

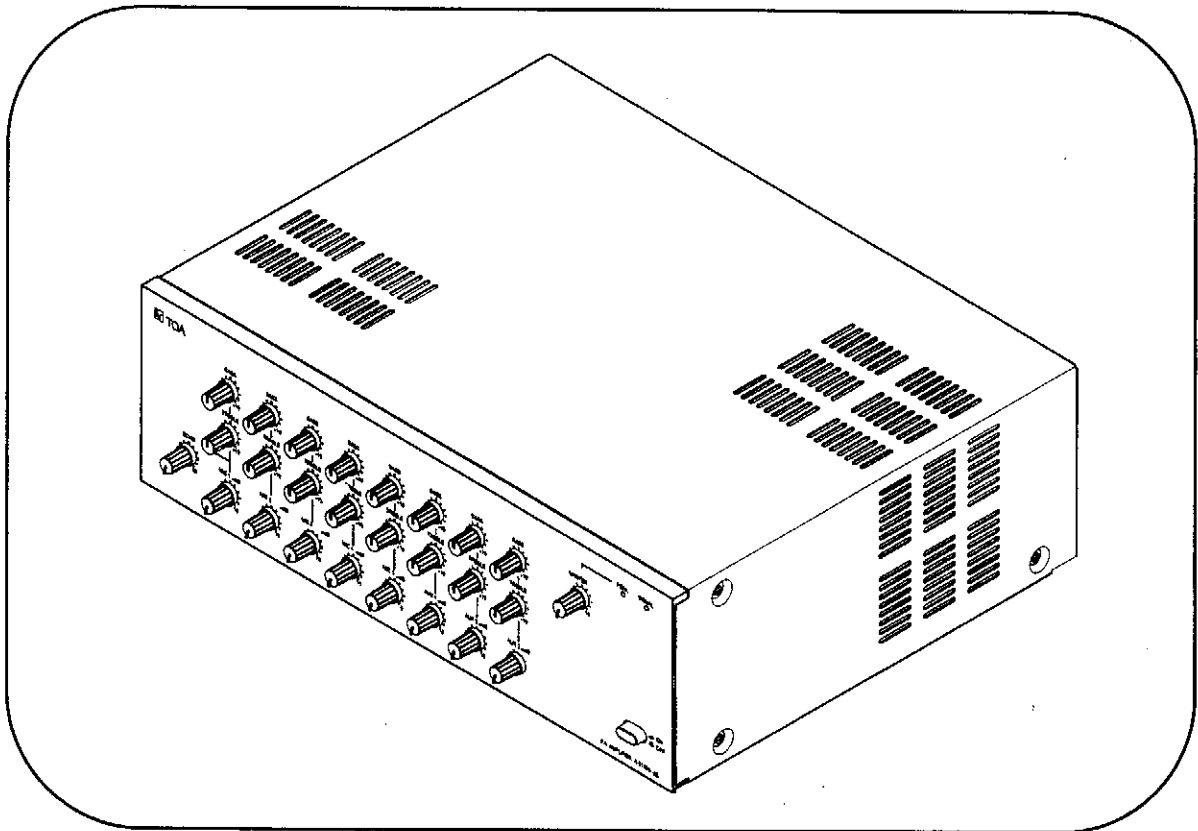


## OPERATING INSTRUCTIONS

### PA AMPLIFIER

**A-2128S-AS**  
**A-2248S-AS**

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 hazards.

 **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.
- The terminals marked with the symbol  are hazardous live. The external wiring to these terminals requires installation by an instructed person.
- The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible.
- Be sure to replace the unit's terminal cover after connection completion. Because the voltage of up to 100 V is applied to the high impedance 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.

### 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 TOA 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 you nearest TOA 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 object 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 upper panel 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.

