Following this idea we create our products and we will create the new ones! From our side, we guarantee you and we will guarantee you also in future the best quality, and the best fruits of our continuous researches and the best prices.

Our ▲LTO MISTRAL1500/900 Stereo Power Amplifier is the result of many hours of listening and tests Involving common people, area experts, musicians and technicians.

The result of this effort is the sophisticated circuit design featuring high power and superb quality together with superior reliability and stability to provide the highest possible audio performance.

Nothing else to add, but that we would like to thank all the people that made the ▲LTO MISTRAL1500/900 Stereo Power Amplifier a reality available to our customers, and thank our designers and all the ▲LTO staff, there to make possible the realization of products containing our idea of music and sound and there to support you, our customers, In the best way, conscious that you are our best richness.

Thank you very much.

▲LTO AUDIO TEAM

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1. ▲LTO MISTRAL1500/900

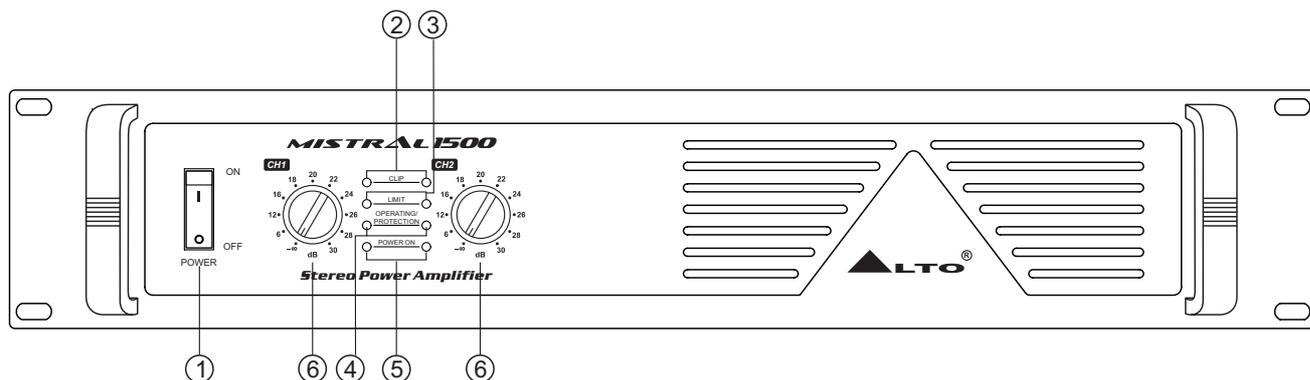
The ▲LTO MISTRAL is a line of high power, low profile, professional Power Amplifiers with advanced features and great reliability. They deliver tremendous power in only two rack spaces, providing high level performance under the most demanding conditions. An automatic speed fan matches cooling capacity with heat requirements. The amplifier frame contains all solid-state circuitry, using complementary silicon output devices. The amplifier is supplied with a single moulded AC cord having an appropriate AC plug for the intended operating voltage. The amplifier employs forced air cooling with a variable speed fan for minimum acoustic noise. Air flow is from rear to front to avoid temperature rise inside the Rack. The amplifier contains two independent channels, with separate AC transformer secondaries, power supplies and protection system. All protection systems, except the main AC one, are self resetting upon removal of fault, and the remaining channel shall continue to operate. Each channel has independent protective circuitry against open circuit, short circuit, mismatched loads and over temperature. Each channel has also a main LED that becomes green for power-on indicator and red for muting or protection, another red LED that shows true amplifier clipping and a yellow one for the Limiter stage. The power outputs employ standard power connectors. All the inputs are electronically balanced and an high quality audio transformer can be added on the input stage of each channel.

