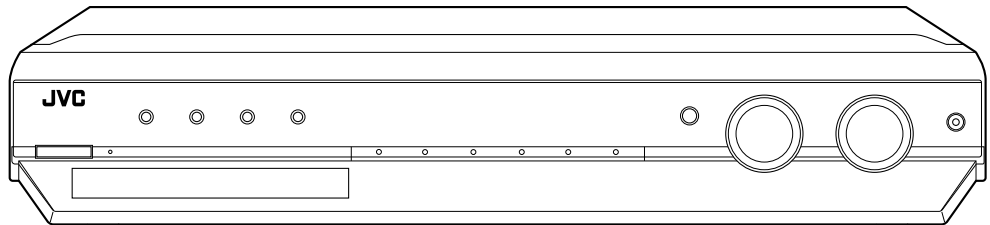
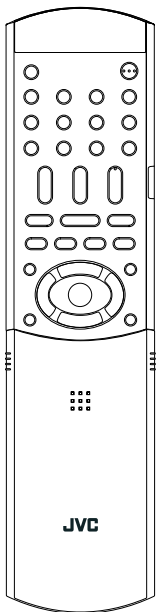


JVC



HOME THEATER RECEIVER

RX-ES1SL



AV COMPU LINK

DIGITAL
dts
SURROUND

DOLBY
DIGITAL
PRO LOGIC II

INSTRUCTIONS

For Customer Use:

Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.



Model No. _____

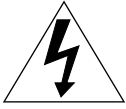
Serial No. _____

LVT1002-006A

[J]

Warnings, Cautions and Others/ Mises en garde, précautions et indications diverses

	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.		



The lightning flash with arrowhead symbol, within an equilateral triangle 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.



The exclamation point within an equilateral triangle 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

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

ATTENTION

Afin d'éviter tout risque d'électrocution, d'incendie, etc.:

1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

Caution — ⏻ switch!

Disconnect the mains plug to shut the power off completely. The ⏻ switch in any position does not disconnect the mains line. The power can be remote controlled.

Attention — Commutateur ⏻!

Déconnecter la fiche de secteur pour couper complètement le courant. Le commutateur ⏻ ne coupe jamais complètement la ligne de secteur, quelle que soit sa position. Le courant peut être télécommandé.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which 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.

For Canada/pour le Canada

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND

For Canada/pour Le Canada

THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE INTERFERENCE-CAUSING EQUIPMENT STANDARD ENTITLED "DIGITAL APPARATUS," ICES-003 OF THE DEPARTMENT OF COMMUNICATIONS. CET APPAREIL NUMERIQUE RESPECTE LES LIMITES DE BRUITS RADIOELECTRIQUES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASSE B PRESCRITES DANS LA NORME SUR LE MATERIEL BROUILLEUR; "APPAREILS NUMERIQUES", NMB-003 EDICTEE PAR LE MINISTRE DES COMMUNICATIONS.

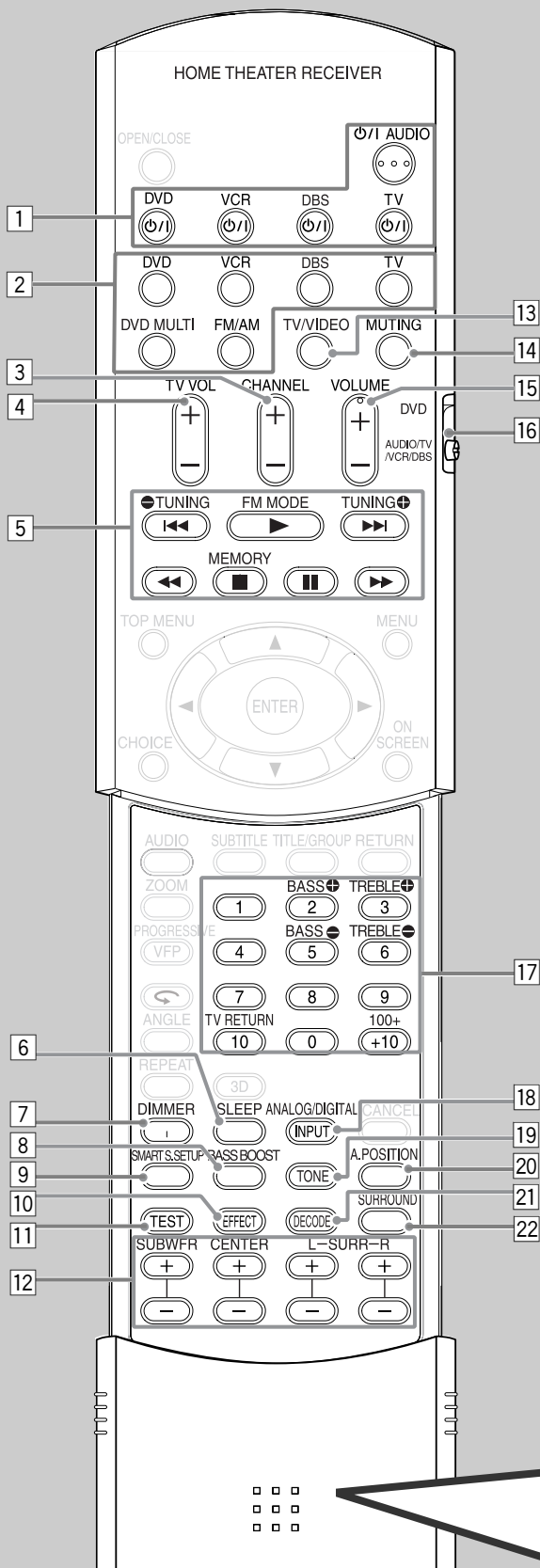
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Parts identification

Remote control

When operating this receiver, always set the mode selector (16) to "AUDIO/TV/VCR/DBS"



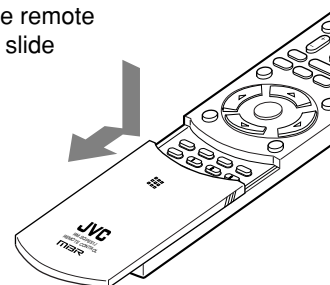
See pages in parentheses for details.

- 1 Standby/on buttons (11, 34 – 37)
 ⏻/I AUDIO, DVD ⏻/I, VCR ⏻/I, DBS ⏻/I, TV ⏻/I
- 2 Source selecting buttons (11)
 DVD, VCR, DBS, TV, DVD MULTI, FM/AM
- 3 CHANNEL +/- buttons (34 – 37)
- 4 TV VOL (volume) +/- buttons (34, 37)
- 5
 - Operating buttons for video components (34, 36)
 ◀◀, ▶▶, ▶▶▶, ◀◀◀, ■, ■■, ■■■▶▶▶
 - Operating buttons for tuner (23, 24)
 TUNING ⏪, TUNING ⏩, FM MODE, MEMORY
- 6 SLEEP button (13)
- 7 DIMMER button (14)
- 8 BASS BOOST button (22)
- 9 SMART S (surround). SETUP button (15)
- 10 EFFECT button (30)
- 11 TEST button (28 – 30)
- 12 Adjusting buttons for speaker and subwoofer output levels (21, 28, 30, 31)
 SUBWFR (subwoofer) +/-, CENTER +/-, SURR L (Left surround) +/-, SURR R (right surround) +/-
- 13 TV/VIDEO button (34, 37)
- 14 MUTING button (13)
- 15 VOLUME +/- buttons (12)
- 16 Mode selector
 DVD, AUDIO/TV/VCR/DBS
- 17
 - Numeric buttons for adjusting tone (21)
 BASS ⏪/⏩, TREBLE ⏪/⏩
 - Numeric buttons for selecting preset channels (24)
 - Numeric buttons for operating video components (34 – 37)
- 18 ANALOG/DIGITAL INPUT button (11, 12)
- 19 TONE button (21)
- 20 A (audio).POSITION button (22)
- 21 DECODE button (12)
- 22 SURROUND button (27, 29, 30)

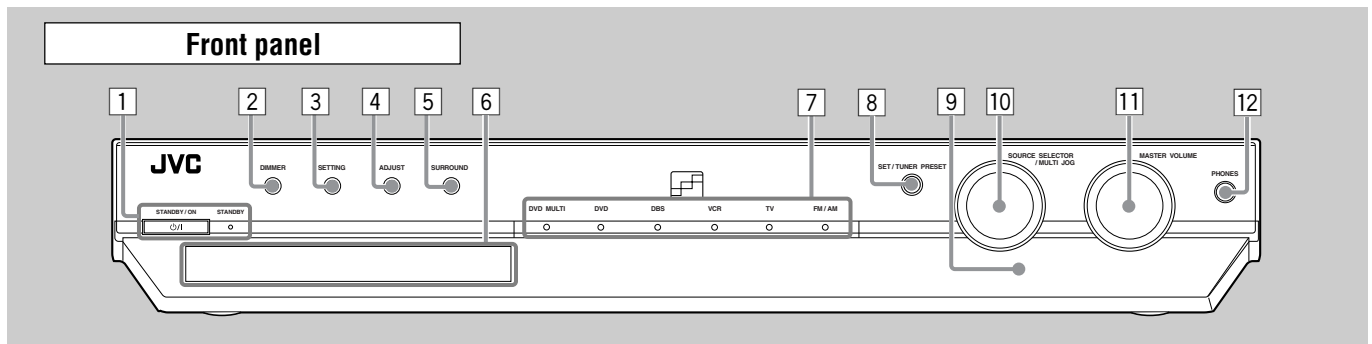
* Buttons shown in half tone color are used for operating JVC DVD player.

- If these buttons cannot be functioned normally, use a remote control supplied with your DVD player. See the instruction supplied with the DVD player for details.

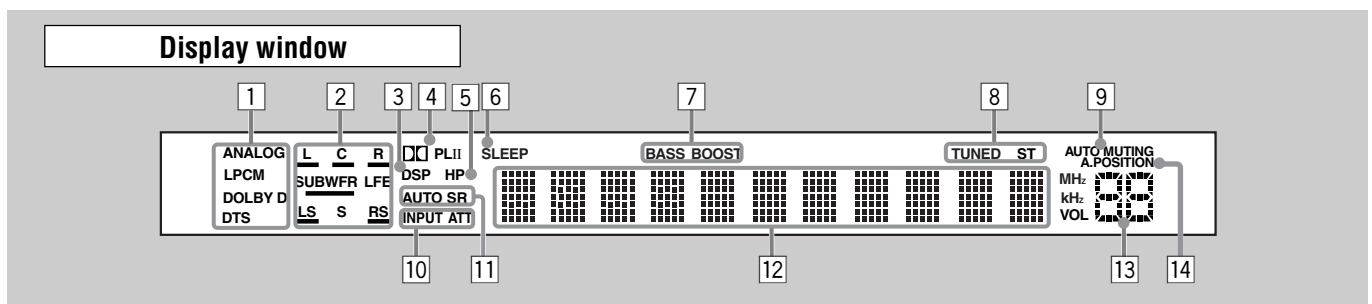
To open the cover of the remote control, push here then slide downward.



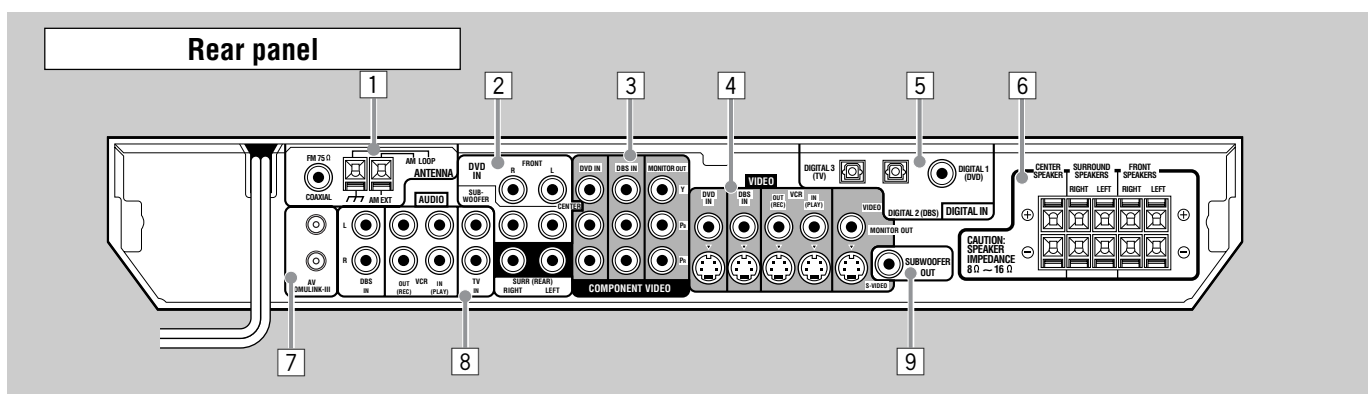
See pages in parentheses for details.



- | | |
|--|--|
| <ul style="list-style-type: none"> 1 STANDBY/ON \mathcal{O}/I button and STANDBY lamp (11) 2 DIMMER button (14) 3 SETTING button (16, 17, 19) 4 ADJUST button (21, 28, 30, 31) 5 SURROUND button (28, 30) 6 Display window (see below) 7 Source indicators
DVD MULTI, DVD, DBS, VCR, TV, FM/AM | <ul style="list-style-type: none"> 8 • SET button (16, 17, 19, 21, 29, 30, 31)
• TUNER PRESET button (24) 9 Remote sensor (4) 10 SOURCE SELECTOR (11)
MULTI JOG (16, 17, 19, 21, 24, 28 – 31) 11 MASTER VOLUME control (12) 12 PHONES jack (12) |
|--|--|



- | | |
|---|---|
| <ul style="list-style-type: none"> 1 Signal format indicators (11, 13)
ANALOG, LPCM (Linear PCM), DOLBY D (Dolby Digital), DTS 2 Signal and speaker indicators (14) 3 DSP indicator (26, 29, 30) 4 \square PLII indicator (25) 5 HP (headphone) indicator (12) 6 SLEEP indicator (13) 7 BASS BOOST indicator (22) | <ul style="list-style-type: none"> 8 Tuner operation indicators (23)
TUNED, ST (stereo) 9 AUTO MUTING indicator (24) 10 INPUT ATT (attenuator) indicator (22) 11 AUTO SR (surround) indicator (20) 12 Main display 13 Volume level indicator (11) 14 A (audio).POSITION indicator (22) |
|---|---|



- | | |
|---|---|
| <ul style="list-style-type: none"> 1 ANTENNA terminals (5) 2 DVD IN terminals (7, 8)
FRONT, CENTER, SURR (REAR), SUBWOOFER 3 COMPONENT VIDEO terminals (7 – 9)
DVD IN, DBS IN, MONITOR OUT 4 VIDEO terminals (7 – 9)
DVD IN, DBS IN, VCR OUT (REC)/IN (PLAY), MONITOR OUT 5 DIGITAL IN terminals (10)
DIGITAL 1 (DVD), DIGITAL 2 (DBS), DIGITAL 3 (TV) | <ul style="list-style-type: none"> 6 Speaker terminals (6)
FRONT SPEAKERS, SURROUND SPEAKERS, CENTER SPEAKER 7 AV COMPULINK-III terminals (32) 8 AUDIO terminals (8, 9)
DBS IN, VCR OUT (REC)/IN (PLAY), TV IN 9 SUBWOOFER OUT jack (6) |
|---|---|

Getting started

Before installation

General Precautions

- DO NOT insert any metal object into the unit.
- DO NOT disassemble the unit or remove screws, covers, or cabinet.
- DO NOT expose the unit to rain or moisture.

Locations

- Install the unit in a location that is level and protected from moisture.
- The temperature around the unit must be between 23°F and 95°F (-5°C and 35°C).
- Make sure there is good ventilation around the unit. Poor ventilation could cause overheating and damage the unit.

Handling the unit

- DO NOT touch the power cord with wet hands.
- DO NOT pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.
- Keep the power cord away from the connecting cords and the antenna. The power cord may cause noise or screen interference. It is recommended to use a coaxial cable for antenna connection, since it is well-shielded against interference.
- When a power failure occurs, or when you unplug the power cord, the preset settings such as preset FM or AM channels and sound adjustments may be erased in a few days.

Checking the supplied accessories

Check to be sure you have all of the following supplied accessories. The number in parentheses indicates the quantity of each piece supplied.

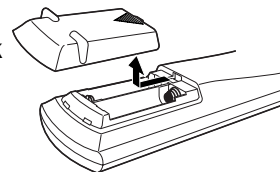
- Remote control (1)
- Batteries (2)
- AM loop antenna (1)
- FM antenna (1)
- Digital coaxial cord (1)

If anything is missing, contact your dealer immediately.

Putting batteries in the remote control

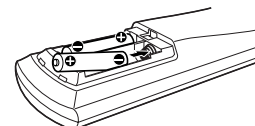
Before using the remote control, put two supplied batteries first.

- 1 Press and slide the battery cover on the back of the remote control.**

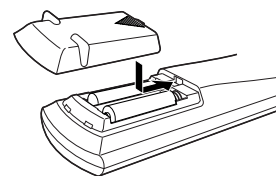


- 2 Insert batteries.**

Make sure to match the polarity: (+) to (+) and (-) to (-).



- 3 Replace the cover.**



If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6P(SUM-3)/AA(15F) type dry-cell batteries.

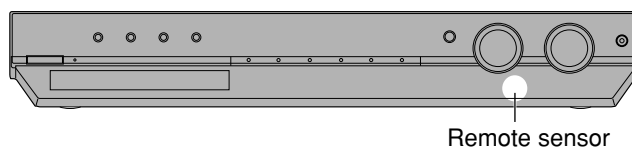
- Supplied batteries are for initial setup. Replace for continued use.

CAUTION:

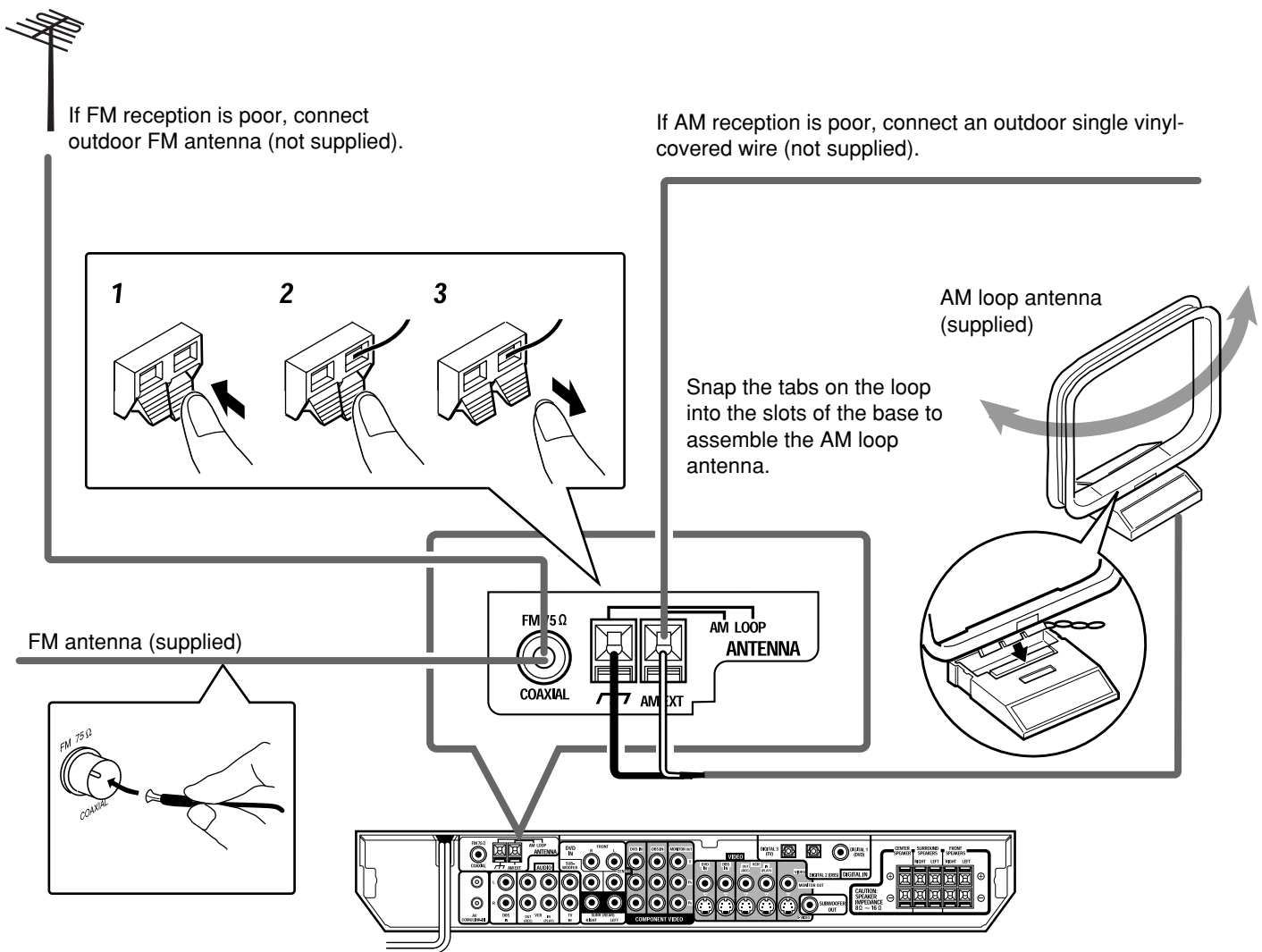
Follow these precautions to avoid leaking or cracking cells:

- Place batteries in the remote control so they match the polarity: (+) to (+) and (-) to (-).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

When using the remote control, aim the remote control directly at the remote sensor on the front panel.



Connecting the FM and AM antennas



AM antenna connection

Connect the AM loop antenna supplied to the AM LOOP terminals. Connect the white cord to the AM EXT terminal, and the black cord to ⏏ terminal.

Turn the loop until you have the best reception.

- If the reception is poor, connect an outdoor single vinyl-covered wire (not supplied) to the AM EXT terminal. Keep the AM loop antenna connected.

FM antenna connection

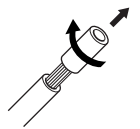
Connect the FM antenna supplied to the FM 75 Ω COAXIAL terminal as temporary measure.

Extend the supplied FM antenna horizontally.

- If the reception is poor, connect an outdoor FM antenna (not supplied). Before attaching a 75 Ω coaxial cable with a connector, disconnect the supplied FM antenna.

NOTES

- If the AM loop antenna wire is covered with vinyl, remove the vinyl while twisting it as shown on the right.
- Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.



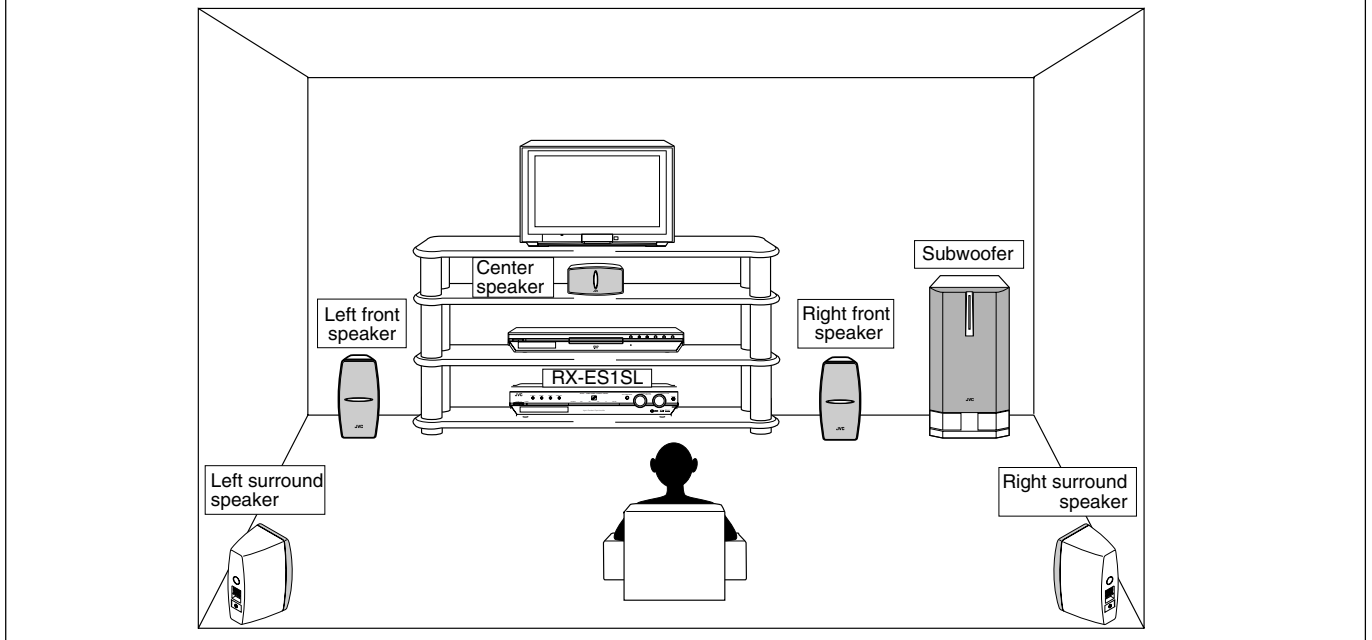
CONTINUED ON THE NEXT PAGE

Connecting the speakers

Turn off all components before connections.

Speaker Layout Diagram

After connecting the front, center and surround speakers, and/or a subwoofer, set the speaker setting information properly to obtain the best possible surround effect. For details, see pages 15 to 18.



Connecting the front, center, and surround speakers

For each speaker, connect the (+) and (-) terminals on the rear panel to the (+) and (-) terminals marked on the speakers respectively.

- 1** Twist and remove the insulation at the end of each speaker cord (not supplied).
- 2** Press and hold the clamp of the speaker terminal (1), then insert the speaker cord (2).
- 3** Release the finger from the clamp.

CAUTION:

Use speakers with the SPEAKER IMPEDANCE indicated by the speaker terminals.

Connecting the subwoofer

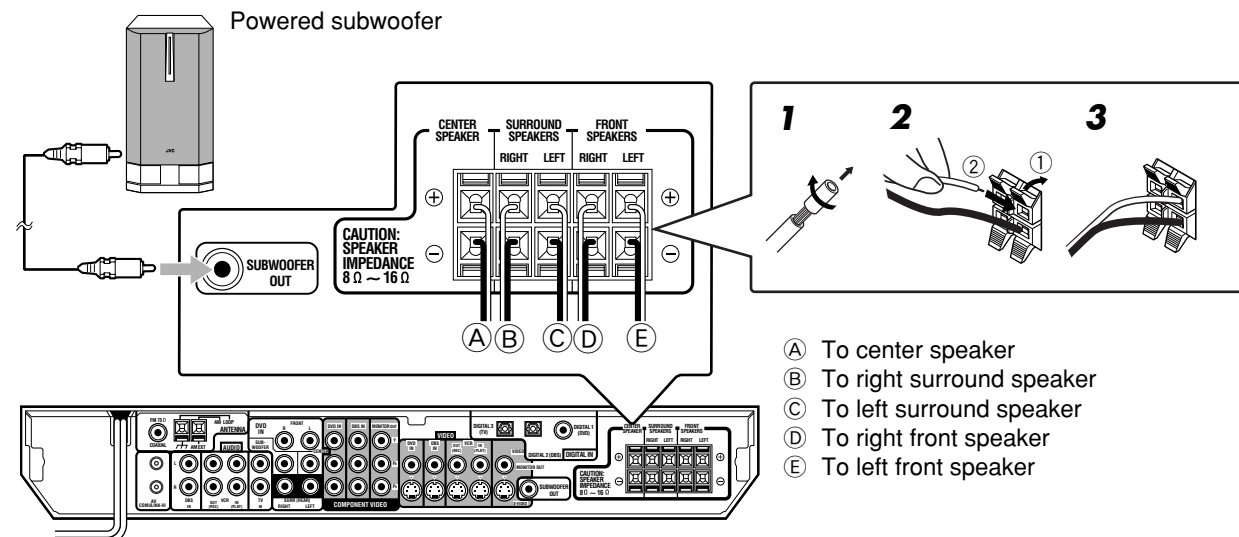
By connecting a subwoofer, you can enhance the bass or reproduce the original LFE signals recorded in the digital software.

Connect the input jack of a powered subwoofer to the SUBWOOFER OUT jack on the rear panel, using a cord with RCA pin plugs (not supplied).

- Refer also to the manual supplied with your subwoofer.

NOTE

You can place a subwoofer wherever you like since bass sound is non-directional. Normally place it in front of you.



Connecting video components

Turn off all components before making connections.

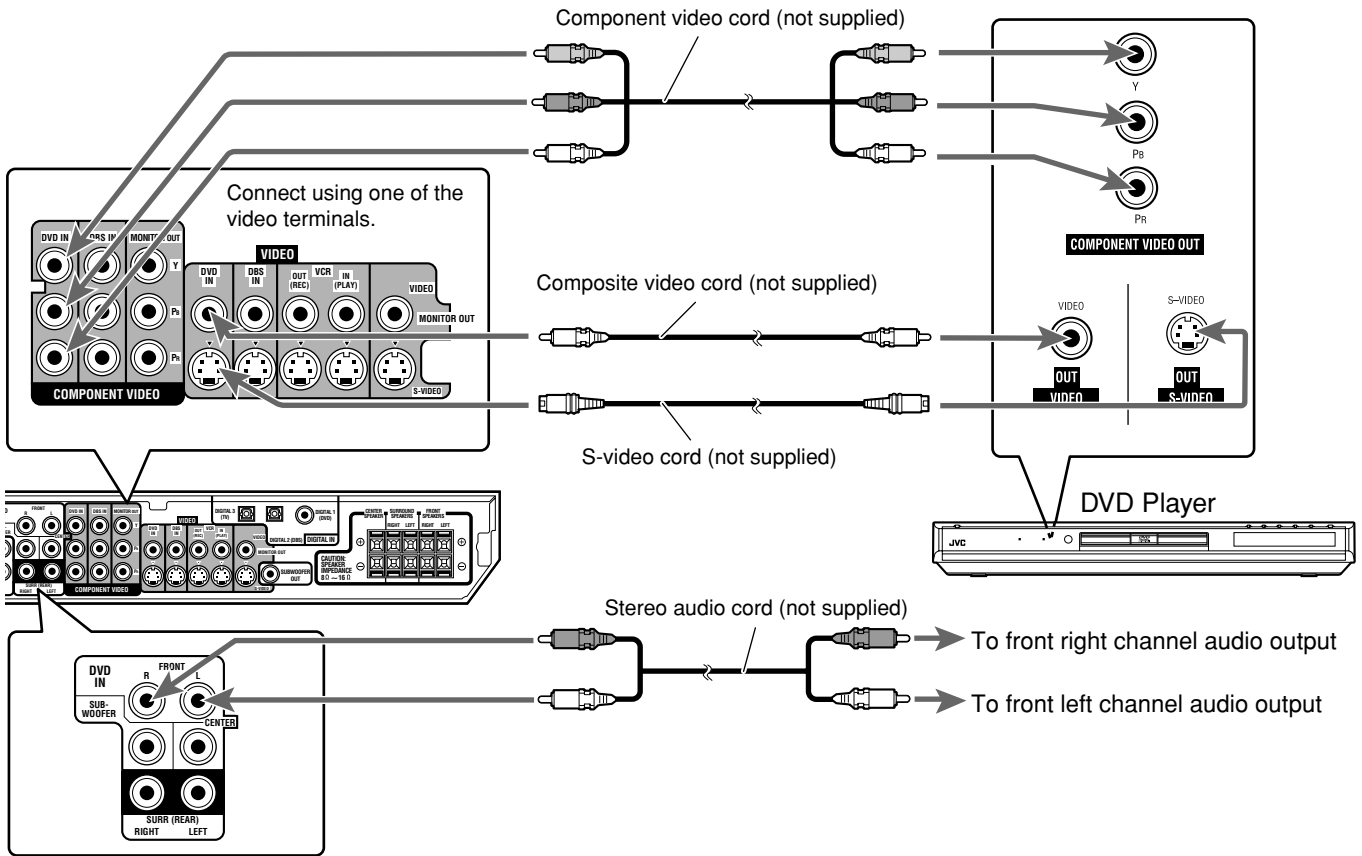
- Illustrations of the input/output terminals are typical examples. When you connect other components, refer also to their manuals since the terminal names actually printed on the rear vary among different components.

Notes for video connection:

- You can use composite video cord or S-video cord for connecting the VCR to this receiver.
- You can use component video cord in addition to composite video cord and S-video cord for connecting your DVD player, TV and DBS tuner to this receiver.
- By using S-video cord or component video cord, you can get a better picture quality—in the order: composite < S-video < component.
- To view the picture from the DVD player, DBS tuner or VCR on your TV, connect your TV to this receiver using the same type of cord for connecting the DVD player, DBS tuner or VCR to this receiver.

