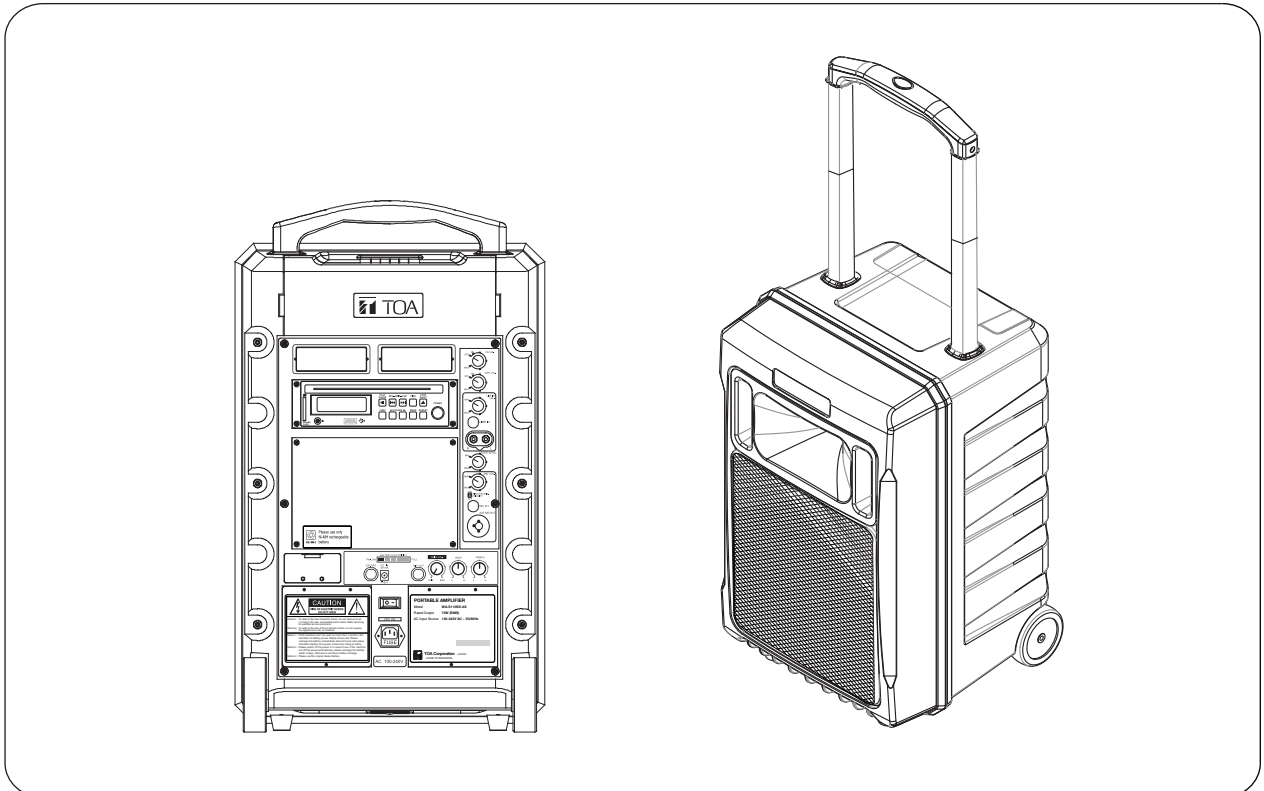


# PORTABLE AMPLIFIER

# WA-Z110SD-AS



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Thank you for purchasing TOA's Portable Amplifier.  
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

# 1. SAFETY PRECAUTIONS

- Be sure to read the instruction in this section carefully before use.
- Make sure to observe the instructions in this manual as 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.

### 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 doing so 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.
- Avoid installing or mounting the unit in unstable locations, such as on rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
- To prevent lightning strikes, install the unit at least five meters away from a lightning rod, and yet within the protective range (angle of 45°) of the lightning conductor. Lightning strikes may cause a fire, electric shock or personal injury.

### 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
  - the power supply cord is damaged (exposure of the core, disconnection, etc)
- 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.
- Do not touch a plug during thunder and lightning, as this may result in electric shock.
- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage component inside the unit. In addition, modifying the internal parts or circuit may cause the unit to be against the regulations in your country.  
Refer all servicing to your nearest TOA dealer.