2. FEATURES

- 2U rack, stereo high power amplifier.
- Fantastic audio quality even with extremely high volume levels.
- Solid and durable, can be mounted into a cabinet.
- User-controllable clip limiter
- 2x300 Watts EIAJ on 4 ohms for MISTRAL900,
- 2x500 Watts EIAJ on 4 ohms for MISTRAL1500.
- Stereo (dual-channel), or bridge mono operating modes.
- Balanced XLR inputs / parallel outputs to ensure noiseless long wiring.
- Binding post and Neutrik Speak-on connectors for output.
- Single channel, bridge, and bi-amp output wiring possibility.
- Front panel LED indicators for operating/protection, limit, power on and clip.
- Accurate gain control
- Independent DC and thermal overload protection on each channel automatically protects amplifier and speakers.
- Single channel over-heat protection.
- Manufactured under QS9000, VDA 6.1 certified management system.

3. CONTROL ELEMENTS

3.1 Front Panel



① Power Switch

Turn the unit power on or off.

② Clip Led

When the signal distortion reaches or surpasses 0.5%, the Led lights up. This means the output level of signal source is too high and it is time to reduce input level until clip led turning off.

③ Output Limiter Led

While the unit is limiting the output signal, the Led lighting up.

④ Operation and protection Led

When there presents signal, the yellow Led lights up.
When at protection status, the Led is off.

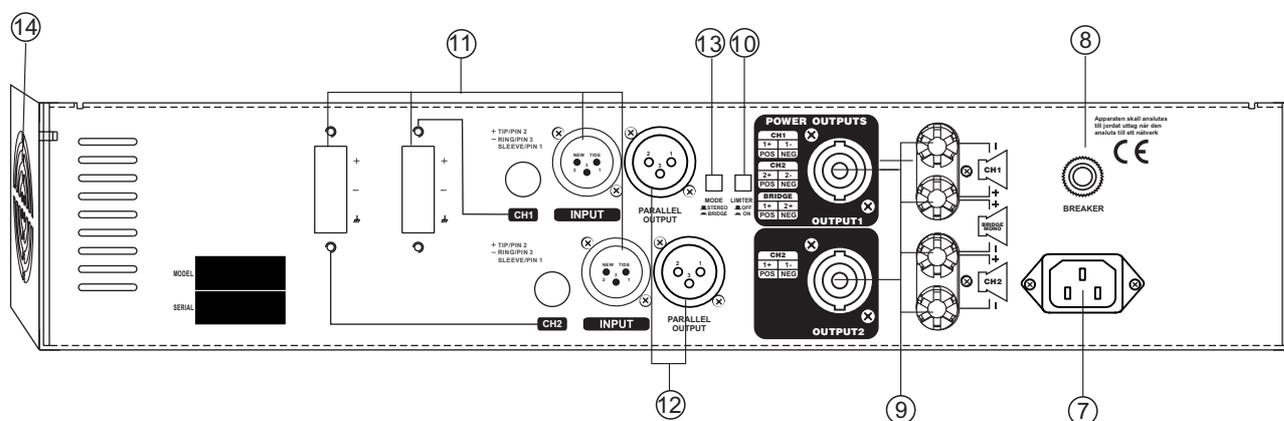
⑤ Power Led

This Led lights up when the unit is powered.

⑥ Level Control for Channels 1 & 2

Adjust the output signal level to avoid signal distortion.

3.2 Rear Panel



⑦ **Power Source Socket**

It is used to connect power cord, after setting the proper voltage, connect one end of power cord with the unit and another end with mains.

⑧ **Manual Reset Pushing-Button**

This switch works as fuse for protecting the unit from damage. When the unit is overloaded or the temperature inside the unit is too high, this pushing-button will spring up and break the power supply. The power supply will be restored with pushing this switch down again.

⑨ **Output Connector**

These connectors have two kinds: Binding post and Neutrik connector. You can choose proper connectors according to practical need. For your safety, please be careful when do connecting work.

⑩ **Clip Switch**

Set this switch at "ON" position, once the output level is above maximum output level, the clip begin, thus keeping consistent output level for protecting apparatus. If the switch is set at "OFF", this clip function doesn't work.

⑪ **Balanced Input Connector**

These connectors connect the input signal of channel1 and channel 2 separately.

⑫ **Balanced Output Connector**

These two output connectors are paralleled inside with input connectors. It enables the unit work under paralleled mode. Please also refer to wiring diagram for paralleled mode.

