

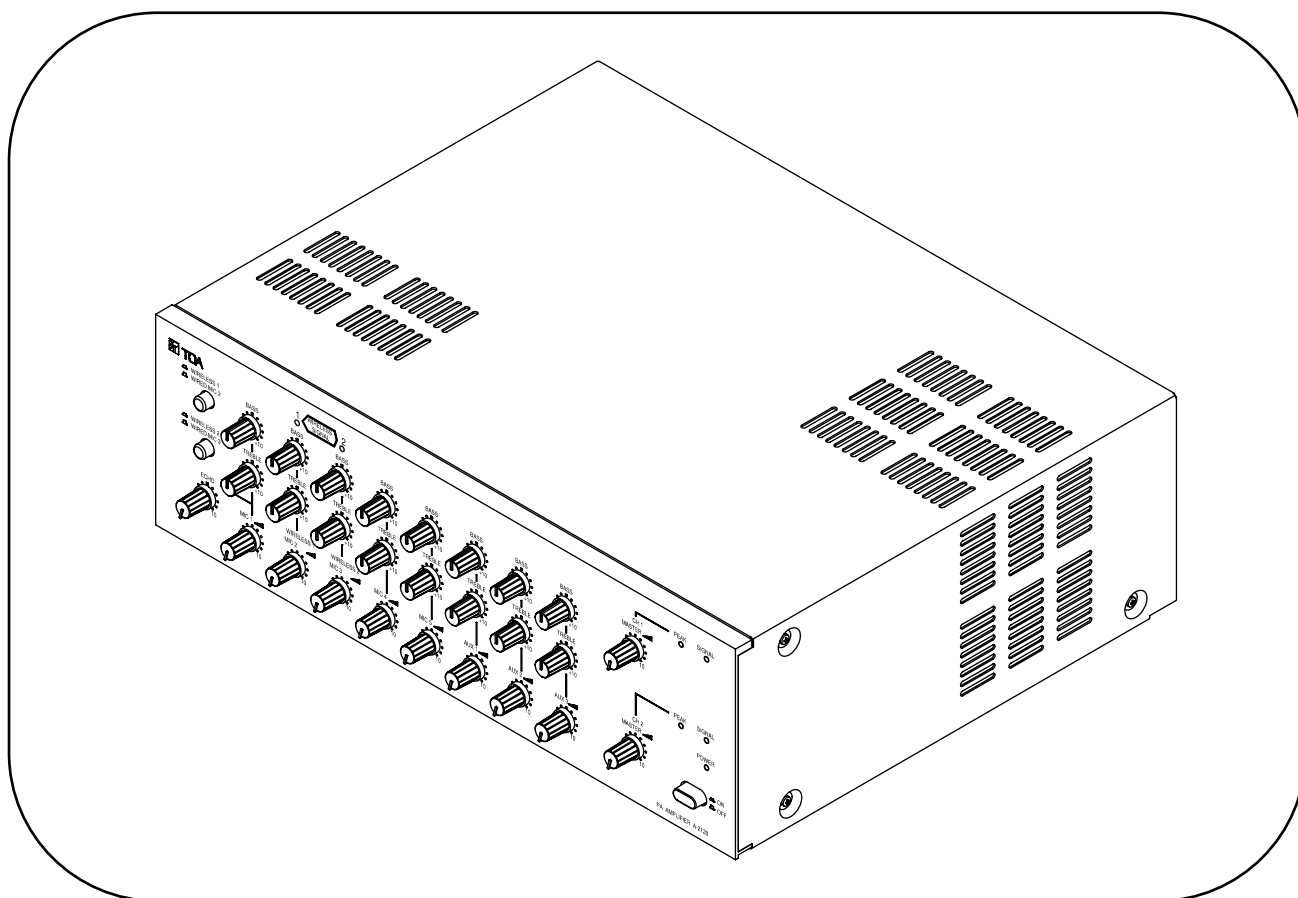
TOA

PA AMPLIFIER

OPERATING INSTRUCTIONS

A-2128 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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TOA Corporation