## 2. GENERAL DESCRIPTION

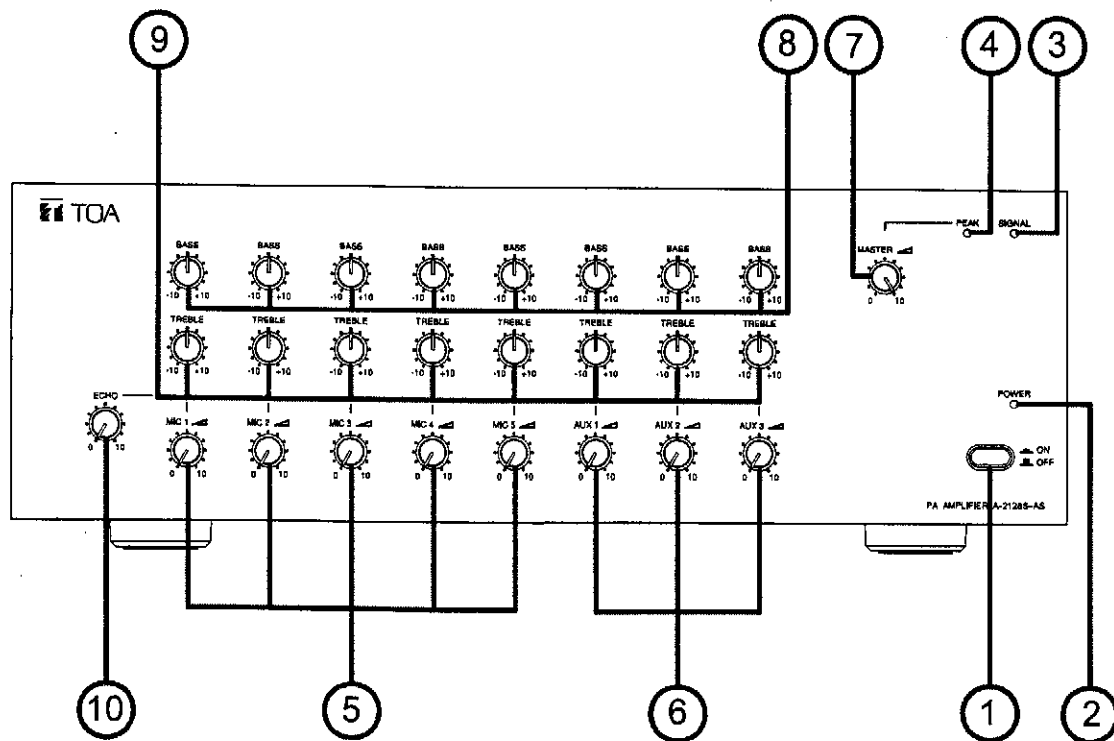
TOA amplifier A-2128S-AS and A-2248S-AS is a mixer power amplifier with high capacity for audio requirements in the mosque and other places of worship.

## 3. FEATURES

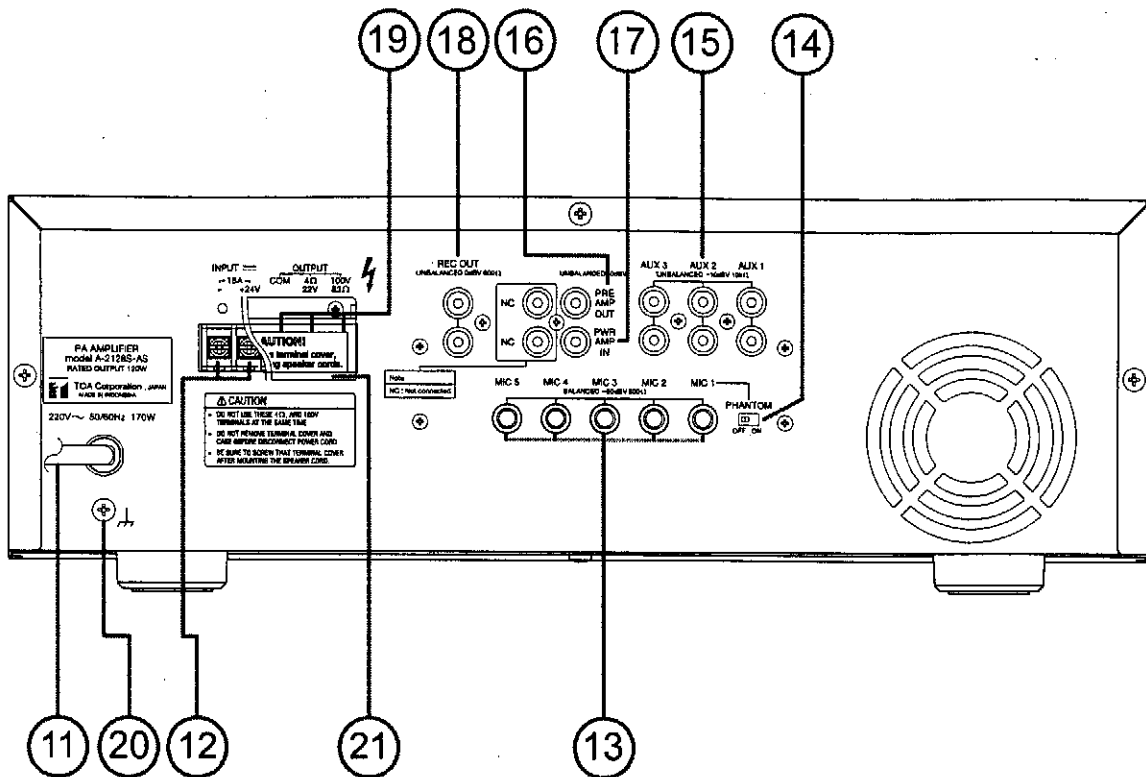
- Durable, high capacity and multifunction.
- 5 Microphone inputs, 3 Aux inputs.
- Mic 1 input is equipped with Echo and Phantom Power as condenser.
- Separate control for low frequency / bass and high frequency / treble adjustment on each inputs.
- Output speaker with constant voltage distribution system 100V and low impedance 4Ω.
- AC/DC compliant.
- Separate volume control for each inputs.
- Excess current limit to prevent damage due to current overload.
- Excess heat limit to protect the transistor and power transformer.