DVD player connection

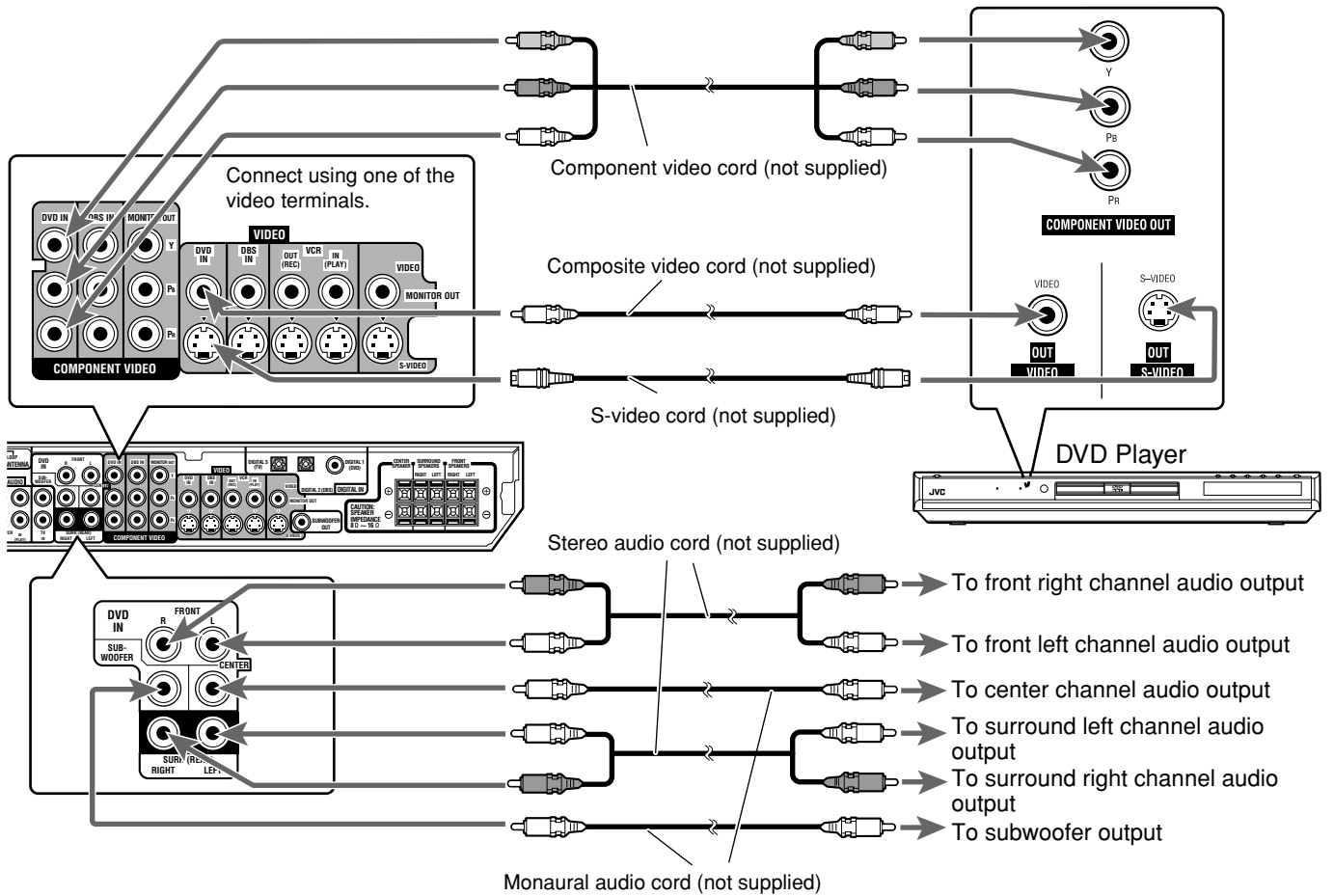
- When connecting a DVD player with stereo output jacks:



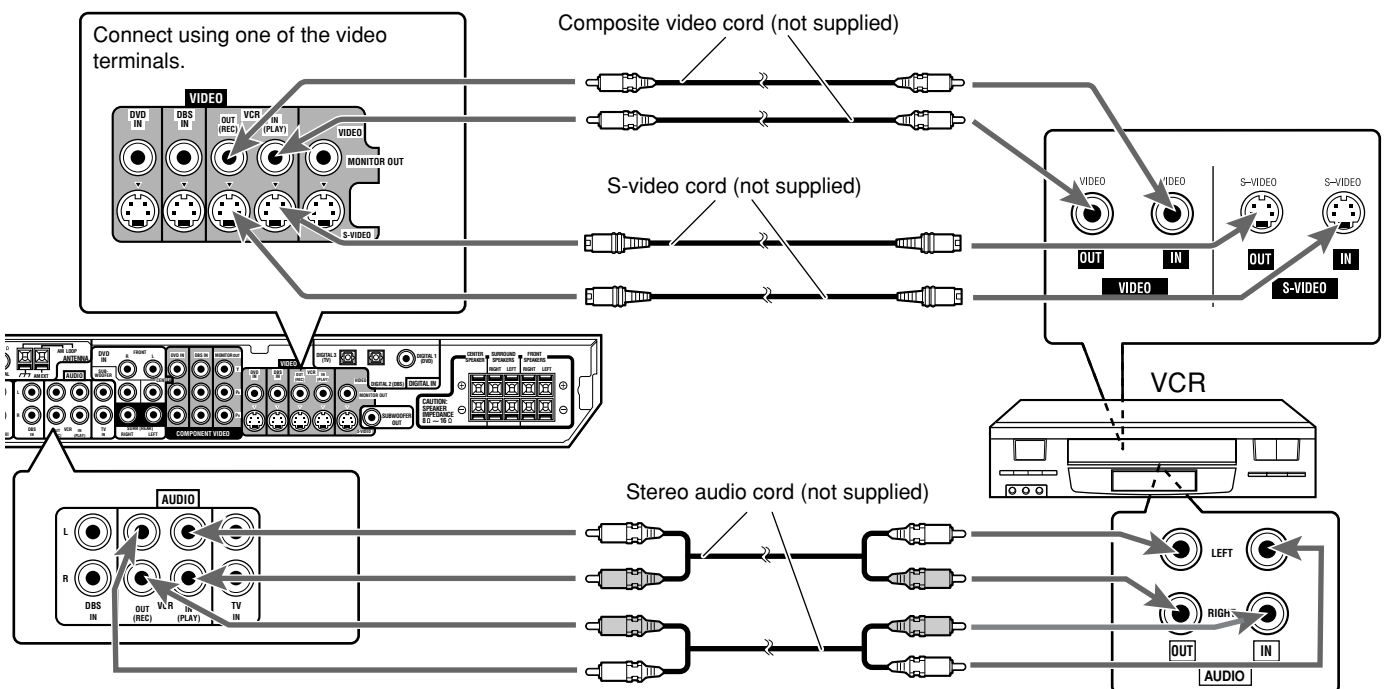
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Getting started

- When connecting a DVD player with its analog discrete output jacks (5.1-channel reproduction—see page 31):

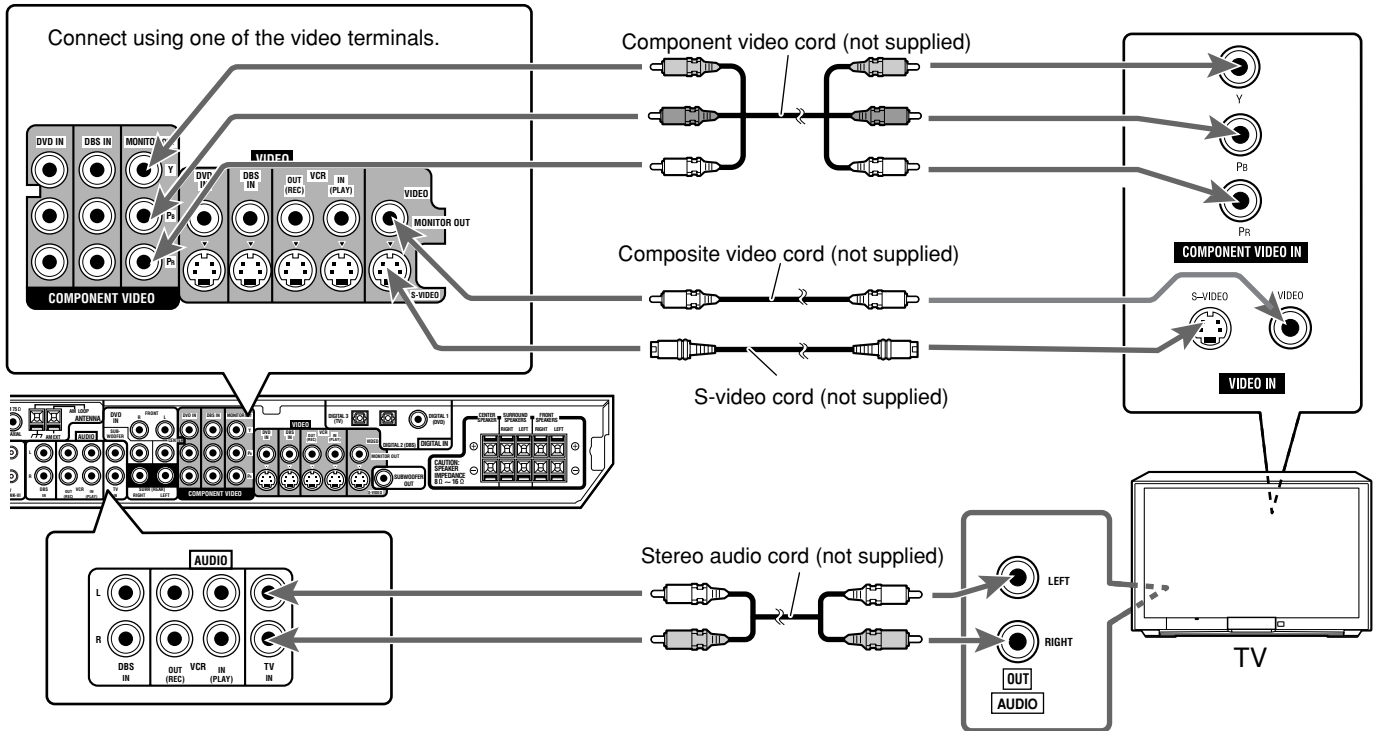


VCR connection

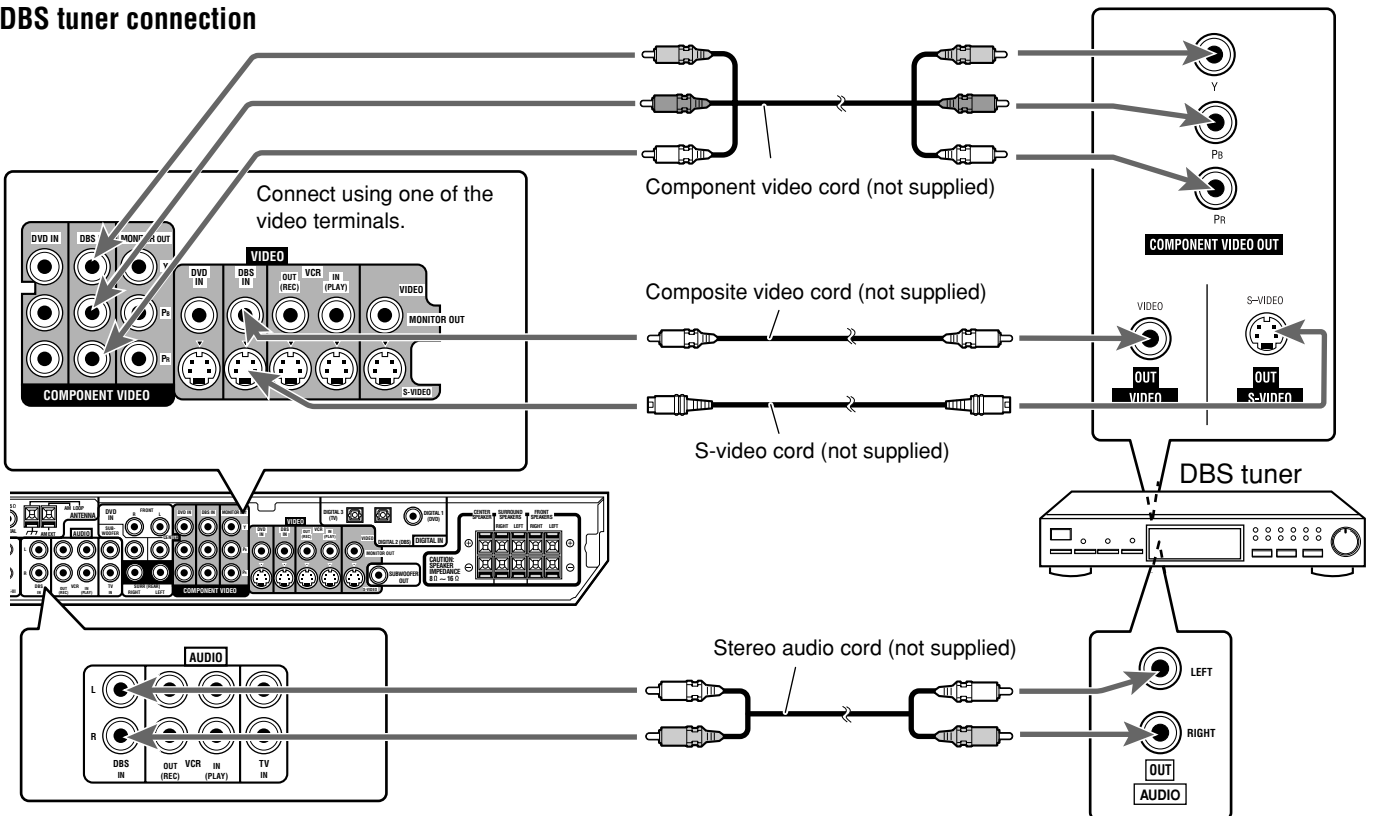


TV connection

DO NOT use a TV through a VCR or a TV with a built-in VCR; Otherwise, the picture may be distorted.

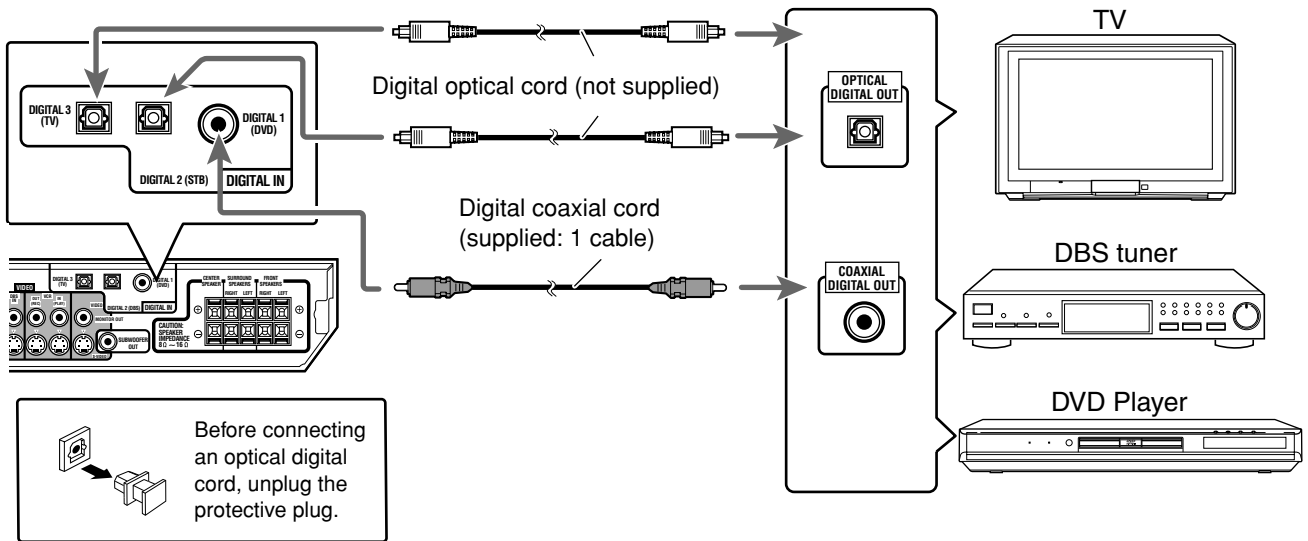


DBS tuner connection



CONTINUED ON THE NEXT PAGE

Digital connection



NOTES

- When shipped from the factory, the DIGITAL IN terminals have been set for use with the following components:
 - DIGITAL 1 (coaxial): For DVD player
 - DIGITAL 2 (optical): For DBS tuner
 - DIGITAL 3 (optical): For TV tunerIf you connect other components, change the digital input (DIGITAL IN) terminal setting correctly. See "Setting the digital input (DIGITAL IN) terminals—DIGITAL IN" on page 19.
- Select the correct digital input mode. See "Selecting the analog or digital input mode" on page 11.

Connecting the power cord

Before plugging the power cord into an AC outlet, make sure that all connections have been made.

Plug the power cord into an AC outlet.

Keep the power cord away from the connecting cables and the antenna. The power cord may cause noise or screen interference. We recommend that you use a coaxial cable to connect the antenna, since it is well-shielded against interference.

NOTE

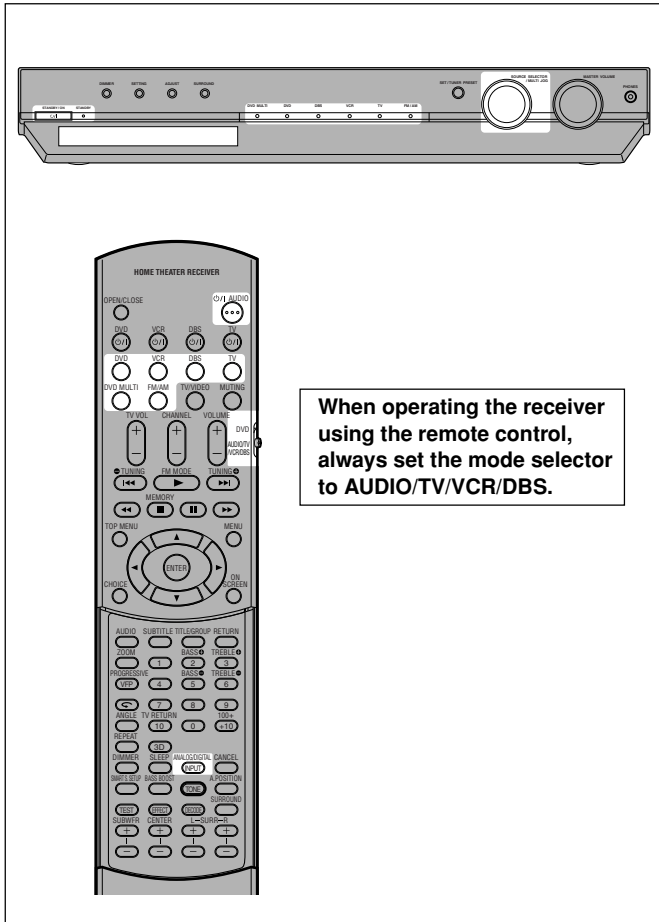
The preset settings such as preset channels and sound adjustment may be erased in a few days in the following cases:

- When you unplug the power cord.
- When a power failure occurs.

CAUTIONS:

- Do not touch the power cord with wet hands.
- Do not pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.

Basic operations



When operating the receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.

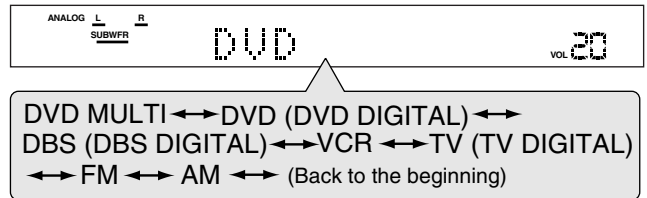
2 Select the source to play

On the front panel:

Turn **SOURCE SELECTOR** until the source name you want appears on the display.

The source indicator corresponding to the selected source lights in red.

• As you turn **SOURCE SELECTOR**, the source changes as follow:



From the remote control:

Press one of the source selecting buttons.

• Each time you press FM/AM, FM and AM changes alternately.

- DVD MULTI: Select the DVD player using the analog discrete output mode (5.1 channel reproduction). To enjoy the DVD MULTI playback see page 31.
- DVD (DIGITAL)*: Select the DVD player.
- DBS (DIGITAL)*: Select the DBS tuner.
- VCR: Select the VCR.
- TV (DIGITAL)*: Select the TV tuner.
- FM: Select an FM broadcast.
- AM: Select an AM broadcast.

1 Turn on the power

Press **STANDBY/ON** (or **AUDIO** on the remote control).

The **STANDBY** lamp goes off. The current source indicator lights in red. The name of the current source (or station frequency) appears on the display.

Current volume level is shown here.



Current source name appears.

To turn off the power (into standby)

Press **STANDBY/ON** again (or **AUDIO** on the remote control). The **STANDBY** lamp lights up.

NOTE

A small amount of power is consumed in standby mode. To turn the power off completely, unplug the AC power cord.

* Selecting the analog or digital input mode

When you have connected the DVD player, DBS tuner, or TV tuner using both the analog connection and the digital connection methods (see pages 7 to 10), you need to select the correct input mode.

• You can select the digital input only for sources which you have selected digital input terminals for. (See "Setting the digital input (DIGITAL IN) terminals—DIGITAL IN" on page 19.)

From the remote control ONLY:

Press **ANALOG/DIGITAL INPUT** to select the analog or digital input mode.

• Each time you press the button, the input mode alternates between the analog input ("ANALOG") and the digital input ("DGTL AUTO").

DGTL AUTO: Select for the digital input mode. The receiver automatically detects the incoming signal format, then the digital signal format indicator (DOLBY D, DTS or LPCM) for the detected signals lights up.

ANALOG*: Select for the analog input mode.

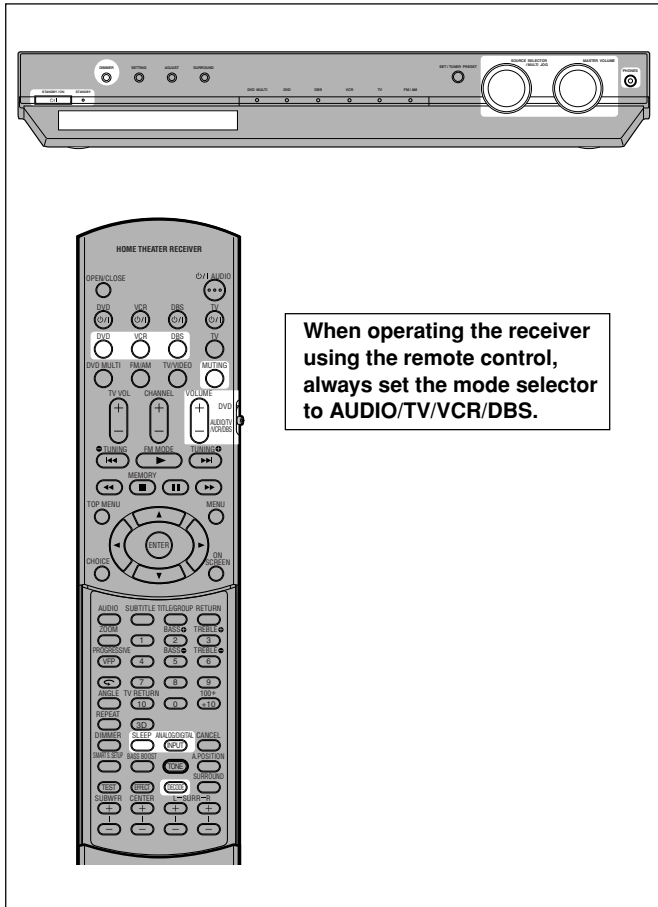
* Initial setting

NOTE

You cannot select the digital input mode when selecting "DVD MULTI" as the playing source.

TO BE CONTINUED TO THE NEXT PAGE

Basic operations



When operating the receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.

3 Adjust the volume

To increase the volume, turn **MASTER VOLUME** control clockwise (or press **VOLUME +** on the remote control).

To decrease the volume, turn **MASTER VOLUME** control counterclockwise (or press **VOLUME -** on the remote control).

CAUTION:

Always set the volume to the minimum before starting any sources. If the volume is set at its high level, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

NOTE

The volume level can be adjusted within the range of "0" (minimum) to "50" (maximum).

Listening with headphones

Connect a pair of headphones to the PHONES jack on the front panel. This cancels the Surround mode currently selected, deactivates speakers, and activates the HEADPHONE mode. The HP (headphone) indicator lights up on the display.

- Disconnecting a pair of headphone from the PHONES jack cancels the HEADPHONE mode and activates the speakers.

HEADPHONE mode

When using the headphones, the following signal is output regardless of your speaker setting:

- For 2 channel sources, the front left and right channel signal is output directly from the left and right headphones.
- For multi-channel sources, the front left and right, center and surround channel signal is down-mixed and then output from the headphones without missing bass element. You can enjoy multi-channel sound source using the headphones.

CAUTION:

Be sure to turn down the volume:

- Before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.
- Before removing headphones, as high volume may output from the speakers.

Selecting the digital decode mode

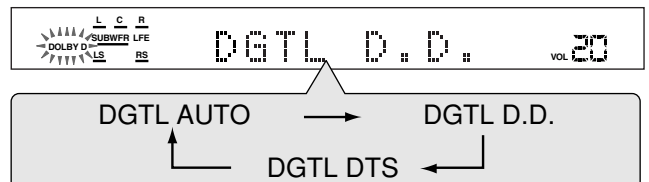
If the following symptoms occur while playing Dolby Digital or DTS Digital Surround software with "DGTL AUTO" selected (see page 11), follow the procedure below:

- Sound does not come out at the beginning of playback.
- Noise comes out while searching for or skipping chapters or tracks.

From the remote control **ONLY**:

- 1 Press **ANALOG/DIGITAL INPUT** to select "DGTL AUTO."
- 2 Press **DECODE** to select "DGTL D.D." or "DGTL DTS."

- Each time you press the button, the digital input mode changes as follows:



- To play back software encoded with Dolby Digital, select "DGTL D.D."
- To play back software encoded with DTS Digital Surround, select "DGTL DTS."

NOTE

When you turn off the power or select another source, "DGTL DTS" or "DGTL D.D." is canceled and the digital input mode is automatically reset to "DGTL AUTO."

The following are the analog/digital signal format indicators on the display to indicate what type of signal comes into the receiver.

- ANALOG:** Lights when analog input is selected.
- LPCM:** Lights when Linear PCM signal comes in.
- DOLBY D:**
 - Lights when Dolby Digital signal comes in.
 - Flashes when "DGTL D.D." is selected for software not encoded with Dolby Digital.
- DTS:**
 - Lights when DTS signal comes in.
 - Flashes when "DGTL DTS" is selected for software not encoded with DTS.

NOTE

When "DGTL AUTO" cannot recognize the incoming signal, no digital signal format indicator lights up on the display.

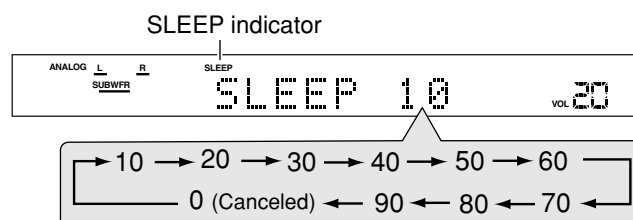
Turning off the power with the Sleep Timer

You can fall asleep while listening to music—Sleep Timer.

From the remote control ONLY:

Press SLEEP repeatedly.

The SLEEP indicator lights up on the display, and the shut-off time changes in 10 minutes intervals.



When the shut-off time comes:

The receiver turns off automatically.

To check or change the remaining time until the shut-off time:

Press SLEEP once.

The remaining time (in minutes) until the shut-off time appears.

- To change the shut-off time, press SLEEP repeatedly.

To cancel the Sleep Timer:

Press SLEEP repeatedly until "SLEEP 0" appears on the display. (The SLEEP indicator goes off.)

- Turning off the power also cancels the Sleep Timer.

Turning off the sounds temporarily—Muting

From the remote control ONLY:

Press **MUTING** to turn off the sound through all connected speakers.

"MUTING" appears on the display and the volume turns off (the volume level indicator goes off).



To restore the sound, press MUTING again.

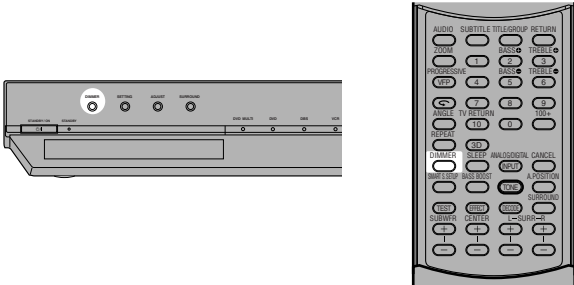
- Pressing VOLUME +/- (or turning MASTER VOLUME control on the front panel) also restores the sound.

Changing the display brightness

You can dim the display.

Press DIMMER repeatedly.

- Each time you press the button, the indication changes as follow:



- DIMMER 1: • Dims the display slightly.
• Dims the blue indication lighting source lamps.
- DIMMER 2: • Dims the display more than DIMMER 1.
• Dims the blue indication lighting source lamps (same as DIMMER 1).
- DIMMER 3: Turns off the display and the blue indication lighting source lamps.
- DIMMER OFF: Cancels the dim (normal display).

NOTES

- When setting speakers and basic items or adjusting sound, select "DIMMER OFF" to confirm the setting you make on the display.
- When selecting DVD or DVD MULTI as a source using the remote control, DIMMER does not function. To dim the display and indication on the receiver, select a source except DVD or DVD MULTI on the remote control, and then press DIMMER.

Basic adjustment of auto memory

This receiver memorizes sound settings for each source:

- when you turn off the power,
- when you change the source, and
- when you change the analog/digital input mode (see page 11).

When you change the source, the memorized settings for the newly selected source are automatically recalled.

The following can be stored for each source:

- Analog/digital input mode (see page 11)
- Tone adjustment (see page 21)
- Subwoofer output level (see page 21)
- Bass boost (see page 22)
- Input attenuator mode (see page 22)
- Balance (see page 22)
- Subwoofer audio position (see page 22)
- Surround/DSP mode selection (see pages 25 – 30)

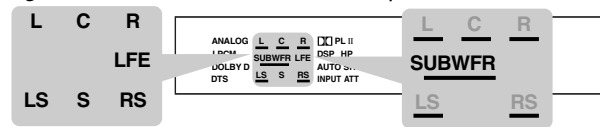
NOTES

- If the source is FM or AM, you can assign a different setting for each band.
- You cannot assign and store different settings for digital input mode and analog input mode.

Signal and speaker indicators on the display

Signal indicators

Speaker indicators



The following signal indicators light up —:

- L: • **When digital input is selected:** Lights up when the left channel signal comes in.
• **When analog input is selected:** Always lights up.
- R: • **When digital input is selected:** Lights up when the right channel signal comes in.
• **When analog input is selected:** Always lights up.
- C: Lights up when the center channel signal comes in.
- LS: Lights up when the left surround channel signal comes in.
- RS: Lights up when the right surround channel signal comes in.
- S: Lights up when the monaural surround channel signal comes in.
- LFE: Lights up when the LFE channel signal comes in.

The speaker indicators light up as follows:

- The subwoofer indicator (**SUBWFR**) lights up when "SUBWFR" is set to "USE" for Quick Setup (see page 16) or to "YES" for Manual Setup (see page 17).
- The other speaker indicators light up only when the corresponding speaker is set to "SML" or "LRG," and also when required for the current playback.

Speaker settings

To obtain the best possible surround effect from Surround/DSP modes (see pages 25 to 30), you need to set up the speaker and subwoofer information after all the connections are completed. You can set the speaker information using one of the following three methods.

Smart Surround Setup: Set the speakers information automatically by one simple action—clapping hands. The delay time and output level for the center and surround speakers are set automatically.

Quick Setup: Set the speakers and subwoofer information quickly by entering the use of the subwoofer, the number of the speakers, and your room size.

Manual Setup: Set the speakers and subwoofer information manually.

- Before starting the speaker setting, connect and position the speakers and subwoofer (see page 6) and turn on the receiver.

Setting the speakers information automatically—Smart Surround Setup

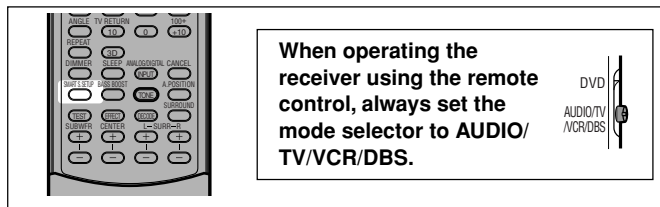
The distance from your listening point to the speakers is one of the important elements to obtain the best possible sound effect for the Surround/DSP modes.

You need to set the delay time of the center and surround speakers relative to the front speakers so that sounds through all the speakers can reach you at the same time (see also page 18).

By using Smart Surround Setup, the speaker delay time and output level are automatically calculated by one simple action—clapping hands.

- To set the speaker information effectively using Smart Surround Setup, unplug the power cords of all the components connected to this receiver such as a TV, DVD player, DBS tuner, and VCR which may cause noise.
- To use Smart Surround Setup effectively, connect both the center and surround speakers.
- You can also set the crossover frequency, the low frequency effect attenuator and the dynamic range compression manually (see page 18).
- When you change your speakers, do the following steps again.

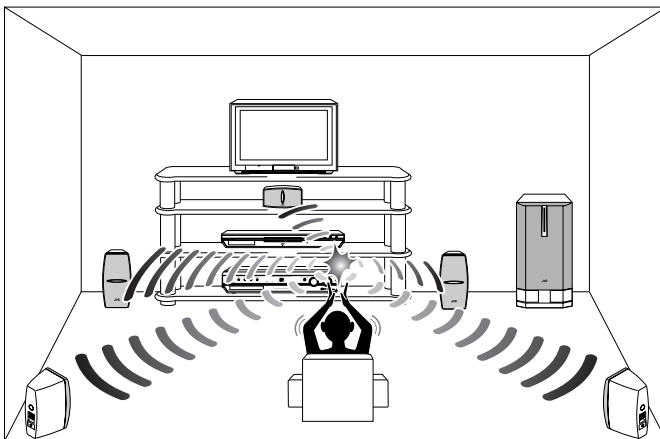
From the remote control ONLY:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step **2** again.

1 Take your position where you listen to the sound.



2 Press and hold SMART S. SETUP.

“SETTING UP” flashes on the display.



3 Confirm “SETTING UP” stops flashing and clap your hands over your head once while “SETTING UP” appears on the display.

The receiver starts detecting the level of the sound coming through all speakers (except the subwoofer). After detecting the sound, one of the following indications appears on the display.

SUCCESSFUL: Sound of your clapping is successfully detected. The receiver sets the delay time and the output level of the center and surround speakers automatically.

SILENT: The receiver cannot detect sound from some speakers.

SILENT-ALL: The receiver cannot detect any sound from all speakers.

FAILED: The receiver cannot detect both right and left channels for the front and/or surround speakers correctly.

- When the receiver cannot detect the sound correctly (“SILENT,” “SILENT-ALL” or “FAILED” appears on the display), “SETTING UP” appears on the display again then repeat step **3**.
- The speaker delay time and output levels are set automatically when:
 - the receiver detects the sound as “SILENT” twice in succession.
 - the receiver detects the sound as “SILENT” at the third time after detecting “SILENT,” “SILENT-ALL” and/or “FAILED” twice.
- When the receiver detects the sound as “SILENT-ALL” or “FAILED” three times, “MANUAL” appears on the display. Set the speaker and subwoofer information using Quick Setup (see page 16) or Manual Setup (see page 17), and the speakers’ output levels for the center and surround speakers (see pages 28 to 30).

To cancel Smart Surround Setup, press SMART S. SETUP while “SETTING UP” flashes on the display.

- Any other operations cannot be done after “SETTING UP” stops flashing. Complete the Smart Surround Setup.

NOTES

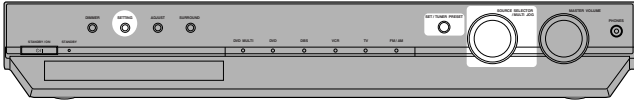
- You need to set the subwoofer information and output level manually (see pages 17 and 21).
- When you use Smart Surround Setup, the speaker delay time and output levels you have set before will be ineffective.
- Set the speakers information using Quick Setup (see page 16) or Manual Setup (see page 17), and the speakers’ output levels for the center and surround speakers (see pages 28 to 30) when:
 - you like to change the speaker setting made by Smart Surround Setup
 - Smart Surround Setup is not done correctly due to some factors such as the environment, speaker types and clapping strength.
- Smart Surround Setup will not be done correctly if your body or other object blocks the sound.
- Do not clap your hands hard because it may hurt your hands.

TO BE CONTINUED TO THE NEXT PAGE

Setting the speakers and subwoofer information quickly—Quick Setup

Entering the use of the subwoofer, the number of the speakers, and your room size, the center and surround speakers' delay time is automatically calculated.

- When you change your speakers, register the information about the speakers again.
- You can also set the crossover frequency, the low frequency effect attenuator and the dynamic range compression manually (see page 18).



On the front panel ONLY:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

1 Press SETTING.

MULTI JOG now works for the setting operation.

2 Turn MULTI JOG until "QUICK SETUP" appears on the display.

- As you turn MULTI JOG, the indication changes as follow:

ANALOG L R
SUBWFR

QUICK SETUP VOL 20

SUBWFR ↔ FRNT SP ↔ CNTR SP ↔
 SURR SP ↔ CNTR DL ↔ SURR DL ↔
 CROSS ↔ LFE ↔ D.COMP ↔
 DIGITAL IN ↔ AUTO SR ↔ DVD VIDEO ↔
 DBS VIDEO ↔ QUICK SETUP ↔

(Back to the beginning)

3 Press SET.

- "ENTER THE NUMBER OF SPEAKERS" scrolls on the display.
- Once you have selected "QUICK SETUP," previously adjusted speaker setting is cleared.

4 Turn MULTI JOG to select the number of the speakers you have connected.

- As you turn MULTI JOG, the indication changes as follow:

ANALOG L R
SUBWFR

5 SPEAKERS VOL 20

5 SPEAKERS* ↔ 3 SPEAKERS
 ↕
 4 SPEAKERS

- | | |
|---------------------|--|
| 5 SPEAKERS*: | Select when the front, center and surround speakers are connected. |
| 4 SPEAKERS: | Select when the front and surround speakers are connected. |
| 3 SPEAKERS: | Select when the front and center speakers are connected. |

* Initial setting

Each speaker size is registered appropriately according to the number of the connected speakers. For details, see the list "Speaker size according to the number of speakers" on the right.

5 Press SET.

"ENTER USE OF SUBWOOFER" scrolls on the display.