## **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.
- 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.

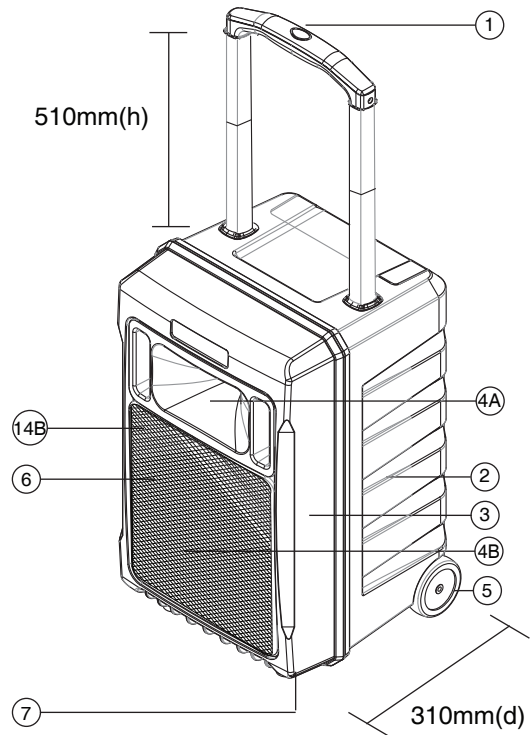
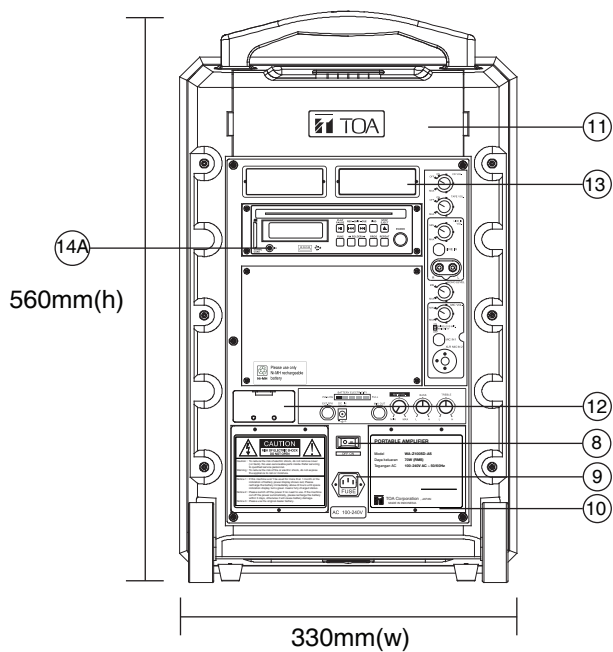
### **When the Unit is in Use**

- Make sure 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 place heavy object 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.
- Do not stand or sit on, nor hang down from the unit as this may cause it to fall down or drop, resulting in personal injury and/or property damage.
- When the unit is not in use for 10 days or more, or when the AC power is used for operating the unit, be sure to take the batteries out of the unit because battery leakage may cause a fire, personal injury, or contamination of environment.
- 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.
- Make sure to observe the following handling precautions so that a fire or personal injury does not result from leakage or explosion of the battery.
  - Do not short, disassemble, heat nor put the battery into a fire.
  - Avoid using both new and old batteries together.
  - Do not solder a battery directly.
  - Be sure to use the specified type of batteries.
  - Note correct polarity (positive and negative orientation) when inserting a battery in the unit.
  - Avoid locations exposed to the direct sunlight, high temperature and high humidity when storing batteries.
- Do not use trolley on ragged ground to avoid any damage.

## **2. GENERAL DESCRIPTION**

TOA's WA-Z110SD series are a portable amplifier that has an elegant design, durable and water-resistant case. It offers reliable performance, clear, powerful sound, and is simple to operate. Equipped with an audio music player, Music can be played from CD, USB or SD / MMC Card. It has the option of installing up to 2 UHF wireless microphone receiver. Wheels are fitted for moving it around effortlessly. The unit has an operating duration of 3 - 9 hours, depending on the volume.

