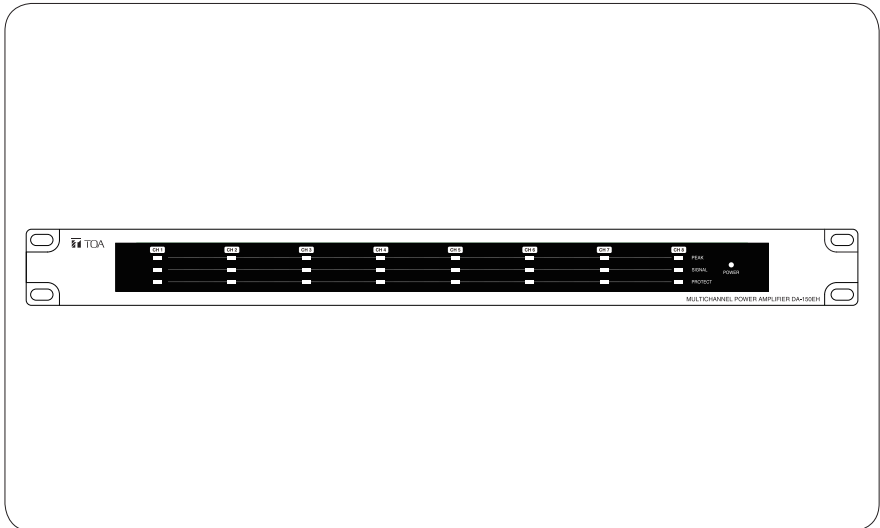



**MULTICHANNEL POWER AMPLIFIER**
**DA-150EH-AM**

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Thank you for purchasing TOA's Multichannel Power Amplifier.

Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

# 1. IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
  - Keep these instructions.
  - Heed all warnings.
  - Follow all instructions.
  - Do not use this apparatus near water.
  - Clean only with dry cloth.
  - Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
  - Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatuses (including amplifiers) that produce heat.
  - Do not alter the safety purpose of the polarized or grounding-type plug. A grounding type plug has two blades and a third grounding prong. If the provided plug does not fit into your outlet, consult an electrician for replacement of the incompatible outlet.
  - Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
  - Only use attachments/accessories specified by the manufacturer.
  - Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus to avoid injury from tip-over.
- 
- Unplug this apparatus during lightning storms or when unused for long periods of time.
  - Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

## INSTRUCTIONS ESSENTIELLES POUR LA SÉCURITÉ

- Lire ces instructions.
  - Conserver ces instructions pour référence ultérieure.
  - Respecter tous les avertissements.
  - Suivre toutes les instructions.
  - Ne pas utiliser cet appareil à proximité d'eau.
  - Nettoyer uniquement à l'aide d'un chiffon sec.
  - Ne pas obstruer les orifices de ventilation. Installer conformément aux instructions du fabricant.
  - Ne pas installer à proximité de sources de chaleur telles que des radiateurs, des registres thermiques, des chaudières ou d'autres appareils (notamment des amplificateurs) produisant de la chaleur.
  - Ne pas contourner la fonction de sécurité de la fiche polarisée ou de mise à la terre. Une fiche de mise à la terre est équipée de deux broches et d'une troisième pour la mise à la terre. Si la fiche fournie ne peut être insérée dans la prise électrique souhaitée, consulter un électricien pour faire remplacer cette dernière.
  - Protéger le cordon d'alimentation pour éviter qu'il ne soit piétiné ou pincé, notamment au niveau des fiches, des prises de courant ou de son point de sortie de l'appareil.
  - Utiliser uniquement les accessoires spécifiés par le fabricant.
  - Utiliser uniquement avec le chariot, support, trépied, la patte de montage ou la table spécifiés par le fabricant ou vendus avec l'appareil. En cas d'utilisation d'un chariot, manipuler la combinaison chariot/appareil pour éviter les blessures dues à un renversement.
- 
- Débrancher cet appareil pendant les orages ainsi que lorsqu'il reste inutilisé pendant une période prolongée.
  - La maintenance de l'appareil doit être confiée à un technicien après-vente qualifié. Une maintenance s'avère nécessaire si l'appareil est endommagé (au niveau du cordon d'alimentation ou de la fiche), a été mouillé par un liquide, un objet est tombé à l'intérieur, s'il a été exposé à la pluie ou l'humidité, s'il ne fonctionne pas normalement ou s'il est tombé.