6 Turn MULTI JOG to select whether or not you have connected a subwoofer.

- As you turn MULTI JOG, the indication changes as follow:

ANALOG L R
SUBWFR

SUBWFR USE VOL 20

USE * ↔ NO

* Initial setting

7 Press SET.

"ENTER ROOM SIZE" scrolls on the display.

8 Turn MULTI JOG to select the room size.

- As you turn MULTI JOG, the indication changes as follow:

ANALOG L R
SUBWFR

SMALL ROOM VOL 20

SMALL* ↔ MEDIUM
 ↕
 LARGE

* Initial setting

The center and surround speakers' delay time is registered appropriately according to the room size. For details, see the list "Speaker delay time according to room size" below.

9 Press SET to finish the setting.

"SETUP END" appears for a while, then the indication of the previously selected source appears on the display.

NOTES

- The setting you have made is not registered until "SETUP END" appears on the display.
- Performing any operation other than volume and dimmer adjustment cancels Quick Setup process.
- When you want to change the speaker and subwoofer information after Quick Setup, use Manual Setup (see page 17).

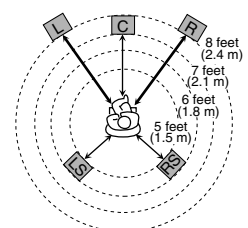
Speaker size according to the number of speakers

Number of speakers	Subwoofer	Front	Center	Surround
3	NO	LRG (large)	SML (small)	NO
3	USE (YES)	SML (small)	SML (small)	NO
4	NO	LRG (large)	NO	SML (small)
4	USE (YES)	SML (small)	NO	SML (small)
5	NO	LRG (large)	SML (small)	SML (small)
5	USE (YES)	SML (small)	SML (small)	SML (small)

Speaker delay time according to room size

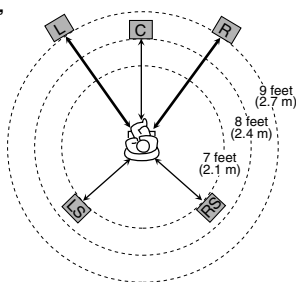
When selecting "SMALL ROOM,"

- Center speaker delay time is set to 1 msec.
- Surround speakers delay time is set to 3 msec.



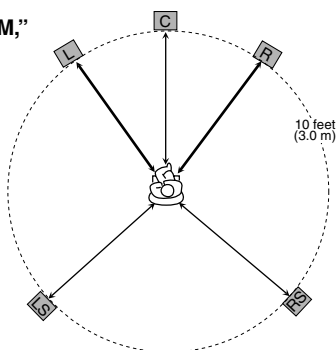
When selecting "MEDIUM ROOM,"

- Center speaker delay time is set to 1 msec.
- Surround speakers delay time is set to 2 msec.



When selecting "LARGE ROOM,"

- Center speaker delay time is set to 0 msec.
- Surround speakers delay time is set to 0 msec.

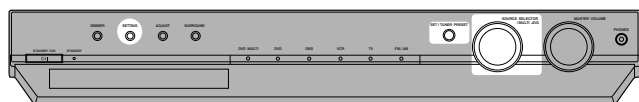


Setting the speakers and subwoofer information manually—Manual Setup

You can set the following speakers and subwoofer information manually as you prefer. When you change your speakers, register the information again.

- Subwoofer information—SUBWFR
- Speaker size—FRNT SP, CNTR SP, SURR SP
- Speaker delay time—CNTR DL, SURR DL
- Crossover frequency—CROSS
- Low frequency effect attenuator—LFE
- Dynamic range compression—D.COMP

Operating procedure



On the front panel ONLY:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

1 Press SETTING.

MULTI JOG now works for the setting operation.

2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

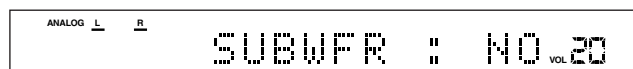
- As you turn MULTI JOG, the indication changes as follow:



SUBWFR ↔ FRNT SP ↔ CNTR SP ↔
 SURR SP ↔ CNTR DL ↔ SURR DL ↔
 CROSS ↔ LFE ↔ D.COMP ↔
 DIGITAL IN ↔ AUTO SR ↔ DVD VIDEO ↔
 DBS VIDEO ↔ QUICK SETUP ↔
 (Back to the beginning)

3 Turn MULTI JOG to select the appropriate setting for the item selected in step 2, then press SET.

Your setting is stored.



EX.: When selecting "NO" for "SUBWFR."

4 If you would like to set other items, repeat steps 2 and 3.

Setting the subwoofer information —SUBWFR (subwoofer)

Register whether you have connected a subwoofer or not.

- YES*:** Select when you have connected a subwoofer. The subwoofer speaker indicator (**SUBWFR**) lights up on the display (see page 14). You can adjust the subwoofer output level (see page 21).
- NO:** Select when you have not connected or have disconnected a subwoofer.

* Initial setting

Setting the speakers size — FRNT SP (front speakers), CNTR SP (center speaker), SURR SP (surround speakers)

Register the sizes of all the connected speakers.

- LRG (large):** Select when the cone speaker size is larger than 4 3/4 inches (12 cm).
- SML (small)*:** Select when the cone speaker size is smaller than 4 3/4 inches (12 cm).
- NO:** Select when you have not connected a speaker. (Not selectable for the front speakers.)

* Initial setting

NOTES

- If you have selected "SML (small)" for the front speaker size, you cannot select "LRG (large)" for the center and surround speaker sizes.
- If you have selected "NO" for the subwoofer setting (see above and page 16), you can only select "LRG (large)" for the front speaker size.

Speaker settings

Setting the speaker delay time

— CNTR DL (center speaker delay), SURR DL (surround speakers delay)

You can set the speaker delay time easily by using Smart Surround Setup (see page 15) or Quick Setup (see page 16).

The distance from your listening point to the speakers is one of the important elements to obtain the best possible surround sound for the Surround modes.

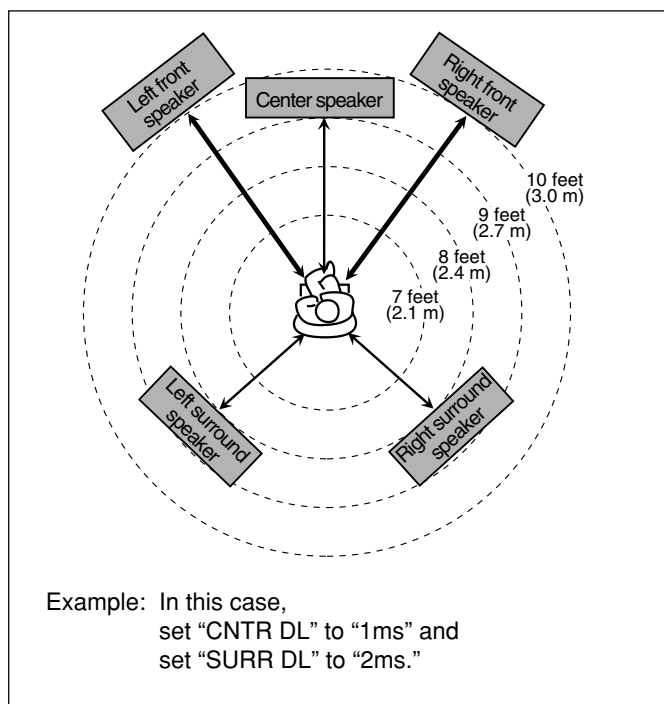
You need to set the delay time of the center and surround speakers relative to the front speakers so that sounds through all the speakers can reach you at the same time.

- 1 msec increase (or decrease) in delay time corresponds to 1 foot (30 cm) increase (or decrease) in distance.

CNTR DL*: Set the delay time for the center speaker within a range of 0 msec to 5 msec (in 1 msec intervals).

SURR DL*: Set the delay time for the surround speakers within a range of 0 msec to 15 msec (in 1 msec intervals).

* "0ms" is the initial setting.



NOTE

If the center and/or surround speakers are not connected (see pages 16 and 17), you cannot set the speaker delay time for the center and/or surround speakers.

Setting the crossover frequency—CROSS

Small speakers cannot reproduce the bass sounds efficiently. If you use a small speaker in any position, this receiver automatically reallocates the bass sound elements assigned to the small speaker to the large speakers.

To use this function properly, set this crossover frequency level according to the size of the small speaker connected.

- If you have selected "LRG (large)" for all speakers (see page 17), this function will not take effect.

80HZ: Select when the cone speaker unit built in the speaker is about 4 ³/₄ inches (12 cm).

100HZ: Select when the cone speaker unit built in the speaker is about 3 ¹⁵/₁₆ inches (10 cm).

120HZ: Select when the cone speaker unit built in the speaker is about 3 ³/₁₆ inches (8 cm).

150HZ*: Select when the cone speaker unit built in the speaker is about 2 ³/₈ inches (6 cm).

200HZ: Select when the cone speaker unit built in the speaker is less than 2 inches (5 cm).

* Initial setting

NOTE

Crossover frequency is not valid for the HEADPHONE mode.

Setting the low frequency effect attenuator—LFE

If the bass sound is distorted while playing back software encoded with **Dolby Digital** or **DTS**, set the LFE level to eliminate distortion.

- This function takes effect only when the LFE signals come in.

0dB*: Normally select this.

-10dB: Select when the bass sound is distorted.

* Initial setting

Setting the dynamic range compression—D.COMP

You can compress the dynamic range (difference between maximum sound and minimum sound) of the reproduced sound. This is useful when listening to surround sound at night.

- This function takes effect only when playing back a source encoded with **Dolby Digital**.

OFF: Select when you want to enjoy surround with its full dynamic range. (No effect applied.)

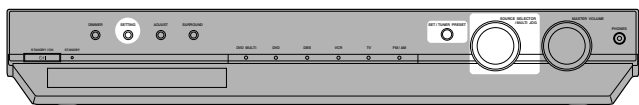
MID*: Select when you want to reduce the dynamic range a little.

MAX: Select when you want to apply the compression effect fully. (Useful at night.)

* Initial setting

Basic settings

Operating procedure



On the front panel ONLY:

Before you start, remember...

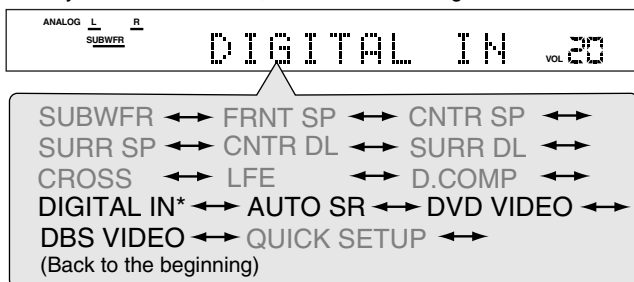
There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step **1** again.

1 Press SETTING.

MULTI JOG now works for the setting operation.

2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



* Setting item you can select appears on the display after "DIGITAL IN" appears for a few seconds.

3 Turn MULTI JOG to select the appropriate setting for the item selected in step 2, then press SET.

Your setting is stored.



EX.: When selecting "1DVD2DBS3TV" for "DIGITAL IN".

Setting the digital input (DIGITAL IN) terminals—DIGITAL IN

When you use the digital input terminals, register what components are connected to which terminals —DIGITAL 1/2/3 (see page 10) so that the correct source name will appear when you select the digital source.

1DVD2DBS3TV* : Select when connecting the following components;
DIGITAL 1: DVD player
DIGITAL 2: DBS tuner
DIGITAL 3: TV tuner

1DVD2TV3DBS : Select when connecting the following components;
DIGITAL 1: DVD player
DIGITAL 2: TV tuner
DIGITAL 3: DBS tuner

1DBS2DVD3TV : Select when connecting the following components;
DIGITAL 1: DBS tuner
DIGITAL 2: DVD player
DIGITAL 3: TV tuner

1DBS2TV3DVD : Select when connecting the following components;
DIGITAL 1: DBS tuner
DIGITAL 2: TV tuner
DIGITAL 3: DVD player

1TV2DVD3DBS : Select when connecting the following components;
DIGITAL 1: TV tuner
DIGITAL 2: DVD player
DIGITAL 3: DBS tuner

1TV2DBS3DVD : Select when connecting the following components;
DIGITAL 1: TV tuner
DIGITAL 2: DBS tuner
DIGITAL 3: DVD player

* Initial setting

Setting Auto Surround—AUTO SR

You can enjoy Surround mode simply by selecting the source (with digital input selected for that source).

Select "ON" when activating Auto Surround.

-
- ON:**
- If multi-channel signal comes in, an appropriate Surround mode will be turned on.
 - If Dolby Digital 2 channel or DTS 2 channel signal including surround signal comes in, "PLII MOVIE" will be selected.
 - If Dolby Digital 2 channel or DTS 2 channel signal not including surround signal comes in, "STEREO" will be selected.
 - If Linear PCM signal comes in, nothing will change.

The AUTO SR indicator lights up on the display.

-
- OFF*:** Select this to deactivate Auto Surround.

* Initial setting

NOTES

- This function does not take effect in the following cases:
 - While playing an analog source, and
 - While selecting "DGTL D.D." or "DGTL DTS" as the fixed digital input mode (see page 12).
- If Surround mode is automatically activated by Auto Surround, any other Surround mode in use will be canceled temporarily. When the multi-channel digital signal stops coming in, "PLII MOVIE" activates.
- If you press SURROUND with Auto Surround activated, Auto Surround will be canceled temporarily for the currently selected source. Auto Surround setting will be restored in the following cases:
 - When you turn the receiver off and on,
 - When you change the source,
 - When you change the analog/digital input, and
 - When you reset "AUTO SR" to "ON" again.

Setting the video component input mode—DVD VIDEO/DBS VIDEO

When you use the component video inputs for the DVD player and/or DBS tuner, you have to register the type of input terminals.

Without setting this correctly, you cannot view the correct input on the TV.

S/C*: : Select when connecting the video component to the composite video or S-video input terminals.

COMP.: : Select when connecting the video component to the component video input terminals.

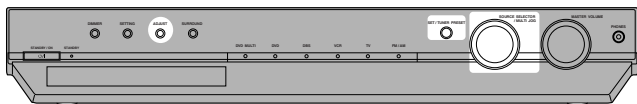
* Initial setting

Sound adjustments

When operating the receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Operating procedure



On the front panel:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

1 Press ADJUST.

MULTI JOG now works for the sound adjustment.

2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

• As you turn MULTI JOG, the indication changes as follow:



BASS	↔	TREBLE	↔	SUBWFR	↔
CENTER	↔	SURR L	↔	SURR R	↔
EFFECT	↔	PANORAMA	↔	BAL	↔
B.BOOST	↔	ATT	↔	(Back to the beginning)	

3 Turn MULTI JOG to adjust the item selected in step 2, then press SET.

Your setting is stored.



EX.: When selecting "+10 (dB)" for "BASS".

Adjusting the tone—BASS, TREBLE

You can adjust the bass and treble sounds to your preference.

- You have to make these adjustments for each source.

BASS*: To adjust the bass (from -10 dB to +10 dB).

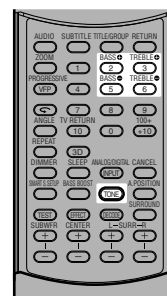
TREBLE*: To adjust the treble (from -10 dB to +10 dB).

* "0" is the initial setting.

When using the remote control:

1 Press TONE.

2 Press BASS +/– or TREBLE +/– to adjust the sound level (from -10 dB to +10 dB).



NOTE

When you use the 10 keys to operate your target source after tone adjustments, press the corresponding source selecting button first so that the 10 keys work for your target source.

Adjusting the subwoofer output level—SUBWFR

You can adjust the subwoofer output level if you have connected a subwoofer and set the subwoofer information correctly—"USE" for the Quick Setup or "YES" for the Manual Setup (see pages 16 and 17).

- You have to make this adjustment for each source.

SUBWFR*: To adjust the subwoofer output level (from -10 dB to +10 dB).

* "0" is the initial setting.

When using the remote control:

Press SUBWFR +/- to adjust the subwoofer output level (from -10 dB to +10 dB).



CONTINUED ON THE NEXT PAGE

Setting the subwoofer audio position

When a stereo source is played back, the subwoofer sound is reinforced compared to the sound from a multi-channel source. Once you have set the subwoofer audio position, the subwoofer output level is decreased by the selected value when a stereo source is played back. The A (audio).POSITION indicator lights up when this function is activated.

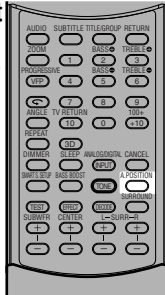
- You have to make this adjustment for each source.

From the remote control ONLY:

Press **A.POSITION** repeatedly to select the subwoofer audio position level from “-2 (dB),” “-4 (dB),” and “-6 (dB).”

The smaller the number becomes, the more the level decreases automatically when listening in stereo.

- If no adjustment is required, select “OFF” (initial setting).



NOTES

- The maximum subwoofer output level is -10 dB.
Ex.:
When setting the subwoofer output level to “-8 (dB)” and the subwoofer audio position to “-4 (dB),” the subwoofer output level when listening in stereo will be -10 dB.
- This function does not take effect when activating a Surround mode.

Adjusting the front speakers output balance—BAL

If the sounds you hear from the front right and left speakers are unequal, you can adjust the speakers output balance.

- You have to make this adjustment for each source.
- You cannot use the remote control for this setting.

BAL*: To adjust the front speakers balance.

- “CENTER” to “L-21”: Decrease the left channel output.
- “CENTER” to “R-21”: Decrease the right channel output.

* “CENTER” is the initial setting.

Reinforcing the bass—B.BOOST

You can boost the bass level—Bass Boost.

- You have to make these adjustments for each source.

ON: Select to boost the bass level (Bass Boost).
The BASS BOOST indicator lights up on the display.

OFF*: Select to deactivate Bass Boost.

* Initial setting

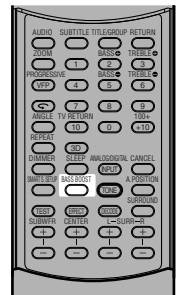
NOTE

This function affects the sound coming out only through the front speakers.

When using the remote control:

Press **BASS BOOST**.

- Each time you press the button, Bass Boost turns on and off alternately.



Attenuating the input signal—ATT

When the input level of **analog source** is too high, the sound will be distorted. If this happens, you need to attenuate the input signal level to prevent the sound distortion.

- You have to make this adjustment for each analog source.
- You cannot use the remote control for this setting.

ON: Select to attenuate the input signal level.
The INPUT ATT indicator lights up on the display.

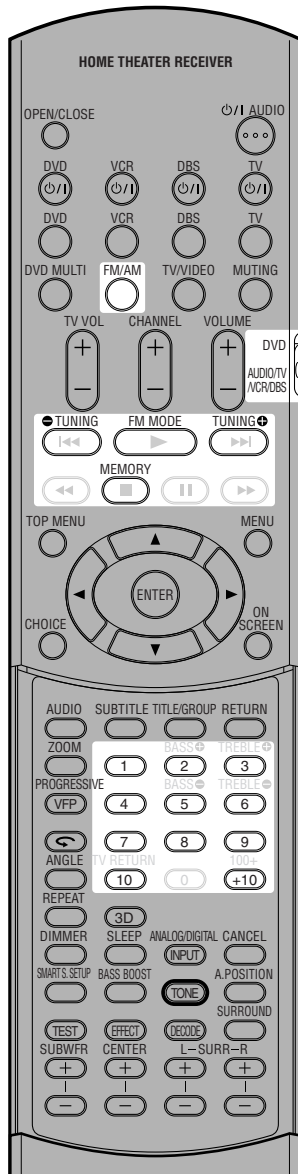
NORMAL*: Select to deactivate attenuation.

* Initial setting

Tuner operations

The buttons on the remote control are mainly used for tuner operations. **To use buttons on the remote control, press FM/AM before operation.**

When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Tuning in to stations manually

From the remote control ONLY:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in.

- Each time you press the button, the band alternates between FM and AM.



You can also select "FM" or "AM" by turning SOURCE SELECTOR on the front panel.

2 Press repeatedly or hold TUNING + or TUNING - until you find the frequency you want.

If you select "FM" or "AM" using SOURCE SELECTOR on the front panel, press FM/AM on the remote control before this operation.

- Pressing (or holding) TUNING + increases the frequency.
- Pressing (or holding) TUNING - decreases the frequency.

NOTES

- When you hold and release TUNING + or TUNING -, the frequency keeps changing until a station is tuned in.
- When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display.
- When an FM stereo program is received, the ST (Stereo) indicator also lights up.

Using preset tuning

Once a station is assigned to a channel number, the station can be quickly tuned. You can preset up to 30 FM and 15 AM stations.

To store the preset stations

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.

From the remote control ONLY:

1 Tune in to the station you want to preset (see "Tuning in to stations manually" above).

- If you want to store the FM reception mode for this station, select the FM reception mode you want. See "Selecting the FM reception mode" on page 24.



2 Press MEMORY.

The channel number position starts flashing on the display for about 5 seconds.



Tuner operations

3 Press the numeric buttons (1 – 10, +10) to select a channel number while the channel number position is flashing.

- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.



4 Press MEMORY again while the selected channel number is flashing on the display.

- The station is assigned to the selected channel number.
- The selected channel number stops flashing.



5 Repeat steps 1 to 4 until you store all the stations you want.

To erase a stored preset station

Storing a new station on a used channel number erases the previously stored one.

To tune in a preset station

From the remote control:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in and the numeric buttons now work for tuner operations.

- Each time you press the button, the band alternates between FM and AM.



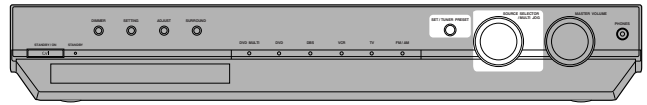
2 Press the numeric buttons (1 – 10, +10) to select a channel number.

If you select "FM" or "AM" using SOURCE SELECTOR on the front panel, press FM/AM on the remote control before this operation.

- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.



On the front panel:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.

1 Turn SOURCE SELECTOR to select "FM" or "AM."

The last received station of the selected band is tuned in.

2 Press TUNER PRESET.

"P" appears on the display and MULTI JOG now works for selecting preset channels.

3 Turn MULTI JOG to select a preset channel number during "P" appears on the display.

- Turning MULTI JOG clockwise increases the preset channel numbers.
- Turning MULTI JOG counterclockwise decreases the preset channel numbers.



Selecting the FM reception mode

When an FM stereo broadcast is hard to receive or noisy, you can change the FM reception mode while receiving an FM broadcast.

- You can store the FM reception mode for each preset station (see page 23).

From the remote control ONLY:

While listening to an FM station, press FM MODE.

If you select "FM" using SOURCE SELECTOR on the front panel, press FM/AM on the remote control before this operation.

- Each time you press the button, the FM reception mode alternates between "AUTO MUTING" and "MONO."

AUTO MUTING*:

Normally select this.

When a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sound. This mode is also useful to suppress static noise between stations. The AUTO MUTING indicator lights up on the display.

MONO:

Select this to improve the reception (but stereo effect will be lost). In this mode, you will hear noise while tuning in to the stations. The AUTO MUTING indicator goes off from the display. (The ST indicator also goes off.)

* Initial setting

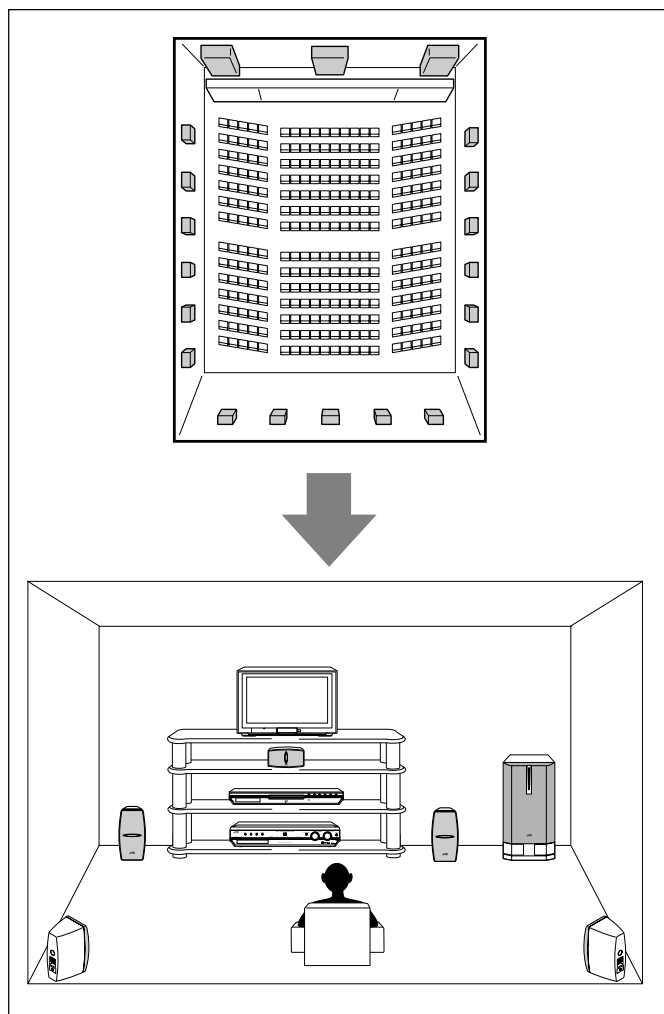
Creating realistic sound fields

Reproducing theater ambience

In a movie theater, many speakers are located on the walls to reproduce impressive multi-surround sound, reaching you from all directions.

With these many speakers, sound localization and sound movement can be expressed.

Surround/DSP modes built in this receiver can create almost the same surround sound as you can feel in a real movie theater.



Introducing the Surround/DSP modes

You can use the following Surround/DSP modes with this receiver.

- Surround modes
 - Dolby Pro Logic II
 - Dolby Digital
 - DTS
- DSP (Digital Signal Processor) modes
 - DAP (Digital Acoustic Processor) modes
 - All Channel Stereo

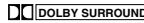
■ Surround modes

Dolby Pro Logic II*


Dolby Pro Logic II has a newly developed multi-channel playback format to decode all 2 channel sources—stereo source and Dolby Surround encoded source—into 5.1 channel.

Matrix-based encoding/decoding method for Dolby Pro Logic II makes no limitation for the cutoff frequency of the surround treble and enables stereo surround sound compared to conventional Dolby Pro Logic.

Dolby Pro Logic II enables you to reproduce spacious sound from original sound without adding any new sounds and tonal colorations. Dolby Pro Logic II has two modes—**Movie mode** and **Music mode**:

Pro Logic II Movie—suitable for reproduction of Dolby Surround encoded sources bearing the mark . You can enjoy a sound field very close to the one created with discrete 5.1 channel sounds.

Pro Logic II Music—suitable for reproduction of any 2-channel stereo music sources. You can enjoy wide and deep sound by using this mode. For this mode, Panorama control can be selected, which gives “wraparound” sound effect with side-wall image.

- When Dolby Pro Logic II is activated, the  PLII indicator lights up on the display.

Dolby Digital*

Dolby Digital is a digital signal compression method, developed by Dolby Laboratories, and enables multi-channel encoding and decoding (1 channel up to 5.1 channel).

Dolby Digital 5.1 channel encoding method records and digitally compresses the left front channel, right front channel, center channel, left surround channel, right surround channel, and LFE channel signals (total 6 channels, but the LFE channel is counted as 0.1 channel. Therefore, it is called 5.1 channel).

Dolby Digital enables stereo surround sounds, and sets the cutoff frequency of the surround treble at 20 kHz, compared to 7 kHz for Dolby Pro Logic. As such, the sound movement and “being-there” feeling are enhanced much more than Dolby Pro Logic.

- To enjoy software encoded with Dolby Digital, connect the source component using the digital terminal on the rear of this receiver. (See page 10.)

NOTE

Dolby Digital software can be roughly grouped into two categories—multi-channel (up to 5.1 channel) and 2 channel software. To enjoy surround sound while playing Dolby Digital 2 channel software, you can use Dolby Pro Logic II.

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

**“DTS” and “DTS Digital Surround” are registered trademarks of Digital Theater Systems, Inc.

Creating realistic sound fields

DTS**

DTS is another digital signal compression method, developed by Digital Theater Systems, Inc., and enables multi-channel encoding and decoding.

DTS Digital Surround is another discrete 5.1 channel digital audio format available on CD, LD, and DVD software.

Compared to Dolby Digital, the DTS Digital Surround format has a lower audio compression rate, which enables it to add breadth and depth to the sounds reproduced. As such, DTS Digital Surround features natural, solid and clear sound.

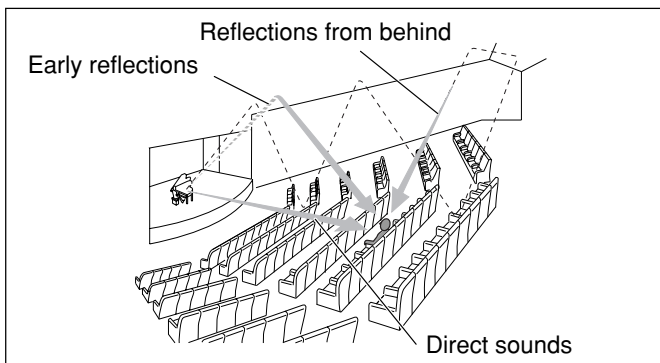
- To enjoy the software encoded with DTS Digital Surround, connect the source component using the digital terminal on the rear of this receiver. (See page 10.)

DSP (Digital Signal Processor) modes

DAP (Digital Acoustic Processor) modes

DAP modes have been designed to create important acoustic surround elements.

The sound heard in a live club, dance club, hall or pavilion consists of direct sound and indirect sound—early reflections and reflections from behind. Direct sounds reach the listener directly without any reflection. On the other hand, indirect sounds are delayed by the distances of the ceiling and walls (see the diagram below). These indirect sounds are important elements of the acoustic surround effects. The DAP mode can create these important elements, and give you a real “being there” feeling.



DAP modes can be used when the front and surround speakers are connected to this receiver (without respect to the center speaker connection: no sound comes out of the center speaker even if it is connected).

The following DAP modes are provided with this receiver:

LIVE CLUB:	Reproduces the spatial feeling of a live music club with a low ceiling.
DANCE CLUB:	Reproduces the spatial feeling of a rocking dance club.
HALL:	Reproduces the spatial feeling of a hall for classical recitals.
PAVILION:	Reproduces the spatial feeling of an exhibition hall.

These DAP modes can be used to add acoustic surround effects while reproducing 2 channel stereo software, either analog or Linear PCM digital signal, and can give you a real “being there” feeling.

- When one of the DAP modes is selected, the DSP indicator lights up on the display.

All Channel Stereo

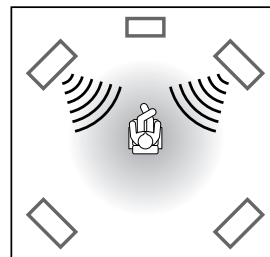
This mode can reproduce a larger stereo sound field using all the connected (and activated) speakers.

All Channel Stereo can be used when the front and surround speakers are connected to this receiver without respect to the center speaker connection.

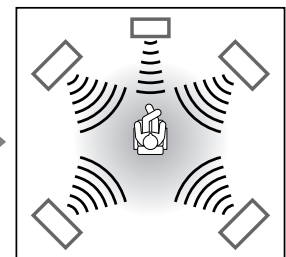
- If the center speaker is connected and activated, the same phase of the front left and right signals are mixed and output through the center speaker.

All Channel Stereo can be used while reproducing 2 channel stereo software, either analog or Linear PCM digital signal.

- When All Channel Stereo is selected, the DSP indicator lights up on the display.



Normal stereo reproduction



Sound reproduced from All Channel Stereo

NOTE

MPEG Multichannel signals cannot be reproduced.

Available Surround/DSP modes for each input signal

○: Possible ×: Impossible

Mode Signals	STEREO	DOLBY DIGITAL	DTS SURROUND	PRO LOGIC II MOVIE	PRO LOGIC II MUSIC	LIVE CLUB	DANCE CLUB	HALL	PAVILION	ALL CH ST.
Dolby Digital (Multi-channel)	○	○	×	×	×	×	×	×	×	×
Dolby Digital (2-channel)	○	×	×	○	○	×	×	×	×	×
DTS Digital Surround (Multi-channel)	○	×	○	×	×	×	×	×	×	×
DTS Digital Surround (2-channel)	○	×	×	○	○	×	×	×	×	×
Linear PCM	○	×	×	○	○	○	○	○	○	○
Analog	○	×	×	○	○	○	○	○	○	○
DVD MULTI	×	×	×	×	×	×	×	×	×	×

About relations between speaker layout and Surround/DSP modes

Available Surround/DSP modes will vary depending on how many speakers are used with this receiver.

Make sure that you have set the speakers information correctly (see pages 15 to 18).

- If only front speakers are connected, you cannot use the Surround modes.
- If surround speakers are not connected, you cannot use DSP modes.

When multi-channel digital software such as Dolby Digital or DTS Digital Surround is played back, the appropriate multichannel Surround mode is automatically activated ("DOLBY D" or "DTS") by pressing SURROUND (with the digital input mode selected).

- For Dolby Digital 2 channel software, you can select "PLII MUSIC" or "PLII MOVIE" by pressing SURROUND.
- For more details, see "Available Surround/DSP modes for each input signal" on page 26.

When connecting 5 speakers and 4 speakers

Available Surround modes:
 PLII MOVIE (Pro Logic II MOVIE)
 PLII MUSIC (Pro Logic II MUSIC)

Available DSP modes:
 LIVE CLUB
 DANCE CLUB
 HALL
 PAVILION
 ALL CH ST. (All Channel Stereo)

When connecting 3 speakers

Available Surround modes:
 PLII MOVIE (Pro Logic II MOVIE)
 PLII MUSIC (Pro Logic II MUSIC)

NOTE

When "AUTO SR (Auto Surround)" is turned "ON" (see page 20), Surround mode is automatically activated when you select and start playing back a multi-channel digital source.

Using Surround modes

Once you have adjusted the Surround modes, the adjustment is memorized for each source.

- If you set the speaker information using Smart Surround Setup (see page 15), you do not have to adjust speaker output level.

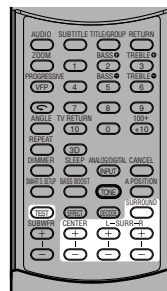
When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Before you start, remember...

Make sure that you have set the speaker information correctly (see pages 15 to 18).

From the remote control:



It will be convenient for you to use the remote control for the sound adjustments, since you can make adjustments from your listening point, and use the test signal.

- For selecting Panorama control for Pro Logic II Music, use the buttons on the front panel.

1 Select and play software you like.

If "AUTO SR (Auto Surround)" is set to "ON"

Playing a digital source automatically activates an appropriate Surround mode. (See page 20.) → **Go to step 3.**

2 Press SURROUND to select an appropriate Surround mode.

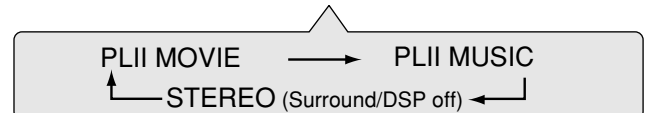
- Each time you press the button, the Surround/DSP modes change as follow:

When playing back multi-channel digital software such as Dolby Digital or DTS Digital Surround:



DOLBY D or DTS ↔ STEREO (Surround/DSP off)

When playing back 2 channel digital software such as Dolby Digital or DTS Digital Surround:

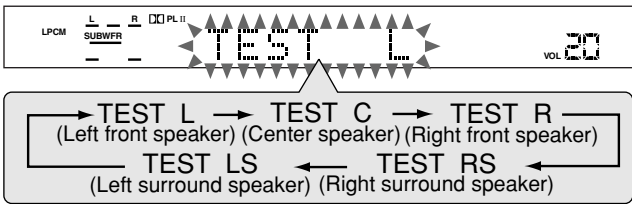


When playing back any software other than above:



3 Press TEST to check the speakers output balance.

“TEST L” starts flashing on the display, and a test tone comes out of the speakers as follow:



4 Adjust the following speaker output levels (from -10 dB to +10 dB).

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.

