CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN.

- Avoid high temperatures. Allow for sufficient heat dispersion when installed in a rack.
- (*For apparatuses with ventilation holes*) Do not obstruct the ventilation holes.
- Do not let foreign objects into the apparatus.
- Do not let insecticides, benzene, and thinner come in contact with the apparatus.
- Do not let naked flame sources, such as lighted candles, be close to the apparatus.
- Never disassemble or modify the apparatus in any way.
- Keep the apparatus free from moisture, water, and dust.
- No naked flame sources, such as lighted candles, should be placed on the apparatus.
- Typp inte till ventilationssliporna.
- Handle the power cord carefully. Hold the plug when unplugging the cord.
- Do not let the apparatus come in contact with the apparatus.
- No deje objetos extraños dentro del equipo.
- Laat geen vreemde voorwerpen in dit apparaat vallen.
- Caution: To reduce the risk of electric shock, do not open.
- Do not let insecticides, benzene, and thinner come in contact with the apparatus.
- Do not obstruct the ventilation holes.
- Do not let foreign objects into the apparatus.
- Do not let naked flame sources, such as lighted candles, be close to the apparatus.
- Never disassemble or modify the apparatus in any way.
- Keep the apparatus free from moisture, water, and dust.
- No naked flame sources, such as lighted candles, should be placed on the apparatus.
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- Typp inte till ventilationssliporna.
- Handle the power cord carefully. Hold the plug when unplugging the cord.
- Do not let the apparatus come in contact with the apparatus.
System Setup

1. Auto Setup
2. Speaker Setup
3. Input Setup
4. Advanced Playback
5. Option Setup

Exit

1-1. Auto Setup

Please place microphone at ear height at main listening position

Power Amp Assign
S. Back
Start / Cancel

2. Speaker Setup

1. Speaker Config
2. Delay Time
3. Channel Level
4. Crossover Frequency
5. SW Mode Setup

Exit

3. Input Setup

1. Digital In Assign
2. Ext In SW Level
3. Input Function Level
4. Function Rename
5. Component In Assign
6. Auto Tuner Preset

Exit

4. Advanced Playback

1. Audio Delay
2. Auto Surround Mode

Exit

5. Option Setup

1. Muting Level
2. On Screen Display
3. Power Amp Assign
4. Setup Lock

Exit
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- Combining the currently playing sound with the desired image (VIDEO SELECT)
- Selecting the front speakers
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- Preset memory
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- On-screen display and front display

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- Setting the Digital In Assign
- Setting the Ext In SW Level
- Setting the Input Function Level
- Setting the Function Rename
- Setting the Component In Assign
- Setting the Auto Tuner Presets

Advanced Playback
- Setting the Audio Delay
- Setting the Auto Surround Mode

Option Setup
- Setting the Muting Level
- Setting the On-Screen Display
- Setting the Power Amplifier Assign
- Setting the Setup Lock

Advanced Setup – Part 2

Speaker Setup
- Setting the Speaker Config
- Setting the Delay Time
- Setting the Channel Level
- Setting the Crossover Frequency
- Setting the SW Mode Setup

System setup items and default values

Troubleshooting

Additional information

Specifications

List of preset codes

End of this manual
### Accessories

Check that the following parts are included in addition to the main unit:

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tr>
<td>1</td>
<td>Operating instructions</td>
<td>5</td>
<td>AM loop antenna</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Service station list</td>
<td>6</td>
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<td></td>
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<td>3</td>
<td>Remote control unit (RC-1016)</td>
<td>7</td>
<td>Omnidirectional microphone</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>R6P/AA batteries</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Before using

Pay attention to the following before using this unit:

- **Moving the unit**
  To prevent short-circuits or damaged wires in the connection cables, always unplug the power supply cord and disconnect the connection cables between all other audio components when moving the unit.

- **Before turning the power switch on**
  Check once again that all connections are correct and that there are no problems with the connection cables. Always set the power switch to the standby position before connecting and disconnecting connection cables.

  - Store these instructions in a safe place.
    After reading, store these instructions along with the warranty card in a safe place.

  - Note that the illustrations in these instructions may differ from the actual unit for explanation purposes.

  - V. AUX terminals
    The AVR-2106's front panel is equipped with V. AUX terminals. Remove the cap covering the terminals when you want to use them.

### Cautions on installation

Noise or disturbance of the picture may be generated if this unit or any other electronic equipment using microprocessors is used near a tuner or TV. If this happens, take the following steps:

- Install this unit as far away as possible from the tuner or TV.
- Run the antenna wires from the tuner or TV away from this unit's power supply cord and input/output connection cables.
- Noise or disturbance tends to occur particularly when using indoor antennas or 300 Ω/ohm feeder wires. We recommend using outdoor antennas and 75 Ω/ohm coaxial cables.

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

### Cautions on handling

- **Switching the input source when input terminals are not connected.**
  A clicking noise may be produced if the input source is switched when nothing is connected to the input terminals. If this happens, either turn down the MASTER VOLUME control knob or connect components to the input terminals.

- **Muting of PRE OUT terminals, PHONES jack and SPEAKER terminals.**
  The PRE OUT terminals, PHONES jack and SPEAKER terminals include a muting circuit. Because of this, the output signals are greatly attenuated for several seconds after the power switch is turned on or the input source, surround mode or any other set-up is changed. If the volume is turned up during this time, the output will be very high after the muting circuit stops functioning. Always wait until the muting circuit turns off before adjusting the volume.

- **Whenever the power switch is in the STANDBY state, the unit is still connected to AC line voltage.**
  Please be sure to turn off the power switch or unplug the cord when you leave home for, say, a vacation.

### A NOTE ABOUT RECYCLING:

This product’s packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with the local recycling regulations. When discarding the unit, comply with local rules or regulations. Batteries should never be thrown away or incinerated but disposed of in accordance with the local regulations concerning chemical waste. This product and the accessories packed together constitute the applicable product according to the WEEE directive except batteries.

### Preparing the remote control unit

The included remote control unit (RC-1016) can be used to operate not only the AVR-2106 but other remote control compatible DENON components as well. In addition, the memory contains control signals for other remote control units, so it can be used to operate non-DENON remote control compatible products.
Getting Started

Inserting the batteries

1. Remove the remote control unit’s rear cover.
2. Set two R6P/AA batteries in the battery compartment in the indicated direction.
3. Put the rear cover back on.

Notes on batteries:
- Replace the batteries with new ones if the set does not operate even when the remote control unit is operated nearby the unit. (The included batteries are only for verifying operation.)
- When inserting the batteries, be sure to do so in the proper direction, following the “Θ” and “Θ” marks in the battery compartment.
- To prevent damage or leakage of battery fluid:
  - Do not use a new battery together with an old one.
  - Do not use two different types of batteries.
  - Do not short-circuit, disassemble, heat or dispose of batteries in flames.
- If the battery fluid should leak, carefully wipe the fluid off the inside of the battery compartment and insert new batteries.
- When replacing the batteries, have the new batteries ready and insert them as quickly as possible.

Operating range of the remote control unit

- Point the remote control unit at the remote sensor on the main unit as shown in the diagram.
- The remote control unit can be used from a straight distance of approximately 7 meters from the main unit, but this distance will be shorter if there are obstacles in the way or if the remote control unit is not pointed directly at the remote sensor.
- The remote control unit can be operated at a horizontal angle of up to 30 degrees with respect to the remote sensor.

NOTE:
- It may be difficult to operate the remote control unit if the remote sensor is exposed to direct sunlight or strong artificial light.
- Do not press buttons on the main unit and remote control unit simultaneously. Doing so may result in malfunction.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

Part names and functions

Front panel

For details on the functions of these parts, refer to the pages given in parentheses ( ).

1. Power ON/STANDBY switch
2. Power indicator
3. Power switch
4. Headphones jack (PHONES)
5. ANALOG button
6. SPEAKER A/B buttons
7. SURROUND BACK button
8. Preset station select buttons
9. STANDARD/NIGHT button
10. 5CH/7CH STEREO button
11. STEREO/DIRECT/PURE DIRECT button
12. TONE CONTROL button
13. MASTER VOLUME control knob
14. TUNING ▲ (up)/▼ (down) buttons
15. RT button
16. PTY button
17. RDS button
18. OUTPUT button
19. Master volume indicator
20. Display
21. INPUT mode indicator
22. SIGNAL indicator
23. BAND button
24. V. AUX INPUT terminals
25. SETUP MIC jack
26. SURROUND MODE button
27. SURROUND PARAMETER button
28. REC SELECT button
29. FUNCTION knob
30. SOURCE button

---

ENGLISH
Easy Setup and Operation

- This section contains the basic steps necessary to configure the AVR-2106 according to your listening room environment and the source equipment and loudspeakers you are using.
- For optimum performance, we recommend using the Auto Setup function.
- If you wish, you can set the various settings manually without using Auto Setup (page 35–44).

MEMO
- The Dolby Surround Pro Logic II(x) Cinema or Music mode can be chosen directly by pressing the CINEMA or MUSIC button on the remote control unit during playback in the Dolby Surround Pro Logic II(x) mode.
- The DTS NEO:6 Cinema or Music mode can be chosen directly by pressing the CINEMA or MUSIC button on the remote control unit during playback in the DTS NEO:6 mode.

![Easy setup flow diagram]

1) Speaker Configuration
2) Delay Time
3) Channel Level

Measurement of the speakers in the listening position.

Check of the measurement result.
Store the measurement result in the memory.

Placing the speakers.

Connecting the speakers.

Connecting a monitor and a DVD player.

Starting the Auto Setup.

Playing a DVD with surround sound.

Connecting a microphone.
Speaker connections

- Connect the speaker terminals with the speakers making sure that like polarities are matched ( with ) . Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the stereo image being impaired.
- When making connections, take care that none of the individual conductors of the speaker cable come in contact with adjacent terminals, with other speaker cable conductors, or with the rear panel.
- When speaker systems A and B are used separately, speakers with an impedance of 6 to 16 Ω/ohms can be connected for use as front speakers.
- Speakers with an impedance of 6 to 16 Ω/ohms can be connected for use as center and surround and surround back speakers.
- The protector circuit may be activated if the unit is operated for long periods of time at high volumes when speakers with an impedance lower than the specified impedance are connected.

Protector circuit

This unit is equipped with a high-speed protection circuit. The purpose of this circuit is to protect the speakers under circumstances such as when the output of the power amplifier is inadvertently short-circuited and a large current flows, when the temperature surrounding the unit becomes unusually high, or when the unit is used at high output over a long period which results in an extreme temperature rise. When the protection circuit is activated, the speaker output is cut off and the power supply indicator flashes. Should this occur, please follow these steps: be sure to switch off the power of this unit, check whether there are any faults with the wiring of the speaker cables or input cables, and wait for the unit to cool down if it is very hot. Improve the ventilation condition around the unit and switch the power back on. If the protection circuit is activated again even though there are no problems with the wiring or the ventilation around the unit, switch off the power and contact a DENON service center.

Speaker impedance

- Be careful when using two pairs of front speakers (A + B) at the same time, since speakers with an impedance of 12 to 16 Ω/ohms in this case must be used.

Connecting the speaker cables

1. Loosen by turning counterclockwise.
2. Insert the cable.
3. Tighten by turning clockwise.
Easy Setup and Operation

Connections
When making connections, also refer to the operating instructions of the other components.

- **Precautions when connecting speakers**
  If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker’s magnetism. If this should happen, move the speaker away to a position where it does not cause this effect.

- **NOTE:**
  - When using only one surround back speaker, connect it to the left channel.

Bi-Amp connections
Certain loudspeakers are equipped with two sets of input terminals, for bi-amplification. The AVR-2106 power amp assign mode allows you to power bi-amp-capable speakers with two amplifier channels (page 40). Be sure to consult the owner’s manual of your bi-amp-capable speakers for further information before proceeding.

NOTE:
- When making Bi-Amp connections, be sure to remove the short-circuiting bar included with the speaker.
Easy Setup and Operation

Connecting a DVD player and monitor TV

• To connect the video output from the DVD player to the AVR-2106, you only need to choose one connection type. Component video connection offers the best quality (and is required for progressive DVD playback), followed by S-Video, while composite video offers the lowest picture quality of the three connection types. For more information about the video conversion function (page 12).

• To connect the digital audio output from the DVD player, you can choose from either the coaxial or optical connections. If you choose to use the coaxial connection, it needs to be assigned. For more information about Digital Input Assignment (page 36).

• Connect a non-DVD video disc player (such as a laser disc, VCD/SVCD, or future high definition disc player) to the DVD/VDP terminals in the same way.

For best picture quality (especially with progressive DVD and other high definition sources), choose the component video connection to your monitor TV. S-Video and composite video outputs are also provided if your TV does not have component video inputs.

NOTE:
• The component video input and/or output terminals may be labeled differently on some TVs, monitors or video components (Y, Pb, Pr; Y, Cb, Cr; Y, B-Y, R-Y). Check the owner’s manuals for the other components for further information.

Audio signal flow is shown with white arrows; video signal flow is shown with gray arrows.
The Auto Setup function of this unit performs an analysis of the speaker system to permit an appropriate automatic setting.

**Measurement and setting details**

1. This sets the speaker connection, polarity, and bass reproduction ability.
2. This sets the delay time from each speaker corresponding to the listening position.
3. This sets the volume that is output from each speaker.