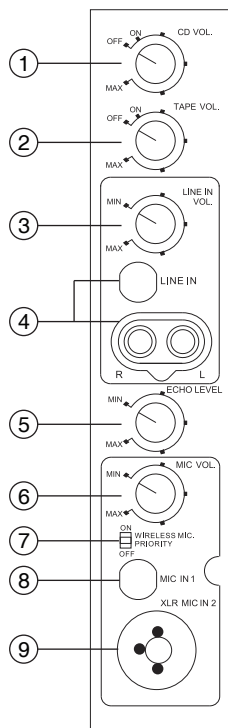
### 3. NOMENCLATURE AND FUNCTIONS



1. Carry Handle : To pull or retract the carry handle, press one touch button.
2. Rear Cover : Fixed related operational unit with audio accessories, such as CD player and batteries.
3. Front Cover : Speaker with fixed grill net.
4. Loudspeaker : (4A) 1" tweeter  
(4B) 10" Woofer
5. Wheel : For moving this unit.
6. Grilled Net : To protect the speaker.
7. Tripod Socket : For use with optional speaker stand ST-34B.
8. Power On/Off : [ - ] On, power start; [ O ] Off power off, please turn off power to avoid consuming battery when not in use.
9. AC Power Input : Comply with international voltage 90V-264V.
10. Lead Acid Battery : Instruction for changing battery : Take out 3 pieces of screws and remove batteries from main panel board.  
Please note to follow the correct operation in order to avoid causing damage to battery.  
(Positive-red line with red line terminal; negative-black line with black line terminal)
11. The Storage Box : A storage space for microphone, remote control, and AC power cord.
12. Recharging box for Microphone's battery : Simultaneously charge 4 pieces of 1.2V / 1300mA~2500mA rechargeable batteries for microphone, red light means charging, green continuous light means full load charged.
- Attention!** Only use rechargeable batteries Nickel-Metal Hybride (Ni-MH) only.
13. Wireless Receiver compartment for WTU-Z100 (optional).
14. (14A) Rear infrared for remote control.  
(14B) Front infrared for remote control.

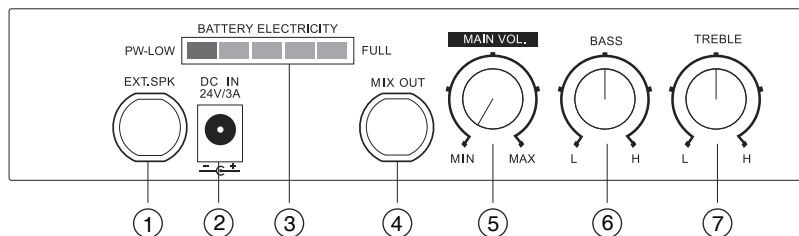


## 4. MASTER PANEL CONTROL



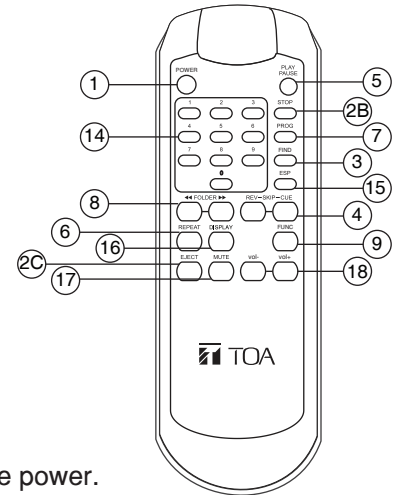
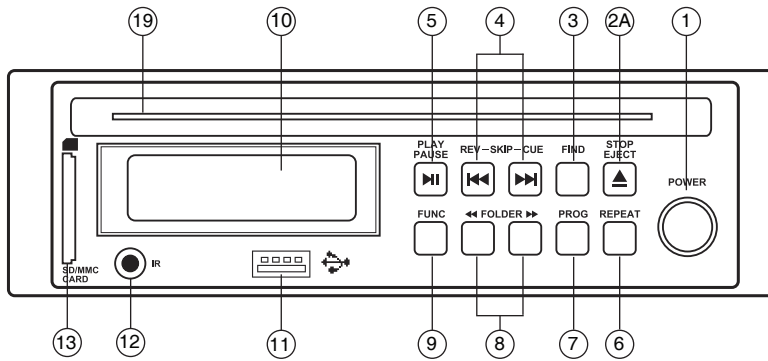
1. CD VOL : Volume control with on/off.
2. TAPE VOL (Not in use).
3. Line in VOL : Volume control for external audio input.
4. Phone jack/RCA Audio Line in : To amplify external audio inputs like CD, DVD.
5. Digital Echo volume control.
6. Volume control for wired Microphone.
7. Wireless Microphone priority switch.
8. Phone jack for Wired Microphone input.
9. Phone jack & XLR jack for MIC.