To adjust the center speaker level, press CENTER +/-.

To adjust the left surround speaker level, press SURR L +/-.

To adjust the right surround speaker level, press SURR R +/-.



Ex.: When selecting “+8 (dB)” for “CENTER.”

5 Press TEST again to stop the test tone.

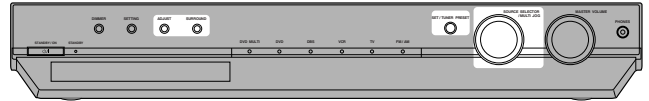
The currently selected source name appears on the display.

On the front panel:

- No test tone is available when using the buttons on the front panel.

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.



1 Select and play software you like.

If “AUTO SR (Auto Surround)” is set to “ON”
Playing a digital source automatically activates an appropriate Surround mode. (See page 20.) → Go to step 4.

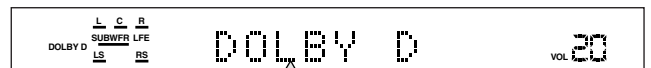
2 Press SURROUND.

MULTI JOG now works for the Surround/DSP mode selection.

3 Turn MULTI JOG to select an appropriate surround mode.

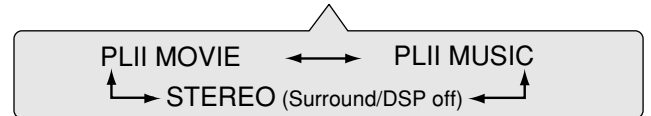
- As you turn MULTI JOG, the indication changes as follow:

When playing back multi-channel digital software such as Dolby Digital or DTS Digital Surround:



DOLBY D or DTS ↔ STEREO (Surround/DSP off)

When playing back 2 channel digital software such as Dolby Digital or DTS Digital Surround:



When playing back any software other than above:

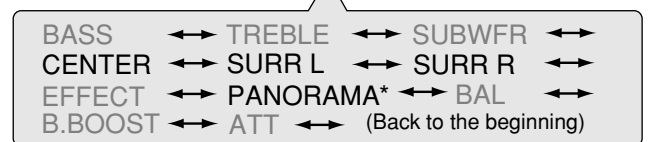


4 Press ADJUST.

MULTI JOG now works for the sound adjustment.

5 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



* Available only for “PLII MUSIC.”

- CENTER*1:** To adjust the center speaker output level (from -10 dB to +10 dB).
- SURR L*1:** To adjust the left surround speaker output level (from -10 dB to +10 dB).
- SURR R*1:** To adjust the right surround speaker output level (from -10 dB to +10 dB).
- PANORAMA control*2:**
 - Select "ON" when you would like to enjoy "wraparound" sound effect with side-wall image.
 - Select "OFF" when you would like to hear originally recorded sound.

*1 "0" is the initial setting for each speaker setting.
 *2 "OFF" is the initial setting.

6 Turn MULTI JOG to adjust the item selected in step 5, then press SET.

- Your setting is stored.
- When adjusting the speaker output levels, make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.



Ex.: When selecting "+8 (dB)" for "CENTER."

7 Repeat steps 5 and 6 to adjust the other settings.

To cancel Surround mode

Press SURROUND repeatedly on the remote control or press SURROUND then turn MULTI JOG on the front panel so that "STEREO" appears on the display.

- If Surround mode is canceled while playing back multi-channel digital software, all channel signals are mixed and output through the front speakers (and subwoofer if you have connected a subwoofer and set the subwoofer setting correctly—"USE" for Quick Setup or "YES" for Manual Setup—see pages 16 and 17).

NOTES

- You can adjust the speaker output levels using the remote control without outputting the test tone.
- You cannot adjust the center speaker output level and no test tone comes out of the center speaker when "CNTR SP" is set to "NO."
- You cannot adjust the surround speaker output levels and no test tone comes out of the surround speakers when "SURR SP" is set to "NO."
- Remember not to change the speaker setting while using any Surround modes; otherwise, the Surround mode may be canceled when you deactivate the speakers required for it.
- You cannot use any Surround modes when selecting DVD MULTI as a playback source.

Using DSP modes

Once you have adjusted the DSP modes, the adjustment is memorized for each source.

- You cannot use the DSP modes if no surround speakers are connected.
- You cannot adjust the effect level for "ALL CH ST."

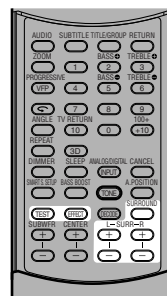
When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Before you start, remember...

Make sure that you have set the speaker information correctly (see pages 15 to 18).

From the remote control:



It will be convenient for you to use the remote control for the sound adjustments, since you can make adjustments from your listening point, and use the test signal.

1 Start playing 2 channel software—either Linear PCM or analog signal—and select the source.

2 Press SURROUND repeatedly until one of the DSP modes you want to apply appears on the display.

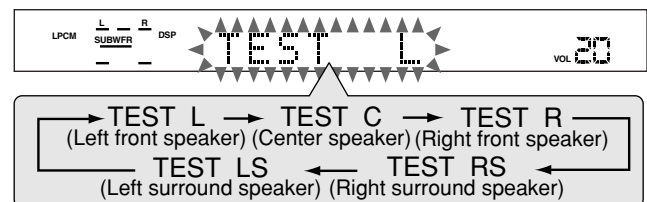
The DSP indicator lights up on the display.

- Each time you press the button, the DSP modes change as follow:



3 Press TEST to check the speakers output balance.

"TEST L" starts flashing on the display, and a test tone comes out of the speakers as follow:



4 Adjust the surround speaker output levels (from -10 dB to +10 dB).

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.

To adjust the left surround speaker level, press SURR L +/-.

To adjust the right surround speaker level, press SURR R +/-.

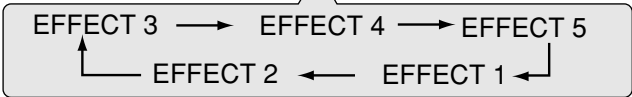


Ex.: When selecting “-8 (dB)” for “SURR R.”

5 Press TEST again to stop the test tone.

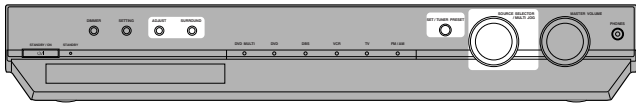
6 Only for DAP modes: Press EFFECT to select the DAP effect level (1 to 5) you want.

- As the number increases, the DAP effect becomes stronger (normally set it to “EFFECT 3”).



On the front panel:

- No test tone is available when using the buttons on the front panel.



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.

1 Start playing 2 channel software—either Linear PCM or analog signal—and select the source.

2 Press SURROUND.

MULTI JOG now works for the Surround/DSP mode selection.

3 Turn MULTI JOG until one of the DSP modes you want to apply appears on the display.

The DSP indicator lights up on the display.

- As you turn MULTI JOG, the indication changes as follow:

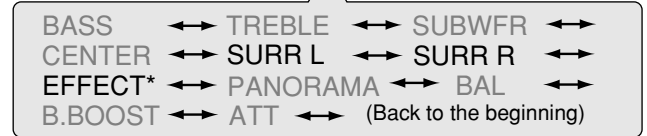


4 Press ADJUST.

MULTI JOG now works for the sound adjustment.

5 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



* Available only for DAP modes.

SURR L*1: To adjust the left surround speaker output level (from -10 dB to +10 dB).

SURR R*1: To adjust the right surround speaker output level (from -10 dB to +10 dB).

EFFECT (available only for DAP modes) *2: To adjust the DAP effect level. As the number increases, the effect becomes stronger (normally set it to “EFFECT 3”).

*1 “0 (dB)” is the initial setting for each speaker setting.

*2 “3” is the initial setting.

6 Turn MULTI JOG to adjust the item selected in step 5, then press SET.

Your setting is stored.

- When adjusting the speaker output levels, make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.



Ex.: When selecting “-8 (dB)” for “SURR R.”

7 Repeat steps 5 and 6 to adjust the other settings.

To cancel DSP Modes

Press SURROUND repeatedly on the remote control or press SURROUND then turn MULTI JOG on the front panel so that “STEREO” appears on the display. The DSP indicator goes off from the display.

NOTES

- You can adjust the speaker output levels using the remote control without outputting the test tone.
- You cannot adjust the center speaker output level and no test tone comes out of the center speaker when “CNTR SP” is set to “NO.”
- You cannot adjust the surround speaker output levels and no test tone comes out of the surround speakers when “SURR SP” is set to “NO.”

Using the DVD MULTI playback mode

This receiver provides the DVD MULTI playback mode for reproducing the analog discrete output mode (5.1 channel reproduction) of the DVD player.

In addition, the DVD MULTI playback mode can be used for reproducing a DVD Audio sound.

Before playing back a DVD, refer also to the manual supplied with the DVD player.

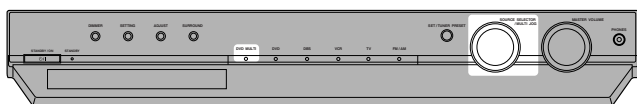
- When using the DVD MULTI playback mode, connect the DVD player with its analog discrete output jacks to the DVD IN jacks on the rear panel (see page 8).

When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Activating the DVD MULTI playback mode

On the front panel:



- 1 Turn SOURCE SELECTOR until "DVD MULTI" appears on the display.**

The DVD MULTI indicator lights in red.

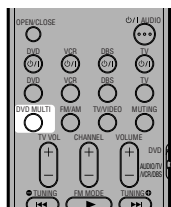
- 2 Select the analog discrete output mode on the DVD player, and start playing a DVD.**

From the remote control:

- 1 Press DVD MULTI.**

The DVD MULTI indicator lights in red.

- 2 Select the analog discrete output mode on the DVD player, and start playing a DVD.**



Adjusting the speaker output level

You can adjust the speaker output level while playing a DVD using the analog discrete output mode on the DVD player.

Once you have adjusted the sound, the adjustment is memorized.

- The test tone does not output through the speakers to adjust the speakers output levels when selecting DVD MULTI.

From the remote control:

It will be convenient for you to use the remote control for the sound adjustments, since you can make adjustments from your listening point.

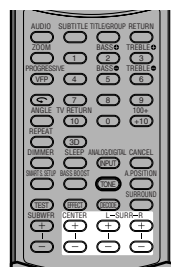
Adjust the following speaker output levels (from -10 dB to +10 dB).

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.

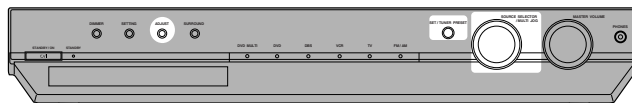
To adjust the center speaker level, press CENTER +/-.

To adjust the left surround speaker level, press SURR L +/-.

To adjust the right surround speaker level, press SURR R +/-.



On the front panel:



Before you start, remember...

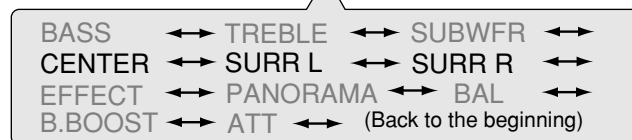
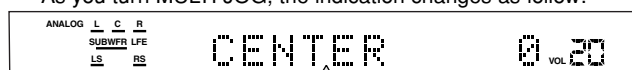
There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

- 1 Press ADJUST.**

MULTI JOG now works for the sound adjustment.

- 2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.**

- As you turn MULTI JOG, the indication changes as follow:



CENTER*: To adjust the center speaker output level (from -10 dB to +10 dB).

SURR L*: To adjust the left surround speaker output level (from -10 dB to +10 dB).

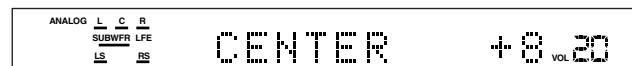
SURR R*: To adjust the right surround speaker output level (from -10 dB to +10 dB).

* "0 (dB)" is the initial setting.

- 3 Turn MULTI JOG to adjust the item selected in step 2, then press SET.**

Your setting is stored.

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.



Ex.: When selecting "+8 (dB)" for "CENTER."

- 4 Repeat steps 2 and 3 to adjust the other settings.**

NOTES

- When you select DVD MULTI as a source to play, the selected Surround/DSP mode is canceled, and the SURROUND button does not work.
- When using a pair of headphones, the sounds of front left and right channels are output from the headphones.

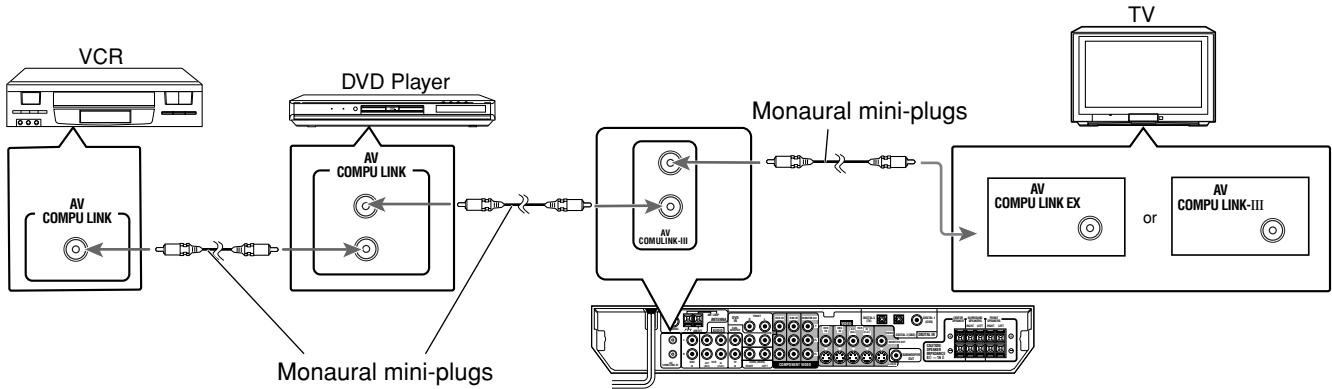
AV COMPU LINK remote control system

The AV COMPU LINK remote control system allows you to operate JVC's video components (TV, DVD player and VCR) through this receiver.

This receiver is equipped with the AV COMPU LINK-III, which has added a function to operate JVC's video components through the video components terminals. To use this remote control system, you need to connect the video components you want to operate, following the diagrams below and the procedures on page 33.

- Refer also to the manuals supplied with your video components.

CONNECTIONS 1: AV COMPU LINK Connection



IMPORTANT:

The AV COMPU LINK remote control system cannot control the DBS tuner connected to the DBS terminals.

CAUTION:

When connecting the TV with the AV COMPU LINK remote control system, connect the receiver to the AV COMPU LINK EX or AV COMPU LINK III terminal. DO NOT connect the receiver to the AV COMPU LINK RECEIVER/AMP terminal.

NOTES

- When connecting the receiver and a TV with the AV COMPU LINK EX terminal by using a component video cable, you cannot use Automatic selection of TV's input mode (see page 33).
- When connecting the DVD player or VCR and TV to this receiver, connect it directly to the receiver using cable with monaural mini-plugs.

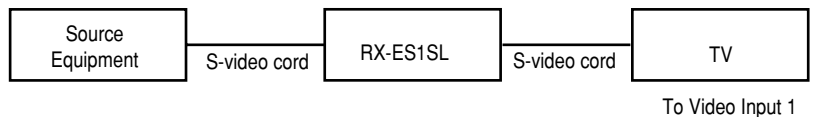
CONNECTIONS 2: Video Cable Connection

This receiver is equipped with three types of the video terminals—composite video, S-video, and component video, and the signals coming into this receiver through one type of video terminals can output only through the terminal of the same type. So you need to connect the VCR and TV to this receiver using one of the following three ways.

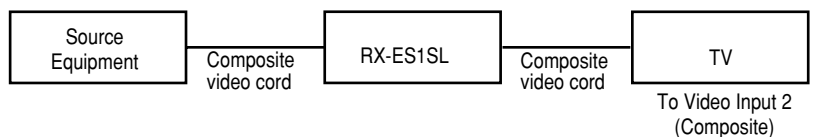
- When using the AV COMPU LINK remote control system, set the component video input for the DVD player and the DBS tuner correctly (see "Setting the video component input mode—DVD VIDEO/DBS VIDEO" on page 20); otherwise, the correct input for this receiver will not be selected on the TV.

CASE 1: When connecting the source equipment to the receiver through the S-video terminals, connect this receiver to the

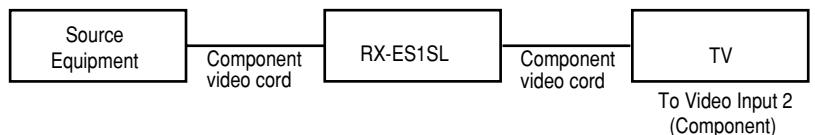
TV's Video Input 1 terminal using S-video cords.



CASE 2: When connecting the source equipment to the receiver through the composite video terminals, connect this receiver to the TV's Video Input 2 terminal (composite video input) using composite video cords.



CASE 3: When connecting the source equipment to the receiver through the component video terminals, connect this receiver to the TV's Video Input 2 terminals (component video input) using component video cords.



- 1. If you have already plugged your VCR, DVD player, TV and this receiver into the AC outlets, unplug their AC power cords first.**
- 2. Connect your VCR, DVD player, TV and this receiver, using the cords with the monaural mini-plugs (not supplied).**
 - See "CONNECTIONS 1" on the previous page.
- 3. Connect the audio input/output terminals on VCR, DVD player, TV and this receiver using the audio cords with RCA pin plugs.**
 - See pages 7 to 9.
- 4. Connect the video input/output terminals on VCR, DVD player, TV and this receiver, using the cords with RCA pin plugs, S-video plug or component video plugs.**
 - See "CONNECTIONS 2" on the previous page.
- 5. Plug the AC power cords of the components and the receiver into the AC outlets.**
- 6. When turning on the TV for the first time after the AV COMPU LINK connection, turn the TV volume to the minimum using the TV volume control on the TV.**
- 7. Turn on the connected components first, then turn on this receiver.**
 - When turning on the VCR, use the remote control supplied with this receiver (press VCR).

The AV COMPU LINK remote control system allows you to use the five basic functions listed below.

Remote control of the TV, DVD player, and VCR using this remote control

See page 34 for details.

- Aim the remote control directly at the remote sensor on each target component.

One-touch video play

Simply by inserting a video cassette without its safety tab into the VCR, you can enjoy the video playback without setting other switches manually. The receiver automatically turns on and changes the source to "VCR."

The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.

When you insert a video cassette with its safety tab, press the play (▶) button on the VCR or on the remote control. So, you can get the same result.

One-touch DVD play

Simply by starting playback on the DVD player, you can enjoy the DVD playback without setting other switches manually.

- When the DVD player is connected through the analog input jacks on this receiver (and analog input is selected), the receiver automatically turns on and changes the source to "DVD" or "DVD MULTI."
- When the DVD player is connected through the digital input terminal on this receiver (and digital input is selected), the receiver automatically turns on and changes the source to "DVD."

The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.

Automatic selection of TV's input mode

- When you select "TV" as the source to play on the receiver, the TV automatically changes the input mode to the TV tuner so that you can watch TV.
- When you select "DVD," "DVD MULTI," "VCR" or "DBS" as the source to play on the receiver, the TV automatically changes the input mode to the appropriate position (either Video Input 1 or Video Input 2) so that you can view the playback picture.

NOTE

This function does not work when you connect this receiver and the TV with the AV COMPU LINK using the TV's AV COMPU LINK EX terminal. In this case, reconnect the TV referring to case 1 or case 2 on page 32.

Automatic power On/Off

The TV, VCR, and DVD player turn on and off along with the receiver.

When you turn on the receiver;

- If the previously selected source is "VCR," the TV and VCR will turn on automatically.
- If the previously selected source is "DVD" or "DVD MULTI," the TV and DVD player will turn on automatically.
- If the previously selected source is "TV" or "DBS," only the TV will turn on automatically.

When you turn off the receiver, the TV, VCR and the DVD player will turn off.

NOTE

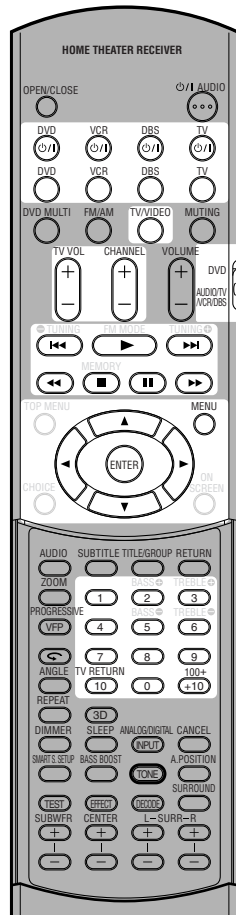
If you turn off the receiver while recording on the VCR, the VCR will not turn off, but continue recording.

Operating other JVC products

You can use the remote control to operate not only this receiver but also other JVC products.

- Refer also to the manuals supplied for the other products.
 - Some JVC VCRs can accept two types of the control signals—remote codes “A” and “B”. This remote control can operate a VCR whose remote control code is set to “A.”
- To operate other products, aim the remote control directly at the remote sensor on the target product.

Set the mode selector to AUDIO/TV/VCR/DBS.



■ TV

You can always perform the following operations:

TV \odot/I:	Turn on or off the TV.
TV VOL +/-:	Adjust the volume on the TV.
TV/VIDEO:	Change the input mode (Video input and TV tuner) on the TV.

After pressing TV (source selecting button), you can perform the following operations on the TV.

CHANNEL +/-:	Change the channel numbers.
1 – 9, 0, +10 (100+):	Select the channel numbers.
10 (TV RETURN):	Function as the TV RETURN button.

■ VCR

You can always perform the following operations:

VCR \odot/I:	Turn on or off the VCR.
---	-------------------------

After pressing VCR (source selecting button), you can perform the following operations on the VCR.

CHANNEL +/-:	Change the channel numbers on the VCR.
1 – 9, 0:	Select the channel numbers on the VCR.
▶:	Start playback.
■:	Stop playback.
 :	Pause playback. To release it, press ▶.
▶▶:	Fast-wind a tape.
◀◀:	Rewind a tape.

■ DVD player

You can always perform the following operations:

DVD \odot/I:	Turn on or off the DVD player.
---	--------------------------------

After setting the mode selector to “DVD” then pressing DVD (source selecting button), you can perform the following operations on the DVD Player.

▶:	Start playback.
■:	Stop playback.
 :	Pause playback. To release it, press ▶.
▶▶:	Skip to the beginning of the next chapter.
◀◀:	Return to the beginning of the current (or previous) chapter.
MENU:	Display or erase the menu screen.
▲/▼/▶/◀:	Select an item on the menu screen.
ENTER:	Enter a selected item.

You can also use ▶▶, ◀◀, OPEN/CLOSE, AUDIO, SUBTITLE, TITLE/GROUP, RETURN, ZOOM, VFP, ↶, ANGLE, REPEAT, DIMMER, 3D, PROGRESSIVE, and numeric buttons for operating JVC DVD player.

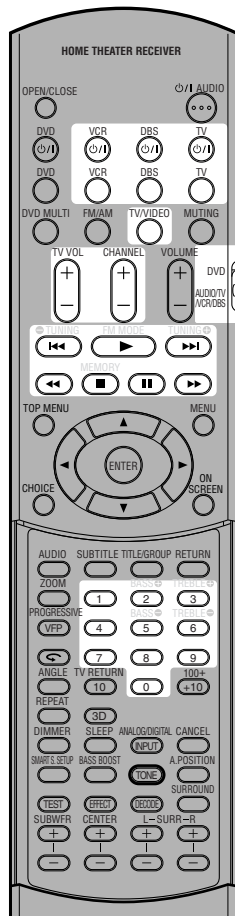
- If these buttons cannot be functioned normally, use a remote control supplied with your DVD player. See the instruction supplied with the DVD player for details.

Operating other manufacturers' equipment

By changing the transmittable signals, you can use the remote control supplied for this unit to operate other manufacturers' equipment.

- Refer also to the manuals supplied with the other products.
- To operate those components with the remote control, first you need to set the manufacturers' codes each for the CATV converter, DBS tuner, VCR, and TV.
- After replacing batteries of the remote control, set the manufacturers' codes again.

Set the mode selector to **AUDIO/TV/VCR/DBS**.



□ Changing the transmittable signals for operating a CATV converter or DBS tuner

1 Press and hold DBS ϕ/I .

2 Press DBS.

3 Enter the manufacturer's code using buttons 1 – 9, and 0.

4 Release DBS ϕ/I .

Now, you can perform the following operations on the CATV converter or DBS tuner.

DBS ϕ/I : Turn on or off the CATV converter or DBS tuner.

After pressing DBS (source selecting button), you can perform the following operations on the CATV converter or DBS tuner.

CHANNEL +/-: Change the channel numbers on the CATV converter or DBS tuner.

1 – 9, 0: Select the channel numbers on the CATV converter or DBS tuner.

5 Try to operate your CATV converter or DBS tuner by pressing DBS ϕ/I .

When your CATV converter or DBS tuner turns on or off, you have entered the correct code.

If more than one codes are listed for your brand of the CATV converter, try each one until the correct one is entered.

Manufacturers' codes for CATV converter

Manufacturer	Codes
G.I.	01*
GEMINI	02
HAMLIN	03 – 06
JERROLD	07 – 15
MACOM	16 – 18
MAGNAVOX	19
OAK	20 – 22
PANASONIC	23, 24
PHILIPS	25 – 30
PIONEER	31, 32
S. ATLANA	33, 34, 35
SAMSUNG	36
TOCOM	37
ZENITH	38, 39

Manufacturers' codes for DBS tuner

Manufacturer	Codes
ECHOSTAR	40
G.I.	41
HITACHI	42
HUGHES	43
PANASONIC	44
PRIMESTAR	45
RCA	46
SONY	47
TOSHIBA	48

* Initial setting

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

TO BE CONTINUED TO THE NEXT PAGE

□ **Changing the transmittable signals for operating a VCR**

- 1 Press and hold VCR** \odot/I .
- 2 Press VCR.**
- 3 Enter the manufacturer's code using buttons 1 – 9, and 0.**
- 4 Release VCR** \odot/I .

Now, you can perform the following operations on the VCR.

VCR \odot/I :	Turn on or off the VCR.
-------------------------------	-------------------------

After pressing VCR (source selecting button), you can perform the following operations on the VCR.

CHANNEL +/-:	Change the channel numbers on the VCR.
---------------------	--

1 – 9, 0:	Select the channel numbers on the VCR.
------------------	--

▶:	Start playback.
-----------	-----------------

■:	Stop playback.
-----------	----------------

 :	Pause playback. To release it, press ▶.
------------	---

▶▶:	Fast-wind a tape.
------------	-------------------

◀◀:	Rewind a tape.
------------	----------------

5 Try to operate your VCR by pressing VCR \odot/I .

When your VCR turns on or off, you have entered the correct code.

If more than one codes are listed for your brand of VCR, try each one until the correct one is entered.

Manufacturers' codes for VCR

Manufacturer	Codes
JVC	01* – 04
AIWA	05
AKAI	06 – 08
BELL+HOWELL	09
DAEWOO	10
EMERSON	11 – 15
FISHER	16 – 19
G.E.	20, 21
GO VIDEO	22
GOLD STAR	23
GO-VIDEO A	24
GO-VIDEO B	25
HITACHI	20, 26
MAGNAVOX	27 – 29
MITSUBISHI	30 – 33
NEC	34, 35
PANASONIC	36, 37
PHILIPS	27
RCA	38
SAMSUNG	39 – 41
SANYO	16 – 19
SCOTT	42
SHARP	43, 44
SHINTOM	45
SONY	46 – 51
SYMPHO	52
TEKNICA	53, 54
TOSHIBA	55
ZENITH	56

* Initial setting

□ Changing the transmittable signals for operating a TV

- 1** Press and hold TV \odot /I.
- 2** Press TV.
- 3** Enter the manufacturer's code using buttons 1 – 9, and 0.
- 4** Release TV \odot /I.

Now, you can perform the following operations on the TV.

TV \odot/I:	Turn on or off the TV.
TV VOL +/-:	Adjust the volume.
TV/VIDEO:	Change the input mode (either TV or VIDEO).

After pressing TV (source selecting button), you can perform the following operations on the TV.

CHANNEL +/-:	Change the channel numbers.
1 – 9, 0:	Select the channel numbers.

5 Try to operate your TV by pressing TV \odot /I.

When your TV turns on or off, you have entered the correct code.

If more than one codes are listed for your brand of TV, try each one until the correct one is entered.

Manufacturers' codes for TV

Manufacturer	Codes
JVC	01*
AKAI	02
BELL+HOWELL	03
CENTURION	04
CORONAD	05
DAEWOO	06 – 08
EMERSON	09 – 13
FISHER	14
GE•PANA	15, 16
GE•RCA	17
GOLD STAR	18, 19
HITACHI	20, 21
KTV	22, 23
MAGNAVOX	24
MARANTZ	25
MITSUBISHI	25
PANASONIC	26, 27
PHILIPS	24
PIONEER	28
PROSCAN	29
QUASAR	30
RADIOSHACK	31
RCA	02, 17, 32 – 35
SAMSUNG	36, 37
SANYO	14
SEARS	38
SHARP	39
SONY	40
SYMPHONIC	41, 42
TOSHIBA	38
ZENITH	43,44

* Initial setting

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Troubleshooting

Use this chart to help you solve daily operational problems. If there are any problems you cannot solve, contact your JVC's service center.

	PROBLEM	POSSIBLE CAUSE	SOLUTION
General	The power does not come on.	The power cord is not plugged in.	Plug the power cord into an AC outlet.
	No sound from speakers.	Speaker signal cables are not connected.	Check speaker wiring and reconnect if necessary.
		An incorrect source is selected.	Select the correct source.
		Muting is activated.	Press MUTING to cancel the mute.
		An incorrect input mode (analog or digital) is selected.	Select the correct input mode (analog or digital).
		Connections are incorrect.	Check connections.
	Sound from one speaker only.	The balance is set to one extreme.	Adjust the balance properly (see page 22).
	The STANDBY lamp lights up after turning on the power, but soon the unit turns off (into standby mode).	Speakers are overloaded because of high volume.	1. Press STANDBY/ON Φ /I on the front panel to turn off the unit. 2. Stop the playback source. 3. Turn on the unit again, and adjust the volume.
		Speakers are overloaded because of a short circuit at the speaker terminals.	Check the speaker wiring. If speaker wiring is not short-circuited, contact your dealer.
		The unit is overloaded because of a high voltage.	Consult your dealer after unplugging the power cord.
	Remote control does not operate as you intend.	The remote control is not ready for your intended operation.	Press a source selecting button or TONE first, then press the buttons you want to use. (See pages 21 and 34 – 37.)
	Remote control does not work.	There is an obstruction hiding the remote sensor on the unit.	Remove the obstruction.
		Batteries are weak.	Replace batteries.
The mode selector is set to the incorrect position.		Set the mode selector to the proper position.	
Bass sound is reinforced too much when listening in stereo.	Appropriate bass level is not selected.	Adjust audio position level (see page 22).	

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION	
Surround mode cannot be selected.	Surround mode is not available on the software being played back, or only the front speakers are set for use.	Play not multi-channel software or check the speaker setting.	Surround/DSP
DSP mode cannot be selected.	DSP mode is not available on the software being played back, or only the front speakers are set for use.	Play back Linear PCM or analog software or check the speaker setting.	
Continuous hiss or buzzing during FM reception.	Incoming signal is too weak.	Connect an outdoor FM antenna or contact your dealer.	FM/AM
	The station is too far away.	Select a new station.	
	An incorrect antenna is used.	Check with your dealer to be sure you have the correct antenna.	
	Antennas are not connected properly.	Check connections.	
Occasional cracking noise during FM reception.	Ignition noise from automobiles.	Move the antenna farther from automobile traffic.	

NOTE

When you use the digital coaxial connection, the sounds may be intermittently distorted by the outside noise such as a lightning discharge but they will restore automatically. This is not a malfunction.

RX-ES1SL

Amplifier

Output Power	
At stereo operation:	
Front channels:	100 W per channel, min. RMS, driven into 8 Ω, 40 Hz to 20 kHz with no more than 0.8% total harmonic distortion.
At surround operation:	
Front channels:	100 W per channel, min. RMS, driven into 8 Ω at 1 kHz with no more than 0.8% total harmonic distortion.
Center channel:	100 W, min. RMS, driven into 8 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.
Surround channels:	100 W per channel, min. RMS, driven into 8 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Audio

Audio Input Sensitivity/Impedance (1 kHz):	
DVD, DVD MULTI, DBS, VCR, TV:	260 mV/47 kΩ
Audio Input (DIGITAL IN)* :	
Coaxial: DIGITAL 1 (DVD):	0.5 V(p-p)/75 Ω
Optical: DIGITAL 2/3 (DBS/TV):	-21 dBm to -15 dBm (660 nm ±30 nm)
* Corresponding to Linear PCM, Dolby Digital, and DTS Digital Surround (with sampling frequency—32 kHz, 44.1 kHz, 48 kHz).	
Audio Output Level: VCR:	250 mV
Signal-to-Noise Ratio (*66 IHF/78 IHF):	
DVD MULTI:	87 dB/67 dB
Frequency Response (8 Ω):	
DVD, DBS, VCR, TV:	20 Hz to 20 kHz (±1 dB)
Tone Control:	
Bass (100 Hz):	±10 dB ±2 dB
Treble (10 kHz):	±10 dB ±2 dB
Bass Boost:	+4 dB ± 1 dB at 100 Hz

Video

Video Input Sensitivity/Impedance (1 kHz):	
Composite video: DVD, DBS, VCR:	1 V(p-p)/75 Ω
S-VIDEO: DVD, DBS, VCR:	
(Y:luminance):	1 V(p-p)/75 Ω
(C:chrominance):	0.286 V(p-p)/75 Ω
Component video: DVD, DBS:	
(Y:luminance):	1 V(p-p)/75 Ω
(Rb/Pr):	0.7 V(p-p)/75 Ω
Video Output Level/Impedance (1 kHz):	
Composite video: VCR, MONITOR OUT:	1 V(p-p)/75 Ω
S-Video: VCR, MONITOR OUT:	
(Y:luminance):	1 V(p-p)/75 Ω
(C:chrominance):	0.286 V(p-p)/75 Ω
Component video: MONITOR OUT:	
(Y:luminance):	1 V(p-p)/75 Ω
(Rb/Pr):	0.7 V(p-p)/75 Ω
Synchronize:	Negative

FM tuner (IHF)

Tuning Range:	87.5 MHz to 108.0 MHz
Usable Sensitivity:	
Monaural:	12.8 dBf (1.2 μV/75 Ω)
50 dB Quieting Sensitivity:	
Monaural:	16.0 dBf (1.7 μV/75 Ω)
Stereo:	37.5 dBf (20.5 μV/75 Ω)
Stereo Separation at REC OUT:	35 dB at 1 kHz

AM tuner

Tuning Range:	530 kHz to 1 710 kHz
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General

Power Requirements:	AC 120 V ~, 60 Hz
Power Consumption:	95 W/130 VA (at operation) 2 W (in standby mode)
Dimensions (W x H x D):	17 ³ / ₁₆ inches x 2 ³ / ₄ inches x 13 ¹ / ₁₆ inches (435 mm x 69.5 mm x 330.5 mm)
Mass:	14.4 lbs (6.5 kg)



LIMITED WARRANTY

AUDIO-2

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period")

PARTS	2 YRS	LABOR	2 YRS
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THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY (50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

WHAT WE WILL DO:

If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

WHAT YOU MUST DO FOR WARRANTY SERVICE:

Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800) 537-5722.

If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus a letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number.

If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

WHAT IS NOT COVERED:

This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model number or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus (Needle) are covered for 90 days from the date of purchase;
7. Batteries (except that Rechargeable Batteries are covered for 90 days from the date of purchase);

There are no express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA
DIVISION OF JVC AMERICAS CORP.

