

# ***Tuner Base Unit***

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**Operating Instructions**

**MB-8N**

# Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. MB-8N      Serial No. \_\_\_\_\_

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

## WARNING

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.**



**To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.**

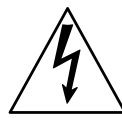
## CAUTION

The apparatus shall not be exposed to dripping or splashing and no objects filled with liquid, such as vases, shall be placed on the apparatus.

The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

**For customers in the U.S.A.**

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



This symbol 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.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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 or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

***If you have any questions about this product, you may call:***

***Sony's Business Information Center (BIC) at 1-800-686-SONY (7669) or***

***Write to: Sony Customer Information Services Center  
6900-29 Daniels Parkway, PMB 330  
Fort Myers, Florida 33912***

### Declaration of Conformity

Trade Name:	SONY
Model:	MB-8N
Responsible Party:	Sony Electronics Inc.
Address:	680 Kinderkamack Road, Oradell NJ 07649 U.S.A.
Telephone Number:	201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### Notice for customers in Canada

This Class B digital apparatus complies with Canadian ICES-003.

*The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.*

### Notice for customers in Europe



U.K.	854.125 - 862 MHz
Spain	841.250 841.750 842.250 842.750 MHz 843.250 848.750 849.250 849.750 MHz 850.250 850.750 851.250 851.750 MHz
Belgium	854.125 - 862 MHz
Luxembourg	854.125 - 862 MHz, 800 - 822 MHz
Germany	798 - 822 MHz
Norway	800 - 820 MHz
Denmark	800 - 820 MHz
France	798 - 822 MHz
Ireland	800 - 820 MHz
Italy	800 - 820 MHz
Portugal	800 - 820 MHz
Sweden	800 - 820 MHz
Switzerland	800 - 820 MHz
Finland	800 - 814 MHz
Iceland	800 - 814 MHz

Hereby, Sony Corporation, declares that this WRU-8N is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.



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# Precautions

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## On operation

- The tuner must be used within a temperature range of 0°C to 40°C (32°F to 104°F). Avoid using the tuner for extended periods at extremely high temperatures or placing it in direct sunlight, especially outdoors, because this may damage the finish of the case. Never install the tuner on or near a heat source, such as lighting equipment or power amplifiers.
- Avoid using in very humid or dusty places, because such use may shorten the life of the tuner.
- To avoid degradation of the signal-to-noise ratio, do not use the tuner in noisy places or in locations subject to vibration, such as the following:
  - near electrical equipment, such as motors, transformers or dimmers
  - near air conditioning equipment or places subject to direct air flow from an air conditioner
  - near public address loudspeakers
  - where adjacent equipment might knock against the tuner

- Switching lights on or off may produce electrical interference over the entire frequency range. Position the tuner and the wireless microphones so that interference is minimized.
- The tuner is precisely adjusted at the factory and no adjustment before use is necessary. Do not touch the inside of the tuner or try to repair it by yourself.
- Do not use the unit when its fan is not working. Using the unit with the fan being in fault may cause a fire.

*About fan replacement, contact your Sony dealer.*

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## On cleaning

Clean the tuner with a dry, soft cloth. Never use thinner, benzene, alcohol or any other chemicals, since these may damage the finish.

These operating instructions describe the MB-8N Tuner Base Unit in which the WRU-8N UHF Synthesized Tuner Unit (option) is installed.

## Note

For the selectable wireless channels and frequencies, refer to the Frequency Lists on the supplied CD-ROM.

Combining the MB-8N Tuner Base Unit and the WRU-8N UHF Synthesized Tuner Unit (option) provides a reliable UHF synthesized diversity tuner for the Sony UHF wireless microphone system which uses the frequency bands allocated for UHF TV broadcasting.

The combination of the MB-8N and the WRU-8N enables simultaneous use of multiple channels when channels are selected according to the Sony channel plan.

Installing four WRU-8N UHF Synthesized Tuner Units will enable four-channel operation on the tuner. In building up a UHF wireless microphone system, be sure to combine a microphone/transmitter and a tuner having the same TV channel number.

## When using CE models of WRU-8N

A 24-MHz frequency band is assigned to the WRU-8N, permitting it to operate on any of 189 (190 with the CE67 model) receiving frequencies in 125-kHz steps of Sony original channel plan or 960 receiving frequencies in 25-kHz steps in the range of three TV channels.

## When using U models of WRU-8N

A 24-MHz frequency band is assigned to the WRU-8N, permitting it to operate on any of 188 receiving frequencies in 125-kHz steps of Sony original channel plan in the range of four TV channels.

## When using the AU model of WRU-8N

A 14-MHz frequency band is assigned to the WRU-8N, permitting it to operate on any of 102 receiving frequencies in 125-kHz steps of Sony original channel plan in the range of TV channels 66 and 67.

## Features

### LAN function

The built-in network adapter and provided 10BASE-T connector enables a LAN connection to a computer running the Windows operating system. Using the supplied MB-8N Network Controller software, it is possible to operate an efficient system for central control of MB-8N Tuner Base Units and WRU-8N UHF Synthesizer Tuner Units from a computer.

### Modular multichannel reception

By installing optional WRU-8N UHF Synthesized Tuner Units, you can receive up to four channels on one MB-8N unit.

### Built-in antenna divider

With a built-in antenna divider and provided with a cascade output connector, without requiring the connection of an antenna divider unit, the MB-8N Tuner Base Unit can be connected in cascade. For a maximum of four MB-8N Tuner Base Units (16 channels<sup>1)</sup>), you can build a diversity receiving system with two antennas.

### Phase Locked Loop (PLL) synthesized system

The tuner has a refined phase locked loop (PLL) synthesizer circuit and covers two UHF TV channels.

### Preprogrammed wireless channel plan for simultaneous multichannel operation

The tuner has many preprogrammed, easily settable channels for simultaneous multichannel operation.

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1) When each MB-8N Tuner Base Unit has four WRU-8N UHF Synthesizer Tuner Units installed. Note that the receiving system consisting of the MB-8N and the AU model of WRU-8N allows you to simultaneously use a maximum of 12 channels in one area.

## Overview

### Versatile display

A liquid-crystal display and LEDs provide a variety of information, including the levels of the reception channels, RF information and transmitter battery condition.

### Space diversity reception system

The tuner provides stable signal reception with minimum dropout.

### Tone squelch circuit for noise elimination

A built-in squelch circuit eliminates noise and signal interference when the tuner is in signal reception standby mode.

### Compander system

A compander (compressor/expander) system enables stabilized wireless transmission over a wide dynamic range.

### Rack mounting

The MB-8N can be mounted in an EIA standard 19-inch rack (1U size).

## Channel Plan

The tuner stores several groups of channels. (Refer to “Overview of Channel Plan” in the Frequency Lists on the supplied CD-ROM.)

Channel groups other than group 00 (and groups of 25-kHz steps with CE models) are designed so that all channels of one group can be used simultaneously within the same UHF wireless microphone system without causing intermodulation. It is therefore recommended that you usually use a channel group other than group 00 (and groups of 25-kHz steps with CE models) unless the use of group 00 (or any group of 25-kHz steps with CE models) is specifically necessary.

## Using the CD-ROM

The supplied CD-ROM contains the following files.

File	Content
MB-8N Network Controller (MB-8N.exe)	This is a program which allows the status of the MB-8N Tuner Base Unit and WRU-8N UHF Synthesizer Tuner Units to be monitored from the computer, and also allows various settings.
User's Guide for MB-8N Network Controller (MB-8N_soft.pdf)	This is a PDF file that describes the functions and usage of the MB-8N Network Controller. You can view it on a computer screen.
MB-8N Operating Instructions (MB-8N_Hard.pdf)	This is a copy of this manual (PDF file). You can view it on a computer screen.
Frequency Lists (index.html)	This HTML file shows the correspondence between channels and frequencies. You can view it on a computer screen.

### Note

To use the MB-8N Network Controller, it is necessary to install it in your computer.

*For the installation procedure, see “Installation” on the next page.*

*For detailed information on the MB-8N Network Controller, refer to the User's Guide for the MB-8N Network Controller.*

*To view a PDF file, you will require Adobe Acrobat Reader. For details, refer to the Adobe website at: <http://www.adobe.com/>*

## Operating conditions

The MB-8N Network Controller is designed to run on a computer meeting the following requirements.

Item	Requirement
Computer	IBM PC/AT compatible
Operating system	Microsoft Windows 98SE/Me/2000/NT 4.0 (SP6a or later) (English display capability needed)
CPU	Pentium II, at least 400 MHz recommended
RAM	At least 128 MB recommended
Available hard disk space	At least 100 MB recommended
Monitor	At least 1024 x 768 pixel resolution recommended
Other	10BASE-T LAN card, CD-ROM drive



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## Installation

Before installing the files contained on the supplied CD-ROM in the computer, be sure to end all the applications you have started, if any. For Windows NT or 2000, log in as Administrator. If you use Windows NT, a Service Pack 6a or later is required.

- 1 Insert the supplied CD-ROM in the computer's CD-ROM drive.

### If the CD-ROM Autorun function is enabled

The CD-ROM starts automatically, and a message "Welcome to the InstallShield Wizard for SONY MB-8N NetworkController" appears on the screen.

*For details of the CD-ROM Autorun facility, refer to Windows Help.*

### If the CD-ROM Autorun function is disabled

- 1-1 Click the Start button, then click Run....
- 1-2 Click the Browse button, then in the Browse dialog box, select the CD-ROM drive.
- 1-3 Select "setup.exe", then click the Open button.

This starts the CD-ROM, and a message "Welcome to the InstallShield Wizard for SONY MB-8N NetworkController" appears on the screen.

- 2 Click the Start button.

A prompt message "Choose Destination Location" appears.

- 3 Confirm or change the destination location.

To change, click the Browse button and select the destination location in the dialog box which appears.

- 4 Click the Next button.

