



PURERESONANCEAUDIO®

LA21000 LOW-IMPEDANCE AMPLIFIER

INSTALLATION AND OPERATION MANUAL



Caution: Please read this manual carefully before operating.
Damage caused by misuse is not covered by the warranty.

SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Be sure to follow the instructions in this manual as safety symbols and message conventions are considered very important precautions.
- We also recommend you keep this instruction manual handy for future reference.

SAFETY SYMBOLS AND MESSAGE CONVENTIONS

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety risks.



WARNING!

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.



CAUTION!

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.



WARNING!

WHEN INSTALLING THE UNIT

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.
- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Do not cut, bend, damage or modify the power cord. Also, avoid using the power cord near heating appliances and never place heavy objects (including the unit itself) on the power cord as this could result in fire or electric shock.
- Be sure to replace the unit's terminal cover after connection is complete. Because high voltage is applied to the speaker terminals, never touch these terminals to avoid electric shock.
- Make sure the equipment is grounded to the safety ground (earth) terminal to avoid electric shock. Never ground to a gas line as this could lead to a catastrophic disaster.
- Do not install or place the device in an unstable place such as a wobbly table or sloped surface. Otherwise, the device may fall and cause personal injury and/or property damage.

WHEN THE UNIT IS IN USE

- Should the following irregularity be found during use, immediately switch off the power, disconnect the power supply plug from the AC outlet and contact your nearest dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
 - If you detect smoke or a strange smell coming from the unit
 - If water or any metallic object gets into the unit
 - If the unit falls, or the unit case breaks
 - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
 - If it is malfunctioning (no tone sounds)
- To prevent a fire or electric shock, never open or remove the unit case as there are high voltage components inside the unit. Refer all servicing to your nearest dealer.

- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit.
- Do not insert or drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.

CAUTION!

WHEN INSTALLING THE UNIT

- Never plug in or remove the power supply plug with wet hands, as doing so may cause electric shock.
- When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.
- When moving the unit, be sure to remove its power supply cord from the wall outlet. Moving the unit with the power cord connected to the outlet may cause damage to the power cord, resulting in fire or electric shock. When removing the power cord, be sure to hold its plug to pull.
- Do not block the ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire.
- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.

WHEN THE UNIT IS IN USE

- Do not place heavy objects on the unit as this may cause it to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.
- Make sure that the volume control is set to the minimum position before the power is switched on. Loud noise produced at high volume when the power is switched on can impair hearing.
- Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- Contact your dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result.
- If dust accumulates on the power supply plug or in the wall AC outlet, a fire may result. Clean it periodically. In addition, insert the plug in the wall outlet securely.
- Switch off the power, and unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more. Doing otherwise may cause a fire or electric shock.

An all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.

PLEASE NOTE:

Due to product upgrades, some of the features and specification in this user manual may or may not match the actual functions of the unit.

DESCRIPTION

The Pure Resonance Audio LA21000 is a game-changing low-impedance amplifier that ushers in a new era of premium, refined, and economical professional audio solutions. This high-power digital amplifier boasts over 95% ultra-high efficiency and excellent stability. Its 1U cabinet design combines Class D power with lightweight convenience, while the universal switch-mode power supply reduces weight and enhances efficiency, ensuring reliable operation. With a focus on powerful functions, high reliability, equipment durability, and crystal-clear sound quality, the LA21000 delivers unmatched performance.

