

LA-Range of power amplifiers

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USER'S MANUAL

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WARNING

Please note:

4x8 Ω speaker each channel High Output Power is about 1 Ω

3x8 Ω speaker each channel High Output Power is about 2 Ω

2x8 Ω speaker each channel High Output Power is about 3 Ω

1x8 Ω speaker each channel High Output Power is about 7 Ω

Minimum Load is 2 Ω , don't use 4x8 Ω speaker each channel, you will destroy amplifier!

Longtime overload or overloaded input signal can destroy amplifier too

No warranty with unauthorized opening in electronic workshop or overloading

Don't open. High Frequency and High Voltage inside, don't touch speaker wires, risk of life!

Thank you for purchasing H series amplifier. Please read the user's manual carefully before you use the product. It will give you correct guidance about using the product.

IMPORTANT PRECAUTIONS



- 1 Before using the product, please read the user manual carefully and retain it for further reference
- 2 Must use power supply same as the voltage label on the rear panel, the product will not be guaranteed if for improper voltage used
- 3 The grounding cable of the equipment must be connected with the power supply grounding cable. Please make sure the power supply grounding cable is connected with the ground
- 4 When this model is connected to the power supply, the standby LED is on. Some components are connected to the electricity
- 5 At bridge mode, the output connector of amplifier should not be connected with the head of the scope, or it will cause damage to the amplifier and the test equipment
- 6 The input level of the amplifier shall not be higher than the rated sensitivity value
- 7 Don't connect the output of any channel with the input of another channel. Don't parallel or serial connect the output of one amplifier to the output of another amplifier
- 8 The power of amplifier must be 50%-100% higher than the rated power of speaker
- 9 Make sure the current using status of the amplifier is accordance with the input mode
- 10 Usually the volume control is set at -80db
- 11 If one signal has to be separated for several amplifiers, we suggest using signal distributor
- 12 Don't obstruct the air entrance and air exit
- 13 Don't use sine wave to test the power of amplifier, you will damage the amplifier

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Safety Instructions

Read all safety instructions before operating amplifier

Install equipment as follows:

Install it in a flat place

Keep the amplifier away from water or moisture

Place power amplifier away from heat sources, such as radiators or other heat source. Keep in mind the following when connecting amplifier:

Read the user manual before connecting the amplifier

Connect each connection of the amplifier perfectly. If not, it may cause burn, damage, electric shock in case of disconnection

To prevent electric shocks, do not open top cover

Connect the power cord with safety after check the AC power



Function Descriptions

This product applies for brand new tunnel heat-sink cooling system, which increases the heating radiation efficiency and decreased working temperature of the amplifier

The amplifier module adopts Class H circuits, which increase the total efficiency to be 70% and much power as the speakers in a limit space. Plus the product is equipped with DC, short circuit, VHF, over-current and soft-start protection. These functions greatly increase the stability and reliability of the products. The best loading condition for this series amplifier is at 8ohm

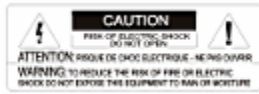
It adopts the output power to make sure that the amplifier is working under the rated power so as to avoid the risk of damage because of over-loading

This amplifier is with advanced switching power supply, standing out the small volume and light weight compared with same power products, favorable to save transportation cost and reduce loading difficulties.

The output stage circuit adopts transistor collector output mode, which makes the transistors with stronger loading ability. It is good for product stability