## 4. PARTS AND FUNCTIONS

### 4.1. Front Panel



## 4.2. Rear Panel



1. **Power Switch**  
Press switch button ON/OFF to turn on.  
Press one more time to turn off.
2. **Power Indicator**  
It will light up in green when the switch power indicates ON.
3. **Signal Indicator**  
It will light up in green when switch power indicates ON and signal is generated.
4. **Peak Signal Indicator**  
It will light up in red when switch power indicates ON and the generated signal has reached average output. At this stage, the generated signal is not perfect anymore. Turn down the input volume control until the peak signal goes off.
5. **Volume Control for Microphone**  
To adjust microphone volume.
6. **Volume Control for AUX**  
To adjust AUX volume.
7. **Master Volume Control**  
To adjust all unit volume.
8. **Bass Control**  
To adjust low-pitch sound/bass. Turn the control counter-clockwise to lower the bass volume, clockwise to increase the volume. A center position will produce balanced characteristic.
9. **Treble Control**  
To adjust high-pitch sound/treble. Turn the control counter-clockwise to lower the treble volume, clockwise to increase the volume. A center position will produce balanced characteristic.
10. **Echo Control for Mic 1**  
To adjust echo delay at Mic 1.
11. **AC Power Cable**  
Connect to AC power supply.
12. **DC Terminal**  
Connect to power supply DC 24V.
13. **MIC 1, MIC 2, MIC 3, MIC 4 and MIC 5 Inputs**  
-60dB (1.0mV), 600Ω, balanced, phone jack.  
(Refer to the Input Connection for details)
14. **Phantom Switch**  
Set to ON to use microphone condenser and set to OFF to use dynamic microphone (specially for MIC 1 input).

**15. Terminal Input for AUX 1, AUX 2 and AUX 3**  
 -10dB (300mV), 10kΩ, unbalanced. Monaural RCA pin jacks. Used for signal from other equipment. (Refer to input connection for details)

**16. Pre-Amp Out**  
 0dB (1V), 600Ω, unbalanced. Monaural RCA pin jacks. Please connect to power source of other amplifiers.

**17. Power Amp In**  
 0dB (1V), 10kΩ, unbalanced. Monaural RCA pin jacks. Connect to mixer or other equipment. When connected to Power AMP In, input connection from Mic and Aux will disconnected.

**18. Rec Out**  
 0dB (1V), 600Ω, unbalanced. Monaural RCA pin jacks. Connect to other equipments for recording.

**19. Speaker Output Terminal**  
 Connect to speaker. When connecting to the speaker, please use only one output terminal, either high or low impedance.

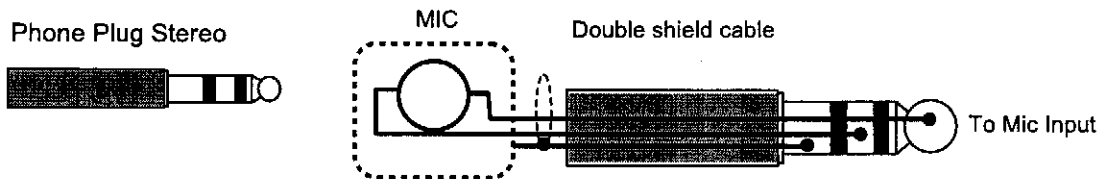
**20. Terminal Ground**  
 Connect to ground for safety and protection against short circuits.

**21. Terminal Cover**  
 To protect against the high voltage at the output terminal. Please put the cover in place after installing the speaker cable.

