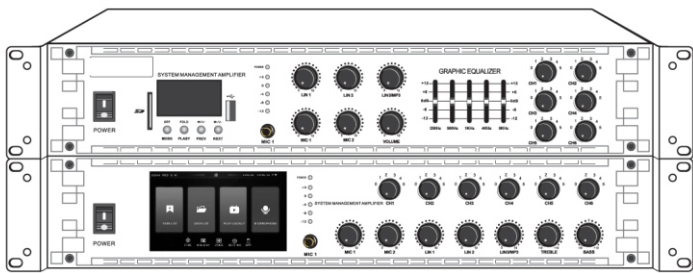


Public Address Power Amplifiers
User Manual



SAFETY NOTICES AND CAUTIONS



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

- ❗ Read this manual carefully before using this product for the first time. This manual includes important instructions about installation, operation and safety precautions.
- ❗ We will assume no responsibility if you do not comply with these instructions and meet troubles.
- ❗ The output voltage can reach up to 180 volts, all installations and operations must be referred to qualified personnel who has been specially trained.
- ❗ Not suitable for household.
- ❗ Do not remove the ground terminal of the power cord.

1. Location

Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity—such as near radiators, etc. Also avoid locations which are subject to excessive dust accumulation or vibration which could cause mechanical damage and locations subject to strong electromagnetic fields, such as close to broadcast equipment.

2. Ventilation

The unit has ventilation slots on the side and bottom panels. Do not block these vents.

3. Avoid physical shocks

Strong physical shocks to the unit can cause damage. Handle it with care.

4. Do not open the case or attempt repairs or modifications yourself

This product contains no user-serviceable parts. Refer all repair or maintenance to qualified engineer.

5. Always power off before making connections

Always turn the power off before connecting or disconnecting cables. This is important to prevent damage to the unit itself as well as other connected equipment.

6. Clean with a soft dry cloth

Never use solvents such as Benzine or thinner to clean the unit.

Wipe clean with a soft, dry cloth.

7. Always use the correct power supply

Make sure that the power supply voltage specified on the rear panel matches your local AC mains supply. Also make sure that the AC mains supply can deliver more than enough current to handle all equipment used in your system.

8. Must be connected correctly

Although this unit have goodly protect functions to avoid damage because of short or overload, we should be turn away short or overload for system chronically turning normally.

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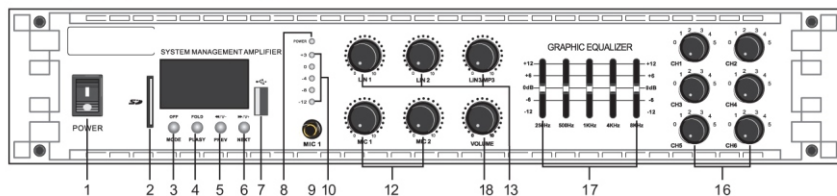
We reserve the right to make any modification for this products to improve them without prior notice.

FEATURES:

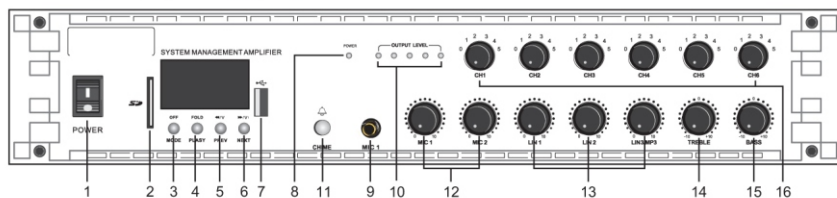
- 2 microphone inputs, and one is first with mute function.
- 3 stereo line inputs, they can be linked to all kinds of sources as CD, radio, tape player etc.
- The level of microphones or lines can be adjusted separately.
- The high bass equalizer, output level control, ring generator.
- The unit provides one line output for recording or linking to other amplifier.
- Three power output modes: 4~16 ohm, 70V 100V.
- Output power can be distributed to 5 sections.
- Output level indicator.
- Built-in FM radio music player, can play songs from U disk or SD card directly.
- Built-in bluetooth acceptance.
- Five-stage equalizer. (For ST-EQG&EQB series only)
- Adjust the microphone reverberation repeat number control
(For ST-ECHO series only)
- Adjust the microphone reverberation delay time control. (For ST-ECHO series only)
- 4.3-inch touchscreen. You can edit the required content from the subscreen
(For ST-IP series only)
- This machine realizes the functions: preposition, partition, timing, power amplifier, USB, SD, FM.
- 5 leds when long light overload distortion, should adjust the volume knob so that the 3rd -4 lights flashing.