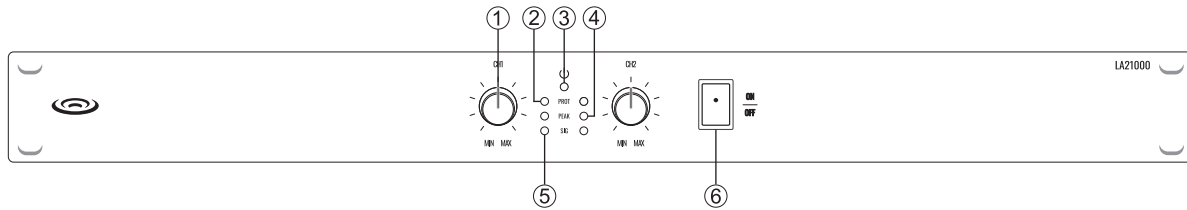
FEATURES

1. Class D low-impedance digital amplifier design
2. 95% ultra-high efficiency with low distortion
3. 2 × 700W at 8 ohms or 2 × 1000W at 4 ohms
4. 3 optional modes: Mono, Stereo, or Bridge
5. Lightweight 1U 19-inch chassis
6. Switched mode power supply technology
7. Smart peak clipper ensures the power module operates in a safe range
8. Soft starter prevents absorbing current spikes or electrical interference
9. Smart forced cooling with low fan noise and high heat dissipation efficiency
10. DC, overload, short circuit, and overheat protection

SPECIFICATIONS

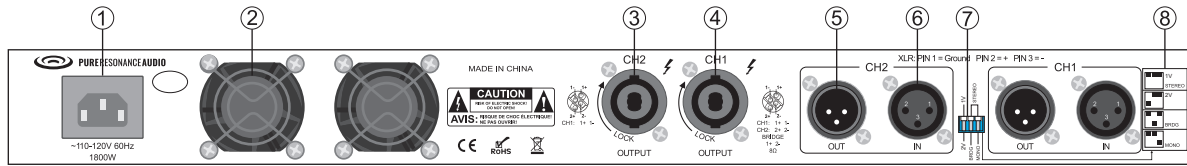
Rated Power	Stereo 8Ω: 2×700W, Stereo 4Ω: 2×1000W Bridge 16Ω: 1400W, Bridge 8Ω: 2000W
Input Sensitivity	2.2dBu(1V) / 8.2dBu(2V)
Input Impedance	10KΩ Unbalanced, 20KΩ Balanced
Voltage Gain (@1KHz)	37.5dB
Frequency Response (@1W)	20Hz - 20KHz (±1dB) @ 8 Ohms
Distortion (THD) (@1/8 power)	≤0.01%
Signal-to-Noise (S/N) Ratio	≥102dB
Damping Coefficient (@1KHz)	≥200 @ 8 Ohms
Separation (@1KHz)	≥80dB
Protection Method	Over-voltage, Under-voltage, Over-current, DC, Short circuit
Cooling Method	Fan cooling
Indicator	Power, Fault, Clipping, Signal
Power Supply	~110-120V 60Hz
Power Consumption	1800W
Dimensions (H x W x D)	1.73" (44 mm) x 10.04" (255 mm) x 19.06" (484 mm)
Weight	11.24 lbs (5.1 kg)

FRONT PANEL



- 1. Volume Knobs (CH1 & CH2)** - The volume knob controls the input power of the amplifier (the adjustment range is -30 dB to +40 dB). When the knob is rotated clockwise, the volume will be gradually increased. When rotated counter-clockwise, the output level will decrease.
- 2. PROT (Protection Mode Indicator Light)** - This indicator lights up when the amplifier is in protection mode. If the speaker wire is short-circuited or the sum of the connected speaker power is more than 1.5 times the rated power, it will engage the circuit protection and disconnect the amplifier output, and the protection indicator light will turn on (the signal indicator is only used to indicate the input of an audio signal. In the protection mode, the signal indicator light still lights up according to the input signal sensitivity). The protection mode indicator light is off when the machine is working normally.
- 3. Power Indicator Light** - When the amplifier is turned on, the power indicator light turns on to indicate that the amplifier is in a working state. When the power is turned off, the power indicator light goes off.
- 4. PEAK (Signal Peak Indicator Light)** - When the indicator light is on, the machine has reached the peak of the rated power output. To avoid distortion or clipping, the volume knob should be appropriately adjusted to reduce the volume.
- 5. SIG (Signal Indicator Light)** - When there is an audio signal input, the signal indicator lights up. As the volume knob is turned clockwise, the brightness changes representing the level of the audio signal.
- 6. Power Switch** - Switch up, power on, switch down, power off.