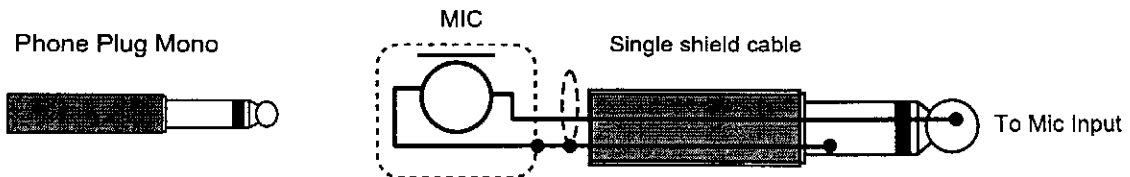
## 5. CONNECTION

### 5.1. Input Connection

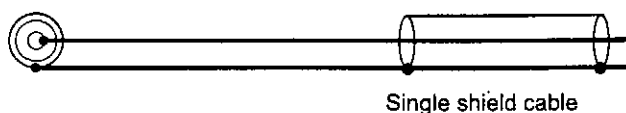
- Mic 1, Mic 2, Mic 3, Mic 4, Mic 5 Connection (Phone Plug)  
 All MIC inputs are of electronically balanced type, used for phone plug stereo and double cable with ground protector.



When using Phone Plug mono, input condition will be unbalanced. For microphone cable of more than 10 meter length, balanced circuit with double cable and phone plug stereo is highly recommended. Single shield cable and unbalanced circuit are for cable of less than 10 meter. If an unbalanced circuit is used for a cable of more than 10 meter length, the sound produced will be tainted with undesired noise.



- AUX Connection, Pre Amp Out, Power Amp In, Rec Out (RCA jack)