## 5. POWER AND VOLUME IDENTIFICATION



1. Extension speaker : connect to external speaker (4-8  $\Omega$  /over 50W rated input)
2. DC IN 24V/3A : connect to external power.
3. Battery electricity display.  
When not connected with power cord, the duration of operation for speaking mode is around 3~9 hours (depending on volume). When the electricity display indicator is lit at PW-LOW, it means battery is low, please charge the battery right away and switch off the power. Flashing green light means the battery is charging. Charging time is around 6 - 8 hours. Solid green in display indicator means full battery power.
4. Mix out : Connect with wireless transmitter or PA broadcasting system.
5. Main VOL.
6. Bass : Bass control of microphone and music, L = Cut , H = Boost.
7. Treble : Treble control of microphone and music, L = Cut , H = Boost.

## 6. AUDIO MUSIC PLAYER



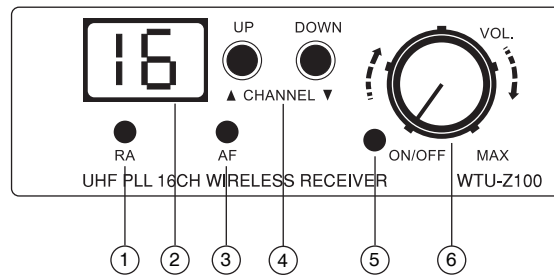
1. **POWER** : In power OFF mode, press this key to switch ON the power.  
In power ON mode, press this key for more than 2 sec. to switch OFF the power.
2. **(2A) STOP/EJECT** : Press to stop playing CD/USB/SDCard and press again to eject disk.  
**(2B) STOP** : Press to stop playing (CD/USB/SDCard).  
**(2C) EJECT** : press to eject disk.
3. **FIND** : In MP3 mode : Press this key once FILE search mode changed. Press this key twice ALBUM search mode changed. If press this key long time once track is displayed. press twice ID3 TAG is displayed.
4. **CUE/UP** : Press to next track number.  
Continued pressed, fast forward during play/pause when pressed for more than 0.7 sec.  
**REV/DOWN** : Press to previous track number.  
Continued pressed, fast reverse during play/pause when pressed for more than 0.7sec.
5. **PLAY/PAUSE** : Press once to start playing, press again to pause.
6. **REPEAT** :  
(In MP3 mode and in USB mode) If this key is pressed, PLAY mode is changed cyclically as shown below.  
PLAY ALL RANDOM → REPEAT TRACK → REPEAT FOLDER → REPEAT ALL → RANDOM REPEAT → PLAY ALL  
In CD mode if this key is pressed, PLAY mode is changed cyclically as shown below.  
PLAY ALL RANDOM → REPEAT TRACK → REPEAT ALL → RANDOM REPEAT → PLAY ALL
7. **PROG** : Press the PROG button then select a track by pressing the CUE / REV, for once making of programming, the maximum limit to 99 election programming, and terminated by pressing PROG.  
Then press PLAY to start.  
Set to programming mode. In programming mode, all program is cleared when [STOP] key is pressed.
8. **FOLDER-DOWN**: In stop mode: Skip the starting play folder to previous folder during stop mode, cyclic to the last folder if it is in the first folder. In normal play mode: Skip the playing file to the previous folder's first file.  
**FOLDER-UP**: In stop mode: Skip the starting play folder to next folder during stop mode, cyclic to the first folder if it is in the last folder. In normal play mode : Skip the playing file to the next folder's first file.
9. **FUNC** : Press to change cyclically as shown : CD → USB → CARD.
10. **LCD DISPLAY** : Display CD status including track number and playing time.
11. **USB Connector** : Insert the USB ( Support up to 32GB ).
12. **IR INFRARED** : Picks up signal from the remote control.
13. **SD/MMC CARD Connector** : Accepts SD Card and MMC Card ( Support up to 32GB ).
14. **0~9** : Use these keys to select the track.
15. **ESP** : In CD mode, Press "ESP" key.  
The ESP display is lit and the set is in electronic anti-shock state. The electronic anti shock time is about 40 seconds. Press "ESP" key again to cancel the ESP function.
16. **Display** : When playing a MP3 CD, and key is pressed, the LCD display will be changed cyclically as shown below : track number and playing time → total number of songs → name of the playing song → total number of folder and total number of songs.
17. **MUTE** : In playing mode, press this key to mute, press again to recovery.
18. **VOL +** : When this key is pressed, the volume will increase by 1dB per step, the max. volume is 30dB.  
**VOL -** : When this key is pressed, the volume will decrease by 1dB per step, the min. volume is 0B.
19. Slot to insert the CD.



