

DENON

AV SURROUND RECEIVER

AVR-2310

Owner's Manual

Bedienungsanleitung

Manuel de l'Utilisateur

Manuale delle istruzioni

Manual del usuario

Gebruiksaanwijzing

Bruksanvisning

※ The illustrations used for explaining operations in this manual show the buttons of the remote control unit. The same operations can be performed using the buttons with the same names on the main unit panel.

※ Die in diesem Handbuch verwendeten Tasten-Illustrationen für die Betriebserklärung beziehen sich auf die Fernbedienung. Sie können das Gerät mit der gleichnamigen Taste an der Frontkonsole des Gerätes bedienen.

※ Les illustrations des boutons présentes dans ce manuel servent à expliquer le fonctionnement de la télécommande. Vous pouvez contrôler l'appareil à l'aide du bouton portant le même nom sur la façade de l'appareil.

※ Le illustrazioni dei pulsanti mostrate in questo manuale di spiegazione si riferiscono al telecomando. E' possibile adoperare l'unità utilizzando i pulsanti del nome corrispondente presenti sul pannello frontale dell'unità.

※ Las ilustraciones de los botones utilizadas en este manual con propósitos de explicación son para la unidad del mando a distancia. Puede operar la unidad utilizando el botón del mismo nombre en el panel delantero de la unidad.

※ De gebruikte toetsillustraties in deze handleiding voor uitleg van de bediening zijn voor de afstandsbediening. U kunt het toestel bedienen door de toets met dezelfde naam op het voorpaneel van het toestel te gebruiken.

※ Bilder på knappar i denna bruksanvisning för att förklara användningen gäller fjärrkontrollen. Du kan också använda knapparna med samma namn på frontpanelen på enheten.

GUI Graphical User Interface

English

Use this manual in combination with the operating guide displayed on the GUI screen.

Menu Map (☞ page 20)
Examples of GUI Menu Screen Displays (☞ page 21)
Remote Control Unit Operations (☞ page 55)

Deutsch

Verwenden Sie dieses Handbuch zusammen mit den Bedienungsanweisungen auf dem GUI-Bildschirm.

Menüplan (☞ Seite 20)
Beispiele für GUI-Bildschirmanzeigen (☞ Seite 21)
Bedienung mit der Fernbedienung (☞ Seite 55)

Français

Utilisez ce manuel en même temps que le guide d'utilisation affiché sur l'écran GUI (Interface graphique).

Plan du menu (☞ page 20)
Exemples d'affichage sur écran et d'affichage avant (☞ page 21)
Fonctionnement de la télécommande (☞ page 55)

Italiano

Usare questo manuale insieme alla guida operativa visualizzata sulla schermata GUI.

Mappa menu (☞ pagina 20)
Esempi di schermate GUI (☞ pagina 21)
Operazioni con telecomando (☞ pagina 55)

Español

Utilice este manual conjuntamente con la guía de uso que aparece en la pantalla GUI.

Estructura de los menús (☞ página 20)
Ejemplos de indicaciones que aparecen en la pantalla GUI (☞ página 21)
Operaciones con el mando a distancia (☞ página 55)

Nederlands

Gebruik deze gebruiksaanwijzing samen met de aanwijzingen die op het GUI-scherm worden getoond.

Overzicht van het menu (☞ blz. 20)
Voorbeelden van GUI menuschermen (☞ blz. 21)
Bedieningsmogelijkheden van de afstandsbediening (☞ blz. 55)

Svenska

Använd denna bruksanvisning i kombination med anvisningarna på GUI-skärmen.

Menyöversikt (☞ sidan 20)
Exempel på GUI-skärmar (☞ sidan 21)
Telecomando principale (☞ sidan 55)

SAFETY PRECAUTIONS



CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN



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

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

IMPOTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by the manufacturer.
11. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.



CAUTION:

To completely disconnect this product from the mains, disconnect the plug from the wall socket outlet.

The mains plug is used to completely interrupt the power supply to the unit and must be within easy access by the user.

VORSICHT:

Um dieses Gerät vollständig von der Stromversorgung abzutrennen, ziehen Sie bitte den Stecker aus der Wandsteckdose.

Der Netzstecker wird verwendet, um die Stromversorgung zum Gerät völlig zu unterbrechen; er muss für den Benutzer gut und einfach zu erreichen sein.

PRECAUTION:

Pour déconnecter complètement ce produit du courant secteur, débranchez la prise de la prise murale.

La prise secteur est utilisée pour couper complètement l'alimentation de l'appareil et l'utilisateur doit pouvoir y accéder facilement.

ATTENZIONE:

Per scollegare completamente questo prodotto dalla rete di alimentazione elettrica, scollegare la spina dalla relativa presa a muro. La spina di rete viene utilizzata per interrompere completamente l'alimentazione all'unità e deve essere facilmente accessibile all'utente.

PRECAUCIÓN:

Para desconectar completamente este producto de la alimentación eléctrica, desconecte el enchufe del enchufe de la pared.

El enchufe de la alimentación eléctrica se utiliza para interrumpir por completo el suministro de alimentación eléctrica a la unidad y debe de encontrarse en un lugar al que el usuario tenga fácil acceso.

WAARSCHUWING:

Om de voeding van dit product volledig te onderbreken moet de stekker uit het stopcontact worden getrokken.

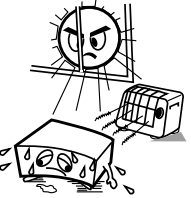
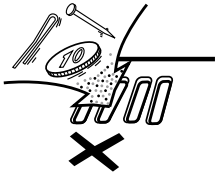
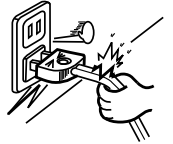
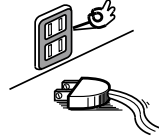
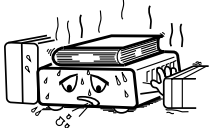
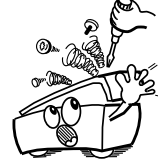
De netstekker wordt gebruikt om de stroomtoevoer naar het toestel volledig te onderbreken en moet voor de gebruiker gemakkelijk bereikbaar zijn.

FÖRSIKTIHETSMÅTT:

Koppla loss stickproppen från eluttaget för att helt skilja produkten från nätet.

Stickproppen används för att helt bryta strömförsörjningen till apparaten, och den måste vara lättillgänglig för användaren.

NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION / NOTE SULL'USO / NOTAS SOBRE EL USO / ALVORENS TE GEBRUIKEN / OBSERVERA ANGÅENDE ANVÄNDNINGEN

 • Avoid high temperatures. Allow for sufficient heat dispersion when installed in a rack. • Vermeiden Sie hohe Temperaturen. Beachten Sie, dass eine ausreichende Belüftung gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird. • Eviter des températures élevées. Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère. • Evitate di esporre l'unità a temperature elevate. Assicuratevi che vi sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio. • Evite altas temperaturas. Permite la suficiente dispersión del calor cuando está instalado en la consola. • Vermijd hoge temperaturen. Zorg er bij installatie in een audiorack voor, dat de door het toestel geproduceerde warmte goed kan worden afgevoerd. • Undvik höga temperaturer. Se till att det finns möjlighet till god värmeavledning vid montering i ett rack.	 • Keep the unit free from moisture, water, and dust. • Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern. • Protéger l'appareil contre l'humidité, l'eau et la poussière. • Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere. • Mantenga el equipo libre de humedad, agua y polvo. • Laat geen vochtigheid, water of stof in het apparaat binnendringen. • Utsätt inte apparaten för fukt, vatten och damm.	 • Do not let foreign objects into the unit. • Lassen Sie keine fremden Gegenstände in das Gerät kommen. • Ne pas laisser des objets étrangers dans l'appareil. • Non inserite corpi estranei all'interno dell'unità. • No deje objetos extraños dentro del equipo. • Laat geen vreemde voorwerpen in dit apparaat vallen. • Se till att främmande föremål inte tränger in i apparaten.	CAUTION: • The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, tablecloths, curtains, etc. • No naked flame sources, such as lighted candles, should be placed on the unit. • Observe and follow local regulations regarding battery disposal. • Do not expose the unit to dripping or splashing fluids. • Do not place objects filled with liquids, such as vases, on the unit. ACHTUNG: • Die Belüftung sollte auf keinen Fall durch das Abdecken der Belüftungsöffnungen durch Gegenstände wie beispielsweise Zeitungen, Tischtücher, Vorhänge o. Ä. behindert werden. • Auf dem Gerät sollten keinerlei direkte Feuerquellen wie beispielsweise angezündete Kerzen aufgestellt werden. • Bitte beachten Sie bei der Entsorgung der Batterien die örtlich geltenden Umweltbestimmungen. • Das Gerät sollte keiner tropfenden oder spritzenden Flüssigkeit ausgesetzt werden. • Auf dem Gerät sollten keine mit Flüssigkeit gefüllten Behälter wie beispielsweise Vasen aufgestellt werden.
 • Handle the power cord carefully. Hold the plug when unplugging the cord. • Gehen Sie vorsichtig mit dem Netzkabel um. Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen. • Manipuler le cordon d'alimentation avec précaution. Tenir la prise lors du débranchement du cordon. • Maneggiare il cavo di alimentazione con attenzione. Tenete ferma la spina quando scollegate il cavo dalla presa. • Maneje el cordón de energía con cuidado. Sostenga el enchufe cuando desconecte el cordón de energía. • Hanteer het netsnoer voorzichtig. Houd het snoer bij de stekker vast wanneer deze moet worden aan- of losgekoppeld. • Hantera nätkablen varsamt. Håll i kablarna när den kopplas från el-uttaget.	 • Unplug the power cord when not using the unit for long periods of time. • Wenn das Gerät längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker. • Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes. • Scollegate il cavo di alimentazione quando prevedete di non utilizzare l'unità per un lungo periodo di tempo. • Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo. • Neem altijd het netsnoer uit het stopkontakt wanneer het apparaat gedurende een lange periode niet wordt gebruikt. • Koppla loss nätkablen om apparaten inte kommer att användas i lång tid.	 • Do not let insecticides, benzene, and thinner come in contact with the unit. • Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen. • Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil. • Assicuratevi che l'unità non entri in contatto con insetticidi, benzolo o solventi. • No permita el contacto de insecticidas, gasolina y diluyentes con el equipo. • Voorkom dat insecticiden, benzeen of verfverdunder met dit toestel in contact komen. • Se till att inte insektsmedel på spraybruk, bensen och thinner kommer i kontakt med apparatens hölje.	ATTENTION: • La ventilation ne doit pas être gênée en recouvrant les ouvertures de la ventilation avec des objets tels que journaux, rideaux, tissus, etc. • Aucune flamme nue, par exemple une bougie, ne doit être placée sur l'appareil. • Veillez à respecter les lois en vigueur lorsque vous jetez les piles usagées. • L'appareil ne doit pas être exposé à l'eau ou à l'humidité. • Ne pas poser d'objet contenant du liquide, par exemple un vase, sur l'appareil. ATTENZIONE: • Le aperture di ventilazione non devono essere ostruite coprendole con oggetti, quali giornali, tovaglie, tende e così via. • Non posizionate sull'unità fiamme libere, come ad esempio candele accese. • Prestate attenzione agli aspetti legati alla tutela dell'ambiente nello smaltimento delle batterie. • L'apparecchiatura non deve essere esposta a gocciolii o spruzzi. • Non posizionate sull'unità alcun oggetto contenente liquidi, come ad esempio i vasi.
	 * (For apparatuses with ventilation holes) • Do not obstruct the ventilation holes. • Decken Sie den Lüftungsbereich nicht ab. • Ne pas obstruer les trous d'aération. • Non coprire i fori di ventilazione. • No obstruya los orificios de ventilación. • De ventilatieopeningen mogen niet worden geblokkeerd. • Täpp inte till ventilationsöppningarna.	 • Never disassemble or modify the unit in any way. • Versuchen Sie niemals das Gerät auseinander zu nehmen oder zu verändern. • Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre. • Non smontare né modificare l'unità in alcun modo. • Nunca desarme o modifique el equipo de ninguna manera. • Dit toestel mag niet gedemonteerd of aangepast worden. • Ta inte isär apparaten och försök inte bygga om den.	PRECAUCIÓN: • La ventilación no debe quedar obstruida por haberse cubierto las aperturas con objetos como periódicos, manteles, cortinas, etc. • No debe colocarse sobre el aparato objetos inflamables sin protección, como velas encendidas. • A la hora de deshacerse de las pilas, respete la normativa para el cuidado del medio ambiente. • No exponer el aparato al goteo o salpicaduras cuando se utilice. • No colocar sobre el aparato objetos llenos de líquido, como jarras. WAARSCHUWING: • De ventilatie mag niet worden belemmerd door de ventilatieopeningen af te decken met bijvoorbeeld kranten, een tafelkleed, gordijnen, enz. • Plaats geen open vlammen, bijvoorbeeld een brandende kaars, op het apparaat. • Houd u steeds aan de milieuvorschriften wanneer u gebruikte batterijen wegdoet. • Stel het apparaat niet bloot aan druppels of spatten. • Plaats geen voorwerpen gevuld met water, bijvoorbeeld een vaas, op het apparaat. OBSERVERA: • Ventilationen bör inte förhindras genom att täcka för ventilationsöppningarna med föremål såsom tidningar, bordsdukar, gardiner osv. • Inga blottade brandkällor, såsom tända ljus, får placeras på apparaten. • Tänk på miljöaspekterna när du bortskaffar batterier. • Apparaten får inte utsättas för vätska. • Placera inte föremål fyllda med vätska, t.ex. vaser, på apparaten.

• DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product, to which this declaration relates, is in conformity with the following standards: EN60065, EN55013, EN55020, EN61000-3-2 and EN61000-3-3. Following the provisions of 2006/95/EC and 2004/108/EC Directive.

• ÜBEREINSTIMMUNGSERLÄRUNG

Wir erklären unter unserer Verantwortung, daß dieses Produkt, auf das sich diese Erklärung bezieht, den folgenden Standards entspricht: EN60065, EN55013, EN55020, EN61000-3-2 und EN61000-3-3. Entspricht den Verordnungen der Direktive 2006/95/EC und 2004/108/EC.

• DECLARATION DE CONFORMITE

Nous déclarons sous notre seule responsabilité que l'appareil, auquel se réfère cette déclaration, est conforme aux standards suivants: EN60065, EN55013, EN55020, EN61000-3-2 et EN61000-3-3. D'après les dispositions de la Directive 2006/95/EC et 2004/108/EC.

• DICHIARAZIONE DI CONFORMITÀ

Dichiariamo con piena responsabilità che questo prodotto, al quale la nostra dichiarazione si riferisce, è conforme alle seguenti normative: EN60065, EN55013, EN55020, EN61000-3-2 e EN61000-3-3. In conformità con le condizioni delle direttive 2006/95/EC e 2004/108/EC. QUESTO PRODOTTO E' CONFORME AL D.M. 28/08/95 N. 548

• DECLARACIÓN DE CONFORMIDAD

Declaramos bajo nuestra exclusiva responsabilidad que este producto al que hace referencia esta declaración, está conforme con los siguientes estándares: EN60065, EN55013, EN55020, EN61000-3-2 y EN61000-3-3. Siguiendo las provisiones de las Directivas 2006/95/EC y 2004/108/EC.

• EENVORMIGHEIDSVERKLARING

Wij verklaren uitsluitend op onze verantwoordelijkheid dat dit produkt, waarop deze verklaring betrekking heeft, in overeenstemming is met de volgende normen: EN60065, EN55013, EN55020, EN61000-3-2 en EN61000-3-3. Volgens de bepalingen van de Richtlijnen 2006/95/EC en 2004/108/EC.

• ÖVERENSSTÄMMELSESINTYG

Härmed intygas helt på eget ansvar att denna produkt, vilken detta intyg avser, uppfyller följande standarder: EN60065, EN55013, EN55020, EN61000-3-2 och EN61000-3-3. Enligt stadgarna i direktiv 2006/95/EC och 2004/108/EC.

DENON EUROPE
Division of D&M Germany GmbH
An der Landwehr 19, Nettetal,
D-41334 Germany

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 battery disposal.

This product and the supplied accessories, excluding the batteries, constitute the applicable product according to the WEEE directive.

HINWEIS ZUM RECYCLING:

Das Verpackungsmaterial dieses Produktes ist zum Recyceln geeignet und kann wieder verwendet werden. Bitte entsorgen Sie alle Materialien entsprechend der örtlichen Recycling-Vorschriften.

Beachten Sie bei der Entsorgung des Gerätes die örtlichen Vorschriften und Bestimmungen.

Die Batterien dürfen nicht in den Hausmüll geworfen oder verbrannt werden; bitte entsorgen Sie die Batterien gemäß der örtlichen Vorschriften.

Dieses Produkt und das im Lieferumfang enthaltene Zubehör (mit Ausnahme der Batterien!) entsprechen der WEEE-Direktive.

UNE REMARQUE CONCERNANT LE RECYCLAGE:

Les matériaux d'emballage de ce produit sont recyclables et peuvent être réutilisés. Veuillez disposer des matériaux conformément aux lois sur le recyclage en vigueur.

Lorsque vous mettez cet appareil au rebut, respectez les lois ou réglementations en vigueur.

Les piles ne doivent jamais être jetées ou incinérées, mais mises au rebut conformément aux lois en vigueur sur la mise au rebut des piles.

Ce produit et les accessoires inclus, à l'exception des piles, sont des produits conformes à la directive DEEE.

NOTA RELATIVA AL RICICLAGGIO:

I materiali di imballaggio di questo prodotto sono riutilizzabili e riciclabili. Smaltire i materiali conformemente alle normative locali sul riciclaggio.

Per lo smaltimento dell'unità, osservare le normative o le leggi locali in vigore.

Non gettare le batterie, né incenerirle, ma smaltirle conformemente alla normativa locale sui rifiuti chimici.

Questo prodotto e gli accessori inclusi nell'imballaggio sono applicabili alla direttiva RAEE, ad eccezione delle batterie.

ACERCA DEL RECICLAJE:

Los materiales de embalaje de este producto son reciclables y se pueden volver a utilizar. Disponga de estos materiales siguiendo los reglamentos de reciclaje de su localidad.

Cuando se deshaga de la unidad, cumpla con las reglas o reglamentos locales.

Las pilas nunca deberán tirarse ni incinerarse. Deberá disponer de ellas siguiendo los reglamentos de su localidad relacionados con los desperdicios químicos.

Este producto junto con los accesorios empacquetados es el producto aplicable a la directiva RAEE excepto pilas.

EEN AANTEKENING MET BETREKKING TOT DE RECYCLING:

Het inpakmateriaal van dit product is recycleerbaar en kan opnieuw gebruikt worden. Er wordt verzocht om zich van elk afvalmateriaal te ontdoen volgens de plaatselijke voorschriften.

Volg voor het wegdoen van de speler de voorschriften voor de verwijdering van wit- en bruingoed op.

Batterijen mogen nooit worden weggegooid of verbrand, maar moeten volgens de plaatselijke voorschriften betreffende chemisch afval worden verwijderd.

Op dit product en de meegeleverde accessoires, m.u.v. de batterijen is de richtlijn voor afgedankte elektrische en elektronische apparaten (WEEE) van toepassing.

OBSERVERA ANGÅENDE ÅTERVINNING:

Produktens emballage är återvinningsbart och kan återanvändas. Kassera det enligt lokala återvinningsbestämmelser.

När du kasserar enheten ska du göra det i överensstämmelse med lokala regler och bestämmelser.

Batterier får absolut inte kastas i soporna eller brännas. Kassera dem enligt lokala bestämmelser för kemiskt avfall.

Denna apparat och de tillbehör som levereras med den uppfyller gällande WEEE-direktiv, med undantag av batterierna.



Pb

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List of preset codes

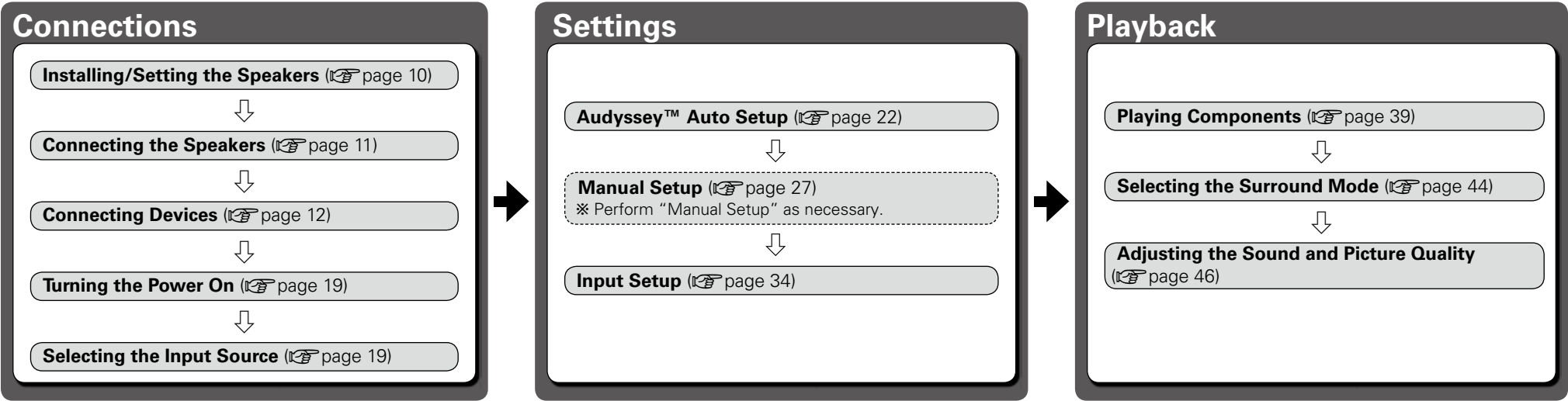
End of this manual

Getting Started

Thank you for purchasing this DENON product. To ensure proper operation, please read this owner’s manual carefully before using the product. After reading them, be sure to keep them for future reference.

Flow of operations through playback

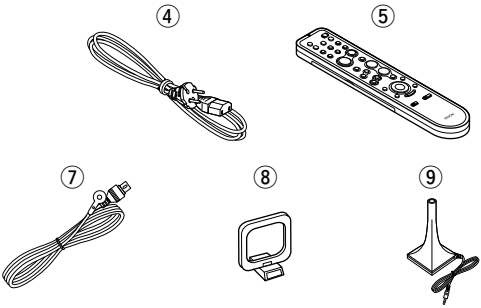
Perform the operations leading to playback on the AVR-2310 in the order shown below.



Accessories

Check that the following parts are supplied with the product.

① Owner’s manual	1
② Getting Started	1
③ Service station list	1
④ Power cord (Cord length: Approx. 1.7 m)	1
⑤ Remote control unit (RC-1117)	1
⑥ R6/AA batteries	2
⑦ FM indoor antenna	1
⑧ AM loop antenna	1
⑨ Setup microphone (DM-A409, Cord length: Approx. 7.6 m)	1



Cautions on Handling

• Before turning the power switch on

Check once again that all connections are correct and that there are no problems with the connection cables.

- Power is supplied to some of the circuitry even when the unit is set to the standby mode. When traveling or leaving home for long periods of time, be sure to unplug the power cord from the power outlet.

• About condensation

If there is a major difference in temperature between the inside of the unit and the surroundings, condensation (dew) may form on the operating parts inside the unit, causing the unit not to operate properly.

If this happens, let the unit sit for an hour or two with the power turned off and wait until there is little difference in temperature before using the unit.

• Cautions on using mobile phones

Using a mobile phone near this unit may result in noise. If so, move the mobile phone away from this unit when it is in use.

• Moving the unit

Turn off the power and unplug the power cord from the power outlet.

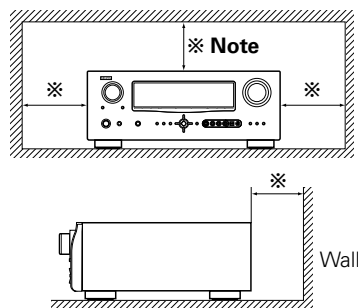
Next, disconnect the connection cables to other system units before moving the unit.

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

Cautions on Installation

Note:

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



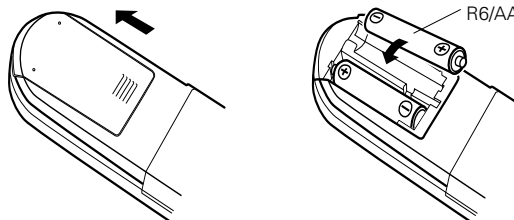
About the Remote Control Unit

In addition to the AVR-2310, the included remote control unit (RC-1117) can also be used to operate the equipment listed below.

- ① **DENON system components**
- ② **Non-DENON system components**
 - By setting the preset memory (page 55)

Inserting the Batteries

- ① Lift the clasp and remove the rear cover.
- ② Load the two batteries properly as indicated by the marks in the battery compartment.



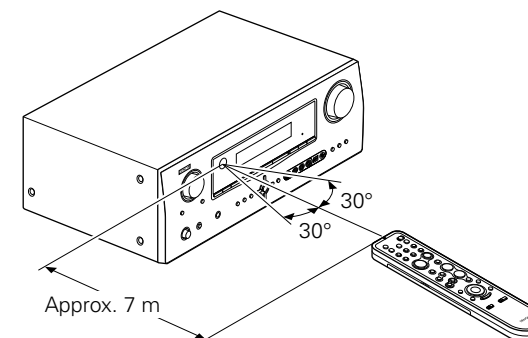
- ③ Put the rear cover back on.

NOTE

- Replace the batteries with new ones if the set does not operate even when the remote control unit is operated close to the unit.
- The supplied batteries are only for verifying operation.
- When inserting the batteries, be sure to do so in the proper direction, following the “⊕” and “⊖” 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 attempt to charge dry 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.
- Remove the batteries from the remote control unit if it will not be in use for long periods.
- Used batteries should be disposed of in accordance with the local regulations regarding battery disposal.

Operating Range of the Remote Control Unit

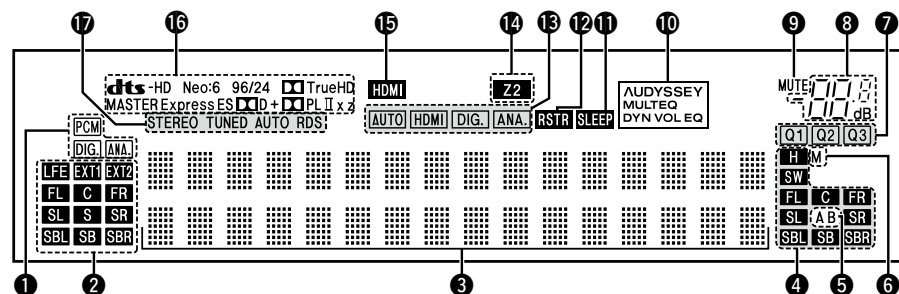
Point the remote control unit at the remote sensor when operating it.



NOTE

The set may function improperly or the remote control unit may not operate if the remote control sensor is exposed to direct sunlight, strong artificial light from an inverter type fluorescent lamp or infrared light.

Display

**1 Input audio signal indicators****2 Input signal channel indicators**

These light when digital signals are input. When playing HD Audio sources, the "EXT1" indicator lights when an extension channel (a channel other than the front, center, surround, surround back or LFE channel) is input. If there are two or more extension channels, the "EXT1" and "EXT2" indicators light.

3 Information display

The input source name, surround mode, setting values and other information are displayed here.

4 Output signal channel indicators**5 Front speaker indicator**

These light according to the settings of the front A and B speakers (page 43).

6 Monitor output indicators

These light according to the HDMI monitor output setting.

7 QUICK SELECT indicators

These light when the Quick Select function is set (page 53).

8 Master volume indicator**9 MUTE indicator**

Lights when the muting mode is set (page 43).

10 AUDYSSEY indicator

These light as shown below in the different modes (page 48).

AUDYSSEY MULT EQ : During "MultEQ" operation

AUDYSSEY MULT EQ DYN EQ : During "MultEQ", "Dynamic EQ" operation

AUDYSSEY MULT EQ DYN VOL : During "MultEQ", "Dynamic EQ", "Dynamic Volume" operation

※When speaker settings are changed after "Audyssey™ Auto Setup" procedure, either the indicators' frame turns off or all the indicators turn off.

11 SLEEP TIMER indicator

Lights when the sleep timer is operating (page 52).

12 RESTORER indicator

Lights during "RESTORER" operation (page 50).

13 Input mode indicators**14 ZONE2 indicator**

Lights when signals are being output to the ZONE2 (page 54).

15 HDMI indicator

Lights when HDMI input signals are detected (page 13).

16 Decoder indicators

The indicator for the currently operating decoder lights.

17 Tuner reception mode indicators

This lights according to the reception conditions when the input source is set to "TUNER".

• STEREO

In the FM mode, this lights when receiving analog stereo broadcasts.

• TUNED

This lights when the broadcast is properly tuned in.

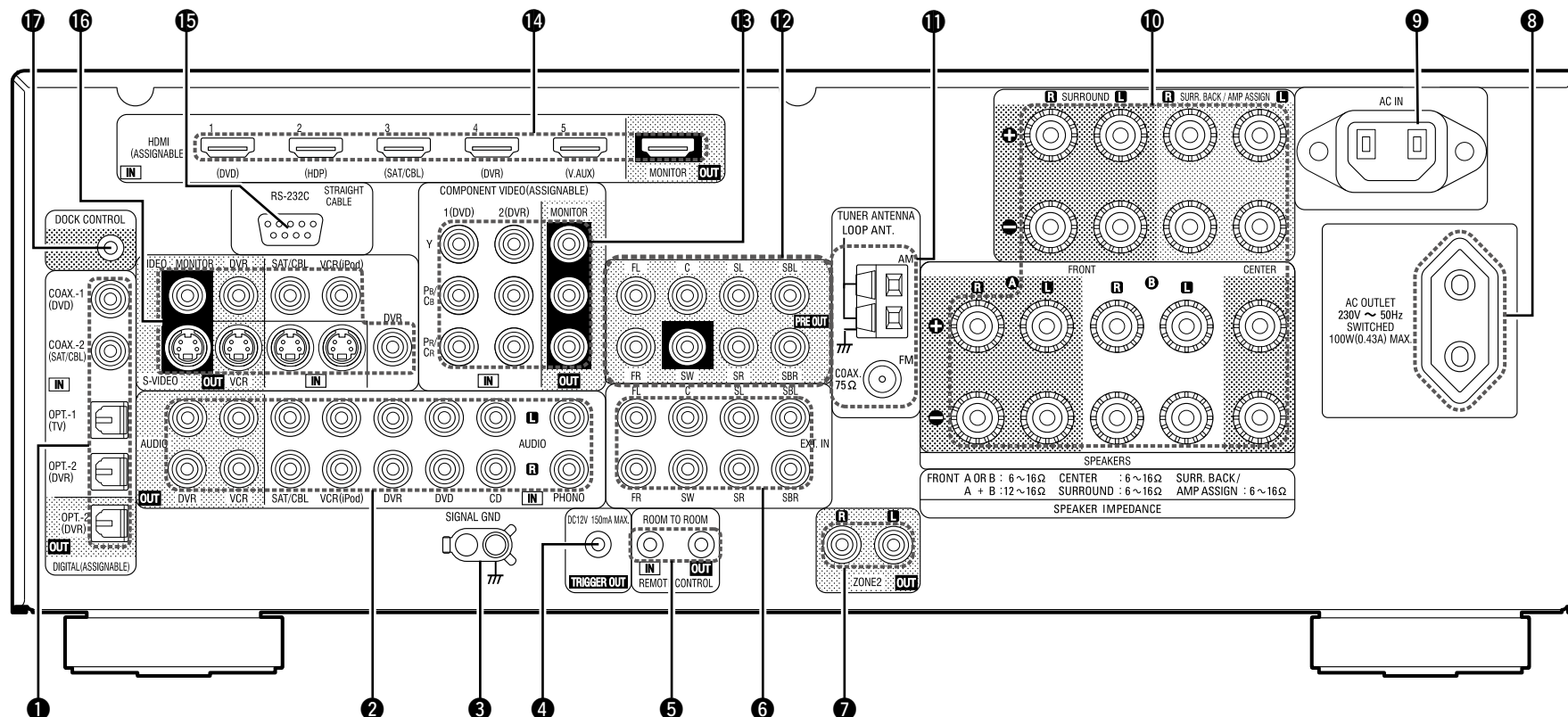
• AUTO

This lights when in the auto tuning mode.