Ex-factory setting

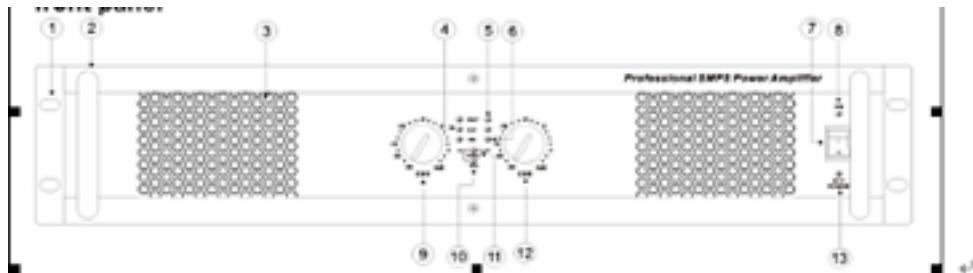
- 1 All the volume adjustment button was set at "-80"
- 2 The power switch was set at "OFF"
- 3 Working mode selector switch was set at "STEREO"
- 4 Sensitivity selector switch was set at "26dB"



Important direction: Other control functions and adjustment functions that do not introduce in the user's manual, may cause mechanical danger or radiation due to other outside factors.

H Series panel description

Front Panel



1 Installation Socket

Use to fix when install to the rack

2 Air Entrance

This part is air entrance. Don't obstruct it.

3 Power "ON" Indicator

When this indicator is on, the main power supply system of amplifier has been working.

4 CLIP Indicator

When this indicator is on, the amplifier has reached its maximum output power (CLIP). The distortion is about 0.5%, you have to turn down the input signal to make sure the amplifier work under low distortion

5 Protection Indicator

The amplifier is under protection when this indicator is on

6 Signal Indicator

When this indicator on, the output port of the amplifier already has signals.

7 Power Switch

This switch is used for power on and off

8 Handles,

Handles are used for easy transportation

9 CH1 Volume control

In bridge mode, this potentiometer controls two channels volume, the CH2 potentiometer invalid. In stereo or parallel mode: this potentiometer just controls CH1 volume. Gain control range: -80dB~0dB, available turning angle is 280 degree.

10 Bridge indicator in orange color

When this indicator lights, the amplifier is on bridge mode

11 "Parallel" indicator in orange color

When this indicator illuminates, the amplifier is on parallel mode

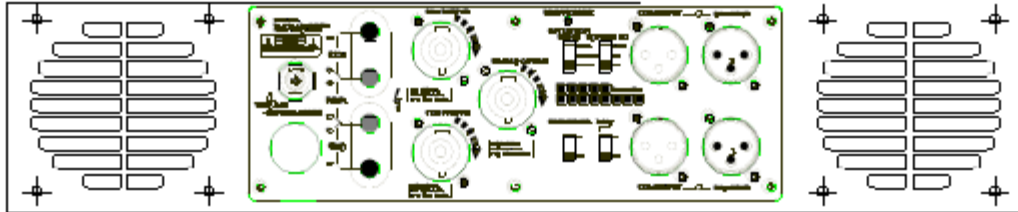
12 CH2 volume control

In bridge mode, this potentiometer is invalid, the volume is controlled by CH 1 potentiometer. In stereo or parallel mode, the potentiometer just controls CH2 volume. Gain control range: -80dB~0dB, available turning angle is 280 degree.

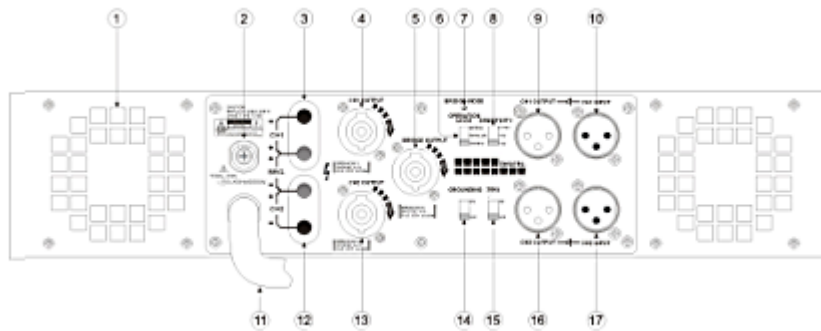
13 Stand-by Power indicator

This indicator lights when the equipment is connecting with power. It will be off when the power indicator lights.

