



PURERESONANCEAUDIO[®]

RZMA240BT ZONE MIXER 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.
- 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 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.

 **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 connecting wires. 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.
- Do not install or place the device on an unstable surface such as a wobbly table or sloped surface. Otherwise, the device may fall and cause injuries and/or property damage.

WHEN THE UNIT IS IN USE

- Should the following irregularities 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 attempts 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. If they accidentally spill into the unit, this may cause a fire or electric shock.
- 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 is set to the 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 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.

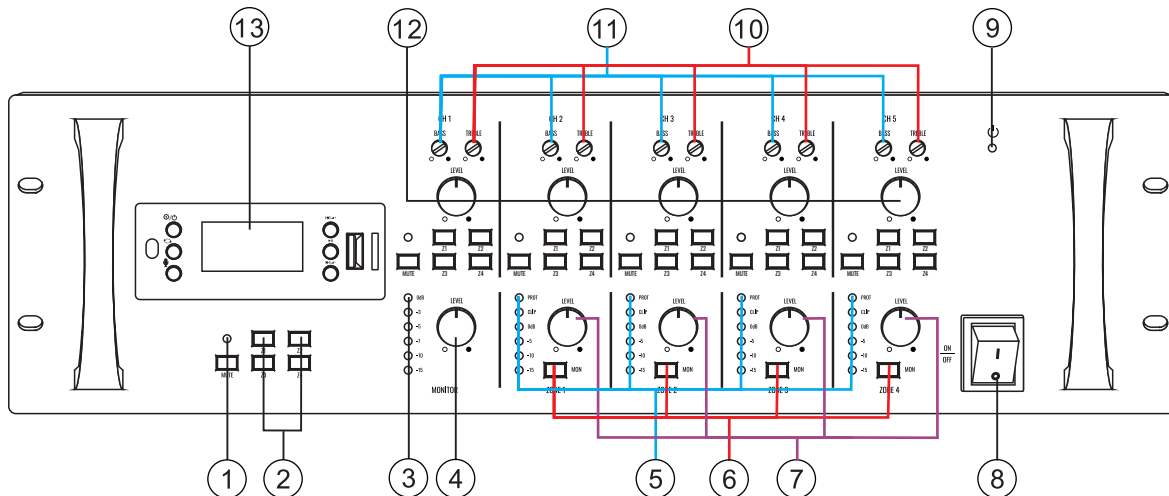
DESCRIPTION

The Pure Resonance Audio RZMA240BT 4 zone commercial mixer amplifier is designed with 4 ohm, 70 Volt and 100 Volt terminals and 4 x 240W power output. The RZMA240BT is a rack mount audio matrix system solution with MP3, tuner and Bluetooth. Each input can easily be designated to a different zone via the front panel selector making this mixer amplifier ideal for hotels, shopping malls, sports centers, entertainment centers, and anywhere multi-zone audio is needed.

FEATURES

1. 4 channel amplifier in a 3U 19" rack mount design
2. All source inputs can be matrix assigned to different 4 zones output simultaneously
3. The 5 channel inputs & MP3 input are designed with separate bass, treble and volume control
4. 3 microphone / line inputs with phantom power and gain control
5. 2 AUX inputs by RCA with gain control
6. MP3 player with TF and USB inputs has a separate power supplied module
7. Built in tuner audio source
8. 1 4 zone remote microphone input via RJ45 port
9. 4 channel line inputs and speaker outputs
10. Versatile speaker outputs for each four channels: 70V, 100V and 4Ω
11. RS232 serial control port for third party system communication
12. Priority input to override other inputs (equal to EMC input)
13. Input priority level from high to low:
Before short circuit priority input: MIC1 TEL Remote MIC MIC2= MIC3 = LINE4 = LINE5 = MP3
After short circuit priority input: TEL MIC1 Remote MIC MIC2 = MIC3 = LINE4 = LINE5 =MP3
14. Built-in monitor with volume control
15. Extensive protection of thermal, short-circuit, clip and overload with indicators
16. Ground lift switch