The front panel

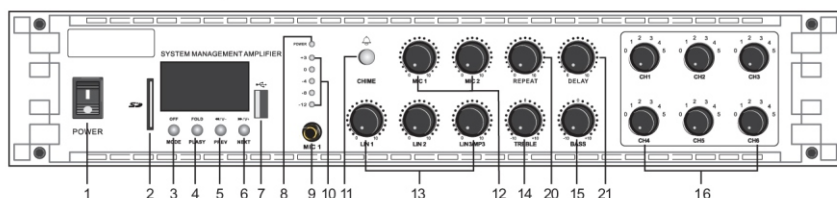
ST-EQB&EQG series front panel



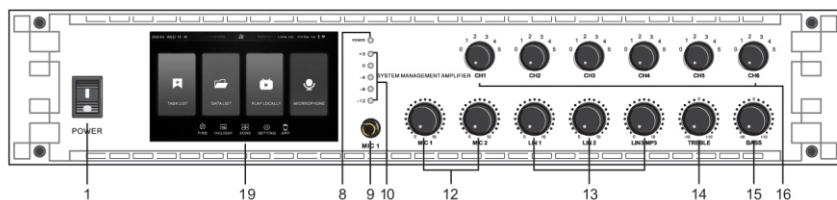
ST-MPB&MPG series front panel



ST-ECHO series front panel

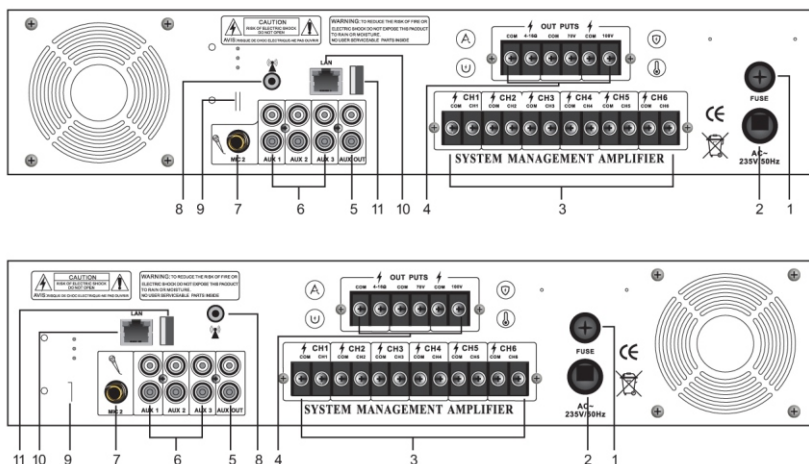


ST-IP series front panel



1. Power switch.
2. A SD Card which loaded many songs easily can be a good quality line signal source via this port
3. MODE:Used to choose the machine's working mode, the working mode cycling according to the order "FM、AUX、MP3.Bluetooth
4. , For This button switch between play and pause. For This button :short press this button to get the next storage radio, long press will automatic search and storage radio station.
5. /V- , Short press this button is to Previous Song, and long press this button is to lower the volume. For series, when in FM mode, short press this button is search radio station from high to low
6. /V+ , Short press this button is to Next Song, and long press this button is to increase the volume. when in FM mode, short press this button is search radio station from low to high.
7. USB Port, This unit built-in a music player, An U disk which loaded many songs easily can be a good quality line signal source via this port.
8. Power on indicator
9. MIC input connector (this MIC1 has priority with mute function)
10. Power on indicator
11. Button for prompting
12. Controls for adjusting MIC input level
13. Controls for adjusting LINE input level (LIN3/MP3/Network port control)
14. High regulating
15. Bass adjustment
16. partition control There are 6 partitions.each partition can easily control the opening and closing
17. Controls for adjusting five-band equalizer (only for ST-EQB&EQG series)
18. This control adjusts the final output level(only for ST-EQB&EQG series)
19. LCD touch screen (only for ST-IP series)
20. Controls for adjusting repeat times of microphone reverb.(only for ST-ECHO series)
21. Controls for adjusting delay time of microphone reverb.(only for ST-ECHO series)