1700 Valley Road
Wayne, NJ 07470

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:

Enter below the Model No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. : _____

Serial No. : _____

Purchase data : _____

Name of dealer : _____

Authorized Service Centers

QUALITY **JVC**[®] SERVICE

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE: 1 (800) 537-5722

<http://www.jvc.com>

Dear Customer,

In order to receive the most satisfaction from your purchase, please read the instruction booklet before operating the unit. In the event that repairs are necessary, please call 1 (800)537-5722 for your nearest authorized servicer or visit our website at **www.JVC.com**

Remember to retain your Bill of Sale for Warranty Service.

Do not service the television yourself

Caution

To prevent electrical shock, do not open the cabinet. There are no user serviceable parts inside. Please refer to qualified service personnel for repairs.

Accessories

To purchase accessories for your JVC product, please call toll free: 1 (800)882-2345 or on the web at **www.JVC.com**



JVC
VICTOR COMPANY OF JAPAN, LIMITED

JVC



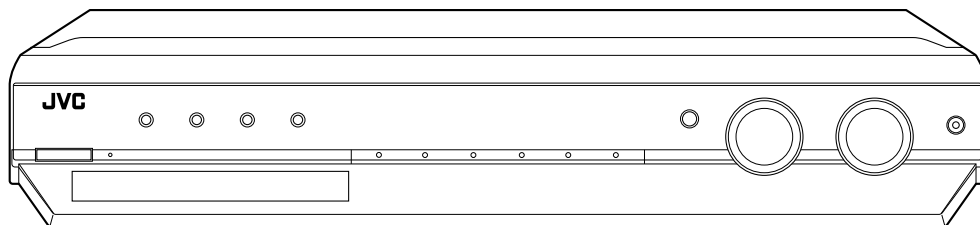
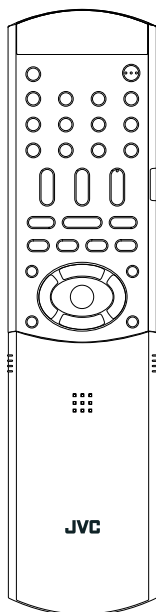
English

Français

HOME THEATER RECEIVER

AMPLI-TUNER CINEMA MAISON

RX-ES1SL



AV COMPU LINK

DIGITAL
dts
SURROUND

DOLBY
DIGITAL
PRO LOGIC II

INSTRUCTIONS MANUAL D'INSTRUCTIONS

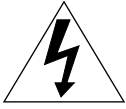
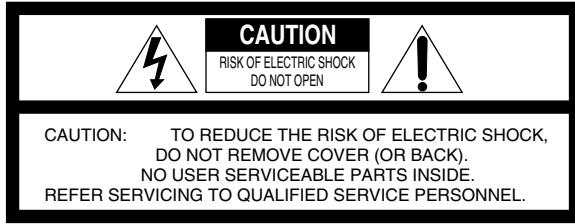
For Customer Use:

Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

Warnings, Cautions and Others/ Mises en garde, précautions et indications diverses



The lightning flash with arrowhead symbol, within an equilateral triangle 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.



The exclamation point within an equilateral triangle 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

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

ATTENTION

Afin d'éviter tout risque d'électrocution, d'incendie, etc.:

1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

Caution — O/I switch!

Disconnect the mains plug to shut the power off completely. The O/I switch in any position does not disconnect the mains line. The power can be remote controlled.

Attention — Commutateur O/I !

Déconnecter la fiche de secteur pour couper complètement le courant. Le commutateur O/I ne coupe jamais complètement la ligne de secteur, quelle que soit sa position. Le courant peut être télécommandé.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which 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.

For Canada/pour le Canada

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND

For Canada/pour Le Canada

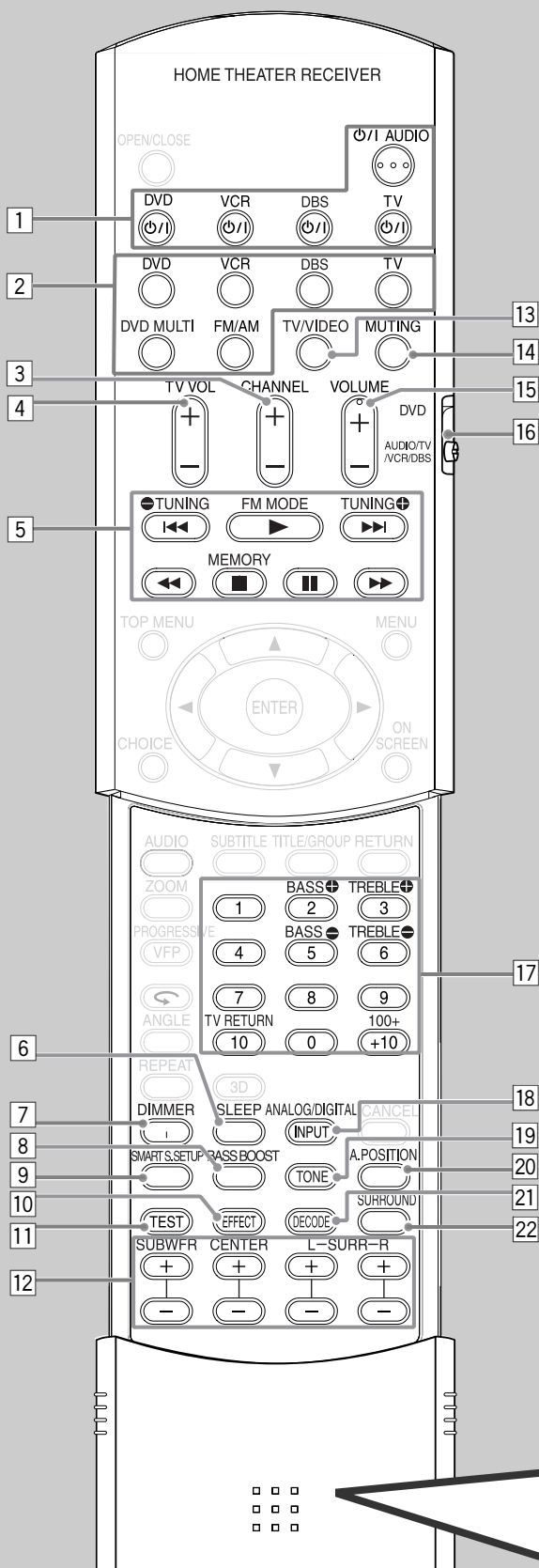
THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE INTERFERENCE-CAUSING EQUIPMENT STANDARD ENTITLED "DIGITAL APPARATUS," ICES-003 OF THE DEPARTMENT OF COMMUNICATIONS. CET APPAREIL NUMERIQUE RESPECTE LES LIMITES DE BRUITS RADIOELECTRIQUES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASSE B PRESCRITES DANS LA NORME SUR LE MATERIEL BROUILLEUR; "APPAREILS NUMERIQUES", NMB-003 EDICTEE PAR LE MINISTRE DES COMMUNICATIONS.

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Parts identification

Remote control

When operating this receiver, always set the mode selector (16) to "AUDIO/TV/VCR/DBS"



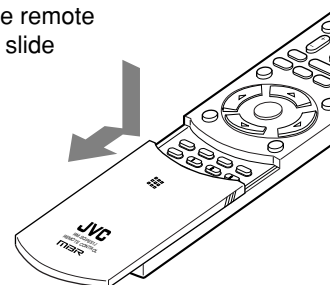
See pages in parentheses for details.

- 1 Standby/on buttons (11, 34 – 37)
 ⏻/I AUDIO, DVD ⏻/I, VCR ⏻/I, DBS ⏻/I, TV ⏻/I
- 2 Source selecting buttons (11)
 DVD, VCR, DBS, TV, DVD MULTI, FM/AM
- 3 CHANNEL +/- buttons (34 – 37)
- 4 TV VOL (volume) +/- buttons (34, 37)
- 5
 - Operating buttons for video components (34, 36)
 ◀◀, ▶, ▶▶, ◀◀, ■, ■, ▶▶
 - Operating buttons for tuner (23, 24)
 TUNING ⏪, TUNING ⏩, FM MODE, MEMORY
- 6 SLEEP button (13)
- 7 DIMMER button (14)
- 8 BASS BOOST button (22)
- 9 SMART S (surround). SETUP button (15)
- 10 EFFECT button (30)
- 11 TEST button (28 – 30)
- 12 Adjusting buttons for speaker and subwoofer output levels (21, 28, 30, 31)
 SUBWFR (subwoofer) +/-, CENTER +/-, SURR L (Left surround) +/-, SURR R (right surround) +/-
- 13 TV/VIDEO button (34, 37)
- 14 MUTING button (13)
- 15 VOLUME +/- buttons (12)
- 16 Mode selector
 DVD, AUDIO/TV/VCR/DBS
- 17
 - Numeric buttons for adjusting tone (21)
 BASS ⏪/⏩, TREBLE ⏪/⏩
 - Numeric buttons for selecting preset channels (24)
 - Numeric buttons for operating video components (34 – 37)
- 18 ANALOG/DIGITAL INPUT button (11, 12)
- 19 TONE button (21)
- 20 A (audio).POSITION button (22)
- 21 DECODE button (12)
- 22 SURROUND button (27, 29, 30)

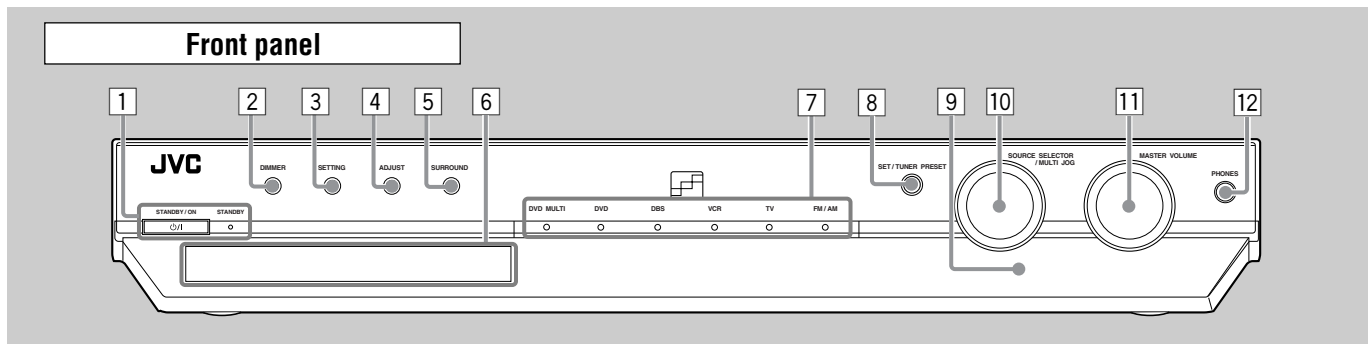
* Buttons shown in half tone color are used for operating JVC DVD player.

- If these buttons cannot be functioned normally, use a remote control supplied with your DVD player. See the instruction supplied with the DVD player for details.

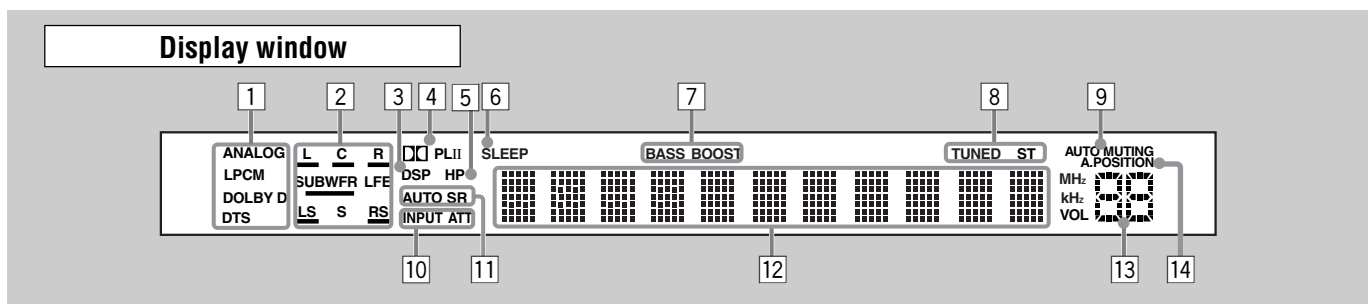
To open the cover of the remote control, push here then slide downward.



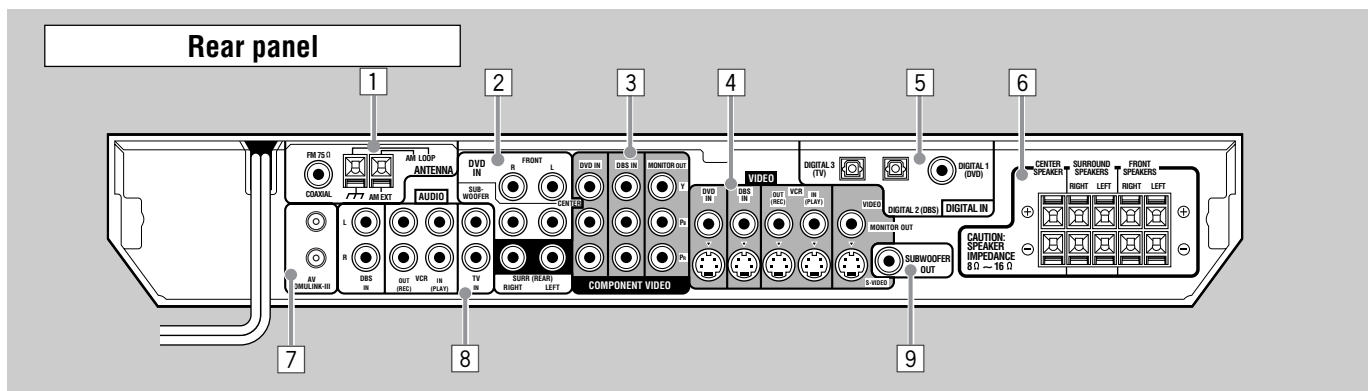
See pages in parentheses for details.



- | | |
|---|--|
| <ul style="list-style-type: none"> 1 STANDBY/ON ϕ/I button and STANDBY lamp (11) 2 DIMMER button (14) 3 SETTING button (16, 17, 19) 4 ADJUST button (21, 28, 30, 31) 5 SURROUND button (28, 30) 6 Display window (see below) 7 Source indicators
DVD MULTI, DVD, DBS, VCR, TV, FM/AM | <ul style="list-style-type: none"> 8 • SET button (16, 17, 19, 21, 29, 30, 31)
• TUNER PRESET button (24) 9 Remote sensor (4) 10 SOURCE SELECTOR (11)
MULTI JOG (16, 17, 19, 21, 24, 28 – 31) 11 MASTER VOLUME control (12) 12 PHONES jack (12) |
|---|--|



- | | |
|---|---|
| <ul style="list-style-type: none"> 1 Signal format indicators (11, 13)
ANALOG, LPCM (Linear PCM), DOLBY D (Dolby Digital), DTS 2 Signal and speaker indicators (14) 3 DSP indicator (26, 29, 30) 4 \square PLII indicator (25) 5 HP (headphone) indicator (12) 6 SLEEP indicator (13) 7 BASS BOOST indicator (22) | <ul style="list-style-type: none"> 8 Tuner operation indicators (23)
TUNED, ST (stereo) 9 AUTO MUTING indicator (24) 10 INPUT ATT (attenuator) indicator (22) 11 AUTO SR (surround) indicator (20) 12 Main display 13 Volume level indicator (11) 14 A (audio).POSITION indicator (22) |
|---|---|



- | | |
|---|---|
| <ul style="list-style-type: none"> 1 ANTENNA terminals (5) 2 DVD IN terminals (7, 8)
FRONT, CENTER, SURR (REAR), SUBWOOFER 3 COMPONENT VIDEO terminals (7 – 9)
DVD IN, DBS IN, MONITOR OUT 4 VIDEO terminals (7 – 9)
DVD IN, DBS IN, VCR OUT (REC)/IN (PLAY), MONITOR OUT 5 DIGITAL IN terminals (10)
DIGITAL 1 (DVD), DIGITAL 2 (DBS), DIGITAL 3 (TV) | <ul style="list-style-type: none"> 6 Speaker terminals (6)
FRONT SPEAKERS, SURROUND SPEAKERS, CENTER SPEAKER 7 AV COMPULINK-III terminals (32) 8 AUDIO terminals (8, 9)
DBS IN, VCR OUT (REC)/IN (PLAY), TV IN 9 SUBWOOFER OUT jack (6) |
|---|---|

Getting started

Before installation

General Precautions

- DO NOT insert any metal object into the unit.
- DO NOT disassemble the unit or remove screws, covers, or cabinet.
- DO NOT expose the unit to rain or moisture.

Locations

- Install the unit in a location that is level and protected from moisture.
- The temperature around the unit must be between 23°F and 95°F (-5°C and 35°C).
- Make sure there is good ventilation around the unit. Poor ventilation could cause overheating and damage the unit.

Handling the unit

- DO NOT touch the power cord with wet hands.
- DO NOT pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.
- Keep the power cord away from the connecting cords and the antenna. The power cord may cause noise or screen interference. It is recommended to use a coaxial cable for antenna connection, since it is well-shielded against interference.
- When a power failure occurs, or when you unplug the power cord, the preset settings such as preset FM or AM channels and sound adjustments may be erased in a few days.

Checking the supplied accessories

Check to be sure you have all of the following supplied accessories. The number in parentheses indicates the quantity of each piece supplied.

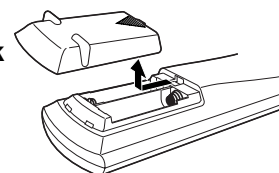
- Remote control (1)
- Batteries (2)
- AM loop antenna (1)
- FM antenna (1)
- Digital coaxial cord (1)

If anything is missing, contact your dealer immediately.

Putting batteries in the remote control

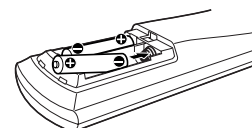
Before using the remote control, put two supplied batteries first.

- 1 Press and slide the battery cover on the back of the remote control.**

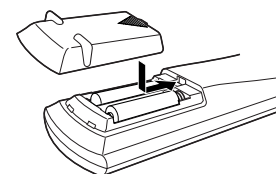


- 2 Insert batteries.**

Make sure to match the polarity: (+) to (+) and (-) to (-).



- 3 Replace the cover.**



If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6P(SUM-3)/AA(15F) type dry-cell batteries.

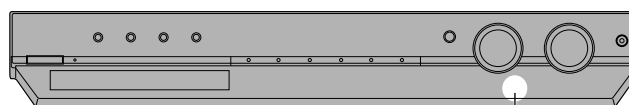
- Supplied batteries are for initial setup. Replace for continued use.

CAUTION:

Follow these precautions to avoid leaking or cracking cells:

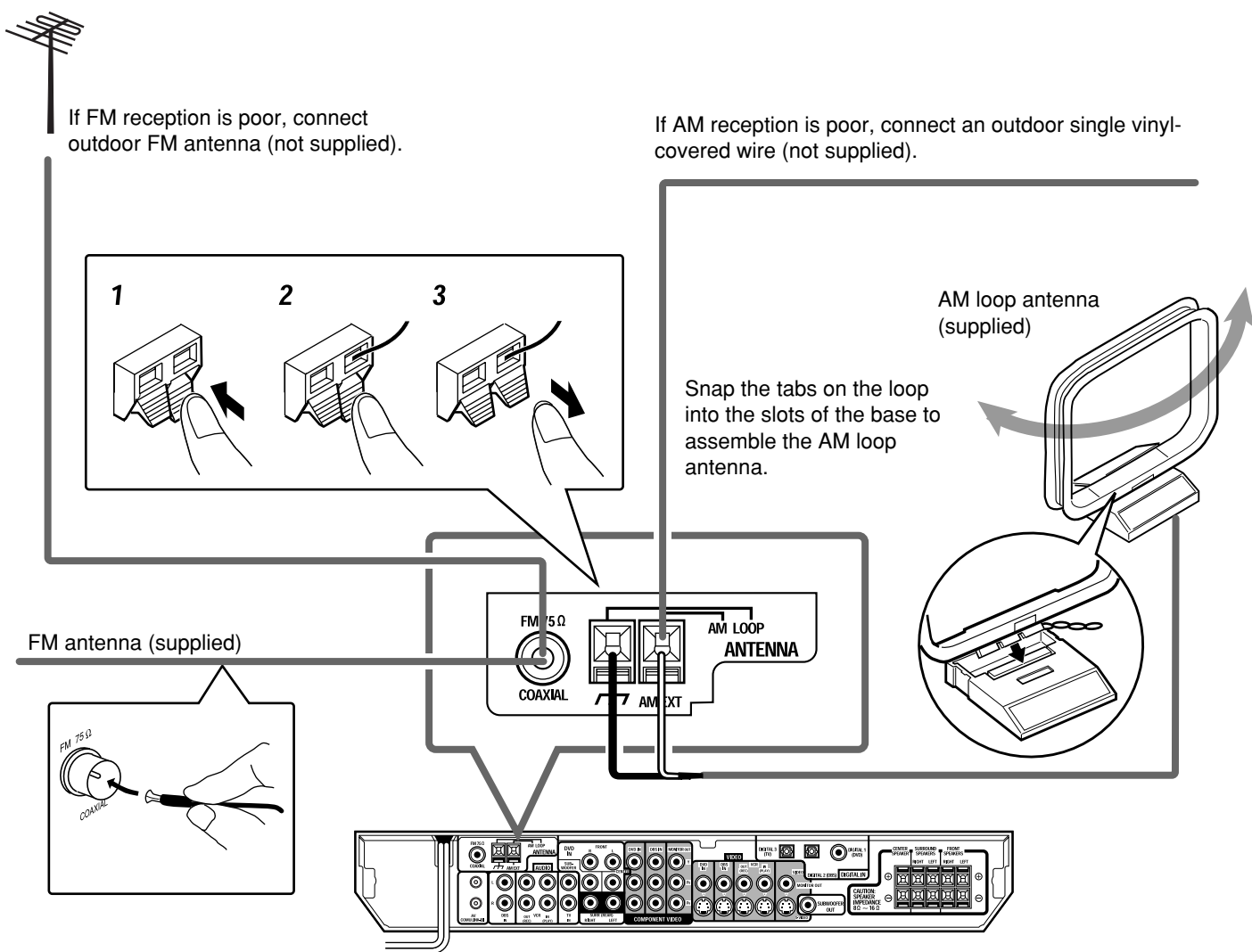
- Place batteries in the remote control so they match the polarity: (+) to (+) and (-) to (-).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

When using the remote control, aim the remote control directly at the remote sensor on the front panel.



Remote sensor

Connecting the FM and AM antennas



AM antenna connection

Connect the AM loop antenna supplied to the AM LOOP terminals. Connect the white cord to the AM EXT terminal, and the black cord to the terminal.

Turn the loop until you have the best reception.

- If the reception is poor, connect an outdoor single vinyl-covered wire (not supplied) to the AM EXT terminal. Keep the AM loop antenna connected.

FM antenna connection

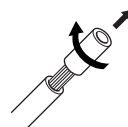
Connect the FM antenna supplied to the FM 75 Ω COAXIAL terminal as temporary measure.

Extend the supplied FM antenna horizontally.

- If the reception is poor, connect an outdoor FM antenna (not supplied). Before attaching a 75 Ω coaxial cable with a connector, disconnect the supplied FM antenna.

NOTES

- If the AM loop antenna wire is covered with vinyl, remove the vinyl while twisting it as shown on the right.
- Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.



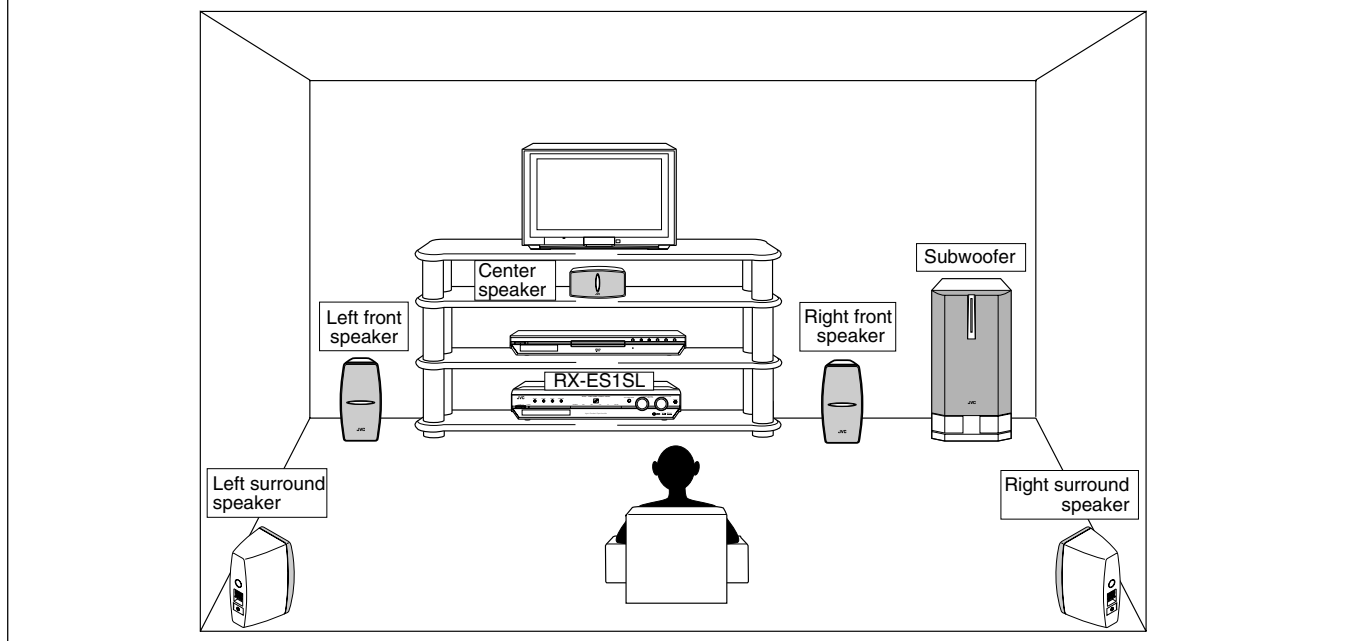
Getting Started

Connecting the speakers

Turn off all components before connections.

Speaker Layout Diagram

After connecting the front, center and surround speakers, and/or a subwoofer, set the speaker setting information properly to obtain the best possible surround effect. For details, see pages 15 to 18.



Connecting the front, center, and surround speakers

For each speaker, connect the (+) and (-) terminals on the rear panel to the (+) and (-) terminals marked on the speakers respectively.

- 1** Twist and remove the insulation at the end of each speaker cord (not supplied).
- 2** Press and hold the clamp of the speaker terminal (1), then insert the speaker cord (2).
- 3** Release the finger from the clamp.

CAUTION:

Use speakers with the SPEAKER IMPEDANCE indicated by the speaker terminals.

Connecting the subwoofer

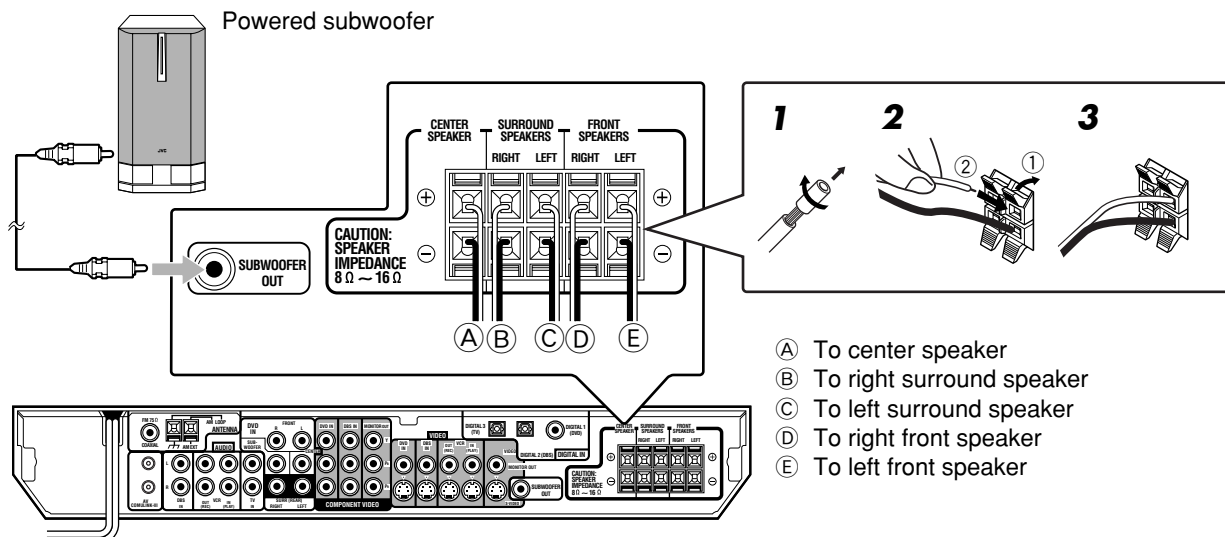
By connecting a subwoofer, you can enhance the bass or reproduce the original LFE signals recorded in the digital software.

Connect the input jack of a powered subwoofer to the **SUBWOOFER OUT** jack on the rear panel, using a cord with RCA pin plugs (not supplied).

• Refer also to the manual supplied with your subwoofer.

NOTE

You can place a subwoofer wherever you like since bass sound is non-directional. Normally place it in front of you.



Connecting video components

Turn off all components before making connections.

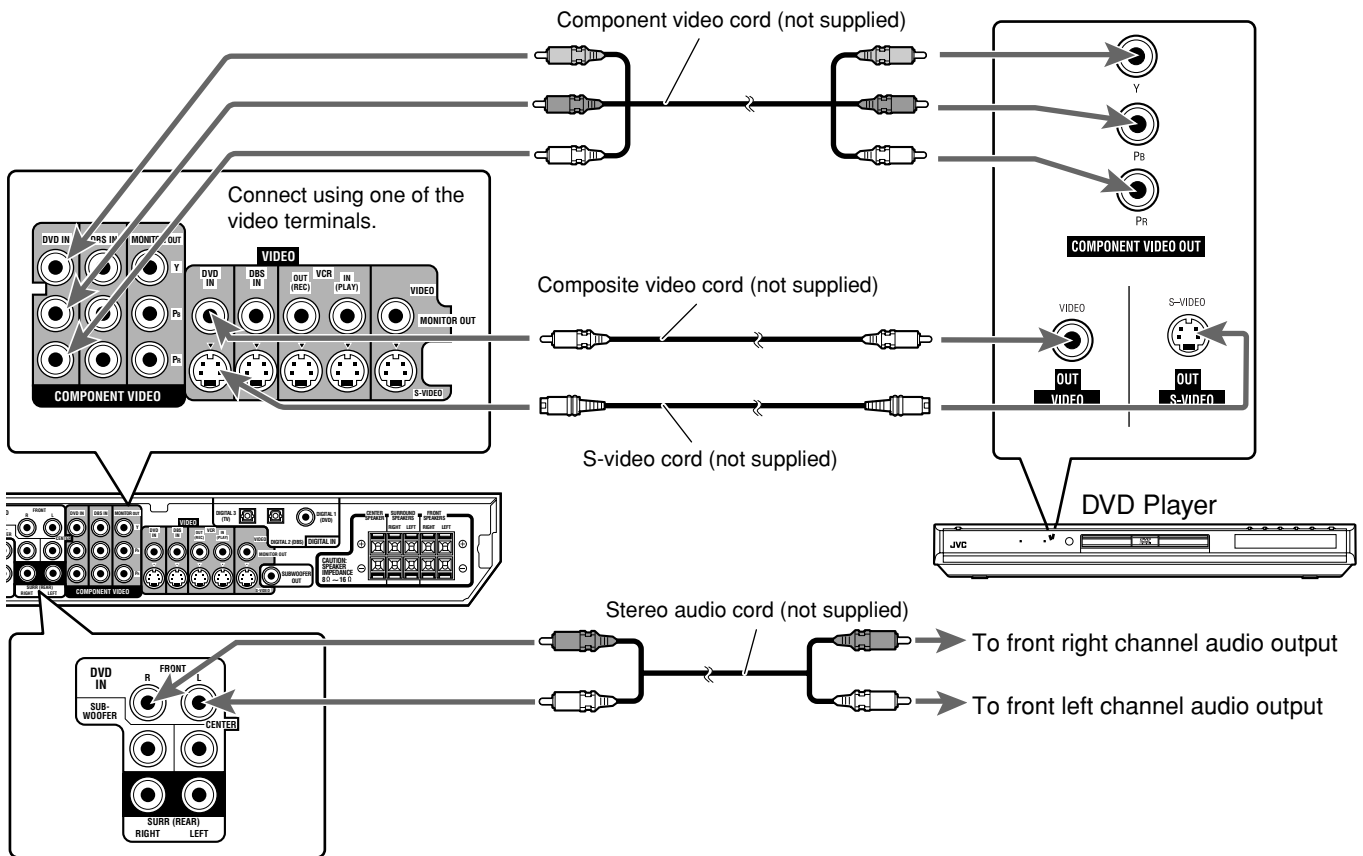
- Illustrations of the input/output terminals are typical examples. When you connect other components, refer also to their manuals since the terminal names actually printed on the rear vary among different components.

Notes for video connection:

- You can use composite video cord or S-video cord for connecting the VCR to this receiver.
- You can use component video cord in addition to composite video cord and S-video cord for connecting your DVD player, TV and DBS tuner to this receiver.
- By using S-video cord or component video cord, you can get a better picture quality—in the order: composite < S-video < component.
- To view the picture from the DVD player, DBS tuner or VCR on your TV, connect your TV to this receiver using the same type of cord for connecting the DVD player, DBS tuner or VCR to this receiver.