• RDS

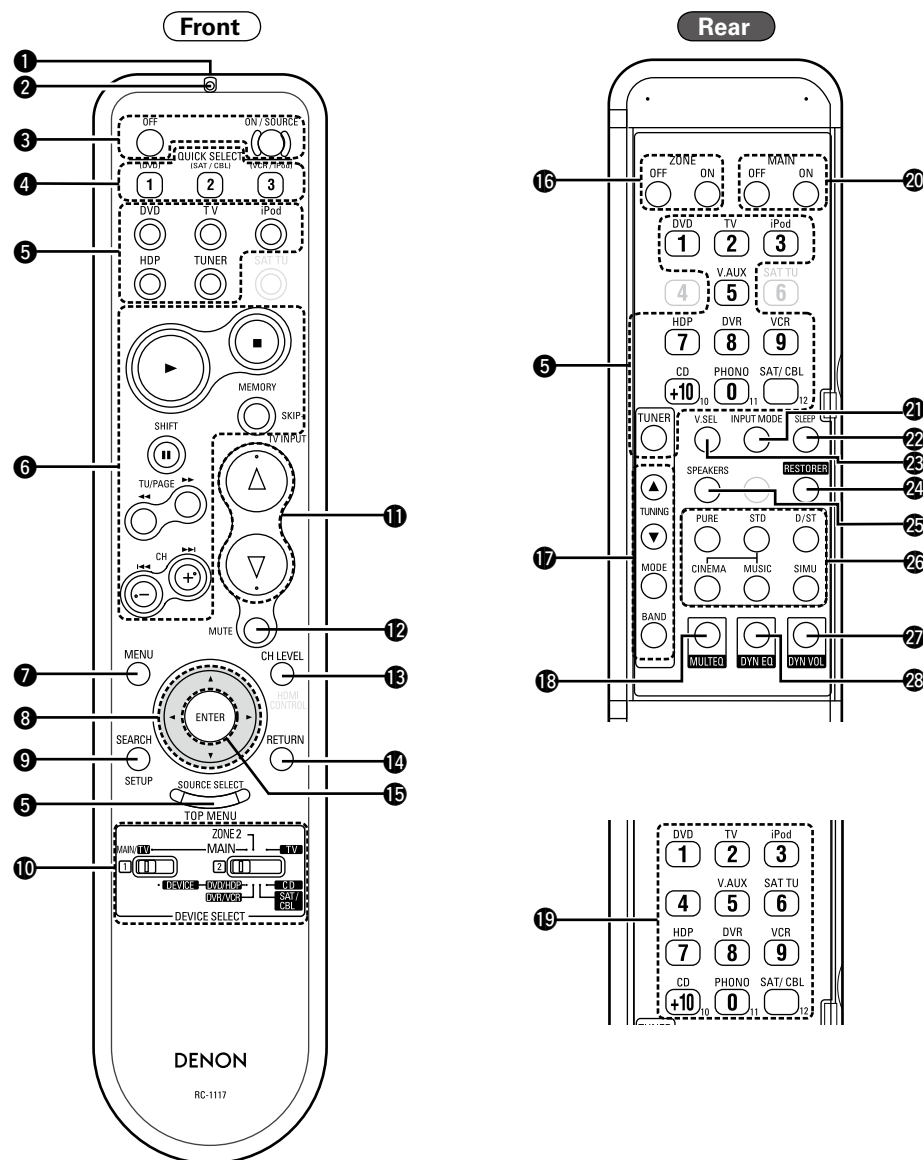
This lights when receiving RDS broadcasts.

Rear Panel



- | | | | | | |
|---------------------------------|------|------------------------------------|------|----------------------------------|------|
| 1 Digital audio connectors..... | (15) | 8 AC OUTLET..... | (18) | 15 RS-232C connector..... | (18) |
| 2 Analog audio connectors..... | (14) | 9 AC inlet (AC IN)..... | (18) | 16 VIDEO/S-VIDEO connectors..... | (15) |
| 3 SIGNAL GND terminal..... | (15) | 10 Speaker terminals..... | (11) | 17 Control dock for iPod | |
| 4 TRIGGER OUT jacks..... | (18) | 11 FM/AM antenna terminals..... | (17) | DOCK CONTROL jack..... | (14) |
| 5 REMOTE CONTROL jacks..... | (18) | 12 PRE OUT connector..... | (11) | | |
| 6 EXT. IN connectors..... | (16) | 13 COMPONENT VIDEO connectors..... | (14) | | |
| 7 ZONE2 connectors..... | (54) | 14 HDMI connectors..... | (13) | | |

Remote Control Unit



- 1 Remote control signal transmitter
- 2 Indicator
- 3 Power buttons
- 4 QUICK SELECT buttons
- 5 SOURCE SELECT button
- 6 System buttons
- 7 MENU button
- 8 Cursor buttons (Δ ▽ ◀ ▶)
- 9 SEARCH button
- 10 DEVICE SELECT switches
- 11 Master volume control buttons
- 12 MUTING button
- 13 Channel level adjustment button
- 14 RETURN button
- 15 ENTER button
- 16 ZONE2 power button
- 17 Tuner operation buttons
- 18 MULTEQ® button
- 19 Number buttons (0 ~ 9, +10)
- 20 MAIN ZONE power buttons
- 21 INPUT MODE button
- 22 SLEEP TIMER button
- 23 VIDEO SELECT button
- 24 RESTORER button
- 25 FRONT HEIGHT SPEAKER ON/OFF button
- 26 Surround mode buttons
- 27 DYNAMIC VOLUME™ button
- 28 DYNAMIC EQ™ button



For buttons not explained here, see the page indicated in parentheses ().

NOTE

- Buttons on the back panel may operate when the back lid is pressed.
- The **SAT TU** button cannot be used.

Operations Possible by Remote Control Unit

- Operations on the AVR-2310
- Operations on six devices other than the AVR-2310

- Preset the remote control codes of the devices to be operated (see page 55).
- Switch two device selector switches according to the devices to be operated.

Position of switches		Operable devices
MAIN TV	ZONE 2	
MAIN TV	MAIN	AVR-2310 (MAIN ZONE) iPod
	ZONE2	AVR-2310 (ZONE2)
	TV	TV
DEVICE	DVD/HDP	Blu-ray disc player or DVD Player
	DVR/VCR	DVD recorder or Video deck
	SAT/CBL	Satellite receiver or Cable TV
	CD	CD player

- ZONE2 operations (see page 54)
- Punch through setting (see page 57)

Connections

❑ Connection Flow

Installing/Setting the Speakers (🔧 page 10)



Connecting the Speakers (🔧 page 11)



Connecting Devices (🔧 page 12)



Connecting Devices not Equipped with HDMI terminals (🔧 page 13)

❑ **HDMI** (🔧 page 12)

❑ **Monitor (TV)** (🔧 page 13)

❑ **Playback Components**

- Blu-ray Disc player / DVD player (🔧 page 14)
- iPod® (🔧 page 14)
- CD Player (🔧 page 14)
- Record Player (🔧 page 15)

❑ **Recording Components**

- Digital Video Recorder (🔧 page 15)
- Video Cassette Recorder (🔧 page 15)

❑ **SAT/CABLE Tuner** (🔧 page 16)

❑ **Other Devices**

- Video Camera / Game Console (🔧 page 16)
- Component with Multi-channel Output connectors (🔧 page 16)
- Antenna terminals (🔧 page 17)
- External Power Amplifier (🔧 page 17)
- External Controller (🔧 page 18)

❑ **Power Cord**



Turning the Power On (🔧 page 19)

Important Information

Connections for all compatible audio and video signal formats are described in this owner's manual. Please select the types of connections suited for the equipment you are connecting.

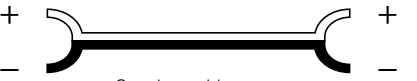
After connections are completed, certain settings must be made on the receiver. Make the settings indicated "Set as necessary" for the individual items.

NOTE

- Do not plug in the power 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).
- Do not bundle power cords together with connection cables. Doing so can result in humming or noise.

Cables Used for Connections

Select the cables according to the equipment being connected.

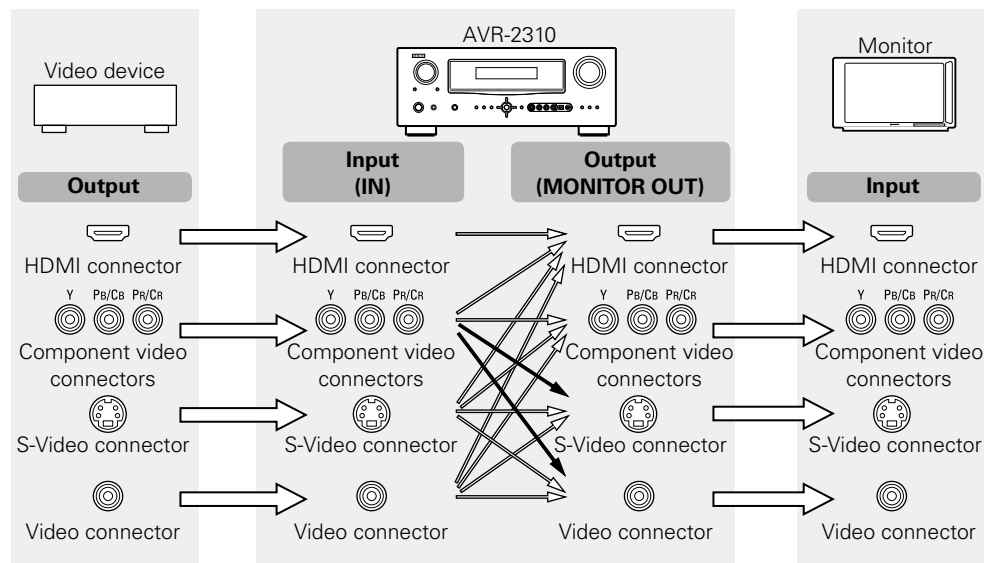
Audio and video cables	
HDMI connections	 HDMI cable
Audio cables	
Coaxial digital connections	 Coaxial digital cable
Optical digital connections	 Optical cable
Analog connections	(White)  (Red)  Stereo pin-plug cable
Analog connections (monaural, for subwoofer)	 Pin-plug cable
Speaker connections	 Speaker cables
Video cables	
Component video connections	(Green)  (Blue)  (Red)  Component video cable
S-Video connections	 S-Video cable
Video connections	(Yellow)  75 Ω/ohms pin-plug video cable

Converting Input video signals for Output (Video Conversion Function)

The AVR-2310 is equipped with four types of video input/output terminals (HDMI, Component video, S-Video and video).

Use the terminals according to the devices to be connected.

This function automatically converts various formats of video signals input to the AVR-2310 into the format used to output the video signals from the AVR-2310 to a monitor.



- The video conversion function supports the NTSC, PAL, SECAM, NTSC 4.43, PAL-N, PAL-M and PAL-60 formats.
- The resolution of the video signal input to the AVR-2310's HDMI terminal is the resolution set at "Resolution" (page 36). (1080p HDMI signals and 1080p component signals are output at 1080p, regardless of the setting.)

Set as Necessary

- Set when using the video conversion function.
"Video Convert" (page 36)
- Set when changing the resolution of the video signal.
"Resolution" (page 36)



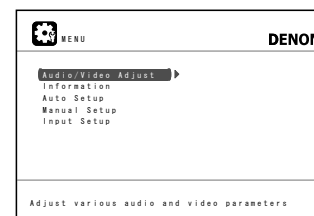
Resolutions of HDMI-compatible TVs can be checked at "HDMI Information" (page 51).

NOTE

- HDMI signals cannot be converted into analog signals.
- When a non-standard video signal from a game machine or some other source is input, the video conversion function might not operate.
- 480p/576p/1080i/720p/1080p component video input signals cannot be converted into S-Video or Video format.

Examples of GUI menu

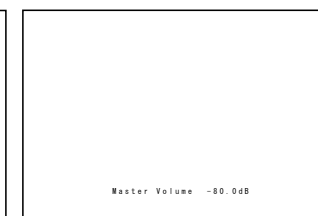
- Menu screen



- Status display screen
When the input source is switched



- When the volume is adjusted



Status display: The operating status is displayed temporarily on the screen when the input source is switched or the volume is adjusted.

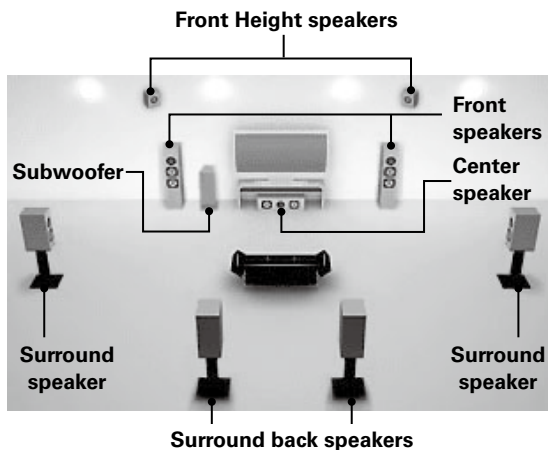
Installing/Setting the Speakers

- The AVR-2310 is compatible with various types of surround playback.
- Decide on the surround modes to be played on the AVR-2310 before making connections and settings.

1 Determine the Speaker Layout

Below we introduce examples of speaker layouts. Refer to these to arrange your speakers according to their type and how you want to use them.

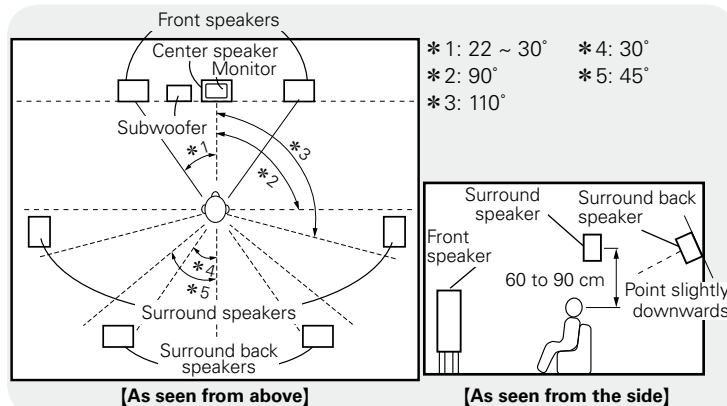
Installing All the Speakers



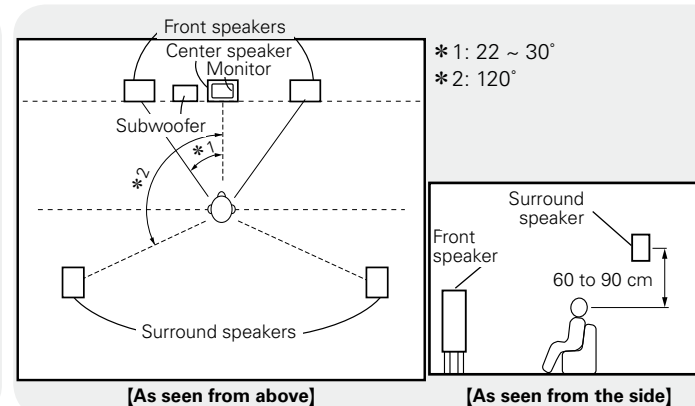
NOTE

It is not possible to use the front height speakers and surround back speakers simultaneously.

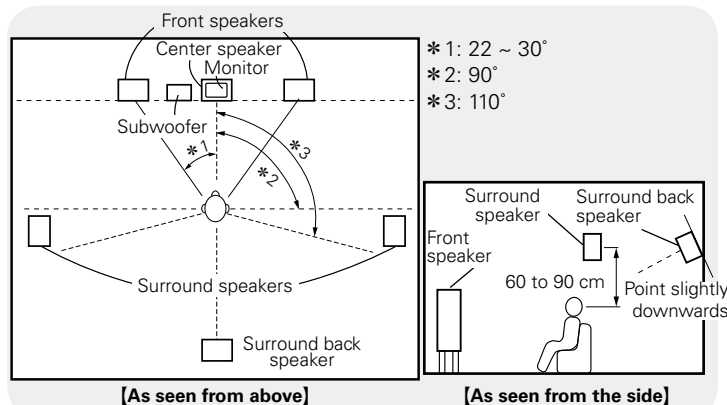
When 7.1ch (Surround Back Speaker) Connected



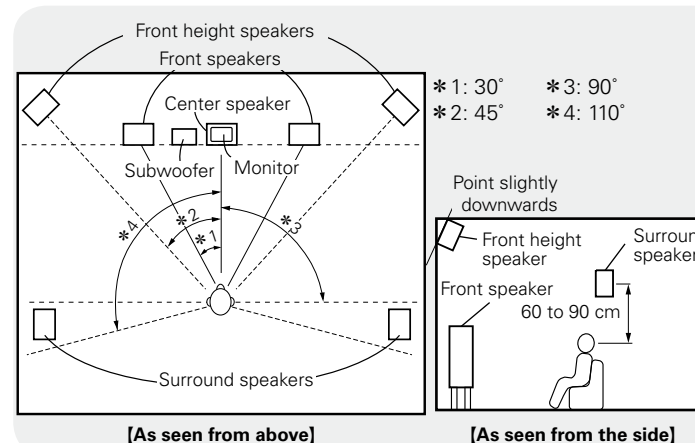
When 5.1ch Connected



When 6.1ch Connected



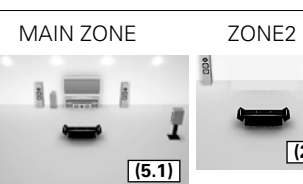
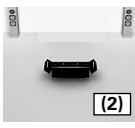
When 7.1ch (Front Height Speaker) Connected



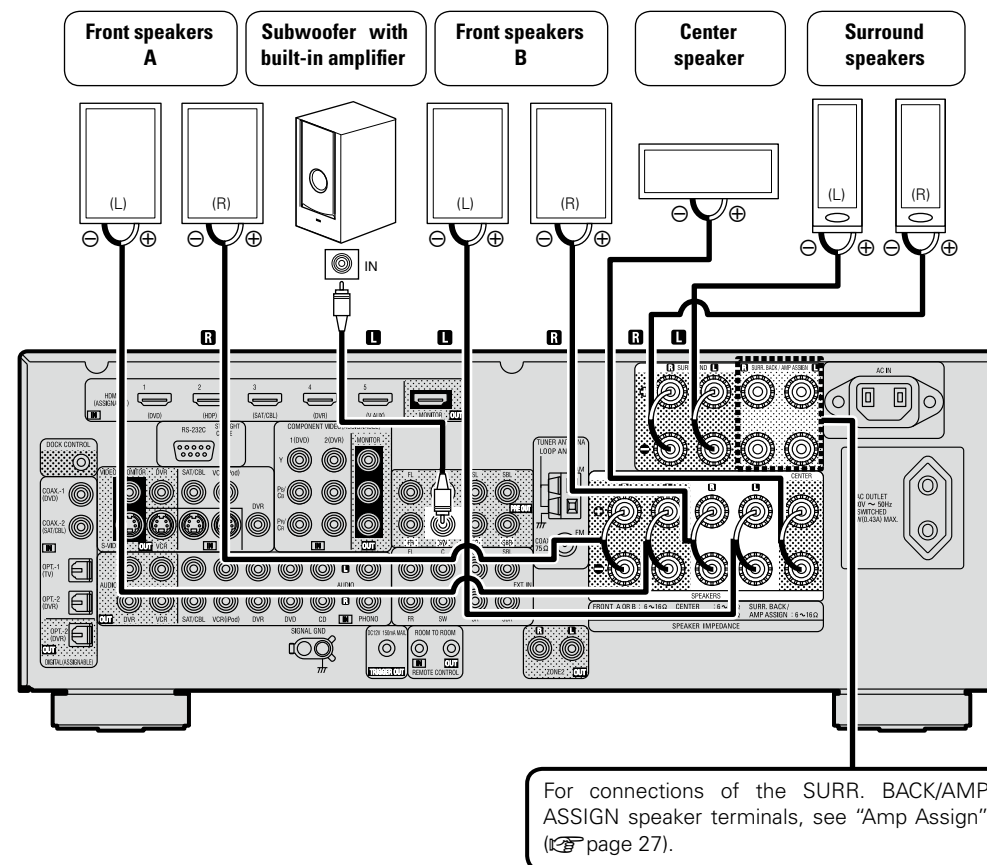
Installing/Setting the Speakers

2 Set the "Amp Assign" Mode According to the Speaker Layout

The signals output from the AVR-2310's SURR. BACK/AMP ASSIGN speaker terminals can be switched to signals of the surround mode being used (☞ page 27 "Amp Assign").

Amp assign mode (☞ page 27)	SURR. BACK/AMP ASSIGN Speaker connections	Example of speaker installation
Normal (Default)	Surround back speakers	 (7.1)
Normal	Surround back speakers ※ Connect to the "L" speaker terminal. ※ Set "S.Back" (☞ page 28) to "1spkr".	 (6.1)
Normal	Not connected ※ Set the "S.Back" setting (☞ page 28) to "None".	 (5.1)
Front Height	Front Height speakers	 (7.1)
Front A Bi-Amp or Front B Bi-Amp	Front A or B speakers ※ For connections, see "About bi-amp connections" (☞ page 12).	 (5.1)
ZONE2	ZONE2 speakers	 (5.1)  (2)

Connecting the Speakers



Protection circuit

If the core wires touch the rear panel and the screws etc., or the ± sides touch each other, the protection circuit will be activated and the power indicator will flash red at intervals of 0.5 secs.

If the protection circuit is activated, the speaker output is isolated, and the power supply goes to the standby state. If the power supply is turned off, after the power supply cord is withdrawn, please confirm that speaker cable and input cable are connected.

Also, if replaying large sound levels by using a speaker having an impedance less than that

specified (eg, 4 Ω/ohms), the temperature will rise, and the protection circuit might be activated. The power supply will go into the standby state, and the power indicator will flash red at 2 second intervals. In this case, please switch off the power supply, and wait until the AVR-2310 has cooled down, and the surrounding ventilation is good.

Even if there are no problems with the surrounding ventilation and connections, in the event of the protection circuit becoming activated, due to thinking that the AVR-2310 has failed, please contact DENON Service center after switching off.

Connecting the Speakers

Connecting the Speaker Cables

Carefully check the left (L) and right (R) channels and + (red) and – (black) polarities on the speakers being connected to the AVR-2310, and be sure to interconnect the channels and polarities correctly.

- 1** Peel off about 10 mm of sheathing from the tip of the speaker cable, then either twist the core wire tightly or terminate it. 
- 2** Turn the speaker terminal counterclockwise to loosen it. 
- 3** Insert the speaker cable's core wire to the hilt into the speaker terminal. 
- 4** Turn the speaker terminal clockwise to tighten it. 



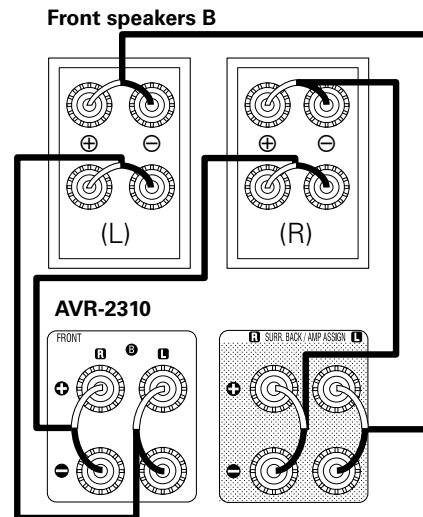
Use speakers with an impedance of 6 to 16 Ω /ohms. When using front A and B speakers simultaneously, use speakers with an impedance of 12 to 16 Ω /ohms.

NOTE

- Connect the speaker cables in such a way that they do not stick out of the speaker terminals. The protection circuit may be activated if the core wires touch the rear panel or if the + and – sides touch each other (☞ “Protection circuit”).
- Never touch the speaker terminals while the power supply is connected. Doing so could result in electric shock.

About bi-amp connections

These connections make for higher quality playback sound with no interference between the signals of the bass and treble units. When the amplifier assignment mode is set to “Front A Bi-Amp” or “Front B Bi-Amp,” connect as shown below. (The illustration shows a connection example for the front B Bi-Amp speakers.)



When in the “Front A Bi-Amp” and “Front B Bi-Amp” modes, the same signals are output from the front speaker terminals and the AMP ASSIGN terminals.

NOTE

- Use speakers compatible with bi-amp connections.
- When making bi-amp connections, be sure to remove the short-circuiting plate or wire between the speaker's woofer and tweeter terminals.

Connecting Devices

Connecting Devices Equipped with HDMI terminals

Important Information

□ About HDMI

“HDMI” is the abbreviation of “High Definition Multimedia Interface”. This interface allows transfer of digital video signals and digital audio signals over a single HDMI cable.

“HDMI”, “HDMI logo” and “High-Definition Multimedia Interface” are trademarks or registered trademarks of HDMI Licensing LLC.

□ Functions usable with HDMI connections

Deep Color

Eliminates on-screen color banding, for smooth tonal transitions and subtle gradations between colors.

x.v.Color

Enables displays with natural, vivid colors. “x.v.Color” is a Sony registered trademark.

Auto Lip Sync (☞ page 30)

HDMI 1.3 incorporates an automatic video/audio syncing capability that allows devices to perform this synchronization automatically with total accuracy.

HDMI control function (☞ page 30, 52)

This function allows you to operate external devices from the receiver and operate the receiver from external devices.

NOTE

- These functions will not work if the device connected to the HDMI terminal does not support Deep Color or x.v.Color signal transfer or the Auto Lip Sync function.
- The HDMI control function may not work depending on the device it is connected to and its settings.
- You cannot operate a TV or Blu-ray Disc player / DVD player that is not compatible with the HDMI control function.

Copyright protection system (HDCP)

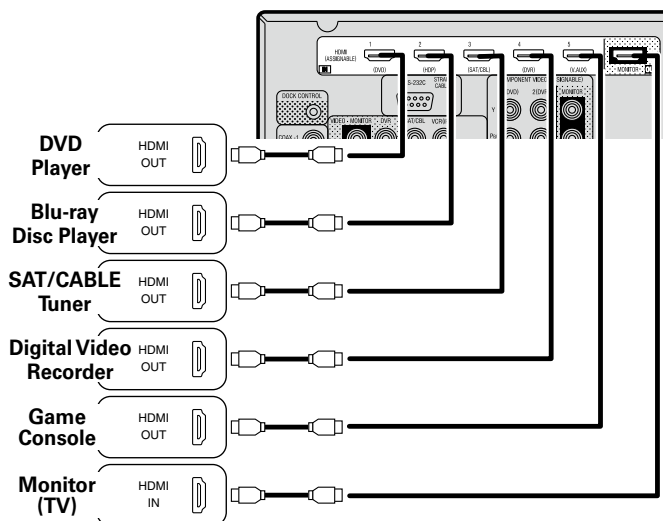
The AVR-2310 supports HDCP (High-bandwidth Digital Contents Protection). HDCP is a copyright protection technology for digital video signals. The devices connected to the AVR-2310 must also support HDCP.

NOTE

When a device that does not support HDCP is connected, video signals are not properly output.

Connections

The AVR-2310 allows connection of inputs from up to 5 HDMI devices and output to 1 TV.



- Use a cable on which the HDMI logo is indicated (a certified HDMI product) for connection to the HDMI connector. Normal playback may not be possible when using a cable other than one on which the HDMI logo is indicated (a non-HDMI-certified product).
- When the AVR-2310 is connected to other devices with HDMI cables, also connect the AVR-2310 and TV using an HDMI cable.
- When a device supporting Deep Color signal transfer is connected, use a cable compatible with HDMI ver.1.3a.
- Video signals are not output if the input video signals do not match the monitor's resolution. In this case, switch the Blu-ray Disc player / DVD player's resolution to a resolution with which the monitor is compatible.

NOTE

- If the menu "HDMI Audio Out" setting (page 30) is set to "Amp", the sound may be interrupted when the monitor's power is turned off.
- The audio signal from the HDMI output terminal (sampling frequency, number of channels, etc.) may be limited by the HDMI audio specifications of the connected device regarding permissible inputs.

Connecting to a device equipped with a DVI-D terminal

When an HDMI/DVI conversion cable (sold separately) is used, the HDMI video signals are converted to DVI signals, allowing connection to a device equipped with a DVI-D terminal.

NOTE

- No sound is output when connected to a device equipped with a DVI-D terminal. Also make the audio connections.
- Signals cannot be output to DVI-D devices that do not support HDCP.
- Depending on the combination of devices, the video signals may not be output.

Settings related to HDMI connections

Set as necessary. For details, see the respective reference pages.

Input terminal assignment (page 35)

Set this when changing the input sources of the different terminals.

HDMI Setup (page 30)

Make these settings related to HDMI input/output signals.

- RGB Range
- Auto Lip Sync
- HDMI Audio Out
- HDMI Control
- Standby Source
- Power Off Control

NOTE

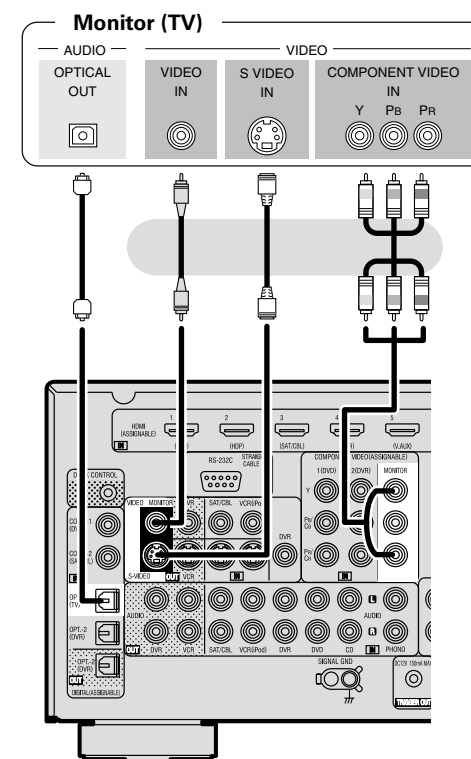
The audio signals output from the HDMI connectors are only the HDMI input signals.

Connecting Devices not Equipped with HDMI terminals

Monitor (TV)

- Select the terminal to use and connect the device.
- For video connections, see "Converting input video signals for output (Video Conversion Function)" (page 9).

For instructions on HDMI connections, see "Connecting Devices Equipped with HDMI terminals" on page 12.



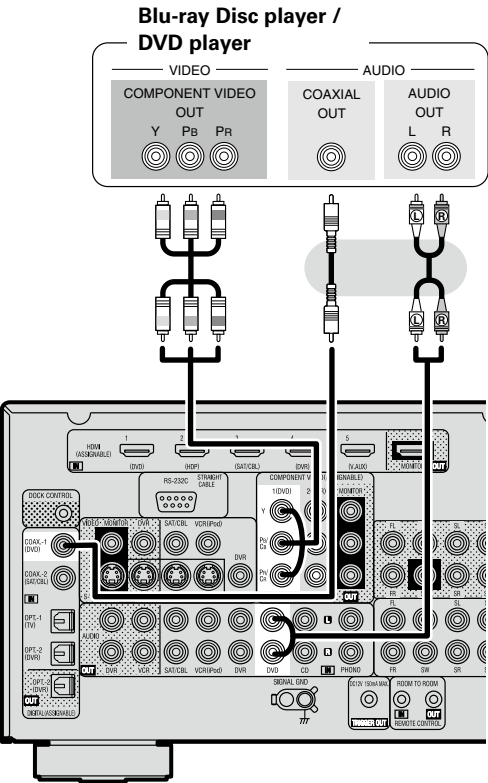
The component video connectors may be indicated differently on your monitor. For details, see the monitor's operating instructions.

Playback Components

Blu-ray Disc player / DVD player

Select the terminal to use and connect the device.

For instructions on HDMI connections, see “Connecting Devices Equipped with HDMI terminals” on page 12.



Set as necessary

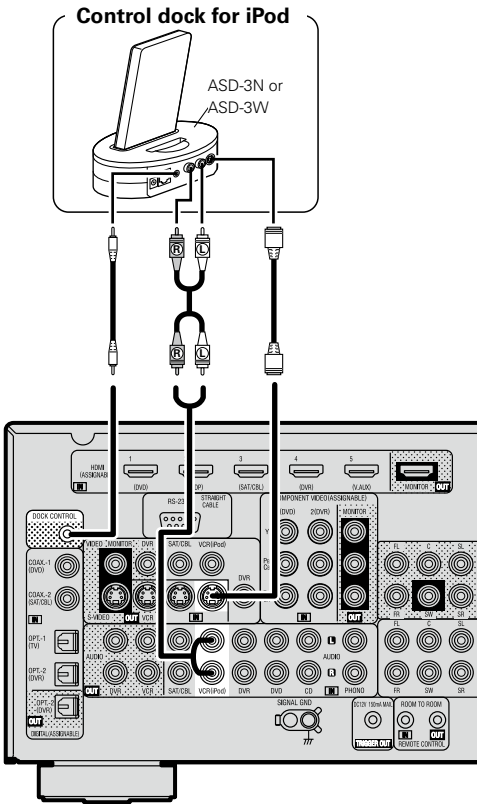
Set this to change the input signal to which the input source is assigned.
“Input Assign” (page 35)

NOTE

When connected to a Blu-ray Disc player, and playing Dolby TrueHD, DTS-HD, Dolby Digital Plus, connect the HDMI.