Installation starts. When all the necessary files have been copied to the hard disk, a message "InstallShield Wizard Complete" appears.

- 5 Click the Finish button.

Installation is complete, and a message appears to prompt you to restart the computer.

- 6 Click the OK button to restart the computer.

## To uninstall the installed files

Carry out step 1 of the installation procedure described above, then click the Next button. A dialog box appears, asking for your confirmation. Click the OK button to execute the uninstalling. When a message appears to prompt you to restart the computer, click the OK button.

### Note

It is not possible to completely uninstall the program with Add/Remove Programs in Control Panel of Windows.

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## How to open files

To open any of the installed files, click the Start button on the task bar, then select Programs and MB-8N Network Controller in this order. Click the desired item in the list which appears.

**MB-8N Network Controller v1.00:** The MB-8N Network Controller (program) starts.

*On how to use this program, refer to the User's Guide for the MB-8N Network Controller.*

**User's Guide for MB-8N Network Controller:** The PDF file of the help for the MB-8N Network Controller opens (provided that Adobe Acrobat Reader is installed in the computer).

**MB-8N Operating Instructions:** The PDF file of the MB-8N Operating Instructions opens (provided that Adobe Acrobat Reader is installed in the computer).

**Frequency Lists:** The HTML file of the Frequency Lists opens (provided that Internet Explorer 4.0 or later is installed in the computer).

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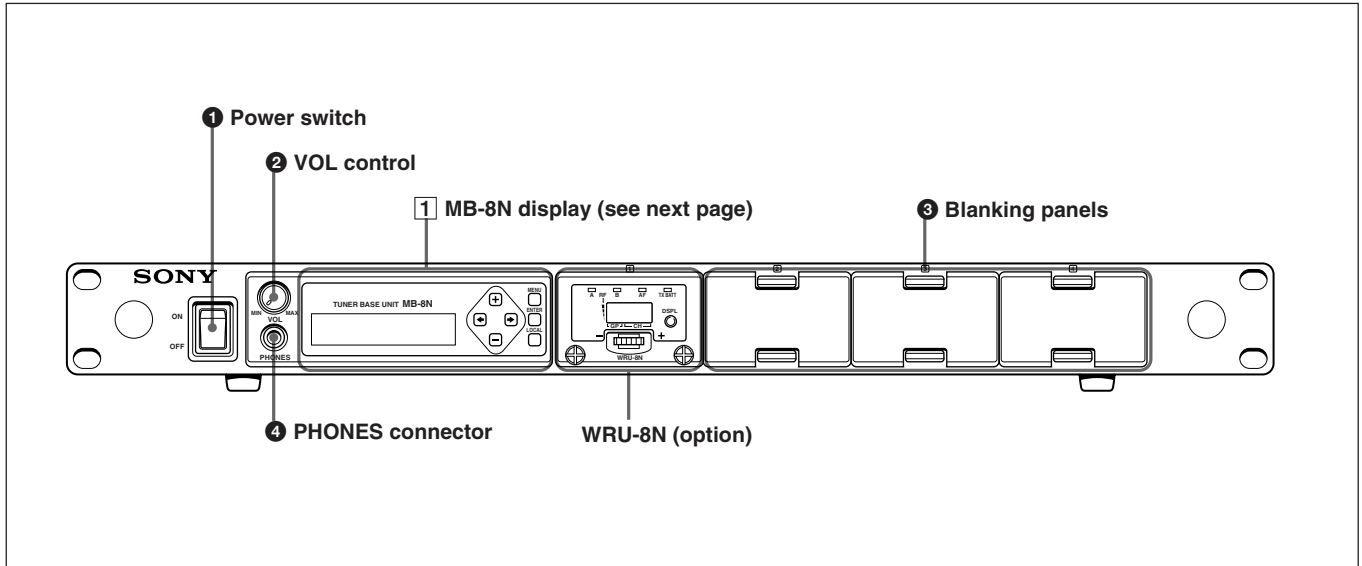
## Trademarks

- Adobe and Acrobat are registered trademarks of Adobe Systems Incorporated, and Acrobat Reader is a trademark of the same company.
- Windows is a registered trademark or trademark of Microsoft Corporation in the United States and other countries.

# Location of Parts and Controls

## MB-8N Tuner Base Unit

### Front panel



#### 1 Power switch

This powers the unit on and off.

#### Note

Do not power off while the unit is communicating with the computer.

#### 2 VOL (volume) control

This adjusts the volume of the headphones connected to the PHONES connector.

#### 3 Blanking panels

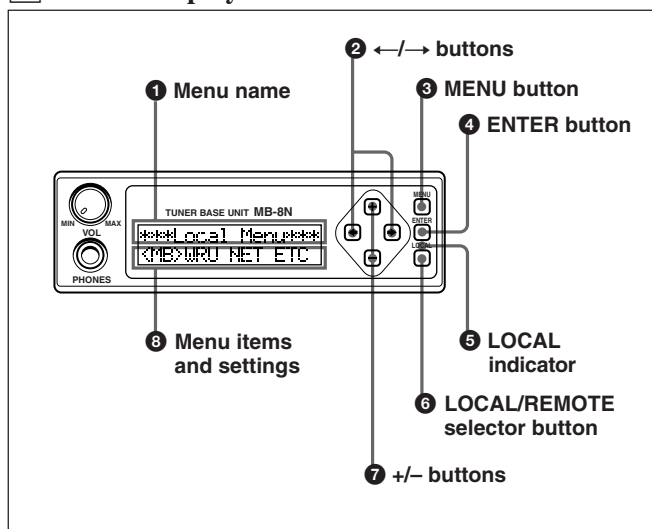
Remove these blanking panels to install the optional WRU-8N UHF Synthesizer Tuner Units.

#### 4 PHONES connector

Connect headphones to monitor the audio on the WRU-8N unit selected in the headphone output slot allocation menu.

*For details, see "Assigning headphone output slots" (page 26).*

## 1 MB-8N display



### 1 Menu name

The menu name appears in the upper row of the display.

### 2 ←/→ buttons

Use these to select a menu item or setting (when there is more than one). Pressing the buttons moves the bracket cursor (“< >” or “[ ]”) to right or left, showing the selected menu item or setting.

### 3 MENU button

When a submenu or setting is displayed in a setting menu, press this button to return to the previous menu.

### 4 ENTER button

Use this to confirm a menu item or setting in a setting menu.

*For details of using setting menus, see “Using the Menus” (page 21).*

### 5 LOCAL indicator

This lights when in local mode.

### 6 LOCAL/REMOTE selector button

Hold this down for three seconds to switch between local and remote modes.

**Local mode:** Select this mode to make and check settings on the operating panel of this unit. (This disables operation from the computer.)

**Remote mode:** Select this mode to operate this unit from the computer connected to the 10BASE-T connector on the rear panel. With the operating panel of this unit, it is only possible to check settings, and use the headphone solo function.

*You can select the default mode when the unit is powered on. For details, see “Operating mode when powered on” (page 27).*

### 7 +/- buttons

In local mode, use these to adjust settings in a setting menu. Each time you press a button, the value inside the brackets changes.

These buttons cannot be used in remote mode.

### 8 Menu items and settings

Menu items and settings appear in the lower row of the display.

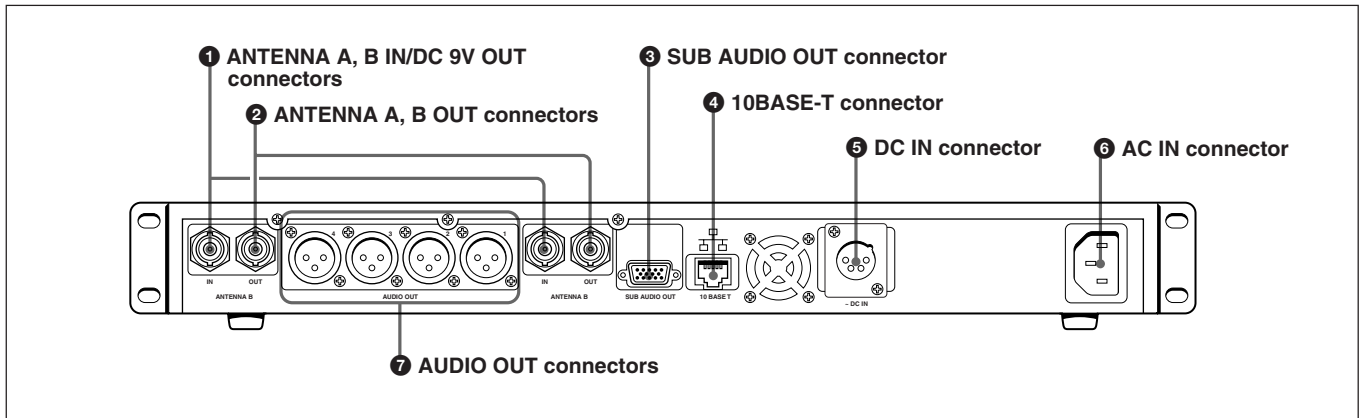
When menu items appear, an angle bracket cursor (“< >”) shows which item is selected.

In local mode, when a setting appears, square brackets (“[ ]”) around the value indicate that it can be changed. These brackets act as a cursor when more than one setting is present.

*For details of setting menu operation, see “Using the Menus” (page 21).*

# Location of Parts and Controls

## Rear panel



### 1 ANTENNA A, B IN/DC 9V OUT (9V DC output) connectors (BNC type)

Connect an optional AN-820A or similar UHF antenna to each of these.

When an AN-820A is connected, this connector supplies 9V DC power to the booster incorporated in the antenna. When using an antenna which does not require a power supply, you can switch the power output off.

For details of the 9V DC power supply, see “Voltage output to an antenna” (page 26).

#### Note

Do not short-circuit this connector.

### 2 ANTENNA A, B OUT connectors (BNC type)

These output the signals input to the ANTENNA IN connectors. Using these connectors, you can connect up to four of these units in cascade.

