SONY

4-235-283-**13**(3)

FM Stereo FM-AM Receiver

Operating Instructions

STR-VA555ES

WARNING

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

To prevent fire, do not Cover the ventilation of the apparatus with news papers, table-cloths, curtains, etc. And don't place lighted candles on the apparatus.

To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.

Don't throw a battery, dispose it as the injurious wastes.

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

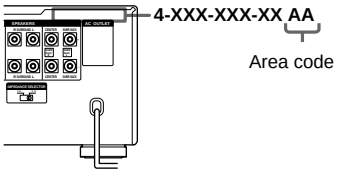
This receiver incorporates with Dolby* Digital and Dolby Pro Logic (II) adaptive matrix surround decoder and the DTS** Digital Surround System.

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

** "DTS", "DTS-ES Extended Surround" and "Neo: 6" are trademarks of Digital Theater Systems, Inc.

About area codes

The area code of the receiver you purchased is shown on the upper portion of the rear panel (see the illustration below).



Any differences in operation, according to the area code, are clearly indicated in the text, for example, "Models of area code AA only".

Tips

- In this Operating Instructions, the models of area code CEL is used for the illustration purposes.
- The instructions in this manual describe the controls on the receiver. You can also use the controls on the supplied remote if they have the same or similar names as those on the receiver. For details on the use of your remote, see pages 55–75.

Table of Contents

* Models of area code CEL only.

Features

7.1 channel mode

This receiver incorporates a 6 channel amplifier. It can reproduce the sound of movies (etc.) encoded in 6.1 channel audio through front (L/R), center, surround (L/R), surround back, and sub woofer speakers. This receiver also lets you enjoy a 7.1 channel mode. The 7.1 channel mode uses DSP (Digital Signal Processor) technology to reproduce the Surround Back channel in stereo (L/R) (page 28).

Compatible with a variety of audio formats and modes

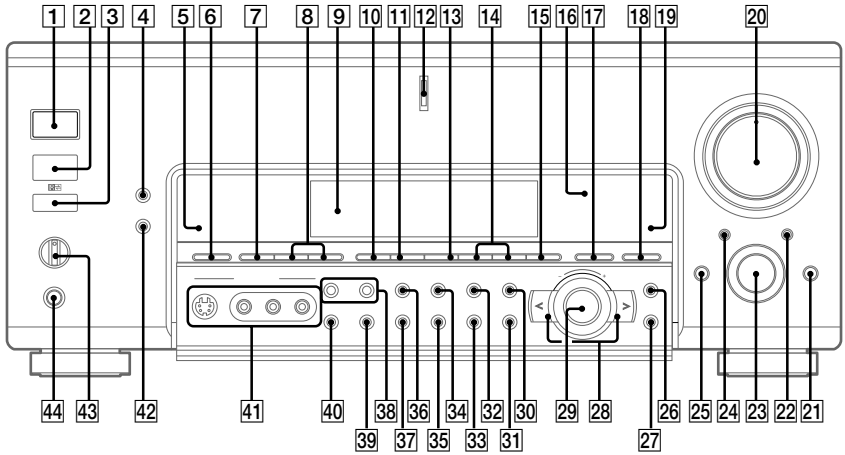
This receiver is compatible with the following audio formats.

- Dolby Digital EX (page 34)
- Dolby Pro Logic II (page 38)
- DTS Neo:6 (page 38)
- DTS-ES Matrix 6.1 (page 34)
- DTS-ES Discrete 6.1 (page 34)

The items are arranged in alphabetical order.

Refer to the pages indicated in parentheses ( ) for details.

Main unit



2CH 15 (30, 32)
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6.1CH indicator 19
6.1CH DECODING 18 (33, 50)
A.F.D. 10 (30, 32)
AUDIO SPLIT 24 (26)
CINEMA STUDIO EX 11 (30)
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RDS/PTY (Models of area code CEL only) 37 (46)
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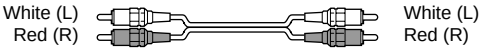
SLEEP 37 (49)
SPEAKERS switch 43 (27)
SURROUND 32 (37)
TUNING +/– 38 (44)
VIDEO 3 INPUT jacks 41
I/⏻ (power) 1 (18, 25, 41, 43)

Required cords

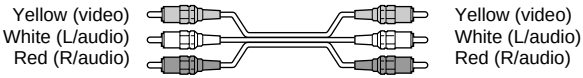
Before you get started

- Turn off the power to all components before making any connections.
- Do not connect the AC power cord until all of the connections are completed.
- Be sure to make connections firmly to avoid hum and noise.
- When connecting an audio/video cord, be sure to match the color-coded pins to the appropriate jacks on the components: yellow (video) to yellow; white (left, audio) to white; and red (right, audio) to red.
- When connecting optical digital cords, take the caps off the connectors and insert the cord plugs straight in until they click into place.
- Do not bend or tie the optical digital cord.

A Audio cord (not supplied)



B Audio/video cord (not supplied)

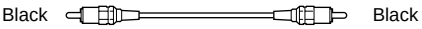


C Video cord (not supplied)

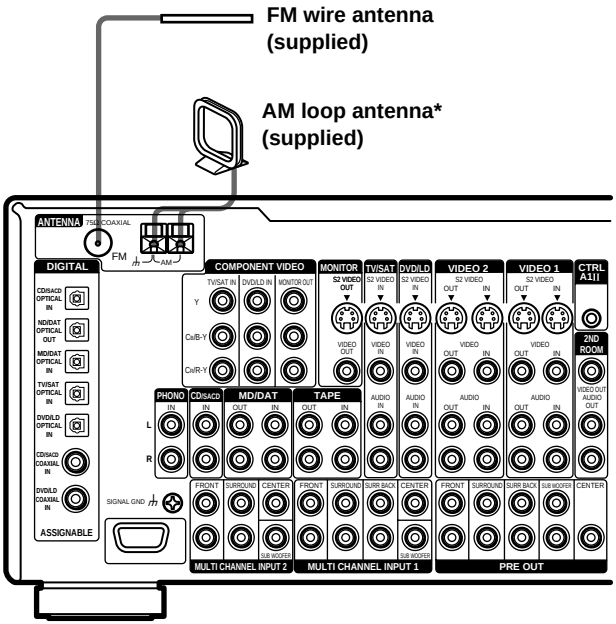
D Optical digital cord (not supplied)

E Coaxial digital cord (not supplied)

F Monaural audio cord (not supplied)



Antenna hookups



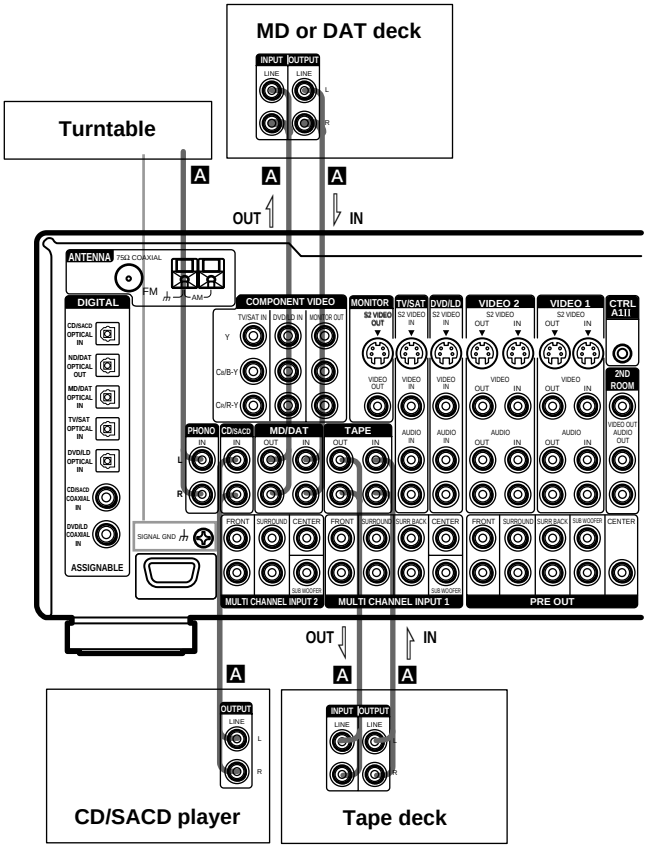
Notes on antenna hookups

- To prevent noise pickup, keep the AM loop antenna away from the receiver and other components.
- Be sure to fully extend the FM wire antenna.
- After connecting the FM wire antenna, keep it as horizontal as possible.
- Do not use the ⏚ SIGNAL GND terminal for grounding the receiver.

* The shape of the connector varies depending on the area code.

Audio component hookups

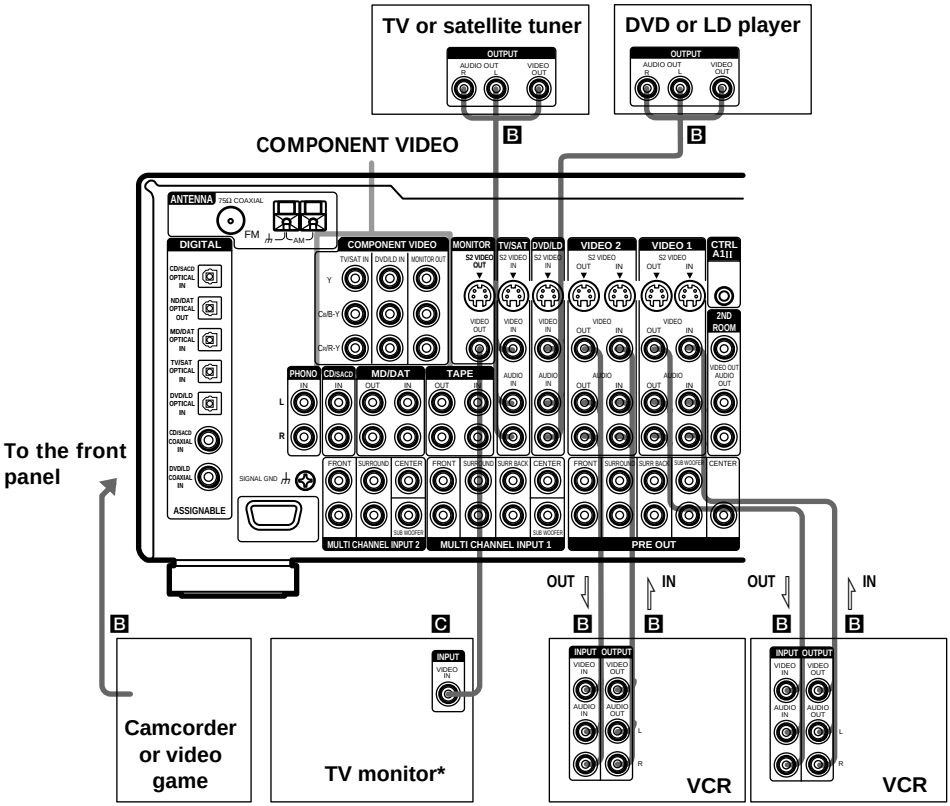
For details on the required cords (A – F), see page 6.



Note on audio component hookups

If your turntable has a ground wire, connect it to the ⏚ SIGNAL GND terminal.

Video component hookups



* You can display the SET UP, SURROUND, LEVEL, EQ parameters and selected sound field by pressing ON SCREEN.

Note on video component hookups

You can connect your TV's audio output jacks to the TV/SAT AUDIO IN jacks on the receiver and apply sound effects to the audio from the TV. In this case, do not connect the TV's video output jack to the TV/SAT VIDEO IN jack on the receiver. If you are connecting a separate TV tuner (or satellite tuner), connect both the audio and video output jacks to the receiver as shown above.

If you have a satellite tuner, DVD player, or LD player with COMPONENT VIDEO (Y, B-Y, R-Y) output jacks and a monitor with COMPONENT VIDEO input jacks, use a video cord (not supplied) to connect to the receiver.

Tip

When using the S-video jacks instead of the video jacks, your monitor must also be connected via an S-video jack. S-video signals are on a separate bus from the video signals and will not be output through the video jacks.

Notes

- If you make COMPONENT VIDEO connections, nothing is displayed on the on-screen display.
- On this receiver, the component video signals are not compatible with S-video signals nor video signals.

Digital component hookups

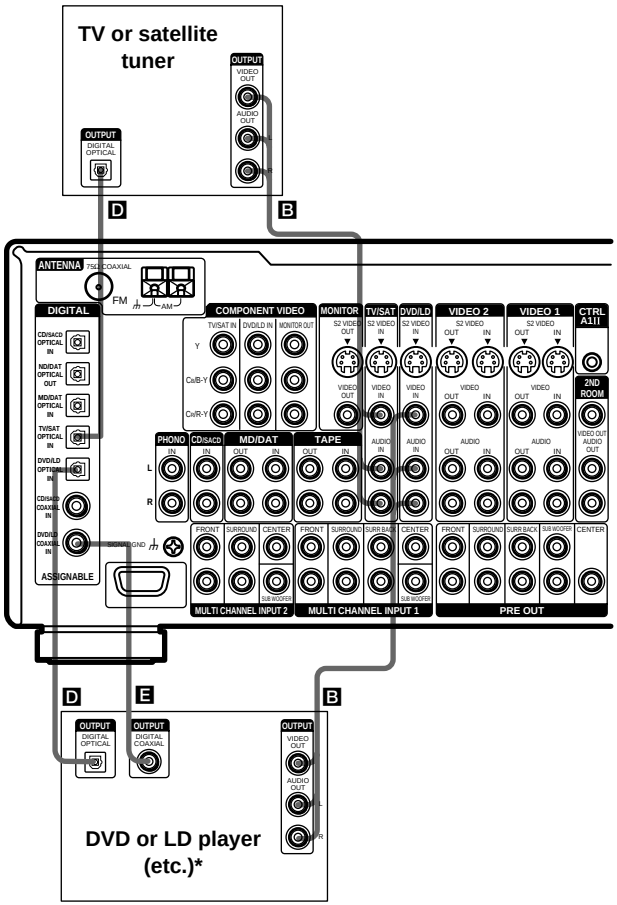
Connect the digital output jacks of your DVD player and satellite tuner (etc.) to the receiver's digital input jacks to bring the multi channel surround sound of a movie theater into your home. To fully enjoy multi channel surround sound, five speakers (two front speakers, two surround speakers, and a center speaker) and a sub woofer are required. For 6.1 channel surround sound, you will also need a surround back speaker. You can also connect an LD player with an RF OUT jack via an RF demodulator, like the Sony MOD-RF1 (not supplied).

Tip

You can select the input mode for your digital components. See "INPUT MODE" on page 27.

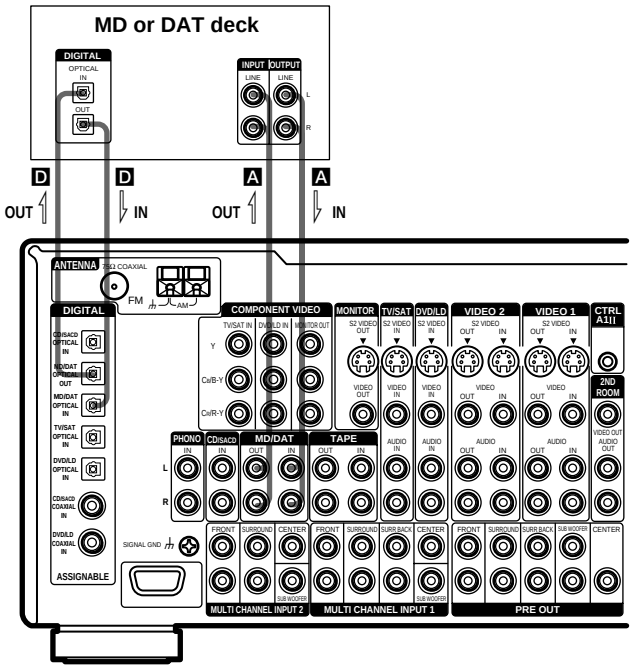
Note

You cannot connect an LD player's DOLBY DIGITAL RF OUT jack directly to this unit's digital input jacks. You must first convert the RF signal to either an optical or coaxial digital signal. For details, see "Troubleshooting" on page 76.



* Make either coaxial or optical connections. We recommend making coaxial connections instead of optical connections.

Connect the digital output jacks of your MD or DAT deck to the receiver's digital input jack and connect the digital input jacks of your MD or DAT deck to the receiver's digital output jack. These connections allow you to make digital recordings of TV broadcasts, etc.



Notes

- You cannot make a digital recording of digital multi channel surround signals.
- All the OPTICAL and COAXIAL jacks are compatible with 96 kHz, 48 kHz, 44.1 kHz and 32 kHz sampling frequencies.
- It is not possible to record analog signals to the components connected to TAPE and VIDEO jacks with only digital connections. To record analog signals, make analog connections. To record digital signals, make analog and digital connections.
- The sound is not output when you play a SACD disc on the SACD player connected to the CD/SACD OPTICAL IN jack on this unit. Connect to the analog input jacks (CD/SACD IN jacks). Refer to the operating instructions supplied with the SACD player.

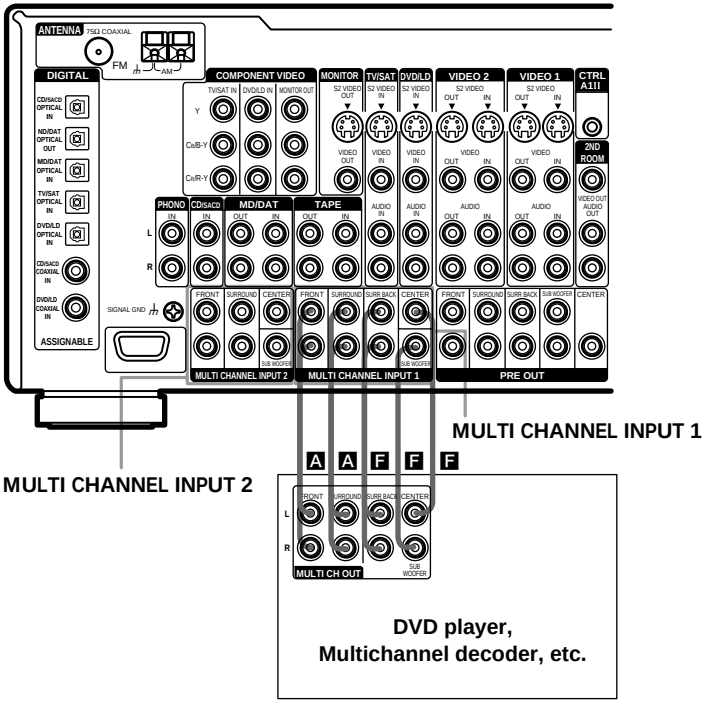
Multi channel input hookups

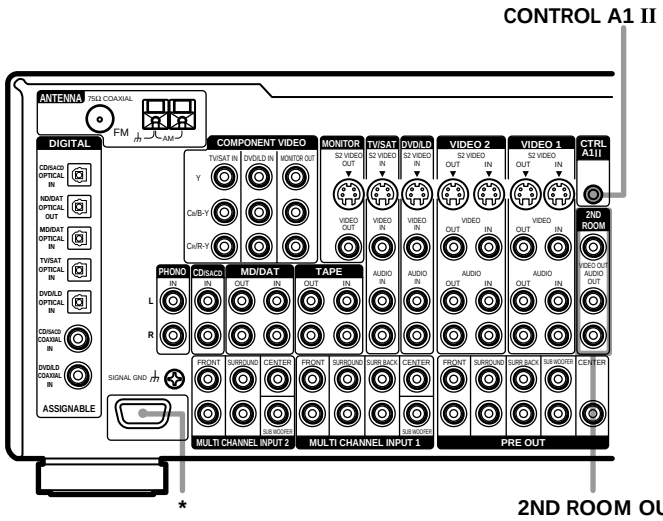
Although this receiver incorporates a multi channel decoder, it is also equipped with multi channel input jacks. These connections allow you to enjoy multi channel software encoded in formats other than Dolby Digital and DTS. If your DVD player is equipped with multi channel output jacks, you can connect them directly to the receiver to enjoy the sound of the DVD player's multi channel decoder. Alternatively, the multi channel input jacks can be used to connect an external multi channel decoder.

To fully enjoy multi channel surround sound, five speakers (two front speakers, two surround speakers, and a center speaker) and a sub woofer are required. For 6.1 channel surround sound, you will also need a surround back speaker. Refer to the operating instructions supplied with your DVD player, multi channel decoder, etc., for details on the multi channel hookups.

Notes

- When using the connections described below, adjust the level of the surround speakers and sub woofer from the DVD player or multi channel decoder.
- See page 16 for details on speaker system hookup.





* This jack is intended only for use in the manufacturing and servicing of the unit.

CONTROL A1II hookup

- **If you have a CONTROL A1II compatible Sony CD player, SACD player, tape deck, or MD deck**

  Use a CONTROL A1 cord (mini jack) (not supplied) to connect the CONTROL A1II jack on the CD player, SACD player, tape deck, or MD deck to the CONTROL A1II jack on the receiver. Refer to "CONTROL A1II control system" on page 53 and the operating instructions supplied with your CD player, SACD player, tape deck, or MD deck for details.

  Note

  If you make CONTROL A1II connections from the receiver to an MD deck that is also connected to a computer, do not operate the receiver while using the "Sony MD Editor" software. This may cause a malfunction.

- **If you have a Sony CD changer with a COMMAND MODE selector**

  If your CD changer's COMMAND MODE selector can be set to CD 1, CD 2, or CD 3, be sure to set the command mode to "CD 1" and connect the changer to the CD jacks on the receiver.

  If, however, you have a Sony CD changer with VIDEO OUT jacks, set the command mode to "CD 2" and connect the changer to the VIDEO 2 jacks on the receiver.

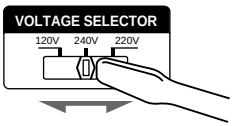
continued

2ND ROOM hookup

You can use the 2ND ROOM OUT jacks to output the audio/video signals of the selected component to a stereo amplifier located in another room (see page 29).

Setting the voltage selector

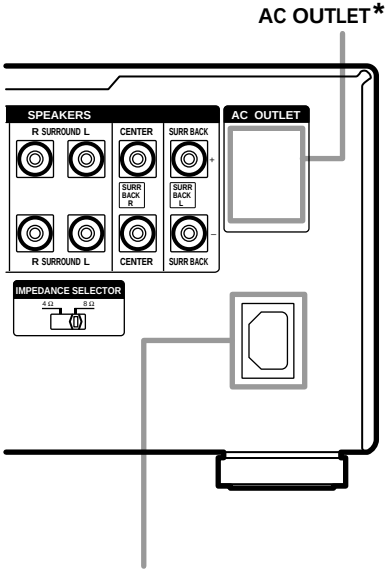
If your receiver has a voltage selector on the rear panel, check that the voltage selector is set to the local power supply voltage. If not, use a screwdriver to set the selector to the correct position before connecting the AC power cord to a wall outlet.



