R-771

Audio/Video Receiver

Sherwood NEWCASTLE

5707-21128-042-0

Sherwood
NEWCASTLE

OPERATING INSTRUCTIONS

R-771

Audio/Video Receiver

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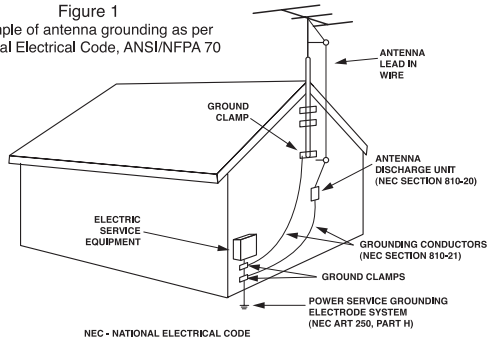
SAFETY INSTRUCTIONS

1. **Read Instructions** - All the safety and operating instructions should be read before the product is operated.
2. **Retain instructions** - The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions** - All operating and use instructions should be followed.
5. **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. **Water and Moisture** - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement, or near a swimming pool; and the like.
8. **Accessories** - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

PORTABLE CART WARNING

10. **Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. **Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. **Grounding or Polarization** - This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replae your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
    Alternate Warnings - This product is equipped with a three-wire grounding-type plug, a plug having a third(grounding) pin. This plug will only fit into a grounding-type power outlet. this is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the gronding-type plug.
13. **Power-Cord Protection** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. **Outdoor Antenna Grounding** - If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 1.

Figure 1
Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70



15. **Lightning** - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. **Power Lines** - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17. **Overloading** - Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. **Damage Requiring Service** - Unplug this product form the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a) When the power-supply cord or plug is damaged,
    b) If liquid has been spilled, or objects have fallen into the product,
    c) If the product has been exposed to rain or water,
    d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    e) If the product has been dropped or damaged in any way, and
    f) When the product exhibits a distinct change in performance - this indicates a need for service.
21. **Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
22. **Safety Check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. **Wall or Ceiling Mounting** - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24. **Heat** - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Introduction

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READ THIS BEFORE OPERATING YOUR UNIT

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

	This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

Caution regarding installation

Note : For heat dispersal, do not install this unit in a confined space such as a bookcase or smilar enclosure.

Do not block ventilation openings or stack other equipment on the top.

Note to CATV System Installer :

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Caution : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FOR YOUR SAFETY

U.S.A **CANADA**	**120 V**	Units shipped to the U.S.A and CANADA are designed for operation on 120 V AC only. Safety precaution with use of a polarized AC plug. However, some products may be supplied with a nonpolarized plug. **CAUTION** : To prevent electric shock, match wide blade of plug to wide slot, fully insert. **ATTENTION** : Pour éviter chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu' au fond.

CAUTION

- Leave a space around the unit for sufficient ventilation.
- Avoid installation in extremely high or cold locations, or in an area that is exposed to direct sunlight or heating equipment.
- Keep the unit free from moisture, water, and dust.
- Do not let foreign objects in the unit.
- The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc.
- No naked flame sources, such as lighted candles, should be placed on the unit.
- Please be care the environmental aspects of battery disposal.
- The unit shall not be exposed to dripping or splashing for use.
- No objects filled with liquids, such as vases, shall be placed on the unit.
- Do not let insecticides, benzene, and thinner come in contact with the set.
- Never disassemble or modify the unit in any way.

■Notes on the AC power cord and the wall outlet.

- The unit is not disconnected from the AC power source(mains) as long as it is connected to the wall outlet, even if the unit has been turned off.
- When disconnecting the power cord from the wall outlet, always pull the plug, not the power cord.
- Disconnect the plug from the wall outlet when not using the unit for long periods of time.
- The wall outlet shall be installed near the unit and shall be easily accessible.

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CONTENTS

System Connections

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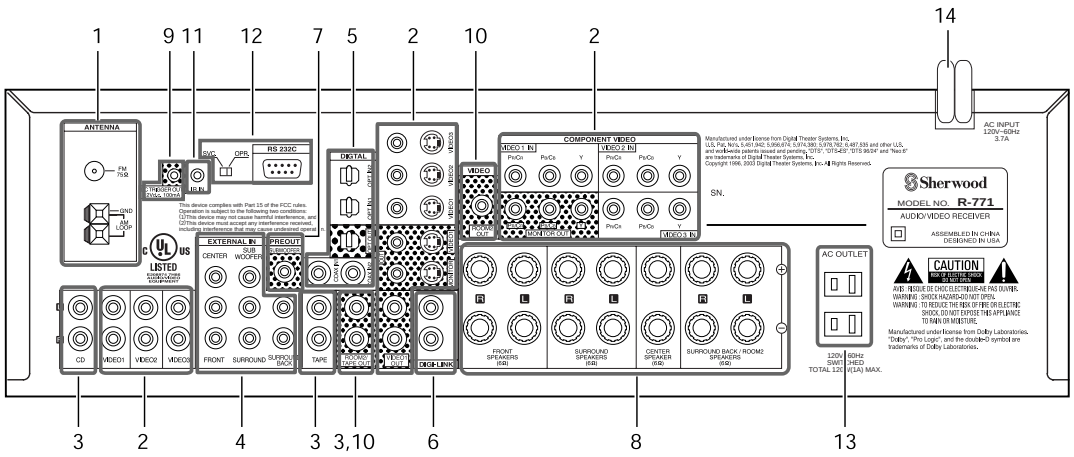
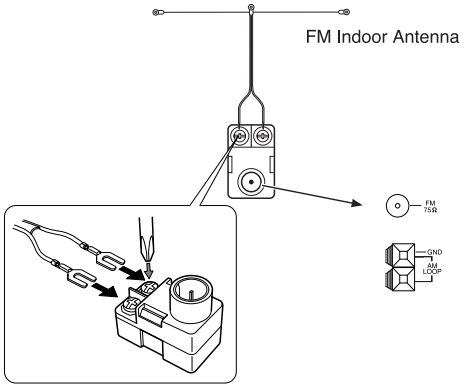
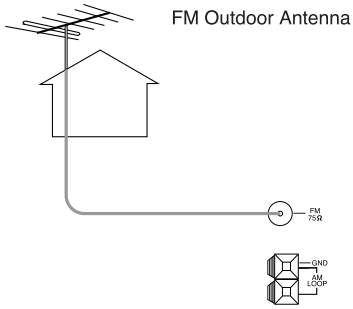
- Do not plug the AC input cord into the wall AC outlet until all connections are completed.
- Be sure to observe the color coding when connecting audio, video and speaker cords.
- Make connections firmly and correctly. If not, it can cause loss of sound, noise or damage to the receiver.



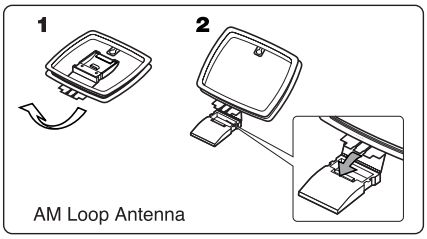
1. CONNECTING ANTENNAs



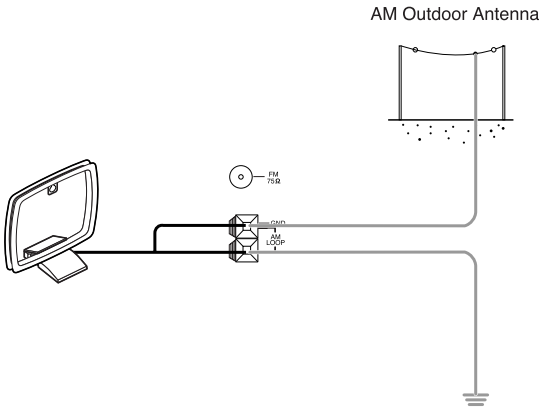


- Change the position of the FM indoor antenna until you get the best reception of your favorite FM stations.

- A 75Ω outdoor FM antenna may be used to further improve the reception. Disconnect the indoor antenna before replacing it with the outdoor one.



- Place the AM loop antenna as far as possible from the receiver, TV set, speaker cords and the AC input cord and set it to a direction for the best reception.
- If the reception is poor with the AM loop antenna, an AM outdoor antenna can be used in place of the AM loop antenna.



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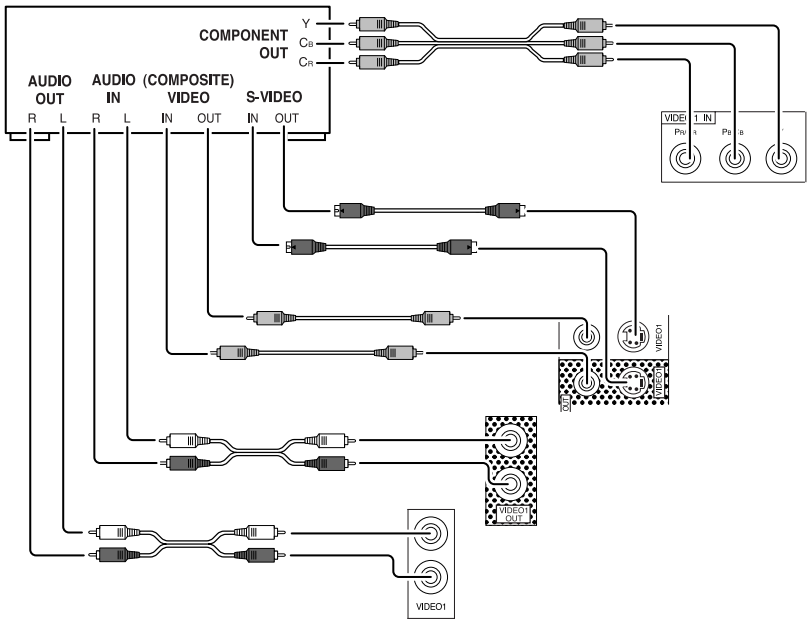
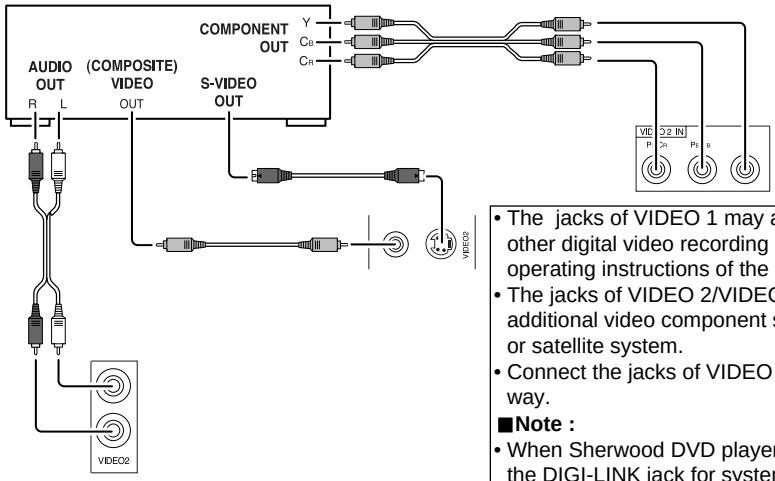
2. CONNECTING VIDEO COMPONENTS

VIDEO 1 Video deck, DVD recorder, etc.



VIDEO 2 DVD player, LD palyer, etc.

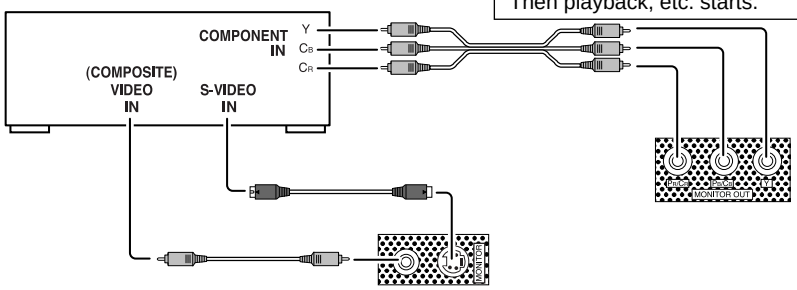


- The jacks of VIDEO 1 may also be connected to a DVD recorder or other digital video recording component. For details, refer to the operating instructions of the component to be connected.
- The jacks of VIDEO 2/VIDEO 3 can also be connected to an additional video component such as a cable TV tuner, an LD player or satellite system.
- Connect the jacks of VIDEO 3 to the video component in the same way.

■Note :

- When Sherwood DVD player such as V-768, etc. is connected to the DIGI-LINK jack for system control, you should connect the DVD player to the " VIDEO 2" jacks of this unit.
  Because, if the PLAY button, etc. is pressed on the DVD player, the VIDEO 2 is automatically selected as an input source on this unit. Then playback, etc. starts.

MONITOR TV, Projector, etc.



- There are three types of video jacks(COMPONENT, S-VIDEO, (composite) VIDEO) for connecting video components.
  Connect them to the corresponding video jacks according to their capability.
- For your reference, the excellence in picture quality is as follows : "COMPONENT" > "S-VIDEO" > "(composite) VIDEO".
- When making COMPONENT VIDEO connections, connect "Y" to "Y", "P_B/C_B" to "C_B"(or "B-Y", "P_B") and "P_R/C_R" to "C_R"(or "R-Y", "P_R").
- When recording video program sources through VIDEO 1 OUT jacks or viewing ROOM 2 source through ROOM 2 OUT jack, you must use the same type of video jacks that you did connect to video playback components such as DVD player, LD player, etc.
- This unit is equipped with a function that up-converts composite video or S-Video signals to component video signals or down-converts S-Video signals to composite video signals and outputs them from the MONITOR OUTs. Because of this, you need not connect all the types of MONITOR OUT jacks to the MONITOR TV.
- After connecting the video components, you should set the video mode correctly, referring to the following table.
  (For details, refer to "When selecting the VIDEO MODE" on page 41.)

■Relationship between the video input signal and the video output signal

Video input signals			Video Mode Setting	MONITOR OUTs		
COMPONENT	S-VIDEO	(COMPOSITE) VIDEO		COMPONENT	S-VIDEO	(COMPOSITE) VIDEO
○	○	○	Auto	Component	S-Video	Composite video*3
			Component*1	Component*4	×	×
			S-Video*2	S-Video	S-Video	S-Video
			Composite*2	Composite video	Composite video	Composite video
○	○	×	Auto	Component	S-Video	S-Video
○	×	○	Auto	Component	Composite video	Composite video
○	×	×	Auto	Component*4	×	×
×	○	○	Auto	S-Video	S-Video	Composite video*3
×	○	×	Auto	S-Video	S-Video	S-Video
×	×	○	Auto	Composite video	Composite video	Composite video

*1 : Component video signal can be output from the MONITOR COMPONENT OUT jacks only.
*2 : The video signal set in the VIDEO MODE menu can be output from all the types of MONITOR OUT jacks.
*3 : The OSD menu and the momentary OSD cannot be displayed via MONITOR COMPOSITE OUT jack.
*4 : If the OSD menu operation is performed, the picture is automatically turned off and only the OSD menu is displayed via MONITOR COMPONENT OUT jacks.

■Note :

- When outputting the component video signal from the MONITOR COMPONENT OUT jacks as it was input, the momentary OSD cannot be displayed.

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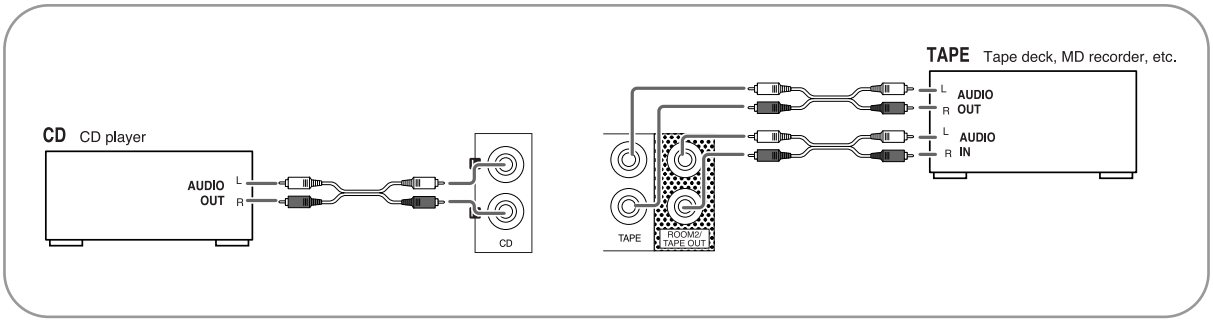
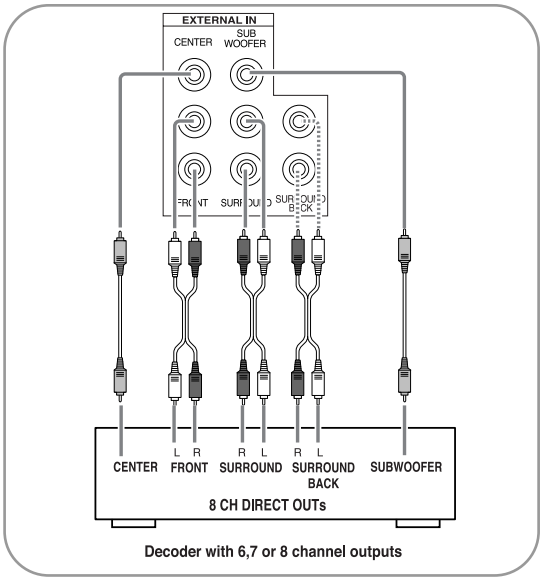
3. CONNECTING AUDIO COMPONENTS

- For ROOM 2 playback, the ROOM 2/TAPE OUT jacks can be connected to the amplifier, TV, etc. installed in another room instead of audio recording equipment such as a tape deck, an MD recorder, etc.
  (For details, refer to "CONNECTING ROOM 2 OUTs" on page 11.)
- Depending on how to use the ROOM 2 /TAPE OUTs, you should assign these correctly.
  (For details, refer to "When selecting the OUT ASSIGN" on page 37.)



4. CONNECTING EXTERNAL INs

- Use these jacks to connect the corresponding outputs of a DVD player or external decoder, etc. that has 6, 7 or 8 channel analog audio outputs
- In case of 6 or 7 channel outputs, do not connect both of the SURROUND BACK L and R inputs or the SURROUND BACK R input of this unit. (For details, refer to the operating instructions of the component to be connected.)

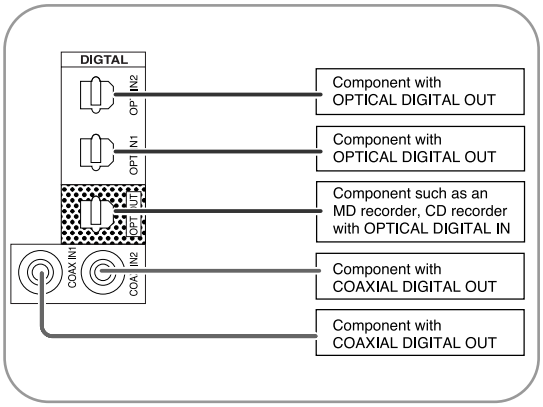


5. CONNECTING DIGITAL INs and OUT

- The OPTICAL and the COAXIAL DIGITAL OUTs of the components that are connected to CD and VIDEO 1~ VIDEO 3 of this unit can be connected to these DIGITAL INs.
- A digital input should be connected to the components such as a CD player, LD player, DVD player, etc. capable of outputting DTS Digital Surround, Dolby Digital or PCM format digital signals, etc.
- If the component with OPTICAL IN jack is connected to the OPTICAL OUT jack of this unit, you can record the high quality sound of CDs, etc. without degradation.
- For details, refer to the operating instructions of the component connected.
- When making the COAXIAL DIGITAL connection, be sure to use a 75 Ω COAXIAL cord, not a conventional AUDIO cord.
- All of the commercially available optical fiber cords cannot be used for the equipment. If there is an optical fiber cord which cannot be connected to your equipment, consult your dealer or nearest service organization.

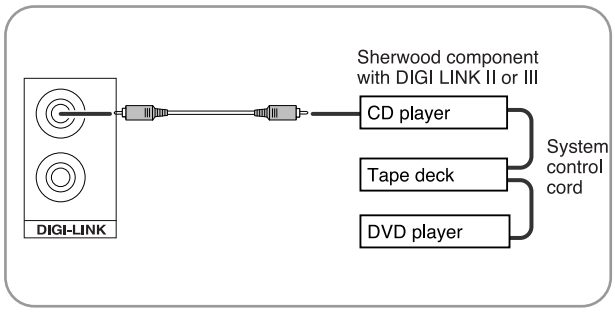
■Notes :

- Be sure to make either a OPTICAL or a COAXIAL DIGITAL connection on each component. (You don't need to do both.)
- If you connect the DIGITAL INs to your components, you should assign the DIGITAL INs you used to the corresponding input sources. (For details, refer to "When CD, VIDEO 1~3 is selected as an input source" on page 22 or "When selecting the DIGITAL AUDIO" on page 40.)



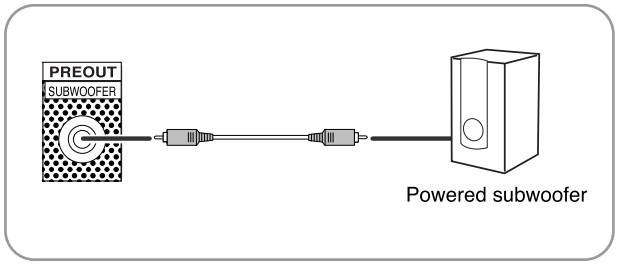
6. CONNECTING SYSTEM CONTROL

• Connect this jack to the DIGI LINK jack of the external Sherwood component that uses the DIGI LINK II or III remote control system.



7. SUBWOOFER PREOUT connection

• To emphasize the deep bass sounds, connect a powered subwoofer.



