Panasonic®

Operating Instructions
Blu-ray Disc Home Theater Sound System

Model No. **SC-BT730**
SC-BT330
SC-BT230
SC-BT235

The illustration shows the image of the unit SC-BT730.

Dear customer

Thank you for purchasing this product.
For optimum performance and safety, please read these instructions carefully.

Before connecting, operating or adjusting this product, please read the instructions completely. Please keep this manual for future reference.

Blu-ray Disc™ | BD LIVE™ | DVD VIDEO | RAM COMPATIBLE PLAYER | COMPACT disc DIGITAL AUDIO | SDXC™

HDMI | VIERA Link™ | VIERA CAST™ | AVCHD™ | Java POWERED

ENERGY STAR

For the U.S.A. and Canada
As an ENERGY STAR® Partner,※ Panasonic has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

※ For Canada only: The word "Participant" is used in place of the word "Partner".

If you have any questions contact
For the U.S.A. and Puerto Rico: **1-800-211-PANA(7262)**
For Canada: **1-800-561-5505**

Only for U.S.A. and Puerto Rico:
**The warranty can be found on page 50.
Please return the product registration card (if included), or register via the Internet at:
www.panasonic.com/register**
For Canada: **The warranty can be found on page 51.**

P PC PX

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IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

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 **(For the U.S.A. and Canada)**
    Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.
    A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11 Only use attachments/accessories specified by the manufacturer.
12 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.
13 Unplug this apparatus during lightning storms or when unused for long periods of time.
14 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.

CAUTION!
- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

THE FOLLOWING APPLIES ONLY TO THE U.S.A. AND CANADA.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

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

CAUTION	VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR/Class II (IIa)
CAUTION	CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1, +A2/CLASS 1M
ATTENTION	RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 1M, EN CAS D'OUVERTURE. NE PAS REGARDER DIRECTEMENT À L'AIDE D'INSTRUMENTS D'OPTIQUE.
FORSIGTIG	SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 1M, NÅR LÅGET ER ÅBENT, UNDGÅ AT SE LIGE PÅ MED OPTISKE INSTRUMENTER.
VARO	AVATTAESSA OLET ALTTIINA LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. ÄLÄ KATSO OPTISELLA LAITTEELLA SUORAAN SÄTEESEEN.
VARNING	KLASS 1M SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD, BETRAKTA EJ STRÅLEN DIREKT GENOM OPTISKT INSTRUMENT.
VORSICHT	SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 1M, WENN ABDECKUNG GEÖFFNET. NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
注意	打开时有可见及不可见激光辐射。避免光束照射。
注意	ここを開くと可見及び不可視レーザー光が出ます。ビームを見たり、触れたりしないでください。 VQL1V70

(Inside of product)

CLASS 1 LASER PRODUCT
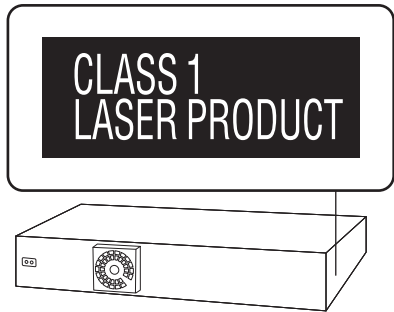
The laser product label has not been attached to products for the U.S.A. and Canada.

(For units with PX printed on the packaging)
THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

(For units with PX printed on the packaging)
CAUTION:
The AC voltage is different according to the area. Be sure to set the proper voltage in your area before use.
(For details, please refer to page ⇨ 18.)

(For units with PX printed on the packaging)
This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

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Table of contents

Getting started

Playback

Radio

TV

Other devices

Advanced operations

Optional speaker settings

Reference

- **These operating instructions are applicable to models SC-BT730, SC-BT330, SC-BT230 and SC-BT235. Unless otherwise indicated, illustrations in these operating instructions are of SC-BT730 for the U.S.A. and Canada.**
- **Operations in these instructions are described mainly with the remote control, but you can perform the operations on the main unit if the controls are the same.**

Indicates features applicable to:

BT730: SC-BT730 only
BT330: SC-BT330 only
BT230: SC-BT230 only
BT235: SC-BT235 only

System		SC-BT730	SC-BT330	SC-BT230	SC-BT235
Main unit		SA-BT730	SA-BT330	SA-BT230	SA-BT235
Speaker system	**Front speakers**	SB-HF730	SB-HF330	SB-HF230	SB-HF330
	Center speaker	SB-HC730	SB-HC230	SB-HC230	SB-HC230
	Surround speakers	SB-HS230	SB-HS230	SB-HS230	SB-HS230
Subwoofer		SB-HW330	SB-HW330	SB-HW480	SB-HW480
Wireless system (with a digital transmitter)		SH-FX71	—	—	—

- **Some models may not be on sale in certain regions.**
- **Some accessories and external devices mentioned in these operating instructions that are not included with this product may not be on sale in certain regions.**

Accessory

Check the supplied accessories before using this unit.

☐ **1 Remote control**
(N2QAKB000089)

☐ **2 Batteries for remote control**

☐ **1 Video cable**
(K2KA2BA00001)

☐ **1 FM indoor antenna**
(RSAX0002)

☐ **1 Sheet of speaker cable stickers**

☐ **Speaker cables**

(center) [REEX1154], with green connector
(surround) [REEX1155, (**BT730**: REEX1155B)], with gray connector
[REEX1156, (**BT730**: REEX1156B)], with blue connector

BT230
(front) [REEX1152A], with red connector
[REEX1153A], with white connector

BT730 **BT330**

☐ **1 Auto speaker setup microphone**
(L0CBAY000034)

☐ **AC power supply cord**
For the U.S.A. and Canada

BT730
2 (K2CB2CB00021)

BT330 **BT235** **BT230**
1 (K2CB2CB00021)

For units with PX printed on the packaging

BT730
2 (K2CQ2CA00007)

BT230
1 (K2CQ2CA00007)

BT730

☐ **2 Speaker stands (with cable)**
[RYK1609-K] with white connector
[RYK1609A-K] with red connector

☐ **2 Bases**
(RYK1610-K)

☐ **4 Screws**
(XTN5+10FFJK)

☐ **2 Screws**
(XYN5+J18FJK)

For units with PX printed on the packaging

☐ **AC plug adaptor**

2 (K2DAYYY00002) **BT730**

1 (K2DAYYY00002) **BT230**

BT330 **BT235**

☐ **2 Speaker stands (with cable)**
[RYPX1041-KL] with white connector
[RYPX1041-KR] with red connector

☐ **2 Bases**
(RYPX0389-K)

☐ **8 Screws**
(XTN5+10FFJK)

(ONLY FOR CANADA)
The enclosed Canadian French label sheet corresponds to the English display on the front and back side of the unit.

☐
- Product numbers correct as of December 2009. These may be subject to change.
- Do not use AC power supply cord with other equipment.
- Only for U.S.A. and Puerto Rico: To order accessories, refer to "Accessory Purchases (United States and Puerto Rico)" on page 50.
For other areas: To order accessories, call the dealer from whom you have made your purchase.

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Control reference guide
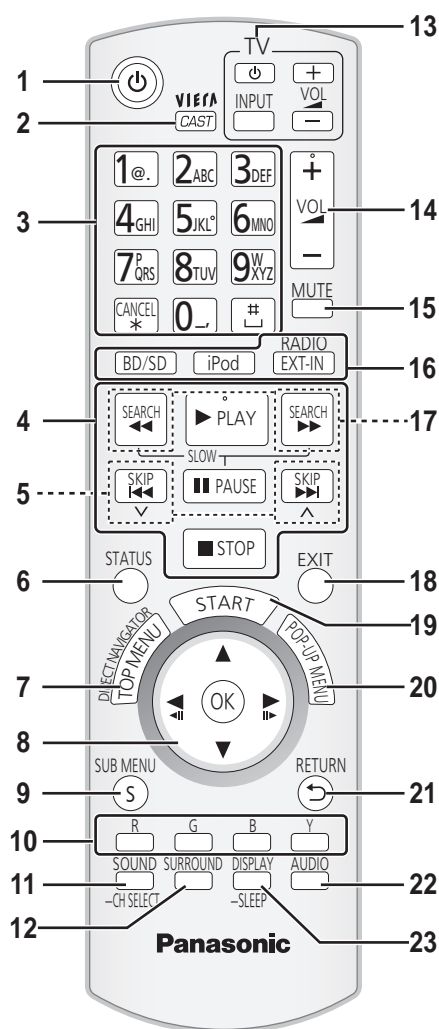
Remote control

1. Turn the unit on and off (⇨ 19)
2. Display the Home screen of VIERA CAST (⇨ 34)
3. Select title numbers, etc./Enter numbers or characters (⇨ 34)
   [CANCEL]: Cancel
4. Basic playback control buttons (⇨ 25)
5. Select preset radio stations
6. Show status messages (⇨ 25)
7. Show Top Menu/Direct Navigator (⇨ 25)
8. [▲, ▼, ◄, ►]: Menu selection
   [OK]: Selection
   [◄, ►]: Select preset radio station (⇨ 29)
   [◄◄] (◄❙❙), [►►] (❙❙►): Frame-by-frame (⇨ 25)
9. Show sub menu (⇨ 26)
10. These buttons are used when;
    ● Operating a BD-Video disc that includes Java™ applications (BD-J).
    ● Displaying "Title View" and "Album View" screens. (⇨ 27)
    ● Operating contents of VIERA CAST (⇨ 34)
11. Set the sound mode (⇨ 24)/Select speaker channel (⇨ 24)
12. Select surround sound effects (⇨ 24)
13. TV operation buttons
    [⏻]: Turn the television on and off
    [INPUT]: Input select
    [+ − VOL]: Adjust the volume
14. Adjust the volume of the main unit
15. Mute the sound
    ● "MUTE" flashes on the unit's display, while the function is on.
    ● To cancel, press the button again or adjust the volume.
    ● Muting is canceled if the unit is turned off.
16. Select the source
    [BD/SD]: Select disc drive or SD card drive (⇨ 23)
    [iPod]: Select iPod/iPhone as the source (⇨ 23, 33)
    [RADIO/EXT-IN]: Select FM tuner or external audio as the source (⇨ 23, 29, 30)
17. Select radio stations manually (⇨ 29)
18. Exit the menu screen
19. Show START menu (⇨ 23)
20. Show Pop-up menu (⇨ 25)
21. Return to previous screen
22. Select audio (⇨ 25)
23. Show Playback menu (⇨ 34)/Set the sleep timer
    ① Press and hold [−SLEEP].
    ② While "SLEEP ✳✳" is displayed, press [−SLEEP] several times to select the time (in minutes).
    ● Timer selection is up to 120 minutes.
    ● Select "OFF" when cancelling the setting.
    ● To confirm the remaining time
      Press and hold the button again.

Main unit (Front)

e.g., **BT730**

Pull open.
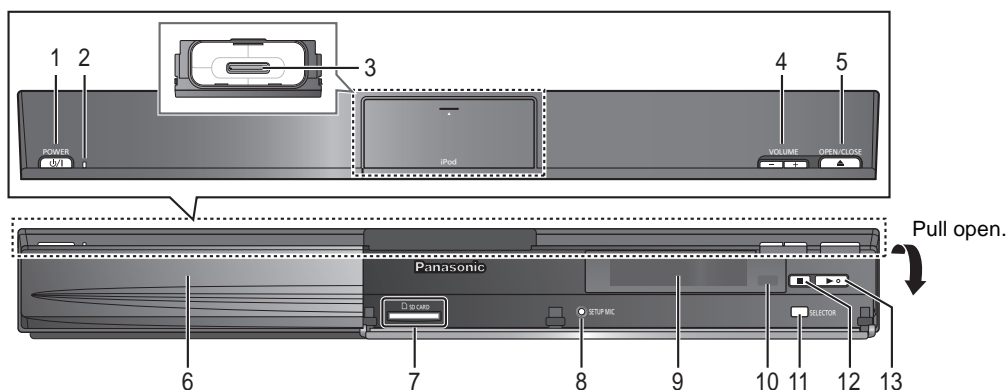
1 **Standby/on switch (POWER ⏻/I)** (⇨ 19)
   Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
2 **Power indicator**
   The indicator lights when this unit is turned on.
3 Connect iPod/iPhone (⇨ 32)
4 Adjust the volume of the main unit
5 Open or close the disc tray (⇨ 22)
6 Disc tray
7 SD card slot (⇨ 22)
8 **BT730** **BT330** Connect Auto speaker setup microphone

9 Display (FL display)
   ● "SRD" (SURROUND) lights when sound is output to the surround speakers.
   (For the U.S.A. and Canada)
   ● The display is turned off when the volume is adjusted to "0". (⇨ 37)
10 Remote control signal sensor
   Distance: Within approx. 7 m (23 ft.)
   Angle: Approx. 20° up and down, 30° left and right
11 Select the source (⇨ 23)
12 Stop (⇨ 25)
13 Start play (⇨ 25)

■ If the front cover comes off
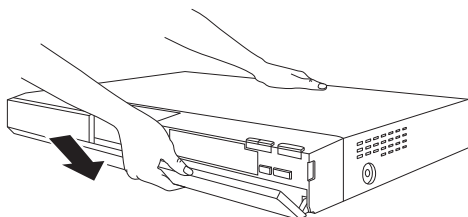
① Hold rear side of main unit by one hand and match up left or right side protruding hook on the cover first with the corresponding slot on the unit.
② Push the hook firmly towards the unit until it clicks into place. Then push the succeeding hooks one by one until all have clicked into place.
③ Check that the cover now moves correctly.
● If it does not, remove it and repeat the above procedure.

Main unit (Rear)

e.g., **BT730**
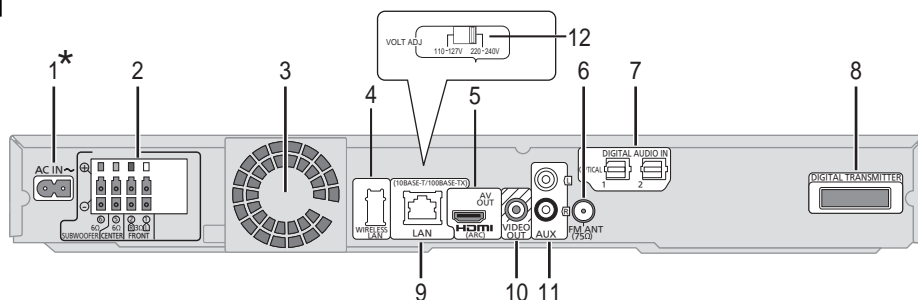
1 AC IN terminal (⇨ 18)
   * (For units with PX printed on the packaging)
   The terminal is not polarized.
2 Speaker terminals (⇨ 13)
3 Cooling fan
4 **BT730** **BT330** **BT230** USB port for optional wireless adaptor (⇨ 17)
5 HDMI AV OUT terminal (⇨ 15)
6 FM radio antenna terminal (⇨ 16)

7 DIGITAL AUDIO IN terminals (⇨ 14 , 15)
   Terminal 1 is designated for connection with the TV.
   Terminal 2 can be used with equipment other than the STB.
8 **BT730** **BT330** **BT230** Digital transmitter dock
9 LAN port (⇨ 17)
10 VIDEO OUT terminal (⇨ 14)
11 AUX terminal (⇨ 14)

(For units with PX printed on the packaging)
12 AC Voltage selector (⇨ 18)

(For the U.S.A. and Canada) **Saving energy**
This unit is designed to conserve its power consumption and save energy.
● This unit will automatically turn to standby mode after 30 minutes if it is inactive.