Connecting the AC power cord

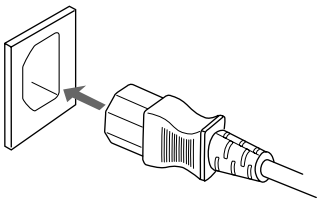
Before connecting the AC power cord of this receiver to a wall outlet, connect the speaker system to the receiver (see page 16).

Connect the AC power cord(s) of your audio/video components to a wall outlet.



* Except for models of area code CN.
The configuration, shape, and number of AC outlets vary according to the model and country to which the receiver is shipped.

Connect the supplied power cord to the AC IN terminal on this unit.



Notes

- (Models of area code E only) Two AC power cords are supplied. Use either AC power cord that fits your wall outlet.
- We recommend that you connect this unit directly to a wall outlet. If you must use a multi-outlet tap, or extension cord, be sure to use one capable of handling high current (at least 10 A) or one designed for office use.

If you connect other audio/video components to the AC OUTLET(s) on the receiver, the receiver will supply power to the connected component(s), allowing you to turn the whole system on or off when you turn the receiver on or off.

Caution

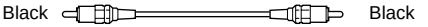
Make sure that the total power consumption of the component(s) connected to the receiver's AC OUTLET(s) does not exceed the wattage stated on the rear panel. Do not connect high-wattage electrical home appliances such as electric irons, fans, or TVs to this outlet.

Speaker system hookup

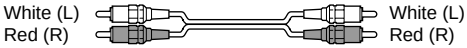
Required cords

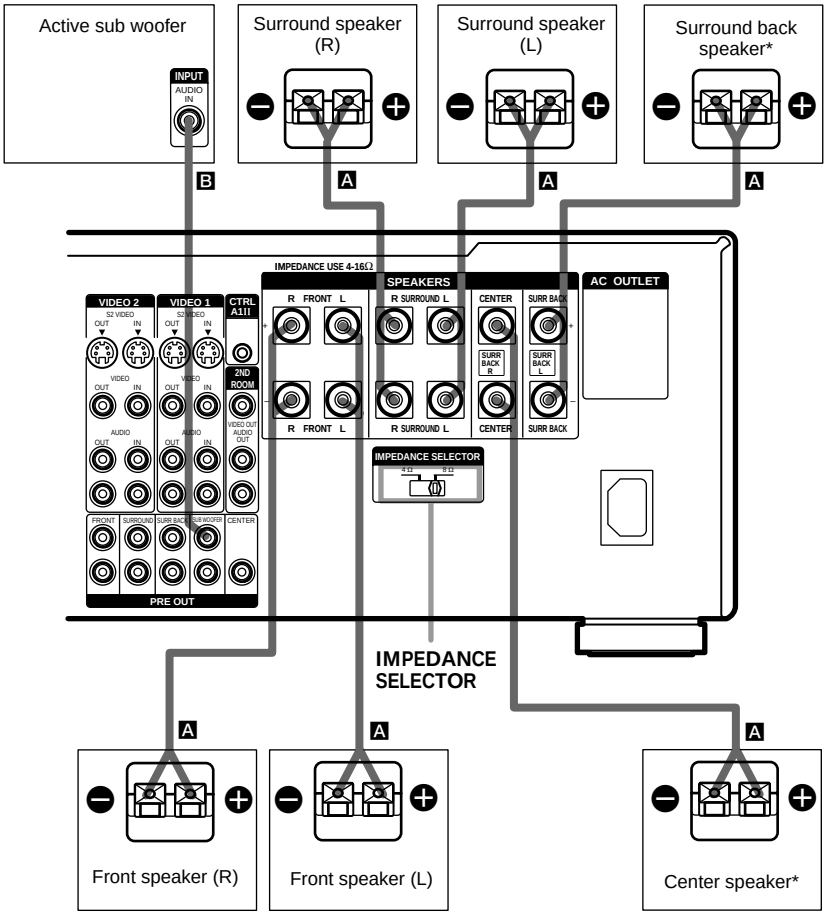
A Speaker cords (not supplied)

B Monaural audio cord (not supplied)



C Audio cord (not supplied)





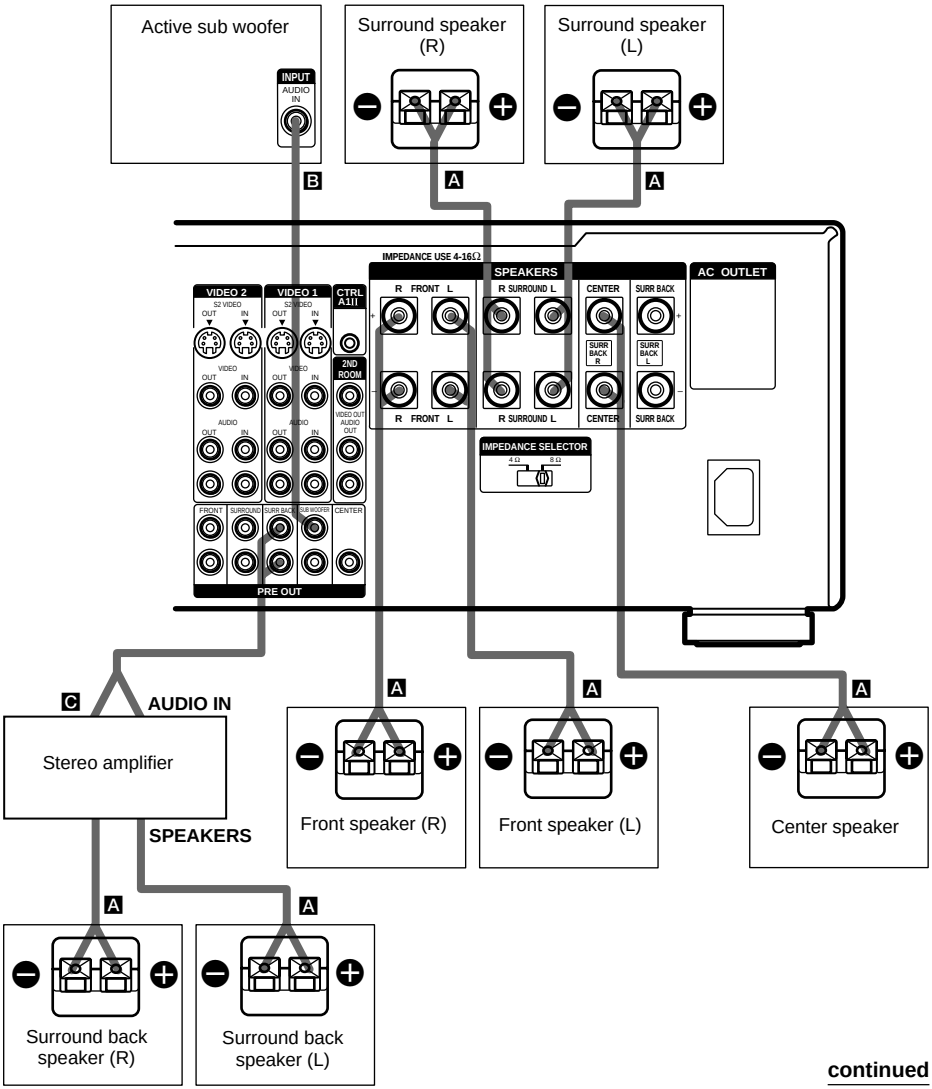
* You can use the connected center and surround back speakers as surround back right and left speakers. (See "Selecting the 7.1 channel mode" on page 28.) Make sure to connect correctly as indicated on the rear panel.

Tips

- You can connect an active sub woofer to either of the two jacks. The remaining jack can be used to connect a second active sub woofer. As the active sub woofer does not have the directivity, you can place it wherever you want.
- To connect certain speakers to another power amplifier, use the PRE OUT jacks. The same signal is output from both the SPEAKERS jacks and the PRE OUT jacks. For example, if you want to connect just the front speakers to another amplifier, connect that amplifier to the PRE OUT FRONT L and R jacks.

7.1 channel speaker hookup

Connect the speakers as follows to enjoy 7.1 channel mode using real speakers for all 7.1 channels. These connections require an additional power amplifier. Connect the additional power amplifier to the PRE OUT SURR BACK terminals on this receiver. Then connect the surround back (L/R) speakers to the additional amplifier. For details on the 7.1 channel mode, see page 28.



continued

Speaker impedance

To enjoy multi channel surround, connect front, center, surround, and surround back speakers with a nominal impedance of 8 ohms or higher, and set the IMPEDANCE SELECTOR to "8Ω". Check the operating instructions supplied with your speakers if you're not sure of their impedance. (This information is usually printed on a label on the back of the speaker.)

You may connect a pair of speakers with a nominal impedance between 4 and 8 ohms to all of the speaker terminals. However, even if one speaker within this range is connected, set the IMPEDANCE SELECTOR to "4Ω".

Note

Be sure to turn the power off when setting the IMPEDANCE SELECTOR.

Performing initial setup operations

Once you have hooked up the speakers and turned on the power, clear the receiver's memory. Then specify the speaker parameters (size, position, etc.) and perform any other initial setup operations necessary for your system.

Tip

To check the audio output during settings (to set up while outputting the sound), check the connection (see page 25).

Clearing the receiver's memory

Before using your receiver for the first time, or when you want to clear the receiver's memory, do the following.

1 **Turn off the receiver.**

2 **Hold down I/⏻ for 5 seconds.**
"ENTER to Clear All" appears in the display.

3 **Press ENTER.**
After "MEMORY CLEARING..." appears in the display for a while, "MEMORY CLEARED!" appears. All of the following items are reset or cleared:

- All preset stations are reset or cleared.
- All sound field parameters are reset to their factory settings.
- All index names (of preset stations and program sources) are cleared.
- All SET UP parameters are reset to their factory settings.
- The sound field memorized for each program source and preset stations are cleared.

Performing initial setup operations

Before using your receiver for the first time, adjust SET UP parameters so that the receiver correspond to your system. For the adjustable parameters, see the table on page 84. See pages 19–24 for speaker settings and pages 50–52 for other settings.

Multi channel surround setup

For the best possible surround sound, all speakers should be the same distance from the listening position (Ⓐ).

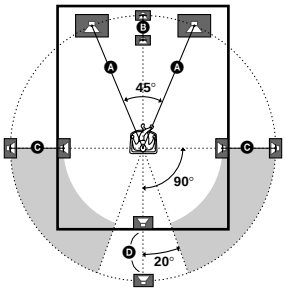
However, the receiver lets you to place the center speaker up to 1.5 meters closer (Ⓑ), the surround speakers up to 4.5 meters closer (Ⓒ) and the surround back speakers up to 4.5 meters closer (Ⓓ) to the listening position.

The front speakers can be placed from 1.0 to 12.0 meters from the listening position (Ⓐ).

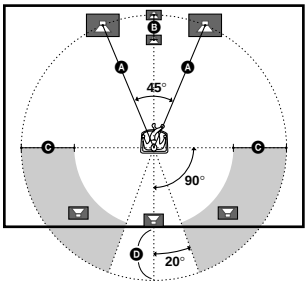
You can place the surround speakers either behind you or to the side, depending on the shape of your room (etc.).

You can use the center and surround back speakers as surround back right and left speakers.

When placing surround speakers to your side



When placing surround speakers behind you



Note

Do not place the center speaker farther away from the listening position than the front speakers.

Tip

When setting up the surround back speaker, set the speaker at least 1 meter behind the listening position. It is recommended to place the speaker at an equal distance from the surround left and right speakers. If there is no space behind the listening position, set the speaker above the listening position by placing it on a stand or hanging it from the ceiling. To prevent speaker damage or injury in case the speaker falls, make sure that it is properly fixed in place.

Specifying the speaker parameters

1 **Press SET UP.**

2 **Press the cursor buttons (< or >) to select the parameter you want to adjust.**

3 **Turn the jog dial to select the setting you want.**

The setting is entered automatically.

4 **Repeat steps 2 and 3 until you have set all of the parameters that follow.**

continued

Multi channel surround setup (continued)

Initial settings

Parameter	Initial setting
FRONT SP	LARGE
CENTER SP	LARGE
SURROUND SP	LARGE
SURR BACK SP	LARGE
SURR BACK L/R	NO
SUB WOOFER	YES
FRONT	5.0 meter
CENTER	5.0 meter
SURROUND	3.5 meter
SURR BACK	3.5 meter
SUB WOOFER	5.0 meter
S.W PHASE	NORMAL
DISTANCE UNIT	meter
SURR POSI.	SIDE
SURR HEIGHT	LOW
SURR BACK HGT.	LOW
FRONT SP >*	STD (120 Hz)
CENTER SP >*	STD (120 Hz)
SURROUND SP >*	STD (120 Hz)
SURR BACK SP >*	STD (120 Hz)
LFE HIGH CUT >	STD (120 Hz)

* When the speakers are set to SMALL only.

■ Front speaker size (FRONT)

- If you connect large speakers that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”.
- If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the front channel bass frequencies from the sub woofer.
- When the front speakers are set to “SMALL”, the center, surround, and surround back speakers are also automatically set to “SMALL” (unless previously set to “NO”).

■ Center speaker size (CENTER)

- If you connect a large speaker that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”. However, if the front speakers are set to “SMALL”, you cannot set the center speaker to “LARGE”.
- If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the center channel bass frequencies from the front speakers (if set to “LARGE”) or sub woofer.*1
- If you do not connect a center speaker, select “NO”. The sound of the center channel will be output from the front speakers.*2

■ Surround speaker size (SURROUND)

- If you connect large speakers that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”. However, if the front speakers are set to “SMALL”, you cannot set the surround speakers to “LARGE”.
- If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the surround channel bass frequencies from the sub woofer or other “LARGE” speakers.
- If you do not connect surround speakers, select “NO”.*3

Tip

*1–*3 correspond to the following Dolby Pro Logic modes

*1 NORMAL

*2 PHANTOM

*3 3 STEREO

■ Surround back speaker size (SURR BACK)

- If you connect a large speaker that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”. However, if the front speakers are set to “SMALL”, you cannot set the surround back speaker to “LARGE”.
- If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the center channel bass frequencies from the front speakers (if set to “LARGE”) or sub woofer.
- If you do not connect a surround back speaker, select “NO”.

Tip

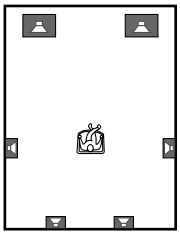
Internally, the LARGE and SMALL settings for each speaker determine whether or not the internal sound processor will cut the bass signal from that channel. When the bass is cut from a channel, the bass redirection circuitry sends the corresponding bass frequencies to the sub woofer or other “LARGE” speakers.

However, since bass sounds have a certain amount of directionality, it best not to cut them, if possible. Therefore, even when using small speakers, you can set them to “LARGE” if you want to output the bass frequencies from that speaker. On the other hand, if you are using a large speaker, but prefer not to have bass frequencies output from that speaker, set it to “SMALL”.

If the overall sound level is lower than you prefer, set all speakers to “LARGE”. If there is not enough bass, you can use the equalizer to boost the bass levels. To adjust the equalizer, see page 41.

■ Surround back speaker single or double (SURR BACK L/R)

- When the center speaker is set to “NO” and you use the center speaker as a surround back right speaker and use the surround back speaker as a surround back left speaker, select “YES”.
- If you use only a surround back speaker, select “NO”.



■ Sub woofer selection (SUB WOOFER)

- If you connect a sub woofer, select “YES”.
- If you do not connect a sub woofer, select “NO”. This activates the bass redirection circuitry and outputs the LFE signals from other speakers.
- In order to take full advantage of the Dolby Digital bass redirection circuitry, we recommend setting the sub woofer’s cut off frequency as high as possible.

■ Front speaker distance (FRONT)

Set the distance from your listening position to the front speakers (Ⓐ on page 19).

■ Center speaker distance (CENTER)

Set the distance from your listening position to the center speaker. Center speaker distance should be set from a distance equal to the front speaker distance (Ⓐ on page 19) to a distance 1.5 meters closer to your listening position (Ⓑ on page 19). When this range is exceeded, the display blinks. If you make the setting while the display blinks, you cannot fully enjoy the surround effect.

continued

Multi channel surround setup (continued)

■ Surround speaker distance (SURROUND)

Set the distance from your listening position to the surround speakers. Surround speaker distance should be set from a distance equal to the front speaker distance (Ⓐ on page 19) to a distance 4.5 meters closer to your listening position (Ⓒ on page 19). When this range is exceeded, the display blinks. If you make the setting while the display blinks, you cannot fully enjoy the surround effect.

■ Surround back speaker distance (SURR BACK)

Set the distance from your listening position to the surround back speaker(s). Surround back speaker distance should be set from a distance equal to the front speaker distance (Ⓐ on page 19) to a distance 4.5 meters closer to your listening position (Ⓓ on page 19). When this range is exceeded, the display blinks. If you make the setting while the display blinks, you cannot fully enjoy the surround effect.

■ Sub woofer distance (SUB WOOFER)

Set the distance from your listening position to the sub woofer.

Tip

The receiver allows you to input the speaker position in terms of distance. However, it is not possible to set the center speaker further than the front speakers. Also, the center speaker cannot be set more that 1.5 meters closer than the front speakers.

Likewise, the surround and surround back speakers can not be set farther away from the listening position than the front speakers. And they can be no more than 4.5 meters closer.

This is because incorrect speaker placement is not conducive to the enjoyment of surround sound.

Please note that, setting the speaker distance closer than the actual location of the speakers will cause a delay in the output of the sound from that speaker. In other words, the speaker will sound like it is farther away.

For example, setting the center speaker distance 1–2 meters closer than the actual speaker position will create a fairly realistic sensation of being “inside” the screen. If you cannot obtain a satisfactory surround effect because the surround speakers are too close, setting the surround speaker distance closer (shorter) than the actual distance will create a larger sound stage.

Adjusting these parameter while listening to the sound often results in much better surround sound. Give it a try!

■ Sub woofer phase polarity (S.W PHASE)

Set the sub woofer phase polarity. There is usually no problem when the sub woofer phase polarity is set to “NORMAL”. However, depending on the type of front speakers, the position of the sub woofer, and the cut-off frequency of the sub woofer, setting the phase polarity to “REVERSE” may produce better bass. Besides bass reproduction, the richness and tightness of the overall sound may also be affected. While listening from the main listening position, select the setting that best suits your environment.

■ Distance unit (DISTANCE UNIT)

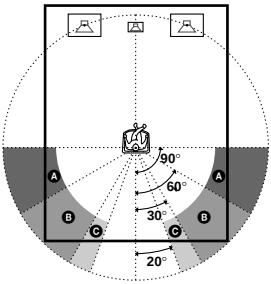
Lets you select either feet or meters as the unit of measure for setting distances.

■ Surround speaker position (SURR POSI.)*

This parameter lets you specify the location of your surround speakers for proper implementation of the Digital Cinema Sound surround modes in the “VIRTUAL” sound fields. Refer to the illustration below.

- Select “SIDE” if the location of your surround speakers corresponds to section Ⓐ.
- Select “MIDDLE” if the location of your surround speakers corresponds to section Ⓑ.
- Select “BEHIND” if the location of your surround speakers corresponds to section Ⓒ. This parameter is available only when the surround back speaker size is set to “NO”.

This setting only effects the surround modes in the “VIRTUAL” sound fields.

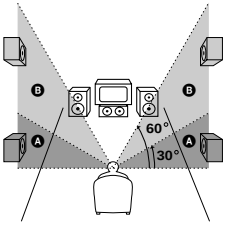


* These parameters are not available when “Surround speaker size (SURROUND)” is set to “NO”.

■ Surround speaker height (SURR HEIGHT)*/Surround back speaker height (SURR BACK HGT.)**

This parameter lets you specify the height of your surround and surround back speaker(s) for proper implementation of the Digital Cinema Sound surround modes in the “VIRTUAL” sound fields. Refer to the illustration below.

This setting only effects the surround modes in the “VIRTUAL” sound fields.



* These parameters are not available when “Surround speaker size (SURROUND)” is set to “NO”.

** This parameter is not available when “Surround back speaker size (SURR BACK)” is set to “NO”.

continued

Multi channel surround setup (continued)

Tip

The surround/surround back speaker position parameter is designed specifically for implementation of the Digital Cinema Sound modes in the "VIRTUAL" sound fields.

With the Digital Cinema Sound modes, speaker position is not as critical as other modes. All of the modes in the "VIRTUAL" sound fields were designed under the premise that the surround speaker would be located behind the listening position, but presentation remains fairly consistent even with the surround speakers positioned at a rather wide angle. However, if the speakers are pointing toward the listener from the immediate left and right of the listening position, the "VIRTUAL" sound fields will not be effective unless the surround speaker position parameter is set to "SIDE".

Nevertheless, each listening environment has many variables, like wall reflections, and you may obtain better results using "BEHIND" or "MIDDLE" if your speakers are located high above the listening position, even if they are to the immediate left and right.

Therefore, although it may result in a setting contrary to the "Surround speaker position" explanation, we recommend that you playback multi channel surround encoded software and listen to the effect each setting has on your listening environment. Choose the setting that provides a good sense of spaciousness and that best succeeds in forming a cohesive space between the surround sound from the surround speakers and the sound of the front speakers. If you are not sure which sounds best, select "BEHIND" and then use the speaker distance parameter and speaker level adjustments to obtain proper balance.

■ Front speaker crossover frequency (FRONT SP >)

Lets you adjust the front speaker bass crossover frequency when the front speakers are set to "SMALL".

■ Center speaker crossover frequency (CENTER SP >)

Lets you adjust the center speaker bass crossover frequency when the center speaker is set to "SMALL".

■ Surround speaker crossover frequency (SURROUND SP >)

Lets you adjust the surround speaker bass crossover frequency when the surround speakers are set to "SMALL".

■ Surround back speaker crossover frequency (SURR BACK SP >)

Lets you adjust the surround back speaker bass crossover frequency when the surround back speaker is set to "SMALL".

Note

You can set the FRONT, CENTER, SURROUND and SURR BACK parameters when the speaker size is set to "SMALL".

■ LFE high cut filter (LFE HIGH CUT >)

Lets you select the cut off frequency of the LFE channel high cut filter. Normally, select "STD". When using a passive sub woofer powered by a separate power amplifier, it may be better to change the cut off frequency.

Adjusting the speaker level

Use the remote while seated in your listening position to adjust the level of each speaker.

Note

The receiver incorporates a new test tone with a frequency centered at 800 Hz for easier speaker level adjustment.

1 **Press I/⏻ to turn on the receiver.**

2 **Press TEST TONE on the remote.**
You will hear the test tone from each speaker in sequence.

3 **Adjust the LEVEL parameters so that the level of the test tone from each speaker sounds the same when you are in your main listening position (page 39).**

4 **Press TEST TONE again to turn off the test tone.**

To output the test tone from a selected speaker

Use the LEVEL menu to set “TEST TONE” to “FIX” (page 40). The test tone is output only from the selected speaker.