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

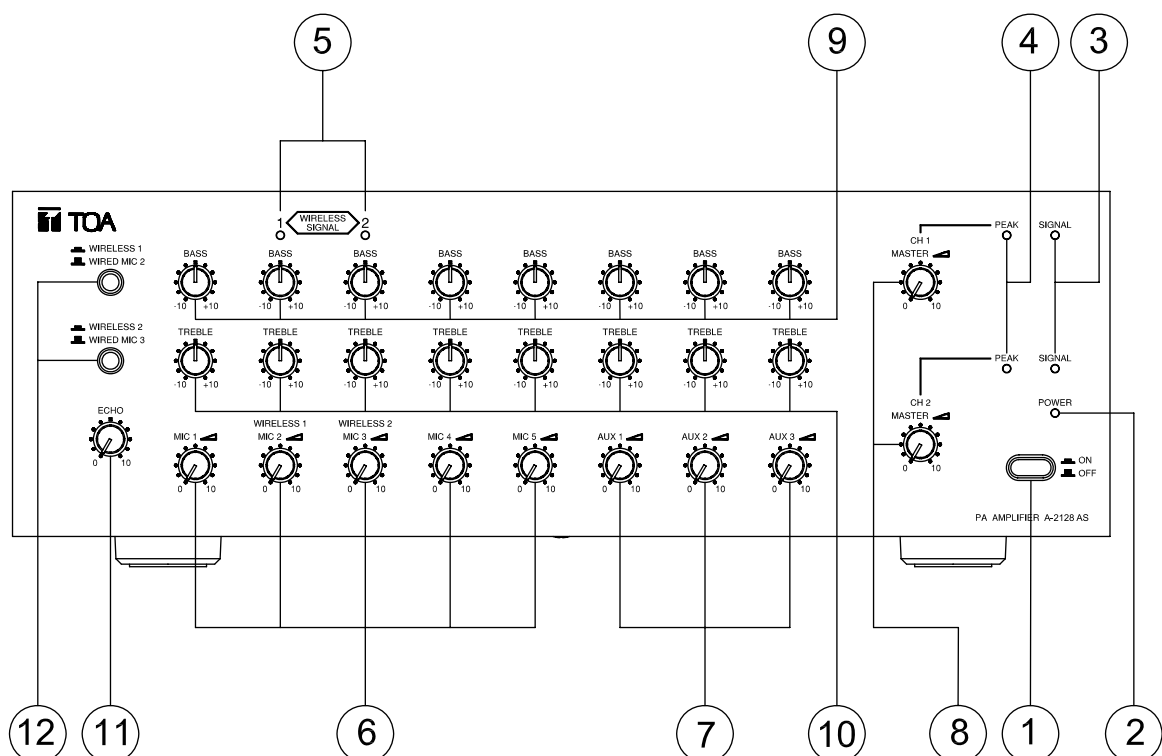
TOA Amplifier of model A-2128 AS is a mixer power amplifier with high capacity for audio requirements in the mosque and other places of worship.

3. FEATURES

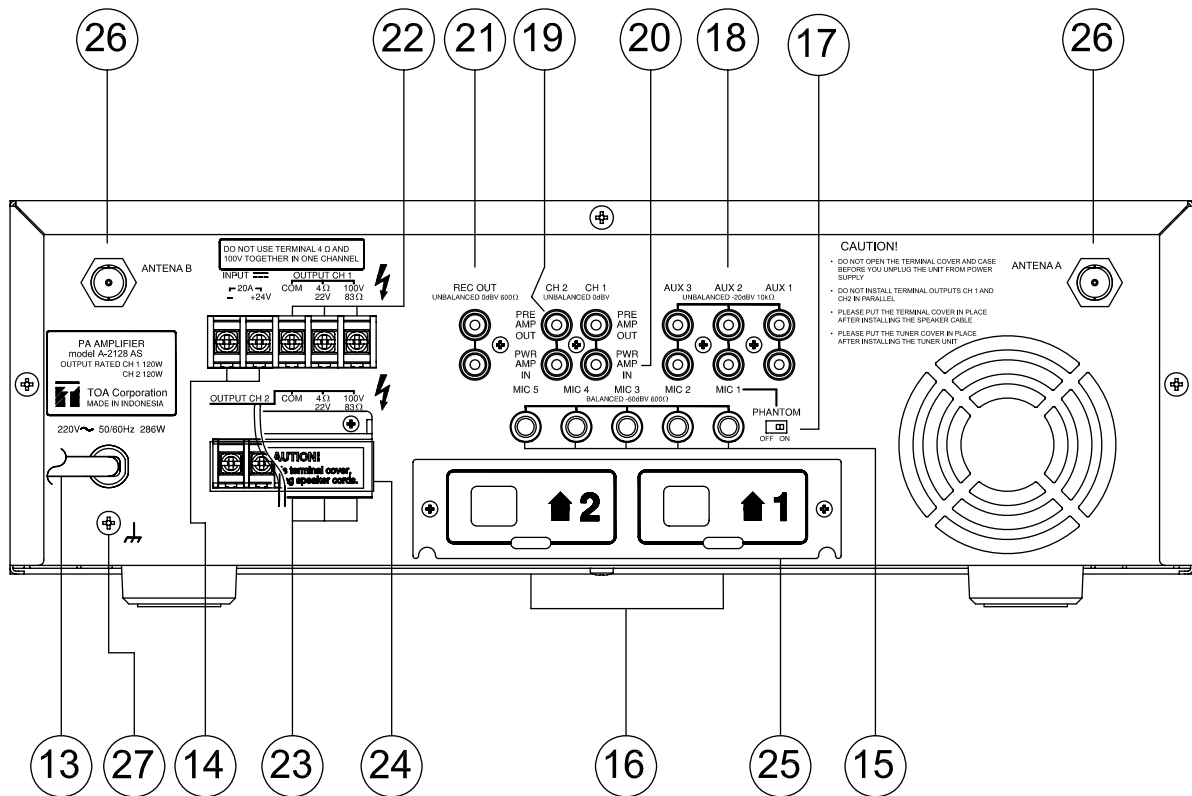
- Durable, high capacity and multifunction.
- 5 microphone inputs (2 inputs are for wireless microphone), 3 AUX inputs.
- Mic1 input is equipped with Echo and Phantom Power as condenser.
- Separate control for low frequency / bass and high frequency / treble adjustment on each inputs.
- 2-channels output speaker with constant voltage distribution system 100V and low impedance 4Ω.
- AC/DC compliant.
- Separate volume control for each inputs.
- Separate master volume control on channel 1 and channel 2.
- External booster antenna for better wireless microphone signal reception (optional).
- 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. Wireless Microphone Signal Indicator**
It will light up in orange when the wireless microphone switch is ON and RF signal is generated by the microphone.
- 6. Volume Control for Microphone**
To adjust microphone volume.
- 7. Volume Control for AUX**
To adjust AUX volume.
- 8. Master Volume Control To adjust all volume.**
Volume Master 1 for Channel 1 output and Volume Master 2 for Channel 2 output.
- 9. Bass Control**
To adjust low-pitch sound / bass. Turn the control anti-clockwise to lower the bass volume, clockwise to increase the volume. A center position will produce balanced characteristic.
- 10. Treble Control**
To adjust high-pitch sound / treble. Turn the control anti-clockwise to lower the treble volume, clockwise to increase the volume. A center position will produce balanced characteristic.
- 11. Echo Control for Mic1**
To adjust echo delay at Mic1.
- 12. Microphone Switch**
Switch for Wireless Microphone 1 to Wired Microphone 2 and Wireless Microphone 2 to Wired Microphone 3. Press ON for Wireless Microphone, press OFF for Wired Microphone.
- 13. AC Power Cable**
Connect to AC power supply