### Phantom Switch (only for Mic 1 input)

Phantom Switch at OFF position  
For Dynamic Microphone

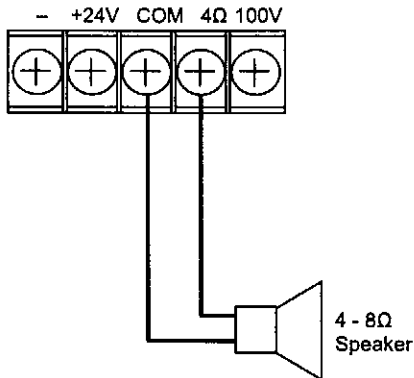


Phantom Switch at ON position  
For Condenser Microphone

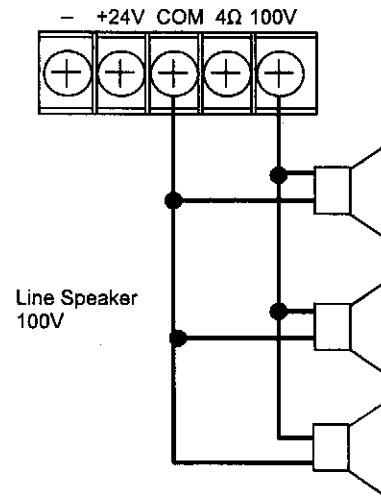


## 5.2. Output Connection

- Low Impedance



- High Impedance / Line Speaker 100V



### Caution !

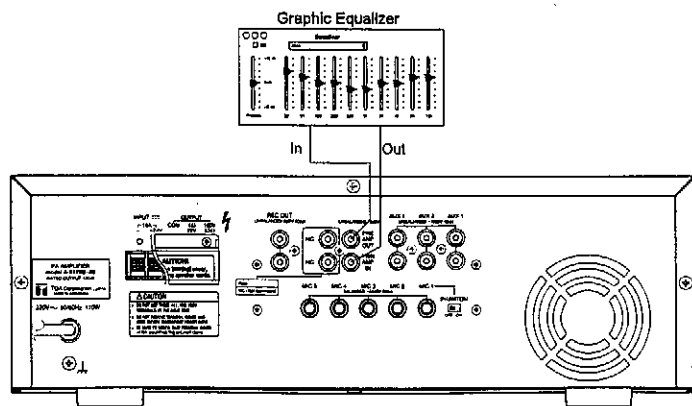
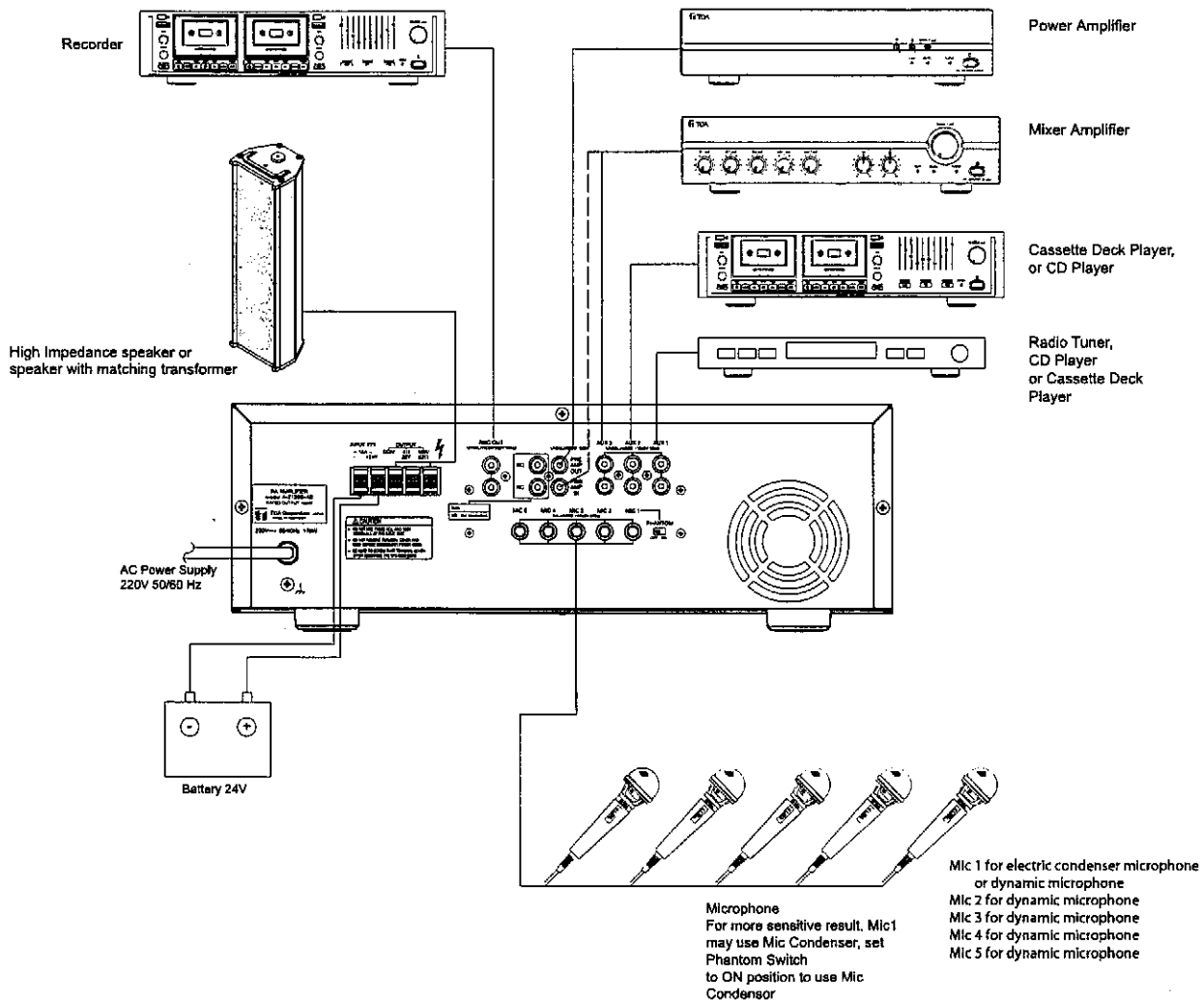
- Terminals 4Ω and 100V cannot be used together.
- Impedance indicates the amount of load from all speakers. Total impedance for 100V line is  
A-2128S-AS: 83Ω  
A-2248S-AS: 42Ω



### CAUTION

Please put the terminal cover in place after installing the speaker cable. Due to the high voltage on the speaker terminal which may cause electric shock, you must not touch the terminal.