When using a cascade connection, set the RF attenuator for the MB-8N units to which no antenna is directly connected to “OFF.”

For details of cascade connection, see “Cascade Connection” (page 17).

For details of the antenna RF attenuator setting, see “Antenna RF attenuator” (page 26).

### 3 SUB AUDIO OUT connector (D-Sub 15-pin)

This outputs the audio signals from each WRU-8N unit.

#### Note

Be careful not to mistakenly connect this connector to the computer monitor.

For details of the SUB AUDIO OUT connector pin assignment, see “Connector Specifications” (page 32).

### 4 10BASE-T connector (RJ-45 type)

This is a 10BASE-T connector for network connection.

Connect to a Windows computer, in order to use the supplied MB-8N Network Controller software for communications with the computer.

For connection to a computer, use a category 5 LAN cable with a maximum length of 100 m (330 ft). If the connection requires a total cable length exceeding 100 m (330 ft), use a hub between the computer and this unit.

Use the following type of cable when:

**Directly connecting the computer and this unit:**  
cross cable

**Using a hub between the computer and this unit:**  
straight cable

#### Caution

Only connect 10BASE-T cables to the  $\frac{8}{8}$  (Ethernet network) port. Do not connect any other type of network cable or any telephone line. Connecting cables other than those listed above may result in an electric current overload and could cause a malfunction, excessive heat, or fire in the connector. To connect the unit to the network, contact your network manager.

### 5 DC IN connector (XLR type)

Use this when operating the unit with a DC power supply. The voltage range that can be used is +12 to +24 V.

#### Note

When power is supplied through this connector, the front panel power switch no longer controls the power to this unit. Be sure to use a DC power supply with a power switch, which you can use to power this unit on and off.

For details of the DC IN connector pin assignment, see “Connector Specifications” (page 32).

### 6 AC IN connector

Connect to an AC power source with the supplied AC power cord.

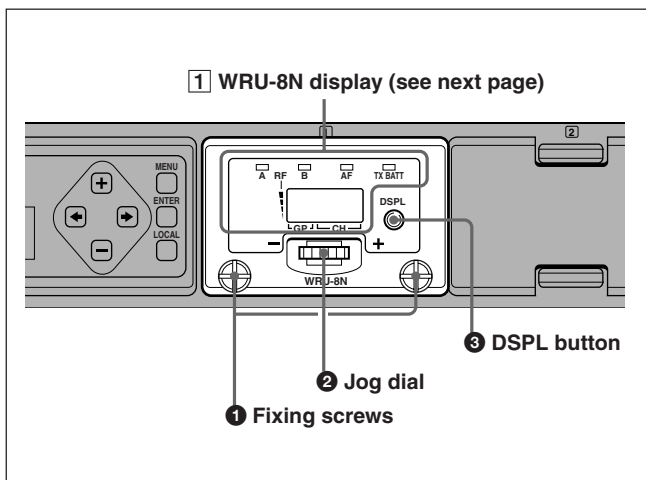
### 7 AUDIO OUT connectors (XLR type)

These output the audio signals from corresponding WRU-8N units. Connect to the audio input connectors of a mixer, amplifier, or other equipment. You can set the output level for each WRU-8N unit separately.

For details of the output settings, see “Audio output levels” (page 26).

For details of the pin assignment of the AUDIO OUT connector, see the section “Connector Specifications” (page 32).

## WRU-8N Tuner Unit (Option)



#### 1 Fixing screws

These fix the WRU-8N unit to the MB-8N unit (this unit).

#### 2 Jog dial

The jog dial has two functions, as follows.

- Press to set the setting changing mode, or to confirm a setting (corresponds to the function of the ENTER button).
- Turn clockwise or counterclockwise to change a setting (corresponds to the function of the +/- buttons).

In local mode, use this to change a group (GP), channel (CH), or frequency setting.

When pressed, the display flashes, and the setting can now be changed. In this state, turning clockwise or counterclockwise changes the setting, and pressing once more confirms the change. In the group/channel (GP/CH) display, repeat this operation to set both the group (GP) and channel (CH).

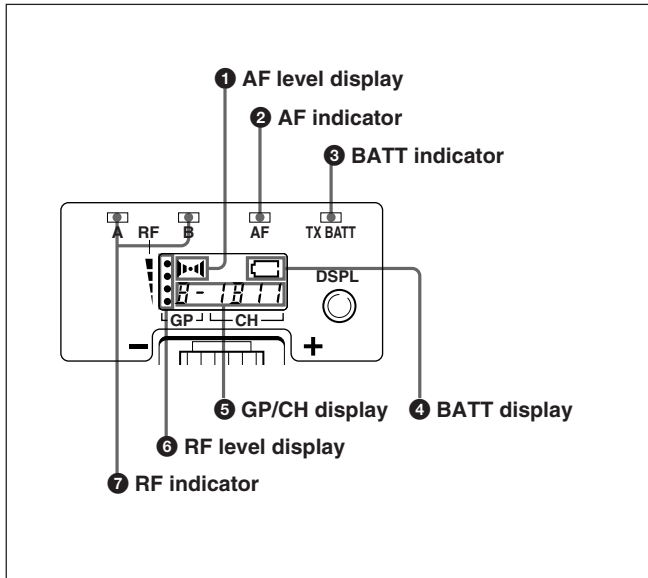
In remote mode, by pressing the jog dial you can monitor only the audio of the WRU-8N unit with the headphone connected to the PHONES connector (solo function).

#### 3 DSPL (display) button

Pressing this button toggles the WRU-8N display (next page) between the group/channel (GP/CH) display and frequency display.

## Location of Parts and Controls

### 1 WRU-8N display



#### 1 AF (audio output) level display

#### 2 AF (audio output) indicator

If an audio signal of the reference level or above is output, the indicator lights, and the display appears.

#### 3 BATT (battery) indicator

#### 4 BATT (battery) display

When a transmitter has a battery alarm function, about one hour before the battery goes dead, the display appears, and begins to flash.

This function is effective with the following transmitters.

- WRT-8B
- WRT-822A/822B
- WRT-805A/805B
- WRT-807A/807B
- WRT-847A/847B
- WRT-860A
- WRT-808A (available in USA only)

The time when the flashing starts depends on the type and state of the battery used by the transmitter.

#### 5 Group/channel (GP/CH) display

This shows the group and channel of the receiving channel. Pressing the DSPL button toggles between the group/channel display and frequency display for the receiving channel.

#### 6 RF (radio frequency input) level display

#### 7 RF (radio frequency input) indicator

Of the antennas A and B, the indicator lights for that with the better receiving conditions, appearing as a number of segments. The number of segments displayed depends on the radio frequency input level.

#### Note

During multi-channel operation or while there is interference, the RF indicator or BATT indicator may flash even though the desired signal is not being received. In this case, the LCD display shows a flashing "NOTONE," indicating that the desired signal is not being received.

# Installing and Removing a WRU-8N

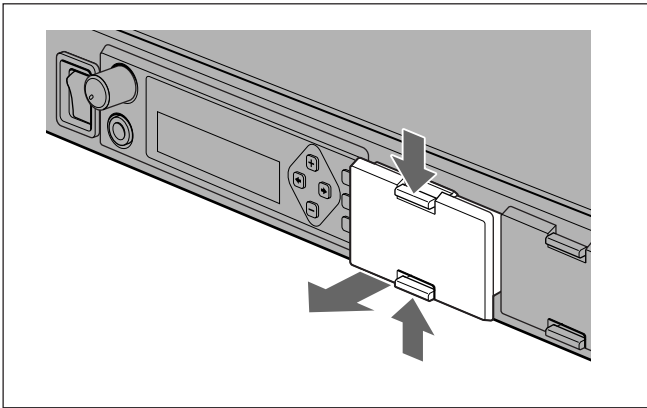
You can install up to four WRU-8N units in this unit.

## Notes

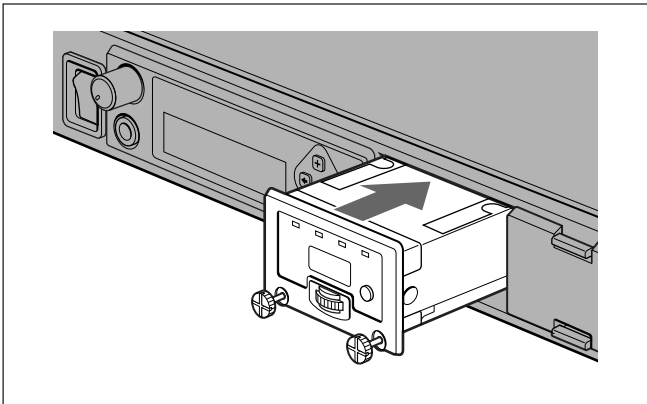
- Be sure to power this unit off first.
- Pressing too strongly on the jog dial or indicators on the WRU-8N front panel may damage it. Always press on the edges of the front panel.
- Do not touch the WRU-8N rear panel and connectors.
- Be careful of static electricity.

## Installation

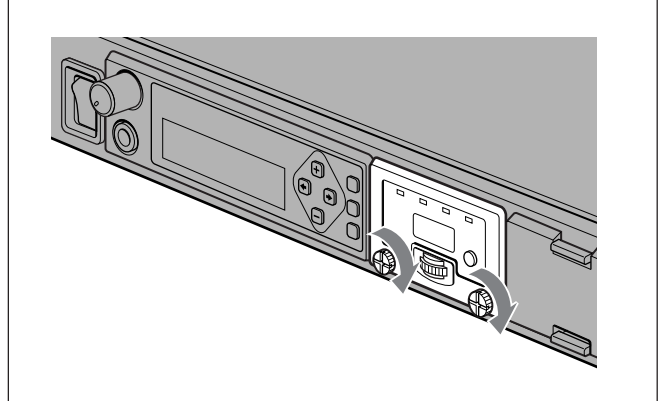
- 1 Press the upper and lower tabs of the blanking panel, and pull the lower edge forward, to remove the blanking panel.