14. DC Terminal

Connect to power supply DC 24V.

15. 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)

16. Input Tuner 1 and Tuner 2

Insert tuner unit to slot 1 and slot 2.
(Refer to the Input Connection for details)

17. Phantom Switch

Set to ON to use microphone condenser and set to OFF to use dynamic microphone (specially for Mic1 input)

18. 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 the Input Connection for details)

19. Pre-Amp Out Ch1 and Ch2

0dB (1V), 10kΩ, unbalanced. Monaural RCA pin jack. Please connect to the power source of other amplifiers.

20. Power Amp In Ch1 and Ch2

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

21. Rec Out 0dB (1V), 10kΩ, unbalanced Monaural
RCA pin jacks. Connect to other equipment for recording.

22. Speaker Ch1 Output Terminal

Connect to speaker. When connecting to the speaker, please use only one output terminal, either high or low impedance.

23. Speaker Ch2 Output Terminal

Connect to speaker. When connecting to the speaker, please use only one output terminal, either high or low impedance.

24. Terminal Cover

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

25. Tuner Unit Cover

Put the cover in place after installing the tuner in the slot.

26. Antenna A and Antenna B

Use antenna A and antenna B for wireless microphone.

27. Terminal Ground

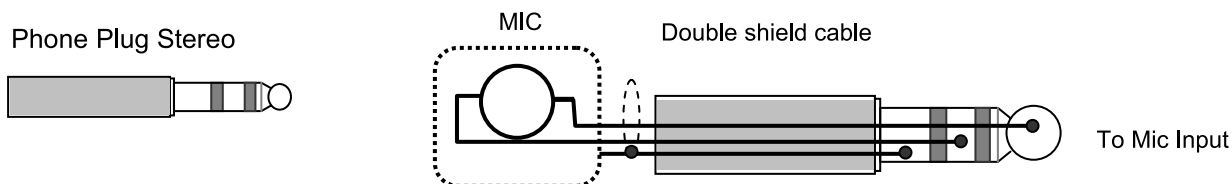
Connect to ground for safety and protection against short-circuits.

5. CONNECTION

5.1. Input Connection

- Mic1, Mic2, Mic3, Mic4, Mic5 Connection (Phone Plug)

All MIC inputs are of electronically balanced type, used for phone plug stereo and double cable with ground protector.



Phantom Switch (only for Mic1 input)

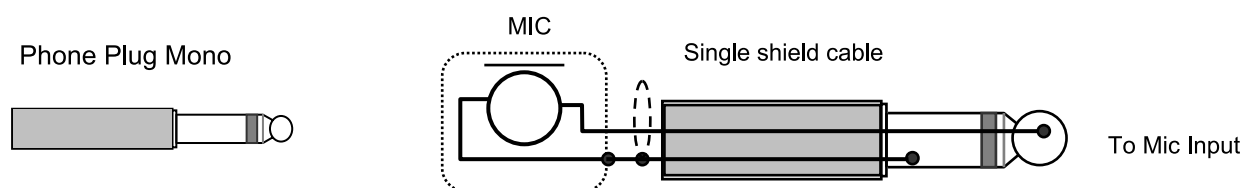
Phantom Switch at OFF position
For Dynamic Microphone



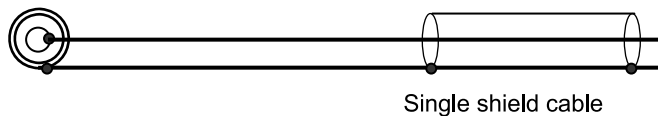
Phantom Switch at ON position
For Condenser Microphone



When using Phone Plug mono, input condition will be unbalanced. For microphone cable of more than 10 meter length, balance 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.