### 5.3 Connection Example With Other Equipment



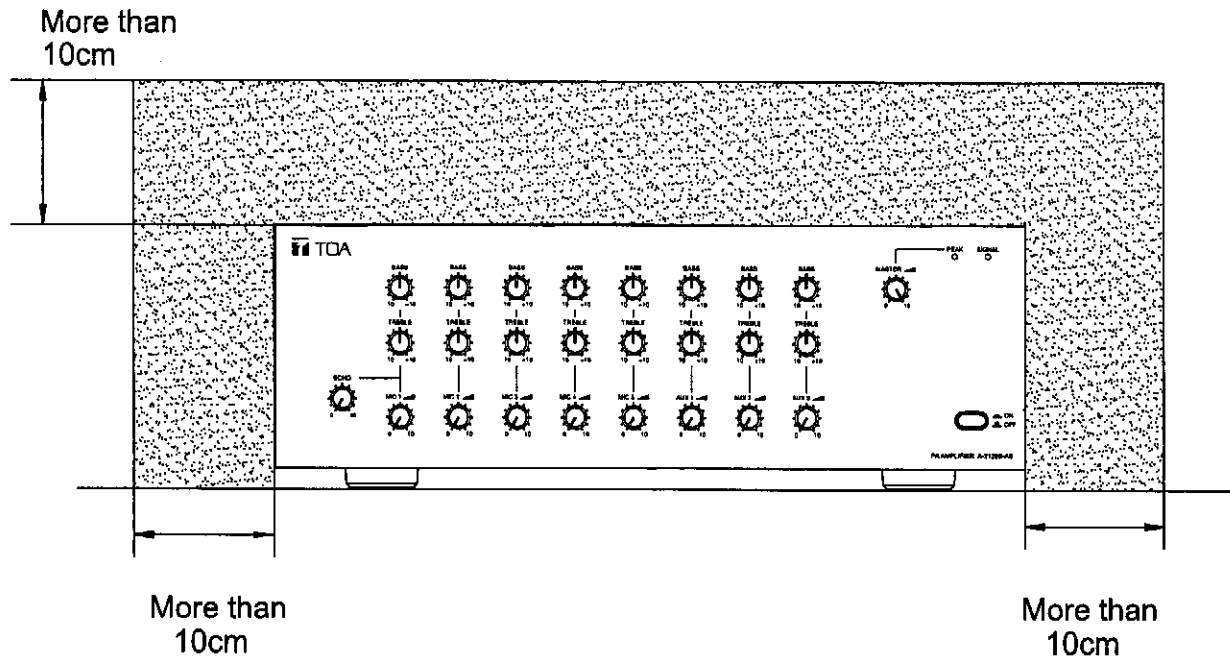
## 6. VOLUME CONTROL ADJUSTMENT

Output level can be adjusted through the volume control of each input. For music or speech, adjust volume control such that there is no noise or impurity.

When there is noise or impurity and the LED Peak lights up, lower down the volume by turning