⑬ **Mode Selector**

Total two optional modes: Up for Stereo mode; Down for Bridge mode.

- Stereo

In this mode, Channel 1 and Channel 2 operate independently (just as traditional stereo amplifier). The signal input into channel 1 can be output from channel 1 only, similarly, the signal input into channel 2 can be output from channel 2 only.

You can also operate the paralleled mode via outside wiring, so, the signal input from channel 1 or 2 will be output from both channel 1 and 2 simultaneously. Details refer to the chapter 4.

- Bridge

In this mode, the signal input into channel 1 will be output from the bridged end, on other hand, the output level control of channel 2 should be turn down to smallest.

⑭ **Fan**

The fan can accelerate the flow of air to lower the temperature inside unit. The inside temperature determines the fan speed which controls the inside air flowing speed.

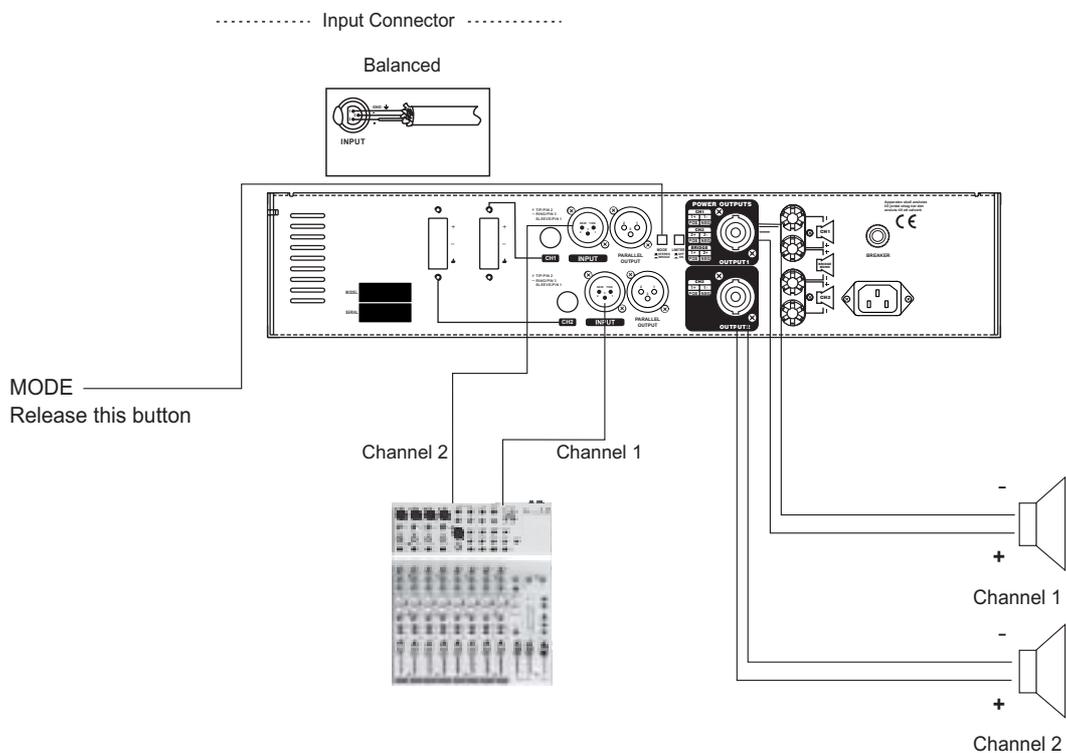
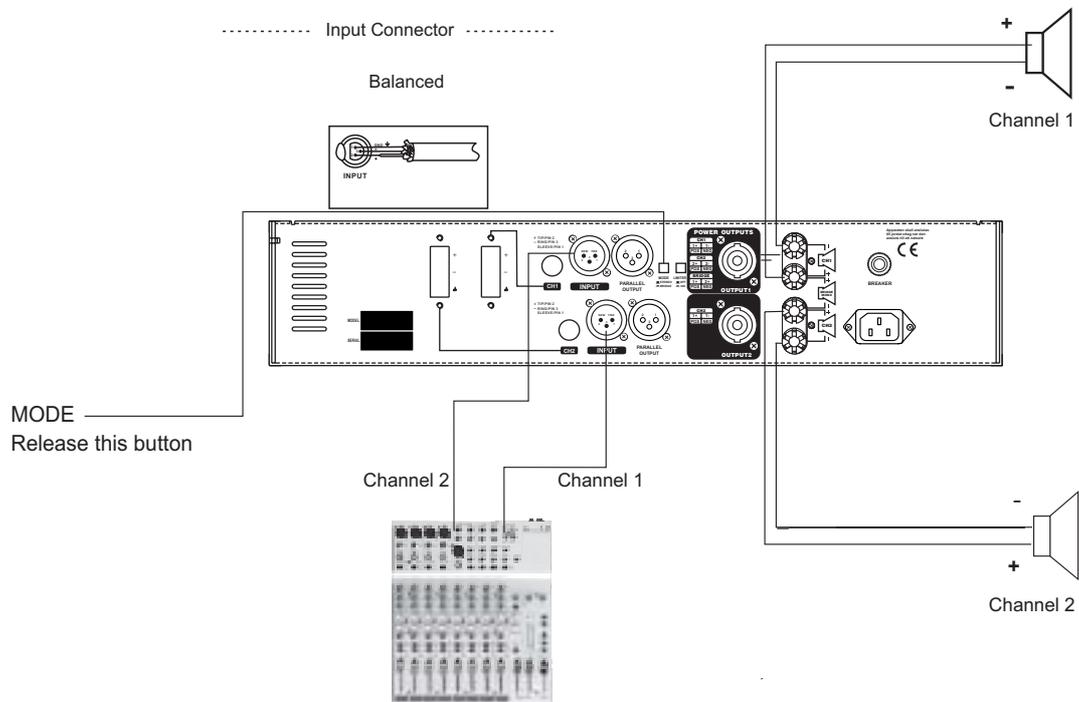
4. APPLICATION