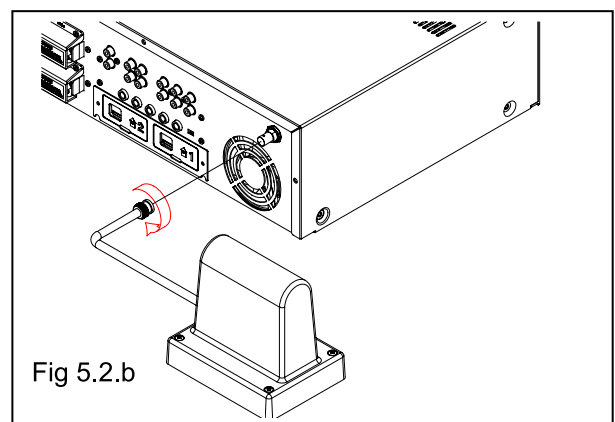
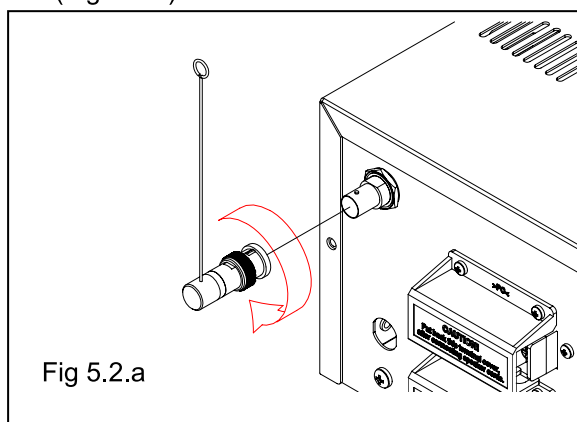
- AUX Connection, Pre Amp Out, Power Amp In, Rec Out (RCA jack)



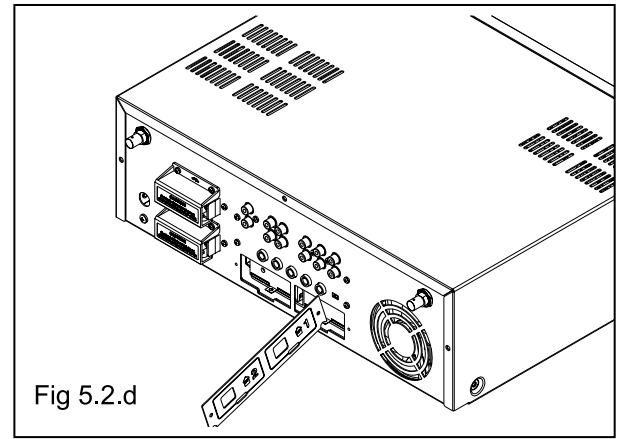
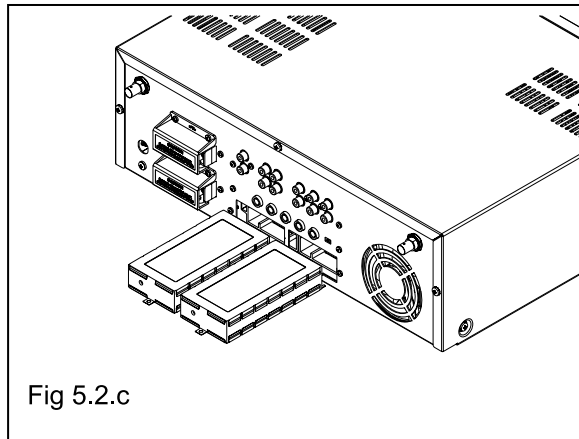
5.2. Tuner Connection

- Tuner 1 and Tuner 2 Connection.

Use Antenna A and Antenna B to receive signal transmitted by wireless microphone (Fig 5.2.a). If the amplifier is blocked by wall or other obstacles which affect the signal reception, please use the external antenna YM-4500 (separately sold/optional) directly pointing to the wireless microphone (Fig 5.2.b).

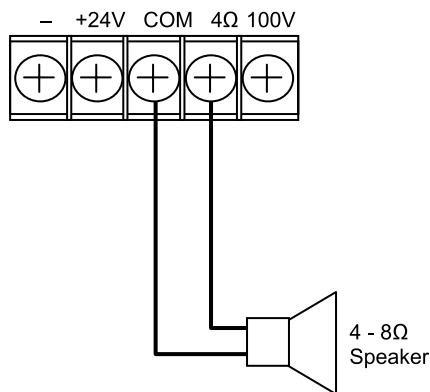


- How to install Tuner Unit (Fig 5.2.c) and dismantle Tuner Unit (Fig 5.2.d)

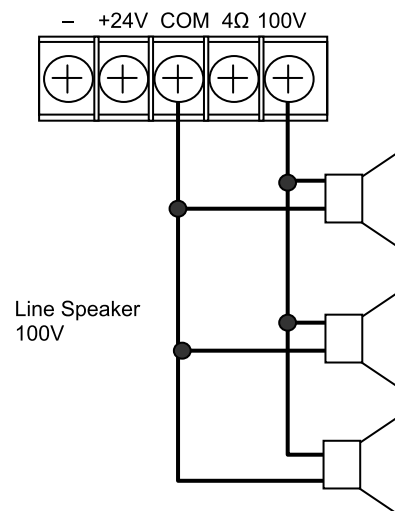


5.3. Output Connection

- Low Impedance Ch1 or Ch2



- High Impedance / Line Speaker 100V Ch1 or Ch2



Caution !