- 2 Holding the sides of the WRU-8N, insert it in the slot, and press in until the panel is flush with the MB-8N operating panel.

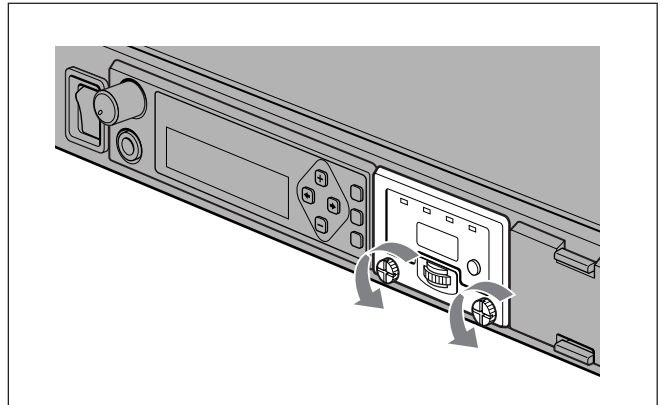


- 3 Turn the fixing screws, to fix.

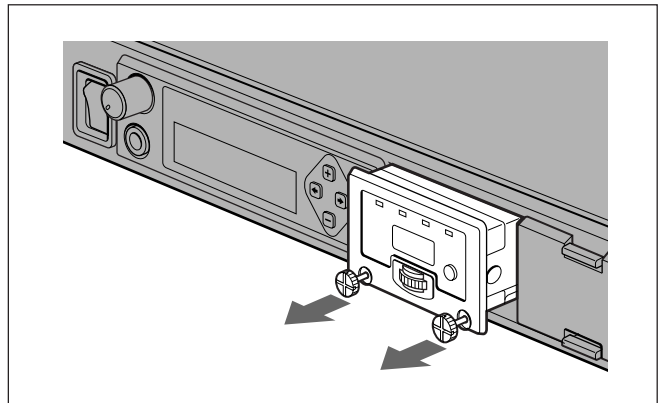


## Removal

- 1 Fully loosen the fixing screws.



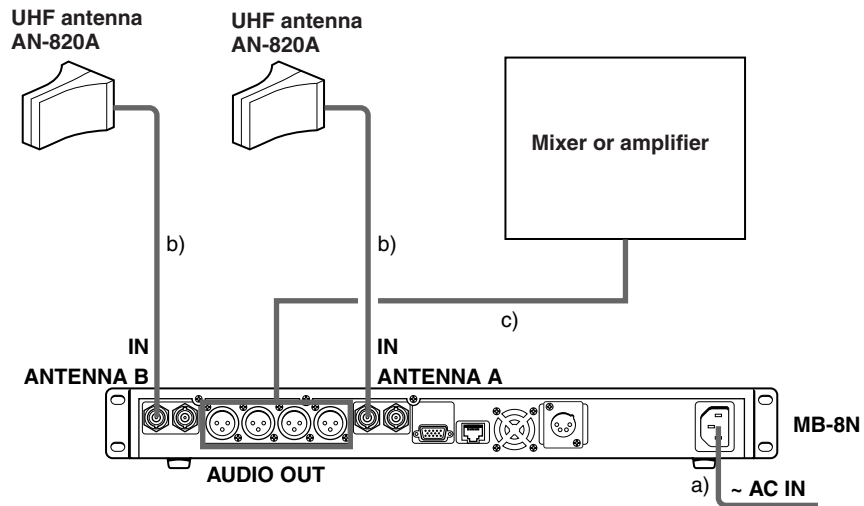
- 2 Holding the fixing screws in both hands, slowly pull out.



# Connections

## Basic Connections

The following diagram illustrates the basic connections when using this unit alone.



- a) AC power cord (supplied)
- b) 50-ohm coaxial cable (RG-5 type, RG-212 type or equivalent recommended)
- c) XLR cable

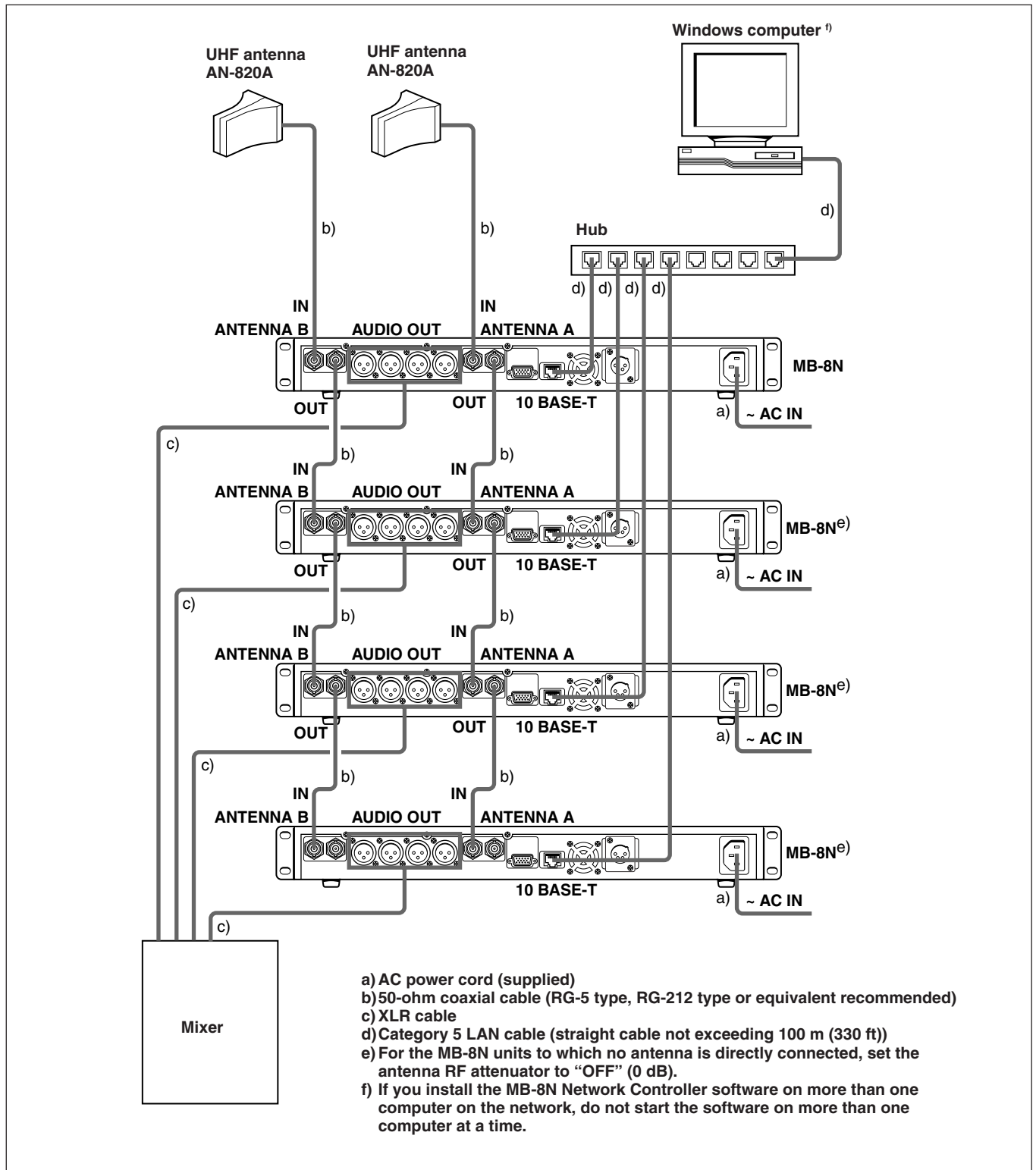


## Cascade Connection

The following diagram illustrates the cascade connection when using two or more of these units with a computer.

### Note

When five or more of these units are cascade-connected, distribution loss may lead to an unstable reception.



# Settings

Once this unit is installed and the peripherals connected, make the necessary settings. The setting operation depends on the operation mode of this unit, as follows.

**Local mode:** You can set or check settings using the operating panel of this unit (local menu).

**Remote mode:** With the operating panel of this unit, you can only check settings (remote menu). It is not possible to change settings.

With this unit connected to a computer through a LAN, using the supplied MB-8N Network Controller software, you can change settings using the software interface.

This manual describes how to carry out settings with the operating panel of this unit.

*For details of settings using the MB-8N Network Controller, refer to the User's Guide for MB-8N Network Controller on the supplied CD-ROM.*

## Organization of Setting Menus

### Local menu

When this unit is in local mode, the MB-8N display shows “\*\*\*Local Menu\*\*\*,” and the setting menus allowing settings to be changed are available.

The local menu gives access to a hierarchical tree of menus, as shown on the next page (maximum four levels).