8. CONNECTING SPEAKERS

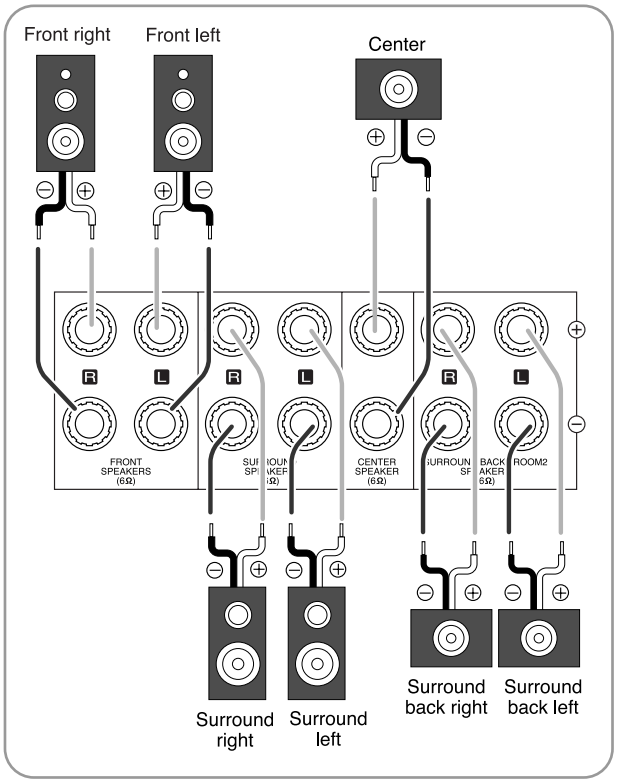
• Be sure to connect speakers firmly and correctly according to the channel(left and right) and the polarity(+ and -). If the connections are faulty, no sound will be heard from the speakers, and if the polarity of the speaker connection is incorrect, the sound will be unnatural and lack bass.
• For installing the speakers, refer to "Speaker placement" on page 10.
• After installing the speakers, first adjust the speaker settings according to your environment and speaker layout.(For details, refer to "SETTING THE SPEAKER / ROOM EQ SETUP" on page 43.)

■Surround back speakers

• When using only one surround back speaker, you should connect it to SURROUND BACK/ROOM 2 LEFT channel.
• If you assign the power amplifier for the surround back/ room 2 channels to the ROOM 2, this unit can drive the speakers in another room (ROOM 2).
(For details, refer to "CONNECTING ROOM 2 OUTs" on page 11 and "When selecting the AMP ASSIGN" on page 37.)

Caution :

• Be sure to use the speakers with the impedance of 6 ohms or above.
• Do not let the bare speaker wires touch each other or any metal part of this unit. This could damage this unit and/or the speakers.



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Speaker placement

Ideal speaker placement varies depending on the size of your room and the wall coverings, etc. The typical example of speaker placement and recommendations are as follows :

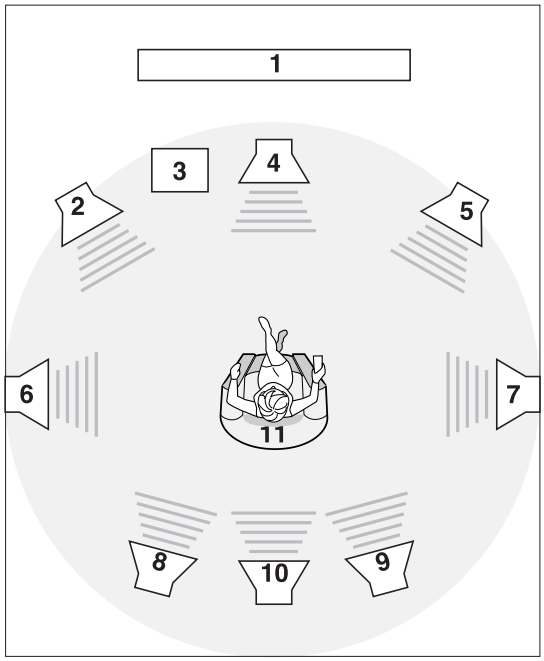
■Front left and right speakers and center speaker
- Place the front speakers with their front surfaces as flush with TV or monitor screen as possible.
- Place the center speaker between the front left and right speakers and no further from the listening position than the front speakers.
- Place each speaker so that sound is aimed at the location of the listener's ears when at the main listening position.

■Surround left and right speakers
- Place the surround speakers approximately 1 meter (40 inches) above the ear level of a seated listener on the direct left and right of them or slightly behind.

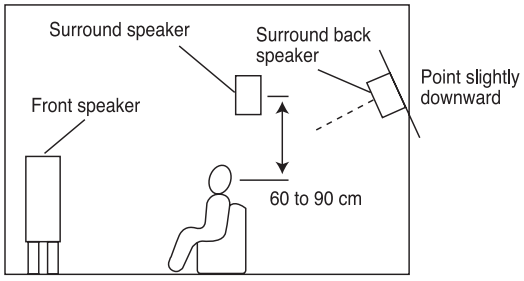
■Surround back left and right speakers
- Place the surround back speakers at the back facing the front at a narrower distance than front speakers.
- When using a single surround back speaker, place it at the rear center facing the front at a slightly higher position (0 to 20 cm) than the surround speakers.
- We recommend installing the surround back speaker(s) at a slightly downward facing angle. This effectively prevents the surround back channel signals from reflecting off the TV or screen at the front center, resulting in interference and making the sense of movement from the front to the back less sharp.

■Subwoofer
- The subwoofer reproduces powerful deep bass sounds.
  Place a subwoofer anywhere in the front as desired.

■Notes :
- When using a conventional TV, to avoid interference with the TV picture, use only magnetically shielded front left and right and center speakers.
- To obtain the best surround effects, the speakers except the subwoofer should be full range speakers.

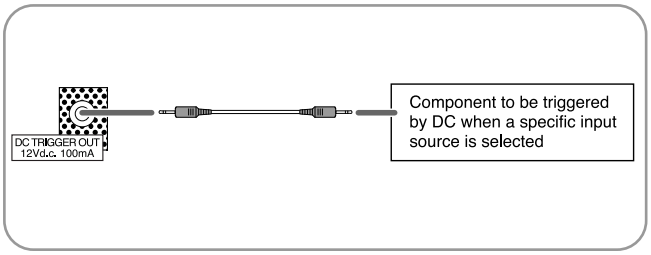


1. TV or screen
2. Front left speaker
3. Subwoofer
4. Center speaker
5. Front right speaker
6. Surround left speaker
7. Surround right speaker
8. Surround back left speaker
9. Surround back right speaker
10. Surround center speaker
11. Listening position



9. CONNECTING DC TRIGGER OUT

- Connect a component to DC TRIGGER OUT jack that allows DC 12 V to turn on when a specific input source is selected.
- For details, refer to the operating instructions of the components to be connected .
- To link DC TRIGGER OUT with a specific input source, refer to "When selecting the DC TRIGGER" on page 41.



■Notes :

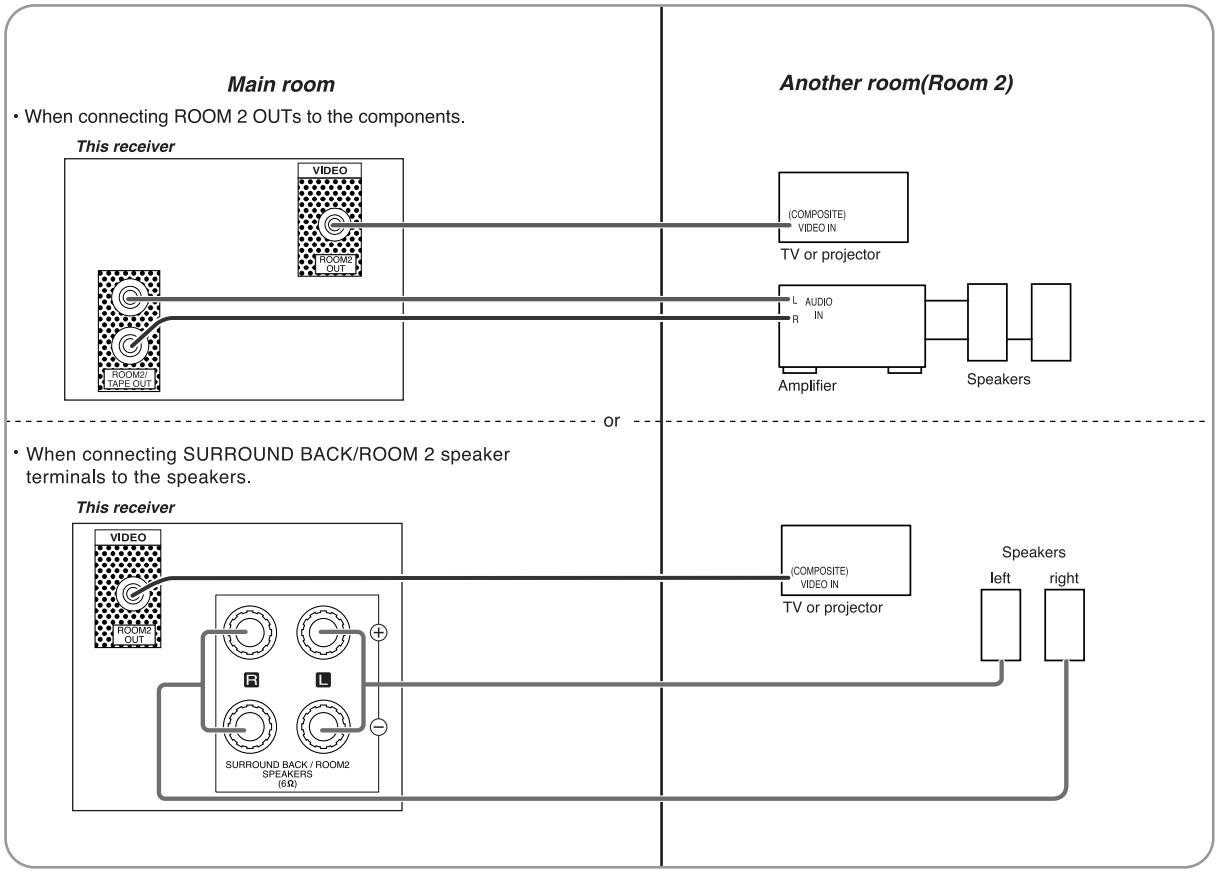
- This output voltage (12 V d.c., 100mA) is for (status) control only, it is not sufficient for drive capability.
- When making DC TRIGGER connection, you should use the stereo mini cord, not a mono mini cord.

10. CONNECTING ROOM 2 OUTs

- ROOM 2 playback feature allows you to play a different program source in another room as well as one source in the main room at the same time.
- For ROOM 2 playback, connect the ROOM 2 OUT jacks to the amplifier, TV, etc. installed in another room, or connect the SURROUND BACK/ROOM 2 speaker terminals to the speakers.
- When connecting the ROOM 2 /TAPE OUT jacks, you should assign the output to the ROOM 2. (For details, refer to "When selecting the OUT ASSIGN" on page 37.)
- When connecting the SURROUND BACK/ROOM 2 speaker terminals, you should assign the power amplifier for surround back/room 2 channels to the ROOM 2. (For details, refer to "When selecting the AMP ASSIGN" on page 37.)

■Notes :

- To minimize hum or noise, use high quality connection cords.
- You cannot use the digital audio signal for ROOM 2 playback.



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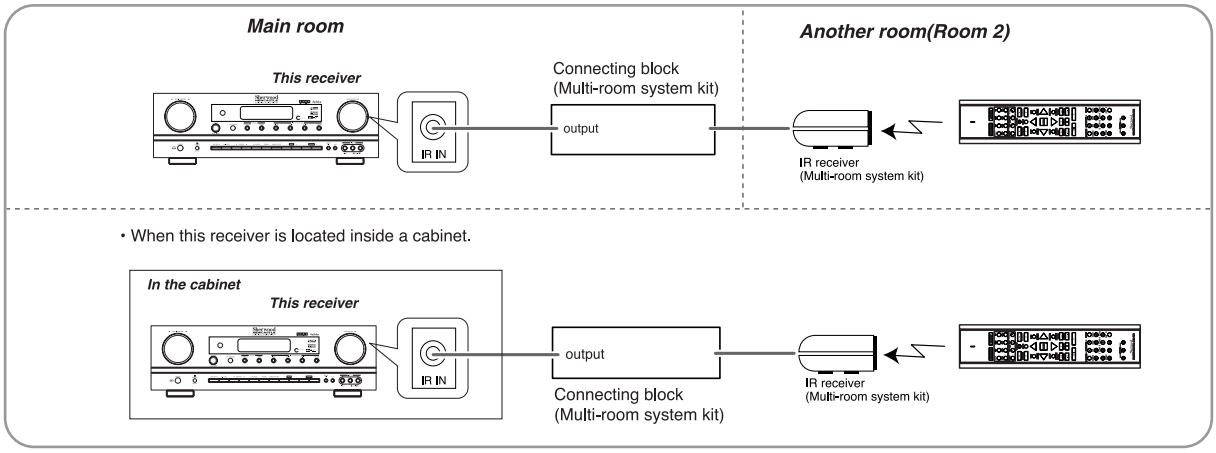
11. CONNECTING MULTI-ROOM SYSTEM KIT

- The multi-room system kit(sold separately) is essential for operation from a remote location .
  For information on the multi-room system kit, contact the Xantech corporation at 1-800-843-5465 or www.xantech.com.
- IR IN jack allows you to control this receiver from another room with the remote control unit.
- To control this receiver from another room with the remote control unit, connect the IR IN jack to the output of the connecting block.
- If this receiver is located inside a cabinet or other enclosure where the infrared beams from the remote control unit cannot enter, then operation with the remote control unit will not be possible.
  In such a case, connect the IR IN jack to the output of the connecting block.

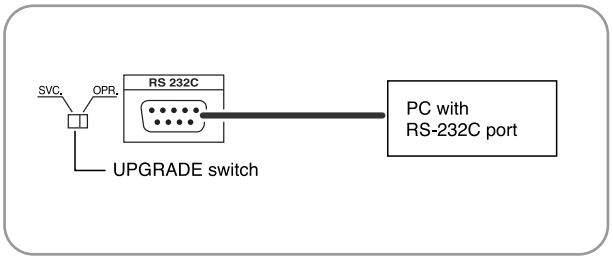
■**Note:**

- Remote operation may become unreliable if the IR receiver is exposed to strong light such as direct sunlight or inverted fluorescent.



12. CONNECTING PC FOR UPGRADES

- This receiver incorporates RS-232C terminal that may be used in the future to update the operating software so that it will be able to support new digital audio formats, external control by using an external device and the like.
- Connect RS-232C terminal to your PC.



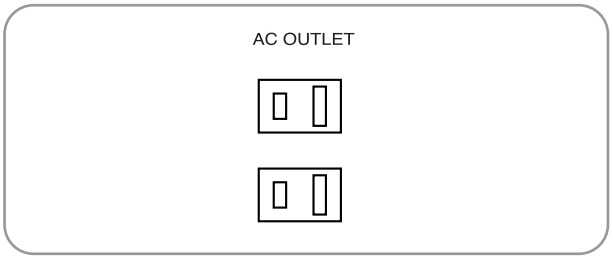
■**Notes :**

- Be sure to set the UPGRADE switch to "SVC"(service) before updating.
- This switch should be set to "OPR"(operation) during normal operation except for upgrades.
  If not, this unit will not operate normally.
- Programming for upgrades and external control requires specialized programming knowledge and for that reason we recommend that it only be done by qualified installers. For more information on future upgrades and external control, visit the Sherwood web site at www.sherwoodamerica.com or contact your dealer.
- Do not disconnect the connection cable while updating the operating software, etc.
  Should this happen, it may be result in malfunction or cause damage to the unit.

13. SWITCHED AC OUTLETs

- These outlets are switched on(power-on mode) and off(standby mode) according to power control as follows(Maximum total capacity is 120 W (1 A)).

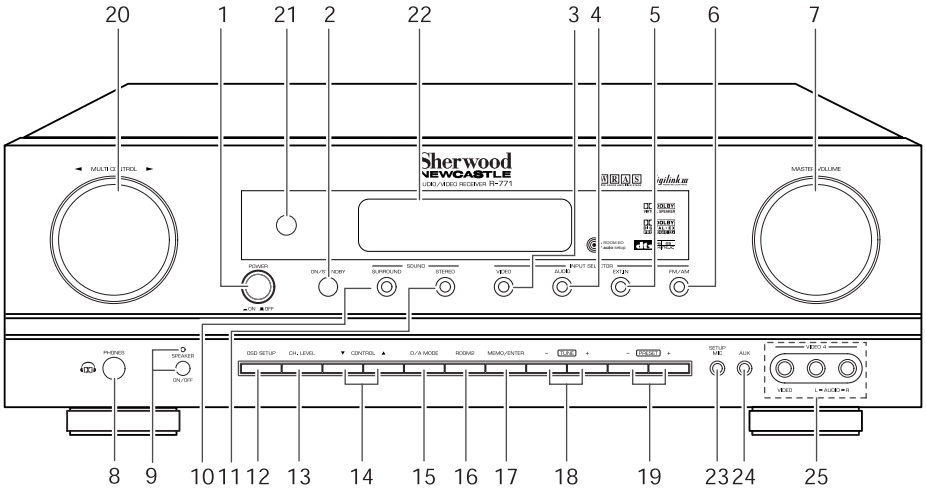
Standby mode - Switched AC outlet off
Power-on mode - Switched AC outlet on



14. AC INPUT CORD

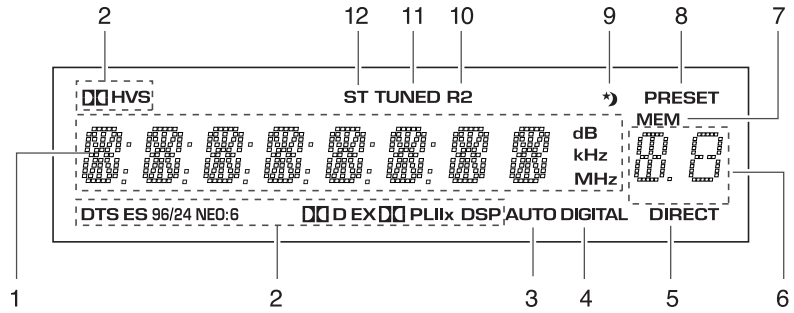
- Plug this cord into a wall AC outlet.

Front Panel Controls



1. POWER switch
2. POWER ON/STANDBY button/indicator
3. VIDEO INPUT SELECTOR button
4. AUDIO INPUT SELECTOR button
5. EXTERNAL IN button
6. FM/AM button
7. MASTER VOLUME CONTROL knob
8. HEADPHONE jack
9. SPEAKER button/indicator
10. SURROUND MODE button
11. STEREO button
12. OSD SETUP button
13. CHANNEL LEVEL button
14. CONTROL UP/DOWN(▲/▼) buttons
15. DIGITAL/ANALOG MODE button
16. ROOM 2 button
17. MEMORY/ENTER button
18. TUNING UP/DOWN(+/–) buttons
19. PRESET UP/DOWN(+/–) buttons
20. MULTI CONTROL knob
21. REMOTE SENSOR
22. FLUORESCENT DISPLAY
    For details, see below.
23. SETUP MIC jack
    For details, see next page.
24. AUX IN jack
    For details, see next page.
25. VIDEO 4 IN jacks
    For details, see next page.

■FLUORESCENT DISPLAY



1. Input, frequency, volume level, operating information, etc.
2. Surround mode indicators
3. AUTO indicator
4. DIGITAL INPUT indicator
5. DIRECT indicator
6. Preset number, sleep time display
7. MEMORY indicator
8. PRESET indicator
9. SLEEP indicator
10. ROOM 2 indicator
11. TUNED indicator
12. STEREO indicator

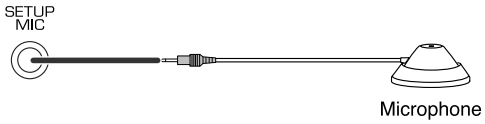
ENGLISH

■SETUP MIC JACK

- To use Auto Setup function, connect the supplied microphone to the SETUP MIC jack.(For details, refer to "When selecting the AUTO SETUP" on page 43.)

■Notes:

- Because the microphone for Auto Setup is designed for use with this receiver, do not use a microphone other than the one supplied with this receiver.
- After you have completed the auto setup procedure, disconnect the microphone.

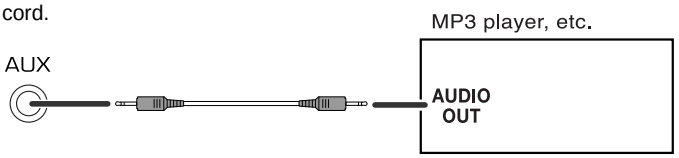


■AUX IN JACK

- The AUX IN jack can be connected to an additional audio component such as an MP3 player, etc.

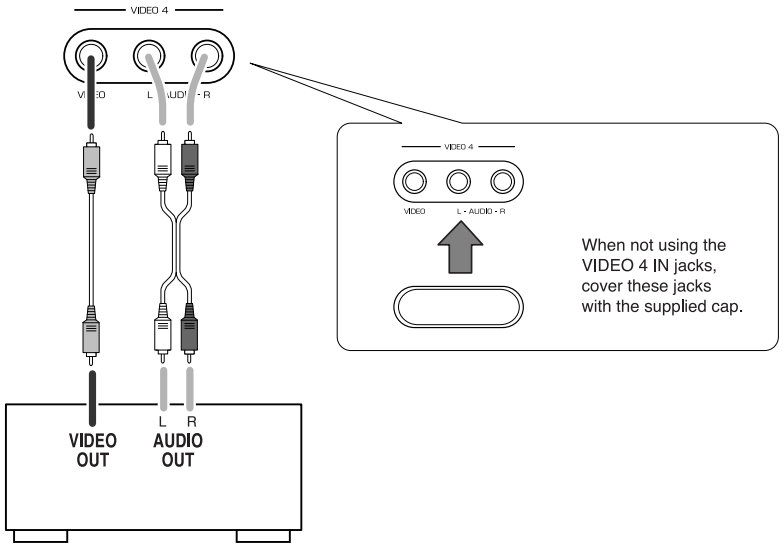
■Note:

- When connecting this jack to an MP3 player, etc., you should use the stereo mini cord, not a mono mini cord.



■VIDEO 4 IN JACKS

- The VIDEO 4 IN jacks may be also connected to an additional video component such as a camcorder, LD player, video game player, etc.



