B

YAMAHA

RX-N600D

AV Receiver

OWNER'S MANUAL

CAUTION: READ THIS BEFORE OPERATING YOUR UNIT.

1. To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
2. Install this sound system in a well ventilated, cool, dry, clean place – away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold. Allow ventilation space of at least 30 cm on the top, 20 cm on the left and right, and 20 cm on the back of this unit.
3. Locate this unit away from other electrical appliances, motors, or transformers to avoid humming sounds.
4. Do not expose this unit to sudden temperature changes from cold to hot, and do not locate this unit in an environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside this unit, which may cause an electrical shock, fire, damage to this unit, and/or personal injury.
5. Avoid installing this unit where a foreign object may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:
   – other components, as they may cause damage and/or discoloration on the surface of this unit.
   – burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury.
   – containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit.
6. Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.
7. Do not plug in this unit to a wall outlet until all connections are complete.
8. Do not operate this unit upside-down. It may overheat, possibly causing damage.
9. Do not use force on switches, knobs and/or cords.
10. When disconnecting the power cable from the wall outlet, grasp the plug; do not pull the cord.
11. Do not clean this unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
12. Only voltage specified on this unit must be used. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, and/or personal injury. YAMAHA will not be held responsible for any damage resulting from use of this unit with a voltage other than specified.
13. To prevent damage by lightning, keep the power cable and outdoor antennas disconnected from a wall outlet or this unit during a lightning storm.
14. Do not attempt to modify or fix this unit. Contact qualified YAMAHA service personnel when any service is needed. The cabinet should never be opened for any reasons.
15. When not planning to use this unit for long periods of time (i.e. vacation), disconnect the AC power plug from the wall outlet.
16. Install this unit near the AC wall outlet where the power cable plug can be reached easily.
17. Be sure to read the "TROUBLESHOOTING" section on common operating errors before concluding that this unit is faulty.
18. Before moving this unit, press MASTER ON/OFF to release it outward to the OFF position to turn off this unit, and then disconnect the power cable from the AC wall outlet.

WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. In this state, this unit is designed to consume a very small quantity of power.

■ For U.K. customers

If the socket outlets in the home are not suitable for the plug supplied with this appliance, it should be cut off and an appropriate 3 pin plug fitted. For details, refer to the instructions described below.

Note

The plug severed from the mains lead must be destroyed, as a plug with bared flexible cord is hazardous if engaged in a live socket outlet.

■ Special Instructions for U.K. Model

IMPORTANT
THE WIRES IN MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:

Blue: NEUTRAL
Brown: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Making sure that neither core is connected to the earth terminal of the three pin plug.

CONTENTS

FEATURES

Built-in 6-channel power amplifier

- Minimum RMS output power
  (20 Hz to 20 kHz, 0.06% THD, 8 Ω)
  Front: 95 W + 95 W
  Center: 95 W
  Surround: 95 W + 95 W
  Surround back: 95 W

Sound field programs

- Proprietary YAMAHA technology for the creation of sound fields
- Dolby Digital/Dolby Digital EX decoder
- DTS/DTS-ES Matrix 6.1, Discrete 6.1, DTS Neo:6, DTS 96/24 decoder
- Dolby Pro Logic/Dolby Pro Logic II/ Dolby Pro Logic IIx decoder
- Virtual CINEMA DSP
- SILENT CINEMA™

Sophisticated AM/FM tuner

- 40-station random and direct preset tuning
- Automatic preset tuning
- Preset station shifting capability (preset editing)

Radio Data System

- Radio Data System tuning capability

DAB (Digital Audio Broadcasting)

- DAB (Digital Audio Broadcasting) tuning capability
- DLS (Dynamic Label Segment) information display
- Initial scan function to locate all DAB services in your area
- Tuning aid function to optimize DAB reception

iPod controlling capability

- DOCK terminal to connect a YAMAHA iPod universal dock (such as YDS-10 sold separately), which supports iPod (Click and Wheel), iPod nano, and iPod mini

Network features

- LAN port to connect a PC and YAMAHA MCX-2000 or access the Internet radio via a LAN
- DHCP automatic or manual network configuration

USB features

- USB port to connect a USB memory device or a USB portable audio player

Other features

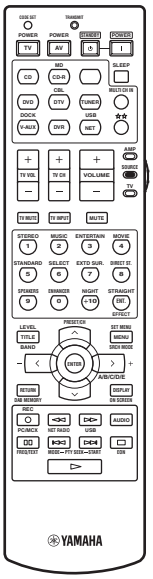
- 192-kHz/24-bit D/A converter
- OSD (on-screen display) menus that allow you to optimize this unit to suit your individual audiovisual system
- 6 additional input jacks for discrete multi-channel input
- S-video signal input/output capability
- Component video input/output capability
  (3 COMPONENT VIDEO INs and 1 MONITOR OUT)
- Digital video signal conversion (composite video ↔ S-video →component video) capability for monitor out
- Optical and coaxial digital audio signal jacks
- Sleep timer
- Cinema and music night listening modes
- Remote control with preset remote control codes, backlighting input selector buttons, and an iPod (stationed in a YAMAHA iPod universal dock connected to the DOCK terminal) controlling capability
- Zone 2 custom installation facility
- Zone switching capability between the main zone and Zone 2 using ZONE CONTROL
- Compressed Music Enhancer mode to improve the sound quality of compression artifacts (such as the MP3 format) to that of a high-quality stereo

GETTING STARTED

Supplied accessories

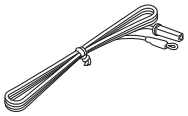
Check that you received all of the following parts.

Remote control

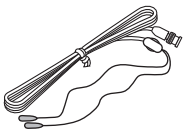


AM loop antenna

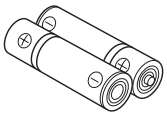
Indoor FM antenna



Indoor DAB antenna



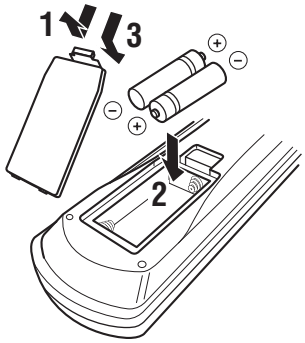
Batteries (2)
(AA, R6, UM-3)



About this manual

- indicates a tip for your operation.
- Some operations can be performed by using either the buttons on the front panel or the ones on the remote control. In case the button names differ between the front panel and the remote control, the button name on the remote control is given in parentheses.
- This manual is printed prior to production. Design and specifications are subject to change in part as a result of improvements, etc. In case of differences between the manual and product, the product has priority.

Installing batteries in the remote control



1 Take off the battery compartment cover.

2 Insert the two supplied batteries (AA, R6, UM-3) according to the polarity markings (+ and –) on the inside of the battery compartment.

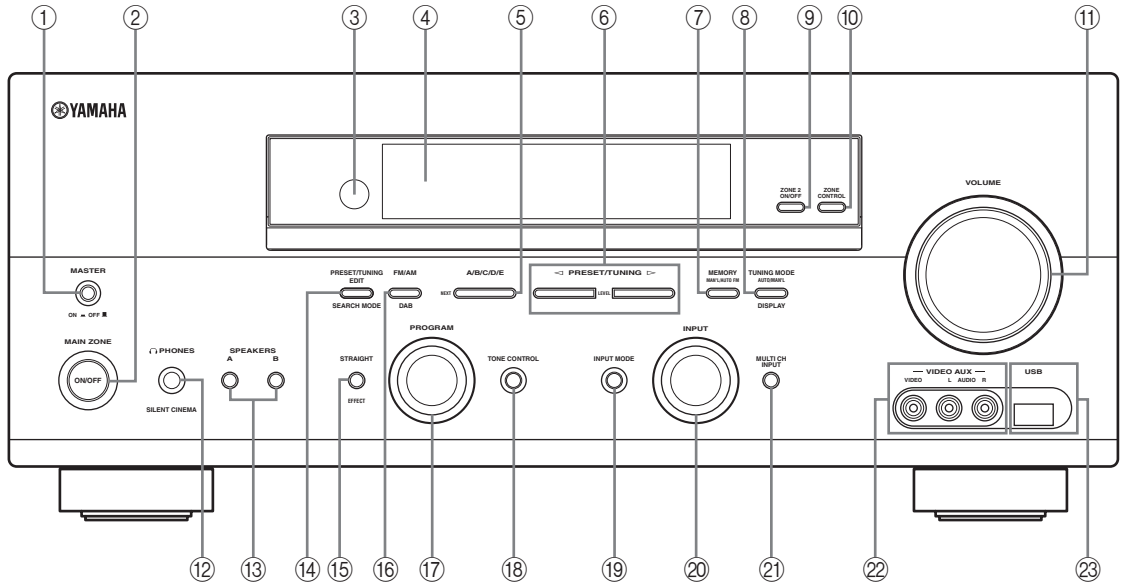
3 Snap the battery compartment cover back into place.

Notes

- Change all of the batteries if you notice the following conditions:
  – the operation range of the remote control decreases.
  – the TRANSMIT indicator does not flash or its light becomes dim.
- Do not use an old battery together with a new one.
- Do not use different types of batteries (such as alkaline and manganese batteries) together. Read the packaging carefully as these different types of batteries may have the same shape and color.
- If the batteries have leaked, dispose of them immediately. Avoid touching the leaked material or letting it come into contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- Do not throw away batteries with general house waste; dispose of them correctly in accordance with your local regulations.
- If the remote control is without batteries for more than 2 minutes, or if exhausted batteries remain in the remote control, the contents of the memory may be cleared. When the memory is cleared, insert new batteries and set up the remote control code that may have been cleared.

CONTROLS AND FUNCTIONS

Front panel



① MASTER ON/OFF

Turns on or off this unit (see page 28).

② MAIN ZONE ON/OFF

Turns on the main zone or sets it to the standby mode (see page 28).

Notes

- In the standby mode, this unit consumes a small amount of power in order to receive infrared signals from the remote control.
- When you turn on this unit, there will be a 4 to 5-second delay before this unit can reproduce sound.
- This button is operational only when MASTER ON/OFF is pressed inward to the ON position.

③ Remote control sensor

Receives signals from the remote control (see page 8).

④ Front panel display

Shows information about the operational status of this unit (see page 9).

⑤ A/B/C/D/E, NEXT

- Selects one of the 5 preset station groups (A to E) when this unit is in the FM/AM tuning mode (see page 46).
- Selects the DAB service on top of the list when this unit is in the DAB tuning mode (see page 57).
- Selects the speaker channel whose output level you want to adjust (see page 37).

⑥ PRESET/TUNING ⊲ / ⊳, LEVEL

- Selects one of the 8 preset station numbers (1 to 8) when this unit is in the FM/AM tuning mode. The colon (:) is displayed in the front panel display (see page 48).
- Selects the tuning frequency when this unit is in the FM/AM tuning mode. The colon (:) is not displayed in the front panel display (see page 46).
- Browses through the list of stored or preset DAB services when this unit is in the DAB tuning mode (see page 59).
- Adjusts the level of the speaker channel selected using NEXT when "TUNER" is not selected as the input source (see page 37).

⑦ MEMORY (MAN'L/AUTO FM)

- Stores a preset station in the memory when this unit is in the FM/AM tuning mode. Hold down this button for more than 3 seconds to start automatic preset tuning (see page 48).
- Stores a preset DAB service in the memory when this unit is in the DAB tuning mode (see page 60).

⑧ TUNING MODE (AUTO/MAN'L), DISPLAY

- Switches between automatic tuning (the AUTO indicator is turned on) and manual tuning (the AUTO indicator is turned off) when this unit is in the FM/AM tuning mode (see page 46).
- Displays various information about the DAB service currently being broadcast when this unit is in the DAB tuning mode (see page 63).

⑨ ZONE 2 ON/OFF

Turns on Zone 2 or sets it to the standby mode (see page 102).

Note

This button is operational only when MASTER ON/OFF is pressed inward to the ON position.

⑩ ZONE CONTROL

Switches the zone you want to control between the main zone and Zone 2 (see page 102).

When Zone 2 is selected, the ZONE2 indicator flashes in the front panel display for approximately 5 seconds. While the indicator is flashing, perform the desired operation.

⑪ VOLUME

Controls the output level of all audio channels.

This does not affect the AUDIO OUT (REC) level.

⑫ PHONES (SILENT CINEMA) jack

Outputs audio signals for private listening with headphones (see page 34).

Notes

- When you connect headphones, no signals are output at the SUBWOOFER OUTPUT jack or the speaker terminals.
- All Dolby Digital and DTS audio signals are mixed down to the left and right headphone channels.

⑬ SPEAKERS A/B

Turns on or off the set of front speakers connected to the FRONT A and/or B terminals on the rear panel each time the corresponding button is pressed.

⑭ PRESET/TUNING, EDIT, SEARCH MODE

- Switches the function of PRESET/TUNING ⊲ / ⊳ between selecting preset station numbers and selecting the tuning frequency when this unit is in the FM/AM tuning mode.
- Edits the assignments of preset stations when this unit is in the FM/AM tuning mode (see page 51).
- Switches between the five DAB tuning methods when this unit is in the DAB tuning mode (see page 59).

⑮ STRAIGHT (EFFECT)

Turns the sound field programs off or on. When the "STRAIGHT" mode is selected, 2-channel or multi-channel input signals are output directly from their respective speakers without effect processing (see page 39).

⑯ FM/AM, DAB

Switches the reception band between FM, AM and DAB when "TUNER" is selected as the input source (see pages 46 and 58).

⑰ PROGRAM selector

Selects sound field programs or adjusts the bass/treble balance in conjunction with TONE CONTROL (see page 33).

⑱ TONE CONTROL

Adjusts the bass/treble balance of the front left and right speakers in conjunction with the PROGRAM selector (see page 33).

⑲ INPUT MODE

Selects either digital or analog input signals exclusively or sets this unit to automatically detect the type of input signals and select the corresponding input signals when one component is connected via both digital and analog connections (see page 35).

⑳ INPUT selector

Selects the desired input source.

㉑ MULTI CH INPUT

Selects the component connected to the MULTI CH INPUT jacks as the input source (see page 38).

Note

The input source connected to the MULTI CH INPUT jacks takes priority over the source selected with the INPUT selector on the front panel (or the input selector buttons on the remote control).

㉒ VIDEO AUX jacks

Input audio and video signals from a portable external source such as a game console, a video camera or a portable audio player (see page 23).

To reproduce the source signals input at these jacks, select "V-AUX" as the input source.

Note

The audio signals input at the DOCK terminal on the rear panel take priority over the ones input at the VIDEO AUX jacks.

㉓ USB port

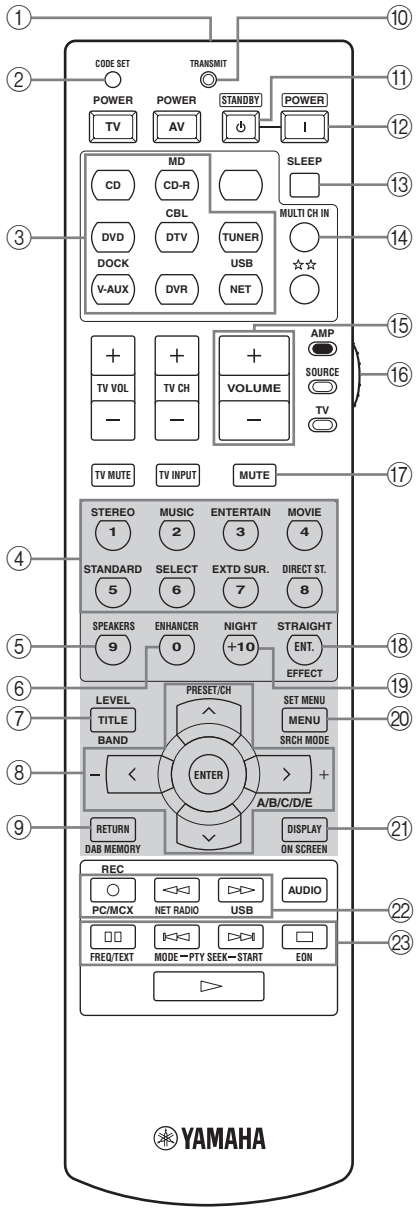
Use to connect a USB memory device or a USB portable audio player (see page 110).

Remote control

This section describes the function of each control on the remote control used to control this unit. To operate other components, see "REMOTE CONTROL FEATURES" on page 96.

Note

The operation mode of the remote control buttons in the shaded area below depends on the component selector switch position. Set the component selector switch to AMP to control this unit. To control the TUNER functions, set the component selector switch to SOURCE and then press TUNER to select "TUNER" as the input source.



■ Controlling this unit

Set the component selector switch to AMP to control this unit.

① Infrared window

Outputs infrared control signals. Aim this window at the component you want to operate (see page 8).

② CODE SET

Use to set up remote control codes (see page 98).

③ Input selector buttons

Select the input source you want to control.

Note

The corresponding input selector button for the currently selected input source lights up for approximately 5 seconds after you press any buttons on the remote control, showing which source component is currently being operated.

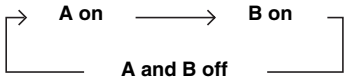
④ Sound field program selector buttons

Select sound field programs (see page 70).

– Use SELECT to play back 2-channel sources in surround (see page 43).
– Use EXTD SUR. to switch between 5.1 and 6.1-channel playback of multi-channel sources (see page 42).
– Use DIRECT ST. to play back 2-channel sources in hi-fi stereo sound (see page 39).

⑤ SPEAKERS

Turns on or off the set of front speakers connected to the FRONT A and/or B terminals on the rear panel. Press this button repeatedly to toggle as follows:



⑥ ENHANCER

Turns on or off the Compressed Music Enhancer mode (see page 37).

⑦ LEVEL

Selects the speaker channel to be adjusted and sets the output level (see page 36).

⑧ Cursor buttons ∧ / ∨ / 〈 / 〉, ENTER

Select and adjust the sound field program parameters or the "SET MENU" parameters.

⑨ RETURN

Returns to the previous menu level when adjusting the "SET MENU" parameters.

⑩ TRANSMIT indicator

Flashes while the remote control is sending infrared signals.

⑪ STANDBY

Sets this unit to the standby mode (see page 28).

Note

This button is operational only when MASTER ON/OFF on the front panel is pressed inward to the ON position.

⑫ POWER

Turns on this unit (see page 28).

Note

This button is operational only when MASTER ON/OFF on the front panel is pressed inward to the ON position.

⑬ SLEEP

Sets the sleep timer (see page 35).

⑭ MULTI CH IN

Selects the component connected to the MULTI CH INPUT jacks as the input source when using an external decoder, etc. (see page 38).

⑮ VOLUME +/–

Increases or decreases the volume level.

⑯ Component selector switch

Selects the operation mode of the remote control buttons in the shaded area.

AMP

Operates this unit.

SOURCE

Operates the component selected with an input selector button (see page 97).

TV

Operates the TV assigned to either DTV/CBL or ☆☆ (see page 96).

Notes

- To set the remote control codes for other components, see page 98.
- When you set the remote control codes for both DTV/CBL and ☆☆ (see page 98), priority is given to the one set for DTV/CBL.

⑰ MUTE

Mutes the audio output. Press again to restore the audio output to the previous volume level (see page 34).

⑱ STRAIGHT (EFFECT)

Turns the sound field programs off or on. When the "STRAIGHT" mode is selected, 2-channel or multi-channel input signals are output directly from their respective speakers without effect processing (see page 39).

⑲ NIGHT

Turns on or off the night listening modes (see page 34).

⑳ SET MENU

Enters "SET MENU" (see page 81).

㉑ DISPLAY

Selects the on-screen display (OSD) mode for your video monitor (see page 41).

㉒ Network and USB input selector buttons

Select the sub input source of NET/USB (see page 106).

PC/MCX

Selects a PC server or YAMAHA MCX-2000 as the sub input source of NET/USB.

NET RADIO

Selects the Internet radio as the sub input source of NET/USB.

USB

Selects a USB memory device or a USB portable audio player as the sub input source of NET/USB.

Notes

- Press NET/USB to select "NET/USB" as the input source before you press any of the network and USB input selector buttons stated above to select the corresponding sub input source of NET/USB.
- When you press any of the network and USB input selector buttons, the contents previously played for the corresponding sub input source of NET/USB is automatically played.

㉓ Radio Data System tuning buttons

FREQ/TEXT

Switches the Radio Data System display between the PS mode, PTY mode, RT mode, CT mode (if the station offers the corresponding data services) and the frequency display (see page 56).

PTY SEEK MODE

Sets this unit to the PTY SEEK mode (see page 53).

PTY SEEK START

Starts searching for a station once the desired program type is selected in the PTY SEEK mode (see page 54).

EON

Selects a program type (NEWS, AFFAIRS, INFO, or SPORT) for automatic tuning (see page 55).

■ Controlling the TUNER (FM/AM and DAB) functions

Set the component selector switch to SOURCE and then press TUNER to select "TUNER" as the input source. Press BAND repeatedly to switch the reception band between FM, AM and DAB.

④⑤⑥Numeric buttons

- Use numbers 1 through 8 to select preset stations when this unit is in the FM/AM tuning mode (see page 50).
- Select preset DAB services when this unit is in the DAB tuning mode (see page 62).

⑦ BAND

Switches the reception band between FM, AM and DAB (See pages 46 and 58).

⑧ Cursor buttons ∧ / ∨ / 〈 / 〉

- Press A/B/C/D/E 〈 / 〉 to select a preset station group (A to E) and PRESET/CH ∧ / ∨ to select a preset station number (1 to 8) when this unit is in the FM/AM tuning mode (see page 50).
- Press PRESET/CH ∧ / ∨ to select a preset service number when this unit is in the DAB tuning mode (see page 62).

⑨ DAB MEMORY

Stores a preset DAB service in the memory when this unit is in the DAB tuning mode (see page 60).

⑳ SRCH MODE

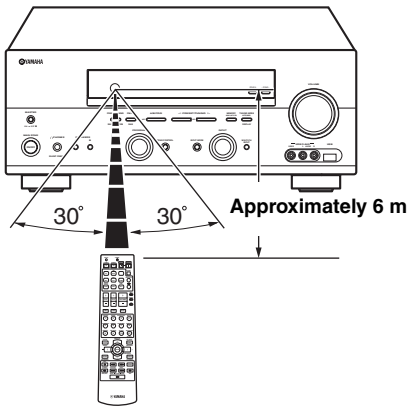
Switches between the five DAB tuning methods when this unit is in the DAB tuning mode (see page 59).

㉑ DISPLAY

Displays various information of the service currently being broadcast when this unit is in the DAB tuning mode (see page 63).

■ Using the remote control

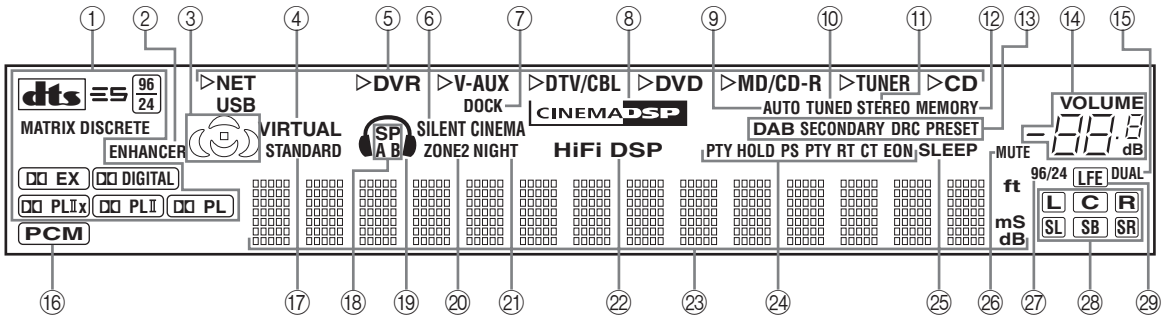
The remote control transmits a directional infrared ray. Be sure to aim the remote control directly at the remote control sensor on this unit during operation.



Notes

- Do not spill water or other liquids on the remote control.
- Do not drop the remote control.
- Do not leave or store the remote control in the following types of conditions:
  – places of high humidity, such as near a bath
  – places of high temperatures, such as near a heater or stove
  – places of extremely low temperatures
  – dusty places

Front panel display



① Decoder indicators

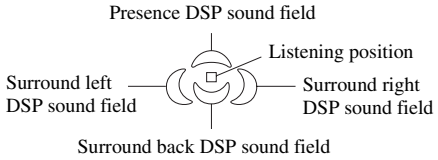
The respective indicator lights up when any of the decoders of this unit functions.

② ENHANCER indicator

Lights up when the Compressed Music Enhancer mode is turned on (see page 37).

③ Sound field indicators

Light up to indicate the active DSP sound fields.



④ VIRTUAL indicator

Lights up when Virtual CINEMA DSP is active (see page 44).

⑤ Input source indicators

The corresponding cursor lights up to show the currently selected input source.

⑥ SILENT CINEMA indicator

Lights up when headphones are connected and a sound field program is selected (see page 34).

⑦ DOCK indicator

Lights up when you station your iPod in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit (see page 21).

⑧ CINEMA DSP indicator

Lights up when you select a CINEMA DSP sound field program (see page 71).

⑨ AUTO indicator

Lights up when this unit is in the automatic tuning mode (see page 46).

⑩ TUNED indicator

Lights up when this unit is tuned into a station (see page 46).

⑪ STEREO indicator

- Lights up when this unit is receiving a strong signal for an FM stereo broadcast while the AUTO indicator is lit (see page 46).
- Lights up when this unit is receiving a stereo DAB service.

⑫ MEMORY indicator

Flashes to show that a station or a DAB service can be stored (see pages 48 and 60).

⑬ DAB indicators

Indicate the current DAB tuning status when this unit is in the DAB tuning mode (see pages 58 to 69).

⑭ VOLUME level indicator

Indicates the current volume level.

⑮ DUAL indicator

Lights up when dual monaural signals are being input to this unit when this unit is in the DAB tuning mode.

⑯ PCM indicator

Lights up when this unit is reproducing PCM (Pulse Code Modulation) digital audio signals.

⑰ STANDARD indicator

Lights up when the “SUR. STANDARD” or “SUR. ENHANCED” program is selected.

⑱ SP A B indicators

Light up according to the set of front speakers selected.

⑲ Headphones indicator
Lights up when headphones are connected.

⑳ ZONE2 indicator
Lights up when Zone 2 is turned on (see page 102).

㉑ NIGHT indicator
Lights up when you select a night listening mode (see page 34).

㉒ HiFi DSP indicator
Lights up when you select a HiFi DSP sound field program (see page 72).

㉓ Multi-information display
Shows the name of the current sound field program and other information when adjusting or changing settings.

㉔ Radio Data System indicators
The corresponding indicator lights up to show the type of the Radio Data System information.

EON
Lights up when the EON data service is being received.

PTY HOLD
Lights up while searching for the Radio Data System stations in the PTY SEEK mode.

㉕ SLEEP indicator
Lights up while the sleep timer is on (see page 35).

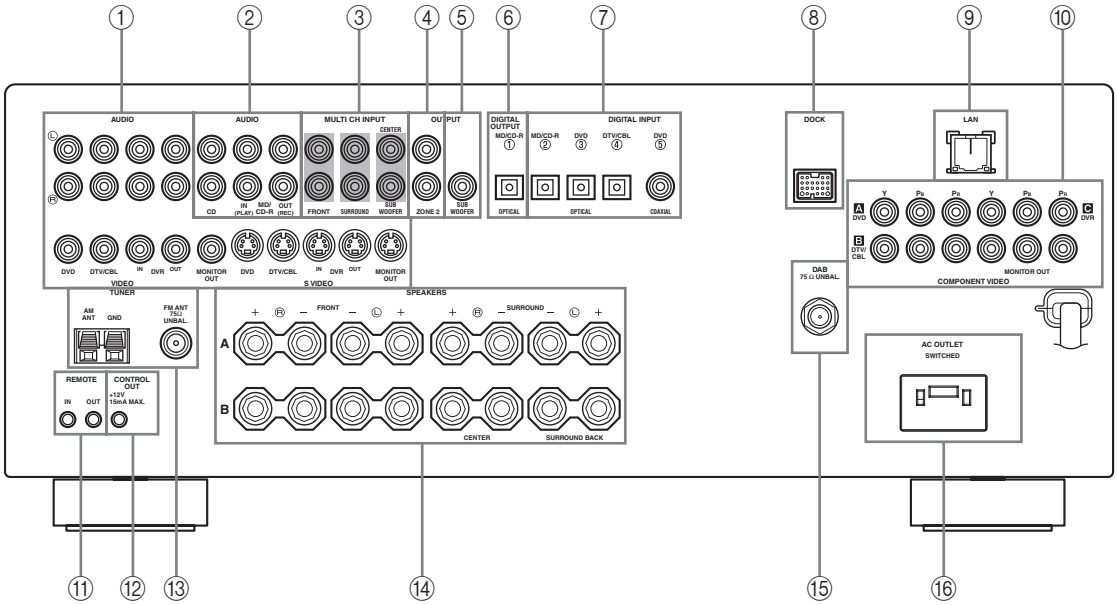
㉖ MUTE indicator
Flashes while the MUTE function is on (see page 34).

㉗ 96/24 indicator
Lights up when a DTS 96/24 signal is input to this unit.

㉘ Input channel indicators
Indicate the channel components of the current digital input signal.

㉙ LFE indicator
Lights up when the input signal contains the LFE signal.

Rear panel



① **Video component jacks**
See pages 17 and 18 for connection information.

② **Audio component jacks**
See page 20 for connection information.

③ **MULTI CH INPUT jacks**
See page 23 for connection information.

④ **ZONE 2 OUTPUT jacks**
See page 101 for connection information.

Note

These jacks output analog signals only.

⑤ **SUBWOOFER OUTPUT jack**
See page 13 for connection information.

⑥ **DIGITAL OUTPUT jack**
See page 20 for connection information.

⑦ **DIGITAL INPUT jacks**
See pages 18 and 20 for connection information.

⑧ **DOCK terminal**
Use to connect a YAMAHA iPod universal dock (such as YDS-10 sold separately) where your iPod can be stationed.
See page 21 for connection information.

⑨ **LAN port**
Use to connect a network cable for network connections.
See page 22 for connection information.

⑩ **COMPONENT VIDEO jacks**
See pages 17 and 18 for connection information.

⑪ **REMOTE jacks**
See page 101 for details.

⑫ **CONTROL OUT jack**
This is a control expansion terminal for custom installation.

⑬ **Antenna terminals**
See page 24 for connection information.

⑭ **Speaker terminals**
See page 13 for connection information.

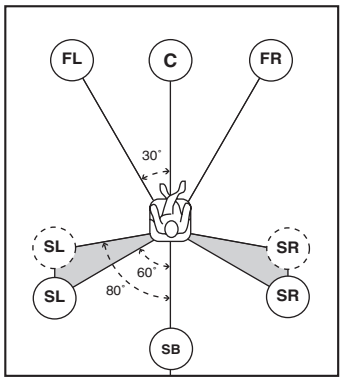
⑮ **DAB antenna terminal**
See page 25 for connection information.

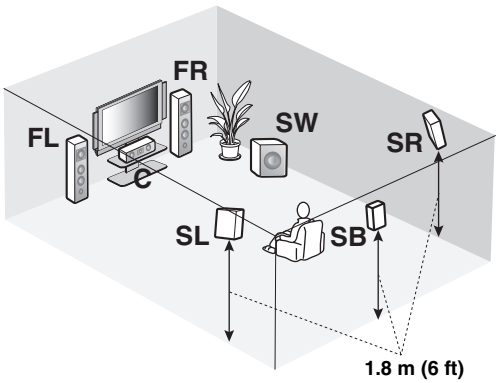
⑯ **AC OUTLET (SWITCHED)**
Use to supply power to your other audiovisual components.
See page 26 for details.

Placing speakers

The speaker layout below shows the standard ITU-R* speaker setting. You can use it to enjoy CINEMA DSP and multi-channel audio sources.

* ITU-R is the radio communication sector of the ITU (International Telecommunication Union).





Front left and right speakers (FL and FR)

The front speakers are used for the main source sound plus effect sounds. Place these speakers at an equal distance from the ideal listening position. The distance of each speaker from each side of the video monitor should be the same.

Center speaker (C)

The center speaker is for the center channel sounds (dialog, vocals, etc.). If for some reason it is not practical to use a center speaker, you can do without it. Best results, however, are obtained with the full system. Place the center speaker centrally between the front speakers and as close to the monitor as possible, such as directly over or under it.

Surround left and right speakers (SL and SR)

The surround speakers are used for effect and surround sounds. Place these speakers behind your listening position, facing slightly inwards, about 1.8 m (6 ft) above the floor.

Surround back speaker (SB)

The surround back speaker supplements the surround speakers and provides more realistic front-to-back transitions. Place this speaker directly behind the listening position and at the same height as the surround speakers.

Subwoofer (SW)

The use of a subwoofer with a built-in amplifier, such as the YAMAHA Active Servo Processing Subwoofer System, is effective not only for reinforcing bass frequencies from any or all channels, but also for high fidelity reproduction of the LFE (low-frequency effect) channel included in Dolby Digital and DTS sources. The position of the subwoofer is not so critical, because low bass sounds are not highly directional. But it is better to place the subwoofer near the front speakers. Turn it slightly toward the center of the room to reduce wall reflections.

Connecting speakers

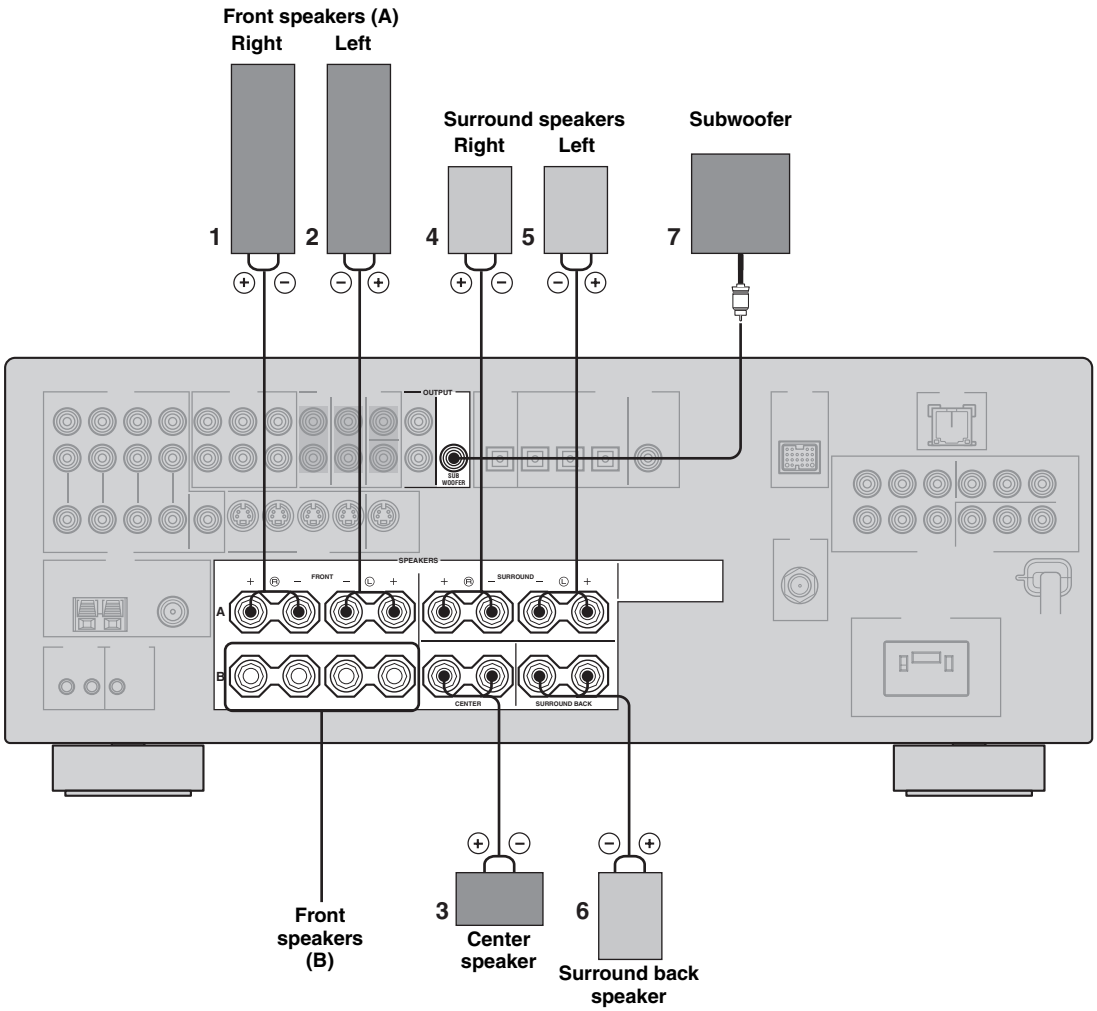
Be sure to connect the left channel (L), right channel (R), "+" (red) and "–" (black) properly. If the connections are faulty, no sound will be heard from the speakers, and if the polarity of the speaker connections is incorrect, the sound will be unnatural and lack bass.

CAUTION

- **Before connecting the speakers, make sure that this unit is turned off (see page 28).**
- **Do not let the bare speaker wires touch each other or do not let them touch any metal part of this unit. This could damage this unit and/or speakers.**
- **Use magnetically shielded speakers. If this type of speakers still creates the interference with the monitor, place the speakers away from the monitor.**
- **If you are to use 6 ohm speakers, be sure to set "SP IMP." to "6ΩMIN" before using this unit (see page 27). 4 ohm speakers can be also used as the front speakers (see page 95).**

Note

A speaker cord is actually a pair of insulated cables running side by side. Cables are colored or shaped differently, perhaps with a stripe, groove or ridge. Connect the striped (grooved, etc.) cable to the "+" (red) terminals of this unit and your speaker. Connect the plain cable to the "–" (black) terminals.



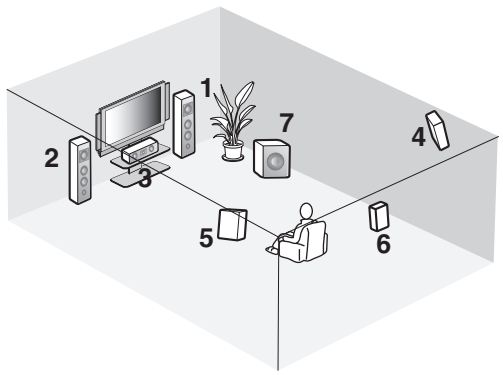
FRONT terminals
Connect one or two sets of front speakers (1, 2) to these terminals. If you use only one front speaker system, connect it to the FRONT A or B terminal.

CENTER terminals
Connect a center speaker (3) to these terminals.

SURROUND terminals
Connect surround speakers (4, 5) to these terminals.

SURROUND BACK terminals
Connect a surround back speaker (6) to these terminals.

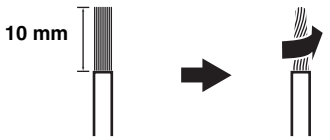
SUBWOOFER OUTPUT jack
Connect a subwoofer with a built-in amplifier (7) (such as the YAMAHA Active Servo Processing Subwoofer System) to this jack.



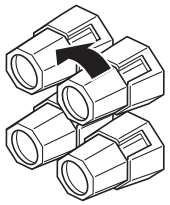
Speaker layout

■ Connecting the speaker cable

1 Remove approximately 10 mm of insulation from the end of each speaker cable and then twist the exposed wires of the cable together to prevent short circuits.

