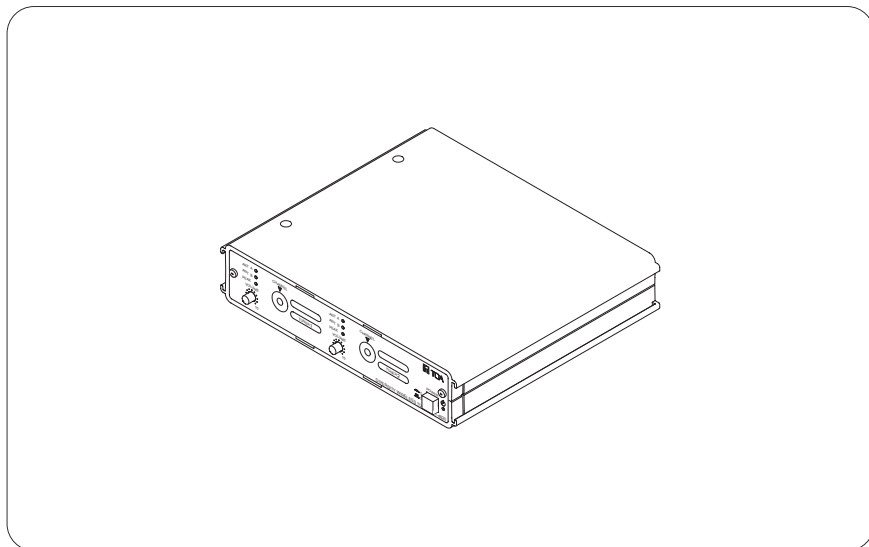


**WIRELESS TUNER**
**WT-4820**

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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.

# 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.

#### 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.
- 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.
- 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.
- Since the unit is designed for in-door use, do not install it outdoors. If installed outdoors, the aging of parts causes the unit to fall off, resulting in personal injury. Also, when it gets wet with rain, there is a danger of electric shock.

#### 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 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 touch a plug or antenna during thunder and lightning, as this may result in electric shock.

### **CAUTION**

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

The servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

#### 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.

- 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 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.
- Leave the installation of the optional YW-4500 antenna to your TOA dealer because the installation requires expert knowledge. Improper installation may cause the antenna to fall, resulting in personal injury or electric shock.
- The socket-outlet shall be installed near the equipment and shall be easily accessible. A fire or electric shock may result.
- Install the AC adapter in well-ventilated locations. Do not install the adapter in a confined space such as a book case or similar unit. In addition, keep over 1 m space above the adapter.

#### **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.
- Use the dedicated AC adapter for the unit. Note that the use of other adapter may cause 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. A fire or electric shock may result.

## **2. GENERAL DESCRIPTION**

The WT-4820 is a diversity tuner that can accept up to two wireless tuner modules of UHF band (WTU-4800). It can be mounted in an EIA 19-inch equipment rack using an optional MB-WT3 or MB-WT4 Rack Mount Bracket Kit.

## **3. FEATURES**

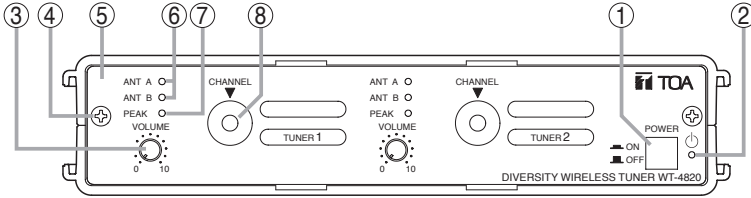
- Half-rack mount size
- Easy-to-change channel number accessible from the front.
- Front-loading modular construction permits easy installation of the WTU-4800 tuner module even after the unit is rack-mounted.
- Antenna outputs connect an additional tuner unit, expanding the system to maximum 4 channels (2 each tuner modules incorporated) without need for extra antenna mixers/distributors.
- A mix input mixes outputs of two or more tuner units into one output signal.

## **4. HANDLING PRECAUTIONS**

- Use only WM-4200 series and WM-4300 series Wireless Microphones. Other wireless microphones cannot be used.
- Turn the power switch off after use.
- When mounting in an equipment rack, place the unit away from high-temperature equipment.
- When using two or more wireless microphones at the same time in the same location, set them to different channels and keep them at least 50 cm from each other.
- Keep the wireless microphone at least 3 m away from the antenna.
- Connect two antennas to the unit. Using a single antenna disables the diversity effect.
- Keep the unit as far away as possible from fluorescent lamps, digital equipment, computers, and other equipment generating high-frequency noise.
- To clean the unit, switch the power off, then wipe with a dry cloth. When the unit gets very dirty, use a cloth dampened in a neutral cleanser. Never use benzene, thinner or chemically-treated cleaning cloth because such volatile liquids could deform or discolor the unit.