For more precise speaker level adjustment

You can output the test tone or sound source from two adjacent speakers to adjust balance, phase, and equalization. Set the SET UP menu to test tone (T.TONE) and select the sound to be output (test tone or sound source) (page 52). Then, select the test tone parameter from the the LEVEL menu to select the two speakers you want to adjust (page 39).

Tips

- You can adjust the level of all speakers at the same time. Turn MASTER VOLUME on the main unit or press MASTER VOL +/– on the remote.
- You can use the jog dial on the receiver for the adjustment.

Notes

- The adjusted value are shown in the display during adjustment.
- Although these adjustments can also be made via the front panel using the LEVEL menu (when the test tone is output, the receiver switches to the LEVEL menu automatically), we recommend you follow the procedure described above and adjust the speaker levels from your listening position using the remote.
- When you select analog audio using the MULTI/2CH ANALOG DIRECT button, the power of the digital circuits is turned off.* Therefore, when you output the test tone in this setting, it requires a few seconds to output the test tone. However, this is not a malfunction.
  * When “D.POWER” is set to “AUTO OFF” in the SET UP menu.

Checking the connections

After connecting all of your components to the receiver, do the following to verify that the connections were made correctly.

1 **Press I/⏻ to turn on the receiver.**

2 **Turn on the component that you connected (e.g., CD player or tape deck).**

3 **Rotate FUNCTION to select the component (program source).**

4 **Start playing.**

If you do not obtain normal sound output after performing this procedure, see “Troubleshooting” on page 76 and take the appropriate measures to correct the problem.

Selecting the component

FUNCTION control

Turn FUNCTION control to select the component you want to use.

To select	Rotate to light
VCR	VIDEO 1 or VIDEO 2
Camcorder or video game	VIDEO 3
DVD or LD player	DVD/LD
TV or satellite tuner	TV/SAT
Tape deck	TAPE
MD or DAT deck	MD/DAT
CD/SACD player	CD/SACD
Built in tuner	TUNER
Turntable	PHONO

After turning on the component you selected, select the component and play the program source.

- After selecting VCR, camcorder, video game, DVD player, or LD player, turn on the TV and set the TV's video input to match the component you selected.

AUDIO SPLIT

Press AUDIO SPLIT to assign the audio input for each function. This function is convenient when you are using a number of digital components. You can select the audio input assigned by this function using INPUT MODE (page 27).
You cannot assign the audio input for TUNER.

1 Turn FUNCTION to select the source for audio input assignment.

2 Press AUDIO SPLIT.

3 Turn FUNCTION to select the audio input.
The audio input you can assign differs depending on the function.

DVD/LD, CD/SACD

NO ASSIGN → DIGITAL: ONLY COAX → DIGITAL: ONLY OPT → ONLY ANALOG INPUT

TV/SAT, MD/DAT

NO ASSIGN → DVD/LD (COAXIAL) → CD/SACD (COAXIAL) → ONLY ANALOG INPUT

Analog functions except for PHONO

NO ASSIGN → DVD/LD (COAXIAL) → DVD/LD (OPTICAL) → TV/SAT (OPTICAL) → MD/DAT (OPTICAL) → CD/SACD (COAXIAL) → CD/SACD (OPTICAL)

PHONO

NO ASSIGN → VIDEO 1 → VIDEO 2 → VIDEO 3 → DVD/LD (ANALOG) → TV/SAT (ANALOG) → TAPE → MD/DAT (ANALOG) → CD/SACD (ANALOG)

4 Press AUDIO SPLIT.
If you do not press AUDIO SPLIT within 8 seconds, the receiver automatically assigns the selected audio input.

Tips

- If you do not assign, select "NO ASSIGN".
- If you select "DIGITAL: ONLY COAX" or "DIGITAL: ONLY OPT" for DVD/LD, only coaxial or optical digital input is automatically selected for DVD/LD.

INPUT MODE

Press INPUT MODE to select the input mode for your digital components. You can also select the COAXIAL or OPTICAL audio input of other functions assigned by AUDIO SPLIT. Each time you press the button, the input mode of the currently selected component switches.

Select	To
AUTO 2CH	Give priority to the analog audio signals input to the AUDIO IN (L/R) jacks when there is no digital signals.
COAXIAL FIXED	Specify the digital audio signals input to the DIGITAL COAXIAL input jacks.
OPTICAL FIXED	Specify the digital audio signals input to the DIGITAL OPTICAL input jacks.
ANALOG 2CH FIXED	Specify the analog audio signals input to the AUDIO IN (L/R) jacks.

When the MULTI CH 1 or 2 is assigned to a specific function using SET UP menu (page 50), the followings are displayed instead of "AUTO 2CH" and "ANALOG 2CH FIXED".

Select	To
AUTO MULTI CH 1 or 2	Give priority to the analog audio signals input to the MULTI CH IN 1 or 2 jacks when there is no digital signals.
MULTI CH 1 or 2 FIXED	Specify the analog audio signals input to the MULTI CH IN 1 or 2 jacks.

MULTI/2CH ANALOG DIRECT

Press MULTI/2CH ANALOG DIRECT to enjoy the audio source connected to the MULTI CH IN 1 or 2 jacks or analog 2 channel input jacks. Only volume control and the front speaker balance can be adjusted when set to 2CH ANALOG DIRECT. When set to MULTI CH 1 or 2 DIRECT, you can adjust balance and level of all the speakers. When this function is on, the surround effects are turned off.

Select	To
MULTI CH 1 or 2 DIRECT	Enjoy the audio source connected to the MULTI CH IN 1 or 2 jacks. MULTI CH IN 1 or 2 indicator lights up in the display. This mode is suitable for enjoying high quality analog source.
2CH ANALOG DIRECT	Enjoy the audio source connected to analog 2 channel jacks. This mode is suitable for enjoying high quality analog source.

SPEAKERS switch

Select	To
ON	Output the sound from the speakers connected to the SPEAKERS terminals.
OFF	No speaker output.

MUTING

Press MUTING to mute the sound. "MUTING" appears in the display when the sound is muted. The muting function is canceled when you turn the MASTER VOLUME clockwise to turn the volume up.

continued

PHONES

Use to connect headphones.

When the headphones are connected, selectable sound fields are HEADPHONE (2CH), HEADPHONE (DIRECT), and HEADPHONE THEATER (see page 32).

Note

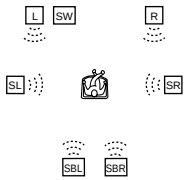
When “HEADPHONE (MULTI 1)” or “HEADPHONE (MULTI 2)” appears in the display while the headphones are connected, only the front L/R signals of the multi channels are output from the headphones. Press MULTI/2CH ANALOG DIRECT to cancel “MULTI CH 1 (or 2) DIRECT” (page 27).

Selecting the 7.1 channel mode

The 7.1 channel mode applies DSP (Digital Signal Processor) technology to 6.1 channel encoded audio in order to reproduce the surround back channel in stereo (L/R). There are two ways to select the 7.1 channel mode. Make speaker connections and settings as described below.

When using only the speakers connected to this receiver

You can enjoy the 7.1 channel mode sound using only the actual 6.1 channel speakers connected to this receiver. Select the center speaker to be used as the surround back right speaker, and set the surround back speaker to be used as the surround back left speaker. The sound of the center channel will be downmixed to other channels.



To connect the speakers

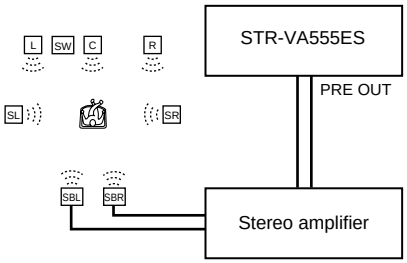
See page 16.

Before using the 7.1 channel mode

Set “Center speaker size (CENTER)” to “NO” and set “Surround back speaker single or double (SURR BACK L/R)” to “YES”. For details on the setting, see pages 20–21.

When connecting an additional amplifier to reproduce all 7.1 channels using real speakers

If you have another stereo power amplifier, you can enjoy the 7.1 channel mode using real speakers for all 7.1 channels. Connect the Surround back (L/R) speakers through your other amplifier.



To connect the speakers and the amplifier

See page 17.

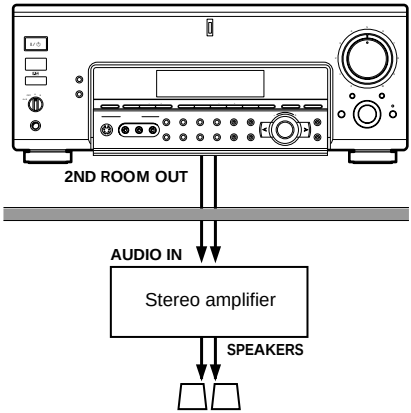
Before using the 7.1 channel mode

Set “Center speaker size (CENTER)” to “LARGE” or “SMALL” according to the connected center speaker, then set “Surround back speaker single or double (SURR BACK L/R)” to “YES”. For details on the setting, see pages 20–21.

Note

No sound is output from the SPEAKERS SURR BACK terminals.

Listening to the sound in another room



You can select the analog audio signals for output to a stereo amplifier in another room. For details on the connection, see page 13.

1 **Press 2ND ROOM.**

2 **Turn the jog dial to select the analog audio signals.**

The audio source changes cyclically as follows:

SOURCE* ⟶ VIDEO 1 ⟶ VIDEO 2 ⟶ VIDEO 3 ⟶ DVD/LD ⟶ TV/SAT ⟶ TAPE ⟶ MD/DAT ⟶ CD/SACD ⟶ TUNER

* The audio signals of the current function is output.

Tips

- When "SOURCE" is selected, the signals input to the MULTI CH IN jacks are not output from the 2ND ROOM OUT jacks even when MULTI/2CH ANALOG DIRECT is set to MULTI CH 1 or 2 DIRECT. The analog audio signals of the current function are output.
- Only signals from components connected to the analog input jacks are output through the 2ND ROOM OUT jacks. No signals are output from components connected to only the digital input jacks.

Changing the display

DISPLAY

Press repeatedly to change the information on the display window.

DIMMER

Press DIMMER repeatedly to adjust the brightness of the display (5 steps). DIMMER indicator lights when the dimmer function is activated.

You can take advantage of surround sound simply by selecting one of the receiver's pre-programmed sound fields. They bring the exciting and powerful sound of movie theaters and concert halls into your home. You can also customize the sound fields to obtain the sound you want by changing the various surround parameters.
To fully enjoy surround sound, you must register the number and location of your speakers. See "Multi channel surround setup" starting from page 19 to set the speaker parameters before enjoying surround sound.

Selecting a sound field

You can enjoy surround sound simply by selecting one of the pre-programmed sound fields according to the program you want to listen to.

Press MODE +/– repeatedly to select the sound field you want.

The current sound field is indicated in the display. See pages 30–32 for information on each sound field.

To turn the surround effect off

Press A.F.D., 2CH, or MULTI/2CH ANALOG DIRECT (page 32).

Tips

- You can identify the encoding format of program software by looking at its packaging.
  Dolby Digital discs are labeled with the DOLBY DIGITAL logo, and Dolby Surround encoded programs are labeled with the DOLBY SURROUND PRO LOGIC logo.
- When sound signals with a sampling frequency of more than 48 kHz are input, the sound signals are output in stereo automatically, and the sound field is turned off.
- You can change the name of the sound field (see page 48).

About DCS (Digital Cinema Sound)

The sound fields with DCS marks use DCS technology. When these sound fields are selected, "Digital Cinema Sound" indicator in the display lights up.

DCS is the concept name of the surround technology for home theater developed by Sony. DCS uses the DSP (Digital Signal Processor) technology to reproduce the sound characteristics of an actual cinema cutting studio in Hollywood.

When played at home, DCS will create a powerful theater effect that mimics the artistic combination of sound and action as envisioned by the movie director.

■ NORMAL SURROUND

Software with multi channel surround audio signals is played back according to the way it was recorded. Software with 2 channel audio signals is decoded with Dolby Pro Logic to create surround effects.

■ CINEMA STUDIO EX A–C[1)2)] DCS

Uses 3D sound imaging of V. MULTI DIMENSION (page 31) to create 5 sets of virtual speakers surrounding the listener from a single pair of actual surround speakers. Though this receiver incorporates the 6.1 channel amplifier, you can reproduce the 6.1 channel surround sound with the 5.1 channel speaker settings by creating the virtual surround back speaker through the "VIRTUAL MATRIX 6.1" playback function (page 33).

- CINEMA STUDIO EX A reproduces the sound characteristics of Sony Pictures Entertainment's classic editing studio.
- CINEMA STUDIO EX B reproduces the sound characteristics of Sony Pictures Entertainment's mixing studio which is one of the most up-to-date facilities in Hollywood.
- CINEMA STUDIO EX C reproduces the sound characteristics of Sony Pictures Entertainment's BGM recording studio.

■ SEMI C.STUDIO EX A–C[1] (Semi Cinema Studio EX A–C) DCS

Uses 3D sound imaging of V. SEMI M. DIMENSION to create 5 sets of virtual speakers surrounding the listener from the sound of the front speakers (without using actual surround speakers).
You can reproduce the 6.1 channel surround sound by creating the virtual surround back speaker through the “VIRTUAL MATRIX 6.1” playback function (page 33).

- SEMI C.STUDIO EX A reproduces the sound characteristics of Sony Pictures Entertainment’s classic editing studio.
- SEMI C.STUDIO EX B reproduces the sound characteristics of Sony Pictures Entertainment’s mixing studio which is one of the most up-to-date facilities in Hollywood.
- SEMI C.STUDIO EX C reproduces the sound characteristics of Sony Pictures Entertainment’s BGM recording studio.

■ NIGHT THEATER

Allows you to retain a theater like environment while listening at low volume levels, such as late at night.

■ MONO MOVIE

Creates a theater like environment from movies with monaural soundtracks.

■ STEREO MOVIE

Creates a theater like environment from movies recorded with stereo soundtracks.

■ V.MULTI DIMENSION[1] (Virtual Multi Dimension) DCS

Uses 3D sound imaging to create an array of virtual surround speakers positioned higher than the listener from a single pair of actual surround speakers. This mode creates 5 sets of virtual speakers surrounding the listener at approximately a 30° angle of elevation.

■ VIRTUAL MULTI REAR[1] (Virtual Multi Rear) DCS

Uses 3D sound imaging to create 3 sets of virtual surround speakers from 1 set of actual surround speakers.

■ V.SEMI M.DIMENSION[1] (Virtual Semi Multi Dimension) DCS

Uses 3D sound imaging to create virtual surround speakers from the sound of the front speakers without using actual surround speakers. This mode creates 5 sets of virtual speakers surrounding the listener at a 30° angle of elevation.

■ VIRTUAL ENHANCED A[1] (Virtual Enhanced Surround A) DCS

Uses 3D sound imaging to create 3 sets of virtual surround speakers from the sound of the front speakers without using actual surround speakers.

■ VIRTUAL ENHANCED B[1] (Virtual Enhanced Surround B) DCS

Uses 3D sound imaging to create 1 set of virtual surround speakers from the sound of the front speakers without using actual surround speakers.

■ D.CONCERT HALL A, B[2] (Digital Concert Hall A, B)

Reproduces the acoustics of a concert hall using multi-speaker system and 3D sound imaging for software with 2 channel signals like CDs.

- D.CONCERT HALL A reproduces the sonic character of the CONCERTGEBOUW in Amsterdam, which is famous for its large sound stage due to its reflectivity.
- D.CONCERT HALL B reproduces the sonic character of the MUSIKVEREIN in Vienna, which is famous for its hall resonance and unique reverberative sound.

continued

■ **CHURCH**
Reproduces the acoustics of a stone church.

■ **OPERA HOUSE**
Reproduces the acoustics of an opera house.

■ **JAZZ CLUB**
Reproduces the acoustics of a jazz club.

■ **DISCO/CLUB**
Reproduces the acoustics of a discotheque/ dance club.

■ **LIVE HOUSE**
Reproduces the acoustics of a 300-seat live house.

■ **ARENA**
Reproduces the acoustics of a 1000-seat concert hall.

■ **STADIUM**
Reproduces the feeling of a large open-air stadium.

■ **GAME**
Obtains maximum audio impact from video game software.

When headphones are connected, you can select the following sound fields only:

■ **HEADPHONE (2CH)**
Outputs the sound in 2 channel (stereo). Standard 2 channel (stereo) sources completely bypass the sound field processing. Multi channel surround formats are downmixed to 2 channel.

■ **HEADPHONE (DIRECT)**
Outputs the analog signals without digital processing by the equalizer, sound field, etc.

■ **HEADPHONE THEATER**
Allows you to experience a theater like environment while listening through a pair of headphones.

1) "VIRTUAL" sound field: Sound field with virtual speakers. However, setting the SURROUND menu "VIR. SPEAKERS" parameter to "OFF" when using "CINEMA STUDIO EX A–C" or "SEMI C.STUDIO EX A–C" reproduces the sound characteristics of each cinema production studio without virtual speakers.
2) You can select directly by pressing the buttons on the front panel.

Notes
- The effects provided by the virtual speakers may cause increased noise in the playback signal.
- When listening with sound fields that employ the virtual speakers, you will not be able to hear any sound coming directly from the surround speakers.

Use the buttons on the front panel to operate the following modes.

A.F.D. (Auto Format Decoding)
Automatically detects the type of audio signal being input (Dolby Digital, DTS, or standard 2 channel stereo) and performs the proper decoding if necessary. This mode presents the sound as it was recorded/encoded, without adding any effects (ex. reverberation). However, if there are no low frequency signals (Dolby Digital LFE, etc.) it will generate a low frequency signal for output to the sub woofer.

2CH (2 Channel)
Outputs the sound from the front left and right speakers only. Standard 2 channel (stereo) sources completely bypass the sound field processing. Multi channel surround formats are downmixed to 2 channel.
There is no sound from the sub woofer.

MULTI/2CH ANALOG DIRECT (Multi/2ch Analog Direct)
The analog input signal is not digitally processed. You can enjoy high quality analog source. Only volume control and the front speaker balance can be adjusted when set to 2CH ANALOG DIRECT. When set to MULTI CH 1 or 2 DIRECT, you can adjust balance and level of all the speakers. When this function is on, the equalizer, sound field (etc.) are turned off.

NIGHT MODE

Allows you to retain a theater like environment, at low volume levels even late at night. Even at a low volume level, you can clearly hear the dialogues and adjust the volume in small steps. This function can be used with other sound field (pages 30–32).

While this function is on, BASS, TREBLE, and EFFECT level rises, and D.RANGE COMP. is automatically set to “MAX”.

This function does not work while MULTI/ 2CH ANALOG DIRECT is on.

Note

No sound is output from the sub woofer when “2CH” is selected. To listen to 2 channel (stereo) sources using the front left and right speakers and a sub woofer, select “A.F.D.”.

6.1CH DECODING

Press 6.1CH DECODING to select the 6.1 channel decoding mode. You can use the SET UP menu to select the parameter (page 50).

This function works only for the multi channel format [3/2], [3/2+1] or [3/3].

This function is effective for all the sound fields.

Note

When you select “A.F.D.”, 6.1CH DECODING setting automatically switches to “AUTO”, even if previously set to “ON” or “OFF”in a different sound field. When you switch back to one of the other sound fields, 6.1CH DECODING setting returns to its previous setting (“ON” or “OFF”).

About DVD encoding and playback of Surround EX (6.1 Channel) movies

The Surround EX System used in movie theaters employs a matrix system to produce 6.1 channels from a 5.1 channel film soundtrack. The matrix system reproduces the sountrack as intended by the filmmaker. All DVD software encoded with Dolby Digital, DTS-ES Matrix 6.1, and DTS-ES Discrete 6.1 includes the 5.1 channel soundtrack designed for use in movie theaters. Therefore it is possible to change the soundtrack to the one designed for use in movie theaters.

To enjoy 6.1 channel surround sound (“VIRTUAL MATRIX 6.1” playback function)

You can experience 6.1 channel surround sound as if you are in a real theater.

- If you have a 2.0, 2.1, 3.0, 3.1, 5.0, 5.1 channel speaker system

  Use the “VIRTUAL MATRIX 6.1” playback function.
  To effectively enjoy “VIRTUAL MATRIX 6.1” playback, use the 6.1CH DECODING function when you select “CINEMA STUDIO EX A–C” or “SEMI C.STUDIO EX A–C”. The sound characteristics of CINEMA STUDIO and the 3D sound imaging create a virtual surround back speaker, and you can experience the surround effect as if you are in a real theater. You can select AUTO/ON/OFF using the 6.1CH DECODING button.
- If you have a 6.1 channel speaker system

  When “NORMAL SURROUND” is selected, set 6.1CH DECODING to “ON”.

continued

About 6.1 channel decoding mode

6.1CH DECODING	Input stream	Output channel	Applied 6.1 channel decoder
OFF	Dolby Digital	5.1	NO
	Dolby Digital EX[1)]	5.1	NO
	DTS 5.1	5.1	NO
	DTS-ES Matrix 6.1[2)]	5.1	NO
	DTS-ES Discrete 6.1[3)]	5.1	NO
AUTO	Dolby Digital	5.1	NO
	Dolby Digital EX	6.1	Sony DCMD[4)]
	DTS 5.1	5.1	NO
	DTS-ES Matrix 6.1	6.1	DTS matrix decoder
	DTS-ES Discrete 6.1	6.1	DTS discrete decoder
ON	Dolby Digital	6.1	Sony DCMD
	Dolby Digital EX	6.1	Sony DCMD
	DTS 5.1	6.1	Sony DCMD
	DTS-ES Matrix 6.1	6.1	Sony DCMD
	DTS-ES Discrete 6.1	6.1	Sony DCMD

1) Dolby Digital EX

Dolby Digital DVD that includes a Surround EX flag. The Dolby Corporation web page can help you distinguish Surround EX films. Set 6.1 Channel Decoding to “ON” when enjoying these movies.

2) DTS-ES Matrix 6.1

Software encoded with a flag to denote it has both Surround EX and 5.1 channel signals.
Set 6.1 Channel Decoding to “AUTO” to activate the matrix decoder provided by DTS Corporation. Set to “ON” to activate Sony DCMD.

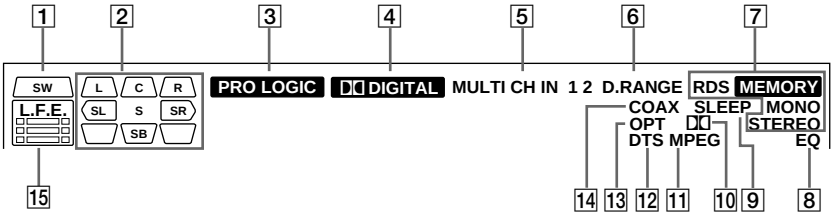
3) DTS-ES Discrete 6.1

Software encoded with both 5.1 channel signals and an extension stream designed for returning those signals to 6.1 discrete channels. Discrete 6.1 channel signals are DVD specific signals not used in movie theaters.
Set 6.1 Channel Encoding to “AUTO” to play the discrete 6.1 channel signals. Set 6.1 Channel Decoding to “ON” to activate Sony DCMD and play 6.1 channel signals equivalent to those that would be used in a movie theater.