FRONT PANEL



1. Mute button and indicator:

Mute on, indicators are on

Mute off, indicators are off

2. Amplifier matrix 4-channel selector button

3. Monitor level indicator

4. Monitor volume control

5. 1-4 Zone amplifier level indicator

6. 1-4 Zone monitor selector button

7. 1-4 Zone amplifier output volume control

8. ON/OFF Power switch:

Switch up, power on

Switch down, power off

9. Power indicator:

When powered on, power indicators are on

When powered off, power indicators are off

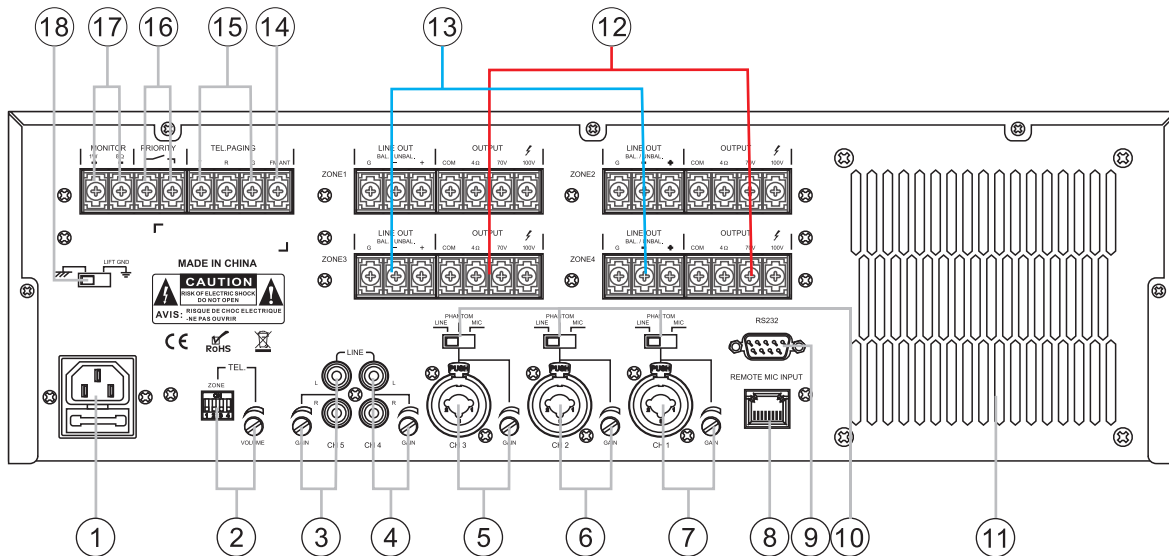
10. CH1-CH4 Treble control

11. CH1-CH4 Bass control

12. CH1 volume control

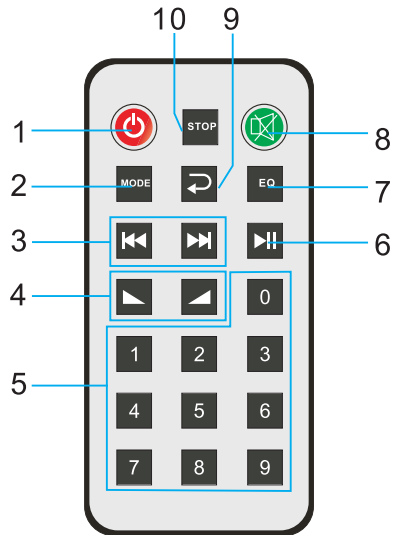
13. MP3 player, with USB & TF card slot

REAR PANEL



- | | |
|--|--|
| <ul style="list-style-type: none"> 1. AC power input socket 2. Telephone DIP switch and volume control 3. CH5 Line signal input and signal gain control 4. CH4 Line signal input and signal gain control 5. CH3 Microphone signal input and signal gain control 6. CH2 Microphone signal input and signal gain control 7. CH1 Microphone signal input and signal gain control 8. Remote microphone input port 9. RS232 port 10. LINE, PHANTOM, MIC signal input selector switch 11. Vents | <ul style="list-style-type: none"> 12. ZONE 1-4 output terminals for connecting speakers; COM is common terminal, 4Ω for 4 ohm speaker; 70V terminal for 70-volt speaker; 100V terminal for 100-volt speaker 13. ZONE 1-4 LINE signal output 14. Radio antenna port 15. Telephone signal input port 16. Contact PRIORITY control, can change the priority of Telephone and MIC1 inputs 17. Monitor output port 18. Ground lift switch |
|--|--|