Total two optional modes:

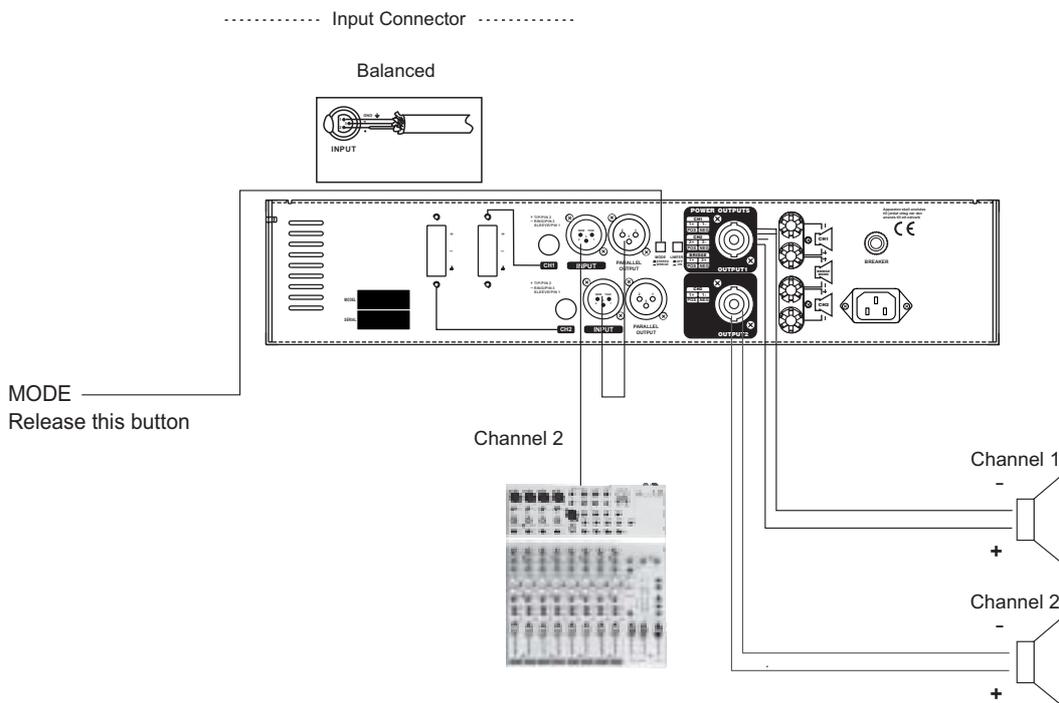
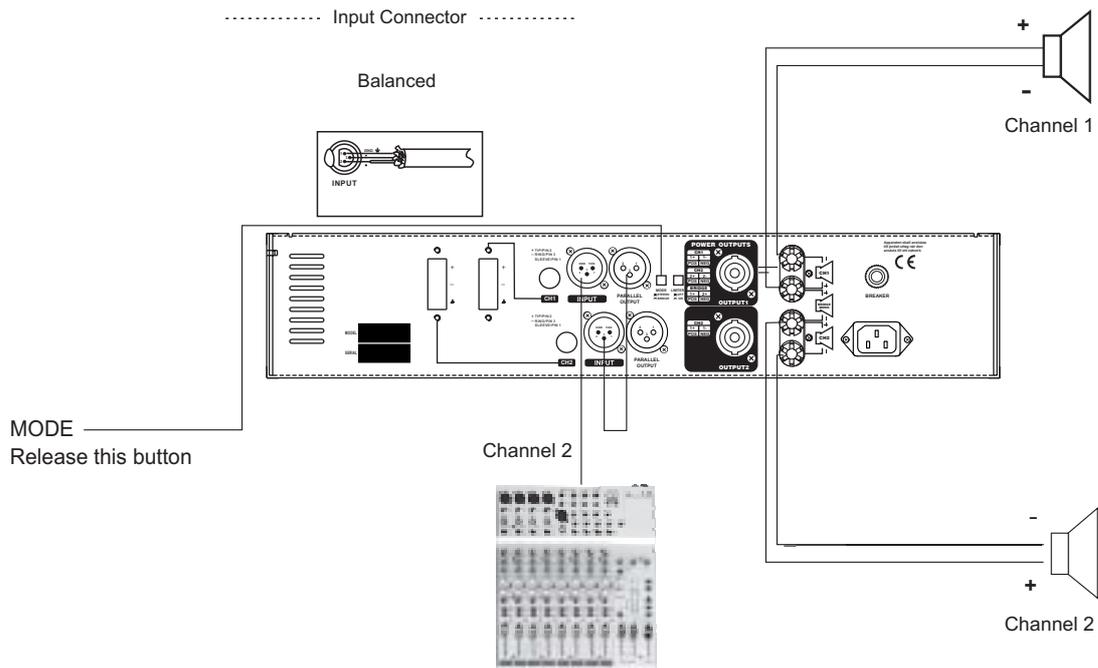
Please see following diagram for connecting the power amplifier into your audio system.