Rear panel



1. Fuse holder
2. Power cord
3. The output terminal: 6partition constant pressure output.connecting 100V speakers.SP1-SP6 output can beinfluenced by a button on the control panel corresponding to SP1-SP6
4. Power output terminals (3 sections, 4-16Ω/70V/100Vrms stable voltage)
5. AUX/Line output
6. RCA connectors for 2 stereo line inputs
7. MIC 2 input connector
8. 4G antenna(only for ST-IP series)
9. 4G slot(only for ST-IP series)
10. Network cable input port(only for ST-IP series)
11. USB port Upgrade(only for ST-IP series)

•Installations and operations

Connection to the mains supply

Before connecting the amplifier to the mans socket, always make certain that:

1. The electric system and mains socket have an adequate grounding, compatible with the safety norms (if you're uncertain, consult specialized personnel);
2. The mains voltage corresponds to that shown on the rear of the unit (an allowance of up to +/-10% is accepted);
3. The on/off switch is in the OFF position.

Make sure the amplifier is also off before disconnecting the power cord from the mains socket.

THE FRONT PANEL & REAR PANEL

Switch on and off

In your reinforcement system, always switch on the amplifier after all the other equipment and always switch it off before anything else, if possible with the gain controls set at minimum: this will avoid annoying and sometimes dangerous signal peaks.

Audio connections

Remember to always connect and disconnect other units with amplifier switch off.

Let the signals from sources as CD player, tape player and radio etc. Into the input sockets via audio cable with shield. This unit can accept at the same time 2 stereo line inputs, adopt RCA connector. Link microphone you will need to microphone input (this unit has 2 microphone inputs, MIC1 is first with mute function located at the front panel, MIC2 are located at the rear panel, they are all TRS phone jacks).

Please use only professional low impedance microphone with output level at -35dB~-60dB

Load connections

The power output mode of this series is stable voltage 100V (120V), this mode is usually used for public broadcasting, they are easy for load linking, less power consume and suitable for long distance transmission. Be careful to check the load impedance and load type to avoid damage of load or amplifier.

The load can be made up of many sound boxes which are stable voltage type with 120V input voltage, these sound boxes is usually linked in parallel, the total power of these parallel boxes should be less than the total output power of the unit, and have enough surplus.

The line output of the unit can be used for linking to another power amplifier.

CHECK AND MEASURE FOR LOAD

The load must be checked and measured at the first time, because of long distance from the power amplifier to the load, because of load complicated connecting and section controlling. In the public broadcasting systems the bad cable using and mistaken connecting will always occur, such as load short circuit, load part short circuit and indirect short circuit between output cables of two amplifiers.

1. Measure the DC impedance of the end terminal of the load by multi-meter, you may determine roughly if the load has been short circuit.
2. Check when the unit is on

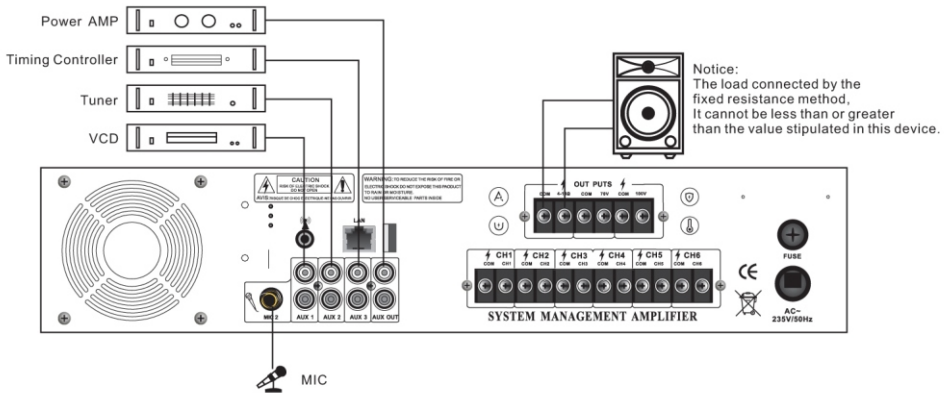
Turn left all potentiometer knobs at the front panel to the minimum position, then turn the source (as CD) on and let it output signal. Turn this unit power on, then rotate the corresponding level knob to 3 o'clock after the buzzer chirps several times and the relay acts. At this time you should feel the output power signal will be right level and excellent tone quality. You may observe the unit status and feel the wind from the vents, if the unit will not protect itself within one hour and also no too hot wind (above 50 C) from vents, and thus we think the load is good. If the unit immediately go into protection (the buzzer always chirps and no signal output) or the wind temperature rise quickly, it means a load trouble has occurred. You should put a current meter into the output load circuit to measure the output current. By comparing the output current with the rated output current as followed, you may determine the load status. You will use this power amplifier again after you getting rid of all load trouble.