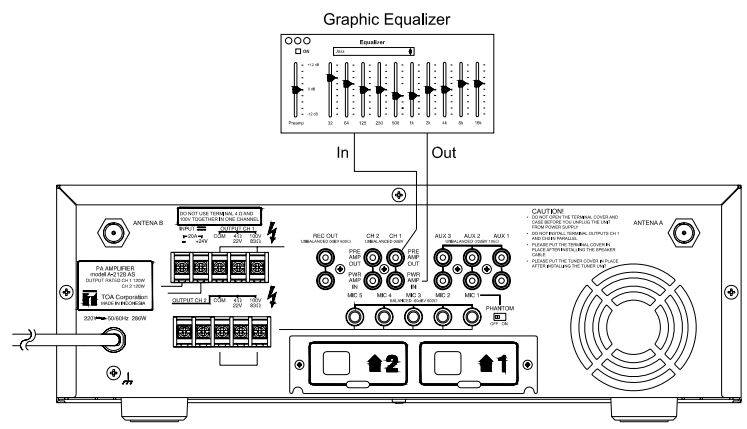
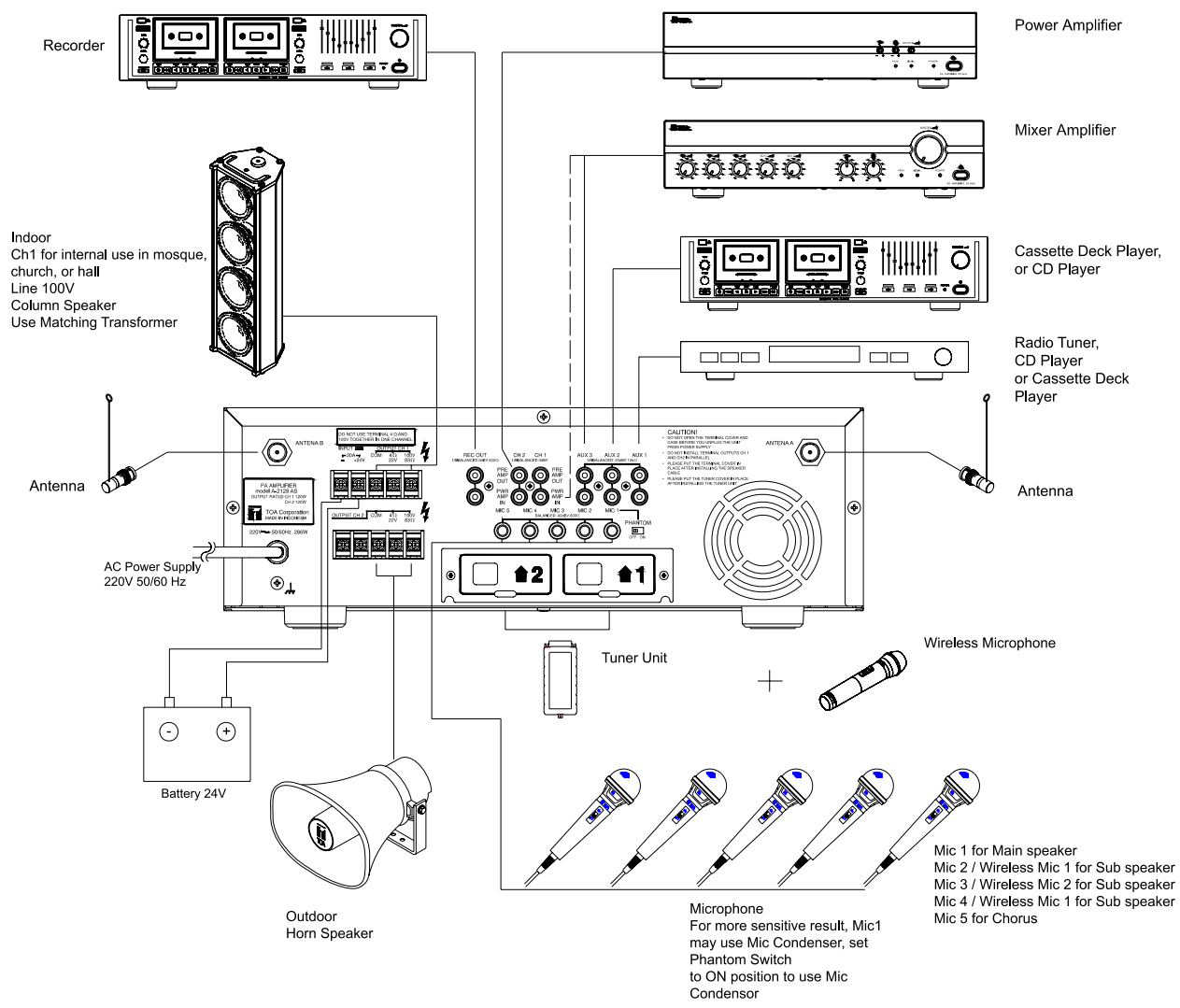
- Terminals 4Ω and 100V cannot be used together in one channel. They can be used separately in each channel (Channel 1 for Low Impedance, Channel 2 for High Impedance or vice versa).
- Terminal output channel 1 and channel 2 cannot be used in parallel.
- Impedance indicates the amount of load from all speaker impedances. Total impedance in line 100V is 83Ω