VIDEO 4 Camcorder, video game player, etc.

Universal Remote Controls

ENGLISH

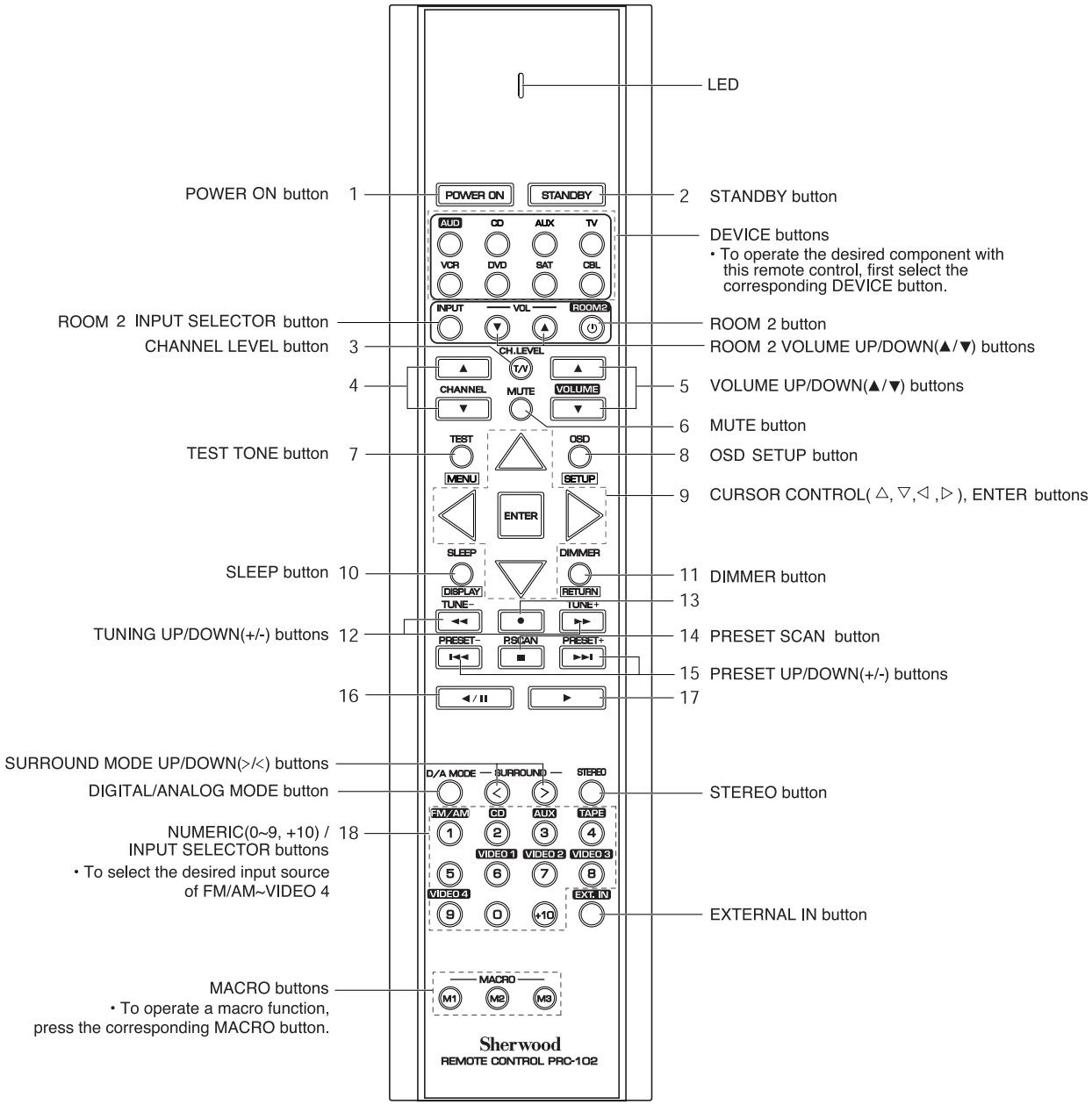
This universal remote control can operate not only this receiver but also most popular brands of audio and video components such as CD players, cassette decks, TVs, cable boxes, VCRs, DVD players, satellite receivers, etc.

- To operate 7 components other than this receiver, you should enter the setup code for each component. (For details, refer to "USING FUNCTIONS OF REMOTE CONTROL" on page 18.)

■Digi link system remote controls

This remote control can also operate Sherwood compatible components bearing the DIGI LINK (II or III) logo.

- For digi link system remote control operation, first make the DIGI LINK connections between Sherwood components.
- The numbered buttons on the remote control have different functions in different device modes. For details, refer to "FUNCTION TABLE of the NUMBERED BUTTONS" on the following page 16.



ENGLISH

■FUNCTION TABLE of the NUMBERED BUTTONS

Button symbol \ Device to be controlled	CD (for CD player)	AUX (for tape deck)	TV (for TV)	VCR (for VCR)	DVD (for DVD player)	SAT (for satellite receiver)	CBL (for cable box)
1 POWER ON	POWER ON	POWER ON	POWER ON	POWER ON	POWER ON	POWER ON	POWER ON
2 STANDBY	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)
3 CH.LEVEL T/V	—	—	INPUT SELECTOR	INPUT SELECTOR	—	INPUT SELECTOR	INPUT SELECTOR
4 ▲ CHANNEL ▼	—	—	CHANNEL UP/DOWN(▲/▼)	CHANNEL UP/DOWN(▲/▼)	—	CHANNEL UP/DOWN(▲/▼)	CHANNEL UP/DOWN(▲/▼)
5 ▲ VOLUME ▼	—	—	VOLUME UP/DOWN(▲/▼)	VOLUME UP/DOWN(▲/▼)	—	VOLUME UP/DOWN(▲/▼)	VOLUME UP/DOWN(▲/▼)
6 MUTE	—	—	MUTE	MUTE	—	MUTE	MUTE
7 TEST / MENU	—	—	—	—	MENU	—	—
8 OSD / SETUP	—	—	—	—	SETUP	—	—
9 △▽◁▷ / ENTER	—	—	—	—	CURSOR CONTROL / ENTER	—	—
10 SLEEP / DISPLAY	—	—	—	—	DISPLAY	—	—
11 DIMMER / RETURN	—	—	—	—	RETURN	—	—
12 TUNE− ◄◄ / TUNE+ ►►	—	REWIND(◄◄) / FAST FORWARD(►►)	—	REWIND(◄◄) / FAST FORWARD(►►)	REVERSE SEARCH(◄◄) / FORWARD SEARCH(►►)	—	—
13 ●	—	RECORD	—	RECORD	—	—	—
14 P.SCAN ■	STOP	STOP	—	STOP	STOP	—	—
15 PRESET− I◄◄ / PRESET+ ►►I	REVERSE SKIP(I◄◄) / FORWARD SKIP(►►I)	—	—	—	REVERSE SKIP(I◄◄) / FORWARD SKIP(►►I)	—	—
16 ◄/II	PAUSE	REVERSE PLAY	—	PAUSE	PAUSE	—	—
17 ►	PLAY	FORWARD PLAY	—	PLAY	PLAY	—	—
18 0 ~ 9, +10	NUMERIC	—	NUMERIC	NUMERIC	NUMERIC	NUMERIC	NUMERIC

■Notes:

- Some functions for each component may not be available or may work differently.
- Depending on other kinds of components that are available for each DEVICE button, some functions may not be available or may work differently, too.
- For details about functions, refer to the operating instructions of each component.

OPERATING COMPONENTS WITH REMOTE CONTROL

1 Enter the setup code for each component other than this receiver. For details, refer to "Entering a setup code" on page 18.

2 Turn on the component you want to operate.

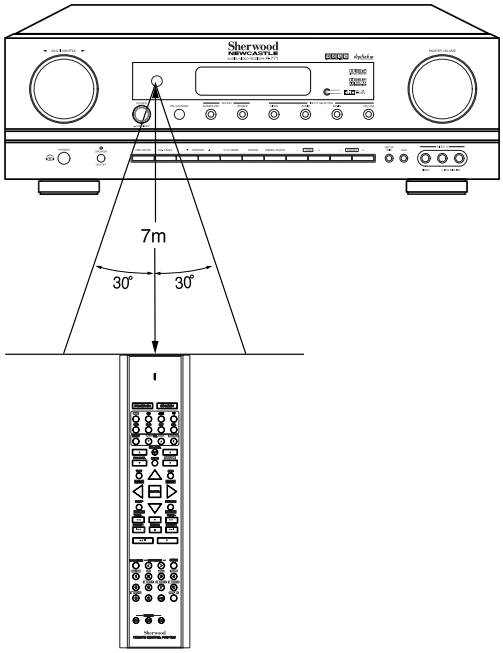
3 Press the DEVICE button on the remote control corresponding to the component you wish to operate.

4 Aim the remote control at the REMOTE SENSOR of the component you wish to control and press the button corresponding to the operation you want.

- When operating a Sherwood CD player or tape deck using digi link system remote control, aim the remote control at the REMOTE SENSOR of this receiver.
  However, to operate a Sherwood DVD player, aim at the REMOTE SENSOR of the corresponding component.

REMOTE CONTROL OPERATION RANGE

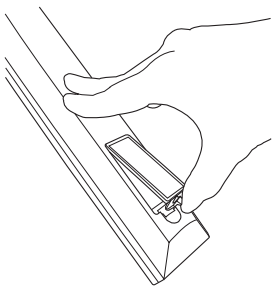
- Use the remote control unit within a range of about 7 meters (23 feet) and angles of up to 30 degrees aiming at the remote sensor.



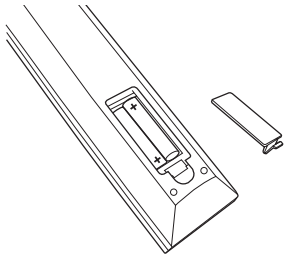
LOADING BATTERIES

- When the remote control does not operate, the old batteries should be replaced. In this case, load new batteries within several minutes after removing old batteries.
- If the batteries are removed or have been exhausted for a longer period of time, memorized contents will be cleared. Should this happen, you should memorize them again.

1 Remove the cover.



2 Load two batteries("AAA" size) matching the polarity.



- Remove the batteries when they are not used for a long time.
- Do not use the rechargeable batteries(Ni-Cd type).
- Be sure to use alkaline batteries.

USING FUNCTIONS OF REMOTE CONTROL

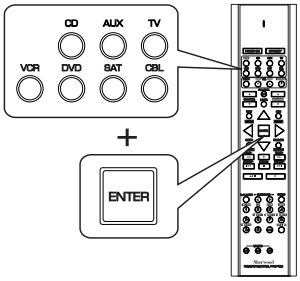
- This remote control can control up to 8 different components.
- Before operating audio and video components other than this receiver with using this remote control, the setup code for each component should be entered.
- For system remote control operation, "000" was stored previously in the memory of the device button "CD" for Sherwood CD player, "DVD" for Sherwood DVD player and "AUX" for Sherwood tape deck respectively as its factory setup code. So, you don't need to enter its code for each Sherwood component except in such a case that its code does not work.

Entering a setup code

1 Turn on the component you want to control.

2 Find the setup codes according to the type and the brand name of your component, referring to "Setup Code Table" on page 59.

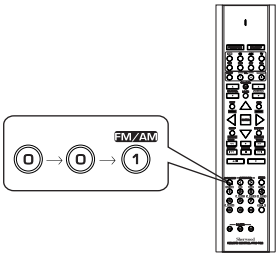
3 Press and hold down both the "ENTER" button and the desired one of the DEVICE buttons for more than 1 second.



- The LED will flicker once.

■Note:
- The "AUD" button is unavailable for the audio components other than this receiver.

4 Enter a 3 digit code, aiming the remote control at the remote sensor on the component.
Example) When entering "001".



- If entering is performed successfully, the LED will flicker twice.
- To be sure that the setup code is correct, press the POWER ON(or STANDBY) button.
  If your component is tuned off, the setup code is correct.
- When your component is not turned off, repeat the above steps ② to ④, trying each code for your component until you find one that works.

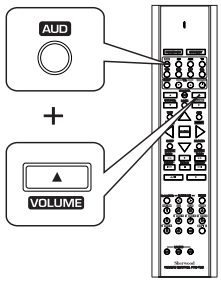
■Note:
- If the LED did not flicker twice, then repeat the above steps ③ to ④ and try entering the same code again.
- Manufacturers may use different setup codes for the same product category. For that reason, it is important that you check to see if the code you have entered operates as many controls as possible. If only a few functions operate, check to see if another code will work with more buttons.
- When operating a Sherwood CD player or tape deck using the system remote control, aim the remote control at the REMOTE SENSOR on this receiver.
  However, in case of Sherwood DVD player and MD recorder, aim it at the REMOTE SENSOR on the corresponding component.

5 Repeat the above steps ① to ④ for each of your components.

Using a punch-through function

This remote control may be programmed to operate either the AUDIO volume punch-through or the TV volume and/or TV channel punch-through in conjunction with any of the eight components controlled by this remote control. For example, since this receiver will likely be used as the sound system while watching TV, you may want to adjust this receiver's volume although this remote control is set to control the TV.

- When programming this remote control for the AUDIO volume punch-through, press and hold down both "AUD" button and "VOLUME ▲" button for more than 1 second.



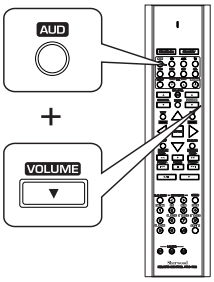
- If programming is performed successfully, the LED will flicker twice.
- When you want either TV volume or TV channel punch-through, press and hold down both "TV" button and either "VOLUME ▲" or "CHANNEL ▲" button for more than 1 second.

■Note:

- If you use one of AUDIO and TV volume punch-through functions, you cannot use the other.

■Removing a punch-through function

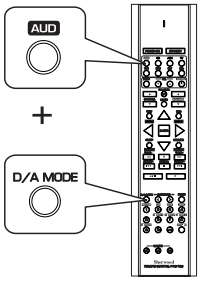
- When removing the AUDIO volume punch-through, press and hold down both "AUD" button and "VOLUME ▼" button for more than 1 second.



- If removing is performed successfully, the LED will flicker twice.
- When you want to remove either TV volume or TV channel punch-through, press and hold down both "TV" button and either "VOLUME ▼" or "CHANNEL ▼" button for more than 1 second.

■Removing all punch-through functions

Press and hold down both "AUD" button and "D/A MODE" button for more than 1 second.



- If removing all punch-through functions is performed successfully, the LED will flicker twice.

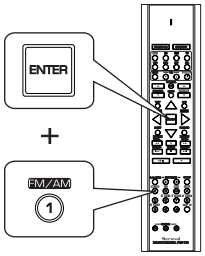
ENGLISH

Programming a macro function

- The macro function enables you to program a series of button operations(up to 10) on this remote control into a single button.
- You can store up to three separate macro command sequences into "M1", "M2" and "M3" buttons.

1 Press and hold down both "ENTER" button and one of three NUMERIC buttons ("1"~"3") corresponding to "M1"~"M3" buttons for more than 1 second.

Example) When programming a series of button operations into "M1" button.



- If the macro mode is entered, the LED will flicker once.

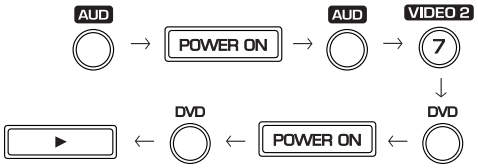
2 Press the operation buttons you want to program in order.

■Note:

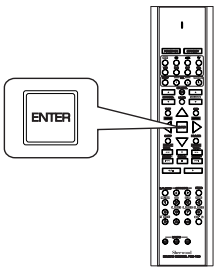
You should press the corresponding DEVICE buttons before pressing each operation button.

Example) When playing a DVD on the DVD player connected to VIDEO 2 jacks of this receiver.

1. Press "AUD" button to control this receiver.
2. Press "POWER ON" button to turn this receiver on.
3. Press "AUD" button to control this receiver.
4. Press "VIDEO 2(7)" button to select the desired input source.
5. Press "DVD" button to control the DVD player.
6. Press "POWER ON" button to turn the DVD player on.
7. Press "DVD" button to control the DVD player.
8. Press "▶" button to start playback.



3 Press "ENTER" button.



- If the programming is performed successfully, the LED will flicker twice.

■To remove a macro program

- When removing a macro program, perform the above steps ① and ③, but ignore the step ②.

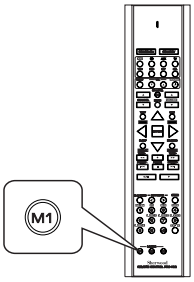
■To change a macro program

- When a new macro program is stored into a MACRO button with performing the above steps ① to ③, the previous macro program is cleared from the memory of the MACRO button.

Operating a macro function

- Aim the remote control at the REMOTE SENSORs of the components to be controlled and press the MACRO button you want.

Example) When pressing "M1" button.



■Notes:

- The codes programmed into a MACRO button will be transmitted at an interval of 0.5 seconds. However, some components may not be able to complete one operation in 0.5 seconds and may miss the next code.
  In this case, the macro function cannot control the corresponding components correctly.
- Be sure to use the remote control within the remote control operation range of the components.
- Depending on the operation status of the components, etc., the macro function cannot control the corresponding components correctly.

Operations

■Notes:

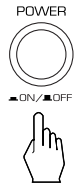
- Before operating this receiver with the supplied remote control, refer to "Universal Remote Controls" on page 15 for details about operation.
- Before operating this receiver, first set this unit as desired for optimum performance, doing the OSD menu setting procedures. (For details, refer to "OSD Menu Settings" on page 35.)

ENGLISH

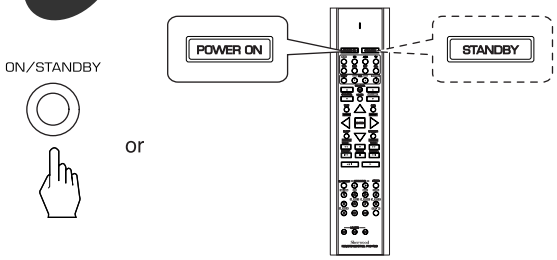
LISTENING TO A PROGRAM SOURCE

Before operation

- Enter the standby mode.
- The POWER ON/STANDBY button lights up in amber. This means that the receiver is not disconnected from the AC mains and a small amount of current is retained to support the operation readiness.
- To switch the power off, push the POWER switch again.
- Then the power is cut off and the POWER ON / STANDBY button goes off.

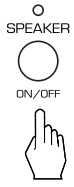


1 In the standby mode, turn the power on.



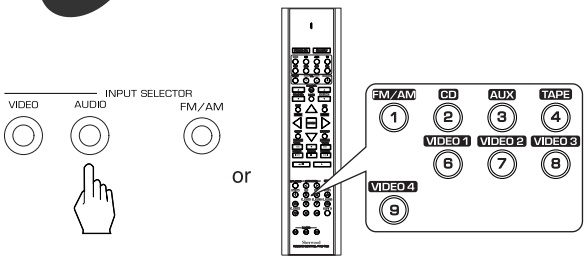
- Each time the POWER ON/STANDBY button on the front panel is pressed, the receiver is turned on to enter the operating mode (the POWER ON/ STANDBY button lights up in blue) or off to enter the standby mode(the POWER ON/STANDBY button lights up in amber).
- On the remote control, press the POWER ON button to enter the operating mode or press the STANDBY button to enter the standby mode.
- In the standby mode, if the INPUT SELECTOR button is pressed, the receiver is turned on automatically and the desired input is selected.

2 Switch the speakers on.



- Then the SPEAKER indicator lights up and the sound can be heard from the speakers connected to the speaker terminals.
- When using the headphone for private listening, press the SPEAKER button again to switch the speakers off.

3 Select the desired input source.



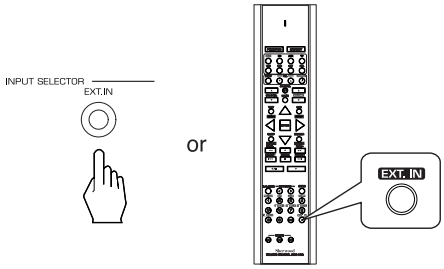
- Each time the "AUDIO" button on the front panel is pressed, the input source changes as follows;

→ TUNER → CD → AUX → TAPE →
(frequency display)

- Each time the "VIDEO" button on the front panel is pressed, the input source changes as follows;

→ VIDEO 1 → VIDEO 2 → VIDEO 3 → VIDEO 4 →

■When selecting the EXTERNAL IN as desired,

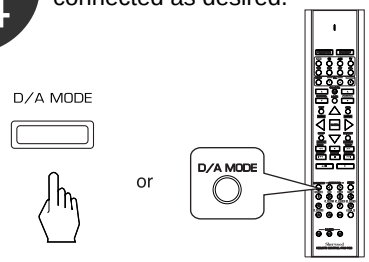


- Depending on the power amplifier setting for the surround back channels and the surround back speaker setting, "EXT IN" is displayed and 8(/7/6) separate analog signals from the component connected to this input pass through the tone and volume circuits only and can be heard from your speakers.
- Press the EXTERNAL IN button or select the desired input source to cancel the external in function.
- These analog signals can be heard only, not recorded.

ENGLISH

When CD, VIDEO 1~3 is selected as an input source

4 Select the digital or analog input connected as desired.



• Each time this button is pressed, the corresponding input is selected as follows ;

A(nalog) → o(ptical) 1 → o(ptical) 2 → c(oaxial) 2 → c(oaxial) 1 →

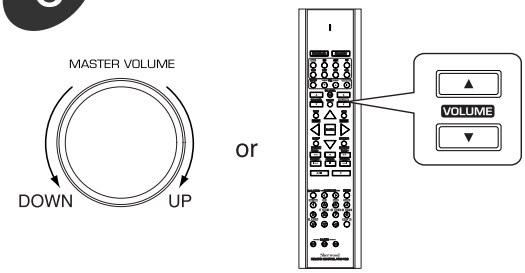
■Notes :

- WhenTUNER, AUX, TAPE, EXTERNAL IN or VIDEO 4 is selected as an input source, the analog input is selected automatically.
- When the selected digital input is not connected, the "DIGITAL" indicator filckers and the analog input is automatically selected.
- The selected digital or analog input is automatically assigned to the corresponding input source on the INPUT SETUP menu. (For details, refer to "SETTING THE INPUT SETUP" on page 40.)
- The sound from the component connected to the selected digital input can be heard regardless of the selected input source.