REMOTE CONTROL



1. Power
2. Mode
3. Previous/Next
4. Volume increase/decrease
5. 0-9 number buttons
6. Play/Pause
7. Sound effect control
8. Mute
9. Cycle play button
10. Stop

Normal usage distance of remote control:

Typically, the effective range for remote control operation is approximately 8 meters in the absence of any obstructions. The remote control angle: Horizontal ± 35 degrees and vertical ± 15 degrees are valid.

Notice - Usage of remote control:

1. When installing battery, please mind electrode.
2. Ensure that the remote control is accurately aimed towards the media player.
3. If remote distance becomes limited and less responsive, replace the battery.
4. Remove battery when the device is not in use for an extended period of time
5. Handle remote with care to prevent dropping and causing damage.

OPERATION

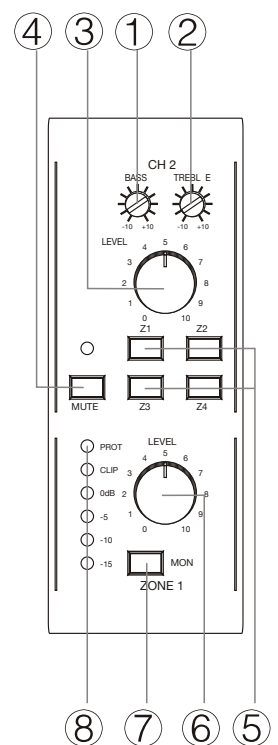
STARTING-UP PROCEDURE

1. Set "LEVEL" volume knobs to the "0" position (counterclockwise position) on the front panel. Set "TREBLE" and "BASS" knobs to the "12 o'clock" position (straight up).
2. Set Gain knobs of "CH1 to CH5" on the rear panel to counterclockwise for minimum gain to start.
3. Set "TEL" DIP switches in down position on back of amp.
4. Press the power button to "ON" position and indicator light will turn on. Blue means amplifier is working normally. Red means amplifier is under protection status. (Please check connections & input voltage.)

CHANNEL OPERATION INSTRUCTIONS

Operational instructions are the same for CH 1 through CH 5. Take CH 2 illustration as an example:

1. Bass: Adjusts the low frequencies of your audio mix
2. Treble: Adjusts the high frequencies of your audio mix
3. Channel Volume Knob: Changes the input level of the channel
4. Channel Mute: Press button to mute selected channel
5. Zone Selection: Press the zone you wish to route audio signal to, buttons will illuminate when selected
6. Zone Monitoring Volume: Adjusts the level of the monitor output signal
7. Zone Monitoring Button: Press button to select and monitor a specific zone. Then use the monitor volume knob to adjust the volume for the selected zone
- 8: Output Status: Protection light indicates a problem somewhere in the system. The amplifier is attempting to protect itself and will not pass any audio signal to the speakers



MONITOR OPERATION INSTRUCTIONS

1. Select output to monitor
2. Adjust monitor to desired level

OPERATION INSTRUCTIONS OF REMOTE MIC

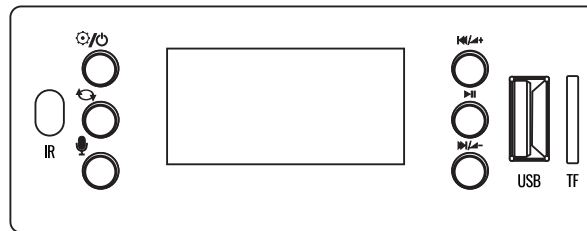
"REMOTE MIC INPUT" Remote Mic Interface: Connect to optional Pure Resonance Audio remote On Paging Mic, select zone, chime or all call. For more information see manual for remote paging mic to configure chimes, bell, & tones. Short "Priority Terminal" with a wire to set Remote Mic. input as the highest priority).