Rear panel



This is the right one. The one below is just used to show you the description



1 Air exit

This part is air exit. Don't obstruct it.

2 Fuse Holder

The fuse holder includes a standard specification fuse inside. It is used to protect amplifier from damage. If the amplifier was connected to power supply but the LED was not light, please check the fuse situation. If you found the fuse broken, you must replace it with a fuse of same specification.

3 CH1 binding post output

Red color connects to the positive port of speaker. Black color connects to the negative port of speaker. In bridge mode, just uses red color to connect the positive port of speaker.

4 CH1 SPEAKON output

This output socket (SPEAKON) is used to connect with speaker. Connecting: +1&+2, -1&-2.

5 Output socket in Bridge

Use the output socket to connect with the speaker, when the amplifier works in bridge mode. Connecting: 1+ connects to the positive port of speaker, 1- connectors to the negative port of speaker.

6 Operation mode selector

This switch is used to choose the operation mode of the power amplifier. Stereo mode: Two channels are independently input and output. PARALLEL mode: Use CH1 to input signal

independently. Output independently from two channels” BRIDGE MODE: Use “+” of CH1 and “+” of CH2 to input signal, output from 1+ and 1- of SPEAKON 3

7 Bridge indicator

The indicator lights when the amplifier is on bridge mode

8 Input Sensitivity selector

This selector allows to choosing the input sensitivity, 0.775v, 1.0v, 1.4v

9 CH1 bypass socket

It is parallel connection with XLR input of CH1, providing output signals same as the input signals.

10 CH1 XLR input

This XLR input is balanced input. It connects to the upper audio processors

11 Power cord

This is the power supply cord. Before plug it into AC power supply, please connect to a power plug which conforms to the power socket of local requirement. Meanwhile, please kindly check whether the amplifier marked voltage is conform to local required voltage or not.

12 CH2 binding post output

Red color connects to the positive port of speaker. Black color connects to the negative port of speaker. In bridge mode, just uses red color to connect the positive port of speaker.

13 CH2 output SPEAKON port

This output port (SPEAKON) is used to connect with speaker. Connecting: +1&+2, -1&-2. When the amplifier is in bridge mode, this port is not in use

14 Grounding selector switch

You can use this switch to cut the “AC voice” when operating the system

15 30Hz high pass filter selector

This filter can cut the frequency below 30Hz to prevent low frequency signal getting into amplifier and speaker, so as to save the energy consume of amplifier and protect the speaker

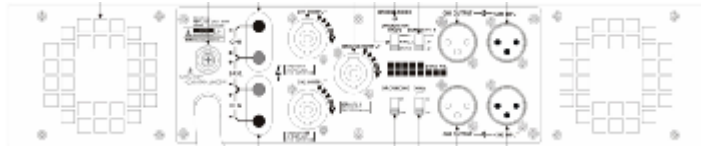
16 CH2 bypass socket

It is parallel connection with XLR input of CH2, providing output signal same as input signal

17 CH2 XLR input

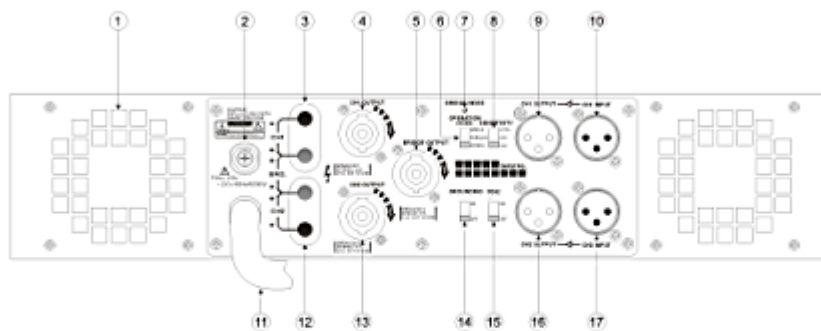
This XLR input is balanced input. It is connected to the upper audio processors.