**For accurate measurements**

- Keep quiet during the auto setup procedure. It is recommended that you turn off the power of any air-conditioner, projector or other equipment that may produce noise.
- Do not stand between the microphone and speakers while Auto Setup is performed.
- Do not place any obstacles between the microphone and speakers. Also, be sure to point the speakers towards the listening position.

**NOTE:**

- A loud test tone is output during the measurement. Please consider this should you be planning night time measurements, and consider not allowing small children into the listening room at this time.

**Connecting a microphone**

1. Connect the microphone for Auto Setup to the SETUP MIC jack on the front panel of the unit.
2. Place the microphone for Auto Setup at the actual listening position which will be at the same height as your ears.

**Turning on the power**

1. Turn on your subwoofer.
2. Turn on your monitor (TV).
3. Press the POWER switch.
4. Press the ON/STANDBY switch on the main unit or the ON/SOURCE button on the remote control unit.
5. Press the SPEAKER A button to turn the speakers on.
6. Set the MODE 1 switch to “AUDIO” (only when operating with the remote control unit).
Easy Setup and Operation

Starting Auto Setup

1. Press the SETUP button.
   - The “System Setup” menu appears.

2. Press the CURSOR △ or ▽ button to select “Auto Setup”, then press the ENTER button.
   - The “Auto Setup” screen appears.

3. Press the CURSOR △ or ▽ button to select “Power Amp Assign”, then press the CURSOR ◄ or ► button to select “S. Back” or “Bi-Amp”.

4. Press the CURSOR ◄ or ▼ button to select “Start”, then press the CURSOR ◄ button.
   - Start the measurements.

   Measurement of each channel is performed as follows:

   - Measurement is canceled if the MASTER VOLUME control knob is operated while the Auto Setup is performed.
   - If the output volume and crossover frequency of your subwoofer speaker can be changed, then set the volume to halfway and the crossover filter to maximum or switch off the low-pass filter.

About automatic retry

To confirm the results of the measurements, remeasurement is automatically performed. Remeasurement is performed up to 2 times. During this time, “Retry1” or “Retry2” is displayed on the screen.

NOTE:
- When measurements have been made using the measurement microphone, speakers with built-in filters, such as a subwoofer, might be set to a value that differs from the physical distance because of the internal electrical delay.
## About error messages

- These error screens may be displayed when performing Auto Setup measurement and the automatic measurements cannot be completed because of the speaker arrangement, measurement environment, or other factors. Please check the following matters, reset the pertinent items, and measure again.
- When there is too much noise in the room, the speakers may not be detected properly. Should this happen, perform the measurements when the noise level is low, or switch off the power of the equipment that is producing the noise for the duration of the measurements.

<table>
<thead>
<tr>
<th>Screen example</th>
<th>Cause</th>
<th>Measures</th>
</tr>
</thead>
</table>
| ![Error Screen](image1.png) | 1. This screen will be displayed when the speakers required for producing suitable reproduction have not been detected.  
   - The front L or front R speaker was not properly detected.  
   - Only one channel of the surround speakers was detected.  
   - Sound was output from the R channel when only one surround back speaker was connected.  
   - The surround back speaker was detected, but the surround speaker was not detected. | Check that the pertinent speakers are properly connected. |
| ![Error Screen](image2.png) | 2. This screen will be displayed when the speaker polarity is connected in reverse. | Check the polarity of the pertinent speakers. For some speakers, this screen may be displayed even though the speakers are properly connected. If so, select “Skip”. |
| ![Error Screen](image3.png) | 3. This screen will be displayed when accurate measurements cannot be made due to the input level of the microphone being too high. | Set up the speakers so that their position is farther away from the listening position.  
   - Lower the volume of the subwoofer speaker. |
| ![Error Screen](image4.png) | 4. This screen will be displayed when the measurement microphone is not connected. | Connect the measurement microphone to the microphone connector. |

## Check of the measurement results

1. Press the CURSOR △ or ▽ button to select an item, then press the ENTER button.

   ![Measurement Options](image5.png)

   ※ The measurement results of each item can be checked here.

2. Press the ENTER button.  
   - The verification screen appears.

   ![Verification Screen](image6.png)

   **Example:** Speaker Config. Check

3. Press the ENTER button again once you have checked the results.

![Result Check](image7.png)
### Easy Setup and Operation

1. Disconnect the microphone from the unit.
2. Select the input source to be played.
3. Select the play (surround) mode.
4. Start DVD playback.
5. Adjust the volume.

4. Press the CURSOR △ or ▼ button to select from the following three items based on the measurement results, then press the CURSOR ◀ button.

**Store:**
Store the checked measurement values.
All parameters are stored.

**Retry:**
Perform the measurement again.
Measurement is repeated.

**Cancel:**
Cancel the checked measurement values.

#### Connecting Other Sources

**Cable indications**

The hookup diagrams on the subsequent pages assume the use of the following optional connection cables (not supplied).

<table>
<thead>
<tr>
<th>Audio cable</th>
<th>Video cable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Analog terminal (Stereo)</td>
<td><strong>F</strong> Video terminal</td>
</tr>
<tr>
<td>(White)</td>
<td>(Yellow)</td>
</tr>
<tr>
<td>(Red)</td>
<td>Video cable (75 Ω/ohm video pin-plug cable)</td>
</tr>
<tr>
<td>Pin-plug cable</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong> Analog terminal (Monaural, for subwoofer)</td>
<td><strong>G</strong> S-Video terminal</td>
</tr>
<tr>
<td>Pin-plug cable</td>
<td>S-Video cable</td>
</tr>
<tr>
<td><strong>C</strong> Digital terminal (Coaxial)</td>
<td><strong>H</strong> Component video terminal</td>
</tr>
<tr>
<td>(Orange) Coaxial cable (75 Ω/ohm pin-plug cable)</td>
<td>(Green) Component video cable</td>
</tr>
<tr>
<td><strong>D</strong> Digital terminal (Optical)</td>
<td>(Blue)</td>
</tr>
<tr>
<td>Optical cable (Optical fiber cable)</td>
<td>(Red)</td>
</tr>
<tr>
<td><strong>E</strong> Speaker terminal</td>
<td>(Pb/Cb)</td>
</tr>
<tr>
<td>Speaker cable</td>
<td>(Pr/Cr)</td>
</tr>
<tr>
<td><strong>Signal direction</strong></td>
<td><strong>Audio signal</strong></td>
</tr>
<tr>
<td>Audio signal</td>
<td>IN OUT</td>
</tr>
<tr>
<td>Video signal</td>
<td>OUT IN</td>
</tr>
</tbody>
</table>

### NOTE:
- Do not plug in the power supply cord until all connections have been completed.
- When making connections, also refer to the operating instructions of the other components.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Note that binding pin-plug cables together with power supply cords or placing them near a power transformer will result in hum or other noise.
Connecting Other Sources

The video conversion function

With the AVR-2106, the Video signal and the S-Video signal which were inputted are mutually converted.

The flow of the video signals.

<table>
<thead>
<tr>
<th>Signals input to the AVR-2106</th>
<th>On-screen display signal output</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIDEO signal input terminal (yellow)</td>
<td>S-Video signal input terminal</td>
</tr>
<tr>
<td>1</td>
<td>×</td>
</tr>
<tr>
<td>2</td>
<td>○</td>
</tr>
<tr>
<td>3</td>
<td>×</td>
</tr>
<tr>
<td>4</td>
<td>○</td>
</tr>
</tbody>
</table>

(○: Signal  ×: No signal)  (○: On-screen signals output  ×: On-screen signals not output)

On-screen display signals
Connecting Other Sources

**Connecting a TV/DBS tuner**

- For best picture quality choose the component video connection to your TV or DBS tuner. S-Video and composite video inputs are also provided if your TV or DBS tuner does not have component video output.

- To connect the digital audio output from the TV or DBS tuner, you can choose from either the coaxial or optical connections. If you choose to use the coaxial connection, it needs to be assigned. For more information about Digital Input Assignment (page 36).

**Connecting the external inputs (EXT. IN) terminals**

- These terminals are for inputting multi-channel audio signals from an external decoder, or a component with a different type of multi-channel decoder, such as a DVD Audio player, a multi-channel Super Audio CD player, or another future multi-channel sound format decoder.

- The video signal connection is the same as that for a DVD player.

- For instructions on playback using the external input (EXT. IN) terminals (page 17).

- With discs on which special copyright protection measures have been taken, the digital signals may not be output from the DVD player. In this case, connect the DVD player’s analog multi-channel output to the AVR-2106’s EXT. IN terminals for playback. Also refer to your DVD player’s operating instructions.

**Connecting a video camera or video game**

**Connecting a CD player**

To connect the digital audio output from the CD player, you can choose either coaxial or optical connection. If you choose to use the optical connection, it needs to be assigned. For more information about Digital Input Assignment (page 36).
Connecting Other Sources

Connecting a DVD recorder

- If you wish to perform analog dubbing from a digital source, such as a DVD recorder to an analog recorder such as a cassette deck, you will need to connect the analog inputs and outputs as shown below, in addition to the digital audio connections.
- The digital inputs and outputs connection is the same as that for a CD (MD) recorder.

Connecting a VCR

- For best picture quality choose the component video connection to your VCR. S-Video and composite video outputs are also provided. If you choose to use the component video connection, it needs to be assigned. For more information about Component Input Assignment (page 37).
- You can connect a second video recorder to the VCR-2 terminals.

Connecting a tape deck

- If humming noise is generated, move the tape deck further away from the source of such noise.
Connecting Other Sources

Connecting a turntable

If humming or other noise is generated when the ground wire is connected, disconnect the ground wire.

NOTE:
• The phono input can accept signals from moving magnet (MM) and high output moving coil (MC) phono cartridges. If your turntable is equipped with a low output MC cartridge, you will need to use a separate MC head amplifier or step-up MC transformer.

Connecting a CD recorder or MD recorder

If you wish to perform analog dubbing from a digital source, such as a CD or MD recorder to an analog recorder such as a tape deck, you will need to connect the analog inputs and outputs as shown below, in addition to the digital audio connections.

NOTE:
• Do not connect the output of the component connected to the OPTICAL 3 OUT terminal on the AVR-2106’s rear panel to any terminal other than the OPTICAL 3 IN terminal (page 36).

Connecting the antenna terminals

An F-type FM antenna cable plug can be connected directly to the unit.

Direction of broadcasting station

NOTE:
• Do not connect two FM antennas simultaneously.
• Even if an external AM antenna is used, do not disconnect the AM loop antenna.
• Make sure the AM loop antenna lead terminals do not touch metal parts of the panel.

AM loop antenna assembly

1. Push the lever.
2. Insert the conductor.
3. Return the lever.

Connection of AM antennas

1. Connect to the AM antenna terminals.
2. Remove the vinyl tie and take out the connection line.
3. Bend in the reverse direction.
4. Antenna placed on a stable surface.
5. Mount
6. Hanging the antenna on a wall.
7. Use the installation hole to secure the antenna to a wall, etc.
Connecting Other Sources

Connecting the pre-out terminals

- Use these terminals if you wish to connect external power amplifier(s) to increase the power of the front, center, surround and surround back sound channels, or for connection to powered loudspeakers.
- When using only one surround back speaker, connect it to the left channel.

Connecting the power supply cord

- Only use the AC OUTLET for connecting audio equipment. Never use it for hair dryers, TVs or other electrical appliances.

**NOTE:**

- SWITCHEDE (total capacity – 100 W)
  The power to this outlet is turned on and off in conjunction with the POWER switch on the main unit, and when the power is switched between on and standby from the remote control unit.
  No power is supplied from this outlet when this unit’s power is at standby. Never connect equipment whose total power consumption exceeds 100 W.
Basic Operation

Playback

1 Select the input source to be played.
   Example: CD
   ※ To select the input source when REC OUT is selected, press the SOURCE button, then operate the input function selector.

2 Select the play (surround) mode.
   Example: STEREO
   ※ To select the surround mode while adjusting the surround parameters, tone defeat or tone control, press the SURROUND MODE button and then operate the selector.

3 Start playback on the selected component.
   ※ For operating instructions, refer to the component's manual.

4 Adjust the volume.
   ※ The volume can be adjusted within the range of -80 to 0 to 18 dB, in steps of 0.5 dB. However, when the channel level is set as described (page 26), if the volume for any channel is set at +0.5 dB or greater, the volume cannot be adjusted up to 18 dB. (In this case the maximum volume is adjusted to “18 dB — (Maximum value of channel level)”).

Playback using the external input (EXT. IN) terminals

The signals being input to the external decoder input terminals are played without passing through the surround circuitry.

Press the EXT. IN button to select the external input.

※ Canceling the external input mode:
   Press the INPUT MODE or ANALOG button to switch to the desired input mode (page 18).
   ※ The external input mode can be set for any input source. To watch video while listening to sound, select the input source to which the video signal is connected, then set this mode.
   ※ If the subwoofer output level is too high, set the “SW ATT.” surround parameter to “ON”.

NOTE:
   ※ When the input mode is set to the external input (EXT. IN), the play mode (DIRECT, PURE DIRECT, VIRTUAL SURROUND, STEREO, STANDARD (DOLBY/DTSSURROUND), 5CH/7CH STEREO or DSP SIMULATION) cannot be selected.
   ※ In play modes other than the external input mode, the signals connected to the EXT. IN terminals cannot be reproduced. In addition, signals cannot be output from channels not connected to the input terminals.