OPERATION INSTRUCTIONS OF TELEPHONE INPUT

"TEL. PAGING" input: Controlled only by telephone "volume" on rear panel.

- a. "VOLUME" sets the input signal of telephone.
- b. "ZONE" Dial Switch: Assign telephone input to each zone. Flip switch up to route telephone page to the desired zone.

BUILT-IN MP3 PLAYER OPERATION METHOD



	MODE button: Press to choose FM radio, USB, Bluetooth or audio playback (Press and hold to forcibly turn on/off the amplifier)
	Previous song (Press and hold to increase the volume)
	MP3 loop playback button (with Repeat One / Repeat ALL / Random / Repeat Folder mode)
	Play / Pause (Press and hold in FM mode to receive the station)
	Next song (long press to decrease volume)

PLEASE NOTE:

1. When using the built-in MP3 player buttons, please pay attention to the strength used, avoid excessive force that may cause damage to the MP3 player buttons.
2. When a TF card or USB interface is inserted, please insert in the correct way, avoid the wrong way or forcing it too hard that may cause damage to the TF card or USB ports.

USB OPERATION

Press the MODE button to select the USB mode, copy the MP3 file in the U disk (below 32G), it supports MP3 / WAV / WMA / AEC / FLAC formats.

TF CARD OPERATION

Insert a TF card (below 32G) to copy the MP3 file, it supports MP3 / WAV / WMA / AEC / FLAC formats.

FM (RADIO RECEPTION) FUNCTION

Press the MODE button to select the FM mode, and then press and hold the PLAY / PAUSE button to automatically search available radio stations. The radio stations received (depending on the signal received) depends on the signal strength. To search for additional stations, you can try to reposition the FM antenna.

Note: Due to the possibilities of FM radio interference and the variables involved, it's not recommended to use FM radio as your primary input source.

MP3 SONG LOOP PLAYBACK

In USB or TF card mode, play a song at will, press the mode button to switch between Repeat One / Repeat ALL / Random / Repeat Folder.

FUNCTIONAL MEMORY OPERATION

Turn off the media player by the remote control or press and hold the MODE button. After it is turned back on, it can remember the function mode selected before. If you unplug the power cable and turn it on again, the default is Bluetooth mode.

VOLUME +/- OPERATION

Long press the Previous Song button to increase the volume quickly, and long press the Next Song button to decrease the volume quickly.

BLUETOOTH OPERATION

1. Press the Mode button on the remote to ensure media player is in Bluetooth mode, indicated by letters "BT."
2. Go to your device's settings, find and select the device "PRA-BT". No password should be required.
3. Device should pair within minutes.
4. If pairing is unsuccessful, ensure no other device is connected and disconnect any existing devices.
5. If no other devices are connected, power down your amplifier, and close the settings app on your device.
6. Power up the amplifier and re-open settings. Repeat first steps to attempt to pair again. If you still have an issue pairing, please reboot personal device and cycle amplifier power.
7. Once pairing is successful, open music app. Ensure device volume is turned up to at least 75% capacity on device.
8. Adjust volume of audio player with volume buttons on infrared remote (OK to set at max volume - 32).
9. Adjust master volume to desired level, ensuring amplifier does not show clip or show any red lights.

SERIAL PORT APPLICATION

Please contact support@pureresonanceaudio.com or call (866) 676-7804 for more information on using serial port.

CH1, CH2, CH3 SWITCH APPLICATION

Input switch has three modes: LINE, PHANTOM, MIC

1. The LINE input is for line level audio source inputs, such as CD, VCD, DVD and other audio equipment.
2. The PHANTOM input offers 48V power supply for a condenser microphone.
3. The MIC input was used for ordinary microphones (dynamic).