Playable discs/Cards

Type	Logo examples	Type detail	Playable contents
BD	(Blu-ray Disc logo)	**BD-Video**	Video
		BD-RE	Video JPEG
		BD-R	Video
DVD	(DVD VIDEO logo)	**DVD-Video**	Video
	(DVD RAM 4.7 logo)	**DVD-RAM**	Video AVCHD JPEG
	(DVD R 4.7 logo)	**DVD-R**	Video AVCHD MP3 JPEG
	(DVD R DL logo)	**DVD-R DL**	
	(DVD RW logo)	**DVD-RW**	Video AVCHD
	—	**+R/+RW/+R DL**	
CD	(COMPACT disc DIGITAL AUDIO logo)	**Music CD**	Music [CD-DA]
	—	**CD-R** **CD-RW**	Music [CD-DA] MP3 JPEG
SD	(SDXC logo)	**SD Memory Card (8 MB to 2 GB)** (Includes miniSD Card and microSD Card) **SDHC Memory Card (4 GB to 32 GB)** (Includes microSDHC Card) **SDXC Memory Card (48 GB, 64 GB)** (Includes microSDXC Card) (as of December 2009)	MPEG2 AVCHD JPEG

■ Discs that cannot be played in this unit

Any other disc that is not specifically supported or previously described.

- 2.6 GB and 5.2 GB DVD-RAM
- DVD-RAM that cannot be removed from cartridge
- Super Audio CD
- Photo CD
- DVD-Audio
- Video CD and Super Video CD
- WMA discs
- DivX discs
- PAL discs
- HD DVD
- BD-Video discs recorded at a rate of 50 fields/sec

■ Region management information

BD-Video
This unit plays BD-Video marked with labels containing the region code A.
Example:

DVD-Video
This unit plays DVD-Video marked with labels containing the region number "1" or "ALL".
Example:

∎ Finalize

DVD-R/RW/R DL, +R/+RW/+R DL and CD-R/RW recorded by a recorder, etc. needs to be finalized by the recorder to play on this unit. Please refer to the recorder's instructions.

∎ BD-Video

This unit supports high bit rate audio (Dolby Digital Plus, Dolby TrueHD, DTS-HD High Resolution Audio and DTS-HD Master Audio) adopted in BD-Video. In order to enjoy these audio formats, refer to page 36.

∎ Music CD

● Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.
● The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so playback may not be possible.

∎ SD card

● MiniSD Cards, microSD Cards, microSDHC Cards and microSDXC Cards can be used, but must be used with an adaptor card. These are usually supplied with such cards, or otherwise customer provided.
● Keep the Memory Card out of reach of children to prevent swallowing.
● To protect the card's contents, move the record prevention tab (on the SD card) to "LOCK".
● This unit is compatible with SD Memory Cards that meet SD Card Specifications FAT12 and FAT16 formats, as well as SDHC Memory Cards in FAT32 format (Does not support long file name.) and SDXC Memory Cards in exFAT.
● If the SD card is used with incompatible computers or devices, recorded contents may be erased due to the card being formatted etc.
● Useable memory may be slightly less than the card capacity.

📖
● It may not be possible to play the above media in some cases due to the type of media, the condition of the recording, the recording method and how the files were created.
● The producers of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.

Unit and media care

∎ Clean this unit with a soft, dry cloth.

● Never use alcohol, paint thinner or benzine to clean this unit.
● Before using chemically treated cloth, carefully read the instructions that came with the cloth.

∎ Clean the lens with the lens cleaner disc.

Lens cleaner disc: RP-CL720PP (not included)
● This lens cleaner may not be for sale depending on the region.
● This lens cleaner is sold as specific for DIGA, but can be used on this unit as well.

∎ Clean discs

DO　　　　　　**DO NOT**

Wipe with a damp cloth and then wipe dry.

∎ Disc and card handling precautions

● Handle discs by the edges to avoid inadvertent scratches or fingerprints on the disc.
● Do not attach labels or stickers to discs.
● Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
● Clean any dust, water, or foreign matter from the terminals on the rear side of the card.
● Do not use the following discs:
  −Discs with exposed adhesive from removed stickers or labels (rented discs etc).
  −Discs that are badly warped or cracked.
  −Irregularly shaped discs, such as heart shapes.

∎ To dispose or transfer this unit

The unit may keep the user settings information in the unit. If you discard this unit either by disposal or transfer, then follow the procedure to return all the settings to the factory presets to delete the user settings. (⇨ 41, "To return all settings to the factory preset")

● The operation history may be recorded in the memory of this unit.

Using the remote control

Insert so the poles (+ and −) match those in the remote control.

R6/LR6, AA
(Alkaline or manganese batteries)
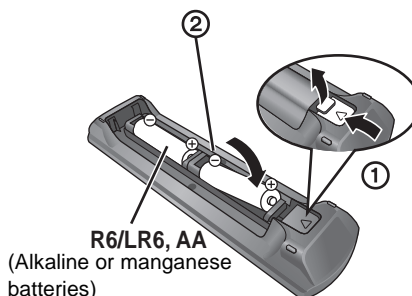
Point it at the remote control signal sensor on this unit (⇨ 7).

📖
Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
● Do not mix old and new batteries or different types at the same time.
● Do not heat or expose to flame.
● Do not leave the battery(ies) in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
● Do not take apart or short circuit.
● Do not attempt to recharge alkaline or manganese batteries.
● Do not use batteries if the covering has been peeled off.
Remove batteries if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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STEP 1 : Preparing the speakers

Assembling the speakers

BT730 BT330 BT235
Caution
- Do not stand on the base. Be cautious when children are near.
- When carrying speakers, hold the stand and base parts.

Preparation
- To prevent damage or scratches, lay down a soft cloth and perform assembly on it.
- For wall mount, refer to page 40.
- Keep the screws out of reach of children to prevent swallowing.

BT730
2 Front speakers
2 Stands (with cables)
2 Bases
4 Screws A
2 Screws B

A B
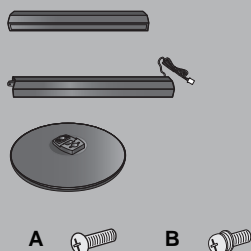
BT330 BT235
2 Front speakers
2 Stands (with cables)
2 Bases
8 Screws

BT730

1

Back of the base

Pull the cable straight along the line and slide into the groove.

Screw A ③ Tighten securely.

2

2

① Insert the wire fully.
+: White
−: Blue line
Push!

④ Press into the groove.
Screw B ② Tighten securely.

Leave about 80 mm (3 5/32″)

1

BT330 BT235

1

④
⑤ Slide into the groove.

Screw ③ Tighten securely.

2

2

④ Insert the wire fully.
+: White
−: Blue line
Push!

① Position the cable between the ridges.
⑤ Press into the groove.

Leave about 120 mm (4 23/32″) ③ Tighten securely.

1

3 Use of the speaker cable stickers is convenient when making cable connections.
e.g. Front speaker (L)
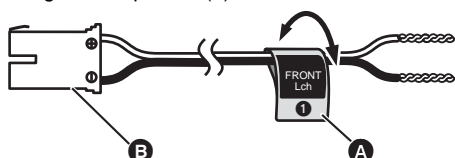
Ⓐ **Speaker cable sticker** (included)
Ⓑ **Connector**

Speaker cable sticker	Color
① FRONT (L)	WHITE
② FRONT (R)	RED
③ SURROUND (L)	BLUE
④ SURROUND (R)	GRAY
⑤ CENTER	GREEN
⑥ SUBWOOFER	PURPLE

Be sure to match the number on each sticker with the connector color.

4 Connecting the speaker cables. Insert the wire fully, taking care not to insert beyond the wire insulation.

e.g. Surround speaker

+: White
−: Blue line

Push!
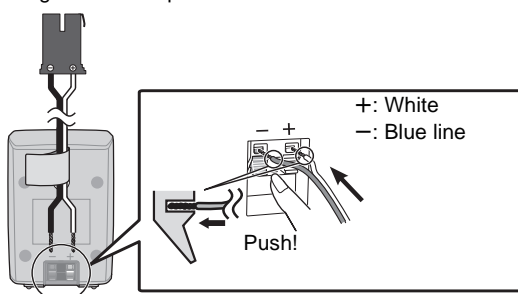
- **Be careful not to cross (short-circuit) or reverse the polarity of the speaker wires as doing so may damage the speakers.**
- **Don't use a front speaker as a surround speaker or vice versa. Verify the type of speaker with the label on the rear of the speaker before connecting the appropriate cable.**
- To avoid injury by falling or dropping the speaker, place the speaker cables with care not to stumble or hook.
- Do not hold the speaker in one hand to avoid injury by dropping the speaker when carrying.

Speaker assembly option

[BT330] [BT235]

Thread the speaker cable through the base.

Leave about 120 mm (4 ²³/₃₂″)

You can remove and use the cable from the stand. To reattach the cable, refer to page 40.

Attach the speaker.

② Insert the wire fully.
+: White
−: Blue line   Push!
③ Press into the groove.
① Tighten securely.
④ Slide into the groove.
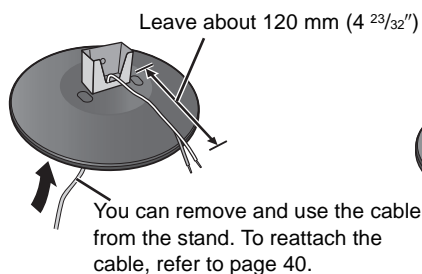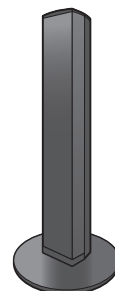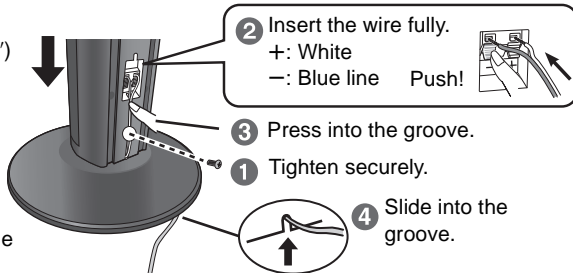
[BT730] [BT330] [BT235]

■ Preventing the speakers from falling

- Consult a qualified housing contractor concerning the appropriate procedure when attaching to a concrete wall or a surface that may not have strong enough support. Improper attachment may result in damage to the wall or speakers.
- Use a string of less than ∅ 2.0 mm (³/₃₂″), which is capable of supporting over 10 kg (22 lbs).

e.g., [BT730]
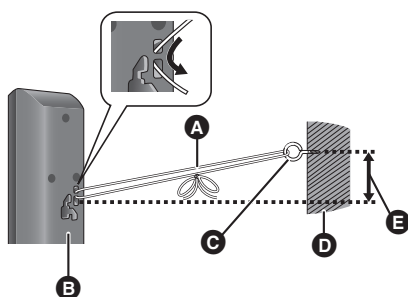
Ⓐ String (not included)
  Thread from the wall to the speaker and tie tightly.
Ⓑ Rear of the speaker
Ⓒ Screw eye (not included)
Ⓓ Wall
Ⓔ Approx.150 mm (5 ²⁹/₃₂″)

VQT2M13
11

STEP 2 : Positioning

<table>
<tr>
<td>⚠</td>
<td>
Caution
● The main unit and supplied speakers are to be used only as indicated in this setup. Failure to do so may lead to damage to the amplifier and/or the speakers, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.
● Do not attempt to attach these speakers to walls using methods other than those described in this manual.
● Do not touch the front netted area of the speakers. Hold by the sides.
</td>
</tr>
</table>

How you set up your speakers can affect the bass and the sound field.

Setup example

Place the front, center and surround speakers at approximately the same distance from the seating position. The angles in the diagram are approximate.

[BT730] [BT330]

Using "Auto Speaker Setup" (⇨ 19) is a convenient way to get the ideal surround sound from your speakers when you are unable to place them.

📖

● Keep your speakers at least 10 mm ($^{13}/_{32}$″) away from the system for proper ventilation.
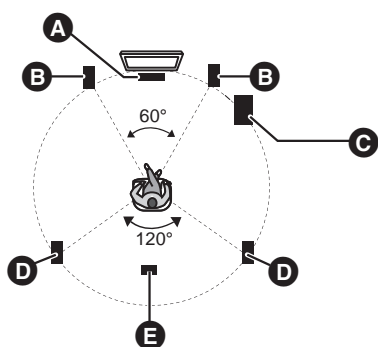
Ⓐ Center speaker

Put on a rack or shelf. Vibration caused by the speaker can disrupt the picture if it is placed directly on the TV.

Ⓑ Front speakers

Ⓒ Subwoofer

Ⓓ Surround speakers

● Place the speakers at the same height or higher than ear level.

Ⓔ [BT730] Wireless system

● Place the wireless system within approximately 10 m (33 ft.) from the main unit, and in a horizontal position with the top panel faced upward.

● To allow for proper ventilation and to maintain good airflow around the wireless system, position it with at least 5 cm (2″) of space on all sides.

● Do not use the wireless system or the digital transmitter in a metal cabinet or bookshelf.

<table>
<tr>
<td>[BT330] [BT230] ((♫))</td>
<td>You can enjoy surround speaker sound wirelessly when you use the optional Panasonic wireless accessory (SH-FX71).
For more details, refer to the operating instructions for the optional wireless system.</td>
</tr>
</table>

📖

● Use only supplied speakers
Using other speakers can damage the unit, and sound quality will be negatively affected.

● You can damage your speakers and shorten their useful life if you play sound at high levels over extended periods.

● Positioning speakers in front
It is possible to locate all the speakers in front of the listening position. However, the optimal surround sound effect may not be obtainable.

● Place speakers on flat secure bases.

● Placing speakers too close to floors, walls, and corners can result in excessive bass. Cover walls and windows with thick curtains.

● For optional wall mount, refer to page 40.

■ If irregular coloring occurs on your TV, turn the TV off for about 30 minutes.

If it persists, move the speakers further away from the TV.

[BT730]

■ Wireless system

To avoid interference, maintain the following distances between the wireless system and other electronic devices that use the same radio frequency (2.4 GHz band).

Wireless system

Wireless LAN: approx. 2 m (6^1/$_2$ ft.)

Cordless phone and other electronic devices: approx. 2 m (6^1/$_2$ ft.)
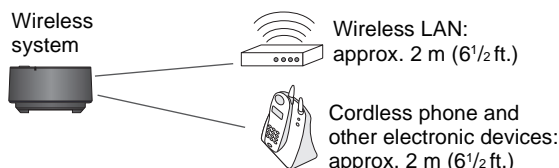
The wireless system will automatically seek a clear channel if any of these other devices interfere with its communication. When this happens, the wireless link indicator (" W ") flashes on the main unit, and there is a brief interruption in audio coming from the surround speakers.