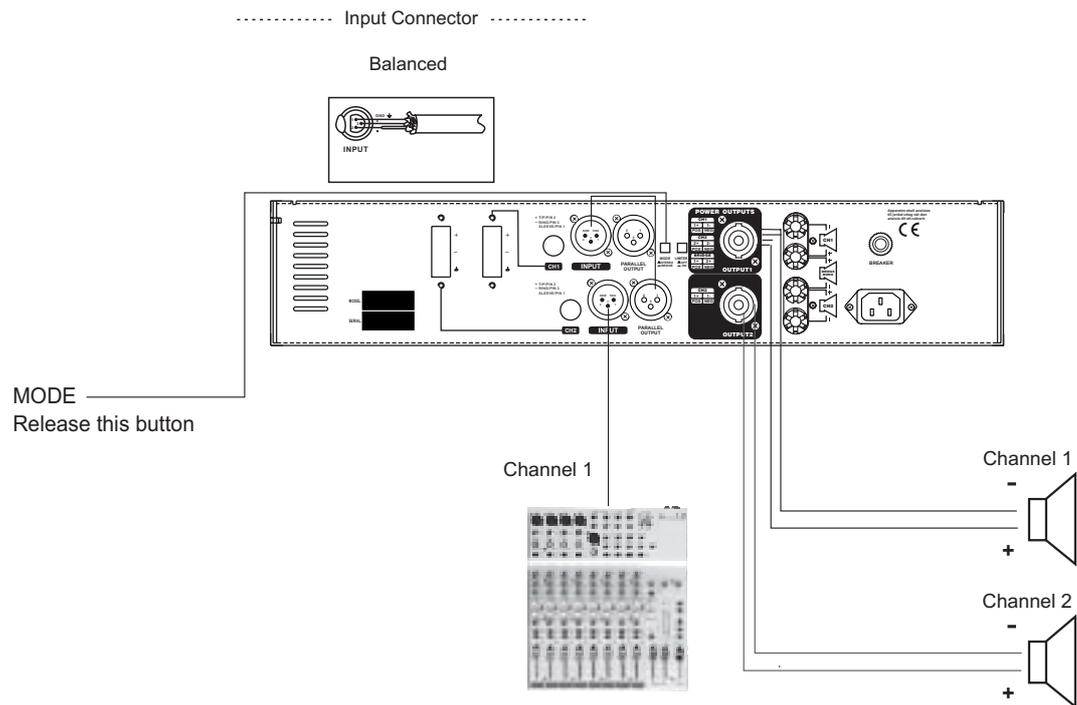
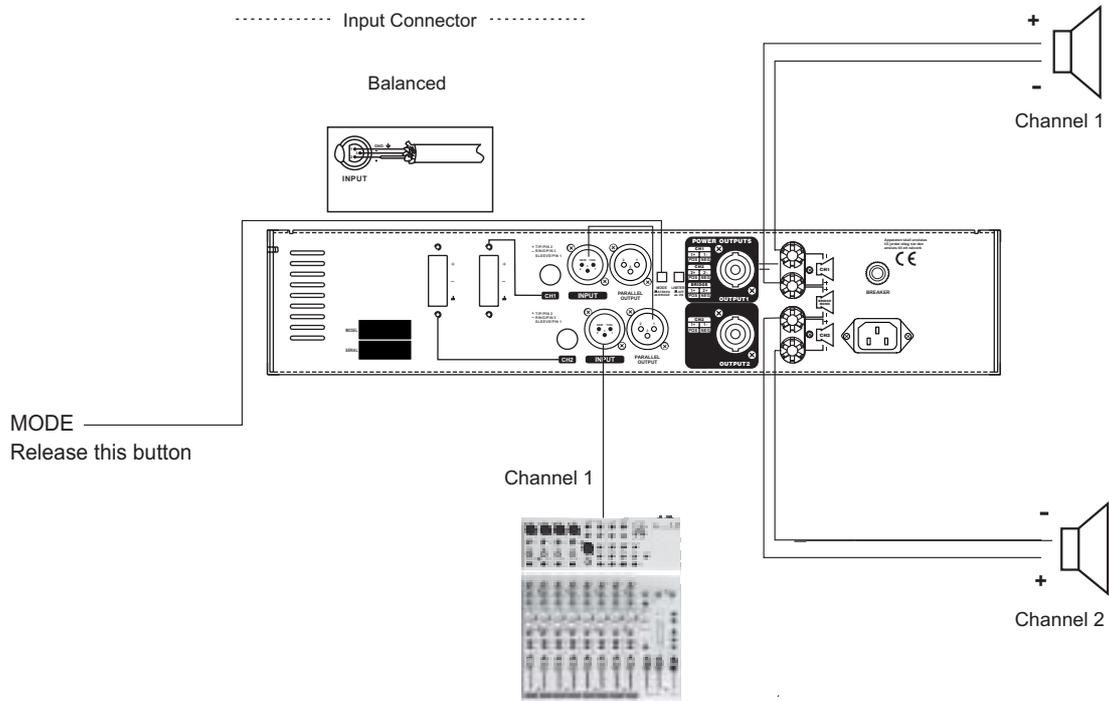
4.1 Stereo Mode

In this mode, Channel 1 and Channel 2 operate independently (just as traditional stereo amplifier). The signal input into channel 1 can be output from channel 1 only, similarly, the signal input into channel 2 can be output from channel 2 only.