4) Sony DCMD (Digital Cinema Matrix Decoder) system

Sony DCMD is a high fidelity 6.1 channel matrix decoder developed by Sony. This decoder has the same function as that used in movie theaters. It can be used with all Surround EX formats (Dolby Digital EX, DTS-ES Matrix 6.1, and DTS-ES Discreet 6.1). Sony DCMD conforms to Dolby Digital EX.

Understanding the multi channel surround displays

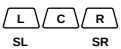


1 **SW:** Lights up when sub woofer selection is set to "YES" and the receiver detects that the disc being played back does not contain the LFE channel signal. While this indicator lights up, the receiver creates a sub woofer signal based on the low frequency components of the front channels.

2 **Playback channel indicators:** The letters (L, C, R, etc.) indicate the channels being played back. The boxes around the letters vary to show how the receiver downmixes the source sound (based on the speakers settings). When using sound fields like "D.CONCERT HALL", the receiver adds reverberation based on the source sound.

L (Front Left), R (Front Right), C (Center (monaural)), SL (Surround Left), SR (Surround Right), S (Surround (monaural or the surround components obtained by Pro Logic processing)), SB (Surround Back (the surround back components obtained by 6.1 matrix decoding))

Example:
Recording format (Front/Surround): 3/2
Output channel: Surround speakers absent
Sound Field: A.F.D.



3 **PRO LOGIC:** Lights up when the receiver applies Pro Logic processing to 2 channel signals in order to output the center and surround channel signals. However, this indicator also lights when the Pro Logic II movie/music decoder is in active. However, this indicator does not light if the center and surround speakers are set to "NO", and "A.F.D." or "NORMAL SURROUND" is selected.

4 **DIGITAL:** Lights up when a sound field other than "2CH" is selected and the receiver is decoding signals recorded in the Dolby Digital format.

5 **MULTI CH IN 1/2:** Lights up when MULTI CH IN 1 or 2 is selected.

6 **D.RANGE:** Lights up when dynamic range compression is activated. See page 41 to adjust the dynamic range compression.

7 **Tuner indicators:** Light up when using the receiver to tune in radio stations, etc. See pages 43–47 for tuner operations.

8 **EQ:** Lights up when the equalizer functions.

9 **SLEEP:** Lights up when sleep timer is activated.

10 **:** Lights up when Dolby Digital signals are input.

continued

Understanding the multi channel surround displays (continued)

11 **MPEG:** Lights up when MPEG signals are input.

Note

Only the front 2 channels are compatible with MPEG format. Multi channel surround sound is downmixed and output from the front 2 channels.

12 **DTS:** Lights up when DTS signals are input. When playing a DTS format disc, be sure that you have made digital connections and that INPUT MODE is NOT set to ANALOG 2CH FIXED (see page 27).

13 **OPT:** Lights up when the source signal is a digital signal being input through the OPTICAL terminal.

14 **COAX:** Lights up when the source signal is a digital signal being input through the COAXIAL terminal.

15 **L.F.E.:** Lights up when the disc being played back contains the LFE (Low Frequency Effect) channel. When the sound of the LFE channel signal is actually being reproduced, the bars underneath the letters lights up to indicate the level. Since the LFE signal is not recorded in all parts of the input signal the bar indication will fluctuate (and may turn off) during playback.

Customizing sound fields

By adjusting the surround parameters and the equalization of the front, center, surround, and surround back speakers, you can customize the sound fields to suit your particular listening situation.

Once you customize a sound field, the changes are stored in the memory indefinitely. You can change a customized sound field any time by making new adjustments to the parameters.

See the tables starting from page 85 for the parameters available in each sound field.

To get the most from multi channel surround sound

Position your speakers and do the procedures described in "Multi channel surround setup" starting from page 19 before you customize a sound field.

Adjusting the surround parameters

The SURROUND menu contains parameters that let you customize various aspects of the current sound field. The settings are stored individually for each sound field.

1 **Start playing a program source encoded with multi channel surround sound.**

2 **Press SURROUND.**

The button lights up and the first parameter is displayed.

3 **Press the cursor buttons (< or >) to select the parameter you want to adjust.**

4 **Turn the jog dial to select the setting you want.**

The setting is entered automatically.

Initial settings

Parameter	Initial setting
2CH DECODING	(depends on the sound field)
2CH MODE	PRO LOGIC
C.WIDTH L__C__R*	3
DIMENSION F__I__S*	Midpoint
PANORAMA MODE*	OFF
EFFECT LEVEL	(depends on the sound field)
WALL S__I__H	Midpoint
REVERB S__I__L	Midpoint
FRONT REVERB	STD (STANDARD)
SCREEN DEPTH	MID
VIR.SPEAKERS	ON
SUR.ENHANCER	ON
BASS GAIN	0 dB
BASS FREQ.	250 Hz
TREBLE GAIN	0 dB
TREBLE FREQ.	2.5 kHz

* You can set this parameter only when the 2ch decode mode is set to "PL II MUSIC".

2ch decode type (2CH DECODING)

Lets you specify the settings for decoding Digital PCM, analog input, or the 2 channel audio signals of [2/0] format sound.

- When set to "AUTO", the receiver performs the decoding when the Dolby Surround or DTS Surround encode flag is on.
- When set to "ON", the receiver performs the decoding for the 2 channel source, regardless of the encode flag.
- When set to "OFF", the receiver does not perform the decoding.

Note

When "NORMAL SURROUND" is selected, the receiver is automaticallty set to "ON" setting. When "A.F.D." is selected, the receiver automatically set to "AUTO" setting. In either case, this parameter is not displayed in the SURROUND menu.

continued

2ch decode mode (2CH MODE)

Lets you specify the type of decoding for the 2 channel source. This receiver incorporates with Dolby Surround Pro Logic II, and DTS Neo:6. Each of these has movie mode and music mode, and the receiver can reproduce the 2 channel sound in 5.1 channel through Dolby Surround Pro Logic II, or 6 channel through DTS Neo:6.

- When set to “PRO LOGIC”, the receiver performs the Pro Logic decoding. The source recorded in 2 channel is decoded into 4 channels.
- When set to “PL II MOVIE”, the receiver performs the Pro Logic II movie mode decoding. This setting is ideal for the movies encoded in Dolby Surround. Besides, this mode can reproduce the sound in 5.1 channel when watching the videos of old movies or in the dubbed language.
- You can set to “PL II MUSIC” only when “NORMAL SURROUND” is selected. When set to “PL II MUSIC”, the receiver performs the Pro Logic II music mode decoding. This setting is ideal for the normal stereo sources, such as CDs. You can make further adjustments using center width control, dimension control, and panorama mode parameters.
- When set to “Neo: Cinema”, the receiver performs the DTS Neo:6 movie mode decoding. This setting is ideal for the movies encoded in DTS Surround.
- You can set to “Neo: Music” only when “NORMAL SURROUND” is selected. When set to “Neo: Music”, the receiver performs the DTS Neo:6 music mode decoding. This setting is ideal for the normal stereo sources, such as CDs.

Note

Dolby Surround Pro Logic II and DTS Neo:6 do not function for DTS or MPEG format signals.

Center width control (C WIDTH)

You can set this parameter only when 2ch decode mode is set to “PL II MUSIC”. You can adjust the distribution of the center channel signal, generated through the Dolby Surround Pro Logic II decoding, to the L/R speakers.

Dimension control (DIMENSION)

You can set this parameter only when 2ch decode mode is set to “PL II MUSIC”. You can adjust the difference between the front channels and the surround channels.

Panorama mode (PANORAMA MODE)

You can set this parameter only when 2ch decode mode is set to “PL II MUSIC”. You can enjoy the surround sound by spreading the sound field of front speakers to the left and right of the listening position.

Effect level (EFFECT LEVEL)

Lets you adjust the “presence” of the current surround effect.

Wall type (WALL)

Lets you control the level of the high frequencies to alter the sonic character of your listening environment by simulating a softer (S) or harder (H) wall. The midpoint designates a neutral wall (made of wood).

Reverberation (REVERB)

Lets you control the spacing of the early reflections to simulate a sonically longer (L) or shorter (S) room. The midpoint designates a standard room with no adjustment.

Front reverberation (FRONT REVERB)

This parameter can be used when "D.CONCERT HALL A, B" is selected. This parameter lets you adjust the amount of reverberations to add to the front signals according to the original reverberations in the source.

- To increase front reverberations, select "WET".
- To decrease front reverberations, select "DRY".

Screen depth (SCREEN DEPTH)

In a movie theater, sound seems to come from inside the image reflected on the movie screen. This parameter lets you create the same sensation in your listening room by shifting the sound of the front speakers "into" the screen. "DEEP" provides the greatest amount of screen depth.

Virtual speakers (VIR. SPEAKERS)

Allows you turn the virtual speakers created by "CINEMA STUDIO EX A, B, C" and "SEMI C.STUDIO EX A, B, C" off or on.

Surround reflection enhancer (SUR. ENHANCER)

This is a setup that adds the effect of a broader sound obtained from the sound of the surround channel even when the surround channel sound is monaural. This setting operates in CINEMA STUDIO EX A, B, C and SEMI C.STUDIO EX A, B, C.

- When ON is set, the effect is automatically applied to sources recorded in Dolby Pro Logic, Dolby Digital [2/1], [3/1] or dts [2/1], [3/1], etc. surround channel.
- When OFF is set, there is no effect added.

Bass adjustment (Gain/Frequency)

Unlike the equalizer in the equalizer menu (which allows you to individually adjust the overall sound quality of each set of speakers), these parameters allow you to individually adjust the tonal quality of each sound field.

1 Press the cursor buttons (< or >) repeatedly to select the gain (dB) or frequency (Hz).

2 Turn the jog dial to adjust.

Repeat until you achieve the sound you desire.

Treble adjustment (Gain/Frequency)

Adjust as described in "Bass adjustment".

Adjusting the level parameters

The LEVEL menu contains parameters that let you adjust the balance and volumes of each speaker. The settings are applied to all sound fields.

1 **Start playing a program source encoded with multi channel surround sound.**

2 **Press LEVEL.**

The button lights up and the first parameter is displayed.

3 **Press the cursor buttons (< or >) to select the parameter you want to adjust.**

4 **Turn the jog dial to select the setting you want.**

The setting is entered automatically.

continued

Initial settings

Parameter	Initial setting
TEST TONE*	OFF
PHASE NOISE*	OFF
PHASE AUDIO*	OFF
FRONT L__I__R	Center
SURROUND L__I__R	Center
SUR.BACK L__I__R	Center
CENTER LEVEL	0 dB
SURROUND LEVEL	0 dB
SUR.BACK LEVEL	0 dB
S.WOOFER LEVEL	0 dB
LFE MIX LEVEL	0 dB
D.RANGE COMP.	OFF

* One of these parameters appears depending on the test tone mode (T.TONE) parameter in the SET UP menu (page 52).

Test tone (TEST TONE)

Lets you output the test tone from each speaker in sequence. When set to “AUTO”, the test tone is output from each speaker automatically. When set to “FIX”, you can select the speaker to output the test tone.

Test tone (PHASE NOISE)

Lets you output the test tone from two adjacent speakers at a time in sequence.

Test tone (PHASE AUDIO)

Lets you output the source sound instead of the test tone from two adjacent speakers at a time in sequence.

Front balance (FRONT)

Lets you adjust the balance between front left and right speakers.

Surround balance (SURROUND)

Lets you adjust the balance between surround left and right speakers.

Surround back balance (SUR.BACK)

Lets you adjust the balance between surround back left and right speakers when surround back L/R speakers are set to “YES”.

Center level (CENTER LEVEL)

Lets you adjust the level of the center speaker.

Surround level (SURROUND LEVEL)

Lets you adjust the level of the surround left and right speakers.

Surround back level (SURR BACK LEVEL)

Lets you adjust level of the surround back (left and right) speaker(s).

Sub woofer level (S. WOOFER LEVEL)

Lets you adjust the level of the sub woofer.

LFE (Low Frequency Effect) mix level (LFE MIX)

Lets you attenuate the level of the LFE (Low Frequency Effect) channel output from the sub woofer without effecting the level of the bass frequencies sent to the sub woofer from the front, center or surround channels via the Dolby Digital or DTS bass redirection circuitry.

- For LFE mix level, “0 dB” outputs the full LFE signal at the mix level determined by the recording engineer.
- To mute the sound of the LFE channel from the sub woofer, select “OFF”. However, the low frequency sounds of the front, center, or surround speakers are output from the sub woofer according to the settings made for each speaker in the speaker setup (page 20–21).

Dynamic range compressor (D. RANGE COMP.)

Lets you compress the dynamic range of the sound track. This may be useful when you want to watch movies at low volumes late at night. We recommend using the “MAX” setting.

- To reproduce the sound track with no compression, select “OFF”.
- To reproduce the sound track with the dynamic range intended by the recording engineer, select “STD”.
- To compress the dynamic range in small steps to achieve the sound you desire, select “0.1”–“0.9”.
- To reproduce a dramatic compression of the dynamic range, select “MAX”.

Notes

- Dynamic range compression is possible with Dolby Digital sources only.
- While NIGHT MODE is activated, D.RANGE COMP. is automatically set to MAX and is not displayed in the LEVEL menu.

Resetting customized sound fields to the factory settings

1 **If the power is on, press I/⏻ to turn off the power.**

2 **Hold down MODE + and press I/⏻.**

“S.F Initialize” appears in the display and all sound fields are reset at once.

Adjusting the equalizer

The EQ menu lets you adjust the equalization of the front, center, surround and surround back speakers individually. The equalizer bank lets you store up to 5 different equalizer settings.

The following menu is only available after pressing EQUALIZER and selecting one of the equalizers (EQ PRESET [1]–[5]).

1 **Start playing a program source encoded with multi channel surround sound.**

2 **Press EQUALIZER repeatedly to select the equalizer you want to adjust (EQ PRESET [1]–[5]).**

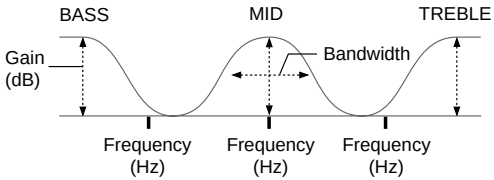
3 **Press EQ.**

The button lights up and the first parameter is displayed.

4 **Press the cursor buttons (< or >) to select the parameter you want to adjust.**

5 **Turn the jog dial to select the setting you want.**

The setting is entered automatically.



Tip

You can turn off the equalization without erasing the equalizer. Press EQUALIZER repeatedly to select “EQ PRESET [OFF]”.

continued

Front speaker bass adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of bass.

Front speaker midrange adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of midrange.

Front speaker midrange bandwidth

Lets you adjust the width of the midrange band.

- "WIDE" provides a wide band centered on the selected frequency, for general adjustments.
- "MIDDLE" provides a normal band.
- "NARROW" provides a narrow band centered on the selected frequency, for specific adjustments.

Front speaker treble adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of treble.

Center speaker bass adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of bass.

Center speaker midrange adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of midrange.

Center speaker midrange bandwidth

Lets you adjust the width of the midrange band.

- "WIDE" provides a wide band centered on the selected frequency, for general adjustments.
- "MIDDLE" provides a normal band.
- "NARROW" provides a narrow band centered on the selected frequency, for specific adjustments.

Center speaker treble adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of treble.

Surround speaker bass adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of bass.

Surround speaker treble adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of treble.

Surround back speaker bass adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of bass.

Surround back speaker treble adjustment (Gain/Frequency)

Lets you adjust the gain and frequency of treble.

Clearing Stored Equalizer Settings

1 **Press EQUALIZER repeatedly to select the equalizer you want to clear (EQ PRESET [1]–[5]).**

2 **Press EQ.**

3 **Press the cursor buttons (< or >) to display "PRESET x CLEAR [NO]" ("x" is the number of the current equalizer preset).**

4 **Turn the jog dial to display "PRESET x CLEAR [YES]" and press ENTER.**

"Are you sure? [NO]" is displayed.

5 **Once again, turn the jog dial to display "[YES]" and press ENTER.**

"PRESET x CLEARED !" is displayed and the contents of the selected equalizer bank are restored to the factory presets.

Before receiving broadcasts, make sure you have connected FM and AM antennas to the receiver (see page 7).

Storing FM stations automatically (AUTOBETICAL)

(Models of area code CEL only)

This function lets you store up to 30 FM and FM RDS stations in alphabetical order without redundancy. Additionally, it only stores the stations with the clearest signals.

If you want to store FM or AM stations one by one, see "Presetting radio stations" on page 45.

1 **Press I/⏻ to turn off the receiver.**

2 **Hold down MEMORY and press I/⏻ to turn the receiver back on.**

"Autobetical select" appears in the display and the receiver scans and stores all the FM and FM RDS stations in the broadcast area.

For RDS stations, the tuner first checks for stations broadcasting the same program, then stores only the one with the clearest signal. The selected RDS stations are sorted alphabetically by their Program Service name, then assigned a 2-character preset code. For more details on RDS, see page 46.

Regular FM stations are assigned 2-character preset codes and stored after the RDS station.

When done, "Autobetical finish" appears in the display momentarily and the receiver returns to the normal operation.

Notes

- Do not press any button on the receiver or supplied remote during autobetical operation.
- If you move to another area, repeat this procedure to store stations in your new area.
- For details on tuning the stored stations, see page 45.
- The FM MODE setting is also stored along with the station.
- If you move the antenna after storing stations with this procedure, the stored settings may no longer be valid. If this happens, repeat this procedure to store the stations again.

Direct tuning

You can enter a frequency of the station you want directly by using the numeric buttons on the supplied remote.

1 **Rotate FUNCTION to select TUNER.**

The last received station is tuned in.

2 **Press FM/AM to select the FM or AM band.**

3 **Select TUNER from the FUNCTION list, then select "DIRECT TUNING" from the SUB menu (page 62).**

4 **Press the numeric buttons to enter the frequency.**

Example 1: FM 102.50 MHz

(1) → (0) → (2) → (5) → (0)

Example 2: AM 1350 kHz
(You don't have to enter the last "0" when the tuning scale is set to 10 kHz.)

(1) → (3) → (5) → (0)

If you cannot tune in a station and the entered numbers flash

Make sure you've entered the right frequency. If not, repeat steps 3 and 4.

If the entered numbers still flash, the frequency is not used in your area.

continued

5 **If you've tuned in an AM station, adjust the direction of the AM loop antenna for optimum reception.**

6 **Repeat steps 2 to 5 to receive another station.**

Tips

- If you do not remember the precise frequency, press TUNING + or TUNING – after entering the value close to the frequency you want. The receiver automatically tunes in the station you want. If the frequency seems to be higher than the entered value, press TUNING +, and if the frequency seems to be lower than the entered value, press TUNING –.
- If "STEREO" flashes in the display and the FM stereo reception is poor, press FM MODE to improve the sound. You will not be able to enjoy the stereo effect, but the sound will be less distorted.

Note

If "STEREO" does not appear at all when an FM broadcast is received normally, press FM MODE to turn on the "STEREO" indication.

The tuning scale for direct tuning differs depending on the area code as shown in the following table. For details on area codes, see page 2.

Area code	FM	AM
CN, CEL	50 kHz	9 kHz
E	50 kHz	9 kHz*

* The AM tuning scale can be changed (see page 81).

Automatic tuning

If you don't know the frequency of the station you want, you can let the receiver scan all available stations in your area.

1 **Rotate FUNCTION to select TUNER.**
The last received station is tuned in.

2 **Press FM/AM to select the FM or AM band.**

3 **Press TUNING + or TUNING –.**
Press TUNING + to scan from low to high; press TUNING – to scan from high to low.
The receiver stops scanning whenever a station is received.

When the receiver reaches either end of the band

Scanning is repeated in the same direction.

4 **To continue scanning, press TUNING + or TUNING – again.**

Preset tuning

After you have tuned in stations using Direct Tuning or Automatic Tuning, you can preset them to the receiver. Then you can tune in any of the stations directly by entering its 2-character preset code using the supplied remote. Up to 30 FM or AM stations can be preset. The receiver will also scan all the stations that you have preset.

Before tuning to preset stations, be sure to preset them by performing steps on "Presetting radio stations" (page 45).

Presetting radio stations

1 **Rotate FUNCTION to select TUNER.**
The last received station is tuned in.

2 **Tune in the station that you want to preset using Direct Tuning (page 43) or Automatic Tuning (page 44).**

3 **Press MEMORY.**
"MEMORY" appears in the display for a few seconds.
Do steps 4 to 5 before "MEMORY" goes out.

4 **Press PRESET TUNING + or PRESET TUNING – to select a preset number.**
If "MEMORY" goes out before you press the preset number, start again from step 3.

5 **Press MEMORY again to store the station.**
If "MEMORY" goes out before you can store the station, start again from step 3.

6 **Repeat steps 2 to 5 to preset another station.**

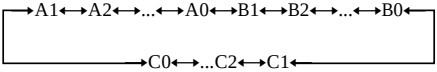
Tuning to preset stations

You can tune the preset stations by either of the following two ways.

Scanning the preset stations

1 **Rotate FUNCTION to select TUNER.**
The last received station is tuned in.

2 **Press PRESET TUNING + or PRESET TUNING – repeatedly to select the preset station you want.**
Each time you press the button, the receiver tunes in one preset station at a time, in the corresponding order and direction as follows:



Using the preset codes

Use the supplied remote to perform the following operations. For details on the buttons used in this section, see page 65.

1 **Rotate FUNCTION to select TUNER.**
The last received station is tuned in.

2 **Select the preset station you want from the list displayed on the supplied remote.**

Using the Radio Data System (RDS)

(Models of area code CEL only)

This receiver also allows you to use RDS (Radio Data System), which enables radio stations to send additional information along with the regular program signal. You can use the following convenient RDS features:

– Displaying RDS information

– Scanning preset stations by program type

Note that RDS is operable only for FM stations.*

* Not all FM stations provide RDS service, nor do they provide the same types of services. If you are not familiar with the RDS services in your area, check with your local radio stations for details.

Receiving RDS broadcasts

Simply select a station on the FM band using direct tuning (page 43), automatic tuning (page 44), or preset tuning (page 44).

When you tune in a station that provides RDS services, the RDS indicator lights up and the program station name appears in the display.

Note

RDS may not work properly if the station you tuned to is not transmitting the RDS signal properly or if the signal strength is weak.

Displaying RDS information

While receiving an RDS station, press DISPLAY.

PS (Program Station name)[a] appears.

Each time you press the button, RDS information on the display changes cyclically as follows:

Frequency[a] → PTY (Program TYpe) indication[b] → RT (Radio Text) indication[c] → CT (Current Time) indication (in 24-hour system)

a) This information also appears for non-RDS FM stations.
b) Type of program being broadcast (see page 47).
c) Text messages sent by the RDS station.