DVD player connection

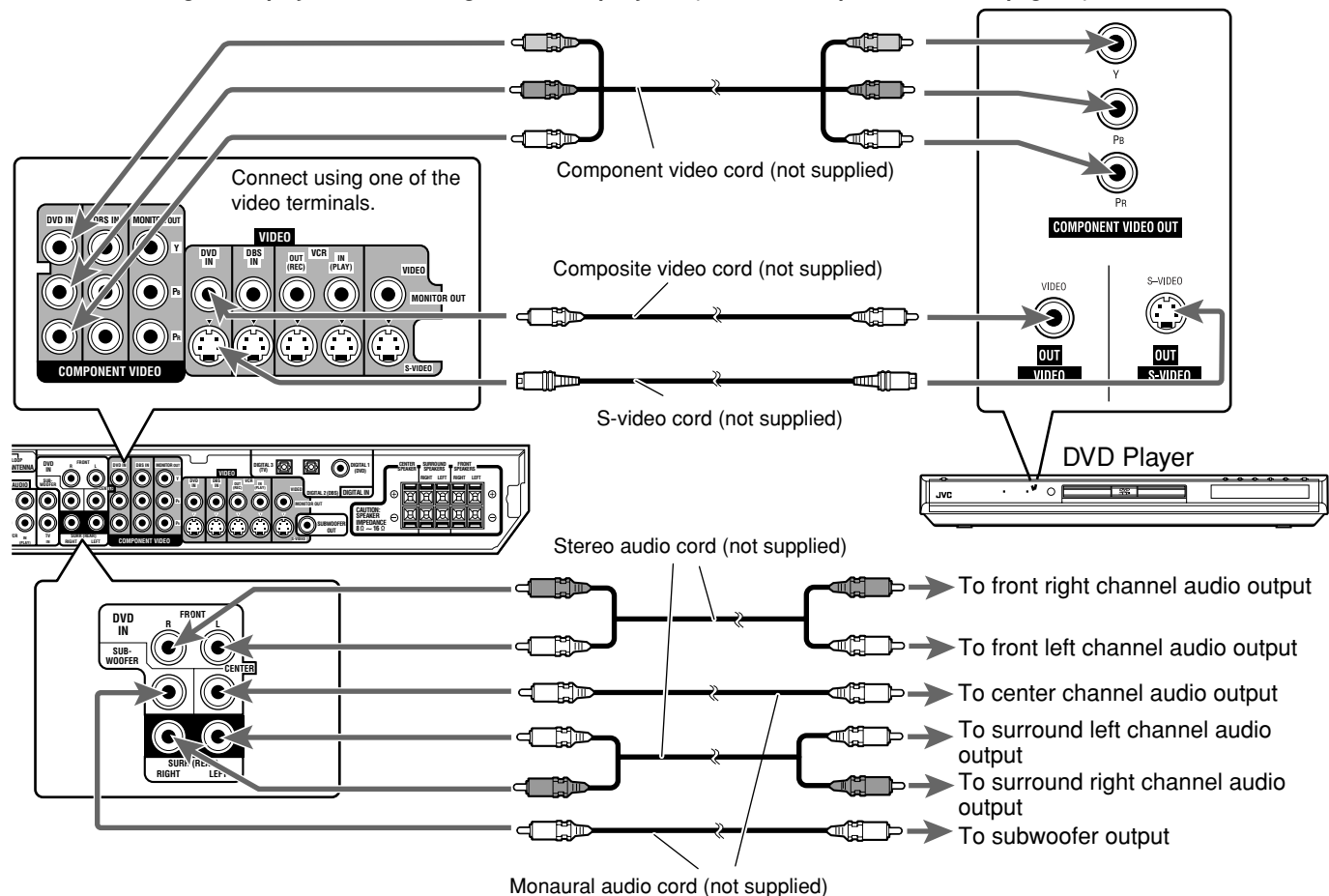
- When connecting a DVD player with stereo output jacks:



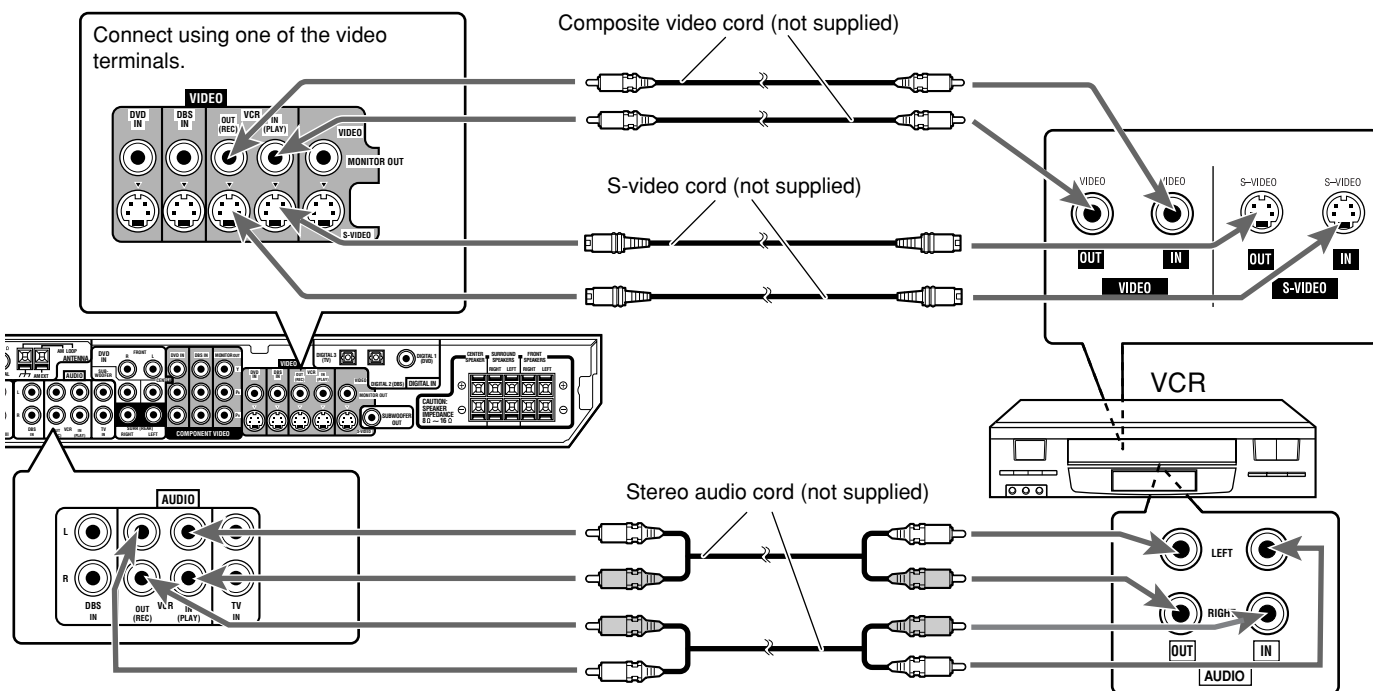
CONTINUED ON THE NEXT PAGE

Getting started

- When connecting a DVD player with its analog discrete output jacks (5.1-channel reproduction—see page 31):

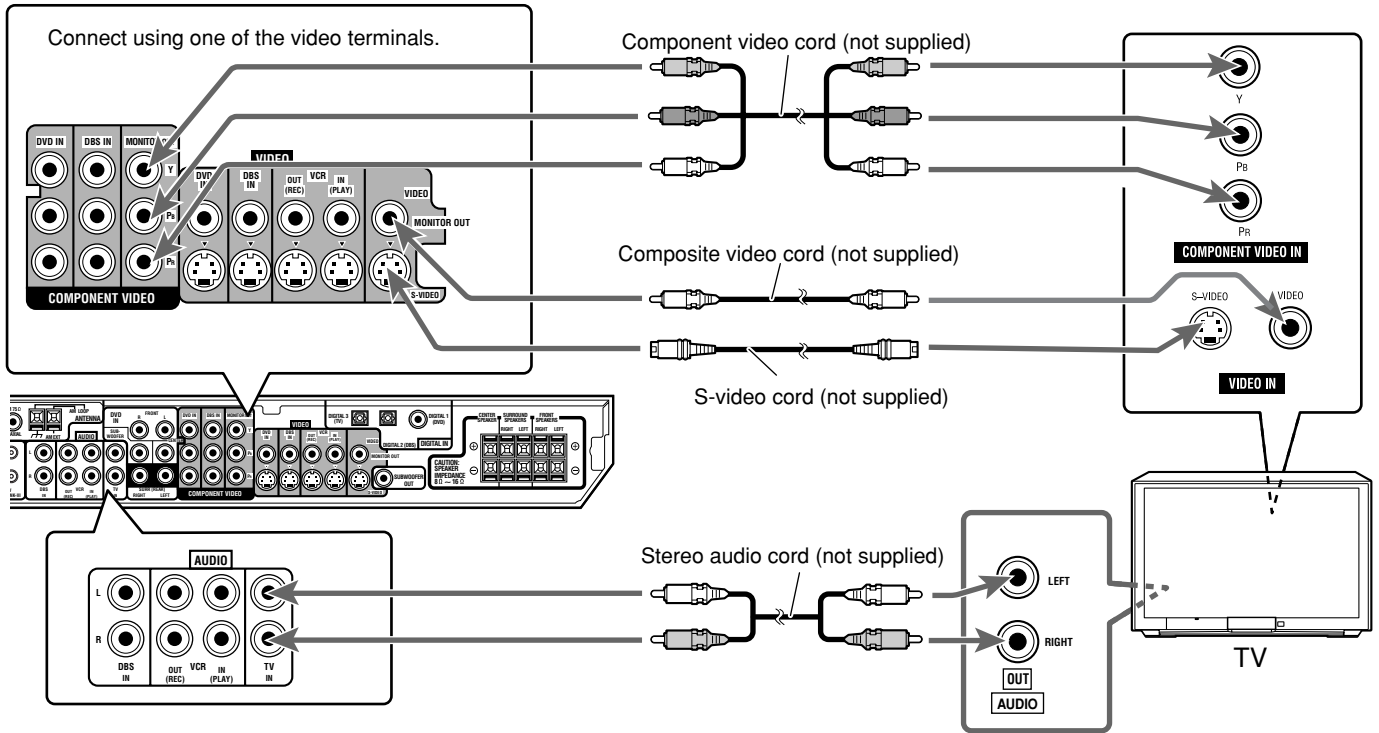


VCR connection

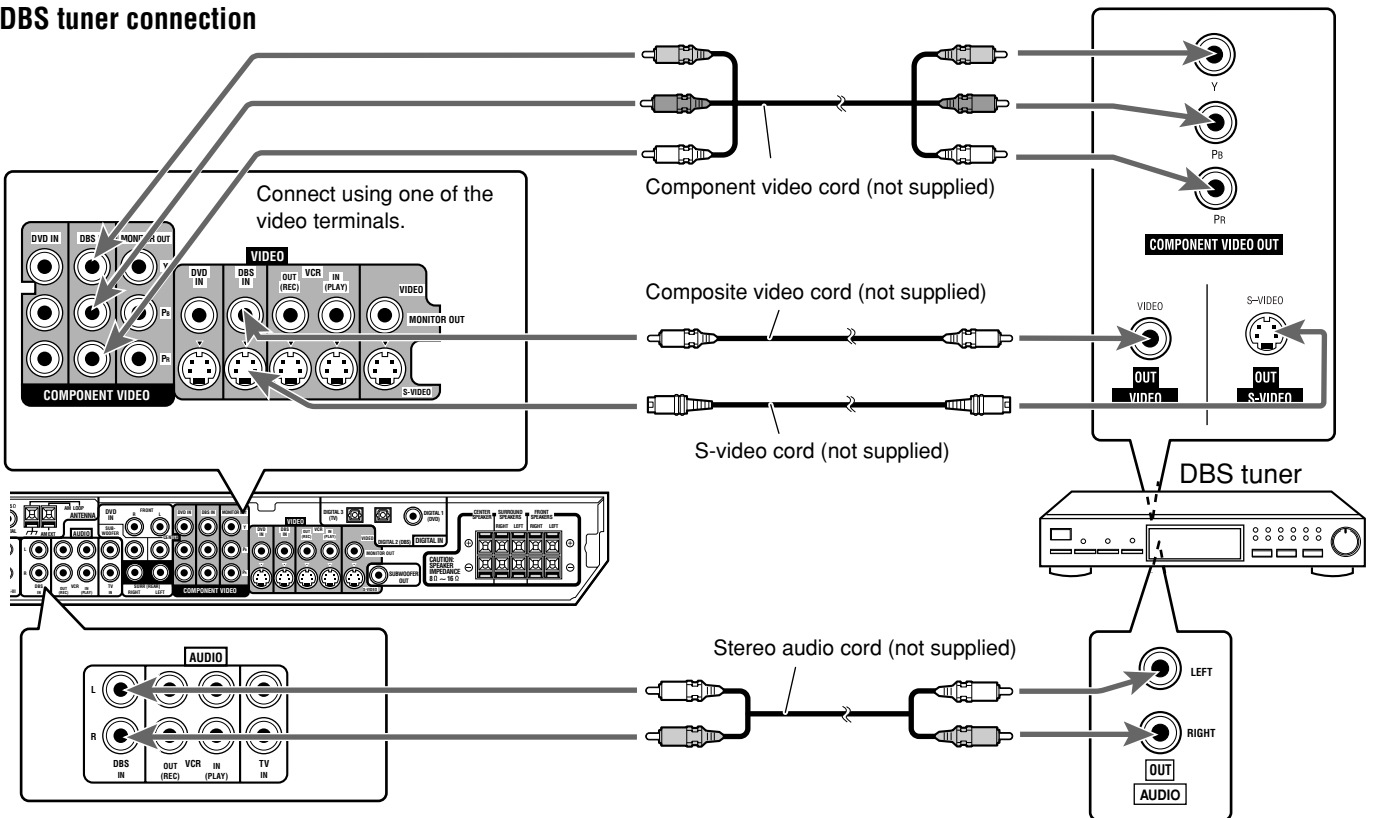


TV connection

DO NOT use a TV through a VCR or a TV with a built-in VCR; Otherwise, the picture may be distorted.



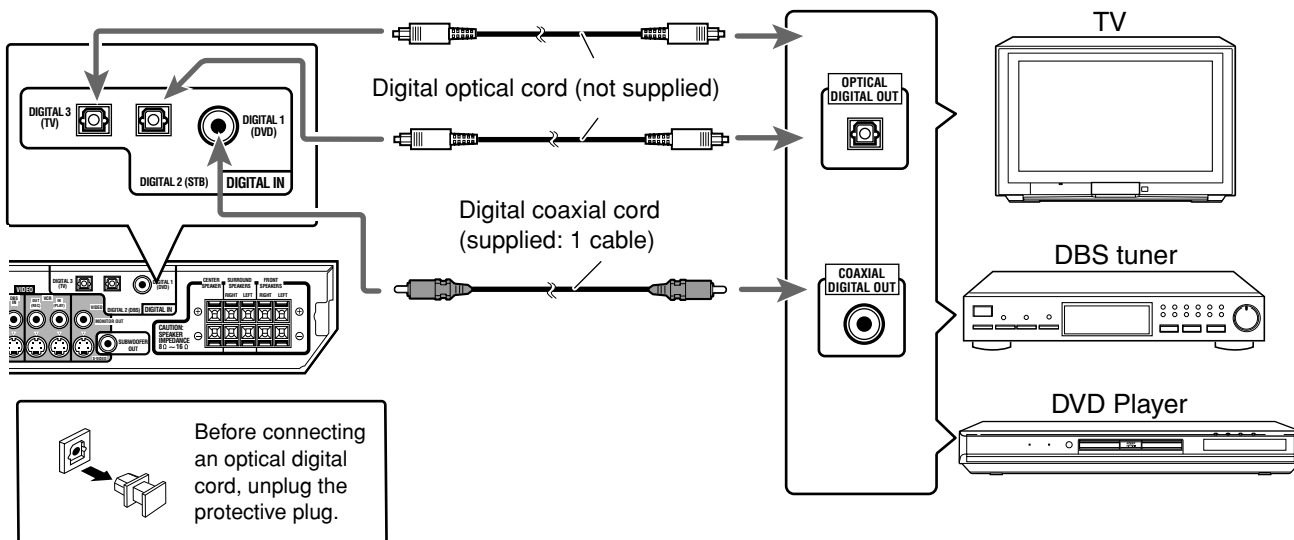
DBS tuner connection



CONTINUED ON THE NEXT PAGE

Getting started

Digital connection



NOTES

- When shipped from the factory, the DIGITAL IN terminals have been set for use with the following components:
 - DIGITAL 1 (coaxial): For DVD player
 - DIGITAL 2 (optical): For DBS tuner
 - DIGITAL 3 (optical): For TV tuner
 If you connect other components, change the digital input (DIGITAL IN) terminal setting correctly. See "Setting the digital input (DIGITAL IN) terminals—DIGITAL IN" on page 19.
- Select the correct digital input mode. See "Selecting the analog or digital input mode" on page 11.

Connecting the power cord

Before plugging the power cord into an AC outlet, make sure that all connections have been made.

Plug the power cord into an AC outlet.

Keep the power cord away from the connecting cables and the antenna. The power cord may cause noise or screen interference. We recommend that you use a coaxial cable to connect the antenna, since it is well-shielded against interference.

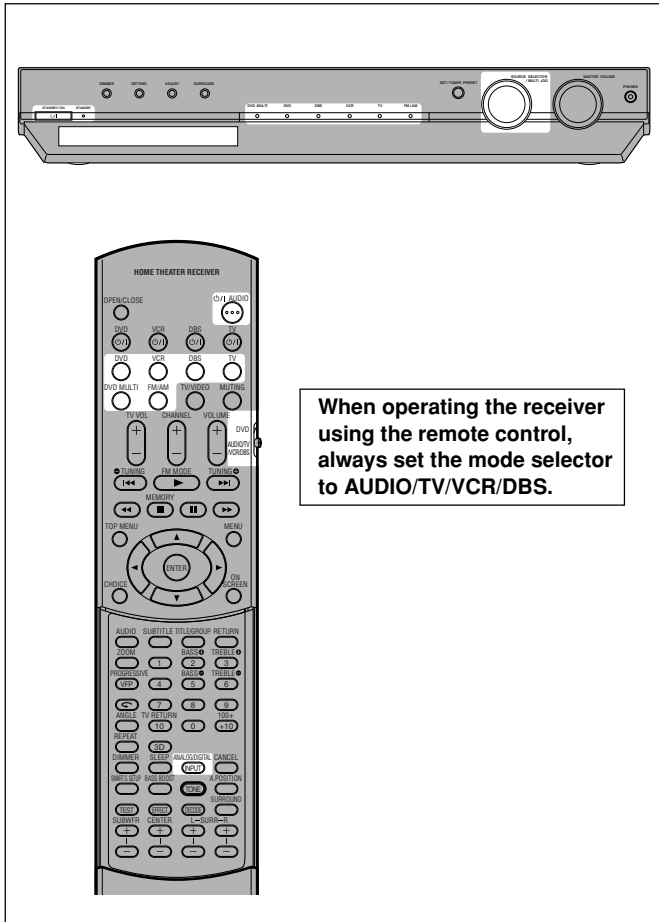
NOTE

The preset settings such as preset channels and sound adjustment may be erased in a few days in the following cases:

- When you unplug the power cord.
- When a power failure occurs.

CAUTIONS:

- Do not touch the power cord with wet hands.
- Do not pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.



When operating the receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.

2 Select the source to play

On the front panel:

Turn **SOURCE SELECTOR** until the source name you want appears on the display.

The source indicator corresponding to the selected source lights in red.

- As you turn **SOURCE SELECTOR**, the source changes as follow:



DVD MULTI ↔ DVD (DVD DIGITAL) ↔ DBS (DBS DIGITAL) ↔ VCR ↔ TV (TV DIGITAL) ↔ FM ↔ AM ↔ (Back to the beginning)

From the remote control:

Press one of the source selecting buttons.

- Each time you press FM/AM, FM and AM changes alternately.

DVD MULTI: Select the DVD player using the analog discrete output mode (5.1 channel reproduction). To enjoy the DVD MULTI playback, see page 31.

DVD (DIGITAL)*: Select the DVD player.

DBS (DIGITAL)*: Select the DBS tuner.

VCR: Select the VCR.

TV (DIGITAL)*: Select the TV tuner.

FM: Select an FM broadcast.

AM: Select an AM broadcast.

1 Turn on the power

Press **STANDBY/ON** (or **AUDIO** on the remote control).

The **STANDBY** lamp goes off. The current source indicator lights in red. The name of the current source (or station frequency) appears on the display.

Current volume level is shown here.



Current source name appears.

To turn off the power (into standby)

Press **STANDBY/ON** again (or **AUDIO** on the remote control). The **STANDBY** lamp lights up.

NOTE

A small amount of power is consumed in standby mode. To turn the power off completely, unplug the AC power cord.

* Selecting the analog or digital input mode

When you have connected the DVD player, DBS tuner, or TV tuner using both the analog connection and the digital connection methods (see pages 7 to 10), you need to select the correct input mode.

- You can select the digital input only for sources which you have selected digital input terminals for. (See "Setting the digital input (DIGITAL IN) terminals—DIGITAL IN" on page 19.)

From the remote control ONLY:

Press **ANALOG/DIGITAL INPUT** to select the analog or digital input mode.

- Each time you press the button, the input mode alternates between the analog input ("ANALOG") and the digital input ("DGTL AUTO").

DGTL AUTO: Select for the digital input mode. The receiver automatically detects the incoming signal format, then the digital signal format indicator (DOLBY D, DTS or LPCM) for the detected signals lights up.

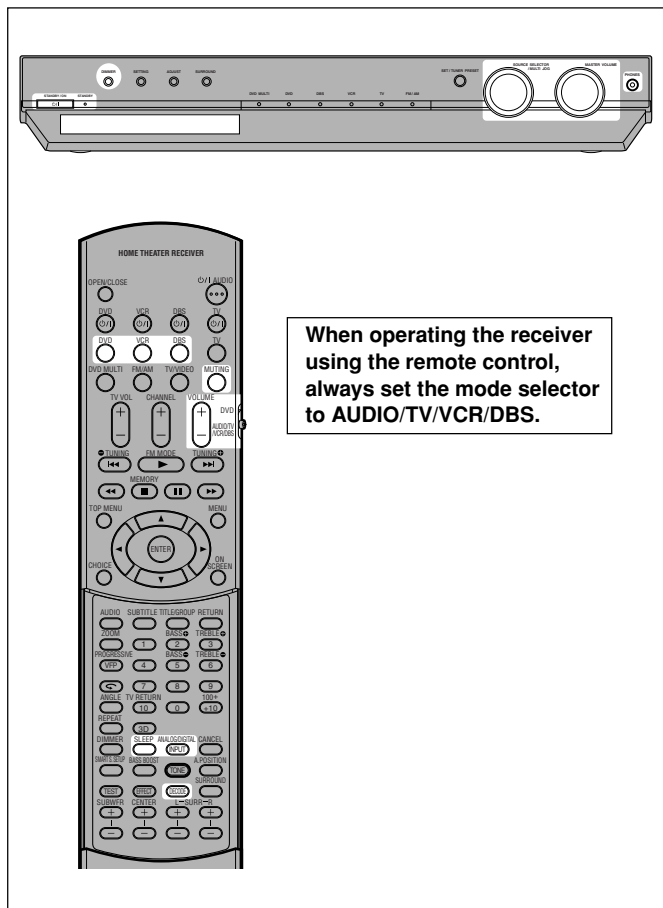
ANALOG*: Select for the analog input mode.

* Initial setting

NOTE

You cannot select the digital input mode when selecting "DVD MULTI" as the playing source.

Basic operations



When operating the receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.

3 Adjust the volume

To increase the volume, turn **MASTER VOLUME** control clockwise (or press **VOLUME +** on the remote control).

To decrease the volume, turn **MASTER VOLUME** control counterclockwise (or press **VOLUME -** on the remote control).

CAUTION:

Always set the volume to the minimum before starting any sources. If the volume is set at its high level, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

NOTE

The volume level can be adjusted within the range of "0" (minimum) to "50" (maximum).

Listening with headphones

Connect a pair of headphones to the PHONES jack on the front panel. This cancels the Surround mode currently selected, deactivates speakers, and activates the HEADPHONE mode. The HP (headphone) indicator lights up on the display.

- Disconnecting a pair of headphone from the PHONES jack cancels the HEADPHONE mode and activates the speakers.

HEADPHONE mode

When using the headphones, the following signal is output regardless of your speaker setting:

- For 2 channel sources, the front left and right channel signal is output directly from the left and right headphones.
- For multi-channel sources, the front left and right, center and surround channel signal is down-mixed and then output from the headphones without missing bass element. You can enjoy multi-channel sound source using the headphones.

CAUTION:

Be sure to turn down the volume:

- Before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.
- Before removing headphones, as high volume may output from the speakers.

Selecting the digital decode mode

If the following symptoms occur while playing Dolby Digital or DTS Digital Surround software with "DGTL AUTO" selected (see page 11), follow the procedure below:

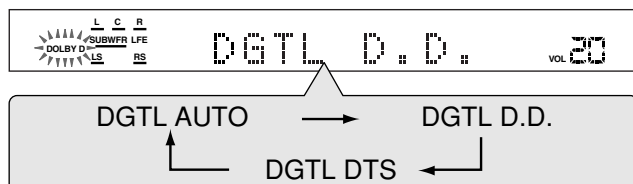
- Sound does not come out at the beginning of playback.
- Noise comes out while searching for or skipping chapters or tracks.

From the remote control **ONLY**:

1 Press **ANALOG/DIGITAL INPUT** to select "DGTL AUTO."

2 Press **DECODE** to select "DGTL D.D." or "DGTL DTS."

- Each time you press the button, the digital input mode changes as follows:



- To play back software encoded with Dolby Digital, select "DGTL D.D."
- To play back software encoded with DTS Digital Surround, select "DGTL DTS."

NOTE

When you turn off the power or select another source, "DGTL DTS" or "DGTL D.D." is canceled and the digital input mode is automatically reset to "DGTL AUTO."

The following are the analog/digital signal format indicators on the display to indicate what type of signal comes into the receiver.

- ANALOG:** Lights when analog input is selected.
- LPCM:** Lights when Linear PCM signal comes in.
- DOLBY D:**
- Lights when Dolby Digital signal comes in.
 - Flashes when “DGTL D.D.” is selected for software not encoded with Dolby Digital.
- DTS:**
- Lights when DTS signal comes in.
 - Flashes when “DGTL DTS” is selected for software not encoded with DTS.

NOTE

When “DGTL AUTO” cannot recognize the incoming signal, no digital signal format indicator lights up on the display.

Turning off the sounds temporarily—Muting

From the remote control ONLY:

Press MUTING to turn off the sound through all connected speakers.

“MUTING” appears on the display and the volume turns off (the volume level indicator goes off).



To restore the sound, press MUTING again.

- Pressing VOLUME +/- (or turning MASTER VOLUME control on the front panel) also restores the sound.

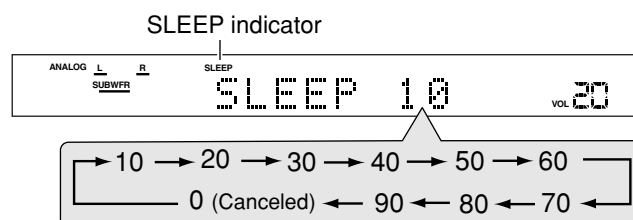
Turning off the power with the Sleep Timer

You can fall asleep while listening to music—Sleep Timer.

From the remote control ONLY:

Press SLEEP repeatedly.

The SLEEP indicator lights up on the display, and the shut-off time changes in 10 minutes intervals.



When the shut-off time comes:

The receiver turns off automatically.

To check or change the remaining time until the shut-off time:

Press SLEEP once.

The remaining time (in minutes) until the shut-off time appears.

- To change the shut-off time, press SLEEP repeatedly.

To cancel the Sleep Timer:

Press SLEEP repeatedly until “SLEEP 0” appears on the display. (The SLEEP indicator goes off.)

- Turning off the power also cancels the Sleep Timer.

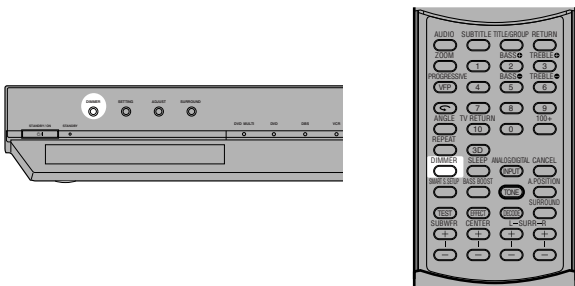
Basic operations

Changing the display brightness

You can dim the display.

Press DIMMER repeatedly.

- Each time you press the button, the indication changes as follow:



- DIMMER 1: • Dims the display slightly.
• Dims the blue indication lighting source lamps.
- DIMMER 2: • Dims the display more than DIMMER 1.
• Dims the blue indication lighting source lamps (same as DIMMER 1).
- DIMMER 3: Turns off the display and the blue indication lighting source lamps.
- DIMMER OFF: Cancels the dim (normal display).

NOTES

- When setting speakers and basic items or adjusting sound, select "DIMMER OFF" to confirm the setting you make on the display.
- When selecting DVD or DVD MULTI as a source using the remote control, DIMMER does not function. To dim the display and indication on the receiver, select a source except DVD or DVD MULTI on the remote control, and then press DIMMER.

Basic adjustment of auto memory

This receiver memorizes sound settings for each source:

- when you turn off the power,
- when you change the source, and
- when you change the analog/digital input mode (see page 11).

When you change the source, the memorized settings for the newly selected source are automatically recalled.

The following can be stored for each source:

- Analog/digital input mode (see page 11)
- Tone adjustment (see page 21)
- Subwoofer output level (see page 21)
- Bass boost (see page 22)
- Input attenuator mode (see page 22)
- Balance (see page 22)
- Subwoofer audio position (see page 22)
- Surround/DSP mode selection (see pages 25 – 30)

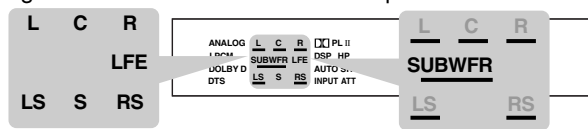
NOTES

- If the source is FM or AM, you can assign a different setting for each band.
- You cannot assign and store different settings for digital input mode and analog input mode.

Signal and speaker indicators on the display

Signal indicators

Speaker indicators



The following signal indicators light up —:

- L: • **When digital input is selected:** Lights up when the left channel signal comes in.
• **When analog input is selected:** Always lights up.
- R: • **When digital input is selected:** Lights up when the right channel signal comes in.
• **When analog input is selected:** Always lights up.
- C: Lights up when the center channel signal comes in.
- LS: Lights up when the left surround channel signal comes in.
- RS: Lights up when the right surround channel signal comes in.
- S: Lights up when the monaural surround channel signal comes in.
- LFE: Lights up when the LFE channel signal comes in.

The speaker indicators light up as follows:

- The subwoofer indicator (**SUBWFR**) lights up when "SUBWFR" is set to "USE" for Quick Setup (see page 16) or to "YES" for Manual Setup (see page 17).
- The other speaker indicators light up only when the corresponding speaker is set to "SML" or "LRG," and also when required for the current playback.

Speaker settings

To obtain the best possible surround effect from Surround/DSP modes (see pages 25 to 30), you need to set up the speaker and subwoofer information after all the connections are completed. You can set the speaker information using one of the following three methods.

- Smart Surround Setup:** Set the speakers information automatically by one simple action—clapping hands. The delay time and output level for the center and surround speakers are set automatically.
- Quick Setup:** Set the speakers and subwoofer information quickly by entering the use of the subwoofer, the number of the speakers, and your room size.
- Manual Setup:** Set the speakers and subwoofer information manually.

- Before starting the speaker setting, connect and position the speakers and subwoofer (see page 6) and turn on the receiver.

Setting the speakers information automatically—Smart Surround Setup

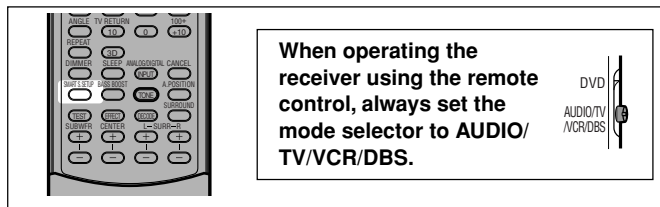
The distance from your listening point to the speakers is one of the important elements to obtain the best possible sound effect for the Surround/DSP modes.

You need to set the delay time of the center and surround speakers relative to the front speakers so that sounds through all the speakers can reach you at the same time (see also page 18).

By using Smart Surround Setup, the speaker delay time and output level are automatically calculated by one simple action—clapping hands.

- To set the speaker information effectively using Smart Surround Setup, unplug the power cords of all the components connected to this receiver such as a TV, DVD player, DBS tuner, and VCR which may cause noise.
- To use Smart Surround Setup effectively, connect both the center and surround speakers.
- You can also set the crossover frequency, the low frequency effect attenuator and the dynamic range compression manually (see page 18).
- When you change your speakers, do the following steps again.

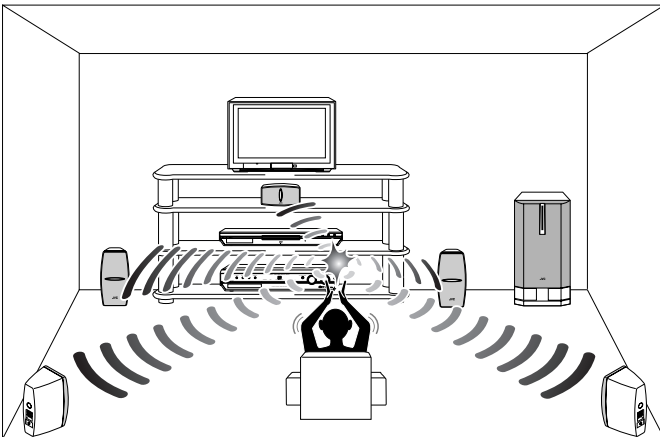
From the remote control ONLY:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step **2** again.

1 Take your position where you listen to the sound.



2 Press and hold SMART S. SETUP.

“SETTING UP” flashes on the display.



3 Confirm “SETTING UP” stops flashing and clap your hands over your head once while “SETTING UP” appears on the display.

The receiver starts detecting the level of the sound coming through all speakers (except the subwoofer).

After detecting the sound, one of the following indications appears on the display.

- SUCCESSFUL:** Sound of your clapping is successfully detected. The receiver sets the delay time and the output level of the center and surround speakers automatically.
- SILENT:** The receiver cannot detect sound from some speakers.
- SILENT-ALL:** The receiver cannot detect any sound from all speakers.
- FAILED:** The receiver cannot detect both right and left channels for the front and/or surround speakers correctly.

- When the receiver cannot detect the sound correctly (“SILENT,” “SILENT-ALL” or “FAILED” appears on the display), “SETTING UP” appears on the display again then repeat step **3**.
- The speaker delay time and output levels are set automatically when:
 - the receiver detects the sound as “SILENT” twice in succession.
 - the receiver detects the sound as “SILENT” at the third time after detecting “SILENT,” “SILENT-ALL” and/or “FAILED” twice.
- When the receiver detects the sound as “SILENT-ALL” or “FAILED” three times, “MANUAL” appears on the display. Set the speaker and subwoofer information using Quick Setup (see page 16) or Manual Setup (see page 17), and the speakers’ output levels for the center and surround speakers (see pages 28 to 30).

To cancel Smart Surround Setup, press SMART S. SETUP while “SETTING UP” flashes on the display.

- Any other operations cannot be done after “SETTING UP” stops flashing. Complete the Smart Surround Setup.

NOTES

- You need to set the subwoofer information and output level manually (see pages 17 and 21).
- When you use Smart Surround Setup, the speaker delay time and output levels you have set before will be ineffective.
- Set the speakers information using Quick Setup (see page 16) or Manual Setup (see page 17), and the speakers’ output levels for the center and surround speakers (see pages 28 to 30) when:
 - you like to change the speaker setting made by Smart Surround Setup
 - Smart Surround Setup is not done correctly due to some factors such as the environment, speaker types and clapping strength.
- Smart Surround Setup will not be done correctly if your body or other object blocks the sound.
- Do not clap your hands hard because it may hurt your hands.

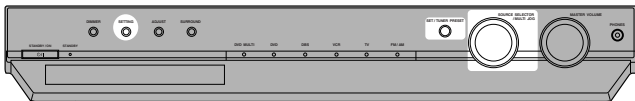
CONTINUED ON THE NEXT PAGE

Speaker settings

Setting the speakers and subwoofer information quickly—Quick Setup

Entering the use of the subwoofer, the number of the speakers, and your room size, the center and surround speakers' delay time is automatically calculated.

- When you change your speakers, register the information about the speakers again.
- You can also set the crossover frequency, the low frequency effect attenuator and the dynamic range compression manually (see page 18).



On the front panel ONLY:

Before you start, remember...

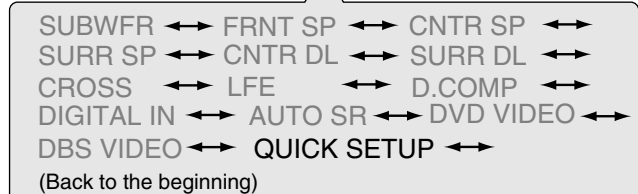
There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

1 Press SETTING.

MULTI JOG now works for the setting operation.

2 Turn MULTI JOG until "QUICK SETUP" appears on the display.

- As you turn MULTI JOG, the indication changes as follow:



3 Press SET.

"ENTER THE NUMBER OF SPEAKERS" scrolls on the display.

- Once you have selected "QUICK SETUP," previously adjusted speaker setting is cleared.