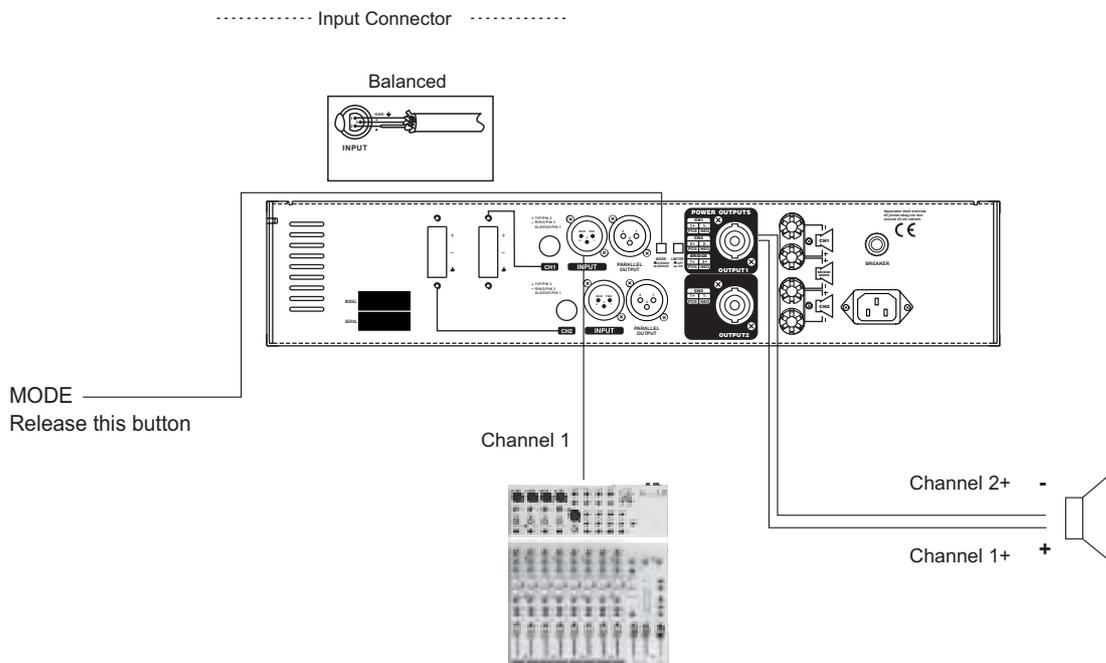
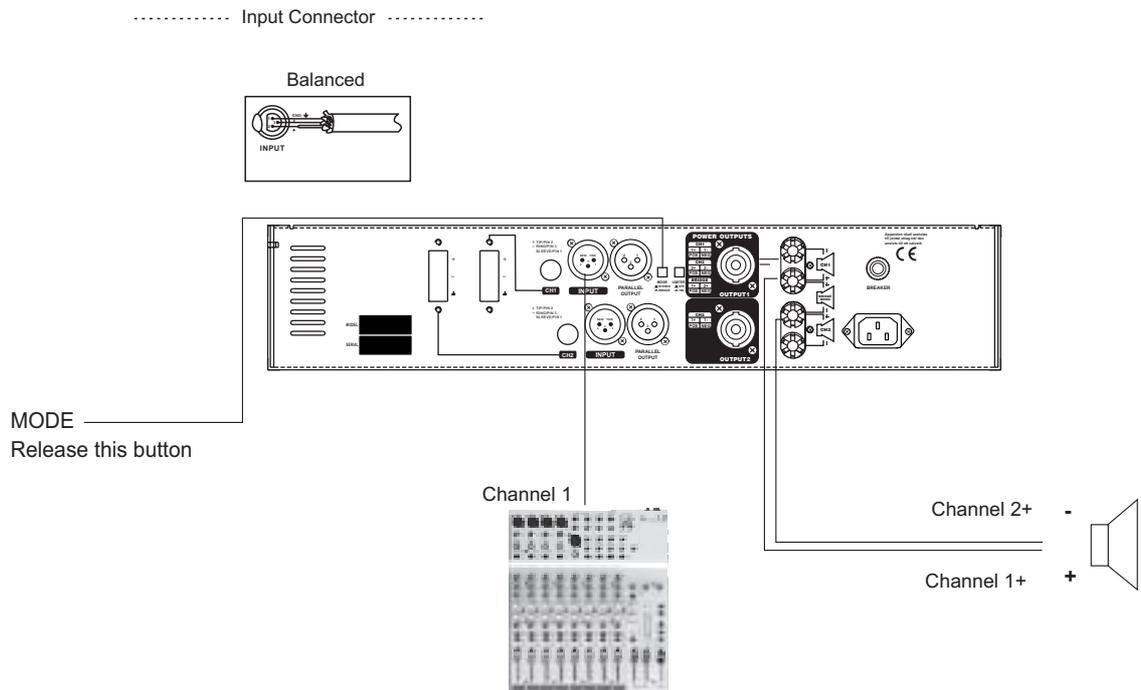
You can also operate the paralleled mode via outside wiring, so, the signal input from channel 1 or 2 will be output from both channel 1 and 2 simultaneously. The volume of channel 1 or channel 2 can be controlled separately.





