



PUBLIC ADDRESS SYSTEM

TS-4200PD/4350PD/4500PD PROFESSIONAL POWER AMPLIFIER



OPERATION MANUAL

Please follow the instructions in this manual to obtain the optimum results from this unit. We also recommend that you keep this manual handy for future reference.

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1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.

Safety Symbol 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



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, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.
- Be sure to replace the unit's terminal cover after connection completion. Because high voltage is applied to the speaker terminals, never touch these terminals to avoid electric shock.
- Be sure to ground to the safety ground (earth) terminal to avoid electric shock. Never ground to a gas pipe as a catastrophic disaster may result.
- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down, causing 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 **ITC** 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 nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to your nearest **ITC** dealer.
- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.
- Do not insert nor 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 nor 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 minimum position before power is switched on. Loud noise produced at high volume when 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 **ITC** 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.

Due to product upgrades, while some of the features and specification in the user manual does not match the actual functions, sorry for any inconvenience and thanks for your kind understanding!

2. GENERAL DESCRIPTION

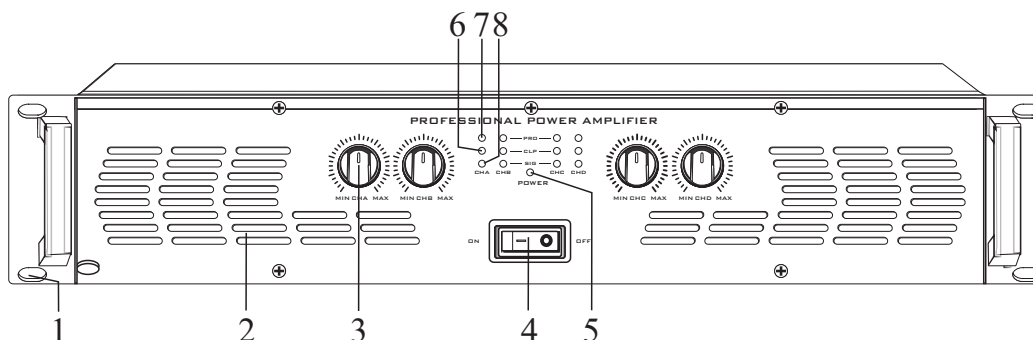
It is a high-efficiency four-channel professional power amplifier with a combination of high-performance switching power supply and class D power amplifier; Support four balanced / unbalanced inputs and a high-fidelity circuit design with extremely low distortion THD+N<0.02% @ 1W. It adopts 2U standard cabinet design, with high efficiency, light weight and beautiful appearance. Ideal for medium and large-scale theaters, outdoor performances, theaters, stadiums, clubs, night clubs, entertainment venues, bars, rental, auditorium, banquet halls and concert, etc.

3. FEATURES

1. Adopting the latest class-D power amplifier design scheme, with small distortion and high efficiency;
2. The power supply adopts switching power supply, which has high efficiency; it is soft-started at startup to prevent large current from being absorbed into the power grid and interfering with other power-consuming equipment.
3. Effectively suppress power supply harmonics and meet EU green power standards.
4. Intelligent peak clipping limiter can control power module and speaker system work within safe range;
5. It is more convenient for users with different demands to adopt simple interfaces, namely standard XLR + TRS1/4" composite input interfaces.
6. There are three levels of input sensitivity optional in two-channel power amplifier, which can easily accept wide range signal source input.
7. Stereo or bridge operation mode is optional to adaptation for different occasions.
8. Input grounding pin grounding and suspension control switch, which has noise suppression.
9. With overvoltage protection, undervoltage protection, over temperature and pressure limit, over temperature shutdown, overcurrent voltage limit, overcurrent shutdown, DC protection, output short circuit protection, temperature control fan, power amplifier frequency synchronization, PWM frequency synchronization, etc.
10. Built-in recoverable unique cut-off switch.
11. The detachable structure of the panel cleans the dustproof cotton by itself.