Notes

- If there is an emergency announcement by government authorities, “Alarm-Alarm!” flashes in the display.
- If a station does not provide a particular RDS service, “No XX” (such as “No Clock Time”) appears in the display.
- When a station broadcasts radio text data, it is displayed at the same rate at which it is sent from the station. Any change in this rate is reflected in the display rate of the data.

Scanning preset stations by program type

You can tune in preset stations according to a program type that you specify. The receiver scans for stations in its preset memory currently broadcasting the specified program type.

1 **Press RDS PTY.**

2 **Press PTY SELECT + or PTY SELECT – to select the program type.**

See the table below for the information on each program type.

3 **Press RDS PTY.**

While the receiver is scanning stations, “PTY SEARCH” appears in the display window.

When the receiver finds a station, the receiver stops scanning. When the receiver could not find any preset stations currently broadcasting the specified program type, “PTY not found” appears in the display.

Description of program types

Program type indication	Description
News	News programs
Current Affairs	Topical programs that expand on current news
Information	Programs offering information on a wide spectrum of subjects, including consumer affairs and medical advice
Sport	Sports programs
Education	Educational programs, such as “how-to” and advice programs
Drama	Radio plays and serials
Cultures	Programs about national or regional culture, such as language and social concerns
Science	Programs about the natural sciences and technology
Varied Speech	Other types of programs such as celebrity interviews, panel games, and comedy
Pop Music	Popular music programs
Rock Music	Rock music programs
M.o.R Music	Middle of the Road Music
Light Classics M	Instrumental, vocal, and choral music
Serious Classics	Performances of major orchestras, chamber music, opera, etc.
Other Music	Music that does not fit into any categories above, such as Rhythm & Blues and Reggae
Weather & Metr	Weather information
Finance	Stock market reports and trading, etc.
Children’s Progs	Programs for children
Social Affairs	Programs about people and the things that affect them
Religion	Programs of religious content
Phone In	Programs where members of the public express their views by phone or in a public forum
Travel & Touring	Programs about travel. Not for announcements that are located by TP/TA.
Leisure & Hobby	Programs on recreational activities such as gardening, fishing, cooking, etc.
Jazz Music	Jazz programs
Country Music	Country music programs
National Music	Programs featuring the popular music of the country or region
Oldies Music	Programs featuring oldies music
Folk Music	Folk music programs
Documentary	Investigative features
None	Any programs not defined above

Naming preset stations and program sources

You can enter a name of up to 8 characters for preset stations and program sources. These names (for example, “VHS”) appear in the receiver’s display when a station or program source is selected. Note that no more than one name can be entered for each preset station or program source.
This function is useful for distinguishing components of the same kind. For example, two VCRs can be specified as “VHS” and “8mm”, respectively. It is also handy for identifying components connected to jacks meant for another type of component, for example, a second CD player connected to the MD/DAT jacks.

Besides, you can change the names of the sound fields up to 18 characters.

1 To index a preset station

Rotate FUNCTION to select TUNER, then tune in the preset station you want to create an index name for.

The last station you received is tuned in. If you are not familiar with how to tune in preset stations, see “Tuning to preset stations” on page 45.

To index a program source

Select the program source (component) to be named.

To change the name of the sound field

Select the sound field you want to change the name.

2 **Press NAME once to index preset stations and program sources, press NAME twice to change the name of the sound field.**

3 **Create an index name by using the jog dial and cursor buttons:**

Turn the jog dial to select a character, then press > to move the cursor to the next position.

To insert a space

Turn the jog dial until a blank space appears in the display .

If you’ve made a mistake

Press < or > repeatedly until the character to be changed flashes, then turn the jog dial to select the right character.

4 **Press ENTER.**

5 **Repeat steps 2 to 4 to assign index name for another station or program source.**

Note
(Models of area code CEL only)
You cannot change the name of an RDS station.

Recording

Before you begin, make sure you’ve connected all components properly.

Recording on an audio tape or MiniDisc

You can record on a cassette tape or MiniDisc using the receiver. See the operating instructions of your cassette deck or MD deck if you need help.

1 **Select the component to be recorded.**

2 **Prepare the component for playing.**

For example, insert a CD into the CD player.

3 **Insert a blank tape or MD into the recording deck and adjust the recording level, if necessary.**

4 **Start recording on the recording deck, then start playback on the playback component.**

Notes

- You cannot record a digital audio signal using a component connected to the analog TAPE OUT or MD/DAT OUT jacks. To record a digital audio signal, connect a digital component to the DIGITAL MD/DAT OUT jacks.
- Sound adjustments do not affect the signal output from the TAPE OUT or MD/DAT OUT jacks.
- The analog audio signals of the current function is output from the REC OUT jacks. When you use AUDIO SPLIT to assign a digital audio input (for example, MD/DAT OPTICAL), the analog audio signals of the assigned audio (for example, MD/DAT ANALOG) is output.
- The signals input to the MULTI CH IN jacks are not output from the REC OUT jacks even when MULTI/2CH ANALOG DIRECT is set to MULTI CH 1 or 2 DIRECT. The analog audio signals of the current function are output.
- No signals are output from DIGITAL OUT jacks (MD/DAT OPTICAL OUT) when you set MULTI/2CH ANALOG DIRECT to 2CH ANALOG DIRECT. The digital circuitry power is cut off to ensure a superior sound quality.

Recording on a video tape

You can record from a VCR, a TV, or an LD player using the receiver. You can also add audio from a variety of audio sources when editing a video tape. See the operating instructions of your VCR or LD player if you need help.

1 **Select the program source to be recorded.**

2 **Prepare the component for playing.**

For example, insert the laser disc you want to record into the LD player.

3 **Insert a blank video tape into the VCR (VIDEO 1 or VIDEO 2) for recording.**

4 **Start recording on the recording VCR, then start playing the video tape or laser disc you want to record.**

Tip

You can record the sound from any audio source onto a video tape while copying from a video tape or laser disc. Locate the point where you want to start recording from another audio source, select the program source, then start playback. The audio from that source will be recorded onto the audio track of the video tape instead of the audio from the original medium. To resume audio recording from the original medium, select the video source again.

Notes

- Make sure to make both digital and analog connections to the TV/SAT and DVD/LD inputs. Analog recording is not possible if you make only digital connections.
- Some sources contain copy guards to prevent recording. In this case, you may not be able to record from the sources.
- The analog audio signals of the current function is output from the REC OUT jacks. When you use AUDIO SPLIT to assign a digital audio input (for example, MD/DAT OPTICAL), the analog audio signals of the assigned audio (for example, MD/DAT ANALOG) is output.
- The signals input to the MULTI CH IN jacks are not output from the REC OUT jacks even when MULTI/2CH ANALOG DIRECT is set to MULTI CH 1 or 2 DIRECT. The analog audio signals of the current function are output.

Using the Sleep Timer

You can set the receiver to turn off automatically at a specified time.

Press SLEEP while the power is on.

Each time you press the button, the display changes cyclically as follows:

2:00:00 → 1:30:00 → 1:00:00 → 0:30:00 → OFF

While using Sleep Timer, “SLEEP” lights up in the display.

Tips

- You can freely specify the time. After pressing SLEEP, specify the time you want using the jog dial and cursor buttons (< or >) on the receiver. The sleep time changes in 1 second intervals. You can specify up to 5 hours.
- To check the remaining time before the receiver turns off, press SLEEP. The remaining time appears in the display.

Adjustments using the SET UP button

The SET UP button allows you to make the following adjustments.

1 **Press SET UP.**

2 **Press the cursor buttons (< or >) to select the parameter you want to adjust.**

3 **Turn the jog dial to select the setting you want.**

The setting is entered automatically.

4 **Repeat steps 2 and 3 until you have set all of the parameters that follow.**

Initial settings

Parameter	Initial setting
6.1CH DECODING	AUTO
MULTI CH 1 or 2	NONE
D.POWER	AUTO OFF
V.POWER	AUTO OFF
S.FIELD LINK	ON
DECODE FORMAT	AUTO
AUTO FUNCTION	ON
2 WAY REMOTE	ON
COMMAND MODE	AV1
T.TONE	NORMAL
COLOR SYSTEM	PAL
OSD	COLOR
OSD H.POSITION	4
OSD V.POSITION	4

■ 6.1ch decoding mode (6.1CH DECODING)

You can set this parameter using 6.1CH DECODING on the front panel (page 33).

- When set to “AUTO”, the receiver performs 6.1 channel decoding only if 6.1 channel signals decode flag is ON.
- When set to “ON”, the receiver performs 6.1 channel decoding only if the surround signals are multi channel format [3/2], [3/2+1] or [3/3] regardless of the 6.1 channel decode flag.
- When set to “OFF”, the receiver does not perform 6.1 channel decoding.

Tip

The 6.1 channel decoding flag is the information recorded on the software (DVD, etc).

■ Multi channel assignment (MULTI CH 1 or 2)

Lets you assign a function to MULTI CH 1 or 2. You cannot assign TUNER or PHONO.

You cannot assign the same function to both MULTI CH 1 and 2.

■ Digital power management (D.POWER)

Lets you enjoy the analog source without the influence of digital circuits.

- "AUTO OFF" turns off the power of the unnecessary digital circuits automatically when you use analog inputs or functions that bypass digital processing when MULTI/2CH ANALOG DIRECT function is used.
- "ALWAYS ON" keeps the power of digital circuits on. Select if you do not like the time lag that occurs with the "AUTO OFF" setting when digital circuits are turned on, etc.

■ Video power management (V.POWER)

Lets you enjoy the sound without the influence of the video circuits.

- "AUTO OFF" turns off the power of video circuits automatically when it is unnecessary.
- "ALWAYS ON" keeps the power of video circuits on. Depending on the monitor, noise may be produced or the picture may be distorted when the power of the video circuits is turned on. In this case, select "ALWAYS ON".

■ Sound field link (S.FIELD LINK)

Lets you apply the last selected sound field to a program source whenever it is selected. For example, if you listen to CD with STADIUM as the sound field, change to a different program source, then return to CD, STADIUM will be applied again.

■ Digital input decode mode (DECODE FORMAT)

Lets you specify the decode type for the signal input to the digital audio jacks.

- "AUTO" switches between DTS, Dolby Digital, or PCM decoding automatically.
- "PCM" decodes all the input signals as PCM signals. If a Dolby Digital, DTS, or MPEG (etc.) signal is input, no sound will be heard. When set to "AUTO", and the sound from the digital audio jacks (for CD, etc.) is interrupted when playback starts, set to "PCM".

■ CONTROL A1 II auto function (AUTO FUNCTION)

Lets you switch the function of this receiver to the Sony components connected via CONTROL A1 cords (see page 13) automatically when the connected component is set to play mode.

continued

Adjustments using the SET UP button (continued)

■ 2-way remote (2 WAY REMOTE)

This receiver is shipped from the factory with the 2 way remote control system set to “ON”. Normally, you can use the receiver as is. However, if you want to use this receiver together with another component that is also compatible with the 2 way remote control system, be sure to perform the following operation to limit response to signals sent from the remote controls.

First select one component for the 2 way remote control, then set the 2 way remote control system for the component to “ON”. For other components, set the 2 way remote control system to “OFF”. With these settings, the component for which the 2 way remote control system is set to “OFF” cannot be used. Therefore, connect the CONTROL A1 II jacks of both components with monaural (2P) mini-plug cord.

■ Selecting the command mode of the remote (COMMAND MODE)

Lets you select the command mode of the remote. Change the command mode when you use 2 Sony receivers in the same room.

■ Test tone mode (T.TONE)

Lets you select the test tone output mode (page 25).

- “NORMAL” output the test tone from each speaker in sequence.
- “PHASE NOISE” output the test tone from two adjacent speakers at a time in sequence.
- “PHASE AUDIO” output the source sound instead of the test tone from two adjacent speakers at a time in sequence.

■ Monitor color system (COLOR SYSTEM)

Lets you select the color system of your TV monitor.

■ Color of the on-screen display (OSD)

Lets you select the color of the on-screen display.

■ OSD horizontal position (OSD H.POSITION)

Lets you adjust the position of the on-screen display horizontally.

■ OSD vertical position (OSD V.POSITION)

Lets you adjust the position of the on-screen display vertically.

CONTROL A1II control system

Getting Started

This section explains the basic functions of the CONTROL A1II Control System. Certain components have special functions, like "CD Synchro Dubbing" on cassette decks, that require CONTROL A1II connections. For detailed information regarding specific operations, be sure to also refer to the Operating Instructions supplied with your component(s).

The CONTROL A1II Control System was designed to simplify the operation of audio systems composed of separate Sony components. CONTROL A1II connections provide a path for the transmission of control signals which enable automatic operation and control features usually associated with integrated systems.

Currently, CONTROL A1II connections between a Sony CD player, amplifier (receiver), MD deck and cassette deck provide automatic function selection and synchronized recording.

In the future, the CONTROL A1II connection will work as a multifunction bus allowing you to control various functions for each component.

Notes

- The CONTROL A1II Control System is designed to maintain upward compatibility as the Control System is upgraded to handle new functions. In this case, however, older components will not be compatible with the new functions.
- Do not operate a 2 way remote control unit when the CONTROL A1II jacks are connected via a PC interface kit to a personal computer running "MD Editor" or similar application. Also, do not operate the connected component in a manner contrary to the functions of the application, as this may cause the application to operate incorrectly.

CONTROL A1II and CONTROL A1 compatibility

The CONTROL A1 control system has been updated to the CONTROL A1II which is the standard system in the Sony 300 disc CD changer and other recent Sony components. Components with CONTROL A1 jacks are compatible with components with CONTROL A1II, and can be connected to each other. Basically, the majority of the functions available with the CONTROL A1 control system will be available with the CONTROL A1II control system.

However, when making connections between components with CONTROL A1 jacks and components with CONTROL A1II jacks, the number of functions that can be controlled may be limited depending on the component. For detailed information, refer to the operating instructions supplied with the component(s).

Connections

Connect monaural (2P) mini-plug cords in series to the CONTROL A1II jacks on the back of each component. You can connect up to 10 CONTROL A1II compatible components in any order. However, you can connect only one of each type of component (i.e., 1 CD player, 1 MD deck, 1 tape deck and 1 receiver).

(You may be able to connect more than one CD player or MD deck, depending on the model. Refer to the operating instructions supplied with the respective component for details.)

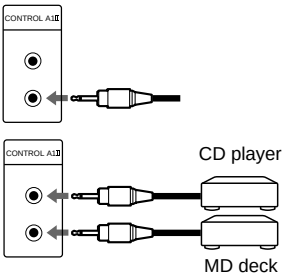
Example

In the CONTROL A1II control system, the control signals flow both ways, so there is no distinction of IN and OUT jacks. If a component has more than one CONTROL A1II jack, you can use either one, or connect different components to each jack.

continued

*CONTROL A1*II *control system (continued)*

Jacks and connection examples



On CONTROL A1 jacks and connections

It is possible to make connections between CONTROL A1 and CONTROL A1II jacks. For details regarding particular connections or set up options, refer to the operating instructions supplied with the component(s).

About the connecting cord

Some CONTROL A1 compatible components are supplied with a connecting cord as an accessory. In this case, use the connecting cord for your connection.

When using a commercially available cord, use a monaural (2P) mini-plug cord less than 2 meters long, with no resistance (like the Sony RK-G69HG).

Basic Functions

The CONTROL A1II functions will operate as long as the component you want to operate is turned on, even if all of the other connected components are not turned on.

Automatic function selection

When you connect a CONTROL A1II compatible Sony amplifier (or receiver) to other Sony components using monaural mini-plug cords, the function selector on the amplifier (or receiver) automatically switches to the correct input when you press the play button on one of the connected components.

Notes

- You must connect a CONTROL A1 compatible amplifier (receiver) using a monaural mini-plug cord in order to take advantage of the automatic function selection feature.
- This function only works when the components are connected to the amplifier (or receiver) inputs according to the names on the function buttons. Certain receivers allow you to switch the names of the function buttons. In this case, refer to the operating instructions supplied with the receiver.
- When recording, do not play any components other than the recording source. It will cause the automatic function selection to operate.

Synchronized recording

This function lets you conduct synchronized recording between the selected source and recorder components.

1 **Set the function selector on the amplifier (or receiver) to the source component.**

2 **Set the source component to pause mode (make sure both the ► and II indicators light together).**

3 **Set the recorder component to the REC-PAUSE mode.**

4 **Press PAUSE on the recorder component.**
The source component is released from the pause mode, and recording begins shortly thereafter.
When playback ends from the source component, recording stops.

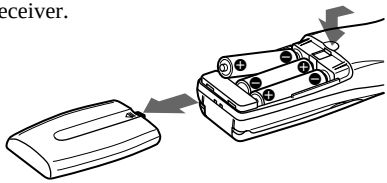
Notes

- Do not set more than one component to the pause mode.
- Certain recorder components may be equipped with a special synchronized recording function that uses the CONTROL A1II Control System, like “CD Synchro Dubbing”. In this case, refer to the operating instructions supplied with the recorder component.

Before you use your remote

Inserting batteries into the remote

Insert three LR6 (size-AA) alkaline batteries with the + and – properly oriented in the battery compartment. When using the remote, point it at the remote sensor RX on the receiver.



Tip

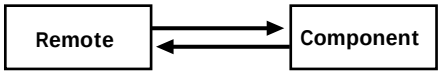
Under normal conditions, the batteries should last for about 3 months. When the remote no longer operates the receiver, replace all the batteries with new ones.

Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not use a new battery with old ones.
- Do not mix the alkaline batteries and other kinds of batteries. This remote is designed for use with the alkaline batteries only.
- Do not expose the remote sensor of the receiver to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you don't use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Understanding the 2 way remote system

This remote operates under a 2 way remote system. With the two way remote system, the component responds to signals sent from the remote by sending additional signals (information about the status of the component, text data, etc.) back to the remote. Thus, operations are performed as a result of communication between the remote and the component.



When using a home entertainment system comprised of several components compatible with the 2 way remote system, please restrict 2 way remote system operation to a single component. Normally, turn off the 2 way remote system on all components except the receiver.

If you would like to turn off the receiver's 2 way remote system, set "2-way remote" using the SET UP button (page 52).

The COMMAND MODE

If the receiver's COMMAND MODE and the remote's COMMAND MODE do not match, transmission is not possible between the remote and the receiver. If you have not changed the COMMAND MODE of the remote and the receiver after purchase, it is not necessary to set the COMMAND MODE. For details, see page 75.

continued

Setting up the remote

At the time of shipping, the remote has not been customized to your receiver yet. Before you use the remote for the first time, do the procedure below to set up the remote so that it can control your receiver properly.

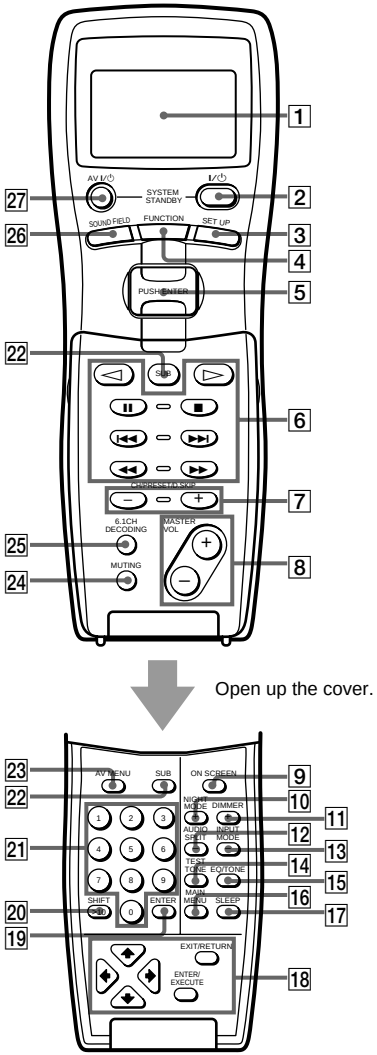
1 **Press I/⏻ on the receiver to turn it on.**

2 **Point the remote towards the receiver and press SOUND FIELD, FUNCTION, or SUB.**

and appear in the display window of the remote while it communicates with the receiver and identifies the receiver model.

When the communication ends, the remote is customized and provides the operation lists that match your receiver.

Location of parts and basic remote operations



Parts Description

1 Display window

The current status of the selected component or a list of selectable items appears here.

Note

Characters other than letters of the alphabet or numbers may be displayed incorrectly on the remote, even if they appear correctly in the display window on the main unit.

2 I/⏻ switch

Press to turn the receiver on or off.

3 SET UP button

Press to display the set up list. Press again to revert back to the component information.

4 FUNCTION button

Press to display the function (component) list. Press again to revert back to the component information.

See the table on page 60 for information on the buttons you can use to control each component.

If you want to change the contents of the function list to match your particular components, do the procedure "Programming the remote" on page 66.

5 Easy scroll key

While displaying a list, move up or down to select an item from the list, and then press to enter the selection.

6 Tape/disc operation buttons

The following table shows what components are operated by each button and the function of the buttons.

Button(s)	Function
▷	Starts play of the playback medium.
◁	Starts play on the reverse side of the cassette.
❚❚	Pauses play or recording or starts recording when the component is in recording standby.
■	Stops play.
⏮/⏭	Skips tracks.
◀◀/▶▶	Fastwinds or rewinds.
	Searches tracks in the forward or backward direction.

See the table on page 60 for information on the buttons that you can use to control each component.

7 CH/PRESET/D.SKIP +/– buttons

Press repeatedly to select a preset station, channel, track, or a disc.

8 MASTER VOL +/– buttons

Press to adjust the volume level of all speakers at the same time.

9 ON SCREEN button

The function of this button is same as the ON SCREEN button on the receiver. See page 9.

10 NIGHT MODE button

The function of this button is same as the NIGHT MODE button on the receiver. See page 33.

continued

11 DIMMER button

The function of this button is same as the DIMMER button on the receiver. See page 29.

12 AUDIO SPLIT button

The function of this button is same as the AUDIO SPLIT button on the receiver. See page 26.

13 INPUT MODE button

The function of this button is same as the INPUT MODE button on the receiver. See page 27.

14 TEST TONE button

Press to output a test tone.

15 EQ/TONE button

The function of this button is same as the EQUALIZER button on the receiver. See page 41.

16 MAIN MENU button

Press repeatedly to select a menu, SURROUND etc.

17 SLEEP button

Press repeatedly to activate the sleep function and select the duration after which the receiver turns off automatically.

18 Cursor buttons (↑/↓/←/→)

After pressing MAIN MENU, use the cursor buttons to make specific settings.

To perform menu operations on the VCR, DVD player, or SAT tuner, do the procedure below. If you do not do this, the cursor buttons merely operate the receiver.

1. Press FUNCTION and move the easy scroll key to select the VCR, DVD player, or SAT tuner.
2. Open up the cover on the remote.