REAR PANEL



- 1. IEC Power Supply** - AC power input is connected to the power outlet. Please check whether the operating voltage is consistent with the marked voltage.
- 2. Cooling Port/Fans** - The cooling port and fan allow for heat dissipation. Please keep good ventilation to avoid overheating.
- 3. Channel 2 Speaker Output, 4-pin NL4 Connection** - CH 2 output to be sent to the speaker(s) used in the Stereo and Mono configurations.
- 4. Channel 1 Speaker Output, 4-pin NL4 Connection** - CH 1 output to be sent to the speaker(s), in the Stereo, Mono, and BRIDGED configurations. In BRIDGED mode, this is the only output that provides an audio signal.
- 5. Channel Specific Link Output** - Use this Link Output to send the same audio signal to additional amplifiers for extra power as needed (In MONO mode, only CH 1 Link Output will be functional).
- 6. Channel Specific Input** - Input audio signal via XLR cable.
- 7. Dip Switch: Sensitivity/MONO/STEREO/BRIDGE mode**
 - When the sensitivity switch is turned to 1V, the voltage gain of the amplifier is 2.2dB;
 - When the sensitivity switch is turned to 2V, the voltage gain of the amplifier is 8.2dB;
 - When the mode switch is turned to STEREO and the amp is in stereo mode. CH 1 and CH 2 work independently. The input signal of CH 1 is sent to both the Speaker Output and the Link Output of CH 1, and the input signal of CH 2 is sent to both the Speaker Output and Link Output of CH 2.
 - When the mode switch is turned to MONO and the amp is in mono mode. This means that the signal sent into the CH 1 Input is sent to the Speaker Output of both CH 1 and CH 2 and only the Link output of CH 1.
- 8. Dip Switch Key**

OPERATION



Before installation, please ensure that the device's power cord is not connected to the power socket, the power switch is turned off, and the volume knob is fully turned off (turn counterclockwise to the limit).

POWER LINE



The grounding terminal of the AC power line should be well grounded. Otherwise, there is a danger of electric shock!

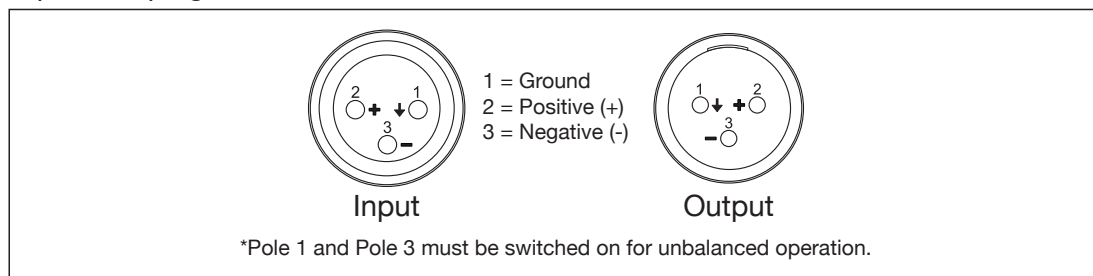
The AC power line must have sufficient over current capability, the AC power voltage must be within $\pm 10\%$ of the nominal operating voltage of the device, and the AC power frequency must be within the nominal frequency range of the device (the nominal value marked on the rear panel of the device).

INPUT AND OUTPUT LINES

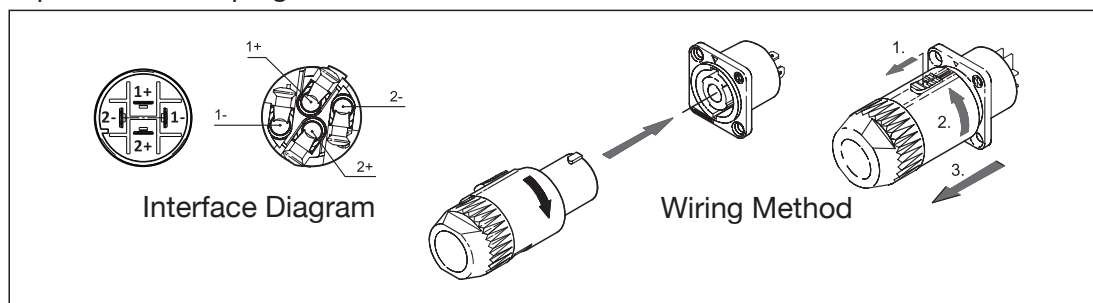
Wiring Notes:

- Use shielded wires for input signals as much as possible, and the higher the shielding layer density, the better.
- Use balanced connections for input signals as much as possible to reduce noise interference.
- If using an unbalanced connection, the wire should be as short as possible, preferably no more than 3m.
- Weak signals should not go together with strong signal lines, such as power lines and amplifier output lines. Otherwise, it may produce noise.
- Turn off all equipment before changing any connections, as this may cause damage to your hearing and speakers

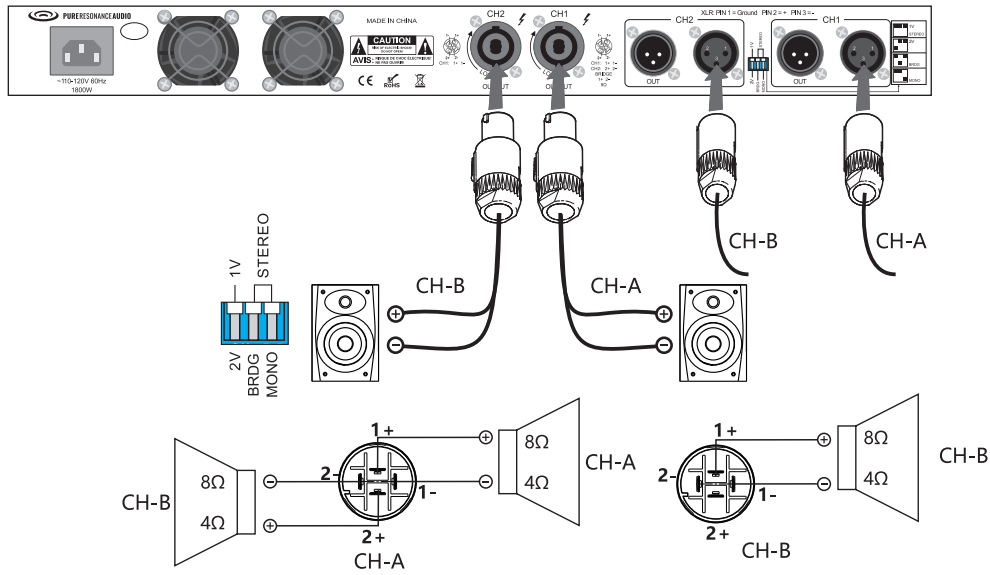
3-pin XLR plug balanced connection, as shown below:



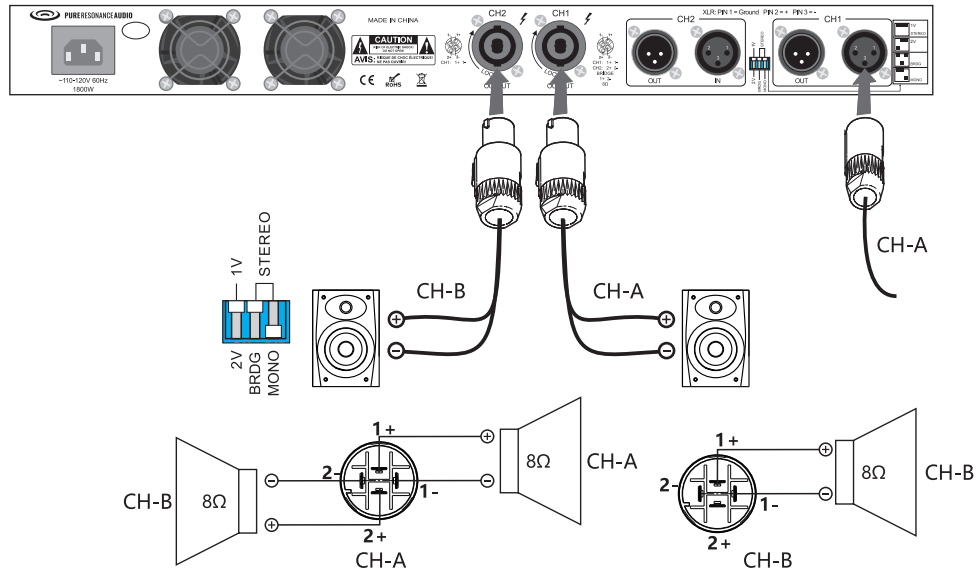
4-pin SPEAKON plug connection, as shown below:



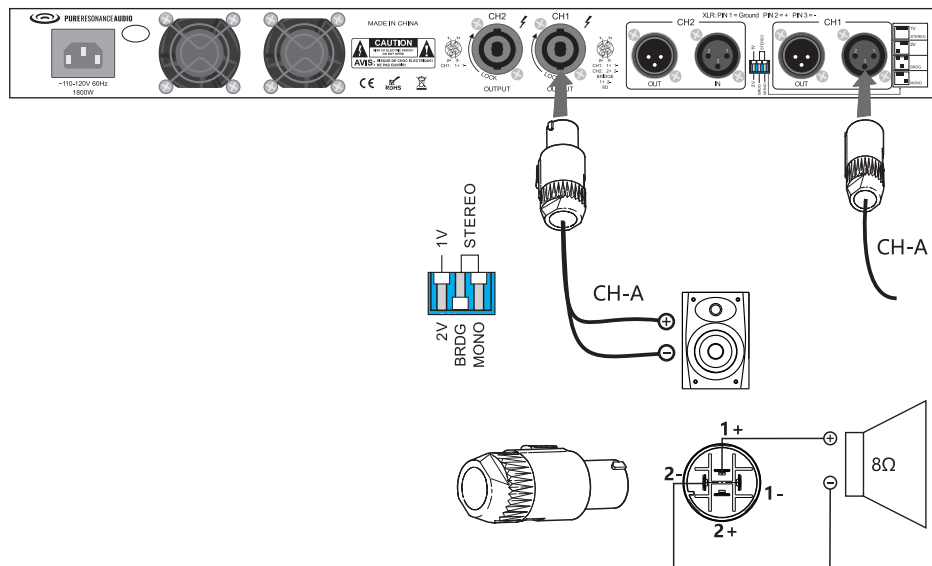
STEREO MODE



MONO MODE



BRIDGE MODE



SPEAKER PROTECTION

Clipping not only makes the sound quality worse but also damages the tweeter (once clipping, the CLIP indicator on the amplifier panel will light up, which can be used to determine whether there is clipping); you can reduce the input signal to avoid clipping.

A strong infrasound signal will cause the speaker drive circuit to burn out. Breathing sounds and high-level and low-frequency signals generated by dropping the microphone are typical infrasound signals. One of the following methods can be used to prevent infrasound signals:

- Install a high-pass filter between the mixer output and the amplifier input
- Turn on the high-pass filter in the mixer. Set the filter frequency as high as possible without affecting usage. For example, set it to 35Hz for music signals and 75Hz for microphones. For each mixer input channel, set the filter frequency below the lowest basic frequency of the associated channel.