## 2. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this 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.



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




Le point d'exclamation à l'intérieur d'un triangle équilatéral avertit l'utilisateur de l'existence d'instructions d'utilisation et d'entretien (réparation) dans la documentation fournie avec l'appareil.



### **WARNING**

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

#### When Installing the Unit

- **WARNING:** 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, or 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.
- 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 and causing personal injury and/or property damage.
- External wiring connected to the terminals marked with  requires installation by an instructed person.
- The apparatus shall be connected to a main socket outlet with a protective ground connection.
- The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible.
- The unit is not suitable for use in locations where children are likely to be present.

#### 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, detached, 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 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 objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.



## CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

### 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 direct sunlight, near heaters, or in locations generating dirty smoke or steam as doing otherwise may result in fire or electric shock.
- To avoid electric shocks, be sure to unplug the unit's power supply cord when connecting speakers.
- Be sure to follow the instructions below when rack-mounting the unit. Failure to do so may cause a fire or personal injury.
  - Install the equipment rack on a stable, hard floor. Fix it with anchor bolts or take other measures to prevent it from falling down.
  - When connecting the unit's power cord to an AC outlet, use the AC outlet with current capacity allowable to the unit.
  - No rack-mounting screws are supplied with the unit. Separately prepare the appropriate screws for the rack.

### 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.
- 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.



The lighting 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.



L'éclair accompagné d'un symbole représentant une pointe de flèche à l'intérieur d'un triangle équilatéral avertit l'utilisateur de la présence d'une "tension dangereuse" à l'intérieur de l'enceinte du téléviseur, dont la magnitude peut être suffisante pour constituer un risque de choc électrique pour les personnes.



## ATTENTION

L'appareil ne doit pas être exposé aux éclaboussures ou écoulements et tous objets remplis de liquide, tels que vases, ne doivent pas être sur l'appareil.

## EMC PRECAUTIONS

**Warning:** Operation of this equipment in a residential environment could cause radio interference.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer to an experienced radio/TV technician for help.

## 3. HANDLING PRECAUTIONS

- Keep the input cable away from the output cable. If installed close to each other, oscillation could occur.
- To avoid unit failures, never connect outputs of two or more channels in parallel.
- Only connect speakers with an impedance equal to or greater than those specified. Connecting speakers with a smaller impedance than specified could cause damage to the unit.
- To clean, be sure to first turn off this unit's power switch, then wipe with a dry cloth. When the unit gets very dirty, use a cloth damped in a neutral cleanser. Never use benzene, thinner, alcohol, or chemically-treated cleaning cloth because such volatile liquids could deform or discolor the unit.

## 4. GENERAL DESCRIPTION

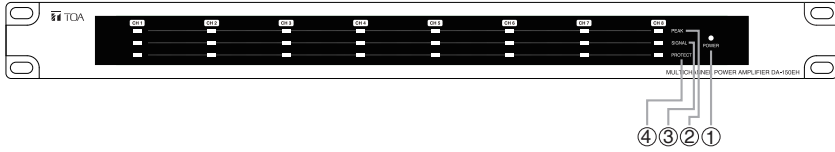
TOA's DA-150EH-AM Multichannel Power Amplifier features high power handling capabilities and commercial-grade durability. It has a rated output of 150 W x 8 channels (100/70V line output). It covers larger scale sound system applications where background/foreground music distributions and/or voice announcements are required in multi-zone. It can be mounted in an EIA standard equipment rack.

## 5. FEATURES

- 8-Channel Class-D amplifier.
- 150W per channel.
- Separate volume control for each channel.
- Low power consumption and light weight.
- Electronically-balanced inputs.
- Input terminals employ removable terminal blocks to achieve quick and easy connections.
- Equipped with the LED indicators that show the input status, etc.
- Built-in protection circuitry disconnects the power amplifier's output from the load when a short circuit, overload, or unusual temperature rise occurs.