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.

5.4. Example of Connection with Other Equipment



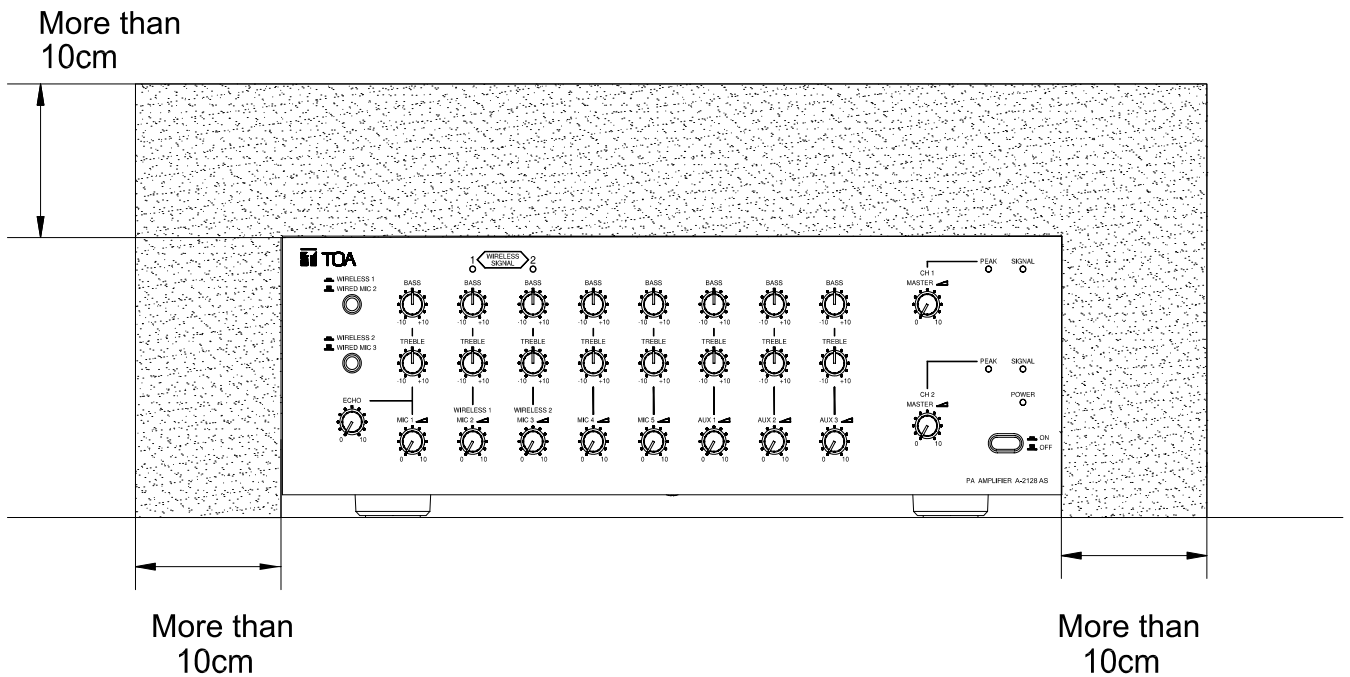
6. VOLUME CONTROL ADJUSTMENT

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