Turning the sound off temporarily (MUTING)

Use this to turn off the audio output temporarily.

Press the MUTING button.
   ※ You can adjust the muting level (page 39).

※ Canceling the MUTING mode:
   ① Press the MUTING button again.
   ② Press the VOLUME button on the remote control unit, or adjust the volume up or down via the front panel MASTER VOLUME knob.
Basic Operation

Listening over headphones

Connect the headphones to the PHONES jack.
• The pre-out output (including the speaker output) is automatically turned off when headphones are connected.

NOTE:
• To prevent hearing loss, do not raise the volume level excessively when using headphones.

Combining the currently playing sound with the desired image (VIDEO SELECT)

Press the VIDEO SELECT button repeatedly until the desired source appears on the display.

■ On-screen display

Press the ON SCREEN button.
• Each time an operation is performed, a description of that operation appears on the display connected to the unit’s VIDEO MONITOR OUT terminal. Also, the unit’s operating status can be checked during playback.
• Such information as the position of the input selector and the surround parameter settings is output in sequence.

■ Using the dimmer function

Press the DIMMER button.
• The display brightness changes in four steps (bright, medium, dim and off).

■ Input mode

The AVR-2106 has an AUTO signal detection mode that automatically identifies the type of incoming audio signals, but is also equipped with a manual mode that can be switched according to the type of input audio signals.

AUTO (auto mode):
In this mode, the types of signals being input to the digital and analog input terminals for the selected input source are detected and the program in the AVR-2106’s surround decoder is selected automatically upon playback. This mode can be selected for all input sources other than PHONO and TUNER.
The presence or absence of digital signals is detected, the signals input to the digital input terminals are identified and decoding and playback are performed automatically with the DTS, Dolby Digital or PCM (2 channel stereo) format. If no digital signal is being input, the analog input terminals are selected.
Use this mode to play Dolby Digital signals.

PCM (exclusive PCM signal playback mode):
Decoding and playback are only performed when PCM signals are being input.
Note that noise may be generated when using this mode to play signals other than PCM signals.

DTS (exclusive DTS signal playback mode):
Decoding and playback are only performed when DTS signals are being input.

Press the ANALOG button to switch to the analog input.

■ Selecting the analog mode

ANALOG (exclusive analog audio signal playback mode):
The signals input to the analog input terminals are decoded and played.

NOTE:
• Input mode when playing DTS sources:
Noise will be output if DTS-compatible CDs or LDs are played in the “ANALOG” or “PCM” mode.
When playing DTS-compatible sources, be sure to connect the source component to the digital input terminals (OPTICAL/COAXIAL) and set the input mode to “DTS”.

Selecting the AUTO, PCM and DTS modes

Press the INPUT MODE button.
• The mode switches as shown below each time the INPUT MODE button is pressed:

AUTO → PCM → DTS

Selecting the front speakers

Press the SPEAKER A or B button to turn the corresponding speaker pair on.
• The front speaker A, B setting can be also be changed with the SPEAKER button on the remote control unit.
Basic Operation

### Input mode display

- In the AUTO mode
  
  ![Input Mode Display](image)

- In the DIGITAL PCM mode
  
  ![Input Mode Display - Digital PCM](image)

- In the DIGITAL DTS mode
  
  ![Input Mode Display - Digital DTS](image)

- In the ANALOG mode
  
  ![Input Mode Display - Analog](image)

### Input signal display

- **DOLBY DIGITAL**
  
  ![Dolby Digital Signal](image)

- **DTS**
  
  ![DTS Signal](image)

- **PCM**
  
  ![PCM Signal](image)

*The “DIGITAL” indicator lights when digital signals are being input properly. If the “DIGITAL” indicator does not light, check whether the Digital In Assign. setup and connections are correct and whether the component's power is turned on.*

### Playing audio sources (CDs and DVDs)

#### 2-channel playback modes

- **PURE DIRECT mode**
  
  Use this mode to achieve good quality 2-channel sound while watching images. In this mode, the audio signals bypass such circuits as the tone circuit and display circuit and are transmitted directly, resulting in good quality sound.

- **DIRECT mode**
  
  Use this mode to achieve good quality 2-channel sound while watching images. In this mode, the audio signals bypass such circuits as the tone circuit and display circuit and are transmitted directly, resulting in good quality sound.

- **STEREO mode**
  
  Use this mode to adjust the tone and achieve the desired sound while watching images.

*Note:*

- The “DIGITAL” indicator will light when playing CD-ROMs containing data other than audio signals, but no sound will be heard.
**Dolby Pro Logic IIx (Pro Logic II) mode**

- To play in the PL IIx mode, set “S. BackSp” at the “Speaker Configuration” setting to “1sp” or “2sp”.
- To play in the PL IIx mode, set “Surround Back” at the “Power Amp Assign” setting.

1. **Press the STANDARD button to select the Dolby Pro Logic IIx mode.**
   - The Dolby Pro Logic II indicator lights.
   - The mode switches as shown below each time the STANDARD button is pressed.

   DOLBY PL IIx ➔ DTS NEO:6

2. **Play a program source.**
   - For operating instructions, refer to the manuals of the respective components.

3. **Press the SURROUND PARAMETER button to select the surround parameter mode.**

4. **Turn the SELECT knob, and press the CURSOR ◄ or ► button to select the optimum mode for the source.**

5. **Press the SURROUND PARAMETER button, and press the CURSOR △ or ▽ button to select the various parameters.**

   **Example:** DOLBY PL IIx music mode screen

6. **Turn the SELECT knob, and press the CURSOR ◄ or ► button to set the various surround parameters.**

   - When the “SB CH OUT” parameter is set to “ON”. (Set “S. BACK” at system setup to “SMALL” or “LARGE”.)

   ![Display](image)

   - When the “SB CH OUT” parameter is set to “OFF”. (Set “S. BACK” at system setup to “NONE”.)

   ![Display](image)

7. **Press the ENTER button to finish the surround parameter mode.**

   - When making parameter settings, the display will return to the regular condition several seconds after the last button was pressed and the setting will be completed.

**Surround parameters**

- **Pro Logic IIx and Pro Logic II Mode:**
  - The Cinema mode is for use with stereo television shows and all programs encoded in Dolby Surround.
  - The Music mode is recommended for stereo music and surround-encoded stereo music sources.
  - The Pro Logic mode offers the same robust surround processing as original Pro Logic in case the source content is not of optimum quality.
  - The Game mode is for playing games. The game mode can only be used with 2-channel audio sources.
  - Select one of the modes (“Cinema”, “Music”, “Pro Logic” or “Game”).

- **Panorama Control:**
  - This mode extends the front stereo image to include the surround speakers for an exciting “wraparound” effect with side wall imaging.
  - Select “OFF” or “ON”.

- **Dimension Control:**
  - This control gradually adjusts the soundfield either towards the front or towards the rear.
  - The control can be set in 7 steps from 0 to 6.

- **Center Width Control:**
  - This control adjusts the center image so it may be heard only from the center speaker; only from the left/right speakers as a phantom image; or from all three front speakers to varying degrees.

   The control can be set in 8 steps from 0 to 7.
Basic Operation

DTS NEO:6 mode

1 Press the STANDARD button to select the DTS NEO:6 mode.
※ The mode switches as shown below each time the button is pressed.

   Dolby PLIIx  →  DTS NEO:6

2 Play a program source.

3 Press the SURROUND PARAMETER button to select the surround parameter mode.

4 Turn the SELECT knob, and press the CURSOR ▲ or ▼ button to select the optimum mode for the source.

5 Press the SURROUND PARAMETER button, and press the CURSOR ▲ or ▼ button to select the various parameters.

6 Turn the SELECT knob, and press the CURSOR ▲ or ▼ button to set the various surround parameters.
※ When the surround parameters are set using the buttons on the main unit, stop operating the buttons after completing the settings. The settings are automatically finalized and the normal display reappears after several seconds.

7 Press the ENTER button to finish the surround parameter mode.

Surround parameters

DTS NEO:6 Mode:

■ Cinema:
This mode is optimum for playing movies. Decoding is performed with emphasis on separation performance to achieve the same atmosphere with 2-channel sources as with 6.1-channel sources. This mode is effective for playing sources recorded in conventional surround formats as well, because the in-phase component is assigned mainly to the center channel (C) and the reversed phase component to the surround (SL, SR and SB channels).

■ Music:
This mode is suited mainly for playing music. The front channel (FL and FR) signals bypass the decoder and are played directly so there is no loss of sound quality, and the effect of the surround signals output from the center (C) and surround (SL, SR and SB) channels add a natural sense of expansion to the sound field.

CENTER IMAGE (0.0 to 1.0: default 0.3):
The center image parameter for adjusting the expansion of the center channel in the DTS NEO:6 MUSIC mode has been added.

Dolby Digital mode and DTS Surround
(only with digital input)

1 Select an input source set to digital (COAXIAL/OPTICAL) (page 36).
Example: DVD

(2)

2 Press the INPUT MODE button to set the input mode to “AUTO” or “DTS”.
3 Press the STANDARD button to select the STANDARD (Dolby/DTS Surround) mode.
   ※ When performing this operation from the main unit’s panel, press the SURROUND MODE button, then turn the SELECT knob and select Dolby Pro Logic IIx or DTS NEO:6.

4 Play a program source with the symbol.
   - The Dolby Digital indicator lights when playing Dolby Digital sources.
   - The DTS indicator lights when playing DTS sources.
   ※ Operate the SURROUND BACK button to switch Surround Back CH ON/OFF.
   - The SURROUND BACK indicator lights when the SURROUND BACK button is on.

5 Press the SURROUND PARAMETER button. 
   - The surround parameter menu is displayed.

6 Press the SURROUND PARAMETER button, and press the CURSOR △ or ▽ button to select the various parameters.

7 Turn the SELECT knob, and press the CURSOR ◀ or ▶ button to adjust the parameter settings.

8 Press the ENTER button to finish the surround parameter mode.

※ When making parameter settings, the display will return to the regular condition several seconds after the last button was pressed and the setting will be completed.

### Surround parameters ③

#### CINEMA EQ. (Cinema Equalizer):
The Cinema EQ function gently decreases the level of the extreme high frequencies, compensating for overly-bright sounding motion picture soundtracks. Select this function if the sound from the front speakers is too bright. This function only works in the Dolby Pro Logic IIx, Dolby Digital, DTS Surround and DTS NEO:6 modes. (The same contents are set for all operating modes.)

#### D.COMP. (Dynamic Range Compression):
Motion picture soundtracks have tremendous dynamic range (the contrast between very soft and very loud sounds). For listening late at night, or whenever the maximum sound level is lower than usual, the Dynamic Range Compression allows you to hear all of the sounds in the soundtrack (but with reduced dynamic range). (This only works when playing program sources recorded in Dolby Digital or DTS). Select one of the four parameters (“OFF”, “LOW”, “MID” (middle) or “HI” (high)). Set to OFF for normal listening.

#### LFE (Low Frequency Effect):
This sets the level of the LFE (Low Frequency Effect) sounds included in the source when playing program sources recorded in Dolby Digital or DTS.
   - If the sound produced from the subwoofer sounds distorted due to the LFE signals when playing Dolby Digital or DTS sources when the peak limiter is turned off with the subwoofer peak limit level setting (system setup menu), adjust the level as necessary.
   - Program source and adjustment range:
     1. Dolby Digital: –10 dB to 0 dB
     2. DTS Surround: –10 dB to 0 dB

   ※ When DTS encoded movie software is played, it is recommended that the LFE LEVEL be set to 0 dB for correct DTS playback.
   ※ When DTS encoded music software is played, it is recommended that the LFE LEVEL be set to –10 dB for correct DTS playback.

#### TONE:
This enables tone control. This can be set individually for the separate surround modes other than PURE DIRECT and DIRECT mode.

### SB CH OUT (Surround Back):

1) Multi-channel source
   - OFF: Playback is conducted without using the surround back speaker.
   - NON MTRX: The same signals as those of the surround channels are output from the surround back channels.
   - MTRX ON: The surround back channel is reproduced using digital matrix processing.
   - ES MTRX: When playing DTS signals, the surround back signals undergo digital matrix processing for playback.
   - ES DSCR: When a signal identifying the source as a discrete 6.1-channel source is included in the DTS signals, the surround back signals included in the source are played.
   - PL.IIx Cinema: Processing is performed with the Cinema mode of the PL.IIx decoder and the surround back channel is reproduced.
   - PL.IIx Music: Processing is performed with the Music mode of the PL.IIx decoder and the surround back channel is reproduced.

2) 2ch source
   - OFF: Playback is conducted without using the surround back speaker.
   - ON: Playback is conducted using the surround back speaker.
   ※ This operation can be performed directly by pressing the SURROUND BACK button.
Basic Operation

Checking the input signal
The input signal can be checked by pressing the remote control unit’s ON SCREEN button.

**SIGNAL:**
Displays the type of signal (DTS, DOLBY DIGITAL, PCM, etc.).

- **fs:** Displays the input signal’s sampling frequency.
- **FORMAT:** Displays the input signal’s number of channels.
  - “Number of front channels/Number of surround channels/ LFE on/off”.
  - “SURROUND” is displayed for 2-channel signal sources recorded in Dolby Surround.

- **OFFSET:** Displays the dialog normalization offset value.