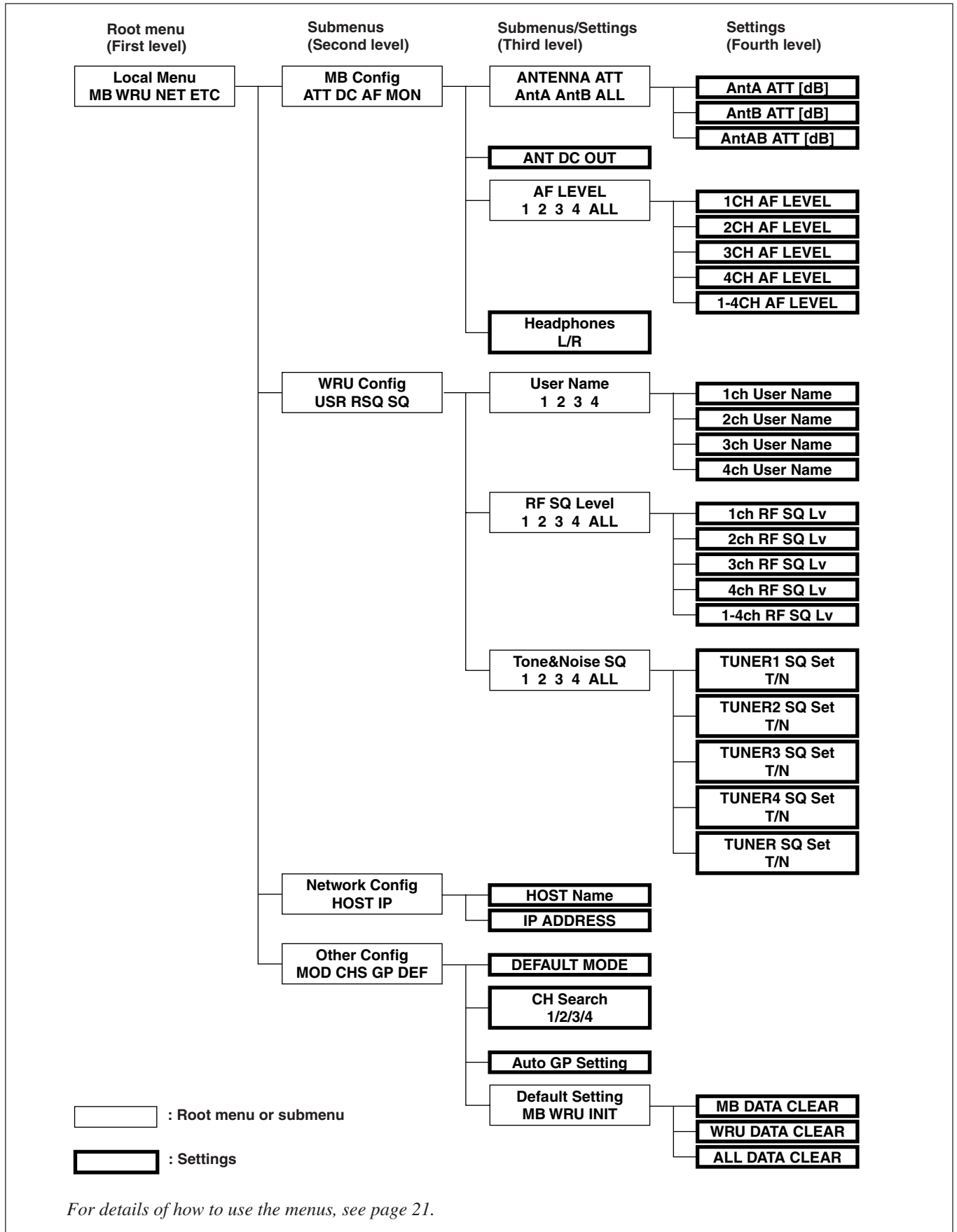
You make the settings from submenus.

### Remote menu

When this unit is in remote mode, the MB-8N display shows “\*\*\*Remote Menu\*\*,” and you can check the settings in the sequence shown on page 20.

*For details of how to use the menus, see page 21.*

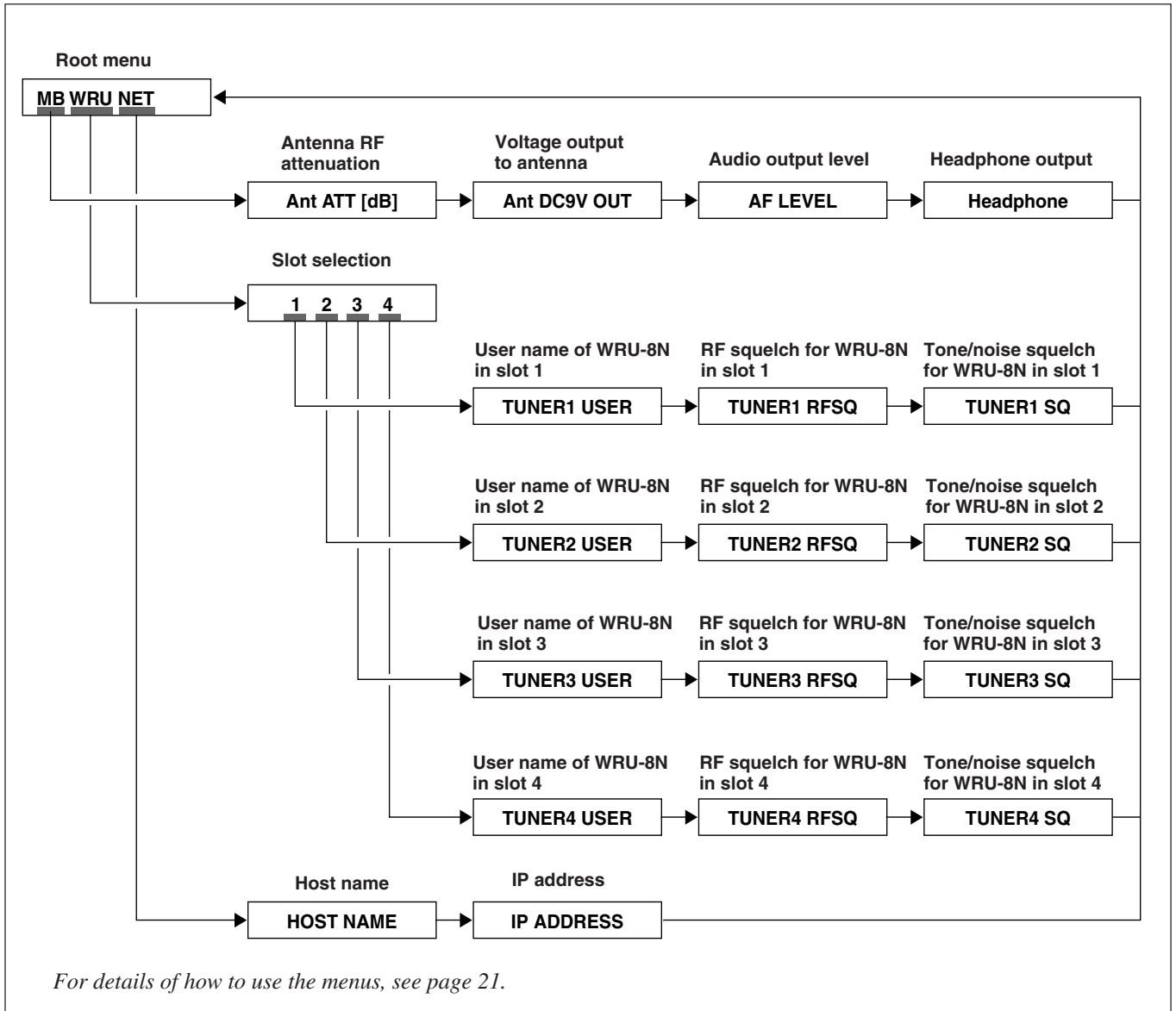
## Local menu



For details of how to use the menus, see page 21.

# Settings

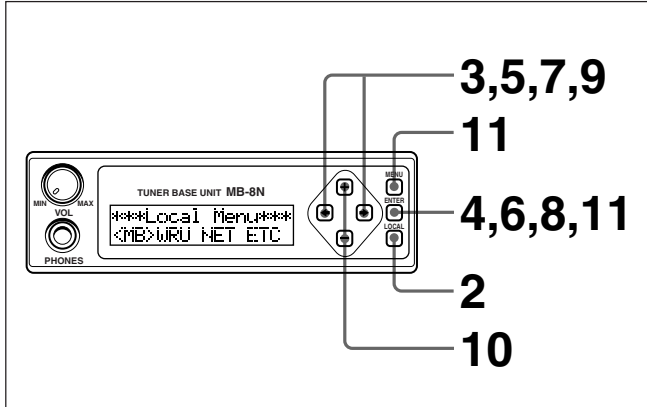
## Root menu



## Using the Menus

### Changing settings

The following section describes how to change settings.



- 1 Press the power switch, to power on this unit.

The MB-8N display shows a “Welcome” message, then displays the menu (Local or Remote menu) for the currently selected mode.

#### Note

Powering on may cause noise in audio output, so before operating the power switch turn down the inputs of the connected devices.

- 2 If the MB-8N display shows “\*\*\*Remote Menu\*\*\*,” hold down the LOCAL/REMOTE selector button for three seconds.

The display then shows “\*\*\*Local Menu\*\*\*,” and the unit is in local mode.

```
***Local Menu***
<MB>WRU NET ETC
```

- 3 Press the ←/→ buttons, to select the desired item.

Each time you press the → button (← button), the menu selection cursor “< >” moves to the right (left).

```
***Local Menu***
MB<WRU>NET ETC
```

- 4 Press the ENTER button.

The submenu (second level) appears.

```
***WRU Config***
<USR>RSD SQ
```

- 5 Press the ←/→ buttons, to select the desired item.

```
***WRU Config***
USR RSD<SQ>
```

- 6 Press the ENTER button.

The submenu (third level) appears.

When the setting display includes the square bracket item selection cursor “[ ],” skip to step 9.

```
*Tone&Noise SQ *
<1>2 3 4 ALL
```

- 7 Press the ←/→ buttons, to select the desired item.

```
*Tone&Noise SQ *
<1>2 3 4 ALL
```

- 8 Press the ENTER button.

The setting screen (fourth level) appears.

```
*Tuner1 SQ Set*
[ T:ON ] N:ON
```

- 9 If there are multiple settings, press the ←/→ buttons, to select the desired item.

```
*Tuner1 SQ Set*
T:ON [ N:ON ]
```

# Settings

**10** Press the +/- buttons, to adjust the setting.

Each time you press the + or – button, the setting inside the bracket cursor “[ ]” changes.

For some settings, if you hold down to + or – button, the setting changes continuously.

```
*Tuner1 SQ Set*  
T:ON [N:ON ]
```

**Note**

Even though the indication changes, the setting is not yet changed.

To confirm the setting change, you must carry on to step **11**.

**To cancel changing a setting**

Press the MENU button.

This returns to the previous display, without changing the setting.

**11** Press the ENTER button.

This saves the setting in memory in this unit, and returns to the previous display.