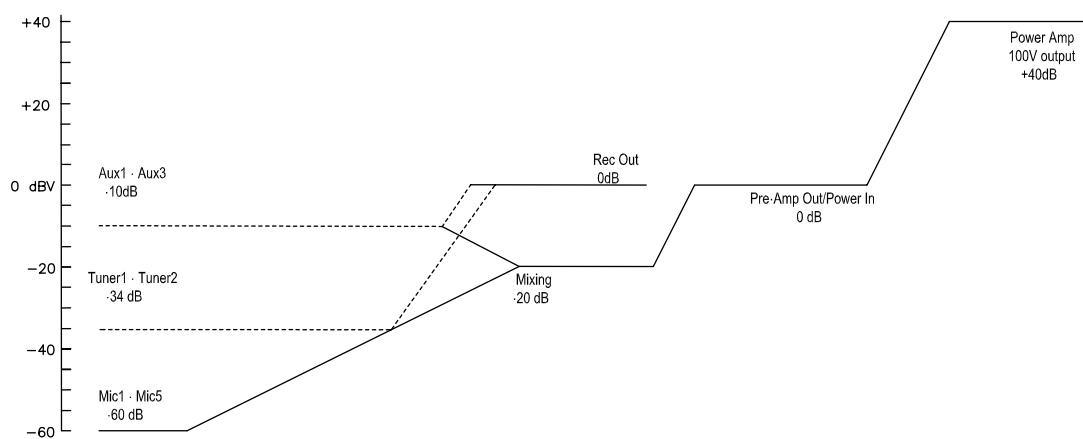
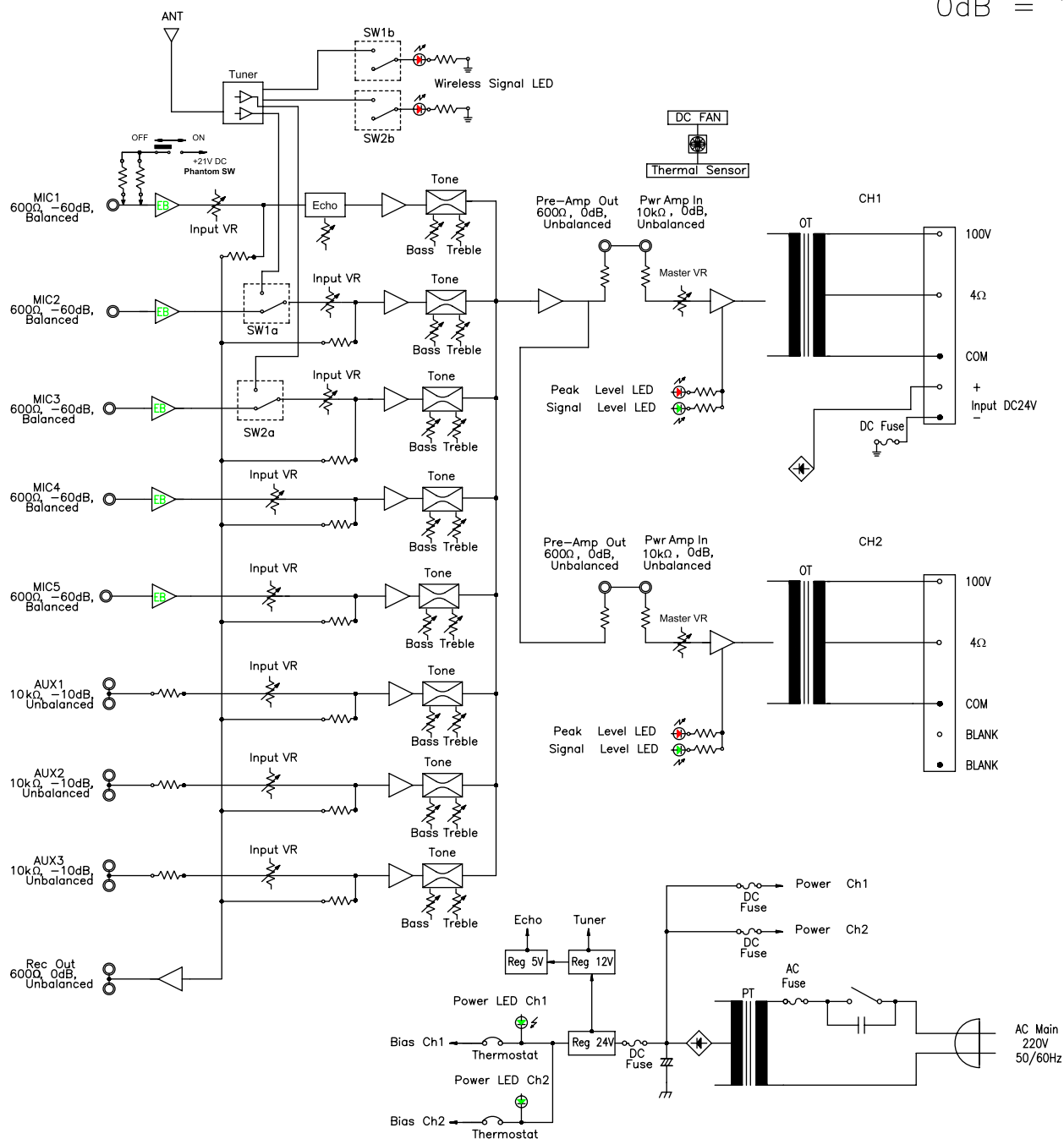
The unit walls shall be at a distance 10 cm away or more from any objects that may block air circulation. This is to prevent overheating in the amplifier unit.