4 Turn MULTI JOG to select the number of the speakers you have connected.

- As you turn MULTI JOG, the indication changes as follow:



- | | |
|---------------------|--|
| 5 SPEAKERS*: | Select when the front, center and surround speakers are connected. |
| 4 SPEAKERS: | Select when the front and surround speakers are connected. |
| 3 SPEAKERS: | Select when the front and center speakers are connected. |

* Initial setting

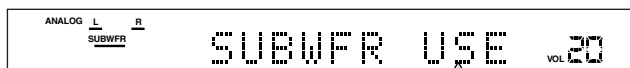
Each speaker size is registered appropriately according to the number of the connected speakers. For details, see the list "Speaker size according to the number of speakers" on the right.

5 Press SET.

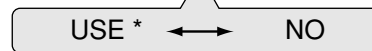
"ENTER USE OF SUBWOOFER" scrolls on the display.

6 Turn MULTI JOG to select whether or not you have connected a subwoofer.

- As you turn MULTI JOG, the indication changes as follow:



* Initial setting



7 Press SET.

"ENTER ROOM SIZE" scrolls on the display.

8 Turn MULTI JOG to select the room size.

- As you turn MULTI JOG, the indication changes as follow:



* Initial setting

The center and surround speakers' delay time is registered appropriately according to the room size. For details, see the list "Speaker delay time according to room size" below.

9 Press SET to finish the setting.

"SETUP END" appears for a while, then the indication of the previously selected source appears on the display.

NOTES

- The setting you have made is not registered until "SETUP END" appears on the display.
- Performing any operation other than volume and dimmer adjustment cancels Quick Setup process.
- When you want to change the speaker and subwoofer information after Quick Setup, use Manual Setup (see page 17).

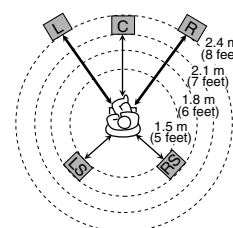
Speaker size according to the number of speakers

Number of speakers	Subwoofer	Front	Center	Surround
3	NO	LRG (large)	SML (small)	NO
3	USE (YES)	SML (small)	SML (small)	NO
4	NO	LRG (large)	NO	SML (small)
4	USE (YES)	SML (small)	NO	SML (small)
5	NO	LRG (large)	SML (small)	SML (small)
5	USE (YES)	SML (small)	SML (small)	SML (small)

Speaker delay time according to room size

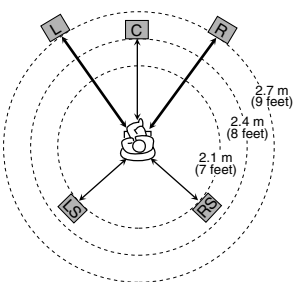
When selecting "SMALL ROOM,"

- Center speaker delay time is set to 1 msec.
- Surround speakers delay time is set to 3 msec.



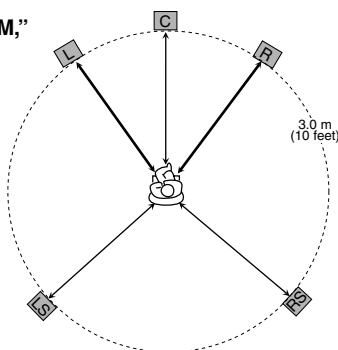
When selecting "MEDIUM ROOM,"

- Center speaker delay time is set to 1 msec.
- Surround speakers delay time is set to 2 msec.



When selecting "LARGE ROOM,"

- Center speaker delay time is set to 0 msec.
- Surround speakers delay time is set to 0 msec.



Setting the speakers and subwoofer information manually—Manual Setup

You can set the following speakers and subwoofer information manually as you prefer. When you change your speakers, register the information again.

- Subwoofer information—SUBWFR
- Speaker size—FRNT SP, CNTR SP, SURR SP
- Speaker delay time—CNTR DL, SURR DL
- Crossover frequency—CROSS
- Low frequency effect attenuator—LFE
- Dynamic range compression—D.COMP

Operating procedure



On the front panel ONLY:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

1 Press SETTING.

MULTI JOG now works for the setting operation.

2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

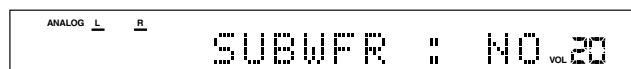
- As you turn MULTI JOG, the indication changes as follow:



SUBWFR ↔ FRNT SP ↔ CNTR SP ↔
 SURR SP ↔ CNTR DL ↔ SURR DL ↔
 CROSS ↔ LFE ↔ D.COMP ↔
 DIGITAL IN ↔ AUTO SR ↔ DVD VIDEO ↔
 DBS VIDEO ↔ QUICK SETUP ↔
 (Back to the beginning)

3 Turn MULTI JOG to select the appropriate setting for the item selected in step 2, then press SET.

Your setting is stored.



EX.: When selecting "NO" for "SUBWFR."

4 If you would like to set other items, repeat steps 2 and 3.

Setting the subwoofer information —SUBWFR (subwoofer)

Register whether you have connected a subwoofer or not.

- YES*:** Select when you have connected a subwoofer. The subwoofer speaker indicator (**SUBWFR**) lights up on the display (see page 14). You can adjust the subwoofer output level (see page 21).
- NO:** Select when you have not connected or have disconnected a subwoofer.

* Initial setting

Setting the speakers size — FRNT SP (front speakers), CNTR SP (center speaker), SURR SP (surround speakers)

Register the sizes of all the connected speakers.

- LRG (large):** Select when the cone speaker size is larger than 12 cm (4 3/4 inches).
- SML (small)*:** Select when the cone speaker size is smaller than 12 cm (4 3/4 inches).
- NO:** Select when you have not connected a speaker. (Not selectable for the front speakers.)

* Initial setting

NOTES

- If you have selected "SML (small)" for the front speaker size, you cannot select "LRG (large)" for the center and surround speaker sizes.
- If you have selected "NO" for the subwoofer setting (see above and page 16), you can only select "LRG (large)" for the front speaker size.

Speaker settings

Setting the speaker delay time

— CNTR DL (center speaker delay), SURR DL (surround speakers delay)

You can set the speaker delay time easily by using Smart Surround Setup (see page 15) or Quick Setup (see page 16).

The distance from your listening point to the speakers is one of the important elements to obtain the best possible surround sound for the Surround modes.

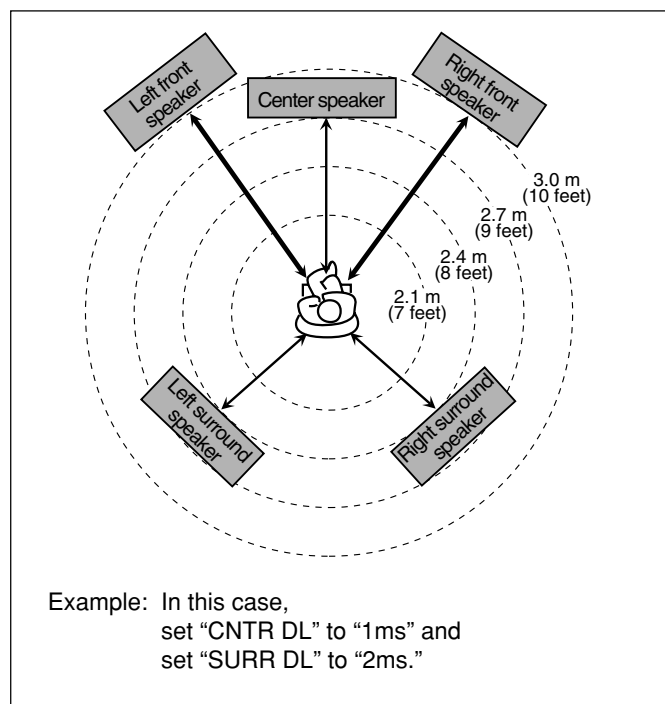
You need to set the delay time of the center and surround speakers relative to the front speakers so that sounds through all the speakers can reach you at the same time.

- 1 msec increase (or decrease) in delay time corresponds to 30 cm (1 foot) increase (or decrease) in distance.

CNTR DL*: Set the delay time for the center speaker within a range of 0 msec to 5 msec (in 1 msec intervals).

SURR DL*: Set the delay time for the surround speakers within a range of 0 msec to 15 msec (in 1 msec intervals).

* "0ms" is the initial setting.



NOTE

If the center and/or surround speakers are not connected (see pages 16 and 17), you cannot set the speaker delay time for the center and/or surround speakers.

Setting the crossover frequency—CROSS

Small speakers cannot reproduce the bass sounds efficiently. If you use a small speaker in any position, this receiver automatically reallocates the bass sound elements assigned to the small speaker to the large speakers.

To use this function properly, set this crossover frequency level according to the size of the small speaker connected.

- If you have selected "LRG (large)" for all speakers (see page 17), this function will not take effect.

80HZ: Select when the cone speaker unit built in the speaker is about 12 cm (4 3/4 inches).

100HZ: Select when the cone speaker unit built in the speaker is about 10 cm (3 15/16 inches).

120HZ: Select when the cone speaker unit built in the speaker is about 8 cm (3 3/16 inches).

150HZ*: Select when the cone speaker unit built in the speaker is about 6 cm (2 3/8 inches).

200HZ: Select when the cone speaker unit built in the speaker is less than 5 cm (2 inches).

* Initial setting

NOTE

Crossover frequency is not valid for the HEADPHONE mode.

Setting the low frequency effect attenuator—LFE

If the bass sound is distorted while playing back software encoded with **Dolby Digital** or **DTS**, set the LFE level to eliminate distortion.

- This function takes effect only when the LFE signals come in.

0dB*: Normally select this.

-10dB: Select when the bass sound is distorted.

* Initial setting

Setting the dynamic range compression—D.COMP

You can compress the dynamic range (difference between maximum sound and minimum sound) of the reproduced sound. This is useful when listening to surround sound at night.

- This function takes effect only when playing back a source encoded with **Dolby Digital**.

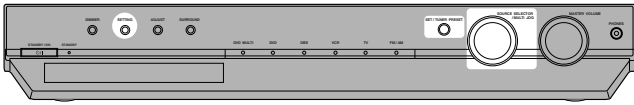
OFF: Select when you want to enjoy surround with its full dynamic range. (No effect applied.)

MID*: Select when you want to reduce the dynamic range a little.

MAX: Select when you want to apply the compression effect fully. (Useful at night.)

* Initial setting

Operating procedure



On the front panel ONLY:

Before you start, remember...

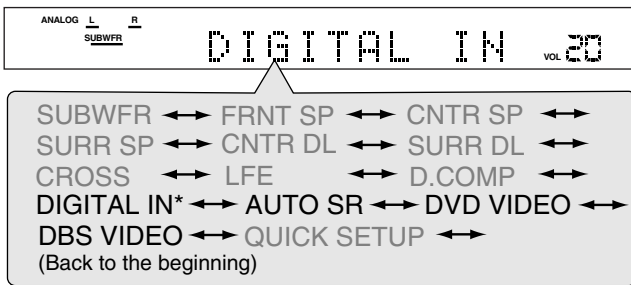
There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step **1** again.

1 Press SETTING.

MULTI JOG now works for the setting operation.

2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



* Setting item you can select appears on the display after "DIGITAL IN" appears for a few seconds.

3 Turn MULTI JOG to select the appropriate setting for the item selected in step 2, then press SET.

Your setting is stored.



Ex.: When selecting "1DVD2DBS3TV" for "DIGITAL IN".

Setting the digital input (DIGITAL IN) terminals—DIGITAL IN

When you use the digital input terminals, register what components are connected to which terminals—DIGITAL 1/2/3 (see page 10) so that the correct source name will appear when you select the digital source.

1DVD2DBS3TV* : Select when connecting the following components;
 DIGITAL 1: DVD player
 DIGITAL 2: DBS tuner
 DIGITAL 3: TV tuner

1DVD2TV3DBS : Select when connecting the following components;
 DIGITAL 1: DVD player
 DIGITAL 2: TV tuner
 DIGITAL 3: DBS tuner

1DBS2DVD3TV : Select when connecting the following components;
 DIGITAL 1: DBS tuner
 DIGITAL 2: DVD player
 DIGITAL 3: TV tuner

1DBS2TV3DVD : Select when connecting the following components;
 DIGITAL 1: DBS tuner
 DIGITAL 2: TV tuner
 DIGITAL 3: DVD player

1TV2DVD3DBS : Select when connecting the following components;
 DIGITAL 1: TV tuner
 DIGITAL 2: DVD player
 DIGITAL 3: DBS tuner

1TV2DBS3DVD : Select when connecting the following components;
 DIGITAL 1: TV tuner
 DIGITAL 2: DBS tuner
 DIGITAL 3: DVD player

* Initial setting

Basic settings

Setting Auto Surround—AUTO SR

You can enjoy Surround mode simply by selecting the source (with digital input selected for that source).

Select "ON" when activating Auto Surround.

- ON:**
- If multi-channel signal comes in, an appropriate Surround mode will be turned on.
 - If Dolby Digital 2 channel or DTS 2 channel signal including surround signal comes in, "PLII MOVIE" will be selected.
 - If Dolby Digital 2 channel or DTS 2 channel signal not including surround signal comes in, "STEREO" will be selected.
 - If Linear PCM signal comes in, nothing will change.

The AUTO SR indicator lights up on the display.

OFF*: Select this to deactivate Auto Surround.

* Initial setting

NOTES

- This function does not take effect in the following cases:
 - While playing an analog source, and
 - While selecting "DGTL D.D." or "DGTL DTS" as the fixed digital input mode (see page 12).
- If Surround mode is automatically activated by Auto Surround, any other Surround mode in use will be canceled temporarily. When the multi-channel digital signal stops coming in, "PLII MOVIE" activates.
- If you press SURROUND with Auto Surround activated, Auto Surround will be canceled temporarily for the currently selected source. Auto Surround setting will be restored in the following cases:
 - When you turn the receiver off and on,
 - When you change the source,
 - When you change the analog/digital input, and
 - When you reset "AUTO SR" to "ON" again.

Setting the video component input mode—DVD VIDEO/DBS VIDEO

When you use the component video inputs for the DVD player and/or DBS tuner, you have to register the type of input terminals.

Without setting this correctly, you cannot view the correct input on the TV.

S/C*: : Select when connecting the video component to the composite video or S-video input terminals.

COMP.: : Select when connecting the video component to the component video input terminals.

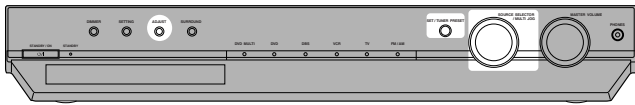
* Initial setting

Sound adjustments

When operating the receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Operating procedure



On the front panel:

Before you start, remember...

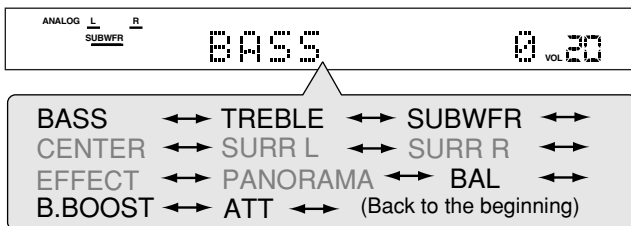
There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

1 Press ADJUST.

MULTI JOG now works for the sound adjustment.

2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



3 Turn MULTI JOG to adjust the item selected in step 2, then press SET.

Your setting is stored.



Ex.: When selecting "+10 (dB)" for "BASS".

Adjusting the tone—BASS, TREBLE

You can adjust the bass and treble sounds to your preference.

- You have to make these adjustments for each source.

BASS*: To adjust the bass (from -10 dB to +10 dB).

TREBLE*: To adjust the treble (from -10 dB to +10 dB).

* "0" is the initial setting.

When using the remote control:

1 Press TONE.

2 Press BASS +/– or TREBLE +/– to adjust the sound level (from -10 dB to +10 dB).



NOTE

When you use the 10 keys to operate your target source after tone adjustments, press the corresponding source selecting button first so that the 10 keys work for your target source.

Adjusting the subwoofer output level—SUBWFR

You can adjust the subwoofer output level if you have connected a subwoofer and set the subwoofer information correctly—"USE" for the Quick Setup or "YES" for the Manual Setup (see pages 16 and 17).

- You have to make this adjustment for each source.

SUBWFR*: To adjust the subwoofer output level (from -10 dB to +10 dB).

* "0" is the initial setting.

When using the remote control:

Press SUBWFR +/- to adjust the subwoofer output level (from -10 dB to +10 dB).



Sound adjustments

Setting the subwoofer audio position

When a stereo source is played back, the subwoofer sound is reinforced compared to the sound from a multi-channel source. Once you have set the subwoofer audio position, the subwoofer output level is decreased by the selected value when a stereo source is played back. The A (audio).POSITION indicator lights up when this function is activated.

- You have to make this adjustment for each source.

From the remote control ONLY:

Press **A.POSITION** repeatedly to select the subwoofer audio position level from “-2 (dB),” “-4 (dB),” and “-6 (dB).”

The smaller the number becomes, the more the level decreases automatically when listening in stereo.

- If no adjustment is required, select “OFF” (initial setting).



NOTES

- The maximum subwoofer output level is -10 dB.
Ex.:
When setting the subwoofer output level to “-8 (dB)” and the subwoofer audio position to “-4 (dB),” the subwoofer output level when listening in stereo will be -10 dB.
- This function does not take effect when activating a Surround mode.

Adjusting the front speakers output balance—BAL

If the sounds you hear from the front right and left speakers are unequal, you can adjust the speakers output balance.

- You have to make this adjustment for each source.
- You cannot use the remote control for this setting.

BAL*: To adjust the front speakers balance.

- “CENTER” to “L-21”: Decrease the left channel output.
- “CENTER” to “R-21”: Decrease the right channel output.

* “CENTER” is the initial setting.

Reinforcing the bass—B.BOOST

You can boost the bass level—Bass Boost.

- You have to make these adjustments for each source.

ON: Select to boost the bass level (Bass Boost).
The BASS BOOST indicator lights up on the display.

OFF*: Select to deactivate Bass Boost.

* Initial setting

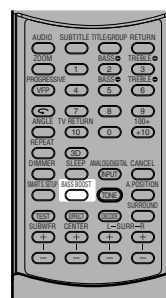
NOTE

This function affects the sound coming out only through the front speakers.

When using the remote control:

Press **BASS BOOST**.

- Each time you press the button, Bass Boost turns on and off alternately.



Attenuating the input signal—ATT

When the input level of **analog source** is too high, the sound will be distorted. If this happens, you need to attenuate the input signal level to prevent the sound distortion.

- You have to make this adjustment for each analog source.
- You cannot use the remote control for this setting.

ON: Select to attenuate the input signal level.
The INPUT ATT indicator lights up on the display.

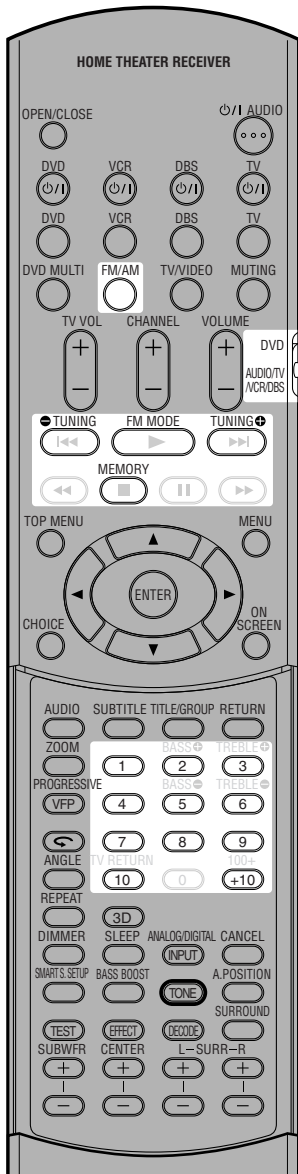
NORMAL*: Select to deactivate attenuation.

* Initial setting

Tuner operations

The buttons on the remote control are mainly used for tuner operations. **To use buttons on the remote control, press FM/AM before operation.**

When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Tuning in to stations manually

From the remote control ONLY:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in.

- Each time you press the button, the band alternates between FM and AM.



You can also select "FM" or "AM" by turning SOURCE SELECTOR on the front panel.

2 Press repeatedly or hold TUNING + or TUNING - until you find the frequency you want.

If you select "FM" or "AM" using SOURCE SELECTOR on the front panel, press FM/AM on the remote control before this operation.

- Pressing (or holding) TUNING + increases the frequency.
- Pressing (or holding) TUNING - decreases the frequency.

NOTES

- When you hold and release TUNING + or TUNING -, the frequency keeps changing until a station is tuned in.
- When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display.
- When an FM stereo program is received, the ST (Stereo) indicator also lights up.

Using preset tuning

Once a station is assigned to a channel number, the station can be quickly tuned. You can preset up to 30 FM and 15 AM stations.

To store the preset stations

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.

From the remote control ONLY:

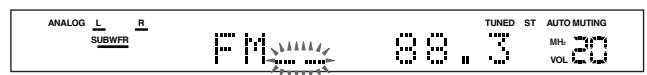
1 Tune in to the station you want to preset (see "Tuning in to stations manually" above).

- If you want to store the FM reception mode for this station, select the FM reception mode you want. See "Selecting the FM reception mode" on page 24.



2 Press MEMORY.

The channel number position starts flashing on the display for about 5 seconds.



Tuner operations

3 Press the numeric buttons (1 – 10, +10) to select a channel number while the channel number position is flashing.

- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.



4 Press MEMORY again while the selected channel number is flashing on the display.

- The station is assigned to the selected channel number.
- The selected channel number stops flashing.



5 Repeat steps 1 to 4 until you store all the stations you want.

To erase a stored preset station

Storing a new station on a used channel number erases the previously stored one.

To tune in a preset station

From the remote control:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in and the numeric buttons now work for tuner operations.

- Each time you press the button, the band alternates between FM and AM.



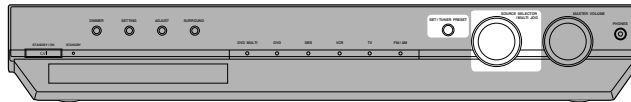
2 Press the numeric buttons (1 – 10, +10) to select a channel number.

If you select "FM" or "AM" using SOURCE SELECTOR on the front panel, press FM/AM on the remote control before this operation.

- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.



On the front panel:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.

1 Turn SOURCE SELECTOR to select "FM" or "AM."

The last received station of the selected band is tuned in.

2 Press TUNER PRESET.

"P" appears on the display and MULTI JOG now works for selecting preset channels.

3 Turn MULTI JOG to select a preset channel number during "P" appears on the display.

- Turning MULTI JOG clockwise increases the preset channel numbers.
- Turning MULTI JOG counterclockwise decreases the preset channel numbers.



Selecting the FM reception mode

When an FM stereo broadcast is hard to receive or noisy, you can change the FM reception mode while receiving an FM broadcast.

- You can store the FM reception mode for each preset station (see page 23).

From the remote control ONLY:

While listening to an FM station, press FM MODE.

If you select "FM" using SOURCE SELECTOR on the front panel, press FM/AM on the remote control before this operation.

- Each time you press the button, the FM reception mode alternates between "AUTO MUTING" and "MONO."

AUTO MUTING*:

Normally select this.

When a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sound. This mode is also useful to suppress static noise between stations. The AUTO MUTING indicator lights up on the display.

MONO:

Select this to improve the reception (but stereo effect will be lost).

In this mode, you will hear noise while tuning in to the stations. The AUTO MUTING indicator goes off from the display. (The ST indicator also goes off.)

* Initial setting

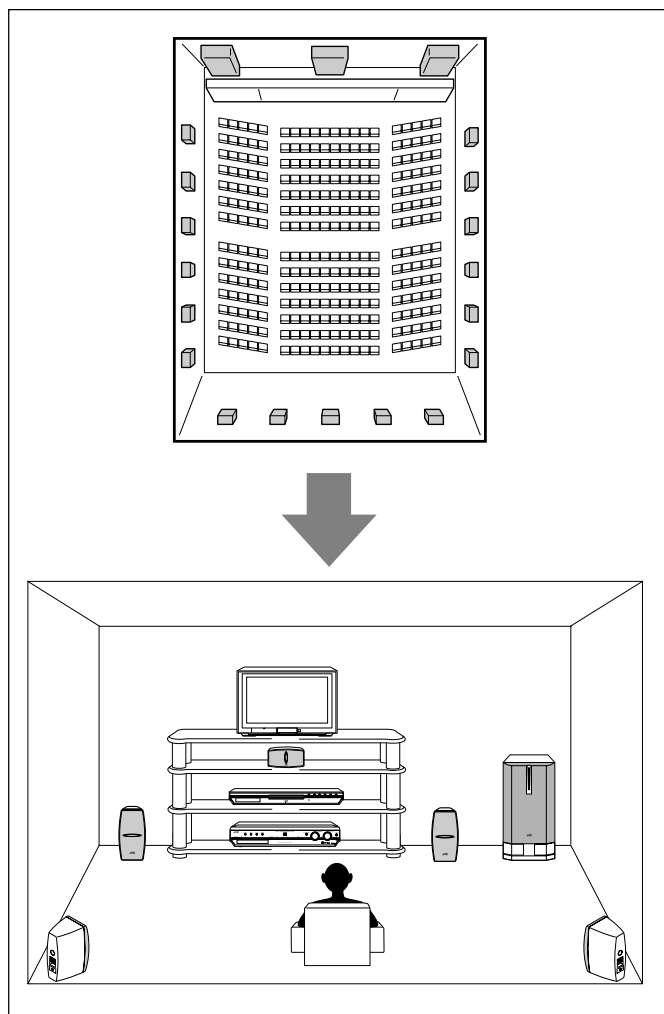
Creating realistic sound fields

Reproducing theater ambience

In a movie theater, many speakers are located on the walls to reproduce impressive multi-surround sound, reaching you from all directions.

With these many speakers, sound localization and sound movement can be expressed.

Surround/DSP modes built in this receiver can create almost the same surround sound as you can feel in a real movie theater.



Introducing the Surround/DSP modes

You can use the following Surround/DSP modes with this receiver.

- Surround modes
 - Dolby Pro Logic II
 - Dolby Digital
 - DTS
- DSP (Digital Signal Processor) modes
 - DAP (Digital Acoustic Processor) modes
 - All Channel Stereo

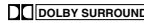
■ Surround modes

Dolby Pro Logic II*


Dolby Pro Logic II has a newly developed multi-channel playback format to decode all 2 channel sources—stereo source and Dolby Surround encoded source—into 5.1 channel.

Matrix-based encoding/decoding method for Dolby Pro Logic II makes no limitation for the cutoff frequency of the surround treble and enables stereo surround sound compared to conventional Dolby Pro Logic.

Dolby Pro Logic II enables you to reproduce spacious sound from original sound without adding any new sounds and tonal colorations. Dolby Pro Logic II has two modes—**Movie mode** and **Music mode**:

Pro Logic II Movie—suitable for reproduction of Dolby Surround encoded sources bearing the mark . You can enjoy a sound field very close to the one created with discrete 5.1 channel sounds.

Pro Logic II Music—suitable for reproduction of any 2-channel stereo music sources. You can enjoy wide and deep sound by using this mode. For this mode, Panorama control can be selected, which gives “wraparound” sound effect with side-wall image.

- When Dolby Pro Logic II is activated, the  PLII indicator lights up on the display.

Dolby Digital*

Dolby Digital is a digital signal compression method, developed by Dolby Laboratories, and enables multi-channel encoding and decoding (1 channel up to 5.1 channel).

Dolby Digital 5.1 channel encoding method records and digitally compresses the left front channel, right front channel, center channel, left surround channel, right surround channel, and LFE channel signals (total 6 channels, but the LFE channel is counted as 0.1 channel. Therefore, it is called 5.1 channel).

Dolby Digital enables stereo surround sounds, and sets the cutoff frequency of the surround treble at 20 kHz, compared to 7 kHz for Dolby Pro Logic. As such, the sound movement and “being-there” feeling are enhanced much more than Dolby Pro Logic.

- To enjoy software encoded with Dolby Digital, connect the source component using the digital terminal on the rear of this receiver. (See page 10.)

NOTE

Dolby Digital software can be roughly grouped into two categories—multi-channel (up to 5.1 channel) and 2 channel software. To enjoy surround sound while playing Dolby Digital 2 channel software, you can use Dolby Pro Logic II.

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

**“DTS” and “DTS Digital Surround” are registered trademarks of Digital Theater Systems, Inc.

Creating realistic sound fields

DTS**

DTS is another digital signal compression method, developed by Digital Theater Systems, Inc., and enables multi-channel encoding and decoding.

DTS Digital Surround is another discrete 5.1 channel digital audio format available on CD, LD, and DVD software.

Compared to Dolby Digital, the DTS Digital Surround format has a lower audio compression rate, which enables it to add breadth and depth to the sounds reproduced. As such, DTS Digital Surround features natural, solid and clear sound.

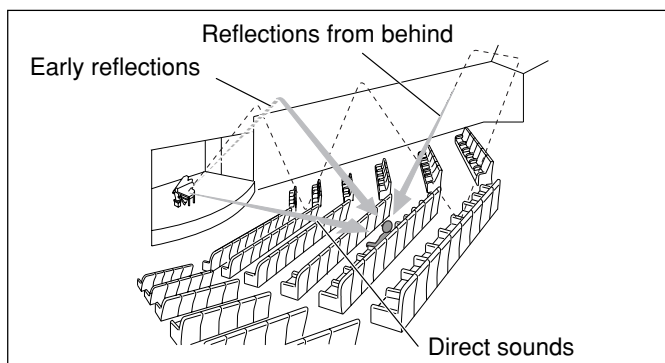
- To enjoy the software encoded with DTS Digital Surround, connect the source component using the digital terminal on the rear of this receiver. (See page 10.)

DSP (Digital Signal Processor) modes

DAP (Digital Acoustic Processor) modes

DAP modes have been designed to create important acoustic surround elements.

The sound heard in a live club, dance club, hall or pavilion consists of direct sound and indirect sound—early reflections and reflections from behind. Direct sounds reach the listener directly without any reflection. On the other hand, indirect sounds are delayed by the distances of the ceiling and walls (see the diagram below). These indirect sounds are important elements of the acoustic surround effects. The DAP mode can create these important elements, and give you a real “being there” feeling.



DAP modes can be used when the front and surround speakers are connected to this receiver (without respect to the center speaker connection: no sound comes out of the center speaker even if it is connected).

The following DAP modes are provided with this receiver:

LIVE CLUB:	Reproduces the spatial feeling of a live music club with a low ceiling.
DANCE CLUB:	Reproduces the spatial feeling of a rocking dance club.
HALL:	Reproduces the spatial feeling of a hall for classical recitals.
PAVILION:	Reproduces the spatial feeling of an exhibition hall.

These DAP modes can be used to add acoustic surround effects while reproducing 2 channel stereo software, either analog or Linear PCM digital signal, and can give you a real “being there” feeling.

- When one of the DAP modes is selected, the DSP indicator lights up on the display.

All Channel Stereo

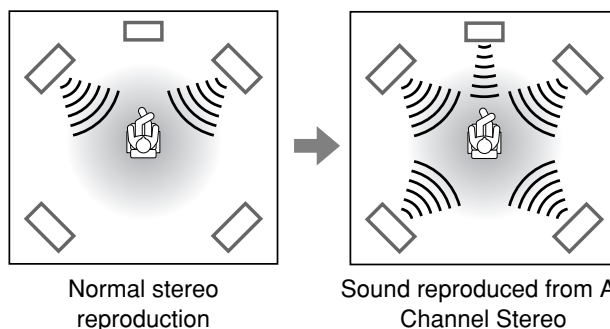
This mode can reproduce a larger stereo sound field using all the connected (and activated) speakers.

All Channel Stereo can be used when the front and surround speakers are connected to this receiver without respect to the center speaker connection.

- If the center speaker is connected and activated, the same phase of the front left and right signals are mixed and output through the center speaker.

All Channel Stereo can be used while reproducing 2 channel stereo software, either analog or Linear PCM digital signal.

- When All Channel Stereo is selected, the DSP indicator lights up on the display.



NOTE

MPEG Multichannel signals cannot be reproduced.

Available Surround/DSP modes for each input signal

○: Possible ×: Impossible

Mode Signals	STEREO	DOLBY DIGITAL	DTS SURROUND	PRO LOGIC II MOVIE	PRO LOGIC II MUSIC	LIVE CLUB	DANCE CLUB	HALL	PAVILION	ALL CH ST.
Dolby Digital (Multi-channel)	○	○	×	×	×	×	×	×	×	×
Dolby Digital (2-channel)	○	×	×	○	○	×	×	×	×	×
DTS Digital Surround (Multi-channel)	○	×	○	×	×	×	×	×	×	×
DTS Digital Surround (2-channel)	○	×	×	○	○	×	×	×	×	×
Linear PCM	○	×	×	○	○	○	○	○	○	○
Analog	○	×	×	○	○	○	○	○	○	○
DVD MULTI	×	×	×	×	×	×	×	×	×	×

About relations between speaker layout and Surround/DSP modes

Available Surround/DSP modes will vary depending on how many speakers are used with this receiver.

Make sure that you have set the speakers information correctly (see pages 15 to 18).

- If only front speakers are connected, you cannot use the Surround modes.
- If surround speakers are not connected, you cannot use DSP modes.

When multi-channel digital software such as Dolby Digital or DTS Digital Surround is played back, the appropriate multichannel Surround mode is automatically activated ("DOLBY D" or "DTS") by pressing SURROUND (with the digital input mode selected).

- For Dolby Digital 2 channel software, you can select "PLII MUSIC" or "PLII MOVIE" by pressing SURROUND.
- For more details, see "Available Surround/DSP modes for each input signal" on page 26.

When connecting 5 speakers and 4 speakers

Available Surround modes:
 PLII MOVIE (Pro Logic II MOVIE)
 PLII MUSIC (Pro Logic II MUSIC)

Available DSP modes:
 LIVE CLUB
 DANCE CLUB
 HALL
 PAVILION
 ALL CH ST. (All Channel Stereo)

When connecting 3 speakers

Available Surround modes:
 PLII MOVIE (Pro Logic II MOVIE)
 PLII MUSIC (Pro Logic II MUSIC)

NOTE

When "AUTO SR (Auto Surround)" is turned "ON" (see page 20), Surround mode is automatically activated when you select and start playing back a multi-channel digital source.

Using Surround modes

Once you have adjusted the Surround modes, the adjustment is memorized for each source.

- If you set the speaker information using Smart Surround Setup (see page 15), you do not have to adjust speaker output level.

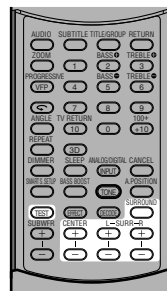
When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Before you start, remember...

Make sure that you have set the speaker information correctly (see pages 15 to 18).

From the remote control:



It will be convenient for you to use the remote control for the sound adjustments, since you can make adjustments from your listening point, and use the test signal.

- For selecting Panorama control for Pro Logic II Music, use the buttons on the front panel.

1 Select and play software you like.

If "AUTO SR (Auto Surround)" is set to "ON"

Playing a digital source automatically activates an appropriate Surround mode. (See page 20.) → **Go to step 3.**

2 Press SURROUND to select an appropriate Surround mode.

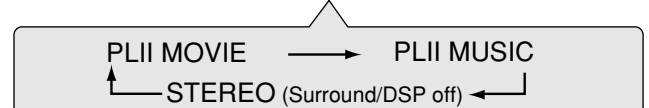
- Each time you press the button, the Surround/DSP modes change as follow:

When playing back multi-channel digital software such as Dolby Digital or DTS Digital Surround:



DOLBY D or DTS ↔ STEREO (Surround/DSP off)

When playing back 2 channel digital software such as Dolby Digital or DTS Digital Surround:



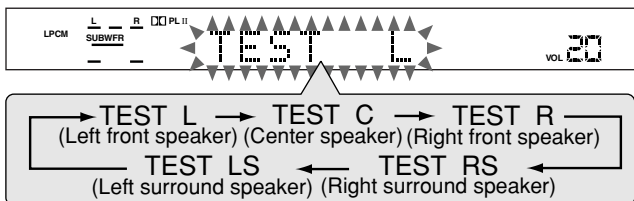
When playing back any software other than above:



Creating realistic sound fields

3 Press TEST to check the speakers output balance.

"TEST L" starts flashing on the display, and a test tone comes out of the speakers as follow:



4 Adjust the following speaker output levels (from -10 dB to +10 dB).

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.