Control dock for iPod®

Use a DENON control dock for iPod (ASD-1R, ASD-11R, ASD-3N or ASD-3W sold separately) to connect the iPod to the AVR-2310. For instructions on the control dock for iPod settings, refer to the control dock for iPod’s operating instructions.



Set as necessary

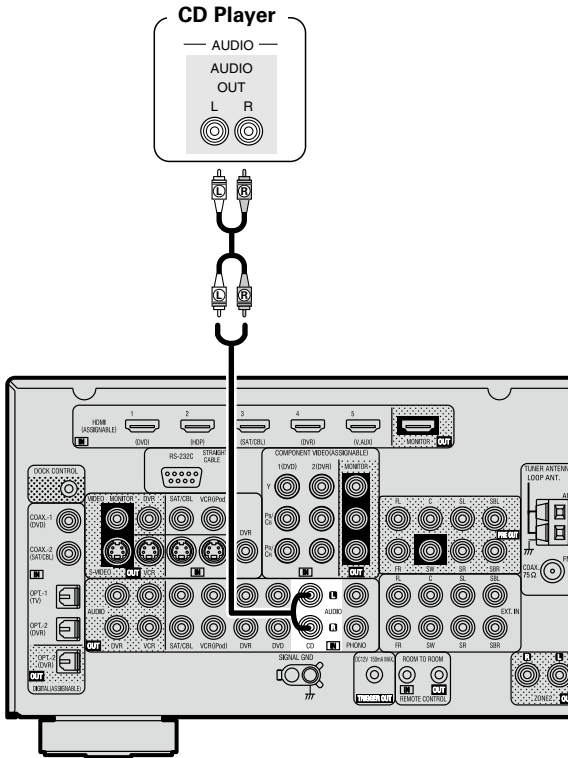
Set this to assign the iPod to a terminal other than “VCR (iPod)”.
“iPod Dock” (page 35)



With the default settings, the iPod can be used connected to the VCR (iPod) connector.

Connecting Devices not Equipped with HDMI terminals

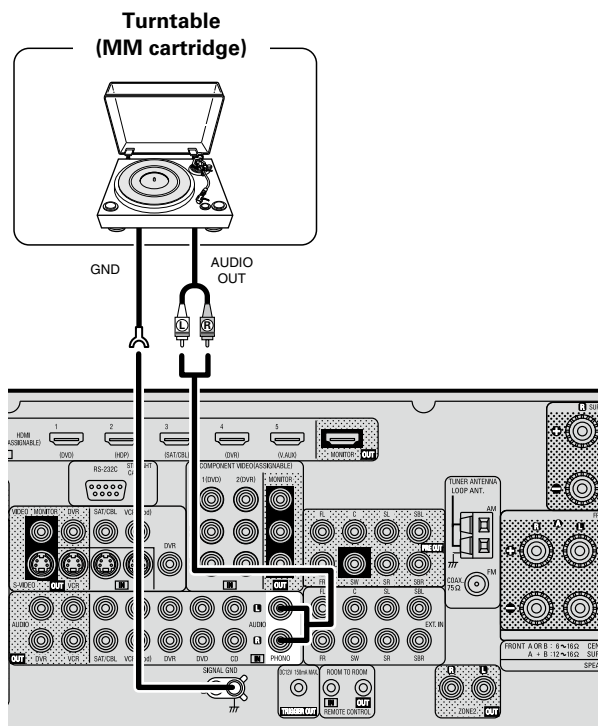
CD Player



Set as necessary

Set this to change the input signal to which the input source is assigned.
“Input Assign” (page 35)

Record Player



- The AVR-2310 is compatible with record players with an MM cartridge. When you connect to a record player with an MC cartridge, use a commercially available MC head amp or a step-up transformer.
- When you increase the volume without connecting the record player, there may be “booming” noise from the speakers.

NOTE

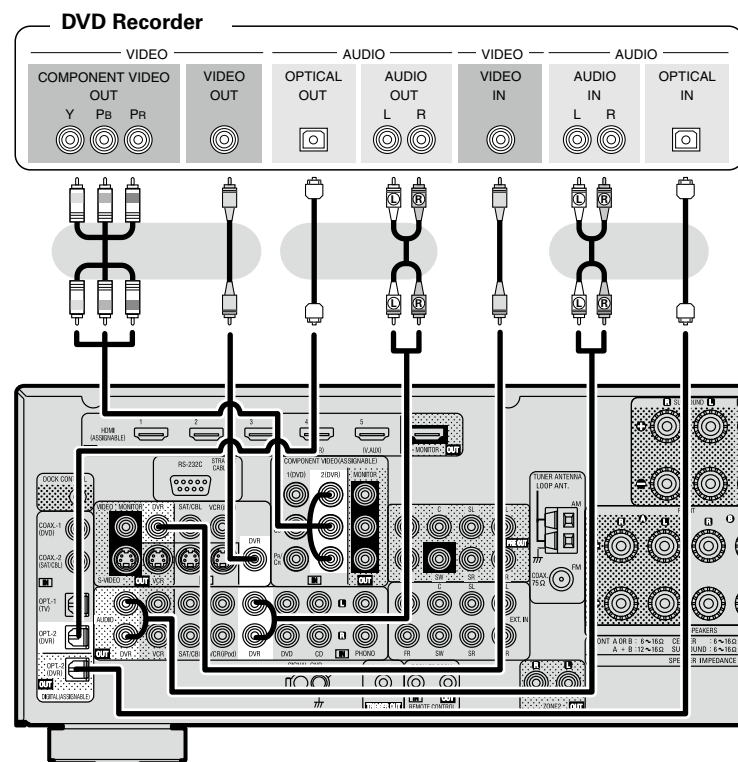
The SIGNAL GND terminal of the AVR-2310 is not a safety ground connection. Connect it to reduce noise when noise is excessive. Note that depending on the record player, connecting the ground line may have the reverse effect of increasing noise. In this case, it is not necessary to connect the ground line.

Recording Components

Digital Video Recorder

Select the terminal to use and connect the device.

For instructions on HDMI connections, see “Connecting Devices Equipped with HDMI terminals” on page 12.



Set as necessary

Set this to change the input signal to which the input source is assigned.

“Input Assign” (ⓘ page 35)

NOTE

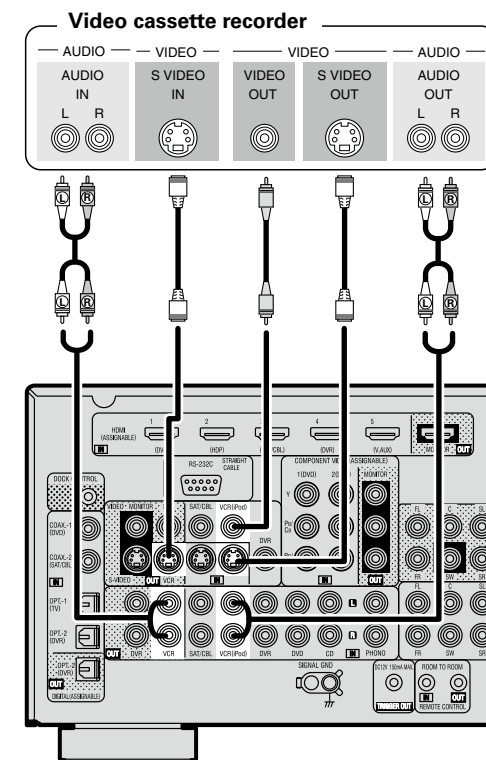
- To record video signals through the AVR-2310, use the same type of video cable for connection between the AVR-2310 and the player as the cable used for connection between the AVR-2310 and the recorder.
- Do not connect the output of the component connected to the AVR-2310's OPTICAL2 output connector to any input connector other than OPTICAL2.
- Digital signals are not output from the analog REC OUT connector.

Connecting Devices not Equipped with HDMI terminals

Video Cassette Recorder

Select the terminal to use and connect the device.

For instructions on HDMI connections, see “Connecting Devices Equipped with HDMI terminals” on page 12.



Set as necessary

Set this to change the input signal to which the input source is assigned.

“Input Assign” (ⓘ page 35)

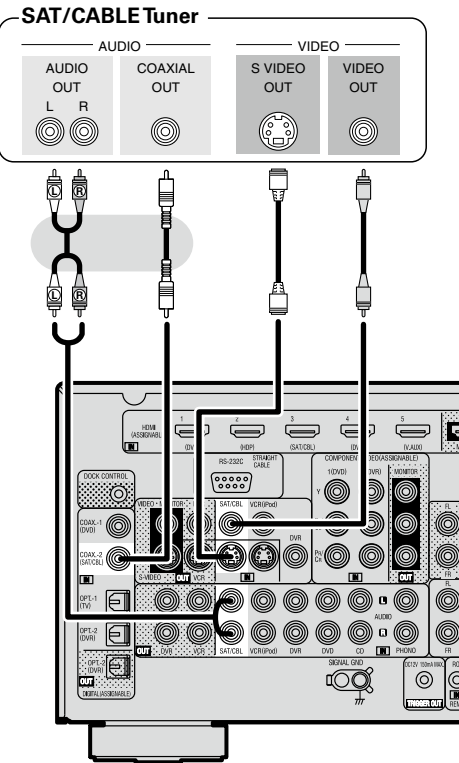
NOTE

- To record video signals through the AVR-2310, use the same type of video cable for connection between the AVR-2310 and the player as the cable used for connection between the AVR-2310 and the recorder.
- Digital signals are not output from the analog REC OUT connector.

SAT/CABLE Tuner

Select the terminal to use and connect the device.

For instructions on HDMI connections, see “Connecting Devices Equipped with HDMI terminals” on page 12.

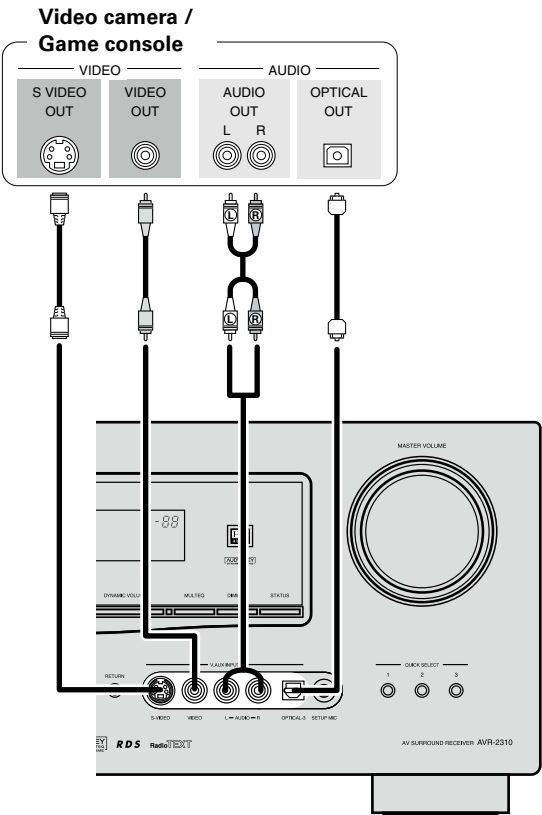


Set as necessary

Set this to change the input signal to which the input source is assigned.
“Input Assign” (page 35)

Other Devices

Video Camera / Game Console



Set as necessary

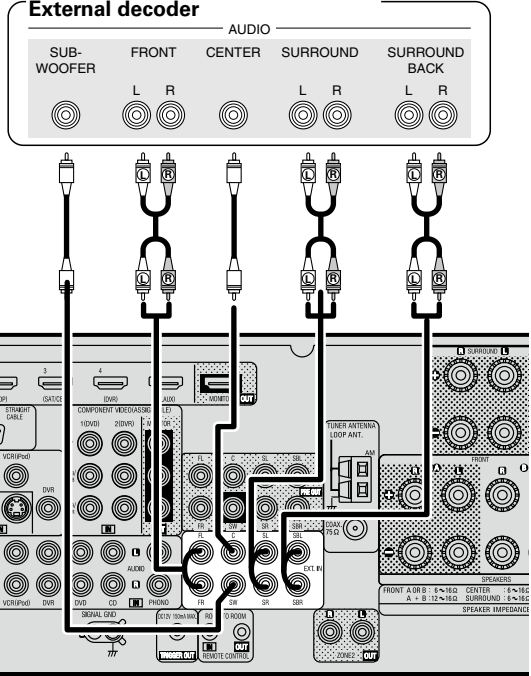
Set this to change the input signal to which the input source is assigned.
“Input Assign” (page 35)

Connecting Devices not Equipped with HDMI terminals

Component with Multi-channel Output connectors

The video signal can be connected in the same way as a Blu-ray Disc player / DVD player (page 14).

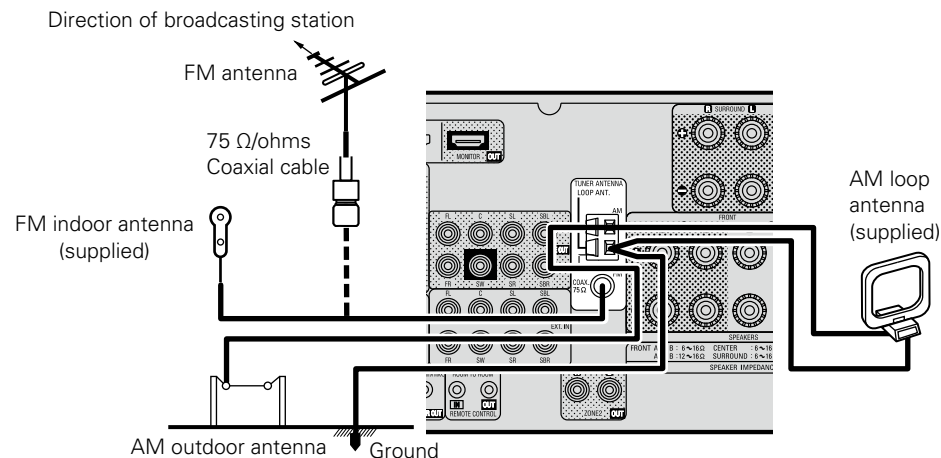
Blu-ray Disc player / DVD player / External decoder



Set as necessary

To play analog signals input from the external input (EXT. IN) terminal, set “Input Mode” (page 37) on the menu to “EXT. IN”.
“EXT. IN” can also be selected with INPUT MODE.

Antenna terminals



AM loop antenna assembly

- 1** Remove the vinyl tie and take out the connection line.
- 2** Bend in the reverse direction.
- 3-1** With the antenna on top of any stable surface.
- 3-2** With the antenna attached to a wall.

Connection of AM antennas

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

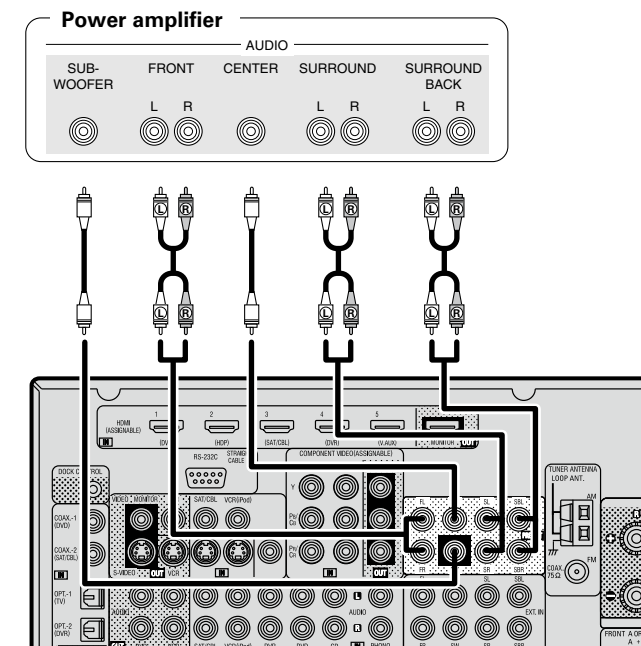
NOTE

- 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.

Connecting Devices not Equipped with HDMI terminals

External Power Amplifier

- Select the terminal to use and connect the device.
- Connect when using an external power amp or an amp you already have.



- When using just one surround back speaker, connect it to the left channel (L).
- Use the volume control on the subwoofer to control subwoofer volume.
- If the subwoofer volume sounds low, use the volume control provided on the subwoofer to adjust the volume.

NOTE

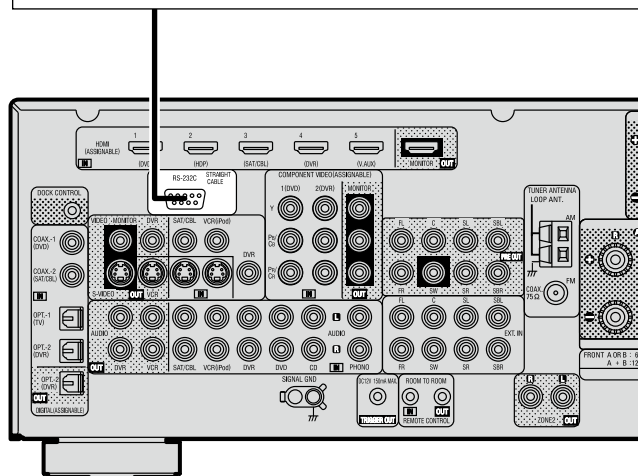
- When speakers have been connected to PRE OUT terminals, do not connect the speakers to the speaker terminals.
- The channel output from the PRE OUT SBL and SBR terminals changes depending on the "Amp Assign" setting (page 27).

External Controller

RS-232C connector

When you connect an external control device, you can control the AVR-2310 with the external control device. Perform the operation below beforehand.

- 1 Turn on the AVR-2310's power.
- 2 Turn off the AVR-2310's power from the external controller.
- 3 Check that the AVR-2310 is in the standby mode.



Set as Necessary

Set this to use the RS-232C connector for the DENON RF remote controller.
"232C Port" (page 33)

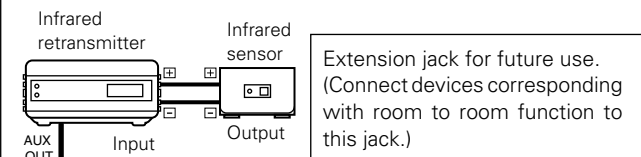


When using the AVR-2310 in combination with the DENON RF remote controller (RC-7000CI, sold separately) or RF remote receiver (RC-7001RCI, sold separately), two-way communication is enabled. The AVR-2310's status information as well as iPod and Internet audio music files can be browsed watching the RF Remote Controller's display. For details, refer to the operating instructions of the respective devices.

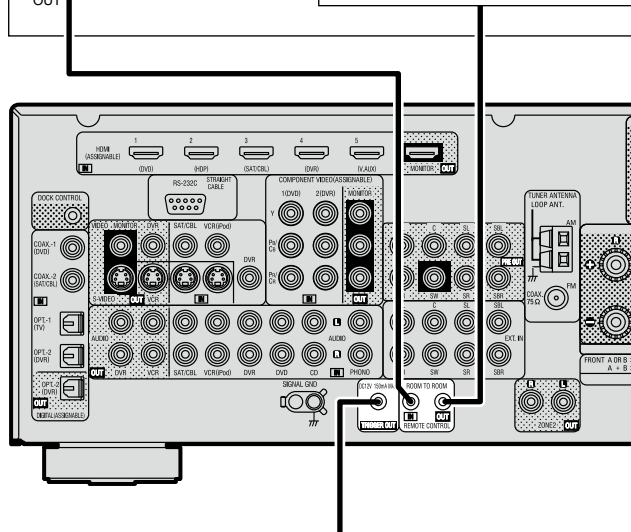
NOTE

On the GUI menu, when setting "232C Port" to "2Way Remote", you cannot use the RS-232C connector as an external controller (page 33).

REMOTE CONTROL jacks



Extension jack for future use.
 (Connect devices corresponding with room to room function to this jack.)



TRIGGER OUT jacks

The TRIGGER OUT output terminal outputs a maximum 12 V/150 mA electrical signal. When a device with TRIGGER IN terminal is connected via a monaural mini-plug, the connected device's power on/standby can be controlled through linked operation to the AVR-2310.

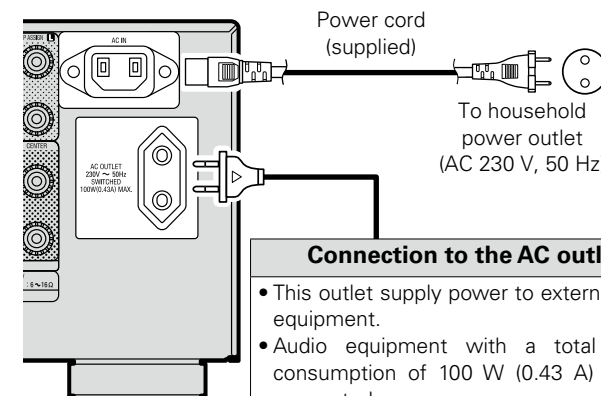
Set as Necessary

Set to change the conditions for linked operation via the TRIGGER OUT terminal.
"Trigger Out" (page 33)

Connecting Devices not Equipped with HDMI terminals

Connecting the Power Cord

Wait until all connections have been completed before connecting the power cord.



Connection to the AC outlet

- This outlet supply power to external audio equipment.
- Audio equipment with a total power consumption of 100 W (0.43 A) can be connected.
- The power supply turns on and off together with the ON / STANDBY on the main unit. When set to "ON", power is supplied from the outlet. When set to "STANDBY", no power is supplied.

NOTE

When "HDMI Control" (page 30) is set to "ON", power is supplied constantly to the AC outlet (UNSWITCHED).

NOTE

- Insert the AC plugs securely. Incomplete connections could cause noise.
- Only use the AC outlet to plug in audio equipment. Do not use them as power supplies for hairdryers or anything other than audio equipment.

Once Connections are Completed

Turning the Power On

1 Press **OFF**.

The power indicator lights red and the power is set to the standby mode.

2 Press **ON / SOURCE**.

The power indicator flashes green and the power turns on.

※ Also press **1** **2** **3** when in standby mode, the power turns on.

When has been pressed, the input source set with the is set. If a **1** **2** **3** has been pressed, the input source stored in the memory for the quick select function is set (page 53 “Saving frequently used settings (Quick Select Function)”).



This operation can also be performed by pressing a **1** **2** **3** on the main unit.

Turning the Power Off

1 Press **OFF**.

The power is set to the standby mode.

2 Press **ON / SOURCE**.

The power indicator turns off, and so does the power.

NOTE

- Power continues to be supplied to some of the circuitry even when the power is in the standby mode. When leaving home for long periods of time or when traveling, either press **OFF** to turn off the power, or unplug the power cord from the power outlet.
- When the ZONE2 power is switched on, and you want to switch off the MAIN ZONE power, press .

Selecting the Input Source

There are three ways to select the input source, as described below.

- ① Selecting the input source using the Source Select menu (GUI menu)
- ② Selecting the input source using the SOURCE SELECT button (Remote control unit)
- ③ Selecting the input source using the (Main unit)

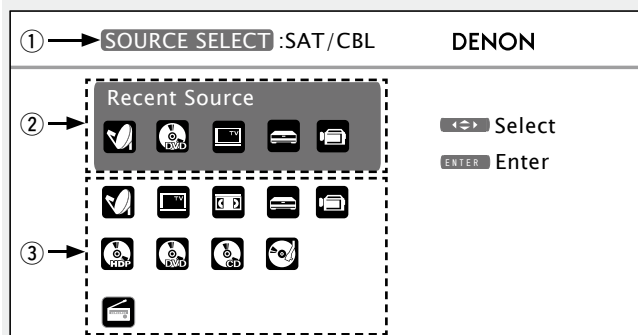
① Using the Source Select Menu

The input source can also be selected using the source selection menu.

1 Set to “MAIN/TV” to “MAIN”.

2 Press .

Display the “Source Select” menu.



- ① **Input Source** : The name of the highlighted input source is displayed.
- ② **Recently used sources** : The currently selected input source is highlighted.
- ③ Icons for the input sources in the different categories are displayed.

Video : (SAT/CBL), (TV), (VCR), (DVR), (V.AUX)

Player : (HDP), (DVD), (CD), (PHONO)

Tuner : (TUNER)

iPod : ※ “” is displayed when using a Control Dock for iPod.

3 Use **to select the input source icon, then press** .

The input source is set and the source selection menu is turned off.

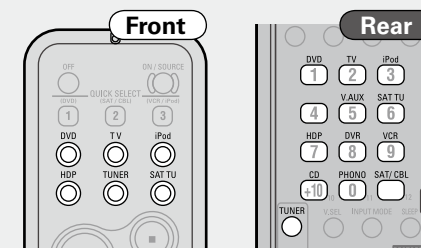


- Use the device selection buttons on the remote control unit to set the device to be operated beforehand.
- Input sources that are not going to be used can be set ahead of time. Make this setting at “Source Delete” (page 32).
- To turn off the source selection menu without selecting an input source, press again.

② Operating on the Remote Control Unit

1 Set to “MAIN/TV” to “MAIN”.

2 Press the SOURCE SELECT button (page 7).
The desired input source can be selected directly.



③ Operating on the Main Unit

Turn .

※ If “Tuning Preset” mode is selected for the input source, press before turning



Settings



With the AVR-2310, settings and operations for most functions can be performed by operating while looking at the menus displayed on the monitor screen.

Menu Map

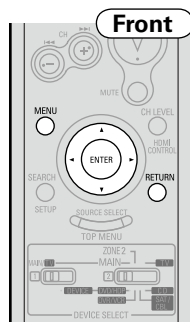
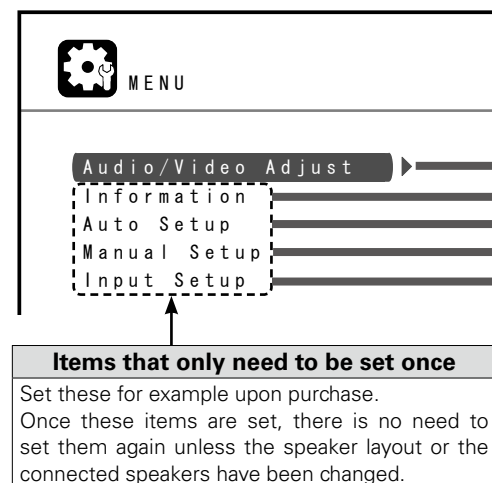


Operations

- 1** Press . The menu is displayed.
- 2** Press to select the item you want to set, then press or .
- 3** Press to select the item you want to set, then press or .
- 4** Use to select the item, then press to set.
 ※ To return to the previous item, press or .
 ※ Select "Default", then press to reset to the default setting.
- 5** Press . The settings made up to that point are entered and the settings menu screen turns off.

Setting menus

Setting items	Detailed items	Description	Page
Audio/Video Adjust Adjust various audio/video parameters.	Audio Adjust	Adjust various audio parameters.	46
	Picture Adjust	Adjust various video parameters.	51
Information Show information about receiver settings, input signals, etc.	Status	Shows information about current settings.	51
	Audio Input Signal	Shows information about audio input signals.	51
	HDMI Information	Displays the HDMI input/output signals and TV information.	51
	Auto Surround Mode	Displays the settings stored for the auto surround mode.	51
	Quick Select	Displays the settings stored for the Quick Select function.	51
Auto Setup Makes the optimum speaker settings and corrects for the acoustic characteristics of the room.	Preset Channel	Shows information about preset channels.	51
	Audyssey™ Auto Setup	Makes the optimum settings for the speakers being used automatically.	22
Manual Setup Use this to make various types of detailed settings.	Parameter Check	Check Audyssey Auto Setup measurement results. This item is only displayed after Audyssey Auto Setup procedure has been performed.	26
	Speaker Setup	Sets the speaker size and distance, the channel level, etc.	27
Input Setup Use this to make settings related to playing input sources.	HDMI Setup	Make settings for HDMI video/audio output.	30
	Audio Setup	Make settings for audio playback.	30
	ZONE2 Setup	Make settings for audio playback in a ZONE2 system.	31
	Option Setup	Make various other settings.	32
	Input Assign	Change input connector assignment.	35
	Video	Makes the video settings.	36
	Input Mode	Sets the audio input mode and decode mode.	37
	Rename	Change the display name for this source.	37
	Source Level	Adjust the playback level of the audio input.	38
	iPod Playback Mode	Make settings for iPod playback.	38
	Auto Preset	Use the auto preset function to program radio stations.	38
	Preset Skip	Set the preset memories that you do not want to display when tuning.	38
	Preset Name	Assign name to a preset memory.	38

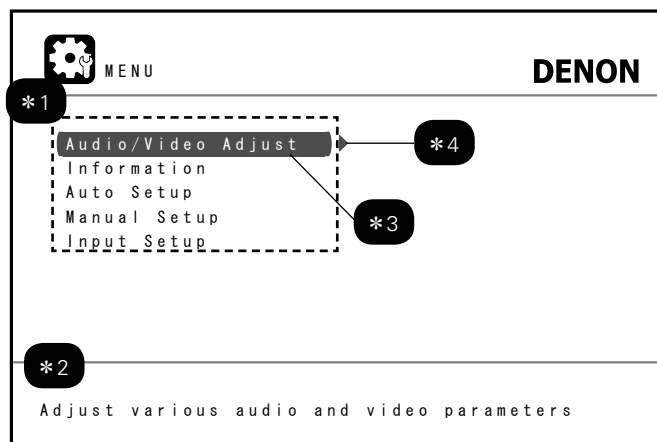


Examples of GUI Menu Screen Displays



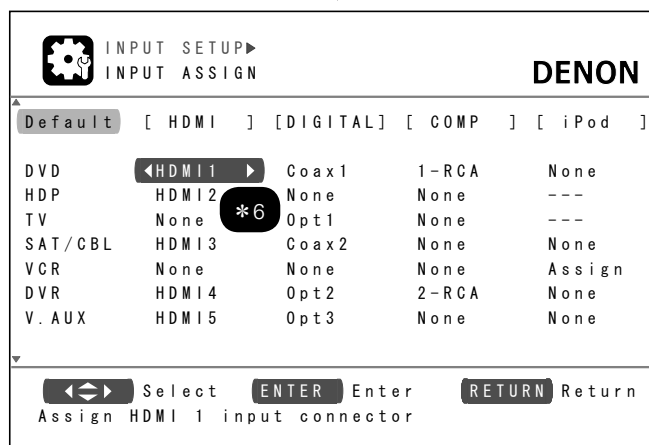
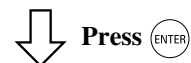
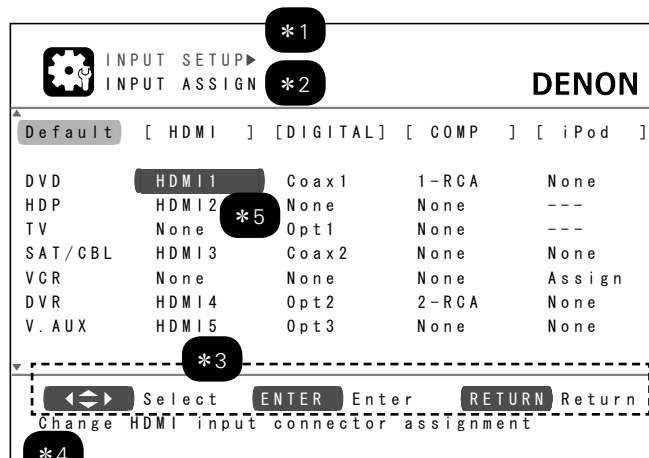
Typical examples are described below.

[Example 1] Top Menu Display



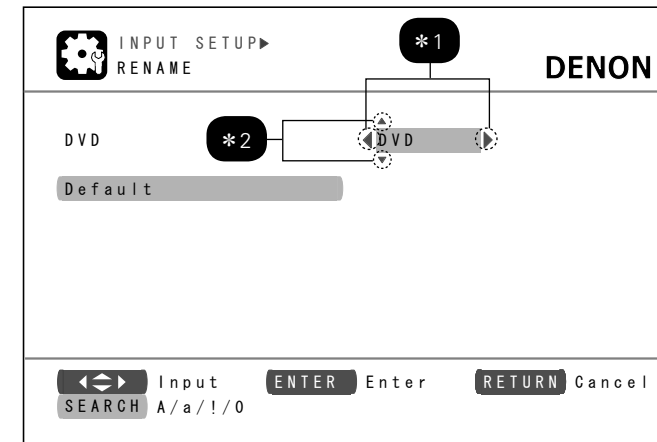
- *1 : The menu items are displayed here.
- *2 : Guide text for the currently selected setup item.
- *3 : The selected line is displayed here.
The currently selected item is displayed on the display.
Use $\Delta \nabla$ to move to the item you want to set.
- *4 : Switch to the next item.
Use $\triangleright$ or ENTER to switch.