- **FLAG:** Displays the special identification signal recorded in the input signal.
  - “MATRIX” is displayed when matrix processing is conducted on the surround back channel.
  - “DISCRETE” is displayed when discrete processing is conducted.
  - Not displayed if an identification signal has not been recorded.

In addition, screen information is displayed in the following order when the ON SCREEN button is pressed repeatedly:

- OSD-1: Input signal
- OSD-2: Input/output
- OSD-3: Auto surround mode
- OSD-4~10: Tuner preset stations

**NOTE:**
- OSD-3:
  - This is displayed when the auto surround mode is set to “ON” and the input mode is set to “Auto”.
  - It is not displayed when the input mode is set to “Analog” or “EXT. IN”.

Dialog normalization
The dialog normalization function is activated automatically when playing Dolby Digital program sources.

Dialog normalization is a basic function of Dolby Digital which automatically normalizes the dialog level (standard level) of the signals which are recorded at different levels for different program sources, such as DVD, DTV and other future formats that will use Dolby Digital.

These contents can be verified with the ON SCREEN button.

---

### Night mode

When listening at night or at lower volumes, the night mode improves listenability.

Press and hold the STANDARD/NIGHT button for several seconds to enter the night mode.

- **Canceling night mode:**
  - Press and hold the STANDARD/NIGHT button again.
- The night mode only works when playing program sources recorded in Dolby Digital or DTS.

### Adjusting the audio delay

- **When watching a DVD or other video source,** the picture on the monitor may seem delayed with respect to the sound. In this case, adjust the audio delay to delay the sound and synchronize it with the picture.
- The audio delay setting is stored separately for each input source.
- This adjustment can be performed with the system setup (page 38) or from the remote control unit, as described below.
Basic Operation

1 Select the input source.
   Example: DVD

2 Press the INPUT MODE button to set the input mode to “AUTO”.

3 Select Dolby/DTS Surround.

4 Play a program source (DVD, etc.).

5 Press the CURSOR △ button.
   ▪ Switch to the Audio Delay adjustment screen.

6 Press the CURSOR ◄ or ► button to set the delay time (0 ms ~ 200 ms).
   ※ With a movie source, for example, adjust so that the movement of the actors’ lips is synchronized with the sound.

7 Press the ENTER button to complete the setting.

DENON original surround modes

This unit is equipped with a high performance DSP (Digital Signal Processor) which uses digital signal processing to synthetically recreate the sound field. One of 7 preset surround modes can be selected according to the program source and the parameters can be adjusted according to the conditions in the listening room to achieve a more realistic, powerful sound.

<table>
<thead>
<tr>
<th>Surround modes and their features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 5CH/7CH STEREO</td>
</tr>
<tr>
<td>2 MONO MOVIE</td>
</tr>
<tr>
<td>(NOTE)</td>
</tr>
<tr>
<td>3 ROCK ARENA</td>
</tr>
<tr>
<td>4 JAZZ CLUB</td>
</tr>
<tr>
<td>5 VIDEO GAME</td>
</tr>
<tr>
<td>6 MATRIX</td>
</tr>
</tbody>
</table>

※ Depending on the program source being played, the effect may not be very noticeable.
In this case, try other surround modes, without worrying about their names, to create a sound field suited to your tastes.

NOTE: When playing sources recorded in monaural, the sound will be one-sided if signals are only input to one channel (left or right), so input signals to both channels. If you have a source component with only one audio output (monophonic camcorder, etc.) obtain a “Y” adapter cable to split the mono output to two outputs, and connect to the L and R inputs.

Personal memory plus

This set is equipped with a personal memorize function that automatically memorizes the surround modes and input modes selected for the different sources. When the input source is switched, the modes set for that source last time it was used are automatically recalled.
※ The surround parameters, tone control settings and playback level balance for the different output channels are memorized for each surround mode.

・The audio delay setting does not apply when playing in the EXT. IN mode or in the analog input direct, pure direct or stereo mode (TONE DEFEAT “ON”).
Basic Operation

DSP surround simulation

To operate the surround mode and the surround parameters from the remote control unit

1. Select the surround mode for the input channel.

2. Press the SURROUND PARAMETER button to enter the surround parameter setting mode.

3. Press the SURROUND PARAMETER button, and press the CURSOR △ or ▽ button to select the various parameters.

4. Press the CURSOR ◄ or ► button to adjust the parameter settings.

5. Press the ENTER button to finish the surround parameter mode.

Press and hold in the SURROUND PARAMETER button to select the parameter you want to set.

The parameters which can be set differ for the different surround modes are displayed. (Refer to “Surround modes and parameters” (page 53).)

Display the parameter you want to adjust, then turn the SELECT knob to set it.

When making parameter settings, the display will return to the regular condition several seconds after the last button was pressed and the setting will be completed.

Surround parameters

- ROOM SIZE:
  This sets the size of the sound field.
  There are five settings: “small”, “med.s” (medium-small), “medium”, “med.l” (medium-large) and “large”. “small” recreates a small sound field, “large” a large sound field.

- EFFECT LEVEL:
  This sets the strength of the surround effect.
  The level can be set in 15 steps from 1 to 15. Lower the level if the sound seems distorted.

- DELAY TIME:
  The delay time can be set within the range of 0 to 110 ms only in the matrix mode.

- TONE CONTROL:
  This can be set individually for each surround mode except PURE DIRECT and DIRECT.
Basic Operation

Tone control setting

■ Adjusting the sound quality (tone)
The tone control function will not work in the PURE DIRECT or DIRECT mode.

1 Press the TONE CONTROL button.
   ✗ The tone switches as follows each time the TONE CONTROL button is pressed.
   
   BASS      TREBLE

2 Turn the SELECT knob to adjust the level of the bass or treble.
   ✗ To increase the bass or treble:
      Turn the control clockwise. (The bass or treble sound can be increased up to +6 dB in steps of 1 dB.)
   ✗ To decrease the bass or treble:
      Turn the control counterclockwise. (The bass or treble sound can be decreased down to –6 dB in steps of 1 dB.)

■ Tone defeat mode
If you do not want the bass and treble to be adjusted, turn on the tone defeat mode.

Press the TONE DEFECT button.
   ✗ The signals do not pass through the bass and treble adjustment circuits, thus resulting in higher quality sound.

Channel Level

You can adjust the channel level either according to the playback sources or to suit your taste, as described below.

1 Press the CH SELECT button to select the speaker whose level you want to adjust.
   ✗ The channel switches as shown below each time the button is pressed.
   
   FL     C     PR    SR
   SW    SL    SBL   SBR
   ✗ When the surround back speaker setting is set to “1sp” for “Speaker Configuration”, this is set to “SB”.
   ✗ “SB” appears only when the “Power Amp Assign.” setting is the surround back mode.

2 Press the CURSOR < or > button to adjust the level of the selected speaker.
   ✗ The default setting of the channel level is 0 dB.
   ✗ The level of the selected speaker can be adjusted within the range of +12 to –12 dB by pressing the CURSOR buttons.
   ✗ The SW channel level can be turned off by decreasing it one step from –12 dB.

   OFF ↔ –12 dB ↔ +12 dB
Auto preset memory

- This unit is equipped with a function for automatically searching for FM broadcast stations and storing them in the preset memory.
- The “Auto tuner preset” operation can also be performed at “System setup” (page 38).

Hold the PRESET button and press the POWER switch on the main unit.
- The unit automatically begins searching for FM broadcast stations.
- When the first FM broadcast station is found, that station is stored in the preset memory at channel A1. Subsequent stations are automatically stored in order at preset channels A1 to A8, B1 to B8, C1 to C8, D1 to D8, E1 to E8, F1 to F8 and G1 to G8 for a maximum of 56 stations.
- Channel A1 is tuned in after the auto preset memory operation is completed.

When an FM station cannot be preset automatically due to poor reception, use the “Manual tuning” operation to tune in the station, then preset it using the manual “Preset memory” operation.
- To interrupt this function, press the ON/STANDBY switch.

### DEFAULT SETTINGS

<table>
<thead>
<tr>
<th>Auto tuner presets</th>
<th>A1 ~ A8</th>
<th>B1 ~ B8</th>
<th>C1 ~ C8</th>
<th>D1 ~ D8</th>
<th>E1 ~ E8</th>
<th>F1 ~ F8</th>
<th>G1 ~ G8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>87.5 / 89.1 / 98.1 / 108.0 / 90.1 / 90.1 MHz</td>
<td>522 / 603 / 999 / 1404 / 1611 kHz, 90.1 / 90.1 / 90.1 MHz</td>
<td>90.1 MHz</td>
<td>90.1 MHz</td>
<td>90.1 MHz</td>
<td>90.1 MHz</td>
<td>90.1 MHz</td>
</tr>
</tbody>
</table>

Auto tuning

1. Set the input source to “TUNER”.

2. Watching the display, press the BAND button to select the desired band (AM or FM).

3. Press the MODE button to set the auto tuning mode.

When in the auto tuning mode on the FM band, the “STEREO” indicator lights on the display when a stereo broadcast is tuned in. At open frequencies, the noise is muted and the “TUNED” and “STEREO” indicators turn off.

### Manual tuning

1. Set the input source to “TUNER”.

2. Watching the display, press the BAND button to select the desired band (AM or FM).

3. Press the MODE button to set the manual tuning mode.
- Check that the display’s “AUTO” indicator turns off.
Basic Operation

4 Press the TUNING (+) or (–) button to tune in the desired station.
   ※ The frequency changes continuously when the button is held in.

• When the manual tuning mode is set, FM stereo broadcasts are received in monaural and the “STEREO” indicator turns off.

Preset stations

1 Use the “Auto tuning” or “Manual tuning” operation to tune in the station to be preset in the memory.

2 Press the MEMORY button.

3 Press the SHIFT button and select the desired memory block (A to G).

4 Press the PRESET (+) or (–) button to select the desired preset channel (1 to 8).

5 Press the MEMORY button again.
   ※ Store the station in the preset memory.

• To preset other channels, repeat steps 1 to 4.
   A total of 56 broadcast stations can be preset — 8 stations (channels 1 to 8) in each of blocks A to G.

Checking the preset stations

The preset (broadcast) stations can be checked on the on-screen display.

Press the ON SCREEN button repeatedly until the “Tuner Preset Stations” screen appears on the OSD.

Recalling preset stations

1 Watching the display, press the SHIFT button to select the preset memory block.

2 Watching the display, press the PRESET ▲ (+) or ▼ (–) button to select the desired preset channel.

RDS (Radio Data System)

RDS (works only on the FM band) is a broadcasting service which allows a station to send additional information along with the regular radio program signal. The following three types of RDS information can be received with this unit:

△ Program Type (PTY)

PTY identifies the type of RDS program.

The program types and their displays are as follows:

- NEWS
- AFFAIRS
- INFO
- SPORT
- EDUCATE
- DRAMA
- CULTURE
- SCIENCE
- VARIED
- POP M
- ROCK M
- EASY M
- LIGHT M
- CLASSICS
- OTHER M
- WEATHER
- FINANCE
- CHILDREN
- SOCIAL
- RELIGION
- PHONE IN
- TRAVEL
- LEISURE
- JAZZ
- COUNTRY
- NATION M
- OLDIES
- FOLK M
- DOCUMENT

NOTE:

The operations described below using the RDS, PTY and RT buttons will not function in areas in which there are no RDS broadcasts.

△ Traffic Program (TP)

TP identifies programs that carry traffic announcements. This allows you to easily find out the latest traffic conditions in your area before leaving home.

△ Radio Text (RT)

RT allows RDS stations to send text messages that appear on the display.
Basic Operation

**RDS search**

Use this function to automatically tune to FM stations that provide the RDS service.

1. Set the input source to “TUNER”.
2. Press the RDS button until “RDS SEARCH” appears on the display.
3. Press the PRESET • (+) or • (–) button.
   - The search for RDS stations begins automatically.
   - If no RDS stations are found with the above operation, all the reception bands are searched.
   - When a broadcast station is found, that station’s name appears on the display.
4. To continue searching, repeat step 3.
   - If no RDS station is found when all the frequencies have been searched, “NO RDS” is displayed.

**PTY search**

Use this function to find RDS stations broadcasting a designated program type (PTY).

For a description of each program type, refer to “Program Type (PTY)”.

1. Set the input source to “TUNER”.
2. Press the RDS button until “PTY SEARCH” appears on the display.
3. Watching the display, press the PTY button to call out the desired program type.
4. Press the PRESET • (+) or • (–) button.
   - PTY search begins automatically.
   - If no station broadcasting the designated program type is found when all the frequencies have been searched, “NO PROGRAMME” is displayed.

**TP search**

Use this function to find RDS stations broadcasting traffic programs (TP stations).

1. Set the input source to “TUNER”.
2. Press the RDS button until “TP SEARCH” appears on the display.
3. Press the PRESET • (+) or • (–) button.
   - TP search begins automatically.
   - If no TP station is found with the above operation, all the reception bands are searched.
   - The station name is displayed on the display after searching stops.
4. To continue searching, repeat step 3.
   - If no other TP station is found when all the frequencies have been searched, “NO PROGRAMME” is displayed.
Basic Operation

**RT (Radio Text)**

“RT” appears on the display when radio text data is received.

1. Set the input source to “TUNER”.

2. Press the RT button.

   - While receiving an RDS broadcast station, the text data broadcast from the station is displayed.
   - To turn the display off, press the RT button again.
   - If no text data is being broadcast, “NO TEXT DATA” is displayed.