4. NOMENCLATURE AND FUNCTIONS

4.1 FRONT PANEL



1. Installation positioning holes (19-inch cabinets);
2. Air grid;
3. The volume control knob of the CHA channel controls the output volume of the channel. Rotate the volume clockwise to increase the volume and vice versa. (Note: CHB/CHC/CHD channels are similar).
4. Power switch;
5. Power status indicator;
6. CLP— Clipping indicator. When the (yellow) indicator light on the machine is lit by a signal, the output signal is distorted at this time, indicating that the input signal is too large. Please reduce the input signal.
7. PRO—Protection indicator. The first 3 seconds of booting is the machine startup process. At this time (red) the protection light is on. If the self-test of the whole machine is normal, it start the whole machine after 3 seconds and turn off the light. If it is in a protected state for a long time after power on, the whole machine is faulty. Please contact your dealer.
8. SIG—Signal indicator, when the machine is normally input, the (green) indicator is on. When the machine fails or the signal is not input correctly, the (green) indicator does not light up.

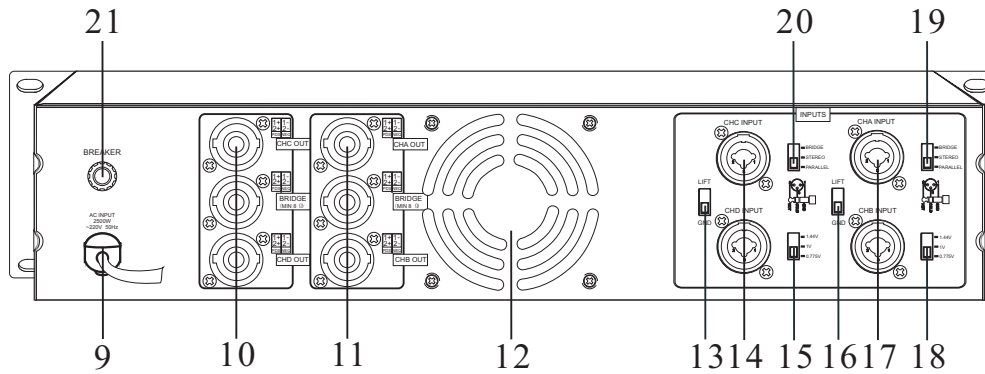
NOTE:

To prevent the fan holes from being blocked and the machine from overheating, remove the dust filter on the panel regularly for cleaning.

Cleaning method: first remove the four screws on the panel, take out the dust filter to clean it. After the filter is cleaned and dried, install it back to the original position.

4. NOMENCLATURE AND FUNCTIONS

4.2 REAR PANEL



9. AC power input;

10. CHC / CHD channel output port, please use the port labeled "BRIDGE" when bridging;

11. CHA / CHB channel output port, please use the port labeled "BRIDGE" when bridging;

12. Cooling fan;

13. CHC / CHD channel unbalanced signal ground control switch;

14. CHC / CHD channel input port. In the BRIDGE mode, only the CHC input port is valid.

15. CHC / CHD channel sensitivity switch;

16. CHA / CHB channel unbalanced signal ground control switch;

17. CHA / CHB channel input port. In BRIDGE mode, only CHA input port is valid.

18. CHA / CHB channel sensitivity switch;

19. CHA / CHB channel bridge / stereo / parallel transfer switch;

① STEREO mode: Channels A and B work independently. The input signal of channel A is output through A output port. And the input signal of channel B is output through the B output port.

② PARALLEL mode: The input signal is output through the output ports of channel A and channel B, and the volume of channels A and B can be adjusted independently.

③ BRIDGE mode: The input signal of channel A is output from the BRIDGE output port. You can only adjust the volume through the volume control knob of channel A. And the knob of CHB channel has no such effect.

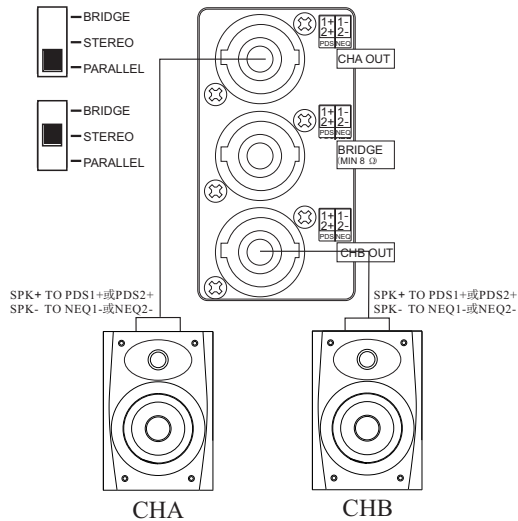
20. CHC / CHD channel bridge / stereo / parallel transfer switch (refer to the 19 item for details);