## 5. NOMENCLATURE AND FUNCTIONS

### [Front]



#### 1. Power switch

Turns the power on when pressed.  
Turns it off when pressed again.

#### 2. Power indicator

Lights when power is on.

#### 3. Wireless microphone volume control

Adjusts the wireless microphone volume.

#### 4. Front panel mounting screw

When installing the optional WTU-4800 Diversity Wireless Tuner Module, remove two screws to detach the front panel. Refer to p. 5.

#### 5. Front panel

Detach this panel when installing or removing the WTU-4800 tuner module. Refer to p. 5.

#### 6. Reception indicators

Either lights to indicate which antenna A or B receives a radio signal.

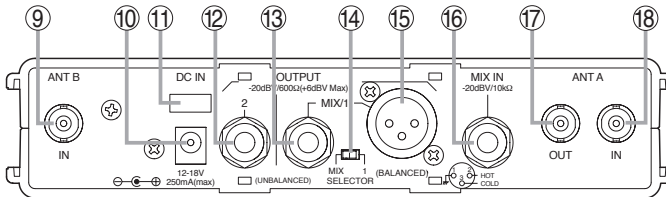
#### 7. Peak indicator

Lights when a receiving wireless microphone signal is distorted.

#### 8. Channel selector switch

Sets the receiving channel.

### [Rear]



#### 9. Antenna B input connector

BNC jack, 75 Ω.

Connects to the supplied antenna or the optional YW-4500 Antenna. When using the supplied antenna, tilt it about 45° out from upright position.

#### 10. Power input connector

Connects to an AC adapter.

#### 11. Cable hanger

Hook the power cable onto this part.

#### 12. Solo output 2 terminal

-20 dB (+6 dB max.), 600 Ω, unbalanced.  
Outputs the tuner module 2 signal.

#### 13. Mix/solo output 1 terminal

-20 dB (+6 dB max.), 600 Ω, unbalanced.  
Outputs either the mixed signal of the tuner modules 1 and 2, and the Mix input (16) source or the tuner module 1 solo signal.

#### 14. Mix/solo output 1 selector switch

Selects the type of signal to be outputted from the Mix/solo output 1 terminals (13) and (15).  
MIX: Outputs the mixed signal of the tuner modules 1 and 2, and the Mix input (16) source.

1: Outputs the tuner module 1 solo signal.

#### 15. Mix/solo output 1 terminal

-20 dB (+6 dB max.), 600 Ω, balanced.  
Outputs either the mixed signal of the tuner modules 1 and 2, and the Mix input (16) source or the tuner module 1 solo signal.

#### 16. Mix input terminal

-20 dB, 10 kΩ, unbalanced.  
Connects to an additional wireless tuner for expansion.  
Refer to p. 7.

#### 17. Antenna A output connector

BNC jack, 75 Ω.

Used to add a wireless tuner (totaling two tuners) without need for extra antenna mixers or distributors.

#### 18. Antenna A input connector

BNC jack, 75 Ω.

Connects to the supplied antenna or optional YW-4500 Antenna.  
When using the supplied antenna, tilt it about 45° out from upright position.

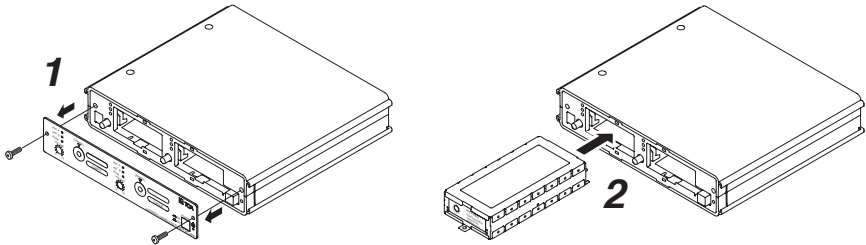
## 6. INSTALLING THE WTU-4800 TUNER MODULE

### Precautions

- To prevent static damage to internal parts, discharge static electricity from your body and cloth by touching the equipment rack, the unit's rear, or other metal object before starting the work.
- Turn the power off before installing the tuner module.
- Avoid touching the edge connector of tuner module.
- Do not install the tuner module upside down.