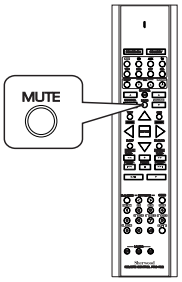
5 Operate the selected component for playback.

• When playing back the program sources with surround sound, refer to "ENJOYING SURROUND SOUND" on page 25.

6 Adjust the (overall) volume.

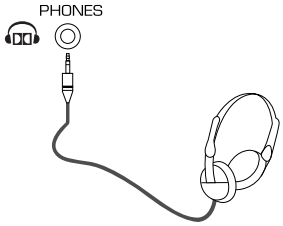


Muting the sound



- "MUTE" will flicker.
- To resume the previous sound level, press it again.

Listening with headphones



- Ensure that the SPEAKER button is set to off.
- Depending on the signal format which is being input, you can listen in different Dolby Headphone modes, stereo mode, etc. (For details, refer to "Listening in a Dolby Headphone mode" on page 26).
- When the EXTERNAL IN is selected as an input source, only front left and front right channel signals can be reproduced through the headphones.

SURROUND SOUND

• This receiver incorporates a sophisticated Digital Signal Processor that allows you to create optimum sound quality and sound atmosphere in your personal Home Theater.

Surround modes

■DTS Digital Surround

DTS Digital Surround(also called simply DTS) is a multi-channel digital signal format which can handle higher data rates. Discs bearing the " DIGITAL dts SURROUND " include the recording of up to 5.1 channels of digital signals, which can be generally thought to provide better sound quality due to the lower audio compression required.
It also provides wide dynamic range and separation, resulting in magnificent sound.

■DTS - ES Extended Surround™ (EXTENDED dts ES SURROUND)

This is a new multi channel digital signal format which greatly improves the 360- degree surround impression and space expression thanks to further expanded surround signals, offering high compatibility with the conventional DTS format. In addition to the 5.1 channels, DTS-ES Extended Surround also offers the surround back (sometimes also referred to as "surround center") channel for surround playback with a total of 6.1 channels. DTS-ES Extended Surround includes two signal formats with different surround signal recording methods as follows:

• DTS-ES™ Discrete 6.1

Because the signals for 6.1 channels (including the surround back channel) are fully independent, it is possible to achieve a sense that the acoustic image are moving about freely among the background sounds surrounding the listener from 360 degrees. Though maximum performance is achieved when sound tracks recorded with this system are played using a DTS -ES decoder, when played with a conventional DTS decoder, the surround back channel signals are automatically downmixed to the surround left and surround right channels so that none of the signal components are lost.

• DTS - ES™ Matrix 6.1

With this format, the additional surround back channel signals undergo matrix encoding and are input to the surround left and surround right channels beforehand. During playback, they are decoded to the surround left, surround right and surround back channels.
Because the bit stream format is 100% compatible with conventional DTS signals, the effect of the DTS-ES Matrix 6.1 format can be achieved even with DTS 5.1- channel signal sources. Of course, it is possible to play DTS-ES Matrix 6.1 - channel signal sources with a DTS 5.1 - channel decoder.
When DTS-ES Discrete 6.1 or Matrix 6.1 sources are decoded with a DTS - ES decoder, the format is automatically detected upon decoding and the optimum surround mode is selected. However, some DTS - ES Matrix 6.1 sources may be detected as DTS sources. In this case, the DTS - ES Matrix mode should be selected manually to play these sources.

■DTS Neo : 6™ surround

This mode applies conventional 2-channel signals such as digital PCM or analog stereo signals to the high precision digital matrix decoder used for DTS-ES Matrix 6.1 to achieve 6.1-channel surround playback. DTS Neo : 6 surround includes two modes for selecting the optimum decoding for the signal source.

• DTS Neo : 6 Cinema

This mode is optimum for playing movies. Decoding is performed with emphasis on separation performance to achieve the same atmosphere with 2-channel sources as with 6.1-channel sources.

• DTS Neo : 6 Music

This mode is suited mainly for playing music. The front left and front right signals bypass the decoder and are played directly so there is no loss of sound quality, and the effect of the surround signals from the center, surround left, surround right and surround back channels adds a natural sense of expansion to the sound field.

■DTS 96/24

Conventional surround formats used sampling frequencies of 48 or 44.1 kHz, so 20 kHz was about the maximum playback signal frequency. With DTS 96/24, the sampling frequency is increased to 96 or 88.2 kHz to achieve a wide frequency range of over 40 kHz. In addition, this format has a resolution of 24 bits, resulting in the same frequency band and dynamic range as 96kHz / 24 bit PCM signals. As with conventional DTS surround, DTS 96/24 is compatible with a maximum of 5.1 channels. DTS 96/24 is fully compatible with the conventional DTS surround format, so DTS 96/24 sources can be played using a conventional DTS 5.1 channel decoder.

"DTS", "DTS-ES", "DTS 96/24" and "Neo:6" are trademarks of Digital Theater Systems, Inc.

■Dolby Digital

Dolby Digital is the multi- channel digital signal format developed by Dolby Laboratories. Discs bearing the " DOLBY DIGITAL " includes the recording of up to 5.1 channels of digital signals, which can reproduce much better sound quality, spatial expansion and dynamic range characteristics than the previous Dolby Surround effect.

■Dolby Digital EX

This mode creates the back (sometimes also referred to as "surround center") signals from the surround left and right signals in Dolby Digital 5.1 channel source using a matrix decoder and provides 6.1 channel surround playback. For the best results, this mode should be selected during playback of sources(bearing the " DOLBY DIGITAL · EX ") recorded in Dolby Digital EX.
With this additional channel, you can experience more dynamic and realistic moving sound especially.
When Dolby Digital EX sources are decoded with a Dolby Digital EX decoder, the format is automatically detected upon decoding and the Dolby Digital EX mode is selected. However, some Dolby Digital EX sources may be detected as Dolby Digital sources. In this case, the Dolby Digital EX mode should be selected manually to play these sources.

ENGLISH

■Dolby Pro Logic IIx surround

Dolby Pro Logic IIx decodes all stereo (2 channel) and 5.1 channel sources and extends to 7.1channel surround playback. It delivers the most natural, full range and immersing 7.1 channel listening experience. Dolby Pro Logic IIx surround includes two modes as follows :

• Dolby Pro Logic IIx Movie

When enjoying movies, this mode allows you to further enhance the cinematic quality by adding processing that emphasizes the sounds of the action special effects.

• Dolby Pro Logic IIx Music

When listening to music, this mode allows you to further enhance the sound quality by adding processing that emphasizes the musical effects.

■Dolby Pro Logic II surround

This mode applies conventional 2-channel signals such as digital PCM or analog stereo signals as well as Dolby Surround signals, etc. to surround processing to offer improvements over conventional Dolby Pro Logic circuits. Dolby Pro Logic II surround includes Dolby Pro Logic II Movie and Dolby Pro Logic II Music like Dolby Pro Logic IIx surround.

■Dolby Virtual Speaker

This mode creates a virtual surround sound field using as few as two front speakers, allowing you to experience listening from 5.1 channel speakers.
This mode is effective not only for 5.1 channel sources but also for stereo(2 channel) sources.
Dolby VIrtual Speaker includes two listening mode as follows:

• Dolby Virtual Speaker Reference

The width of the front sound image is defined by the actual distance between front speakers.

• Dolby Virtual Speaker Wide

The width of the front sound image seems to extend beyond the front speakers.

■Dolby Pro Logic

Dolby Pro Logic is a specially encoded two channel surround format which consists of four channels (front left, center, fornt right and surround). Sources bearing the " DOLBY SURROUND " provide the theater-like surround sound. The surround channel is monaural, but is played through both surround speakers.

■Dolby Headphone

The Dolby Headphone function simulates 5.1 channel surround sound, which allows you to enjoy 5.1 channel surround sound through 2 channel headphones, just like listening from 5.1 channel speakers.
This mode is effective not only for 5.1 channel sources but also for stereo(2 channel) sources.

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

- The following modes apply conventional 2-channel signals such as digital PCM or analog stereo signals to high performance Digital Signal Processor to recreate sound fields artificially. Select one of the 3 provided surround modes according to the program source you want to play.

■Theater

This mode provides the effect of being in a movie theater when watching a movie.

■Hall

This mode provides the ambience of a concert hall for classical music sources such as orchestral, chamber music or an instrumental solo.

■Stadium

This mode provides the expansive sound field to achieve the true stadium effect when watching baseball or soccer games.

- When using the EXTERNAL INs to play back the sound from the additional multi-channel decoder for surround sound, you can enjoy the corresponding surround sound, too.(For details, refer to the operating instructions of the component to be connected.)

For your reference, the sound from each channel can be reproduced according to the surround modes as follows:

Modes \ Channels	FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK L/R	SUBWOOFER
DTS, DTS 96/24	○	○	○	—	○
DTS ES DISCRETE/MATRIX	○	○	○	○	○
DTS NEO: 6 CINEMA/MUSIC	○	○	○	○	—(*)
DOLBY DIGITAL	○	○	○	—	○
DOLBY DIGITAL EX	○	○	○	○	○
DOLBY PRO LOGIC IIx MOVIE/MUSIC	○	○	○	○	○
DOLBY PRO LOGIC II MOVIE/MUSIC	○	○	○	—	○
DOLBY PRO LOGIC	○	○	○	—	—(*)
DOLBY VIRTUAL SPEAKER	○	○	○	—	○
Other Surrounds	○	○	○	○	—(*)
STEREO	○	—	—	—	—(*)
EXTERNAL IN	○	○	○	○	○

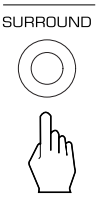
(*): Depending on the subwoofer setting, the sound from the subwoofer channel may be reproduced.

- Depending on the speaker settings and the number of the encoded channels, etc., the sound from the corresponding channels cannot be reproduced.(For details, refer to "SETTING THE SPEAKER / ROOM EQ SETUP" on page 43.)

ENJOYING SURROUND SOUND

■**Notes**:
- Before surround playback, first perform the speaker setup procedure, etc. on the OSD menu for optimum performance. (For details, refer to "SETTING THE SPEAKER/ROOM EQ SETUP" on page 43.)
- When playing digital signals from the Dolby Digital program source or selecting the surround mode such as Dolby Pro Logic II /Dolby Pro Logic IIx Music, Dolby Headphone, Dolby Virtual Speaker modes, you can adjust their parameters for optimum surround effect. (For details, refer to "SETTING THE SOUND PARAMETER" on page 52.)
- When the EXTERNAL IN is selected as an input source, the surround modes cannot be selected.

Depending on how to select a surround mode, select the auto surround mode or the manual surround mode.



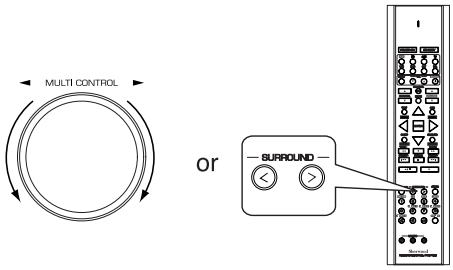
- Each time this button is pressed, the mode changes as follows :

Auto surround mode : ("AUTO" indicator lights up.) The optimum surround mode will be automatically selected depending on the digital signal format being input.

Manual surround mode : (The previous surround mode is displayed.) You can select the desired of different surround modes selectable for the signal being input with using the MULTI CONTROL konb or the SURROUND MODE UP/DOWN (> / <) buttons.

■**Notes :**
- When the SPEAKER button is set to off, the auto surround mode is invalid.
- Even when the auto surround mode is selected and the same type of digital signal format is being input, the optimum surround mode may vary depending on whether the speaker type is set to "NONE" or not.
- When the auto surround mode is selected and the PCM (2 channel) digital signal or the analog stereo signal is being input, only the stereo mode will be selected.
- When the auto surround mode is selected, the surround modes other than the optimum surround mode cannot be selected.

■When selecting the manual surround mode with pressing the SURROUND MODE button on the front panel.
Select the desired surround mode.



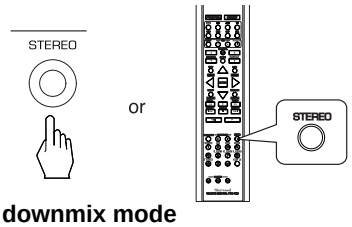
- Each time the MULTI CONTROL konb is rotated or the SURROUND MODE UP / DOWN (>/<) buttons are pressed, the surround mode changes depending on the input signal format as follows :

Signal format being input	Selectable surround mode
Dolby Digital EX6.1 channel sources, Dolby Digital 5.1 channel sources	(DOLBY D + PLIIx MOVIE), < DOLBY D + PLIIx MUSIC, DOLBY DIGITAL EX>, DOLBY DIGITAL, DOLBY VS REF, DOLBY VS WIDE
Dolby Digital 2 channel sources	<DOLBY PLIIx MOVIE, DOLBY PLIIx MUSIC>, [DOLBY PLII MOVIE, DOLBY PLII MUSIC], DOLBY PRO LOGIC, DOLBY VS REF, DOLBY VS WIDE
DTS sources	corresponding DTS mode, DOLBY VS REF, DOLBY VS WIDE, {DTS + NEO:6}
96 kHz PCM (2channel) sources	<DOLBY PLIIx MOVIE, DOLBY PLIIx MUSIC>, [DOLBY PLII MOVIE, DOLBY PLII MUSIC], DOLBY PRO LOGIC, NEO:6 CINEMA, NEO:6 MUSIC, THEATER, HALL, STADIUM
PCM (2channel) sources Analog stereo sources	<DOLBY PLIIx MOVIE, DOLBY PLIIx MUSIC>, [DOLBY PLII MOVIE, DOLBY PLII MUSIC], DOLBY PRO LOGIC, DOLBY VS REF, DOLBY VS WIDE, NEO:6 CINEMA, NEO:6 MUSIC, THEATER, HALL, STADIUM

- Depending on surround speaker setting, some surround modes can be selected or not as follows:
  < >: Possible only when surround back speaker is not set to "NONE".
  [ ] : Possible only when surround back speaker is set to "NONE".
  ( ): Possible only when surround back speaker is set to " 2CH".
  { }: Possible only when surround back speaker is not set to "NONE" while playing the digital signals from DTS 5.1 channel sources only(, not DTS 96/24 sources).

ENGLISH

■To cancel the surround mode for stereo operation



- Depending on the signal format which is being input, either the stereo mode or the 2CH downmix mode is selected.
- To cancel either the stereo mode or the 2CH downmix mode, select the surround mode with using the MULTI CONTROL knob on the front panel or the SURROUND MODE UP/DOWN (>/<) buttons on the remote control.

■2CH downmix mode

- This mode allows the multi-channel signals encoded in DTS or Dolby Digital format to be mixed down into 2 front channels and to be reproduced through only two front speakers or through headphones.
- When the SPEAKER button is set to off to listen with headphones, if the STEREO button is pressed while playing the multi-channel digital signals from DTS or Dolby Digital sources, it will enter the 2CH downmix mode automatically.
- To cancel the 2CH downmix mode, select the desired Dolby Headphone mode with using the MULTI CONTROL knob on the front panel or the SURROUND MODE UP/DOWN (>/<) buttons on the remote control.

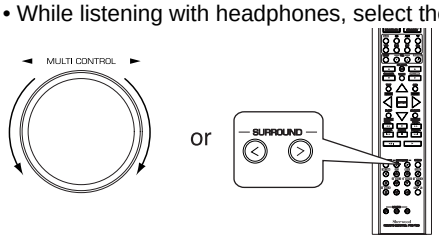
Listening in a Dolby Headphone mode

- The Dolby Headphone function simulates 5.1 channel surround sound, which allows you to enjoy 5.1 channel surround sound through 2 channel headphones, just like listening from 5.1 channel speakers.

■Notes :

- Only when the SPEAKER button is set to off, the Dolby Headphone mode can be selected.
- When playing the 96 kHz PCM(2 channel) digital signals, only the stereo mode can be selected.

- While listening with headphones, select the desired Dolby Headphone mode.



- Each time the MULTI CONTROL knob is rotated or the SURROUND MODE UP/DOWN (>/<) buttons are pressed, the mode changes as follows :

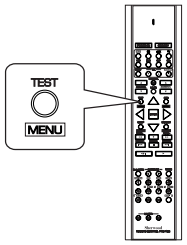
DH 1 : This simulates the soundfield as if you were in a relatively small room with less reverberations.
↕
DH 2 : This simulates the soundfield as if you were in a typical listening room with moderate reverberations.
↕
DH 3 : This simulates the soundfield as if you were in a large space like theater.

Adjusting each channel level with test tone

- The volume level of each channel can be adjusted easily with the test tone function.

■**Note** : When the SPEAKER button is set to off or it is in the stereo mode, the test tone function does not work.

1 Enter the test tone mode.

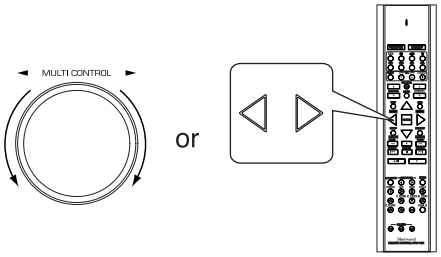


- The test tone will be heard from the speaker of each channel for 2 seconds as follows:

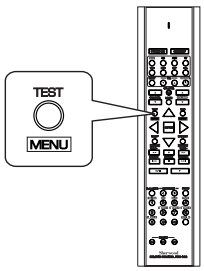
FL (Front Left) → C (Center) → FR (Front Right) → SR (Surround Right) →
SW (Subwoofer) ← SL (Surround Left) (← SB (Surround Back)) or (← BL (Surr.Back Left) ← BR (Surr.Back Right)) ←

- When the speaker setting is "NONE", the test tone of the corresponding channel is not available.
- ( ) : Possible depending on whether the surround back channel is set to "2 CH" or "1 CH".

2 At each channel, adjust the level as desired until the sound level of each speaker is heard to be equally loud.



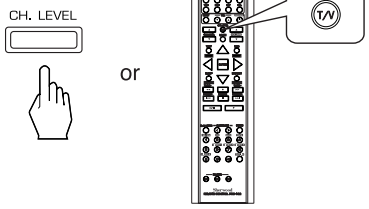
3 Cancel the test tone function.



Adjusting the current channel level

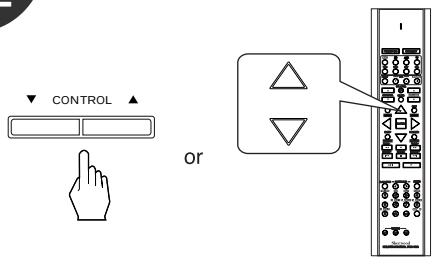
- After adjusting each channel level with test tone, adjust the channel levels either according to the program sources or to suit your tastes.
- You can adjust the current channel levels as desired. These adjusted levels are just memorized into user's memory ("CAL"), not into preset memory("REF 1", "REF 2").

1 Press the CHANNEL LEVEL button.



- Then the memory mode ("CAL" or "REF 1") is displayed for several seconds.
- When the memory mode or channel level disappears, press this button again.

2 Select the desired channel.



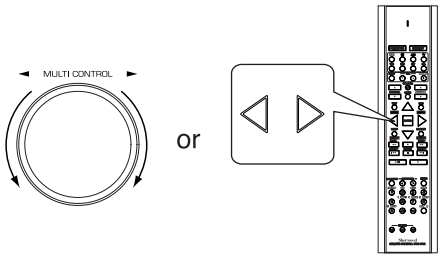
- Each time these button are pressed, the corresponding channel is selected as follows:

→ REF 1 (or CAL) → FL → C → FR → SR →
<DTS L or DD L> ← SW ← SL(←SB) or(←BL←BR)←
DTS LFE Dolby Digital LFE

( ): Possible depending on whether the surround back channel is set to "2 CH" or "1 CH".
< >: Possible only when the digital signals from Dolby Digital or DTS program sources that include LFE signal are input.

- Depending on the speaker settings("NONE", etc.) and surround mode, etc., some channels cannot be selected.
- When the SPEAKER button is set to off, only the Front Left and Front Right channels can be selected.

3 Adjust the level of the selected channel as desired.



- The LFE level can be adjusted within the range of -10~0 dB and other channel levels within the range of -15~+15 dB.
- In general, we recommend the LFE level to be adjusted to 0 dB.(However, the recommended LFE level for some early DTS software is -10 dB.) If the recommended levels seem too high, lower the setting as necessary.

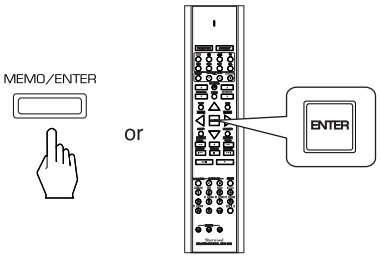
4 Repeat the above steps ② and ③ to adjust each channel level.

ENGLISH

Memorizing the adjusted channel levels

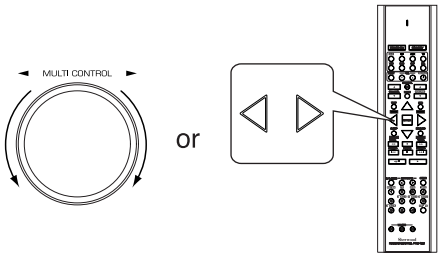
• You can memorize the adjusted channel levels into preset memory("REF 1", "REF 2") and recall the memorized whenever you want.

1 After performing the steps ①~④ in "Adjusting the current channel level" procedure on page 27, press the (MEMORY/) ENTER button.



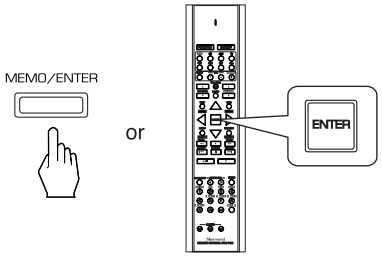
• The "1" of "REF 1" indication flickers for several seconds.