USAGE PRECAUTION

Although the amplifier will be protected under abnormal conditions, to achieve the best performance and the highest security, please pay attention to the following:

- Before use, make some configurations for the amplifier, including the connection of input and output lines. Improper wiring can cause the device not to work properly.
- Take care when making connections, selecting input signals, and controlling output levels to avoid unnecessary troubles.
- Do not short-circuit the ground wire of the output cable and the ground wire of the input signal. Otherwise, it may create a ground loop and cause oscillations.
- Do not connect the output to the power supply, battery, or main power. Failure to do so may result in electric shock.
- Tampering with and unauthorized modification of circuits is dangerous and voids all dealer services.
- Do not use the amplifier while the CLIP indicator keeps flashing.
- Do not overload the mixer, as this will send a clipped signal to the amplifier. The amplifier will accurately reproduce such signals, and the speakers may be damaged.
- Do not use the amplifier below the nominal load. Too low a load can damage the speaker by causing the amplifier output protection and premature clipping.
- After the amplifier is turned on and a signal passes through, there may be a lethal voltage on the output interface.

COOLING INSTRUCTION

How this device dissipates heat: The cold air is inhaled from the side vents, flows through the cooling fins inside the machine, takes away the heat, and is exhausted from the fan outlets on the rear panel. To ensure good heat dissipation, please place the device in an environment of 0°C-40°C and ensure the side and back panel air ducts are unobstructed. If the temperature of the radiator continues to rise above 85°C, the amplifier will start the protection, and the output will be turned off; when the temperature drops to a safe temperature, the amplifier will automatically restart.

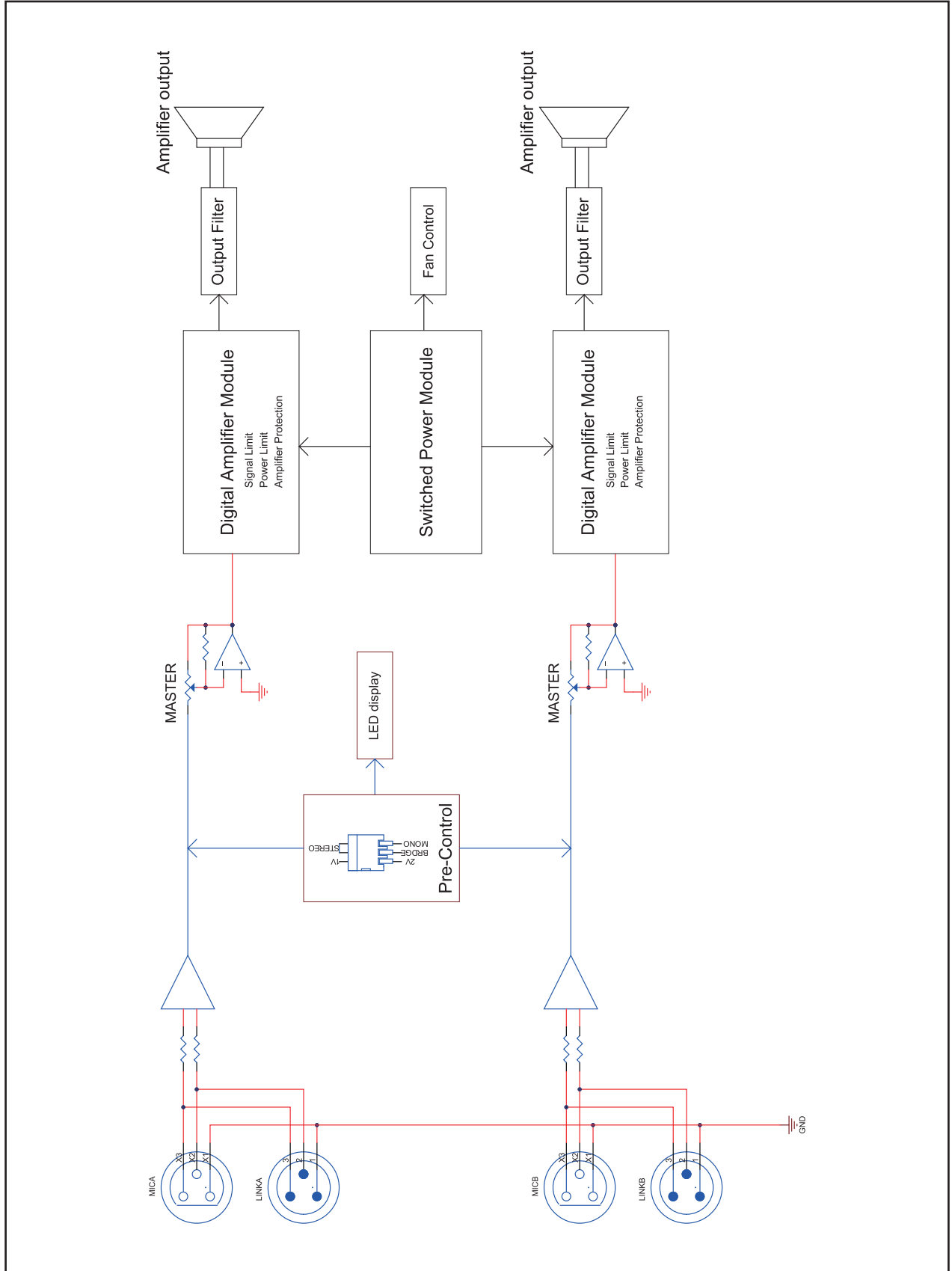
After using the device for a period of time (even if it is not turned on), if the fan runs at a high speed for a long time, but the cooling effect is not good, please turn off the device and remove and clean the mesh cover (for devices with mesh cover).