21. Overload protection switch.

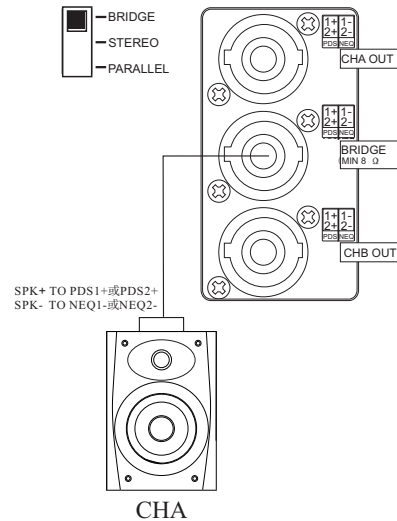
5. OPERATION ILLUSTRATION

1. Connect the speakers:

① In the operating mode of STEREO and PARALLEL, the speaker connection is as shown below:



② In BRIDGE's operating mode, the speaker connection is as shown below:



Note:

1. Before connecting the speakers, please make sure that the equipment is powered off. In the case of power on, may have the risk of electric shock.
2. Please make sure there are no applied load to the speaker cables.
3. During the installation of speakers, please make sure that the sum of the rated input power of the speakers to be connected is less than rated power of equipment.

2. Connect external devices:

- ① Please ensure that the equipment and all equipment will be connected are powered off.
- ② Using the corresponding cable to connect this equipment and other external equipment.

3. Connect the power line and turn it on:

- ① Please make sure that the power switch of equipment and its connected equipment are turned off (in the OFF position).
- ② Turn the volume knob to the left
- ③ Connect the supplied power line to the AC IN interface
- ④ Plug the power line into the applicable socket
- ⑤ Turn on the connected equipment (CD player, etc.), and then turn on the equipment.



Note:

1. Before powering on, please check and make sure there is no problem with the cable and connection.
2. When you turn off the system, turn off the equipment, and then turn off the connected equipment.

5. OPERATION ILLUSTRATION

4. Microphone using:

1. Turning the volume knob to the left, Connect the microphone and microphone input interface.
2. Turning the volume knob in the right position.
3. Facing the microphone and Speak loudly, turn the volume knob to the right, until the output signal no longer distortion. If input is high but output is low voice, and then increase the volume by using the volume knob. If the speaker volume is very high, then reduce the volume by using the volume knob.

5. Shutdown the system:

1. Turning the volume knob to the left until the minimum position.
2. Turning off the panel power switch of the professional power amplifier, at Off. In turn shutoff processor equipment and audio source equipment.



Note:

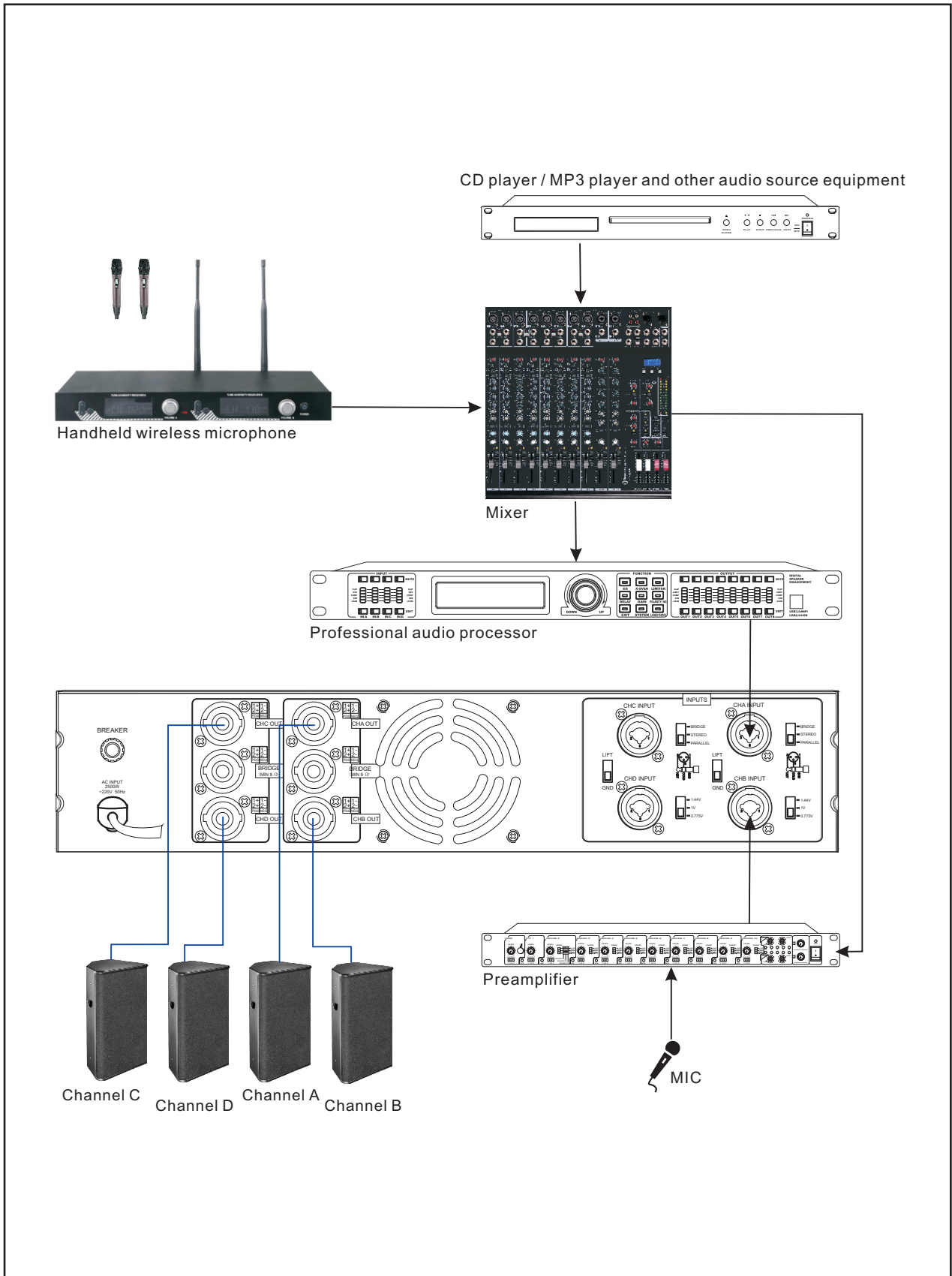
1. Turn off the power switch, Please wait about 5 seconds before turning on again. Continuous rapid turning on and off the power switch, it will lead to equipment failure.
2. Even the switch is in the off status, there will be a little current in equipment. If it won't use the equipment in a long time, please unplug the power cord from the wall AC socket.