2 Select the desired one of REF 1 and REF 2.



• If the preset memory disappears, perform the above step ① again.

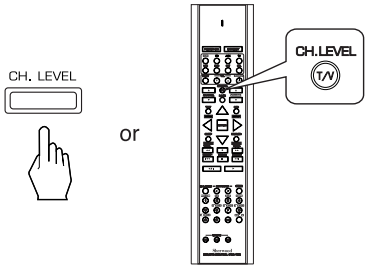
3 Confirm your selection.



• The adjusted channel levels have now been memorized into the selected memory.

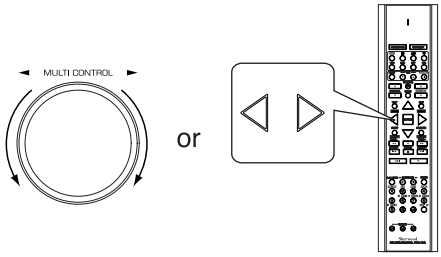
Recalling the memorized channel levels

1 Press the CHANNEL LEVEL button.



• "REF 1" (or "CAL") is displayed for several seconds.
• If the channel level mode display disappears, press this button again.

2 Select the desired one of REF 1 and REF 2.

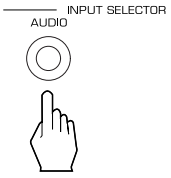


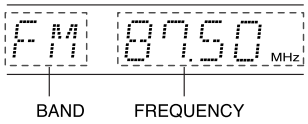
• Then the channel levels memorized into the selected preset memory are recalled.

LISTENING TO RADIO BROADCASTS

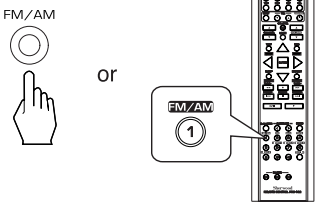
Auto tuning

1 Select the tuner.





2 Select the desired band.

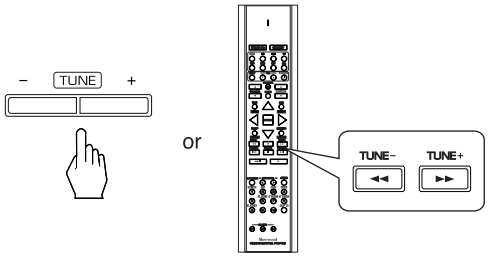


- Each time this button is pressed, the band changes as follows ;

FM STereo → FM MONO → AM MONO
("ST" lights up) ("ST" goes off)

- When FM stereo broadcasts are poor because of weak broadcast signals, select the FM mono mode to reduce the noise, then FM broadcasts are reproduced in monaural sound.
- When pressing the FM/AM button without selecting the tuner, the tuner will be selected automatically.

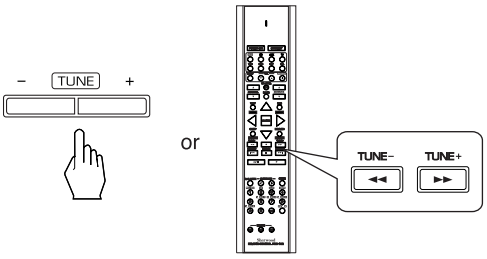
3 Press the TUNING UP(+)/DOWN(-) for more than 0.5 second.



- The tuner will now search until a station of sufficient strength has been found. The display shows the tuned frequency and "TUNED".
- If the station found is not the desired one, simply repeat this operation.
- Weak stations are skipped during auto tuning.

Manual tuning

- Manual tuning is useful when you already know the frequency of the desired station.
- After selecting the tuner and the desired band, press the TUNING UP(+) / DOWN(-) buttons repeatedly until the right frequency has been reached.



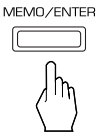
ENGLISH

Presetting radio stations

• You can store up to 30 preferred stations in the memory.

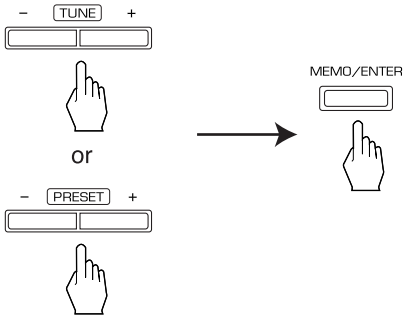
1 Tune in the desired station with auto or manual tuning.

2 Press the MEMORY/ENTER button.



• "MEM" is flickering for several seconds.

3 Select the desired preset number (1~30) and press the MEMORY/ENTER button.



• The station has now been stored in the memory.
• A stored frequency is erased from the memory by storing another frequency in its place.
• If "MEM" goes off, start again from the above step ②.

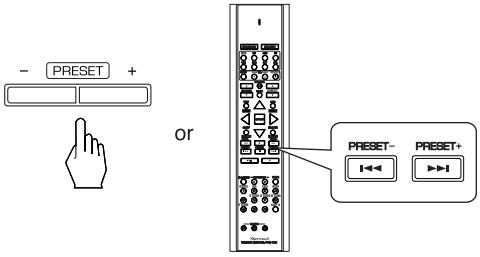
4 Repeat the above steps ① to ③ to memorize other stations.

■MEMORY BACKUP FUNCTION

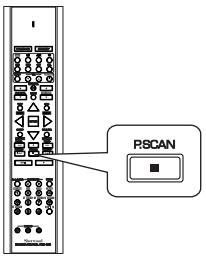
The following items, set before the receiver is turned off, are memorized.
• INPUT SELECTOR settings
• Surround mode settings
• Preset stations,etc.

Tuning to preset stations

• After selecting the tuner as an input source, select the desired preset number.



Scanning preset stations in sequence



• The receiver will start scanning the stations in the preset sequence and each station is received for 5 seconds.
• At the desired station, press this button again to stop scanning.

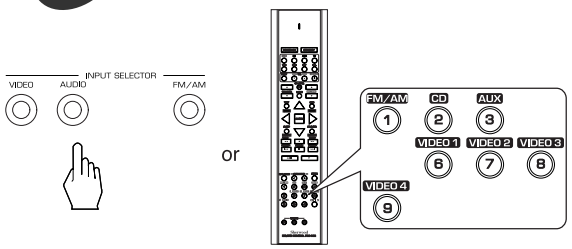
RECORDING

- The analog signals from the EXTERNAL INs as well as the digital signals from the coaxial or optical digital input can be heard but cannot be recorded.
- When recording the analog signals from CD, VIDEO 1~3, be sure to select the analog input. (For details, refer to "When CD, VIDEO 1~3 is selected as an input source" on page 22.)
- The volume and tone (bass, treble) settings have no effect on the recording signals.

ENGLISH

Recording with TAPE

1 Select the desired input as a recording source except for TAPE.



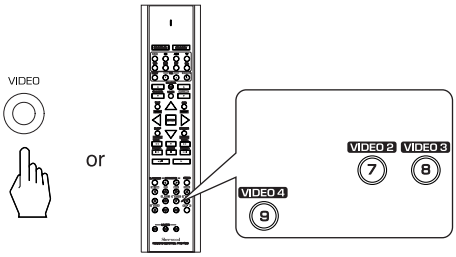
2 Start recording on the TAPE.

3 Start play on the desired input.

- To record the analog signals onto the recording equipment connected to TAPE, be sure to connect the ROOM 2/TAPE OUT jacks to the recording equipment and to assign the output to TAPE REC. (For details, refer to "CONNECTING AUDIO COMPONENTS" on page 8 and "When selecting the OUT ASSIGN" on page 37.)

Dubbing from video components onto VIDEO 1

1 Select the desired of VIDEO 2 ~ 4 as a recording source except VIDEO 1.



2 Start recording on the VIDEO 1.

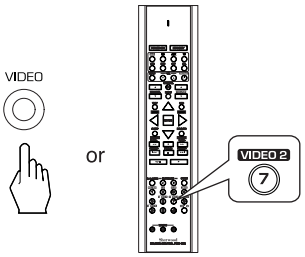
3 Start play on the desired input.

- The audio and video signals from the desired input will be dubbed onto the VIDEO 1 and you can enjoy them on the TV set and from the speakers.

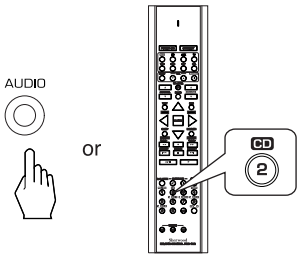
Dubbing the audio and video signals separately onto VIDEO 1

Example) When dubbing the VIDEO 2 video signal and the CD audio signal separately onto VIDEO 1.

1 Select VIDEO 2 as a video recording source.



2 Select CD as an audio recording source.



3 Start recording on the VIDEO 1.

4 Start play on the VIDEO 2 and the CD respectively.

- The audio signal from the CD and the video signal from the VIDEO 2 will be dubbed and you can enjoy them on the TV set and from the speakers.

■**Note:** Be sure to observe the order of the above steps ① and ②.

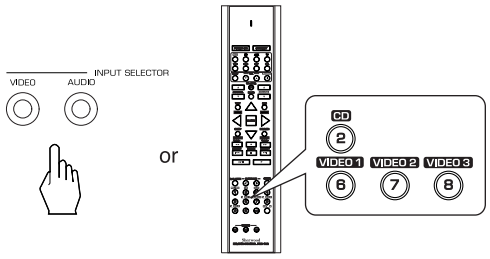
DIGITAL AUDIO RECORDING WITH MD RECORDER

- Only when the OPTICAL DIGITAL OUT of this receiver is connected to the OPTICAL DIGITAL IN of the MD recorder or CD recorder, you can enjoy high-quality sound of digital recording without converting the original signals. Refer to "CONNECTING VIDEO COMPONENTS", "CONNECTING AUDIO COMPONENTS" and "CONNECTING DIGITAL INs and OUT" on pages 6~8 and the operating instructions of the MD recorder or CD recorder.

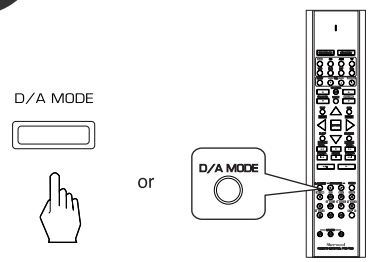
■**Notes:**

- Digital recording is available for the digital audio program sources such as CDs, MDs, some DVDs, etc.
- In most DVDs as well as some CDs, etc., digital recording may not be available depending on the signal format.
- There are some restrictions on recording digital signals. When making digital recordings, refer to the operating instructions of your digital recording equipment to know what restrictions are imposed.

1 Select the desired of CD, VIDEO 1~3 as a recording source.



2 For digital recording, select the digital input as recording signal input.



■**Note :**

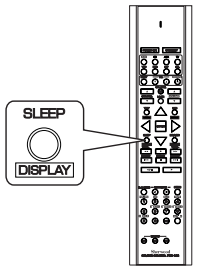
- When the digital signals are not input from the selected digital input, there will be no recording. (For details, refer to "When CD,VIDEO 1 ~ 3 is selected as an input source" on page 22 or "When selecting the DIGITAL AUDIO" on page 40.)

3 Start recording on the component connected to the OPTICAL DIGITAL OUT.

4 Start play on the desired input.

Operating the sleep timer

- The sleep timer allows the system to continue to operate for a specified period of time before automatically shutting off.
- To set the receiver to automatically turn off after the specified period of time.

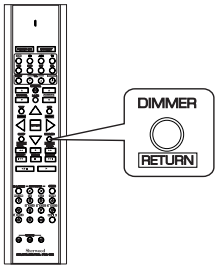


- Each time this button is pressed, the sleep time changes as follows:

→ 10 → 20 → 30 → --- → 90 → OFF
Unit : minutes

- While operating the sleep timer, " ☾ " lights up.
- When the sleep time is selected, all display panels of Sherwood components connected by the DIGI LINK III are dimly lit.

Adjusting the brightness of the fluorescent displays



- Each time this button is pressed, the brightness of all fluorescent displays of Sherwood components connected by the DIGI LINK III changes together as follows:

→ ON → dimmer → OFF

- In the display OFF mode, pressing any button will restore the display ON mode.

ROOM 2 SOURCE PLAYBACK

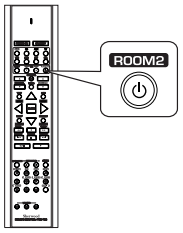
- This function allows enjoying one source in the main room and playing another in a different room at the same time.
- When you connect the multi-room system kit to the IR IN jack of this receiver, you can control this receiver with the remote control unit in a different room. (For details, refer to "CONNECTING MULTI-ROOM SYSTEM KIT" on page 12.)

■Notes:

- The analog signals from the EXTERNAL INs and the digital signals cannot be output to the different room, meaning no playback in a different room.
- You cannot play the ROOM 2 source in any surround mode.

■When using the buttons on the remote control unit.

1 Press the ROOM 2 button.

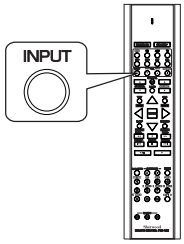


- R2 ~ is displayed on the front panel for several seconds.
- Each time this button is pressed, the ROOM 2 mode changes as follows :
  OFF : To turn off the ROOM 2 function. ("R2" goes off.)
  ↕
  ON : To turn it on. ("R2" lights up.)

■Note:

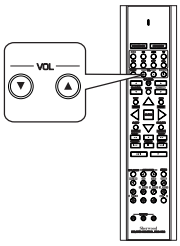
- When the ROOM 2 mode is set to OFF, the ROOM 2 input and the ROOM 2 volume cannot be selected.

2 Select the desired input as a ROOM 2 source.



- Each time this button is pressed, the ROOM 2 input can be selected among TUNER, CD, AUX, TAPE, VIDEO 1 ~ VIDEO 4.

3 Adjust the ROOM 2 volume.

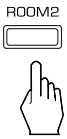


- You can adjust the volume on the power amplifier assigned to ROOM 2 when the SURROUND BACK/ ROOM 2 speaker terminals are connected to the speakers in a different room. (For details, refer to "When selecting the AMP ASSIGN" on page 37.)

4 Start play on the component related to the ROOM 2 source.

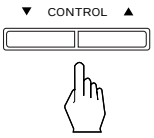
■When using the buttons on the front panel.

1 Press the ROOM 2 button to enter the ROOM 2 mode.



- R2 ~ is displayed on the front panel for several seconds.
- When the ROOM 2 setting mode disappears, press the ROOM 2 button again.

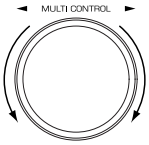
2 Select the desired mode while displaying the ROOM 2 setting mode.



- Each time these buttons are pressed, the mode changes as follows :
  R2 ~ (ROOM 2 mode) : To turn on or off the ROOM 2 function.
  ↕
  Input display (ROOM 2 input) : To select the desired ROOM 2 source.
  ↕
  R2 V ~ (ROOM 2 volume) : To adjust the volume on the power amplifier assigned to ROOM 2.

■Note:: When the ROOM 2 mode is set to OFF, the ROOM 2 input and the ROOM 2 volume cannot be selected.

3 Set the selected mode as desired.



■When selecting the ROOM 2 mode.
OFF : To turn off the ROOM 2 function. ("R2" goes off.)
↕
ON : To turn it on. ("R2" lights up.)

■When selecting the ROOM 2 input.

- You can select the desired among TUNER, CD, AUX, TAPE, VIDEO 1 ~ VIDEO 4 as a ROOM 2 source.

■When selecting the ROOM 2 volume.

- You can adjust the volume on the power amplifier assigned to ROOM 2 when the SURROUND BACK/ ROOM 2 speaker terminals are connected to the speakers in a different room. (For details, refer to "When selecting the AMP ASSIGN" on page 37.)

4 Start play on the component related to the ROOM 2 source.

■Notes :

- Even when this receiver enters the standby mode, in such a case that "R2" lights up still and the POWER ON/STANDBY button lights up in blue as it does in the operating mode, meaning only the ROOM 2 circuitry operates, the ROOM 2 source can be played independently.
- When the ROOM 2 function is operating in the standby mode, only the remote control unit is available.
- When you do not use the ROOM 2 function, turn off the ROOM 2 function to save electricity.

OSD Menu Settings

ENGLISH

• The OSD (On-Screen Display) menu is a setting menu that is displayed on the monitor TV and allows you to perform the setup procedures easily. In most situations, you will only need to set this once during the installation and layout of your home theater, and it rarely needs to be changed later.
The OSD menu consists of 6 main menus ; system setup, input setup, speaker / room EQ setup, CH level setup, sound parameter and room 2 setup. These menus are then divided up into various sub-menus.

■**Note :**

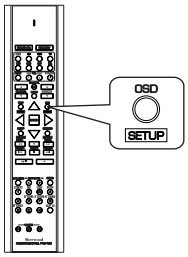
• Depending on the VIDEO MODE setting and the video connections between this receiver and the video component, the OSD menu and the momentary OSD cannot be displayed via MONITOR COMPOSITE OUT jack, or the picture is automatically turned off and only the OSD menu can be displayed via MONITOR COMPONENT OUT jacks.
(For details, refer to "Relationship between the video input signal and the video output signal" on page 7.)

■Navigating through the OSD menu

• The explanations here assume you are using the buttons on the remote control when performing the OSD menu operation. However, you can use the buttons on the front panel as well.
The buttons on the front panel correspond to those on the remote control as shown below.

Button on the remote control	OSD / SETUP	ENTER	△ ▽	◁ ▷
Button on the front panel	OSD SETUP	MEMO/ENTER	▼ CONTROL ▲	◄ MULTI CONTROL ►

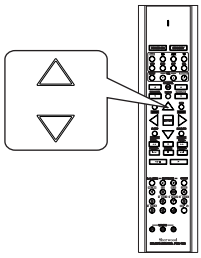
1 Turn the menu screen on.



• The main menu will be shown.
• To turn the menu screen off, press this button again.

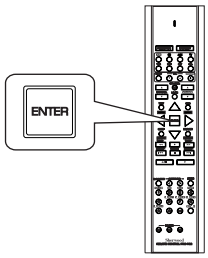
```
        MAIN  MENU

>SYSTEM      SETUP
 INPUT       SETUP
 SPEAKER
 /ROOM EQ    SETUP
 CH  LEVEL   SETUP
 SOUND       PARAMETER
 ROOM2       SETUP

 EXIT
```

2 Select the desired menu using the CURSOR UP(▲)/DOWN(▼) buttons.



ENGLISH

3 Confirm your selection.



■When selecting the SYSTEM SETUP

```
        SYSTEM  SETUP

>AMP  ASSIGN :  SURR BACK
 OUT  ASSIGN :  ROOM 2
 SUB W MODE :  NORMAL
 TONE  CONTROL    :     OFF
 CINEMA  EQ       :     OFF
 MOMENTARY  OSD :     ON
 OSD  POSITION  ADJUST

 RETURN  TO  MAIN  MENU
```

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■When selecting the INPUT SETUP

```
        INPUT  SETUP
>VIDEO  1      CONFIG
 VIDEO  2      CONFIG
 VIDEO  3      CONFIG
 VIDEO  4      CONFIG
 CD            CONFIG
 TAPE          CONFIG
 AUX           CONFIG
 TUNER         CONFIG
 EXT . IN      CONFIG
 RETURN  TO  MAIN  MENU
```

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■When selecting the SPEAKER/ROOM EQ SETUP

```
   SPEAKER/R . EQ  SETUP

>AUTO  SETUP

 SPEAKER     CONFIG
 SPEAKER     DISTANCE
 SPEAKER     X-OVER
 ROOM EQ     :    OFF


 RETURN  TO  MAIN  MENU
```

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■When selecting the CH LEVEL SETUP

```
      CH  LEVEL  SETUP
>MODE   :      CALIBRATE
 FRONT  LEFT          0dB
 CENTER               0dB
 FRONT  RIGHT         0dB
 SURR  RIGHT          0dB
 SURR  BACK  R        0dB
 SURR  BACK  L        0dB
 SURR  LEFT           0dB
 SUBWOOFER            0dB
 LFE  LEVEL  SETUP
 RETURN  TO  MAIN  MENU
```

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■When selecting the SOUND PARAMETER

```
        SOUND  PARAMETER

>NIGHT  MODE
 DOLBY  PLII MUSIC
 DOLBY  HEADPHONE
 DOLBY  VIRTUAL




 RETURN  TO  MAIN  MENU
```

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■When selecting the ROOM 2 SETUP

```
      ROOM  2    SETUP

>ROOM  2      :    OFF
  INPUT       :    TUNER
  VOLUME      :    - -




 RETURN  TO  MAIN  MENU
```

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- For the setting details, see page in ⇨.
- Adjust the setting(s) in each setting category to your preference.
- When the OSD button is pressed on a sub-menu, the menu screen will be turned off.

SETTING THE SYSTEM SETUP

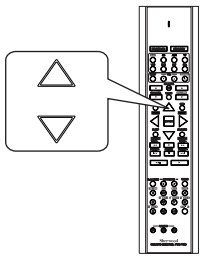
```
        SYSTEM  SETUP

>AMP  ASSIGN :  SURR BACK
 OUT  ASSIGN :  ROOM 2
 SUB W MODE :  NORMAL
 TONE  CONTROL   :     OFF
 CINEMA  EQ      :     OFF
 MOMENTARY  OSD  :     ON
 OSD  POSITION  ADJUST

 RETURN  TO  MAIN  MENU
```

- AMP ASSIGN : To assign the surround back channel's power amplifier to ROOM 2 for ROOM 2 playbak.
- OUT ASSIGN : To assign the ROOM 2/TAPE OUTs to TAPE REC for analog audio recording.
- SUBWOOFER MODE : To select the desired subwoofer mode.
- TONE CONTROL : To adjust the tone (bass and treble) as desired.
- CINEMA EQ : To select the desired cinema EQ mode.
- MOMENTARY OSD : To turn on or off the OSD that shows the status corresponding to each operation momentarily.
- OSD POSITION ADJUST : To adjust the positon of the momentary OSD and the OSD menu.