## 7. WIRELESS RECEIVER MODULE

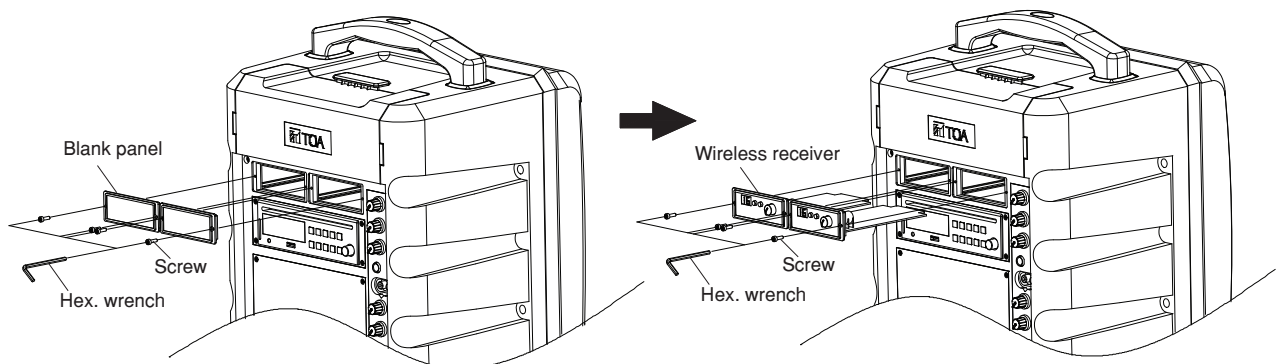
### 7.1. UHF PLL Non-Diversity receiver module

#### WTU-Z100 (Optional)



1. RA Signal Indicator : The yellow LED RA lights up when wireless audio signal is being received and transmitted.
2. LED display : When selecting channels, the selected channel is shown on the display.
3. AF Signal Indicator: The red LED AF lights up when microphone signal is being transmitted and received when microphone is turned on.
4. Channel selector : Press up and down for 16 user selectable channels.
5. Power ON/OFF Indicator : Red LED lights up when power is on.
6. Power ON/OFF /Volume Knob : Adjust by turning clockwise to switch on power and to increase microphone volume. Power is switched off when knob is turned to minimum.

### 7.2. Wireless Receiver Installation



1. Please switch off power before installation.
2. Unscrew the screws from the blank panel with the hex head wrench provided and remove the blank panel.
3. Slot the wireless receiver into the compartment completely.
4. Screw back the screws tightly.
5. Installation is done correctly when the equipment is powered on and the LED indicators on the wireless receiver lights up.



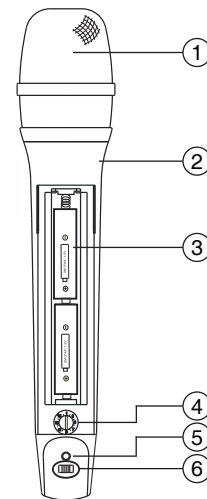
## 8. TRANSMITTERS

### 8.1. WM-Z100H Wireless Handheld microphone

1. Steel grille : Protect capsule from any damage.
2. Aluminium neck ring : logo printing and fixed top and capsule.
3. Battery compartment : 1.5V x 2 pcs or 1.2V x 2 pcs  
Remove the batteries when not in use for long period of time.
4. Channel switch from 1 to 16.
5. Battery indicator : This red light indicator flashes when the batteries are almost out of power.
6. Power switch on/off : Control microphone power.