This is the normal operation of the product working to assure the best possible performance of your home theater system.

If the interference persists, try moving the other devices to another location outside the range of the wireless system or move the wireless system nearer to the main unit.

[BT730] [BT330] [BT230]

■ Upgrade your system to 7.1-channel system

The main unit is designed to enjoy the 7.1ch surround sound. By connecting 2 units of the Panasonic wireless system SH-FX71 with 4 speakers, more theater-like effect can be available.

Necessary equipment:
[BT730]

● 1 optional wireless system (SH-FX71)

● 2 additional speakers

[Impedance: 3 Ω to 6 Ω, Speaker input power: 100 W (Min)]

[BT330] [BT230]

● 2 optional wireless systems (SH-FX71)

● 2 additional speakers

[Impedance: 3 Ω to 6 Ω, Speaker input power: 100 W (Min)]

For more details, refer to the operating instructions for the optional wireless system.

STEP 3: Connections

Turn off all equipment before connection and read the appropriate operating instructions.
Do not connect the AC power supply cord until all other connections are complete.

Speaker cable connection

Connect to the terminals of the same color.
BT730

⑥ **PURPLE** Subwoofer
⑤ **GREEN** Center speaker
② **RED** Front speaker (Rch)
① **WHITE** Front speaker (Lch)

③ **BLUE** Surround speaker (Lch)
④ **GRAY** Surround speaker (Rch)

Wireless system

Main unit

Surround selector
The surround selector switch must be set in the center position.

BT330 BT230 BT235

⑥ **PURPLE** Subwoofer
⑤ **GREEN** Center speaker
② **RED** Front speaker (Rch)
① **WHITE** Front speaker (Lch)
④ **GRAY** Surround speaker (Rch)
③ **BLUE** Surround speaker (Lch)

Main unit

BT330 BT230
When using the optional wireless system, do not attempt to connect any extra surround or surround back speakers to the main unit.

Connection to a TV

The basic connection is shown in the included Easy Setting Guide, however, there are more connection examples to optimize your system setting.

📖

- **Do not make the video connections through the VCR.**
  Due to copy guard protection, the picture may not be displayed properly.
- Turn off all equipment before connection.

■ OPTICAL IN

- After making the digital audio connection, make settings to suit the type of audio from your digital equipment (⇨ 30).

■ HDMI

The HDMI connection supports VIERA Link "HDAVI Control" (⇨ 31) when used with a compatible Panasonic TV.
- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover). It is recommended that you use Panasonic's HDMI cable. When outputting 1080p signal, please use HDMI cables 5.0 meters (16.4 ft.) or less.
  Recommended part number:
  RP-CDHS15 (1.5 m/4.9 ft.), RP-CDHS30 (3.0 m/9.8 ft.), RP-CDHS50 (5.0 m/16.4 ft.), etc.

Basic connection

Ⓐ **Video cable** (included)
Ⓑ **Audio cable** (not included)

📖
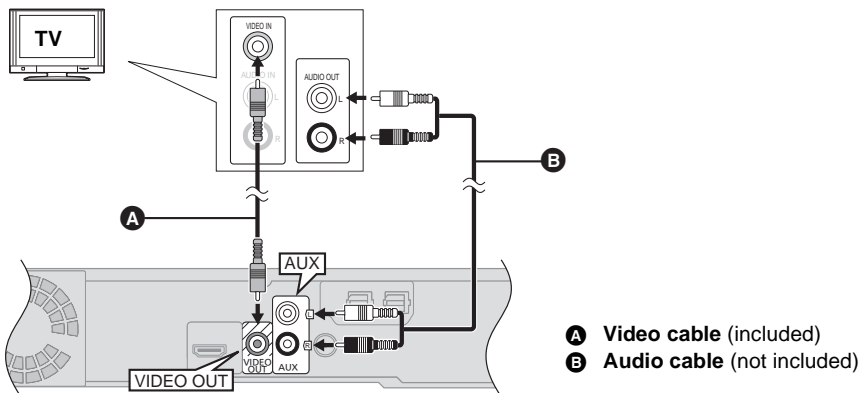
- To enjoy TV audio from this home theater system's speakers, select "AUX (TV)" as a source (⇨ 23).

Connection for the better audio
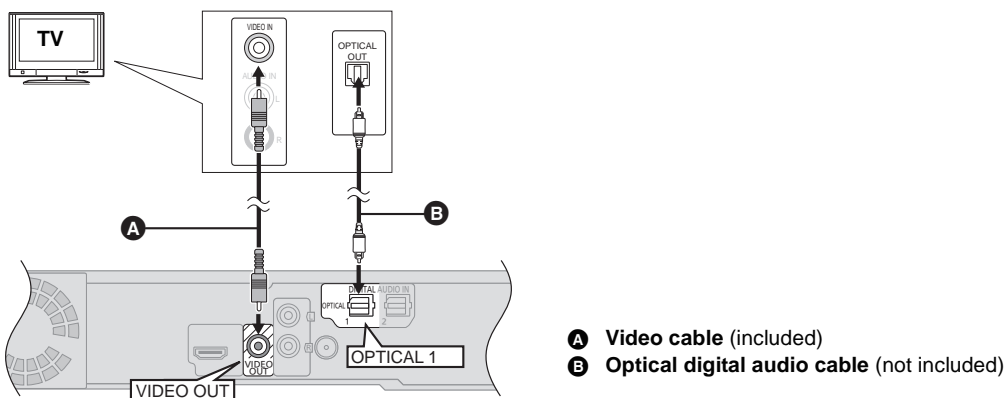
Ⓐ **Video cable** (included)
Ⓑ **Optical digital audio cable** (not included)

📖

- To enjoy TV audio from this home theater system's speakers, select "DIGITAL IN 1 (TV)" or "D-IN 1" as a source.

Connection for the best picture and audio
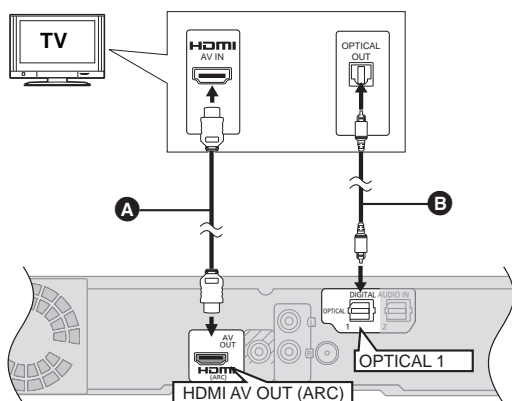
Ⓐ **HDMI cable** (not included)
Ⓑ **Optical digital audio cable** (not included)
 ● For the TV audio, an audio cable (not included) can be also used by connecting the AUX terminal with the AUDIO OUT terminal on the TV.

📖

● To enjoy TV audio from this home theater system's speakers, select "DIGITAL IN 1 (TV)" or "D-IN 1" as a source (⇨ 23).

ARC (Audio Return Channel)
(Available when using an ARC compatible TV)
With this function it is possible to receive the digital audio signal from the TV without connecting any other audio cables.
● Select "ARC (TV)" as the audio input source (⇨ 23).
● Refer to the operating instructions of the TV for the settings to output digital audio.

Connection with Set Top Box, etc.

Refer to the operating instructions of the respective devices for the optimal connections.
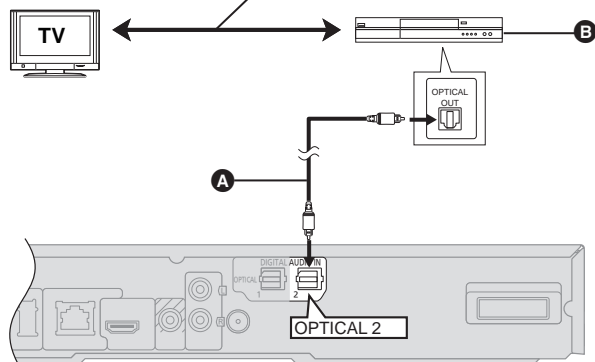
Ⓐ **Optical digital audio cable** (not included)
Ⓑ **Set Top Box, cable TV, VCR, DVD recorder, etc.**

📖

● To enjoy TV audio from this home theater system's speakers, select "DIGITAL IN 2 (CABLE/SAT)" or "D-IN 2" as a source (⇨ 23).
NECESSARY SETTINGS
● "HDMI Audio Output" : "Off" (⇨ 37)

Radio antenna connection

Using an indoor antenna

Main unit

FM ANT
(75Ω)

Ⓐ **FM indoor antenna** (included)
Ⓑ **Adhesive tape**
  Affix this end of the antenna where reception is
  best.

Using an outdoor antenna

Use outdoor antenna if FM radio reception is poor.

e.g.,

Main unit

FM ANT
(75Ω)

Ⓐ **FM outdoor antenna** [Using a TV antenna
  (not included)]
  The antenna should be installed by a competent
  technician.
Ⓑ **75 Ω coaxial cable** (not included)
Ⓒ **Antenna plug** (not included)
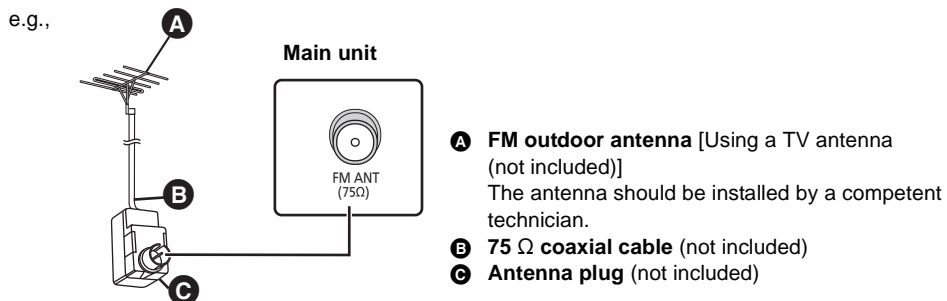
[BT730] Digital transmitter connection

DIGITAL TRANSMITTER

**Do not insert or remove while the
home theater unit is on.**

Insert fully until you hear a click.
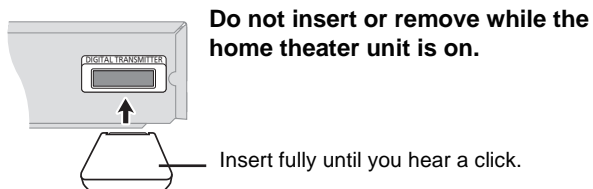
Connection to a broadband network

The following services can be used when this unit is connected to broadband.
- Firmware can be updated (⇨ 21)
- You can enjoy the BD-Live (⇨ 27)
- You can enjoy VIERA CAST (⇨ 34)

For details about connection method, refer to the instructions supplied with the connected equipment.
- It may not work properly depending on the equipment or environment used.

`BT730` `BT330` `BT230`

■ Using LAN (ethernet) cable
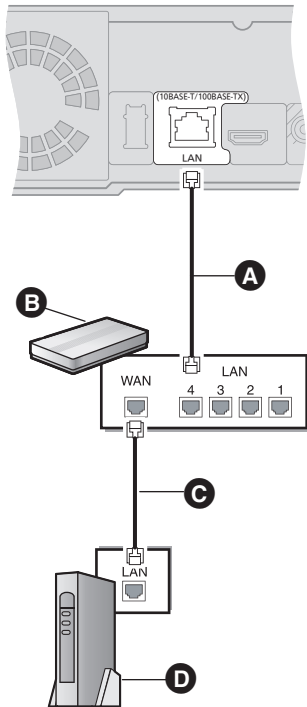
Ⓐ LAN Cable (not included)
Ⓑ Broadband router, etc.
Ⓒ LAN Cable (not included)
Ⓓ Modem (Broadband) *Provided by ISP
- Use shielded LAN cables when connecting to peripheral devices.
- Inserting any cable other than a LAN cable in the LAN terminal can damage the unit.

■ Using Wireless LAN Adaptor (optional)

- Only the Wireless LAN Adaptor DY-WL10 (optional) can be used.
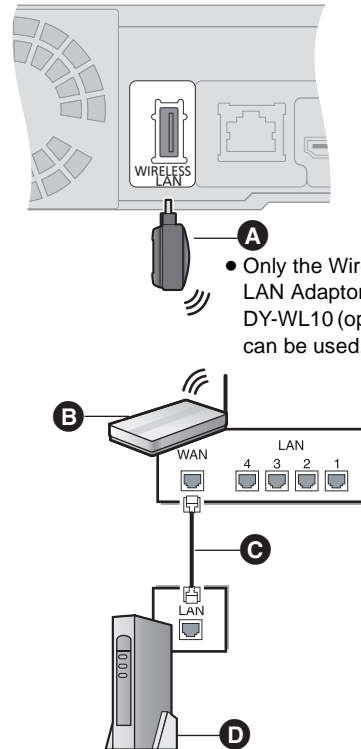
Ⓐ Wireless LAN Adaptor
Ⓑ Wireless router (Access point), etc.
Ⓒ LAN Cable (not included)
Ⓓ Modem (Broadband) *Provided by ISP
- Read the operating instructions for the Wireless LAN Adaptor DY-WL10 (optional) thoroughly when using it.
- For up to date compatibility information on your Wireless router (Access Point) refer to http://panasonic.jp/support/global/cs/

STEP 4: AC power supply cord connection

Connect only after all other connections are complete.

(For units with PX printed on the packaging)
Before connecting the AC power supply cord; VOLT ADJ 110~127V 220~240V
Set the voltage.
●Use a flat-head screwdriver to move the voltage selector to the appropriate position for the area in which this system is used.
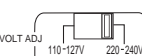
BT730
Wireless system
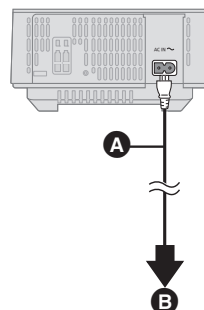
Main unit
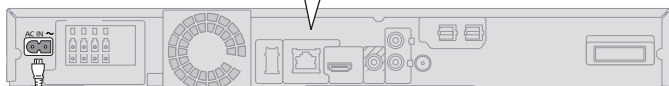
The main unit shows SC-BT730 for the U.S.A. and Canada.

Ⓐ AC power supply cord (included)
(For units with PX printed on the packaging)
●If the power plug does not fit your AC outlet, use the AC plug adaptor (included). If it still doesn't fit, contact an electrical parts distributor for assistance.
BT730
●AC power supply cord with a label is for the wireless system. Do not use any other AC power supply cords except the supplied one.

Ⓑ To a household AC outlet
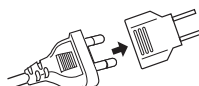
Main unit
●This unit consumes a small amount of AC power, even when it is turned off.
For the U.S.A. and Canada **BT730** **BT330**: approx. 0.05 W* **BT230** **BT235**: approx. 0.1 W*
For units with PX printed on the packaging **BT730** : approx. 0.1 W* **BT230**: approx. 0.2 W*
*When the "Quick Start" setting is "Off"
In the interest of power conservation, if you will not be using this unit for a long time, unplug it from the household AC outlet.