## 6. NOMENCLATURES AND FUNCTIONS

[Front]



### 1. Power indicator

Lights green when the Power switch (5) is turned on.

### 2. Peak indicator

Lights red when the input signal is too high.

#### Note

When the Peak indicator lights up, turn the input level control (8) counterclockwise until its light switches off or decreases the input signal level of the connected external device.

Operating the unit while the Peak indicator remains lit may cause the protection circuitry to be activated.

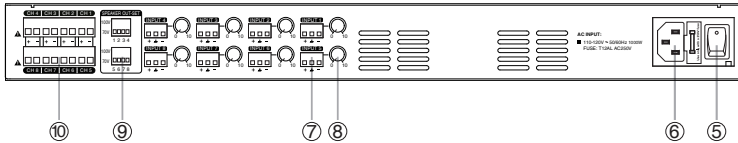
### 3. Signal indicator

Lights green when the respective channel's input signal pass through.

### 4. Protect indicator

Lights red when the protection circuitry is activated. If the problem is resolved, the protection output systems will deactivate automatically, and normal amplifier operation is resumed.

[Rear]



### 5. Power switch

Turning this switch on causes the amplifier to function, and turning it off causes the amplifier to cease function.

### 6. AC inlet

Connect the supplied power cord to this inlet. The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible.

### 7. Input terminals

Electronically-balanced inputs of 3-pin removable terminal block type.

(+ : Hot, - : Cold,  $\perp$  : Earth)

### 8. Input level controls

Adjust the input level of each channel.

Turn the control clockwise to increase the input level and counterclockwise to decrease the level.

### 9. Speaker output settings

Select the speaker output mode (100V or 70V) on each channel moving the dip-switches to the desired position.

### 10. Speaker output terminals

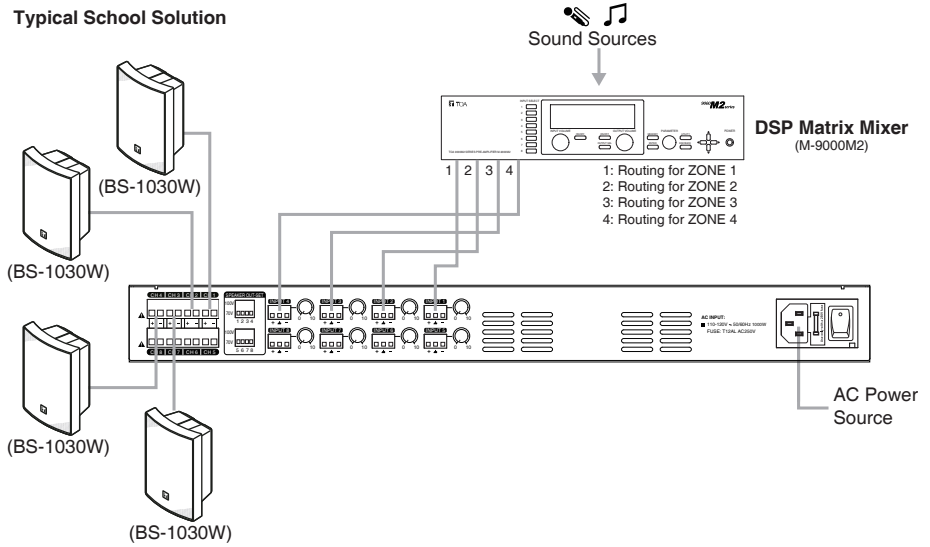
Connect speaker cables to these terminals.