Bridge Mode



In this mode, connect the CH1 input to sound source (such as mixer, CD) output, set the mode at “BRIDGE” adjust the CH1 volume to suitable position, connect the SPEAKON of the BRIDGE OUTPUT to the speaker.

parallel mode:



In this mode, connect the CH1 input to the sound source (such as mixer, CD) output, set the mode at “PARALLEL” adjust the two channels volume to a suitable position, connect the two SPEAKON to two speakers.

In this mode, connect the CH1 input to sound source (such as mixer, CD) output, set the mode at “PARALLEL” adjust the two channels volume to suitable position, connect the two SPEAKON to two speakers.

Protection

1 CLIP/LIMIT

It is used to prevent the speakers from dangerous clip signal. CLIP/LIMIT monitors the distortion produced by amplifier output. When distortion exceeds 1%, Clip/limit will reduce the input signal to ensure right signals from amplifier

Note: If the input signal already has CLIP or exceeds linearity working range of input circuit, the CLIP/LIMIT will be invalid

2 Over-heat

If the amplifier works at full loading for a long time, and the fans have reached the highest speed. If this status continue and the temperature rise up to over 95 degree, the amplifier will go into over-heat protection status and the protection indicator (PRO) on the front panel will light on. The amplifier will have no output when it is under PRO status. Therefore, the users are suggested to correctly operate the amplifier, the loading should not be under 2ohm and maintain the airflow good and free

3 VHF

If the amplifier output reaches a certain range and frequency exceeds 10Khz, such as MIC feedback noise, amplifier may go into VHF protection after 3 seconds, the protection indicator (PRO) on the front panel will be on and the speakers do not have sound, but it will recover automatically after protection circuits startup for 10 seconds. If the output signal does not change, it will keep on VHF protection

4 Short circuit protection

It makes the output transistors work at safe range. When output is in short circuit, the protection indicator (PRO) on the front panel will be on and the amplifier has no output. The equipment will be recovered after 10 seconds when the terms of short circuits removed.

5 AC local power protection

If the AC power voltage lower than the allowed working voltage ($\sim 160\text{v}$), the power supply will be turned off automatically until the power voltage is normal

6 DC protection

If the output signal has large DC voltage ($\approx 2.6\text{V}$), in order to protect the speaker, the DC protection circuit will be startup, the protection indicator (PRO) on the front panel will be on and the amplifier has no output.

Maintenance and Trouble Shooting

Below are some simple methods to check if the amplifier has been damaged or not:

1 No output

If the signal LED is illumed based on the signal, the amplifier shall be fine, please check if the

SPEAKON output is well connected.