[Example 2] Display when changing settings



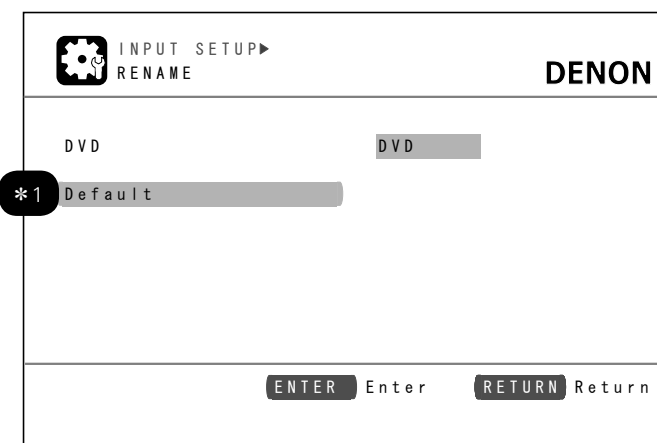
- *1 : History item.
- *2 : Currently selected setup item.
- *3 : Operation button guidance.
- *4 : Guide text for the currently selected setup item.
- *5 : Use $\Delta \nabla \triangleleft \triangleright$ to move to the item you want to set.
- *6 : $\triangleleft \triangleright$ is displayed at the sides of items whose setting can be changed.
Use $\triangleleft \triangleright$ to change to the desired setting.

[Example 3] Display when inputting characters



- *1 : When $\triangleleft \triangleright$ is pressed, the cursor moves to the left or right.
- *2 : When $\Delta \nabla$ is pressed at the position at which you want to input the character, the character is input.

[Example 4] Display when resetting



- *1 : Press ∇ to select "Default", then press ENTER to set.



Making the Optimum Settings for the Connected Speakers Automatically (Audyssey™ Auto Setup)

The acoustic characteristics of the connected speakers and listening room are measured and the optimum settings are made automatically.

Audyssey Auto Setup Flow

1 Connect the included Setup Microphone

(page 23)



2 Audyssey Auto Setup Preparations

(page 23)

Changing the amplifier assignment (Amp Assign)

(page 23)

Set the channel to be measured (Channel Select)

(page 24)



3 Performing "Audyssey Auto Setup" Procedure

(page 24)

Check Audyssey Auto Setup Measurement Results (Parameter Check)

(page 26)

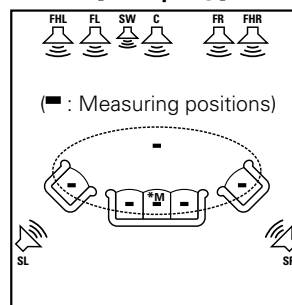
Important Information

Audyssey MultEQ® automatically measures the acoustical problems in the listening environment to create the best audio experience for your home theater.

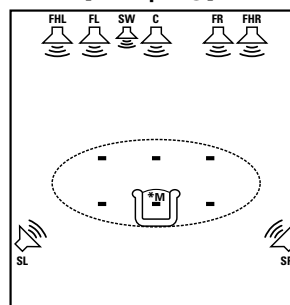
- When "Audyssey™ Auto Setup" is performed, MultEQ®, Dynamic EQ™ and Dynamic Volume™ functions (page 48) are enabled.
- Use the included setup microphone (DM-A409) to perform "Audyssey Auto Setup".
- Measurements are performed by placing the calibrated microphone successively at multiple positions throughout the listening area as shown in **[Example ①]**. For best results, it is strongly recommended to measure 6 positions so that the measurements have the proper spatial weighting. Even if the listening environment is small as shown in **[Example ②]**, measuring at multiple points throughout the listening environment results in more effective correction.

When using Front Height Speakers

[Example ①]

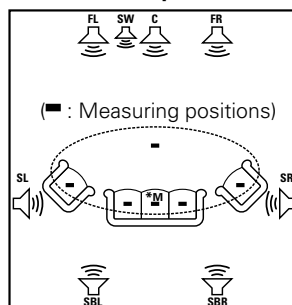


[Example ②]

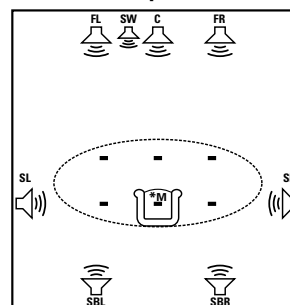


When using Surround Back Speakers

[Example ①]



[Example ②]



- FHL** : Front height speaker (L)
- FL** : Front speaker (L)
- SW** : Subwoofer
- C** : Center speaker
- FR** : Front speaker (R)
- FHR** : Front height speaker (R)
- SR** : Surround speaker (R)
- SBR** : Surround back speaker (R)
- SBL** : Surround back speaker (L)
- SL** : Surround speaker (L)

About the main listening position (*M)

The main listening position refers to the most central position where one would normally sit within the listening environment. MultEQ uses the measurements from this position to calculate speaker distance, level, polarity, and the optimum crossover value for the subwoofer.

NOTE

- Loud test sounds may be played during "Audyssey Auto Setup". This is part of normal operation. If there is background noise in room, these test signals will increase in volume.
- Do not stand between the speakers and setup microphone or allow obstacles in the path while the measurements are being made. This will cause inaccurate readings.
- Make the room as quiet as possible. Background noise can disrupt the room measurements. Close windows, silence cell phones, televisions, radios, air conditioners, fluorescent lights, home appliances, light dimmers, or other devices as measurements may be affected by these sounds. Cell phones should be placed away from all audio electronics during the measurement process as Radio Frequency Interference (RFI) may cause measurement disruptions (even if the cell phone is not in use).

1 Connect the included Setup Microphone

NOTE

- Do not disconnect the setup microphone until "Audyssey Auto Setup" is completed.
- When using headphones, unplug the headphones before starting "Audyssey Auto Setup".

1 Check the speaker connections.

(☞ page 11 "Connecting the Speakers")

2 Turn on the power of the TV and subwoofer.

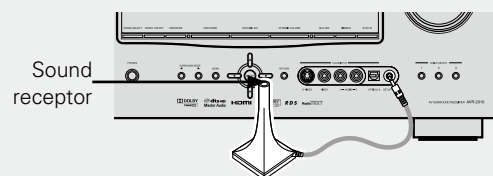
Set the TV's input to the AVR-2310.

3 Turn on the AVR-2310's power.

(☞ page 19 "Turning the Power On")

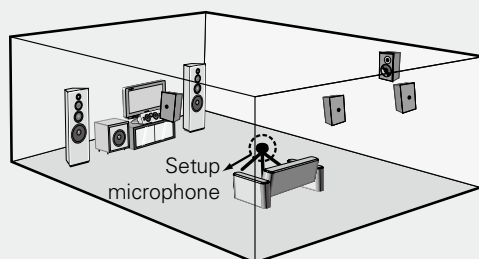
4 Connect the included calibrated setup microphone to the SETUP MIC jack on the main unit.

Audyssey Auto Setup screen appears automatically.



5 Mount the setup microphone on a tripod or stand and install it at the main listening position.

When installing the setup microphone, adjust its height so that the section where the sound is received is at the height of the ears during listening.



NOTE

- Do not hold the microphone in your hand during measurements.
- Avoid placing the microphone close to a seat back or wall as sound reflections may give inaccurate results.

When using a subwoofer with adjustable gain and crossover frequency

When using a subwoofer, make the following settings before starting "Audyssey Auto Setup":

When using a subwoofer with a direct mode

Set the direct mode to "On" and disable the volume adjustment and crossover frequency setting.

When using a subwoofer without a direct mode

Make the following settings:

- Volume : "12 o'clock position"
- Crossover frequency : "Maximum/Highest Frequency"
- Low pass filter : "Off"
- Standby mode : "Off"

2 Audyssey Auto Setup Preparations

around items indicate the default setting.

STEP1 Preparation

Perform the following settings if adjustments, etc., are required for the speaker environment you're using.

If you do not need to perform the following settings, or have already completed them, select "Auto Setup Start" and then press **ENTER**. Proceed to "[STEP2]".

Changing the amplifier assignment (Amp Assign)

The signals output from the AVR-2310's SURR. BACK/AMP ASSIGN speaker terminals can be switched to signals of the surround mode being used.

1 Press $\Delta \nabla$ to select "Amp Assign", then press **ENTER**.



2 Press $\triangleleft \triangleright$ to select Amp Assign Mode, then press **RETURN**.

Normal

: The sound of the surround back channel is output from the speakers connected to the SURR. BACK/AMP ASSIGN terminals.

ZONE2

: If the ZONE2 power is on, the sound of the ZONE2 channel is output from the speakers connected to the SURR. BACK/AMP ASSIGN terminals.

Front A Bi-Amp

: The sound of the front A bi-amp channel is output from the speakers connected to the SURR. BACK/AMP ASSIGN terminals.

Front B Bi-Amp

: The sound of the front B bi-amp channel is output from the speakers connected to the SURR. BACK/AMP ASSIGN terminals.

Front Height

: The sound of the front height channel is output from the speakers connected to the SURR. BACK/AMP ASSIGN terminals.

To cancel Audyssey Auto Setup

To cancel, press **RETURN** then use $\triangleleft \triangleright$ to select "Yes".

Set the channel to be measured (Channel Select)

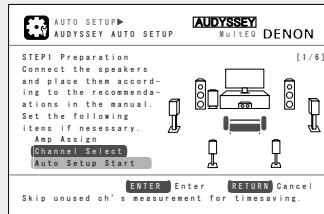
• Front

The front speaker to be measured can be selected ahead of time here.

• Subwoofer, Surround Back

If you set the channels you will not use beforehand, those channels will not be measured. Therefore, you can save an amount of time commensurate with that which would have been taken to measure those channels.

1 Press $\Delta \nabla$ to select “Channel Select”, then press ENTER .



2 Press $\Delta \nabla$ to select a channel, press $\triangleleft \triangleright$ to select the item, and then press RETURN .

□ Front

A : The sound is output from front speakers A when measuring the front speakers.

B : The sound is output from front speakers B when measuring the front speakers.

A + B : The sound is output simultaneously from front speakers A and B when measuring the front speakers.

□ Subwoofer, Surround Back

Measure : Measure the selected channel.

Skip : Skip the selected channel and do not measure.

※ To cancel, press RETURN .



When “Amp Assign” is set to “Normal”, only then is “Surround Back” displayed.

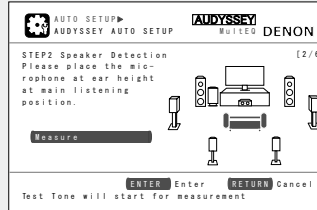
3 Performing “Audyssey Auto Setup” Procedure

- Audyssey Auto Setup detects the presence of each speaker and automatically calculates the speaker size, channel level, distance, and optimal crossover frequency setting. Audyssey MultEQ® corrects acoustical distortions within the listening area.
- Once started, MultEQ will play a series of test tones through each speaker.
- Before starting, connect and position all of your speakers.

STEP2 Speaker Detection

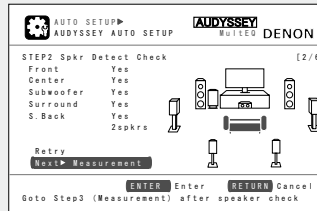
1 Press $\Delta \nabla$ to select “Auto Setup Start”, then press ENTER .

2 Select “Measure” and then press ENTER .



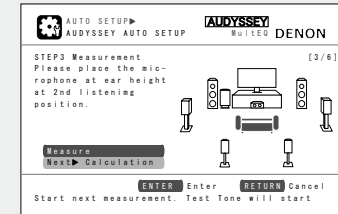
3 Once all the speakers have been detected, check the results of detection of the connected speakers.

4 Press $\Delta \nabla$ to select “Next Measurement”, then press ENTER .



STEP3 Measurement

5 Once the screen on the right appears, move the setup microphone to the second position, use $\Delta \nabla$ to select “Measure”, then press ENTER .



Measurements for the second position begin.

※ To skip this step, select “Next ► Calculation” and proceed to STEP4.

6 Perform Step 5 repeatedly for the 3rd, 4th, 5th, and 6th measurements.

Once measurements for the sixth position are completed, “Measurements finished.” is displayed.

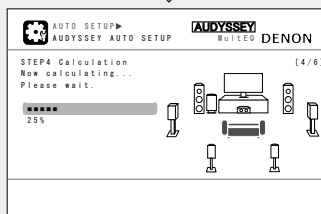
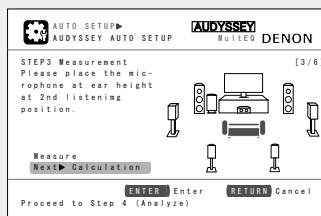
※ Measure at a total of six positions, including the main listening position and positions around it. It is possible to stop the settings with five positions or fewer, but for better results we recommend measuring at six positions.

STEP4 Calculation

7 Once measurements are finished, use $\Delta \nabla$ to select “Next ► Calculation”, then press ENTER .

Analysis begins.

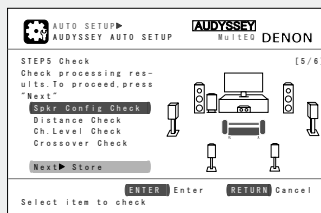
※ Analysis takes several minutes to complete. The time required for this analysis depends on the number of speakers connected. The greater the number of speakers connected, the longer analysis will take.

**STEP5 Check**

8 Use $\Delta \nabla$ to select the item you want to check, then press ENTER .

The measurement result confirmation screen is displayed.

※ Subwoofer or other speakers may be set to a value that does not correspond to the actual distance.



9 Press RETURN .

This returns you to analysis results items, so repeat step 8.

10 Press ∇ to select “Next ► Store”, then press ENTER .

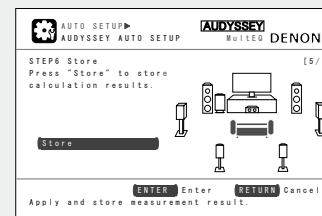
STEP6 Store

11 Select “Store”, then press ENTER .

“Now Storing... Please wait.” is displayed on the GUI menu while the results are being stored.

NOTE

Do not turn the power off while the settings are being stored.



12 Disconnect the setup microphone from the AVR-2310.

13 Select “Exit” and then press ENTER .

Exiting the GUI Menu

Press MENU while the GUI menu is displayed.

The GUI menu display disappears.

NOTE

Do not change the speaker connections or subwoofer volume, or speaker locations after making measurements. If changes are necessary, make the changes and use Audyssey™ Auto Setup once again for an updated EQ solution.



- If the result differs from the actual connection status or an error message appears, use $\Delta \nabla$ to GUI menu “Retry” and then press ENTER to repeat the measurement.
- If the result still differs from the actual connection status after re-measurement or the error message still appears, it is possible that the speakers are not connected properly. Turn the AVR-2310 off, check the speaker connections and repeat the measurement process from the beginning.
- For instance, If the location or direction of a speaker is altered, Audyssey Auto Setup should be performed again to ensure the correct EQ solution for the new room configuration.

Error Messages

If “Audyssey Auto Setup” could not be completed due to speaker installation, the measuring environment, etc., an error message is displayed. If this happens, check the relevant items, be sure to take the necessary measures, then perform “Audyssey Auto Setup” over again.

NOTE Be sure to turn the power off before checking the speaker connections.

Error messages (examples)	Cause	Measures
	- Included setup microphone is not connected. - Not all speakers could be detected. - The front L speaker was not properly detected.	- Connect the included setup microphone to the SETUP MIC jack on the main unit. - Check the speaker connections.
	- Too much noise in the room for accurate measurements to be made. - Speaker or subwoofer sound is too low for accurate measurements to be made.	- Either turn off any device generating noise or move it away. - Try again when the surroundings are quieter. - Check the speaker installation and the direction in which the speakers are facing. - Adjust the subwoofer's volume.
	- Displayed speaker could not be detected. - The front R speaker were 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, but the surround speaker was not detected.	Check the connections of the displayed speaker.
	Displayed speaker connected with the polarities reversed.	- Check the polarities of the displayed speaker. - For some speakers, this error message may be displayed even if the speaker is properly connected. If you are sure that the wiring is correct, press $\Delta \nabla$ to select “Skip,” then press $\bigcirc$.

☐ To perform “Audyssey Auto Setup” again

Press $\Delta \nabla$ to select “Retry,” then press $\bigcirc$.

☐ To cancel Audyssey Auto Setup

Press $\bigcirc$, the “Cancel auto setup?” prompt is displayed.
Press $\Delta \nabla$ and select “Yes,” then press $\bigcirc$.

Check Audyssey Auto Setup Measurement Results (Parameter Check)

This is displayed after “Audyssey Auto Setup” is completed.

1 Press $\Delta \nabla$ to select “Parameter Check”, then press $\triangleright$ or $\bigcirc$.

2 Use $\Delta \nabla$ to select the item you want to check, then press $\triangleright$ or $\bigcirc$.

Speaker Config. Check	: Check the speaker configuration
Distance Check	: Check the distance
Channel Level Check	: Check the channel level
Crossover Freq. Check	: Check the crossover frequency
EQ Check	: Check the equalizer

3 Use $\Delta \nabla$ to switch the display between the different speakers.

4 Press $\bigcirc$.
The confirmation screen reappears. Repeat steps 2 and 3.

Even if the settings are changed after “Audyssey Auto Setup,” Audyssey Auto Setup settings can be restored by selecting “Restore” then pressing $\bigcirc$.



Making detailed settings (Manual Setup)

Use this procedure to change "Audyssey™ Auto Setup" settings or to change the various audio, video and display settings.

The set can be used without changing these settings. Make these settings as necessary. For a description of "Menu Map" and operating instructions, see page 20.

Items that can be set with the Manual Setup procedure



Making the speaker settings (Speaker Setup) page 27



Making the HDMI settings (HDMI Setup) page 30



Making the audio settings (Audio Setup) page 30



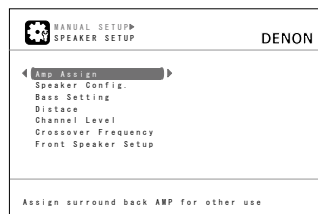
Making the ZONE2 settings (ZONE2 Setup) page 31



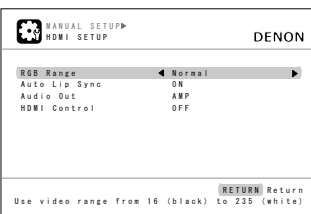
Making other settings (Option Setup) page 32

Examples of Menu Screen Displays

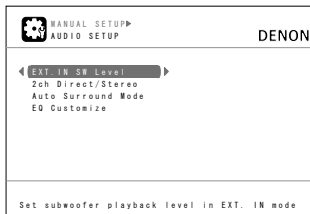
Speaker Setup



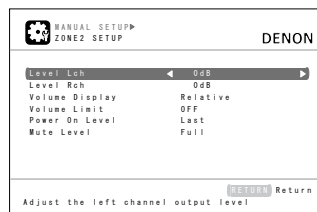
HDMI Setup



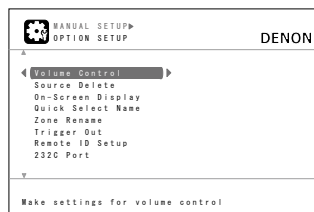
Audio Setup



ZONE2 Setup



Option Setup



Making the speaker settings (Speaker Setup)

Default settings are underlined.

Use this procedure to set the speakers manually or if you wish to change the settings made with "Audyssey Auto Setup".

Setting items	Setting contents
Amp Assign Sets the signal output to the speaker connected to the SURR. BACK/AMP ASSIGN terminals.	Normal : The surround back channel audio signals are output. ZONE2 : The ZONE2 audio signals are output. Front A Bi-Amp : The bi-amp audio signals are output. Set this for bi-amp playback of the front A speakers. Front B Bi-Amp : The bi-amp audio signals are output. Set this for bi-amp playback of the front B speakers. Front Height : The front height channel audio signals are output.
Speaker Config. Select speaker configuration and size. (bass reproduction capability)	Front : Set the front speaker size. • Large : Use of a large speaker that can adequately play back low frequencies. • Small : Use of a small speaker that has inadequate playback capacity for low frequencies. If "Subwoofer" is set to "No", "Front" is automatically set to "Large". Center : Set the presence and size of the center speaker. • Large : Use of a large speaker that can adequately play back low frequencies. • Small : Use of a small speaker that has inadequate playback capacity for low frequencies. • None : Select when a center speaker is not connected. • "Large" is not displayed when "Front" is set to "Small". • Even if "Center" has been set to "Large", when "Front" is set to "Small", the "Center" setting automatically switches to "Small". Subwoofer : Set the presence of a subwoofer. • Yes : Use a subwoofer. • No : Select when a subwoofer is not connected. When "Front" is set to "Small", "Subwoofer" can automatically set to "Yes".

NOTE

Select "Large" or "Small" not according to the physical size of the speaker but according to the low frequency reproduction capabilities based on the frequency set at "Crossover Frequency" (page 29).

See overleaf

Remote control
operation buttons

MENU : Displaying the menu
○ : Cancel the menu

: Moves the cursor (Up/Down/Left/Right)

ENTER : Decision the setting

RETURN : Return to previous menu

Setting items	Setting contents
Speaker Config. Select speaker configuration and size. (bass reproduction capability)	Surround : Set the presence and size of the Surround speakers. • Large : Use of a large speaker that can adequately play back low frequencies. • Small : Use of a small speaker that has inadequate playback capacity for low frequencies. • None : Select when the surround speakers are not connected. "Large" is not displayed when "Front" is set to "Small".
"S.Back" is displayed when the "Amp Assign" setting (page 27) is set to "Normal".	S.Back : Set the presence, size and number of surround back speakers. • Large : Use of a large speaker that can adequately play back low frequencies. • Small : Use of a small speaker that has inadequate playback capacity for low frequencies. • None : Select when the surround back speakers are not connected. • 2spkr : Use two surround back speakers. • 1spkr : Use only one surround back speaker. Surround back audio is output from the surround back L terminal. • "Large" is not displayed when "Surround" is set to "Small". • Even if "S.Back" is set to "Large", the "S.Back" setting is automatically switched to "Small" if "Surround" is set to "Small".
	NOTE Even when the Surround Back Speaker setting is other than "None", sound may not be emitted from the surround back speaker, depending on the playback source. In this case, "Surround Back" setting other than "OFF" (page 47).
"Front Height" is displayed when the "Amp Assign" setting (page 27) is set to "Front Height".	Front Height : Set the front height speaker size. • Large : Use of a large speaker that can adequately play back low frequencies. • Small : Use of a small speaker that has inadequate playback capacity for low frequencies. • None : Select when a front height speaker is not connected. • "Large" is not displayed when "Front" is set to "Small". • Even if "Front Height" is set to "Large", the "Front Height" setting is automatically switched to "Small" if "Front" is set to "Small".
NOTE Select "Large" or "Small" not according to the physical size of the speaker but according to the low frequency reproduction capabilities based on the frequency set at "Crossover Frequency" (page 29).	

Setting items	Setting contents
Bass Setting Make the settings related to playback of low frequency signals (subwoofer and LFE). This can be set when "Speaker Config." – "Subwoofer" (page 27) is set to "Yes".	Subwoofer Mode : Select low range signal to be reproduced by subwoofer. • LFE : Add the low frequency signal of the channel for which the speaker size is set to "Small" to the subwoofer signal and output it. • LFE+Main : Add the low frequency signal of all channels to the subwoofer signal and output it. • Play music or a movie source and select the mode offering the strongest bass. • Select "LFE+Main" if you want the bass signals to always be produced from the subwoofer.
	LPF for LFE : Set the upper limit of the low frequency signals output from the subwoofer. • 80Hz / 90Hz / 100Hz / 110Hz / 120Hz / 150Hz / 200Hz / 250Hz
Distance Set the distance from the listening position to the speakers. Measure the distance from the listening position to the speakers beforehand.	Unit : Set the unit of distance. • Feet • Meters Step : Set the minimum variable width of the distance. • 1ft / 0.1ft • 0.1m / 0.01m • FL (Front L)/ FR (Front R)/ C (Center)/ SW (Subwoofer)/ SL (Surround L)/ SR (Surround R)/ SBL (Surr. Back L)/ SBR (Surr. Back R)/ FHL (Front Height L)/ FHR (Front Height R) : Select the speaker you want to set, and set the distance. Set the value that is closest to the measured distance. • 0.00m ~ 18.00m / 0.0ft ~ 60.0ft • The speakers that can be selected differ depending on the "Amp Assign" (page 27) and "Speaker Config." (page 27) settings. • Default settings : Front/Center/Subwoofer/Front Height : 3.6 meters (12 feet) Surround/Surr. Back : 3.0 meters (10 feet)
	NOTE Set the difference in the distance between the speakers to less than 6.0 meters (20 feet). "Relocate Speaker" is displayed on the screen if an inappropriate distance is set. Default : Reset all distance settings to factory default. • Yes : Reset to the defaults. • No : Do not reset to the defaults.

Making detailed settings (Manual Setup)

Setting items	Setting contents
Channel Level Set the volume of the test tone to be the same when it is output from each speaker.	Test Tone Start : Output test tones. FL (Front L)/ C (Center)/ FR (Front R)/ SR (Surround R)/ SBR* (Surround Back R)/ SBL* (Surround Back L)/ SL (Surround L)/ FHL (Front Height L)/ FHR (Front Height R)/ SW (Subwoofer) : Select the speaker. *When the "S.Back" setting (page 28) is set to "1spkr", "SB" is displayed. • -12.0dB ~ +12.0dB (0.0dB) : Adjust the volume.  • When "Channel Level" is adjusted, the adjusted values are set for all the surround modes. To adjust the channel level separately for the different surround modes, use the operation see "Adjust the volume of the different speakers" (page 53). • Speakers set to "None" in the "Speaker Config." (page 27) settings are not displayed. • When <1 is pressed while the subwoofer volume is set to "-12dB", the "Channel Level" setting switches to "OFF". • If output of the test tones begins while the muting mode is set, the muting mode is canceled.
	Default : Reset all channel level settings to factory default. • Yes : Reset to the defaults. • No : Do not reset to the defaults.
Crossover Frequency Outputs at below set frequency, each speaker's bass signal output from the subwoofer. Set this according to the low frequency reproduction capabilities of the speakers you are using.	Crossover : Outputs at below set frequency, each speaker's bass signal output from the subwoofer. • 40Hz / 60Hz / 80Hz / 90Hz / 100Hz / 110Hz / 120Hz / 150Hz / 200Hz / 250Hz • Advanced : Set the low frequency signals to be output from the signals of the respective speakers to the subwoofer. • Front / Center / Surround / S.Back / Front Height : Select the speaker. • 40Hz / 60Hz / 80Hz / 90Hz / 100Hz / 110Hz / 120Hz / 150Hz / 200Hz / 250Hz : Set the crossover frequency.

This can be set when "Speaker Config." – "Subwoofer" (page 27) is set to "Yes" or "No".

Setting items	Setting contents
Crossover Frequency	 • Always set the crossover frequency to "80 Hz". When using small speakers, however, we recommend setting the crossover frequency to a higher frequency. • For speakers set to "Small", sound below the crossover frequency is cut from the sound output. The cut bass sound is output from the subwoofer or front speakers. • The speakers that can be set when "Advanced" is selected differ according to the "Bass Setting" setting (page 28). · When "LFE" is selected, speakers set to "Small" at "Speaker Config." (page 27) can be set. · When "LFE+Main" is selected, speakers can be set regardless of the speaker size setting.
Front Speaker Setup Select front speakers to use for each surround mode.	Setting : Choose the method for setting the front speakers. • Normal : The front speakers are set using the SPEAKERS . • Custom : The front speakers used for the different playing modes are set in advance. 2CH DIRECT/STEREO : The front speakers used in the direct, stereo and pure direct play modes are set in advance. • A : Front speaker A is used. • B : Front speaker B is used. • A+B : Both front speakers A and B are used. MULTI CH : The front speakers used in modes other than the direct, stereo and pure direct play modes are set in advance. • A : Front speaker A is used. • B : Front speaker B is used. • A+B : Both front speakers A and B are used. NOTE • When set to "Custom", SPEAKERS does not operate. • The front speaker setting stored for the "Quick Select" function is given priority.



Making the HDMI settings (HDMI Setup)



Default settings are underlined.

Make settings for HDMI video/audio output.

Setting items	Setting contents
RGB Range Set the video range of RGB output from the HDMI terminal.	Normal : Output with RGB video range (16 (black) to 235 (white)). Enhanced : Output with RGB video range (0 (black) to 255 (white)). This setting is valid when using a TV equipped with a DVI terminal.
Auto Lip Sync Automatic compensation for timing shift in audio and video output.	ON : Compensated. OFF : Not compensated.
HDMI Audio Out Select HDMI audio output device.	Amp : Use speakers connected to AVR-2310 for audio playback. TV : Use speakers of TV for audio playback. NOTE When the HDMI control function is operating, the setting of audio playback in the connected TV takes priority (page 52 "Controlling HDMI-compatible devices from the AVR-2310 (HDMI Control Function)").
HDMI Control External devices can be controlled from the AVR-2310 and the AVR-2310 can be controlled from external devices.	ON : Use the HDMI control function. OFF : Do not use the HDMI control function. • Please consult the operating instructions for each connected device to check the settings. • For details on the HDMI control function, see "Controlling HDMI-compatible devices from the AVR-2310 (HDMI Control Function)" (page 52).

NOTE

The HDMI control function controls operations of a TV that is compatible with the HDMI control function. Make sure that the TV and HDMI are connected when you perform HDMI control.

NOTE

- When "Control" is set to "ON", it consumes more standby power.
- When not using this unit for a long period, we recommend that you press to turn off (OFF) the power.
- When the "HDMI Control" setting has been changed, always turn off the power to the connecting devices afterwards and then turn back on.
- The "HDMI Control" does not work when the power to the equipment is off.
- When "HDMI Control" is set to "ON", power is supplied constantly to the AC outlet (UNSWITCHED).

Making detailed settings (Manual Setup)

Setting items	Setting contents
Standby Source Set the HDMI connector for HDMI signal input during standby. This can be set when "HDMI Control" is set to "ON".	Last : Standby with last used input source during power on. HDMI1 / HDMI2 / HDMI3 / HDMI4 / HDMI5 : The standby mode is set at the input source assigned to the respective.
Power Off Control The power of the AVR-2310 and external device turn off together. This can be set when "HDMI Control" is set to "ON".	ON : Switched. OFF : Not switched. • Please consult the operating instructions for each connected device to check the settings. • For details on the HDMI control function, see "Controlling HDMI-compatible devices from the AVR-2310 (HDMI Control Function)" (page 52).



Making the audio settings (Audio Setup)



Default settings are underlined.

Make settings for audio playback.

Setting items	Setting contents
EXT.IN SW Level Set the playback level of the analog subwoofer signals input from the external input terminals (EXT. IN).	+15dB : This is the recommended level. +10dB / +5dB / 0dB : Select the level according to the player being used.

Making detailed settings (Manual Setup)

Setting items	Setting contents
2CH DIRECT/STEREO Make speaker settings for 2-channel mode playback.	Setting : Select the method for setting the speakers used in the 2-channel direct and stereo playback modes. • Basic : The settings at “Speaker Setup” (page 27) are applied. • Custom : Make separate settings for 2-channel mode. Front : Set the front speaker size. • Large : Use of a large speaker that can adequately play back low frequencies. • Small : Use of a small speaker that has inadequate playback capacity for low frequencies. SW : Set the presence of a subwoofer. • Yes : Use a subwoofer. • No : Select when a subwoofer is not connected. SW Mode : Select low range signal to be reproduced by subwoofer. • LFE : Add the low frequency signal of the channel for which the speaker size is set to “Small” to the subwoofer signal and output it. • LFE+Main : Add the low frequency signal of all channels to the subwoofer signal and output it. Crossover : Outputs at below set frequency, each speaker’s bass signal output from the subwoofer. • 40Hz / 60Hz / <u>80Hz</u> / 90Hz / 100Hz / 110Hz / 120Hz / 150Hz / 200Hz / 250Hz Distance FL / Distance FR : Select the speaker you want to set, and set the CH Level. Set the value that is closest to the measured distance. • 0.00m ~ 18.00m (<u>3.6m</u>) / 0.0ft ~ 60.0ft (<u>12.0ft</u>) CH Level FL/ CH Level FL FR : Select the speaker you want to set, and set the CH Level. Adjust the level of each channel. • -12.0dB ~ +12.0dB(<u>0.0dB</u>)
Auto Surround Mode Make setting for memorizing surround mode setting for each input signal type.	ON : Memorize settings. Most recently stored surround mode is automatically selected. OFF : Do not memorize settings. Surround mode does not change according to input signal.  The auto surround mode function lets you store in the memory the surround mode last used for playing the four types of input signals listed below. ① Analog and PCM 2-channel signals ② Dolby Digital and DTS 2-channel signals ③ Dolby Digital and DTS multi-channel signals ④ Multi-channel signals other than Dolby Digital and DTS (PCM, etc.) NOTE When playing in the PURE DIRECT mode, the surround mode does not change even if the input signal is changed.