To adjust the center speaker level,
 press CENTER +/-.

To adjust the left surround speaker level,
 press SURR L +/-.

To adjust the right surround speaker level,
 press SURR R +/-.



Ex.: When selecting "+8 (dB)" for "CENTER."

5 Press TEST again to stop the test tone.

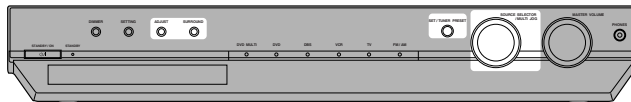
The currently selected source name appears on the display.

On the front panel:

- No test tone is available when using the buttons on the front panel.

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.



1 Select and play software you like.

If "AUTO SR (Auto Surround)" is set to "ON"

Playing a digital source automatically activates an appropriate Surround mode. (See page 20.) → Go to step 4.

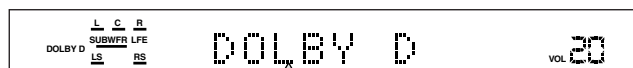
2 Press SURROUND.

MULTI JOG now works for the Surround/DSP mode selection.

3 Turn MULTI JOG to select an appropriate surround mode.

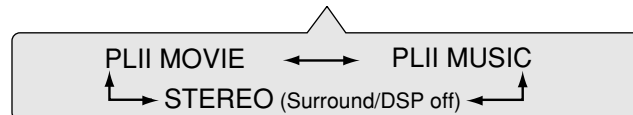
- As you turn MULTI JOG, the indication changes as follow:

When playing back multi-channel digital software such as Dolby Digital or DTS Digital Surround:



DOLBY D or DTS ↔ STEREO (Surround/DSP off)

When playing back 2 channel digital software such as Dolby Digital or DTS Digital Surround:



When playing back any software other than above:

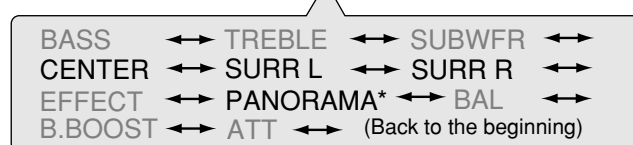


4 Press ADJUST.

MULTI JOG now works for the sound adjustment.

5 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



* Available only for "PLII MUSIC."

CENTER*1:	To adjust the center speaker output level (from -10 dB to +10 dB).
SURR L*1:	To adjust the left surround speaker output level (from -10 dB to +10 dB).
SURR R*1:	To adjust the right surround speaker output level (from -10 dB to +10 dB).
PANORAMA control*2:	<ul style="list-style-type: none"> • Select "ON" when you would like to enjoy "wraparound" sound effect with side-wall image. • Select "OFF" when you would like to hear originally recorded sound.

*1 "0" is the initial setting for each speaker setting.
 *2 "OFF" is the initial setting.

6 Turn MULTI JOG to adjust the item selected in step 5, then press SET.

- Your setting is stored.
- When adjusting the speaker output levels, make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.



Ex.: When selecting "+8 (dB)" for "CENTER."

7 Repeat steps 5 and 6 to adjust the other settings.

To cancel Surround mode

Press SURROUND repeatedly on the remote control or press SURROUND then turn MULTI JOG on the front panel so that "STEREO" appears on the display.

- If Surround mode is canceled while playing back multi-channel digital software, all channel signals are mixed and output through the front speakers (and subwoofer if you have connected a subwoofer and set the subwoofer setting correctly—"USE" for Quick Setup or "YES" for Manual Setup—see pages 16 and 17).

NOTES

- You can adjust the speaker output levels using the remote control without outputting the test tone.
- You cannot adjust the center speaker output level and no test tone comes out of the center speaker when "CNTR SP" is set to "NO."
- You cannot adjust the surround speaker output levels and no test tone comes out of the surround speakers when "SURR SP" is set to "NO."
- Remember not to change the speaker setting while using any Surround modes; otherwise, the Surround mode may be canceled when you deactivate the speakers required for it.
- You cannot use any Surround modes when selecting DVD MULTI as a playback source.

Using DSP modes

Once you have adjusted the DSP modes, the adjustment is memorized for each source.

- You cannot use the DSP modes if no surround speakers are connected.
- You cannot adjust the effect level for "ALL CH ST."

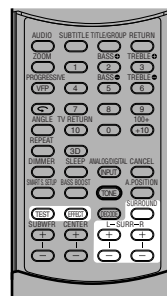
When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Before you start, remember...

Make sure that you have set the speaker information correctly (see pages 15 to 18).

From the remote control:



It will be convenient for you to use the remote control for the sound adjustments, since you can make adjustments from your listening point, and use the test signal.

1 Start playing 2 channel software—either Linear PCM or analog signal—and select the source.

2 Press SURROUND repeatedly until one of the DSP modes you want to apply appears on the display.

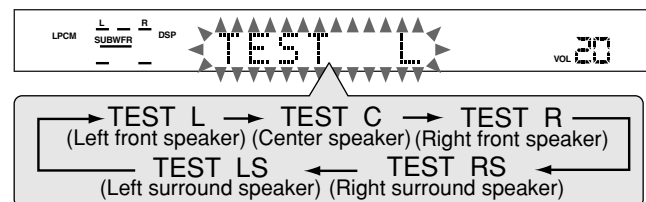
The DSP indicator lights up on the display.

- Each time you press the button, the DSP modes change as follow:



3 Press TEST to check the speakers output balance.

"TEST L" starts flashing on the display, and a test tone comes out of the speakers as follow:



Creating realistic sound fields

4 Adjust the surround speaker output levels (from -10 dB to +10 dB).

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.

To adjust the left surround speaker level, press SURR L +/-.

To adjust the right surround speaker level, press SURR R +/-.



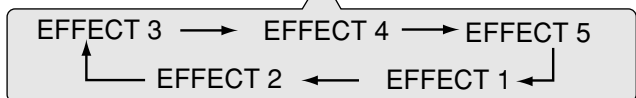
Ex.: When selecting "-8 (dB)" for "SURR R."

5 Press TEST again to stop the test tone.

6 Only for DAP modes:

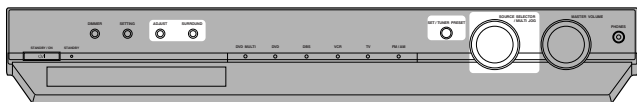
Press EFFECT to select the DAP effect level (1 to 5) you want.

- As the number increases, the DAP effect becomes stronger (normally set it to "EFFECT 3").



On the front panel:

- No test tone is available when using the buttons on the front panel.



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 2 again.

1 Start playing 2 channel software—either Linear PCM or analog signal—and select the source.

2 Press SURROUND.

MULTI JOG now works for the Surround/DSP mode selection.

3 Turn MULTI JOG until one of the DSP modes you want to apply appears on the display.

The DSP indicator lights up on the display.

- As you turn MULTI JOG, the indication changes as follow:

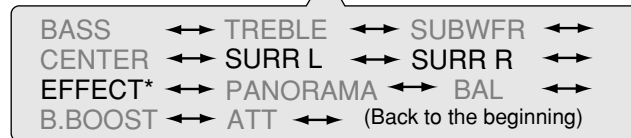


4 Press ADJUST.

MULTI JOG now works for the sound adjustment.

5 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.

- As you turn MULTI JOG, the indication changes as follow:



- * Available only for DAP modes.

SURR L*1: To adjust the left surround speaker output level (from -10 dB to +10 dB).

SURR R*1: To adjust the right surround speaker output level (from -10 dB to +10 dB).

EFFECT (available only for DAP modes) *2:

To adjust the DAP effect level.

As the number increases, the effect becomes stronger (normally set it to "EFFECT 3").

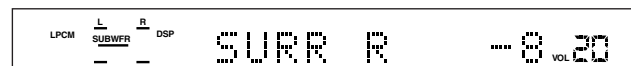
*1 "0 (dB)" is the initial setting for each speaker setting.

*2 "3" is the initial setting.

6 Turn MULTI JOG to adjust the item selected in step 5, then press SET.

Your setting is stored.

- When adjusting the speaker output levels, make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.



Ex.: When selecting "-8 (dB)" for "SURR R."

7 Repeat steps 5 and 6 to adjust the other settings.

To cancel DSP Modes

Press SURROUND repeatedly on the remote control or press SURROUND then turn MULTI JOG on the front panel so that "STEREO" appears on the display. The DSP indicator goes off from the display.

NOTES

- You can adjust the speaker output levels using the remote control without outputting the test tone.
- You cannot adjust the center speaker output level and no test tone comes out of the center speaker when "CNTR SP" is set to "NO."
- You cannot adjust the surround speaker output levels and no test tone comes out of the surround speakers when "SURR SP" is set to "NO."

Using the DVD MULTI playback mode

This receiver provides the DVD MULTI playback mode for reproducing the analog discrete output mode (5.1 channel reproduction) of the DVD player.

In addition, the DVD MULTI playback mode can be used for reproducing a DVD Audio sound.

Before playing back a DVD, refer also to the manual supplied with the DVD player.

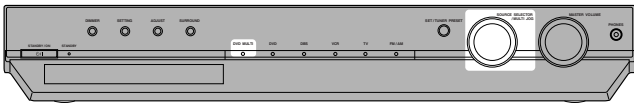
- When using the DVD MULTI playback mode, connect the DVD player with its analog discrete output jacks to the DVD IN jacks on the rear panel (see page 8).

When operating this receiver using the remote control, always set the mode selector to AUDIO/TV/VCR/DBS.



Activating the DVD MULTI playback mode

On the front panel:



- 1 Turn SOURCE SELECTOR until "DVD MULTI" appears on the display.**

The DVD MULTI indicator lights in red.

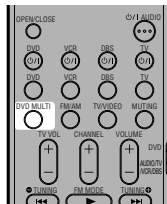
- 2 Select the analog discrete output mode on the DVD player, and start playing a DVD.**

From the remote control:

- 1 Press DVD MULTI.**

The DVD MULTI indicator lights in red.

- 2 Select the analog discrete output mode on the DVD player, and start playing a DVD.**



Adjusting the speaker output level

You can adjust the speaker output level while playing a DVD using the analog discrete output mode on the DVD player.

Once you have adjusted the sound, the adjustment is memorized.

- The test tone does not output through the speakers to adjust the speakers output levels when selecting DVD MULTI.

From the remote control:

It will be convenient for you to use the remote control for the sound adjustments, since you can make adjustments from your listening point.

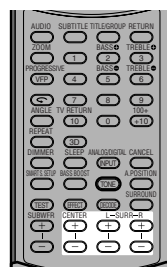
Adjust the following speaker output levels (from -10 dB to +10 dB).

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.

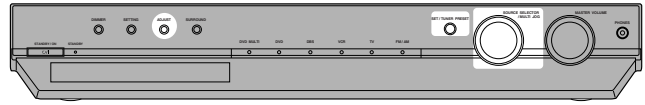
To adjust the center speaker level, press CENTER +/-.

To adjust the left surround speaker level, press SURR L +/-.

To adjust the right surround speaker level, press SURR R +/-.



On the front panel:



Before you start, remember...

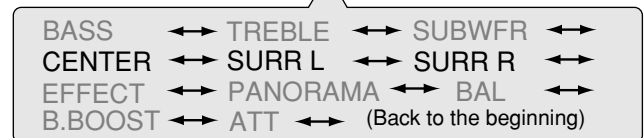
There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step **1** again.

- 1 Press ADJUST.**

MULTI JOG now works for the sound adjustment.

- 2 Turn MULTI JOG until the setting item you want to set appears on the display, then press SET.**

- As you turn MULTI JOG, the indication changes as follow:



CENTER*: To adjust the center speaker output level (from -10 dB to +10 dB).

SURR L*: To adjust the left surround speaker output level (from -10 dB to +10 dB).

SURR R*: To adjust the right surround speaker output level (from -10 dB to +10 dB).

* "0 (dB)" is the initial setting.

- 3 Turn MULTI JOG to adjust the item selected in step 2, then press SET.**

Your setting is stored.

- Make adjustments so that the sound level of the selected speaker is set at the same level as that of the front speakers.



Ex.: When selecting "+8 (dB)" for "CENTER."

- 4 Repeat steps 2 and 3 to adjust the other settings.**

NOTES

- When you select DVD MULTI as a source to play, the selected Surround/DSP mode is canceled, and the SURROUND button does not work.
- When using a pair of headphones, the sounds of front left and right channels are output from the headphones.

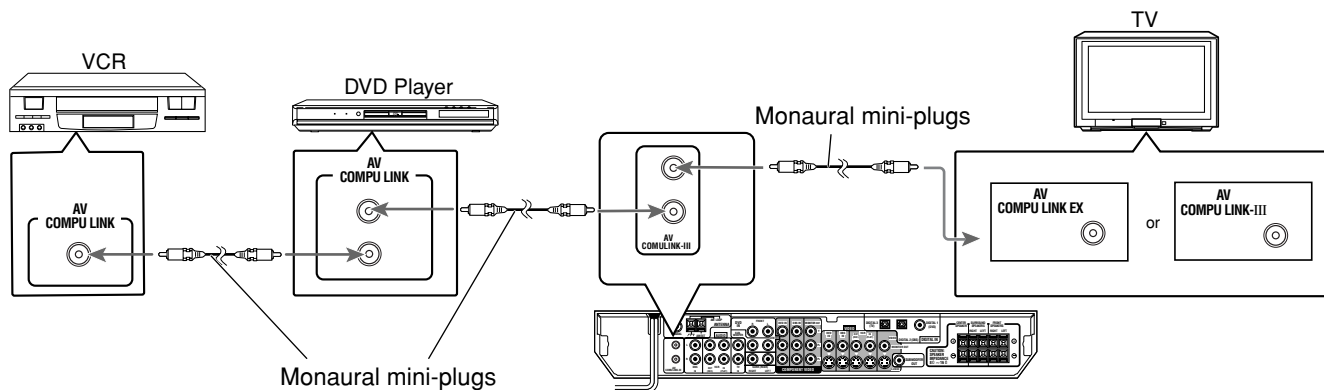
AV COMPU LINK remote control system

The AV COMPU LINK remote control system allows you to operate JVC's video components (TV, DVD player and VCR) through this receiver.

This receiver is equipped with the AV COMPU LINK-III, which has added a function to operate JVC's video components through the video components terminals. To use this remote control system, you need to connect the video components you want to operate, following the diagrams below and the procedures on page 33.

- Refer also to the manuals supplied with your video components.

CONNECTIONS 1: AV COMPU LINK Connection



IMPORTANT:

The AV COMPU LINK remote control system cannot control the DBS tuner connected to the DBS terminals.

CAUTION:

When connecting the TV with the AV COMPU LINK remote control system, connect the receiver to the AV COMPU LINK EX or AV COMPU LINK-III terminal. DO NOT connect the receiver to the AV COMPU LINK RECEIVER/AMP terminal.

NOTES

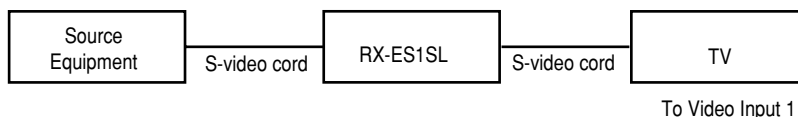
- When connecting the receiver and a TV with the AV COMPU LINK EX terminal by using a component video cable, you cannot use Automatic selection of TV's input mode (see page 33).
- When connecting the DVD player or VCR and TV to this receiver, connect it directly to the receiver using cable with monaural mini-plugs.

CONNECTIONS 2: Video Cable Connection

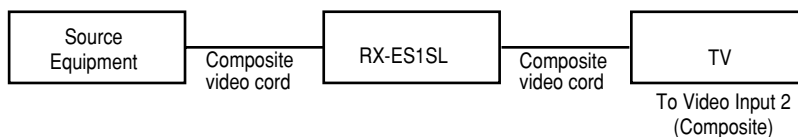
This receiver is equipped with three types of the video terminals—composite video, S-video, and component video, and the signals coming into this receiver through one type of video terminals can output only through the terminal of the same type. So you need to connect the VCR and TV to this receiver using one of the following three ways.

- When using the AV COMPU LINK remote control system, set the component video input for the DVD player and the DBS tuner correctly (see "Setting the video component input mode—DVD VIDEO/DBS VIDEO" on page 20); otherwise, the correct input for this receiver will not be selected on the TV.

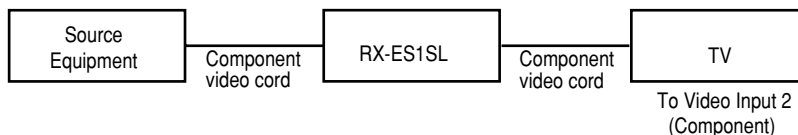
CASE 1: When connecting the source equipment to the receiver through the S-video terminals, connect this receiver to the TV's Video Input 1 terminal using S-video cords.



CASE 2: When connecting the source equipment to the receiver through the composite video terminals, connect this receiver to the TV's Video Input 2 terminal (composite video input) using composite video cords.



CASE 3: When connecting the source equipment to the receiver through the component video terminals, connect this receiver to the TV's Video Input 2 terminals (component video input) using component video cords.



1. **If you have already plugged your VCR, DVD player, TV and this receiver into the AC outlets, unplug their AC power cords first.**
2. **Connect your VCR, DVD player, TV and this receiver, using the cords with the monaural mini-plugs (not supplied).**
 - See "CONNECTIONS 1" on the previous page.
3. **Connect the audio input/output terminals on VCR, DVD player, TV and this receiver using the audio cords with RCA pin plugs.**
 - See pages 7 to 9.
4. **Connect the video input/output terminals on VCR, DVD player, TV and this receiver, using the cords with RCA pin plugs, S-video plug or component video plugs.**
 - See "CONNECTIONS 2" on the previous page.
5. **Plug the AC power cords of the components and the receiver into the AC outlets.**
6. **When turning on the TV for the first time after the AV COMPU LINK connection, turn the TV volume to the minimum using the TV volume control on the TV.**
7. **Turn on the connected components first, then turn on this receiver.**
 - When turning on the VCR, use the remote control supplied with this receiver (press VCR).

The AV COMPU LINK remote control system allows you to use the five basic functions listed below.

Remote control of the TV, DVD player, and VCR using this remote control

See page 34 for details.

- Aim the remote control directly at the remote sensor on each target component.

One-touch video play

Simply by inserting a video cassette without its safety tab into the VCR, you can enjoy the video playback without setting other switches manually. The receiver automatically turns on and changes the source to "VCR."

The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.

When you insert a video cassette with its safety tab, press the play (▶) button on the VCR or on the remote control. So, you can get the same result.

One-touch DVD play

Simply by starting playback on the DVD player, you can enjoy the DVD playback without setting other switches manually.

- When the DVD player is connected through the analog input jacks on this receiver (and analog input is selected), the receiver automatically turns on and changes the source to "DVD" or "DVD MULTI."
- When the DVD player is connected through the digital input terminal on this receiver (and digital input is selected), the receiver automatically turns on and changes the source to "DVD."

The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.

Automatic selection of TV's input mode

- When you select "TV" as the source to play on the receiver, the TV automatically changes the input mode to the TV tuner so that you can watch TV.
- When you select "DVD," "DVD MULTI," "VCR" or "DBS" as the source to play on the receiver, the TV automatically changes the input mode to the appropriate position (either Video Input 1 or Video Input 2) so that you can view the playback picture.

NOTE

This function does not work when you connect this receiver and the TV with the AV COMPU LINK using the TV's AV COMPU LINK EX terminal. In this case, reconnect the TV referring to case 1 or case 2 on page 32.

Automatic power On/Off

The TV, VCR, and DVD player turn on and off along with the receiver.

When you turn on the receiver;

- If the previously selected source is "VCR," the TV and VCR will turn on automatically.
- If the previously selected source is "DVD" or "DVD MULTI," the TV and DVD player will turn on automatically.
- If the previously selected source is "TV" or "DBS," only the TV will turn on automatically.

When you turn off the receiver, the TV, VCR and the DVD player will turn off.

NOTE

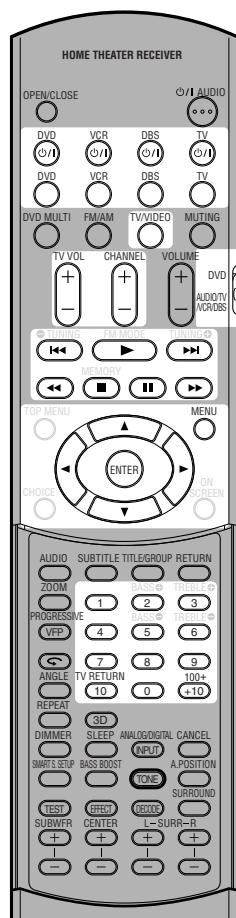
If you turn off the receiver while recording on the VCR, the VCR will not turn off, but continue recording.

Operating other JVC products

You can use the remote control to operate not only this receiver but also other JVC products.

- Refer also to the manuals supplied for the other products.
 - Some JVC VCRs can accept two types of the control signals—remote codes “A” and “B”. This remote control can operate a VCR whose remote control code is set to “A.”
- To operate other products, aim the remote control directly at the remote sensor on the target product.

Set the mode selector to AUDIO/TV/VCR/DBS.



■ TV

You can always perform the following operations:

TV \odot/I:	Turn on or off the TV.
TV VOL +/-:	Adjust the volume on the TV.
TV/VIDEO:	Change the input mode (Video input and TV tuner) on the TV.

After pressing TV (source selecting button), you can perform the following operations on the TV.

CHANNEL +/-:	Change the channel numbers.
1 – 9, 0, +10 (100+):	Select the channel numbers.
10 (TV RETURN):	Function as the TV RETURN button.

■ VCR

You can always perform the following operations:

VCR \odot/I:	Turn on or off the VCR.
----------------------------------	-------------------------

After pressing VCR (source selecting button), you can perform the following operations on the VCR.

CHANNEL +/-:	Change the channel numbers on the VCR.
1 – 9, 0:	Select the channel numbers on the VCR.
▶:	Start playback.
■:	Stop playback.
 :	Pause playback. To release it, press ▶.
▶▶:	Fast-wind a tape.
◀◀:	Rewind a tape.

■ DVD player

You can always perform the following operations:

DVD \odot/I:	Turn on or off the DVD player.
----------------------------------	--------------------------------

After setting the mode selector to “DVD” then pressing DVD (source selecting button), you can perform the following operations on the DVD Player.

▶:	Start playback.
■:	Stop playback.
 :	Pause playback. To release it, press ▶.
▶▶:	Skip to the beginning of the next chapter.
◀◀:	Return to the beginning of the current (or previous) chapter.
MENU:	Display or erase the menu screen.
▲/▼/▶/◀:	Select an item on the menu screen.
ENTER:	Enter a selected item.

You can also use ▶▶, ◀◀, OPEN/CLOSE, AUDIO, SUBTITLE, TITLE/GROUP, RETURN, ZOOM, VFP, ↶, ANGLE, REPEAT, DIMMER, 3D, PROGRESSIVE, and numeric buttons for operating JVC DVD player.

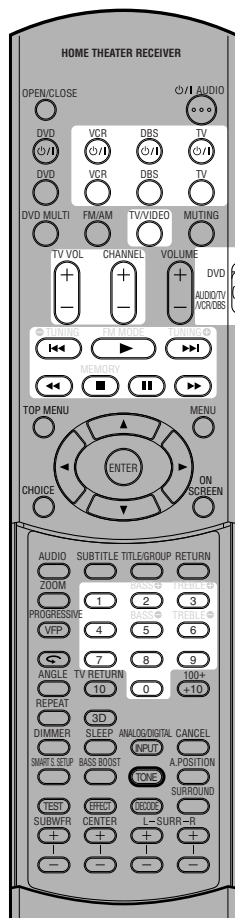
- If these buttons cannot be functioned normally, use a remote control supplied with your DVD player. See the instruction supplied with the DVD player for details.

Operating other manufacturers' equipment

By changing the transmittable signals, you can use the remote control supplied for this unit to operate other manufacturers' equipment.

- Refer also to the manuals supplied with the other products.
- To operate those components with the remote control, first you need to set the manufacturers' codes each for the CATV converter, DBS tuner, VCR, and TV.
- After replacing batteries of the remote control, set the manufacturers' codes again.

Set the mode selector to **AUDIO/TV/VCR/DBS**.



❑ Changing the transmittable signals for operating a CATV converter or DBS tuner

- 1 Press and hold **DBS** ϕ/I .
- 2 Press **DBS**.
- 3 Enter the manufacturer's code using buttons **1 – 9, and 0**.
- 4 Release **DBS** ϕ/I .

Now, you can perform the following operations on the CATV converter or DBS tuner.

DBS ϕ/I : Turn on or off the CATV converter or DBS tuner.

After pressing **DBS** (source selecting button), you can perform the following operations on the CATV converter or DBS tuner.

CHANNEL +/-: Change the channel numbers on the CATV converter or DBS tuner.

1 – 9, 0: Select the channel numbers on the CATV converter or DBS tuner.

5 Try to operate your CATV converter or DBS tuner by pressing **DBS** ϕ/I .

When your CATV converter or DBS tuner turns on or off, you have entered the correct code.

If more than one codes are listed for your brand of the CATV converter, try each one until the correct one is entered.

Manufacturers' codes for CATV converter

Manufacturer	Codes
G.I.	01*
GEMINI	02
HAMLIN	03 – 06
JERROLD	07 – 15
MACOM	16 – 18
MAGNAVOX	19
OAK	20 – 22
PANASONIC	23, 24
PHILIPS	25 – 30
PIONEER	31, 32
S. ATLANA	33, 34, 35
SAMSUNG	36
TOCOM	37
ZENITH	38, 39

Manufacturers' codes for DBS tuner

Manufacturer	Codes
ECHOSTAR	40
G.I.	41
HITACHI	42
HUGHES	43
PANASONIC	44
PRIMESTAR	45
RCA	46
SONY	47
TOSHIBA	48

* Initial setting

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

CONTINUED ON THE NEXT PAGE

Operating other manufacturers' equipment

❑ Changing the transmittable signals for operating a VCR

- 1** Press and hold VCR \odot/I .
- 2** Press VCR.
- 3** Enter the manufacturer's code using buttons 1 – 9, and 0.
- 4** Release VCR \odot/I .

Now, you can perform the following operations on the VCR.

VCR \odot/I :	Turn on or off the VCR.
------------------------	-------------------------

After pressing VCR (source selecting button), you can perform the following operations on the VCR.

CHANNEL +/-:	Change the channel numbers on the VCR.
--------------	--

1 – 9, 0:	Select the channel numbers on the VCR.
-----------	--

▶:	Start playback.
----	-----------------

■:	Stop playback.
----	----------------

⏸:	Pause playback. To release it, press ▶.
----	---

▶▶:	Fast-wind a tape.
-----	-------------------

◀◀:	Rewind a tape.
-----	----------------

5 Try to operate your VCR by pressing VCR \odot/I .

When your VCR turns on or off, you have entered the correct code.

If more than one codes are listed for your brand of VCR, try each one until the correct one is entered.

Manufacturers' codes for VCR

Manufacturer	Codes
JVC	01* – 04
AIWA	05
AKAI	06 – 08
BELL+HOWELL	09
DAEWOO	10
EMERSON	11 – 15
FISHER	16 – 19
G.E.	20, 21
GO VIDEO	22
GOLD STAR	23
GO-VIDEO A	24
GO-VIDEO B	25
HITACHI	20, 26
MAGNAVOX	27 – 29
MITSUBISHI	30 – 33
NEC	34, 35
PANASONIC	36, 37
PHILIPS	27
RCA	38
SAMSUNG	39 – 41
SANYO	16 – 19
SCOTT	42
SHARP	43, 44
SHINTOM	45
SONY	46 – 51
SYMPHO	52
TEKNICA	53, 54
TOSHIBA	55
ZENITH	56

* Initial setting

❑ **Changing the transmittable signals for operating a TV**

- 1** Press and hold TV \odot /I.
- 2** Press TV.
- 3** Enter the manufacturer's code using buttons 1 – 9, and 0.
- 4** Release TV \odot /I.

Now, you can perform the following operations on the TV.

TV \odot/I:	Turn on or off the TV.
TV VOL +/-:	Adjust the volume.
TV/VIDEO:	Change the input mode (either TV or VIDEO).

After pressing TV (source selecting button), you can perform the following operations on the TV.

CHANNEL +/-:	Change the channel numbers.
1 – 9, 0:	Select the channel numbers.

5 Try to operate your TV by pressing TV \odot /I.

When your TV turns on or off, you have entered the correct code.

If more than one codes are listed for your brand of TV, try each one until the correct one is entered.

Manufacturers' codes for TV

Manufacturer	Codes
JVC	01*
AKAI	02
BELL+HOWELL	03
CENTURION	04
CORONAD	05
DAEWOO	06 – 08
EMERSON	09 – 13
FISHER	14
GE•PANA	15, 16
GE•RCA	17
GOLD STAR	18, 19
HITACHI	20, 21
KTV	22, 23
MAGNAVOX	24
MARANTZ	25
MITSUBISHI	25
PANASONIC	26, 27
PHILIPS	24
PIONEER	28
PROSCAN	29
QUASAR	30
RADIOSHACK	31
RCA	02, 17, 32 – 35
SAMSUNG	36, 37
SANYO	14
SEARS	38
SHARP	39
SONY	40
SYMPHONIC	41, 42
TOSHIBA	38
ZENITH	43, 44

* Initial setting

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Troubleshooting

Use this chart to help you solve daily operational problems. If there are any problems you cannot solve, contact your JVC's service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The power does not come on.	The power cord is not plugged in.	Plug the power cord into an AC outlet.
No sound from speakers.	Speaker signal cables are not connected.	Check speaker wiring and reconnect if necessary.
	An incorrect source is selected.	Select the correct source.
	Muting is activated.	Press MUTING to cancel the mute.
	An incorrect input mode (analog or digital) is selected.	Select the correct input mode (analog or digital).
	Connections are incorrect.	Check connections.
Sound from one speaker only.	The balance is set to one extreme.	Adjust the balance properly (see page 22).
The STANDBY lamp lights up after turning on the power, but soon the unit turns off (into standby mode).	Speakers are overloaded because of high volume.	1. Press STANDBY/ON Φ /I on the front panel to turn off the unit. 2. Stop the playback source. 3. Turn on the unit again, and adjust the volume.
	Speakers are overloaded because of a short circuit at the speaker terminals.	Check the speaker wiring. If speaker wiring is not short-circuited, contact your dealer.
	The unit is overloaded because of a high voltage.	Consult your dealer after unplugging the power cord.
Remote control does not operate as you intend.	The remote control is not ready for your intended operation.	Press a source selecting button or TONE first, then press the buttons you want to use. (See pages 21 and 34 – 37.)
Remote control does not work.	There is an obstruction hiding the remote sensor on the unit.	Remove the obstruction.
	Batteries are weak.	Replace batteries.
	The mode selector is set to the incorrect position.	Set the mode selector to the proper position.
Bass sound is reinforced too much when listening in stereo.	Appropriate bass level is not selected.	Adjust audio position level (see page 22).

PROBLEM	POSSIBLE CAUSE	SOLUTION	
Surround mode cannot be selected.	Surround mode is not available on the software being played back, or only the front speakers are set for use.	Play not multi-channel software or check the speaker setting.	Surround/DSP
DSP mode cannot be selected.	DSP mode is not available on the software being played back, or only the front speakers are set for use.	Play back Linear PCM or analog software or check the speaker setting.	
Continuous hiss or buzzing during FM reception.	Incoming signal is too weak.	Connect an outdoor FM antenna or contact your dealer.	FM/AM
	The station is too far away.	Select a new station.	
	An incorrect antenna is used.	Check with your dealer to be sure you have the correct antenna.	
	Antennas are not connected properly.	Check connections.	
Occasional cracking noise during FM reception.	Ignition noise from automobiles.	Move the antenna farther from automobile traffic.	

NOTE

When you use the digital coaxial connection, the sounds may be intermittently distorted by the outside noise such as a lightning discharge but they will restore automatically. This is not a malfunction.

Specifications

Designs & specifications are subject to change without notice.

RX-ES1SL

Amplifier

Output Power	
At stereo operation:	
Front channels:	100 W per channel, min. RMS, driven into 8 Ω, 40 Hz to 20 kHz with no more than 0.8% total harmonic distortion.
At surround operation:	
Front channels:	100 W per channel, min. RMS, driven into 8 Ω at 1 kHz with no more than 0.8% total harmonic distortion.
Center channel:	100 W, min. RMS, driven into 8 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.
Surround channels:	100 W per channel, min. RMS, driven into 8 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Audio

Audio Input Sensitivity/Impedance (1 kHz):	
DVD, DVD MULTI, DBS, VCR, TV:	260 mV/47 kΩ
Audio Input (DIGITAL IN)* :	
Coaxial: DIGITAL 1 (DVD):	0.5 V(p-p)/75 Ω
Optical: DIGITAL 2/3 (DBS/TV):	-21 dBm to -15 dBm (660 nm ±30 nm)
* Corresponding to Linear PCM, Dolby Digital, and DTS Digital Surround (with sampling frequency—32 kHz, 44.1 kHz, 48 kHz).	
Audio Output Level: VCR:	250 mV
Signal-to-Noise Ratio (*66 IHF/78 IHF):	
DVD MULTI:	87 dB/67 dB
Frequency Response (8 Ω):	
DVD, DBS, VCR, TV:	20 Hz to 20 kHz (±1 dB)
Tone Control:	
Bass (100 Hz):	±10 dB ±2 dB
Treble (10 kHz):	±10 dB ±2 dB
Bass Boost:	+4 dB ± 1 dB at 100 Hz

Video

Video Input Sensitivity/Impedance (1 kHz):	
Composite video: DVD, DBS, VCR:	1 V(p-p)/75 Ω
S-Video: DVD, DBS, VCR:	
(Y:luminance):	1 V(p-p)/75 Ω
(C:chrominance):	0.286 V(p-p)/75 Ω
Component video: DVD, DBS:	
(Y:luminance):	1 V(p-p)/75 Ω
(Rb/Pr):	0.7 V(p-p)/75 Ω
Video Output Level/Impedance (1 kHz):	
Composite video: VCR, MONITOR OUT:	1 V(p-p)/75 Ω
S-Video: VCR, MONITOR OUT:	
(Y:luminance):	1 V(p-p)/75 Ω
(C:chrominance):	0.286 V(p-p)/75 Ω
Component video: MONITOR OUT:	
(Y:luminance):	1 V(p-p)/75 Ω
(Rb/Pr):	0.7 V(p-p)/75 Ω
Synchronize:	Negative

FM tuner (IHF)

Tuning Range:	87.5 MHz to 108.0 MHz
Usable Sensitivity:	
Monaural:	12.8 dBf (1.2 μV/75 Ω)
50 dB Quieting Sensitivity:	
Monaural:	16.0 dBf (1.7 μV/75 Ω)
Stereo:	37.5 dBf (20.5 μV/75 Ω)
Stereo Separation at REC OUT:	35 dB at 1 kHz

AM tuner

Tuning Range:	530 kHz to 1 710 kHz
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General

Power Requirements:	AC 120 V ~, 60 Hz
Power Consumption:	95 W/130 VA (at operation) 2 W (in standby mode)
Dimensions (W x H x D):	17 ³ / ₁₆ inches x 2 ³ / ₄ inches x 13 ¹ / ₁₆ inches (435 mm x 69.5 mm x 330.5 mm)
Mass:	14.4 lbs (6.5 kg)



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