Advanced Operation

**Remote control unit**

**Operating DENON audio components**

1. Set the **MODE 1** switch to “AUDIO”.

2. Set the **MODE 2** switch to the position for the component to be operated (CD, CDR/MD or TAPE).

3. Operate the audio component.

   - For details, refer to the component’s operating instructions.
   - While this remote control is compatible with a wide range of infrared controlled components, it may be the case that some component models cannot be operated with this remote control.

1. **CD player (CD), CD recorder and MD recorder (CDR/MD) system buttons**

   - Manual search (forward and reverse)
   - Stop
   - Play
   - Auto search (cue)
   - Pause
   - DISC SKIP +: Switch discs (for CD changers only)

2. **Tape deck (TAPE) system buttons**

   - Rewind
   - Fast-forward
   - Stop
   - Forward play
   - Reverse play
   - A/B: Switch between decks A and B

3. **Tuner system buttons**

   - SHIFT: Switch preset channel range
   - CHANNEL +, -: Preset channel up/down
   - TUNING +, -: Frequency up/down
   - BAND: Switch between the AM and FM bands
   - MODE: Switch between auto and mono
   - MEMORY: Preset memory

**Notes**

- **TUNER** can be operated when the switch is at “AUDIO” position.
Advanced Operation

Preset memory

1. DENON and other makes of components can be operated by setting the preset memory.
2. This remote control unit can be used to operate components of other manufacturers without using the learning function by registering the manufacturer of the component as shown in the list of preset codes (End of this manual).
3. Operation is not possible for some models.

Set the MODE 1 switch to “AUDIO” or “VIDEO”.

Set the MODE 2 switch to the component to be registered.

Set to the AUDIO side for the CD, Tape deck or CDR/MD position, and to the VIDEO side for the DVD/VDP, DBS/CABLE, VCR or TV position.

The signals for the pressed buttons are emitted while setting the preset memory. To avoid accidental operation, cover the remote control unit’s transmitting window while setting the preset memory.

Depending on the model and year of manufacture, this function cannot be used for some models, even if they are of makes listed in the list of preset codes.

Some manufacturers use more than one type of remote control code. Refer to the included list of preset codes to change the number and verify correct operation.

The preset memory can be set for one component only among the following: CDR/MD, DVD/VDP and DBS/CABLE.

The preset codes are as follows upon shipment from the factory and after resetting:

- TV, VCR ....................................................HITACHI
- CD, TAPE ..................................................DENON
- CDR/MD ................................................DENON (CDR)
- DVD/VDP ................................................DENON (DVD)
- DBS/CABLE ............................................ABC (CABLE)

Operating a component stored in the preset memory

1. Set the MODE 1 switch to “AUDIO” or “VIDEO”.

2. Set the MODE 2 switch to the component you want to operate.

3. Operate the component.

- For details, refer to the component’s operating instructions.
- Some models cannot be operated with this remote control unit.

4. Referring to the included list of preset codes, press the NUMBER buttons to input the preset code (a 3-digit number) for the manufacturer of the component whose signals you want to store in the memory.

5. To store the codes of another component in the memory, repeat steps 1 to 4.
1. Digital video disc player (DVD) system buttons

- **ON/SOURCE**: Power on/standby
- **OFF**: DENON DVD power off
- **_returns**, **_fast forward_**: Manual search (forward and reverse)
- **_**: Stop
- **_play_**: Play
- **_returns, _fast reverse_**: Auto search (to beginning of track)
- **pause**: Pause
- **_0 ~ 9, +10_**: Number
- **DISC SKIP +**: Disc skip (for DVD changer only)
- **DISPLAY**: Switch display
- **MENU**: Menu
- **RETURN**: Return
- **SETUP**: Setup
- **_cursor up, down, left and right_**: Cursor up, down, left and right
- **ENTER**: Enter setting

2. Video disc player (VDP) system buttons

- **ON/SOURCE**: Power on/standby
- **_returns, _fast forward_**: Manual search (forward and reverse)
- **_**: Stop
- **_play_**: Play
- **_returns, _fast reverse_**: Auto search (cue)
- **pause**: Pause
- **_0 ~ 9, +10_**: Number

3. Video deck (VCR) system buttons

- **ON/SOURCE**: Power on/standby
- **_returns, _fast forward_**: Manual search (forward and reverse)
- **_**: Stop
- **_play_**: Play
- **pause**: Pause
- **Channel +, -**: Channel up/down

*Some manufacturers use different names for the DVD remote control buttons, so also refer to the instructions on remote control for that component.*
5. Monitor TV (TV) system buttons

- **ON/SOURCE**: Power on/standby
- **MENU**: Menu
- **RETURN**: Return
- **△, ▼, ◀, ▶**: Cursor up, down, left and right
- **ENTER**: Enter
- **CHANNEL +, –**: Channel up/down
- **0 ~ 9, +10**: Number
- **DISPLAY**: Switch display
- **TV/VCR**: Switch between TV and video player
- **VOL +, –**: Volume up/down

**Punch through**

"Punch Through" is a function allowing you to operate the PLAY, STOP, MANUAL SEARCH and AUTO SEARCH buttons on CD, TAPE, CDR/MD, DVD/VDP or VCR components when in the DBS/CABLE or TV mode. By default, nothing is set.

1. Set the **MODE 1** switch to "VIDEO".

2. Set the **MODE 2** switch to the component to be registered (DBS/CABLE or TV).

3. Press the **DVD/VDP POWER** and **TV POWER** buttons at the same time.
- The indicator starts flashing.

4. Input the number of the component you want to set.

<table>
<thead>
<tr>
<th>Component</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD</td>
<td>1</td>
</tr>
<tr>
<td>TAPE</td>
<td>2</td>
</tr>
<tr>
<td>CDR/MD</td>
<td>3</td>
</tr>
<tr>
<td>DVD/VDP</td>
<td>4</td>
</tr>
<tr>
<td>VCR</td>
<td>5</td>
</tr>
<tr>
<td>No setting</td>
<td>0</td>
</tr>
</tbody>
</table>

- For CD, CDR, MD and TAPE components, the buttons can be operated in the same way as for DENON audio components (page 30).
- A TV can be operated when the switch is at the DVD/VDP, VCR, TV position.
Other functions

Playing one source while recording another (REC OUT mode)

1 Press the REC SELECT button to display the “RECOUT SOURCE” on the display.
2 Turn the FUNCTION knob to select the source you wish to record.
3 Set the recording mode.
   ※ For operating instructions, refer to the manual of the component on which you want to record.
   ※ To cancel, turn the FUNCTION knob and select “SOURCE”.

Last function memory

• This unit is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resettings when the power is switched on.
• The unit is also equipped with a back-up memory. This function provides approximately one week of memory storage when the main unit’s POWER switch is off and the power supply cord disconnected.

Initialization of the microprocessor

If the indication on the display is not normal or if the operation of the unit is not correct, then the microprocessor should be reset by the following procedure.

1 Switch off the unit using the main unit’s POWER switch.
2 Keep both SPEAKER A and B buttons depressed and turn on the unit by pressing the main unit’s POWER switch.
3 Check that the entire display is flashing at 1-second intervals and release the buttons.
   • The microprocessor will be initialized.
   • If step 3 does not work, start over from step 1.
   • If the microprocessor has been reset, all the button settings are reset to the default values (the values set upon shipment from the factory).

Recording sources other than digital inputs selected in the REC OUT mode are also output to the multi source audio output terminals.
Digital signals are not output to the REC SOURCE or audio output terminals.
The DIGITAL IN’s signal selected with the FUNCTION knob is output to the DIGITAL OUT (OPTICAL) terminal.
Advanced Setup – Part 1

Use System Setup to customize a variety of settings to suit your listening environment. For the contents of a system menu and the initial setting of this unit (page 45, 46).

Navigating through the System Setup Menu

You can change the settings using the buttons on the front panel or remote control unit.

1. Set the MODE 1 switch to “AUDIO”.
2. Press the SETUP button to display the “System Setup” menu. Press the CURSOR ▲ or ▼ button to select the menu, then press the ENTER button.
3. Press the ENTER button to enter the selected menu.
4. To change a setting, first select it by pressing the CURSOR ▲ or ▼ button, and then change the setting pressing the CURSOR ◀ or ▶ button.
5. Press the ENTER button to confirm the new settings.
6. Press the SETUP button to return to the “System Setup” menu and again to return to the main screen.

On-screen display and front display

The AVR-2106 is equipped with an intuitive and easy-to-understand on-screen display, and is equipped with an alphanumeric front panel display that can also be used to check and adjust settings. We recommend that you use the on-screen display when you make system adjustments. Some representative front display and on-screen display examples are shown below.
### Setting the Digital In Assign.

This setting assigns the digital input terminals of the AVR-2106 for the different input sources.

1. Press the CURSOR \( \Delta \) or \( \nabla \) button to select “Input Setup” at the “System Setup” menu, then press the ENTER button.
   - The “Input Setup” screen appears.

2. Press the CURSOR \( \Delta \) or \( \nabla \) button to select “Digital In Assign.”, then press the ENTER button.
   - The “Digital In Assign.” screen appears.

3. Press the CURSOR \( \Delta \) or \( \nabla \) button to select the digital input terminal, then press the CURSOR \( \langle \) or \( \rangle \) button to select the input source.
   - Select “OFF” for input sources for which no digital input terminals are used.
   - If “Yes” is selected for “Default”, the settings are automatically reset to the default values.

4. Press the ENTER button to enter the setting.
   - The “Input Setup” menu appears.

---

### Setting the Ext In SW Level

Set the method of playback of the analog input signal connected to the Ext. In Subwoofer.

1. Press the CURSOR \( \Delta \) or \( \nabla \) button to select “Ext In SW Level” at the “Input Setup” menu, then press the ENTER button.
   - The “Ext In SW Level” screen appears.

2. Press the CURSOR \( \langle \) or \( \rangle \) button to select according to the specifications of the player being used.
   - Also refer to the player’s operating instructions.
   - +15 dB (default) recommended (0, +5, +10 or +15 can be selected).

3. Press the ENTER button to enter the setting.
   - The “Input Setup” menu appears.

---

### Setting the Input Function Level

1. Press the CURSOR \( \Delta \) or \( \nabla \) button to select “Input Function Level” at the “Input Setup” menu, then press the ENTER button.
   - The “Input Function Level” screen appears.

2. Press the CURSOR \( \langle \) or \( \rangle \) button to adjust the level.
   - The level can be adjusted between –12 dB and +12 dB in units of 1 dB.
   - If “Yes” is selected for “Default”, the settings are automatically reset to the default values.

3. Press the ENTER button to enter the setting.
   - The “Input Setup” menu appears.

---

* Correct the playback level of the different input sources.
* Adjust the playback levels of the devices connected to the different input sources to the same level to eliminate the need for adjusting the main volume each time the input source is switched.
Setting the Function Rename

The names of the input sources displayed on the front display and the on-screen display can be changed. The names or brands of the devices connected to the input sources can be input.

1. Press the CURSOR △ or ▽ button to select “Function Rename” at the “Input Setup” menu, then press the ENTER button.
   • The “Function Rename” screen appears.

2. Press the CURSOR △ or ▽ button to select the input source whose name you want to change, then press the CURSOR < or > button.
   • The screen switches to the character input screen.
   Example:
   When “CD” is selected and the CURSOR < or > button is pressed

3. Press the CURSOR < or > button to move the cursor ( ▬ ) to the character, number, symbol or punctuation mark you wish to input, and press the CURSOR △ or ▽ button to select that character.

4. Repeat step 3 to complete input of the input source name.
   • If you wish to return the input source to its initial setting, press the CURSOR ▽ button while the input source is highlighted.
   • If “Yes” is selected for “Default”, the setting is automatically reset to the default name.

5. Once all the characters have been input, press the ENTER button.
   • The “Function Rename” screen appears.

6. Press the ENTER button to enter the setting.
   • The “Input Setup” menu appears.

Setting the Component In Assign.

This setting assigns the color difference (component) video input terminals of the AVR-2106 for the different input sources.

1. Press the CURSOR △ or ▽ button to select “Component In Assign.” at the “Input Setup” menu, then press the ENTER button.
   • The “Component In Assign.” screen appears.

2. Press the CURSOR △ or ▽ button to select the component video input terminal, then press the CURSOR < or > button to select the input source.
   • Select “OFF” for sources for which the component (Y, PB/CB and PR/CR) video input is not to be used.
   • When the default, “Yes”, is selected, the settings are reset to the factory defaults.

3. Press the ENTER button to enter the setting.
   • The “Input Setup” menu appears.
Use this to automatically search for FM broadcasts and store up to 56 stations at preset channels A1 to 8, B1 to 8, C1 to 8, D1 to 8, E1 to 8, F1 to 8 and G1 to 8.

1. Press the CURSOR △ or ▽ button to select “Auto Tuner Preset” at the “Input Setup” menu, then press the ENTER button.
   • The “Auto Tuner Preset” screen appears.

2. Press the CURSOR ◄ button to select “Start”.
   • “Search” appears on the screen and searching begins.
   • “Completed” appears once searching is completed.

3. Press the CURSOR △ or ▽ button to select “Exit”, then press the ENTER button.
   • The “System Setup” menu appears.

Setting the Audio Delay

When watching a DVD or other video source, the picture on the monitor may seem delayed with respect to the sound. In this case, adjust the audio delay to delay the sound and synchronize it with the picture.