Wireless system **BT730**
For the U.S.A. and Canada: approx. 0.2 W
For units with PX printed on the packaging: approx. 0.3 W

The socket outlet shall be installed near the equipment and easily accessible. The mains plug of the power supply cord shall remain readily operable. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from AC receptacle.

STEP 5: **BT730** Preparing the wireless system

Turn on the wireless system after all connections are complete.
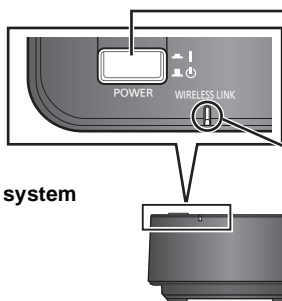
Press [POWER ▬ I, ▬ ⏻] on the wireless system.

Unit on/off button [POWER ▬ I, ▬ ⏻]
▬ I: The wireless system is on.
▬ ⏻: The wireless system is off.

WIRELESS LINK indicator
Red: The wireless system is on and the wireless link is deactivated.
Green : The wireless system is on and the wireless link is activated.
(" **W** " is also displayed on the main unit's display.)

Wireless system

STEP 6: Smart setup / Easy setup

The Smart setup / Easy setup assists you to make necessary settings.

Follow the on-screen prompts to make basic settings for the system.

BT730 BT330 : Smart setup
BT230 BT235 : Easy setup

ᗱ, ᗴ, ◄, ►
OK
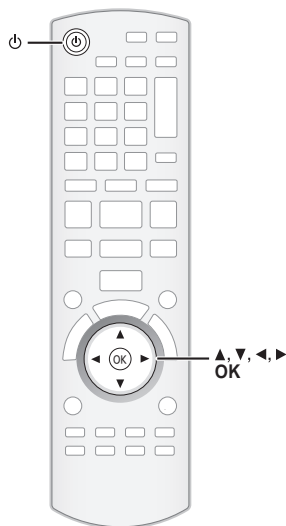
Preparation

● Turn on your TV and select the appropriate video input mode (e.g., VIDEO 1, AV 1, HDMI, etc.) to suit the connections to this unit.
● BT730 BT330 : Place the Auto speaker setup microphone at the actual seating position. (At ear level when seated.)

e.g., BT730

📖
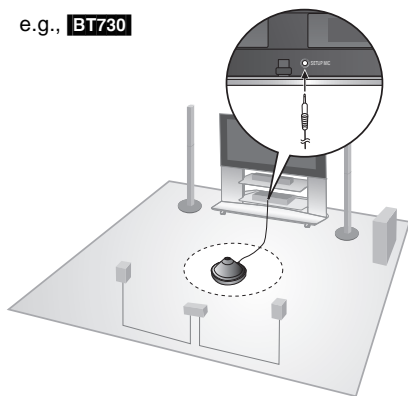
● Keep as quiet as possible during the Auto speaker setup. Excessive background noise may lead to incorrect settings.
● The speakers output loud test signals during setup.
● After the Smart setup is completed, unplug the Auto speaker setup microphone and keep it for future use.

1 **Press [⏻].**

2 **Follow the on-screen instructions and make the settings with [ᗱ, ᗴ, ◄, ►] and press [OK].**

Language
Select the language used on menu screen.

TV Aspect
Select the aspect to suit your TV and preference.

BT730 BT330 BT230 Wireless System
If a digital transmitter is inserted, it is required to specify the current settings.

BT330* BT235 BT230* Speakers position
Specify the positioning of the surround speakers.
* When using the optional wireless system, this setting is not available.
(BT730 only): "Speakers position" is not available.

BT230 BT235 : Speaker check
Check if the connection to each speaker is valid.

BT730 BT330 Auto Speaker Setup
Adjust the speaker output level automatically.

Speaker Output
Make surround sound setting for speaker output.

Cinema Surround
The function creates the sound of virtual speakers to enhance the realistic surround feeling as if the sound comes from all directions.
(Speakers position: Surround Layout only)
(Effective when playing video with 5.1/7.1ch audio)

TV Audio
Select the audio input connection from your TV, [item with "(TV)"].

Quick Start
Speed of startup from power off is increased.

3 **Press [OK] several times to finish the "Smart setup" or "Easy setup".**

After completing "Smart setup" or "Easy setup", you can perform "Network Easy Setting".

📖

● You can perform this setup anytime by selecting "Smart setup" or "Easy setup" in the Setup menu. (⇨ 38)
● Language and TV Aspect settings are automatically retrieved if this unit is connected to a Panasonic TV (VIERA) supporting HDAVI Control 2 or later via an HDMI cable.

Network Easy Setting

BT730 BT330 BT230

1 Select "Wired" or "Wireless" and press [OK].

Network Easy Setting (Connection Check)
A settings check for home network and Internet connections
is now being conducted.

Please select a connection mode first.
  Current setting   : Wired
LAN cable connection:
  Connect a LAN cable to the unit and select "Wired."
Wireless LAN connection:
  Insert a compatible Wireless LAN Adaptor to USB port
  and select "Wireless."
Access point is necessary for Wireless LAN connection.

| Wired |
| Wireless |

OK
RETURN

If "Wireless LAN Adaptor is not connected." is displayed, check
that the Wireless LAN Adaptor is fully inserted. Alternatively,
disconnect and reconnect it. If there is still no change in the
display, consult your dealer.

2 Follow the on-screen instructions and make the settings with [▲, ▼] and press [OK].

For wireless LAN connection:
If you are using a Wireless router (Access point) that supports
WPS, you can easily perform the settings by selecting "WPS
(PUSH button method)".
Otherwise, perform the settings by selecting "Search for
access point" or "Manual setting" in "Other methods".

Access Point Connection Setting
Select a connection method to use with an access point
of Wireless LAN.
Please refer to the operating instructions of the access
point about connection methods.

| ⟳ | WPS (PUSH button method) |
| Other methods |

OK
RETURN

| Search for access point |
| ⟳ | WPS (PIN code method) |
| Manual setting |
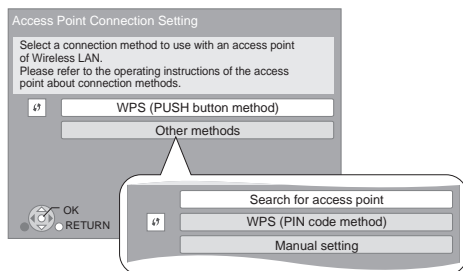
● WPS (Wi-Fi Protected Setup) is a function that facilitates
settings relating to the connection and security of wireless
LAN devices. To see whether your Wireless router (Access
point) supports WPS, check the Wireless router operating
instructions.

BT235

Follow the on-screen instructions and make the settings with [▲, ▼] and press [OK].

When you experience problems with settings

BT730 BT330 BT230 **Access Point Connection Setting**

Access Point Connection Setting
Failed to connect to the access point.
A conflict with another device occurred.
Do you want to configure Access Point Connection
Setting again ?

| Yes | No |

OK

Display	Check the following
A conflict with another device occurred.	● Please wait a few moments, and then try again.
A time out error occurred.	● Setting of the Wireless router (Access point) for MAC Address etc. ● The signal may be weak. Using the USB extension cable included with the Wireless LAN Adaptor, adjust the position of the Wireless LAN Adaptor. ● The SSID* and the encryption key of the Wireless router (Access point). ● Please wait a few moments, and then try again.
An authentication error or a time out error occurred.	
A device error occurred.	● Connection of Wireless LAN Adaptor If there is no improvement in symptom, contact our Customer Service Center.

Network Easy Setting (Connection Check)

Network Easy Setting (Connection Check)
Complete.
1. LAN cable connection   : Fail
2. IP address setting   : Fail
3. Connection to gateway   : Fail

LAN cable is not connected.
Please check the connection.
Select "Yes" and press [OK] to check network
connection again. Select "No" and press [OK]
to finish Network Easy Setting.

| Yes | No |

OK
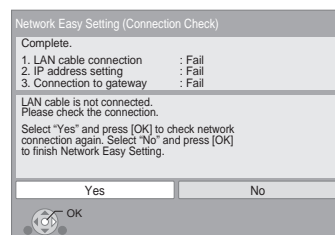
Display		Check the following
1. LAN cable connection or Connection to access point	:Fail	● Connection of the LAN cables (⇨ 17)
2. IP address setting	:Fail	
3. Connection to gateway	:Fail	

1. LAN cable connection or Connection to access point	:Pass	● Connection and settings of the hub and router
2. IP address setting	:Fail	● Settings of "IP Address / DNS Settings" (⇨ 38)
3. Connection to gateway	:Fail	
1. LAN cable connection or Connection to access point	:Pass	
2. IP address setting	:Pass	
3. Connection to gateway	:Fail	

Network Easy Setting (Internet Connection Check)

```
Network Easy Setting (Internet Connection Check)
Complete.
- Connection to the Internet     : Fail(Error code: B019)

Failed the connection test.
Cannot find the server.(Error code: B019)
Please refer to the operating instructions for the cause
of the error and the solution for it.
Press [OK].

                                        OK
```
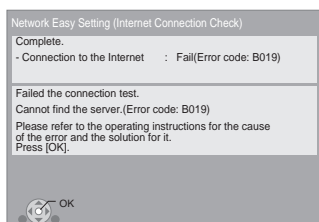
Display	Check the following
Cannot find the server. (Error code: B019)	● "Primary DNS" and "Secondary DNS" Settings of "IP Address / DNS Settings" (⇨ 38)
Failed to connect to the server. (Error code: B020)	● The server may be busy or the service may have been suspended. Please wait a few moments, and then try again. ● Settings of "Proxy Server Settings" (⇨ 38) and the router.

📖

● Refer to the operating instructions of the hub or router.
● You can perform this setup anytime by selecting "Network Easy Setting" in the Setup menu. (⇨ 38)
● You can redo these settings individually using "Network". (⇨ 38)
● **BT730** **BT330** **BT230** **Do not use this device to connect to any wireless network for which you do not have usage rights.** During automatic seaches in a wireless network environment, wireless networks (SSID*) for which you do not have usage rights may be displayed; however, using these networks may be regarded as illegal access.
● **BT730** **BT330** **BT230** After performing network settings on this unit, the settings (encryption level, etc.) of the Wireless router (Access point) might change. When you have trouble getting online on your PC, perform the network settings on your PC in accordance with the settings of Wireless router (Access point).

* An SSID (Service set IDentification) is a name used by wireless LAN to identify a particular network. Transmission is possible if the SSID matches for both devices.

Firmware updates

Occasionally, Panasonic may release updated firmware for this unit that may add or improve the way a feature operates. These updates are available free of charge.

This unit is capable of checking the firmware automatically when connected to the Internet via a broadband connection. When a new firmware version is available, the following screen is displayed.

```
                  Firmware Update

   Latest Online Version: x.xx
   Current Installed Version: x.xx
   Do you want to start firmware update?
   For the update information, please visit the
   following website:
   http://panasonic.net/support/

        Yes                      No

                          OK
                          RETURN
```
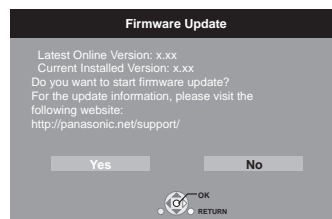
If downloading on this unit fails or this unit is not connected to the Internet, then you can download the latest firmware from the following website and burn it to a CD-R to update the firmware.
http://panasonic.net/support/
(This site is in English only.)
To show the firmware version on this unit. (⇨ 38, "System Information")

DO NOT DISCONNECT the unit from the AC power or perform any operation while the update takes place.
After the firmware is installed, "FINISH" will be displayed on the unit's display. Unit will restart and the following screen will be displayed.

```
          The firmware was updated.
          Current Installed Version: x.xx

                     OK
                     RETURN
```

📖
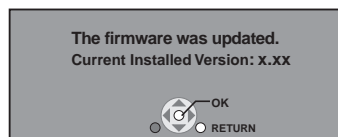
● You can perform update anytime by selecting "Firmware Update" in the Setup menu. (⇨ 38)
● Downloading will require several minutes. It may take longer or the Internet may not be connected depending on the connection environment.
● If you do not want to check for the latest firmware version, set "Automatic Update Check" to "Off". (⇨ 38)

STEP 7: Reprogramming the remote control

When other Panasonic products respond to this remote control

Change "Remote Control Code" (⇨ 38) on the main unit and the remote control (the two must match) if you place other Panasonic products close together and it responds to this remote control.

To change the code on the main unit.

1 **While stopped, press [START].**
2 **Press [▲, ▼] to select "Other Functions" and press [OK].**
3 **Press [▲, ▼] to select "Setup" and press [OK].**
4 **Press [▲, ▼] to select "Others" and press [OK].**
5 **Press [▲, ▼] to select "Remote Control Code" and press [OK].**
6 **Press [▲, ▼] to select the code (1 or 2) and press [OK].**

To change the code on the remote control.

1 **While pressing [OK]**
   Press and hold the numbered button (1 or 2), which has the same number you selected in the step 6 for more than 5 seconds.
2 **Press [OK].**

Inserting or removing a media
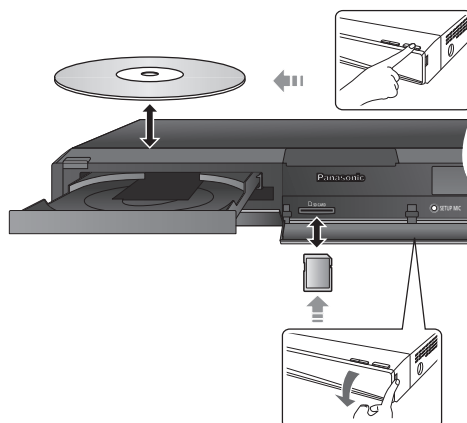
- When inserting a media, ensure that it is facing the right way up.
- While the reading indicator is displayed, do not turn off the unit or remove the media. Such action may result in loss of the media's contents.
- When removing the SD card, press on the center of the card and pull it straight out.

■ To switch sources

Press [BD/SD] to select "BD/DVD" or "SD".
- If a media is inserted while the unit is stopped, the source switches automatically depending on the inserted media.

START menu

Major functions of this unit can be operated from the START menu.