the control anti-clockwise until the LED Peak turns off and the sound becomes perfect.

## 7. INSTALLATION

The unit walls shall be at a distance 10 cm away or more from any objects that may block air circulation. This is to prevent overheating in the amplifier unit.



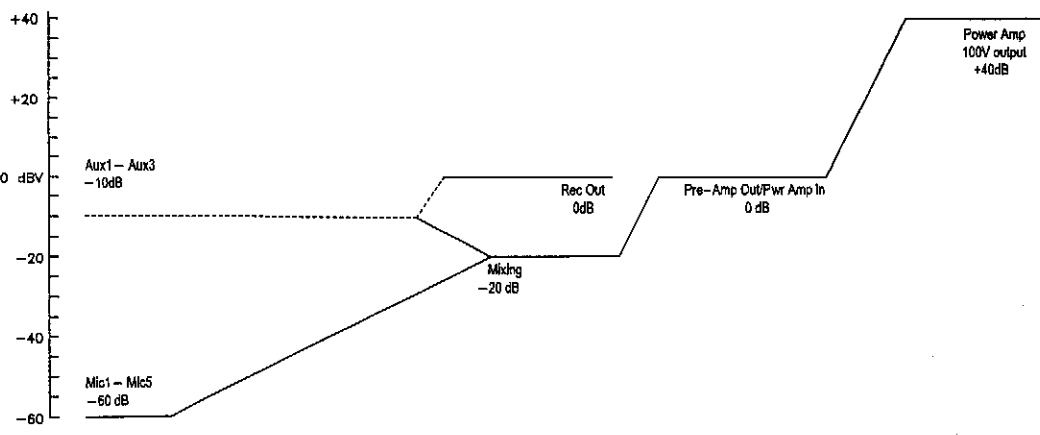
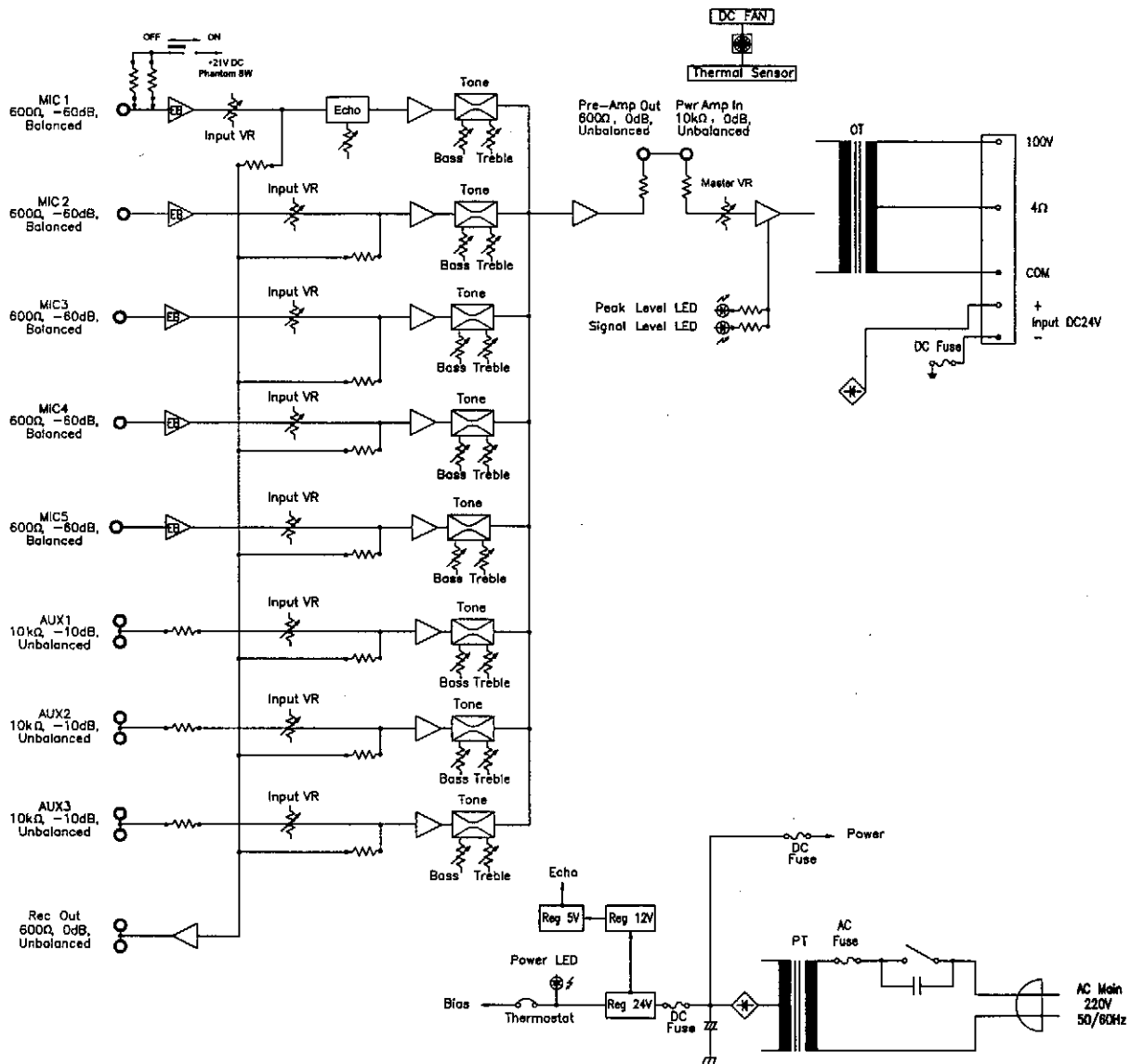
### Caution !