MUTE OPERATION

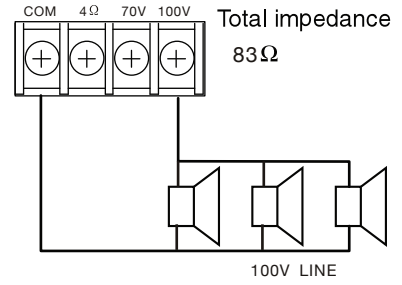
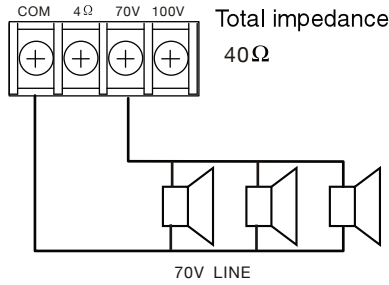
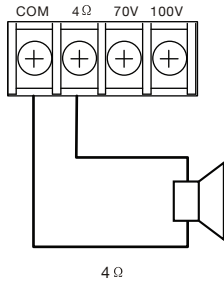
MIC1 has the highest priority in default status:

Highest Priority: MIC1 > Telephone > Remote MIC.

By shorting "PRIORITY" terminal, Remote MIC has the highest priority.

Highest Priority: Remote Mic > Telephone > MIC1, when "PRIORITY" when jumper is added.

SPEAKER CONNECTIONS



PLEASE NOTE:

- Both the 4Ω and 70V/100V terminals cannot be used at the same time.
- Impedances indicated in the figures represent the total speaker system (load) impedances.

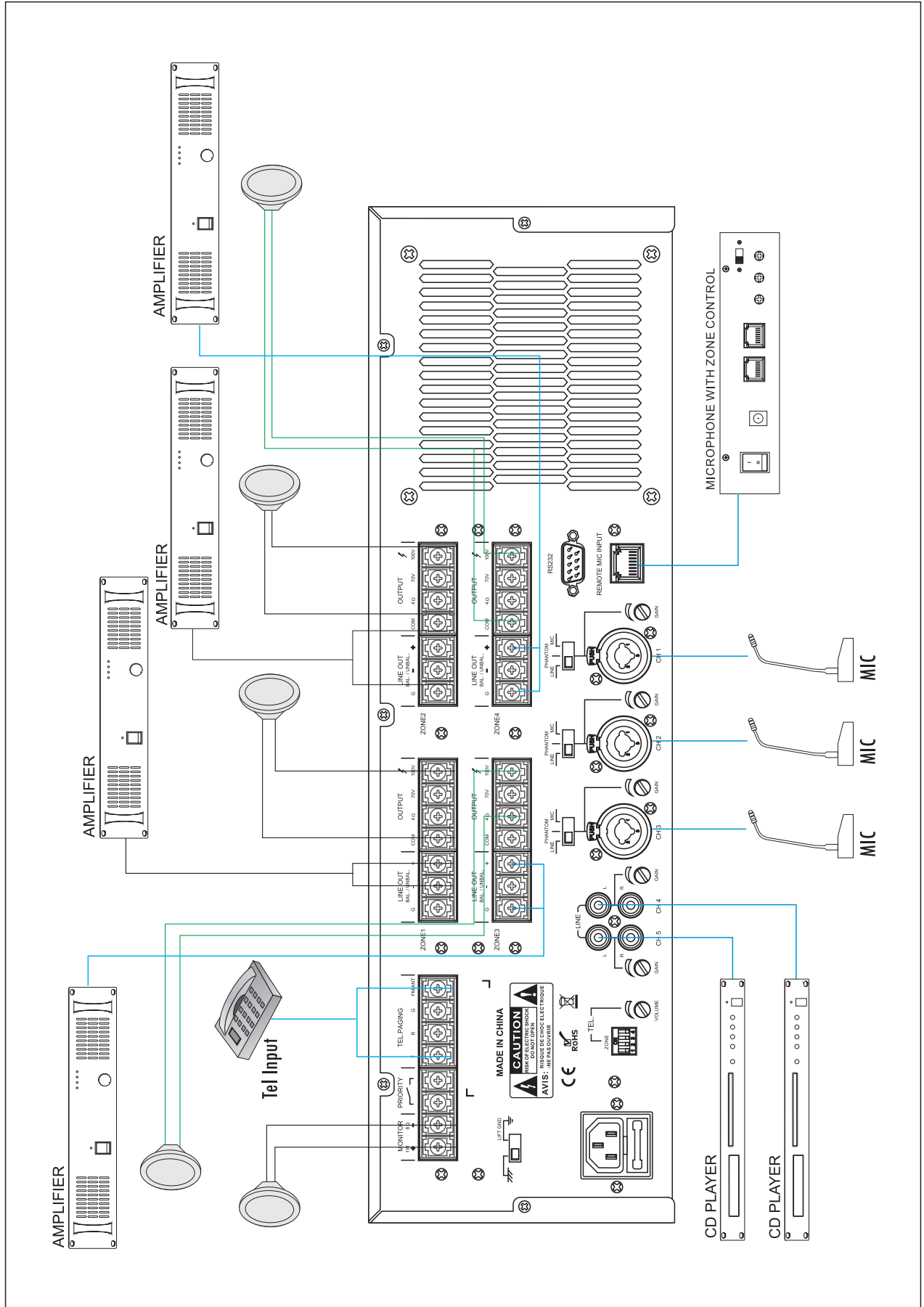
WARNING!