   CURSOR TYPE list appears.

   If the list has disappeared before you go on to step 3, press any of the cursor buttons to restore the list.
3. Move the easy scroll key to select the component that you selected in step 1, then press the key to enter the selection.

ENTER/EXECUTE button

After pressing AV MENU, use the cursor buttons to select a menu item, press ENTER/EXECUTE to enter the selection.

EXIT/RETURN button

Press to return to the previous menu or exit the menu while VCR, DVD, or SAT menu is displayed on the TV screen.

19 ENTER button

After selecting a channel, disc, or track using the numeric buttons, press this button to enter the selection. For details, refer to the operation manual supplied with the respective components.

20 SHIFT >10 button

If you have selected tuner:

Press repeatedly to select a memory page for presetting radio stations or tuning to preset stations.

If you selected VCR, TV, tape deck, LD player, video CD player, MD deck, or CD player:

Press before inputting a channel, disc, or track number of eleven or higher. For details, refer to the operation manual supplied with the respective components.

21 Numeric buttons (1 to 0)

Inputs the correponding numeric value. On some components, pressing 0 selects 10. For details, refer to the operation manual supplied with the respective components.

22 SUB button

While operating a component, press to display a list of operations that the corresponding buttons are not found on the remote. Then move the easy scroll key to select the operation, and then press the key to enter the selection. Press again to revert back to the component information.

See the table on pages 61–62 for information on the operations that appear when you press SUB.

23 AV MENU button

When you have selected the VCR, DVD player, or SAT tuner, press this button to display VCR, DVD, or SAT menu on the TV screen. Then use the cursor buttons to perform the menu operations (see "18 Cursor buttons (↑/↓/←/→)", "ENTER/EXECUTE button", and "EXIT/RETURN button").

Note

When you have selected VCR, the remote is set to control the VCR that corresponds with VCR 1 after you press AV MENU. Before pressing the button, make sure to set the VCR input mode to VCR 1.

24 MUTING button

The function of this button is same as the MUTING button on the receiver. See page 27.

25 6.1CH DECODING button

The function of this button is same as the 6.1CH DECODING button on the receiver. See page 33.

26 SOUND FIELD button

Press to display the sound field list. Press again to revert back to the component information.

27 AV I/⏻ switch

Press to turn on or off the components that the remote is programmed to operate. For details on programming procedure, see "Programming the remote" on page 66.

If you press the I/⏻ switch (2) at the same time, it will turn off the main component and other Sony audio/video components (**SYSTEM STANDBY**).

Note

The function of the AV I/⏻ switch changes automatically each time you press FUNCTION (4). Depending on the component, the above operation may not be possible or may operate differently than described.

continued

Table of buttons used to control each component

When you program the remote to control the following Sony or non-Sony components, you can use the buttons on the remote that are marked with circles. Note, however, that some buttons may not operate your component.

Component / Button	VCR	TV	LD player	DVD player	Video CD player	CD player	MD deck	Tape deck (A and B)	DAT deck	Tuner	Cable box	Satellite tuner	Projector
AV I/⏻	●	●	●	●	●	●	●				●	●	
SUB[1]	●	●	●	●	●	●	●	●	●	●	●	●	●
◁								●					
▷	●		●	●	●	●	●	●	●				
❚❚	●		●	●	●	●	●	●	●				
■	●		●	●	●	●	●	●	●				
⏮/⏭	●		●	●	●	●	●	●[2]	●				
◀◀/▶▶	●		●	●	●	●	●	●	●				
CH	●	●									●	●	
PRESET										●			
D.SKIP +/–[3]				●	●	●	●						
Cursor buttons	●			●								●	●
AV MENU	●			●								●	●
Numeric buttons	●	●	●	●	●	●	●	●	●	●	●	●	
SHIFT										●			
>10	●		●		●	●	●	●					
ENTER	●	●	●	●		●	●	●[4]	●			●	●
EXIT												●	
RETURN			●	●	●								
ENTER/EXECUTE	●			●								●	●

[1] For information on the operations that become available when you press the button, see the table on pages 61–62.

[2] Deck B only.

[3] Multi disc changer only.

[4] RMS/START.

Table of operations that appear when you press the SUB button

Press SUB to display a list of operations that the corresponding buttons are not found on the remote. The contents of the lists will vary according to the currently selected component. The following table shows the items in each list and the function of each item.

Component	Item(s)	Function
VCR	DISPLAY	Selects information displayed on the TV screen.
	INPUT SELECT	Changes the input mode of the VCR.
	ANT TV/VTR	Selects the signal to be output from the antenna terminal of the VCR (TV signal or video signal).
	SP/LP	Selects the playback speed.
	REC	Starts recording.
TV	MUTING	Mutes the sound.
	VOL +	Raises the volume.
	VOL –	Lowers the volume.
	-/--	Selects the channel of eleven or higher.
	JUMP	Toggles between the previous and current channels.
	DISPLAY	Selects information displayed on the TV screen.
	TV/VIDEO	Changes the input mode of the TV.
	P IN P	Activates the picture-in picture function.[b)]
	POSITION	Changes the position of the small picture.[b)]
	SWAP	Swaps the small and large pictures.[b)]
	WIDE	Selects the wide-picture mode.[c)]
	SUB CH +	Selects preset channels for the small picture.[b)]
	SUB CH –	
LD Player	DISPLAY	Selects information displayed on the TV screen.
	SIDE A[a)]	Selects side A of the disc.
	SIDE B[a)]	Selects side B of the disc.
	PROGRAM	Programs the tracks.
	REPEAT	Repeats current track or programmed tracks.
DVD player	DISPLAY	Selects information displayed on the TV screen.
	TITLE	Displays the Title menu. For details on the menu operation, see the tip on page 63.
	SET UP	Displays the Set up menu. For details on the menu operation, see the tip on page 63.
	SUBTITLE CHG.	Changes the Subtitle Language.
	SUBTITLE	Displays the Subtitles.
	AUDIO CHANGE	Changes the sounds.
	SEARCH MODE	Changes the search mode.
	CLEAR	Returns to the Continuous Play etc.
	INDEX +	Selects a index.
	INDEX –	

continued

Location of parts and basic remote operations (continued)

Component	Item(s)	Function
VIDEO CD player	TIME	Changes the time information.
	INDEX +	Selects a index.
	INDEX –	
CD Player	DISC	Selects a disc.[d)]
	TRACK	Selects a track.[d)]
	CONTINUE	Selects Continuous Play.
	SHUFFLE	Selects Shuffle Play.
	PROGRAM	Selects Program Play.
	REPEAT	Selects Repeat Play.
MD deck	DISPLAY	Changes the information on the display.
	CONTINUE	Selects Continuous Play.
	SHUFFLE	Selects Shuffle Play.
	PROGRAM	Selects Program Play.
	REPEAT	Selects Repeat Play.
	MENU(EDIT)/NO	Selects editing operation or cancels editing.
	YES	Performs editing operation.
	CLEAR	Erases a track in the program etc.
	REC	Pauses for recording.
Tape deck	A-REC	Makes deck A pause for recording.
	B-REC	Makes deck B pause for recording.
DAT deck	REC	Pauses for recording.
	REPEAT	Starts Repeat Play.
	CLEAR	Erases a track in the program etc.
Tuner	DIRECT TUNING	Enters Direct Tuning mode.
	FM/AM	Selects the FM or AM band.
Cable box		
Satellite tuner	GUIDE	Displays the SAT guide.
	JUMP	Toggles between the previous and current channels.
	DISPLAY	Selects information displayed on the TV screen.
	FAVORITE	Displays the Favorite Station Guides.
	CATEGORY	Displays the Guide Category list.
	INDEX	Displays the Station Index.
	-/--	Selects the channel of eleven or higher.
	EPG	Displays the EPG (Electronic Program Guide).
Projector	POWER ON	Turn on the projector.
	POWER OFF	Turn off the projector.
	INPUT A	Switch to the input from INPUT A jacks.
	INPUT B	Switch to the input from INPUT B jacks.
	INPUT VIDEO	Switch to the input from VIDEO jacks.
	INPUT SELECT	Switch to the input from VIDEO IN or S VIDEO IN jacks.
	MEMORY	Store the adjusted data in memory.
	BRIGHT +	Adjust the brightness.
	BRIGHT –	
	CONTRAST +	Adjust the contrast.
	CONTRAST –	
	ZOOM +	Adjust the zoom of the picture.
	ZOOM –	
	SHIFT +	Adjust the lens shift of the picture.
	SHIFT –	
	FOCUS +	Adjust the focus of the picture.
	FOCUS –	

a) “SIDE A/B” appears for non-Sony LD players.
b) Only with Sony TVs with the picture-in-picture function.
c) Only with Sony TVs that supports the wide-picture mode.
d) Only with the Sony CD changer.

Note

If you have programmed the remote to control non-Sony components, note the following:
– All the items may not appear when you select a component.
– All the items displayed may not function.

Tip

Do the following procedure to perform title and set up menu operations on the DVD player.

1 Select the DVD player from the function list.
2 Press SUB.
3 Move the easy scroll key to select “TITLE” (for the title menu) or “SET UP” (for the set up menu), then press the key to enter the selection.
4 Open up the cover on the remote and move the easy scroll key to select “DVD” from the CURSOR TYPE list, then press the key to enter the selection.
5 Use the cursor buttons and the ENTER/EXECUTE button to perform menu operations on the DVD player.

To exit the menu operation, press SUB, move the easy scroll key to select “TITLE” or “SET UP”, then press the key to enter the selection.
To display the DVD menu, use the AV MENU button. For details, see “23 AV MENU button” on page 59.

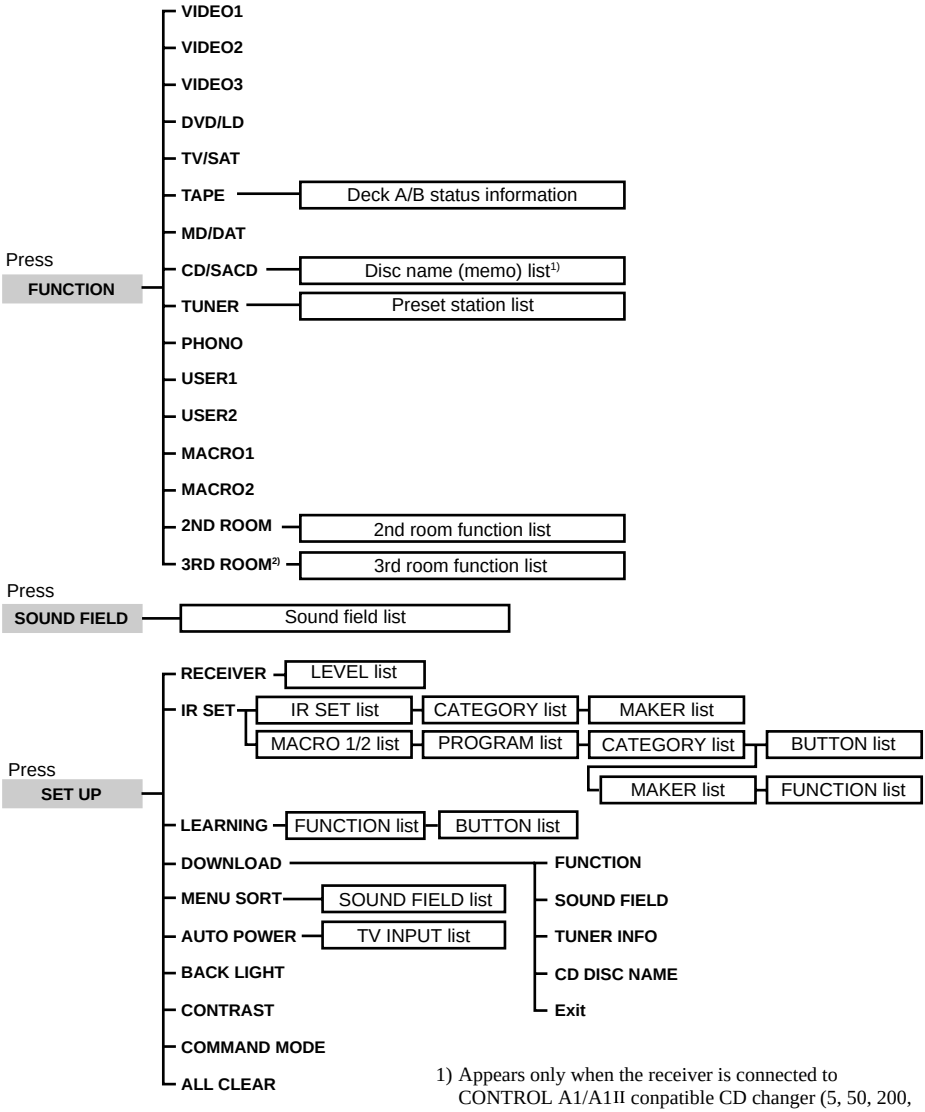
Tip

You can freely assign codes to SUB1 through SUB5. Select when you transmit learned codes. For details, see “Learning the commands of your components” on page 70.

Using the lists

Chart of lists

See the treelike chart below for the list hierarchy. Details on how to access each list is given from page 65. Some items have sub-lists that appear when you press SUB (see pages 61–62).



1) Appears only when the receiver is connected to CONTROL A1/A1II conpatible CD changer (5, 50, 200, 300 or 400 discs).

2) This function is not available for this receiver.

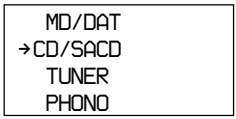
Selecting a component

Basic procedure for selecting a component

Do the procedure below to select a component from the function list.

1 Press FUNCTION.

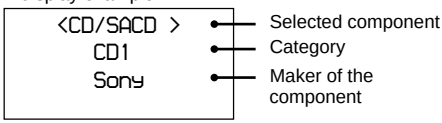
The function list appears. The items in the list correspond with the jacks on the receiver.



2 Move the easy scroll key to select a component from the list, then press the key to enter the selection.

Information about the component appears in the display window.

A display example



Tips

- You can modify the category indication. The category indication tells you what component is actually connected to the jacks on the receiver. If a component is connected to jacks for which they are not originally meant, you can modify the category indication to match the component. For details, see "Programming the remote" on page 66.
- You can set the remote to automatically turn on a component when it is selected from the function list. For details, see "Using the auto power function" on page 74.

Depending on the component that you selected, you may have to do an additional procedure, or you may be able to obtain detailed information about the component by doing an additional procedure. For details, see "Additional procedures after selecting a component" on this page.

Additional procedures after selecting a component

If you selected tuner

Do the procedure below after you have selected the tuner.

1 Move the easy scroll key.

The preset station list appears.

2 Move the easy scroll key to select the preset station, then press the key to enter the selection.

The current status of the component appears in the display window.

Note

If you have changed the contents of the preset station memory of the receiver, be sure to download the preset station memory from the receiver (see page 71) before you tune in to a preset station.

If you selected CD player, tape deck, or MD deck

Detailed information about the component appears in the display window of the remote only if the component is compatible with CONTROL A1/A1II.

The information that appears is as follows:

If you have selected	The following information appears
CD player	The first 12 characters of the disc memo, track number, and track text
MD deck	The first 12 characters of the disc name, track number, and track name
Tape deck, CD player, or MD deck	The current deck operation (►, ❚❚ or ■) to the right of the component indication

continued

If you selected a Sony CD changer

1 **Move the easy scroll key.**
The DISC MEMO list appears.

2 **Move the easy scroll key to select a disc, then press the key to enter the selection.**

3 **Start playback.**

Note

If you have changed the discs in the changer, be sure to download the CD memos from the receiver (see page 71) or play the newly inserted disc(s) before you select a disc from the changer.

If you selected the tape deck

Move the easy scroll key to display the information about deck A or B.

Note

When the remote is programmed to control a non-Sony tape deck, the following may occur:

– The information about deck B is not displayed and you cannot switch between tape deck A and B.
– "TAPE A/B" is displayed and tape deck A and B switch automatically each time you press the easy scroll key, etc.

If you selected 2ND ROOM

Move the easy scroll key to select the source for 2nd room, then press the key.

Selecting a sound field

Do the procedure below to select a sound field from the sound field list.

1 **Press SOUND FIELD.**
The sound field list appears.

2 **Move the easy scroll key to select the sound field, then press the key to enter the selection.**
A display example

```
  NORMAL SURROUND
  C.STUDIO EX A
  C.STUDIO EX B
→C.STUDIO EX C
```

To turn off the sound field

Move the easy scroll key to select either "2CH STEREO" or "A.F.D." in the sound field list in the display.

Tip

You can sort the sound field (page 73).

Programming the remote

You can customize the remote to match the components connected to your receiver. You can even program the remote to control non-Sony components and also Sony components that the remote is normally unable to control.

The procedure below uses as an example a case in which a Kenwood LD player is connected to the VIDEO 2 jacks on the receiver.

Before you begin note that:

– You cannot change the settings of TUNER and PHONO.
– The remote can control only components that accept infrared wireless control signals.

Be sure to turn on the receiver and point the remote towards the receiver when performing the following procedure.

1 **Press SET UP.**

The set up list appears.

```
→RECEIVER
 IR SET
 LEARNING
 DOWNLOAD
```

2 **Move the easy scroll key to select "IR SET", then press the key to enter the selection.**

The IR SET list appears.

```
<IR SET>
 [VIDEO 1 ]
→[VIDEO 2 ]
 [VIDEO 3 ]
```

3 **Move the easy scroll key to select the component ("VIDEO 2", for example), then press the key to enter the selection.**

The category list appears.

```
Category?
→VCR
 T V
 L D
```

4 **Move the easy scroll key to select the category (i.e., the component that is actually connected to the corresponding jacks; in this case, "LD"), then press the key to enter the selection.**

The maker list appears.

```
Maker?
 Sony
 DENON
→Kenwood
```

5 **Move the easy scroll key to select the maker of the component ("Kenwood", for example), then press the key to enter the selection.**

When programming the remote to control Sony component

Select "Sony."

Programming is now completed.

To cancel programming

Move the easy scroll key to select "Exit" or "Cancel" during any step, then press the key to enter the selection.

Tip

You can freely assign any component to USER 1 and 2 items in the IR SET list

1 Do steps 1 and 2 in "Programming the Remote".

2 Move the easy scroll key to select "USER 1" or "USER 2," then press the key to enter the selection.

3 Continue from step 3 in "Programming the Remote" to select the category and maker of the component.

Note

If you select "IR SET" for a component that already has a learned button setting, the learned codes for that component are cleared. Furthermore, if the cleared learned button is used in a Macro Play setting, the setting for that button will be changed to "NO SET".

Performing several commands in sequence automatically (Macro Play)

The Macro Play function lets you link several IR codes in a sequential order as a single command. The remote provides 2 macro lists (MACRO 1 and 2). You can specify up to 16 IR codes for each macro list.

Setting the sequence of IR codes

1 **Press SET UP.**

The set up list appears.

```
→RECEIVER
 IR SET
 LEARNING
 DOWNLOAD
```

2 **Move the easy scroll key to select "IR SET", then press the key to enter the selection.**

The IR SET list appears.

```
<IR SET>
→MACRO1
 MACRO2
 Exit
```

continued

3 **Move the easy scroll key to select "MACRO1" (or "MACRO2"), then press the key to enter the selection.**

The program list appears.

```
<MACRO1>
→ 1-NO SET
  2-NO SET
  3-NO SET
```

4 **Move the easy scroll key to select the macro step number ("1-NO SET" for example) then press the key to enter the selection.**

The category list appears.

```
Category?
 Common
 Button
→VCR
```

5 **Move the easy scroll key to select the component category ("VCR" for example), then press the key to enter the selection.**

The maker list appears.

```
Maker?
→Sony VTR1
 Sony VTR2
 Sony VTR3
```

6 **Move the easy scroll key to select the maker, then press the key to enter the selection.**

The function list appears.

```
Function?
→*POWER
 *PLAY
 *STOP
```

7 **Move the easy scroll key to select the IR code for the operation you want to perform, then press the key to enter the selection.**

The program list reappears.

```
<MACRO1>
→ 1-POWER
  2-NO SET
  3-NO SET
```

8 **Repeat steps 4 through 7 to program up to 16 IR codes.**

When you have finished programming IR codes, select "Exit" in step 7.

To use learned codes under the Macro Play function

1 In step 4, move the easy scroll key to select "Button", then press the key to enter selection.

2 Move the easy scroll key to select the button of the learned codes.
When selecting a button, you can press the button directly, instead of scrolling down the list, to jump to the desired button in the list and transmit the IR code.

To delay the output of an IR code

1 In step 4, move the easy scroll key to select "Common", then press the key to enter selection.

2 Move the easy scroll key to select "WAIT TIME", then press the key to enter selection.

3 Move the easy scroll key to select the time to delay the output of an IR code, then press the key to enter selection. You can specify from 1 to 10 second delay (in 1 second increments).

To erase a programmed IR code

1 In step 4, move the easy scroll key to select “Common”, then press the key to enter selection.

2 Move the easy scroll key to select “NO SET”, then press the key to enter selection.

To turn off all Sony components (SYSTEM STANDBY)

1 In step 4, move the easy scroll key to select “Common”, then press the key to enter selection.

2 Move the easy scroll key to select “ALL OFF”, then press the key to enter selection. However, this function cannot be applied to some Sony components.

To cancel programming

Move the easy scroll key to select “Exit” or “Cancel” during any step, then press the key to enter the selection.

Tips

- In step 6, when “✱” is displayed in front of the function, the function is pre-programmed.
- In step 3 and 7, when “NO SET” is displayed after the program number, the codes have not been programmed.

Note

If you select “IR SET” for a component that already has a learned button setting, the learned codes for that component are cleared. Furthermore, if the cleared learned button is used in a Macro Play setting, the setting for that button will be changed to “NO SET”.

Starting macro play

1 Press FUNCTION.

The function list appears.

```
  DVD/LD
→ TV/SAT
  TAPE
  MD/DAT
```

2 Move the easy scroll key to select “MACRO1” or “MACRO2”, then press the key to enter the selection.

The IR codes appear in the display window as they are performed.

Notes

- Pressing any of the following buttons during a macro play operation will cancel the macro play sequence before it is complete.
  - AV I/⏻
  - I/⏻
  - SYSTEM STANDBY
  - SOUND FIELD
  - FUNCTION
  - SET UP
- When the Macro Play function does not work properly, set “WAIT TIME” between each operation.

continued

Learning the commands of your components

By using the Learning function, it is possible for this commander to perform learned operations.

Setting remote control codes that are not stored in the commander

When a remote control code is not one of the presets stored in the commander, it is possible for the commander to learn the code using the Learning function.

1 **Press SET UP and move the easy scroll key to select "LEARNING", then press the key to enter the selection.**

The function list appears.

```
<LEARNING>
 [VIDEO 1 ]
→[VIDEO 2 ]
 [VIDEO 3 ]
```

2 **Move the easy scroll key to select the function you want to use the Learning function, then press the key to enter the selection.**

The button list appears.