Impedance for 100 V line : 67 $\Omega$

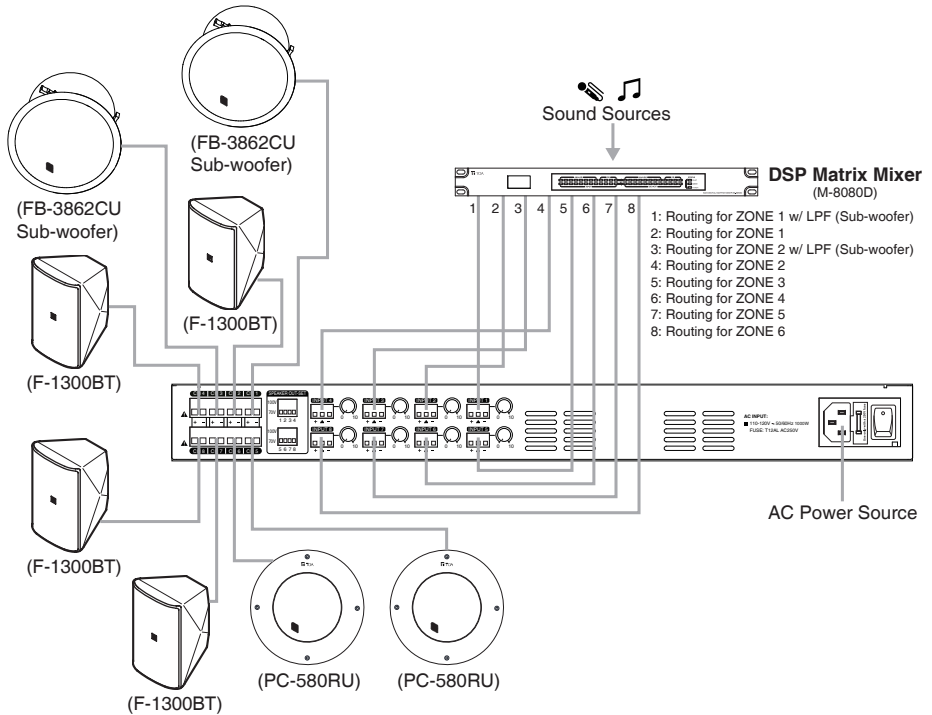
Impedance for 70 V line : 33 $\Omega$

# 7. APPLICATION EXAMPLES

## Typical School Solution



## Restaurant/Bar Solution



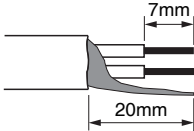
# 8. REMOVABLE TERMINAL PLUG CONNECTION

## Cautions

- Be sure to use shielded cables for audio signal lines.
- Avoid soldering cable conductor, as contact resistance may increase when the cable is tightened and the solder is crushed, possibly resulting in an excessive rise in joint temperatures.
- Use cables of AWG 12-24.

## Cable end treatment

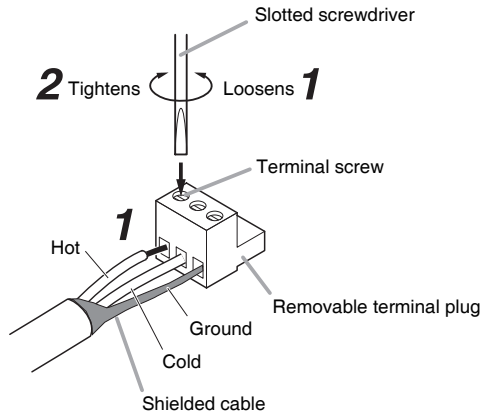
Shielded cable



## Connector connections

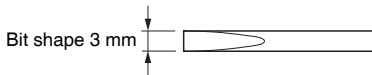
**Step 1.** Loosen the terminal screw, then insert the cable.