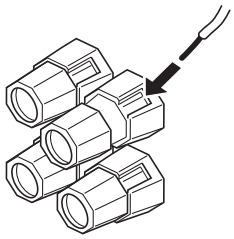


2 Loosen the knob.

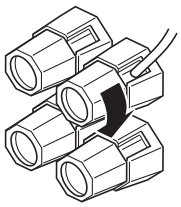


Red: positive (+)
Black: negative (–)

3 Insert one bare wire into the hole on the side of each terminal.

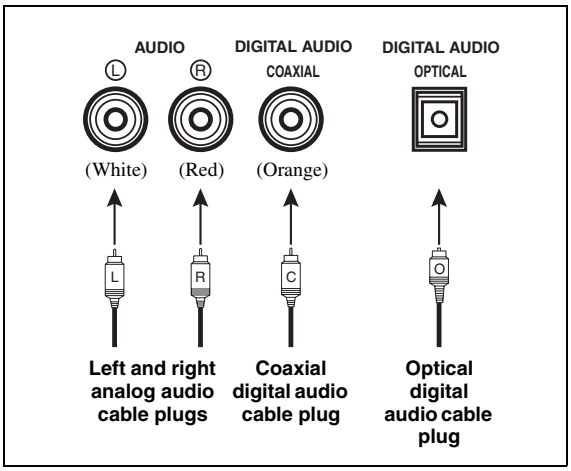


4 Tighten the knob to secure the wire.

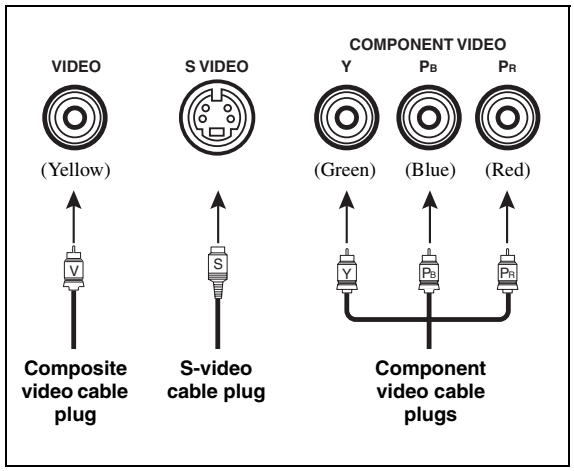


Information on jacks and cable plugs

Audio jacks and cable plugs



Video jacks and cable plugs



■ Audio jacks

This unit has three types of audio jacks. Connection depends on the availability of audio jacks on your other components.

AUDIO jacks

For conventional analog audio signals transmitted via left and right analog audio cables. Connect red plugs to the right jacks and white plugs to the left jacks.

DIGITAL AUDIO COAXIAL jacks

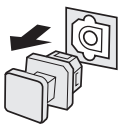
For digital audio signals transmitted via coaxial digital audio cables.

DIGITAL AUDIO OPTICAL jacks

For digital audio signals transmitted via optical digital audio cables.

Notes

- You can use the digital jacks to input PCM, Dolby Digital and DTS bitstreams. When you connect components to both the COAXIAL and OPTICAL jacks, priority is given to the signals input at the COAXIAL jack. All digital input jacks are compatible with 96-kHz sampling digital signals.
- Pull out the cap from the optical jack before you connect the fiber optic cable. Do not discard the cap. When you are not using the optical jack, be sure to put the cap back in place. This cap protects the jack from dust.



■ Video jacks

This unit has three types of video jacks. Connection depends on the availability of input jacks on your video monitor.

VIDEO jacks

For conventional composite video signals transmitted via composite video cables.

S VIDEO jacks

For S-video signals, separated into the luminance (Y) and chrominance (C) video signals transmitted on separate wires of S-video cables.

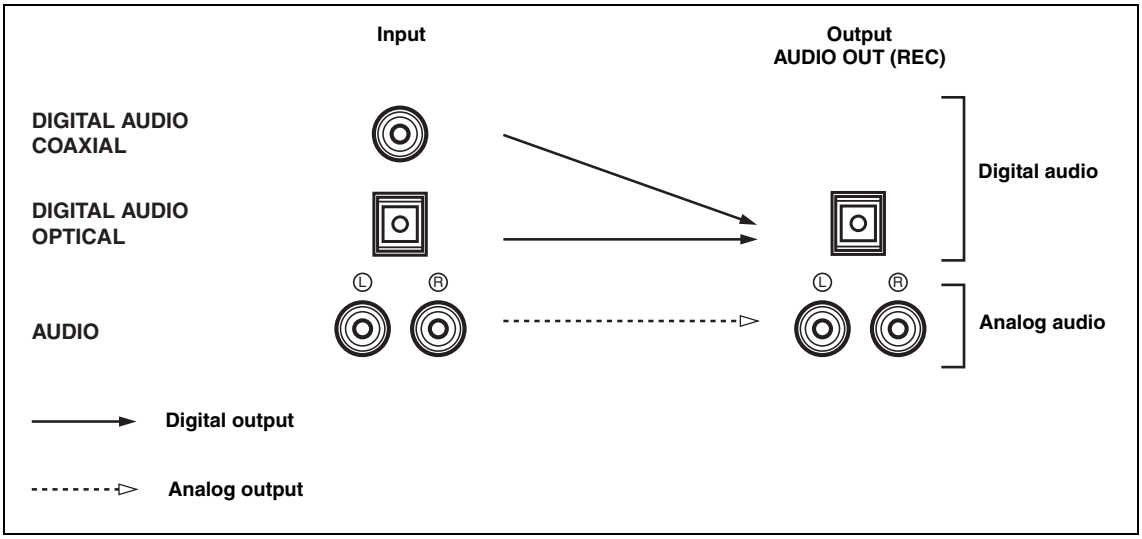
COMPONENT VIDEO jacks

For component video signals, separated into the luminance (Y) and chrominance (P_B, P_R) video signals transmitted on separate wires of component video cables.

When "VIDEO CONV." is set to "ON" (see page 92), the video signals input at the VIDEO and S VIDEO jacks are converted and output at the VIDEO, S VIDEO and COMPONENT VIDEO jacks interchangeably.

Audio and video signal flow

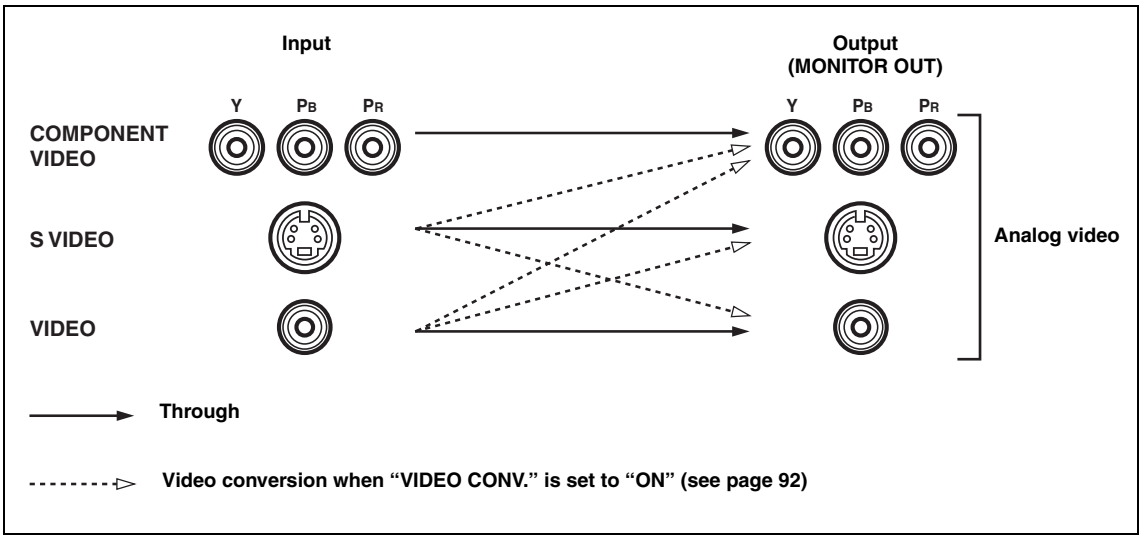
■ Audio signal flow for AUDIO OUT (REC)



Note

This unit handles digital and analog signals independently. Thus, audio signals input at the analog jacks are output only at the analog AUDIO OUT (REC) jacks. Likewise, audio signals input at the DIGITAL INPUT (OPTICAL or COAXIAL) jacks are output only at the DIGITAL OUTPUT jack.

■ Video signal flow for MONITOR OUT



Note

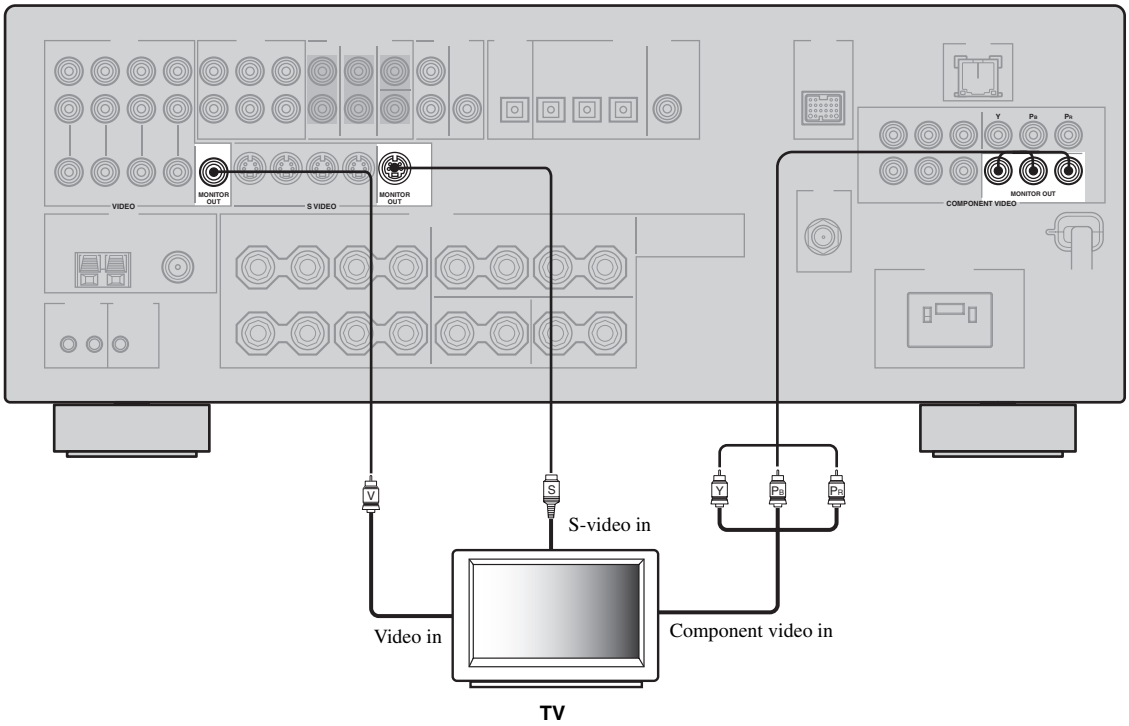
If video signals are input at the COMPONENT VIDEO, S VIDEO and VIDEO jacks simultaneously when "VIDEO CONV." is set to "ON", the priority order of the input signals is as follows:
COMPONENT VIDEO > S VIDEO > VIDEO

Connecting a TV

Connect your TV to the VIDEO MONITOR OUT jack, the S VIDEO MONITOR OUT jack or the COMPONENT VIDEO MONITOR OUT jacks of this unit.

CAUTION

Do not connect this unit or other components to the AC power supply until all connections between components are complete.



Connecting a DVD player, a DVD recorder, a VCR or an STB

Connect your DVD player, DVD recorder, VCR or STB (set-top box) using the same type of video connections as those made for your TV (see page 17). The cable TV receiver and the satellite receiver are examples of the STB.

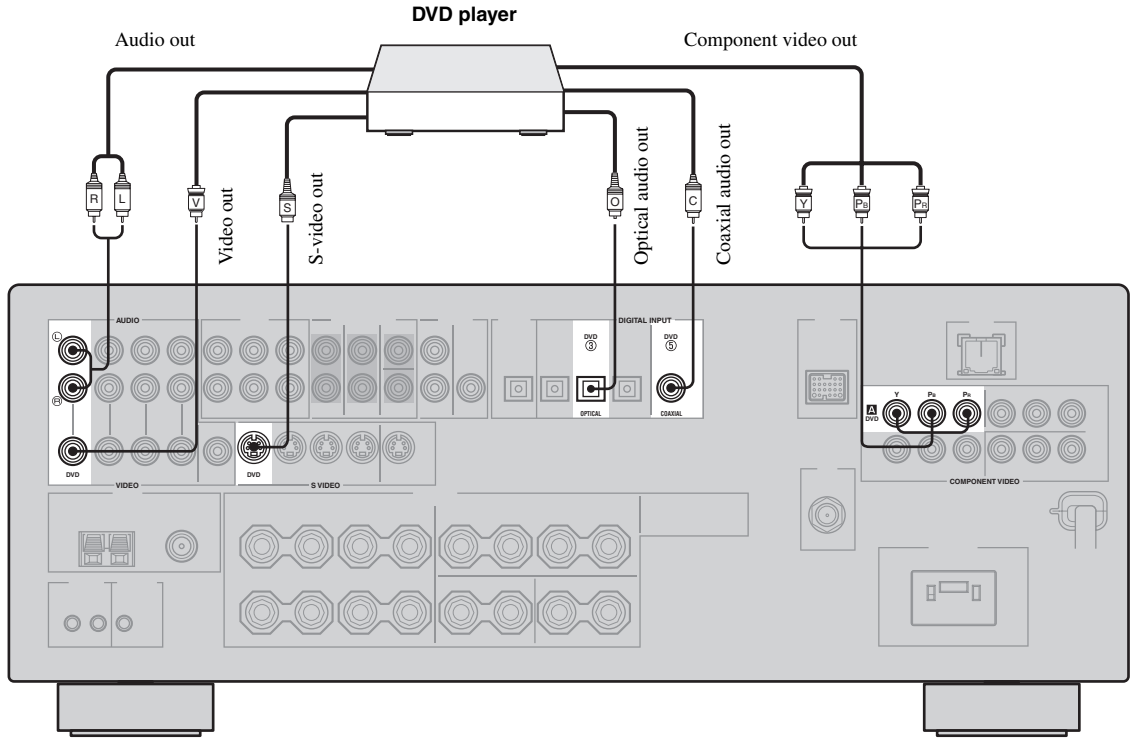
CAUTION

Do not connect this unit or other components to the AC power supply until all connections between components are complete.

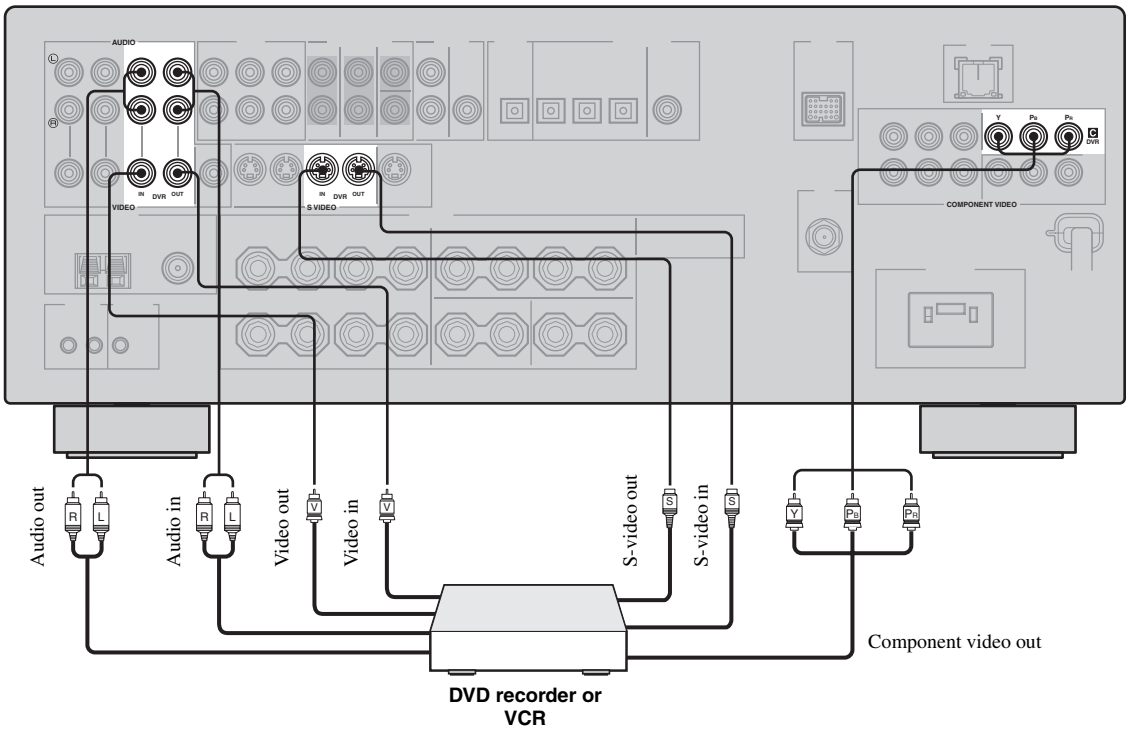
Notes

- When "VIDEO CONV." is set to "OFF" (see page 92), be sure to make the same type of video connections as those made for your TV (see page 17). For example, if you connected your TV to the VIDEO MONITOR OUT jack of this unit, connect your other components to the VIDEO jacks.
- When "VIDEO CONV." is set to "ON" (see page 92), the converted video signals are output only at the MONITOR OUT jacks. When recording a source, you must make the same type of video connections between each component.
- To make a digital connection to a component other than the default component assigned to each DIGITAL INPUT or DIGITAL OUTPUT jack, select the corresponding setting for "OPTICAL OUT", "OPTICAL IN", or "COAXIAL IN" in "I/O ASSIGNMENT" (see page 87).
- If you connect your DVD player to both the DIGITAL INPUT (OPTICAL) and the DIGITAL INPUT (COAXIAL) jacks, priority is given to the signals input at the DIGITAL INPUT (COAXIAL) jack.

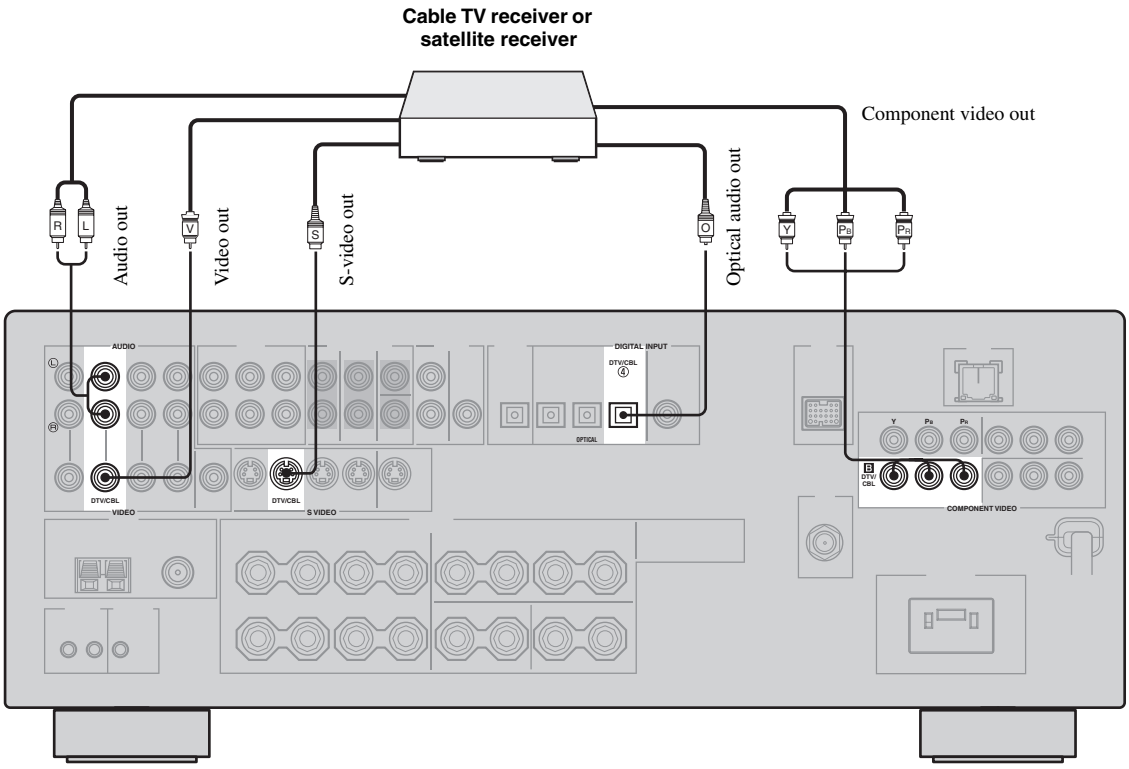
■ Connecting a DVD player



■ Connecting a DVD recorder or a VCR



■ Connecting an STB



Connecting a CD player, an MD player or a tape deck

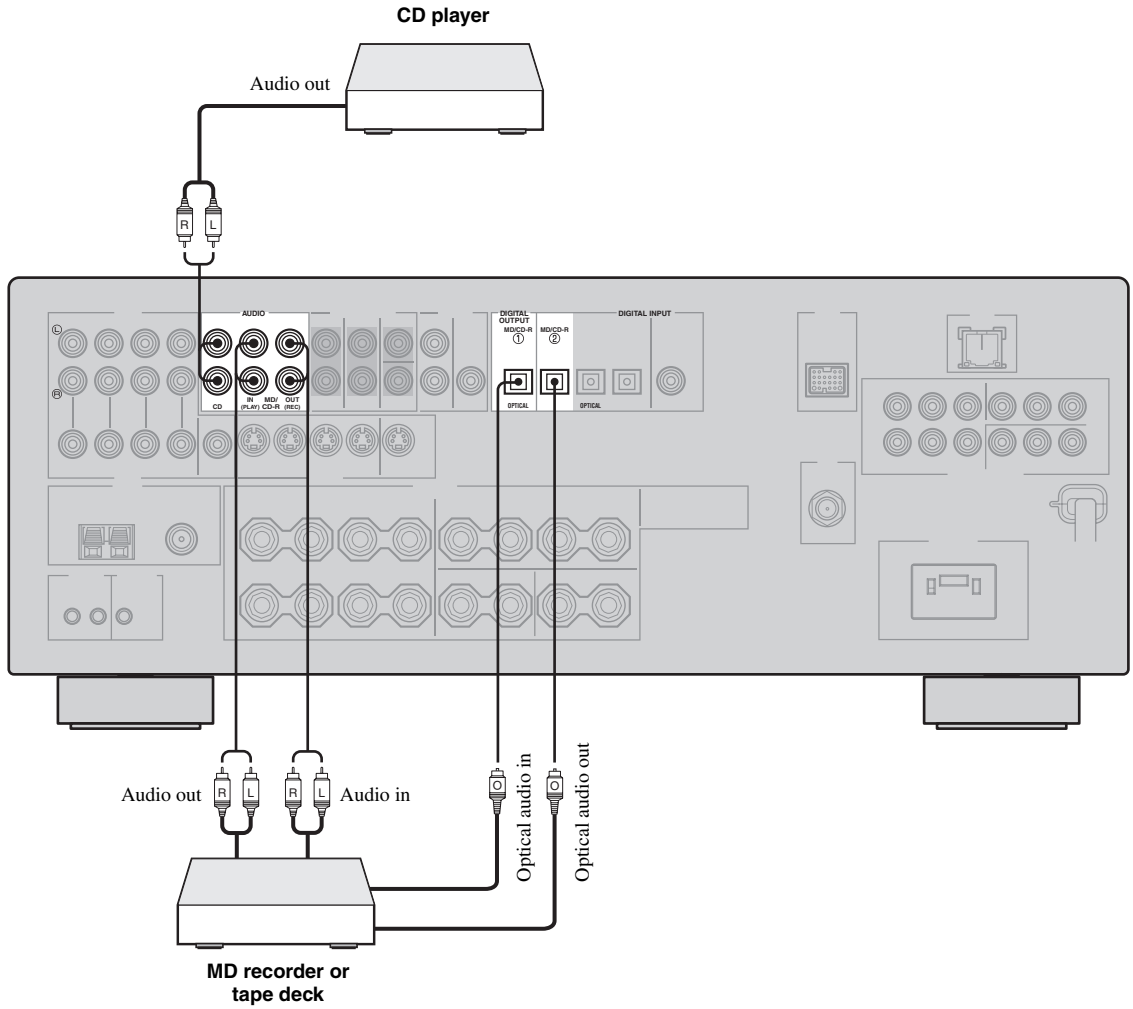
Connect your CD player, MD player or tape deck via analog and/or digital connections.

CAUTION

Do not connect this unit or other components to the AC power supply until all connections between components are complete.

Note

To make a digital connection to a component other than the default component assigned to each DIGITAL INPUT or DIGITAL OUTPUT jack, select the corresponding setting for "OPTICAL OUT", "OPTICAL IN", or "COAXIAL IN" in "I/O ASSIGNMENT" (see page 87).



Connecting a YAMAHA iPod universal dock

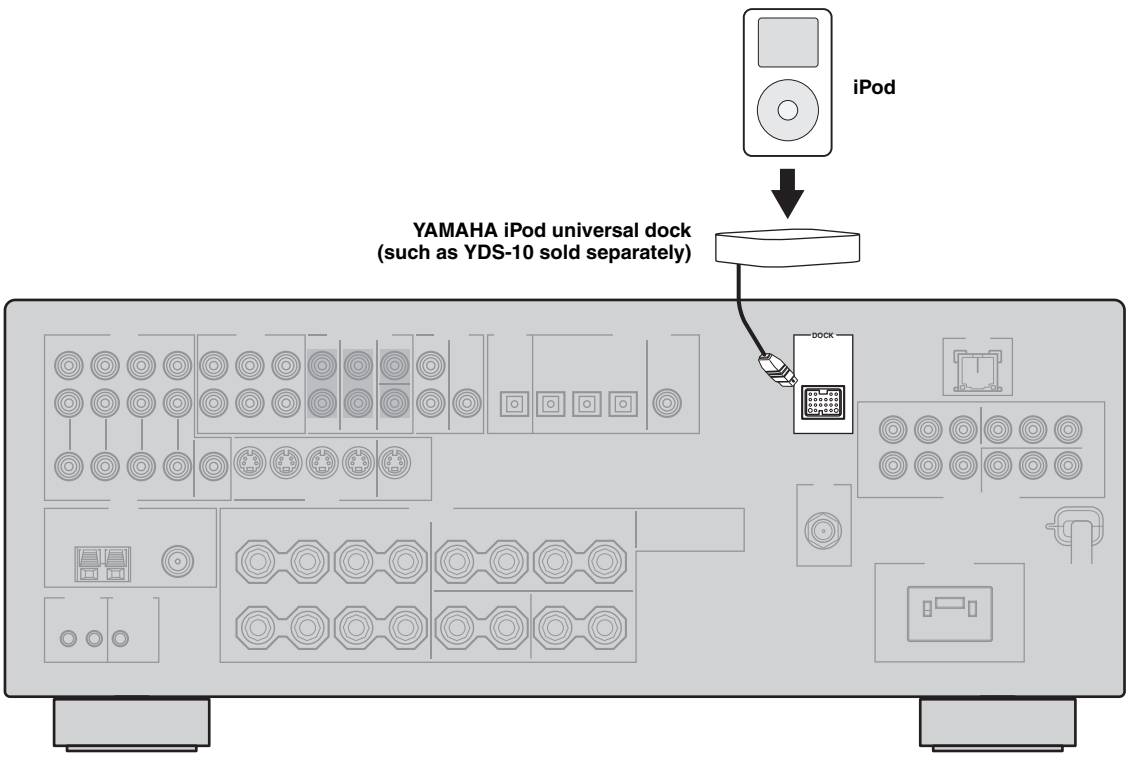
This unit is equipped with the DOCK terminal on the rear panel that allows you to connect a YAMAHA iPod universal dock (such as YDS-10 sold separately) where you can station your iPod and control playback of your iPod using the supplied remote control. Connect a YAMAHA iPod universal dock (such as YDS-10 sold separately) to the DOCK terminal on the rear panel of this unit using its dedicated cable. Once the connection is complete, station your iPod in the YAMAHA iPod universal dock.

CAUTION

Do not connect this unit or other components to the AC power supply until all connections between components are complete.

Notes

- Only iPod (Click and Wheel), iPod nano, and iPod mini are supported.
- You need a YAMAHA iPod universal dock (such as YDS-10 sold separately) and its dedicated cable compatible with the DOCK terminal of this unit.
- Do not connect any iPod accessories (such as headphones, a wired remote control, or an FM transmitter) to your iPod when it is stationed in a YAMAHA iPod universal dock (such as YDS-10 sold separately).
- Once your iPod is stationed in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit, this unit begins the signal transmission with your iPod.
- Unless your iPod is firmly stationed in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit, audio and/or video signals may not be output properly.
- Once the connection between your iPod and this unit is complete, "iPod connected" appears in the front panel display and the DOCK indicator lights up in the front panel display. If the connection between your iPod and this unit fails, a status message appears in the front panel display. For a complete list of connection status messages, see the iPod section in "TROUBLESHOOTING" on page 116.
- Only analog audio and video signals of your iPod are input at the DOCK terminal, and the analog audio signals can be output at the analog AUDIO OUT (REC) jacks for recording.
- Your iPod battery is automatically charged when your iPod is stationed in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit as long as this unit is turned on.
- Depending on the type of iPod, you may need to insert one of the iPod adapters supplied with a YAMAHA iPod universal dock (such as YDS-10 sold separately) into the dock slot before you station your iPod.

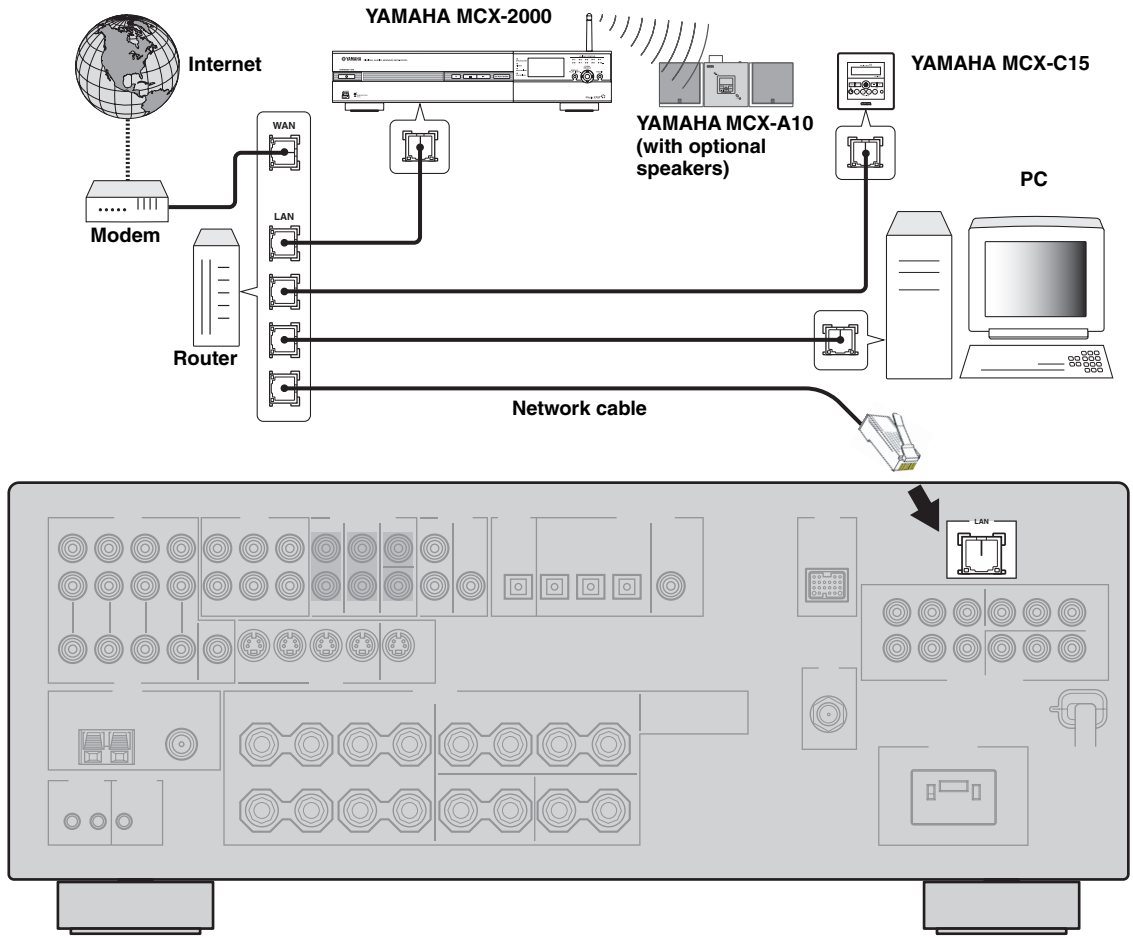


Connecting the network

To connect this unit to your network, plug one end of a network cable (CAT-5 or higher straight cable) into the LAN port of this unit, and plug the other end into one of the LAN ports on your router that supports the DHCP (Dynamic Host Configuration Protocol) server function. The following diagram shows a connection example where this unit is connected to one of the LAN ports on a 4-port router. To enjoy music files saved on your PC and YAMAHA MCX-2000 or access the Internet radio, each device must be connected properly in the network.

Note

If the DHCP server function on your router is disabled, you need to configure the network settings manually (see page 90).



Connecting a multi-format player, an external decoder or a sound processor

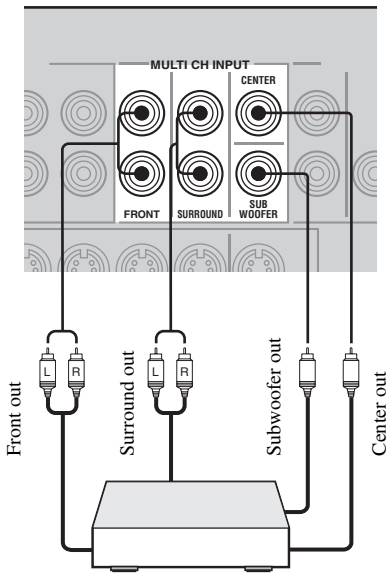
This unit is equipped with 6 additional input jacks (FRONT L/R, CENTER, SURROUND L/R and SUBWOOFER) for discrete multi-channel input from a multi-format player, external decoder or sound processor. Connect the output jacks on your multi-format player, external decoder or sound processor to the MULTI CH INPUT jacks. Be sure to match the left and right output jacks to the left and right input jacks for the front and surround channels.

CAUTION

Do not connect this unit or other components to the AC power supply until all connections between components are complete.

Notes

- When you select the component connected to the MULTI CH INPUT jacks as the input source (see page 38), this unit automatically turns off the digital sound field processor, and you cannot select sound field programs.
- This unit does not redirect signals input at the MULTI CH INPUT jacks to accommodate for missing speakers. We recommend that you connect at least a 5.1-channel speaker system before using this feature.
- When headphones are used, only the signals input at the FRONT L/R jacks are output at the PHONES jack.



Multi-format player, external decoder or sound processor

Connecting a game console, a video camera or a portable audio player

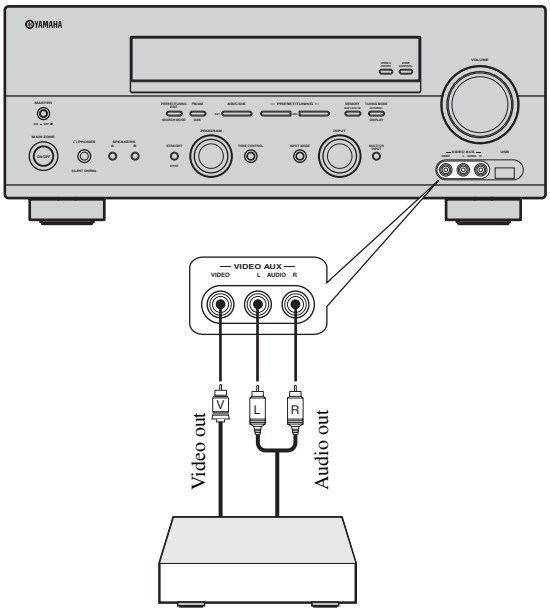
Use the VIDEO AUX jacks on the front panel to connect a game console, a video camera or a portable audio player to this unit.

CAUTION

Be sure to turn off the volume of this unit and other components before making connections.

Note

The audio signals input at the DOCK terminal takes priority over the ones input at the VIDEO AUX jacks.



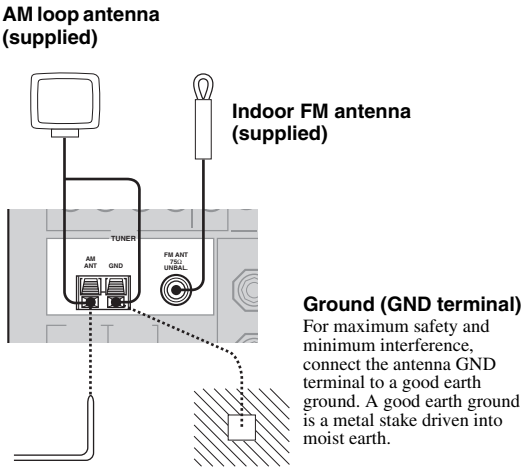
Game console, video camera or portable audio player

Connecting the FM and AM antennas

Both FM and AM indoor antennas are supplied with this unit. In general, these antennas should provide sufficient signal strength. Connect each antenna correctly to the designated terminals.

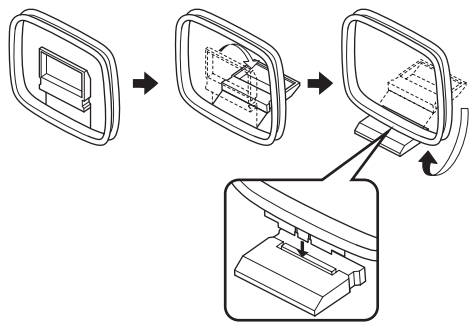
Notes

- The AM loop antenna should be placed away from this unit.
- The AM loop antenna should always be connected, even if an outdoor AM antenna is connected to this unit.
- A properly installed outdoor antenna provides clearer reception than an indoor one. If you experience poor reception quality, install an outdoor antenna. Consult the nearest authorized YAMAHA dealer or service center about outdoor antennas.



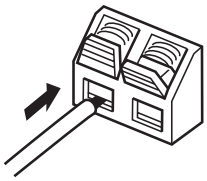
■ Connecting the AM loop antenna

1 Set up the AM loop antenna.



2 Press and hold the tab of the AM ANT terminal.

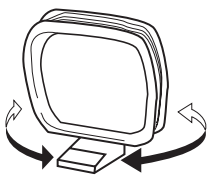
3 Insert one of the AM loop antenna lead wires into the AM ANT terminal.