**Step 1.** Remove the two front mounting screws to detach the front panel.

**Step 2.** Insert the WTU-4800 tuner module and ensure its connection.



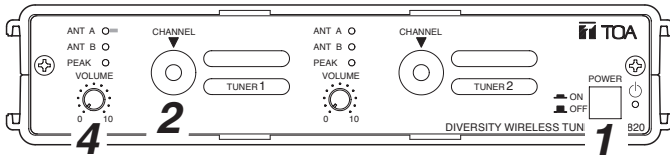
**Step 3.** Replace the front panel, and fix it with the removed mounting screws.

## 7. PRECAUTIONS ON ANTENNA INSTALLATION

- Keep the wireless microphone at least 3 m away from the antenna. Using the microphone close to the antenna may cause malfunction or noise.
- Avoid installing the antenna to or near steel beam, lockers, and other metal objects. Besides, keep it at least 30 cm away from wall surfaces.
- Keep the unit as far away as possible from the following equipment that may generate high-frequency noise: inverter-driven equipment (such as fluorescent lamps or air-conditioners), digital equipment, and computers.
- Never short antenna cables or the unit's antenna connectors. If they are shorted, the power supply to the antenna shorts, possibly causing unit's failure.
- Install the antenna and the unit as close as possible to each other to minimize the coaxial cable length.
- Use the optional YW-4500 Antenna when mounting the unit in an equipment rack.
- Install the antenna cable referring to the following type of cable vs. permissible maximum length.
  - RG-6/U (diameter 8.4 mm): 35 m
  - RG-11/U (diameter 10.3 mm): 50 m

## 8. OPERATION

The following operation procedure is an example for the tuner module 1. The same procedure applies to the tuner module 2.



**Step 1.** Turn the unit's power on.

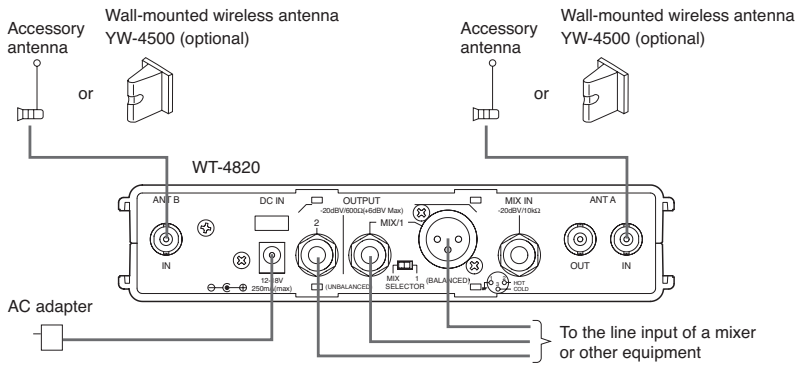
**Step 2.** Set the channel selector switch to the predetermined channel number using the screwdriver supplied with the WTU-4800.

**Step 3.** Turn the wireless microphone's power on.

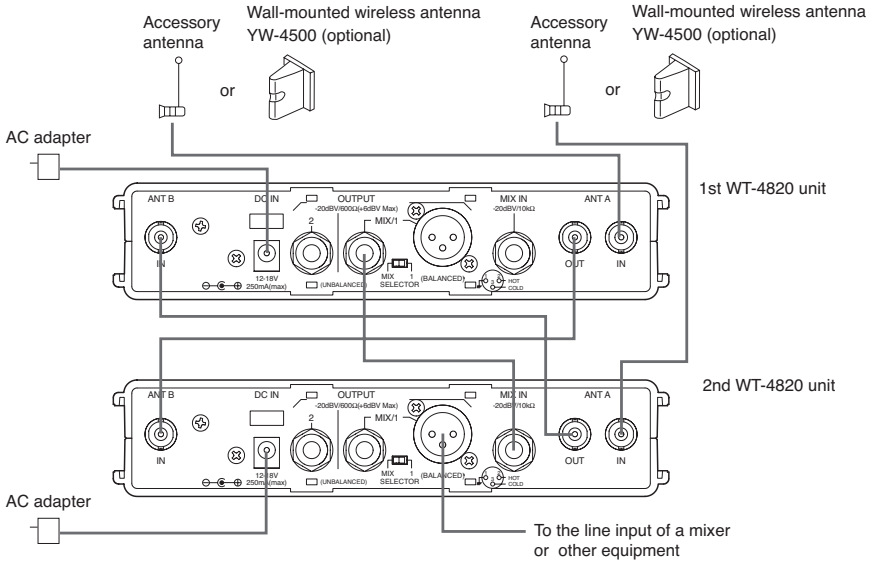
**Step 4.** Adjust the wireless microphone volume control for proper level.