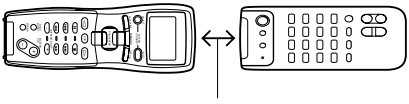
```
[VIDEO 2 ]
 * POWER
→  REVERSE
 * PLAY
```

3 **Move the easy scroll key to select the button you want to use for the Learning function, then press the key to enter the selection.**

The learning display appears.

```
[VIDEO 2 ]          ← Function
 (REVERSE)          ← Button
→Learning Start
 Cancel
```

4 **Point the remote code receiver section of the commander toward the receiver/ transmitter on the remote control to be learned.**



About 5 cm – 15 cm

5 **Move the easy scroll key to select "Learning Start", then press the key to enter the selection.**

"Learning Now!!" is displayed.

6 **Press the appropriate button on the remote control to send the remote control code.**

Lightly pressing the button once should be sufficient. In about 3 to 5 seconds, it is displayed whether learning was successful or not.

When the learning completes successfully, "Learning OK!", the number of keys, and the capacity used for learning are displayed.

```
[VIDEO 2 ]
■(REVERSE)
  Learning OK!
  (15/80   20%)
```

When the learning does not complete successfully, the cause is displayed.

```
Learning NG!
 (REVERSE)
 FULL (Keys)      ← Information*
→Exit
```

* FULL (Keys): shortage of buttons
FULL (memory): shortage of memory
ERROR: other causes

To enter a name for SUB 1–5

1 In step 5, move the easy scroll key to select "Name", then press the key to enter selection.

2 Use the easy scroll key to create a name (up to 8 characters).
+/–: select a character
</>: move the cursor
Insert: insert a space
Delete: delete a character

To cancel learning

Move the easy scroll key to select "Exit" or "Cancel" during any step, then press the key to enter the selection.

To erase the learned code

In step 5 above, move the easy scroll key to select "Clear", then press the key to enter the selection. Again, move the easy scroll key to select "Yes", then press the key to enter the selection. The number of buttons and the capacity used for learning are displayed.

Tips

- The marks that are displayed in front of the button name indicate the following:
  ■ : already learned
  ∗ : pre-programmed
- In step 3, learned buttons can be selected directly. If you press the button you want to use for the Learned function, the list will jump to the same button.
- The Learned function can be applied to the SUB menus. SUB 1–5 can be learned.

Notes

- You can program up to 80 buttons for the Learned function. However, in some cases, you may not be able to program even if you have not programmed 80 buttons.
- If you select "IR SET" for a component that already has a learned button setting, the learned codes for that component are cleared. Furthermore, if the cleared learned button is used in a Macro Play setting, the setting for that button will be changed to "NO SET".

Using a command that has been learned

When selecting a learned function, press the button used to learn that function.

Downloading data from the Receiver

The remote communicates with the receiver every time a button is pressed on the remote and displays the current operation status of the receiver on the display window. The remote can also download index names of the program sources, preset stations, CD disc names (memos)*, and information indicating the presence or absence of a CD in each slot of a CD changer* from the receiver.

* Appears only when you have selected a Sony CD changer (5, 50, 200, 300, or 400 discs) connected to the receiver using the CONTROL A1 cable.

Be sure to turn on the receiver and point the remote towards the receiver when performing the following procedure.

1 Press SET UP.

The set up list appears.

2 Move the easy scroll key to select "DOWNLOAD", then press the key to enter the selection.

The DOWNLOAD list appears.

```
<DOWNLOAD>
→FUNCTION
 SOUND FIELD
 TUNER INFO
```

3 To download index names

Move the easy scroll key to select "FUNCTION", then press the key to enter the selection.

To download sound field names

Move the easy scroll key to select "SOUND FIELD", then press the key to enter the selection.

To download preset stations

Move the easy scroll key to select "TUNER INFO", then press the key to enter the selection.

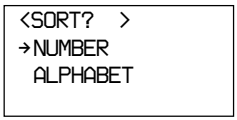
continued

To download CD disc names (memos) and information on the presence or absence of a CD in each slot of a CD changer

This function is available only when the category for the CD function in the IR SET list is set to “CD2” or “CD3”. When the category is set to “CD1”, CD DISC NAME does not appear in the DOWNLOAD list.

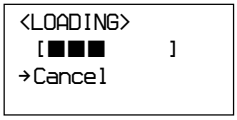
1 Move the easy scroll key to select “CD DISC NAME” then press the key to enter the selection.

The SORT menu appears in the display.



2 Move the easy scroll key to select “NUMBER” or “ALPHABET”, then press the key to enter the selection.

The remote starts to download the data.



To cancel the downloading process

Move the easy scroll key to select “Exit” from the DOWNLOAD list, then press the key to enter the selection.

Notes

- If you have changed the discs in the CD changer, be sure to download the CD disc names (memos) from the receiver or play the newly inserted disc(s) before you select a disc from the changer.
- You can download the data only from the Sony CD changer (5, 50, 200, 300, or 400 discs) connected to the receiver using the CONTROL A1 cable.
- CD DISC NAME is available for up to 400 discs.

Note on downloading CD disc names from the CD players

You can download CD disc names (memos) only from the CONTROL A1/A1II-compatible Sony CD players. Depending on the CD player setting, it may take several minutes to download CD disc names (memos). For faster transmission, make the following CD player settings.

When an CONTROL A1/A1II -compatible Sony CD player is connected to the receiver

Set the category for the CD function in the IR SET list to “CD1”. When using the Sony CD changer, set it to “CD2” (or “CD3”). Be sure to set the category to only one of “CD1”, “CD2” or “CD3”.

You can check the current category setting by selecting a component from the function list (see page 65).

When multiple CONTROL A1/A1II - compatible Sony CD players are connected to the receiver

When you use two CD players, set the COMMAND MODE selector on the back panel of the CD players to “CD1” or “CD2,” respectively, and set the category in the IR SET list to match the corresponding player’s COMMAND MODE selector position (see page 66). When you use three CD players, set the COMMAND MODE selector to “CD1,” “CD2,” or “CD3,” respectively, and set the category in the IR SET list to match the corresponding player’s COMMAND MODE selector position.

When using the Sony CD changer, be sure to set to “CD2” or “CD3”.

When setting category for the CD players, do not skip the number or select the same number to the multiple players.

When an CONTROL A1/A1II-compatible Sony CD player and a non-compatible Sony CD player are connected to the receiver

Set the COMMAND MODE selector on the back panel of the CONTROL A1/A1II-compatible CD player to “CD2” and set the category in the IR SET list for the player to “CD2” (see page 66).

Set the COMMAND MODE selector on the back panel of the non-compatible CD player to “CD1” and set the category in the IR SET list for the player to “CD1” (see page 66).

When using a non-Sony CD player in conjunction with Sony CD players

Program the remote to control the non-Sony CD player (see page 66).

See the sections above for settings of the Sony CD players.

Adjusting the level parameters

1 **Press SET UP.**

The set up list appears.

```
→RECEIVER
 IR SET
 LEARNING
 DOWNLOAD
```

2 **Move the easy scroll key to select "RECEIVER", then press the key to enter the selection.**

The RECEIVER list appears.

```
<RECEIVER>
→LEVEL
 Exit
```

3 **Move the easy scroll key to select "LEVEL", then press the key to enter the selection.**

The LEVEL list appears.

```
<LEVEL>
→FRONT BAL
 SURR BAL
 SURR BACK BAL
```

4 **Move the easy scroll key to select the menu you want to adjust, then press the key to enter the selection.**

5 **To adjust the balance**

Move the easy scroll key to select the channel (L or R) you want to increase the level, then press the key to enter the selection.

To adjust the level

Move the easy scroll key to select + (to increase the level) or – (to decrease the level), then press the key to enter the selection.

To cancel adjusting

Move the easy scroll key to select "Exit" during any step, then press the key to enter the selection.

Other Operations

Sorting the menu

You can arrange the order of sound field list.

1 **Press SET UP.**

The set up list appears.

```
 IR SET
 LEARNING
 DOWNLOAD
→MENU SORT
```

2 **Move the easy scroll key to select "MENU SORT", then press the key to enter the selection.**

The MENU SORT list appears.

```
<MENU SORT>
→SOUND FIELD
 Exit
```

3 **Move the easy scroll key to select "SOUND FIELD", then press the key to enter the selection.**

The sort list appears.

```
Sort?
→A.F.D.
 2CH STEREO
 MULTI/2CH A.DIR
```

4 **Move the easy scroll key to select the menu you want to move, then press the key to enter selection.**

When you press the key, "→" changes to "=".

```
Sort?
 A.F.D.
=2CH STEREO
 MULTI/2CH A.DIR
```

5 **Move the easy scroll key to select the position you want to move the menu to, then press the key to enter selection.**

When you press the key, "=" changes to "→".

```
Sort?
 NORMAL SURROUND
 C.STUDIO EX A
→2CH STEREO
```

continued

Using the auto power function

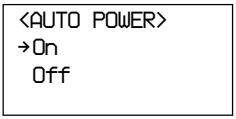
With the auto power function turned on, the commander sends numerous codes to the appropriate Sony AV components when you select a video function. Automatically, the components and the TV you have done IR setting turn on and the TV switches to the selected input mode. This function works for Sony components only.

1 **Press SET UP.**

The set up list appears.

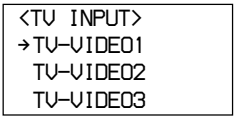
2 **Move the easy scroll key to select "AUTO POWER", then press the key to enter the selection.**

The AUTO POWER list appears.



3 **Move the easy scroll key to select "On" or "Off", then press the key to enter the selection.**

When you select "On", the TV INPUT list appears.



4 **Move the easy scroll key to select the video input of the TV, then press the key to enter the selection.**

Notes

- Switching to VIDEO 1–4 input may not be automatic on all Sony TVs. This is because some TVs cannot receive remote control codes immediately after being turned on.
- When you select "(Off)" in step 4, the TV input does not switch.

Turning the backlight on or off

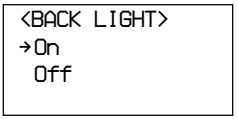
Each time you press a button on the remote, the backlight turns on. If you do the procedure below to turn off the backlight, you can make the batteries last longer.

1 **Press SET UP.**

The set up list appears.

2 **Move the easy scroll key to select "BACK LIGHT", then press the key to enter the selection.**

The BACK LIGHT list appears .



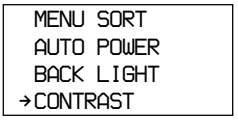
3 **Move the easy scroll key to select "On" or "Off", then press the key to enter the selection.**

Adjusting the contrast of the display

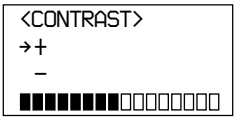
You can adjust the contrast of the display.

1 **Press SET UP.**

The set up list appears.



2 **Move the easy scroll key to select "CONTRAST", then press the key to enter the selection.**



3 **Move the easy scroll key to select "+" or "–", then press the key to enter the selection.**

Each time you press the key, the contrast of the display changes. To cancel adjusting, move the easy scroll key to select "Exit", then press the key to enter the selection.

Switching the COMMAND MODE

You can switch the command mode (AV SYSTEM1 or AV SYSTEM2) of the remote. If the command mode of the receiver and the remote is different, you cannot use the remote to operate the receiver.

1 **Press SET UP.**

The set up list appears.

```
  AUTO POWER
  BACK LIGHT
  CONTRAST
→COMMAND MODE
```

2 **Move the easy scroll key to select "COMMAND MODE", then press the key to enter the selection.**

The COMMAND MODE list appears.

```
<COMMAND MODE>
→AV SYSTEM1
  AV SYSTEM2
  3RD ROOM
```

3 **Move the easy scroll key to select "AV SYSTEM1" or "AV SYSTEM2", then press the key to enter the selection.**

Tip

When the remote is turned on, the COMMAND MODE appears in the first line of the display.

Note

"3RD ROOM" is not available for this receiver.

Clearing all the contents of remote's memory

Be sure to turn on the receiver and point the remote towards the receiver when performing the following procedure.

1 **Press SET UP.**

The set up list appears.

```
  BACK LIGHT
  CONTRAST
  COMMAND MODE
→ALL CLEAR
```

2 **Move the easy scroll key to select "ALL CLEAR", then press the key to enter the selection.**

The ALL CLEAR list appears.

```
<ALL CLEAR?>
  Yes
→No
```

3 **Move the easy scroll key to select "Yes", then press the key to enter the selection.**

"CLEAR OK?!" appears.

```
<CLEAR OK?!>
  Yes
→No
```

4 **Move the easy scroll key to select "Yes" again, then press the key.**

All the contents of the remote's memory (i.e., all the programmed data) are cleared.

Precautions

On safety

Should any solid object or liquid fall into the cabinet, unplug the receiver and have it checked by qualified personnel before operating it any further.

On power sources

- Before operating the unit, check that the operating voltage is identical with your local power supply. The operating voltage is indicated on the nameplate at the rear of the receiver.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the receiver itself has been turned off.
- If you are not going to use the receiver for a long time, be sure to disconnect the receiver from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.
- AC power cord must be changed only at the qualified service shop.

On heat buildup

Although the unit heats up during operation, this is not a malfunction. If you continuously use this unit at a large volume, the cabinet temperature of the top, side and bottom rises considerably. To avoid burning yourself, do not touch the cabinet.

On placement

- Place the receiver in a location with adequate ventilation to prevent heat buildup and prolong the life of the receiver.
- Do not place the receiver near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.
- Do not place anything on top of the cabinet that might block the ventilation holes and cause malfunctions.

On operation

Before connecting other components, be sure to turn off and unplug the receiver.

On cleaning

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

If you have any question or problem concerning your receiver, please consult your nearest Sony dealer.

Troubleshooting

If you experience any of the following difficulties while using the receiver, use this troubleshooting guide to help you remedy the problem. Also, see “Checking the connections” on page 25 to verify that the connections are correct. Should any problem persist, consult your nearest Sony dealer.

There is no sound no matter which component is selected.

- Check that both the receiver and all components are turned on.
- Check that the MASTER VOLUME control is not set at –∞ dB.
- Check that the SPEAKERS switch is not set to OFF (see page 27).
- Check that all speaker cords are connected correctly.
- Press MUTING to cancel the muting function.

“Not PCM” appears in the display and no sound is heard.

- Set “DECODE FORMAT” to “AUTO” in the SET UP menu (page 51).

There is no sound from a specific component.

- Check that the component is connected correctly to the audio input jacks for that component.
- Check that the cord(s) used for the connection is (are) fully inserted into the jacks on both the receiver and the component.

There is no sound from one of the front speakers.

- Connect a pair of headphones to the PHONES jack to verify that sound is output from the headphones (see page 28).

  If only one channel is output from the headphones, the component may not be connected to the receiver correctly. Check that all the cords are fully inserted into the jacks on both the receiver and the component.

  If both channels are output from the headphones, the front speaker may not be connected to the receiver correctly. Check the connection of the front speaker which is not outputting any sound.

There is no sound or only a very low-level sound is heard.

- Check that the speakers and components are connected securely.
- Check that you have selected the correct component on the receiver.
- Check that the SPEAKERS switch is set to ON (see page 27).
- Check that the headphones are not connected.
- Press MUTING to cancel the muting function.
- The protective device on the receiver has been activated because of a short circuit. Turn off the receiver, eliminate the short-circuit problem and turn on the power again.
- When only a very low-level sound is heard, check to see if NIGHT MODE is activated (see page 33).

The left and right sounds are unbalanced or reversed.

- Check that the speakers and components are connected correctly and securely.
- Adjust balance parameters in the LEVEL menu.

There is severe hum or noise.

- Check that the speakers and components are connected securely.
- Check that the connecting cords are away from a transformer or motor, and at least 3 meters away from a TV set or fluorescent light.
- Move your TV away from the audio components.
- Make sure you have grounded ⏚ SIGNAL GND terminal (only when a turntable is connected).
- The plugs and jacks are dirty. Wipe them with a cloth slightly moistened with alcohol.

There is no sound from the center speaker.

- Make sure the sound field function is on (press MODE +/–).
- Select a sound field containing the word “CINEMA” or “VIRTUAL” (see pages 30–32).
- Adjust the speaker level (see page 25).
- Make sure the center speaker size parameter is set to either “SMALL” or “LARGE” (see page 20).

There is no sound or only a very low-level sound is heard from the surround/surround back speakers.

- Make sure the sound field function is on (press MODE +/–).
- Select a sound field containing the word “CINEMA” or “VIRTUAL” (see pages 30–32).
- Adjust the speaker level (see page 25).
- Make sure the surround/surround back speaker size parameter is set to either “SMALL” or “LARGE” (see pages 20–21).

The surround effect cannot be obtained.

- Make sure the sound field function is on (press MODE +/–).
- Sound fields do not function for the signals with a sampling frequency of more than 48 kHz.
- When the INPUT MODE is set to “AUTO MULTI CH 1 or 2” and no digital signal is input, or INPUT MODE is set to “MULTI CH 1 or 2 FIXED”, you cannot change the sound field (page 27).

Dolby Digital or DTS multi channel sound is not reproduced.

- Check that the playing DVD, etc. is recorded in Dolby Digital or DTS format.
- When connecting the DVD player, etc. to the digital input jacks of this receiver, check the audio setting (settings for the audio output) of the connected component.

continued

Recording cannot be done.

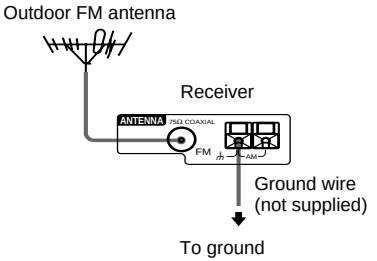
- Check that the components are connected correctly.
- Select the source component with FUNCTION control.
- When recording from a digital component, make sure the INPUT MODE is set to ANALOG 2CH FIXED (see page 27) before recording with a component connected to the analog MD/DAT or TAPE terminals.
- When recording from a digital component, make sure the INPUT MODE is set to COAXIAL FIXED or OPTICAL FIXED (see page 27) before recording with the component connected to the DIGITAL MD/DAT OUT terminals.

To connect an LD player via an RF demodulator

- Connect the LD player to the RF demodulator, then connect the RF demodulator's optical or coaxial digital output to the receiver's DVD/LD OPTICAL IN or COAXIAL jack. When making this connection, be sure to set INPUT MODE manually (see page 27). The receiver may not operate correctly if INPUT MODE is set to AUTO 2CH.
  For details on DOLBY DIGITAL RF hookups, see the operating instructions supplied with your RF demodulator.

The FM reception is poor.

- Use a 75-ohm coaxial cable (not supplied) to connect the receiver to an outdoor FM antenna as shown below. If you connect the receiver to an outdoor antenna, ground it against lightning. To prevent a gas explosion, do not connect the ground wire to a gas pipe.



Radio stations cannot be tuned in.

- Check that the antennas are connected securely. Adjust the antennas and connect an external antenna if necessary.
- The signal strength of the stations is too weak (when tuning in with automatic tuning). Use direct tuning.
- Make sure you set the tuning interval correctly (when tuning in AM stations with direct tuning).
- No stations have been preset or the preset stations have been cleared (when tuning by scanning preset stations). Preset the stations (see page 45).
- Press DISPLAY so that the frequency appears in the display.

RDS does not work.*

- Make sure that you're tuned to an FM RDS station.
- Select a stronger FM station.

The RDS information that you want does not appear.*

- Contact the radio station and find out whether or not they actually provide the service in question. If so, the service may be temporarily out of order.

There is no picture or an unclear picture appears on the TV screen or monitor.

- Select the appropriate function on the receiver.
- Set your TV to the appropriate input mode.
- Move your TV away from the audio components.

* Models of area code CEL only.

Remote control

The remote does not function.

- Point the remote at the remote sensor RX on the receiver.
- Remove any obstacles in the path between the remote and the receiver.
- Replace all the batteries in the remote with new ones, if they are weak.
- If the receiver's COMMAND MODE and the remote's COMMAND MODE do not match, transmission is not possible between the remote and the receiver.
- Make sure you select the correct function on the remote.
- When you operate a programmed non-Sony component, the remote may not function properly depending on the model and the make of the component.

The component names appearing in the function list do not correspond to the jacks on the receiver./The sound field list does not appear.

- The remote has not been initialized. Turn on the receiver, point the remote at the receiver, and press SOUND FIELD, FUNCTION, or SUB on the remote (see page 56).

appears in the display window of the remote.

- The batteries are running out. Replace all the batteries with new ones.

The function names that appear in the display windows of the receiver and the remote are different.

- Select the correct function using the remote.

When the CD player, tape deck, or MD deck is connected to the receiver via CONTROL A1/A1 II jacks, Auto Function does not work properly.

- Reprogram the remote (see page 66).

Reference sections for clearing the memory

To clear	See
All memorized settings	page 18
Customized sound fields	page 41
All the settings in the remote	page 75

Specifications

Amplifier section

Models of area code E:
Rated Power Output at Stereo Mode
(8 ohms 20 Hz – 20 kHz, THD 0.05 %)
100 W + 100 W[1)]
(4 ohms 20 Hz – 20 kHz, THD 0.09 %)
90 W + 90 W[1)]

Reference Power Output
(8 ohms 20 Hz – 20 kHz, THD 0.05 %)
FRONT[3)]: 100 W + 100 W
CENTER[3)]: 100 W
SURR[3)]: 100 W + 100 W
SURR BACK[3)]: 100 W
(4 ohms 20 Hz – 20 kHz, THD 0.09 %)
FRONT[3)]: 90 W + 90 W
CENTER[3)]: 90 W
SURR[3)]: 90 W + 90 W
SURR BACK[3)]: 90 W

Models of area code CN, CEL:
Rated Power Output at Stereo Mode
(8 ohms 1 kHz, THD 0.7 %)
100 W + 100 W[1)]
90 W + 90 W[2)]
(4 ohms 1 kHz, THD 0.7 %)
90 W + 90 W[1)]
80 W + 80 W[2)]

Reference Power Output[1)]
(8 ohms 1 kHz, THD 0.7 %)
FRONT[3)]: 100 W + 100 W
CENTER[3)]: 100 W
SURR[3)]: 100 W + 100 W
SURR BACK[3)]: 100 W
(4 ohms 1 kHz, THD 0.7 %)
FRONT[3)]: 90 W + 90 W
CENTER[3)]: 90 W
SURR[3)]: 90 W + 90 W
SURR BACK[3)]: 90 W
(8 ohms 20 Hz – 20 kHz, THD 0.05 %)
FRONT[3)]: 90 W + 90 W
CENTER[3)]: 90 W
SURR[3)]: 90 W + 90 W
SURR BACK[3)]: 90 W
(4 ohms 20 Hz – 20 kHz, THD 0.05 %)
FRONT[3)]: 80 W + 80 W
CENTER[3)]: 80 W
SURR[3)]: 80 W + 80 W
SURR BACK[3)]: 80 W

continued

Specifications (continued)

1) Measured under the following conditions:

Area code	Power requirements
E	240 V AC, 50 Hz
CN, CEL	230 V AC, 50 Hz

2) Measured under the following conditions:

Area code	Power requirements
CN	220 V AC, 50 Hz

3) Depending on the sound field settings and the source, there may be no sound output.