**Step 2.** Retighten the terminal screw. (Pull on the cable to ensure it is securely connected.)



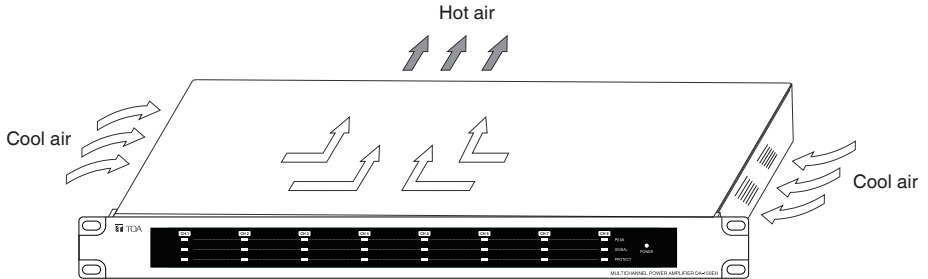
## Tip

Recommended slotted screwdriver type: Screwdriver with blade that is 3 mm in width





## 9. THERMAL DISSIPATION

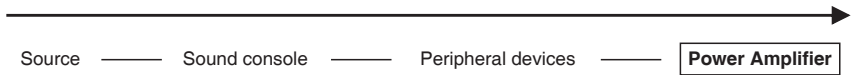


### Exhaust vents

Air is drawn from both sides, flowing through the unit and heat sink, and then exhausted via the rear vents. Do not block or impede the air flow through these vents and keep the vents areas free of foreign materials.

## 10. POWER ON/OFF SEQUENCE

### Power on



### Power off

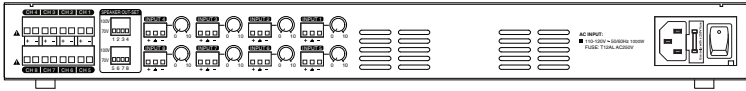


### NOTES:

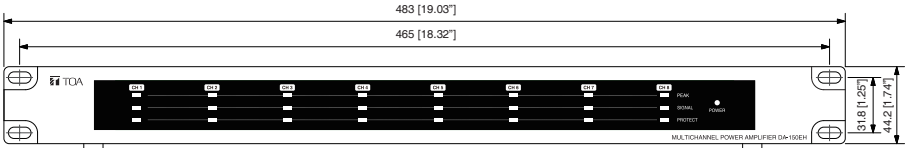
For high-power systems, power on/off sequence is very important. Failure to follow the sequence is likely to damage the equipment.

# 11. DIMENSIONAL DIAGRAM

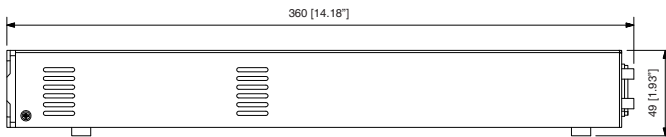
Unit: mm [inches]



Rear View



Front View



Side View

## 12. SPECIFICATIONS

Power Source	110-120 V AC, 50/60 Hz
Amplification System	Digital class D
Power Consumption	1000 W
Input	8 circuits, 0 dBV (1 V) (input level control in maximum position), 20 k $\Omega$ , electronically-balanced, removable terminal block (3 pins)
Rated Output	8 channels: 150 W x 8 (66.7 $\Omega$ (100 V)/33 $\Omega$ (70 V)) 100/70 V DIP switch x 8 removable terminal block (2 pins)
Frequency Response	50 - 20,000 Hz ( $\pm$ 3 dB)
Total Harmonic Distortion	< 0.1%
S/N Ratio	> 95 dB (A-weighted)
Crosstalk	> 70 dB (A-weighted)
Protection Circuit	Short circuit, open circuit, thermal, excessive input, ultrasonic and RF
Indicators	Signal(green) x 8, Peak(red) x 8, Protect(red) x 8, Power(green) x 1
Cooling	Forced air cooling
Operating Temperature	0°C to +40°C (32 °F to 104 °F)
Operating Humidity	Under 90% RH (no condensation)
Finish	Panel: aluminum, black, alumite Case: plated steel sheet
Dimensions	483 (W) x 44 (H) x 360 (D) mm (19" x 1.7" x 14.2")
Weight	7.3 kg (16.09 lbs)
Accessory	Power cord (2 m) ...1, Removable terminal plug (3 pins) ...8, Removable terminal plug (2 pins) ...8

**Note:** The design and specifications are subject to change without notice for improvement.

**Manufacturer:**

TOA Corporation  
7-2-1, Minatojima-Nakamachi, Chuo-ku, Kobe, Hyogo, Japan

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