Setting items	Setting contents
EQ Customize Set so that unused equalizer settings are not displayed when  is used.	Audyssey Byp. L/R / Audyssey Flat / Manual • Used • Not Used NOTE • Set so that “Audyssey Byp. L/R” and “Audyssey Flat” settings can be made when “Audyssey™ Auto Setup” is performed. • Equalizer settings for which “Not Used” is set with the Quick Select function cannot be stored and called out.



Making the ZONE2 settings (ZONE2 Setup)



Default settings are underlined.

Make settings for audio playback in a ZONE2 system.

“ZONE2 Setup” is displayed when ZONE2 is selected with “Amp Assign” (page 27).

Setting items	Setting contents
Level Lch Adjust the left channel output level.	-12dB ~ +12dB (<u>0dB</u>)
Level Rch Adjust the right channel output level.	-12dB ~ +12dB (<u>0dB</u>)
Volume Display Set the ZONE2 volume display method.	Relative : The volume is displayed within the range of -- dB (Minimum), -80 dB ~ +18 dB. Absolute : The volume is displayed within the range of 0, 1 ~ 99.
Vol.Limit Make a setting for maximum volume.	OFF : Do not set a maximum volume. -20dB (61) / <u>-10dB (71)</u> / 0dB (81)
Power On Level Define the volume setting that is active when the power is turned on.	Last : Use the memorized setting from the last session. --- : Always use the muting on condition when power is turned on. -80dB (1) ~ +18dB (99) : The volume is adjusted to the set level.
Mute Level Set the amount of attenuation when muting is on.	Full : The sound is cut off entirely. -40dB : The sound is attenuated by 40 dB. -20dB : The sound is attenuated by 20 dB.



- The volume is displayed using the display method set at “Volume Display” (page 32).
- Set the main volume at “Volume Control” (page 32).

Remote control
operation buttons

MENU  : Displaying the menu
 : Cancel the menu

 : Moves the cursor (Up/Down/Left/Right)

ENTER  : Decision the setting

RETURN  : Return to previous menu



Making other settings (Option Setup)



Default settings are underlined.

Setting items	Setting contents
Volume Control Set the MAIN ZONE volume setting.	Volume Display : Set the volume display method. • Relative : The volume is displayed within the range of --- dB (Minimum), -80.5 dB ~ +18 dB. • Absolute : The volume is displayed within the range of 0, 1 ~ 99. Vol.Limit : Make a setting for maximum volume. • OFF : Do not set a maximum volume. • -20dB (61) / -10dB (71) / 0dB (81) Power On Level : This sets the volume set when the MAIN ZONE's power is turned on. • Last : Use the memorized setting from the last session. • --- : Always use the muting on condition when power is turned on. • -80dB (1) ~ +18dB (99) : The volume is adjusted to the set level. Mute Level : This sets the amount of attenuation of the volume when the mute mode is set in the MAIN ZONE. • Full : The sound is cut off entirely. • -40dB : The sound is attenuated by 40 dB. • -20dB : The sound is attenuated by 20 dB.
Source Delete Remove input sources that are not used from the display.	TUNER / PHONO / CD / DVD / HDP / TV / SAT/CBL / VCR / DVR / V.AUX : Select the sources you do not want to use. • ON : Use this source. • Delete : Do not use this source. NOTE • The currently selected input source cannot be set. • Input sources set to "Delete" cannot be selected using .
GUI Make the settings related to displays on the TV screen.	Screensaver : Make screensaver settings. • ON : The screen switches to the screensaver if no operation is performed for approximately 3 minutes while a menu is displayed or while an iPod screen is displayed. When you press , the screen saver is cancelled and the screen before that screen saver started is displayed. • OFF : Turn the screensaver function off. Wall Paper : Set wallpaper to display the background when playback is stopped, etc. • Picture : Set the background to a picture (DENON logo). • Black : Set the background to black.

Making detailed settings (Manual Setup)

Setting items	Setting contents
GUI Make the settings related to displays on the TV screen.	Format : Set the video signal format to be output for the TV you are using. • NTSC : Select NTSC output. • PAL : Select PAL output. The "Format" can also be set by the following procedure. However, the GUI screen is not displayed. 1. Press and hold on the main unit and for at least 3 seconds. "Video Format" appears on the display. 2. Press and set the video signal format. 3. Press , or to complete the setting. NOTE When a format other than the video format of the connected TV is set, the picture will not be displayed properly.
	Text : The mode name is displayed when the operation for switching the surround mode, input mode, etc., is performed. • ON : Turn display on. • OFF : Turn display off.
	Master Volume : Master volume display during adjustment. • Bottom : Displayed at the bottom of the screen. • Top : Displayed at the top of the screen. • OFF : Turn display off.
	Tuner Information : This sets the time the GUI menu is displayed when a tuner operation is performed. • Always : Show display continuously. • 30sec : Show display for 30 seconds after operation. • 10sec : Show display for 10 seconds after operation. • OFF : Turn display off.
	iPod Information : This sets the time the GUI menu is displayed when an iPod operation is performed. • Always : Show display continuously. • 30sec : Show display for 30 seconds after operation. • 10sec : Show display for 10 seconds after operation. • OFF : Turn display off.

Making detailed settings (Manual Setup)

Setting items	Setting contents
Quick Select Name Change the Quick Select name.	Rename Label : Change the display name of the selected "Quick Select" setting. 1. Use $\triangle \nabla$ to select the name of the Quick Select setting you want to change, then press ENTER. 2. Use $\triangleleft \triangleright$ to set the cursor to the character you want to change. 3. Use $\triangle \nabla$ to change the character, then press ENTER. - Up to 16 characters can be input. - The input character type can be switched by pressing SEARCH while the display name is being changed. - The types of characters that can be input are as shown below. [Upper case characters] ABCDEFGHIJKLMNOPQRSTUVWXYZ [Lower case characters] abcdefghijklmnopqrstuvwxyz [Symbols] ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } ~ [Numbers] 0 1 2 3 4 5 6 7 8 9 (Space) 4. Repeat steps 2 and 3 to change the display name.
Zone Rename Rename the display names of the different zones as desired.	1. Use $\triangle \nabla$ to select the zone name you want to change, then press ENTER. MAIN ZONE / ZONE2 2. Use $\triangleleft \triangleright$ to set the cursor to the character you want to change. 3. Use $\triangle \nabla$ to change the character, then press ENTER. - Up to 10 characters can be input. - The input character type can be switched by pressing SEARCH while the display name is being changed. - The types of characters that can be input are as shown below. [Upper case characters] ABCDEFGHIJKLMNOPQRSTUVWXYZ [Lower case characters] abcdefghijklmnopqrstuvwxyz [Symbols] ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } ~ [Numbers] 0 1 2 3 4 5 6 7 8 9 (Space) 4. Repeat steps 2 and 3 to change the display name.

Setting items	Setting contents
Trigger Out Select the condition for activating Trigger Out for the input source, surround mode, etc. See "TRIGGER OUT jacks" (page 18) for more information on trigger out.	☐ When Setting for Zone (MAIN ZONE / ZONE2) Trigger out is activated through linkage to the power of the zone set to "ON". ☐ When Setting for Input Source Activate trigger out when the input source set to "ON" is selected. Valid for the zone set to "ON" with "When Setting for Zone". ☐ When Setting for Surround Mode Activate trigger out when the surround mode set to "ON" is selected. Valid when the "MAIN ZONE" set to "ON" with "When Setting for Zone" is selected, and when the input source set to "ON" with "When Setting for Input Source" is selected.
Remote ID Set when you operate another DENON AV amplifier with the remote control unit of the AVR-2310. Match the remote control unit you are using with the remote ID of the AVR-2310.	1 / 2 / 3 / 4 When using the AVR-2310 with only the included remote control unit (RC-1117), use Remote ID "1" (default). When using a separately sold remote control unit (RC-7000CI, etc.), this function can be used. Match the ID setting of the remote control unit and the receiver.
232C Port Set when using an external controller or two-way remote control connected to the RS-232C terminal.	Serial Control : Set when using an external controller. 2Way Remote : Set when using a 2-way remote control unit. When using a DENON two-way remote control (RC-7000CI or RC-7001RCI, sold separately), set to "2Way Remote". NOTE When setting to "2Way Remote", you can not use the RS-232C connector as an external controller.
Dimmer Adjust display brightness of the receiver.	Bright : Normal display brightness. Dim : Reduced display brightness. Dark : Very low display brightness. OFF : Turns the display off. Switching is also possible by pressing DIMMER on the main unit.
Setup Lock Protect settings from inadvertent change.	ON : Turn protection on. OFF : Turn protection off. When "Setup Lock" is set to "ON", the settings listed below can no longer be changed. Also, "SETUP LOCKED!" is displayed if you attempt to operate related settings. · RESTORER · MultEQ · Dynamic EQ · Dynamic Volume · Channel Level · Audio Delay



Making the Input Settings (Input Setup)



Make the settings related to the currently selected input source.

Before displaying the menu screen, press  to switch to the input source to be set. The items that can be set differ according to the selected input source.

The set can be used without changing these settings. Make these settings as necessary. For a description of “Menu map” and operating instructions, see page 20.

Items that can be set with the Input Setup procedure

Changing the Input Sources Assigned to the Input Terminals (Input Assign)  page 35

Making the video settings (Video)  page 36

Changing the Input Source's Input Mode and Decoding mode (Input mode)  page 37

Changing the Input Source's Display Name (Rename)  page 37

Correcting the Input Source's Playback Level (Source Level)
 page 38

Setting the iPod Playback Mode (iPod Playback Mode)  page 38

Presetting Radio Stations (Auto Preset)  page 38

Setting the Preset Channels to be Skipped (Preset Skip)  page 38

Assign Name to a Preset Memory (Preset Name)  page 38

Examples of Menu Screen Displays

Assign

Video

Input Mode

Rename

Source Level

iPod Playback Mode

Auto Preset

Preset Skip

Preset Name

Changing the Input Sources Assigned to the Input Terminals (Input Assign)

GUI

Default settings are underlined.

Setting items	Setting contents																
Input Assign (HDMI) Assign input sources to input connectors.	HDMI : The DVD HDP TV SAT/CBL VCR DVR V.AUX input sources are assigned to the HDMI input terminals as shown below. • HDMI1 / HDMI2 / HDMI3 / HDMI4 / HDMI5 • None : Do not assign an HDMI input terminal to the currently selected input source. ※ Upon purchase, the settings of the different input sources are as shown below. <table><tr><th>Input source</th><th>DVD</th><th>HDP</th><th>TV</th><th>SAT/CBL</th><th>VCR</th><th>DVR</th><th>V.AUX</th></tr><tr><th>Default setting</th><td>HDMI1</td><td>HDMI2</td><td>None</td><td>HDMI3</td><td>None</td><td>HDMI4</td><td>HDMI5</td></tr></table>  • When HDMI is assigned to an input source, the audio signal switches to HDMI along with the video signal. To use with the digital audio input connectors assigned, set menu "Input Mode" ( page 37) to "Digital". • When the AVR-2310 and TV are connected with an HDMI cable, if the TV is not compatible with HDMI audio signal playback, only the video signals are output to the monitor. • The audio signals input from the analog, digital and EXT. IN connectors are not output to the TV. NOTE When "HDMI Control" is set to "ON", HDMI cannot be assigned to "TV" at the "HDMI" settings ( page 30).	Input source	DVD	HDP	TV	SAT/CBL	VCR	DVR	V.AUX	Default setting	HDMI1	HDMI2	None	HDMI3	None	HDMI4	HDMI5
Input source	DVD	HDP	TV	SAT/CBL	VCR	DVR	V.AUX										
Default setting	HDMI1	HDMI2	None	HDMI3	None	HDMI4	HDMI5										

Making the input settings (Input Setup)

Setting items	Setting contents																				
Input Assign (Digital) Assign input sources to input connectors.	Digital : The DVD HDP TV SAT/CBL VCR DVR V.AUX CD input sources are assigned to the digital audio input terminals as shown below. • Coax1 / Coax2 / Opt1 / Opt2 / Opt3 • None : Do not assign a digital input terminal to the currently selected input source. ※ Upon purchase, the settings of the different input sources are as shown below. <table><tr><td>Input source</td><td>DVD</td><td>HDP</td><td>TV</td><td>SAT/CBL</td><td>VCR</td></tr><tr><td>Default setting</td><td>Coax1</td><td>None</td><td>Opt1</td><td>Coax2</td><td>None</td></tr></table> <table><tr><td>Input source</td><td>DVR</td><td>V.AUX</td><td>CD</td></tr><tr><td>Default setting</td><td>Opt2</td><td>Opt3</td><td>None</td></tr></table>	Input source	DVD	HDP	TV	SAT/CBL	VCR	Default setting	Coax1	None	Opt1	Coax2	None	Input source	DVR	V.AUX	CD	Default setting	Opt2	Opt3	None
Input source	DVD	HDP	TV	SAT/CBL	VCR																
Default setting	Coax1	None	Opt1	Coax2	None																
Input source	DVR	V.AUX	CD																		
Default setting	Opt2	Opt3	None																		
Input Assign (Component) Assign input sources to input connectors.	Component : The DVD HDP TV SAT/CBL VCR DVR V.AUX input sources are assigned to the component video input terminals as shown below. • 1-RCA (Component video 1 input terminal) / 2-RCA (Component video 2 input terminal) • None : Do not assign the component video input terminals to the currently selected input source. ※ Upon purchase, the settings of the different input sources are as shown below. <table><tr><td>Input source</td><td>DVD</td><td>HDP</td><td>TV</td><td>SAT/CBL</td><td>VCR</td><td>DVR</td><td>V.AUX</td></tr><tr><td>Default setting</td><td>1-RCA</td><td>None</td><td>None</td><td>None</td><td>None</td><td>2-RCA</td><td>None</td></tr></table>	Input source	DVD	HDP	TV	SAT/CBL	VCR	DVR	V.AUX	Default setting	1-RCA	None	None	None	None	2-RCA	None				
Input source	DVD	HDP	TV	SAT/CBL	VCR	DVR	V.AUX														
Default setting	1-RCA	None	None	None	None	2-RCA	None														
iPod Dock Change the input source to which the control dock for iPod is assigned.	The control dock for iPod can be assigned to the DVD SAT/CBL VCR DVR V.AUX CD input sources. Assign : Assign the currently selected input source to the Control Dock for iPod input. None : Do not assign the currently selected input source to the Control Dock for iPod input.  • With the default settings, the control dock for iPod can be used connected to the VCR (iPod) connector. • Even if “iPod Dock” is set to “Input Assign”, if AVR-2310 and control dock for iPod are not connected, the input is used as the normal input source.																				

Making the video settings (Video)



Default settings are underlined.

The items that can be set depend on the input source and the "Input Assign" setting.

Setting items	Setting contents
Video Select Switch video input source while listening to audio signal.	Source : Play the picture and sound of the input source. DVD / HDP / TV / SAT/CBL / VCR / DVR / V.AUX : Select video input source to view. This can be set for individual input sources. NOTE - It is not possible to select HDMI input signals. - When playing HDMI video input signals, the analog video signal of another input source cannot be selected for the HDMI video output. - Input sources for which "Delete" is selected at "Source Delete" (page 32) cannot be selected. - Input sources for which "None" is selected at "Input Assign" (page 35) cannot be selected. • This can also be set by pressing . • To cancel, press to select "Source".
Video Convert The input video signal is converted automatically in function of the connected TV (page 9 "Converting Input Video Signals for Output (Video Conversion Function)").	This can be set when the input source is DVD HDP TV SAT/CBL VCR DVR V.AUX. ON : The input video signal is converted. OFF : The input video signal is not converted. - When a non-standard video signal from a game machine or some other source is input, the video conversion function might not operate. In this case set "Video Convert" to "OFF". - When "Video Convert" is set to "OFF", the video conversion function does not work. In this case, connect the AVR-2310 and TV with the same type of cable.
i/p Scaler The input source's resolution is converted to the resolution set at "Resolution".	This can be set to the DVD HDP TV SAT/CBL VCR DVR V.AUX. OFF : Do not use i/p scaler function. Analog : Analog signals are converted to HDMI signals. Analog and HDMI : Both analog signals and HDMI signals are converted to the desired HDMI resolution.

Making the input settings (Input Setup)

Setting items	Setting contents
Resolution Set the output resolution. Resolution A (Analog) : Analog Video Resolution H (HDMI) : HDMI	This can be set when the input source is set to DVD HDP TV SAT/CBL VCR DVR V.AUX, and when "i/p Scaler" is set to anything other than "OFF". AUTO : Detect monitor panel resolution and automatically set output resolution. 480p/576p / 1080i / 720p / 1080p / 1080p:24Hz : Select the output resolution.
Progressive Mode Select optimum progressive mode for video material.	This can be set when the input source is set to DVD HDP TV SAT/CBL VCR DVR V.AUX, and when "i/p Scaler" is set to anything other than "OFF". AUTO : The video material is automatically detected and the appropriate mode is set. Video1 : Select mode suitable for video playback. Video2 : Select mode suitable for video and 30-frame film material playback.
Aspect Set the aspect ratio of the video signal output from the HDMI terminal.	This can be set when the input source is set to DVD HDP TV SAT/CBL VCR DVR V.AUX, and when "i/p Scaler" is set to anything other than "OFF". Normal : Output at 4:3 aspect ratio. Full : Output at 16:9 aspect ratio.

Changing the Input Source's Input Mode and Decoding mode (Input Mode)



Default settings are underlined.

The selectable input modes depend on the input source and "Input Assign" setting (page 35 "Changing the Input Sources Assigned to the Input Terminals").

Setting items

Setting contents

Input Mode

Set the audio input modes for the different input sources.

Auto

Automatically detect input signal and perform playback.

HDMI

Play only signals from HDMI input. (Excluding CD)

Digital

Play only signals from digital input.

Analog

Play only signals from analog input.

EXT. IN

Play only signals from EXT. IN input.

※ Upon purchase, the settings of the different input sources are as shown below.

Input source	DVD	HDP	TV	SAT/CBL	VCR
Default setting	Auto	HDMI	Digital	Auto	Analog

Input source	DVR	V.AUX	CD	TUNER	PHONO
Default setting	Auto	Auto	Analog	Analog	Analog

• The “HDMI” settings are made for input sources for which HDMI input terminals are assigned at “Input Assign” (page 35).

• The “Digital” settings are made for input sources for which digital input terminals are assigned at “Input Assign” (page 35).

• When a digital signal is properly input, the “DIG.” indicator lights on the display. If the “DIG.” indicator does not light, check the digital input connector assignment and the connections.

• The surround mode cannot be set if the input mode is set to “EXT. IN”.

• This can also be set by pressing  .

Each time you press the button, the input mode display will change.

Auto

HDMI

Digital

EXT. IN

Analog

Making the input settings (Input Setup)

Setting items	Setting contents
Decode Mode Set the input source's decoding mode.	Auto : Detect type of digital input signal and decode and play automatically. PCM : Decode and play only PCM input signals. DTS : Decode and play only DTS input signals.  - This can be set for input sources for which "HDMI" or "Digital" is assigned at "Input Assign" (page 35). - Normally set this to "Auto".

Changing the Input Source's Display Name (Rename)



Default settings are underlined.

Use this procedure to change the display name of the currently selected input source.

Setting items	Setting contents
Rename Change the input source's display name to the desired name.	- Use   to set the cursor to the character you want to change. - Use   to change the character, then press . - Up to 8 characters can be input. - The input character type can be switched by pressing  while the display name is being changed. - The types of characters that can be input are as shown below. [Upper case characters] ABCDEFGHIJKLMNOPQRSTUVWXYZ [Lower case characters] abcdefghijklmnopqrstuvwxyz [Symbols] ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } ~ [Numbers] 0123456789 (Space)
Default The changed display names are reset to the defaults.	Yes : Reset to the defaults. No : Do not reset to the defaults.

Correcting the Input Source's Playback Level (Source Level)



Default settings are underlined.

Use this procedure to correct the playback level of the currently selected input source's audio input. Set this if there are differences in the input volume levels between the different sources. The analog input level and digital input level can be corrected separately.

Setting items	Setting contents
Source Level (Analog) Correct the playback level of the analog audio input.	-12dB ~ +12dB (<u>0dB</u>)
Source Level (Digital) Correct the playback level of the digital audio input.	-12dB ~ +12dB (<u>0dB</u>)

Setting the iPod Playback Mode (iPod Playback Mode)



Default settings are underlined.

This can be selected for input sources for which "Input Assign" is assigned at the "iPod Dock" (page 35) setting.

Setting items	Setting contents
Repeat Make settings for repeat mode.	All : Repeat all songs. One : Repeat the current song. OFF : Cancel repeat mode.
Shuffle Make settings for shuffle mode.	☐ When DENON control dock for iPod ASD-1R or ASD-11R is connected Songs : Shuffle all songs. Albums : Shuffle songs from current album only. OFF : Cancel shuffle mode.

Presetting Radio Stations (Auto Preset)



Default settings are underlined.

Setting items	Setting contents
Auto Preset Use the auto preset function to program radio stations.	This can be set when the source is set to TUNER . Start : Start the auto preset process. If an FM station cannot be preset automatically, select the desired station by tuning it in manually, then preset it manually.

Setting the Preset Channels to be Skipped (Preset Skip)



Default settings are underlined.

Setting items	Setting contents
Preset Skip Set the preset memories that you do not want to display when tuning.	This can be set when the source is set to TUNER . A ~ G : Select the preset channel(s) you do not want to display. • ON : Display this number. • Skip : Skip this number. If you set "Block Presets" to "Skip", you can skip the preset memory blocks (A to G).

Assign Name to a Preset Memory (Preset Name)



Default settings are underlined.

Setting items	Setting contents
Preset Name Assign name to a preset memory.	This can be set when the source is set to TUNER . 1. Use Δ/∇ to select the preset channel name you want to change, then press . 2. Use $\triangleleft$/$\triangleright$ to set the cursor to the character you want to change. 3. Use Δ/∇ to change the character, then press . • Up to 8 characters can be input. • The input character type can be switched by pressing while the display name is being changed. • The types of characters that can be input are as shown below. [Upper case characters] ABCDEFGHIJKLMNOPQRSTUVWXYZ [Lower case characters] abcdefghijklmnopqrstuvwxyz [Symbols] ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } ~ [Numbers] 0123456789 (Space) 4. Repeat steps 2 and 3 to change the display name.
Default The changed display names are reset to the defaults.	Yes : Reset to the defaults. No : Do not reset to the defaults.



Playback

Operation Flow

Before starting playback, make the connections between the different components and the settings on the receiver.

Playing Components (👉 page 39)

- ❑ **Playing Blu-ray Disc/DVD Players** (👉 page 39)
- ❑ **iPod® Playback** (👉 page 39)
- ❑ **Listening to FM/AM Broadcasts** (👉 page 41)
- ❑ **Operations During Playback** (👉 page 43)



Selecting the Surround Mode (👉 page 44)

- ① **Standard Playback** (👉 page 44)
- ② **Playing in a DENON original surround mode** (👉 page 45)
- ③ **Direct Playback** (👉 page 45)
- ④ **Stereo Playback** (👉 page 45)
- ⑤ **Playing the Pure Direct mode** (👉 page 45)



Adjusting the Sound and Picture Quality (Audio/Video Adjust) (👉 page 46)

NOTE

- Also refer to the operating instructions of the connected components when playing them.
- External devices can be controlled by remote control unit (👉 page 55 "Operating the Connected Devices by Remote Control Unit").

Playing Components

Playing Blu-ray Disc / DVD Players

The following describes the procedure for playing Blu-ray disc/DVD players.

Use the same procedure to play other components.

1 Prepare for playback.

- ① Turn on the power of the TV, subwoofer and player.
- ② Set the TV's input to the AVR-2310.
- ③ Load the disc in the player.

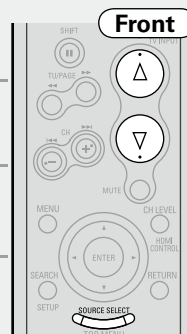
2 Turn on the AVR-2310's power.

(👉 page 19 "Turning the Power On")

3 Press and select the input source.

4 Play the component connected to the AVR-2310.

Make the necessary settings on the player (language setting, subtitles setting, etc.) beforehand.



5 Use to adjust the volume.

[Variable range] --- -80.5dB ~ 18.0dB

※ The variable range differs according to the input signal and channel level setting.

6 Select the desired surround mode.

(👉 page 44 "Selecting the Surround Mode")

7 Adjust the desired sound field effects.

(👉 page 46 "Adjusting the Sound and Picture Quality")

iPod® Playback

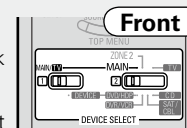
The music / video on an iPod can be played by using the control dock for iPod (ASD-1R, ASD-11R, ASD-3N or ASD-3W sold separately).

Connect the control dock for iPod beforehand. (👉 page 14 "iPod®").

Listening to music on an iPod®

1 Prepare for playback.

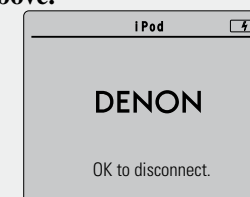
- ① Set the iPod in the DENON control dock for iPod.
- ② Assign the control dock for iPod's input (👉 page 35).
- ③ Set  to "MAIN/TV"  to "MAIN".



2 Turn on the AVR-2310's power.

(👉 page 19 "Turning the Power On")

3 Press to select the input source assigned in step 1-2 above.



(iPod screen)



※ If the screens above are not displayed, the iPod may not be properly connected. Try connecting again.

See overleaf

4 Press and hold it down for a 2 seconds or more to select the display mode.

There are two modes for display the contents recorded on the iPod.

Browse mode : Displayed on the TV screen.

Remote mode : Displayed on the iPod's screen.

Display mode		Browse mode	Remote mode
Playable files	Audio file		
	Picture file	×	 * 2
	Video file	 * 1	 * 2
Active buttons	Remote control unit (AVR-2310)		
	iPod®	×	

* 1 : When using an ASD-11R, ASD-3N or ASD-3W control dock for iPod.

* 2 : Video may not be output, depending on the combination of ASD-1R or ASD-11R and iPod.

5 Use to select the menu, then press or to select the music or video file to be played.

6 Press or .

Playback starts.

7 Use to adjust the volume.

[Variable range] --- -80.5dB ~ 18.0dB

※ The variable range differs according to the input signal and channel level setting.

8 Select the desired surround mode.

( page 44 "Selecting the Surround Mode")

9 Adjust the desired sound field effects.

( page 46 "Adjusting the Sound and Picture Quality")

□ To stop

During playback, either press and hold  or press .

□ Stopping playback temporarily

During playback, press  or .

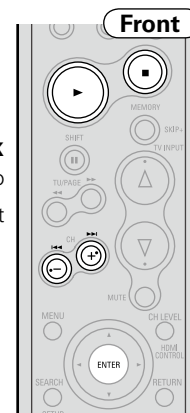
Press again to resume playback.

□ To cue to the beginning of a track

During playback,  either press (to cue to the current track) or  (to cue to the next track).

□ Repeat playback and shuffle playback

"iPod Playback Mode" ( page 38)

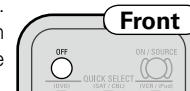


- Use the RESTORER mode to expand the low and high frequency components of compressed audio files and achieve a richer sound. The default setting is "Mode3" ( page 50).

- To check the name of the title, the artist or the album when playing in browse mode, press .

- The time (default : 30 sec) for which the GUI menu are displayed can be set at menu "GUI-iPod" ( page 32). Press     to return to the original screen.

- Press  and set the AVR-2310's power to the standby mode before disconnecting the iPod. Also switch the input source to one to which the menu "iPod dock" is not assigned before disconnecting the iPod.



NOTE

- Depending on the type of iPod and the software version, some functions may not operate.
- DENON will accept no responsibility whatsoever for any loss of iPod data.

Viewing Still Pictures or Videos on the iPod®

- Photo and video data on the iPod can be viewed on the monitor. Only for iPod equipped with slideshow or video functions. (When using an ASD-1R or ASD-11R)
- Video may not be output, depending on the combination of ASD-1R or ASD-11R and iPod.

1 Press and hold to set the Remote mode.

"Remote iPod" is displayed on the AVR-2310's display.

2 Watching the iPod's screen, use to select "Photos" or "Videos".

3 Press until the image you want to view is displayed.



"TV Out" at the iPod's "Slideshow Settings" or "Video Settings" must be set to "On" in order to display the iPod's photo data or videos on the monitor. For details, see the iPod's operating instructions.

iPod is a trademark of Apple Inc., registered in the U.S. and other countries. The iPod may only be used to copy or play contents that are not copyrighted or contents for which copying or playback is legally permitted for your private use as an individual. Be sure to comply with applicable copyright legislation.

Listening to FM/AM Broadcasts

Basic Operation

1 Set to “MAIN/TV” and to “MAIN”.

2 Press to select “TUNER”.

3 Press to select “FM” or “AM”.

4 Tune in the desired broadcast station.

① To tune in automatically (Auto Tuning)
Press to light the “AUTO” indicator on the display, then use to select the station you want to hear.

② To tune in manually (Manual Tuning)
Press to turn off the display’s “AUTO” indicator, then use to select the station you want to hear.



- If the desired station cannot be tuned in with auto tuning, tune it in manually.
- When tuning in stations manually, press and hold to change frequencies continuously.
- The time (default : 30 sec) for which the GUI menu are displayed can be set at “GUI-Tuner” (page 32).

Presetting Radio Stations (Preset Memory)

Your favorite broadcast stations can be preset so that you can tune them in easily. Up to 56 stations can be preset.

1 Tune in the broadcast station you want to preset.

2 Press .

3 Press to select the block (A to G) in which the station is to be preset.

4 Press to select the preset number (1 to 8).

5 Press again to complete the setting.



- To preset other stations, repeat steps 1 to 5.
- Stations can be preset automatically at menu “Auto Preset” (page 38).

NOTE

Preset stations are erased by overwriting them.

Listening to Preset Stations

1 Press to select the memory block (A to G).

2 Press to select the desired preset channel (1 to 8).

Default settings

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

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	News	WEATHER	Weather
AFFAIRS	Current Affairs	FINANCE	Finance
INFO	Information	CHILDREN	Children's programmes
SPORT	Sports	SOCIAL	Social Affairs
EDUCATE	Education	RELIGION	Religion
DRAMA	Drama	PHONE IN	Phone In
CULTURE	Culture	TRAVEL	Travel
SCIENCE	Science	LEISURE	Leisure
VARIED	Varied	JAZZ	Jazz Music
POP M	Pop Music	COUNTRY	Country Music
ROCK M	Rock Music	COUNTRY	Country Music
EASY M	Easy Listening Music	NATION M	National Music
LIGHT M	Light Classical	OLDIES	Oldies Music
CLASSICS	Serious Classical	FOLK M	Folk Music
OTHER M	Other Music	DOCUMENT	Documentary

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.

NOTE

The operations described below using  will not function in areas in which there are no RDS broadcasts.

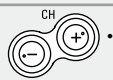
RDS Search

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

1 Set  to “MAIN/TV” and  to “MAIN”.

2 Press  to select “TUNER”.

3 Press  to select “RDS SEARCH”.

4 Press .

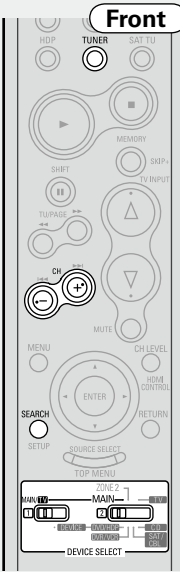
5 To continue searching, repeat steps 2 to 3.

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.

※ If no RDS station is found when all the frequencies have been searched, “NO RDS” is displayed.