4 Release the tab of the AM ANT terminal back into place.

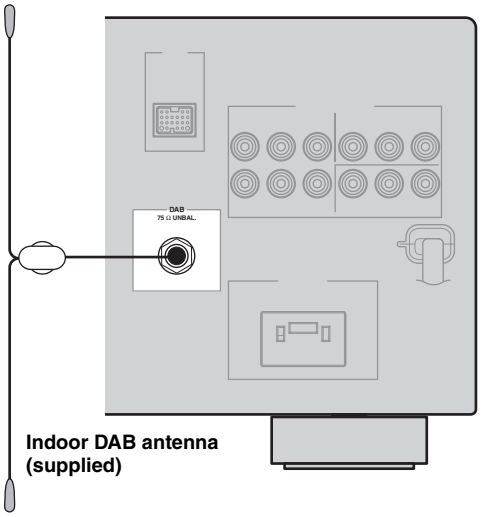
5 Repeat steps 2 through 4 to connect the other lead wire to the GND terminal.

Once you have properly connected the AM loop antenna to this unit, orient the AM loop antenna for the best reception when you tune into AM stations.



Connecting the DAB antenna

Connect the supplied indoor DAB antenna to the DAB antenna terminal on the rear panel and attach the indoor DAB antenna vertically on the wall.



It is recommended that you use the tuning aid function (see page 66) when you set up the indoor DAB antenna in order to maximize DAB reception capability.

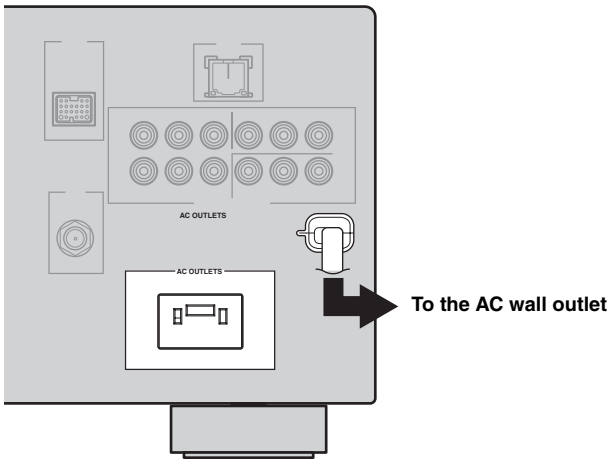
Notes

- Be sure to check the DAB coverage in your area in that not all areas are currently being covered. For a list of nationwide DAB statuses and worldwide DAB frequencies, check WorldDAB online at "http://www.worlddab.org/".

If the DAB signal is weak, use a commercially available outdoor DAB antenna for better reception.

Connecting the power cable

Once all connections are complete, plug the power cable into the AC wall outlet.



■ AC OUTLET (SWITCHED)

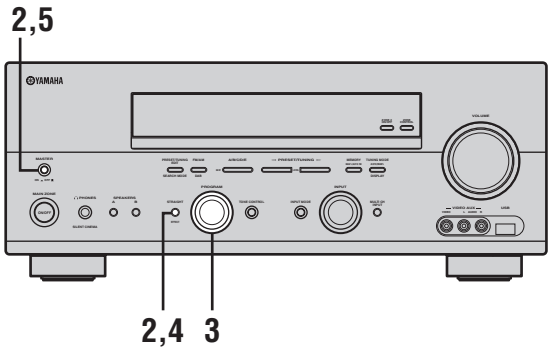
Use this outlet to supply power to any connected components. Connect the power cable of another component to this outlet. Power to this outlet is supplied when the main zone or Zone 2 is turned on. However, power to this outlet is cut off when the main zone and Zone 2 are turned off or when MASTER ON/OFF on the front panel is pressed and released outward to the OFF position. For information on the maximum power, see "SPECIFICATIONS" on page 123.

Memory back-up
The memory back-up circuit prevents the stored data from being lost even if this unit is in the standby mode. However, the stored data will be lost in case the power cable is disconnected from the AC wall outlet or if the power supply is cut off for more than one week.

Setting the speaker impedance

CAUTION

If you are to use 6 ohm speakers, set "SP IMP." to "6ΩMIN" as follows BEFORE using this unit. 4 ohm speakers can be also used as the front speakers.



1 Make sure this unit is turned off.

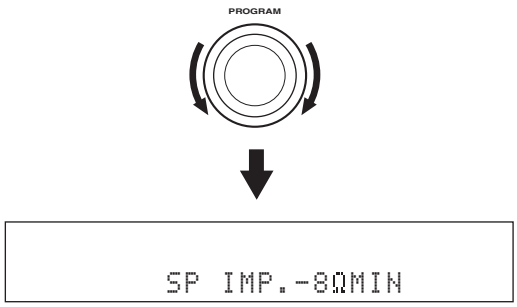
See page 28 for details about turning on or off this unit.

2 Press and hold STRAIGHT (EFFECT) on the front panel and then press MASTER ON/OFF inward to the ON position to turn on this unit.

This unit turns on, and the advanced setup menu appears in the front panel display.

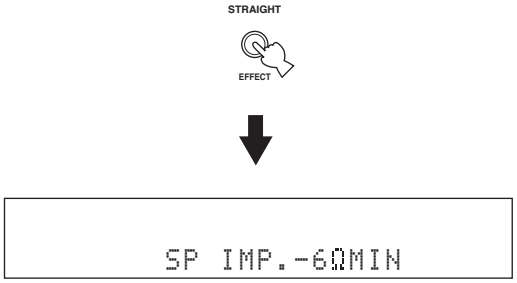
3 Rotate the PROGRAM selector on the front panel to select "SP IMP.".

The following display appears in the front panel display.



4 Press STRAIGHT (EFFECT) on the front panel repeatedly to select "6ΩMIN".

The following display appears in the front panel display.



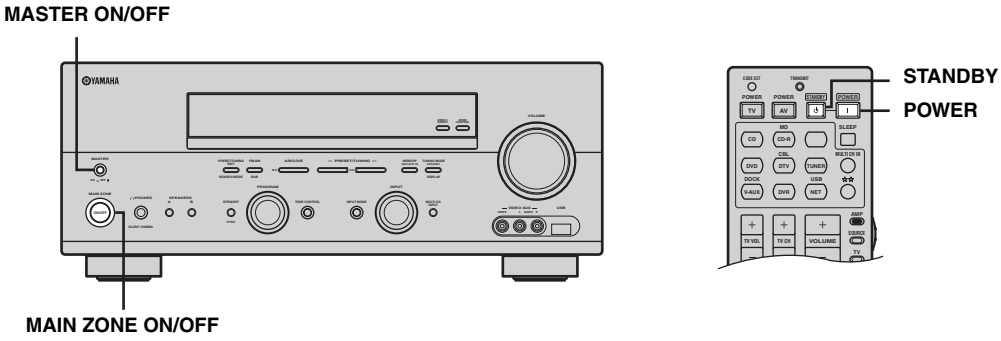
5 Press MASTER ON/OFF on the front panel to release it outward to the OFF position to save the new setting and turn off this unit.

Note

The setting you made is reflected next time you turn on this unit.

Turning on and off the power

When all connections are complete, turn on this unit.

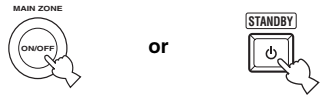


■ Turning on this unit

Press MASTER ON/OFF on the front panel inward to the ON position to turn on this unit.

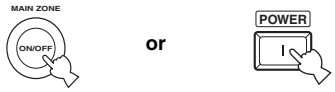
Front panel

- Press MAIN ZONE ON/OFF on the front panel (or STANDBY on the remote control) to set the main zone to the standby mode.



Front panel **Remote control**

- Press MAIN ZONE ON/OFF on the front panel (or POWER on the remote control) to turn on the main zone.



Front panel **Remote control**

■ Turning off this unit

Press MASTER ON/OFF on the front panel to release it outward to the OFF position to turn off this unit.

Front panel

Note

MAIN ZONE ON/OFF on the front panel as well as POWER and STANDBY on the remote control are operational only when MASTER ON/OFF is pressed inward to the ON position.

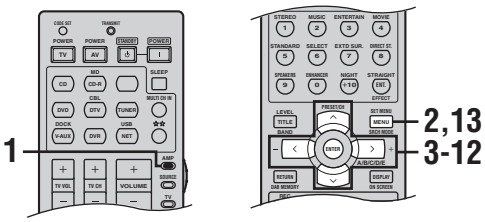
For details about turning on or off Zone 2, see page 102.

BASIC SETUP

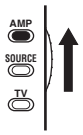
The “BASIC SETUP” feature is a useful way to set up your system quickly and with minimal effort.

Notes

- Make sure you disconnect your headphones from this unit.
- If you wish to configure this unit manually using more precise adjustments, use the detailed parameters in “SOUND MENU” (see page 82).
- Altering any parameters in “BASIC SETUP” resets all parameters manually adjusted in “SOUND MENU” (see page 82).
- Initial settings are indicated in bold under each parameter.
- Press RETURN on the remote control to return to the previous menu level.

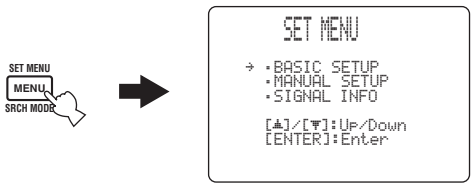


1 Set the component selector switch to AMP.

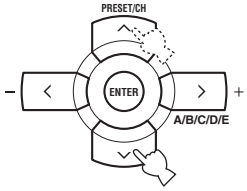


2 Press SET MENU to enter “SET MENU”.

The top “SET MENU” display appears in the OSD.

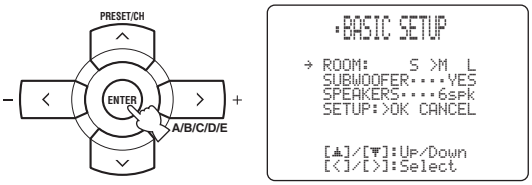


3 Press ∧ / ∨ to select “BASIC SETUP”.

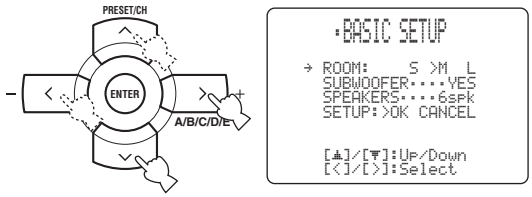


4 Press ENTER to enter “BASIC SETUP”.

The following display appears in the OSD.



5 Press ∧ / ∨ to select “ROOM” and then 〈 / 〉 to select the desired setting.

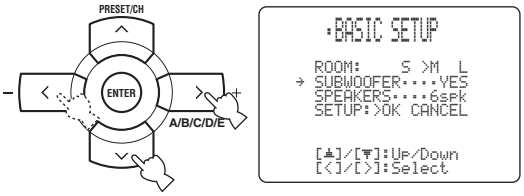


Select the size of the room where you have installed your speakers. In general, the room sizes are defined as follows:

Choices: S, **M**, L

S (small)	3.6 x 2.8m, 10m^2
M (medium)	4.8 x 4.0m, 20m^2
L (large)	6.3 x 5.0m, 30m^2

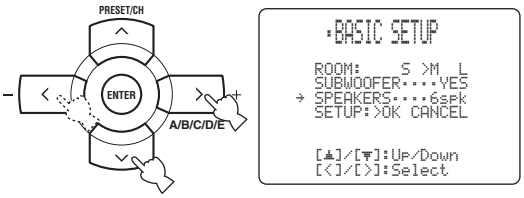
6 Press ∨ to select “SUBWOOFER” and then 〈 / 〉 to select the desired setting.



Choices: **YES**, NONE

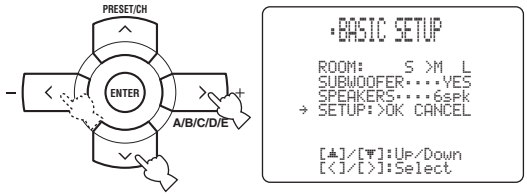
- Select “YES” if you have a subwoofer in your system.
- Select “NONE” if you do not have a subwoofer in your system.

7 Press ∨ to select “SPEAKERS” and then 〈 / 〉 to select the number of speakers connected to this unit.



Choice	Display	Speakers
2spk	L R	Front L/R
3spk	L C R	Front L/R, Center
4spk	L R / SL SR	Front L/R, Surround L/R
5spk	L C R / SL SR	Front L/R, Center, Surround L/R
6spk	L C R / SL SB SR	Front L/R, Center, Surround L/R, Surround back

8 Press ∨ to select “SETUP” and then 〈 / 〉 to select the desired setting.

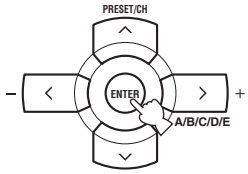


Choices: **OK**, CANCEL

- Select “OK” to apply the settings you made.
- Select “CANCEL” to cancel the setup procedure without making any changes.

You can also press SET MENU to cancel the setup procedure.

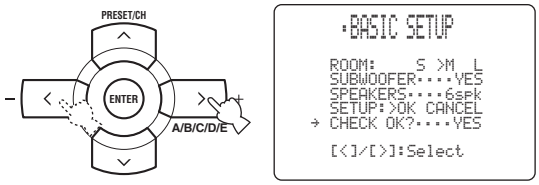
9 Press ENTER to confirm your selection.



If you selected “OK” in step 8, each speaker outputs a test tone twice in turn. “CHECK:Test Tone” appears in the OSD for a few seconds and then “CHECK OK?” appears in the OSD.

Check the speaker connections (see page 13) and adjust the “SPEAKERS” settings back in step 7, if necessary.

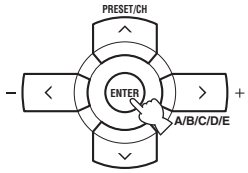
10 Press 〈 / 〉 to select the desired setting.



Choices: **YES**, NO

- Select “YES” to complete the setup procedure if the test tone levels from each speaker were satisfactory.
- Select “NO” to proceed to the speaker level adjustment menu in step 12 to balance the output level of each speaker.

11 Press ENTER to confirm your selection.

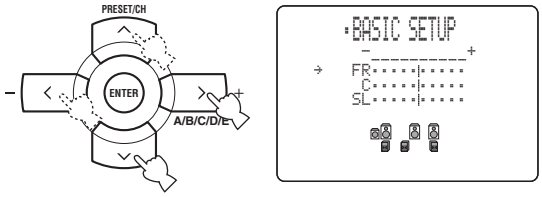


- If you selected “YES” in step 10, the setup procedure is completed and the display returns to the top “SET MENU” display.
- If you selected “NO” in step 10, the speaker level adjustment display appears in the front panel display.

12 Press ∧ / ∨ to select a speaker and then 〈 / 〉 to adjust the balance.

The selected speaker and the front left speaker (or the surround left speaker) output a test tone in turn.

- Press 〉 to increase the value.
- Press 〈 to decrease the value.



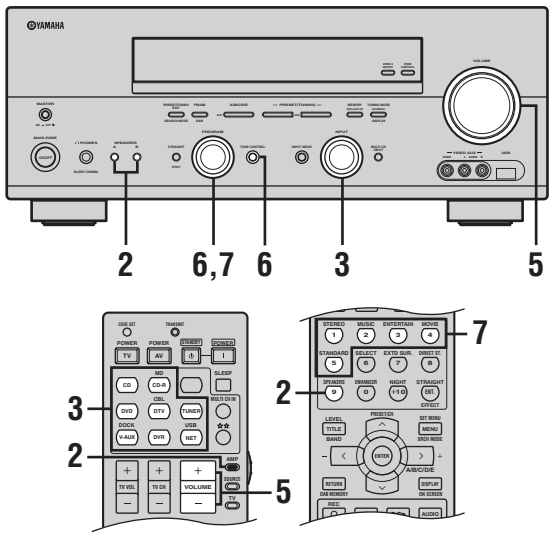
- Select “FR” to adjust the balance between the front left and right speakers.
- Select “C” to adjust the balance between the front left and center speakers.
- Select “SL” to adjust the balance between the front left and surround left speakers.
- Select “SB” to adjust the balance between the surround left and surround back speakers.
- Select “SR” to adjust the balance between the surround left and surround right speakers.
- Select “SWFR” to adjust the balance between the front left speaker and the subwoofer.

13 Press SET MENU to exit from “BASIC SETUP”.

PLAYBACK

CAUTION

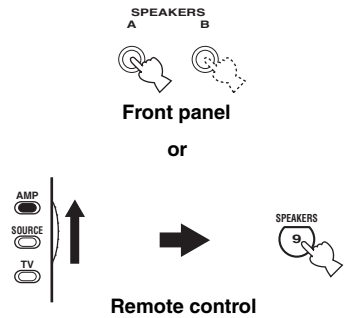
Extreme caution should be exercised when you play back CDs encoded in DTS. If you play back a CD encoded in DTS on a DTS-incompatible CD player, you will only hear some unwanted noise that may damage your speakers. Check whether your CD player supports CDs encoded in DTS. Also, check the sound output level of your CD player before you play back a CD encoded in DTS.



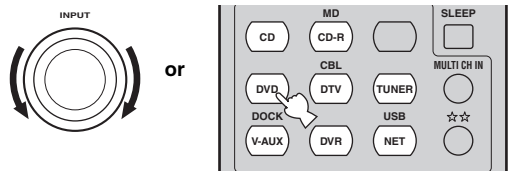
1 Turn on the video monitor connected to this unit.

2 Press SPEAKERS A or B on the front panel (or set the component selector switch to AMP and then press SPEAKERS on the remote control repeatedly) to turn on the set of front speakers you want to use.

Each time you press SPEAKERS A or B, the respective set of front speakers are turned on or off.

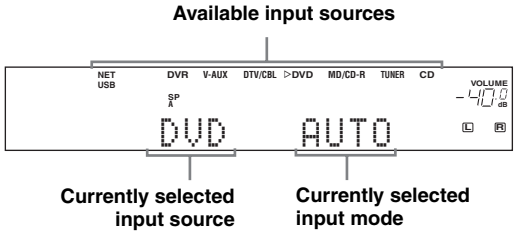


3 Rotate the INPUT selector on the front panel (or press one of the input selector buttons on the remote control) to select the desired input source.



Front panel **Remote control**

The name of the currently selected input source appears in the front panel display and in the OSD for a few seconds.



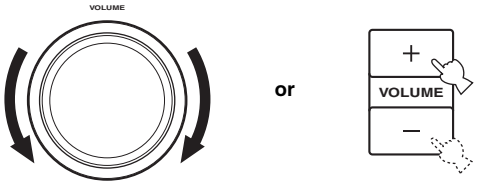
Notes

- To enjoy multi-channel sources in surround, connect the source component via digital connection and set the input mode to "AUTO" or "DTS" (see page 35).
- See page 42 for details about surround sound.

4 Start playback on the selected source component or select a broadcast station.

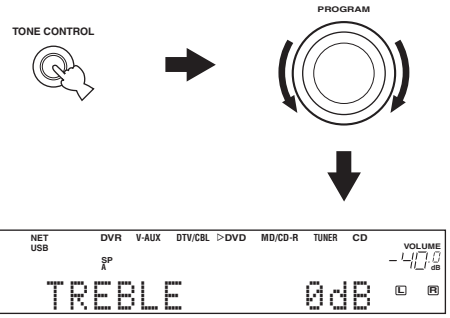
- Refer to the operating instructions for the source component.
- See page 46 for details about FM/AM tuning instructions.
- See page 57 for details about DAB tuning instructions.

5 Rotate VOLUME on the front panel (or press VOLUME +/– on the remote control) to adjust the volume to the desired output level.



Front panel Remote control

6 Press TONE CONTROL on the front panel repeatedly to select "TREBLE" or "BASS" and then rotate the PROGRAM selector to adjust the corresponding frequency response level.



- Select "TREBLE" to adjust the high-frequency response.
- Select "BASS" to adjust the low-frequency response.

Notes

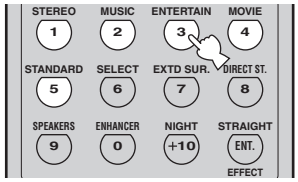
- Speaker and headphone adjustments are stored independently.
- When "TONE BYPASS" is set to "AUTO" (see page 86), and "BASS" and "TREBLE" are set to 0 dB, audio output automatically bypasses the tone control circuitry of this unit.
- If you increase or decrease the high-frequency or low-frequency sound to an extreme level, the tonal quality of the front speakers may not match that of the other speakers.
- TONE CONTROL is not effective when the "DIRECT STEREO" mode (see page 39) is selected or when the component connected to the MULTI CH INPUT jacks is selected as the input source (see page 38).

7 Rotate the PROGRAM selector on the front panel (or press one of the sound field program selector buttons on the remote control repeatedly) to select the desired sound field program.

The name of the selected sound field program appears in the front panel display and in the OSD.
See page 71 for details about sound field programs.

Front panel

or



Remote control

Currently selected sound field program

Notes

- Choose a sound field program based on your listening preference, not merely on the name of the program.
- When you select an input source, this unit automatically selects the last sound field program used with the corresponding input source.
- Sound field programs cannot be selected when the component connected to the MULTI CH INPUT jacks is selected as the input source (see page 38).
- Sampling frequencies higher than 48 kHz (except for DTS 96/24 signals) are sampled down to 48 kHz and then sound field programs are applied.
- To display information about the currently selected input source in the OSD, see page 40 for details.

Using SILENT CINEMA

SILENT CINEMA allows you to enjoy multi-channel music or movie sound, including Dolby Digital and DTS sources, through ordinary headphones. SILENT CINEMA activates automatically whenever you connect headphones to the PHONES jack while listening to a source with a CINEMA DSP or HiFi DSP sound field program (see page 71). When activated, the SILENT CINEMA indicator lights up in the front panel display.

Notes

- SILENT CINEMA does not activate when the component connected to the MULTI CH INPUT jacks is selected as the input source (see page 38).
- SILENT CINEMA is not effective when the "DIRECT STEREO" (see page 39), "2ch Stereo" (see page 39) or "STRAIGHT" mode (see page 39) is selected.

Muting the audio output

Press MUTE on the remote control to mute the audio output. Press MUTE again to resume the audio output.

- You can also rotate VOLUME on the front panel or VOLUME +/– on the remote control to resume the audio output.
- You can adjust the muting level by using the "MUTING TYPE" parameter in "SOUND MENU" (see page 86).
- The MUTE indicator flashes in the front panel display when the audio output is muted and disappears from the front panel display when the audio output is resumed.

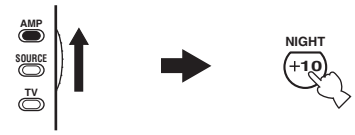
Note

If you change the input source or the sound field program with the remote control while the audio output is being muted, this unit resumes the audio output.

Selecting the night listening mode

The night listening modes are designed to improve listenability at lower volumes or at night. Choose either "NIGHT:CINEMA" or "NIGHT:MUSIC" depending on the type of material you are playing.

1 Set the component selector switch to AMP and then press NIGHT on the remote control repeatedly to select "NIGHT:CINEMA" or "NIGHT:MUSIC".

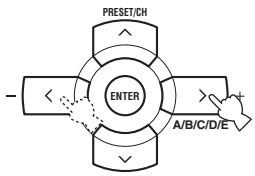


Choices: NIGHT:CINEMA, NIGHT:MUSIC, OFF

- Select "NIGHT:CINEMA" when watching films to reduce the dynamic range of film soundtracks and make dialog easier to hear at lower volumes.
- Select "NIGHT:MUSIC" when listening to music sources to preserve ease-of-listening for all sounds.
- Select "OFF" if you do not want to use this feature.

When a night listening mode is selected, the NIGHT indicator lights up in the front panel display.

2 Press 〈 / 〉 on the remote control to adjust the effect level while "NIGHT:CINEMA" or "NIGHT:MUSIC" is displayed in the front panel display.



Remote control

```
Effect.Lvl:MID
```

Choices: MIN, **MID**, MAX

- Select "MIN" for minimum compression.
- Select "MID" for standard compression.
- Select "MAX" for maximum compression.

"NIGHT:CINEMA" and "NIGHT:MUSIC" adjustments are stored independently.

Notes

- You cannot use the night listening modes in the following cases:
  – when the "DIRECT STEREO" mode (see page 39) is selected.
  – when the component connected to the MULTI CH INPUT jacks is selected as the input source (see page 38).
  – when headphones are connected to the PHONES jack.
- The effectiveness of the night listening modes may vary depending on the input source and surround sound settings you use.

Selecting the input mode

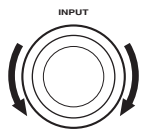
This unit comes with a variety of input jacks. Do the following to select the type of input signals you want to use.

- We recommend setting "INPUT MODE" to "AUTO" in most cases.
- You can adjust the default input mode of this unit by using the "INPUT MODE" parameter in "INPUT MENU" (see page 88).

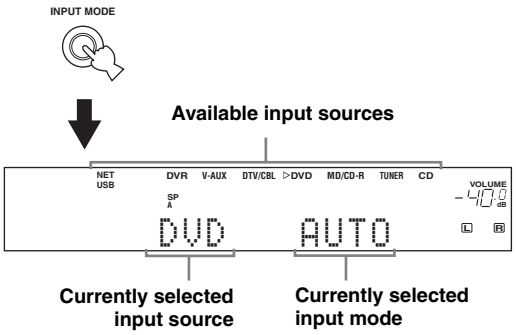
Notes

- To play DTS-encoded CDs when using a digital audio connection, be sure to set "INPUT MODE" to "DTS".
- DTS decoding may not be performed correctly depending on the player even if you make a digital connection between this unit and the player.

1 Rotate the INPUT selector on the front panel to select the desired input source.



2 Press INPUT MODE on the front panel repeatedly to select the desired input mode.



AUTO	Automatically selects input signals in the following order: (1) Digital signals (2) Analog signals
DTS	Selects only digital signals encoded in DTS. If no DTS signals are input, no sound is output.
ANALOG	Selects only analog signals. If no analog signals are input, no sound is output.

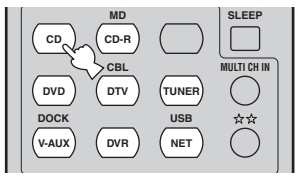
Note

When "INPUT MODE" is set to "AUTO", this unit automatically switches to the appropriate decoder if a Dolby Digital or DTS signal is detected.

Using the sleep timer

Use this feature to automatically set this unit to the standby mode after a certain amount of time. The sleep timer is useful when you are going to sleep while this unit is playing or recording a source. The sleep timer also automatically turns off any external components connected to AC OUTLET (SWITCHED) (see page 26).

1 Press one of the input selector buttons on the remote control to select the desired input source.

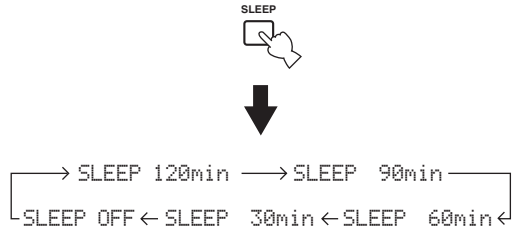


2 Start playback on the selected source component or select a broadcast station.

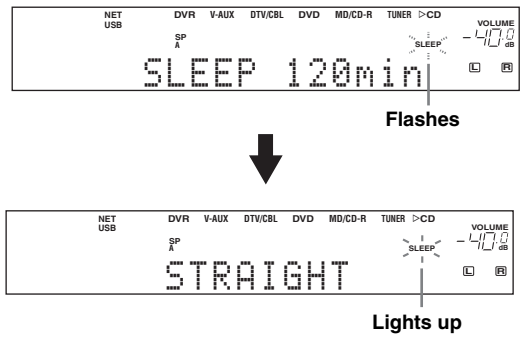
- Refer to the operating instructions for the source component.
- See page 46 for details about tuning instructions.

3 Press SLEEP on the remote control repeatedly to set the amount of time.

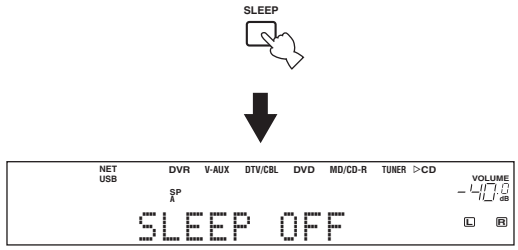
Each time you press SLEEP, the front panel display changes as shown below.



The SLEEP indicator flashes while you are switching the amount of time for the sleep timer. Once the sleep timer is set, the SLEEP indicator lights up in the front panel display, and the display returns to the selected sound field program.



4 To cancel the sleep timer, press SLEEP on the remote control repeatedly until "SLEEP OFF" appears in the front panel display.



The SLEEP indicator turns off, and "SLEEP OFF" disappears from the front panel display after a few seconds.

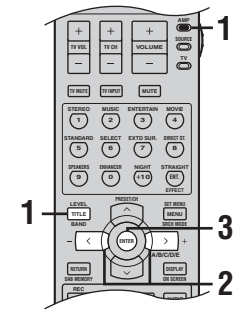
The sleep timer setting can also be canceled by pressing MAIN ZONE ON/OFF on the front panel (or STANDBY on the remote control) to set the main zone to the standby mode.

Adjusting the speaker level

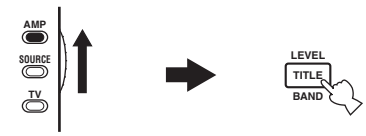
You can adjust the output level of each speaker while listening to a music source. This is also possible when playing sources input at the MULTI CH INPUT jacks.

Note

This operation will override the level adjustments made in "BASIC SETUP" (see page 29) and "SPEAKER LEVEL" (see page 84).



1 Set the component selector switch to AMP and then press LEVEL on the remote control repeatedly to select the speaker you want to adjust.



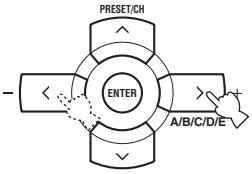
- Select "FRONT L" to adjust the front left speaker output level.
- Select "CENTER" to adjust the center speaker output level.
- Select "FRONT R" to adjust the front right speaker output level.
- Select "SUR. R" to adjust the surround right speaker output level.
- Select "SUR. B" to adjust the surround back speaker output level.
- Select "SUR. L" to adjust the surround left speaker output level.
- Select "SWFR" to adjust the subwoofer output level.

Once you press LEVEL on the remote control, you can also select the speaker by pressing ∧ / ∨.

2 Press 〈/〉 on the remote control to adjust the speaker output level.

- Press 〉 to increase the value.
- Press 〈 to decrease the value.

Control range: –10 dB to +10 dB



This operation can also be performed using the control buttons on the front panel. Press NEXT on the front panel repeatedly to select the speaker channel whose output level you want to adjust and then press LEVEL on the front panel to adjust the output level.

Selecting the Compressed Music Enhancer mode

Compression artifacts (such as the MP3 format) are created by a lossy compression scheme where the audio is resampled to lower the bitrate and to remove sounds that are indistinguishable to typical human hearing. The Compressed Music Enhancer feature of this unit enhances your listening experience by regenerating the missing harmonics in a compression artifact. As a result, flattened complexity due to the loss of high-frequency fidelity as well as lack of bass due to the loss of low-frequency bass is compensated, providing the improved performance of the overall sound system.

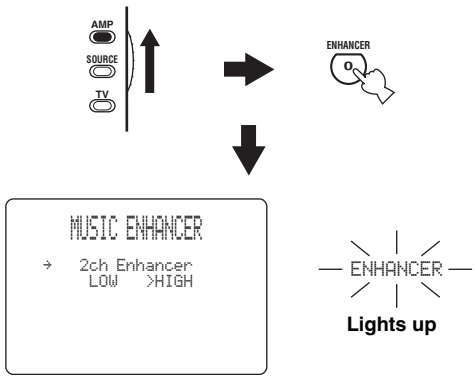
Notes

- The Compressed Music Enhancer mode is compatible with the PCM signals (48 kHz), the analog 2-channel input sources and the music data input at the USB port or the LAN port.
- The Compressed Music Enhancer mode is not effective with any of the sound field programs.
- When the Compressed Music Enhancer mode is turned on while an incompatible input source is being played back, “Not Available” appears in the front panel display and in the OSD.
- When the input source is changed to an incompatible input source while the Compressed Music Enhancer mode is turned on, the Compressed Music Enhancer mode is automatically turned off and the incompatible input source is played back in 2-channel or 6-channel stereo.

The ENHANCER indicator lights up in the front panel display when one of the Compressed Music Enhancer modes is selected.

1 Set the component selector switch to AMP and then press ENHANCER on the remote control repeatedly to select the desired Compressed Music Enhancer mode.

The following display appears in the OSD and the ENHANCER indicator lights up in the front panel display.

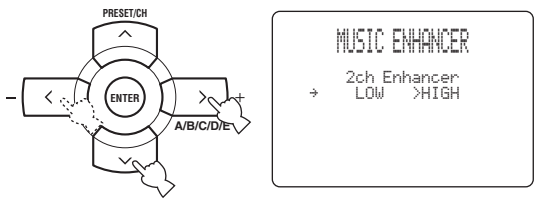


Choices: **2ch Enhancer**, 6ch Enhancer, Off (previously selected sound field program)

- Select "2ch Enhancer" to play back compression artifacts in 2-channel stereo.
- Select "6ch Enhancer" to play back compression artifacts in 6-channel stereo.
- Select Off (previously selected sound field program) to turn off the Compressed Music Enhancer mode.

You can also switch between "2ch Enhancer" and "6ch Enhancer" by pressing < / > on the remote control when the arrow is located on the left of "2ch Enhancer" or "6ch Enhancer" in the OSD.

2 Press ∨ once and then < / > on the remote control to select the desired effect level.



Choices: **HIGH**, LOW

- Select "HIGH" for a high effect level.
- Select "LOW" for a low effect level.

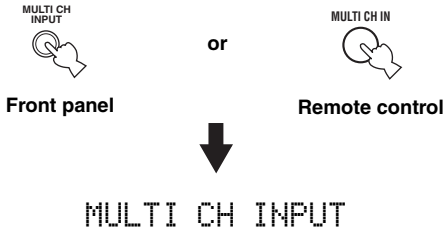
Note

Set the effect level to "HIGH" or "LOW" according to the characteristics of a source. The high-frequency signals of some sources may be emphasized too much. In this case, set the effect level to "LOW".

Selecting the MULTI CH INPUT component

Use this feature to select the component connected to the MULTI CH INPUT jacks (see page 23) as the input source.

Press MULTI CH INPUT on the front panel (or MULTI CH IN on the remote control) so that "MULTI CH INPUT" appears in the front panel display.



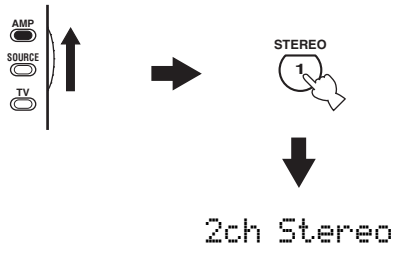
Note

When "MULTI CH INPUT" is shown in the front panel display, no other source can be played. To select another input source with the INPUT selector on the front panel (or one of the input selector buttons), press MULTI CH INPUT (or MULTI CH IN on the remote control) so that "MULTI CH INPUT" disappears from the front panel display.

Enjoying multi-channel sources in 2-channel stereo

You can mix down multi-channel sources to 2 channels and enjoy playback in 2-channel stereo.

Set the component selector switch to AMP and then press STEREO on the remote control repeatedly to select "2ch Stereo".

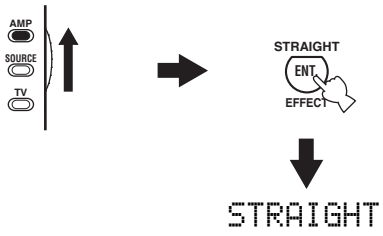


- You can use a subwoofer with this program when "LFE/BASS OUT" is set to "SWFR" or "BOTH" (see page 83).
- You can also select the "2ch Stereo" mode by rotating the PROGRAM selector on the front panel.

Enjoying unprocessed input sources

When this unit is in the "STRAIGHT" mode, 2-channel stereo sources are output from only the front left and right speakers. Multi-channel sources are decoded straight into the appropriate channels without any additional effect processing.

1 Set the component selector switch to AMP and then press STRAIGHT on the remote control to select "STRAIGHT".



2 To deactivate the "STRAIGHT" mode, press STRAIGHT on the remote control again so that "STRAIGHT" disappears from the front panel display.

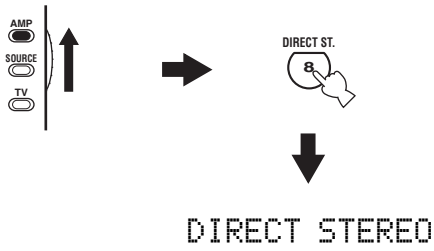
The sound effect is turned back on.

You can also select the "STRAIGHT" mode by pressing STRAIGHT (EFFECT) on the front panel.

Enjoying pure hi-fi stereo sound

The "DIRECT STEREO" mode allows sources to bypass the decoders and DSP processors of this unit so that you can enjoy pure hi-fi sound from 2-channel PCM and analog sources.

Set the component selector switch to AMP and then press DIRECT ST. on the remote control to select "DIRECT STEREO".



Notes

- To avoid unexpected noise, do not play CDs encoded in DTS when the "DIRECT STEREO" mode is selected.
- When multi-channel signals (Dolby Digital and DTS) are input, this unit automatically switches to the corresponding analog input. When "DTS" is selected as the input mode (see page 35), no sound will be output.
- No sound will be output from the subwoofer.
- "TONE CONTROL" (see page 33) and "SOUND MENU" (see page 82) settings (except for speaker level settings) are not effective.
- The front panel display automatically dims.

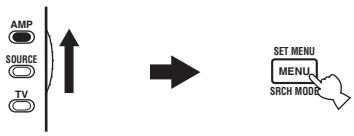
You can also select the "DIRECT STEREO" mode by rotating the PROGRAM selector on the front panel.

Displaying the input source information

You can display the format, sampling frequency, channel, bit rate and flag data of the current input signal.

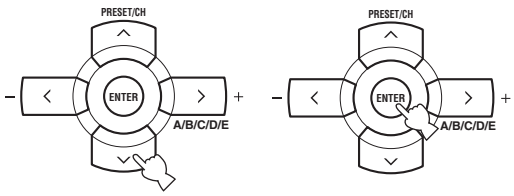
1 Set the component selector switch to AMP and then press SET MENU on the remote control.

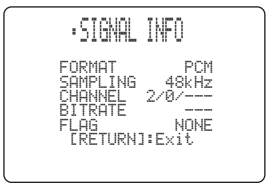
The top "SET MENU" display appears in the OSD.



2 Press ∨ repeatedly to select "SIGNAL INFO" and then press ENTER.

The following information about the input source appears in the OSD.





Signal format FORMAT

Signal format display. When this unit cannot detect a digital signal, it automatically switches to analog input.

Display status: Analog, Digital, DolbyD, DTS, MP3, PCM, WMA, ---

Note

"---" appears when this unit cannot detect any signals.

Sampling frequency SAMPLING

The number of samples per second taken from a continuous signal to make a discrete signal.

Display status: 8kHz, 11kHz, 12kHz, 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz, 64kHz, 88.2kHz, 96kHz, ---

Note

"---" appears when this unit cannot detect the sampling frequency.

Channel CHANNEL

The number of source channels in the input signal (front/surround/LFE). For example, a multi-channel soundtrack with 3 front channels, 2 surround channels and LFE, is displayed as "3/2/0.1".

Note

"---" appears when there is no source channel available.

Bit rate BITRATE

The number of bits passing a given point per second.

Note

"---" appears when this unit cannot detect the bit rate.