Be sure to attach the supplied terminal cover after connection completion. Because high voltage is applied to the speaker terminals, never touch these terminals to avoid electric shock.

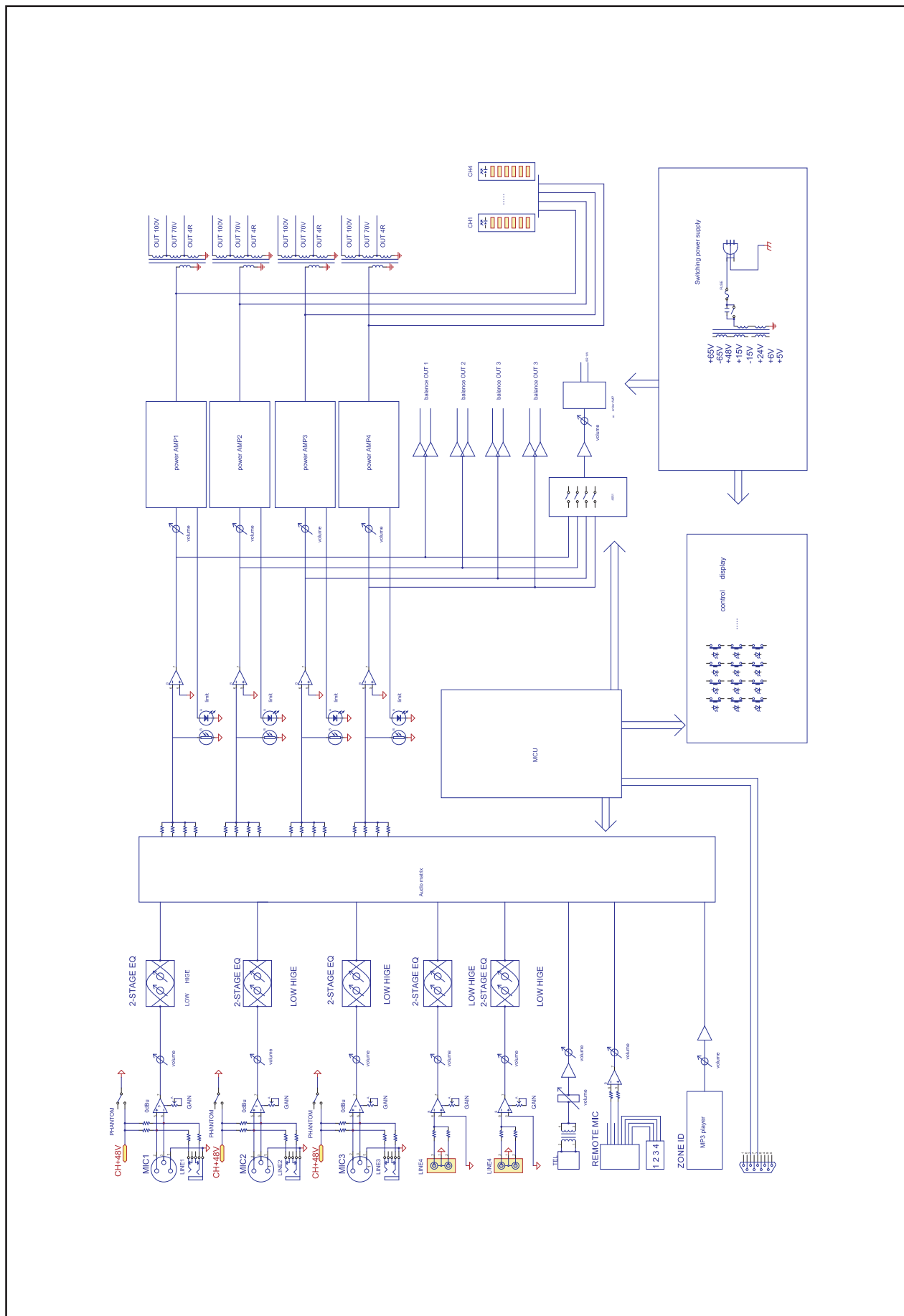
TROUBLESHOOTING

SYMPTOM	PROBLEM
1. There is no sound output when the line connection is good	<ol style="list-style-type: none"> 1. No electricity or plug contact undesirable 2. The fuse was burned out 3. The volume is not open 4. No input signal
2. Normal startup, the alarm triggered	<ol style="list-style-type: none"> 1. Load short circuit or damaged 2. Power supply voltage is not stable, too high or too low 3. Overload
3. In the normal use and all of a sudden there is no sound output	<ol style="list-style-type: none"> 1. Temperature is too high, the machine in temperature protection 2. Loose cable connection