---

## Selecting a change of settings when replacing a WRU-8N unit

The MB-8N unit saves the settings for all installed WRU-8N units.

When powered on, if it detects a WRU-8N unit with different settings from that previously installed, a message such as the following appears in the MB-8N display. (In the example shown, the WRU-8N unit in slot 4 was replaced before powering on.)

```
Reload Settings?  
<OK> Cancel
```

## To use the settings for the WRU-8N unit newly installed

Select OK, and press the ENTER button.

This clears the settings for the WRU-8N unit which was previously installed in the slot, and reads in the settings for the WRU-8N unit newly installed in the slot.

## To use the settings for the WRU-8N unit previously installed

Select Cancel, and press the ENTER button.

This applies the settings for the WRU-8N unit which was previously installed in the slot to the WRU-8N unit newly installed in the slot.

---

## Checking settings in remote mode

**1** Press the ←/→ buttons, to select the desired item.

```
**Remote Menu**  
<MB>WRU NET
```

**2** Press the ENTER button.

A submenu or submenu setting appears.

```
**Ant. ATT[dB]**  
A:10 B:10
```

**When a submenu appears**

Press the ←/→ buttons, to select the desired item.

**When a submenu setting appears**

Press the ENTER button.

**To return to the previous display**

Press the MENU button.

**3** Repeat from step **2**.

Successive submenu settings appear. Pressing the ENTER button in the last display returns to the root menu.

## List of Settings

### Tuner base unit setting items

The MB submenu provides setting items relating to the MB-8N unit (this unit).

*For details of individual items, see the page numbers shown in parenthesis.*

Submenu		Setting
Setting items	Setting refers to	
<b>ATT:</b> RF attenuator setting for each antenna (page 26)	<b>AntA:</b> antenna A <b>AntB:</b> antenna B <b>ALL:</b> both antennas A and B	OFF, 5, 10, 15 (unit: dB) <b>Factory default:</b> OFF
<b>DC:</b> Whether or not 9V DC is supplied from the ANTENNA A and B IN/DC 9V OUT connectors (page 26)	MB-8N unit	OFF, ON <b>Factory default:</b> ON
<b>AF:</b> Audio output levels output from the AUDIO OUT connectors of each WRU-8N unit (page 26)	<b>1:</b> Output of AUDIO OUT connector 1 <b>2:</b> Output of AUDIO OUT connector 2 <b>3:</b> Output of AUDIO OUT connector 3 <b>4:</b> Output of AUDIO OUT connector 4 <b>ALL:</b> All outputs of AUDIO OUT connectors 1 to 4	LINE (–20dBm), MIC (–58dBm), OFF (no output) <b>Factory default:</b> LINE
<b>MON:</b> Assigning headphone output slots (page 26)	<b>L:</b> output to left headphone channel <b>R:</b> output to right headphone channel	1, 2, 3, 4 (audio from slots 1 to 4), 1&2 (when “L” is selected, mixed audio from slots 1 and 2), 3&4 (when “R” is selected, mixed audio from slots 3 and 4), ALL (mixed audio from slots 1 to 4) <b>Factory defaults</b> L: 1&2, R:3&4

# Settings

## Tuner unit setting items

The WRU submenu provides setting items relating to the WRU-8N unit.

*For details of individual items, see the page numbers shown in parenthesis.*

Submenu		Setting
Setting items	Setting refers to	
<b>USR:</b> User name for each WRU-8N unit (maximum 23 characters) (page 26)	1: WRU-8N unit in slot 1 2: WRU-8N unit in slot 2 3: WRU-8N unit in slot 3 4: WRU-8N unit in slot 4	Capital and lower case letters, numerals, and symbols <b>Factory default:</b> "WRU-8N"
<b>RSQ:</b> Setting for RF (radio frequency) squelch of each WRU-8N unit (page 27)	1: WRU-8N unit in slot 1 2: WRU-8N unit in slot 2 3: WRU-8N unit in slot 3 4: WRU-8N unit in slot 4 <b>ALL:</b> WRU-8N units in all of slots 1 to 4	0 OFF, 10dB, 20dB, 30dB <b>Factory default:</b> 30dB
<b>SQ:</b> Setting for tone squelch and noise squelch of each WRU-8N unit (page 27)	1: WRU-8N unit in slot 1 2: WRU-8N unit in slot 2 3: WRU-8N unit in slot 3 4: WRU-8N unit in slot 4 <b>ALL:</b> WRU-8N units in all of slots 1 to 4	T (tone squelch): ON, OFF <b>Factory default:</b> ON N (noise squelch): ON, OFF <b>Factory default:</b> ON

## Network setting items

The NET submenu provides setting items relating to the network.

### Notes

- This unit uses port 9901, and this cannot be changed. For more information about ports and port numbers, consult your network manager.
- After changing NET setting items, power the unit off and on again.

*For details of individual items, see the page numbers shown in parenthesis.*

Submenu		Setting
Setting items	Setting refers to	
<b>HOST:</b> Host name (maximum 23 characters) (page 27)	MB-8N unit	Capital and lower case letters, numerals, and symbols <b>Factory default:</b> "MB-8N"
<b>IP <sup>a)</sup>:</b> IP address (four integers 0 to 255) (page 27)	MB-8N unit	0 to 255 <b>Factory default:</b> 0. 0. 0. 0

a) Set this so as not to conflict with a computer, router, or other MB-8N units on the network.

*For more details of the setting, with examples, refer to the User's Guide for MB-8N Network Controller.*



## Miscellaneous setting items

The ETC submenu provides miscellaneous setting items.

*For details of individual items, see the page numbers shown in parenthesis.*

Submenu		Setting
Setting items	Setting refers to	
<b>MOD:</b> Operation mode when this unit is powered on (page 27)	MB-8N Tuner Base Unit	LOCAL (local mode), REMOTE (remote mode) <b>Factory default:</b> LOCAL
<b>CHS:</b> Transmitter channel search and automatic setting (page 27)	<b>1:</b> WRU-8N in slot 1 <b>2:</b> WRU-8N in slot 2 <b>3:</b> WRU-8N in slot 3 <b>4:</b> WRU-8N in slot 4	None
<b>GP:</b> Search for free channels within group, and automatic setting (page 28)	Each WRU-8N unit	None
<b>DEF:</b> Return to factory default settings (page 28)	<p><b>MB:</b> Following settings for the MB-8N (this unit)</p> <ul style="list-style-type: none"> <li>• ATT (antenna RF attenuator)</li> <li>• DC (voltage output to antenna connector)</li> <li>• AF (audio output level)</li> <li>• MON (audio output to headphone)</li> </ul> <p><b>WRU:</b> Following settings for the WRU-8N</p> <ul style="list-style-type: none"> <li>• Group (GP)</li> <li>• Channel (CH)</li> <li>• RSQ (RF squelch)</li> <li>• SQ (tone squelch and noise squelch)</li> </ul> <p><b>INIT:</b> All the settings relating to MB-8N and WRU-8N</p>	None

# Settings

## Details of Settings

### Antenna RF attenuator

```
***ANTENNA ATT***  
<AntA>AntB ALL
```

Set the RF attenuation level for each antenna in the range 0 to 15 dB (settable in 5-dB steps; factory default: OFF).

#### When using the optional AN-820A UHF antenna:

Make the setting as follows, depending on the length of the connecting cable (RG-5 type, RG-212 type, or equivalent) and the number of channels simultaneously used.

Cable length	30 m (98 ft) or more	3 (10 ft) to 30 m (98 ft)	up to 3 m (10 ft)			
Number of channels and setting	Less than 8 channels	0 dB	Less than 8 channels	5 dB	Less than 8 channels	10 dB
	8 channels or more	10 dB	8 channels or more	15 dB	8 channels or more	15 dB

However, depending on receiving conditions, it may be necessary to adjust the setting as follows.

- If the RF level is adequate for multichannel operation, but noise and sound breaks occur: raise the attenuation level.
- If the RF level is low: lower the attenuation level.

**For a cascade connection:** Make the setting as follows, depending on whether the unit is directly connected to the antenna or not.

- MB-8N unit directly connected to the antenna: as above (“When using the optional AN-820A UHF antenna”)
- MB-8N unit not directly connected to the antenna: OFF (0 dB)

### Voltage output to antenna

```
***ANT DC OUT***  
[ ON ]
```

When using an optional antenna such as an AN-820A that requires a power feed, select whether or not to supply 9V DC from the ANTENNA A and B IN/DC 9V OUT connectors (factory default: ON).

### Audio output levels

```
***RF LEVEL***  
<1>2 3 4 ALL
```

Set the audio output level of each WRU-8N unit output from the AUDIO OUT connectors, to LINE (–20 dBm), MIC (–58 dBm), or OFF (factory default: LINE).

Set these according to the input levels of the connected devices.

### Assigning headphone output slots

```
***Headphones***  
[L: 1&2] R: 3&4
```

You can assign the audio outputs of the maximum of four WRU-8N unit channels to the left and right channels of stereo headphones.

For each of the left and right channels, you can make the following assignments.

- 1:** Audio of WRU-8N in slot 1 only
- 2:** Audio of WRU-8N in slot 2 only
- 3:** Audio of WRU-8N in slot 3 only
- 4:** Audio of WRU-8N in slot 4 only
- 1&2:** Mixed audio from WRU-8N in slots 1 and 2 (when left channel selected)
- 3&4:** Mixed audio from WRU-8N in slots 3 and 4 (when right channel selected)
- ALL:** Mixed audio from WRU-8N in slots 1 to 4 (Factory default L: 1&2, R: 3&4)

### Tuner unit user names

```
***User Name***  
<1 >2 3 4
```

You can assign a name (maximum 23 characters) to each WRU-8N unit, consisting of capital and lower case letters, numerals, and symbols (factory default: “WRU-8N”).