Flag FLAG

Flag data encoded in DTS, Dolby Digital, or PCM signals that cue this unit to automatically switch decoders.

3 Press SET MENU on the remote control again to exit from "SET MENU".

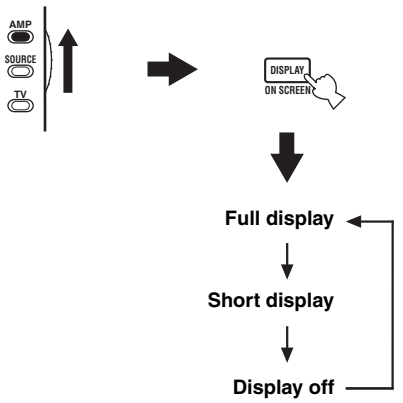
Selecting the OSD mode

You can display the operating information of this unit on a video monitor. If you display the "SET MENU" and sound field program parameter settings on a video monitor, it is much easier to see the available options and parameters than it is to read the information in the front panel display.

1 Turn on the video monitor connected to this unit.

2 Set the component selector switch to AMP and then press DISPLAY on the remote control repeatedly to toggle between the OSD modes.

The OSD mode changes in the following order.



Full display

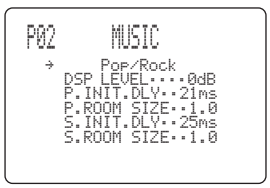
Fully shows the sound field program parameter settings as well as the contents of the front panel display.

Short display

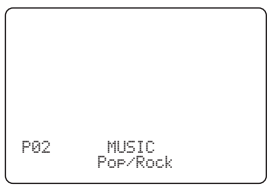
Briefly shows the contents of the front panel display at the bottom of the screen each time you operate this unit.

Display off

No information is displayed except for the "SET MENU" screen.



Full display



Short display

You can display a gray background in the OSD when there is not video signal being input by setting "GRAY BACK" in "OPTION MENU" to "AUTO" (see page 92).

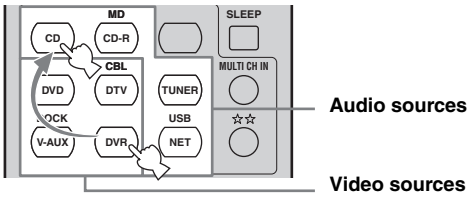
Notes

- The OSD signal is not output at the DVR OUT jacks and will not be recorded.
- You must set "VIDEO CONV." in "OPTION MENU" to "ON" (see page 92) to display the OSD.
- To display the OSD with the component video signals output at the COMPONENT VIDEO MONITOR OUT jacks, set the OSD mode to the full display mode.
- When "GRAY BACK" in "OPTION MENU" is set to "OFF" (see page 92), the OSD may not be displayed correctly depending on the conditions of the picture.

Playing video sources in the background

You can combine a video image from a video source with sound from an audio source. For example, you can enjoy listening to classical music while viewing beautiful scenery from the video source on the video monitor.

Press the input selector buttons on the remote control to select a video source and then an audio source.

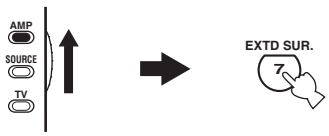


If you want to enjoy an audio source input at the MULTI CH INPUT jacks together with a video source, first select the video source and then press MULTI CH INPUT on the front panel (or MULTI CH IN on the remote control) to select the component connected to the MULTI CH INPUT jacks as the input source (see page 38).

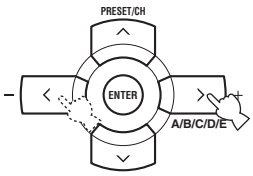
Enjoying multi-channel sources in 6.1-channel surround

If you connected a surround back speaker, use this feature to enjoy 6.1-channel playback for multi-channel sources using the Dolby Pro Logic IIx, Dolby Digital EX or DTS-ES decoders.

1 Set the component selector switch to AMP and then press EXTD SUR. on the remote control repeatedly to switch between 5.1 and 6.1-channel playback.



2 Press < / > repeatedly to select a decoder while "PLIIxMusic" (etc.) is displayed.



Auto AUTO

When a signal flag that can be recognized by this unit is input, this unit selects the optimum decoder to play back the signal in 6.1 channels.
If this unit cannot recognize the flag or no flag is present in the input signal, it cannot automatically be played in 6.1 channels.

Decoders

You can select from the following decoders depending on the format of the source you are playing.

Decoder	Functions
PLIIxMusic	Plays back Dolby Digital or DTS signals in 6.1 channels using the Pro Logic IIx music decoder.
EX/ES	Plays back Dolby Digital or DTS signals in 6.1 channels using the Dolby Digital EX or DTS-ES decoder.
EX	Plays back Dolby Digital or DTS signals in 6.1 channels using the Dolby Digital EX decoder.

Off OFF

Decoders are not used to create 6.1 channels.

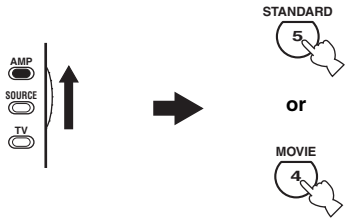
Notes

- Some 6.1-channel compatible discs do not have a signal flag that can be automatically detected by this unit. When playing these kinds of discs in 6.1 channels, select a decoder manually from "PLIIxMusic", "EX/ES" or "EX".
- 6.1-channel playback is not possible even if you press EXTD SUR. in the following cases:
  – when "CENTER SP" (see page 83), "SUR. L/R SP" (see page 83) or "SUR. B SP" (see page 83) is set to "NONE".
  – when the component connected to the MULTI CH INPUT jacks is being played.
  – when the source being played does not contain surround left and right channel signals.
  – when a Dolby Digital KARAOKE source is being played.
  – when the "2ch Stereo" (see page 39) or "DIRECT STEREO" (see page 39) mode is selected.
- When this unit is turned off, this setting will be reset to "AUTO".
- The Pro Logic IIx decoder is not available when "SUR. B SP" is set to "NONE" (see page 83).

Enjoying 2-channel sources in surround

Signals input from 2-channel sources can also be played back on multi-channels.

1 Set the component selector switch to AMP and then press STANDARD on the remote control repeatedly to switch between the "SUR. STANDARD" and "SUR. ENHANCED" programs or press MOVIE to select the "MOVIE THEATER" program.



2 Press SELECT on the remote control repeatedly to select the desired decoder.

You can select from the following modes depending on the type of source you are playing and your personal preference.

You can also select a decoder by pressing 〈/〉 on the remote control while the decoder type is displayed in the front panel display.

SUR. STANDARD	Functions
PRO LOGIC	Dolby Pro Logic processing for any sources
PLII Movie	Dolby Pro Logic II processing for movie sources
PLII Music	Dolby Pro Logic II processing for music sources
PLII Game	Dolby Pro Logic II processing for game sources
PLIIx Movie	Dolby Pro Logic IIx processing for movie sources
PLIIx Music	Dolby Pro Logic IIx processing for music sources
PLIIx Game	Dolby Pro Logic IIx processing for game sources
Neo:6 Cinema	DTS processing for movie sources
Neo:6 Music	DTS processing for music sources

SUR. ENHANCED or MOVIE THEATER	Functions
PRO LOGIC	Dolby Pro Logic processing for any sources
PLII Movie	Dolby Pro Logic II processing for movie sources
PLIIx Movie	Dolby Pro Logic IIx processing for movie sources
Neo:6 Cinema	DTS processing for movie sources

Note

The Pro Logic IIx decoder is not available when "SUR. B SP" is set to "NONE" (see page 83).

Using Virtual CINEMA DSP

Virtual CINEMA DSP allows you to enjoy the CINEMA DSP programs without surround speakers. It creates virtual speakers to reproduce the natural sound field. If you set "SUR. L/R SP" to "NONE" (see page 83), Virtual CINEMA DSP activates automatically whenever you select a CINEMA DSP sound field program (see page 71).

Note

Virtual CINEMA DSP will not activate even when "SUR. L/R SP" is set to "NONE" (see page 83) in the following cases:

– when the component connected to the MULTI CH INPUT jacks is selected as the input source (see page 38).
– when headphones are connected to the PHONES jack.
– when the "DIRECT STEREO" (see page 39), "2ch Stereo" (see page 39) or "STRAIGHT" mode (see page 39) is selected.

RECORDING

Recording adjustments and other operations are performed from the recording components. Refer to the operating instructions for those components.

CAUTION

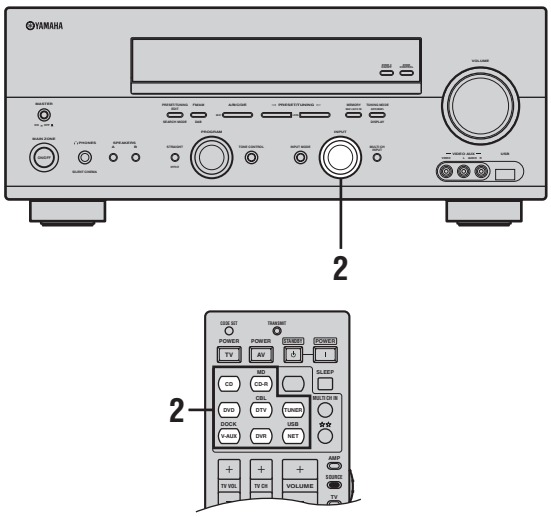
The DTS signal is a digital bitstream. Attempting to digitally record the DTS bitstream will result in noise being recorded. Therefore, if you want to use this unit to record sources encoded in DTS, the following considerations and adjustments need to be made. To play DTS-encoded DVDs and CDs (when using a digital audio connection) on your DTS-compatible player, follow its operating instructions to make a setting so that the analog signal will be output from the player.

Notes

- When this unit is set to the standby mode, you cannot record between other components connected to this unit.
- The settings of TONE CONTROL (see page 33), VOLUME, the speaker level (see page 84) and the sound field programs (see page 71) do not affect the recorded material.
- The source connected to the MULTI CH INPUT jacks of this unit cannot be recorded.
- S-video and composite video signals pass independently through the video circuits of this unit. Therefore, when recording or dubbing video signals input from a video source component that provides only an S-video or a composite video signal, you can record only an S-video or a composite video signal on your VCR.
- Digital signals input at the DIGITAL INPUT jacks are not output at the analog AUDIO OUT (REC) jacks for recording. Likewise, analog signals input at the AUDIO IN jacks are not output at the DIGITAL OUTPUT jack. Therefore, if your source component is connected to provide only digital or analog signals, you can only record digital or analog signals.
- A given input source is not output on the same OUT (REC) channel.
- Check the copyright laws in your country to record from CDs, radio, etc. Recording of copyrighted material may infringe copyright laws.
- The analog audio signals input at the DOCK terminal can be output at the analog AUDIO OUT (REC) jacks for recording.

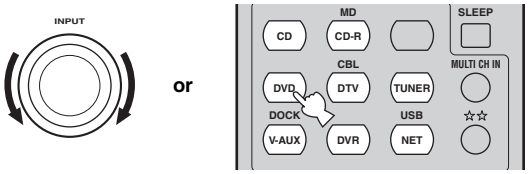
Do a test recording before you start an actual recording.

If you play back a video source that uses scrambled or encoded signals to prevent it from being dubbed, the picture itself may be disturbed due to those signals.



1 Turn on all the connected components.

2 Rotate the INPUT selector on the front panel (or press one of the input selector buttons on the remote control) to select the source component you want to record from.



Front panel Remote control

3 Start playback on the selected source component or select a broadcast station.

4 Start recording on the recording component.

BASIC OPERATION

FM/AM TUNING

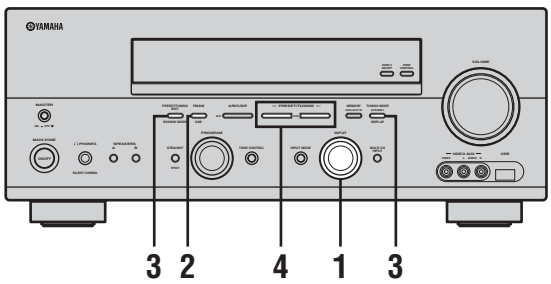
There are 2 tuning methods: automatic and manual. Automatic tuning is effective when station signals are strong and there is no interference. If the signal from the station you want to select is weak, tune into it manually. You can also use the automatic and manual preset tuning features to store up to 40 stations (A1 to E8: 8 preset station numbers in each of the 5 preset station groups). Furthermore, you can recall any preset stations and exchange the assignment of two preset stations with each other.

Note

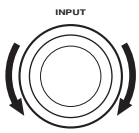
Orient the connected FM and AM antennas for the best reception.

Automatic tuning

Automatic tuning is effective when station signals are strong and there is no interference.



1 Rotate the INPUT selector to select "TUNER" as the input source.

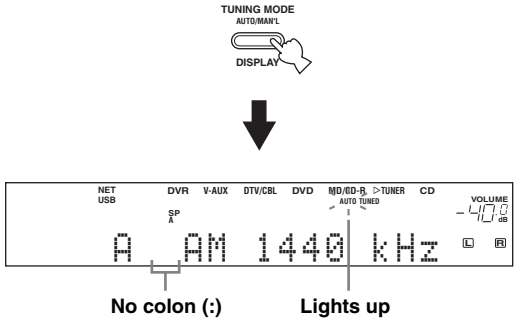


Front panel

2 Press FM/AM to select the reception band.

"FM" or "AM" appears in the front panel display.

3 Press TUNING MODE (AUTO/MAN'L) so that the AUTO indicator lights up in the front panel display.

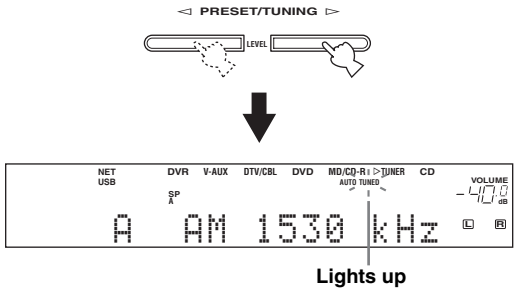


If a colon (:) appears in the front panel display, tuning is not possible. Press PRESET/TUNING to turn the colon (:) off.

4 Press PRESET/TUNING ⊲ / ⊳ once to begin automatic tuning.

When this unit is tuned into a station, the TUNED indicator lights up and the frequency of the received station is shown in the front panel display.

- Press ⊳ to tune into a higher frequency.
- Press ⊲ to tune into a lower frequency.

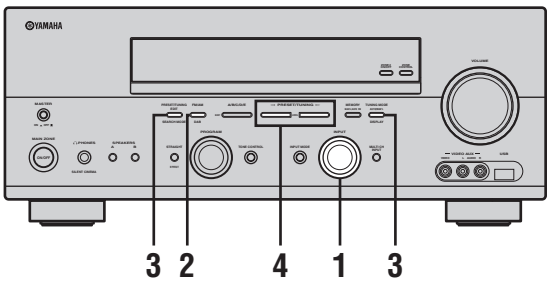


Manual tuning

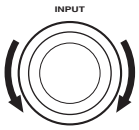
If the signal received from the station you want to select is weak, tune into it manually.

Note

Manually tuning into an FM station automatically switches the tuner to monaural reception to increase the signal quality.



1 Rotate the INPUT selector to select "TUNER" as the input source.

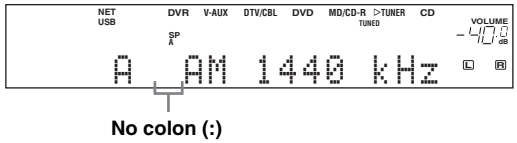


Front panel

2 Press FM/AM to select the reception band.

"FM" or "AM" appears in the front panel display.

3 Press TUNING MODE (AUTO/MAN'L) so that the AUTO indicator disappears from the front panel display.



No colon (:)

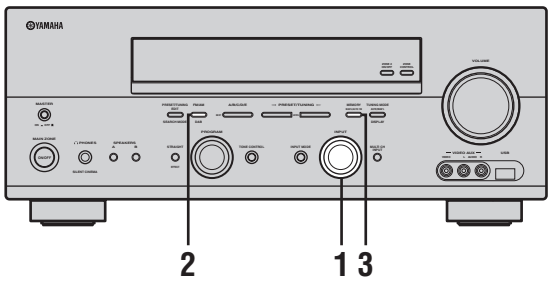
If a colon (:) appears in the front panel display, tuning is not possible. Press PRESET/TUNING to turn the colon (:) off.

4 Press PRESET/TUNING ⊲ / ⊳ to tune into the desired station manually.

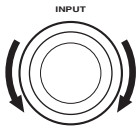
Hold down the button to continue searching.

Automatic preset tuning

You can use the automatic preset tuning feature to store FM stations with strong signals up to 40 (A1 to E8: 8 preset station numbers in each of the 5 preset station groups) of those stations in order. You can then recall any preset station easily by selecting the preset station number.



1 Rotate the INPUT selector to select "TUNER" as the input source.



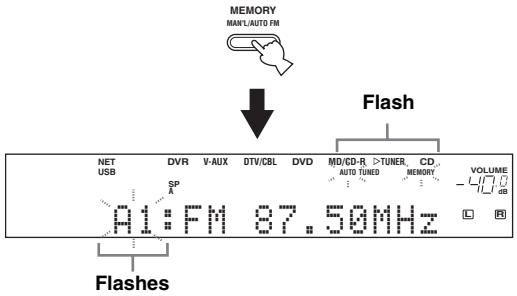
Front panel

2 Press FM/AM to select "FM" as the reception band.

"FM" appears in the front panel display.

3 Press and hold MEMORY (MAN'L/AUTO FM) for more than 3 seconds.

The preset station number as well as the MEMORY and AUTO indicators flashes. After approximately 5 seconds, automatic presetting starts from the current frequency and proceeds toward the higher frequencies.



When automatic preset tuning is completed, the front panel display shows the frequency of the last preset station.

- You can specify the preset number from which this unit stores FM stations and/or begins tuning toward lower frequencies. For details, see "Automatic preset tuning options" on page 49.

Notes

- Any stored station data existing under a preset station number is cleared when you store a new station under the same preset station number.
- If the number of received stations does not reach 40 (E8), automatic preset tuning automatically stops after searching for all the available stations.
- Only FM stations with sufficient signal strength are stored automatically by automatic preset tuning. If the station you want to store is weak in signal strength, tune into it manually and store it as described in "Manual preset tuning" on page 49.
- Only radio data system stations are stored automatically by automatic preset tuning.

■ Automatic preset tuning options

You can specify the preset number from which this unit stores FM stations and/or begins tuning toward lower frequencies.

Note

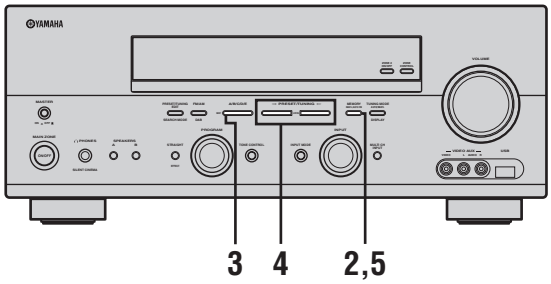
First carry out steps 1 through 3 in "Automatic preset tuning" on page 48.

- **Press A/B/C/D/E and then PRESET/TUNING ⊲ / ⊳ to select the preset station number under which the first station will be stored.**
  Automatic preset tuning stops when stations have all been stored up to E8.

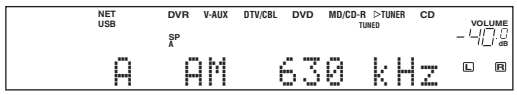
- **Press PRESET/TUNING so that the colon (:) disappears from the front panel display and then press PRESET/TUNING ⊲ to begin tuning toward lower frequencies.**

Manual preset tuning

You can also store up to 40 stations (A1 to E8: 8 preset station numbers in each of the 5 preset station groups) manually.



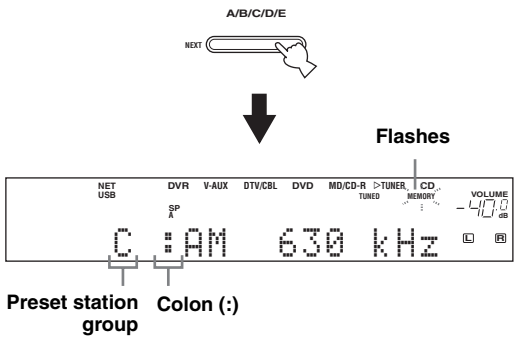
1 Tune into a station automatically or manually.
See pages 46 and 47 for tuning instructions.



When this unit is tuned into a station, the front panel display shows the frequency of the station received.

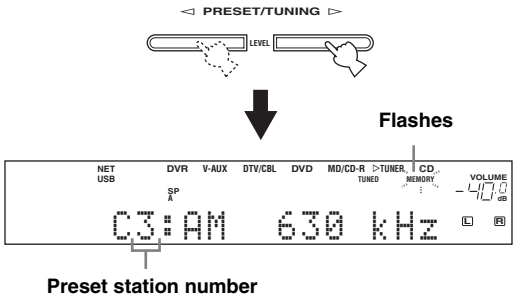
2 Press MEMORY (MAN'L/AUTO FM).
The MEMORY indicator flashes in the front panel display for approximately 5 seconds.

3 Press A/B/C/D/E repeatedly to select a preset station group (A to E) while the MEMORY indicator is flashing.
The selected preset station group letter appears. Check that the colon (:) appears in the front panel display.



4 Press PRESET/TUNING ⊲ / ⊳ to select a preset station number (1 to 8) while the MEMORY indicator is flashing.

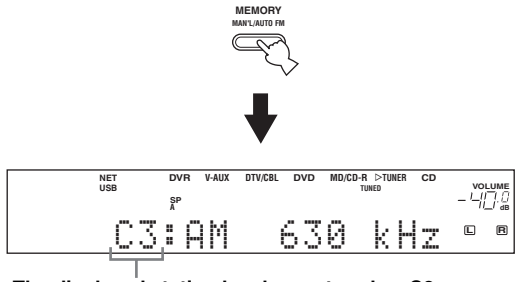
- Press ⊳ to select a higher preset station number.
- Press ⊲ to select a lower preset station number.



Preset station number

5 Press MEMORY (MAN'L/AUTO FM) while the MEMORY indicator is flashing.

The station band and frequency appear in the front panel display with the preset station group and number you have selected. The MEMORY indicator disappears from the front panel display.



The displayed station has been stored as C3.

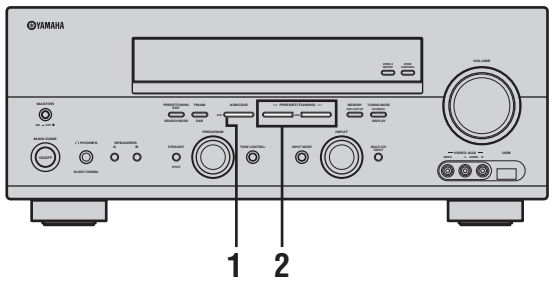
6 Repeat steps 1 through 5 to store other stations.

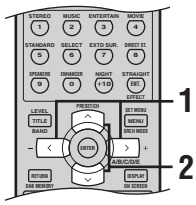
Notes

- Any stored station data existing under a preset station number is cleared when you store a new station under the same preset station number.
- The reception mode (stereo or monaural) is stored along with the station frequency.

Selecting preset stations

You can tune into any desired station simply by selecting the preset station group and number under which it was stored.

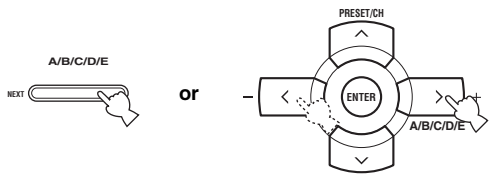




When performing this operation with the remote control, set the component selector switch to SOURCE and then press TUNER to select "TUNER" as the input source.

1 Press A/B/C/D/E on the front panel (or A/B/C/D/E on the remote control) to select the desired preset station group (A to E).

The preset station group letter appears in the front panel display and changes each time you press the button.

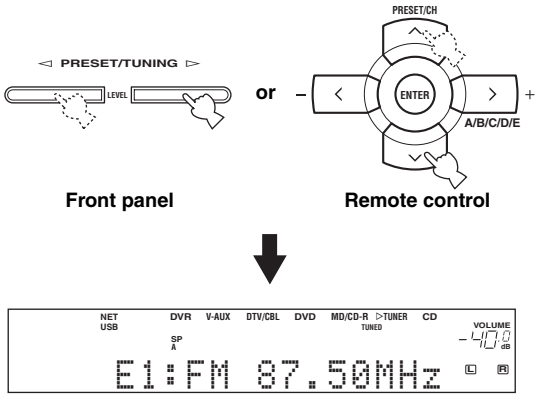


Front panel

Remote control

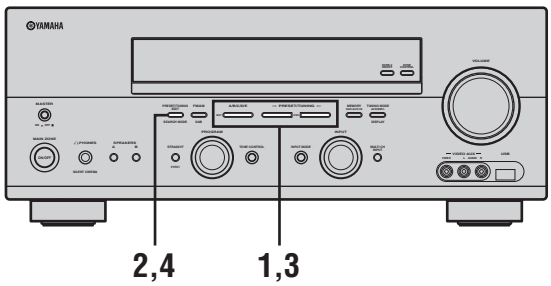
2 Press PRESET/TUNING ⊲ / ⊳ on the front panel (or PRESET/CH ∧ / ∨ on the remote control) to select the desired preset station number (1 to 8).

The preset station group and number appear in the front panel display along with the station band and frequency.



Exchanging preset stations

You can exchange the assignments of two preset stations with each other. The example below describes the procedure to exchange preset station "E1" with "A5".

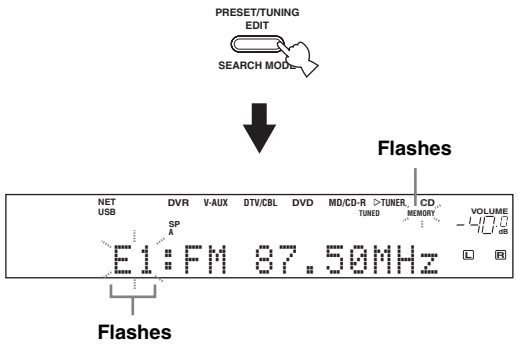


1 Select preset station "E1" using A/B/C/D/E and PRESET/TUNING ⊲ / ⊳.

See "Selecting preset stations" on page 50.

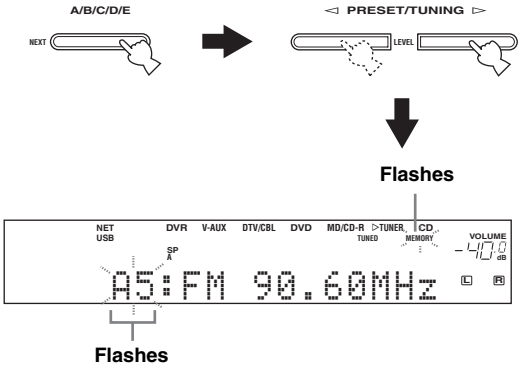
2 Press and hold EDIT for more than 3 seconds.

"E1" and the MEMORY indicator flash in the front panel display.



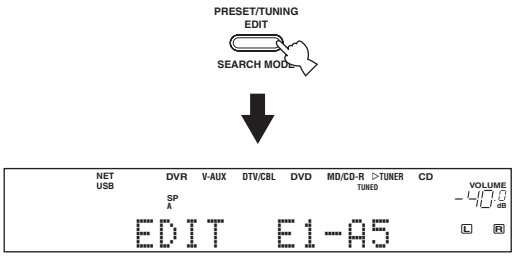
3 Select preset station "A5" using A/B/C/D/E and PRESET/TUNING ⊲ / ⊳.

"A5" and the MEMORY indicator flash in the front panel display.
See "Selecting preset stations" on page 50.



4 Press EDIT again.

"EDIT E1–A5" appears in the front panel display and the assignments of the two preset stations are exchanged.

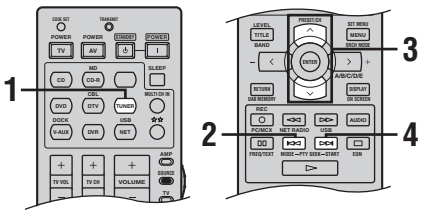


RADIO DATA SYSTEM TUNING

Radio Data System (Europe model only) is a data transmission system used by FM stations in many countries. The Radio Data System function is carried out among the network stations. This unit can receive various Radio Data System data such as PS (program service), PTY (program type), RT (radio text), CT (clock time), and EON (enhanced other networks) when receiving Radio Data System broadcasting stations.

Selecting the Radio Data System program

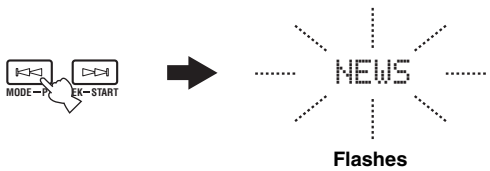
Use this feature to select one of the 15 Radio Data System program types and search for all the available preset stations of the selected program type.



1 Press TUNER on the remote control to select "TUNER" as the input source.

2 Press PTY SEEK MODE on the remote control to set this unit to the PTY SEEK mode.

The name of the program type or "NEWS" flashes in the front panel display.

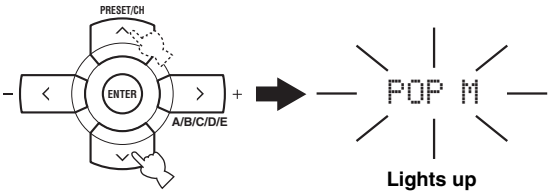


Flashes

To cancel the PTY SEEK mode, press PTY SEEK MODE on the remote control again.

3 Press PRESET/CH ∧ / ∨ on the remote control to select the desired program type.

The name of the selected program type appears in the front panel display.

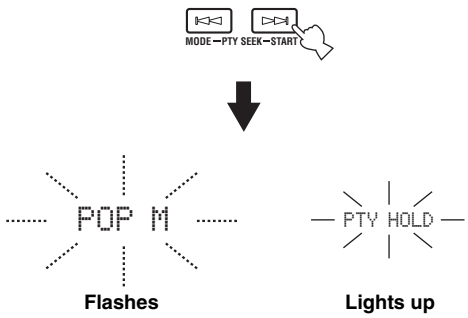


Lights up

Program type	Descriptions
NEWS	News
AFFAIRS	Current affairs
INFO	General information
SPORT	Sports
EDUCATE	Education
DRAMA	Drama
CULTURE	Culture
SCIENCE	Science
VARIED	Light entertainment
POP M	Popular music
ROCK M	Rock music
M.O.R. M	Middle-of-the-road music (easy-listening)
LIGHT M	Light classics
CLASSICS	Serious classics
OTHER M	Other music

4 Press PTY SEEK START on the remote control to start searching for all the available Radio Data System preset stations.

The name of the selected program type flashes and the PTY HOLD indicator lights up in the front panel display while this unit is searching for stations.



To stop searching for stations, press PTY SEEK START on the remote control again.

Notes

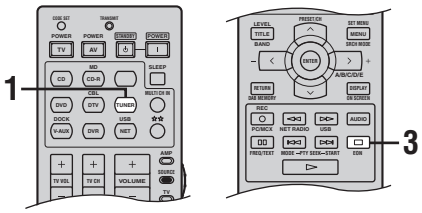
- This unit stops searching for stations when a station broadcasting the selected program type is found.
- If the station found is not the one you desire, press PTY SEEK START again to resume searching for another station broadcasting the same program type.

Using the Radio Data System station network

Use this feature to receive the EON (enhanced other networks) data service of the Radio Data System station network. Once you select one of the 4 Radio Data System program types (NEWS, AFFAIRS, INFO, or SPORT), this unit automatically searches for all the available preset stations that are scheduled to broadcast the EON data service of the selected program type for a certain duration of time. When the scheduled EON data service starts, this unit automatically switches to the local station broadcasting the EON data service and then switches back to the nationwide station once the EON data service ends.

Notes

- You can use this feature only when the EON data service is available.
- The EON indicator lights up in the front panel display only when the EON data service is being received from a Radio Data System station.



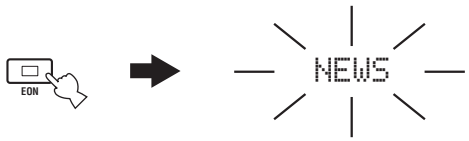
1 Press TUNER on the remote control to select "TUNER" as the input source.

2 Make sure the EON indicator is lit in the front panel display.

If the EON indicator is not lit in the front panel display, select another Radio Data System program so that the EON indicator lights up.

3 Press EON on the remote control repeatedly to select one of the 4 Radio Data System program types (NEWS, AFFAIRS, INFO or SPORT).

The name of the selected program type appears in the front panel display.



Lights up

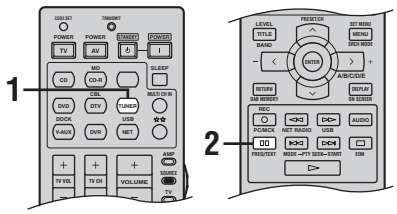
To cancel the EON feature, press EON on the remote control repeatedly until the name of the program type disappears and "EON OFF" appears in the front panel display.

Displaying the Radio Data System information

Use this feature to display the 4 types of the Radio Data System information: PS (program service), PTY (program type), RT (radio text) and CT (clock time). The corresponding indicators light up in the front panel display.

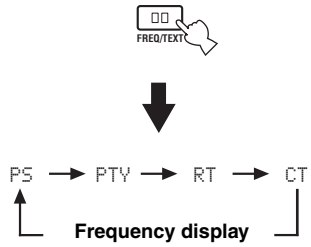
Notes

- You can select one of the Radio Data System modes only when the corresponding Radio Data System indicator lights up in the front panel display. It may take a while for this unit to receive all of the Radio Data System data from the station.
- You can select only the available Radio Data System modes being offered by the station.
- If the signals being received are not strong enough, this unit may not be able to utilize the Radio Data System data. In particular, the "RT" mode requires a large amount of data and may not be available even when the other Radio Data System modes are available.
- In case of poor reception conditions, press TUNING MODE (AUTO/MAN'L) on the front panel so that the AUTO indicator disappears from the front panel display.
- If the signal strength is weakened by external interference while this unit is receiving the Radio Data System data, the reception may be cut off unexpectedly and "...WAIT" appears in the front panel display.
- When the "RT" mode is selected, this unit can display the program information by a maximum of 64 alphanumeric characters, including the umlaut symbol. Unavailable characters are displayed with the "_" (underscore).
- If the reception is cut off when the "CT" mode is selected, "CT WAIT" appears in the front panel display.



1 Press TUNER on the remote control to select "TUNER" as the input source.

2 Press FREQ/TEXT on the remote control repeatedly to select the desired Radio Data System display mode.



- Select “PS” to display the name of the Radio Data System program currently being received.
- Select “PTY” to display the type of the Radio Data System program currently being received.
- Select “RT” to display the information on the Radio Data System program currently being received.
- Select “CT” to display the current time.

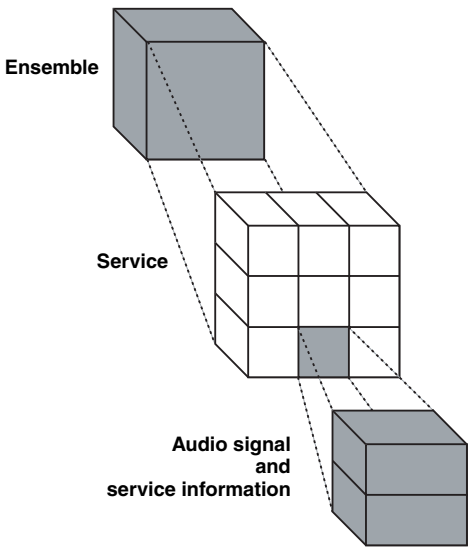
DAB (DIGITAL AUDIO BROADCASTING) TUNING

DAB (Digital Audio Broadcasting), also known as digital radio, is a new way of radio broadcasting. DAB is broadcast using digital signals instead of analog signals, resulting in near CD-quality sound. Analog signals (i.e. AM/FM) are susceptible to interference (i.e. distorting and noise) caused by electrical equipment, weather conditions, tall buildings, mountains, etc. whereas digital signals are not. Thus, with DAB, there is virtually interference-free reception and no hiss or crackle.

Another advantage of DAB is that a large amount of information can be carried within the digital signal. DAB is broadcast in blocks of data called ensembles (also known as multiplexes). Several radio programs called services can be broadcast simultaneously in each ensemble. This means that you can choose between several radio programs within one frequency.

In addition to the audio signal, service information is also broadcast and displayed in the front panel display of this unit. Part of the service information is text data information called Dynamic Label Segment (DLS). For more information, see page 63.

With DAB, there is no need to remember channel frequencies. All broadcasts are selected by simply selecting the service name.

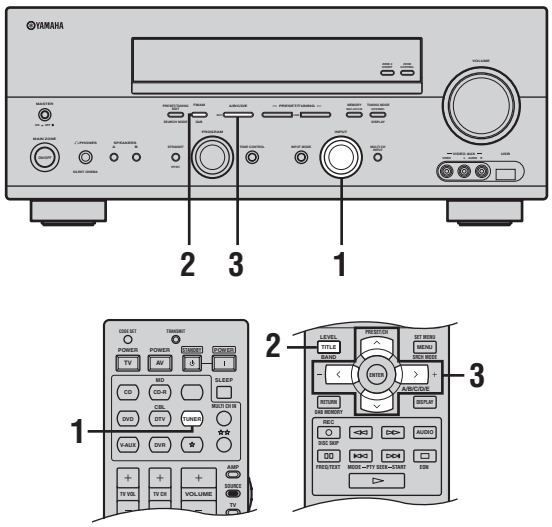


Notes

- Be sure to check the DAB coverage in your area in that not all areas are currently being covered. For a list of nationwide DAB statuses and worldwide DAB frequencies, check WorldDAB online at "http://www.worlddab.org/".
- The sound quality and service information are controlled by the DAB broadcaster, not this unit. Not all DAB broadcasters transmit service information.
- DAB signals are broadcast in Band-III (174 – 240 MHz) and L-Band (1452 – 1492 MHz). This unit is able to receive both bands.

Preparing the DAB tuning

Before tuning into DAB services, you must perform the initial scan.

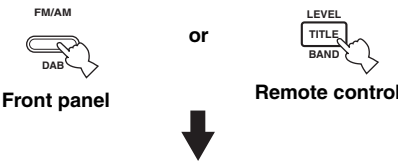


1 Rotate the INPUT selector on the front panel (or set the component selector switch to SOURCE, and then press TUNER on the remote control) to select "TUNER" as the input source.

Front panel Remote control

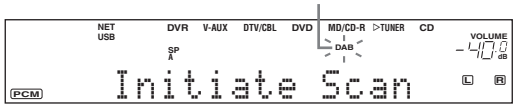
2 Press DAB on the front panel (or BAND on the remote control) repeatedly to select DAB as the reception band.

The DAB indicator lights up in the front panel display. When you did not perform the initial scan, "Initiate Scan" appears in the front panel display.