1 Press [START].

2 Press [▲, ▼] to select the item and press [OK].

e.g., BD-Video

```
Home theater
START
⌀ BD-Video
    Playback
    Top Menu

    Network
    Input Select
    Sound(Equalizer)
    Other Functions
        OK
        RETURN
```

Playback Viewing Picture	Play back the contents.
Top Menu	(⇨ 25)
Menu	(⇨ 25)
Network	Displays the Home screen of the VIERA CAST (⇨ 34).
Input Select	Switches to each source. **BD/DVD/CD** **SD card** **iPod** **FM Radio**: To enjoy the FM radio (⇨ 29) **AUX*1**: To enjoy TV broadcasts with this unit's speakers (⇨ 30) **ARC*1:** To enjoy TV broadcasts with this unit's speakers (⇨ 30) **DIGITAL IN 1*1:** To enjoy TV broadcasts with this unit's speakers (⇨ 30) *1 "(TV)" is displayed next to items set for TV AUDIO input. **DIGITAL IN 2*2**: To enjoy audio from other devices with this unit's speakers (⇨ 30) *2 "(CABLE/SAT)" is displayed next to DIGITAL IN when set for CABLE/SAT AUDIO input. **To enjoy sound from the TV** Select one source from either "AUX (TV)", "ARC (TV)" or "DIGITAL IN 1 (TV)".
Sound(Equalizer)	(⇨ 24)
Other Functions	**Playlists:** You can play playlists created on DVD-VR.
	Setup: (⇨ 36)
	Card Management: (⇨ 27)

To exit the screen
Press [START].

■ Selecting the source by the remote control

Button	Source
BD/SD	**BD/DVD or SD card (SD) (⇨ 25)**
iPod	**iPod (IPOD) (⇨ 32)**
RADIO EXT-IN	**FM Radio (FM) (⇨ 29)** **AUX*1 (⇨ 30)** **ARC*1 (⇨ 30)** **DIGITAL IN 1*1 (D-IN 1) (⇨ 30)** **DIGITAL IN 2*2 (D-IN 2) (⇨ 30)** *1 "(TV)" is displayed next to items set for TV AUDIO input. *2 "(CABLE/SAT)" is displayed next to DIGITAL IN when set for CABLE/SAT AUDIO input. **To enjoy sound from the TV** Select one source from either "AUX (TV)", "ARC (TV)" or "DIGITAL IN 1 (TV)".

📖

● Items to be displayed may vary with the media.

Enjoying sound effects from all speakers

Enjoying surround sound effects

1 Press [SURROUND] several times to select the effect.

STANDARD
Sound is output as it was recorded/encoded.
Speaker output varies depending on the source.

MULTI-CH
You can enjoy sound from the front speakers, as well as the surround even when playing a 2-channel sound or non-surround sound.

MANUAL

● The selected effect will only be displayed on the main unit.

2 While "MANUAL" is displayed, press [◀, ▶] and select the desired effect.

DOLBY PL II MOVIE (Dolby Pro Logic II Movie)
Suitable for movie software, or the one recorded in Dolby Surround.

DOLBY PL II MUSIC (Dolby Pro Logic II Music)
Adds 5.1-channel effects to stereo sources.

7.1CH VS (7.1CH Virtual Surround)
You can enjoy 6.1/7.1-channel surround-like effect using 5.1-channel speakers.

S.SURROUND (Super Surround)
You can enjoy sound from all speakers with stereo sources.

2CH STEREO
You can play any source in stereo. Sound will be output to the front speakers and the subwoofer only.

■ Adjusting speaker level during play

① Press and hold [–CH SELECT] to activate the speaker setting mode.
② Press [–CH SELECT] several times to select the speaker. Each time you press the button:

L R⟶ C⟶ RS⟶RB*⟶ LB*⟶LS⟶ SW

* **BT730** **BT330** **BT230** When the optional surround back speakers are connected.

L R: Front speaker (left and right: only the balance is adjustable.)
● Press [◀, ▶] to adjust the balance of the front speakers.
C: Center speaker
RS: Surround speaker (right)
RB*: Surround back speaker (right)
LB*: Surround back speaker (left)
LS: Surround speaker (left)
SW: Subwoofer
● The channels not included in the playing audio will not be displayed (subwoofer is displayed even if it is not included).

③ Press [▲] (increase) or [▼] (decrease) to adjust the speaker level for each speaker.
−6 dB to +6 dB

■ Changing the sound modes

① Press [SOUND] several times to select the mode.
● The selected mode will only be displayed on the main unit.
② While the selected mode is displayed
Press [◀, ▶] and select the desired setting.

EQ: (Equalizer)
You can select sound quality settings.
FLAT
Cancel (no effect is added).
HEAVY
Adds punch to rock.
CLEAR
Clarifies higher sounds.
SOFT
For background music.

SUB W: (Subwoofer level)
You can adjust the amount of base.
1 (Weakest effect) to **4** (Strongest effect)
● The setting you make is retained, and recalled every time you play the same type of source.

H.BASS
You can enhance low-frequency sound so that heavy bass sound can be heard clearly, even if the acoustics of your room are not optimal.
● The setting you make is retained, and recalled every time you play from the same type of source.

C.FOCUS: (Center focus)
(Effective when playing audio containing center channel sound.)
You can make the sound of the center speaker seem like it is coming from within the TV.

W.SRND: (Whisper-mode Surround)
You can enhance the surround effect for low volume sound. (Convenient for late night viewing.)

● The sound effects/modes may not be available or have no effect with some sources.
● You may experience a reduction in sound quality when these sound effects/modes are used with some sources. If this occurs, turn the sound effects/modes off.

Playing video contents

`BD` `DVD` `CD` `SD`

Preparation

Turn on the television and select the appropriate video input on the television.

1 Press [⏻] to turn on the unit.

2 Insert the media.

Play starts.

● If the menu is displayed, press [▲, ▼, ◄, ►] to select the item and press [OK].
● If play does not start, press [► PLAY].

∎ To show menus

You can show Top Menu, Direct Navigator or Pop-up Menu.

Press [TOP MENU/DIRECT NAVIGATOR] or [POP-UP MENU].

● Press [▲, ▼, ◄, ►] to select the item and press [OK].
● Pop-up menu also appears by pressing [SUB MENU] and selecting "Pop-up Menu".

∎ To show the status messages

While playing, press [STATUS].

The status messages give you information about what is currently being played. Each time you press [STATUS], the information displayed will change.

e.g. BD-Video

T: Title, C: Chapter, PL: Playlist

Elapsed time in the title

| ∎ T1 C1 0:05.14 | | **BD-Video** |
| | 0:20.52 | Play |

Current position   Total time

📖
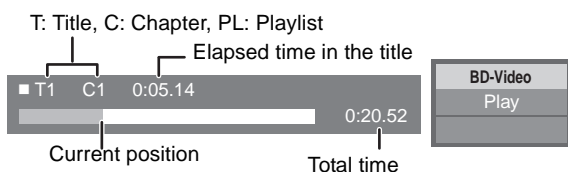
● DISCS CONTINUE TO ROTATE WHILE MENUS ARE DISPLAYED. Press [∎STOP] when you finish to preserve the unit's motor and your television screen.
● Depending on media and contents, the display may change or may not appear.
● It is not possible to playback AVCHD and MPEG2 video which have been dragged and dropped, copied and pasted to the media.

Other operations during play

These functions may not work depending on the media and contents.

Stop

Press [∎STOP].

The stopped position is memorized.

Resume play function

Press [► PLAY] to restart from this position.

● The position is cleared if the tray is opened or you press [∎STOP] several times to display "STOP" on unit's display.
● **On BD-Video discs including BD-J (⇨ 47), the resume play function does not work.**

Pause

Press [❚❚PAUSE].

● Press [❚❚PAUSE] again or [► PLAY] to restart play.

Search/Slow-motion

Search

While playing, press [SEARCH◄◄] or [SEARCH►►].

● Music and MP3: The speed is fixed to a single step.

Slow-motion

While paused, press [SEARCH◄◄] or [SEARCH►►] .

● BD-Video and AVCHD: Forward direction [SEARCH►►] only.

The speed increases up to 5 steps.

● Press [► PLAY] to revert to normal playback speed.

Skip

While playing or paused, press [SKIP❘◄◄] or [SKIP►►❘].

Skip to the title, chapter or track you want to play.

● Each press increases the number of skips.

Frame-by-frame

While paused, press [◄] (◄❚❚) or [►] (❚❚►).

● Press and hold to change in succession forward or backward.
● Press [► PLAY] to revert to normal playback speed.
● BD-Video and AVCHD: Forward direction [►] (❚❚►) only.

Changing audio

Press [AUDIO].

You can change the audio channel number or soundtrack language (⇨ 45), etc.

Useful functions

1 Press [SUB MENU]

2 Select an item and press [OK].

While DIRECT NAVIGATOR screen is displayed

Properties	To display the titles properties (recording date, etc.)
View Chapters	To select the chapter
To picture	Playing still pictures (⇨ 27)
Select Folder	To switch to another folder

While playing

Screen Aspect	When black bars are shown at the top, bottom, left, and right sides of the screen, you can enlarge the image to fill the screen.
Top Menu	To display Top Menu.
Pop-up Menu	To display Pop-up Menu.
Menu	To display Menu.

● Depending on the played contents if you perform "Screen Aspect", there may be no effect.
● When "TV Aspect" (⇨ 37) is set to "4:3" or "4:3 Letterbox", the "Zoom" effect is disabled.

📖

● Depending on the media and contents, displayed items are different.

Enjoying BD-Live or BONUSVIEW in BD-Video

What is BONUSVIEW?
BONUSVIEW allows you to enjoy functions such as picture-in-picture or secondary audio etc.

What is BD-Live?
In addition to the BONUSVIEW function, BD-Live allows you to enjoy more functions such as subtitles, exclusive images and online games by connecting this unit to the Internet.

● The usable functions and the operating method may vary with each disc, please refer to the instructions on the disc and/or visit their website.

Playing picture-in-picture

To turn on/off secondary video
① Press [DISPLAY].
② Press [▲, ▼] to select the "Disc" menu and press [▶].
③ Press [▲, ▼] to select the "Signal Type" menu and press [OK].
④ Press [▲, ▼] to select the "Video" under "Secondary Video" menu and press [▶].
⑤ Press [▲, ▼] to select the "On" or "Off".
⑥ Press [RETURN] to exit.
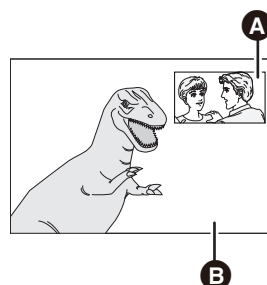
🅐 Secondary video
🅑 Primary video

To turn on/off secondary audio
① Press [DISPLAY].
② Press [▲, ▼] to select the "Disc" menu and press [▶].
③ Press [▲, ▼] to select the "Signal Type" menu and press [OK].
④ Press [▲, ▼] to select the "Soundtrack" under "Secondary Video" menu and press [▶].
⑤ Press [▲, ▼] to select the "On" or "Off".
When "On" is selected, press [▶] and then press [▲, ▼] to select the language.
⑥ Press [RETURN] to exit.

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● During search/slow-motion or frame-by-frame, only the primary video is displayed.
● When "BD-Video Secondary Audio" in "Digital Audio Output" is set to "Off", secondary audio will not be played (⇨ 36).

Enjoying BD-Live discs with Internet

Some BD-Live content available on the Blu-ray discs may require an Internet account to be created in order to access the BD-Live content. Follow the screen display or instruction manual of the disc for information on acquiring an account.

1 Connect to the network. (⇨ 17)

2 Insert an SD card (with 1 GB or more free space).
SD card is used as the local storage (⇨ 47).

3 Insert the disc.

■ Deleting data/Formatting SD cards

① Insert an SD card.
② Press [START].
③ Press [▲, ▼] to select "Other Functions" and press [OK].
④ Press [▲, ▼] to select "Card Management" and press [OK].
⑤ Press [▲, ▼] to select "BD-Video Data Erase" or "Format SD Card" and press [OK].

```
Card Management        No. of Files   6
□ SD card              Free space   300 MB


              BD-Video Data Erase
              Format SD Card


    OK          Format this SD Card.
    RETURN
```
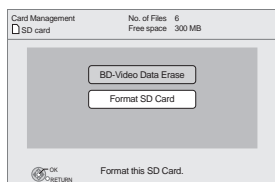
⑥ Press [◄, ►] to select "Yes" and press [OK].
⑦ Press [◄, ►] to select "Start" and press [OK].

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- To use the above functions, it is recommended that you format the card on this unit. If the SD card you use is formatted, all data on the card will be erased. It cannot be recovered.
- "BD-Live Internet Access" may need to be changed for certain discs (⇨ 36).
- When discs supporting BD-Live are played back, the player or disc IDs may be sent to the content provider via the Internet.

Playing still pictures

BD DVD CD SD
(BD-RE, DVD-RAM/R/R DL, CD-R/RW, SD Card)

1 Insert a disc or SD card.
If the menu is displayed, press [▲, ▼] to select the item and press [OK].

2 BD-RE, DVD-RAM
Press [▲, ▼, ◄, ►] to select the album and press [OK].

```
DIRECT NAVIGATOR        Album View
 DVD-RAM(VR)                        Video  Picture

          008

    106_DVD        2006 9 12
    Total 6        Total 13


        Previous   Next       Slideshow  Page 02/02
SUB     OK  R Video  G Picture  B      Y
MENU    RETURN              Press [OK] to go to Picture View.
```
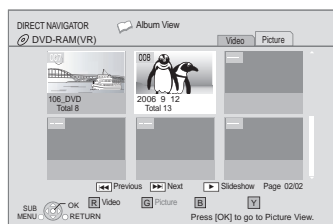
3 Press [▲, ▼, ◄, ►] to select the still picture and press [OK].

```
DIRECT NAVIGATOR    Picture View
 DVD-RAM(VR)                    Video Picture
                    2006 9 12
  0001   0002   0003   0004
  0005   0006   0007   0008
  0009
                Page 001/001
SUB     Play
MENU    RETURN
```
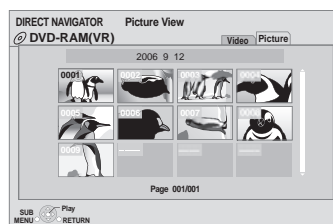
Press [◄, ►] to display the previous or next still picture.

To exit the screen
Press [TOP MENU/DIRECT NAVIGATOR].

■ To show the picture properties

While playing, press [STATUS] twice.

e.g. JPEG on DVD-RAM
Shooting date

```
Photo   11/12/2007      Total    3/9
```
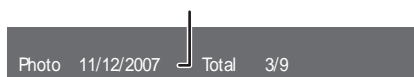
To exit the screen
Press [STATUS].

Useful functions

1 Press [SUB MENU].

2 Select an item and press [OK].

While "Album View" or "Picture View" screen is displayed

Start Slideshow	You can display still pictures one by one at a constant interval.
Slideshow Settings	**Display Interval** Change the display interval. **Transition Effect** Set display method. **Repeat Play** Repeat slideshow. **Soundtrack** Music files on an iPod/iPhone or a music CD can be played back as Background Music during the slideshow. **Press [▲, ▼, ◄, ►] to select "Set" and press [OK].**
Select Root folder	To switch to another higher folder ● Only if there is a multiple number of higher folders recognizable
Select Folder	To select the still pictures in another folder
To Video	Playing video contents (⇨ 25)
To album view	To display album view.