PTY Search

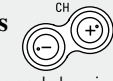
Use this function to find RDS stations broadcasting a designated program type (PTY).
For a description of each program type, refer to “Program Type (PTY)”

1 Set  to “MAIN/TV” and  to “MAIN”.

2 Press  to select “TUNER”.

3 Press  to select “PTY SEARCH”.

4 Watching the display, press   to call out the desired program type.

5 Press .

6 To continue searching, repeat steps 2 to 4.

PTY search begins automatically.

※ If there is no station broadcasting the designated program type with the above operation, all the reception bands are searched.

※ The station name is displayed on the display after searching stops.

※ If no station broadcasting the designated program type is found when all the frequencies have been searched, “NO PROGRAMME” is displayed.



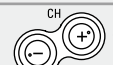
TP Search

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

1 Set  to "MAIN/TV" and  to "MAIN".

2 Press  to select "TUNER".

3 Press  to select "TP SEARCH".

4 Press .

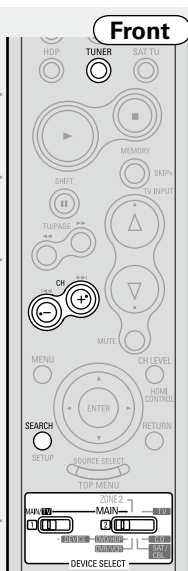
TP search begins automatically.

※ 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.

5 To continue searching, repeat steps 2 to 3.

※ If no other TP station is found when all the frequencies have been searched, "NO PROGRAMME" is displayed.



RT (Radio Text)

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

1 Set  to "MAIN/TV" and  to "MAIN".

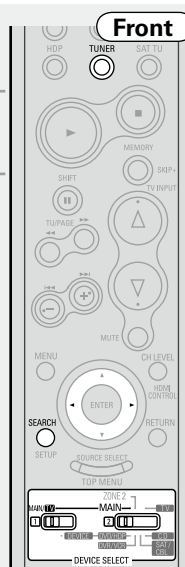
2 Press  to select "TUNER".

3 Press  to select "RT".

※ While receiving an RDS broadcast station, the text data broadcast from the station is displayed.

※ To turn the display off, press  .

※ If no text data is being broadcast, "NO TEXT DATA" is displayed.



❑ To end RDS search / PTY search / TP search / RT

- Do not operate anything for 15 seconds.
- When setting RT, press .

Operations During Playback

Turning Off the Sound Temporarily (Muting)

Press .



- The sound is reduced to the level set at menu "Mute Level" (page 31, 32).
- To cancel, press  again. Muting can also be canceled by adjusting the master volume.

Listening with Headphones

Plug the headphones into the PHONES jack on the main unit.

The sound from the speakers and pre-out connectors is automatically cut.

NOTE

- To prevent hearing loss, do not raise the volume level excessively when using headphones.
- Unplug headphones when performing "Audyssey™ Auto Setup" or other settings.

Switching the front speakers

Press .



NOTE

When you set to "Custom" with "Front Speaker Setup" (page 29), you cannot operate .

Selecting the Surround Mode

Select a surround mode to enjoy surround playback with your favorite sound field effects.

① Playing Sources According to the Sources' Audio Signal Format/ Number of Channels (Standard Playback)

Operations

- The selectable surround modes depend on the following:
- Format of the audio signals being input
 - Number of channels of the audio signals being input
 - The set amplifier assignment mode (⌂ page 27)

1 Playing the source (⌂ page 39).

2 Press  to select the surround mode.

❑ Multichannel sources

The surround modes that can be selected differ according to the input source.

❑ 2channel sources

When you select "DOLBY PLIIz", set "Amp Assign" to "Front Height".

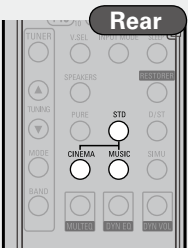
**DOLBY PLIIx,
DOLBY PLII
or
DOLBY PLIIz**

* : The signals are decoded in DOLBY PLIIx, DOLBY PLII or DOLBY PLIIz, for playback.

DTS NEO:6

: The signals are decoded in DTS NEO:6 for playback.

* : DOLBY PLIIx can be selected when surround back speakers are being used.



3

This is the operation for playing 2-channel sources.

Select the mode for the source at "Mode" (⌂ page 46).

❑ DOLBY PLIIx, DOLBY PLII

Cinema : This mode is suited for movie sources.

Music : This mode is suited for music sources.

Game : This mode is suited for games.

Pro Logic : This is the Pro Logic playback mode. This can be selected when playing with a DOLBY PLII decoder. When this mode is selected, "DOLBY PL" is displayed.

❑ DTS NEO:6

Cinema : This mode is suited for movie sources.

Music : This mode is suited for music sources.

※ The modes that can be selected depend on the input source being played.



The "Cinema" and "Music" modes can also be set by pressing  or .

Displaying the currently playing surround mode

❑ Surround playback of multichannel sources (Dolby Digital, DTS, etc.)

In the case of standard playback of multi channel sources, the AVR-2310 recognizes the format of the multi-channel audio input signal and automatically operates the appropriate decoder for surround sound.

Input signal		The indication contents of the display
Dolby Digital	Dolby Digital (other than 2ch)/ Dolby Digital EX	DOLBY DIGITAL
		DOLBY DIGITAL EX
		DOLBY DIGITAL+PLIIx CINEMA
	Dolby Digital Plus (*1)	DOLBY DIGITAL+PLIIx MUSIC
		DOLBY DIGITAL+PLIIz
		DOLBY DIGITAL+
		DOLBY DIGITAL++EX
		DOLBY DIGITAL++PLIIx C
		DOLBY DIGITAL++PLIIx M
DTS	Dolby TrueHD (*1)	DOLBY DIGITAL++PLIIz
		DOLBY TrueHD
		DOLBY HD+EX
		DOLBY HD+PLIIx CINEMA
	DTS (5.1ch)/ DTS-ES Discrete 6.1 / DTS-ES Matrix 6.1 / DTS 96/24	DOLBY HD+PLIIx MUSIC
		DOLBY HD+PLIIz
		DTS SURROUND
		DTS+PLIIx CINEMA
		DTS+PLIIx MUSIC
		DTS+PLIIz
		DTS+NEO:6
	DTS-HD (*1)	DTS ES MTRX6.1 (*2)
		DTS ES DSCRT6.1 (*3)
		DTS 96/24 (*4)
		DTS-HD HI RES
PCM	PCM (multi ch)	DTS-HD MSTR
		DTS-HD+NEO:6
		DTS-HD+PLIIx CINEMA
		DTS-HD+PLIIx MUSIC
		DTS-HD+PLIIz
		MULTI CH IN
		MULTI IN+PLIIx CINEMA
		MULTI IN+PLIIx MUSIC
		MULTI IN+PLIIz
		MULTI CH IN 7.1

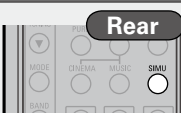
- *1 : When a signal is input, the HD AUDIO indicator lights.
- *2 : This is displayed when the input signal is "DTS-ES Matrix 6.1" and the AVR-2310's "AFDM" setting (⌂ page 47) is set to "ON".
- *3 : This is displayed when the input signal is "DTS-ES Discrete 6.1".
- *4 : This is displayed when the input signal is "DTS 96/24".

② Playing in a DENON Original Surround Mode

The desired mode according to the program source and viewing situation can be selected from among 7 DENON original surround modes.

1 Select the input source by pressing  and play the source (page 39).

2 Press  to select the Surround mode.

5CH/7CH STEREO : This mode is for enjoying stereo sound from all speakers.

ROCK ARENA : This mode is for enjoying the atmosphere of a live concert in an arena.

JAZZ CLUB : This mode is for enjoying the atmosphere of a live concert in a jazz club.

MONO MOVIE : This mode is for playing monaural movie sources with surround sound. *1

VIDEO GAME : This mode is suited for achieving surround sound with video games.

MATRIX : This mode lets you add a sense of expansion to stereo music sources.

VIRTUAL : This mode is for enjoying surround effects using only the front speakers or headphones.

*1 : When playing sources recorded in monaural in the MONO MOVIE mode, the sound will be off balance with a single channel (left or right), so input to both channels.



Depending on the program source being played, it may not be possible to achieve a satisfactory surround effect. In this case, try other modes to achieve a sound field suited to your tastes.

NOTE

When the input signal is DOLBY TrueHD, DOLBY DIGITAL Plus, DTS HD, you cannot select DENON original surround mode.

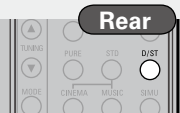
③ Direct Playback

In this mode the signals bypass the tone adjustment circuitry for high quality sound.

The sound is output to the same channels as the input signal.

1 Select the input source by pressing  and play the source (page 39).

2 Press  to select the "DIRECT".

Displaying the currently playing surround mode

Input signal	The indication contents of the display
Analog signal / PCM (2ch) / Dolby Digital source / DTS source / Other 2-channel digital signals	DIRECT
PCM (multi ch)	MULTI CH DIRECT
	M DIRECT + PLIIx CINEMA
	M DIRECT + PLIIx MUSIC
	M DIRECT + PLIIz
	M DIRECT 7.1

④ Stereo Playback

This is the mode for playing in stereo. The tone can be adjusted. Sound is output from the front left and right speakers and subwoofer.

1 Select the input source by pressing  and play the source (page 39).

2 Press  to select the "STEREO".




⑤ Playing the Pure Direct Mode

This is the mode that recreates the original sound most faithfully, providing extremely high quality sound.

1 Select the input source by pressing  and play the source (page 39).

2 Press .





- To cancel, press  again.
- The channel level and surround parameters in the PURE DIRECT mode are the same as in the DIRECT mode.

NOTE

When in the PURE DIRECT mode, the GUI menu is not displayed and the display on the main unit is turned off.



Adjusting the Sound and Picture Quality



Adjusting the Sound (Audio Adjust)

Default settings are underlined.

The sound being played in the surround mode can be adjusted to your liking. The items (parameters) that can be adjusted depend on the signal being input and the currently set surround mode. For details on the adjustable parameters, see "Surround Modes and Parameters" (page 60).

NOTE

Some of the setting items cannot be set while playback is stopped. Set these items during playback.

Setting items	Setting contents
Mode Set the play mode for playing 2-channel sources in surround.	☐ In the PLIIx, PLII or PLIIZ mode Cinema : This is the mode for cinema source. Music : This is the mode for music source. Game : This is the mode for game source. ProLogic : Dolby Pro Logic playback mode (PLII mode only). (This is the mode for 4-channel playback (front L, front R, center, surround (MONO)).) ☐ In the DTS NEO:6 mode Cinema : This is the mode for cinema source. Music : This is the mode for music source.  - The "Music" mode is also effective for movie sources including a lot of stereo music. - The "Cinema" and "Music" modes can also be set by pressing  or .
Cinema EQ Soften the treble range of movie sound tracks for better understanding.	OFF : "Cinema EQ" is not used. ON : "Cinema EQ" is used.
Dynamic Range Compression (D.Comp) Compress dynamic range (difference between loud and soft sounds).	Low/Mid/High : These set the compression level. OFF : Turn dynamic range compression off.  The "D.Comp" indicator lights when playing DTS source that supports the "D.Comp" function.
Dynamic Range Control (DRC) Compress dynamic range	Auto : Dynamic range compression of Dolby TrueHD sources turns on and off automatically. Low/Mid/High : These set the compression level. OFF : Turn dynamic range compression off.

Setting items	Setting contents
LFE Adjust the low-frequency effects level (LFE).	-10dB ~ 0dB  For proper playback of the different program sources, we recommend setting to the values below. - Dolby Digital sources : "0dB" - DTS movie sources : "0dB" - DTS music sources : "-10dB"
Center Image Assign center channel signal to front left and right channels for wider sound.	0.0 ~ 1.0 (0.3)
Panorama Assign front L/R signal also to surround channels, for wider sound.	ON : Set. OFF : Do not set.
Dimension Shift sound image center to front or rear, to adjust playback balance.	0 ~ 6 (3)
Center Width Assign center channel signal to front left and right channels for wider sound.	0 ~ 7 (3)
Delay Time Adjust delay time to control sound stage size.	0ms ~ 300ms (30ms)
Effect Level Adjust the strength of the surround effect.	1 ~ 15 (10)  Set to a lower level if the positioning and sense of phase of the surround signals seems unnatural.
Room Size Determine size of acoustic environment.	Small : Simulate acoustics of a small room. Medium small : Simulate acoustics of a medium-small room. Medium : Simulate acoustics of a medium room. Medium large : Simulate acoustics of a medium-large room. Large : Simulate acoustics of a large room.
NOTE "Room Size" does not indicate the size of the room in which sources are played.	

Adjusting the Sound and Picture Quality (Audio/Video Adjust)

Setting items	Setting contents
AFDM (Auto Flag Detect Mode) Detects the source's surround back channel signal and sets the optimum surround mode automatically.	ON : Set. OFF : Do not set.
Surround Back Sets the method of generating of the surround back channel.	☐ For 2-channel sources ON : The surround back channel is used. OFF : No signal is played from the surround back channels. ☐ For multi channel sources Set this to set the method of generating of the surround back channel for sources that do not include surround back signals and when you do not want to play the surround back signals included in the source. Check the audio signals of the source being played before making this setting. OFF : No signal is played from the surround back channels. MTRX ON : Generate and play the surround back signals from the surround channel signals. PLIIx CINEMA*1 : Generate and play the surround back signals by decoding the signals in the "Dolby Pro Logic IIx Cinema" mode. PLIIx MUSIC*2 : Generate and play the surround back signals by decoding the signals in the "Dolby Pro Logic IIx Music" mode. ES MTRX : Generate and play the surround back signals from the surround channel signals of the DTS source. ES DSCRT*3 : Play the surround back signals included in the 6.1-channel DTS source. DSCRT ON*3 : Play the surround back signals included in the 7.1-channel source. *1 : This can be selected when "S.Back" in the "Speaker Config." settings (page 28) is set to "2spkr". *2 : This can be selected when "S.Back" in the "Speaker Config." settings (page 28) is set to "2spkr" or "1spkr". *3 : When "AFDM" is set to "ON", the surround back channel is played with the AFDM function. When selected while "AFDM" is set to "OFF", the source's surround back signals are played.  This can also be set by pressing . NOTE This is valid when the "Amp Assign" setting (page 27) is set to "7.1-channel surround back" or "6.1-channel surround back", and when the "S.Back" setting (page 28) is set to "Large" or "Small".

Setting items	Setting contents
Front Height Set whether or not to use the front height channel.	ON : Use the front height channel. OFF : Do not use the front height channel.  This can also be set by pressing  .
Subwoofer ATT Attenuate subwoofer level when using EXT. IN mode.	ON : The input from the subwoofer channel is attenuated. OFF : The input from the subwoofer channel is not attenuated. Usually use in this mode.  Set this to "ON" if the subwoofer channel level seems too high when playing audio signal.
Subwoofer Turn subwoofer output on and off.	ON : The subwoofer is used. OFF : The subwoofer is not used.
Default Restores all the surround parameter settings to their defaults.	Yes : Reset to the defaults. No : Do not reset to the defaults.

Adjusting the Tone (Tone Control)



Default settings are underlined.

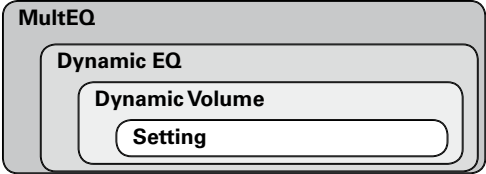
Setting items	Setting contents
Tone Control Sets the tone control function ON and OFF. This can be set when "Dynamic EQ" (page 49) is set to "OFF".	ON : Allow tone adjustment (treble, bass). OFF : Playback without tone adjustment. ✎ The tone cannot be adjusted when in the DIRECT mode.
Bass Adjusts the low frequencies. This can be set when "Tone Control" is set to "ON".	-6dB ~ +6dB (0dB)
Treble Adjusts the high frequencies. This can be set when "Tone Control" is set to "ON".	-6dB ~ +6dB (0dB)

Adjusting MultEQ®, Dynamic EQ™, Dynamic Volume™ Settings (Audyssey Settings)



Default settings are underlined.

- When "Audyssey™ Auto Setup" (page 22) procedure is performed, "MultEQ", "Dynamic EQ" and "Dynamic Volume" functions are enabled.
- Operating conditions for each function
 - Dynamic EQ** :
When "MultEQ" is set to "ON"
 - Dynamic Volume** :
When "Dynamic EQ" is set to "ON"
 - Setting** :
When "Dynamic Volume" is set to "ON"



NOTE

If the speaker settings are changed after "Audyssey Auto Setup" is performed, "MultEQ", "Dynamic EQ" and "Dynamic Volume" functions cannot be selected and "Run Audyssey" is displayed. If this happens, either perform "Audyssey Auto Setup" again, or perform the "Restore" operation (page 26) to restore the settings to as they were after "Audyssey Auto Setup" was performed.

Setting items	Setting contents
MultEQ Corrects the frequency response of the different speakers.	Audyssey : Optimize frequency response of all speakers. Audyssey Byp.L/R : Optimize frequency response of speakers except front L and R speakers. Audyssey Flat : Optimize frequency response of all speakers to flat response. Manual : Apply frequency response set with "Manual EQ" (page 50). OFF : "MultEQ" equalization cannot be used.
NOTE "MultEQ" and "Manual EQ" settings for which "Not Used" has been set at "EQ Customize" (page 31) cannot be selected. - When using headphones, "MultEQ" is set to "OFF".	✎ When "Audyssey", "Audyssey Byp. L/R" or "Audyssey Flat" is selected, "AUDYSSEY MULTEQ" lights. - After running Audyssey Auto Setup, if the Speaker Configuration, Distance, Channel Level, and Crossover Frequency have changed without increasing the number of speakers measured, only "AUDYSSEY MULTEQ" lights. - This can also be set by pressing

Adjusting the Sound and Picture Quality (Audio/Video Adjust)

Setting items	Setting contents
Dynamic EQ Audyssey Dynamic EQ™ solves the problem of deteriorating sound quality as volume is decreased by taking into account human perception and room acoustics.	ON : Use Dynamic EQ function. OFF : Do not use Dynamic EQ function. - When set to "ON", "AUDYSSEY MULTEQ DYN EQ" is displayed. - When "MultEQ" is set to "OFF", "Dynamic EQ" is automatically set to "OFF" - This can also be set by pressing  Dynamic EQ : ON/Volume : OFF → Dynamic EQ / Volume : OFF  "Red"  "Off" NOTE "Tone Control" is set to "OFF" when "Dynamic EQ" is set to "ON". Reference Level Offset : "Audyssey Dynamic EQ" is referenced to the standard film mix level. It makes adjustments to maintain the reference response and surround envelopment when the volume is turned down from 0 dB. However, film reference level is not always used in music or other non-film content. The Dynamic EQ Reference Level Offset provides three offsets from the film level reference (5 dB, 10 dB, and 15 dB) that can be selected when the mix level of the content is not within the standard. 0dB (Film Ref) : This is the default setting and should be used when listening to movies. 5dB : Select this setting for content that has a very wide dynamic range, such as classical music. 10dB : Select this setting for jazz or other music that has a wider dynamic range. This setting should also be selected for TV content as that is usually mixed at 10 dB below film reference. 15dB : Select this setting for pop/rock music or other program material that is mixed at very high listening levels and has a compressed dynamic range.  Setting is enabled when "Dynamic EQ" is "ON".

Setting items	Setting contents
Dynamic Volume Audyssey Dynamic Volume™ Dynamic Volume solves the problem of large variations in volume level between television programs, commercials, and between the soft and loud passages of movies.	ON : Use Dynamic Volume. The Dynamic Volume effect will be at the level of the "Setting" (page 49) OFF : Do not use Dynamic Volume. - When set to "ON", "AUDYSSEY MULTEQ DYN VOL" is displayed. - When "MultEQ" is set to "OFF", "Dynamic Volume" is automatically set to "OFF". - This can also be set by pressing  Dynamic EQ / Volume : ON → Dynamic EQ : ON / Volume : OFF  "Green"  "Red" This can be set when "Dynamic EQ" (page 49) is set to "ON".
Setting Set Dynamic Volume effect.	This can be set when "Dynamic EQ" (page 49) is set to "ON". Day : Low setting provides the least adjustments to the loudest and softest of sounds. Evening : Middle setting prevents loud and soft sounds from being much louder and softer respectively than average sounds. Midnight : High setting affects volume the most, causing all sounds to be of equal loudness.

Adjust Tonal Quality for Each Speaker Using Graphic Equalizer (Manual EQ)

GUI

Default settings are underlined.

Setting items	Setting contents
Adjust CH Adjust the tonal quality of the individual speakers.	1. Select speaker adjustment method. All CH : Adjust tonal quality for all speakers together. L/R CH : Adjust tonal quality for each L/R speaker pair. Each CH : Adjust tonal quality for each speaker separately. 2. Select the frequency band to be adjusted. 63Hz / 125Hz / 250Hz / 500Hz / 1kHz / 2kHz / 4kHz / 8kHz / 16kHz ※ When “L/R CH” or “Each CH” is selected, select the speaker to be adjusted. 3. Adjust the level. -20.0dB ~ +6.0dB (0dB)
Base Curve Copy Copy MultEQ® “Audyssey Flat” correction curve.	Yes : Copy. No : Do not copy. ✎ “Base Curve Copy” is displayed after Audyssey Auto Setup procedure has been performed.
Default Reset the “Manual EQ” settings to their defaults.	Yes : Reset to the defaults. No : Do not reset to the defaults.

Restoring Compressed Audio to Nearly Pre-compressed Conditions for Playback (RESTORER)

GUI

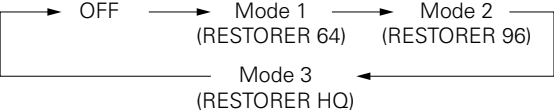
Default settings are underlined.

- Such compressed audio formats as MP3, WMA (Windows Media Audio) and MPEG-4 AAC reduce the amount of data by eliminating signal components that are hard for the human ear to hear. The RESTORER function generates the signals eliminated upon compression, restoring the sound to conditions near those of the original sound before compression. It also corrects the sense of volume of the bass to obtain richer sound with compressed audio signals.
- This can be set with analog signals or when a PCM signal (fs = 44.1/48 kHz) is input.

Setting contents

- OFF** : Do not use RESTORER.
- Mode1** (RESTORER 64) : Optimized mode for compressed sources with very weak highs.
- Mode2** (RESTORER 96) : Apply suitable bass and treble boost for all compressed sources.
- Mode3** (RESTORER HQ) : Optimized mode for compressed sources with normal highs.

- ✎
- The default setting for “iPod” is “Mode3”. All others are set to “OFF”.
 - When set to something other than “OFF”, “**RSTR**” is displayed.
 - This can also be set by pressing  during playback.



Adjusting the Audio Delay Time while Watching the Picture (Audio Delay)

GUI

Default settings are underlined.

Setting contents

- 0ms ~ 200ms**
- ✎
- If you wish to adjust the “Audio Delay” while playing HDMI or component video signals, press  to set “GUI” to “OFF”. This way the audio delay can be adjusted while watching the picture. (Press the  again. The display switches to the display of the menu screen only.)
 - This cannot be adjusted when playing in the EXT. IN, DIRECT or STEREO mode (with “Front Speaker” set to “Large”, “Tone Control” to “OFF” and “MultEQ” and “RESTORER” to “OFF”).
 - When the Auto Lipsync Correction function is operating, you can set within the range 0 ~ 100 ms.
 - Store “Audio Delay” for each input source.

Adjusting the Sound and Picture Quality (Audio/Video Adjust)



Adjusting the Picture Quality (Picture Adjust)



Default settings are underlined.

- This can be set when the input source is **DVD** **HDP** **TV** **SAT/CBL** **VCR** **DVR** **V.AUX**.
 ※ With input sources other than the ones above, this can be set when "Video Select" is selected. In this case, the original input source settings are called out.
- Can be set when the "Video Convert" setting (page 36) is "ON".

Setting items	Setting contents
Contrast Adjust picture contrast.	-6 ~ +6 (0)
Brightness Adjust picture brightness.	0 ~ +12
Chroma Level Adjust picture chroma level (saturation).	-6 ~ +6 (0)
Hue Adjust color hue.	-6 ~ +6 (0)
DNR Reduce overall picture noise.	OFF / Low / Middle / High
Enhancer Emphasize picture contours.	0 ~ +12



- "DNR" and "Enhancer" are each effective with HDMI output.
- The value set at "Picture Adjust" is stored in the memory individually for each input source.



Checking the Status (Information)



Setting items	Setting contents
Status Shows information about current settings.	Select Source / Name / Surround Mode / Input Mode / Decode Mode / HDMI / Digital / Component / iPod Dock / Video Select / Video Convert / i/p Scaler / Resolution / Progressive Mode / Aspect You can also display current status on the main unit's display each time you press STATUS on the main unit. ZONE2 • POWER/ Select Source/ Master Volume
Audio Input Signal Shows information about audio input signals.	Surround Mode : The currently set surround mode is displayed. Signal : The input signal type is displayed. fs : The input signal's sampling frequency is displayed. Format : The number of channels in the input signal (front, surround, LFE) is displayed. Offset : The dialogue normalization correction value is displayed. Flag : This is displayed when inputting signals including a surround back channel. "MATRIX" is displayed with Dolby Digital EX and DTS-ES Matrix signals, "DISCRETE" with DTS-ES Discrete signals.
HDMI Information Shows information about HDMI input signals and monitor.	HDMI Signal Information • Resolution / Color Space / Pixel Depth HDMI Monitor Information • Interface / Support Resolution
Auto Surround Mode Shows information about auto surround mode settings.	Analog/PCM / Digital 2ch / Digital 5.1ch / Multi CH
Quick Select Shows information about quick select settings.	Quick Select 1 / Quick Select 2 / Quick Select 3 • Select Source / Video Select / MultEQ / Dynamic EQ / Dynamic Vol / Analog/PCM / Digital 2ch / Digital 5.1ch / Multi CH ZONE2 Quick Select Z2 Quick Select 1 : Select Source / Volume Level Z2 Quick Select 2 : Select Source / Volume Level Z3 Quick Select 3 : Select Source / Volume Level
Preset Channel Shows information about preset channels.	A 1 ~ G 8 • TUNER

Convenient functions

HDMI Control Function

When you make an HDMI connection with a TV or player compatible with AVR-2310 and HDMI control functions, you can perform the following operations by setting the HDMI control function of each device.

- ☐ **AVR-2310 power off can be linked to the TV power off step**
 - * When you set "Output audio from amp" in the TV audio output setup operation, you can switch the amp power on.
- ☐ **You can switch audio output devices with a TV operation**
- ☐ **You can adjust AVR-2310 volume in the TV volume adjustment operation**
- ☐ **You can switch AVR-2310 input source through linkage to TV input switching**
- ☐ **When playing the player, the AVR-2310 input function switches to the function of that player**



- To play the TV's sound on the AVR-2310, make optical digital connections (page 13 "Connecting the Monitor (TV)").
- To use this function, set "HDMI Control" (page 30) to "ON".

NOTE

- When you power off AVR-2310, the HDMI control function does not operate.
- Some functions may not operate depending on the connected TV or player. Check the owner's manual of each device for details beforehand.
- When "HDMI Control" is set to "ON", it is not possible to assign an HDMI terminal to "TV" at "HDMI" (page 30).
- When "HDMI Control" (page 30) is set to "ON", power is supplied constantly to the AC outlet (UNSWITCHED).

1 Turn the power on for all the equipment connected by HDMI cable.

2 Set the HDMI control function for all equipment connected by HDMI cable.

Set "HDMI Control" (page 30) to "ON".

※ Please refer to the owner's manual as regards setting of connected devices.

※ Carry out Steps 1 and 2 should any of the equipment be unplugged.

3 Switch the television input to the HDMI connected to the AVR-2310.

4 Switch the AVR-2310 input to the HDMI input source and check if the picture from the player is ok.

5 When you turn the TV's power to standby, check that the power of the AVR-2310 and player also goes on standby.



If the HDMI control function does not operate properly, check the following points.

- Is the TV or player compatible with the HDMI control function?
- Is the AVR-2310 properly set?
 - Is "HDMI Control" (page 30) set to "ON"?
 - Is "Power Off Control" (page 30) set to "ON"?
- Are the HDMI control function settings of all equipment correct?

NOTE

Should any of the operations below be performed, the interlocking function may be reset, in which case, repeat step's 1 and 2.

- Menu "HDMI" (page 30) setting has changed.
- There is a change to the connection between the equipment and the HDMI, or an increase in equipment.

Setting the Power to Standby After a Certain Amount of Time (Sleep Timer Function)

This function allows you to automatically set the power to standby after the set amount of time has passed.

When the sleep timer turns the power off in the MAIN ZONE, the power also turns off in the ZONE2.

Press  and display the time you want to set.

The "SLEEP" indicator on the display lights.

• The time switches as shown below each time  is pressed.

→ Sleep:OFF → Sleep:120min → Sleep:90min

← Sleep:30min ← Sleep:60min ←

• The time display turns off after about 5 seconds, and the setting is activated.

• Once the set time has passed, the power is automatically set to standby.

☐ **To cancel the sleep timer**

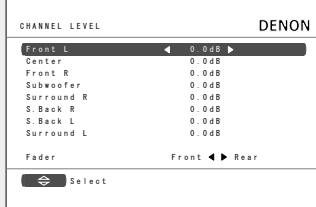
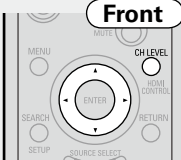
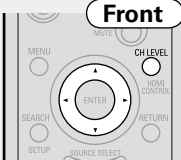
- Press  to set "OFF".
- The "SLEEP" indicator on the display turns off.



Adjust the Volume of the Different Speakers

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

Adjust the volume of the different speakers

- Press . 
- Press to select the speaker. The speaker that can be set switches each time one of the buttons is pressed. 
- Press to adjust the volume. 

※ In the case of a subwoofer, reducing the volume when it is at “-12 dB” will change the setting to “OFF” (none).



If headphones are plugged in, the headphones settings screen appears.

Adjusting the volume of groups of speakers (Fader Function)

This function lets you adjust (fade) the sound from all the front (Front speaker/center speaker/Front Height speaker) or rear (Surround speaker/Surround Back speaker) speakers at once.

- Use or to select “Fader”, then select the item to be adjusting using or .
- Press to adjust the volume of the speakers.



- The fader function does not affect the subwoofer.
- The fader can be adjusted until the volume of the speaker adjusted to the lowest value is -12 dB.

Saving Frequently Used Settings (Quick Select Function)

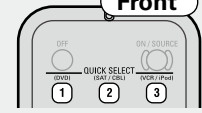
This function allows you to save all the settings shown in step 1. When frequently used settings are saved, they can easily be set again the next time you want to use them. This function also allows you to always enjoy the same playback environment.

- Three sets of settings can be saved.

MAIN ZONE settings

Saving the settings

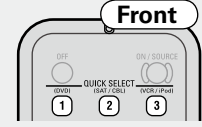
- Set the items below to the settings you want to save.
 - Input source (page 39)
 - Input Mode (page 37)
 - Surround Mode (page 44)
 - Audyssey Settings (MultEQ®, Dynamic EQ™, Dynamic Volume™) (page 48, 49)
 - Front Speaker Setup (page 29)
 - Volume setting (page 39)
 - Video Select (page 36)

- Press and hold the desired until “Memory” appears on the display. The current settings will be memorized. 

[Quick Select Defaults]

	Input Source	Volume
Quick Select 1	DVD	-40 dB
Quick Select 2	SAT/CBL	-40 dB
Quick Select 3	VCR/iPod	-40 dB

Calling the settings out

Press the at which the settings you want to call out are saved. 

NOTE

Input sources stored with the quick select function cannot be selected if they have been deleted at menu “Source Delete” (page 32). In this case, store them again.

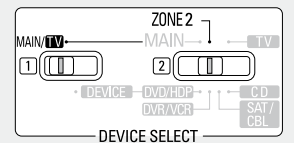
Naming Quick Select settings

“Quick Select Name” (page 33).

ZONE2 settings

It is also possible to save three settings for ZONE2.

Saving the settings

- Set the remote control unit's device selector switches as shown on right. 
- Perform steps 1 and 2 under “MAIN ZONE settings”.

Various Memory Functions

Personal Memory Plus Function

This function sets the settings (input mode, surround mode, MultEQ, Dynamic EQ, Dynamic Volume, audio delay etc.) last selected for the individual input sources.

Last Function Memory

This stores the settings as they were directly before the standby mode was set.

When the power is turned back on, the settings are restored to as they were directly before the standby mode was set.

Backup Memory

The various settings are backed up for about 1 week, even if the power is turned off or the power cord is disconnected.