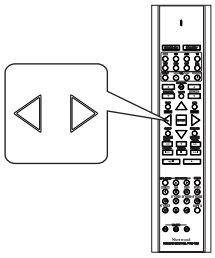
ENGLISH

When selecting the items other than OSD POSITION ADJUST

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired item.



2 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to set the selected item as desired.



When selecting the AMP ASSIGN

- You should assign the power amplifier for the surround back/room 2 channels to ROOM 2 when the SURROUND BACK/ROOM 2 speaker terminals are connected to the speakers installed in another room for ROOM 2 playback. In this case, you need not use the power amplifier to drive the speakers additionally. (For details on ROOM 2 connection, refer to "CONNECTING ROOM 2 OUTs" on page 11.)

SURR BACK : To use power amplifier for the surround back channels.
↕
ROOM 2 : To use it for ROOM 2 playback.

■ **Note** : When the EXTERNAL IN is selected as a main source, the AMP ASSIGN is automatically set to "SURR BACK".

When selecting the OUT ASSIGN

- Depending on how to use the ROOM 2/TAPE OUTs, you should assign these to ROOM 2 or TAPE REC.

ROOM 2 : To use the ROOM 2/TAPE OUTs for ROOM 2 playback
↕ (For details on ROOM 2 connection, refer to "CONNECTING ROOM 2 OUTs" on page 11.)
TAPE REC : To use them for analog audio recording.
(For details on connection, refer to "CONNECTING AUDIO COMPONENTS" on page 8.)

■ **Note** : When the AMP ASSIGN is set to "ROOM 2" or the ROOM 2 mode is turned on, the OUT ASSIGN is automatically set to "ROOM 2".

When selecting the SUBWOOFER MODE

• "SW PLUS +" mode is valid only when "FRONT" and "CENTER" are set to "LARGE" and "SUBWOOFER" is set to "YES" on the SPEAKER / ROOM EQ SETUP menu. (For details, refer to "SETTING THE SPEAKER / ROOM EQ SETUP" on page 43.)

NORMAL : When the low frequency signals of channels set to "LARGE" are reproduced from those channels only.
In this mode, the low frequency signals that are produced from the subwoofer channel is only the low frequency signals of LFE (from the multi-channel sources that contains LFE (Low Frequency Effects) channel, also called the ".1" channel) and the channels set to "SMALL".

SW PLUS + : When the low frequency signals of channels set to "LARGE" are produced simultaneously from those channels and the subwoofer channel.
In this mode, the low frequency range expands more uniformly through the room, but depending on the size and shape of the room, interference may result in a decrease of the actual volume of the low frequency range.

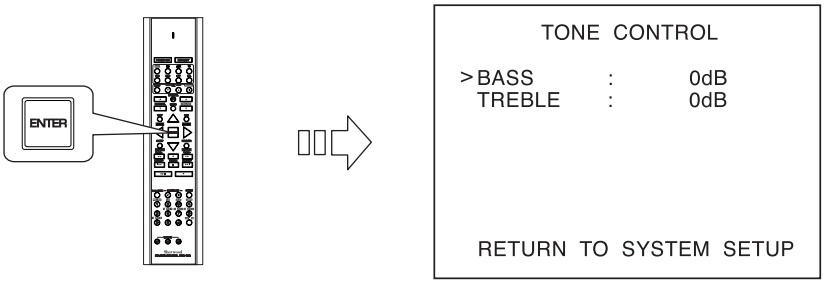
When selecting the TONE CONTROL

■ **Note** : When the digital signals from DTS, Dolby Digital program sources are input or the EXTERNAL IN is selected as an input source, you cannot adjust the tone and can listen to a program source without the tone effect.

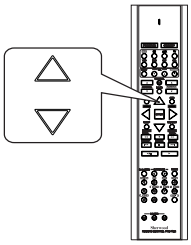
OFF : To listen to a program source without the tone effect. ("DIRECT" indicator lights up.)
↕
ON : To adjust the tone for your taste. ("DIRECT" indicator goes off.)

■ When the TONE CONTROL is set to ON to adjust the tone (bass and treble)

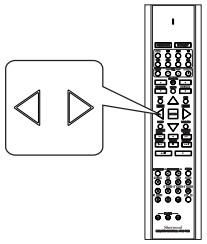
1. Press the ENTER button to enter the tone adjustment mode.



2. Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired tone mode.



3. Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to adjust the selected tone as desired.



- The tone level can be adjusted within the range of -10 ~ +10 dB.
- In general, we recommend the bass and treble to be adjusted to 0 dB (flat level).
- Extreme settings at high volume may damage your speakers.
- To complete tone adjustment, repeat the above steps 2 and 3.

When selecting the CINEMA EQ

OFF : To turn off the cinema EQ function.
↕
ON : To compensate for edgy or shrill movie sound tracks.

■**Note** : When the EXTERNAL IN is selected as an input source, the CINEMA EQ is automatically set to OFF.

When selecting the MOMENTARY OSD

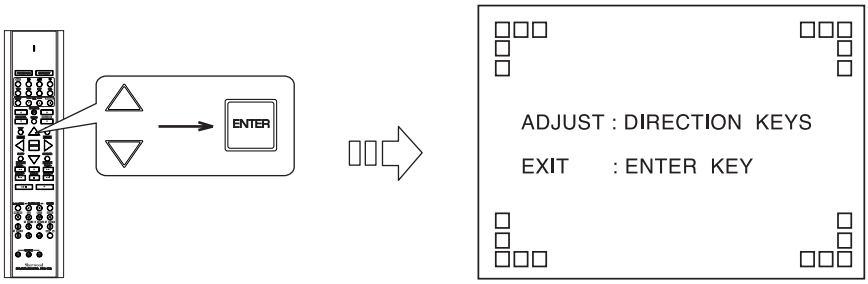
ON : To turn on the OSD function that shows the status corresponding to each operation on this unit
↕ momentarily.
OFF : To turn it off.

■**Note** : When outputting the component video signal from the MONITOR COMPONENT OUT jacks as it was input, the momentary OSD cannot be displayed.

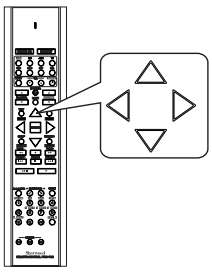
When selecting the OSD POSITION ADJUST

• You can adjust the position of the momentary OSD and the OSD menu that are displayed on the monitor TV.

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the OSD POSITION ADJUST, then press the ENTER button.



2 Press the CURSOR UP(▲)/DOWN(▼)/LEFT(◀)/RIGHT(▶) buttons to adjust the position of the momentary OSD and the OSD menu as desired.



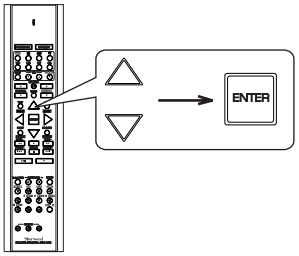
SETTING THE INPUT SETUP

• This menu allows you to make the various settings depending on how to use the input sources connected to this receiver.

```
        INPUT SETUP
>VIDEO 1      CONFIG
 VIDEO 2      CONFIG
 VIDEO 3      CONFIG
 VIDEO 4      CONFIG
 CD           CONFIG
 TAPE         CONFIG
 AUX          CONFIG
 TUNER        CONFIG
 EXT.IN       CONFIG
 RETURN TO MAIN MENU
```

When selecting the items other than NAME

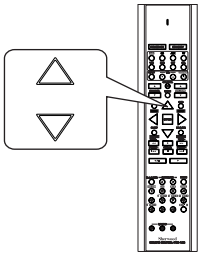
1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired input source, then press the ENTER button.



Example) When selecting the VIDEO 1

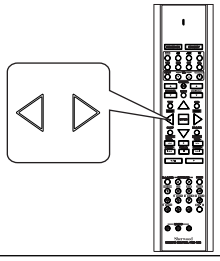
```
    VIDEO 1    CONFIG
>NAME       :   VIDEO  1
 DIGITAL AUDIO :  ANALOG
 VIDEO MODE :  AUTO
 AUTO SURROUND :  OFF
 REMASTER   :     OFF
 AV SYNC.   :     0 mS
 DC TRIGGER :     OFF

 RETURN TO SETUP MENU
```

2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired item.



■**Note :**
• Depending on the input source, some items other than DC TRIGGER cannot be selected.

3 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to set the selected item as desired.



When selecting the DIGITAL AUDIO

• You should assign the connected DIGITAL INs to the desired of CD and VIDEO 1 ~ VIDEO 3. (For details, refer to "CONNECTING DIGITAL INs and OUT" on page 8.)
• You can select the desired of OPT 1, OPT 2, COAX1, COAX 2 and ANALOG.

■**Note :**
• In such a case that a DIGITAL IN is assigned to two input sources or more, when these input sources are selected, the digital audio signals can be heard from the same DIGITAL IN.

When selecting the VIDEO MODE

• You can select the video input signal to be output from the MONITOR OUTs.

AUTO : When there are mutiple video input signals, the video input signals are detected and the video input signal to be output from the MONITOR OUTs is selected automatically in the following order : component video, S-video, composite video.

COMPOSITE : The signal that is input into the (COMPOSITE) VIDEO jack is always played. The composite video input signal is up-converted and output from the S-VIDEO and COMPONENT MONITOR OUT jacks.

S-VIDEO : The signal that is input into the S-VIDEO jack is always played. The S-video input signal is converted and output from the (COMPOSITE) VIDEO and COMPONENT MONITOR OUT jacks.

COMPONENT : The signals that are input into the COMPONENT jacks are always played. Because video conversion is not performed, no video signals are output from the MONITOR OUT jacks when there are no video signals that are input into the COMPONENT jacks.

• For details, refer to "Relationship between the video input signal and the video output signal" on page 7.

When selecting the AUTO SURROUND

• Depending on how to select a surround mode, you can select the auto surround mode or the manual surround mode.

ON (Auto surround mode) : The optimum surround mode will be automatically selected depending on the digital signal format being input.

OFF (Manual surround mode) : You can select the disired of different surround modes selectable for the signal being input with using the MULTI CONTROL knob or the SURROUND MODE UP/DOWN (>/<) buttons. (For details, refer to "When selecting the manual surround mode with pressing the SURROUND MODE button on the front panel" on page 25.)

■ **Notes :**

• When the SPEAKER button is set to off, the auto surround mode is invalid.
• Even when the auto surround mode is selected and the same type of digital signal format is being input, the optimum surround mode may vary depending on whether the speaker type is set to "NONE" or not.
• When the auto surround mode is selected and the PCM (2 channel) digital signal or the analog stereo signal is being input, only the stereo mode will be selected.
• When the auto surround mode is selected, the surround modes other than the optimum surround mode cannot be selected.

When selecting the REMASTER

• The remastering processes the input digital signal and converts its digital sampling frequency to twice the current frequency (88.2/96 kHz) for a more detailed sound reproduction.

ON : To process the input digital signal and to convert its sampling frequency to 88.2/96 kHz for a more detailed sound reproduction.

OFF : To turn off the remastering function.

■ **Notes** :

• The remastering function have no effect on the input digital signal from the 88.2/96 kHz source or higher as well as the digital signal that is output from the OPTICAL DIGITAL OUT of this receiver.
• When playing an analog input source, the remastering function cannot be activated.

When selecting the AV SYNC

• There may be a slight time delay between the video and audio signals in case that some video playback equipments may process the video signals later than the audio signals due to signal processing procedure, etc.. Should this happen, you can adjust the time delay of audio signals to synchronize the sound with the picture.
• The time delay can be adjusted within the range of 0 ~ 200 msec.

When selecting the DC TRIGGER

• To turn on the component connected to the DC TRIGGER OUT jack when this input source is selected, you should set the DC TRIGGER to ON for this input source.

OFF : To turn off the DC trigger function.

ON: To turn it on.

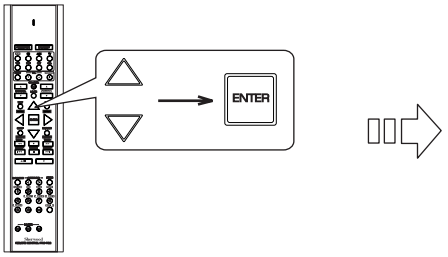
• For details, refer to "CONNECTING DC TRIGGER OUT" on page 11.

ENGLISH

When selecting the NAME

- You can give names to the input sources other than tuner.
- Up to 8 characters can be entered for each name.

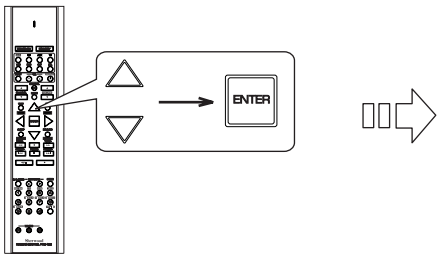
1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired input source, then press the ENTER button.



Example) When selecting the VIDEO 1

```
    VIDEO 1    CONFIG
>NAME        :   VIDEO  1
 DIGITAL  AUDIO :  ANALOG
 VIDEO  MODE :  AUTO
 AUTO  SURROUND :   OFF
 REMASTER    :      OFF
 AV  SYNC .    :     0 mS
 DC  TRIGGER  :      OFF


 RETURN  TO  SETUP  MENU
```

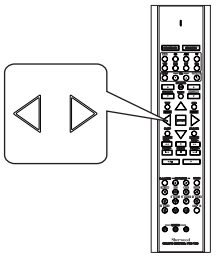
2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the NAME, then press the ENTER button.




```
    VIDEO 1    CONFIG
>NAME        : ■VIDEO  1
```

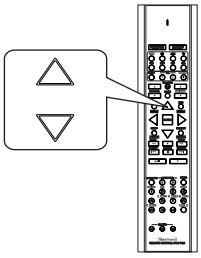
- The first digit flickers.

3 Press the CURSOR LEFT(◀)/ RIGHT(▶) buttons to select the desired digit.



- Then the selected digit will flicker.

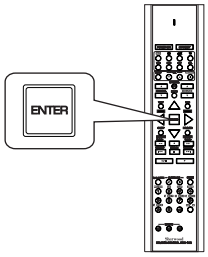
4 Press the CURSOR UP(▲)/DOWN(▼) buttons to enter the desired character on the flickering digit.



- You can enter the desired among blank, A ~ Z and 0 ~ 9.

5 Repeat the above steps ③ and ④ to enter the desired characters on the rest of the digits.

6 Confirm your entry.



- The name is stored in the memory.

■To resume its factory input source name.

- Make a blank on each digit and press the ENTER button.

SETTING THE SPEAKER / ROOM EQ SETUP

ENGLISH

- After you have installed this receiver and connected all the components, you should adjust the speaker settings for the optimum sound acoustics according to your environment and speaker layout.
- Even when you change speakers, speaker positions, or the layout of your listening environment, you should adjust the speaker settings, too.
- When performing the AUTO SETUP procedure, you need not perform the SPEAKER CONFIGURATION, SPEAKER DISTANCE, SPEAKER X-OVER and CH LEVEL SETUP procedures.

```
SPEAKER/R . EQ SETUP

>AUTO SETUP

SPEAKER    CONFIG
SPEAKER    DISTANCE
SPEAKER    X-OVER
ROOM EQ    :   OFF


RETURN TO MAIN MENU
```

- AUTO SETUP : To set the speaker setup and channel level setup automatically.
- SPEAKER CONFIGURATION : To select the sizes of the speakers that are connected.
- SPEAKER DISTANCE: To enter the distance between the listening position and each speaker to set the delay time automatically for optimum surround playback.
- SPEAKER CROSSOVER : To select the desired crossover frequency.
- ROOM EQ : To turn on or off the room EQ.

When selecting the AUTO SETUP

- Auto Setup lets you avoid troublesome listening-based speaker setup and achieve good surround sound. Auto Setup has the feature that provides the optimum listening environment at two main listening positions in your room, where there are often multiple listeners viewing programs together.
  You should connect the supplied microphone to the SETUP MIC jack so that this receiver can analyze the information from a series of test tones emitted from speakers at two main listening positions and can adjust the size, distance, sound level, crossover frequency and frequency response of each speaker automatically.
  For optimum effectiveness, move the microphone from first position to second position within the listening area surrounded by the speakers while performing the auto setup.

■About the first listening position

The first listening position is the point where a listener sits most often or the listening position when only one person is listening. Measurements start from this point.

- If you want to personalize your speaker setup and channel level setup by making the settings manually, perform the "When selecting the SPEAKER CONFIGURATION" on page 45, "When selecting the SPEAKER DISTANCE" on page 47, "When selecting the SPEAKER X-OVER" on page 48, "Adjusting each channel level with test tone" on page 26 and "Adjusting the current channel level" on page 27.
- After the auto setup has been completed, set the room EQ mode as desired. (For details, refer to "When selecting the ROOM EQ" on page 49.)

■Preparations

1. Check that the speakers are securely connected to this receiver.
   - If your subwoofer has adjustable volume and crossover frequency, set the volume halfway and set the crossover frequency to the maximum or the low pass filter off.
2. Connect the supplied microphone to the SETUP MIC jack on the front panel.(For details, refer to "SETUP MIC JACK" on page 14.)

■Notes :

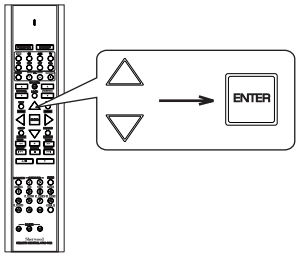
- Because the microphone for Auto Setup is designed for use with this receiver, to use the auto setup function, do not use a microphone other than the one supplied with this receiver.
- After you have completed the auto setup procedure, disconnect the microphone.

1 Place the microphone on a flat level surface at the first main listening position.

- If possible, use a tripod, etc. to attach the microphone at the same height as your ears would be when you are seated in your listening position.
- Ensure there are no obstacles between the speakers and the microphone.

Continued

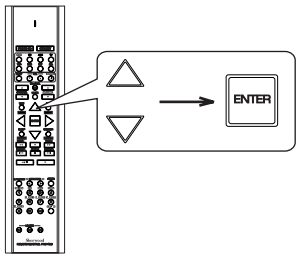
2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the AUTO SETUP, then press the ENTER button.




```
        AUTO SETUP

  BEFORE STARTING THE
  SYSTEM PLEASE PLUG
  THE MIC. IN USING
  THE FRONT PANEL JACK
     >> WARNING <<
  THE TEST TONE IS LOUD.

 >START
  BACK TO SETUP MENU
```

3 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the START, then press the ENTER button

When measurements at first position have been completed.




```
        AUTO  SETUP

     SECOND POSITION


      >CONTINUE
    CANCEL THE AUTO SETUP
```

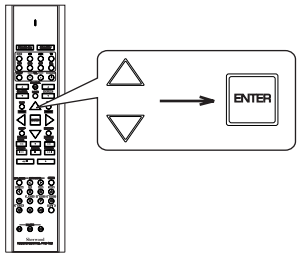
- Loud test tones are output from each speaker and then if measurements at the first position have been completed, "SECOND POSITION" message will be displayed.

4 Place the microphone on a flat level at the second main listening position.

- For optimum effectiveness, place the microphone at the second main position within the listening area surrounded by the speakers.

5 Press the CURSOR UP(▲)/DOWN(▼) buttons to select "CONTINUE", then press the ENTER button

When the auto setup has been completed.



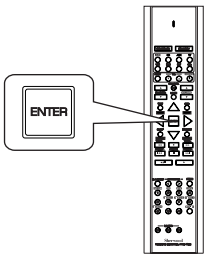

```
        AUTO  SETUP

        <COMPLETE>


 >BACK TO SETUP  MENU
```

- Loud test tones are output again successively and then if a series of auto setup procedure has been completed, "COMPLETE" will be displayed.
- To stop the auto setup procedure while performing it, (press the CURSOR UP(▲)/DOWN(▼) buttons to select "CANCEL THE AUTO SETUP", then) press the ENTER button.
  In such a case that the auto setup procedure is stopped before "<COMPLETE>", the results of each adjustment may not be memorized.
- If there may be a problem with front speakers or microphone connection, error message will be displayed. In this case, turn off the power, check the connection and then retry the auto setup procedure.

■Notes :

- Before starting auto setup, be sure to set the SPEAKER button to on.
- Because the test tones are loud, ensure there no infants or small children in the room.
- For best results, ensure the room is as quiet as possible during the auto setup procedure.
  If there is too much ambient noise, the results may not be satisfactory.

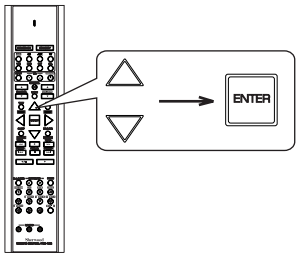
6 To check the results, press the ENTER button.



- Then the results are memorized and the SPEAKER/ROOM EQ SETUP menu is displayed.
- Check the results on each setup menu(SPEKER CONFIGURATION menu on page 45, SPEAKER DISTANCE menu on page 47, SPEAKER X-OVER menu on page 48 and CH LEVEL menu for "CALIBRATE" mode on page 50).
- If the results are not satisfactory, you can retry the auto setup procedure or personalize your speaker setup and channel level setup by making the settings manually. (For details, refer to "When selecting the SPEAKER CONFIGURATION" on page 45, "When selecting the SPEAKER DISTANCE" on page 47, "When selecting the SPEAKER X-OVER" on page 48, "Adjusting each channel level with test tone" on page 26 and "Adjusting the current channel level" on page 27.)

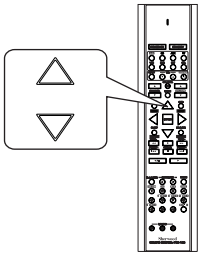
When selecting the SPEAKER CONFIGURATION

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the SPEAKER CONFIGURATION, then press the ENTER button.

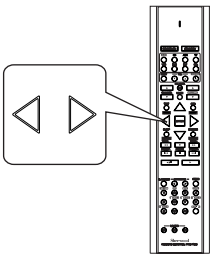


```
    SPEAKER     CONFIG

>FRONT       : LARGE
 CENTER      : LARGE
 SURROUND    : LARGE
 SURR BACK   : LARGE 2CH
 SUBWOOFER   : YES


  RETURN TO SPK SETUP
```

2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired speaker.