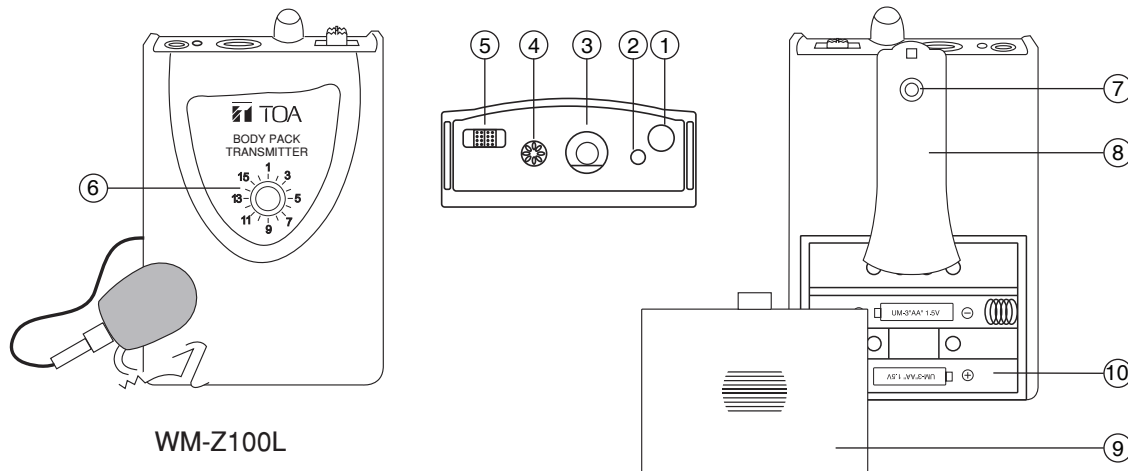
Note :

WM-Z100H is an optional item and is packaged with WTU-Z100 wireless receiver as a set.  
Set Model: WS-Z100H



WM-Z100H

### 8.2. WM-Z100L Wireless Lavalier microphone



WM-Z100L

1. External antenna jack : 1/4 for antenna input jack.
2. Power indicator : The red light indicator will flash once when it is turned on.  
The red light indicator will be solid red when the batteries are almost out of power.
3. Mini XLR jack.
4. Volume control : Adjust the volume by turning clockwise.
5. Power switch : Power on / power off.
6. Channel selector from 1 to 16.
7. Buckle is fixed with a screw so that it can conveniently clip on the belt comfortably.
8. Buckle is fixed on the unit. It can revolve up to 90.
9. Battery chamber cover : Put batteries in and take out from this chamber cover.
10. Battery compartment :  
1.5V x 2. Align the negative or positive polarities properly when inserting the batteries.  
Remove the batteries when not in use for long period of time.

Note :

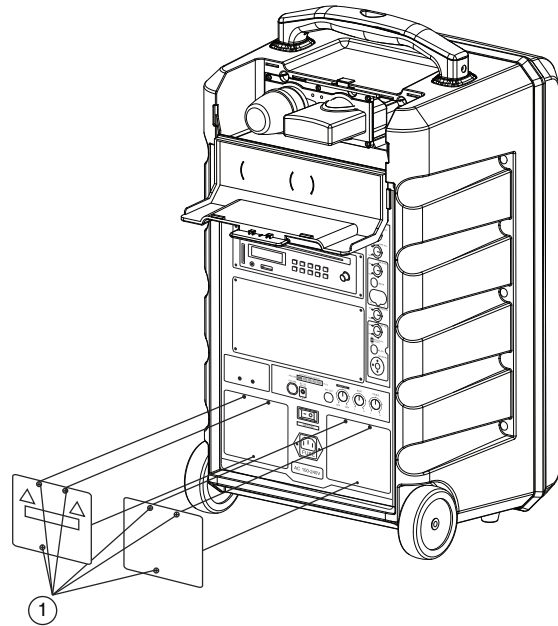
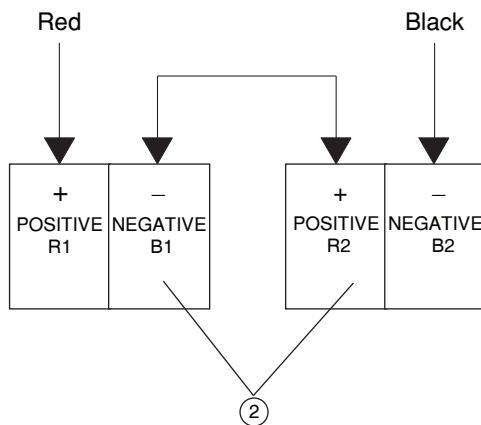
- When using lavalier, try to place capsule close to the mouth while doing, do not maximize the volume as it cannot achieve the best performance.
- WM-Z100L is an optional item and is packaged with the WTU-Z100 wireless receiver as a set.  
Set model : WS-Z100L