While playing (except for slideshow)

Rotate Right	Rotate the still picture.
Rotate Left	
Zoom out	Reduce the still picture ● This function is only available for small-sized still pictures.
Zoom in	Cancel "Zoom out"

● Depending on the media and contents, displayed items are different.
● When a still picture with large number of pixels is played, the display interval may become longer. Even if the setting is changed, the display interval may not become shorter.
● When both a music CD and an iPod/iPhone is inserted to this unit, the iPod/iPhone has a priority to be played back as Background Music.

Playing music

DVD CD
(DVD-R/R DL, music CD, CD-R/RW)

1 Insert a disc.

If the menu is displayed, press [▲, ▼] to select the item and press [OK].

2 Press [▲, ▼] to select the track and press [OK].
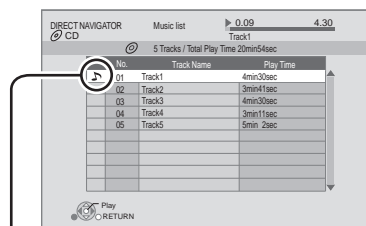
" ♪ " indicates the track currently playing.

■ Playing a track in another folder

① While the "Music list" is displayed
  Press [SUB MENU].
② Press [▲, ▼] to select "Select Folder" and press [OK].

● You cannot select folders that contain no compatible tracks.

Listening to the Radio

Presetting stations automatically

Up to 30 stations can be set.

1 Press [RADIO] to select "FM".

2 Press [STATUS] to select the position to start the auto preset search.

LOWEST:
To begin auto preset with the lowest frequency (FM87.9 or FM87.5).

CURRENT:
To begin auto preset with the current frequency.*
* To change the frequency, refer to "Presetting stations manually".

3 Press and hold [OK].

Release the button when "AUTO" is displayed.

The tuner starts to preset all the stations it can receive into the channels in ascending order.

📖

● "SET OK" is displayed when the stations are set, and the radio tunes to the last preset station.
● "ERROR" is displayed when automatic presetting is unsuccessful. Preset the stations manually.

Presetting stations manually

Preparation
Select a radio broadcast.
① Press [RADIO] to select "FM".
② Press [SEARCH◄◄] or [SEARCH►►] to select the frequency.
● To start automatic tuning, press and hold [SEARCH◄◄], [SEARCH►►] until the frequency starts scrolling. Tuning stops when a station is found.

**1 While listening to the radio broadcast
Press [OK].**

**2 While "P" is flashing on the display
Press the numbered buttons to select a channel.**

To select a 1-digit number
e.g., 1: [1] ⇨ [OK].
To select a 2-digit number
e.g., 12: [1] ⇨ [2]

📖

● A station previously stored is overwritten when another station is stored in the same channel preset.

Listening/confirming the preset channels

1 Press [RADIO] to select "FM".

2 Press the numbered buttons to select the channel.

To select a 1-digit number
e.g., 1: [1] ⇨ [OK].
To select a 2-digit number
e.g., 12: [1] ⇨ [2].
Alternatively, press [∧, ∨] or [◄, ►].

■ Display on the main unit

TUNED/STEREO: Displayed when receiving stereo broadcasting
TUNED: Displayed when receiving monaural broadcasting or monaural sound is selected.

■ If noise is excessive

Press [AUDIO] to display "MONO".
The sound becomes monaural.

Press the button again to cancel the mode. "AUTO ST" will be displayed on the main unit. Depending on the broadcast system, stereo or monaural will be selected.
"MONO" is also canceled when you change the frequency.

● This setting can be preset for each broadcasting station.

■ FM frequency step

Main unit:
The factory setting is set to 0.2 MHz, it can be changed to receive broadcasts allocated in 0.1 MHz. You may need to change this setting if the tuner seems to skip over the correct frequency for stations in your area.

① Press [SELECTOR] to select "FM".
② Press and hold [SELECTOR].

After a few seconds the display changes to show the current lowest frequency. Continue to hold the button down. The lowest frequency changes and the step is changed.

To return to the original settings, repeat steps ① and ②.

📖

● After changing the setting, previously preset frequencies will be cleared. Preset them again.

Enjoying TV with unit's speakers

Preparation
Turn on your TV and select the appropriate audio input mode [AUX, ARC, D-IN 1 or D-IN 2] to suit the connections to this unit. (⇨ 23)

Surround sound effects

You can enhance stereo sources with surround sound effect.

1 Press [SURROUND] several times to select the effect.

2 While "MANUAL" is displayed on the unit's display Press [◄, ►] and select the desired effect.

> **Surround modes to enjoy TV audio or stereo sources from all speakers:**
> ● DOLBY PL II MOVIE
> ● DOLBY PL II MUSIC
> ● S.SURROUND
> ● Cinema Surround (⇨ 19)

For more detailed information on this operation, please refer to the "Enjoying surround sound effects" section on page 24.

Sound modes

You can adjust the mode depending on the source or situation.

1 Press [SOUND] several times to select the mode.

2 While the selected mode is displayed on the unit's display
Press [◄, ►] and select the desired setting.

For more detailed information on this operation, please refer to the "Changing the sound modes" section on page 24.

Making settings for digital audio input

Select to suit the type of audio from the DIGITAL AUDIO IN terminals on the main unit.

Press [EXT-IN] several times to select "D-IN 1" (DIGITAL IN 1) or "D-IN 2" (DIGITAL IN 2).

■ DIGITAL IN 1/DIGITAL IN 2

Press [AUDIO].
>   MAIN
>   SAP*
>   M+S* (stereo audio)
>   * "**SAP**" = Secondary Audio Program
>   (Only works with Dolby Dual Mono)

● "MAIN" or "SAP" is not available if "On" is selected in "Digital Audio Input". (⇨ 36)

■ DIGITAL IN 2

Press [STATUS].
CABLE/SAT AUDIO :
>   Select when an HDMI connected STB is selected on the TV, "D-IN 2" input is automatically selected.(⇨ 31, "Setting the audio link with the STB").

📖
● Audio that is input through the DIGITAL AUDIO IN or AUX terminals are not output from the HDMI AV OUT terminal.

Linked operations with the TV

(VIERA Link™ "HDAVI Control™")

What is VIERA Link "HDAVI Control"?
VIERA Link™ is a new name for EZ Sync™.
VIERA Link "HDAVI Control" is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) under "HDAVI Control".
You can use this function by connecting the equipment with an HDMI cable. See the operating instructions for connected equipment for operational details.

Preparation
① Set "VIERA Link" to "On" (⇨ 37).
   (The default setting is "On".)
② Set the "HDAVI Control" operations on the connected equipment (e.g., TV).
③ Turn on all "HDAVI Control" compatible equipment and select this unit's input channel on the connected TV so that the "HDAVI Control" function works properly.
   Also when the connection or settings are changed, repeat this procedure.

Setting the audio link

■ Setting the audio link with the TV

With the remote control;
● Select the actual TV audio connection on the main unit.
① Press [START] and press [▲, ▼] to select "Other Functions" and press [OK].
② Press [▲, ▼] to select "Setup" and press [OK].
③ Press [▲, ▼] to select "TV / Device Connection" and press [OK].
④ Press [▲, ▼] to select "TV Audio Input".
⑤ Press [◄, ►] to switch "AUX","ARC" or "DIGITAL IN 1".

Whenever the connection or settings are changed, reconfirm the points above.

■ Setting the audio link with the STB

With the remote control;
● Select the STB input channel on the TV.
① Press [EXT-IN] to select "D-IN 2".
② Press [STATUS] to select "CABLE/SAT AUDIO ON".

● If the input channel of the STB on the TV is changed or if you want to change the device allocated for the linked operations, select "CABLE/SAT AUDIO OFF" in step ② above and then repeat steps ① to ②.

📖
● VIERA Link "HDAVI Control", based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed.
● This unit supports "HDAVI Control 5" function.
  "HDAVI Control 5" is the newest standard (current as of December, 2009) for Panasonic's HDAVI Control compatible equipment. This standard is compatible with Panasonic's conventional HDAVI equipment.
● Please refer to individual manuals for other manufacturers' equipment supporting VIERA Link function.

One touch play

You can turn on this unit and the TV, and start play with a single press of a button.
While the unit and the TV are in standby mode;
Press [► PLAY].

Speaker control

You can select whether audio is output from the unit's speakers or the TV speakers by using the TV menu settings.
Home theater
This unit's speakers are active.
● When this unit is in standby mode, changing the TV speakers to this unit's speakers in the TV menu will automatically turn the unit on and select, "AUX"[*1], "ARC"[*1] or "D-IN 1" (DIGITAL IN 1)[*1] as the source.
● You can control the volume setting using the volume or mute button on the TV's remote control.
● If you turn off this unit, TV speakers will be automatically activated.

TV
TV speakers are active.
● The volume of this unit is set to "0".
● Audio output is 2-channel audio.

📖
● When switching between this unit's speakers and TV speakers, the TV screen may be blank for several seconds.

Automatic input switching (Power on link)

When the following operations are performed, the television will automatically switch the input channel and display the corresponding action. When the TV is off, the TV will automatically turn on.
−When play starts on the unit
−When an action that uses the display screen is performed (e.g., Direct Navigator screen)
● When you switch the TV input to TV tuner mode, this unit will automatically switch to "AUX"[*1], "ARC"[*1] or "D-IN 1" (DIGITAL IN 1)[*1] or "D-IN 2" (DIGITAL IN 2)[*2].
● This function does not work when the iPod/iPhone selector is chosen. (⇨ 33)

Automatic lip-sync function (for HDAVI Control 3 or later)

Delay between audio and video is automatically adjusted, enabling you to enjoy smooth audio for the picture (⇨ 37, "Audio Delay").
● This function works only when "BD/DVD", "SD", "AUX"[*1], "ARC"[*1], "D-IN 1" (DIGITAL IN 1)[*1] or "D-IN 2" (DIGITAL IN 2)[*2] is selected as the source on this unit.

*1 "AUX", "ARC" or "D-IN 1" works depending on the setting in "Setting the audio link with the TV".
*2 "D-IN 2" works depending on the setting in "Setting the audio link with the STB".

Power off link

All connected equipment compatible with "HDAVI Control", including this unit, automatically turns off when you switch the television off.

Playing music continuously even after turning off the TV
(When the unit is connected to a Panasonic TV (VIERA) that supports HDAVI Control 2 or later.)
Select "Video" in "Power Off Link" (⇨ 37)

Easy control only with VIERA remote control

Only TV supports "HDAVI Control 2" or later
By using the TV remote control, you can play discs using the "Control Panel" and display the Top Menu or Pop-up Menu, etc.

● This works only during "BD/DVD" or "SD" playback and resume modes.

1 Press [SUB MENU].

2 Select an item and press [OK].

| Control Panel |
| Screen Aspect |
| Top Menu |
| Pop-up Menu |
| SUB MENU OK RETURN |

● The sub menu may not appear while the Top Menu for BD-Video or DVD-Video is displayed.

📖
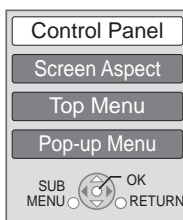
● The buttons that you can use for this unit vary depending on the TV. For details, refer to the operating instructions of the TV.
● The operation of this unit may be interrupted when you press incompatible buttons on the TV remote control.
● Depending on the menu, some button operations cannot be performed from the TV's remote control.

Using the iPod/iPhone

iPod/iPhone Connection

Preparation
● Before connecting/disconnecting the iPod/iPhone, turn the main unit off or reduce the volume of the main unit to its minimum.
● Make sure that the video cable connection is made to view photos/videos from the iPod/iPhone.

1 Push △ to open the iPod/iPhone lid.
2 Connect the iPod/iPhone (not included) firmly.

iPod/iPhone

Main unit
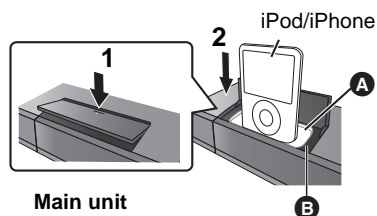
Ⓐ Dock adapter (not included)
● Attach the dock adapter until firmly fitting into the dock. The adapter should be supplied with your iPod/iPhone for the stable use.
If you need an adapter, consult your iPod/iPhone dealer.
Ⓑ Dock for iPod/iPhone

📖

About recharging the battery
● iPod/iPhone will start recharging regardless of whether this unit is on or off.
● "IPOD ☀" will be shown on the main unit's display during iPod/iPhone charging in main unit standby mode.
● Once fully recharged, additional recharging will not occur.

Compatible iPod/iPhone (as of December 2009)
● Compatibility depends on the software version of your iPod/iPhone.

Name	Memory size
iPhone 3GS	16 GB, 32 GB
iPhone 3G	8 GB, 16 GB
iPod nano 5th generation (video camera)	8 GB, 16 GB
iPod touch 2nd generation	8 GB, 16 GB, 32 GB, 64 GB
iPod classic	120 GB, 160 GB (2009)
iPod nano 4th generation (video)	8 GB, 16 GB
iPod classic	160 GB (2007)
iPod touch 1st generation	8 GB, 16 GB, 32 GB
iPod nano 3rd generation (video)	4 GB, 8 GB
iPod classic	80 GB
iPod nano 2nd generation (aluminum)	2 GB, 4 GB, 8 GB
iPod 5th generation (video)	60 GB, 80 GB
iPod 5th generation (video)	30 GB
iPod nano 1st generation	1 GB, 2 GB, 4 GB
iPod 4th generation (color display)	40 GB, 60 GB
iPod 4th generation (color display)	20 GB, 30 GB
iPod 4th generation	40 GB
iPod 4th generation	20 GB
iPod mini	4 GB, 6 GB

iPod/iPhone Playback

Preparation
● Make sure that the "IPOD" source is selected. Press [iPod] to select the source.
● **To view photos/videos from the iPod/iPhone**
  Operate the iPod/iPhone menu to make the appropriate photo/video output settings for your TV.
● To display the picture, turn on the TV and select the appropriate video input mode.

Enjoy music/video

To use the iPod touch/iPhone features
① Press the Home button on the iPod touch/iPhone.
② Select the iPod touch/iPhone features on the touch screen to operate.

1 Press [iPod] to select "IPOD".

2 Press [STATUS] several times to select the music menu or videos menu.

3 Press [▲, ▼] to select an item and press [OK].
  ● Repeat this step until the selected title starts playback.
  ● Press [◄, ►] to display the previous or next page.
  e.g., music playback screen

```
iPod                                      ►
♪ Good morning
♪ Ronaldo
♪ Happy days
1:00                                  -2:30
                                  45 of 1230
   Shuffle (Albums)               ❚❚   ►
   Repeat (All)                 ◄◄  ◉  ►►
                                      ↩
```
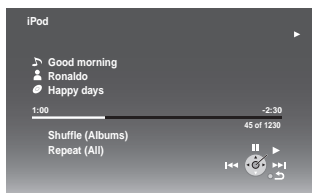
To exit, press [TOP MENU/DIRECT NAVIGATOR].