Due to the high power density of this device and the strong magnetic field around the device, please keep away from weak signal sensitive devices as far as possible (preferably no less than 20cm). Otherwise, noise may be generated.

TROUBLESHOOTING

FAILURE	CAUSE
All lines are connected, but there is no sound.	<ol style="list-style-type: none">1. No power or poor contact of the plug2. Burned fuse3. Volume knob is not turned on, or level is set too low4. No audio signal input5. Speaker cable is short-circuited
Low Sound	The speakers connected are high-impedance, or their transformer is set to a high-impedance tap setting.
Sound Is Distorted	The audio signal level of the input device is too high, causing distortion.
The Protection Light Is On	<ol style="list-style-type: none">1. The internal temperature of the device is too high2. The speaker wiring resulted in a load incompatible with the amplifier and will remain on until the problem is corrected and the amplifier is restarted.

BLOCK DIAGRAM



SERVICE

Ensure the problem is not related to operator error, or system devices that are external to this unit. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

LIMITED WARRANTY

PRO ACOUSTICS, LLC. ("PRO ACOUSTICS") warrants this product to the original purchaser to be free from defects in materials and workmanship (subject to the terms set forth below), for the following periods from the date of purchase.

THIS WARRANTY COVERS THE LISTED PRODUCTS AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR THE FOLLOWING PERIOD

Warranty Terms	
Speakers	2 Years
Amplifiers & Electronics	1 Year
Microphones	1 Year
Accessories	1 Year

PRO ACOUSTICS will repair or replace (at PRO ACOUSTICS's option) this product or any defective parts (excluding electronics and amplifiers) in this product.

Your authorized PRO ACOUSTICS dealer will inspect the product and, if your dealer is not equipped to perform the repair of your PRO ACOUSTICS product, they will replace your product or return it to PRO ACOUSTICS for repair, at their discretion. Proof of purchase in the form of a bill of sale or receipted invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service.

This warranty is invalid if the factory applied serial number has been altered or removed from this product. This warranty is invalid if this product was not purchased from a PRO ACOUSTICS authorized dealer. Cosmetic damage or damage due to the accident, acts of God, misuse, abuse, negligence, commercial use, or modification of, or to any part of, the product are not covered in this warranty. This warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than PRO ACOUSTICS or a PRO ACOUSTICS dealer which is authorized to do PRO ACOUSTICS warranty work. Any unauthorized repairs will void this warranty.

This warranty does not cover products sold as is.

REPAIRS OR REPLACEMENTS AS PROVIDED UNDER THIS WARRANTY ARE THE EXCLUSIVE REMEDY OF THE CONSUMER/PURCHASER. PRO ACOUSTICS U.S.A. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY LAW, THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PRACTICAL PURPOSE.

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