## 9. REPLACEMENT OF BATTERY

1. Please switch power off before changing batteries and modules.
2. Take out ① 6 pieces of screws and remove battery plates from main panel board and take batteries out. Install batteries 12V/5AH into battery compartment.
3. Make sure the battery pack is properly inserted then close the cover by tightening the screws.  
② Connect red terminal into battery's positive R1 red line terminal, black terminal into battery's negative B2 black line terminal, and connect negative B1 and positive R2 together.
4. Note : Make sure the pole matches color. Refer to Diagram 1 for changing battery. Incorrect connection will cause damage or power will not work in perfect condition.  
If there are no plans to use the unit for a long time, so keep the battery fully charged condition.

Note : Diagram 1



## 10. WARNING

### Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits of class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in 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 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 of 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 or an experienced radio/TV technician for help.

FCC Caution : To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. (Example use only shielded interface cables when connecting to computer or peripheral devices).



**CAUTION** : To reduce the risk of electric shock, do not remove the cover, no user serviceable parts inside. Refer servicing to qualified personnel.

**WARNING** : To prevent fire or electric shock, do not expose this equipment to rain or moisture.

### Explanation Of Graphical Symbols



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 products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to human.



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

## 11. SPECIFICATIONS

### 11.1. General Specifications

Model	WA-Z110SD-AS
Speaker	6 Ω / 1" tweeter, 4 Ω / 10" Woofer
Receiver module	UHF PLL Non-Diversity receiver module (up to 2 pcs optional receivers) with 16 user selectable channels
Output power	70W (RMS) / 100W (MAX) (Class-D Amplifier)
Frequency Response	70Hz ~ 15kHz (±3dB)
Function	CD Player; USB (support up to 32GB); SD/MMC Card (support up to 32GB); Mic Input x 2 (phone jack x 1, combination XLR & phone jack x 1); Line Input (RCA x 1 or phone jack x 1); Mixed Out x 1 (phone jack); External Speaker out x 1 (phone jack)
Charging time	12V/5Ah (2 pcs) Lead Acid battery : 6-8 hours 1.2V/1.3Ah (4 pcs) NiMH battery : 5 hours (for microphone)
Operating time	Averagely 3-9 hours (depending on the volume)
Power supply	100-240V AC (90-264V) switching power supply
Rechargeable battery	12V/5Ah Lead Acid battery : 2 pcs Compartment battery recharging for 1.2V/1.3Ah (AA UM-3) NiMH battery : 4 pcs
Frame material	Panel : Plastic with paint, Black; Grille : Metal with paint, Black
Special design	Automatic charge design for 1.2V rechargeable batteries x 4 pcs; Storage for 2 sets of handheld microphone or lavalier microphone; Simultaneous power charging with unit operating; Wireless microphone priority; Effect echo digital; One-touch retractable handle
Dimensions	560 (h) x 330 (w) x 310 (d) mm
Weight	16.5 kg
Accessories	Remote control ....1, AC power cord ....1 (Type C), Hex. head wrench ....1
Options	WS-Z100H AS Set (WM-Z100H Handheld Mic & WTU-Z100 Wireless Receiver) WS-Z100L AS Set (WM-Z100L Lavalier Mic & WTU-Z100 Wireless Receiver) Speaker Stand : ST-34B

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