Enjoy photos

1 Press [iPod] to select "IPOD".

2 Press [STATUS] several times to select "ALL" on the unit's display.

3 Switch the TV input to video in.

4 Play a slideshow on your iPod/iPhone.
  The picture will be displayed on your TV.

You can use the remote control to operate the iPod/iPhone menu.
The operation may vary among iPod/iPhone models.
● [▲, ▼]: To navigate menu items
● [OK]: To go to the next menu.
● [RETURN]: To return to the previous menu.

Other methods of playback

1 Press [START].

2 Press [▲, ▼] to select "Menu" and then press [OK].

3 Press [▲, ▼] to select "Playback Mode" and then press [OK].

4 Press [▲, ▼] to select an item and press [OK].

  Shuffle (For music playback only.)
  Songs:
  Play all songs on iPod/iPhone in random order.
  Albums:
  Play all songs on an album in random order.

  Repeat
  One:
  Play a single song/video repeatedly.
  All:
  Play all songs/videos from selected items (e.g., Playlists, Albums, etc.) repeatedly.

5 Press [▲, ▼] to select the setting and press [OK].

📖
● The setting of the playback mode will be kept until changes are made on the same iPod/iPhone.
● This function does not work when "All (iPod display)" is selected.

Basic controls

(For music and video playback only)

Buttons	Functions
[► PLAY]	Play
[■STOP]	Pause
[❚❚PAUSE]	
[SKIP I◄◄, SKIP ►►I]	Skip
(Press and hold) [SEARCH◄◄, SEARCH►►]	Search

📖
● Surround sound effect and sound mode are available (⇨ 24).

Enjoying VIERA CAST™

You can access a selection of Internet services from the Home screen with VIERA CAST, for example YouTube, Picasa Web Albums. (Current as of December 2009)

Preparation
● Network connection (⇨ 17)
● Network setting (⇨ 20)

1 Press [VIERA CAST].
Message is displayed. Please read these instructions carefully and then press [OK].

2 Press [▲, ▼, ◄, ►] to select the item and press [OK].
Operable buttons:
[▲, ▼, ◄, ►], [OK], [RETURN], colored buttons, numbered buttons

VIERA CAST Home screen;
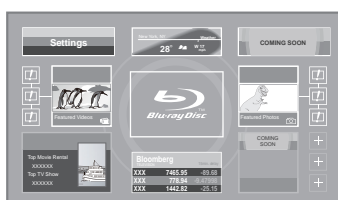
Images are for illustration purposes, contents may change without notice.

To return to VIERA CAST Home screen
Press [VIERA CAST].

To exit from VIERA CAST
Press [EXIT], [START] or [TOP MENU/DIRECT NAVIGATOR].
● When the Blu-ray disc logo is selected on the Home screen, the playback source will be changed and go back to the source previously selected.

● In the following cases, settings are possible using "Internet Content Settings" (⇨ 38)
  – When restricting the use of VIERA CAST.
  – When the audio is distorted.
  – When wrong time is displayed
● If using slow Internet connection, the video may not be displayed correctly. A high-speed Internet service with a speed of at least 6 Mbps is recommended.

● Be sure to update the firmware when a firmware update notice is displayed on the screen. If the firmware is not updated, you will not be able to use the VIERA CAST™ function. (⇨ 21)
● VIERA CAST™ home screen is subject to change without notice.
● The services through VIERA CAST™ are operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services.
● All features of websites or content of the service may not be available.
● Some content may be inappropriate for some viewers.
● Some content may only be available for specific countries and may be presented in specific languages.

Playback menu

1 Press [BD/SD] to select "BD/DVD".

2 Press [DISPLAY].
e.g., BD-Video

Disc	Signal Type			
Play				
Video	Subtitle	Off	Main	1ENG
Audio	Subtitle Style	-	Angle	-

Menus　　　　Items　　　　Settings
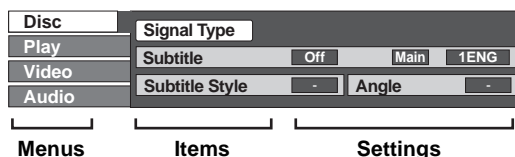
3 Press [▲, ▼] to select the menu and press [►].

4 Press [▲, ▼, ◄, ►] to select the item and press [►].

5 Press [▲, ▼] to select the setting.
Some items can be changed by pressing [OK].

To exit the screen
Press [DISPLAY].

Depending on the condition of the unit (playing, stopped, etc.) and media contents, there may be some items that you cannot select or change.
Regarding Language, Audio attribute and Video attribute :
(⇨ 45)

Disc

Signal Type
Primary Video

Video	The recording method of original video appears.
Soundtrack	Select the type of audio or language.

Secondary Video

Video	Select on/off of images. The recording method of original video appears.
Soundtrack	Select on/off of audio and the language.

Video
The recording method of original video appears.

Soundtrack
Show or change the soundtrack.

Subtitle
Turn the subtitle on/off, and change the language depending on the media.

Subtitle Style
Select the subtitle style.

Audio channel
Select the audio channel number.
(⇨ 25, "Changing audio")

Angle
Select the number of the angle.

Some items may be changed only on the disc specific menu. (⇨ 25)

Play

Repeat Play

(Only when the elapsed time is being displayed on the unit's display.)
Select the item which you want to repeat. The items displayed differ depending on the type of media.

Select "Off" to cancel.

Random

Select whether or not to play random.

Playback Information Window

Displays the following.

⊘	Audio/video attribute information of disc.
⬚	Settings status of "Digital Audio Output"(⇨ 36).
HDMI	HDMI output information.

Press [RETURN] to exit.

Video

Picture

Select the picture quality mode during play.

Detail Clarity

The picture is sharp and detailed.

Progressive

Select the method of conversion for progressive output to suit the type of material being played.

● When the content is distorted change the settings from "Auto" to "Video".

24p

Movies and other material recorded on DVD-Video at 24p are output at 24p.

● Only when you have selected "On" in "24p Output" (⇨ 37)

Audio

Sound Effects[*1, *2]

(Discs recorded at 48 kHz or less)
This feature gives you brighter sound by increasing the high frequency portion of the audio.

Re-master 1	Pop and rock
Re-master 2	Jazz
Re-master 3	Classical

Dialog Enhancer[*1]

The volume of the center channel is raised to make dialog easier to hear.

High Clarity Sound

When connected to TV via HDMI AV OUT terminal for outputting image, it produces clearer sound because the analog video circuit (via VIDEO OUT terminal) can be stopped.
● Only when you have selected "Enable" in "High Clarity Sound" (⇨ 37).

[*1]　When audio is output from the HDMI AV OUT terminal this function is effective only when "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" is set to "PCM". (⇨ 36)

[*2]　This function has no effect when the type of audio is Dolby Pro Logic II.

Setup menu

Change the unit's settings if necessary. The settings remain intact even if you switch the unit to standby.

1 **Press [START] and press [▲, ▼] to select "Other Functions" and press [OK].**

2 **Press [▲, ▼] to select "Setup" and press [OK].**

Setup
Disc
Video
Audio
Display
TV / Device Connection
Network
Others

```
        OK
        RETURN
```

3 **Press [▲, ▼] to select the menu and press [OK].**

4 **Press [▲, ▼] to select the item and press [OK].**
   If there are any other items, repeat these steps.

5 **Press [▲, ▼, ◄, ►] to select the option and press [OK].**

- There may be differences in operation methods. If this happens, follow the on-screen instructions for the operation.

About the password
The password of the following items are common.
Don't forget your password.
- "DVD-Video Ratings"
- "BD-Video Ratings"
- "Lock" (⇨ 38)

Disc

DVD-Video Ratings
Set a ratings level to limit DVD-Video play.
- Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown.

BD-Video Ratings
Set an age limit of BD-Video play.
- Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown.

Audio Language
Choose the language for audio.
- If "Original" is selected, the original language of each disc will be selected.
- Enter a code (⇨ 45) with the numbered buttons when you select "Other ✳✳✳✳".

Subtitle Language
Choose the language for subtitle.
- If "Automatic" is selected and the language selected for "Audio Language" is not available, subtitles of that language will automatically appear if available on that disc.
- Enter a code (⇨ 45) with the numbered buttons when you select "Other ✳✳✳✳".

Menu Language
Choose the language for disc menus.
- Enter a code (⇨ 45) with the numbered buttons when you select "Other ✳✳✳✳".
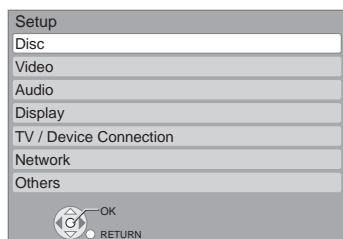
BD-Live Internet Access (⇨ 27)
You can restrict Internet access when BD-Live functions are used.
- If "Allow (Limited)" is selected, Internet access is permitted only for BD-Live contents which have content owner certificates.

Video

Still Mode (paused video)
Select the type of picture shown when you pause playback.

Auto	Automatically selects the type of picture shown.
Field	Select if jittering occurs when "Auto" is selected.
Frame	Select if small text or fine patterns cannot be seen clearly when "Auto" is selected.

Seamless Play
The chapters segment in playlists are played seamlessly.
- Select "On", when the picture freezes for a moment at the chapters segment in playlists.

Black Level Control
Select lighter or darker for adjusting the black level control to the desired setting for picture enhancement.

Audio

Dynamic Range Compression
You can listen at low volumes but still hear dialog clearly.
(Dolby Digital, Dolby Digital Plus and Dolby TrueHD only)
- "Auto" is effective only when playing Dolby TrueHD.

Digital Audio Output
Press [OK] to show the following settings.

Dolby D/Dolby D +/Dolby TrueHD
DTS/DTS-HD
Select the audio signal to output.
- Select "PCM", when the connected equipment cannot decode the respective audio format.
- Not making the proper settings may result in noise.

BD-Video Secondary Audio
Select whether to mix or not mix the primary audio and secondary audio (including the button click sound). (⇨ 26)
- If "Off" is selected, the unit outputs the primary audio only.

Digital Audio Input
Select whether to receive the digital sound as PCM or the original sound format.
Select "On" if the sound is cut off intermittently.

Downmix
Select the downmix system to enjoy multi-channel or 2-channel sound.
- Select "Surround encoded" to enjoy the surround sound.
- There is no downmix effect on the bitstream audio signal.
- The audio will be output in "Stereo" in the following cases.
  – AVCHD playback
  – Playback of secondary audio (including the button click sound).

7.1ch Audio Reformatting

Surround sound with 6.1ch or less is automatically expanded and played back at 7.1ch.
● If "Off" is selected, sound is played over the original number of channels (Note that in the case of 6.1ch audio, playback will be at 5.1ch.)

Audio reformatting is enabled in the following cases:
● When you have selected "PCM" in "Digital Audio Output".
● When the audio is Dolby Digital, Dolby Digital Plus, Dolby TrueHD or LPCM.

High Clarity Sound

When connected to TV via HDMI AV OUT terminal for outputting image, it produces clearer sound because the analog video circuit (via VIDEO OUT terminal) can be stopped.
● Set to "Enable" and then set "High Clarity Sound" on the playback menu to "On". (⇨ 35)

Audio Delay

Mis-sync between the video and audio is corrected by delaying the audio output.

Speaker

Refer to page 39

Display

Status Messages

Choose whether to show status messages automatically.

On-screen Language

Choose the language for these menus and on-screen messages.

Screen Saver Function

This is to prevent burn-in on the screen.
● When this is set to "On":
  If there is no operation for 5 minutes or more, the displayed screen switches to the other states automatically.

FL Display

Changes the brightness of the unit's display.
● If "Auto" is selected, the display is dimmed but brightens when you perform some operations.

(For the U.S.A. and Canada)
FL Control (Vol 0)
● If "On" is selected, the unit's display will turn off when the volume is adjusted to "0".

License

Information about the software used by this unit is displayed.

TV / Device Connection

TV Aspect

Set to match the type of television connected.
When connected to a 4:3 aspect television and playing 16:9 ratio image:

4:3	The sides are cut off so the picture fills the screen. When playing BD-Video, video is output as "4:3 Letterbox".
4:3 Letterbox	Black bands appear at the top and bottom of the picture.

When connected to a 16:9 widescreen television and playing 4:3 ratio image:

16:9	Video is displayed as a 4:3 ratio image in the center of the screen.

HDMI Connection

Press [OK] to show the following settings.

HDMI Resolution

The items supported by the connected devices are indicated on the screen as "✳". When any item without "✳" is selected, the images may be distorted.
● If "Auto" is selected, automatically selects the output resolution best suited to the connected television.
● To enjoy high definition video up-converted to 1080p, you need to connect the unit directly to 1080p compatible HDTV (High Definition Television). If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.

24p Output

When this unit is connected to a TV supporting 1080/24p output using an HDMI cable, movies and other material recorded at 24p are output at 24p.
● When playing DVD-Video, set to "On" and then also set "24p" in "Video" (⇨ 35) to "On".
● When BD-Video images other than 24p are played, images are output at 60p.

HDMI Color Mode

This setting is for selecting color-space conversion of the image signal when the unit is connected using an HDMI cable.

HDMI Audio Output

This setting selects whether or not to output audio from HDMI. Audio will be output through the system's speakers when "Off" is selected.

VIERA Link

Set to use "HDAVI Control" function when connected with an HDMI cable to a device that supports "HDAVI Control".
● Select "Off" when you do not want to use "HDAVI Control".

Deep Color Output

This setting is for selecting whether to use Deep Color output when a television that supports Deep Color is connected.

Contents Type Flag

Depending on the playback content, the TV will output adjusting to the optimal method when a TV that supports this function is connected.

Power Off Link

Select the desired power off link setting of this unit for VIERA Link operation (⇨ 32). (This works depending on the settings of the connected VIERA Link "HDAVI Control" compatible equipment.)
Video/Audio:
When the TV is turned off, this unit will turn off automatically.
Video:
When the TV is turned off, this unit will turn off except during the following conditions:
  – CD or MP3 audio playback
  – iPod/iPhone mode
  – Radio mode
  – "AUX","ARC" or "D-IN 1" (DIGITAL IN 1) mode (non-selected TV AUDIO setting for VIERA Link)
  – "D-IN 2" (DIGITAL IN 2) mode (non-selected CABLE/ SAT AUDIO setting for VIERA Link)

TV Audio Input

Select the TV audio input to work with the VIERA Link operations.

Network

Network Easy Setting (⇨ 20)

Network Settings

Perform network-related settings individually.
Press [OK] to show the following settings.

LAN Connection Mode

Select connection method.

`BT730` `BT330` `BT230` Access Point Connection Setting

This allows the Wireless router (Access point) and connection settings to be set and the current connection settings and connection state to be checked when a wireless connection is used.

`BT730` `BT330` `BT230` Connection Setting

The Wireless router (Access point) connection wizard will be displayed.

IP Address / DNS Settings

This is for checking the state of the network connection and setting the IP address and DNS-related.
Press [OK] to show the respective setting.
● "Connection Speed Setting" is enabled only when "Auto Detect Connection Speed" is turned "Off".

Proxy Server Settings

This is for checking the state of connection with the Proxy server and performing settings.
Press [OK] to show the respective setting.

Internet Content Settings (⇨ 34) (VIERA CAST)

Press [OK] to show the following settings.