3 Press the CURSOR LEFT(◀)/ RIGHT(▶) buttons to set the selected speaker as desired.



• Depending on your speaker type, you can select one of these following speaker types.

LARGE: Select this when connecting speakers that can fully reproduce sounds below crossover frequency.

SMALL: Select this when connecting speakers that can not fully reproduce sounds below crossover frequency. When this is selected, sounds below crossover frequency are sent to the subwoofer or speakers which are set to LARGE(when not using a subwoofer)

NONE: Select this when no speakers are connected. When this is selected, sounds are sent to the speakers which are not set to NONE.

2CH/1CH: Select the desired depending on the number of surround back speakers.

YES/NONE: Select the desired depending on whether a subwoofer is connected or not.

■**Notes** :

- When speakers are set to "SMALL", you should set their crossover frequency correctly according to their frequency characteristics. (For details, refer to "When selecting the SPEAKER X-OVER" on page 48.)
- When "SUBWOOFER" is set to "NONE", "FRONT" is automatically set to "LARGE".
- When the "FRONT" is set to "SMALL", "CENTER", "SURROUND", "SURR BACK" cannot be set to "LARGE" and "SUBWOOFER" is automatically set to "YES".
- When the "SURROUND" is set to "SMALL", "SURR BACK" cannot be set to "LARGE".
- When the power amplifier for surround back/room 2 channels is assigned to "ROOM 2", the "SURR BACK" is automatically set to "NONE". (For details, refer to "When selecting the AMP ASSIGN" on page 37.)

■**When setting the speaker size by performing the auto setup.**

If the speakers may not be detected properly because of incorrect connection, measurement environment, or other factors, the speakers are set as follows :

- When a pair of speakers such as front, surround or surround back speakers are detected differently (i.e, one is detected as "LARGE", the other as "SMALL"), both are automatically set to "SMALL".
- When only one surround speaker is detected, both are automatically set to "NONE".
- When only the surround back right speaker is detected, both are automatically set to "NONE". In this case, connect that speaker to the SURROUND BACK/ROOM 2 LEFT speaker terminals and retry the auto setup, then it will be automatically set to "1CH".

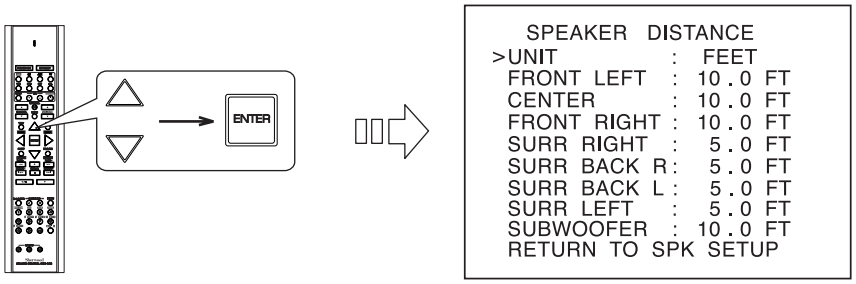
4 Repeat the above steps ② and ③ until the speakers are all set to the desired mode.

■**About the speaker size**

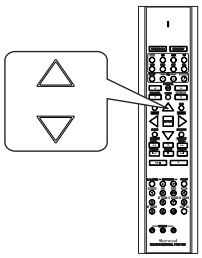
- Select "LARGE" or "SMALL" not according to the actual size of the speaker but according to the speaker's capacity for playing low frequency (bass sound below frequency set on the SPEAKER X-OVER menu) signals.
- If you do not know, try comparing the sound at both settings (setting the volume to a level low enough so as not to damage the speakers) to determine the proper setting.
- When setting the speaker size by performing the auto setup, depending on whether the measured crossover frequency of each speaker is lower or higher than 80 Hz, its size is automatically set to "LARGE" or "SMALL". (For details, refer to "When selecting the SPEAKER X-OVER" on page 48.)

When selecting the SPEAKER DISTANCE

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the SPEAKER DISTANCE, then press the ENTER button.

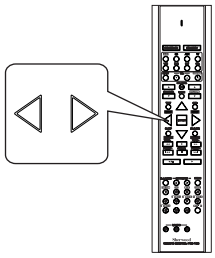


2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired item.



■Note :
- You cannot select the speakers set to "NONE".

3 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to set the selected item as desired.



■When selecting the desired unit
- You can select either METER or FEET.
- Once a unit is selected, the distances are automatically changed in the selected unit.

■When setting the distance
- You can set the distance within the range of 0.1 ~ 9.0 meters in 0.1 meter intervals (or 0 ~ 30 feet in 0.5 feet intervals).

4 Repeat the above steps ② and ③ until the distances are all set as desired.

■About the speaker distance

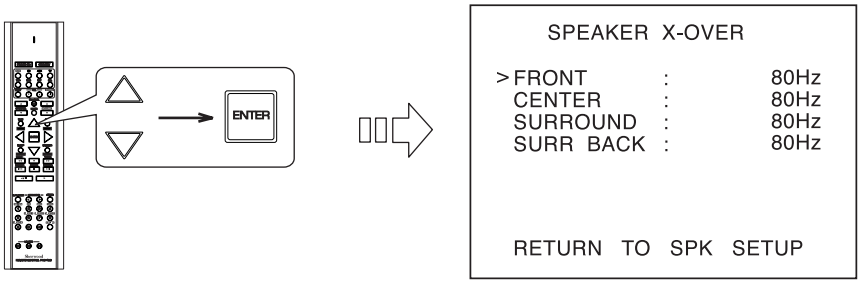
When enjoying multi-channel surround playback with Dolby Digital and DTS sources, etc., it is ideal that the center, surround and surround back speakers, etc. should be the same distance from the main listening position as the front speakers. By entering the distance between the listening position and each speaker, the delay times of center, surround and surround back speakers, etc. are automatically adjusted to create an ideal listening environment virtually as if the center, surround and surround back speakers, etc.were at their ideal locations respectively.

ENGLISH

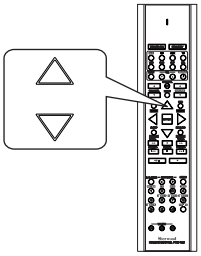
When selecting the SPEAKER X-OVER

• When speakers are set to "SMALL", be sure to set their crossover frequency correctly according to their frequency characteristics.

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the SPEAKER X-OVER, then press the ENTER button.

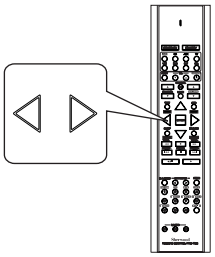


2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired speaker.



■**Note :**
• You cannot select the subwoofer and the speakers set to "NONE".

3 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to set the crossover frequency as desired.



• You can adjust the crossover frequency within the range of 40 ~ 200 Hz in 10 Hz intervals.

4 Repeat the above steps ② and ③ until the crossover frequencies are all set as desired.

■**About the crossover frequency**
• When speakers are set to "SMALL", low frequencies in those channels that are below the crossover frequency are to output from subwoofer or front speakers which are set to LARGE(when not using a subwoofer).
• Refer to the operating instructions of the speakers to be connected. If the frequency range of your speaker is 100 Hz~20 kHz, the crossover frequency should be set to 100 Hz(or slightly higher).

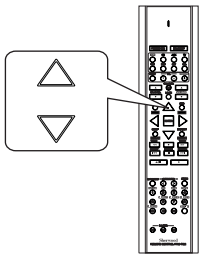
When selecting the ROOM EQ

- The room EQ is a kind of room equalizer for your speakers. According to the acoustic characteristics of your room measured by the auto setup, the room EQ automatically adjusts the frequency response of speakers.
- If you use different brands or sizes of speakers for some channels or have a room with unique acoustic characteristics, such as walls, furniture, and the dimensions or the shape of the room, we recommend using the room EQ.

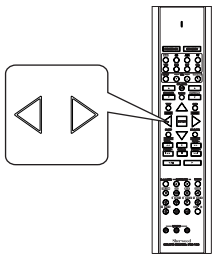
■Note :

- To use the room EQ, first you should finish measuring the acoustic characteristics of your room performing the auto setup.
  (For details, refer to "When selecting the AUTO SETUP" on page 43.)

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the ROOM EQ.



2 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to select the desired room EQ mode.



ON : When turning on the room EQ.

↕

OFF : When turning it off.

SETTING THE CH LEVEL SETUP

```
     CH  LEVEL  SETUP
 >MODE  :      CALIBRATE
  FRONT  LEFT            0dB
  CENTER                 0dB
  FRONT  RIGHT           0dB
  SURR  RIGHT            0dB
  SURR  BACK  R          0dB
  SURR  BACK  L          0dB
  SURR  LEFT             0dB
  SUBWOOFER              0dB
  LFE  LEVEL  SETUP
  RETURN  TO  MAIN  MENU
```

Memory mode

■Note :

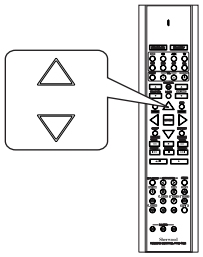
• Depending on the speaker settings("NONE", etc.), some channels cannot be selected.

Adjusting the current channel level

• You can adjust the current channel levels as desired. These adjusted levels are just memorized into user's memory("CALIBRATE"), not into preset memory("REF 1", "REF 2")

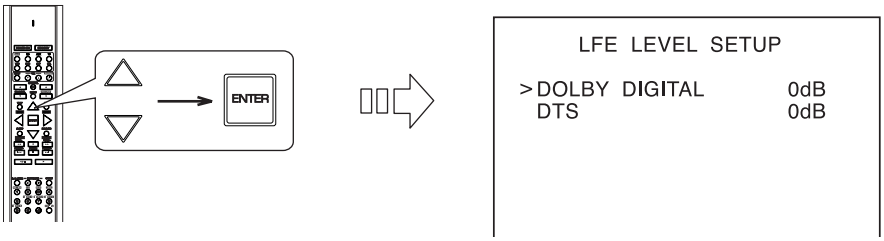
• After adjusting each channel level with test tone, adjust the channel levels either according to the program sources or to suit your tastes.(For details, refer to "Adjusting each channel level with test tone" on page 26.)

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired channel.



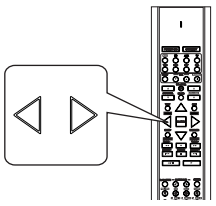
■When adjusting the LFE LEVEL

1. Press the CURSOR UP(▲)/DOWN(▼)buttons to select the LFE LEVEL SETUP, then press the ENTER button.



2. Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired program source.

2 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to adjust the level of the selected channel or program source's LFE as desired.



• The LFE level can be adjusted within the range of -10 ~ 0 dB and other channel levels within the range of -15 ~ +15 dB

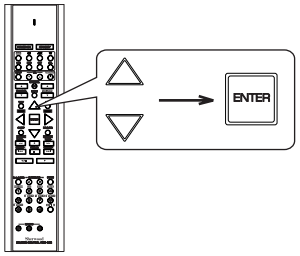
• In general, we recommend the LFE level to be adjusted to 0 dB.(However, the recommended LFE level for some early DTS software is -10 dB.) If the recommended levels seem too high, lower setting as necessary.

3 Repeat the above steps ① and ② to adjust each channel level.

Memorizing the adjusted channel levels

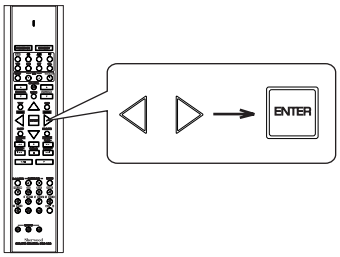
• You can memorize the adjusted channel levels into preset memory("REF 1", "REF 2") and recall the memorized whenever you want.

1 After performing the steps ①~③ in "Adjusting the current channel level" procedure on page 50, press the CURSOR UP(▲)/DOWN(▼) buttons to select the MODE(memory mode), then press the ENTER button.



• The "REF 1" indication flickers.

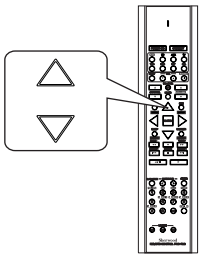
2 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to select the desired preset memory, then press the ENTER button.



• Each time the CURSOR LEFT(◀) or RIGHT(▶) button is pressed, "REF 1" or "REF 2" is selected.
• The adjusted channel levels have now been memorized into the selected memory.

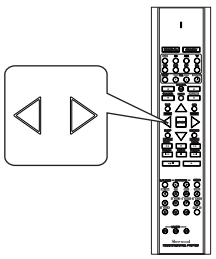
Recalling the memorized channel levels

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the MODE(memory mode).



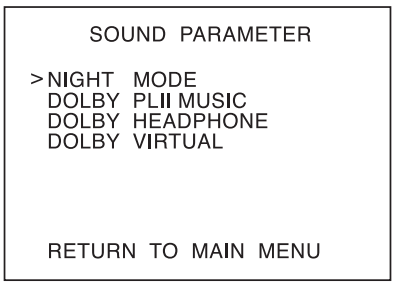
• "CALIBRATE" may be displayed instead of "REF 1" or "REF 2".

2 Press the CURSOR LEFT(◀)/ RIGHT(▶) buttons to select the desired one of REF 1 and REF 2.



• Then the channel levels memorized into the selected preset memory are recalled.

SETTING THE SOUND PARAMETER



- NIGHT MODE : To adjust the dynamic range compression that makes faint sound easier to hear at low volume levels.
- DOLBY PLII MUSIC : To adjust the various surround parameters for optimum surround effect.
- DOLBY HEADPHONE : To select the desired listening mode for each Dolby Headphone mode.
- DOLBY VIRTUAL : To select the speaker layout to be used actually for each Dolby Virtual Speaker mode.

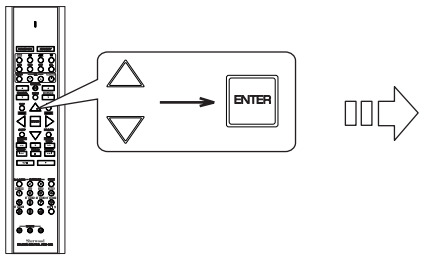
When selecting the NIGHT MODE

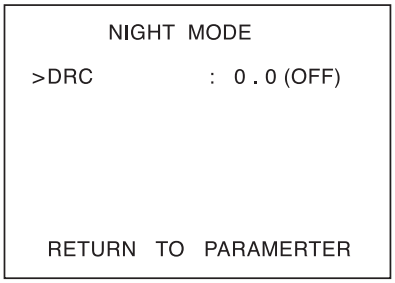
- This function compresses the dynamic range of previously specified parts of the Dolby Digital sound track (with extremely high volume) to minimize the difference in volume between the specified and non-specified parts.
  This makes it easy to hear all of the sound track when watching movies at night at low levels.

■Notes:

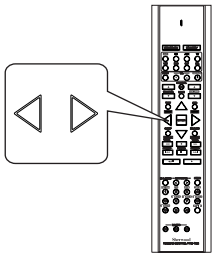
- The night mode setting is valid only when the digital signals from the Dolby Digital program source are being input.
- In some Dolby Digital softwares, the night mode setting may not be valid.

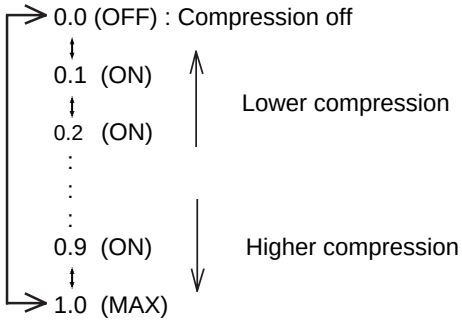
1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the NIGHT MODE, then press the ENTER button.





2 Press the CURSOR LEFT(◀)/ RIGHT(▶) buttons to adjust the dynamic range compression as desired.





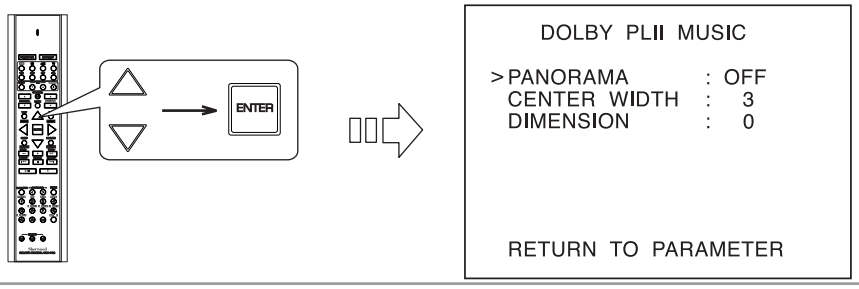
When selecting the DOLBY PLII MUSIC

• You can adjust the various surround parameters for optimum surround effect.

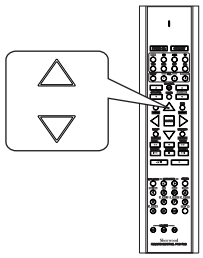
■Note:

• The parameter settings are valid only when listening in either Dolby Pro Logic II Music mode or the Dolby Pro Logic IIx Music mode.

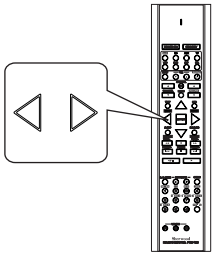
1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the DOLBY PLII MUSIC, then press the ENTER button.



2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired parameter.



3 Press the CURSOR LEFT(◀)/ RIGHT(▶) buttons to adjust the selected parameter as desired.



■When selecting the PANORAMA mode
This mode extends the front stereo image to include the surround speakers for an exciting "wraparound" effect with side wall imaging. Select "OFF" or "ON"(default value:OFF).

■When selecting the CENTER WIDTH control
This adjusts the center image so it may be heard only from the center speaker, only from the left/right speakers as a phantom image, or from all three front speakers to varying degrees.
The control can be set in 8 steps from 0 to 7(default value : 3).

■When selecting the DIMENSION control
This gradually adjusts the soundfield either towards the front or towards the rear. The control can be set in 7 steps from -3 to +3(default value : 0).

4 Repeat the above steps ② and ③ to adjust other parameters.

ENGLISH

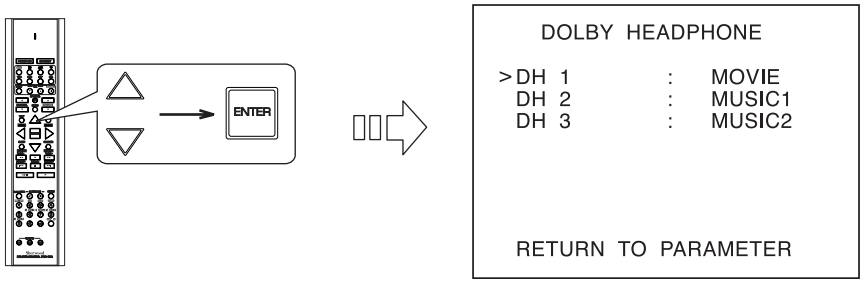
When selecting the DOLBY HEADPHONE

• You can select the desired listening mode for each Dolby Headphone mode.

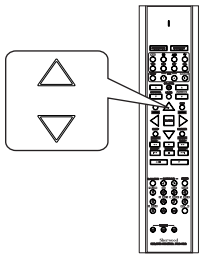
■**Note**:

• You can select the desired listening mode only when playing analog stereo, PCM 2 channel or Dolby Digital 2 channel source.

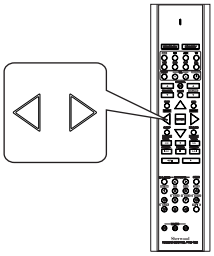
1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the DOLBY HEADPHONE, then press the ENTER button.



2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired Dolby Headphone mode.



3 Press the CURSOR LEFT(◀)/ RIGHT(▶) buttons to select the desired listening mode.



MOVIE : This provides the surround effect suitable for movie sources.

MUSIC 1 : This provides the surround effect suitable for music sources.

MUSIC 2 : This provides less surround effect compared to MUSIC 1 mode.

4 Repeat the above steps ② and ③ to select the desired listening modes for other Dolby Headphone modes.

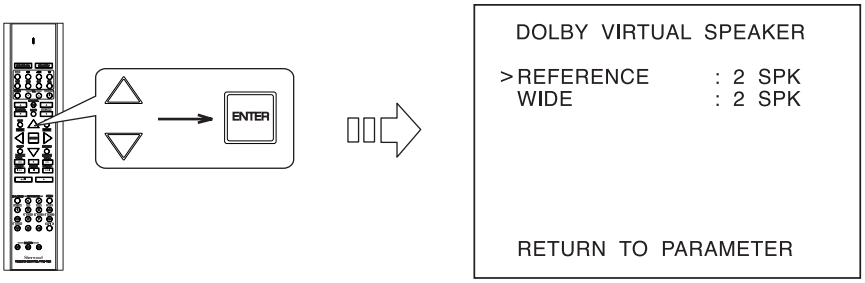
When selecting the DOLBY VIRTUAL

• You can select the speaker layout to be used actually for each Dolby Virtual Speaker mode.

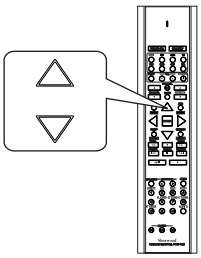
■Note:

• The speaker layout settings are valid only when listening in a Dolby Virtual Speaker mode.

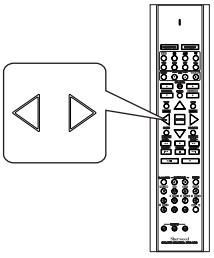
1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the DOLBY VIRTUAL, then press the ENTER button.



2 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired Dolby Virtual Speaker mode.



3 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to select the desired speaker layout.



■When selecting the Dolby Virtual Speaker Reference mode

2 SPK : When using 2 front speakers only.
↕
3 SPK : When using 2 front and center speakers.

■When selecting the Dolby Virtual Speaker Wide mode

2 SPK : When using 2 front speakers only.
↕
3 SPK : When using 2 front and center speakers.
↕
4 SPK : When using 2 front and 2 surround speakers.
↕
5 SPK : When using 2 front, center and 2 surround speakers.