1. Press the CURSOR △ or ▽ button to select “Advanced Playback” at the “System Setup” menu, then press the ENTER button.
   • The “Advanced Playback” screen appears.

2. Press the CURSOR △ or ▽ button to select “Audio Delay”; then press the ENTER button.
   • The “Audio Delay” screen appears.

3. Press the CURSOR ◄ or ► button to set the delay time (0 ms ~ 200 ms).
   • With a movie source, for example, adjust so that the movement of the actors’ lips is synchronized with the sound.

4. Press the ENTER button to enter the setting.
   • The “Advanced Playback” menu appears.

Setting the Auto Surround Mode

The surround mode used last for the three types of input signals shown below is stored in the memory, and the signal is automatically played with that surround mode the next time it is input. Note that the surround mode setting is also stored separately for the different input sources.

1. Analog and PCM 2-channel signals (STEREO)
2. 2-channel signals in the Dolby Digital, DTS or another multi-channel format (DOLBY PLIIx Cinema)
3. Multi-channel signals in the Dolby Digital, DTS or another multi-channel format (DOLBY/DTS SURROUND)

Default settings are indicated in ( ).

1. Press the CURSOR △ or ▽ button to select “Auto Surround Mode” at the “Advanced Playback” menu, then press the ENTER button.
   • The “Auto Surround Mode” screen appears.

2. Press the CURSOR ◄ or ► button to select “ON” if you want to use the auto surround mode, or “OFF” if you do not want to use it.
1 Press the CURSOR △ or ▽ button to select “Option Setup” at the “System Setup” menu, then press the ENTER button.
• The “Option Setup” screen appears.

2 Press the CURSOR △ or ▽ button to select “Muting Level” at the “Option Setup” menu, then press the ENTER button.
• The “Muting Level” screen appears.

3 Press the CURSOR ◄ or ► button to select the desired setting.

-20 dB:
Attenuation of the volume by –20 dB from the present level.

–40 dB:
Attenuation of the volume by –40 dB from the present level.

– – – dB:
The volume level is completely muted.

4 Press the ENTER button to enter the setting.
• The “Option Setup” menu appears.

Setting the Muting Level
This sets the amount of attenuation applied for audio output muting.

Setting the On-Screen Display (OSD)
• Use this to turn the on-screen display (messages other than the menu screens) “ON” or “OFF”.
• Sets the on-screen display mode.

1 Press the CURSOR △ or ▽ button to select “On Screen Display” at the “Option Setup” menu, then press the ENTER button.
• The “On Screen Display” screen appears.

2 Press the CURSOR ◄ or ► button to select “ON” or “OFF”.

3 Press the CURSOR △ or ▽ button to select the on-screen display mode, then press the CURSOR ◄ or ► button to select “MODE1” or “MODE2”.

MODE1:
Prevents flickering of the on-screen display when there is no video signal.

MODE2:
Flickering is not prevented. Use this mode if the on-screen display does not appear in MODE1, which may happen depending on the TV being used.

4 Press the ENTER button to enter the setting.
• The “Option Setup” menu appears.
Setting the Power Amp Assign.

Make this setting to switch the power amplifier for the surround back channel to Bi-Amp.

1. Press the CURSOR ▲ or ▼ button to select “Power Amp Assign.” at the “Option Setup” menu, then press the ENTER button.
   • The “Power Amp Assign.” screen appears.

2. Press the CURSOR ◀ or ▶ button to select the Amp Assign mode according to the speaker system you want to set up.

3. Press the ENTER button to enter the setting.
   • The “Option Setup” menu appears.

Setting the Setup Lock

The system setup settings can be locked so that they cannot be changed easily.

1. Press the CURSOR ▲ or ▼ button to select “Setup Lock” at the “Option Setup” menu, then press the ENTER button.
   • The “Setup Lock” screen appears.

2. Press the CURSOR ◀ button to select “ON” to lock the system setup settings.

3. Press the ENTER button to finalize the setting and exit the system setup mode.

When the setup lock function is activated, the settings listed below cannot be changed, and “SETUP LOCKED” is displayed when related buttons are operated.

• System setup settings
• Surround parameter settings
• Tone control settings
• Channel level settings (including test tones)

To unlock, press the SETUP button again and display the “Setup Lock” screen, then select “OFF” and press the ENTER button.

System setup is complete. Once these settings are made, there is no need to change them unless different AV components are connected or the speakers are repositioned.
Advanced Setup – Part 2

This Speaker Setup section describes the procedures to make speaker settings manually (without using the Auto Setup function), as well as to make manual changes to settings that have already been made by the Auto Setup function.

Speaker Setup

Setting the Speaker Config.

The composition of the signals output to each channel and the frequency response are adjusted automatically according to the combination of speakers actually being used.

1. Press the CURSOR △ or ▼ button to select “Speaker Setup” at the “System Setup” menu, then press the ENTER button.
   • The “Speaker Setup” screen appears.

2. Press the CURSOR △ or ▼ button to select “Speaker Config.”, then press the ENTER button.
   • The “Speaker Config.” screen appears.

3. Press the CURSOR △ or ▼ button to select a speaker, then press the CURSOR ◀ or ▶ button to select a parameter.

4. Press the ENTER button to enter the setting.
   • The “Speaker Setup” menu appears.

Parameters

Large:
Select this when using speakers that have sufficient ability to reproduce bass sound below the frequency set for the crossover frequency mode.

Small:
Select this when using speakers that do not have sufficient ability to reproduce bass sound below the frequency set for the crossover frequency mode. When this is set, bass sound with a frequency below the frequency set for the crossover frequency mode is sent to the subwoofer.

None:
Select this when no speakers are installed.

Yes / No:
Select “Yes” when a subwoofer is installed, “No” when a subwoofer is not installed.

2sp / 1sp:
Set the number of speakers to be used for the surround back channel.

※ If the subwoofer has sufficient low frequency playback capacity, good sound can be achieved even when “Small” is set for the front, center and surround speakers.

Setting the Delay Time

Input the distance between the listening position and each speaker to set the delay time for the surround playback.

Preparations:
Measure the distances between the listening position and the speakers.
Advanced Setup – Part 2

1. Press the CURSOR △ or ▽ button to select “Delay Time” at the “Speaker Setup” menu, then press the ENTER button.
   - The “Delay Time” screen appears.

2. Press the CURSOR △ or ▽ button to select the speaker to be set.

3. Press the CURSOR ◀ or ▶ button to set the distance between the speaker and the listening position.
   - The distance changes in units of 0.1 meters each time the button is pressed. Select the value closest to the measured distance.
   - If “Yes” is selected for “Default”, the settings are automatically reset to the default values.
   - The difference in distance for the various speaker settings must not be greater than 6.0 meters.

4. Press the ENTER button to enter the setting.
   - The “Speaker Setup” menu appears.

Setting the Channel Level

1. Press the CURSOR △ or ▽ button to select “Channel Level” at the “Speaker Setup” menu, then press the ENTER button.
   - The “Channel Level” screen appears.

2. Press the CURSOR ◀ or ▶ button to select “Auto” or “Manual”.
   - Auto: Adjust the level while listening to the test tones produced automatically from each speaker.
   - Manual: Select the speaker from which you want to produce the test tone to adjust the level.

3. Press the CURSOR △ or ▽ button to select “TEST TONE Start”, then press the CURSOR ◀ button to select “Start”.

4. When “Auto” mode is selected:
   - Press the CURSOR ◀ or ▶ button to adjust all the speakers to the same volume.
   - The test tones are emitted from each speaker in the following order: at 4-second intervals during the first and second cycle, and at the 2-second intervals during the third and subsequent cycles.

5. When “Manual” mode is selected:
   - Press the CURSOR △ or ▽ button to select the speaker, then press the CURSOR ◀ or ▶ button to adjust all the speakers to the same volume.

4 When “Auto” mode is selected:
   - Press the CURSOR ◀ or ▶ button to adjust all the speakers to the same volume.
   - The test tones are emitted from each speaker in the following order: at 4-second intervals during the first and second cycle, and at the 2-second intervals during the third and subsequent cycles.

Example:
When the volume is set to –12.0 dB while the test tone is being produced from the Front Lch speaker.

-1 When “Auto” mode is selected:
   - Press the CURSOR ◀ or ▶ button to adjust all the speakers to the same volume.
   - The test tones are emitted from each speaker in the following order: at 4-second intervals during the first and second cycle, and at the 2-second intervals during the third and subsequent cycles.

-2 When “Manual” mode is selected:
   - Press the CURSOR △ or ▽ button to select the speaker, then press the CURSOR ◀ or ▶ button to adjust all the speakers to the same volume.

5 Press the ENTER button to enter the setting.
   - The “Speaker Setup” menu appears.
• To cancel the settings, press the CURSOR button to select “Level Clear” on the “Channel Level” screen, then make the settings again.
• When adjusting the level of an active subwoofer system, you may also need to adjust the subwoofer’s own volume control.
• When you adjust the channel levels while in the system setup channel level mode, the channel level adjustments made will affect all surround modes. Consider this mode a master channel level adjustment mode.
• After you have completed the system setup channel level adjustments, you can then activate the individual surround modes and adjust channel levels that will be remembered for each of those modes. Then, whenever you activate a particular surround sound mode, your preferred channel level adjustments for just that mode will be recalled. Check the instructions for adjusting channel levels within each surround mode (page 26).

Adjusting the test tone
• Before playing with the surround function, be sure to use the test tones to adjust the playback level from the different speakers. This adjustment can be performed with the system setup (page 42) or from the remote control unit, as described below.
• Adjusting with the remote control unit using the test tones is only possible in the “Auto” mode and only effective in the STANDARD (DOLBY/DTS SURROUND) modes. The adjusted levels for the different modes are automatically stored in the memory.

1 Press the STANDARD button to select the STANDARD (DOLBY/DTS SURROUND) modes.
2 Press the TEST TONE button.
   • Test tones are output from the different speakers.
3 Press the CURSOR button to adjust so that the volume of the test tones is the same for all the speakers.
4 After completing the adjustment, press the TEST TONE button again.

Setting the Crossover Frequency
Set the crossover frequency mode according to the speaker system being used.

1 Press the CURSOR button to select “Crossover Frequency” at the “Speaker Setup” menu, then press the ENTER button.
   • The “Crossover Frequency” screen appears.
2 Press the CURSOR button to select the frequency.
   • 40/60/80/100/120/150/200/250 Hz can be selected.
3 Press the ENTER button to enter the setting.
   • The “Speaker Setup” menu appears.

Setting the SW Mode Setup
Set the subwoofer mode according to the speaker system being used.

1 Press the CURSOR button to select “SW Mode Setup” at the “Speaker Setup” menu, then press the ENTER button.
   • The “Subwoofer Mode Setup” screen appears.
2 Press the CURSOR button to select a setting.
3 Press the ENTER button to enter the setting.
   • The “Speaker Setup” menu appears.
4 Press the CURSOR button to select “Exit”, then press the ENTER button.
   • The “System Setup” menu appears.

• This screen is not displayed when not using a subwoofer and all speakers are set to small size.
Assignment of low frequency signal range
The only signals produced from the subwoofer channel are LFE signals (during playback of Dolby Digital or DTS signals) and the low frequency signal range of channels set to “Small” in the setup menu. The low frequency signal range of channels set to “Large” are produced from those channels.

Crossover Frequency
• When “Subwoofer” is set to “Yes” at the “Speaker Config.” screen, set the frequency (Hz) below which the bass sound of the various speakers is to be output from the subwoofer (the crossover frequency).
• For speakers set to “Small”, sound with a frequency below the crossover frequency is cut, and the cut bass sound is output from the subwoofer instead.
  (When “Subwoofer” is set to “No”, the bass sound is output from the speakers set as “Large”.)

NOTE:
• For ordinary speaker systems, we recommend setting the crossover frequency to 80 Hz. When using small speakers, however, setting the crossover frequency to a higher frequency may improve frequency response for frequencies near the crossover frequency.

Subwoofer Mode
• The subwoofer mode setting is only valid when “Large” is set for the front speakers and “Yes” is set for the subwoofer in “Setting the Speaker Config.” (page 41).
• When the “LFE+MAIN” playback mode is selected, the low frequency signal range of channels set to “Large” is produced simultaneously from those channels and the subwoofer channel.
  In this playback mode, the low frequency range expands more uniformly through the room, but depending on the size and shape of the room, interference may result in a decrease of the actual volume of the low frequency range.
• Selection of the “LFE” play mode will play the low frequency signal range of the channel selected with “Large” from that channel only. Therefore, the low frequency signal range that is played from the subwoofer channel is only the low frequency signal range of LFE (only during Dolby Digital or DTS signal playback) and the channels specified as “Small” in the setup menu.
• Select the play mode that offers the fullest bass.
• When the subwoofer is set to “Yes”, bass sound is output from the subwoofer regardless of the subwoofer mode setting in surround modes other than Dolby/DTS.
• In surround modes other than Dolby Digital and DTS, if the subwoofer is set to “Yes”, the low frequency portion is always output to the subwoofer channel. For details, refer to “Surround modes and parameters” (page 53).
## Advanced Setup – Part 2

### System setup items and default values (set upon shipment from the factory)

#### 1. Auto Setup

<table>
<thead>
<tr>
<th>Auto Setup</th>
<th>Default setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Setup</td>
<td>Power Amp Assign.</td>
<td>SURROUND BACK</td>
</tr>
</tbody>
</table>

Set this to switch the surround back channel’s power amplifier for Bi-amp use.