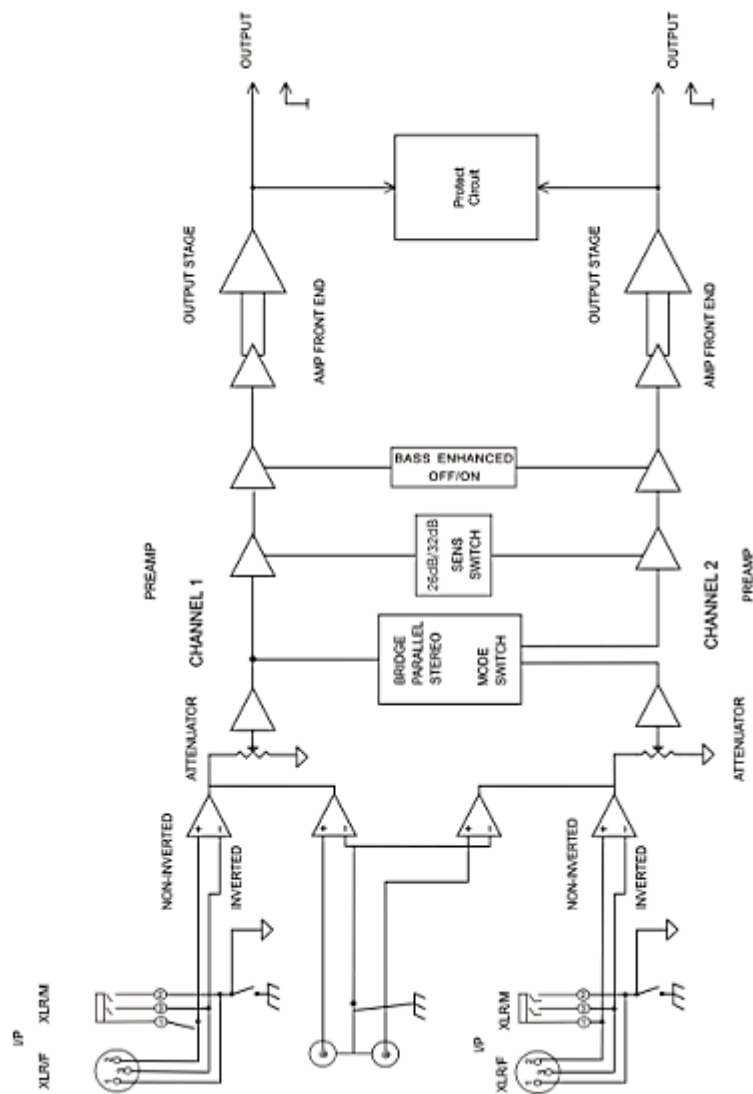
2 Low signal output

If the signal LED is illuminated and clip LED lit, please check if the output port is short circuit

If the signal LED is illuminated, and the protection LED is lit, the amplifier shall be at protection status. There are two possibilities: one maybe over-heat protection, another maybe VHF protection. Cancel the signal, you can test if it is VHF protection. If the amplifier chassis temperature is very high, it should be over-heat protection. If the input voltage is too low, it may lead to lack of voltage protection, the lowest AC voltage is 160V

3 If the failure is still existing after check the above, please return the equipment to the authorized service agent, it should be repaired by skilled person

Schematic illustration



Specifications

model	MTA-LA07	MTA-LA10	MTA-LA15	MTA-LA20	MTA-LA37
8ohm stereo power (RMS)	200WX2	350WX2	450WX2	600WX2	1200WX2
4ohm stereo power (RMS)	380WX2	500WX2	750WX2	1000WX2	1850WX2
2ohm stereo power (RMS)	500WX2	750WX2	900WX2	1200WX2	2000WX2
8ohm bridge power (EIA)	600W	900W	1400W	2000W	3700W
frequency response	20Hz-20KHz@8 Ω +0dB/-0.5dB				
THD+N	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
S/N rate	>95dB	>95dB	>95dB	>95dB	\geq 80dB
slew rate	>20V/ μ s	>20V/ μ s	>20V/ μ s	>20V/ μ s	>20V/ μ s
damping factor	>300	>300	>300	>300	>200
input sensitivity	2V/1.0V	2V/1.0V	2.82V/1.41V	3.46V/1.73V	2.5V/4.4V
input impedance	20K Ω /10K Ω				

protection	Soft start, short circuit, overload, DC, over-heat, THD clip/limit, output volume increase gradually function after switch on, lack of voltage of SMPS, VHF, infrasound frequency protection, over-power limit.				
dynamic range	≥80dB	≥80dB	≥80dB	≥80dB	≥80dB
voltage gain	26dB/32dB				
Output circuit class	CLASS AB	2 STEPS CLASS H	2 STEPS CLASS H	2 STEPS CLASS H	3 STEPS CLASS H
Power voltage/frequecny	~220V±10%/50Hz				
gross weight	9KG	9KG	11.5KG	11.5KG	13.5KG
packing dimension(cm)	L138xW560xH380		L138xW560xH542		

※The above result was tested under the term of standard power wave and constant voltage.

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Schematic Illustration