4.2 Bridge Mode

In this mode, the signal input into channel 1 will be output from the bridged end, on other hand, the output level control of channel 2 should be turned down to smallest (turn the volume control at counterclockwise). Only the volume control of channel 1 is used to control the volume of whole system.



5. TECHNICAL SPECIFICATIONS

MODEL	MISTRAL900	MISTRAL1500
20Hz 20KHz@0.1%THD, Stereo Mode		
8 ohms per channel(EIAJ)	190W	300W
4 ohms per channel(EIAJ)	300W	500W
Bridge Mono Mode		
8 ohms, 1KHz, 0.1%THD	600W	1000W
Distortion (SMPTE-IM)	<0.05%	
Frequency Response	20Hz-20KHz ± 1dB, -3dB points: 10Hz-60KHz	
Damping Factor, 1 kHz and below	>300 at 8ohms	
Signal to Noise,20Hz-20KHz	102dB	
Voltage Gain	40x (32dB)	
Input Sensitivity @ 4 ohms	1Vrms	
Input Clipping	10Vrms (+22dB)	
Input Impedance	10K ohms unbalanced, 20K ohms balanced 56 (36dB)	
Controls	FRONT: AC SWITCH, CH1 & CH2 GAIN KNOBS REAR: LIMITER, BRIDGE SELECTOR	
Indicators (1 per channel)	Power-On: Blue LED Operation/Protection : Dual Color (Yellow LED) Limit: Yellow LED Clip: Red LED	
Connectors, each channel	Input: Active balanced XLR Parallel Output : XLR Output: NEUTRIK® Speakon and Binding posts	
Cooling	Continuously variable-speed fan, rear-to-front air flow	
Load Protection	On/off muting, DC-fault load grounding relay. Internal fault fuses.	
Power Requirements	200-240(100-120) Vac 50~60Hz	
Dimensions	19" (48.3 cm) rack mounting, 3.5" (8.9 cm) tall (2 rack spaces), 15.9" (40 cm) deep (rack mounting to rear support ears)	
Net Weight	11Kg	13Kg

*PRELIMINART

6. 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 purport 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.

SEIKAKU TECHNICAL GROUP LIMITED
No. 1, Lane 17, Sec. 2, Han Shi West Road, Taichung 40151 Taiwan
<http://www.altoproaudio.com> Tel: 886-4-22313737
email: alto@altoproaudio.com Fax: 886-4-22346757

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