OPERATIONS

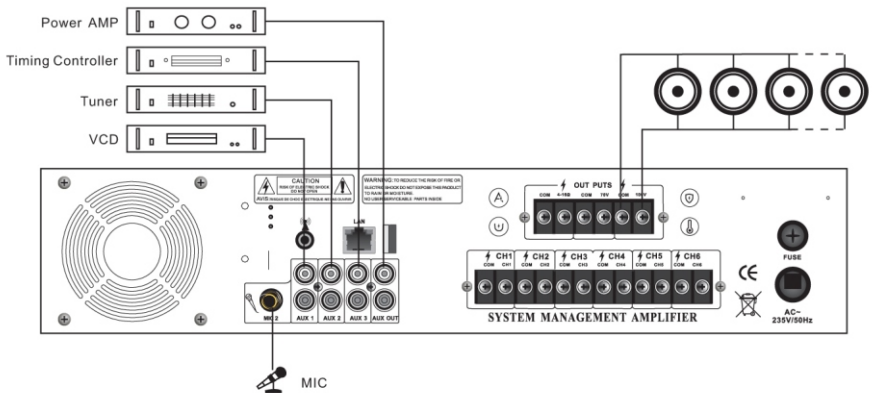
Rotate all knobs of the potentiometers at the front panel to full closed, turn the unit on, now the power indicator is on. After the buzzer chirps several times and the relay acts, turn right the knob of the corresponding potentiometer, you also can adjust the five-band equalizer and adjust the control of the total output level until the output level is just fit for you. Remember that you should reduce the input signal level when the last one of the level indicator is always on, if not, the unit will be overloading and the output power signal will be clipping.