## 9. CONNECTION

[Connection Example 1]



**[Connection Example 2]**



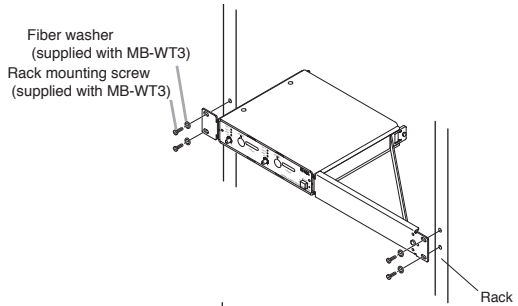
**10. INSTALLATION**

**10.1. Rack Mounting**

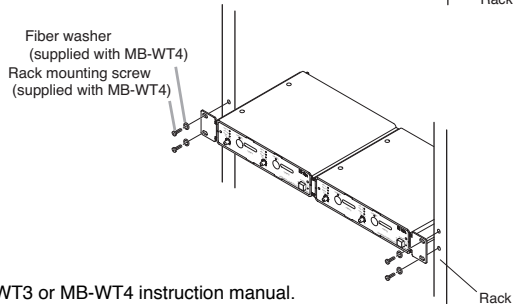
**Caution**

Use the optional YW-4500 Antenna when mounting the unit in an equipment rack.

- To mount one unit in an equipment rack, use the optional MB-WT3 Rack Mount Kit.



- To mount two units in an equipment rack, use the optional MB-WT4 Rack Mount Kit.

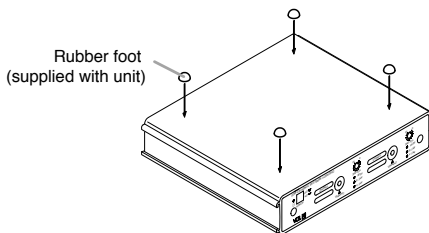


**Note**

For the mounting methods, refer to the MB-WT3 or MB-WT4 instruction manual.

## 10.2. Desktop Mounting

Attach the 4 supplied rubber feet to the bottom surface of the unit when installing the unit on the desk.



## 11. SPECIFICATIONS

Power Source	AC mains (an AC adapter* <sup>1</sup> must be used.)
Power Consumption	250 mA (12 V DC, when operating with two tuner modules)
Receiving Frequency	506 – 865 MHz (506 – 606 MHz and 614 – 698 MHz for USA/Canada)
Mixing Input	-20 dB* <sup>2</sup> , 10 kΩ, unbalanced, phone jack
Audio Output	Mixing/Solo 1 (selectable): -20 dB* <sup>2</sup> (+6 dB* <sup>2</sup> Max.), 600 Ω, unbalanced, phone jack -14 dB* <sup>2</sup> (+12 dB* <sup>2</sup> Max.), 600 Ω, balanced, XLR-3-32 type connector Solo 2: -20 dB* <sup>2</sup> (+6 dB* <sup>2</sup> Max.), 600 Ω, unbalanced, phone jack
Antenna Input	75 Ω, BNC (phantom powering for antenna), 9 V DC, 30 mA (max)
Antenna Output	75 Ω, BNC (Gain 0 dB)
Indicator	ANT A/B, Audio (peak), Power
Signal to Noise Ratio	Over 102 dB (A-weight, balanced output)
Harmonic Distortion	Under 1%
Frequency Response	50 Hz – 18 kHz, ±3 dB
Operating Temperature	-10°C to +50°C
Operating Humidity	30 % to 85 %RH
Finish	Resin, black
Dimensions	210 (w) x 44 (h) x 181 (d) mm
Weight	770 g (without tuner module)

\*<sup>1</sup> May not included with the unit marketed in your country. In this case, prepare it locally. Please consult your TOA dealer in advance for details of the adapter.

\*<sup>2</sup> 0 dB = 1 V

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

### • Accessories

AC adapter* <sup>1</sup> .....	1
Rod antenna .....	2
Rubber foot .....	4

### • Optional products

Antenna:	YW-4500
Mounting bracket kit:	MB-WT3 (for rack mounting one WT-4820 unit)
	MB-WT4 (for rack mounting two WT-4820 units)

URL: <http://www.toa.jp/>