#### 2. Speaker Setup

<table>
<thead>
<tr>
<th>Speaker Setup</th>
<th>Default setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Delay Time</td>
<td>Front L &amp; R Center Subwoofer Surround L &amp; R Surround Back L &amp; R</td>
<td>41, 42</td>
</tr>
<tr>
<td>3 Crossover Frequency</td>
<td>Front L Center Surround Sp. Surround R Surround Back Sp. Subwoofer</td>
<td>42, 43</td>
</tr>
<tr>
<td>4 SW Mode Setup</td>
<td>LFE (Normal)</td>
<td></td>
</tr>
</tbody>
</table>

Input the combination of speakers in your system and their corresponding sizes (SMALL for regular speakers, LARGE for full-size, full-range) to automatically set the composition of the signals output from the speakers and the frequency response.

This parameter is for optimizing the timing with which the audio signals are produced from the speakers and subwoofer according to the listening position.

This adjusts the volume of the signals output from the speakers and subwoofer for the different channels in order to obtain optimum effects.

Sets the frequency (Hz) below which the bass sound of the various speaker is to be output from the subwoofer.

This selects the subwoofer speaker for playing deep bass signals.

<table>
<thead>
<tr>
<th>Input Setup</th>
<th>Default setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Digital In Assign.</td>
<td>Input source</td>
<td>36</td>
</tr>
<tr>
<td>Digital Inputs</td>
<td>CD DVD / VDP TV / DBS VCR-1 CDR / TAPE</td>
<td></td>
</tr>
<tr>
<td>CDAX1 OPT1 OPT2 CDAX2 OPT3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sets the Ext. In Subwoofer terminal playback level.

The playback level can be corrected individually for the different input sources.

The names of the different input source can be changed as desired and displayed on the display.

This assigns the color difference (component) video input terminals for the different input sources.

FM stations are received automatically and stored in the memory.
## 4. Advanced Playback

<table>
<thead>
<tr>
<th>Advanced Playback</th>
<th>Default setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Delay</td>
<td>Sets the audio delay to delay the sound and synchronize it with the picture.</td>
<td>0 ms</td>
</tr>
<tr>
<td>Auto Surround Mode</td>
<td>Sets the Auto surround mode function.</td>
<td>Auto Surround Mode = ON</td>
</tr>
</tbody>
</table>

## 5. Option Setup

<table>
<thead>
<tr>
<th>Option Setup</th>
<th>Default setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muting Level</td>
<td>This sets the amount of attenuation for audio output muting.</td>
<td>-- -- dB (minimum)</td>
</tr>
<tr>
<td>On Screen Display</td>
<td>This sets whether or not to display the on-screen display that appears on the monitor screen when the controls on the remote control unit or main unit are operated. A setting to prevent flickering.</td>
<td>On Screen Display = ON / MODE1</td>
</tr>
<tr>
<td>Power Amp Assign.</td>
<td>Set this to switch the surround back channel’s power amplifier for Bi-Amp use.</td>
<td>Surround Back</td>
</tr>
<tr>
<td>Setup Lock</td>
<td>Sets whether or not to lock the system setup settings so that they cannot be changed.</td>
<td>Setup Lock = OFF</td>
</tr>
</tbody>
</table>
## Troubleshooting

If a problem should arise, first check the following.

1. **Are the connections correct?**
2. **Have you operated the receiver according to the operating instructions?**
3. **Are the speakers, turntable and other components operating properly?**

If this unit is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Measures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display not lit and sound not produced when POWER switch set to on.</td>
<td>• Power supply cord not plugged in securely.</td>
<td>• Check the insertion of the power supply cord plug.</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>• Turn the power on with the remote control unit after turning the POWER switch on.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display lit but sound not produced.</td>
<td>• Speaker cables not securely connected.</td>
<td>• Connect securely.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>• Improper setting of the FUNCTION knob.</td>
<td>• Set to a suitable position.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Volume control set to minimum.</td>
<td>• Turn volume up to suitable level.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• MUTING is on.</td>
<td>• Switch off MUTING.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Digital signals not input. Digital input selected.</td>
<td>• Input digital signals or select input terminals to which digital signals are being input.</td>
<td></td>
</tr>
<tr>
<td>Display not lit and power indicator is flashing rapidly.</td>
<td>• Speaker terminals are short-circuited.</td>
<td>• Switch power off, connect speakers properly, then switch power back on.</td>
<td>5, 6</td>
</tr>
<tr>
<td></td>
<td>• The ventilation holes of the set are blocked.</td>
<td>• Turn off the set’s power, then ventilate it well and allow it to cool down.</td>
<td>2, 5</td>
</tr>
<tr>
<td></td>
<td>• The unit is operating at continuous high power conditions and/or with inadequate ventilation.</td>
<td>• Turn off the set’s power, then ventilate it well and allow it to cool down.</td>
<td>2, 5</td>
</tr>
<tr>
<td>Sound produced only from one channel.</td>
<td>• Incomplete connection of speaker cables.</td>
<td>• Connect securely.</td>
<td>5, 6</td>
</tr>
<tr>
<td></td>
<td>• Incomplete connection of input/output cables.</td>
<td>• Connect securely.</td>
<td>5 – 7, 11 – 16</td>
</tr>
<tr>
<td>Positions of instruments reversed during stereo playback.</td>
<td>• Reverse connections of left and right speakers or left and right input/output cables.</td>
<td>• Check left and right connections.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Symptom

- **Humming noise produced when record is playing.**
  - **Cause:** Ground wire of turntable not connected properly.
  - **Measures:** Connect securely. Replace with MM cartridge or use a head amplifier or step-up transformer.
  - **Page:** 15

- **Howling noise produced when volume is high.**
  - **Cause:** Turntable and speaker systems too close together.
  - **Measures:** Separate as much as possible. Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (sold separately).
  - **Page:** —

- **Sound is distorted.**
  - **Cause:** Stylus pressure too weak.
  - **Measures:** Apply proper stylus pressure. Check stylus. Replace cartridge.
  - **Page:** —

- **Volume is weak.**
  - **Cause:** MC cartridge being used.
  - **Measures:** Replace with MM cartridge or use a head amplifier or step-up transformer.
  - **Page:** 15

- **This unit does not operate properly when remote control unit is used.**
  - **Cause:** Batteries dead.
  - **Measures:** Replace with new batteries. Move closer. Remove obstacle. Press the proper button. Insert batteries properly.
  - **Page:** 3
Additional Information

Optimum surround sound for different sources

There are currently various types of multi-channel signals (signals or formats with more than two channels).

Types of multi-channel signals

Dolby Digital, Dolby Pro Logic, DTS, high definition 3-1 signals (Japan MUSE Hi-Vision audio), DVD-Audio, Super Audio CD, MPEG multi-channel audio, etc.

“Source” here does not refer to the type of signal (format) but the recorded content. Sources can be divided into two major categories.

Types of sources

• Movie audio:
Signals created to be played in movie theaters. In general sound is recorded to be played in movie theaters equipped with multiple surround speakers, regardless of the format (Dolby Digital, DTS, etc.).

Movie theater sound field

Listening room sound field

Multiple surround speakers (For 5.1-channel system)

In this case it is important to achieve the same sense of expansion as in a movie theater with the surround channels. To do so, in some cases the number of surround speakers is increased (to four or eight) or speakers with bipolar or dipolar properties are used.

SL : Surround L channel
SR : Surround R channel
SB : Surround back channel (1 speaker or 2 speakers)

Other types of audio:
These signals are designed to recreate a 360° sound field using three to five speakers.

In this case the speakers should surround the listener from all sides to create a uniform sound field from 360°. Ideally the surround speakers should function as “point” sound sources in the same way as the front speakers.

These two types of sources thus have different properties, and different speaker settings, particularly for the surround speakers, are required in order to achieve the ideal sound.

Surround back speakers

A 6.1-channel system is a conventional 5.1-channel system to which the “surround back” (SB) channel has been added. This makes it easy to achieve sound positioned directly behind the listener, something that was previously difficult with sources designed for conventional multi surround speakers. In addition, the acoustic image extending between the sides and the rear is narrowed, thus greatly improving the expression of the surround signals for sounds moving from the sides to the back and from the front to the point directly behind the listening position.

Change of positioning and acoustic image
with 5.1-channel systems

Movement of acoustic image from SR to SL

Change of positioning and acoustic image
with 6.1-channel systems

Movement of acoustic image from SR to SB to SL
Additional Information

With this set, speaker(s) for 1 or 2 channels are required to achieve a 6.1-channel system (DTS-ES, etc.). Adding these speakers, however, increases the surround effect not only with sources recorded in 6.1 channels but also with conventional 2- to 5.1-channel sources. Furthermore, all the DENON original surround modes (page 24) are compatible with 7.1-channel playback, so you can enjoy 7.1-channel sound with any signal source.

- **Number of surround back speakers**
  Though the surround back channel only consists of 1 channel of playback signals for 6.1-channel sources (DTS-ES, etc.), we recommend using two speakers. When using speakers with dipolar characteristics in particular, it is essential to use two speakers. Using two speakers results in a smoother blend with the sound of the surround channels and better sound positioning of the surround back channel when listening from a position other than the center.

- **Placement of the surround left and right channels when using surround back speakers**
  Using surround back speakers greatly improves the positioning of the sound at the rear. Because of this, the surround left and right channels play an important role in achieving a smooth transition of the acoustic image from the front to the back. As shown in the diagram above, in a movie theater the surround signals are also produced from diagonally in front of the listeners, creating an acoustic image as if the sound were floating in space. To achieve these effects, we recommend placing the speakers for the surround left and right channels slightly more towards the front than with conventional surround systems. Doing so sometimes increases the surround effect when playing conventional 5.1-channel sources in the 6.1 surround or DTS-ES Matrix 6.1 mode. Check the surround effects of the various modes before selecting the surround mode.

**Speaker setting examples**

Here we describe a number of speaker settings for different purposes. Use these examples as guides to set up your system according to the type of speakers used and the main usage purpose.

[1] **DTS-ES compatible system**
  (using surround back speakers)

1. **Basic setting for primarily watching movies**
   This is recommended when mainly playing movies and using regular single way or 2-way speakers for the surround speakers.

   - Set the front speakers with their front surfaces as flush with the TV or monitor screen as possible. Set the center speaker between the front left and right speakers and no further from the listening position than the front speakers.
   - Consult the owner's manual for your subwoofer for advice on placing the subwoofer within the listening room.
   - If the surround speakers are direct-radiating (monopolar), then place them slightly behind and at an angle to the listening position and parallel to the walls at a position 0 to 20 cm above ear level at the prime listening position.
   - When using two surround back speakers, place them at the back facing the front at a narrower distance than the front left and right speakers. When using one surround back speaker, place it at the rear center facing the front at a slightly higher position 0 to 20 cm than the surround speakers.
   - If the surround speakers are direct-radiating (monopolar), then place them slightly behind and at an angle to the listening position and parallel to the walls at a position 0 to 20 cm above ear level at the prime listening position.
   - When using two surround back speakers, place them at the back facing the front at a narrower distance than the front left and right speakers. When using one surround back speaker, place it at the rear center facing the front at a slightly higher position 0 to 20 cm than the surround speakers.
   - We recommend installing the surround back speaker(s) at a slightly downward facing angle. This effectively prevents the surround back channel signals from reflecting off the monitor or screen at the front center, resulting in interference and making the sense of movement from the front to the back less sharp.

2. **Setting for primarily watching movies using diffusion type speakers for the surround speakers**
   For the greatest sense of surround sound envelopment, diffuse radiation speakers such as bipolar types, or dipolar types, provide a wider dispersion than is possible to obtain from a direct radiating speaker (monopolar). Place these speakers at either side of the prime listening position, mounted above ear level.

   - Set the front speakers, center speaker and subwoofer in the same positions as in example (1).
   - It is best to place the surround speakers directly at the side or slightly to the front of the viewing position, and 60 to 90 cm above the ears.
   - Same as surround back speaker installation method (1).
   - Using dipolar speakers for the surround back speakers as well is more effective.
   - The signals from the surround channels reflect off the walls as shown in the diagram above, creating an enveloping and realistic surround sound presentation.
[2] When not using surround back speakers

- Set the front speakers with their front surfaces as flush with the TV or monitor screen as possible. Set the center speaker between the front left and right speakers and no further from the listening position than the front speakers.
- Consult the owner’s manual for your subwoofer for advice on placing the subwoofer within the listening room.
- If the surround speakers are direct-radiating (monopolar), then place them slightly behind and at an angle to the listening position and parallel to the walls at a position 60 to 90 cm above ear level at the prime listening position.

Surround

The AVR-2106 is equipped with a digital signal processing circuit that lets you play program sources in the surround mode to achieve the same sense of presence as in a movie theater.

[1] Dolby Surround

1. Dolby Digital
   Dolby Digital is the multi-channel digital signal format developed by Dolby Laboratories. Dolby Digital consists of up to “5.1” channels – front left, front right, center, surround left, surround right, and an additional channel exclusively reserved for additional deep bass sound effects (the Low Frequency Effects –LFE– channel, also called the ”.1” channel, containing bass frequencies of up to 120 Hz).
   Unlike the analog Dolby Pro Logic format, Dolby Digital’s main channels can all contain full range sound information, from the lowest bass, up to the highest frequencies – 22 kHz. The signals within each channel are distinct from the others, allowing pinpoint sound imaging, and Dolby Digital offers tremendous dynamic range from the most powerful sound effects to the quietest, softest sounds, free from noise and distortion.