CONNECTIONS

CONNECTIONS 1. Constant Resistance output

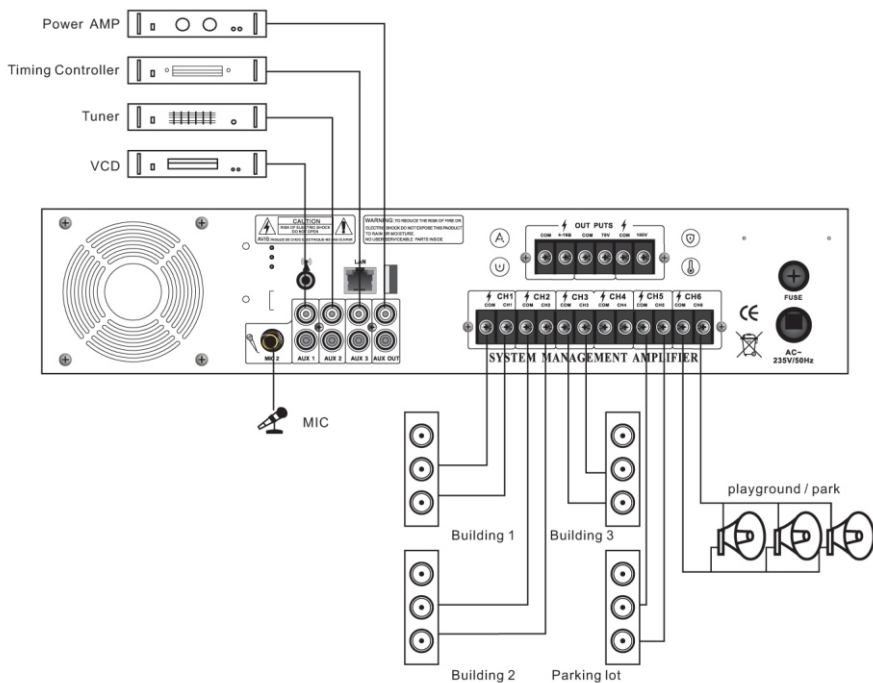


CONNECTIONS 2. Constant Pressure output

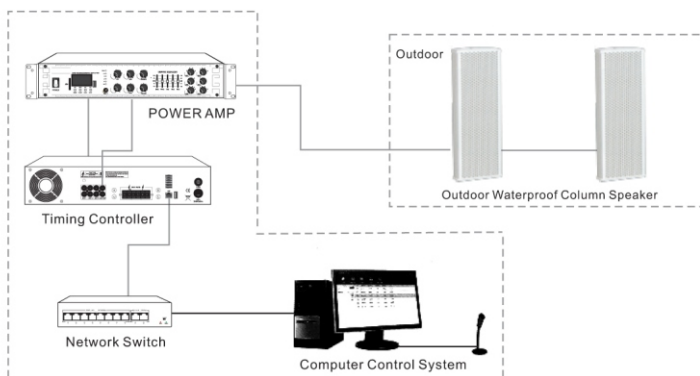


CONNECTIONS

CONNECTIONS 3. Partition connection



System diagram



SPECIFICATIONS

Parameter		Model		ST-IP-120	ST-IP-180	ST-IP-250	ST-IP-350	ST-IP-500	ST-IP-700
		ST-EQB/G-120		ST-EQB/G-180	ST-EQB/G-250	ST-EQB/G-350	ST-EQB/G-500	ST-EQB/G-700	
		ST-ECHO-120		ST-ECHO-180	ST-ECHO-250	ST-ECHO-350	ST-ECHO-500	ST-ECHO-700	
		ST-MPB/G-120		ST-MPB/G-180	ST-MPB/G-250	ST-MPB/G-350	ST-MPB/G-500	ST-MPB/G-700	
Rated output power		120W	180W	250W	350W	500W	700W		
Output 1		4-16 ohms (Section 1)							
Output 2		70V (Section 2)							
Output 3		100V (Section 3)							
Output 4		100V (CH1-CH6 Section 4)							
Five-band equalizer		250Hz, 500Hz, 1KHz, 4KHz,8KHz +/- 12dB							
Frequency Response	Low-cut	130Hz ~22KHz +/-2dB							
	No low-cut	60Hz ~22KHz +/-2dB							
THD (1KHz)		≤0.5%							
S/N Ratio	MIC1~2	<-108dB Equivalent input noise							
	LINE1,3	>88dB							
Inputs	MIC1~2	-50dB 600ohms unbalanced							
	LINE1,3	-10dB 10Kohms unbalanced							
MIC1 mute adjust		-30dB							
Line(Record) output		0dB(-10dB) unbalanced at 600ohms load							
Rated output current		0.9A@70V	1.4A@70V	2.2A@70V	3.6A@70V	5.0A@70V	6.5A@70V		
		0.6A@100V	1.0A@100V	1.5A@100V	2.5A@100V	3.5A@100V	4.5A@100V		
Power supply		AC 120V, 220V, 230V, 110V/220V, 50~60Hz. (Please refer to the nameplate on the rear panel.)							
Power consume		200VA	320VA	400VA	550VA	800VA	950VA		
Net weights(Kg)		9.3	10.5	12	14.5	15.7	17.3		
Dimensions(WDxH)		482x330x88mm				482x380x88mm			

The functions and relevant technical parameters stated in this manual shall be closed upon completion of this product, and shall be subject to change without prior notice if the function and technical parameters change

Precautions for use

In order to prevent damage, equipment damage or property damage to users and others, it is important to observe the following basic precautions.



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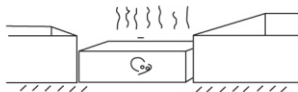


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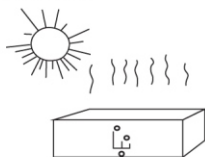
Check whether the power cord is broken, do not pull the power cord to pull out the plug, should pull out the plug directly, otherwise cause electric shock. Short circuit or fire.



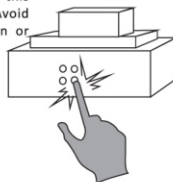
In the process of use, do not clog the vents, all vents must remain unblocked to avoid overheating.



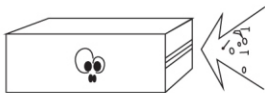
Do not place the equipment in a large amount of dust. Shake. Extreme cold or hot environment.



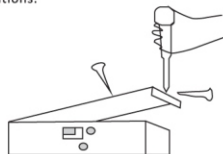
Do not place heavy objects on this equipment. Operation switch. Avoid excessive force when a button or link to an external audio source.



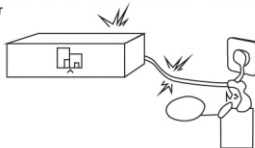
Avoid any foreign material (e.g. paper, metal, etc.) through the clearance or opening of the machine to enter the machine. If this happens, please disconnect the power immediately.



Please do not attempt to remove the internal parts of the equipment or make any modifications.



When the machine is in use, the sound is suddenly interrupted, or emit abnormal smell, or smoke, please remove the power plug immediately, lest cause electric shock. Fire and other accidents, and ask professional personnel to repair the equipment.



Do not use this equipment for a long time, please be sure to unplug ac power supply. Power cable or close wall outlet to achieve zero energy consumption.