Front panel Remote control

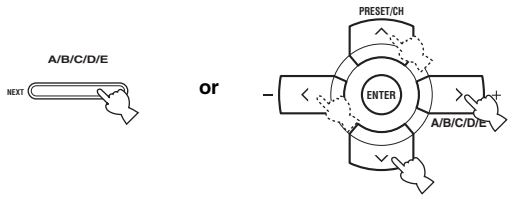
Lights up



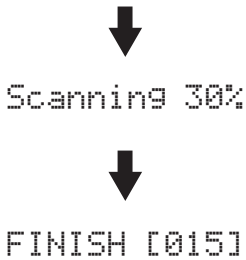
When you have already performed the initial scan before you set this unit to the DAB tuning mode for the first time, "Initiate Scan" does not appear in the front panel display. See step 3 on page 59, and proceed with the DAB tuning operation.

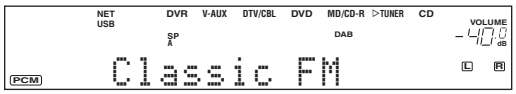
3 Press A/B/C/D/E on the front panel (or ∧ / ∨ / 〈 / 〉 on the remote control) to start the initial scan operation.

This unit starts the scan for DAB ensembles. While the scan is in progress, "Scanning" and the percentage of the progress of the scan appear in the front panel display. When this unit completes the scan, "FINISH" and the number of receivable DAB services appear in the front panel display, and then this unit enters the DAB tuning mode automatically.



Front panel Remote control





Notes

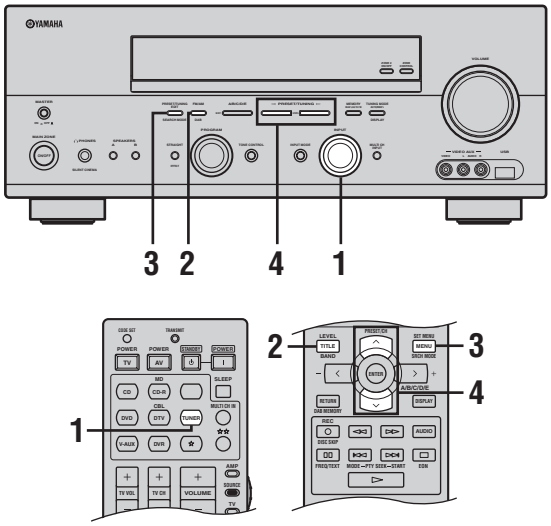
- If the initial scan operation is not successful, "Not Available" appears in the front panel display. You can start the initial scan again by pressing A/B/C/D/E on the front panel (or ∧ / ∨ / 〈 / 〉 on the remote control). When you want to exit the DAB tuning mode, press BAND on the remote control to select the other bands.
- For further details about problems and their proper remedies, see the "Tuner" section in "TROUBLESHOOTING" on page 115.

DAB tuning

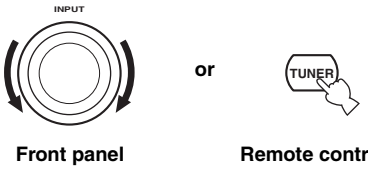
There are five DAB tuning methods: “ALPHANUMERIC”, “ACTIVE”, “ENSEMBLE”, “FAVOURITE”, and “PRESET”. You can select the desired services with the channel labels displayed in the front panel display.

Note

Once you have performed the initial scan, the registry list of available services is updated automatically as long as this unit is in the DAB tuning mode. To register new ensembles, perform the initial scan again (see pages 65).

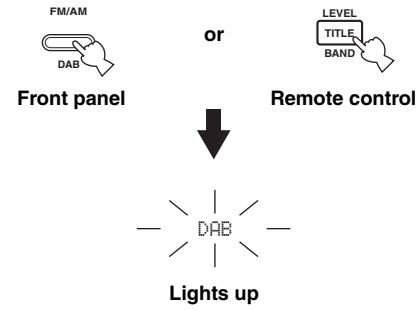


1 Rotate the INPUT selector on the front panel (or press TUNER on the remote control) to select “TUNER” as the input source.

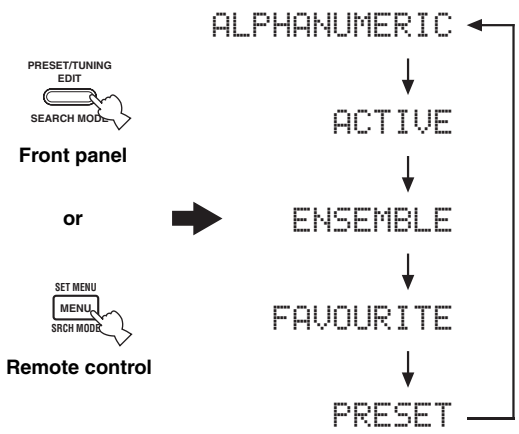


2 Press DAB on the front panel (or BAND on the remote control) repeatedly to select “DAB” as the reception band.

The DAB indicator lights up in the front panel display while this unit is in the DAB tuning mode.



3 Press SEARCH MODE on the front panel (or SRCH MODE on the remote control) repeatedly to select the desired DAB tuning method.

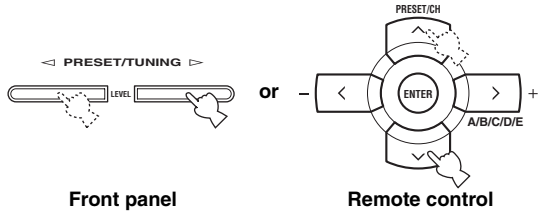


- Select “ALPHANUMERIC” to browse through all of the registered DAB services in the alphanumeric order.
- Select “ACTIVE” to browse through all of the receivable DAB services in the alphabetical order.
- Select “ENSEMBLE” to browse through the registered DAB services from the lowest to the highest channel labels.
- Select “FAVOURITE” to browse through the top 10 services most frequently selected with this unit.
- Select “PRESET” to tune into preset DAB services by entering the corresponding preset service number. When you select “PRESET”, the PRESET indicator lights up in the front panel display.

Note

For details about tuning into preset DAB services, see pages 60 and 62.

4 Press PRESET/TUNING ⊲ / ⊳ on the front panel (or PRESET/CH ∧ / ∨ on the remote control) repeatedly to search for registered DAB services.



Front panel **Remote control**

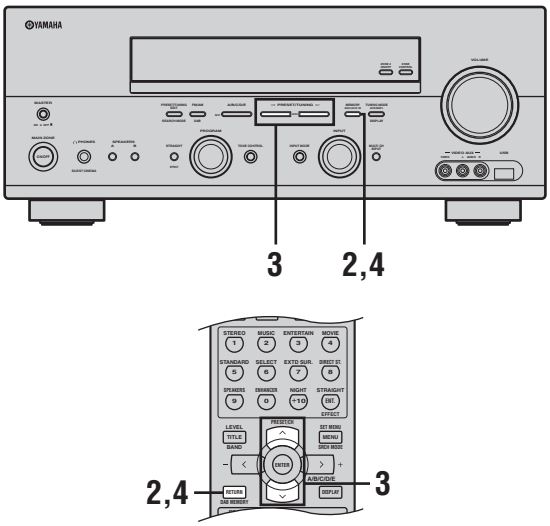
To return to the top of the list, press A/B/C/D/E on the front panel (or ⟨ / ⟩ on the remote control).

Notes

- The SECONDARY indicator lights up in the front panel display when this unit is receiving a secondary service. This unit returns to the corresponding primary service when the secondary service becomes timed out.
- You can change the information in the OSD and front panel display. See page 63 for details.

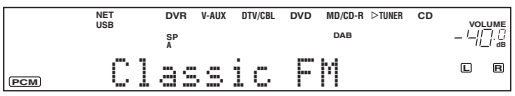
DAB preset tuning

You can use the DAB preset tuning feature to store preset DAB services in the memory. You can then recall any preset service easily by selecting the preset service number assigned to the corresponding DAB service.



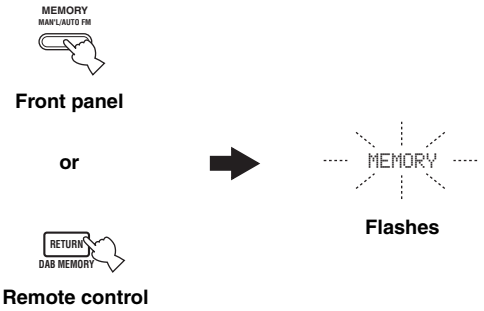
1 Tune into the desired DAB service.

See page 59 for tuning instructions.

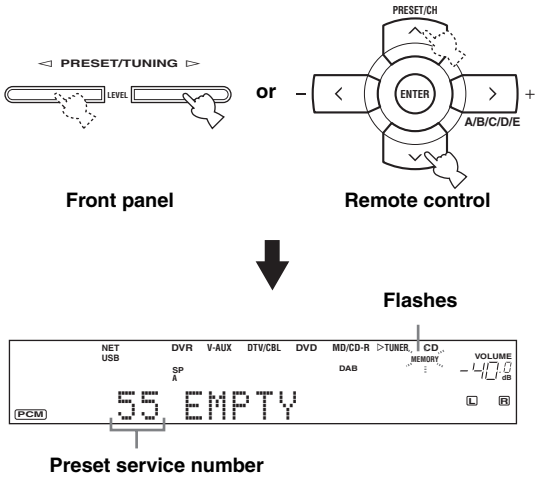


2 Press MEMORY on the front panel (or DAB MEMORY on the remote control).

The MEMORY indicator flashes in the front panel display for approximately 5 seconds.



3 Press PRESET/TUNING ⊲ / ⊳ on the front panel (or PRESET/CH ∧ / ∨ on the remote control) repeatedly until "EMPTY" appears next to the preset service number in the front panel display.



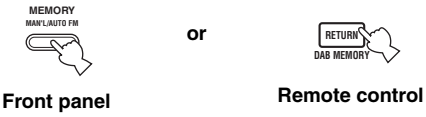
- "EMPTY" appears when no preset DAB service is assigned to the corresponding service number.
- You can select the desired preset service number directly by pressing the numeric buttons on the remote control.

Note

Any stored DAB service data existing under a preset service number is cleared when you store a new DAB service under the same preset service number.

4 Press MEMORY on the front panel (or DAB MEMORY on the remote control).

The MEMORY indicator disappears from the front panel display.



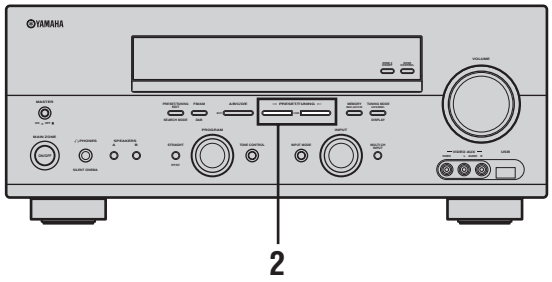
5 Repeat steps 1 through 4 to store other DAB services.

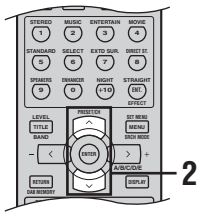
Note

While you are browsing or changing the SET MENU parameters, you cannot preset any DAB service.

Selecting preset DAB services

You can tune into any desired DAB service simply by entering the corresponding preset service number under which it was stored.





1 Select "DAB" as the reception band and then select "PRESET" as the DAB tuning method.

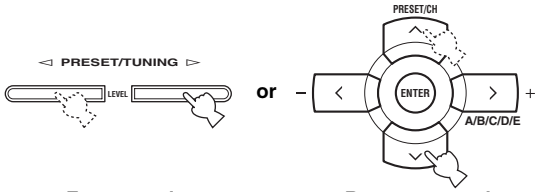
The PRESET indicator lights up in the front panel display.

See page 59 for the DAB tuning instructions.

Lights up

2 Press PRESET/TUNING ⊲ / ⊳ on the front panel (or PRESET/CH ∧ / ∨ on the remote control) to browse through the preset DAB services in the registry list.

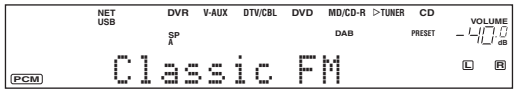
Unassigned preset service numbers are skipped and only assigned preset service numbers along with their DAB service names appear in the front panel display for approximately 3 seconds.



Front panel Remote control

Preset service number

Approximately after 3 seconds

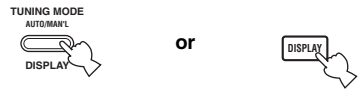


- You can select the desired preset service number directly by pressing the numeric buttons and ENTER on the remote control. To enter numbers less than 10 (i.e. 1 to 9), simply press 0 and then the number itself. For example, to select the preset DAB service assigned to preset service number 7, press 0 and then 7 in turn.
- "EMPTY" appears briefly when no preset DAB service is assigned to the corresponding preset service number. The DAB service currently being received is then displayed in the front panel display.

DAB service information

Use this feature to display various information about the DAB service currently being received.

Press DISPLAY on the front panel (or on the remote control) repeatedly while a DAB service is currently being broadcast.



Front panel Remote control

Each time you press DISPLAY on the front panel (or on the remote control), information displayed in the OSD and front panel display changes in the following order.

Order	Information type	Example
1	Service label	Classic FM
2	Dynamic Label Segment (DLS)	Classic FM on the internet...
3	Ensemble label	Digital1 Network
4	Program type	Classic Music
5	Date and time	05JUL05 10:50
6	Audio mode and bit rate	Stereo 160kbps
7	Channel label and frequency	11D 222.06MHz
8	Signal quality	SignalQ.: 100

To turn off the DAB information in the OSD, press and hold DISPLAY on the front panel (or on the remote control).

Notes

- The information order starts from the beginning again after the signal quality information has been displayed in the front panel display.
- If the DAB information contains a character that cannot be recognized by this unit, the character will be displayed with an underscore "_".

Service label

Displays the name of the current DAB service up to 16 characters.

DLS (Dynamic Label Segment)

Displays information about the current DAB service. Examples are the title of the current song or program, the name of the artist or speaker, and the name of the next song or program. This data is continuously updated by the DAB broadcaster, thus changing often with every new song or program. Other data, such as news, weather, and sports headlines, may be broadcast as well.

Ensemble label

Displays the name of the current ensemble up to 16 characters.

Program type

Displays the genre (song or program type) of the current DAB service up to 16 characters.

Date and time

Displays the current date and time. This data is updated with each passing minute.

Audio mode and bit rate

Displays the audio mode and bit rate of the current DAB service.

Channel label and frequency

Displays the channel label and frequency of the current DAB service.

Signal quality

Displays the signal quality (from 0 (none) to 100 (best)) of the current DAB service. A higher number means a better reception level.

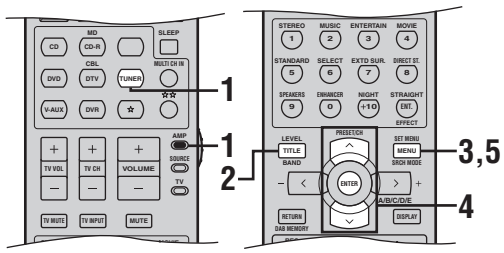
- When you turn on the video monitor connected to this unit, the DAB information appears in the OSD as the following example.

- The front panel display can indicate up to 14 alphanumeric characters at once. The dynamic label segment scrolls in a continuous manner and the service label, ensemble label and program type scroll at once.
- You can select the amount of time while the DAB information is displayed in the OSD by using the "ON SCREEN" parameter in "OPTION MENU" (see page 92).

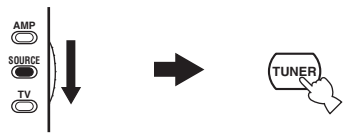
Using DAB MENU

There are 5 operations in DAB MENU: “INIT SCAN”, “TUNE AID”, “DRC MODE”, “PRUNE LIST”, and “PRESET DEL”. Use the remote control to access and adjust each operation in DAB MENU.

This section explains how to access DAB MENU and perform each operation using the front panel display. You can also perform the DAB MENU operations using the OSD.



1 Set the component selector switch to SOURCE and then press TUNER to select “TUNER” as the input source.



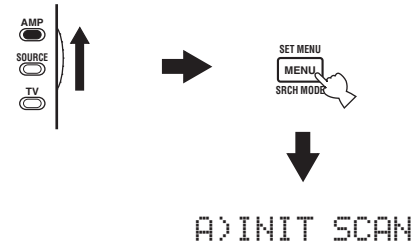
2 Press BAND repeatedly to select “DAB” as the reception band.

The DAB indicator lights up in the front panel display.

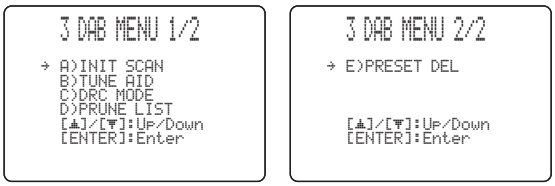
Lights up

3 Set the component selector switch to AMP and then press SET MENU.

“INIT SCAN” appears in the front panel display.

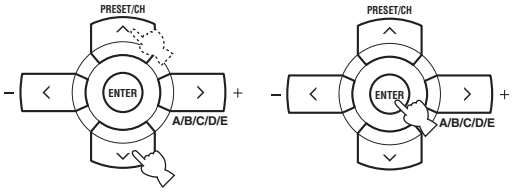


When you perform the DAB MENU operations using the OSD, the following displays appear in the OSD.



4 Press ∧ / ∨ repeatedly and then press ENTER to select and enter the desired submenu.

For details about each operation, see pages 65 to 68.



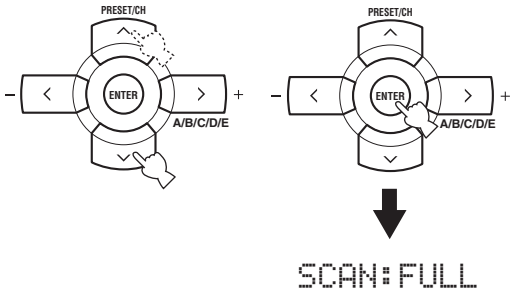
5 Press SET MENU to exit from “SET MENU”.

■ Initial scan A)INIT SCAN

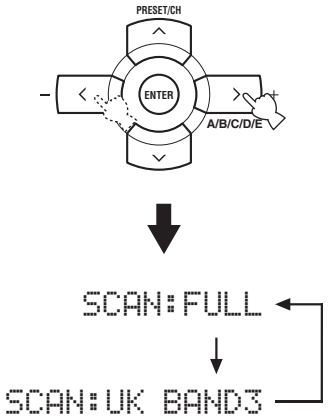
Use this feature to locate all of the DAB ensembles and services in your area. When "INIT SCAN" is selected, this unit scans the entire range of Band III and L-Band (or the limited range of Band III, if selected), and creates a registry list of all the receivable DAB ensembles and services.

1 Press ∧ / ∨ repeatedly to select "INIT SCAN" in "DAB MENU", and then press ENTER.

For details, see "Using DAB MENU" on page 64.
The current setting appears in the front panel display.



2 Press 〈 / 〉 to select the desired option.

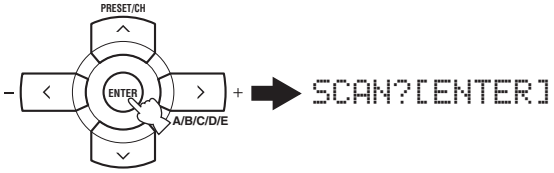


Choices: **FULL**, UK BAND3

- Select "FULL" to scan both Band III (174 – 240 MHz) and L-Band (1452 – 1490 GHz) for DAB ensembles.
- Select "UK BAND3" to scan within the range of Band III limited for United Kingdom (218 – 230 MHz) for DAB ensembles.

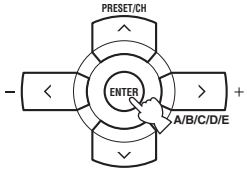
3 Press ENTER to select the desired option.

"SCAN?[ENTER]" appears in the front panel display.

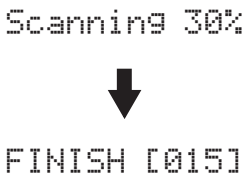


When you want to cancel the initial scan, press RETURN on the remote control.

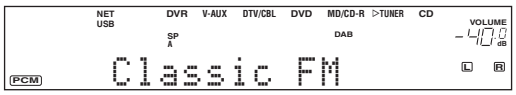
4 Press ENTER again to start the selected initial scan operation.



This unit starts scanning the selected band(s) for DAB ensembles. While scanning is in progress, "Scanning" appears in the front panel display. Once scanning has been completed, "FINISH [###]" appears in the front panel display for approximately 3 seconds ("###" indicates the number of receivable DAB services), and then this unit returns to the DAB tuning mode automatically.



Example: if 15 DAB services were found



Note

If the initial scan operation was not successful, "Not Available" appears in the front panel display. In such cases, press A/B/C/D/E on the front panel (or ∧ / ∨ on the remote control) to start "INIT SCAN" automatically.

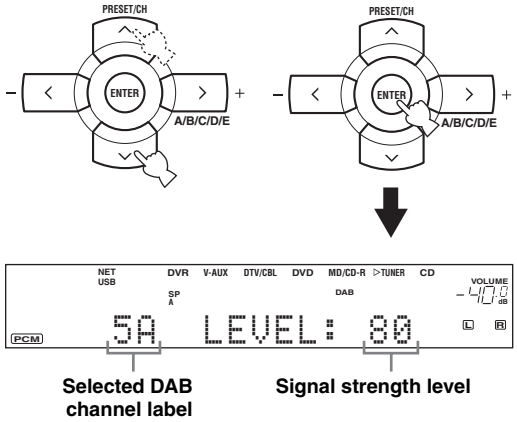
- You can cancel the initial scan operation in the middle by pressing RETURN on the remote control. When "BREAK?[ENTER]" appears in the front panel display, press ENTER on the remote control to return to "INIT SCAN".
- For further details about problems and their proper remedies, see the "Tuner" section in "TROUBLESHOOTING" on page 115.

■ Tuning aid B)TUNE AID

Use this feature to display the strength of the current DAB signals in the front panel display. You can use this feature to adjust the positioning of the DAB antenna and this unit. It is recommended that you perform this operation when setting up this unit in order to maximize the DAB reception capability.

1 Press ∧ / ∨ to select "TUNE AID" in "DAB MENU", and then press ENTER.

For details, see "Using DAB MENU" on page 64.
The signal strength level of the selected DAB channel appears in the front panel display.
Display status: 0 (none) to 100 (best)

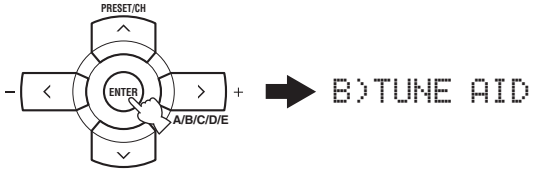


2 Press 〈 / 〉 to switch between channel labels.

For a complete list of channel labels, see "DAB frequency information" on page 122.

3 Press ENTER.

This unit returns to the "TUNE AID" menu.

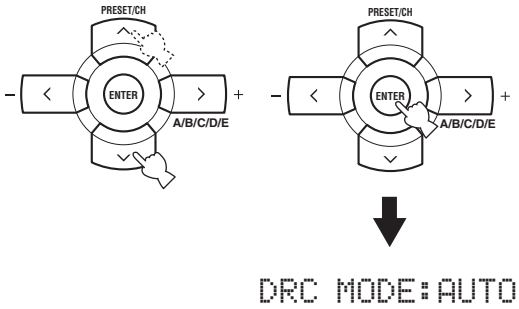


■ DRC mode C>DRC MODE

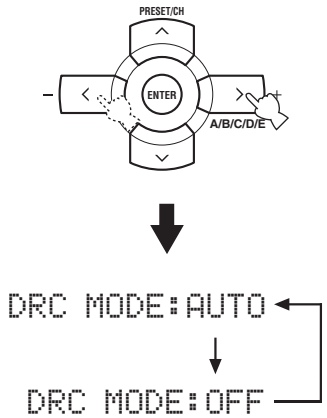
Some DAB broadcasters transmit a wide dynamic range enabling high quality sound, accompanied by DRC (Dynamic Range Control) data. Use this feature to compress the dynamic range of the DAB broadcast. This is especially useful when you listen to a DAB service in a noisy environment or at a low volume at night.

1 Press ∧ / ∨ to select "DRC MODE" in "DAB MENU", and then press ENTER.

For details, see "Using DAB MENU" on page 64.
The current setting appears in the front panel display.



2 Press 〈 / 〉 to select the desired option.



Choices: **AUTO**, OFF

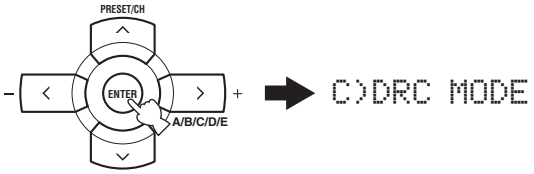
- Select "AUTO" to utilize DRC data (if transmitted). The dynamic range of the DAB signals is compressed, enhancing the audio quality in a noisy environment or at a low volume at night.
- Select "OFF" not to utilize DRC data (if transmitted). The dynamic range of the DAB signals is played in full, enabling high quality sound.

Note

If "DRC MODE: AUTO" is selected and the DAB broadcast contains DRC data, the DRC indicator lights up in the front panel display.

3 Press ENTER.

This unit returns to the "DRC MODE" menu.

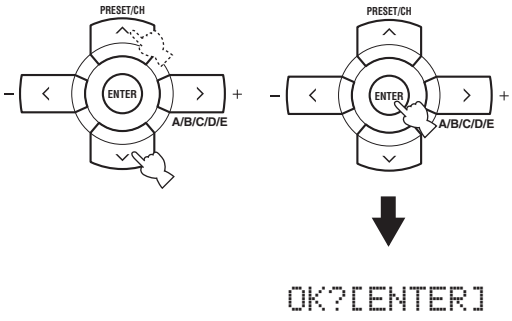


■ Prune list D)PRUNE LIST

Use this feature to delete a group of inactive DAB ensembles and services from the DAB registry list.

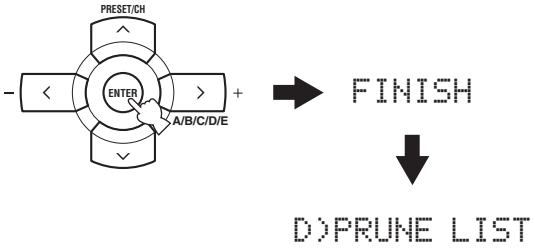
1 Press ∧ / ∨ to select "PRUNE LIST" in "DAB MENU", and then press ENTER.

For details, see "Using DAB MENU" on page 64.
"OK?[ENTER]" appears in the front panel display.



2 Press ENTER again to confirm your selection.

Inactive DAB ensembles and services are deleted from the DAB registry list. Once this operation has been completed, "FINISH" appears in the front panel display, and then this unit then returns to the "PRUNE LIST" menu.

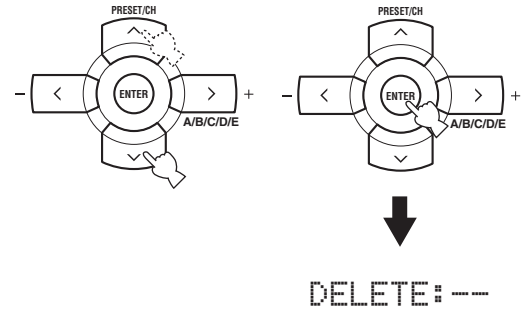


■ Preset delete E)PRESET DEL

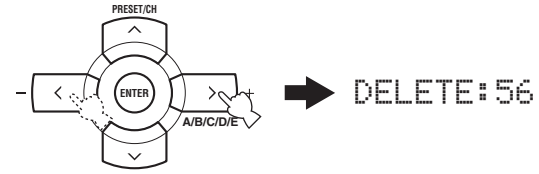
Use this feature to specify and delete unnecessary DAB services from the DAB registry list.

1 Press ∧ / ∨ to select "PRESET DEL" in "DAB MENU", and then press ENTER.

For details, see "Using DAB MENU" on page 64.
"DELETE:--" appears in the front panel display.



2 Press 〈 / 〉 to select the desired preset service number.

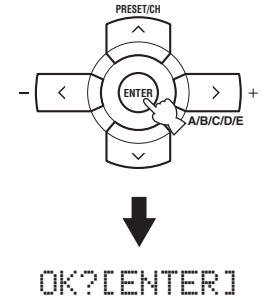


Note

Only the preset service number appears in the front panel display.

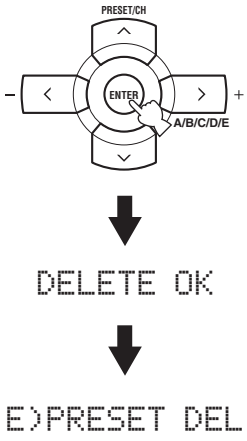
3 Press ENTER to confirm your selection.

"OK?[ENTER]" appears in the front panel display.



4 Press ENTER to delete the selected preset DAB service from the DAB registry list.

Once this operation is has been completed, “DELETE OK” appears in the front panel display, and then this unit returns to the “PRESET DEL” menu.



To cancel the procedure, press RETURN.

SOUND FIELD PROGRAMS

What really creates the rich, full tones of a live instrument are the multiple reflections from the walls of the room. In addition to making the sound live, these reflections enable us to tell where the player is situated as well as the size and shape of the room in which we are sitting.

■ Elements of a sound field

There are two distinct types of sound reflections that combine to make up the sound field in addition to the direct sound coming straight to our ears from the player's instrument.

Early reflections

Reflected sounds reach our ears extremely rapidly (50 ms to 100 ms after the direct sound), after reflecting from one surface only (for example, from a wall or the ceiling). Early reflections actually add clarity to the direct sound.

Reverberations

These are caused by reflections from more than one surface (for example, from the walls, and the ceiling) so numerous that they merge together to form a continuous sonic afterglow. They are non-directional and lessen the clarity of the direct sound.

Direct sound, early reflections and subsequent reverberations taken together help us to determine the subjective size and shape of the room, and it is this information that the digital sound field processor reproduces in order to create sound fields.

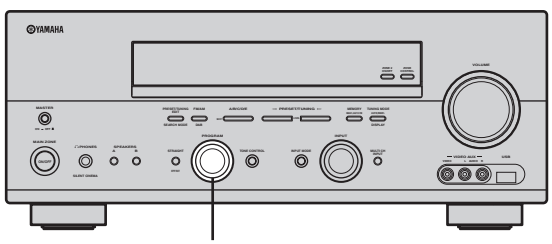
If you could create the appropriate early reflections and subsequent reverberations in your listening room, you would be able to create your own listening environment. The acoustics in your room could be changed to those of a concert hall, a dance floor, or a room with virtually any size at all. This ability to create sound fields at will is exactly what YAMAHA has done with the digital sound field processor.

Selecting sound field programs

Notes

- Choose a sound field program based on your listening preference, not merely on the name of the program.
- When you select an input source, this unit automatically selects the last sound field program used with the corresponding input source.
- Sound field programs cannot be selected when the component connected to the MULTI CH INPUT jacks is selected as the input source (see page 38).
- Sampling frequencies higher than 48 kHz (except for DTS 96/24 signals) are sampled down to 48 kHz and then sound field programs are applied.

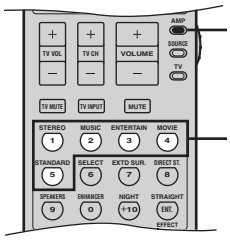
■ Front panel operations



Rotate the PROGRAM selector on the front panel.

The name of the selected sound field program appears in the front panel display and in the OSD.

■ Remote control operations



Set the component selector switch to AMP and then press one of the sound field program selector buttons on the remote control repeatedly.

The name of the selected sound field program appears in the front panel display and in the OSD.

Sound field program descriptions

This unit is equipped with a variety of precise digital decoders that allow you to enjoy multi-channel playback from almost any stereo or multi-channel sound source. This unit is also equipped with a YAMAHA digital sound field processing (DSP) chip containing several sound field programs which you can use to enhance your playback experience.

The YAMAHA CINEMA DSP modes are compatible with all Dolby Digital, DTS, and Dolby Surround sources. Set "INPUT MODE" to "AUTO" (see page 35) to enable this unit to automatically switch to the appropriate digital decoder according to the input signal.

Notes

- The DSP sound field programs of this unit are recreations of real-world acoustic environments made from precise measurements taken in the actual concert hall, music venue, movie theater, etc. Thus, you may notice variations in the strength of the reflections coming from the front, back, left and right.
- Choose a sound field program based on your listening preference, not merely on the name of the program itself.

■ For movie/video sources

You can select from the following sound fields when playing movie or video sources. The sound fields marked "MULTI" can be used with multi-channel sources, like DVD, digital TV, etc. Those marked "2-CH" can be used with 2-channel stereo sources like TV programs, video tapes, etc.

Rotate the PROGRAM selector on the front panel (or set the component selector switch to AMP and then press one of the sound field program selector buttons on the remote control) to select the desired sound field program (see page 70).

Remote control button	Sound field program	Features	Sources
1	STEREO 2ch Stereo	Downmixes multi-channel sources to 2 channels or plays back 2-channel sources as they are.	MULTI 2-CH
2	MUSIC Pop/Rock	CINEMA DSP processing. This program creates an enthusiastic atmosphere where you can feel as if you are in an actual jazz or rock concert.	
3	ENTERTAINMENT TV Sports	CINEMA DSP processing. This program reproduces the sound environment of a large concert hall using the surround sound field to enhance your experience of watching various TV programs such as news, variety shows, music programs or sports programs.	
	ENTERTAINMENT Mono Movie	CINEMA DSP processing. This program reproduces monaural video sources (such as old movies) at the optimum reverberation level to create sound depth using only the presence sound field.	
	ENTERTAINMENT Game	CINEMA DSP processing. This program adds a deep and spatial feeling to video game sounds.	

Remote control button	Sound field program	Features	Sources
4	MOVIE THEATER Spectacle	CINEMA DSP processing. This program reproduces the extremely wide sound field of a 70-mm movie theater in detail, making both the video and the sound field incredibly real. This is ideal for any kind of video source encoded in Dolby Surround, Dolby Digital or DTS, especially large-scale movie productions.	MULTI 2-CH
	MOVIE THEATER Sci-Fi	CINEMA DSP processing. This program reproduces dialog and sound effects in the latest sound form for science fiction films, thus creating a broad and expansive cinematic space amid silence. You can enjoy science fiction films encoded in Dolby Surround, Dolby Digital or DTS in a virtual-space sound field employing the most advanced techniques.	
	MOVIE THEATER Adventure	CINEMA DSP processing. This program reproduces the sound design of the newest 70-mm and multi-channel soundtrack films similar to the sound field of the newest movie theaters, so the reverberations of the sound field itself are restrained as much as possible.	
	MOVIE THEATER General	CINEMA DSP processing. This program reproduces sounds from 70-mm and multi-channel soundtrack films characterized by soft and extensive sound field.	
5	SUR. STANDARD	Standard processing for the selected decoder.	
	SUR. ENHANCED	Enhanced processing for the selected decoder.	

■ For music sources

You can select from the following sound fields when playing music sources, like CD, FM/AM broadcasting, tapes, etc.

Rotate the PROGRAM selector on the front panel (or set the component selector switch to AMP and then press one of the sound field program selector buttons on the remote control) to select the desired sound field program (see page 70).

Remote control button	Sound field program	Features	Sources
1	STEREO 2ch Stereo	Plays back 2-channel sources.	2-CH
	STEREO 6ch Stereo	Plays back 2-channel sources from all speakers in 6.1 channels, providing a larger sound field ideal for background music at parties, etc.	
2	MUSIC Hall in Vienna	HiFi DSP processing. This program reproduces a classic shoe-box type concert hall with approximately 1700 seats. Pillars and ornate carvings create extremely complex reflections which produce a very full, rich sound.	MULTI 2-CH
	MUSIC The Bttm Line	HiFi DSP processing. This program reproduces the stage front in “The Bottom Line”, a famous New York jazz club where 300 people can be seated.	
	MUSIC The Roxy Thtr	HiFi DSP processing. This program reproduces the dynamic rock music environment of “The Roxy Theatre”, one of the hottest rock clubs in L.A. The listener’s imaginary seat is at the center-left of the hall.	
3	ENTERTAINMENT Disco	HiFi DSP processing. This program reproduces the acoustic environment of a lively disco in the heart of a big city to create a highly concentrated and energetic sound.	
5	SUR. STANDARD	Standard processing for the selected decoder.	
	SUR. ENHANCED	Enhanced processing for the selected decoder.	

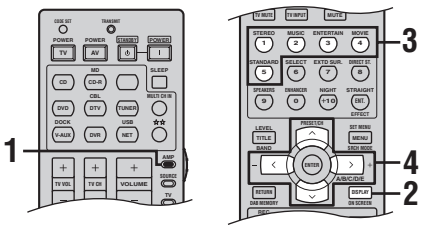
Changing sound field parameter settings

You can enjoy good quality sound with the initial factory settings. Although you do not have to change the initial factory settings, you can change some of the parameters to better suit the input source or your listening room.

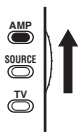
Notes

- Use the "PARAM. INI" feature in "OPTION MENU" to initialize the parameters of each sound field program within a sound field program group (see page 93).
- When you set a sound field parameter to a value other than the initial factory settings, an asterisk mark (*) appears by the sound field parameter name in the OSD.
- You cannot change the sound field parameter values when "MEMORY GUARD" in "OPTION MENU" is set to "ON" (see page 93). If you want to change the sound field parameter values, set "MEMORY GUARD" to "OFF".

- For details about the function and control range of each sound field parameter, see page 74.
- Repeat steps 3 and 4 as necessary to change other sound field program parameter settings.
- The available sound field parameters for some of the sound field programs may be displayed on more than one page in the OSD. In this case, press ∧ / ∨ to scroll through pages.
- If you press and hold 〈 / 〉 to change the sound field parameter value, the initial factory settings are shown momentarily in the front panel display.

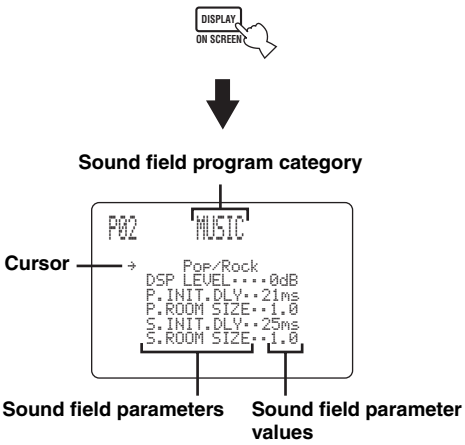


1 Set the component selector switch to AMP.

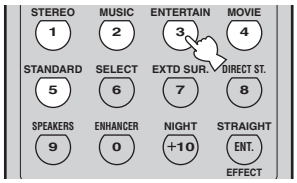


2 Turn on the video monitor and then press DISPLAY on the remote control.

The following display is shown in the OSD.

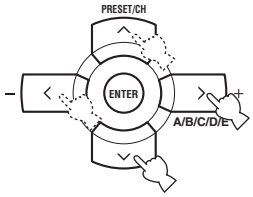


3 Press one of the sound field program selector buttons repeatedly to select the desired sound field program you want to adjust.



4 Press ∧ / ∨ to select the desired sound field parameter and then 〈 / 〉 to change the selected sound field parameter value.

- Press 〉 to increase the value.
- Press 〈 to decrease the value.