Playing 2-Channel Sound in ZONE2 (Multizone Function)

2-channel sound can be played in rooms other than the MAIN ZONE where multichannel sound is played.

There are two methods to do this, as described below. Choose one of the methods.

- ① ZONE2 playback by speaker output
- ② ZONE2 playback by audio output (PRE OUT) (using an external amplifier))

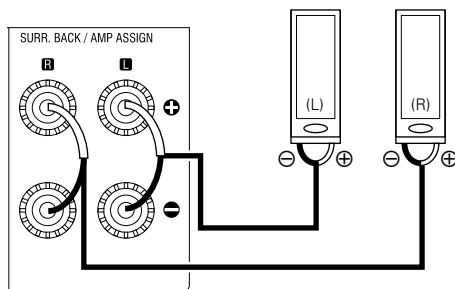
① ZONE2 Playback by Speaker Output

With the Amp Assign function, Zone 2 audio signals are output from the AVR-2310's SURR BACK/AMP ASSIGN terminals.

Preparations

Connecting and setting the speakers

Connecting the speakers



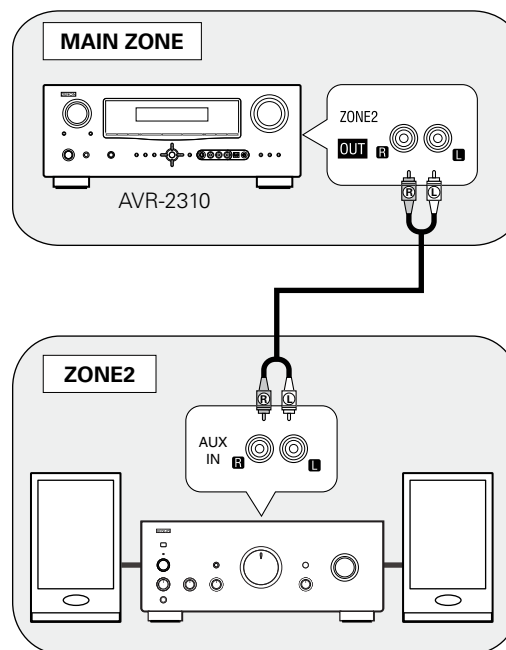
Necessary settings

- Set the AMP ASSIGN mode to "ZONE2".
"Amp Assign" (page 27)
- Perform the settings at "ZONE2 Setup".
"Making the ZONE2 settings" (page 31)

② ZONE2 Playback by Audio Output

The audio signals connected to the AVR-2310's ZONE2 output terminals (ZONE2 OUT) are output to the ZONE2's amplifier and played with that amplifier.

Connection (ZONE2)



- Adjust the volume on the connected amplifier.
- Also be sure to read the operating instructions of the connected devices.

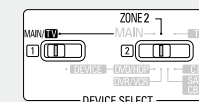
NOTE

- We recommend using high quality pin-plug cables for audio connections in order to prevent noise.
- It is not possible to play the digital audio signals input from the HDMI, COAXIAL or OPTICAL terminals in ZONE2. Play using analog connections (in stereo).

Playback

The operation is the same for "① ZONE2 playback by speaker output" and "② ZONE2 playback by audio output".

- 1 Set the remote control unit's "device selector switches" as shown on right.



- 2 Turn on the AVR-2310's power.
(page 19 "Turning the Power On")



- 3 Press to turn on the ZONE2 power.
When the power turns on, the "Z2" indicator lights on the display.

※ The power can be turned on by pressing the one of while in the standby mode.

- 4 Use the input source selector to choose the input source.
The selected input source is shown on the display.

NOTE

When "SOURCE" is selected for the input source, the sound being played in the MAIN ZONE is played. No sound is output if a digital audio input source is being played in the MAIN ZONE.

Adjusting the volume (for "① ZONE2 playback by speaker output")

Use to adjust the volume.

[Variable range] --- -80dB(1) ~ -40dB(41) ~ +18dB(99)

※ The volume can be adjusted up to the level set at "Vol. Limit" (page 31).

※ The volume display is the display set at "Volume Display" (page 31).



For "② ZONE2 playback by audio output", adjust the volume on the connected amplifier.

Operating the Connected Devices by Remote Control Unit

Registering Preset Codes

DENON and other makes of components can be operated by setting the preset memory.

1 Switch .

MAIN/TV : To register a TV

DEVICE : To operate a Blu-ray disc player, DVD player, Digital video recorder, video deck, satellite receiver, cable TV or CD player

2 Set to the component to be registered.

TV : TV

DVD/HDP : DVD player or Blu-ray disc player

DVR/VCR : Digital video recorder or video deck

SAT/CBL : Satellite receiver or cable TV

CD : CD player

3 Press and at the same time.

The indicator starts flashing.

4 Press ~ and input the 3-digit number of the brand of the component to be preset. The numbers are shown in the Preset Code Table (End of this manual).

5 To store the codes of another component in the memory, repeat steps 1 to 4.



- 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.
- VDP (Video Disc Player) can be preset when  is set to "DVD/HDP".
- The preset memory can be set for one component only among the following: DVD/HDP, DVR/VCR and SAT/CABLE.

Operating Registered Devices

1 Switch .

MAIN/TV : To operate the TV or iPod

DEVICE : To operate a Blu-ray disc player, DVD player, Digital video recorder, video deck, satellite receiver, cable TV or CD player

2 Set to the component you want to operate.

MAIN : iPod

TV : TV

DVD/HDP : DVD player or Blu-ray disc player

DVR/VCR : DVD recorder or video deck

SAT/CBL : Satellite receiver or cable TV

CD : CD player

3 Operate the component.

※ For details, refer to the component's operating instructions.

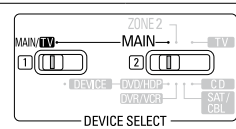
NOTE

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.

iPod



Front

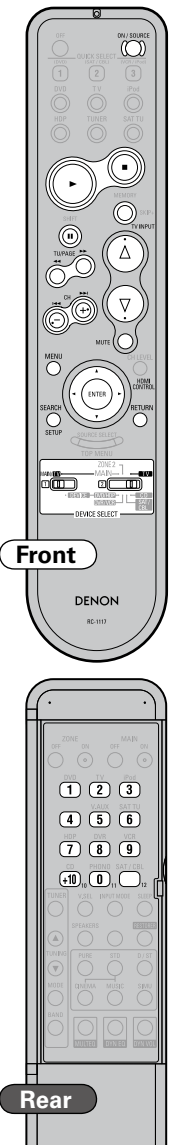
Front		
DEVICE SELECT		
	Play / Pause	
	Stop	
MEMORY	MEMORY * 1	
TU/PAGE	Page up/down * 1	
	Auto search (cue)	
	Cursor	
ENTER	Enter	
	Pause	
SEARCH	Press and hold	Once
	Browse/Remote mode switching	Page search mode switching * 2
RETURN	Return	

* 1 : This operation is possible when using a DENON ASD-3N or ASD-3W control dock for iPod.

* 2 : This operation is possible when using a DENON ASD-1R or ASD-11R control dock for iPod.

See overleaf

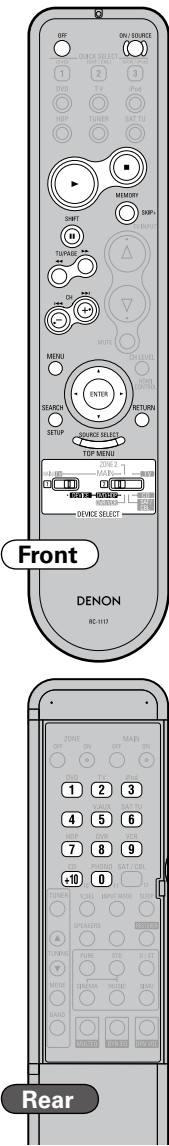
TV



Front	
DEVICE SELECT	
ON/SOURCE	Power on / Standby
	Play *
	Pause *
	Stop *
	Manual search * (fast-reverse / fast-forward)
CH + -	Channel *
TV INPUT	Switching the input
VOLUME ▲▼	▲ : TV Volume (+) ▼ : TV Volume (-)
MUTE	TV MUTE
MENU	Calling out the menus
	Cursor operation
ENTER	Enter setting
SETUP	Setup
RETURN	Return
Rear	
1 ~ 12	Channels
Default setting (Preset code)	HITACHI (014)
Special Remarks	①

* :When the punch through function (page 57) is set, this functions as the button for the device for which punch through is set.

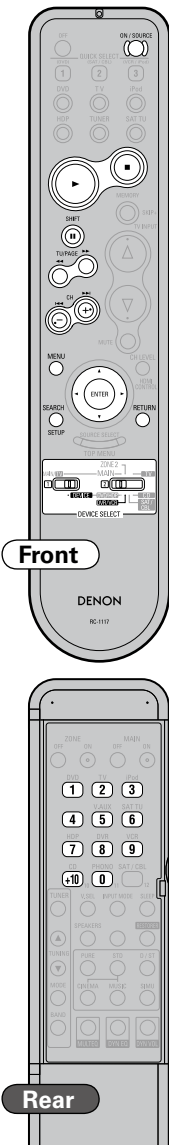
Blu-ray Disc / DVD Player



Front					
DEVICE SELECT					
POWER OFF	Power off				
ON/SOURCE	Power on or Power on / Standby				
	Play				
	Stop				
SHIFT, II	Pause				
SKIP +	<table><tr><th>BD Player</th><th>DVD Player</th></tr><tr><td>-</td><td>Disc skip</td></tr></table>	BD Player	DVD Player	-	Disc skip
BD Player	DVD Player				
-	Disc skip				
	Manual search (fast-reverse / fast-forward)				
	Auto search (cue)				
MENU	Calling out the menus				
	Cursor operation				
ENTER	Enter setting				
SETUP	Setup				
RETURN	Return				
SOURCE SELECT / TOP MENU	Calling out the top menus				
Rear					
0 ~ 9, +10	Number input / Track selection				
Default setting (Preset code)	<table><tr><th>BD Player</th><th>DVD Player</th></tr><tr><td>DENON (121)</td><td>DENON (111) *</td></tr></table>	BD Player	DVD Player	DENON (121)	DENON (111) *
BD Player	DVD Player				
DENON (121)	DENON (111) *				
Special Remarks	①, ②				

* :The initial setting of Preset code is 111 (DVD Player).

Digital Video Recorder / Video Deck

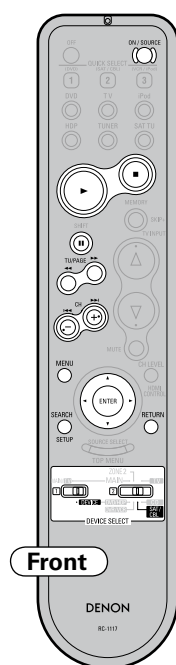


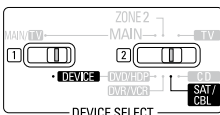
Front	
DEVICE SELECT	
ON/SOURCE	Power on / Standby
	Play
	Stop
SHIFT, II	Pause
	Manual search (fast-reverse / fast-forward)
CH + -	Switch channels (+, -)
MENU	Calling out the menus
	Cursor operation
ENTER	Enter setting
SETUP	Setup
RETURN	Return
Rear	
0 ~ 9, +10	Channels
Default setting (Preset code)	HITACHI (008)
Special Remarks	①, ②

[Special Remarks]

- ① Only one device can be set in the preset memory for each mode.
When a new preset code is registered, the existing code is automatically erased.
- ② For some brands, the DVD remote control buttons may have different function names. Check beforehand.

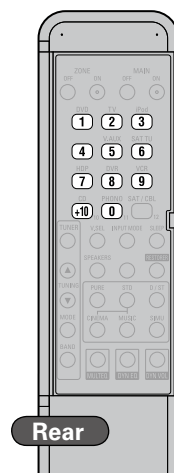
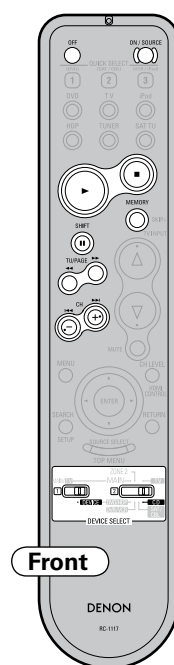
Satellite receiver/Cable TV



Front		
DEVICE SELECT		
ON/SOURCE	Power on / Standby	
	Play *	
	Pause *	
	Stop *	
	Manual search * (fast-reverse / fast-forward)	
CH + -	Channel *	
	Cursor operation	
ENTER	Enter setting	
MENU	Calling out the menus	
SETUP	Setup	
RETURN	Return	
Rear		
0 ~ 9, +10	Channels	
Default setting (Preset code)	Satellite Receiver	Cable TV
	—	ABC (009)
Special Remarks	①	

* : When the punch through function (page 57) is set, this functions as the button for the device for which punch through is set.

CD Player



Front	
DEVICE SELECT	
POWER OFF	Power off
ON/SOURCE	Power on or Power on / Standby
	Play
	Stop
SHIFT, II	Pause
SKIP +	Disc skip +
	Manual search (fast-reverse / fast-forward)
	Auto search (cue)
Rear	
0 ~ 9, +10	Number input / Track selection
Default setting (Preset code)	DENON (111)
Special Remarks	①

Assigning buttons that are Not Used to Operate Other Devices (Punch Through Function)

The Blu-ray disc Player/DVD player, Digital Video recorder, video deck, or CD player can be operated as described below even when is set to the "SAT/CBL" or "TV" position.

- Play
- Stop
- Pause
- fast-forward
- fast-reverse
- Auto Search

1 Switch .

MAIN/TV : Assigning TV buttons to operate other devices

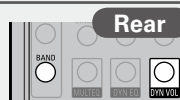
DEVICE : Assigning satellite receiver or cable TV buttons to operate other devices

2 Switch .

TV : Assigning TV buttons to operate other devices

SAT/CBL : Assigning satellite receiver or cable TV buttons to operate other devices

3 Press and at the same time. The indicator starts flashing.



4 Refer to the table below and input the number corresponding to the device to be assigned.

Device to be assigned	Numbers
iPod, Tuner	①
CD Player	②
Blu-ray Disc Player / DVD Player	③
DVD Recorder, Video Deck	④
No setting	①



This is set to "No setting" upon purchase.

[Special Remarks]

- ① Only one device can be set in the preset memory for each mode.
When a new preset code is registered, the existing code is automatically erased.
- ② For some brands, the DVD remote control buttons may have different function names. Check beforehand.

Other Information

Surround

The AVR-2310 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.

Dolby Surround

Dolby Digital

Dolby Digital is a multichannel digital signal format developed by Dolby Laboratories.
A total of 5.1-channels are played: 3 front channels (“FL” , “FR” and “C”), 2 surround channels (“SL” and “SR”) and the “LFE” channel for low frequencies.
Because of this, there is no crosstalk between channels and a realistic sound field with a “three-dimensional” feeling (sense of distance, movement and positioning) is achieved.
A real, overpowering sense of presence is achieved when playing movie sources in AV rooms as well.

Dolby Digital Plus

Dolby Digital Plus is an improved Dolby Digital signal format that is compatible with up to 7.1-channels of discrete digital sound and also improves sound quality thanks to extra data bit rate performance. It is upwardly compatible with conventional Dolby Digital, so it offers greater flexibility in response to the source signal and the conditions of the playback equipment.

Dolby TrueHD

Dolby TrueHD is a high definition audio technology developed by Dolby Laboratories, using lossless coding technology to faithfully reproduce the sound of the studio master.
This format is compatible with a maximum sampling frequency of 96 kHz and up to 7.1-channels, so it is used for applications particularly prioritizing sound quality.

Dolby Pro Logic II

Dolby Pro Logic II is a matrix decoding technology developed by Dolby Laboratories.
Regular music such as that on CDs is encoded into 5-channels to achieve an excellent surround effect.
The surround channel signals are converted into stereo and full band signals (with a frequency response of 20 Hz to 20 kHz or greater) to create a “three-dimensional” sound image offering a rich sense of presence for all stereo sources.

Dolby Pro Logic IIx

Dolby Pro Logic IIx is a further improved version of the Dolby Pro Logic II matrix decoding technology.
Audio signals recorded in 2-channels are decoded to achieve a natural sound with up to 7.1-channels.
There are 3 modes: “Music” suited for playing music, “Cinema” suited for playing movies, and “Game” which is optimized for playing games.

Dolby Digital EX

Dolby Digital EX is a 6.1-channel surround format proposed by Dolby Laboratories that allows users to enjoy in their homes the “DOLBY DIGITAL SURROUND EX” audio format jointly developed by Dolby Laboratories and Lucas Films.
The 6.1 channels of sound, including surround back channels, provide improved sound positioning and expression of space.

Dolby Pro Logic IIz

Dolby Pro Logic IIz introduces a new dimension to Home Entertainment through the addition of a pair of front height channels. Compatible with stereo, 5.1 and 7.1 content, Dolby Pro Logic IIz provides enhanced spaciousness, depth and dimension to movies, concert video and videogame playback while maintaining the full integrity of the source mix.

Dolby Pro Logic IIz identifies and decodes spatial cues that occur naturally in all content, directing this information to the front height channels, complementing the performance of left and right surround sound speakers. Content that is encoded with Dolby Pro Logic IIz height channel information can be even more revealing, with perceptually discrete height channel information bringing an exciting new dimension to home entertainment. Dolby Pro Logic IIz, with front height channels is also an ideal alternative for households that cannot support the placement of back surround speakers of a typical 7.1 channel system but may have bookshelf space available to support the addition of height speakers.

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

DTS Surround

DTS Digital Surround

DTS Digital Surround is the standard digital surround format of DTS, Inc., compatible with a sampling frequency of 44.1 or 48 kHz and up to 5.1-channels of digital discrete surround sound.

DTS-HD High Resolution Audio

DTS-HD High Resolution Audio is an improved version of the conventional DTS, DTS-ES and DTS 96/24 signals formats, compatible with sampling frequencies of 96 or 48 kHz and up to 7.1-channels of discrete digital sound. High data bit rate performance provides high quality sound. This format is fully compatible with conventional products, including conventional DTS digital surround 5.1-channel data.

DTS-HD Master Audio

DTS-HD Master Audio is DTS, Inc.'s lossless audio format compatible with up to 96 kHz/7.1-channels. The lossless audio coding technology faithfully reproduces the sound of the studio master. It is fully compatible with conventional products, including conventional DTS digital surround 5.1-channel data.

DTS-ES™ Discrete 6.1

DTS-ES™ Discrete 6.1 is a 6.1-channel discrete digital audio format adding a surround back (SB) channel to the DTS digital surround sound. Decoding of conventional 5.1-channel audio signals is also possible according to the decoder.

DTS-ES™ Matrix 6.1

DTS-ES™ Matrix 6.1 is a 6.1-channel discrete digital audio format inserting a surround back (SB) channel to the DTS digital surround sound through matrix encoding. Decoding of conventional 5.1-channel audio signals is also possible according to the decoder.

DTS NEO:6™ Surround

DTS NEO:6™ is a matrix decoding technology for achieving 6.1-channel surround playback with 2-channel sources. It includes "DTS NEO:6 Cinema" suited for playing movies and "DTS NEO:6 Music" suited for playing music.

DTS 96/24

DTS 96/24 is a digital audio format enabling high sound quality playback in 5.1-channels with a sampling frequency of 96 kHz and 24 bit quantization on DVD-Video.

Manufactured under license under U.S. Patent #'s: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,226,616; 6,487,535; 7,212,872; 7,333,929; 7,392,195; 7,272,567 & other U.S. and worldwide patents issued & pending. DTS is a registered trademark and the DTS logos, Symbol, DTS-HD and DTS-HD Master Audio are trademarks of DTS, Inc.© 1996-2008 DTS, Inc. All Rights Reserved.

Audyssey

Audyssey MultEQ®

Audyssey MultEQ is a room equalization solution that calibrates any audio system so that it can achieve optimum performance for every listener in a large listening area. Based on several room measurements, MultEQ calculates an equalization solution that corrects for both time and frequency response problems in the listening area and also performs a fully automated surround system setup.

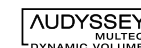
Audyssey Dynamic EQ™

Audyssey Dynamic EQ solves the problem of deteriorating sound quality as volume is decreased by taking into account human perception and room acoustics. Audyssey Dynamic EQ works in tandem with Audyssey MultEQ to provide well-balanced sound for every listener at any volume level.

Audyssey Dynamic Volume™

Audyssey Dynamic Volume solves the problem of large variations in volume level between television programs, commercials, and between the soft and loud passages of movies.

Audyssey Dynamic EQ is integrated into Dynamic Volume so that as the playback volume is adjusted automatically, the perceived bass response, tonal balance, surround impression, and dialog clarity remain the same.



Manufactured under license from Audyssey Laboratories. U.S. and foreign patents pending. Audyssey MultEQ® is a registered trademark of Audyssey Laboratories. Audyssey Dynamic EQ™ is a trademark of Audyssey Laboratories. Audyssey Dynamic Volume™ is a trademark of Audyssey Laboratories.

Surround Modes and Parameters

Surround mode	Signals and adjustability in the different modes																
	Channel output						Parameter (default values are shown in parentheses)										
	Front L/R	Center	Surround L/R	Surround Back L/R	Front Height L/R	Subwoofer	D. Comp *1	LFE *2	AFDM *1	Surround Back	Cinema EQ.	Mode	Room Size	Effect Level	Delay Time	Subwoofer	DRC *3
PURE DIRECT, DIRECT	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	×	×	×	×	×	×	○	○ (Auto)
MULTI CH DIRECT	○	◎	◎	◎	×	◎	×	○ (0dB)	○ (ON)	○	×	×	×	×	×	×	×
STEREO	○	×	×	×	×	◎	○ (OFF)	○ (0dB)	×	×	×	×	×	×	×	×	○ (Auto)
EXT. IN	○	◎	◎	◎	×	◎	×	×	×	×	×	×	×	×	×	×	×
MULTI CH IN	○	◎	◎	◎	×	◎	×	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	×
DOLBY PRO LOGIC IIx	○	◎	◎	◎	×	◎	○ (OFF)	×	×	○	○ (NOTE1)	○ (Cinema)	×	×	×	×	○ (Auto)
DOLBY PRO LOGIC II	○	◎	◎	×	×	◎	○ (OFF)	×	×	○	○ (NOTE2)	○ (Cinema)	×	×	×	×	○ (Auto)
DTS NEO:6	○	◎	◎	◎	×	◎	○ (OFF)	×	×	○	○ (NOTE1)	○ (Cinema)	×	×	×	×	×
DOLBY PRO LOGIC IIz	○	◎	◎	×	◎	◎	○ (OFF)	×	×	×	○ (OFF)	×	×	×	×	×	×
DOLBY DIGITAL	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	×
DOLBY DIGITAL Plus	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	×
DOLBY TrueHD	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	○ (Auto)
DTS SURROUND	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	×
DTS 96/24	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	×
DTS-HD	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	○ (ON)	○	○ (OFF)	×	×	×	×	×	×
5CH/7CH STEREO	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	○	×	×	×	×	×	×	×
ROCK ARENA	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	○	×	×	○ (Medium)	○ (10)	×	×	×
JAZZ CLUB	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	○	×	×	○ (Medium)	○ (10)	×	×	×
MONO MOVIE	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	○	×	×	○ (Medium)	○ (10)	×	×	×
VIDEO GAME	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	○	×	×	○ (Medium)	○ (10)	×	×	×
MATRIX	○	◎	◎	◎	◎	◎	○ (OFF)	○ (0dB)	×	○	×	×	×	×	○ (30 ms)	×	×
VIRTUAL	○	×	×	×	×	◎	○ (OFF)	○ (0dB)	×	×	×	×	×	×	×	×	×

○ : Signal / Adjustable

× : No signal / Not adjustable

◎ : Turned on or off by speaker configuration setting

○ : Signal / Adjustable

× : No signal / Not adjustable

NOTE1 : This parameter is available when the menu "Mode" (page 46) is set to "Cinema".

NOTE2 : This parameter is available when the menu "Mode" (page 46) is set to "Cinema" or "Pro Logic".

NOTE:

*1 : When playing Dolby Digital and DTS signals.

*2 : When playing Dolby Digital, DTS and Linear PCM (multi ch).

*3 : When playing Dolby TrueHD signal.

Surround mode	Signals and adjustability in the different modes									
	Parameter (default values are shown in parentheses)									
	PRO LOGIC II/IIx MUSIC mode only			NEO:6 MUSIC mode only	EXT. IN only	Tone Control (NOTE4)	MultEQ	Dynamic EQ (NOTE5)	Dynamic Volume (NOTE6)	RESTORER (NOTE7)
	Panorama	Dimension	Center Width	Center Image	Subwoofer ATT					
PURE DIRECT, DIRECT	×	×	×	×	×	×	×	×	×	×
MULTI CH DIRECT	×	×	×	×	×	×	×	×	×	×
STEREO	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
EXT. IN	×	×	×	×	○	×	×	×	×	×
MULTI CH IN	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DOLBY PRO LOGIC IIx	○ (OFF)	○ (3)	○ (3)	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
DOLBY PRO LOGIC II	○ (OFF)	○ (3)	○ (3)	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
DTS NEO:6	×	×	×	○ (0.3)	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
DOLBY PRO LOGIC IIz	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DOLBY DIGITAL	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DOLBY DIGITAL Plus	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DOLBY TrueHD	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DTS SURROUND	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DTS-96/24	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
DTS-HD	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	×
5CH/7CH STEREO	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
ROCK ARENA	×	×	×	×	×	○ (NOTE3)	○ (OFF)	○ (OFF)	○ (OFF)	○
JAZZ CLUB	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
MONO MOVIE	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
VIDEO GAME	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
MATRIX	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○
VIRTUAL	×	×	×	×	×	○ (0dB)	○ (OFF)	○ (OFF)	○ (OFF)	○

○ : Adjustable

×

NOTE3 : BASS +6 dB, TREBLE +4 dB

NOTE4 : Cannot be set when the "Dynamic EQ" (page 49) setting is "ON".

NOTE5 : Cannot be set when the "MultEQ" (page 48) setting is "OFF".

NOTE6 : Cannot be set when the "Dynamic EQ" (page 49) setting is "OFF".

NOTE7 : "RESTORER" can be set for analog or PCM 48 kHz or 44.1 kHz input signals.

Differences in Surround Mode Names Depending on the Input Signals

Button		Note	Input signals														
Surround mode	ANALOG		PCM		DTS-HD		DTS				DOLBY		DOLBY DIGITAL				
			Linear PCM (multi ch)	Linear PCM (2ch)	DTS-HD Master Audio	DTS-HD High Resolution Audio	DTS ES DSCRT (With Flag)	DTS ES MTRX (With Flag)	DTS (5.1ch)	DTS 96/24	DOLBY TrueHD	DOLBY DIGITAL Plus	DOLBY DIGITAL EX (With Flag)	DOLBY DIGITAL EX (With no Flag)	DOLBY DIGITAL (5.1/5/4ch)	DOLBY DIGITAL (4/3ch)	DOLBY DIGITAL (2ch)
STANDARD																	
DTS SURROUND																	
	DTS-HD MSTR		×	×	×	●	×	×	×	×	×	×	×	×	×	×	×
	DTS-HD HI RES		×	×	×	×	●	×	×	×	×	×	×	×	×	×	×
	DTS ES DSCRT6.1	*1 *3	×	×	×	×	×	● ◎	×	×	×	×	×	×	×	×	×
	DTS ES MTRX6.1	*1 *3	×	×	×	×	×	×	● ◎	×	×	×	×	×	×	×	×
	DTS SURROUND		×	×	×	×	×	○	○	●	×	×	×	×	×	×	×
	DTS 96/24		×	×	×	×	×	×	×	×	●	×	×	×	×	×	×
	DTS (-HD) + PLIIx CINEMA	*2 *3	×	×	×	○	○	○	○	○	○	×	×	×	×	×	×
	DTS (-HD) + PLIIx MUSIC	*1 *3	×	×	×	○	○	○	○	○	○	×	×	×	×	×	×
	DTS (-HD) + PLIIz	*1 *4	×	×	×	○	○	○	○	○	○	×	×	×	×	×	×
	DTS (-HD) + NEO:6	*1 *3	×	×	×	○	○	×	○	○	○	×	×	×	×	×	×
	DTS NEO:6 CINEMA		○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DTS NEO:6 MUSIC		○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
DOLBY SURROUND																	
	DOLBY TrueHD		×	×	×	×	×	×	×	×	×	●	×	×	×	×	×
	DOLBY DIGITAL+		×	×	×	×	×	×	×	×	×	×	●	×	×	×	×
	DOLBY DIGITAL EX	*1 *3	×	×	×	×	×	×	×	×	×	×	×	○	○	○	×
	DOLBY (D+) (HD) +EX	*1 *3	×	×	×	×	×	×	×	×	×	○	○	×	×	×	×
	DOLBY DIGITAL		×	×	×	×	×	×	×	×	×	×	×	○	●	●	×
	DOLBY (D) (D+) (HD) +PLIIx CINEMA	*2 *3	×	×	×	×	×	×	×	×	×	○	○	● ◎	○	○	×
	DOLBY (D) (D+) (HD) +PLIIx MUSIC	*1 *3	×	×	×	×	×	×	×	×	×	○	○	○	○	○	×
	DOLBY (D) (D+) (HD) +PLIIz	*1 *4	×	×	×	×	×	×	×	×	×	○	○	○	○	○	×
	DOLBY PRO LOGIC IIx CINEMA	*3	○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC IIx MUSIC	*3	○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC IIx GAME	*3	○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC IIz	*4	○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC II CINEMA		○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC II MUSIC		○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC II GAME		○	×	○	×	×	×	×	×	×	×	×	×	×	×	○
	DOLBY PRO LOGIC		○	×	○	×	×	×	×	×	×	×	×	×	×	×	○

NOTE:

*1: This mode is not available when the surround back speaker setup is set to "None".

*2: This mode is not available when the surround back speaker setup is set to "1spkr" or "None".

*3: Can be set when "Amp Assign" is set to "Normal".

*4: Not selectable when "Amp Assign" is set to anything other than "Front Height".

● : Mode selectable in initial status

◎ : Mode fixed when "AFDM" is "ON"

○ : Selectable mode

× : Non-selectable mode

Button		Note	Input signals														
Surround mode	ANALOG		PCM		DTS-HD		DTS				DOLBY		DOLBY DIGITAL				
			Linear PCM (multi ch)	Linear PCM (2ch)	DTS-HD Master Audio	DTS-HD High Resolution Audio	DTS ES DSCRT (With Flag)	DTS ES MTRX (With Flag)	DTS (5.1ch)	DTS 96/24	DOLBY TrueHD	DOLBY DIGITAL Plus	DOLBY DIGITAL EX (With Flag)	DOLBY DIGITAL EX (With no Flag)	DOLBY DIGITAL (5.1/5/4ch)	DOLBY DIGITAL (4/3ch)	DOLBY DIGITAL (2ch)
STANDARD																	
MULTI CH IN																	
MULTI CH IN			×	●	×	×	×	×	×	×	×	×	×	×	×	×	×
MULTI IN + PLIIx CINEMA		*2 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
MULTI IN + PLIIx MUSIC		*1 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
MULTI IN + PLIIz		*1 *5	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
MULTI IN + Dolby EX		*1 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
MULTI CH IN 7.1		*3	×	● ◎ (7.1)	×	×	×	×	×	×	×	×	×	×	×	×	×
DIRECT																	
DIRECT			○	×	○	○	○	○	○	○	○	○	○	○	○	○	○
MULTI CH DIRECT			×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M DIRECT + PLIIx CINEMA		*2 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M DIRECT + PLIIx MUSIC		*1 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M DIRECT + PLIIz		*1 *5	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M DIRECT + Dolby EX		*1 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M DIRECT 7.1		*3	×	○ (7.1)	×	×	×	×	×	×	×	×	×	×	×	×	×
PURE DIRECT																	
PURE DIRECT			○	×	○	○	○	○	○	○	○	○	○	○	○	○	○
MULTI CH PURE DIRECT			×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M PURE D + PLIIx CINEMA		*2 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M PURE D + PLIIx MUSIC		*1 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M PURE D + PLIIz		*1 *5	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M PURE D + Dolby EX		*1 *3	×	○	×	×	×	×	×	×	×	×	×	×	×	×	×
M CH PURE DIRECT 7.1		*3	×	○ (7.1)	×	×	×	×	×	×	×	×	×	×	×	×	×
DSP SIMULATION																	
5CH/7CH STEREO		*4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ROCK ARENA			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
JAZZ CLUB			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
MONO MOVIE			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
VIDEO GAME			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
MATRIX			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
VIRTUAL			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
STEREO																	
STEREO			●	○	●	○	○	○	○	○	○	○	○	○	○	○	○

NOTE :

- *1: This mode is not available when the surround back speaker setup is set to "None".
 *2: This mode is not available when the surround back speaker setup is set to "1spkr" or "None".
 *3: Can be set when "Amp Assign" is set to "Normal".
 *4: If the surround back speaker setup is set to "None", then "5CH STEREO" is displayed.
 *5: Not selectable when "Amp Assign" is set to anything other than "Front Height".