■Note:

• When the speakers are set to "NONE", the corresponding speaker layouts cannot be selected.

4 Repeat the above steps ② and ③ to select the desired speaker layout for another Dolby Virtual Speaker mode.

ENGLISH

SETTING THE ROOM 2 SETUP

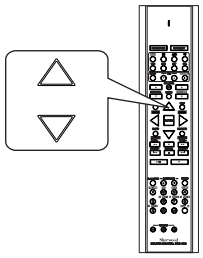
• The ROOM 2 function allows enjoying one source in the main room while playing another in a different room at the same time.

```
        ROOM 2   SETUP

>ROOM 2      :   OFF
  INPUT      :   TUNER
  VOLUME     :   - -




  RETURN TO MAIN MENU
```

• ROOM 2 : To turn on or off the ROOM 2 function.
• INPUT : To select the desired ROOM 2 source.
• VOLUME : To adjust the volume on the power amplifier assigned to ROOM 2.

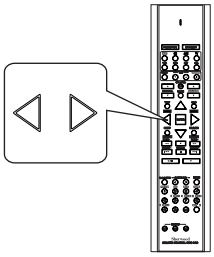
■Notes:
• The analog signals from the EXTERNAL INs and the digital signals cannot be output to the different room, meaning no playback in a different room.
• You cannot play the ROOM 2 source in any surround mode.

1 Press the CURSOR UP(▲)/DOWN(▼) buttons to select the desired item.



■Note:
• The VOLUME cannot be adjusted when the AMP ASSIGN is assigned to SURR BACK. (For details, refer to "When selecting the AMP ASSIGN" on page 37.)

2 Press the CURSOR LEFT(◀)/RIGHT(▶) buttons to set the selected item as desired.



When selecting the ROOM 2

OFF : To turn off the ROOM 2 function.
↕
ON : To turn it on.

■Notes:
• When the ROOM 2 is set to OFF, the INPUT and the VOLUME cannot be selected.
• When you do not use the ROOM 2 function, set the ROOM 2 to OFF to save electricity.

When selecting the INPUT

• You can select the desired among TUNER, CD, AUX, TAPE, VIDEO 1 ~ VIDEO 4 as a ROOM 2 source.

When selecting the VOLUME

• You can adjust the volume on the power amplifier assigned to ROOM 2 when the SURROUND BACK/ ROOM 2 speaker terminals are connected to the speakers in a different room.

■Note:
• You can adjust the VOLUME only when the power amplifier for surround back/room 2 channels is assigned to "ROOM 2". (For details, refer to "When selecting the AMP ASSIGN" on page 37.)

Troubleshooting Guide

If a fault occurs, run through the table below before taking your receiver for repair.
If the fault persists, attempt to solve it by switching the receiver off and on again. If this fails to resolve the situation, consult your dealer. Under no circumstances should you attempt to repair the receiver yourself. This could void the warranty.

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	• The AC input cord is disconnected. • Poor connection at AC wall outlet or the outlet is dead or off.	• Connect cord securely. • Check the outlet using a lamp or another appliance.
No sound	• The speaker wires are disconnected. • The master volume is adjusted too low. • The MUTE button is pressed to ON. • Incorrect selection of input source. • Incorrect connections between the components.	• Check the speaker connections. • Adjust the master volume. • Press the MUTE button to cancel the muting effect. • Select the desired input source correctly. • Make connections correctly.
No sound from the surround speakers	• Surround mode is switched off(stereo mode). • Master volume and surround level are too low. • Monaural source is used. • Surround speaker setting is "NONE".	• Select a surround mode. • Adjust master volume and surround level. • Select a stereo or surround source. • Select the desired surround speaker setting.
No sound from the center speaker	• Dolby Virtual Speaker, stereo mode, etc is selected. • Center speaker setting is "NONE". • Master volume and center level are too low.	• Select the desired surround mode. • Select the desired center speaker setting. • Adjust master volume and center level.
No sound from the surround back speakers	• The input signal format or the current surround mode cannot support the 7.1(or 6.1) surround. • The power amplifier for the surround back/room 2 channels is assigned to the ROOM 2. • Master volume and surround back level are too low. • Surround back speaker setting is "NONE".	• Under the proper situations, perform the 7.1(or 6.1) surround playback.(For details, refer to "ENJOYING SURROUND SOUND" on page 25.) • Assign the power amplifier to the surround back channels.(For details, refer to "When selecting the AMP ASSIGN"on page 37.) • Adjust master volume and surround back level. • Select the desired surround back speaker setting.
Stations cannot be received	• No antenna is connected. • The desired station frequency is not tuned in. • Antenna is in wrong position.	• Connect an antenna. • Tune in the desired station frequency. • Move antenna and retry tuning.
Preset stations cannot be received	• An incorrect station frequency has been memorized. • The memorized stations are cleared.	• Memorize the correct station frequency. • Memorize the stations again.
Poor FM reception	• No antenna is connected. • The antenna is not positioned for the best reception.	• Connect an antenna. • Change the position of the antenna.
Continuous hissing noise during FM reception, especially when a stereo broadcast is received.	• Weak signals.	• Change the position of the antenna. • Install an outdoor FM antenna.
Continuous or intermittent hissing noise during AM reception, especially at night.	• Noise is caused by motors, fluorescent lamps or lightning, etc.	• Keep the receiver away from noise sources. • Install an outdoor AM antenna.
Remote control unit does not operate.	• Batteries are not loaded or exhausted. • The remote sensor is obstructed.	• Replace the batteries. • Remove the obstacle.
Other Sherwood components do not react to remote control commands.	• DIGI LINK connections are not made properly.	• Make proper DIGI LINK connections.
OSD function is not available.	• Video connections between this unit and the monitor TV are not made correctly.	• Make proper video connections.

Specifications

ENGLISH

■AMPLIFIER SECTION

- Power output, stereo mode, 6 Ω, THD 0.2 %, 40 Hz~20 kHz | **2 ×100 W**
- Total harmonic distortion, 6 Ω, 95 W, 1 kHz | **0.05%**
- Intermodulation distortion
  60 Hz : 7 kHz= 4 : 1 SMPTE, 6 Ω, 95 W | **0.1%**
- Input sensitivity/impedance
  Line (CD, TAPE, VIDEO) | **200 mV/47k**Ω
- Signal to noise ratio, IHF "A" weighted
  Line (CD, TAPE, VIDEO) | **95 dB**
- Frequency response
  Line (CD, TAPE, VIDEO), 20 Hz~55 kHz | **+0, -3 dB**
- Output level
  ROOM 2/TAPE OUT, 2.2 kΩ | **200 mV**
- Bass/Treble control, 100 Hz/10 kHz | ±**10 dB**
- Surround mode, only channel driven
  Front power output, 6 Ω, 1 kHz, THD 0.7 % | **110 W+110 W**
  Center power output, 6 Ω, 1 kHz, THD 0.7 % | **110 W**
  Surround power output, 6 Ω, 1 kHz, THD 0.7 % | **110 W+110 W**
  Surround back / ROOM 2 power output, 6 Ω, 1 kHz, THD 0.7 % | **110 W + 110W**

■DIGITAL AUDIO SECTION

- Sampling frequency | **32, 44.1, 48, 96 kHz**
- Digital input level
  Coaxial, 75 Ω | **0.5 Vp-p**
  Optical, 660 nm | **-15~-21 dBm**

■VIDEO SECTION

- Video format | **NTSC**
- Input sensitivity(=Output level), 75 Ω
  Video (Composite(normal)) | **1 Vp-p**
  S-Video (luminance signal) | **1 Vp-p**
  (chrominance signal) | **0.286 Vp-p**
  Component video (R-Y signal) | **0.5 Vp-p**
  (B-Y signal) | **0.5 Vp-p**
  (Y signal) | **1.0 Vp-p**

■FM TUNER SECTION

- Tuning frequency range | **87.5~108 MHz**
- Usable sensitivity, THD 3%, S/N 30 dB | **12.8 dBf**
- 50 dB quieting sensitivity, mono/stereo | **20.2 / 45.3 dBf**
- Signal to noise ratio, 65 dBf, mono/stereo | **70 / 65 dB**
- Total harmonic distortion, 65 dBf,1 kHz, mono/stereo | **0.5 / 0.8 %**
- Frequency response, 30 Hz~15 kHz | ±**3 dB**
- Stereo separation, 1 kHz | **32 dB**
- Capture ratio | **4.0 dB**
- IF rejection ratio | **60 dB**

■AM TUNER SECTION

- Tuning frequency range | **520~1710 kHz**
- Usable sensitivity | **500 µV/m**
- Signal to noise ratio | **40 dB**
- Selectivity | **25 dB**

■GENERAL

- Power supply | **120 V ~ 60 Hz**
- Power consumption | **3.7 A**
- Switched AC outlets | **TOTAL 120 W (1 A) max.**
- Dimensions (W ×H ×D, including protruding parts) | **440 ×141 ×370 mm**(**17-3/8 ×5-1/2 ×14-1/2 inches**)
- Weight (Net) | **10.1 kg (22.3 lbs)**

Note: Design and specifications are subject to change without notice for improvements.

Setup Code Table

ENGLISH

TV

AOC	005	003				
Admiral	041	031				
Aiko	014					
Akai	005					
Alaron	026					
Ambassador	024					
America Action	027					
Ampro	043					
Anam	027	047	048	049		
Audiovox	030	027	014	034		
Baysonic	027					
Belcor	003					
Bell & Howell	019	001				
Bradford	027					
Brockwood	003					
Broksonic	028	031				
CXC	027					
Candle	005	011				
Carnivale	005					
Carver	010					
Celebrity	050					
Cineral	030	014				
Citizen	012	005	011	006	014	
Concerto	011					
Contec	027					
Craig	027					
Crosley	010					
Crown	027	006				
Curtis Mathes	007	010	019	008	030	041
	012	005	016	011	001	006
	022	032	038	040		
Daewoo	030	003	006	014	034	035
Daytron	003					
Denon	016					
Dumont	002	003				
Dwin	044	036				
Electroband	050					
Emerson	019	028	031	027	029	025
	003	026	006	024	034	035
Envision	005					
Fisher	019					
Fujitsu	026					
Funai	027	026	023			
Futuretech	027					
GE	007	008	030	041	029	025
	004	015	038	040		
Gibralter	002	005	003			
Goldstar	005	025	003	011		
Gradiente	009	011				
Grunpy	027	026				
Hallmark	025					
Harley Davidson	026					
Harman/Kardon	010					
Havard	027					
Hitachi	016	011	018			
Infinity	010					
Inteq	002					
JBL	010					
JCB	050					
JVC	009	046				
KEC	027					
KTV	027	005	006			
Kenwood	005	003				
LG	011	003				
LXI	007	010	019	020	025	
Logik	001					
Luxman	011					
MGA	017	005	025	003		
MTC	012	005	003	011		
Magnavox	010	005	026			
Magestic	001					
Marantz	010	005				
Matsushita	042					
Magatron	025	016				
Memorex	019	042	031	017	025	011
	001					
Midland	007	002	008	006	015	
Minutz	004					
Mitsubishi	041	017	025	003		
Motorola	041					
Multitech	027					
NAD	020	025	022			
NEC	005	003	011			
NTC	014					
Nikko	005	025	014			
Onwa	027					
Optimus	019	042	022			
Optonica	041	021				
Orion	028	031	026			
Panasonic	008	042				
Penney	007	020	008	012	005	025
	004	003	011	006	015	040
Pilco	010	031	005	016	003	
Philips	010					

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Pilot	005	003	006			
Pioneer	022					
Portland	003	006	014			
Prism	008					
Proscan	007					
Proton	025	032				
Pulsar	002	003				
Quasar	008	042	021			
RCA	007	008	041	003	013	015
	037	038	039	040		
Radio Shack	007	019	021	027	005	025
	003	011	006			
Realistic	019	021	027	005	025	003
	011	006				
Runco	002	005	033			
SSS	027	003				
Sampo	005	006				
Samsung	012	005	025	003	011	045
Samsux	006					
Sansei	030					
Sansui	031					
Sanyo	019					
Scimitsu	003					
Scotch	025					
Scott	028	027	025	003	026	
Sears	007	010	019	020	025	026
	011	006				
Semivox	027					
Semp	020					
Sharp	041	021	006			
Sherwood	000					
Shogun	003					
Signature	001					
Sony	050					
Soundesign	027	025	026			
Squareview	023					
Starlite	027					
Supreme	050					
Sylvania	010	005				
Symphonic	023					
TMK	025	011	024			
Tandy	041					
Technics	008	042				
Technoi Ace	026					
Techwood	008	011				
Teknika	010	027	017	012	003	026
	011	001	006	014		
Telefunken	011					
Toshiba	019	020	012			
Totevision	006					
Vector Research	005					
Victor	009					
Vidikron	010					
Vidtech	025	003				
Wards	010	021	005	025	004	003
	026	011	001			
White Westinghouse	031	034	035			
Yamaha	005	003				
Zenith	002	031	001	014		

VCR

Admiral	027	021				
Adventura	000					
Aiko	025					
Aiwa	005	000				
Akai	026					
America Action	025					
America High	004					
Asha	023					
Audiovox	005					
Beaumark	023					
Bell & Howell	017					
Brocksonic	021					
Broksonic	020	018	021	001		
CCE	015	025				
Calix	005					
Canon	004					
Carver	081					
Cineral	025					
Citizen	005	025				
Colt	015					
Craig	005	012	023	015	024	
Curtis Mathes	013	004	026	028		
Cybernex	023					
Daewoo	010	025				
Denon	008					
Dynatech	000					
Electrohome	005					
Electrophonic	005					
Emerex	002					
Emerson	005	020	000	018	009	021
	001	025				
Fisher	012	017				
Fuji	004	003				
Funai	000					
GE	013	004	027	023		
Garrard	000					
Go Video	052					
GoldStar	005	006				
Gradiente	000					
HI-Q	012					
Harley Davidson	000					
Harman/Kardon	016	006				
Harwood	015					

Headquarter	011					
Hitachi	000	008	026			
Hughes Net.Sys	008					
JVC	014	026				
Jensen	026					
KEC	005	025				
KLH	015					
Kenwood	014	026	006			
Kodak	004	005				
LXI	005					
Lloyd's	000					
Logik	015					
MEI	004					
MGA	023	009				
MGN Technology	023					
MTC	023	000				
Magnasonic	025					
Magnavox	004	007	016	000	019	
Magnin	023					
Marantz	004	016				
Marta	005					
Matsushita	004	028	029			
Memorex	004	005	027	007	012	023
	000	017	021	011	031	032
Minolta	008					
Mitsubishi	027	014	009			
Motorola	004	027				
Multitech	000	015				
NEC	017	014	026	006		
Nikko	005					
Noblex	023					
Olympus	004					
Opimus	005	027	017	028	029	030
	031	032				
Orion	020	021	001			
Panasonic	004	028	022	029	031	
Penny	004	005	023	008	006	
Pentax	008					
Philco	004	021				
Philips	004	016				
Pilot	005					
Pioneer	014					
Profitronic	023					
Proscan	013					
Protec	015					
Pulsar	007					
Quarter	011					
Quartz	011					
Quasar	004	028	029	031		
RCA	013	004	027	023	008	019
Radio Shack	000					
Radix	005					
Randex	005					

Realistic	004	005	027	012	000	017
	011					
Runco	007					
STS	008					
Samsung	023	010	033			
Sanky	027	007				
Sansui	000	014	021	026	024	
Sanyo	012	023	017	011		
Scott	020	010	018	009		
Sears	004	005	012	000	008	017
	011					
Semp	010					
Sharp	027					
Shintom	015					
Shogun	023					
Singer	015					
Sony	004	002	000	003		
Syvania	004	016	000	009		
Symphonic	000					
TMK	023					
Tatung	026					
Teac	000	026				
Technics	004	028				
Teknika	004	005	000			
Thomas	000					
Toshiba	010	009				
Totevision	005	023				
Unitech	023					
Vector	010					
Vector Research	006					
Video Concepts	010					
Videosonic	023					
Wards	013	004	027	012	016	023
	000	008	015	019		
White WestingHouse	021	025				
XR-100	004	000	015			
Yamaha	006					
Zenith	007	000	021	003		
Ameira High	004 (TV use 008)					
Brocksonic	001					
Colt	015					
Cutis Mathes	004 (TV use 008)					
Daewoo	025					
Emerson	001					
Funai	000					
GE	004 (TV use 008)		013 (TV use 012)			
	027 (TV use 041)		023			
Hitachi	004 (TV use 008)		000			
HQ	000					
Lloyds	000					
MGA	023					
Megavox	016 (TV use 010)		004 (TV use 008)			
	000					

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Magnin	023
Memorex	005 028 (TV use 025)
Mitsubishi	027 (TV use 041)
Orion	001
Panasonic	004 (TV use 008) 028 (TV use 042)
Penney	004 (TV use 008) 023
	028 (TV use 042)
Quasar	004 (TV use 008) 028 (TV use 042)
RCA	013 (TV use 012) 004 (TV use 008)
	027 (TV use 041)
Sansui	000
Sanyo	023
Sear	000 005
Sharp	027 (TV use 041)
Sony	002 (TV use 000)
Symphonic	000
Zenith	000

DVD

Harman/Kardon	009
JVC	008
Kenwood	005
Megavox	011
Mitsubishi	016
Onkyo	011
Panasonic	013
Philips	011 006
Pioneer	003 014 026
Proscan	002
RCA	002
Samsung	017
Sherwood	001 012 000 018 019
	020 021 022 023 025
Sony	004
Technics	013
Theta Digital	014
Toshiba	011
Yamaha	013 007
Zenith	011 010

CBL

ABC	002 003 009 030
	007 006 008
Allegro	018 021
Archer	018 026
Bell&Howell	009
Century	018
Citizen	018 021
Comtronics	014
Contec	011
Easten	001
Emerson	026
Everquest	010 014
Focus	022
Garrard	018
Gemini	010
General Instrument	033 276 006 034
GoldStar	017 040
Goodmind	026
Hamlin	012 020 004 013
Hitachi	006
Hytex	007
Jasco	010 018 021
Jerrold	002 007 033 032 009 010
	006 034
Memolex	000
Movie Time	015
NSC	015
Oak	011
Optimus	031
Panasonic	000 016 031
Paragon	000
Philips	018
Pioneer	017 025
Popular Mechanics	022
Pulsar	000
Quasar	000
RCA	031
Radio Shack	010 021 026 028
Recoton	022
Regal	012 020
Regency	001
Rembrandt	006
Runco	000
SL Marx	014
Smasung	017 014
Scientific Atlanta	003 023 030 027
Signal	010 014
Signature	006
Sprucer	031
Starcom	002 010

Stargate	010	014	026	
Starquest	010			
TV86	015			
Teleview	014			
Tocom	007	008		
Toshiba	000			
Tusa	010			
Unika	018			
United Artists	007			
Universal	153	019		
Viewstar	015			
Zenith	000	024		
Zentek	022			

SAT

AlphaStar	008			
Chaparral	001			
Echostar	009			
Expreevu	009			
General Instrument	016	015	018	
HTS	009			
Hitachi	011			
Hughes Net.Sys	007			
JVC	009			
Jerrold	016	015		
Megavox	006	005		
Memorex	006			
Next Level	006			
Panasonic	017			
Philips	006	005		
Primestar	016	015		
RCA	003	000	002	012
Radio Shack	018			
Realistic	014			
Sony	004			
Star Choice	018			
Toshiba	010			
Uniden	006	005	014	
Zenith	013			

AUX-TAPE/MD

Sherwood	000 (for tape deck)
	035 (for MD recorder)

AUX-LD

Denon	007	
Mitsubishi	007	
NAD	007	
Pioneer	007	
Sony	017	018

AUX-TAPE

Aiwa	004	034	
Carver	004		
Harman/Kardon	016	004	
JVC	022	024	
Kenwood	008		
Megavox	004		
Marantz	004		
Onkyo	012	025	
Opimus	002	020	
Panasonic	038		
Pioneer	002	020	011
Sansui	004		
Sony	021	014	026
Technics	038		
Victor	024		
Wards	002		
Yamaha	010	009	

AUX-AMP

Awia	029	
Carver	023	
Curtis Mathes	027	
Denon	037	
Harman/Kardon	040	
Linn	023	
Megavox	023	
Marantz	023	
Panasonic	039	
Philips	023	040
Pioneer	003	027
Sony	019	033
Technics	039	
Wards	003	
Yamaha	028	

ENGLISH

AUX-HOME AUTOMATION

GE	043
Lutron	044
One For All	042
Radio Shack	043
Security System	042
Universal X10	042
X10	042

AUX-DBS

Awia	045	059	029
Fisher	005		
Harman/Kardon	046		
JBL	046		
JVC	047		
Jerrold	031		
RCA	006		
Scientific Artlanta	032		
Sony	045		
Starcom	031		

AUX-ACCESSARY

Archer	013
GC Electronics	013
Jebsee	013
Rabbit	036
Radio Shack	013

CD

Awia	010	030	
Burmester	019		
California Audio Lab	002		
Carver	010	012	020
DKK	001		
Denon	028	034	
Emerson	035		
Fisher	012	033	
Garrard	019	018	
Genexxa	004	035	
Harman/Kardon	010	011	
Hitachi	004		
JVC	007		

Kenwood	003	029	016	024	025	
Krell	010					
LXI	035					
Linn	010					
MCS	002					
MTC	019					
Megavox	010	035				
Marantz	002	010	013			
Mission	010					
NSM	010					
Nikko	033					
Onkyo	008	026				
Opimus	001	004	012	035	029	
	019	009	021	020		
Panasonic	002	031				
Parasound	019					
Philips	010	023				
Pioneer	004	035	021	017		
Proton	010					
QED	010					
Quasar	002					
RCA	012	035	006	036		
Realistic	012	019	013			
Rotel	010	019				
SAE	010					
Sansui	010	035				
Sanyo	012					
Scott	035					
Sears	035					
Sharp	029	013	037			
Sherwood	013	027	038	039	040	041
	000					
Sony	001	014	022			
Soundesign	009					
Tascam	019					
Teac	019	018	033	013		
Technics	002	031				
Victor	007					
Wards	010	006				
Yamaha	005	015				
Yorx	032					