Dolby Digital and Dolby Pro Logic

<table>
<thead>
<tr>
<th>Comparison of home surround systems</th>
<th>Dolby Digital</th>
<th>Dolby Pro Logic</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of recorded channels (elements)</td>
<td>5.1 ch</td>
<td>2 ch</td>
</tr>
<tr>
<td>No. of playback channels</td>
<td>5.1 ch</td>
<td>4 ch</td>
</tr>
<tr>
<td>Playback channels (max.)</td>
<td>L, R, C, SL, SR, SW</td>
<td>L, R, C, S (SW – recommended)</td>
</tr>
<tr>
<td>Audio processing</td>
<td>Digital discrete processing Dolby Digital encoding / decoding</td>
<td>Analog matrix processing Dolby Surround</td>
</tr>
<tr>
<td>High frequency playback limit of surround channel</td>
<td>20 kHz</td>
<td>7 kHz</td>
</tr>
</tbody>
</table>

Dolby Digital compatible media and playback methods

Symbol indicating Dolby Digital compatibility: □[Dolby Digital]

The following are general examples. Also refer to the player’s operating instructions.

<table>
<thead>
<tr>
<th>Media</th>
<th>Dolby Digital output terminals</th>
<th>Playback method (reference page)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD (VDPI)</td>
<td>Coaxial Dolby Digital RF output terminal</td>
<td>Set the input mode to “AUTO” ([ page 18, 19).</td>
</tr>
<tr>
<td>DVD</td>
<td>Optical or coaxial digital output (same as for PCM)</td>
<td>Set the input mode to “AUTO” ([ page 18, 19).</td>
</tr>
<tr>
<td>Others (satellite broadcasts, CATV, etc.)</td>
<td>Optical or coaxial digital output (same as for PCM)</td>
<td>Set the input mode to “AUTO” ([ page 18, 19).</td>
</tr>
</tbody>
</table>

1: Please use a commercially available adapter when connecting the Dolby Digital RF output terminal of the LD player to the digital input terminal. Please refer to the instruction manual of the adapter when making connection.

2: Some DVD digital outputs have the function of switching the Dolby Digital signal output method between “bitstream” and “(convert to) PCM”. When playing in Dolby Digital surround on the AVR-2106, switch the DVD player’s output mode to “bitstream”. In some cases players are equipped with both “bitstream + PCM” and “PCM only” digital outputs. In this case connect the “bitstream + PCM” terminals to the AVR-2106.

Dolby Pro Logic II

- Dolby Pro Logic II is a new multi-channel playback format developed by Dolby Laboratories using feedback logic steering technology and offering improvements over conventional Dolby Pro Logic circuits.
- Dolby Pro Logic II can be used to decode not only sources recorded in Dolby Surround (□) but also regular stereo sources into five channels (front left, front right, center, surround left and surround right) to achieve surround sound.
DTS Digital Surround

Digital Theater Surround (also called simply DTS) is a multi-channel digital signal format developed by Digital Theater Systems. DTS offers the same “5.1” playback channels as Dolby Digital (front left, front right, center, surround left and surround right) as well as the stereo 2-channel mode. The signals for the different channels are fully independent, eliminating the risk of deterioration of sound quality due to interference between signals, crosstalk, etc. DTS features a relatively higher bit rate as compared to Dolby Digital (1234 kbps for CDs and LDs, 1536 kbps for DVDs) so it operates with a relatively low compression rate. Because of this the amount of data is great, and when DTS playback is used in movie theaters, a separate CD-ROM synchronized with the film is played. With LDs and DVDs, there is of course no need for an extra disc; the pictures and sound can be recorded simultaneously on the same disc, so the discs can be handled in the same way as discs with other formats.

There are also music CDs recorded in DTS. These CDs include 5.1-channel surround signals (compared to two channels on current CDs). They do not include picture data, but they offer surround playback on CD players that are equipped with digital outputs (PCM type digital output required). DTS surround track playback offers the same intricate, grand sound as in a movie theater, right in your own listening room.

Symbols indicating DTS compatibility: and .

The following are general examples. Also refer to the player’s operating instructions.

When DTS-ES Discrete 6.1 or Matrix 6.1 encoded sources are decoded with a DTS-ES decoder, the format is automatically detected upon decoding and the optimum playing mode is selected. However, some Matrix 6.1 sources may be detected as having a 5.1-channel format, so the DTS-ES Matrix 6.1 mode must be set manually to play these sources. (For instructions on selecting the surround mode [3P] page 21, 22.)

The DTS-ES decoder includes another function, the DTS Neo:6 surround mode for 6.1-channel playback of digital PCM and analog signal sources.

**DTS Neo:6™ surround**
This mode applies conventional 2-channel signals to the high precision digital matrix decoder used for DTS-ES Matrix 6.1 to achieve 6.1-channel surround playback. High precision input signal detection and matrix processing enable full band reproduction (frequency response of 20 Hz to 20 kHz or greater) for all 6.1 channels, and separation between the different channels is improved to the same level as that of a digital discrete system.

DTS Neo:6 surround includes two modes for selecting the optimum decoding for the signal source.

- **DTS Neo:6 Cinema**
  This mode is optimum for playing movies. Decoding is performed with emphasis on separation performance to achieve the same atmosphere with 2-channel sources as with 6.1-channel sources. This mode is effective for playing sources recorded in conventional surround formats as well, because the in-phase component is assigned mainly to the center channel (C) and the reversed phase component to the surround (SL, SR and SB) channels.

- **DTS Neo:6 Music**
  This mode is suited mainly for playing music. Changes in the sound quality are reduced by decoding with emphasis on the front channel signals (FL and FR), and a natural sense of expansion is given to the sound field by the effect of the surround signals output from the center (C) and surround (SL, SR and SB) channels.

---

1. A DVD player with DTS digital output capabilities (for CD/LD players, a player with digital outputs for conventional DTS CDs/LDs) and a disc recorded in DTS 96/24 are required.
2. The resolution is 24 or 20 bits, depending on the decoder.
## Surround modes and parameters

<table>
<thead>
<tr>
<th>Mode</th>
<th>FRONT L/R</th>
<th>CENTER</th>
<th>SURROUND L/R</th>
<th>SURROUND BACK L/R</th>
<th>SUBWOOFER</th>
<th>When playing Dolby Digital signals</th>
<th>When playing DTS signals</th>
<th>When playing PCM signals</th>
<th>When playing ANALOG signals</th>
<th>D. COMP.</th>
<th>LFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECT / PURE DIRECT</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>STEREO</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>EXTERNAL INPUT</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>DOLBY PRO LOGIC Ⅱ</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>DOLBY PRO LOGIC Ⅱx</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>DTS NEO:6</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>DOLBY DIGITAL</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
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<tr>
<td>DTS SURROUND</td>
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<td>○</td>
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<td>○</td>
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<td>○ *</td>
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<td>○ (OFF)</td>
<td>○ (0 dB)</td>
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<tr>
<td>6CH/7CH STEREO</td>
<td>○</td>
<td>○</td>
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<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
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</tr>
<tr>
<td>ROCK ARENA</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
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<td>○ (0 dB)</td>
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<tr>
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<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>VIDEO GAME</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>MONO MOVIE</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>MATRIX</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ *</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
<tr>
<td>VIRTUAL</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○ (OFF)</td>
<td>○ (0 dB)</td>
<td></td>
</tr>
</tbody>
</table>

○ : Signal / Adjustable
× : No signal
○ : Turned on or off by speaker configuration setting

<table>
<thead>
<tr>
<th>Mode</th>
<th>SB CH OUT (MODE)</th>
<th>TONE CONTROL</th>
<th>CINEMA EQ.</th>
<th>MODE</th>
<th>ROOM SIZE</th>
<th>EFFECT LEVEL</th>
<th>DELAY TIME</th>
<th>SUBWOOFER ON/OFF</th>
<th>PRO LOGIC Ⅱ / Ⅱx only</th>
<th>NEO:6 MUSIC</th>
<th>EXT. IN</th>
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<tbody>
<tr>
<td>DIRECT / PURE DIRECT</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○ (OFF)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>STEREO</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○ (OFF)</td>
<td>×</td>
<td>×</td>
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<tr>
<td>EXTERNAL INPUT</td>
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<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
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</tr>
<tr>
<td>DOLBY PRO LOGIC Ⅱ</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○ (OFF)</td>
<td>○ (3)</td>
<td>○ (3)</td>
<td>×</td>
</tr>
<tr>
<td>DOLBY PRO LOGIC Ⅱx</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>○ (OFF)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○ (OFF)</td>
<td>○ (3)</td>
<td>○ (3)</td>
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</tr>
<tr>
<td>DTS NEO:6</td>
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<td>○ (0 dB)</td>
<td>○ (OFF)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>DTS SURROUND</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>○ (OFF)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>6CH/7CH STEREO</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>ROCK ARENA</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>JAZZ CLUB</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>VIDEO GAME</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>MONO MOVIE</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>MATRIX</td>
<td>○</td>
<td>○ (0 dB)</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (Medium)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>VIRTUAL</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>× (30 msec)</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

○ : Adjustable
× : Not adjustable
Specifications

Audio section

• Power amplifier
  Rated output:
  Front: 90 W + 90 W
  (8 Ω/ohms, 20 Hz – 20 kHz with 0.08% T.H.D.)
  125 W + 125 W
  (6 Ω/ohms, 1 kHz with 0.7% T.H.D.)
  Center: 90 W
  (8 Ω/ohms, 20 Hz – 20 kHz with 0.08% T.H.D.)
  125 W
  (6 Ω/ohms, 1 kHz with 0.7% T.H.D.)
  Surround: 90 W + 90 W
  (8 Ω/ohms, 20 Hz – 20 kHz with 0.08% T.H.D.)
  125 W + 125 W
  (6 Ω/ohms, 1 kHz with 0.7% T.H.D.)
  Surround Back: 90 W + 90 W
  (8 Ω/ohms, 20 Hz – 20 kHz with 0.08% T.H.D.)
  125 W + 125 W
  (6 Ω/ohms, 1 kHz with 0.7% T.H.D.)
  Dynamic power:
  120 W x 2 ch (8 Ω/ohms)
  110 W x 2 ch (4 Ω/ohms)
  200 W x 2 ch (2 Ω/ohms)
  Output terminals:
  Front: A or B
  Center, Surround, Surr.Back: 6 – 16 Ω/ohms
  A + B
  12 – 16 Ω/ohms

• Analog
  Input sensitivity / input impedance: 200 mV / 47 kΩ/kohms
  Frequency response: 10 Hz – 100 kHz: +1, –3 dB (DIRECT mode)
  S/N: 100 dB (IHF-A weighted) (DIRECT mode)
  Distortion: 0.008 % (20 Hz – 20 kHz) (DIRECT mode)
  Rated output: 1.2 V

• Phono equalizer (PHONO input — REC OUT)
  Input sensitivity: 2.5 mV
  RIAA deviation: ±0.2 dB (20 Hz to 20 kHz)
  S/N: 74 dB (A weighting, with 5 mV input)
  Rated output / Maximum output: 150 mV / 7 V
  Distortion factor: 0.03 % (1 kHz, 3 V)

Video section

• Standard video terminals
  Input / output level and impedance: 1 Vp-p, 75 Ω/ohms
  Frequency response: 5 Hz – 10 MHz — +1, –3 dB

• S-Video terminals
  Input / output level and impedance: Y (brightness) signal — 1 Vp-p, 75 Ω/ohms
  C (color) signal — 0.286 Vp-p, 75 Ω/ohms
  Frequency response: 5 Hz – 10 MHz — +1, –3 dB

• Color component video terminal
  Input / output level and impedance: Y (brightness) signal — 1 Vp-p, 75 Ω/ohms
  Pr/Cb (blue) signal — 0.7 Vp-p, 75 Ω/ohms
  Pr/Cr (red) signal — 0.7 Vp-p, 75 Ω/ohms
  Frequency response: DC ~ 100 MHz — +0, –3 dB

Tuner section

[FM] (note: μV at 75 Ω/ohms, 0 dBf=1 x 10⁻¹⁵ W)
  Receiving Range: 87.50 MHz ~ 108.00 MHz
  Usable Sensitivity: 1.0 μV (11.2 dBf)
  50 dB Quieting Sensitivity:
  MONO 1.6 μV (15.3 dBf)
  STEREO 23 μV (38.5 dBf)
  S/N (IHF-A): MONO 77 dB (IHF-A weighted)
  STEREO 72 dB (IHF-A weighted)
  Total Harmonic Distortion (at 1 kHz):
  MONO 0.15 % (1 kHz)
  STEREO 0.3 % (1 kHz)

[AM]
  Receiving Range: 522 kHz ~ 1611 kHz
  Usable Sensitivity: 18 μV

General

Power supply: AC 230 V, 50 Hz
Power consumption: 450 W
Maximum external dimensions: 434 (W) x 171 (H) x 417 (D) mm
Mass: 12.8 kg

Remote control unit (RC-1016)

Batteries: R6/AA Type (two batteries)
External dimensions: 55 (W) x 225 (H) x 34.5 (D) mm
Mass: 165 g (including batteries)

* For purposes of improvement, specifications and design are subject to change without notice.