---

## RF squelch

```
**RF SQ Level**  
<1>2 3 4 ALL
```

Set the RF (radio frequency) input level for muting on each WRU-8N unit in the range 10 to 30 dB or set to OFF (settable in 10-dB steps; factory default: 30 dB). If the radio frequency input level falls below the set RF squelch level, the audio output is muted. To expand the range of frequencies for operation, reduce the setting value. Turn them off when looking for external interference or noise.

### Note

While this unit is in receiving standby or is receiving when the RF level is low, setting these off may cause damage to connected devices or speakers as a result of noise. When these settings are off, be sure to operate with the inputs to the connected devices kept low.

---

## Tone squelch and noise squelch

```
*Tone&Noise SQ*  
<1>2 3 4 ALL
```

Set the tone squelch (T) and noise squelch (N) for each WRU-8N unit (factory default: both T and N set to ON).

**Tone squelch:** If a signal including the specified tone signal is not received, the audio output is muted.

**Noise squelch:** If the noise exceeds a certain level, the audio output is muted.

---

## Host name

```
***HOST Name***  
##### [ ]
```

Assign this unit the name required when it is connected to a computer network (maximum 23 characters), consisting of capital and lower case letters, numerals, and symbols (factory default: "MB-8N").

---

## IP address

```
***IP ADDRESS***  
[ 0 ] . [ 0 ] .
```

Assign this unit the IP address (four integers 0 to 255) required when it is connected to a computer network (factory default: 0. 0. 0. 0).

---

## Operating mode when powered on

```
***DEFAULT MODE***  
[ LOCAL ]
```

Select whether this unit is in local mode or remote mode when powered on (factory default: LOCAL).

---

## Transmitter channel search and automatic setting

```
***CH Search***  
<1 >2 3 4
```

The receiving frequency is varied within the group for the WRU-8N unit in the selected slot, and a search is made for a transmitter frequency.

When a transmitter frequency is found, that frequency is automatically set as the receiving channel.

### Notes

- Before carrying out this operation, power on the transmitter to be received.
- If there is a strong radio signal close to the receiving antenna, the search may stop at a different position from the actual frequency.

# Settings

## Search for free channels within group, and automatic setting



AUTO GP Setting  
<START> CANCEL

This searches within the group set for the WRU-8N unit in slot 1 for a free channel, and automatically sets the other WRU-8N unit different channels in the same group as slot 1.

You can use this to make the group and channel settings for multiple WRU-8N units in a single operation.

### Making the settings

- 1 Power off all the microphones or transmitters.
- 2 For the WRU-8N unit in slot 1, set the group to be used.

*For details of group settings, see “Channel Settings” (page 29).*

- 3 Check that “START” is selected in this setting menu, then press the ENTER button.

#### Notes

- Select a group other than “00” for the operation. In the case of CE models of WRU-8N, you should also avoid selecting a group of 25-kHz steps. With the CE67 model, for example, you should not select any of the following groups: 00, 67, 68, and 69.
- If there are no free channels, the message “NO CH” appears in the WRU-8N display. When “NO CH” is displayed, press the jog dial to set the first channel in group 00.

### Making settings for two or more MB-8N units

- 1 Power on all of the microphones and transmitters for which channel settings have been made with the first MB-8N unit.
- 2 Set the group for slot 1 in the second MB-8N unit to the same group as the first MB-8N unit.

*For details of group settings, see “Channel Settings” (page 29).*

- 3 Check that “START” is selected in this setting menu, then press the ENTER button.
- 4 To make the settings for the third and subsequent MB-8N unit, repeat steps 1 to 3.

Note that in step 1 the microphones and transmitters to be used with the MB-8N unit for which the settings have already been made should all be powered on.

## Initializing to default settings



\*DefaultSetting\*  
<MB> WRU INIT

This returns the settings to their factory defaults. The following setting items are initialized.

**MB:** Settings relating to the MB-8N (this unit)

- ATT (antenna RF attenuator)
- DC (power feed to antenna connector)
- AF (audio output levels)
- MON (assignment of headphone output slots)

**WRU:** Settings relating to the WRU-8N

- Group (GP)
- Channel (CH)
- RSQ (RF squelch)
- SQ (tone and noise squelch)

**INIT:** All the settings relating to both MB-8N and WRU-8N

#### Note

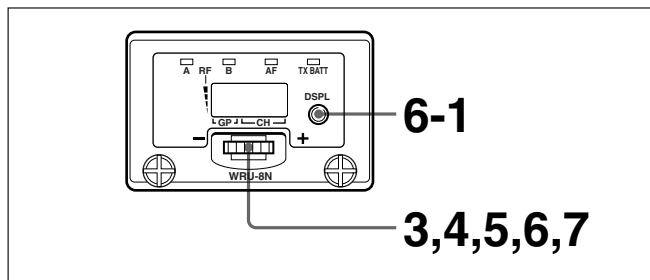
After initializing, the relevant items must be set again. Before carrying out this operation, you are recommended to make a note of the current settings.

## Channel Settings

When making the channel settings, consult the Frequency Lists on the supplied CD-ROM.

When using two or more WRU-8N units simultaneously, to avoid interference or noise, set the WRU-8N units as follows.

- Same group other than “00” and groups of 25-kHz steps.
- Different channels.



- 1 Press the power switch, powering on the unit.

The MB-8N display shows a “Welcome” message, then displays the menu (Local or Remote menu) for the currently selected mode.

### Note

Powering on may cause noise in audio output, so before operating the power switch turn down the inputs of the connected devices.

- 2 If the MB-8N display shows “\*\*\*Remote Menu\*\*\*,” hold down the LOCAL/REMOTE selector button for three seconds.

The display then shows “\*\*\*Local Menu\*\*\*,” and the unit is in local mode.

```
***Local Menu***
<MB>WRU NET ETC
```

### Note

It is not possible to make channel settings in remote mode. (It is, however, possible to select the group/channel or frequency indication using the DSPL button.)

*In remote mode, the jog dial has a separate function. For details see page 30.*

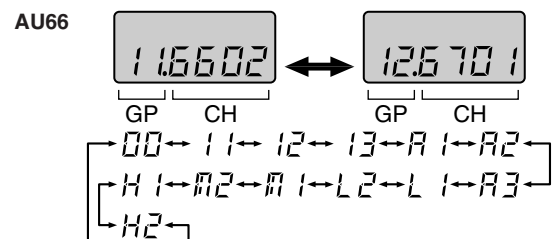
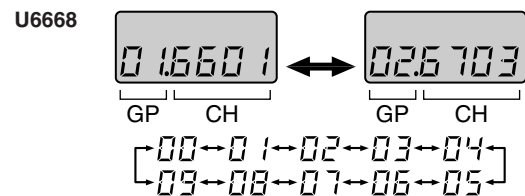
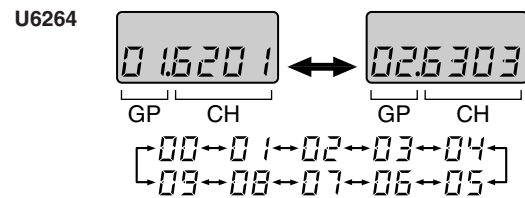
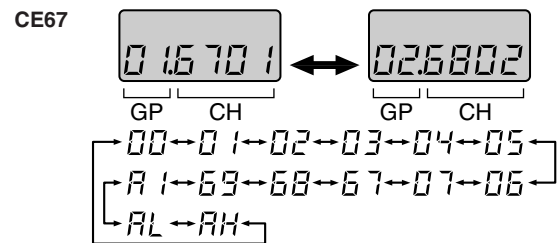
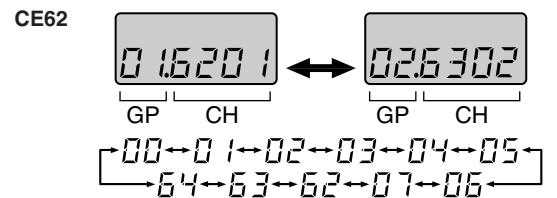
- 3 Press the jog dial.

The group indication flashes.

- 4 Turn the jog dial clockwise (+) or counterclockwise (–), to select the group.

Each time you turn the jog dial clockwise (+) or counterclockwise (–), the group indication changes in the sequence shown in the following figure. Holding the jog dial in the turned position makes the display change continuously.

The display differs with models of WRU-8N.



(Continued)

# Settings

The channel indication shows the channel with the lowest frequency in the selected group.

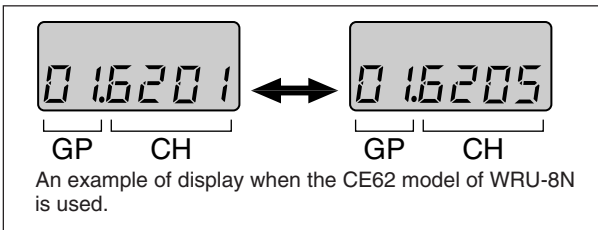
## 5 Press the jog dial.

This sets the selected group, and the channel indication flashes.

## 6 Turn the jog dial clockwise (+) or counterclockwise (-) to select the channel.

Each time you turn the jog dial clockwise (+) or counterclockwise (-), the channel indication changes in the order shown in the Frequency Lists is on the supplied CD-ROM.

When the last channel in the group is displayed, turning the jog dial clockwise (+) returns to the first channel.



### Selecting the channel while displaying the frequency

#### 6-1 Press the DSPL button.

The group/channel indication changes to a frequency display.

#### 6-2 Press the jog dial.

This first switches to the group/channel indication, and the group indication flashes.

**To select the group:** Turn the jog dial clockwise (+) or counterclockwise (-) to select.

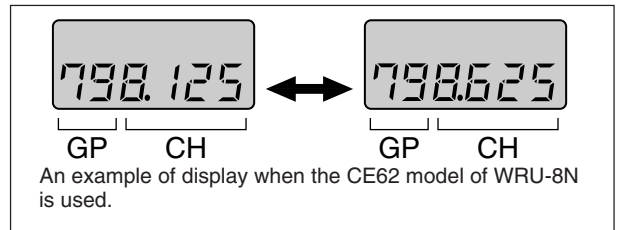
**If you do not want to select a group:** Skip to the next step. In this case, the group will be the previously set group automatically.