6. TROUBLESHOOTING

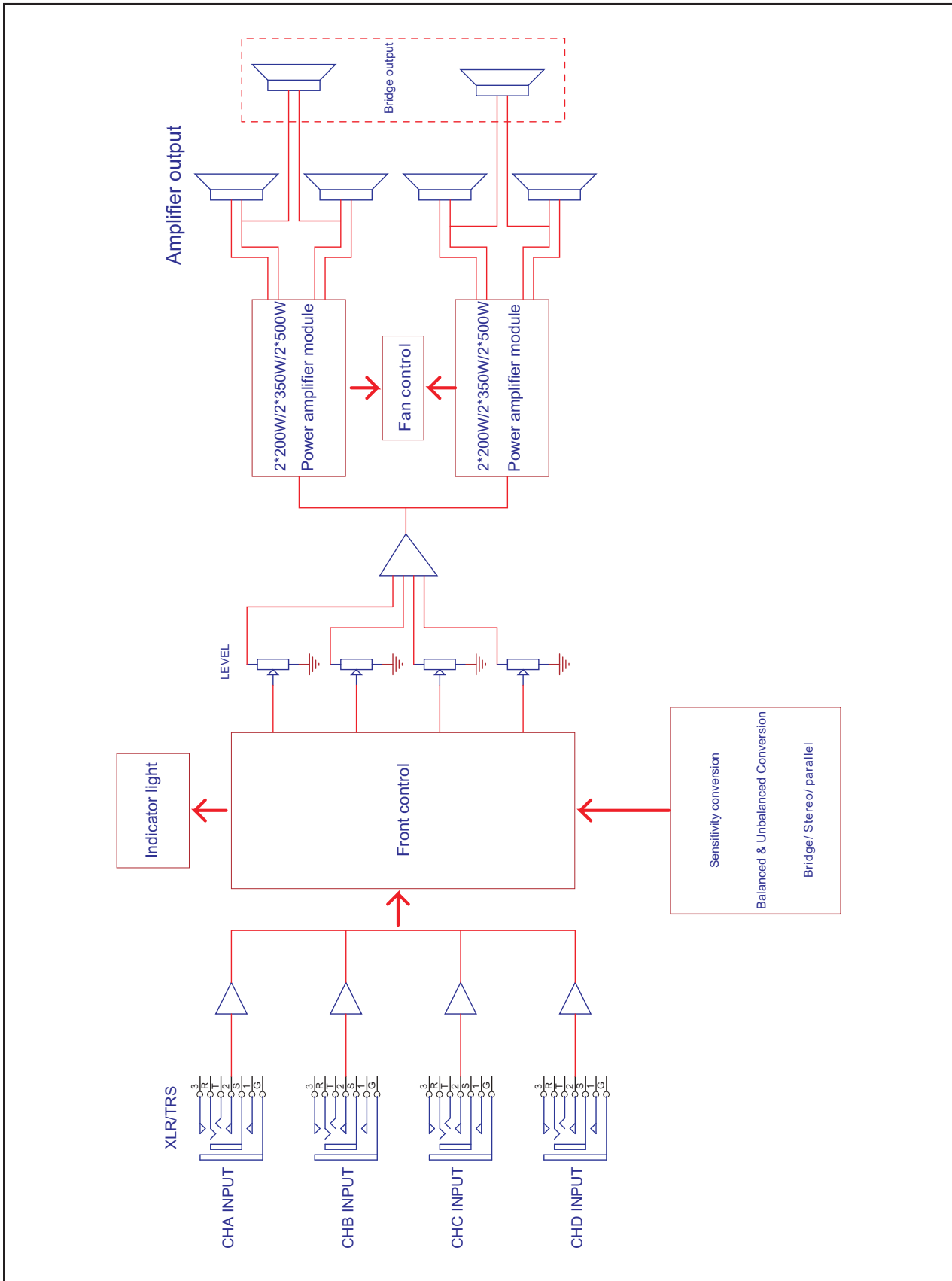
Failure phenomena	Failure cause
1. Power switch is not opened	<ol style="list-style-type: none">1. Power line is cut off2. The protection function of the equipment is not activated
2. All lines are connected, but there is no sound.	<ol style="list-style-type: none">1. The power switch is not opened or the power plug is bad contacted.2. The fuse is burnt3. The volume knob is not opened or turned down to a extra low level4. There is no audio signal input5. There is short-circuit in the speaker line.
3. The sound suddenly disappears in normal status.	<ol style="list-style-type: none">1. The equipment is in very high temperature to make it into protection status.2. The connection wire is bad contact.
4. Low sound	The equipment is set to be low impedance connection, but the speakers connected is with high impedance.
5. Sound is distorted	The input level of Mic or external equipment is too high