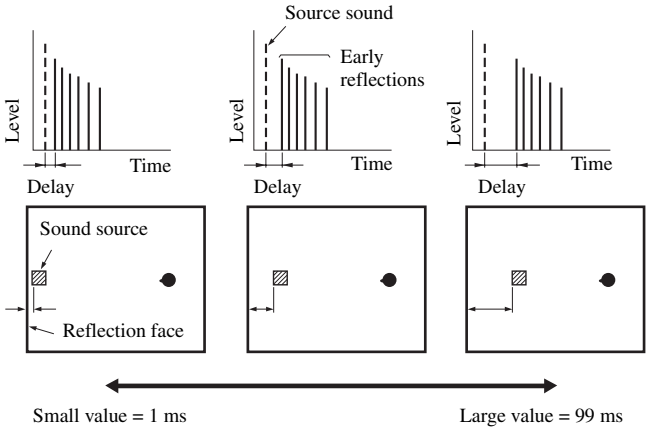


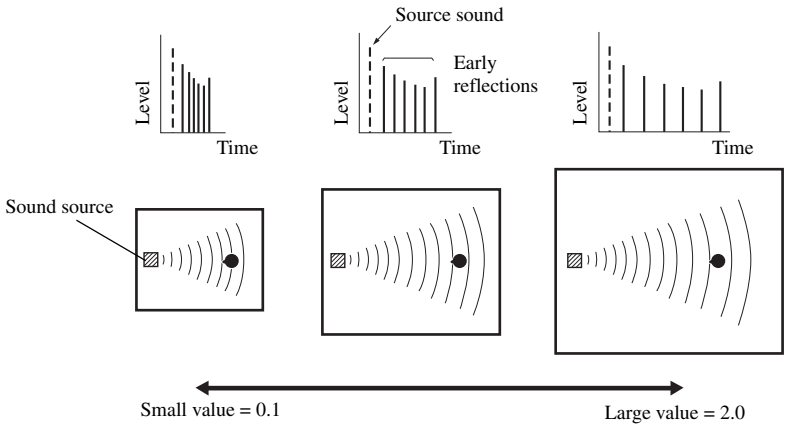
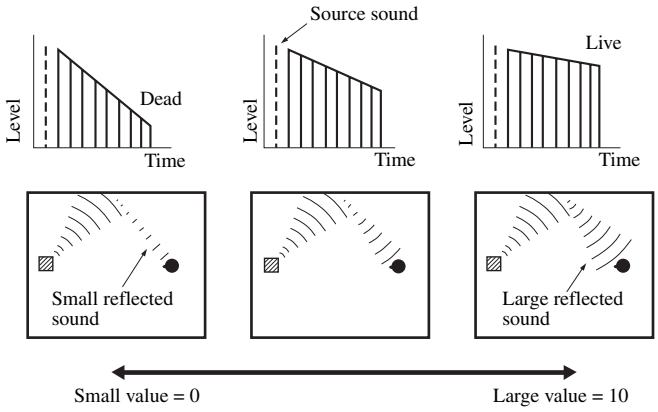
■ Sound field parameter descriptions

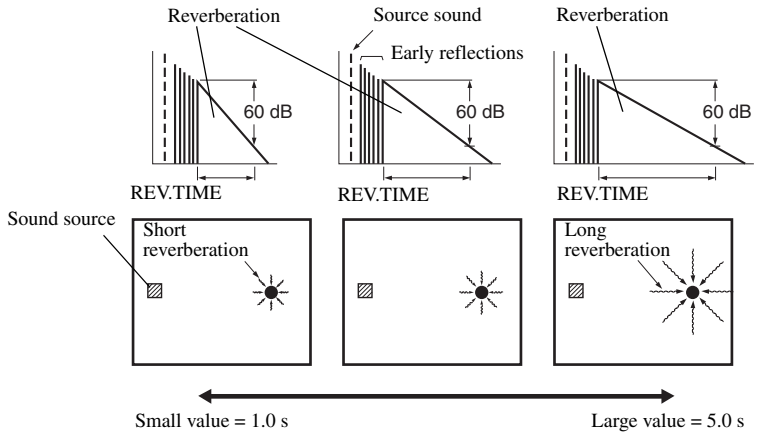
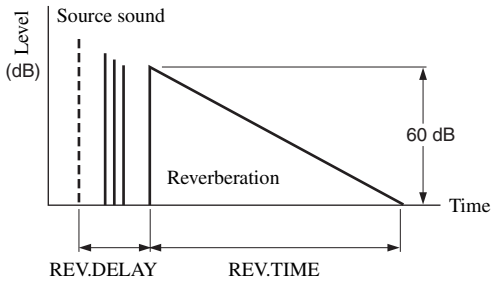
You can adjust the values of certain digital sound field parameters so that the sound fields are recreated accurately in your listening room. Not all of the following parameters are found in every program.

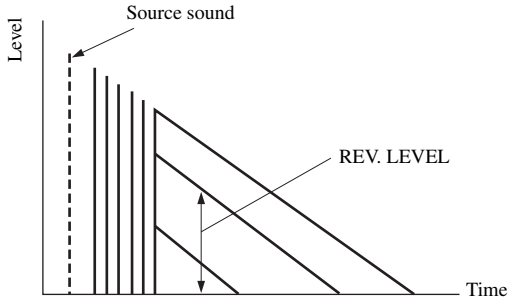
To change sound field parameter settings to suit your listening environment, see page 73 for details.

Sound field parameter	Features
DSP LEVEL	DSP level. Adjusts the level of all the DSP effect sounds within a narrow range. Depending on the acoustics of your listening room, you may want to increase or decrease the DSP effect level relative to the level of the direct sound.
	Control range: –6 dB to +3 dB
INIT.DLY P.INIT.DLY S.INIT.DLY SB INI.DLY	Initial delay. Presence, surround, and surround back initial delays. Changes the apparent distance from the source sound by adjusting the delay between the direct sound and the first reflection heard by the listener. The smaller the value, the closer the sound source seems to the listener. The larger the value, the farther it seems. For a small room, set to a small value. For a large room, set to a large value.
	Control range: 1 to 99 ms (INIT.DLY and P.INIT.DLY) 1 to 49 ms (S.INIT.DLY and SB INI.DLY)



Sound field parameter	Features
ROOM SIZE P.ROOM SIZE S.ROOM SIZE SB ROOM SIZE	Room size. Presence, surround, and surround back room sizes. Adjusts the apparent size of the surround sound field. The larger the value, the larger the surround sound field becomes. As the sound is repeatedly reflected around a room, the larger the hall is, the longer the time between the original reflected sound and the subsequent reflections. By controlling the time between the reflected sounds, you can change the apparent size of the virtual venue. Changing this parameter from one to two doubles the apparent length of the room. Control range: 0.1 to 2.0 
LIVENESS S.LIVENESS SB LIVENESS	Liveness. Surround and surround back liveness. Adjusts the reflectivity of the virtual walls in the hall by changing the rate at which the early reflections decay. The early reflections of a sound source decay much faster in a room with acoustically absorbent wall surfaces than in one which has highly reflective surfaces. A room with acoustically absorbent surfaces is referred to as “dead”, while a room with highly reflective surfaces is referred to as “live”. This parameter lets you adjust the early reflection decay rate and thus the “liveness” of the room. Control range: 0 to 10 

Sound field parameter	Features
REV.TIME	Reverberation time. Adjusts the amount of time taken for the dense, subsequent reverberation sound to decay by 60 dB at 1 kHz. This changes the apparent size of the acoustic environment over an extremely wide range. Set a longer reverberation time for "dead" sources and listening room environments, and a shorter time for "live" sources and listening room environments.
	Control range: 1.0 to 5.0 s
	
REV.DELAY	Reverberation delay. Adjusts the time difference between the beginning of the direct sound and the beginning of the reverberation sound. The larger the value, the later the reverberation sound begins. A later reverberation sound makes you feel as if you are in a larger acoustic environment.
	Control range: 0 to 250 ms
	

Sound field parameter	Features
REV.LEVEL	Reverberation level. Adjusts the volume of the reverberation sound. The larger the value, the stronger the reverberation becomes.
	Control range: 0 to 100%
	
2ch Stereo DIRECT	2-channel stereo direct. Bypasses the decoders and DSP processors of this unit for pure hi-fi stereo sound when playing 2-channel analog sources.
	Choices: **AUTO**, OFF
	• The "AUTO" setting bypasses the decoders and DSP processors only when "BASS" and "TREBLE" are set to 0 dB (see page 33). • When multi-channel signals (Dolby Digital and DTS) are input, they are downmixed to 2 channels and output from the front left and right speakers. • The low-frequency signals input from the front left and right speakers are redirected to the subwoofer in the following cases: – "LFE/BASS OUT" is set to "BOTH" (see page 83). – "FRONT SP" is set to "SMALL" (see page 82) and "LFE/BASS OUT" is set to "SWFR" (see page 83).
6ch Stereo CT LEVEL SL LEVEL SR LEVEL SB LEVEL	6-channel stereo center, surround left, surround right and surround back levels. Adjusts the volume level of each channel in the 6-channel stereo mode.
	Control range: 0 to 100%

Sound field parameter	Features
PRO LOGIC IIx Music PRO LOGIC II Music PANORAMA	Pro Logic IIx Music and Pro Logic II Music panorama. Sends stereo signals to the surround speakers as well as the front speakers for a wraparound effect.
	Choices: **OFF**, ON
PRO LOGIC IIx Music PRO LOGIC II Music DIMENSION	Pro Logic IIx Music and Pro Logic II Music dimension. Adjusts the sound field either towards the front or towards the rear.
	Control range: –3 (towards the rear) to +3 (towards the front)
	Initial setting: STD (standard)
PRO LOGIC IIx Music PRO LOGIC II Music CENTER WIDTH	Pro Logic IIx Music and Pro Logic II Music center width. Moves the center channel output completely towards the center speaker or towards the front left and right speakers. A larger value moves the center channel output towards the front left and right speakers.
	Control range: 0 (center channel sound is output only from the center speaker) to 7 (center channel sound is output only from the front left and right speakers)
	Initial setting: 3
DTS Neo:6 Music C.IMAGE	DTS Neo:6 Music center image. Adjusts the front left and right channel output relative to the center channel to make the center channel more or less dominant as necessary.
	Control range: 0.0 to 1.0
	Initial setting: 0.3

The "PRO LOGIC IIx Music", "PRO LOGIC II Music", and "DTS Neo:6 Music" parameters can be set only when "SUR. STANDARD" is selected. Set the component selector switch to AMP and then press STANDARD on the remote control repeatedly to select "SUR. STANDARD" (see page 43).

SET MENU

You can use the following parameters in “SET MENU” to adjust a variety of system settings and customize the way this unit operates. Change the initial settings (indicated in bold under each parameter) to reflect the needs of your listening environment.

■ Basic setup BASIC SETUP

Use this feature to set up your system quickly and with minimal effort (see page 29).

■ Manual setup MANUAL SETUP

Use this feature to manually adjust speaker and system parameters.

Sound menu 1 SOUND MENU

Use this menu to manually adjust any speaker settings, alter the quality and tone of the sound output by the system or compensate for video signal processing delays when using LCD monitors or projectors.

Parameter	Features	Page
A)SPEAKER SET	Selects the size of each speaker, the speakers for low-frequency signal output, and the crossover frequency.	82
B)SPEAKER LEVEL	Adjusts the output level of each speaker.	84
C)SP DISTANCE	Adjusts the delay time of each speaker.	85
D)CENTER GEQ	Adjusts the tonal quality of the center speaker.	85
E)LFE LEVEL	Adjusts the output level of the LFE channel for Dolby Digital or DTS signals.	85
F)DYNAMIC RANGE	Adjusts the dynamic range of Dolby Digital or DTS signals.	86
G)AUDIO SET	Adjusts the muting level, audio delay and tone bypass settings.	86

Input menu 2 INPUT MENU

Use this menu to manually reassign the input/output jacks, select the input mode or rename the input source.

Parameter	Features	Page
A)I/O ASSIGNMENT	Assigns the input/output jacks of this unit according to the component to be used.	87
B)INPUT MODE	Selects the initial input mode of the source.	88
C)INPUT RENAME	Changes the name of the input source.	88
D)VOLUME TRIM	Adjusts the output volume of each jack.	89

DAB menu 3 DAB MENU

Use this menu to manually perform the DAB operations. For details, see “Using DAB MENU” on page 64.

Parameter	Features	Page
A)INIT SCAN	Locates all of the DAB ensembles and services in your area.	89
B)TUNE AID	Displays the strength of the current DAB signals.	89
C)DRC MODE	Compresses the dynamic range of the DAB broadcast.	89
D)PRUNE LIST	Deletes a group of inactive DAB ensembles and services from the DAB registry list.	89
E)PRESET DEL	Specifies and deletes unnecessary DAB services from the DAB registry list.	89

Network and USB menu 4 NET/USB MENU

Use this menu to manually adjust the network and USB system parameters.

Parameter	Features	Page
A)NETWORK	Configures the network settings automatically or manually.	90
B)PLAY STYLE	Adjusts the playback style.	91
C)INFORMATION	Displays the network system information.	91

Option menu 5 OPTION MENU

Use this menu to manually adjust the optional system parameters.

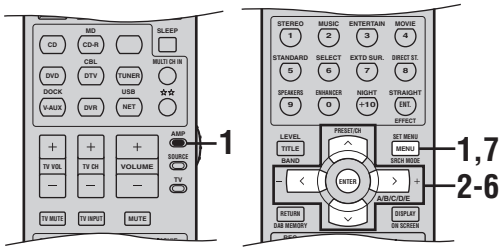
Parameter	Features	Page
A)DISPLAY SET	Adjusts the brightness of the display and converts video signals. Sets the OSD display time as well as the front panel display scrolling mode.	92
B)MEMORY GUARD	Locks sound field program parameters and other “SET MENU” settings.	93
C)PARAM. INI	Initializes the parameters of a group of sound field programs.	93
D)MULTI ZONE SET	Specifies the location of the speakers connected to the SPEAKERS B terminals.	93

■ Signal information SIGNAL INFO

Use this feature to check audio signal information (see page 40).

Using SET MENU

Use the remote control to access and adjust each parameter.



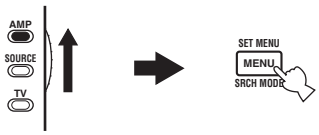
- You can change the "SET MENU" parameters while this unit is reproducing sound.
- If you press one of the sound field program selector buttons during the "SET MENU" operation, the "SET MENU" operation is canceled.
- Repeat the following procedure to select and adjust each parameter setting.
- Press RETURN to return to the previous menu level.

Note

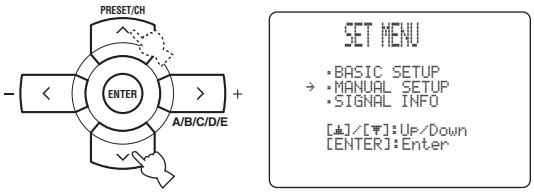
You cannot change some "SET MENU" parameters when "NIGHT:CINEMA" or "NIGHT:MUSIC" is selected as the night listening mode (see page 34).

1 Set the component selector switch to AMP and then press SET MENU to enter "SET MENU".

The top "SET MENU" display appears in the OSD.

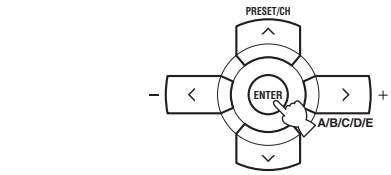


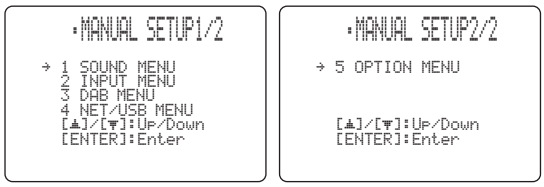
2 Press ∧ / ∨ to select "MANUAL SETUP".



3 Press ENTER to enter "MANUAL SETUP".

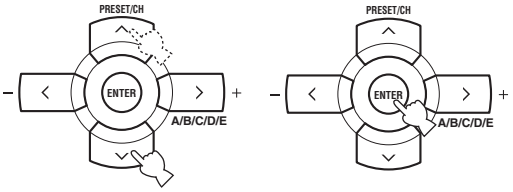
The "MANUAL SETUP" display appears in the OSD.

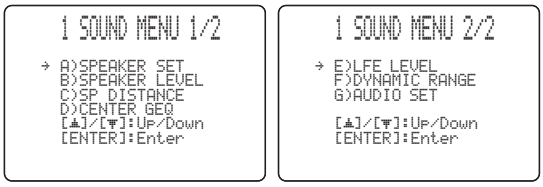




4 Press ∧ / ∨ repeatedly and then press ENTER to select and enter the desired menu.

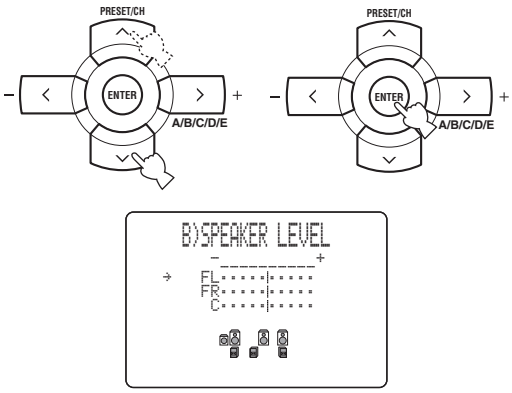
The following displays are examples where "SOUND MENU" is selected.





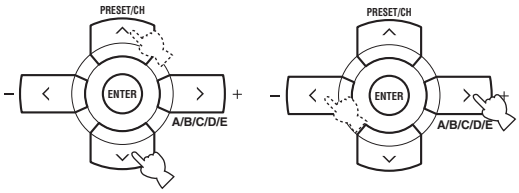
5 **Press ∧ / ∨ repeatedly and then press ENTER to select and enter the desired submenu.**

The following display is an example where "SPEAKER LEVEL" is selected.



6 **Press ∧ / ∨ to select the desired parameter and then 〈 / 〉 to change the parameter settings.**

- Press 〉 to increase the value.
- Press 〈 to decrease the value.



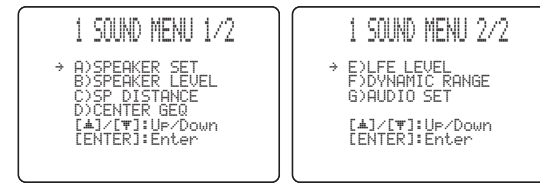
7 **Press SET MENU to exit from "SET MENU".**

Memory back-up

The memory back-up circuit prevents the stored data from being lost even if this unit is in the standby mode. However, the stored data will be lost in case the power cable is disconnected from the AC wall outlet or if the power supply is cut off for more than one week.

1 SOUND MENU

Use this menu to manually adjust any speaker settings or compensate for video signal processing delays when using LCD monitors or projectors.



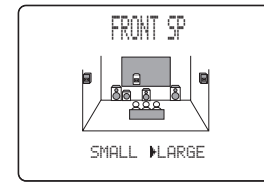
■ Speaker settings A)SPEAKER SET

Use this feature to manually adjust any speaker settings.

If you are not satisfied with the bass sounds from your speakers, you can change these settings according to your preference.

Front speakers FRONT SP

Choices: SMALL, **LARGE**



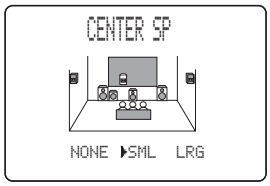
- Select "SMALL" (small) if you have small front speakers that do not reproduce low-frequency signals effectively. The low-frequency signals of the front left and right channels are directed to the speakers selected in "LFE/BASS OUT" (see page 83).
- Select "LARGE" (large) if you have large front speakers that reproduce low-frequency signals effectively. All the front left and right channel signals are directed to the front left and right speakers.

Note

If "LFE/BASS OUT" is set to "FRNT" (see page 83), the LFE signals found in Dolby Digital or DTS sources, the low-frequency signals of the front left and right channels, and the low-frequency signals of other speakers set to "SML" (or "SMALL") are all directed to the front left and right speakers regardless of the "FRONT SP" setting.

Center speaker CENTER SP

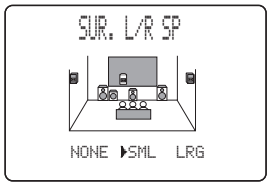
Choices: NONE, **SML**, LRG



- Select “NONE” (none) if you did not connect a center speaker. The center channel signals are directed to the front left and right speakers.
- Select “SML” (small) if you have a small center speaker that does not reproduce low-frequency signals effectively. The low-frequency signals of the center channel are directed to the speakers selected in “LFE/BASS OUT”.
- Select “LRG” (large) if you have a large center speaker that reproduces low-frequency signals effectively. All the center channel signals are directed to the center speaker.

Surround left/right speakers SUR. L/R SP

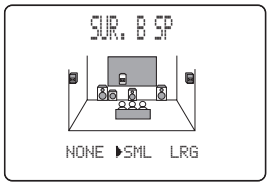
Choices: NONE, **SML**, LRG



- Select “NONE” (none) if you did not connect surround speakers. This unit is set to the Virtual CINEMA DSP mode (see page 44) and “SUR. B SP” is automatically set to “NONE”.
- Select “SML” (small) if you have small surround left and right speakers that do not reproduce low-frequency signals effectively. The low-frequency signals of the surround left and right channels are directed to the speakers selected in “LFE/BASS OUT”.
- Select “LRG” (large) if you have large surround left and right speakers that reproduce low-frequency signals effectively. All the surround channel signals are directed to the surround left and right speakers.

Surround back speakers SUR. B SP

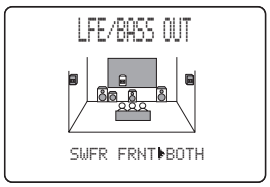
Choices: NONE, **SML**, LRG



- Select “NONE” (none) if you did not connect a surround back speaker. The surround back channel signals are directed to the surround left and right speakers.
- Select “SML” (small) if you have a small surround back speaker that does not reproduce low-frequency signals effectively. The low-frequency signals of the surround back channel are directed to the speakers selected in “LFE/BASS OUT”.
- Select “LRG” (large) if you have a large surround back speaker that reproduces low-frequency signals effectively. All the surround back channel signals are directed to the surround back speaker.

Bass out LFE/BASS OUT

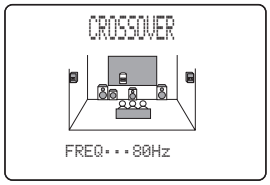
Use this feature to select the speakers that output the LFE (low-frequency effect) and the low-frequency signals.
Choices: SWFR, FRNT, **BOTH**



- Select “SWFR” (subwoofer) if you connected a subwoofer. The LFE signals as well as the low-frequency signals of other speakers set to “SML” (or “SMALL”) are directed to the subwoofer.
- Select “FRNT” (front) if you did not connect a subwoofer. The LFE signals, the low-frequency signals of the front left and right channels, and the low-frequency signals of other speakers set to “SML” (or “SMALL”) are all directed to the front left and right speakers regardless of the “FRONT SP” setting (see page 82).
- Select “BOTH” (both) if you connected a subwoofer. The low-frequency signals of any source are output from the subwoofer. The LFE signals as well as the low-frequency signals of other speakers set to “SML” (or “SMALL”) are directed to the subwoofer. The low-frequency signals of the front left and right channels are directed to the front left and right speakers and the subwoofer regardless of the “FRONT SP” setting (see page 82).

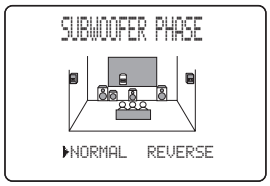
Crossover CROSSOVER

Use this feature to select a crossover frequency of all the speakers set to “SML” (or “SMALL”) or to “NONE” in “SPEAKER SET” (see pages 82 and 83). All frequencies below the selected frequency will be sent to the subwoofer or to the speakers set to “LRG” (or “LARGE”) in “SPEAKER SET” (see pages 82 and 83).
Choices: 40Hz, 60Hz, **80Hz**, 90Hz, 100Hz, 110Hz, 120Hz, 160Hz, 200Hz



Subwoofer phase SUBWOOFER PHASE

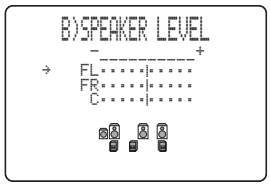
Use this feature to switch the phase of your subwoofer if bass sounds are lacking or unclear.
Choices: **NORMAL**, REVERSE



- Select “NORMAL” if you do not want to reverse the phase of your subwoofer.
- Select “REVERSE” to reverse the phase of your subwoofer.

■ Speaker level B)SPEAKER LEVEL

Use this feature to manually balance the speaker levels between the front left or surround left speakers and each speaker selected in “SPEAKER SET” (see page 82).
Control range: –10.0 to +10.0 dB
Control step: 1.0 dB
Initial setting: 0 dB



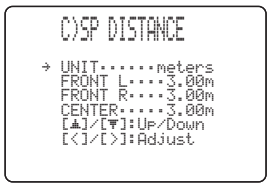
- Select “FL” to adjust the balance of the front left speaker.
- Select “FR” to adjust the balance of the front right speaker.
- Select “C” to adjust the balance of the center speaker.
- Select “SL” to adjust the balance of the surround left speaker.
- Select “SR” to adjust the balance of the surround right speaker.
- Select “SB” to adjust the balance of the surround back speaker.
- Select “SWFR” to adjust the balance of the subwoofer.

Note

“C”, “SL”, “SR”, “SB” and “SWFR” cannot be adjusted if “CENTER SP” (see page 83), “SUR. L/R SP” (see page 83), “SUR. B SP” (see page 83) and “LFE/BASS OUT” (see page 83) are set to “NONE” respectively.

■ Speaker distance C)SP DISTANCE

Use this feature to manually adjust the distance of each speaker and the delay applied to the respective channel. Ideally, each speaker should be the same distance from the main listening position. However, this is not possible in most home situations. Thus, a certain amount of delay must be applied to the sound from each speaker so that all sounds will arrive at the listening position at the same time.



Unit UNIT

Choices: **meters** (m), feet (ft)

- Select "meters" to adjust speaker distances in meters.
- Select "feet" to adjust speaker distances in feet.

Speaker distances

Control range: 0.30 to 24.00 m (1.0 to 80.0 ft)
Control step: 0.10 m (0.5 ft)

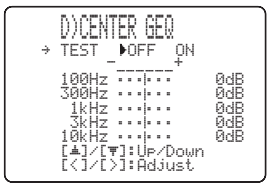
- Select "FRONT L" to adjust the distance of the front left speaker.
  Initial setting: 3.00 m (10.0 ft)
- Select "FRONT R" to adjust the distance of the front right speaker.
  Initial setting: 3.00 m (10.0 ft)
- Select "CENTER" to adjust the distance of the center speaker.
  Initial setting: 3.00 m (10.0 ft)
- Select "SUR. L" to adjust the distance of the surround left speaker.
  Initial setting: 3.00 m (10.0 ft)
- Select "SUR. R" to adjust the distance of the surround right speaker.
  Initial setting: 3.00 m (10.0 ft)
- Select "SUR. B" to adjust the distance of the surround back speaker.
  Initial setting: 2.10 m (7.0 ft)
- Select "SWFR" to adjust the distance of the subwoofer.
  Initial setting: 3.00 m (10.0 ft)

Note

"CENTER", "SUR.L", "SUR.R", "SUR.B" and "SWFR" cannot be adjusted if "CENTER SP" (see page 83), "SUR. L/R SP" (see page 83), "SUR. B SP" (see page 83) and "LFE/BASS OUT" (see page 83) are set to "NONE" respectively.

■ Center graphic equalizer D)CENTER GEQ

Use this feature to adjust the built-in 5-frequency band (100Hz, 300Hz, 1kHz, 3kHz and 10kHz) graphic equalizer for the center channel so that the tonal quality of the center speaker matches that of the front speakers. You can make adjustments while listening to the currently selected source component or a test tone.
Control range: –6 to +6 dB
Control step: 0.5 dB
Initial setting: 0 dB



Test tone TEST

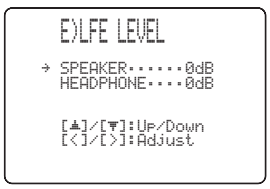
Choices: **OFF**, ON

- Select "OFF" to stop test tones and output the currently selected source component.
- Select "ON" to output test tones from the front left and center speakers, and adjust the tonal quality of the center speaker.

Press ∧ / ∨ to select a frequency band and < / > to adjust the selected frequency band.

■ Low-frequency effect level E)LFE LEVEL

Use this feature to adjust the output level of the LFE (low-frequency effect) channel according to the capacity of your subwoofer or headphones. The LFE channel carries low-frequency special effects which are only added to certain scenes. This setting is effective only when this unit decodes Dolby Digital or DTS signals.
Control range: –20 to **0** dB
Control step: 1 dB



Speaker SPEAKER

Adjusts the speaker LFE level.

Headphone HEADPHONE

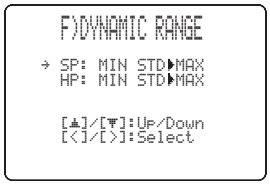
Adjusts the headphone LFE level.

Note

Depending on the settings of "LFE/BASS OUT" (see page 83), some signals may not be output at the SUBWOOFER OUTPUT jack.

■ Dynamic range F)DYNAMIC RANGE

Use this feature to select the amount of dynamic range compression to be applied to your speakers or headphones. This setting is effective only when this unit is decoding Dolby Digital and DTS signals.



Speaker SP

Adjusts the speaker compression.

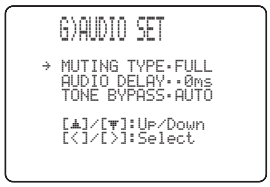
Headphone HP

Adjusts the headphone compression.
Choices: MIN, STD, **MAX**

- Select “MIN” (minimum) if you regularly listen at low volume levels.
- Select “STD” (standard) for general use.
- Select “MAX” (maximum) to preserve the greatest amount of dynamic range.

■ Audio settings G)AUDIO SET

Use this feature to adjust the overall audio settings of this unit.



Muting type MUTING TYPE

Use this feature to adjust how much the mute function reduces the output volume (see page 34).
Choices: **FULL**, –20dB

- Select “FULL” to completely mute all the audio output.
- Select “–20dB” to reduce the current volume by 20 dB.

Audio delay AUDIO DELAY

Use this feature to delay the sound output and synchronize it with the video image. This may be necessary when using certain LCD monitors or projectors.
Control range: **0** to 160 ms
Control step: 1 ms

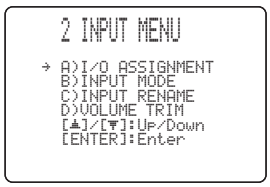
Tone bypass TONE BYPASS

Use this feature to select whether audio output bypasses tone control circuitry when “TREBLE” and “BASS” are set to 0 dB (see page 33).
Choices: **AUTO**, OFF

- Select “AUTO” if you want signals to bypass tone control circuitry to provide the purest signal possible.
- Select “OFF” if you do not want signals to bypass tone control circuitry.

2 INPUT MENU

Use this menu to reassign the input/output jacks, select the input mode or rename the input source.



■ Input/output assignment

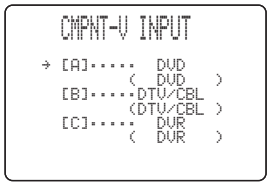
A)I/O ASSIGNMENT

Use this feature to assign the input/output jacks according to the component to be used if the initial settings of this unit do not correspond to your needs. Change the following parameters to reassign the respective jacks and effectively connect more components.
Once the input/output jacks are reassigned, you can select the corresponding component by using the INPUT selector on the front panel (or the input selector buttons on the remote control).

For COMPONENT VIDEO jacks A, B and C

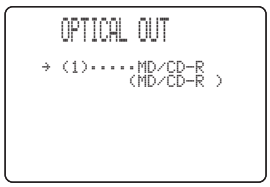
CMPNT-V INPUT [A]
CMPNT-V INPUT [B]
CMPNT-V INPUT [C]

Choices: [A] **DVD**, DTV/CBL, V-AUX, DVR
[B] DVD, **DTV/CBL**, V-AUX, DVR
[C] DVD, DTV/CBL, V-AUX, **DVR**



For OPTICAL OUTPUT jack 1 OPTICAL OUT (1)

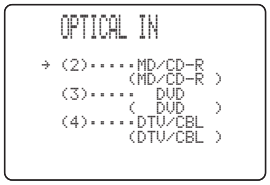
Choices: CD, **MD/CD-R**, DVD, DTV/CBL, V-AUX, DVR



For OPTICAL INPUT jacks 2, 3 and 4

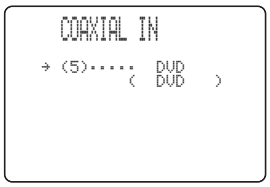
OPTICAL IN (2)
OPTICAL IN (3)
OPTICAL IN (4)

Choices: (2) CD, **MD/CD-R**, DVD, DTV/CBL, V-AUX, DVR
(3) CD, MD/CD-R, **DVD**, DTV/CBL, V-AUX, DVR
(4) CD, MD/CD-R, DVD, **DTV/CBL**, V-AUX, DVR



For COAXIAL INPUT jack 5 COAXIAL IN (5)

Choices: (5) CD, MD/CD-R, **DVD**, DTV/CBL, V-AUX, DVR



Notes

- You cannot select a specific item more than once for the same type of jack.
- When you connect a component to both the DIGITAL INPUT (COAXIAL) and DIGITAL INPUT (OPTICAL) jacks, priority is given to the signals input at the DIGITAL INPUT (COAXIAL) jack.

■ Input mode B)INPUT MODE

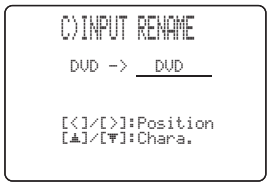
Use this feature to set this unit to reset "INPUT MODE" back to "AUTO" (see page 35) regardless of the previous setting or to recall the last input mode ("AUTO", "DTS", or "ANALOG") used for that source whenever you turn on this unit.

Choices: **AUTO**, LAST

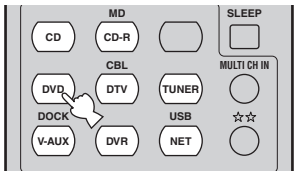
- Select "AUTO" to reset "INPUT MODE" back to "AUTO" (see page 35) regardless of the previous setting whenever you turn on this unit. This unit automatically selects input signals in the following order:
  (1) Digital signals
  (2) Analog signals
- Select "LAST" to set this unit to automatically recall the last input mode ("AUTO", "DTS", or "ANALOG") used for that source whenever you turn on this unit.

■ Input rename C)INPUT RENAME

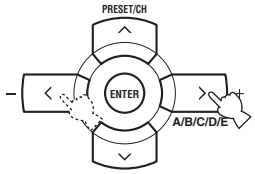
Use this feature to change the name of the input source that appears in the OSD and in the front panel display.



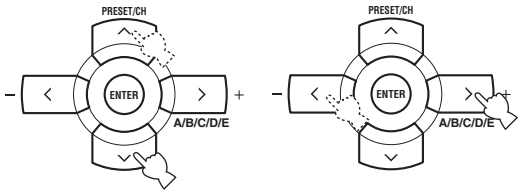
1 Press one of the input selector buttons on the remote control to select the input source you want to change the name of.



2 Press < / > on the remote control to place the "_" (underscore) under the space or the character you want to edit.



3 Press ∧ / ∨ to select the character you want to use and then press < / > to move to the next space.

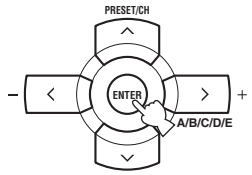


Notes

- You can use up to 8 characters for each input.
- Press ∨ to change the character in the following order, or press ∧ to go in the reverse order:
  A to Z, a space, 0 to 9, a space, a to z, a space, symbols (#, *, +, –, etc.)

4 Repeat steps 1 through 3 to rename each input source.

5 Press ENTER on the remote control to exit from "INPUT RENAME".



■ Volume trim D)VOLUME TRIM

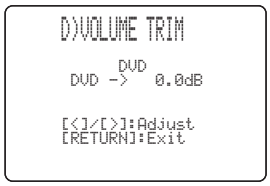
Use this feature to adjust the level of the signal input at each jack. This is useful if you want to balance the level of each input source to avoid sudden changes in volume when switching between input sources.

Choices: CD, MD/CD-R, TUNER, DVD, DTV/CBL, V-AUX, DOCK, DVR, PC/MCX, USB, NET RADIO, MULTI CH IN

Control range: –6.0 to +6.0 dB

Control step: 1.0 dB

Initial setting: 0.0 dB



3 DAB MENU

Use this menu to adjust the DAB tuning parameters as well as the DAB ensemble/service registry list. For details, see “Using DAB MENU” on page 64.

■ Initial scan A)INIT SCAN

See page 65 for details.

■ Tuning aid B)TUNE AID

See page 66 for details.

■ DRC mode C)DRC MODE

See page 67 for details.

■ Prune list D)PRUNE LIST

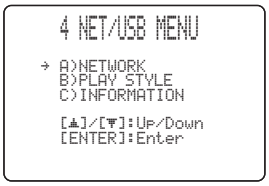
See page 68 for details.

■ Preset delete E)PRESET DEL

See page 68 for details.

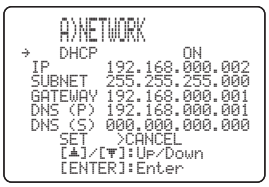
4 NET/USB MENU

Use this menu to adjust the network and USB system parameters.



■ Network settings A)NETWORK

Use this feature to view the network parameters (IP address, etc.) or to change them manually.



Note

The above display is an example.

DHCP DHCP

When this parameter is set to "ON", network parameters for "IP", "SUBNET", "GATEWAY", "DNS (P)" and "DNS (S)" obtained from a DHCP enabled router are displayed. If DHCP server function is not available, set this parameter to "OFF" to configure the network parameters manually.
Choices: **ON**, OFF

IP address IP

Use this parameter to specify an IP address assigned to this unit. This value must not duplicate the one used for other devices in the target network.

Subnet mask SUBNET

Use this parameter to specify the subnet mask value assigned to this unit.

For most of the cases, the subnet mask value can be set as "255.255.255.0".

Default gateway GATEWAY

Use this parameter to specify the IP address of the default gateway.

Primary DNS server DNS (P)
Secondary DNS server DNS (S)

Use this parameter to specify the IP address of the primary and secondary DNS (Domain Name System) servers.

Note

If you have only one DNS address, enter the DNS address in "DNS (P)". If you have two or more DNS addresses, enter one of them in "DNS (P)" and another in "DNS (S)".

1 Press ∧ / ∨ on the remote control repeatedly and then press ENTER to select and enter the desired network parameter.

Note

When "DHCP" is set to "ON", you cannot select and adjust any other network settings. To specify the other parameters, you need to first set "DHCP" to "OFF".

2 To specify the parameter, press ∧ / ∨ repeatedly to change the number and press 〈 / 〉 to select the digit to change.

3 Press ENTER to confirm the parameter.

4 Repeat steps 1 through 3 to configure each network parameter.

5 Select "SET" and then press ENTER to finish configuration.

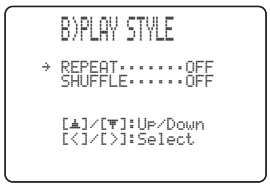
Note

In case you have changed your network configuration, you may need to reconfigure the network settings again.

You can reset the network settings of this unit to the initial factory settings by using "N-RESET" in the advanced setup menu (see page 95).

■ Playback styles B)PLAY STYLE

Use this feature to adjust the playback style according to your preference. You can shuffle songs in a random order or repeat one specific song or a sequence of songs.