#### 6-3 Press the jog dial.

This switches to the frequency display, and the display flashes.

#### 6-4 Turn the jog dial clockwise (+) or counterclockwise (-), to select the channel.

Press the DSPL button once more to return to the group/channel indication.



## 7 When the desired channel or frequency is displayed, press the jog dial.

This confirms the selected channel.

### Note

The group/channel settings in the above procedure are saved in memory in this unit one minute after being displayed.

If you want to power off the unit after making group/channel settings, either wait for one minute, or set the unit to remote mode before powering off.

### To carry out a transmitter frequency search

See “Transmitter channel search and automatic setting” (page 27).

### To carry out a group/channel automatic setting

See “Search for free channels within group, and automatic setting” (page 28).

### Factory default setting for group/channel

This is the first channel of the group after group “00”.  
E.g. for the CE67 model: 01.67-01

## Function of the jog dial in remote mode

In remote mode, pressing the jog dial allows you to monitor the audio output from the corresponding WRU-8N unit only on the headphones (solo function). A message such as the following appears on the MB-8N unit display. (The example shows the case where the jog dial on the WRU-8N unit in slot 1 is pressed.)



Press the MENU button on the MB-8N unit to return to the previous display.

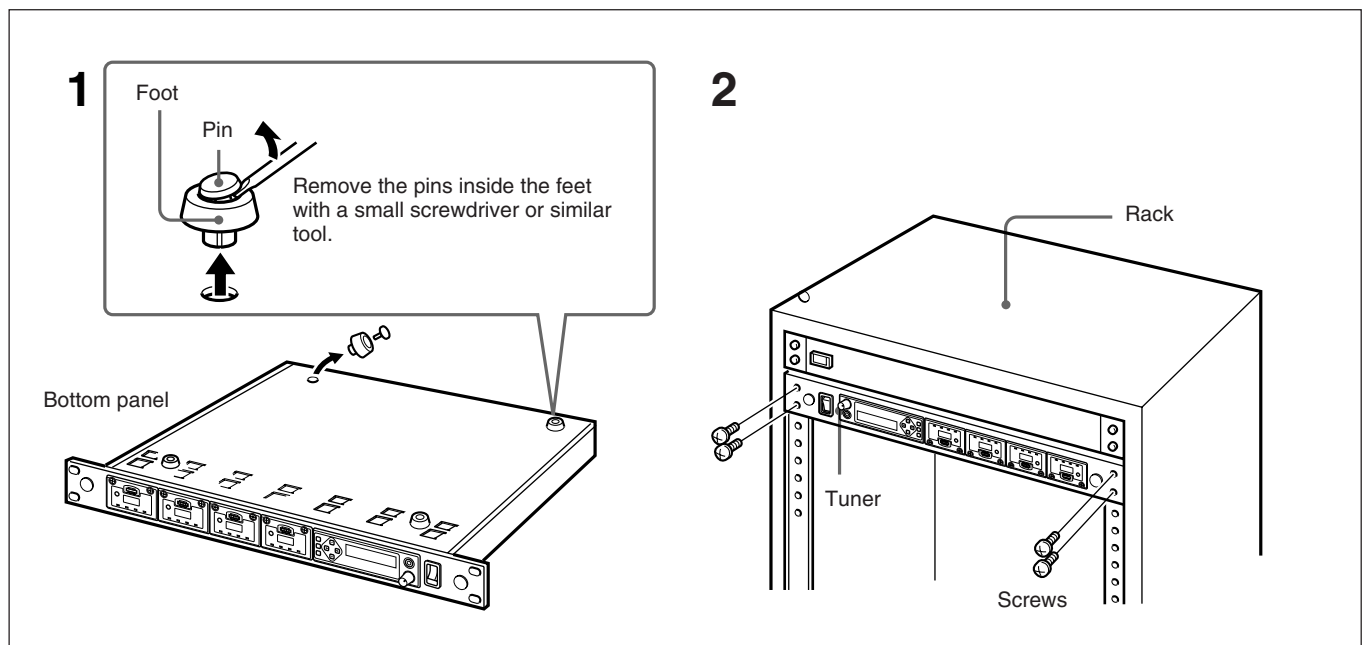
# Appendixes

## Error Messages

In addition to normal indications, the MB-8N display shows the following error messages.

Message	Meaning	What to do
Warning01 TUNER ERROR	This message appears if there is a communications problem between the MB-8N unit (this unit) and the WRU-8N unit. The following may be the cause of the problem. <ul style="list-style-type: none"><li>• The WRU-8N unit has failed</li><li>• The WRU-8N unit was removed while this unit was powered on</li></ul>	The display should be automatically restored. If it is not, carry out the following procedure. <ul style="list-style-type: none"><li>• Power this unit off and on again.</li><li>• Initialize the WRU-8N unit.</li></ul> <p><i>For details, see "Initializing to default settings" (page 28).</i></p>
Warning02 FAN ERROR	This message appears if the cooling fan in the rear panel of this unit fails because of wear to the moving parts.	The cooling fan must be replaced. Consult your Sony service representative.
Warning03 NET ERROR	This message appears if there is a communications error on the network between this unit and the computer.	The display is automatically restored. Restart the MB-8N Network Controller.  <p><i>For detailed information on the MB-8N Network Controller, refer to the User's Guide for MB-8N Network Controller on the supplied CD-ROM.</i></p>

## Rack Mounting

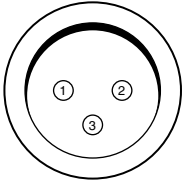


**1** Remove the feet of the tuner before mounting it on a rack.

**2** Mount the tuner on the rack using screws that are at least 12 mm (1/2 inches) long and that match the diameter of the screw holes on the rack.

## Connector Specifications

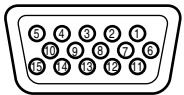
### AUDIO OUT connector



XLR-3-32F or equivalent

Pin number	Signal name	Description
1	GND	Audio output signal ground
2	HOT	Audio output signal (hot)
3	COLD	Audio output signal (cold)

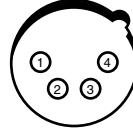
### SUB AUDIO OUT connector



D-Sub 15-pin, half-pitch  
Output impedance: 470 ohms

Pin number	Signal name	Description
1	CH1 OUT	Audio signal output of WRU-8N in slot 1
2	CH2 OUT	Audio signal output of WRU-8N in slot 2
3	CH3 OUT	Audio signal output of WRU-8N in slot 3
4	CH4 OUT	Audio signal output of WRU-8N in slot 4
5	NC	No connection
6	CH1 GND	Audio signal output ground of WRU-8N in slot 1
7	CH2 GND	Audio signal output ground of WRU-8N in slot 2
8	CH3 GND	Audio signal output ground of WRU-8N in slot 3
9	CH4 GND	Audio signal output ground of WRU-8N in slot 4
10	NC	No connection
11	NC	No connection
12	NC	No connection
13	NC	No connection
14	NC	No connection
15	NC	No connection

### DC IN connector



XLR 4-32F or equivalent  
Input voltage range: +12 to +24V  
Current consumption: 3A (at 12 V DC)

Pin number	Signal name	Description
1	GND	DC input ground
2	NC	No connection
3	NC	No connection
4	DC INPUT	DC input



---

## Principal Specifications

---

### Tuner (with WRU-8N)

Reception type	Space diversity
Circuit system	Dual conversion superheterodyne
Operating frequency range	
CE/AU models	758 to 862 MHz
U models	758 to 806 MHz
Reception frequencies	Refer to the Operating Instructions supplied with the WRU-8N.
Local oscillators	Crystal controlled PLL synthesizer
Selectivity	60 dB or more (at $\pm 250$ kHz detuned)
RF squelch	Switchable between 10, 20, 30 dB $\mu$ <sup>1)</sup> and OFF
Antenna connectors	BNC-R type (2), 50 ohms
Frequency response	40 to 20,000 Hz
De-emphasis	50 $\mu$ s
Signal-to-noise ratio	40 dB or more at an A-weighted RF input level of 20 dB $\mu$ 60 dB or more at an A-weighted RF input level of 60 dB $\mu$ ( $\pm 5$ kHz deviation at 1 kHz modulation)
Distortion	1% or less ( $\pm 40$ kHz deviation at 1 kHz modulation)
Tone signal frequency	32.768 kHz
Output level	
LINE	-20 dBm ( $\pm 5$ kHz deviation at 1 kHz modulation)
MIC	-58 dBm ( $\pm 5$ kHz deviation at 1 kHz modulation)
Sub-audio output level (unbalanced)	-20 dBm ( $\pm 5$ kHz deviation at 1 kHz modulation)
Output impedance	150 ohms (line output) 470 ohms (sub-audio output)
Output connectors	XLR-3-32 type

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## Network

10BASE-T connector  
RJ-45, 8-pole

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## General

Power requirements	
CE/AU models	100 to 240 V AC, 50/60 Hz
U models	120 V AC, 50/60 Hz
Power consumption	
CE models	0.5 A
U models	50 W
Current consumption	3 A (at 12 V DC)
DC IN connector	XLR-4-32F or equivalent +12 to +24 V
Power supply for antenna boosters	9 V DC (max. 100 mA)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +55°C (-4°F to +131°F)
Dimensions (w/h/d)	482 $\times$ 44 $\times$ 300 mm (19 $\times$ 1 $\frac{3}{4}$ $\times$ 11 $\frac{7}{8}$ inches)
Mass	Approx. 3.6 kg (7 lb 15oz) (without WRU-8N units)

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## Accessories supplied

AC power cord (1)  
CD-ROM (containing files of operating instructions, application software, and frequency lists) (1)  
Operation Guide (1)

Design and specifications are subject to change without notice.

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1) 0 dB $\mu$ =1  $\mu$ V<sub>EMF</sub>