REAR PANEL CONNECTIONS



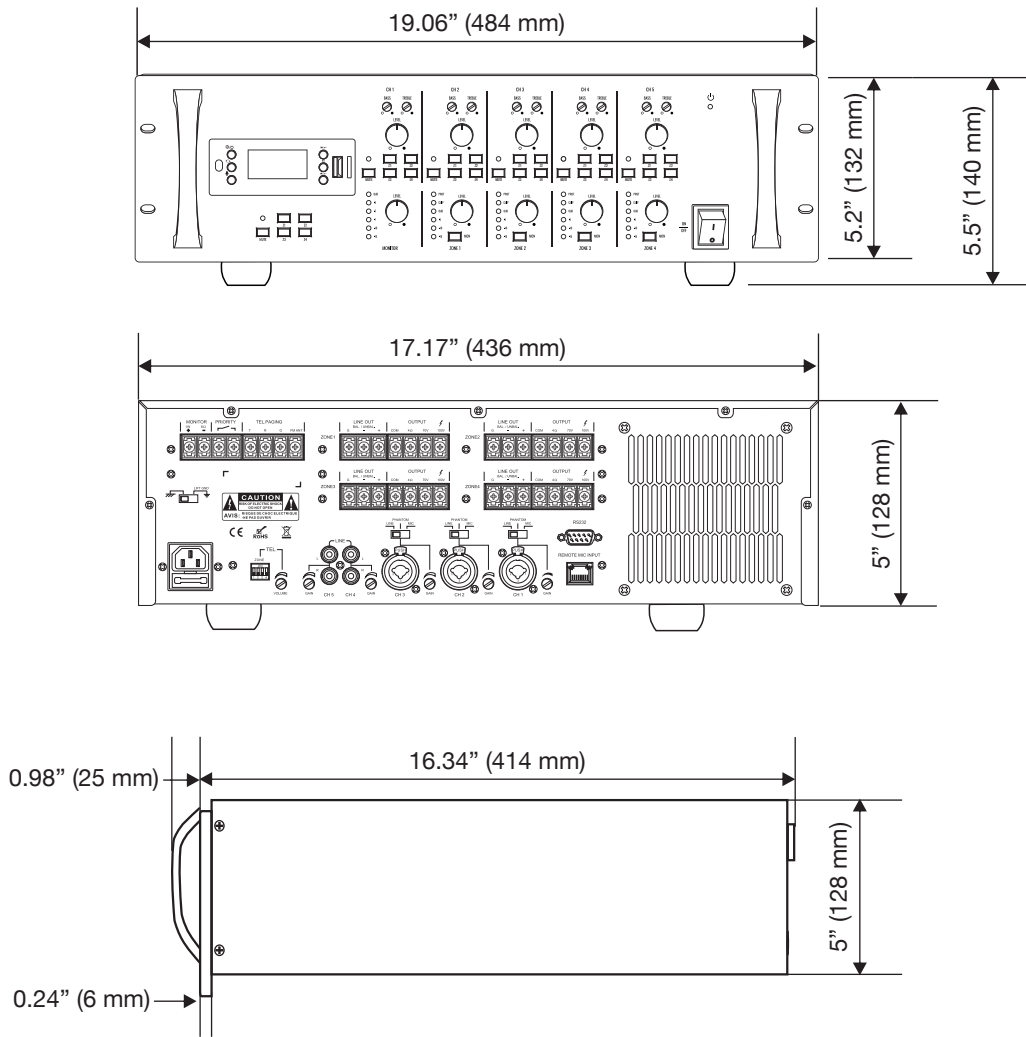
BLOCK DIAGRAM



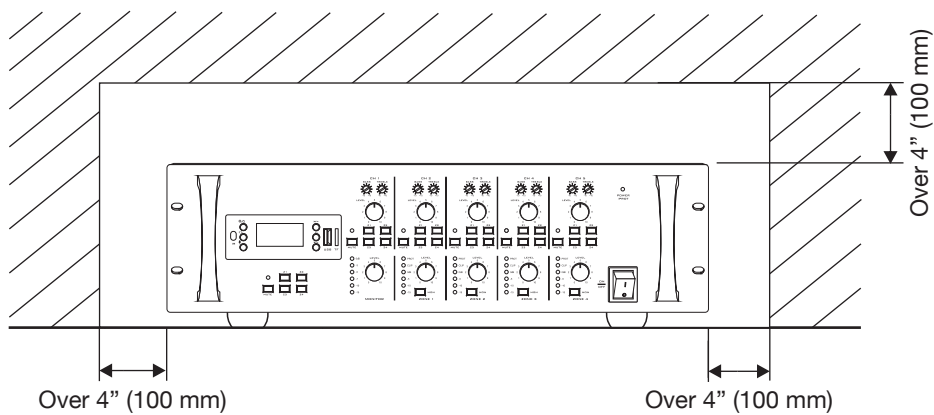
SPECIFICATIONS

Power Output	4 x 240W
Output Interface	4R, 70V/100V
Monitor Output	1W/8 Ω
Input Sensitivity and Impedance	CH 1, CH 2, CH 3: MIC: $\pm 2.5\text{mV}/600 \Omega$ PHANTOM: $\pm 2.5\text{mV}$ LINE: $\sim 175\text{mV}/10\text{K} \Omega$ balance input CH 5-6: $350\text{mV}/10\text{K} \Omega$ balance input TEL: $350\text{mV}/10\text{K} \Omega$ REMOTE MIC: $\pm 387\text{mV}/10\text{K} \Omega$
Tone	Bass: $\pm 10 \text{ dB}$ at 100Hz Treble: $\pm 10 \text{ dB}$ at 100Hz
SNR	>65 dB
LINE 1-4 Output Level	1V/600 Ω (balance output)
Frequency	80 - 16kHz
MP3	Support MP3 format, max capacity of 32GB
TF File System	Only FAT16, FAT32, the biggest one partition, does not support folder to store
Harmonic Distortion	<1%
Power Consumption	1500W
Supply Voltage	$\sim 120\text{V}$ 60Hz
Remote Control	IR remote control with replaceable CR2025 3V lithium battery
Dimensions (H x W x D)	5.20" (132 mm) x 19.06" (484 mm) x 17.32" (440 mm)
Weight	48.5 lbs (22 kg)
Shipping Weight	64 lbs (29.03 kg)

DIMENSIONAL DIAGRAMS



Keep all sides of the unit over 4 inches away from objects that may obstruct airflow to prevent the unit's internal temperature from rising.



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	1Year
Accessories	1Year

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.

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