- : Mode selectable in initial status
 ◎ : Mode fixed when "AFDM" is "ON"
 ○ : Selectable mode
 × : Non-selectable mode

Relationship Between Video Signals and Monitor Output

Video Convert	MAIN ZONE MONITOR OUT															
	Input Signals				Output Signals				GUI menu displayed							
	HDMI	COMPONENT	S-VIDEO	VIDEO	HDMI	COMPONENT	S-VIDEO	VIDEO	HDMI	COMPONENT	S-VIDEO	VIDEO				
ON/OFF	×	×	×	×	×	×	×	×	Only the GUI menu is displayed							
ON	×	×	×	○	VIDEO	VIDEO	VIDEO	VIDEO	○ (VIDEO)	×	×	×				
ON	×	×	○	×	S-VIDEO	S-VIDEO	S-VIDEO	S-VIDEO	○ (S-VIDEO)	×	×	×				
ON	×	×	○	○												
ON	×	○ (1080p)	×	×	COMPONENT	COMPONENT	×	×	○ (COMPONENT)	×	×	×				
ON	×	○ (1080i ~ 480p)	×	×			COMPONENT	COMPONENT		×	×	×				
ON	×	○ (480i/576i)	×	×						×	×	×				
ON	×	○ (1080p)	×	○			×	VIDEO	VIDEO	×	×	×	×			
ON * 1	×	○ (1080p)	×	○			×				○ (VIDEO)	○ (VIDEO)	○ (VIDEO)			
ON	×	○ (1080i ~ 480p)	×	○			×				×	×	×			
ON	×	○ (480i/576i)	×	○			COMPONENT	COMPONENT	○ (COMPONENT)	×	×	×	×			
ON	×	○ (1080p)	○	×			S-VIDEO	S-VIDEO		×	×	×				
ON * 1	×	○ (1080p)	○	×						○ (S-VIDEO)	○ (S-VIDEO)	○ (S-VIDEO)				
ON	×	○ (1080i ~ 480p)	○	×			COMPONENT	COMPONENT	○ (COMPONENT)	×	×	×	×			
ON	×	○ (480i/576i)	○	×			S-VIDEO	S-VIDEO		×	×	×				
ON	×	○ (1080p)	○	○						×	×	×				
ON * 1	×	○ (1080p)	○	○	HDMI	COMPONENT	COMPONENT	COMPONENT	×	×	×	×				
ON	×	○ (1080i ~ 480p)	○	○			S-VIDEO	S-VIDEO		×	×	×				
ON	×	○ (480i/576i)	○	○				○ (COMPONENT)	×	×	×					
ON	○	×	×	×		×	×		×	×	×	×				
ON	○	×	○	○			S-VIDEO	S-VIDEO	○ (COMPONENT)	×	×	×				
ON	○	×	○	○		COMPONENT	×	×		×	×	×				
ON	○	○	×	×			S-VIDEO	S-VIDEO	×	×	×	×				
ON	○	○	○	○						×	×	×				
ON	○	○	○	○			HDMI	×	×							
ON	○	○	○	○				S-VIDEO	VIDEO							
ON	○	○	○	○												
OFF	×	×	×	○	×	COMPONENT	×	×	Only the GUI menu is displayed	×						
OFF	×	×	○	×			S-VIDEO	VIDEO								
OFF	×	×	○	○												
OFF	×	○	×	×			S-VIDEO	VIDEO								
OFF	×	○	○	×												
OFF	×	○	○	○			S-VIDEO	VIDEO								
OFF	○	×	×	×		HDMI	×	×								
OFF	○	×	○	×			S-VIDEO	VIDEO								
OFF	○	×	○	×												
OFF	○	○	×	×		COMPONENT	×	×								
OFF	○	○	○	×			S-VIDEO	VIDEO								
OFF	○	○	○	×												
OFF	○	○	○	×			S-VIDEO	VIDEO								
OFF	○	○	○	×												

○ : Video signal input present

×

*1 : When no HDMI monitor is connected or the HDMI monitor's power is not on



- The main zone video conversion function is compatible with the following formats: NTSC, PAL, SECAM, NTSC4.43, PAL-N, PAL-M and PAL-60.
- When SECAM signals of video input are up-converted, the signals are output in PAL format from the S-Video and Video connectors.
- The GUI menu display cannot be superimposed when x.v.Color signals and computer's resolution (e.g. VGA) are input.

○ () : Superimposed on the picture indicated in ().

× () : Only the picture in () is output.

×

*2 : Only the GUI menu is displayed when no HDMI monitor is connected or the HDMI monitor's power is not on.

*3 : When no HDMI monitor is connected or the HDMI monitor's power is "OFF", the GUI menu is superimposed on the picture indicated in ().

Troubleshooting

If a problem should arise, first check the following:

1. Are the connections correct?

2. Is the set being operated as described in the owner's manual?

3. Are the other components operating properly?

If this unit does not operate properly, check the items listed in the table below. Should the problem persist, there may be a malfunction.

In this case, disconnect the power immediately and contact your store of purchase.

[General]

Symptom	Cause	Countermeasure	Page
Set does not operate properly.	• External noise or interference is causing the set to malfunction.	• Reset the microprocessor.	68
Power does not turn on, or turns off directly after it was turned on.	• Connection of the power cord is faulty.	• Check the insertion of the power cord plug.	18
No sound is produced from speakers.	• Connection with the input devices or connection of the speaker cables is faulty. • Device you want to play and set input source do not match. • Master volume is turned too low. • Mute mode is set. • Headphones are connected. • No digital signals are being input.	• Check the connections.	11
		• Select an appropriate input source.	19, 39
		• Adjust the master volume to an appropriate level.	39
		• Cancel the mute mode.	43
		• Disconnect the headphones.	43
Display is off.	• The "Dimmer" setting is set to "OFF". • The PURE DIRECT mode is set.	• Select an input source for which the digital input setting has been made.	35
		• Set the input mode.	37
		• Set to something other than "OFF".	33
"DOLBY DIGITAL" indicator does not appear on display.	• The PURE DIRECT mode is set.	• Set a surround mode other than the PURE DIRECT mode.	45
		• Check the Blu-ray Disc player / DVD player's audio output setting. For details, read the Blu-ray Disc player / DVD player's operating instructions.	–

Symptom	Cause	Countermeasure	Page
Power switches off suddenly while you are using the AVR-2310, the power indicator will flash in red at intervals of approximately 2 seconds.	• The protection circuit will be activated depending upon the temperature rise in the internal parts of the unit.	• Please switch off power at once, and re-apply the power after the body temperature has fallen sufficiently.	3
		• Please re-install AVR-2310 in a place having good ventilation.	–
Power switches off suddenly while you are using the AVR-2310, the power indicator will flash red at intervals of approximately 0.5 seconds.	• Use speakers having impedance less than that specified. • If speaker cable core wires touch each other or the core wires become disconnected from their terminals, the protection circuit will be activated in the event of core wires coming into contact with the AVR-2310 rear panel.	• Please use speakers which have the specified impedance.	11
		• Unplug the power cord, then after twisting the core wires together tightly again, or effecting termination treatments etc, please reconnect once again.	11
Even applying power, the power display flashes red at intervals of approximately 0.5 seconds.	• The AVR-2310 amplifier circuit has failed.	• Switch off the power and please contact the DENON service adviser.	–
Set does not work properly when remote control unit operated.	• Batteries are worn. • You are operating outside of the specified range. • Obstacle between main unit and remote control unit. • The batteries are not inserted in the proper direction, as indicated by the polarity marks in the battery compartment. • The set's remote control sensor is exposed to strong light (direct sunlight, inverter type fluorescent bulb light, etc.). • Settings do not match the remote control unit's DEVICE SELECT switch.	• Replace with new batteries.	3
		• Operate within the specified range.	3
		• Remove the obstacle.	3
		• Insert the batteries in the proper direction, following the polarity marks in the battery compartment.	3
		• Move the set to a place in which the remote control sensor will not be exposed to strong light.	3
		• Match the settings to the remote control unit's DEVICE SELECT switch.	55

See overleaf

[Audio]

Symptom	Cause	Countermeasure	Page
No sound is produced from center speaker.	• You are playing a monaural source (TV, etc.) in the "STANDARD" (Dolby/DTS Surround) mode.	• The mode is set to something other than "STANDARD" (Dolby/DTS Surround).	44
No sound is produced from surround speakers.	• The surround mode is set to "STEREO", "DIRECT" or "PURE DIRECT".	• Set to a surround playback mode.	44, 45
No sound is produced from surround back speaker.	• The surround back speaker's power amplifier is assigned to a different channel.	• Check the setting and change it as necessary.	27
	• "S.Back" setting is set to "None".	• Set to something other than "None".	28
	• The "Audio/Video Adjust" – "Audio Adjust" – "Surround Back" settings are "OFF".	• Please set "Audio/Video Adjust" – "Audio Adjust" – "Surround Back" to settings other than "OFF".	47
	• Surround mode not set to a mode for 6.1- or 7.1-channel playback.	• Select a surround playback mode.	44
No sound is produced from subwoofer.	• Subwoofer's power not turned on.	• Turn on the subwoofer's power.	–
	• The "Subwoofer" setting at "Speaker Config." is set to "No".	• Set to "Yes".	27
	• The subwoofer is not properly connected.	• Check the connections.	11
	• The subwoofer's volume is turned off.	• Adjust the subwoofer's volume to an appropriate level.	53
DTS sound is not output.	• Blu-ray Disc player / DVD player's audio output setting is not set to bitstream.	• Set the Blu-ray Disc player / DVD player. For details, refer to the Blu-ray Disc player / DVD player's operating instructions.	–
	• Blu-ray Disc player / DVD player is not compatible with DTS sound playback.	• Use a DTS-compatible player.	–
	• The AVR-2310's "Decode Mode" setting is set to "PCM".	• Set to the "Auto" or "DTS" mode.	37
HDMI audio signals are not output from speakers.	• The "Manual Setup" – "HDMI Setup" – "HDMI Audio Out" setting is set to "TV".	• Set to "Amp".	30

Symptom	Cause	Countermeasure	Page
No sound is output from the monitor connected with HDMI connections.	• The "Manual Setup" – "HDMI Setup" – "HDMI Audio Out" setting is set to "Amp".	• Set to "TV".	30
Dolby TrueHD, DTS-HD, Dolby Digital Plus audio is not output.	• HDMI is not connected.	• Connect the HDMI.	12
	• Blu-ray Disc player's audio output setting is not set to bitstream.	• Set the Blu-ray Disc player. For details, refer to the Blu-ray Disc player's operating instructions.	–
	• Blu-ray Disc player is not compatible with DTS sound playback.	• Use a DTS-compatible player.	–

[iPod]

Symptom	Cause	Countermeasure	Page
iPod cannot be played.	• The input source assigned to "iPod Dock" is not selected.	• Switch to the input source assigned at "iPod Dock".	35
	• Cable is not properly connected.	• Reconnect.	14
	• Control dock for iPod's AC adapter is not connected to power outlet.	• Plug the control dock for iPod's AC adapter into a power outlet.	–

[Video]

Symptom	Cause	Countermeasure	Page
No picture appears.	- The connections between the AVR-2310 and monitor are faulty. - The monitor's input setting is wrong. - PURE DIRECT mode is set. - The player is connected using the component input connectors, the monitor is connected using the video (yellow) output connectors.	- Check the connections. - Set properly. - Cancel the PURE DIRECT mode. - High definition (1080i/720p) and progressive (480p/576p) video signals are not down-converted. Set the player to interlace (480i/576i) signals.	13 ~ 18 45
Picture cannot be recorded.	Input source does not match recorder's video connection connector (video).	The video conversion function does not work for the REC OUT connectors. Match the input source and recorder connections.	15
DVDs cannot be copied on a DVR.	—	This is not a malfunction. Most movie software includes copy prevention signals and cannot be copied.	—
The menu screen and status indicators are not displayed.	"OFF" is displayed for the status. - The main volume display is "OFF". - The display during tuner operation is "OFF". - The display during iPod operation is "OFF".	- When viewing HDMI or component video signals via the AVR-2310, the GUI menu appears when the MENU button on the main unit or the MENU button on the remote control unit. - Set "Manual Setup" – "Option Setup" – "GUI" – "Text" to "ON". - Set "Manual Setup" – "Option Setup" – "GUI" – "Master Volume" to "Top" or "Bottom". - Set when "Manual Setup" – "GUI" – "Tuner Information" is not "OFF". - Set when "Manual Setup" – "GUI" – "iPod Information" is not "OFF".	9 32 32 32 32

[HDMI]

Symptom	Cause	Countermeasure	Page
HDMI audio signals are not output from speakers.	The "Manual Setup" – "HDMI Setup" – "HDMI Audio Out" setting is set to "TV".	Set to "Amp".	30
No picture appears with HDMI connections.	- The connections to the HDMI connectors are faulty. - HDMI input setting is improper. - The monitor is not compatible with copyright protection (HDCP). - The HDMI format of the player and monitor do not match.	- Check the connections. - Check the HDMI input setting. - Connect a monitor that is compatible with copyright protection (HDCP). - Match the HDMI format of the player and monitor.	12 35 12 12
No sound is output from the monitor connected with HDMI connections.	The "Manual Setup" – "HDMI Setup" – "HDMI Audio Out" setting is set to "Amp".	Set to "TV".	30
When performing the following operations on a connected device, AVR-2310 has the same operations. ·Power ON/OFF ·Switching audio output devices ·Adjust volume ·Switch input source	HDMI's CEC function is operating.	Set "Manual Setup" – "HDMI Setup" – "HDMI Control" to "OFF". When you only want to operate the power on/off each device, set "Power Off Control" to "OFF".	30

Restoring All the Settings to as They were at the Time of Purchase (Resetting the Microprocessor)

Perform this procedure if the display is abnormal or if operations cannot be performed.
When the microprocessor is reset, all the settings are reset to their default values.

- 1

Turn off the power using  on the main unit.
- 2

Press  while simultaneously pressing  and  on the main unit.
- 3

Once the display starts flashing at intervals of about 1 second, release the two buttons.



If in step 3 the display does not flash at intervals of about 1 second, start over from step 1.

Specifications

Audio section

- Power amplifier

Rated output:	Front (A, B):	
	105 W+105 W	(8 Ω/ohms, 20 Hz ~ 20 kHz with 0.08 % T.H.D.)
	135 W+135 W	(6 Ω/ohms, 1 kHz with 0.7 % T.H.D.)
	Center:	
	105 W	(8 Ω/ohms, 20 Hz ~ 20 kHz with 0.08 % T.H.D.)
	135 W	(6 Ω/ohms, 1 kHz with 0.7 % T.H.D.)
	Surround:	
	105 W+105 W	(8 Ω/ohms, 20 Hz ~ 20 kHz with 0.08 % T.H.D.)
	135 W+135 W	(6 Ω/ohms, 1 kHz with 0.7 % T.H.D.)
	Surround Back:	
	105 W+105 W	(8 Ω/ohms, 20 Hz ~ 20 kHz with 0.08 % T.H.D.)
	135 W+135 W	(6 Ω/ohms, 1 kHz with 0.7 % T.H.D.)
Output connectors:	Front:	A or B 6 ~ 16 Ω/ohms
		A + B 12 ~ 16 Ω/ohms
Center, Surround Back / Amp Assign:		
6 ~ 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) |

Video section

- Standard video connectors
- | | |
|-------------------------------------|---------------------------|
| Input / output level and impedance: | 1 Vp-p, 75 Ω/ohms |
| Frequency response: | 5 Hz ~ 10 MHz — +1, -3 dB |
- S-Video connectors
- | | |
|-------------------------------------|---|
| Input / output level and impedance: | Y (brightness) signal — 1 Vp-p, 75 Ω/ohms |
| | C (color) signal — 0.3 (PAL) / 0.286 (NTSC) Vp-p, 75 Ω/ohms |
| Frequency response: | 5 Hz ~ 10 MHz — +1, -3 dB (when video convert set to "OFF") |
- Color component video connector
- | | |
|-------------------------------------|--|
| Input / output level and impedance: | Y (brightness) signal — 1 Vp-p, 75 Ω/ohms |
| | P _B / C _B signal — 0.7 Vp-p, 75 Ω/ohms |
| | P _R / C _R signal — 0.7 Vp-p, 75 Ω/ohms |
| Frequency response: | 5 Hz ~ 60 MHz — +0, -3 dB (when video convert set to "OFF") |

Tuner section

	[FM]	[AM]
(note: μV at 75 Ω/ohms, 0 dBf = 1 x 10 ⁻¹⁵ W)	87.5 MHz ~ 108.0 MHz	522 kHz ~ 1611 kHz
Receiving Range:	1.0 μV (11.2 dBf)	18 μV
Usable Sensitivity:	1.6 μV (15.3 dBf)	
50 dB Quieting Sensitivity:	23 μV (38.5 dBf)	
S/N (IHF-A):	77 dB	
	72 dB	
Total harmonic Distortion (at 1 kHz):	MONO 0.15 %	
	STEREO 0.3 %	

General

Power supply:	AC 230 V, 50 Hz
Power consumption:	600 W
	0.3 W (Standby)
Maximum external dimensions:	434 (W) x 171 (H) x 377 (D) mm
Weight:	11.2 kg

Remote control unit (RC-1117)

Batteries:	R6/AA Type (two batteries)
Maximum external dimensions:	52 (W) x 243 (H) x 21 (D) mm
Weight:	184 g (including batteries)

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

**List of preset codes / Liste von voreingestellten Codes / Liste de codes pré-réglés / Lista dei codici pre-regolati /
Lista de códigos pre-ajustados / Lijst van voorinstelde codes / Förteckning över förinställda koder**

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TV/DVD Combination

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DVD/VCR Combination

B	Broksonic	061
C	CineVision	074
G	Go Video	012
I	Insignia	055
P	Panasonic	018, 019, 020
S	Samsung	012, 048
	Sony	002, 003, 004, 005
	Sylvania	046
T	Toshiba	007, 010

TV/DVD Combination

A	Akai	098
	Apex	026
	Audiovox	075
	Axion	099
C	Coby	081

	Cytron	097
D	DiamondVision	124
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G	GFM	101
H	Haier	103
I	Ilo	096
	Initial	096
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M	Mintek	096
O	Oppo	100
P	Panasonic	078
	Philips	073
	Polaroid	086
R	RCA	035
S	Sansui	008
	Sharp	079
	Sylvania	046, 123
T	Toshiba	008, 101
W	Westinghouse	072

TV/DVD/VCR Combination

M	Magnavox	062
P	Panasonic	021
T	Toshiba	009

DEVICE SELECT : DVR/VCR

Digital Video Recorder

A	ABS	035
	Alienware	035
B	Bang & Olufsen	079
C	CyberPower	035
D	Dell	035
	DIRECTV	063, 065, 066, 067, 071, 073, 077
	Dish Network	076
	Dishpro	076
E	Echostar	076
	Expressvu	076
G	Gateway	035
	GOI	076
H	Hewlett Packard	035
	HNS	072
	Howard Computers	035
	HP	035
	HTS	076
	Hughes Network Systems	063, 065, 066, 067, 073
	Humax	063
	Hush	035

I	iBUYPOWER	035
J	JVC	063, 076
L	Linksys	035
M	Media Center PC	035
	Microsoft	035
	Mind	035
N	Niveus Media	035
	Northgate	035
P	Panasonic	070
	Philips	063, 065, 066, 067, 068, 072
	Proscan	077
R	RCA	063, 065, 072, 077
	ReplayTV	069
S	Samsung	065, 067, 072
	Sonic Blue	069
	Sony	035, 064, 074, 078
	Stack	035
	Systemax	035
T	Tagar Systems	035
	Tivo	063, 064, 065, 068, 073, 074, 078
	Toshiba	035, 075
	Touch	035
U	UltimateTV	077
V	Viewsonic	035
	Voodoo	035
Z	ZT Group	035

Video Cassette Recorder

A	ABS	035
	Adventura	008, 033
	Aiwa	008, 033
	Akai	020
	Alienware	035
	American High	032
	Asha	013, 030
	Audio Dynamics	018
	Audiovox	031
B	Beaumarck	013, 030
	Bell & Howell	029
	Broksonic	056
C	Calix	031
	Candle	030, 031
	Canon	032
	CineVision	058
	Citizen	030, 031
	Colortyme	018
	Craig	013, 030, 031
	Curtis Mathes	012, 018, 030, 032
	Cybernex	013, 030
	CyberPower	035

D	Daewoo	019, 033
	Davidson	008
	DBX	018
	Dell	035
	Denon	014
	DIRECTV	061
	Durabrand	025
	Dynatech	008, 033
E	Electrohome	010, 031
	Electroponic	031
	Emerson	008, 010, 021, 031, 032, 033
F	Fisher	029
	Fuji	026, 032
	Funai	008, 021, 033
G	Garrard	008, 033
	Gateway	035
	GE	012, 013, 030, 032
	Go Video	013, 048
	Goldstar	018, 031
	Gradiente	008, 033
H	Harley Davidson	033
	Harman/Kardon	018
	Headquarter	029
	Hewlett Packard	035
	Hitachi	[008]*, 014
	Howard Computers	035
	HP	035
	Hughes Network Systems	014, 061
	Humax	061
	Hush	035
I	iBUYPOWER	035
	Insignia	059
	Instant Replay	032
J	JC Penney	018, 029, 030, 031, 032
	JCL	032
	JVC	016, 017, 018, 029
K	Kenwood	018, 029
	Kodak	031, 032
L	LG	031
	Linksys	035
	Lloyd's	008, 033
	LXI	031
M	Magnasonic	021
	Magnavox	008, 021, 022, 025, 028, 032
	Magnin	013, 031
	Marantz	018, 029, 032
	Marta	031
	Matsushita	032
	Media Center PC	035
	MEI	032
	Memorex	008, 013, 025, 029, 030, 031, 032, 033, 062

	MGA	010, 013
	MGN Technology	013, 030
	Microsoft	035
	Mind	035
	Minolta	014
	Mitsubishi	010, 038
	Motorola	032
	MTC	008, 013, 030
	Multitech	008, 030, 033
N	NEC	018, 029
	Nikko	031
	Niveus Media	035
	Noblex	013, 030
	Northgate	035
O	Olympus	032
	Optimus	021, 031
	Optonica	024
	Orion	044, 062
P	Panasonic	000, 001, 002, 003, 004, 032, 060
	Penney	013, 014
	Pentax	014
	Philco	032
	Philips	024, 032, 041, 061
	Philips Magnavox	041
	Pilot	031
	Profitronic	013
	Pulsar	025
Q	Quarter	029
	Quartz	029
	Quasar	032
R	RadioShack	008, 024, 031
	Radio Shack/Realistic	024, 029, 030, 031, 032, 033
	Radix	031
	Randex	031
	RCA	011, 012, 013, 014, 015, 030, 032, 051
	Realistic	008, 024, 029, 030, 031, 032, 033
	ReplayTV	060
	Ricavision	035
	Runco	025
S	Samsung	013, 019, 020, 030, 040, 048, 049, 061
	Sanky	025
	Sansui	008, 044, 062
	Sanyo	013, 029, 030
	Scott	010, 019
	Sears	008, 014, 029, 031, 032
	Sharp	023, 024, 042
	Shogun	013, 030
	Singer	032
	Sonic Blue	060

	Sony	005, 006, 007, 008, 026, 034, 035, 036, 037, 045, 052, 053, 054
	Stack	035
	STS	014, 032
	Sylvania	008, 010, 021, 022, 032, 033, 046, 055
	Symphonic	008, 021, 022, 033
	Systemax	035
T	Tagar Systems	035
	Tandy	029
	Tashiko	031
	Teac	008, 033
	Technics	032
	Teknika	008, 031, 032, 033
	Thomas	008
	Tivo	061
	TMK	013, 030
	Toshiba	009, 010, 019, 035, 039, 047, 050, 057
	Totevision	013, 030, 031
	Touch	035
U	Unitech	013, 030
V	Vector	019
	Vector Research	018
	Video Concepts	018, 019
	Videosonic	013, 030
	Viewsonic	035
	Villain	008
	Voodoo	035
W	Wards	008, 013, 014, 024, 030, 031, 032, 033
X	XR-1000	008, 032, 033
Y	Yamaha	018, 029
Z	Zenith	008, 025, 026, 027, 043
	ZT Group	035

DVD/VCR Combination

B	Broksonic	056
C	CineVision	058
G	Go Video	048
I	Insignia	059
P	Panasonic	002, 003, 004
S	Samsung	040, 048, 049
	Sony	037, 045, 052, 053, 054
	Sylvania	046
T	Toshiba	039, 050, 057

TV/VCR Combination

R	RCA	051
S	Sylvania	055

TV/DVD/VCR Combination

M	Magnavox	022
P	Panasonic	001
T	Toshiba	047

DEVICE SELECT : SAT/CBL

Satellite Receiver

A	AccessHD	109
	Alpha Digital	109
	Alphastar	083
	Artec	106
C	CaptiveWorks	102
	Channel Master	111
	Chaparral	077
	Coolsat	103
	Coship	114
	Crossdigital	120
D	Digital Stream	110
	DIRECTV	058, 059, 060, 061, 062, 063, 064, 068, 069, 073, 074, 075, 076, 088, 089, 090, 093, 095, 116
	Dish Network	052, 053, 054, 055, 065, 091, 115, 119
	Dishpro	115, 119
	Drake	078
E	Echostar	052, 065, 091, 115, 119
	Expressvu	119
G	GE	056, 057, 112
	General Instrument	079, 117
	GOI	119
	Goodmind	112
H	Hisense	118
	Hitachi	074, 084
	HTS	119
	Hughes Network Systems	060, 062, 067, 068, 070, 075, 093
	Humax	104
I	Ilo	118
	Insignia	096
J	Jerrold	117
	JVC	052, 065, 091, 119
L	Lasonic	113
	LG	096, 105
M	Magnavox	073, 107
	Memorex	073
	MicroGem	108
	Mitsubishi	068, 099
	Motorola	117
N	Next Level	117
P	Panasonic	061, 095, 097

	Pansat	100
	Paysat	073
	PCT	111
	Philco	107
	Philips	060, 067, 068, 070, 072, 073, 090
	Pioneer	060
	Primestar	082
	Proscan	056, 057
	Proton	118
R	RadioShack	117
	RCA	056, 057, 058, 070, 076, 086, 087, 088, 089, 092
	Realistic	080
S	Samsung	060, 062, 069, 070, 071, 094
	Sharp	098
	Sony	059, 066, 116
	Star Choice	117
	STS	085
T	Tivax	109
	Tivo	060, 070
	Toshiba	063
U	UltimateTV	116
	Uniden	073, 081
	US Digital	118
V	Viewsat	101
	Voom	117
Z	Zenith	064, 096

Cable TV

A	ABC	[009]*, 010, 012, 028, 040
	Adelphia	007
	Americast	047
	Antronix	014, 015
	Archer	015
	AT&T	003
B	Bell South	047
C	Cable Vision	006
	Cabletenna	014
	Cableview	013
	Clearmaster	046
	ClearMax	046
	Colour Voice	016
	Comcast	000, 005, 033
	Comtronics	017
	Contec	018
	Coolmax	046
	COX	005
D	Daeryung	036
	Director	033
	Dumont	051
E	Eastern	019

	Everquest	041
F	Focus	045
G	GC Electronics	015
	GE	009, 010
	Gehua	033
	Gemini	020, 041
	General Instrument	005, 010, 033, 044
	Goldstar	042
H	Hamlin	021
	Hitachi	010
J	Jasco	041
	Jerrold	005, 010, 020, 028, 029, 033, 041, 044
L	LG	050
M	Magnavox	022
	MegaCable	005
	Memorex	023, 040
	Motorola	000, 003, 005, 033, 037, 039, 044
	Movie Time	024
	Multitech	046
N	NEC	011
	NET Brazil	035
	NSC	024
	Oak	018
O	Pace	008, 043
P	Panasonic	026, 027, 040
	Paragon	040
	Philips	016, 022
	Pioneer	002, 030, 036, 042
	Popular Mechanics	045
	Proscan	009, 010
	Pulsar	040
Q	Quasar	040
R	RadioShack	041, 046
	RCA	013, 027
	Realistic	015
	Recoton	045
	Regal	021
	Regency	019
	Rembrandt	010
	Runco	040
S	Samsung	008, 034, 042
	Scientific Atlanta	001, 002, 003, 007, 012, 036, 038
	Signal	020, 041
	Signature	010
	Sony	006, 048
	Sprucer	027
	Standard Component	025
	Starcom	020, 028, 041
	Stargate	020, 041
	Starquest	020, 041

	Supercable	044
	Supermax	046
T	Time Warner	004
	Tocom	031
	Torx	049
	Toshiba	040
	Trans PX	044
	Tristar	046
	TS	049
	Tusa	020, 041
	TV86	024
U	Unika	014, 015
	United Cable	028
	Universal	014, 015
V	V2	046
	View Star	018, 022, 024
	Viewmaster	046
	Vision	046
	Vortex View	046
Z	Zenith	032, 040, 047
	Zentek	045

DEVICE SELECT : CD

CD Player

A	Accuphase	018
	Acoustic Research	019
	ADS	020
	Aiwa	021
	Akai	022
	Audio Alchemy	023
	Audio Pro	024
	Audio-Technica	025
B	B & K	026
C	California Audio Labs	036
	Carver	040, 041
D	Denon	001, 042, [111]*
	DKK	035
	DMX Electronics	040
	Dynamic Bass	041
G	GE	017
	Genexxa	037
H	Harman/Kardon	007
J	JVC	003, 011, 012
K	Kenwood	038, 039
L	Krell	040
L	Linn	040
M	Magnavox	027
	Marantz	028
	Miro	035

	Mission	040
	Musical Fidelity	029
N	NEC	030
	NSM	040
O	Onkyo	002
	Optimus	035, 037, 039, 041
P	Philips	009, 010
	Pioneer	006
	Polk Audio	040
	Proscan	017
	Proton	040
Q	QED	040
	Quad	040
R	RCA	000, 017
	Realistic	041
	Rotel	040
S	SAE	040
	Sansui	040
	Sanyo	031
	SAST	040
	Sharp	032
	Silsonic	038
	Sonic Frontiers	040
	Sony	004, 005, 008, 013, 014
	Soundesign	033
	Symphonic	034
T	TAG McLaren	040
	Technics	015
W	Wards	040
Y	Yamaha	016
Z	Zonda	040

- [*]: Preset codes set upon shipment from the factory.
- : Sie Voreinstellungscodes wurden vor der Auslieferung werkseitig eingestellt.
 - : Les codes pré-réglés diffèrent en fonction des livraisons de l'usine.
 - : I codici di presettaggio sono impostati in fabbrica prima della consegna.
 - : Los códigos vienen preprogramados de fábrica.
 - : Voorinstelde codes bij het verlaten van de fabriek.
 - : Förinställda koder har ställts in vid transporten från fabriken.

DVD preset codes DVD-Voreinstellungscodes Codes pré-réglés DVD Codici di preselezione DVD Códigos de preajuste de DVD DVD-voorkeuzecodes Förinställda DVD-koder			
DENON Model No. / Modellnr Modèle numéro Modello No N° de modelo Modelnr Modellnr	111 (default / standard / défaut / default / predeterminado / standaard / standard)		014
	DVD-900 DVD-1000 DVD-1400 DVD-1500 DVD-1710 DVD-1720 DVD-1730 DVD-1740 DVD-1910 DVD-1920 DVD-1930 DVD-1940 DVD-2200 DVD-2800 DVD-2800II	DVD-2900 DVD-2910 DVD-2930 DVD-3800 DVD-3910 DVD-3930 DVD-A11 DVD-5000 DVD-A1XV DVD-A1XVA DVD-A1 DVM-3700	DVD-800 DVD-1600 DVD-2000 DVD-2500 DVD-3000 DVD-3300

Blu-ray preset codes Blu-ray-Voreinstellungscodes Codes pré-réglés Blu-ray Codici di preselezione Blu-ray Códigos de preajuste de Blu-ray Blu-ray-voorkeuzecodes Förinställda Blu-ray	
DENON Model No. Modellnr Modèle numéro Modello No N° de modelo Modelnr Modellnr	121
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