7. APPLICATIONS

REAR PANEL CONNECTIONS



8. BLOCK DIAGRAM

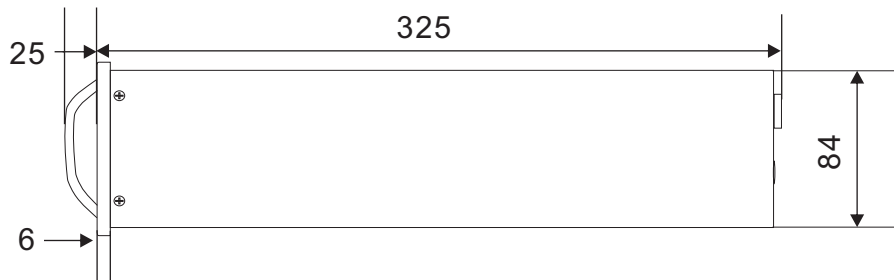
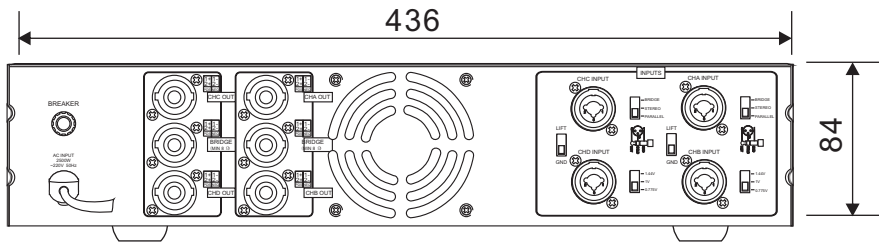
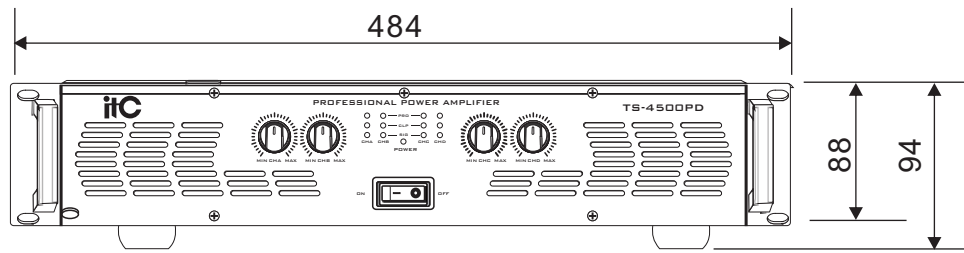


9. SPECIFICATIONS

Output power (20-20KHz/THD≤1%)	TS-4200PD	TS-4350PD	TS-4500PD
Stereo / parallel 8Ω×4	105W×4	190W×4	350W×4
Stereo / parallel 4Ω×4	200W×4	350W×4	500W×4
Bridge 8Ω×2	420W×2	750W×2	1000W×2
Connecting interfaces	XLR, TRS interfaces		
Voltage gain (@1KHz)	32dB	34.4dB	36.2dB
Input sensitivity	0.775V/1V/1.44V		
Input impedance	10K Ω unbalanced, 20KΩ balanced		
Frequency response (under 1W power)	20-20KHz/+0/-2dB		
THD + N (under @ 1/8 power)	≤0.05%		
SNR(A-weighted)	≥95dB		
Damping coefficient (@ 1KHz)	≥200@ 8 ohms		
Resolution (@ 1KHz)	≥80dB		
Protection method	Over current/DC/short circuit protection		
Indicator light	Power, protection, distortion		
Cooling method	Fan cooling		
Powered supply	~220-240V 50-60Hz		
Maximum power consumption	1000W	1800W	2600W
Weight	8.8Kg	9Kg	9.2Kg
Dimension (LxWxH)	484x350x88 mm		

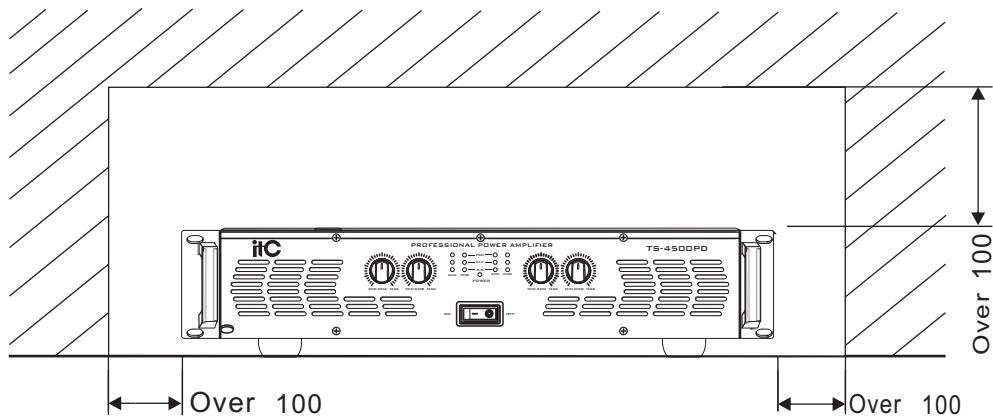
10. DIMENSIONAL DIAGRAM

UNIT:mm



Keep the unit's all sides over 10 cm away from objects that may obstruct air flow to prevent the unit's internal temperature rise.

UNIT:mm



PUBLIC ADDRESS SYSTEM