Repeat REPEAT

Use this feature to set this unit to repeat one song or a sequence of songs.

Choices: **OFF**, SINGLE, ALL

- Select "OFF" to deactivate this feature.
- Select "SINGLE" to set this unit to repeat one song.
- Select "ALL" to set this unit to repeat a sequence of songs.

Notes

- When "REPEAT" is set to a setting other than "OFF", the highlighted letter "R" appears in the top right corner of the playback status screen while one song or a sequence of songs are being repeated.
- If "REPEAT" is set to "SINGLE", the setting will be reset to "OFF" when both the main zone and Zone 2 are turned off.

Shuffle SHUFFLE

Use this feature to set this unit to play songs or albums in a random order.

Choices: **OFF**, ON

- Select "OFF" to deactivate this feature.
- Select "ON" to set this unit to play songs or albums in a random order.

Note

When "SHUFFLE" is set to "ON", the highlighted letter "S" appears in the top right corner of the playback status screen while songs or albums are being shuffled.

■ Network information C)INFORMATION

Use this feature to display the network system information.

Note

The above display is an example.

MAC (Media Access Control) address MAC ADDRESS

This information displays the MAC address that is assigned to this unit.

Status STATUS

This information displays the current link status of the network.

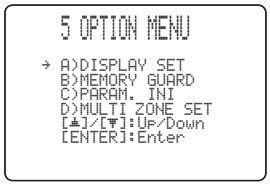
Display status: 10BASE-T, 100BASE-TX, FULL-DUPLEX, HALF-DUPLEX, NO LINK

Note

"NO LINK" appears when network connection is not made.

5 OPTION MENU

Use this menu to adjust the optional system parameters.



■ Display settings A)DISPLAY SET

Dimmer DIMMER

Use this feature to adjust the brightness of the front panel display.
Control range: –4 to **0**
Control step: 1

- Press < to make the front panel display dimmer.
- Press > to make the front panel display brighter.

Video conversion VIDEO CONV.

Use this feature to set whether to convert the video signals input at the VIDEO and S VIDEO jacks.
Choices: **ON**, OFF

- Select “ON” to convert composite and S-video signals interchangeably and up-convert composite and S-video signals to component video signals.
- Select “OFF” not to convert any signals.

Notes

- The converted video signals are only output at the MONITOR OUT jacks. When recording a video source, you must make the same type of video connections between each component.
- When composite video or S-video signals from a VCR are converted to component video signals, the picture quality may suffer depending on your VCR.
- You must set “VIDEO CONV.” to “ON” to display the OSD.
- Unconventional signals input at the composite video or S-video jacks cannot be converted or may be output abnormally. In such cases, set “VIDEO CONV.” to “OFF”.

OSD shift OSD SHIFT

Use this feature to adjust the vertical position of the OSD.
Control range: –5 (upward) to +5 (downward)
Control step: 1
Initial setting: 0

- Press < to raise the position of the OSD.
- Press > to lower the position of the OSD.

Gray back GRAY BACK

Use this feature to display a gray background in the OSD when there is no video signal being input.
Choices: **AUTO**, OFF

- Select “AUTO” to display a gray background in the OSD when there is no video signal being input.
- Select “OFF” not to display any background in the OSD.

Notes

- Depending on the video signals being input or the system setting of your video monitor (NTSC or PAL), the OSD may be displayed abnormally. In such cases, set “GRAY BACK” to “OFF”.
- Even when “GRAY BACK” is set to “OFF”, the OSD may not be displayed correctly depending on the conditions of the picture.

On-screen display time ON SCREEN

Use this feature to set the amount of time to display the DAB information, iPod menu or NET/USB menu in the OSD after you perform a certain operation.
Choices: ON, **10s**, 30s

- Select “ON” to display the OSD unceasingly during an operation.
- Select “10s” to turn off the OSD 10 seconds after you perform a certain operation.
- Select “30s” to turn off the OSD 30 seconds after you perform a certain operation.

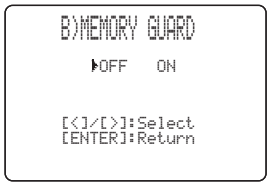
Front panel display scroll FL SCROLL

Use this feature to set whether to display the information (such as song title or channel name) in the front panel display in a continuous manner or by the first 14 alphanumeric characters after scrolling all characters once when “DOCK” or “NET/USB” is selected as the input source.
Choices: **CONT**, ONCE

- Select “CONT” to display the operation status in the front panel display in a continuous manner.
- Select “ONCE” to display the operation status in the front panel display by the first 14 alphanumeric characters after scrolling all characters once.

■ Memory guard B)MEMORY GUARD

Use this feature to prevent accidental changes to DSP program parameter values and other system settings.
Choices: **OFF**, ON



- Select "OFF" to turn off the "MEMORY GUARD" feature.
- Select "ON" to protect:
  – DSP program parameters
  – all "SET MENU" items
  – all speaker levels

Note

When "MEMORY GUARD" is set to "ON", you cannot select and adjust any other "SET MENU" items.

■ Parameter initialization C)PARAM. INI

Use this feature to initialize the parameters of each sound field program within a sound field program group. When you initialize a sound field program group, all of the parameter values within that group revert to their initial factory settings.
Press the corresponding sound field program selector buttons on the remote control to select the sound field program that you want to initialize.
An asterisk (*) appears to the left of the sound field program names that have been changed from their initial factory settings.
Choices: STEREO, MUSIC, ENTERTAINMENT, MOVIE THEATER, STANDARD

Notes

- You cannot automatically revert to the previous parameter settings once you initialize a sound field program group.
- You cannot separately initialize individual sound field programs.
- You cannot initialize any sound field program groups when "MEMORY GUARD" is set to "ON" (see page 93).

■ Zone set D)MULTI ZONE SET

Use this feature to specify the location of speakers connected to the SPEAKERS B terminals of this unit.

Speaker B setting SP B

Use this feature to select the location of the front speakers connected to the SPEAKERS B terminals.
Choices: **FRONT**, ZONE B

- Select "FRONT" to turn on or off SPEAKERS A and B when the speakers connected to the SPEAKERS B terminals are set in the main zone.
- Select "ZONE B" if the speakers connected to the SPEAKERS B terminals are set in another zone. If SPEAKERS A is turned off and SPEAKERS B is turned on, all the speakers including the subwoofer in the main zone are muted and this unit outputs sound at the SPEAKERS B terminals only.

Notes

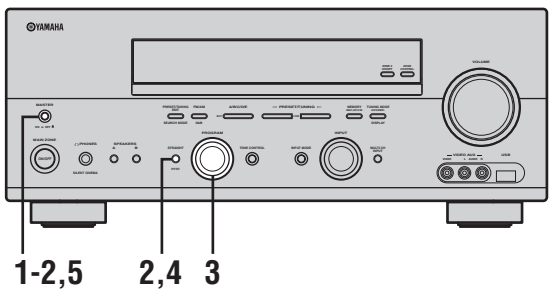
- If you connect headphones to the PHONES jack of this unit, the sound is output from both headphones and the SPEAKERS B terminals when "SP B" is set to "ZONE B".
- If a DSP program is selected when "SP B" is set to "ZONE B", this unit automatically enters the Virtual CINEMA DSP mode (see page 44).

ADVANCED SETUP

This unit has additional menus that are displayed in the front panel display. The advanced setup menu offers additional operations to adjust and customize the way this unit operates. Change the initial settings (indicated in bold under each parameter) to reflect the needs of your listening environment.

Notes

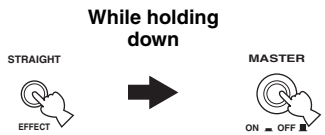
- The settings you make are reflected next time you press MASTER ON/OFF inward to the ON position to turn on this unit (see page 28).
- Only MASTER ON/OFF, STRAIGHT (EFFECT) and the PROGRAM selector are effective while you are using the advanced setup menu.
- All the other operations cannot be made while you are using the advanced setup menu.
- The advanced setup menu is only available in the front panel display.



1 **Press MASTER ON/OFF on the front panel to release it outward to the OFF position to turn off this unit.**

2 **Press and hold STRAIGHT (EFFECT) on the front panel, and then press MASTER ON/OFF inward to the ON position to turn on this unit.**

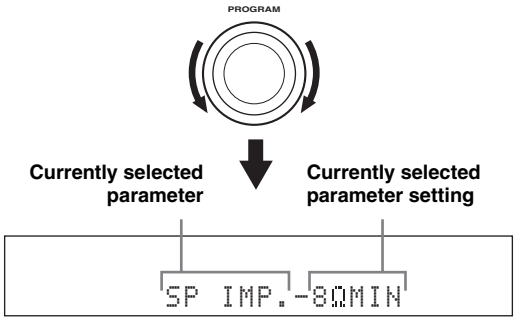
This unit turns on, and the advanced setup menu appears in the front panel display.



3 **Rotate the PROGRAM selector on the front panel to select the parameter you want to adjust.**

The name of the selected parameter appears in the front panel display.

See page 95 for a complete list of available parameters.



4 **Press STRAIGHT (EFFECT) on the front panel repeatedly to change the selected parameter setting.**

5 **Press MASTER ON/OFF on the front panel to release it outward to the OFF position to save the new setting and turn off this unit.**

The settings you made are reflected next time you turn on this unit.

■ Speaker impedance SP IMP.

Use this feature to set the speaker impedance of this unit so that it matches that of your speakers.
Choices: **8ΩMIN**, 6ΩMIN

- Select "8ΩMIN" to set the speaker impedance to 8 Ω.
- Select "6ΩMIN" to set the speaker impedance to 6 Ω.

SP IMP.	Speaker	Impedance level
8ΩMIN	Front	If you use one set (A or B), the impedance of each speaker must be 8 Ω or higher.
		If you use two sets (A and B), the impedance of each speaker must be 16 Ω or higher.*
	Center	The impedance of each speaker must be 8 Ω or higher.
	Surround	
	Surround back	
6ΩMIN	Front	If you use one set (A or B), the impedance of each speaker must be 4 Ω or higher.
		If you use two sets (A and B), the impedance of each speaker must be 8 Ω or higher.
	Center	The impedance of each speaker must be 6 Ω or higher.
	Surround	
	Surround back	

■ Factory presets PRESET

Use this feature to reset all the parameters of this unit to the initial factory settings (see page 111).
Choices: **CANCEL**, RESET

- Select "CANCEL" not to reset any parameters of this unit.
- Select "RESET" to reset the parameters of this unit.

Notes

- This setting completely resets all the parameters of this unit including the "SET MENU" parameters. However, the advanced setup menu parameters will not be initialized.
- The initial factory settings are activated next time you turn on this unit.

■ Network reset N-RESET

Use this feature to reset the network settings of this unit (see page 90) to the initial factory settings.
Choices: **CANCEL**, RESET

- Select "CANCEL" not to reset any network settings of this unit.
- Select "RESET" to reset the network settings of this unit.

Notes

- The initial factory settings are activated next time you turn on this unit.
- When the network settings are reset, "DHCP" in "NET/USB MENU" is automatically set to "ON" (see page 90) and the registered client ID of this unit on your YAMAHA MCX-2000 is cleared (see page 108).

■ Remote control AMP ID REMOTE AMP

Use this feature to set the AMP ID of this unit for remote control recognition (see page 99).
Choices: **ID1**, ID2

- Select "ID1" when the remote control AMP ID library code is set to "00001".
- Select "ID2" when the remote control AMP ID library code is set to "00002".

Note

You need to set the corresponding remote control AMP library code for the remote control (see page 99).

■ Remote control TUNER ID REMOTE TUN

Use this feature to set the TUNER ID of this unit for remote control recognition (see page 99).
Choices: **ID1**, ID2

- Select "ID1" when the remote control TUNER ID library code is set to "81916".
- Select "ID2" when the remote control TUNER ID library code is set to "81917".

Note

You need to set the corresponding remote control TUNER library code for the remote control (see page 99).

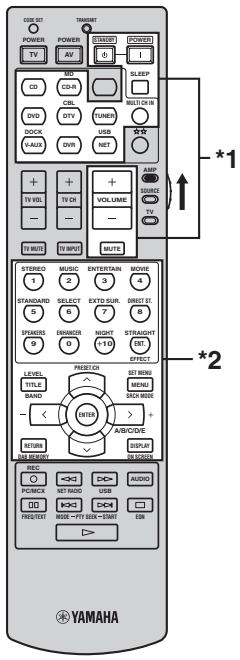
REMOTE CONTROL FEATURES

In addition to controlling this unit, the remote control can also operate other audiovisual components made by YAMAHA and other manufacturers. To control your TV or other components, you must set the appropriate remote control code for each input source (see page 98).

Controlling this unit, a TV, or other components

■ Controlling this unit

Set the component selector switch to AMP to control this unit.



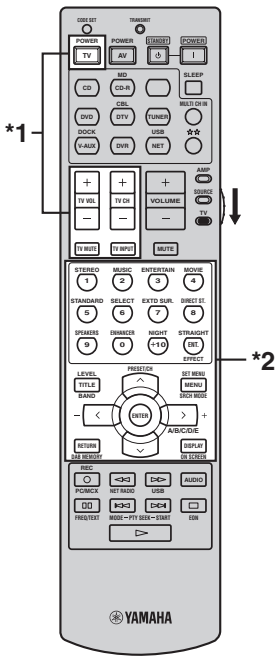
Notes

*1 These buttons always control this unit regardless of the component selector switch position.

*2 These buttons control this unit only when the component selector switch is set to AMP.

■ Controlling a TV

Set the component selector switch to TV to control your TV. To control your TV, you must set the appropriate remote control code for DTV/CBL or ☆☆ (see page 98). When you set the remote control codes for both DTV/CBL and ☆☆, priority is given to the one set for DTV/CBL.



Notes

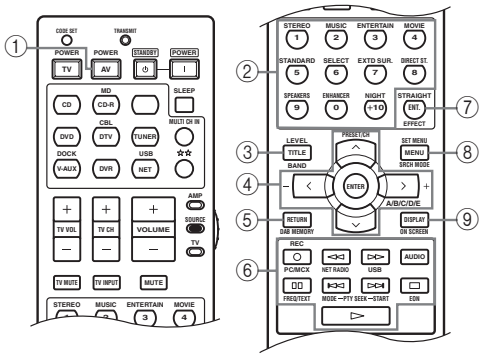
*1 These buttons always control your TV regardless of the component selector switch position.

Remote control	Digital TV/Cable TV
TV POWER	Turns on or off the power.
TV VOL +/–	Increases or decreases the volume level.
TV CH +/–	Changes the channel number.
TV MUTE	Mutes the audio output.
TV INPUT	Changes the input source.

*2 These buttons control your TV only when the component selector switch is set to TV. For details, see the "Digital TV/Cable TV" column on page 97.

■ Controlling other components

Set the component selector switch to SOURCE to control other components selected with the input selector buttons, ☆☆ or the blank button on the right of MD/CD-R. You must set the appropriate remote control code for each input source (see page 98). The following table shows the function of each control button used to control other components assigned to each input selector button, ☆☆ and the blank button on the right of MD/CD-R. Be advised that some buttons may not correctly operate the selected component.



Remote control	DVD player/ recorder	VCR	Digital TV/ Cable TV	LD/CD player	MD/CD recorder	Tuner	iPod®	PC/MCX-2000/ Internet radio/ USB
① AV POWER	Power *1	Power *1	Power *2	Power *1	Power *1			
② 1-9, 0, +10	Numeric buttons	Numeric buttons	Numeric buttons	Numeric buttons	Numeric buttons	Preset stations (1-8)		
③ TITLE	Title					Band		Bookmark *5
④ PRESET/CH ∧	Up	VCR channel up	Up			Preset up (1-8)	Up	Up
PRESET/CH ∨	Down	VCR channel down	Down			Preset down (1-8)	Down	Down
A/B/C/D/E ＜	Left		Left			Preset down (A-E)	Previous menu	Previous menu
A/B/C/D/E ＞	Right		Right			Preset up (A-E)	Subsequent menu	Subsequent menu
ENTER	Enter		Enter				Subsequent menu	Subsequent menu
⑤ RETURN	Return		Return					
⑥ REC	Disc skip (player) Rec (recorder) *3	Rec *3	Rec *2*3	Disc skip (CD player)	Rec *3			Select PC/MCX
▷	Play	Play	Play *2	Play	Play		Play	Play
◁◁	Search backward	Search backward	Search backward *2	Search backward	Search backward		Search backward *4	Select NET RADIO
▷▷	Search forward	Search forward	Search forward *2	Search forward	Search forward		Search forward *4	Select USB
AUDIO	Audio	Audio	Audio *2	Sound (LD player)				
▯▯	Pause	Pause	Pause *2	Pause	Pause		Pause	
⏮	Skip backward	Skip backward	Skip backward *2	Skip backward	Skip backward		Skip backward	Skip backward *6
⏭	Skip forward	Skip forward	Skip forward *2	Skip forward	Skip forward		Skip forward	Skip forward *6
□	Stop	Stop	Stop *2	Stop	Stop		Stop	Stop
⑦ ENT.	Title/Index	Enter	Enter	Chapter/Time (LD player) Index (CD player)	Index			
⑧ MENU	Menu		Menu				Previous menu	Previous menu
⑨ DISPLAY	Display	Display	Display	Display	Display		Display	Display

Notes

*1 This button is operational only when the original remote control supplied with the component has a POWER button.

*2 These buttons control your VCR or DVD recorder only when you set the appropriate remote control code for DVR (see page 98).

*3 When you use this button to record a source, press it twice repeatedly to prevent a malfunction.

*4 Press and hold to search backward or forward.

*5 Press and hold to store your favorite Internet radio stations with bookmarks (see page 109).

*6 These buttons are not operational when the Internet radio is selected as the sub input source of NET/USB.

Setting the remote control code

You can control your TV and other components by setting the appropriate remote control code for each input source. For a complete list of available remote control codes, refer to "LIST OF REMOTE CONTROL CODES" at the end of this manual.

The following table shows the default component in the "Library (component category)" column and the remote control code for each input source.

Remote Control Code Default Settings

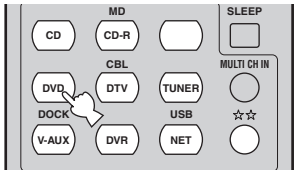
Input source	Library (component category)	Manufacturer	Default code
CD	CD	YAMAHA	61907
MD/CD-R	MD	YAMAHA	70888
DVD	DVD	YAMAHA	40539
DTV/ CBL	–	–	–
TUNER	TUNER	YAMAHA	81916
V-AUX/ DOCK	OTHER AUDIO ACCESSORIES (iPod)	YAMAHA	81981
DVR	DVR	YAMAHA	51544
NET/ USB	OTHER AUDIO ACCESSORIES (NET/USB)	YAMAHA	81982
☆☆	–	–	–
Blank button	TAPE	YAMAHA	70524

Note

You may not be able to operate your YAMAHA component even if a YAMAHA remote control code is initially set as listed above. In this case, try setting other YAMAHA remote control codes.

The blank button is the one on the right of MD/CD-R.

1 Press one of the input selector buttons, ☆☆ or the blank button on the right of MD/CD-R to select the component you want to set up.



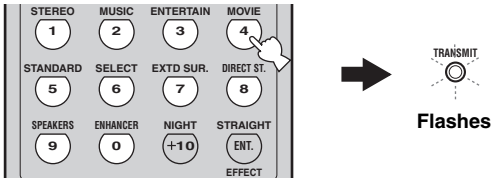
2 Press CODE SET using a ballpoint pen or a similar object.

The TRANSMIT indicator on the remote control flashes twice.

Flashes

3 Press the numeric buttons (0 to 9) to enter the five-digit remote control code for the component to be used.

The TRANSMIT indicator on the remote control flashes twice, and the remote control code for the selected component is set.



Flashes

To clear the remote control code previously set for the selected component, enter the code number "9980".

Notes

- If the manufacturer of your component has more than one code, try each of them until you find the correct one.
- If you do not press any buttons within 30 seconds in step 3, the setup process is canceled. If this happens, repeat the setup procedure.

Setting library codes

You can operate multiple YAMAHA receivers or amplifiers in the same room with the supplied remote control simultaneously. Set the appropriate library code to select and operate the desired component with the supplied remote control.

■ Setting remote control AMP ID library codes

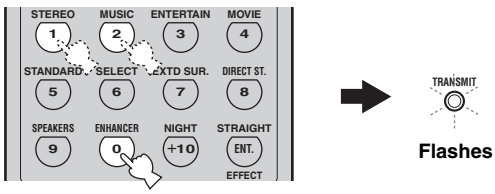
Select one of the following codes to set the remote control AMP ID library code for the component you want to use.

1 Press CODE SET using a ballpoint pen or a similar object.

The TRANSMIT indicator on the remote control flashes twice.

2 Press the numeric buttons to enter the code number “00001” or “00002”.

The TRANSMIT indicator on the remote control flashes twice, and the AMP ID library code is changed.



AMP ID library code *1	Function	Remote control AMP ID *2
00001 (initial setting)	To operate this unit using the default code.	ID1 (initial setting)
00002	To operate this unit using an alternative code.	ID2

*1 The remote control setting

*2 The setting of this unit (see page 95)

Notes

- You need to set the corresponding remote control AMP ID of this unit in the advanced setup (see page 95).
- When using multiple YAMAHA receivers/amplifiers, you may be able to operate the other components simultaneously with the default code setting. In this case, set one of the alternative codes to operate this unit separately.

■ Setting remote control TUNER ID library codes

Select one of the following codes to set the remote control TUNER ID library code for the component you want to use.

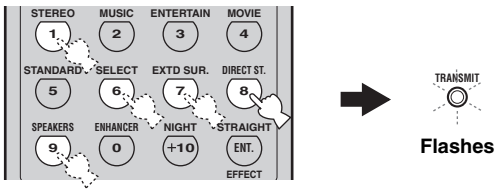
1 Press TUNER to select “TUNER” as the input source.

2 Press CODE SET using a ballpoint pen or a similar object.

The TRANSMIT indicator on the remote control flashes twice.

3 Press the numeric buttons to enter the code number “81916” or “81917”.

The TRANSMIT indicator on the remote control flashes twice, and the TUNER ID library code is changed.



TUNER ID library code *1	Function	Remote control TUNER ID *2
81916 (initial setting)	To operate this unit using the default code.	ID1 (initial setting)
81917	To operate this unit using an alternative code.	ID2

*1 The remote control setting

*2 The setting of this unit (see page 95)

Notes

- You need to set the corresponding remote control TUNER ID of this unit in the advanced setup (see page 95).
- When using multiple YAMAHA receivers/amplifiers, you may be able to operate the other components simultaneously with the default code setting. In this case, set one of the alternative codes to operate this unit separately.

Resetting all remote control codes

Use this feature to clear all the remote control codes previously set and reset all of them to the initial factory settings.

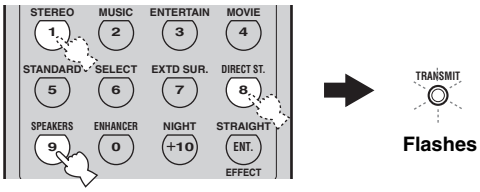
1 Press CODE SET using a ballpoint pen or a similar object.

The TRANSMIT indicator on the remote control flashes twice.

Flashes

2 Press the numeric buttons to enter the code number “9981”.

The TRANSMIT indicator on the remote control flashes twice, and all the remote control codes previously set are cleared and reset to the initial factory settings.



Flashes

If you do not press any buttons within 30 seconds after step 2, the clearing process is canceled. In this case, repeat the clearing procedure.

USING MULTI-ZONE CONFIGURATION

This unit allows you to configure a multi-zone audio system. The Zone 2 feature allows you to set this unit to reproduce separate input sources in the main zone and the second zone (Zone 2). You can control this unit from the second zone using the supplied remote control.

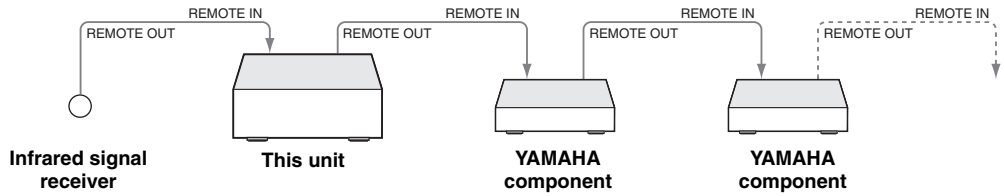
Only analog signals are sent to the second zone. Any source you want to listen to in the second zone must be connected to the analog AUDIO IN jacks of this unit.

Connecting Zone 2

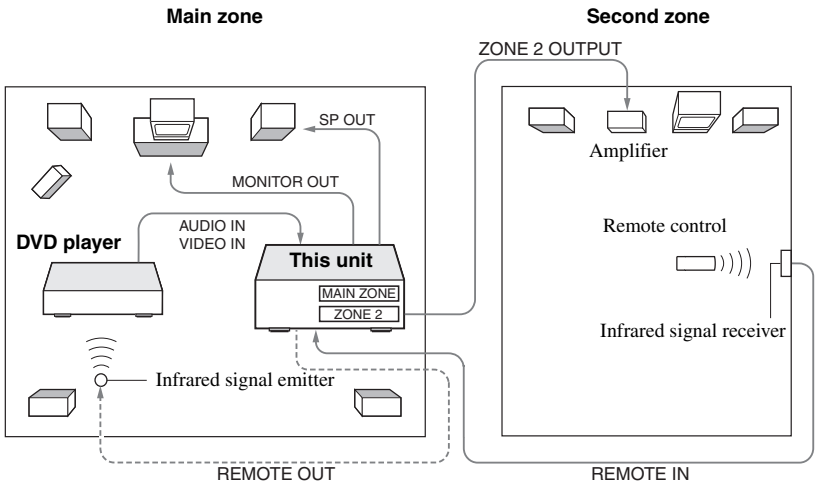
You need the following additional equipment to use the multi-zone functions of this unit:

- An infrared signal receiver in the second zone.
- An infrared signal emitter in the main zone. This emitter transmits the infrared signals from the remote control via the infrared signal receiver in the second zone to a CD player or a DVD player, etc. in the main zone.
- An amplifier and speakers in the second zone.

- Since there are many possible ways to connect and use this unit in a multi-zone configuration, we recommend that you consult with your nearest authorized YAMAHA dealer or service center about the Zone 2 connections that best meet your requirements.
- Some YAMAHA models are able to connect directly to the REMOTE jacks of this unit. If you own these products, you may not need to use an infrared signal emitter. Up to 6 YAMAHA components can be connected as shown below.



■ Multi-zone configuration and Zone 2 connections



Notes

- When you do not use the main zone, press MAIN ZONE ON/OFF on the front panel to turn off the main zone.
- To avoid unexpected noise, DO NOT USE the Zone 2 feature with CDs encoded in DTS.

Controlling Zone 2

You can select and control Zone 2 by using the control buttons on the front panel or on the remote control. The available operations are listed as follows:

- Selecting the input source of Zone 2
- Tuning into FM or AM when "TUNER" is selected as the input source of Zone 2 (see page 46)
- Enjoying music stored on your iPod stationed in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit when "V-AUX" is selected as the input source (see page 104)

The volume level and tonal quality of Zone 2 cannot be adjusted. Adjust the volume control on the amplifier in Zone 2.

Notes

- You must complete each step while the ZONE2 indicator is flashing in the front panel display. Otherwise, the Zone 2 mode is automatically canceled and this unit returns to the normal operation mode. In this case, repeat the Zone 2 selection procedure.
- The Zone 2 control function is operational only when MASTER ON/OFF on the front panel is pressed inward to the ON position.

■ Controlling Zone 2 with the front panel

1 Press ZONE 2 ON/OFF to turn on Zone 2.

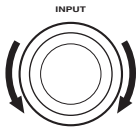
ZONE 2 ON/OFF is operational only when MASTER ON/OFF on the front panel is pressed inward to the ON position.

2 Press ZONE CONTROL to control Zone 2.

The ZONE2 indicator flashes in the front panel display for approximately 5 seconds.

Flashes

3 Rotate the INPUT selector to select the desired input source while the ZONE2 indicator is flashing in the front panel display.



4 Press ZONE 2 ON/OFF to set Zone 2 to the standby mode.

■ Setting the remote control to the Zone 2 mode

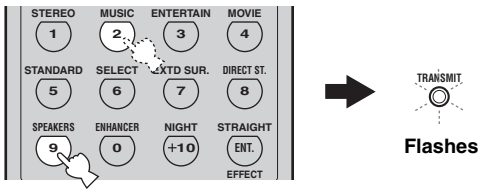
Note

The remote control is originally set to the main mode to control the main zone. To control Zone 2 with the remote control, you must first set the remote control to the Zone 2 mode.

1 Press CODE SET using a ballpoint pen or a similar object.

The TRANSMIT indicator on the remote control flashes twice.

2 Press the numeric buttons to enter the code number “9992”.



■ Controlling Zone 2 with the remote control

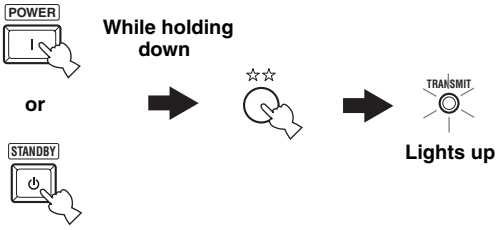
Notes

- The remote control is originally set to the main mode to control the main zone, and the TRANSMIT indicator on the remote control is turned off when the remote control is set to the main mode.
- When the remote control is set to the Zone 2 mode, POWER, STANDBY, MUTE, and the input selector buttons are set to control Zone 2. However, the rest of the remote control buttons remain in the main mode.
- The remote control automatically exits from the Zone 2 mode in the following cases:
  – when you do not make any operations within 10 seconds after the remote control is set to the Zone 2 mode.
  – when you press a remote control button other than POWER, STANDBY, MUTE, and the input selector buttons.

1 Press and hold POWER or STANDBY and then press ☆☆ to set the remote control to the Zone 2 mode.

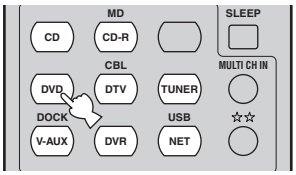
- Press POWER when the main zone is turned on.
- Press STANDBY when the main zone is turned off.

The TRANSMIT indicator on the remote control lights up while the remote control is set to the Zone 2 mode.



2 Press POWER to turn on Zone 2.

3 Press one of the input selector buttons to select the desired input source of Zone 2.



To mute the audio output of Zone 2, press MUTE on the remote control. Press MUTE again to resume the audio output of Zone 2.

4 Press STANDBY to set Zone 2 to the standby mode.

USING iPod®

Once you have stationed your iPod in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit (see page 21), you can enjoy playback of your iPod using the supplied remote control. You can also use the Compressed Music Enhancer mode of this unit to improve the sound quality of the compression artifacts (such as the MP3 format) stored on your iPod (see page 37).

Notes

- Only iPod (Click and Wheel), iPod nano, and iPod mini are supported.
- Some features may not be compatible depending on the model or the software version of your iPod.

- For a complete list of the remote control functions used to control your iPod, see the "iPod" column in "Controlling other components" on page 97.
- For a complete list of status messages that appear in the front panel display and in the OSD, see the "iPod" section in "TROUBLESHOOTING" on page 116.

Controlling iPod

You can control your iPod when "V-AUX" is selected as the input source. The operations of your iPod can be done with the aid of the OSD of this unit (menu browse mode) or without it (simple remote mode).

■ Controlling iPod in the simple remote mode

You can perform the basic operations of your iPod (play, stop, skip, etc.) using the supplied remote control without the aid of the OSD of this unit.

- You can view the photos or video clips stored on your iPod.
- Operations can be also done with the controls on your iPod.

■ Controlling iPod in the menu browse mode

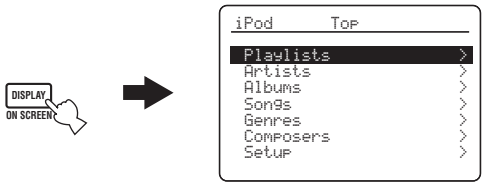
You can perform the advanced operations of your iPod using the supplied remote control with the aid of the OSD of this unit. The name of the song being played appears in the front panel display according to the "FL SCROLL" parameter in "OPTION MENU" (see page 92). You can also browse the songs stored on your iPod in the OSD. Further, you can change or adjust settings for your iPod to suit your personal preferences.

Notes

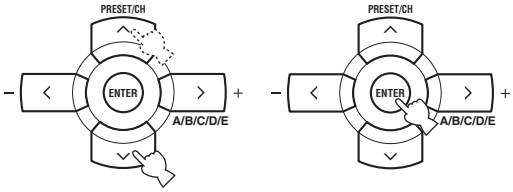
- Operations cannot be done with the controls on your iPod.
- The YAMAHA logo appears in the display window of your iPod.
- There are some characters that cannot be displayed in the front panel display or in the OSD of this unit. Those characters are replaced with underscores "_".
- The "Setup" parameters can be changed or adjusted only in the OSD. Press ENTER on the remote control to toggle between the "Setup" parameter settings.
- You cannot browse the photos or video clips stored on your iPod in the OSD. Instead, you must use the controls on your iPod to select the desired photos or video clips.

1 Press DISPLAY on the remote control.

The following display appears in the OSD.



2 Press ∧ / ∨ / 〈 / 〉 on the remote control to navigate the iPod menu and then press ENTER to begin playback of the selected song.



Choices: Playlists (playlists), Artists (artists), Albums (albums), Songs (songs), Genres (genres), Composers (composers)

- Playlists > Songs
- Artists > Albums > Songs
- Albums > Songs
- Songs
- Genres > Artists > Albums > Songs
- Composers > Albums > Songs
- Setup > Shuffle, Repeat

Shuffle Shuffle

Use this feature to set this unit to play songs or albums in a random order.

Choices: Off, Songs, Albums

- Select “Off” to deactivate this feature.
- Select “Songs” to set this unit to play songs in a random order.
- Select “Albums” to set this unit to play albums in a random order.

Note

When “Shuffle” is set to a setting other than “Off”, the highlighted letter “S” appears in the top right corner while songs or albums are being shuffled.

Repeat Repeat

Use this feature to set this unit to repeat one song or a sequence of songs.

Choices: Off, One, All

- Select “Off” to deactivate this feature.
- Select “One” to set this unit to repeat one song.
- Select “All” to set this unit to repeat a sequence of songs.

Note

When “Repeat” is set to a setting other than “Off”, the highlighted letter “R” appears in the top right corner while one song or a sequence of songs are being repeated.

USING NETWORK/USB FEATURES

This unit is equipped with network and USB features that allow you to enjoy WAV (PCM format only), MP3 and WMA files saved on your PC, YAMAHA MCX-2000, USB memory device and USB portable audio player or access the Internet radio.

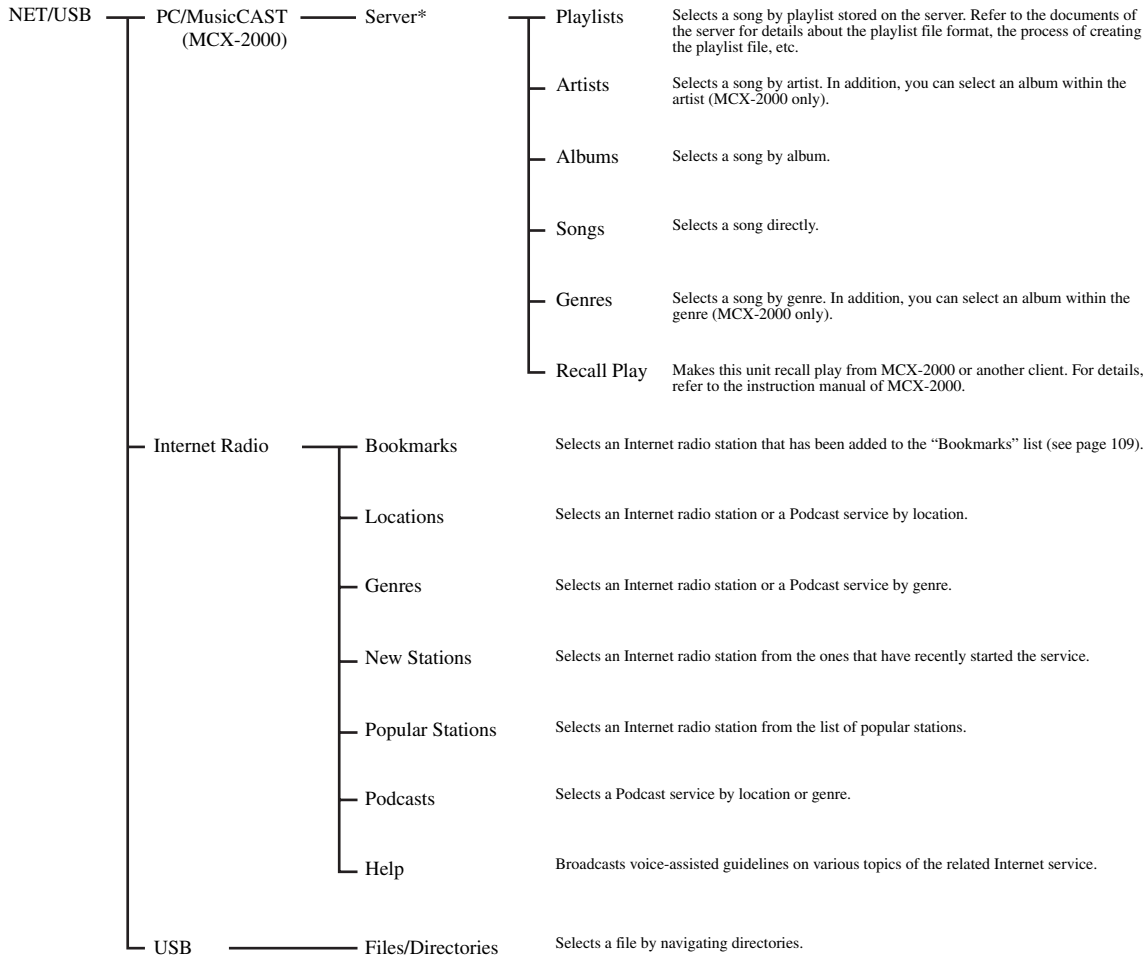
Notes

- YAMAHA MCX-2000 may not be for sale in some locations.
- For further details about networking, refer to the operation manuals supplied with your network devices. Also refer to technical reference books, if needed.
- Some WAV, MP3 and WMA files may not be playable or may be noisy when played.

- For a complete list of the remote control functions used to control the network and USB features, see the "PC/MCX-2000/Internet radio/USB" column in "Controlling other components" on page 97.
- For a complete list of status messages that appear in the front panel display and in the OSD, see the "Network and USB" section in "TROUBLESHOOTING" on page 117.

Navigating the network and USB menus

The following diagram shows the construction of the network and USB menu.



Note

* Only the available PC servers and MCX-2000 are displayed.

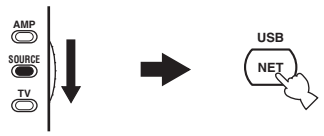
The following procedure shows the basic steps to navigate the network and USB menus. See pages 108 and 109 for details about each sub input source.

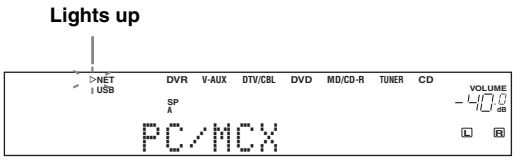
Note

"Please wait" may appear whenever it takes time for communication. This is not a system malfunction. Wait for a while.