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

8. DIAGRAM BLOK & LEVEL

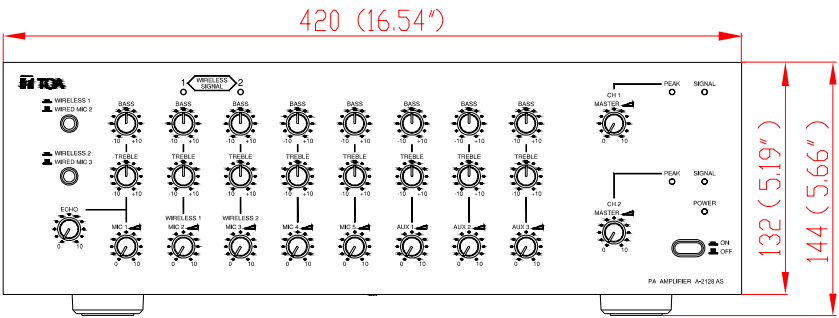
0dB = 1V



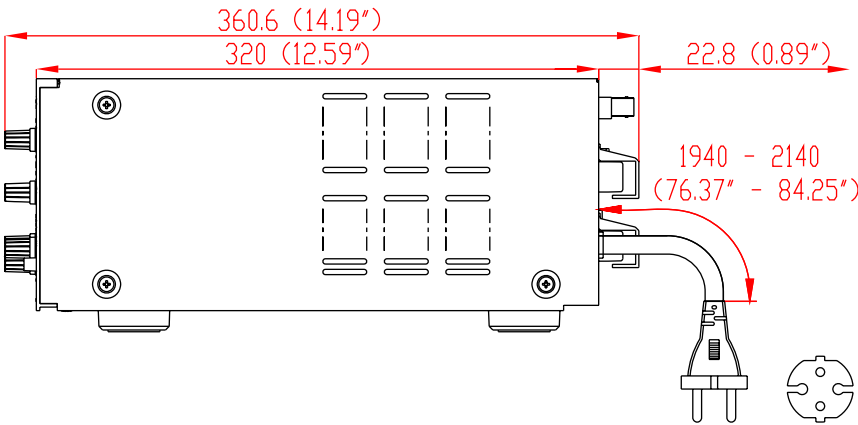
9. DIMENSIONS

measurement unit: mm (inch)

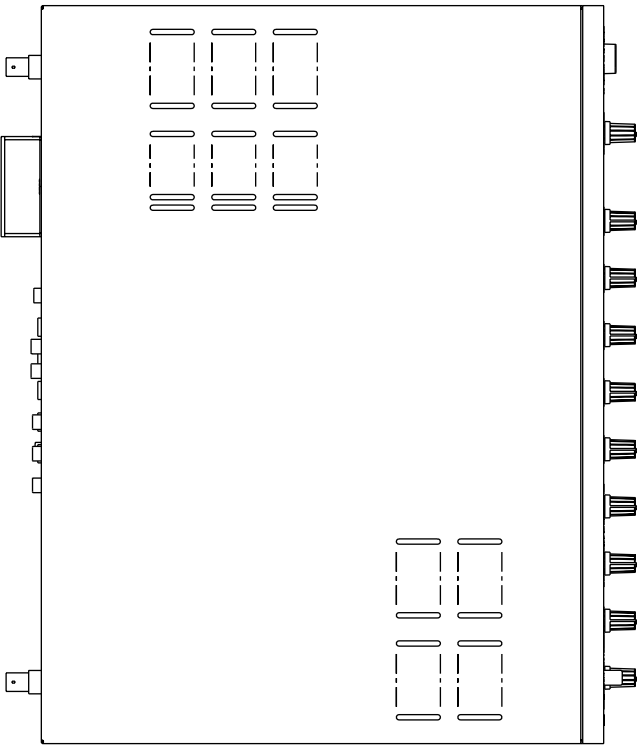
Front View



Side View



Top View



10. SPECIFICATIONS

Model No.	A-2128 AS
Power Source	220V AC, 50/60 Hz or 24V DC
Rated Output Power	2 x 120 W
Power consumption	520 W (operated with AC at rated output)
	286 W (operated with AC at EN60065 standard)
	20 A (operated with DC at rated output)
Frequency Response	50 - 20,000 Hz, ± 3 dB
Distortion	Less Than 1% at 1 kHz, 1/3 rated power
Input	MIC 1: -60 dB*, 600 Ω , Balanced, Phone Jack, Echo
	MIC 2 - 3 : -60 dB*, 600 Ω , Balanced, Phone Jack, Wireless Tuner 1 - 2
	MIC 4 - 5: -60 dB*, 600 Ω , Balanced, Phone Jack
	AUX 1 - 3: -10 dB*, 10 k Ω , Unbalanced, RCA Pin Jack
	PWR AMP IN: 2 x 0 dB*, 10 k Ω , Unbalanced, RCA Pin Jack
Output	Speaker Outputs: Floating Balanced
	High Impedance (100 V): 2 x 83 Ω
	Low Impedance (4 Ω): 2 x 22 V
	REC OUT: 0 dB* (1 V), 600 Ω , Unbalanced, RCA Pin Jack
	PRE AMP OUT: 2 x 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, Wireless Mic Signal
Finish	Panel: Aluminium, Grey
	Case: Steel Plate, Grey
Dimensions	420(W) x 144(H) x 361(D) mm
Weight	19.5 kg
Accessories	2 x BNC Antenna

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.