This amplifier is designed for portable use and not for rack-system mounting.



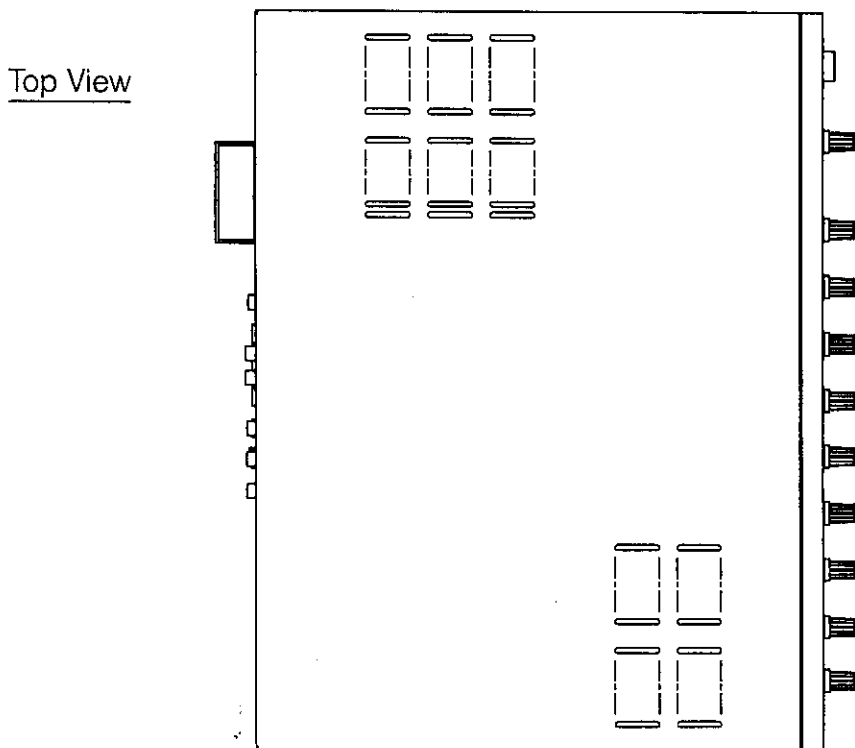
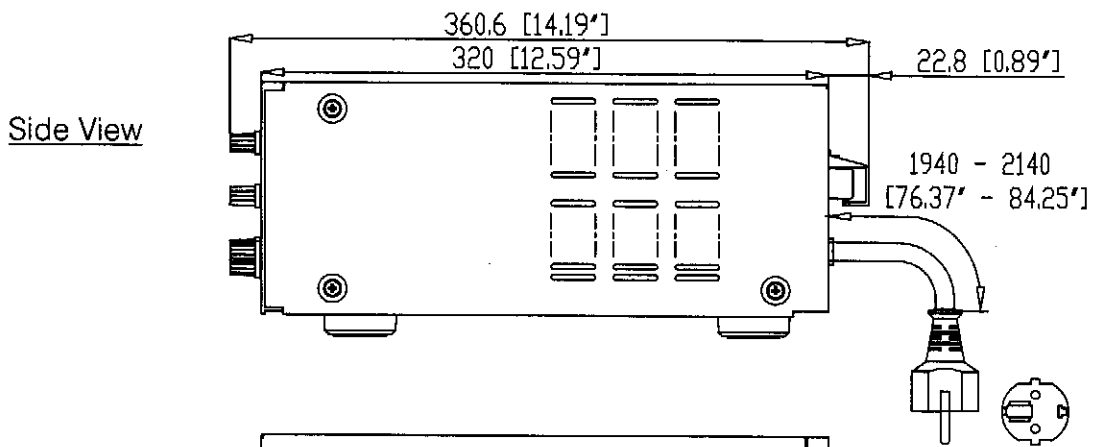
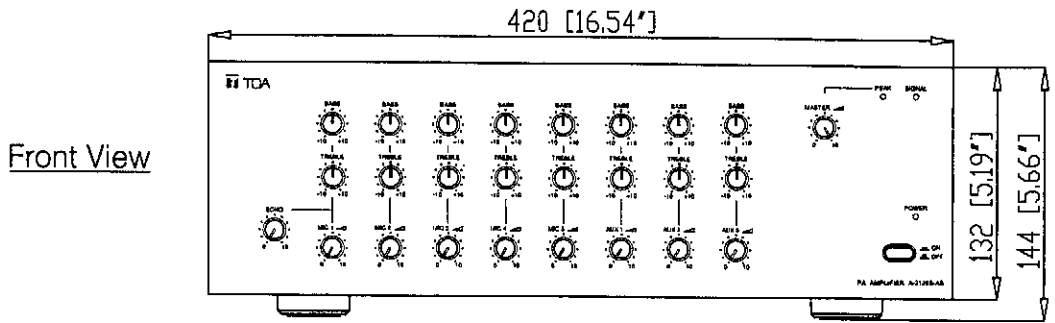
# 8. BLOCK AND LEVEL DIAGRAMS

0dB = 1V



# 9. DIMENSIONS

measurement unit: mm (inch)



## 10. SPECIFICATIONS

Model No.	A-2128S-AS	A-2248S-AS
Power Source	220V AC, 50/60 Hz or 24V DC	
Rated Output Power	120 W	240 W
Power Consumption	350 W (AC operated, at rated output)	600 W (AC operated, at rated output)
	170 W (EN-60065 standard)	330 W (EN-60065 standard)
	15 A (DC operated, at rated output)	20 A (DC operated, at rated output)
Frequency Response	50 - 20,000 Hz	
Distortion	Less Than 1% at 1 kHz, 1/3 rated power	
Input	MIC 1: -60 dB*, 600 Ω, Balanced, Phone Jack, Echo	
	MIC 2 - 5: -60 dB*, 600 Ω, Balanced, Phone Jack	
	AUX 1 - 3: -10 dB*, 10 kΩ, Unbalanced, RCA Pin Jack	
	PWR AMP IN: 0 dB*, 10 kΩ, Unbalanced RCA Pin Jack	
Output	Speaker Outputs: Floating Balanced	
	High Impedance (100 V): 83 Ω	High Impedance (100 V): 42 Ω
	Low Impedance (4 Ω): 22 V	Low Impedance (4 Ω): 31 V
	REC OUT: 0 dB*, 600 Ω, Unbalanced, RCA Pin Jack	
	PRE AMP OUT: 0 dB*, 600 Ω, Unbalanced, RCA Pin Jack	
Phantom Power	ON or OFF for Mic1 with switch setting (+21V DC)	
S/N Ratio	More than 80 dB All Minimum Volume Control	
	More than 50 dB All Maximum Volume Control	
Tone Control	Bass: ±10 dB at 100 Hz Treble: ±10 dB at 10 kHz	
Indicator	Power, Signal, Peak Signal	
Finish	Panel: Aluminium, Grey	
	Case: Steel Plate, Grey	
Dimensions	420(W) x 144(H) x 361(D) mm	
Weight	13 kg	14.5 kg

**Notes:**

\*) 0 dB = 1.0 V

- Specifications are measured on 220 V AC.
- The design and specifications are subject to change without notice for improvement.