1 Set the component selector switch to SOURCE and then press NET/USB on the remote control to select "NET/USB" as the input source.

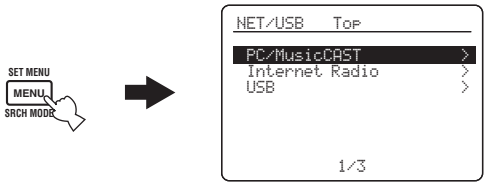
The cursor on the left of the NET/USB indicator lights up in the front panel display, and the contents previously played for the corresponding sub input source of NET/USB is automatically played.





2 Press MENU on the remote control to display the top NET/USB menu.

The following display appears in the OSD.
If any other display appears in the OSD, press MENU on the remote control repeatedly until the top NET/USB menu appears.



3 Press ∧ / ∨ to select the desired sub input source and then press 〉or ENTER.

You can also select the desired sub input source by pressing the corresponding button on the remote control (see page 7).

4 Press ∧ / ∨ / 〈 / 〉on the remote control to select the desired song or Internet radio station.

- Press ∧ / ∨ to select the desired menu.
- Press 〉to enter the selected menu.
- Press 〈 to return to the previous menu level.

- "〉" in the right corner of each menu line indicates that there is a submenu available in the next menu level.
- You can press ENTER or MENU to enter the selected menu or to return to the previous menu level.

5 Press ENTER to play the selected song or to listen to the selected station.

Using a PC server or YAMAHA MCX-2000

Use this feature to enjoy music files saved on your PC or YAMAHA MCX-2000. MCX-2000 is a music server that enhances the concept of YAMAHA exclusive MusicCAST, a digital music delivery method over a personal network.

1 Install Windows Media Connect 2.0 on your PC, or register this unit on your YAMAHA MCX-2000.

- Refer to "Installing Windows Media Connect 2.0 on your PC" on page 108 and "Registering this unit on the YAMAHA MCX-2000" on page 109.
- This procedure is needed only the first time.

2 Turn on your PC or MCX-2000.

The PC server or MCX-2000 is added to the server list on the submenu of PC/MusicCAST.

3 Select a desired server or MusicCAST to begin playback.

Notes

- YAMAHA MCX-2000 may not be for sale in some locations.
- You can connect this unit to up to 4 PC servers and 1 MCX-2000, and each server must be connected to the same subnet as this unit.
- Some WAV, MP3 and WMA files on your PC may not be playable or may be noisy when played.
- (MCX-2000 only) Files marked with an asterisk (*) have not been converted to MP3 format. You cannot play back such files immediately unless you set the "Receive PCM Stream" setting of this unit to "ON" on MCX-2000. For details, refer to the instruction manual of MCX-2000.

- While a song is being played, the time elapsed is displayed at the bottom of the OSD.
- You can use ⏮ / ⏭ to skip backward/forward and ▷ / □ to start/stop playback independently from the menu in the OSD.
- You can set the settings for repeat and shuffle mode by using the "PLAY STYLE" parameters in "NET/USB MENU" (see page 91).
- You can set whether to display the operation status in the front panel display in a continuous manner or by the first 14 characters after scrolling all characters once by using "FL SCROLL" in "OPTION MENU" (see page 92).

■ Installing Windows Media Connect 2.0 on your PC

With Windows Media Connect 2.0, you can play back the audio files on your PC. For details refer to the documents of Windows Media Connect 2.0.

1 Install Windows Media Connect 2.0 on your PC.

You can download the installer of Windows Media Connect 2.0 from the Microsoft website.

2 Turn on your PC and then share a folder on the PC.

The Shared folder is added to the server list on the submenu of PC/MusicCAST.

Notes

- Some security software installed on your PC (anti-virus software, firewall software, etc.) may block the access of this unit to your PC. In such cases, configure the security software appropriately.
- If you are using a PC with Windows XP Professional, and the PC is logging on to a domain, you may not be able to connect the PC server. In such cases, log on to the local machine instead of the domain.

■ Registering this unit on the YAMAHA MCX-2000

You must register this unit on your YAMAHA MCX-2000 so that this unit can be recognized by your YAMAHA MCX-2000. For details, refer to the operation manual supplied with your YAMAHA MCX-2000.

1 Turn off this unit.

2 Set your YAMAHA MCX-2000 to the "Auto Config" mode.

3 Turn on this unit.

- MCX-2000 is added to the server list on the submenu of PC/MCX.
- The client ID of this unit appears in the OSD of your YAMAHA MCX-2000 (shown as CL-XXXXX), and this completes the automatic configuration procedure.

Notes

- The latter part of the client ID of this unit is same as the last 5 digits of the MAC address of this unit. For details about MAC address, see page 91.
- To clear the registered client ID of this unit, use the "Manual Config" mode of your YAMAHA MCX-2000 (refer to the instruction manual of MCX-2000) and then set "N-RESET" in the advanced setup menu of this unit to "RESET" (see page 95).
- The client control functions of MusicCAST over this unit other than "View Play Info", "Receive PCM Stream" and "Edit Client title" are not available. Avoid using these functions as it will stop the playback on this unit.

Using the Internet radio

Use this feature to listen to Internet radio stations. This unit uses the vTuner Internet radio station database service particularly customized for this unit, providing over 2000 radio station database. Further, you can store your favorite stations with bookmarks.

Notes

- This service may be discontinued without notice.
- Some Internet radio stations may not be played even if they are selected in the NET RADIO menu.
- To listen to the Internet radio, connect this unit to your network (see page 22).
- A narrowband Internet connection (i.e. 56K modem, ISDN) will not provide satisfactory results, and a broadband connection is strongly recommended (i.e. a cable modem, an xDSL modem, etc.). For detailed information, consult with your ISP.

- You can use ▷ / □ to start/stop playback independently from the menu in the OSD.
- "Podcast" is a type of the Internet radio service, and there are a number of Podcast services available on the Internet. The Podcast is not a continuous service. That is, this unit stops playback when an episode of the Podcast ends.
- Some security devices (such as firewall) may block the access of this unit to Internet radio stations. In such cases, configure the security settings appropriately.

■ Storing your favorite Internet radio stations with bookmarks

Use this feature to select your favorite Internet radio stations quickly.

Press and hold TITLE on the remote control while the selected Internet radio station service is being broadcast.

The stored Internet radio station is added to the "Bookmarks" list (see page 106).

To remove the stored station from the list, select the item in the first level of the "Bookmarks" list and then press and hold TITLE on the remote control.

Using a USB memory device or a USB portable audio player

Use this feature to enjoy WAV (PCM format only), MP3 and WMA files saved on your USB memory device or USB portable audio player connected to the USB port on the front panel of this unit.

Notes

- This unit supports USB mass storage class devices using FAT 16 or FAT 32.
- Only the first partition is displayed in the OSD. You cannot select files in other partitions.
- Up to 8 levels of directory hierarchy and 500 music files per directory are recognized.
- Some devices may not work properly even if they meet the requirements.
- Some WAV, MP3 and WMA files may not be playable or may be noisy when played.
- When you connect your USB memory device or USB portable audio player, there may be an about 10 seconds delay.

- While a song is being played, the time elapsed is displayed at the bottom of the OSD.
- You can use ⏮ / ⏭ to skip backward/forward and ▷ / □ to start/stop playback independently from the menu in the OSD.
- You can set the settings for repeat and shuffle mode by using the "PLAY STYLE" parameters in "NET/USB MENU" (see page 91).
- You can set whether to display the operation status in the front panel display in a continuous manner or by the first 14 characters after scrolling all characters once by using "FL SCROLL" in "OPTION MENU" (see page 92).

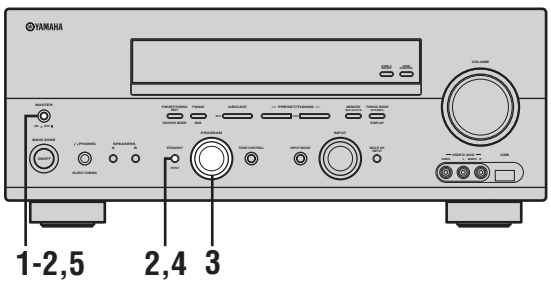
RESETTING THE SYSTEM

Use this feature to reset all the parameters of this unit to the initial factory settings.

Notes

- This procedure completely resets all the parameters of this unit including the "SET MENU" parameters. However, the advanced setup menu parameters will not be initialized.
- The initial factory settings are activated next time you turn on this unit.

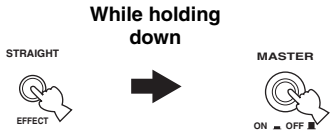
To cancel the initialization procedure at any time without making any changes, press MASTER ON/OFF on the front panel to release it outward to the OFF position.



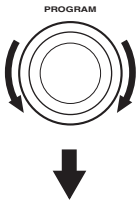
1 Press MASTER ON/OFF on the front panel to release it outward to the OFF position to turn off this unit.

2 Press and hold STRAIGHT (EFFECT) on the front panel and then press MASTER ON/OFF inward to the ON position to turn on this unit.

This unit turns on, and the advanced setup menu appears in the front panel display.



3 Rotate the PROGRAM selector on the front panel to select "PRESET".



4 Press STRAIGHT (EFFECT) on the front panel repeatedly to select "RESET".

Select "CANCEL" to cancel the initialization procedure without making any changes.

5 Press MASTER ON/OFF on the front panel to release it outward to the OFF position to confirm your selection and turn off this unit.

TROUBLESHOOTING

Refer to the table below when this unit does not function properly. If the problem you are experiencing is not listed below or if the instruction below does not help, turn off this unit, disconnect the power cable, and contact the nearest authorized YAMAHA dealer or service center.

■ General

Problem	Cause	Remedy	See page
This unit fails to turn on or enters the standby mode soon after the power is turned on.	The power cable is not connected or the plug is not completely inserted.	Connect the power cable firmly.	—
	The speaker impedance setting is incorrect.	Set the speaker impedance to match your speakers.	27
	The protection circuitry has been activated.	Make sure that all speaker wire connections on this unit and on all speakers are secure and that the wire for each connection does not touch anything other than its respective connection.	13
	This unit has been exposed to a strong external electric shock (such as lightning or strong static electricity).	Set this unit to the standby mode, disconnect the power cable, plug it back in after 30 seconds and then use it normally.	—
No sound	Incorrect input or output cable connections.	Connect the cables properly. If the problem persists, the cables may be defective.	17-23
	“INPUT MODE” is set to “DTS” or “ANALOG”.	Set “INPUT MODE” to “AUTO”.	35
	No appropriate input source has been selected.	Select an appropriate input source with the INPUT selector on the front panel (or the input selector buttons on the remote control) and MULTI CH INPUT on the front panel (or MULTI CH IN on the remote control).	32, 38
	Speaker connections are not secure.	Secure the connections.	13
	The front speakers to be used have not been selected properly.	Select the set of front speakers with SPEAKERS A or B on the front panel or SPEAKERS on the remote control.	32
	The volume is turned down.	Turn up the volume.	—
	The sound is muted.	Press MUTE or VOLUME +/– on the remote control to resume audio output and then adjust the volume.	34
	“INPUT MODE” is set to “ANALOG” while playing a source encoded in DTS.	Set “INPUT MODE” to “AUTO” or “DTS”.	35
	Signals this unit cannot reproduce are being input from a source component, such as a CD-ROM.	Play a source whose signals can be reproduced by this unit.	—
No picture	The output and input for the picture are connected to different types of video jacks.	Set “VIDEO CONV.” to “ON”.	92

Problem	Cause	Remedy	See page
The sound suddenly goes off.	The protection circuitry has been activated because of a short circuit, etc.	Check that the speaker impedance setting is correct.	27, 95
		Check that the speaker wires are not touching each other and then turn this unit back on.	—
	The sleep timer has turned off this unit.	Turn on this unit, and play the source again.	—
	The sound is muted.	Press MUTE or VOLUME +/– on the remote control to resume audio output.	34
Sound is heard from the speaker on one side only.	Incorrect cable connections.	Connect the cables properly. If the problem persists, the cables may be defective.	13
	Incorrect settings in “SPEAKER LEVEL”.	Adjust the “SPEAKER LEVEL” settings.	84
Only the center speaker outputs substantial sound.	When playing a monaural source with a CINEMA DSP program, the source signal is directed to the center channel, and the front and surround speakers output effect sounds.		
No sound is heard from the center speaker.	“CENTER SP” in “SET MENU” is set to “NONE”.	Set “CENTER SP” to “SML” or “LRG”.	83
	One of the HiFi DSP programs (except for “6ch Stereo”) has been selected.	Try another sound field program.	70
No sound is heard from the surround speakers.	“SUR. L/R SP” in “SET MENU” is set to “NONE”.	Set “SUR. L/R SP” to “SML” or “LRG”.	83
	This unit is in the “STRAIGHT” mode and a monaural source is being played back.	Press STRAIGHT (EFFECT) on the front panel so that “STRAIGHT” disappears from the front panel display.	39
No sound is heard from the surround back speaker.	“SUR. L/R SP” in “SET MENU” is set to “NONE” and “SUR. B SP” is automatically set to “NONE”.	Set “SUR. L/R SP” and “SUR. B SP” to “SML” or “LRG”.	83
	“SUR. B SP” in “SET MENU” is set to “NONE”.	Set “SUR. B SP” to “SML” or “LRG”.	83
No sound is heard from the subwoofer.	“LFE/BASS OUT” in “SET MENU” is set to “FRNT” when a Dolby Digital or DTS signal is being played.	Set “LFE/BASS OUT” to “SWFR” or “BOTH”.	83
	“LFE/BASS OUT” in “SET MENU” is set to “SWFR” or “FRNT” when a 2-channel source is being played.	Set “LFE/BASS OUT” to “BOTH”.	83
	The source does not contain low-frequency signals.		

Problem	Cause	Remedy	See page
Dolby Digital or DTS sources cannot be played. (Dolby Digital or DTS indicator in the front panel display does not light up.)	The connected component is not set to output Dolby Digital or DTS digital signals.	Make an appropriate setting following the operating instructions for your component.	—
	"INPUT MODE" is set to "ANALOG".	Set "INPUT MODE" to "AUTO" or "DTS".	35
A humming sound is heard.	Incorrect cable connections.	Connect the audio cables firmly. If the problem persists, the cables may be defective.	—
The volume level cannot be increased, or the sound is distorted.	The component connected to the AUDIO OUT (REC) jacks of this unit is turned off.	Turn on the power of the component.	—
The sound effect cannot be recorded.	It is not possible to record the sound effect with a recording component.		
A source cannot be recorded by a digital recording component connected to the DIGITAL OUTPUT jack.	The source component is not connected to the DIGITAL INPUT jacks of this unit.	Connect the source component to the DIGITAL INPUT jacks.	18, 20
	Some components cannot record the Dolby Digital or DTS sources.		
A source cannot be recorded by an analog component connected to the AUDIO OUT (REC) jacks.	The source component is not connected to the analog AUDIO IN jacks of this unit.	Connect the source component to the analog AUDIO IN jacks.	20
The sound field parameters and some other settings of this unit cannot be changed.	"MEMORY GUARD" in "SET MENU" is set to "ON".	Set "MEMORY GUARD" to "OFF".	93
This unit does not operate properly.	The internal microcomputer has been frozen by an external electric shock (such as lightning or excessive static electricity) or by a power supply with low voltage.	Disconnect the power cable from the AC wall outlet and then plug it in again after about 30 seconds.	—
"CHECK SP WIRES" appears in the front panel display.	Speaker cables are short-circuited.	Make sure all speaker cables are connected correctly.	13
There is noise interference from digital or radio frequency equipment.	This unit is too close to the digital or high-frequency equipment.	Move this unit further away from such equipment.	—
The picture is disturbed.	The video source uses scrambled or encoded signals to prevent dubbing.		
This unit suddenly enters the standby mode.	The internal temperature becomes too high and the overheat protection circuitry has been activated.	Wait about 1 hour for this unit to cool down and then turn it back on.	—

■ Tuner

	Problem	Cause	Remedy	See page
FM	**FM stereo reception is noisy.**	The characteristics of FM stereo broadcasts may cause this problem when the transmitter is too far away or the antenna input is poor.	Check the antenna connections.	24
			Try using a high-quality directional FM antenna.	—
			Use the manual tuning method.	47
	There is distortion, and clear reception cannot be obtained even with a good FM antenna.	There is multi-path interference.	Adjust the antenna position to eliminate multi-path interference.	—
	The desired station cannot be tuned into with the automatic tuning method.	The signal is too weak.	Use a high-quality directional FM antenna.	—
			Use the manual tuning method.	47
	Previously preset stations can no longer be tuned into.	This unit has been disconnected for a long period.	Set preset stations.	48, 49
AM	**The desired station cannot be tuned into with the automatic tuning method.**	The signal is weak or the antenna connections are loose.	Tighten the AM loop antenna connections and orient it for the best reception.	—
			Use the manual tuning method.	47
	There are continuous crackling and hissing noises.	Noises result from lightning, fluorescent lamps, motors, thermostats and other electrical equipment.	Use an outdoor antenna and a ground wire. This will help somewhat, but it is difficult to eliminate all noise.	—
	There are buzzing and whining noises.	A TV set is being used nearby.	Move this unit away from the TV set.	—
DAB	**Cannot tune into any DAB services.**	The initial scan operations were not performed, or the DAB registry list needs to be updated.	Perform the initial scan operations.	58
		There is no DAB coverage in your area.	Check with your dealer or WorldDAB online at “http://www.worlddab.org” for a listing of the DAB coverage in your area.	—
		The DAB signals are too weak.	Use a high-quality outdoor DAB antenna.	—
	The initial scan operations are not successful and “Not Available” appears in the front panel display.	The DAB antenna may not be connected.	Make sure the DAB antenna is firmly connected.	25
		The DAB signals are too weak.	Use a high-quality outdoor DAB antenna.	—
		There is no DAB coverage in your area.	Check with your dealer or WorldDAB online at “http://www.worlddab.org/” for a listing of the DAB coverage in your area.	—
	The DAB service reception is weak.	The positioning of the indoor DAB antenna and/or this unit is not optimal for DAB reception.	Use the tuning aid feature to locate the best positioning of the DAB antenna and this unit for optimal DAB reception.	66
		The DAB signals are too weak.	Use a high-quality outdoor DAB antenna.	—
	There is noise interference (e.g. hiss or crackle).	The indoor DAB antenna needs to be repositioned.	Readjust the position of the indoor DAB antenna.	—
		The DAB signals are too weak.	Use a high-quality outdoor DAB antenna.	—
	The DAB service information does not appear or is inaccurate.	The DAB service may be temporarily out of service, or the DAB service information is not provided by the DAB broadcaster.	Contact the DAB broadcaster.	—

■ Remote control

Problem	Cause	Remedy	See page
The remote control does not work nor function properly.	Wrong distance or angle.	The remote control functions within a maximum range of 6 m (20 ft) and no more than 30 degrees off-axis from the front panel.	8
	Direct sunlight or lighting (from an inverter type of fluorescent lamp, etc.) is striking the remote control sensor of this unit.	Reposition this unit.	—
	The batteries are weak.	Replace all batteries.	3
	The remote control code is not correctly set.	Set the remote control code correctly using "LIST OF REMOTE CONTROL CODES" at the end of this manual.	98
		Try setting another code for the same manufacturer using "LIST OF REMOTE CONTROL CODES" at the end of this manual.	98
	The library code of the remote control and the remote control ID of this unit do not match.	Match the remote control ID of this unit with the corresponding remote control library code.	95, 99
	Even if the remote control code is correctly set, there are some models that do not respond to the remote control.		

■ iPod

Note

In case of a transmission error without a status message appearing in the front panel and in the OSD, check the connection to your iPod (see page 21).

Status message	Cause	Remedy	See page
Loading...	This unit is in the middle of recognizing the connection with your iPod.		
	This unit is in the middle of acquiring song lists from your iPod.		
Connect error	There is a problem with the signal path from your iPod to this unit.	Turn off this unit and reconnect the YAMAHA iPod universal dock to the DOCK terminal of this unit.	21
		Try resetting your iPod.	—
Unknown type	The iPod being used is not supported by this unit.	Only iPod (Click and Wheel), iPod nano, and iPod mini are supported.	—
iPod connected	Your iPod is properly stationed in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit, and the connection between your iPod and this unit is complete.		
Disconnected	Your iPod was removed from a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit.	Station your iPod back in a YAMAHA iPod universal dock (such as YDS-10 sold separately) connected to the DOCK terminal of this unit.	21
Unable to play	This unit cannot play back the songs currently stored on your iPod.	Check that the songs currently stored on your iPod are playable.	—
		Store some other playable music files on your iPod.	—

■ Network and USB

Problem	Cause	Remedy	See page
The PC server/MCX-2000/ Internet radio does not function properly.	The IP address is not set properly.	Set the DHCP server function of the router to ON. Alternately, perform manual configuration according to the current operating environment.	90
	The network cable is not connected.	Connect it properly.	22
The music in the PC server cannot be played back.	The PC does not have Windows Media Connect 2.0 installed in it.	Install Windows Media Connect 2.0 in the PC.	—
	The music is recorded in a format that cannot be played on this unit. This unit cannot play music formats other than WMA, MP3 and WAV (PCM format). Also note that it cannot play certain music files even if these are recorded in the WMA, MP3 or WAV format.	Play music recorded in a format that this unit is compatible with.	—
	The music is copyright-protected.	This unit cannot play copyright-protected music.	—
Windows Media Connect 2.0 cannot be connected.	The Windows XP PC is logging on to a domain.	Log on to the local machine instead of the domain.	—
The MusicCAST server cannot be connected.	You are attempting to connect to MCX-1000. The MusicCAST server that can be connected by this unit is MCX-2000.	Use MCX-2000 or the PC server.	—
	Auto Configuration is not executed.	Execute “Auto Configure”.	108
The Internet radio cannot be played.	The firewall of the network device is activated. The Internet radio can be played only when it passes through the port designated by each radio station. The port number is variable depending on radio station.	Check the firewall setting of the network device.	—
	Connection to the Internet is disconnected.	Check the configuration of the network device, and then contact the network connection provider.	—
The music files and directories in the USB device cannot be viewed.	The music files and directories are placed in locations other than the FAT area.	Place music files and directories in the FAT area.	—
	You are attempting to browse directory hierarchies of over 8 levels or a directory with more than 500 files.	Modify the data structure on your USB device.	—
The USB device cannot be recognized.	The connected USB device is other than a USB mass storage class USB memory device or USB portable audio player.	This unit can recognize only a USB mass storage class USB memory device or USB portable audio player. Also note that it cannot recognize certain USB devices even when they are devices as described above.	110
		Some devices may become easier to recognize when they are inserted before turning this unit on.	28
“Disconnected” is displayed even when a USB device is present.	This unit recognized the USB device as an illegal device.	Turn this unit off then on again.	28

Status message	Cause	Remedy	See page
Please wait	This unit is in the middle of recognizing the connection with your network.	This is not a system malfunction. Wait for a while.	—
	This unit is in the middle of recognizing the connection with your USB memory device or USB portable audio player.	This is not a system malfunction. Wait for a while.	—
Please wait (Starting Server)	This unit is in the middle of waking up MCX-2000 that has been set to the standby mode.	Wait for approximately 20 seconds.	—
Connect error	There is a problem with the signal path from your network to this unit.	Check the connection between this unit and the LAN port on your router or hub.	22
		Make sure your router is properly connected and turned on. Also, make sure your modem is properly connected and turned on when you are attempting to listen to Internet radio.	22
Disconnected	Your USB memory device or USB portable audio player has been disconnected from the USB port of this unit.	Check the connection between this unit and your USB memory device or USB portable audio player.	—
	The PC server or MCX-2000 previously connected to this unit no longer exists.	Connect this unit to the available PC server or MCX-2000.	108
	There is a problem with the signal path from your USB memory device or USB portable audio player to this unit.	Turn off this unit and reconnect your USB memory device or USB portable audio player to the USB port of this unit.	28
		Try resetting your USB memory device or USB portable audio player.	—
Access error	This unit cannot access your USB memory device or USB portable audio player.	Try another USB memory device or USB portable audio player.	—
	There is a problem with the signal path from your USB memory device or USB portable audio player to this unit.	Turn off this unit and reconnect your USB memory device or USB portable audio player to the USB port of this unit.	28
		Try resetting your USB memory device or USB portable audio player.	—
Unable to play	This unit cannot play back the songs currently stored on your PC.	Make sure Windows Media Connect 2.0 is installed on your PC.	—
		Check that the songs currently stored on your PC are playable (MP3, WMA, and WAV).	—
		Store some other playable music files (MP3, WMA, and WAV) on your PC.	—
	The network may be overloaded with heavy traffic, and playback is interrupted.	Try preparing a network exclusively for use with this unit to separate it from general network traffic.	—
List updated	The list of the contents stored on your PC server or MCX-2000 has been updated.		
Bookmark ON	The desired Internet radio station has been added to the “Bookmarks” list.		
Bookmark OFF	The stored Internet radio station has been removed from the “Bookmarks” list.		

GLOSSARY

Audio information

■ Dolby Digital

Dolby Digital is a digital surround sound system that gives you completely independent multi-channel audio. With 3 front channels (front L/R and center), and 2 surround stereo channels, Dolby Digital provides 5 full-range audio channels. With an additional channel especially for bass effects, called LFE (Low Frequency Effect), the system has a total of 5.1-channels (LFE is counted as 0.1 channel). By using 2-channel stereo for the surround speakers, more accurate moving sound effects and surround sound environment are possible than with Dolby Surround. The wide dynamic range from maximum to minimum volume reproduced by the 5 full-range channels and the precise sound orientation generated using digital sound processing provide listeners with unprecedented excitement and realism. With this unit, any sound environment from monaural up to a 5.1-channel configuration can be freely selected for your enjoyment.

■ Dolby Digital EX

Dolby Digital EX creates 6 full-bandwidth output channels from 5.1-channel sources. This is done using a matrix decoder that derives 3 surround channels from the 2 in the original recording. For the best results, Dolby Digital EX should be used with movie sound tracks recorded with Dolby Digital Surround EX. With this additional channel, you can experience more dynamic and realistic moving sound especially with scenes with "fly-over" and "fly-around" effects.

■ Dolby Pro Logic II

Dolby Pro Logic II is an improved technique used to decode vast numbers of existing Dolby Surround sources. This new technology enables a discrete 5-channel playback with 2 front left and right channels, 1 center channel, and 2 surround left and right channels instead of only 1 surround channel for conventional Pro Logic technology. There are three modes available: "Music mode" for music sources, "Movie mode" for movie sources and "Game mode" for game sources.

■ Dolby Pro Logic IIx

Dolby Pro Logic IIx is a new technology enabling discrete multi-channel playback from 2-channel or multi-channel sources. There are three modes available: "Music mode" for music sources, "Movie mode" for movie sources (for 2-channel sources only) and "Game mode" for game sources.

■ Dolby Surround

Dolby Surround uses a 4-channel analog recording system to reproduce realistic and dynamic sound effects: 2 front left and right channels (stereo), a center channel for dialog (monaural), and a surround channel for special sound effects (monaural). The surround channel reproduces sound within a narrow frequency range. Dolby Surround is widely used with nearly all video tapes and laser discs, and in many TV and cable broadcasts as well. The Dolby Pro Logic decoder built into this unit employs a digital signal processing system that automatically stabilizes the volume on each channel to enhance moving sound effects and directionality.

■ DTS 96/24

DTS 96/24 offers an unprecedented level of audio quality for multi-channel sound on DVD video, and is fully backward-compatible with all DTS decoders. "96" refers to a 96 kHz sampling rate compared to the typical 48 kHz sampling rate. "24" refers to 24-bit word length. DTS 96/24 offers sound quality transparent to the original 96/24 master, and 96/24 5.1-channel sound with full-quality full-motion video for music programs and motion picture soundtracks on DVD video.

■ DTS (Digital Theater Systems) Digital Surround

DTS digital surround was developed to replace the analog soundtracks of movies with a 6.1-channel digital sound track, and is now rapidly gaining popularity in movie theaters around the world. Digital Theater Systems Inc. has developed a home theater system so that you can enjoy the depth of sound and natural spatial representation of DTS digital surround in your home. This system produces practically distortion-free 6.1-channel sound (technically, front left and right, center, surround left and right, and LFE 0.1 (subwoofer) channels for a total of 5.1 channels). This unit incorporates a DTS-ES decoder that enables 6.1-channel reproduction by adding the surround back channel to the existing 5.1-channel format.

■ ITU-R

ITU-R is the radio communication sector of the ITU (International Telecommunication Union). ITU-R recommends a standard speaker placement which is used in many critical listening rooms, especially for mastering purposes.

■ LFE 0.1 channel

This channel reproduces low-frequency signals. The frequency range of this channel is from 20 Hz to 120 Hz. This channel is counted as 0.1 because it only enforces a low-frequency range compared to the full-range reproduced by the other 5/6 channels in Dolby Digital or DTS 5.1/6.1-channel systems.

■ MP3

One of the audio compression methods used by MPEG. It employs the irreversible compression method, which achieves a high compression rate by thinning out the data of hardly audible part to the human ears. It is said to be capable of compressing the data quantity by about 1/11 (128 kbps) while maintaining a similar audio quality to music CD.

■ Neo:6

Neo:6 decodes the conventional 2-channel sources for 6-channel playback by the specific decoder. It enables playback with the full-range channels with higher separation just like digital discrete signal playback. There are two modes available: “Music mode” for music sources and “Cinema mode” for movie sources.

■ PCM (Linear PCM)

Linear PCM is a signal format under which an analog audio signal is digitized, recorded and transmitted without using any compression. This is used as a method of recording CDs and DVD audio. The PCM system uses a technique for sampling the size of the analog signal per very small unit of time. Standing for “Pulse Code Modulation”, the analog signal is encoded as pulses and then modulated for recording.

■ Sampling frequency and number of quantized bits

When digitizing an analog audio signal, the number of times the signal is sampled per second is called the sampling frequency, while the degree of fineness when converting the sound level into a numeric value is called the number of quantized bits. The range of rates that can be played back is determined based on the sampling rate, while the dynamic range representing the sound level difference is determined by the number of quantized bits. In principle, the higher the sampling frequency, the wider the range of frequencies that can be played back, and the higher the number of quantized bits, the more finely the sound level can be reproduced.

■ WAV

Windows standard audio file format, which defines the method of recording the digital data obtained by converting audio signals. It does not specify the compression (coding) method so a desired compression method can be used with it. By default, it is compatible with the PCM method (no compression) and some compression methods including the ADPCM method.

■ WMA

An audio compression method developed by Microsoft Corporation. It employs the irreversible compression method, which achieves a high compression rate by thinning out the data of hardly audible part to the human ears. It is said to be capable of compressing the data quantity by about 1/22 (64 kbps) while maintaining a similar audio quality to music CD.

Video information

■ Component video signal

With the component video signal system, the video signal is separated into the Y signal for the luminance and the P_B and P_R signals for the chrominance. Color can be reproduced more faithfully with this system because each of these signals is independent. The component signal is also called the “color difference signal” because the luminance signal is subtracted from the color signal. A monitor with component input jacks is required in order to output component signals.

■ Composite video signal

With the composite video signal system, the video signal is composed of three basic elements of a video picture: color, brightness and synchronization data. A composite video jack on a video component transmits these three elements combined.

■ S-video signal

With the S-video signal system, the video signal normally transmitted using a pin cable is separated and transmitted as the Y signal for the luminance and the C signal for the chrominance through the S-video cable. Using the S VIDEO jack eliminates video signal transmission loss and allows recording and playback of even more beautiful images.

Sound field program information

■ CINEMA DSP

Since the Dolby Surround and DTS systems were originally designed for use in movie theaters, their effect is best felt in a theater having many speakers designed for acoustic effects. Since home conditions, such as room size, wall material, number of speakers, and so on, can differ so widely, it is inevitable that there are differences in the sound heard. Based on a wealth of actually measured data, YAMAHA CINEMA DSP uses YAMAHA original sound field technology to combine Dolby Pro Logic, Dolby Digital and DTS systems to provide the audiovisual experience of movie theater in the listening room of your own home.

■ SILENT CINEMA

YAMAHA has developed a natural, realistic sound effect DSP algorithm for headphones. Parameters for headphones have been set for each sound field so that accurate representations of all the sound field programs can be enjoyed on headphones.

■ Virtual CINEMA DSP

YAMAHA has developed a Virtual CINEMA DSP algorithm that allows you to enjoy DSP sound field surround effects even without any surround speakers by using virtual surround speakers. It is even possible to enjoy Virtual CINEMA DSP using a minimal two-speaker system that does not include a center speaker.

DAB frequency information

■ Band III

Note

When you select "UK BAND3" in the initial scan operation, this unit scans only within the frequencies marked with an asterisk (*) in the following table (see page 65).

	Frequency	Channel label
	174.928 MHz	5A
	176.640 MHz	5B
	178.352 MHz	5C
	180.064 MHz	5D
	181.936 MHz	6A
	183.648 MHz	6B
	185.360 MHz	6C
	187.072 MHz	6D
	188.928 MHz	7A
	190.640 MHz	7B
	192.352 MHz	7C
	194.064 MHz	7D
	195.936 MHz	8A
	197.648 MHz	8B
	199.360 MHz	8C
	201.072 MHz	8D
	202.928 MHz	9A
	204.640 MHz	9B
	206.352 MHz	9C
	208.064 MHz	9D
	209.936 MHz	10A
	211.648 MHz	10B
	213.360 MHz	10C
	215.072 MHz	10D
	216.928 MHz	11A
*	218.640 MHz	11B
*	220.352 MHz	11C
*	222.064 MHz	11D
*	223.936 MHz	12A
*	225.648 MHz	12B
*	227.360 MHz	12C
*	229.072 MHz	12D
	230.784 MHz	13A
	232.496 MHz	13B
	234.208 MHz	13C
	235.776 MHz	13D
	237.488 MHz	13E
	239.200 MHz	13F

■ L-Band

Frequency	Channel label
1452.960 MHz	LA
1454.672 MHz	LB
1456.384 MHz	LC
1458.096 MHz	LD
1459.808 MHz	LE
1461.520 MHz	LF
1463.232 MHz	LG
1464.944 MHz	LH
1466.656 MHz	LI
1468.368 MHz	LJ
1470.080 MHz	LK
1471.792 MHz	LL
1473.504 MHz	LM
1475.216 MHz	LN
1476.928 MHz	LO
1478.640 MHz	LP
1480.352 MHz	LQ
1482.064 MHz	LR
1483.776 MHz	LS
1485.488 MHz	LT
1487.200 MHz	LU
1488.912 MHz	LV
1490.624 MHz	LW

SPECIFICATIONS

AUDIO SECTION

- Minimum RMS Output Power for Front, Center, Surround, Surround back
  20 Hz to 20 kHz, 0.06% THD, 8 Ω ..... 95 W
- Dynamic Power (IHF)
  8/6/4/2 Ω ..... 130/165/195/240 W
- Maximum Output Power
  1 kHz, 0.7% THD, 4 Ω ..... 145 W
- IEC Output Power
  1 kHz, 0.06% THD, 8 Ω ..... 105 W
- Damping Factor
  20 Hz to 20 kHz, 8 Ω ..... 120 or more
- Maximum Input Voltage
  CD, etc. (1 kHz, 0.5% THD) ..... 2.2 V or more
- Frequency Response
  CD, etc. ..... 10 Hz to 100 kHz, –3 dB
  V-AUX ..... 10 Hz to 20 kHz, –3 dB
- Total Harmonic Distortion
  CD, etc. to Front L/R (20 Hz to 20 kHz, 50 W, 8 Ω) ..... 0.06% or less
- Signal to Noise Ratio (IHF-A Network)
  CD, etc. (250 mV) to Front L/R ..... 100 dB or more
- Residual Noise (IHF-A Network)
  Front L/R ..... 150 µV or less
- Channel Separation (1 kHz/10 kHz)
  CD (5.1 kΩ terminated) to Front L/R ..... 60 dB/45 dB or more
- Tone Control (Front L/R)
  BASS Boost/Cut ..... ±10 dB/60 Hz
  TREBLE Boost/Cut ..... ±10 dB/20 kHz
- Phones Output ..... 150 mV/100 Ω
- Input Sensitivity/Input Impedance
  CD, etc. ..... 200 mV/47 kΩ
  MULTI CH INPUT ..... 200 mV/47 kΩ
- Rated Output Voltage/Output Impedance
  OUT (REC) ..... 200 mV/1.2 kΩ
  SUBWOOFER ..... 4 V/1.2 kΩ
  ZONE 2 OUT ..... 200 mV/1.2 kΩ
- Volume Control ..... Mute/–80 dB to +16 dB/1 dB step

VIDEO SECTION

- Video Format (Gray Back) ..... PAL
- Video Format (Video Conversion) ..... NTSC/PAL
- Rated Input Voltage
  Composite ..... 1 Vp-p/75 Ω
  S-video (Y) ..... 1 Vp-p/75 Ω
  S-video (C) ..... 0.286 Vp-p/75 Ω
  Component (Y) ..... 1 Vp-p/75 Ω
  Component (P_B, P_R) ..... 0.7 Vp-p/75 Ω
- Signal to Noise Ratio ..... 50 dB or more
- Frequency Response (MONITOR OUT)
  Component ..... 5 Hz to 60 MHz, –3 dB

FM SECTION

- Tuning Range ..... 87.50 to 108.00 MHz
- Usable Sensitivity (IHF) ..... 1.0 µV (11.2 dBf)
- Signal to Noise Ratio (IHF)
  Mono/Stereo ..... 76 dB/70 dB
- Harmonic Distortion (1 kHz)
  Mono/Stereo 0.2%/0.3%
- Stereo Separation (1 kHz) ..... 42 dB
- Frequency Response ..... 20 Hz to 15 kHz, +0.5, –2 dB

AM SECTION

- Tuning Range ..... 531 to 1611 kHz
- Usable Sensitivity ..... 300 µV/m

DAB SECTION

- Tuning Range
  (Band III) ..... 174 to 240 MHz
  (L-Band) ..... 1452 to 1492 MHz
- Sensitivity
  (Band III) ..... –99 dBm
  (L-Band) ..... –95 dBm
- Signal to Noise Ratio ..... 97 dB
- Total Harmonic Distortion 0.01%
- Stereo Separation (1 kHz) 95dB
- Frequency Response ..... 20 Hz to 20 kHz, ±0.5 dB

GENERAL

- Power Supply ..... AC 230 V, 50 Hz
- Power Consumption ..... 360 W
- Standby Power Consumption ..... 0.1 W or less
- AC Outlets ..... 1 (100 W maximum)
- Dimensions (W x H x D) ..... 435 x 171 x 393 mm
- Weight ..... 11.9 kg

GPL/LGPL

This product includes software code subject to the GNU General Public License (GPL) or the GNU Lesser General Public License (LGPL). The copy, distribution, or change of this software code is licensed under the terms of the GPL or the LGPL. The source code is available at the following website:
http://www.global.yamaha.com/download/

The source code is also available on a physical media (such as a CD-ROM) at actual cost.
Contact: AV products division, YAMAHA CORPORATION,
10-1 Nakazawa-cho, Hamamatsu 430-8650, Japan

In principle, the source code is offered for 3 years from the day of purchase.

■ GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

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That's all there is to it!

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