Frequency response

PHONO	RIAA equalization curve ±0.5 dB
CD/SACD, TAPE, MD/DAT, TV/SAT, DVD/LD, VIDEO 1, 2, 3	10 Hz – 100 kHz +0.5/–2 dB (with sound field, equalizer, and bass boost bypassed)

Inputs (Analog)

PHONO	Sensitivity: 2.5 mV Impedance: 50 kilohms S/N[4]: 86 dB (A, 2.5 mV[5])
MULTI CHANNEL INPUT 1, 2, CD/SACD, TAPE, MD/DAT, DVD/LD, TV/SAT, VIDEO 1, 2, 3	Sensitivity: 150 mV Impedance: 50 kilohms S/N[4]: 100 dB (A, 150 mV[5])

4) INPUT SHORT.
5) Weighted network, input level.

Inputs (Digital)

CD/SACD, DVD/LD (Coaxial)	Sensitivity: – Impedance: 75 ohms S/N: 100 dB (A, 20 kHz LPF)
DVD/LD, TV/SAT, MD/DAT (Optical)	Sensitivity: – Impedance: – S/N: 100 dB (A, 20 kHz LPF)

Outputs

TAPE, MD/DAT (REC OUT), VIDEO 1, 2 (AUDIO OUT)	Voltage: 150 mV Impedance: 22 kilohms
FRONT L/R, CENTER, SURROUND L/R, SURROUND BACK, SUB WOOFER	Voltage: 2 V Impedance: 1 kilohms

EQ

BASS:	99 Hz~1.0 kHz (21 steps)
MID (FRONT L/R, CENTER only):	198 Hz~10 kHz (36 steps)
TREBLE:	1.0 kHz~10 kHz (23 steps)
Gain levels:	±10 dB, 1 dB step

FM tuner section

Tuning range 87.5 – 108.0 MHz

Antenna terminals 75 ohms, unbalanced

Sensitivity

Mono:	18.3 dBf, 2.2 µV/75 ohms
Stereo:	38.3 dBf, 22.5 µV/75 ohms

Usable sensitivity 11.2 dBf, 1 µV/75 ohms

S/N

Mono:	76 dB
Stereo:	70 dB

Harmonic distortion at 1 kHz

Mono:	0.3%
Stereo:	0.5%

Separation 45 dB at 1 kHz

Frequency response 30 Hz – 15 kHz, +0.5/–2 dB

Selectivity 60 dB at 400 kHz

AM tuner section

Tuning range
Models of area code E
With 10-kHz tuning scale: 530 – 1610 kHz[6)]
With 9-kHz tuning scale: 531 – 1602 kHz[6)]
Models of area code CN, CEL
With 9-kHz tuning scale: 531 – 1602 kHz

Antenna Loop antenna

Usable sensitivity 50 dB/m (at 1,000 kHz or 999 kHz)

S/N 54 dB (at 50 mV/m)

Harmonic distortion 0.5 % (50 mV/m, 400 Hz)

Selectivity
At 9 kHz: 35 dB
At 10 kHz: 40 dB

6) You can change the AM tuning scale to 9 kHz or 10 kHz. After tuning in any AM station, turn off the receiver. Hold down TUNING + and press **I**/⏻. All preset stations will be erased when you change the tuning scale. To reset the scale to 10 kHz (or 9 kHz), repeat the procedure.

Video section

Inputs
Video: 1 Vp-p, 75 ohms
S-video: Y: 1 Vp-p, 75 ohms
C: 0.286 Vp-p, 75 ohms

Outputs
Video: 1 Vp-p, 75 ohms
S-video: Y: 1 Vp-p, 75 ohms
C: 0.286 Vp-p, 75 ohms

Remote control

Remote control system
Infrared control

Power requirements 4.5 V DC with three LR6 (size-AA) alkaline batteries

Dimensions 175 × 62 × 33 mm

Mass (approx.) 135 g excluding batteries

General

Power requirements

Area code	Power requirements
CEL	230 V AC, 50/60 Hz
CN	220 – 230 V AC, 50/60 Hz
E	120/220/240 V AC, 50/60 Hz

Power consumption

Area code	Power consumption
CN, CEL	390 W
E	400 W

Power consumption (during standby mode)
1 W

AC outlets

Area code	AC outlets
CEL	1 switched, 100 W MAX
E	2 switched, 100 W MAX

Dimensions 430 × 175 × 465 mm including projecting parts and controls

Mass (Approx.) 20.0 kg

Supplied accessories
FM wire antenna (1)
AM loop antenna (1)
Remote commander RM-LJ305 (1)
LR6 (size-AA) batteries (3)

For details on the area code of the component you are using, see page 2.

Design and specifications are subject to change without notice.

Tables of settings using SURROUND, LEVEL, EQ, and SET UP buttons

You can make various settings using the LEVEL, SURROUND, EQ, SET UP buttons, jog dial, and cursor buttons. The tables below show each of the settings that these buttons can make.

Press	Press < or > to select	Turn jog dial to select	Page
SURROUND	2CH DECODING	AUTO, ON, OFF	37
	2CH MODE	PRO LOGIC, PLII MOVIE, PLII MUSIC, Neo: Cinema, Neo: Music	
	C.WIDTH L__C__R[1)]	(8 steps)	
	DIMENSION F__I__S[1)]	–3 to +3 (1 increment steps)	
	PANORAMA MODE[1)]	ON, OFF	
	EFFECT LEVEL	0 to 150 % (5 % steps)	
	WALL S_I_H	–8 to +8 (1 increment steps)	
	REVERB S_I_L	–8 to +8 (1 increment steps)	
	FRONT REVERB	DRY, WET, STD	
	SCREEN DEPTH	DEEP, MID, OFF	
	VIR.SPEAKERS	ON, OFF	
	SUR.ENHANCER	ON, OFF	
	BASS GAIN	–10 dB to +10 dB (1 dB steps)	
	BASS FREQ.	99 Hz to 1.0 kHz (21 steps)	
	TREBLE GAIN	–10 dB to +10 dB (1 dB steps)	
	TREBLE FREQ.	1.0 kHz to 10.0 kHz (23 steps)	
LEVEL	TEST TONE[2)]	OFF, AUTO, FIX	39
	PHASE NOISE[2)]	OFF, [L-C], [C-R], [R-SR], [SL-SR], [SR-SBR], [SBR-SBL], [SBL-SL], [SL-L]	
	PHASE AUDIO[2)]	OFF, [L-C], [C-R], [R-SR], [SL-SR], [SR-SBR], [SBR-SBL], [SBL-SL], [SL-L]	
	FRONT L_I_R	–8 to +8 (1 increment steps)	
	SURROUND L_I_R	–8 to +8 (1 increment steps)	
	SUR.BACK L_I_R	–8 to +8 (1 increment steps)	
	CENTER LEVEL	(OFF), –20 dB to +10 dB (1 dB steps)	
	SURROUND LEVEL	(OFF), –20 dB to +10 dB (1 dB steps)	
	SUR.BACK LEVEL	(OFF), –20 dB to +10 dB (1 dB steps)	
	S.WOOFER LEVEL	(OFF), –20 dB to +10 dB (1 dB steps)	
	LFE MIX LEVEL	(OFF), –20 dB to 0 dB (1 dB steps)	
	D.RANGE COMP.	OFF, 0.1 to 0.9 (0.1 steps), STD, MAX	

1) You can set this parameter only when the 2ch decode mode is set to “PL II MUSIC”.
2) One of these parameters appears depending on the T.TONE parameter in the SET UP menu.

Press	Press < or > to select	Turn jog dial to select	Page
EQ	FRONT BASS GAIN	–10 dB to +10 dB (1 dB steps)	41
	FRONT BASS FREQUENCY	99 Hz to 1.0 kHz (21 steps)	
	FRONT MID GAIN	–10 dB to +10 dB (1 dB steps)	
	FRONT MID FREQUENCY	198 Hz to 10 kHz (37 steps)	
	FRONT MID BANDWIDTH	WIDE, MID, NARR	
	FRONT TREBLE GAIN	–10 dB to +10 dB (1 dB steps)	
	FRONT TREBLE FREQUENCY	1.0 kHz to 10 kHz (23 steps)	
	CENTER BASS GAIN	–10 dB to +10 dB (1 dB steps)	
	CENTER BASS FREQUENCY	99 Hz to 1.0 kHz (21 steps)	
	CENTER MID GAIN	–10 dB to +10 dB (1 dB steps)	
	CENTER MID FREQUENCY	198 Hz to 10 kHz (37 steps)	
	CENTER MID BANDWIDTH	WIDE, MID, NARR	
	CENTER TREBLE GAIN	–10 dB to +10 dB (1 dB steps)	
	CENTER TREBLE FREQUENCY	1.0 kHz to 10 kHz (23 steps)	
	SURROUND BASS GAIN	–10 dB to +10 dB (1 dB steps)	
	SURROUND BASS FREQUENCY	99 Hz to 1.0 kHz (21 steps)	
	SURROUND TRE. GAIN	–10 dB to +10 dB (1 dB steps)	
	SURROUND TRE. FREQUENCY	1.0 kHz to 10 kHz (23 steps)	
	SURR BACK BASS GAIN	–10 dB to +10 dB (1 dB steps)	
	SURR BACK BASS FREQUENCY	99 Hz to 1.0 kHz (21 steps)	
	SURR BACK TRE. GAIN	–10 dB to +10 dB (1 dB steps)	
	SURR BACK TRE. FREQUENCY	1.0 kHz to 10 kHz (23 steps)	

continued

Tables of settings using SURROUND, LEVEL, EQ, and SET UP buttons (continued)

Press	Press < or > to select	Turn jog dial to select	Page
SET UP	FRONT SP	LARGE, SMALL	19
	CENTER SP	LARGE, SMALL, NO	
	SURROUND SP	LARGE, SMALL, NO	
	SURR BACK SP	LARGE, SMALL, NO	
	SURR BACK L/R	YES, NO	
	SUB WOOFER	YES, NO	
	FRONT	1.0 meter to 12.0 meters (0.1 meter steps)	
	CENTER	1.0 meter to 12.0 meters (0.1 meter steps)	
	SURROUND	1.0 meter to 12.0 meters (0.1 meter steps)	
	SURR BACK	1.0 meter to 12.0 meters (0.1 meter steps)	
	SUB WOOFER	1.0 meter to 12.0 meters (0.1 meter steps)	
	S.W PHASE	NORMAL, REVERSE	
	DISTANCE UNIT	meter, feet	
	SURR POSI.	SIDE, MIDDLE, BEHIND	
	SURR HEIGHT	HIGH, LOW	
	SURR BACK HGT.	HIGH, LOW	
	FRONT SP > [1)]	40 Hz to 200 Hz (10 Hz steps)	
	CENTER SP > [1)]	40 Hz to 200 Hz (10 Hz steps)	
	SURROUND SP > [1)]	40 Hz to 200 Hz (10 Hz steps)	
	SURR BACK SP > [1)]	40 Hz to 200 Hz (10 Hz steps)	
	LFE HIGH CUT >	40 Hz to 200 Hz (10 Hz steps)	
	6.1CH DECODING	AUTO, ON, OFF	50
	MULTI CH 1/2	NONE, Every function (except for TUNER and PHONO)	
	D.POWER	AUTO OFF, ALWAYS ON	
	V.POWER	AUTO OFF, ALWAYS ON	
	S.FIELD LINK	ON, OFF	
	DECODE FORMAT	AUTO, PCM	
	AUTO FUNCTION	ON, OFF	
	2 WAY REMOTE	ON, OFF	
	COMMAND MODE	AV1, AV2	
	T.TONE	NORMAL, PHASE NOISE, PHASE AUDIO	
	COLOR SYSTEM	PAL, NTSC	
	OSD	COLOR, MONOCHROME	
	OSD H.POSITION	0 to 64 (1 steps)	
	OSD V.POSITION	0 to 32 (1 steps)	

1) When the speakers are set to SMALL only.

Adjustable parameters for each sound field

The adjusted SURROUND parameters are stored in each sound field.

The adjusted LEVEL parameters are applied to all the sound fields.

	< SURROUND >									
	2CH DECODING	2CH MODE	EFFECT LEVEL	WALL TYPE	REVERB TIME	FRONT REVERB	SCREEN DEPTH	VIRTUAL SPEAKERS	SUR. ENHANCER	BASS/ TREBLE
2CH										●
A.F.D.	AUTO	●								●
NORMAL SURROUND	ON	●								●
CINEMA STUDIO EX A	●	●	●				●	●	●	●
CINEMA STUDIO EX B	●	●	●				●	●	●	●
CINEMA STUDIO EX C	●	●	●				●	●	●	●
SEMI C.STUDIO EX A	●	●	●				●	●	●	●
SEMI C.STUDIO EX B	●	●	●				●	●	●	●
SEMI C.STUDIO EX C	●	●	●				●	●	●	●
NIGHT THEATER	●	●	●	●	●					●
MONO MOVIE	●	●	●	●	●					●
STEREO MOVIE	●	●	●	●	●					●
V.MULTI DIMENSION	●	●								●
VIRTUAL MULTI REAR	●	●								●
V.SEMI M.DIMENSION	●	●								●
VIRTUAL ENHANCED A	●	●								●
VIRTUAL ENHANCED B	●	●								●
D.CONCERT HALL A	●	●	●			●				●
D.CONCERT HALL B	●	●	●			●				●
CHURCH	●	●	●	●	●					●
OPERA HOUSE	●	●	●	●	●					●
JAZZ CLUB	●	●	●	●	●					●
DISCO/CLUB	●	●	●	●	●					●
LIVE HOUSE	●	●	●	●	●					●
ARENA	●	●	●	●	●					●
STADIUM	●	●	●	●	●					●
GAME	●	●	●	●	●					●
HEADPHONE (2CH)										●
HEADPHONE (DIRECT)										
HEADPHONE (MULTI 1/2)										
HEADPHONE THEATER	●	●	●							●
MULTI CH IN 1										
MULTI CH IN 2										
2CH ANALOG DIRECT										
PCM96K (more than 48 kHz)										

continued

Adjustable parameters for each sound field (continued)

	< LEVEL >								
	FRONT BAL	SURR BAL	SURR BACK BAL	CENTER LEVEL	SURR LEVEL	SURR BACK LEVEL	S. WOOFER LEVEL	LFE MIX[1)]	D.RANGE COMP[1)]
2CH	●							●	●
A.F.D.	●	●	●	●	●	●	●	●	●
NORMAL SURROUND	●	●	●	●	●	●	●	●	●
CINEMA STUDIO EX A	●	●	●	●	●	●	●	●	●
CINEMA STUDIO EX B	●	●	●	●	●	●	●	●	●
CINEMA STUDIO EX C	●	●	●	●	●	●	●	●	●
SEMI C.STUDIO EX A	●			●			●	●	●
SEMI C.STUDIO EX B	●			●			●	●	●
SEMI C.STUDIO EX C	●			●			●	●	●
NIGHT THEATER	●	●	●	●	●	●	●	●	●
MONO MOVIE	●	●	●	●	●	●	●	●	●
STEREO MOVIE	●	●	●	●	●	●	●	●	●
V.MULTI DIMENSION	●	●	●	●	●	●	●	●	●
VIRTUAL MULTI REAR	●	●	●	●	●	●	●	●	●
V.SEMI M.DIMENSION	●			●			●	●	●
VIRTUAL ENHANCED A	●			●			●	●	●
VIRTUAL ENHANCED B	●			●			●	●	●
D.CONCERT HALL A	●	●	●	●	●	●	●[2)]	●	●
D.CONCERT HALL B	●	●	●	●	●	●	●[2)]	●	●
CHURCH	●	●	●	●	●	●	●[2)]	●	●
OPERA HOUSE	●	●	●	●	●	●	●[2)]	●	●
JAZZ CLUB	●	●	●	●	●	●	●[2)]	●	●
DISCO/CLUB	●	●	●	●	●	●	●	●	●
LIVE HOUSE	●	●	●	●	●	●	●[2)]	●	●
ARENA	●	●	●	●	●	●	●[2)]	●	●
STADIUM	●	●	●	●	●	●	●[2)]	●	●
GAME	●	●	●	●	●	●	●	●	●
HEADPHONE (2CH)	●								●
HEADPHONE (DIRECT)	●								
HEADPHONE (MULTI 1/2)	●								
HEADPHONE THEATER	●								●
MULTI CH IN 1	●	●		●	●	●	●		
MULTI CH IN 2	●	●		●	●		●		
2CH ANALOG DIRECT	●								
PCM96K (more than 48 kHz)	●								

[1)] These parameters may not operate depending on the source or adjustments. For details, see each item in "Adjusting the level parameters" (page 39).

[2)] When these sound fields are selected, there is no sound output from the sub woofer if the front speaker size is set to "LARGE". However, sound will be output from the sub woofer if the digital input signal contains L.F.E. signals.

	<			EQ			>
	<			FRONT			>
	BASS GAIN	BASS FREQ	MID GAIN	MID FREQ	MID SLOPE	TREBLE GAIN	TREBLE FREQ
2CH	●	●	●	●	●	●	●
A.F.D.	●	●	●	●	●	●	●
NORMAL SURROUND	●	●	●	●	●	●	●
CINEMA STUDIO EX A	●	●	●	●	●	●	●
CINEMA STUDIO EX B	●	●	●	●	●	●	●
CINEMA STUDIO EX C	●	●	●	●	●	●	●
SEMI C.STUDIO EX A	●	●	●	●	●	●	●
SEMI C.STUDIO EX B	●	●	●	●	●	●	●
SEMI C.STUDIO EX C	●	●	●	●	●	●	●
NIGHT THEATER	●	●	●	●	●	●	●
MONO MOVIE	●	●	●	●	●	●	●
STEREO MOVIE	●	●	●	●	●	●	●
V.MULTI DIMENSION	●	●	●	●	●	●	●
VIRTUAL MULTI REAR	●	●	●	●	●	●	●
V.SEMI M.DIMENSION	●	●	●	●	●	●	●
VIRTUAL ENHANCED A	●	●	●	●	●	●	●
VIRTUAL ENHANCED B	●	●	●	●	●	●	●
D.CONCERT HALL A	●	●	●	●	●	●	●
D.CONCERT HALL B	●	●	●	●	●	●	●
CHURCH	●	●	●	●	●	●	●
OPERA HOUSE	●	●	●	●	●	●	●
JAZZ CLUB	●	●	●	●	●	●	●
DISCO/CLUB	●	●	●	●	●	●	●
LIVE HOUSE	●	●	●	●	●	●	●
ARENA	●	●	●	●	●	●	●
STADIUM	●	●	●	●	●	●	●
GAME	●	●	●	●	●	●	●
HEADPHONE (2CH)	●	●	●	●	●	●	●
HEADPHONE (DIRECT)							
HEADPHONE (MULTI 1/2)							
HEADPHONE THEATER	●	●	●	●	●	●	●
MULTI CH IN 1/2							
2CH ANALOG DIRECT							
PCM96K (more than 48 kHz)							

continued

Adjustable parameters for each sound field (continued)

	<			EQ			>
	<			CENTER			>
	BASS GAIN	BASS FREQ	MID GAIN	MID FREQ	MID SLOPE	TREBLE GAIN	TREBLE FREQ
2CH							
A.F.D.	●	●	●	●	●	●	●
NORMAL SURROUND	●	●	●	●	●	●	●
CINEMA STUDIO EX A	●	●	●	●	●	●	●
CINEMA STUDIO EX B	●	●	●	●	●	●	●
CINEMA STUDIO EX C	●	●	●	●	●	●	●
SEMI C.STUDIO EX A	●	●	●	●	●	●	●
SEMI C.STUDIO EX B	●	●	●	●	●	●	●
SEMI C.STUDIO EX C	●	●	●	●	●	●	●
NIGHT THEATER	●	●	●	●	●	●	●
MONO MOVIE	●	●	●	●	●	●	●
STEREO MOVIE	●	●	●	●	●	●	●
V.MULTI DIMENSION	●	●	●	●	●	●	●
VIRTUAL MULTI REAR	●	●	●	●	●	●	●
V.SEMI M.DIMENSION	●	●	●	●	●	●	●
VIRTUAL ENHANCED A	●	●	●	●	●	●	●
VIRTUAL ENHANCED B	●	●	●	●	●	●	●
D.CONCERT HALL A	●	●	●	●	●	●	●
D.CONCERT HALL B	●	●	●	●	●	●	●
CHURCH	●	●	●	●	●	●	●
OPERA HOUSE	●	●	●	●	●	●	●
JAZZ CLUB	●	●	●	●	●	●	●
DISCO/CLUB	●	●	●	●	●	●	●
LIVE HOUSE	●	●	●	●	●	●	●
ARENA	●	●	●	●	●	●	●
STADIUM	●	●	●	●	●	●	●
GAME	●	●	●	●	●	●	●
HEADPHONE (2CH)							
HEADPHONE (DIRECT)							
HEADPHONE (MULTI 1/2)							
HEADPHONE THEATER							
MULTI CH IN 1/2							
2CH ANALOG DIRECT							
PCM96K (more than 48 kHz)							

	<	EQ		>
	<	SURROUND/SURROUND BACK		>
	BASS GAIN	BASS FREQ	TREBLE GAIN	TREBLE FREQ
2CH				
A.F.D.	●	●	●	●
NORMAL SURROUND	●	●	●	●
CINEMA STUDIO EX A	●	●	●	●
CINEMA STUDIO EX B	●	●	●	●
CINEMA STUDIO EX C	●	●	●	●
SEMI C.STUDIO EX A				
SEMI C.STUDIO EX B				
SEMI C.STUDIO EX C				
NIGHT THEATER	●	●	●	●
MONO MOVIE	●	●	●	●
STEREO MOVIE	●	●	●	●
V.MULTI DIMENSION	●	●	●	●
VIRTUAL MULTI REAR	●	●	●	●
V.SEMI M.DIMENSION				
VIRTUAL ENHANCED A				
VIRTUAL ENHANCED B				
D.CONCERT HALL A	●	●	●	●
D.CONCERT HALL B	●	●	●	●
CHURCH	●	●	●	●
OPERA HOUSE	●	●	●	●
JAZZ CLUB	●	●	●	●
DISCO/CLUB	●	●	●	●
LIVE HOUSE	●	●	●	●
ARENA	●	●	●	●
STADIUM	●	●	●	●
GAME	●	●	●	●
HEADPHONE (2CH)				
HEADPHONE (DIRECT)				
HEADPHONE (MULTI 1/2)				
HEADPHONE THEATER				
MULTI CH IN 1/2				
2CH ANALOG DIRECT				
PCM96K (more than 48 kHz)				

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