Lock

You can restrict the usage of VIERA CAST.
● Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown.

Audio Auto Gain Control

Volume that is different depending on the contents is adjusted automatically to the standard volume while using the VIERA CAST.
● Depending on contents, this function effect will not work.
● Select "Off" when the audio is warped.

Time Zone

By selecting the time zone, it is possible to set the unit's time to match your location.
● Some VIERA CAST contents require the time zone to be set. Set the time zone if necessary.

DST

Select "On" when using Daylight Saving time.

MAC Address

Displays the MAC address of this unit.

Others

(For units with PX printed on the packaging)
Off Timer

Select how long the unit remains on when it is not being used.
● Effective only when "BD/DVD" or "SD" is selected as source.

Remote Control Code

Change the remote control code, when other Panasonic products react to this remote control.

Quick Start*

Speed of startup from power off is increased.
● Internal control unit will be powered when it is set to "On", so contents of the following will be different from the time it is set to "Off".
  – Idle power consumption will increase. (about the power consumption ⇨ 48)

  *The cooling fan may turn slowly to prevent overheating of internal parts.
  * Depending on the power conserving setting activated on the TV, this function may have less effect when the unit is started by the power on link function. (⇨ 31)

`BT730` `BT330` Smart setup /
`BT230` `BT235` Easy setup (⇨ 19)

You can execute basic settings to optimize your home theater system.

Restore Default Settings

This returns all values in the Setup menu and the playback menu, except for "Remote Control Code", "On-screen Language", "IP Address / DNS Settings", "Proxy Server Settings", "Lock", "DVD-Video Ratings" and "BD-Video Ratings" to the default settings.

System Information

Display the following items.
  – Firmware version of this unit
  – `BT730` `BT330` `BT230` Wireless LAN module of optional Wireless LAN Adaptor

Firmware Update (⇨ 21)

Press [OK] to show the following settings.

Automatic Update Check

When this equipment remains connected to the Internet, it will check for the latest firmware version when it is turned on and you can update it if necessary.
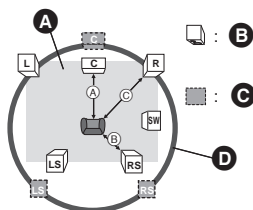
Update Now

You can update the firmware manually.

Speaker settings

Delay time

For optimum listening with 5.1-channel sound, all the speakers, except for the subwoofer, should be the same distance from the seating position.

If either distance Ⓐ or Ⓑ is less than Ⓒ (⇨ below), find the difference in the relevant table and adjust the delay time to make up for the difference.

Ⓐ Ⓑ Ⓒ: Primary listening distance
A Approximate room dimensions
B Actual speaker position
C Ideal speaker position
D Circle of constant primary listening distance

1 Press [▲, ▼, ◄, ►] to select the distance box (ms 0.0) and press [OK].

e.g., 5.1ch setting
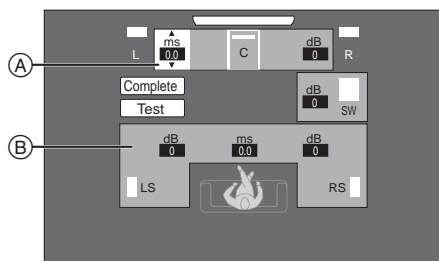
Ⓐ Center (C)
Ⓑ Left Surround (LS), Right Surround (RS)

BT730 BT330 BT230

e.g., 7.1ch setting
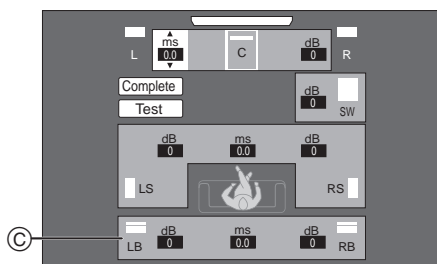
Ⓒ Left Surround back (LB), Right Surround back (RB)

2 Press [▲, ▼] to select the setting and press [OK].

Ⓐ Center speaker

Difference	Setting
Approx. 34 cm (1 ft. 1 in.)	1.0 ms
Approx. 68 cm (2 ft. 2 in.)	2.0 ms
Approx. 102 cm (3 ft. 4 in.)	3.0 ms
Approx. 136 cm (4 ft. 5 in.)	4.0 ms
Approx. 170 cm (5 ft. 6 in.)	5.0 ms

Ⓑ Surround speakers/
BT730 BT330 BT230 Surround back speakers

Difference	Setting
Approx. 170 cm (5 ft. 6 in.)	5.0 ms
Approx. 340 cm (11 ft. 1 in.)	10.0 ms
Approx. 510 cm (16 ft. 8 in.)	15.0 ms

BT730 BT330 BT230

■ When using the 7.1ch speaker system

① Check the distance difference of both the front speakers and the surround back speakers from the seating position.
② Set the delay time of the surround back speakers.

Adjusting speaker level

Volume (Channel balance) (dB 0)
(Effective when playing multi-channel audio)

1 Select "Test" and press [OK].
A test signal is output.

2 While listening to the test signal
Press [▲, ▼] to adjust the volume of each speaker.

The volume can be adjusted between +6 dB to −6 dB.
● Set each speaker level according to the volume of the Front (L) and Front (R) speaker volume respectively.
● No signal is output for the subwoofer. To adjust its volume, see page 24, "Adjusting speaker level during play".

3 Press [OK].
The test signal stops.

e.g., 5.1ch setting
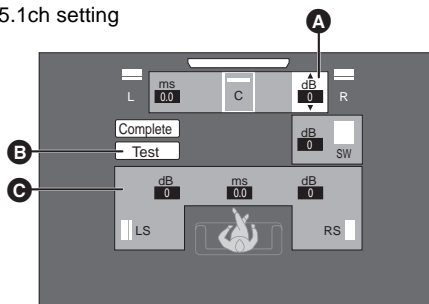
A Center (C)
B Test
C Left Surround (LS), Right Surround (RS)

To finish the speaker setting
Press [▲, ▼, ◄, ►] to select "Complete" and press [OK].

Speaker installation option

Attaching to a wall

You can attach all of the speakers (except subwoofer) to a wall.

- The wall or pillar on which the speakers are to be attached should be capable of supporting 10 kg (22 lbs) per screw. Consult a qualified building contractor when attaching the speakers to a wall. Improper attachment may result in damage to the wall and speakers.
- Do not attempt to attach these speakers to walls using methods other than those described in this manual.

1 Drive a screw (not included) into the wall.

Ⓐ At least 30 mm (1 $^3/_{16}$″)
Ⓑ ∅ 4.0 mm ($^5/_{32}$″)
Ⓒ ∅ 7.0 mm to ∅ 9.4 mm ($^9/_{32}$″ to $^3/_8$″)
Ⓓ Wall or pillar
Ⓔ 5.5 mm to 7.5 mm ($^7/_{32}$″ to $^5/_{16}$″)
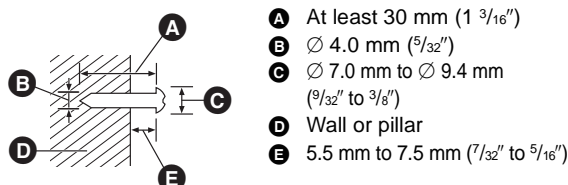
2 Fit the speaker securely onto the screw(s) with the hole(s).

e.g., BT730 Front speaker	
DO NOT	**DO**
• In this position, the speaker will likely fall if moved to the left or right.	• Move the speaker so that the screw is in this position.

Front speaker
Attach to a wall without the base and the stand.

BT730 | BT330 BT235

BT730 BT330 BT235 :
Surround speaker
BT230 :
Front speaker and surround speaker

Ⓕ 97 mm (3 $^{13}/_{16}$″)
Ⓖ 210 mm to 212 mm (8 $^9/_{32}$″ to 8 $^{11}/_{32}$″)
Ⓗ 72 mm (2 $^{27}/_{32}$″)
Ⓘ 349 mm to 351 mm (13 $^3/_4$″ to 13 $^{13}/_{16}$″)
Ⓙ 26 mm (1 $^1/_{32}$″)
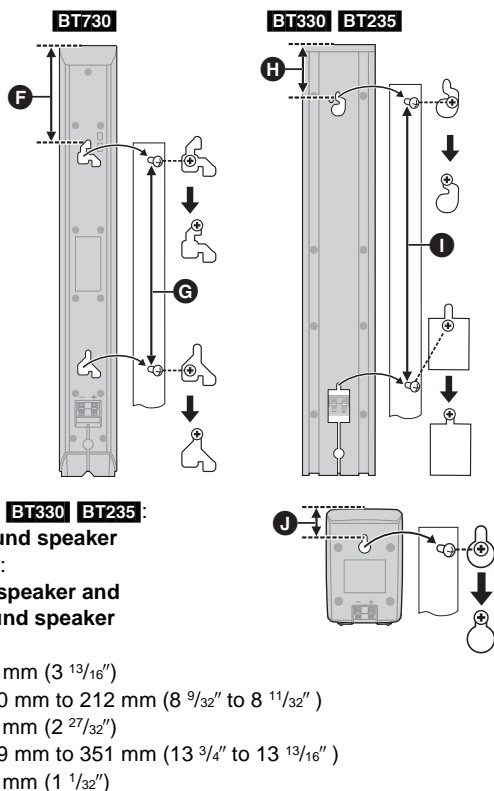
BT730
Center speaker
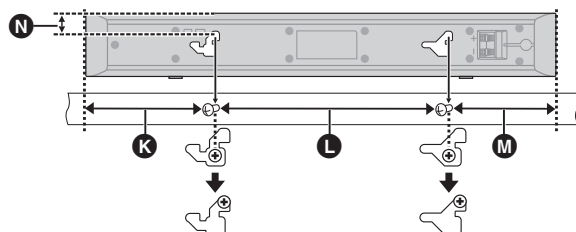
BT330 BT230 BT235
Center speaker
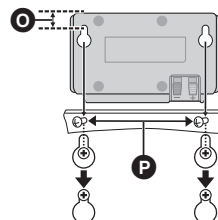
Ⓚ 117 mm (4 $^{19}/_{32}$″)
Ⓛ 209 mm to 211 mm (8 $^7/_{32}$″ to 8 $^5/_{16}$″)
Ⓜ 97 mm (3 $^{13}/_{16}$″)
Ⓝ 18.8 mm ($^3/_4$″)
Ⓞ 17 mm ($^{21}/_{32}$″)
Ⓟ 99 mm to 101 mm (3 $^{29}/_{32}$″ to 3 $^{31}/_{32}$″)

■ To avoid speaker dropping

BT730 : **Front speaker, Center speaker**
BT330 BT235 : **Front speaker**

e.g., BT730 **Front speaker**

Ⓐ String (not included)
Ⓑ Screw eye (not included)
Ⓒ Less than 10 cm (3 $^{15}/_{16}$″)
Ⓓ Rear of the speaker
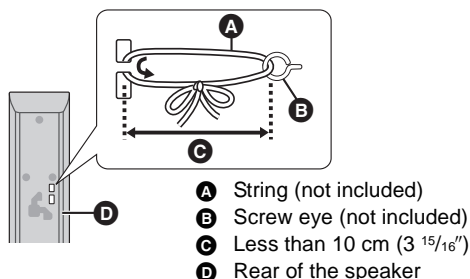
- Consult a qualified building contractor to avoid damage to the wall or speakers.
- Use a string of less than ∅ 2.0 mm ($^3/_{32}$″), which is capable of supporting over 10 kg (22 lbs).

Reattaching the speaker cable

BT330 BT235

Insert the cable from the bottom.

Pull out the cable through the hole.

Leave about 120 mm (4 $^{23}/_{32}$″)

Troubleshooting guide

Before requesting service, please perform the following steps.

(For the U.S.A. and Canada)

Do you have the latest firmware installed?

Firmware updates may be released to correct operating irregularities that are discovered with certain movies. (⇨ 21)

▼

Make the following checks and visit our website for more information.

For USA :
http://www2.panasonic.com/consumer-electronics/support/
Enter the model number.

For Canada :
http://www.panasonic.ca

▼

Even so, you still have trouble,

Visit our website to find a service center.
You can find a service center near you easily on our website.

Other support information:
"Customer Services Directory (United States and Puerto Rico)" (⇨ 50) or "Limited Warranty (Only for CANADA)" (⇨ 51).

(For units with PX printed on the packaging)

Do you have the latest firmware installed?

Firmware updates may be released to correct operating irregularities that are discovered with certain movies. (⇨ 21)

Even so, you still have trouble, consult your dealer.

The following do not indicate a problem with this unit:
- Regular disc rotating sounds.
- Image disturbance during search.

■ Unit does not respond to the remote control or front panel buttons.

Press and hold [POWER ⏻/I] on the main unit for 5 seconds.
− If still unable to power the unit off, disconnect the power cord, wait 1 minute, then reconnect the power cord.

■ Cannot eject disc.

The unit may have a problem.
While the unit is off, press and hold [SKIP ▶▶I] on the remote control and [▲ OPEN/CLOSE] on the unit at the same time for more than 5 seconds.

General operation

To return to the factory preset
- Select "Yes" in "Restore Default Settings" in the Setup menu. (⇨ 38)

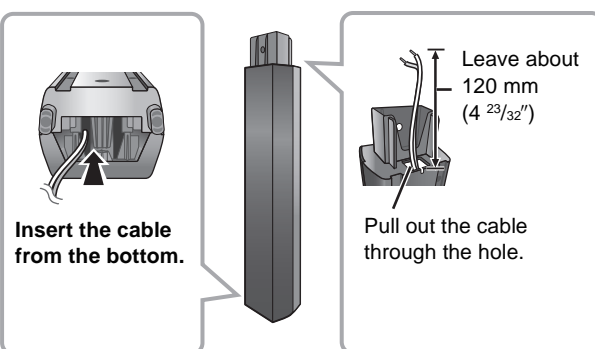**To return all settings to the factory preset**
- Reset the unit as follows:
  While the unit is off, press and hold [+ VOLUME], [▲ OPEN/CLOSE] and [POWER ⏻/I] on the main unit at the same time for more than 5 seconds.

The remote control doesn't work properly.
- The remote control and main unit are using different codes. Change the code on the remote control. (⇨ 22)
- It may be necessary to set the code of the remote control again after changing the batteries for remote control. (⇨ 22)

Disc cannot be played.
- The disc is dirty. (⇨ 9)

Still pictures (JPEG) do not playback normally.
- The images that were edited on the PC, such as Progressive JPEG, etc., may not playback.

The TV tuner mode is not displayed when the TV is switched on.
- This phenomenon may occur, depending on the TV setting, when "Quick Start" is set to "On".
- Depending on the TV, this phenomenon may be prevented by reconnecting the HDMI cable to a different HDMI input terminal or by changing the HDMI auto connection setting.

You have forgotten your ratings password.
You want to cancel the ratings level.
While the disc tray is empty and "BD/DVD" is selected as a source, press and hold [SKIP I◀◀] on the remote control and [▶] (Play) on the unit at the same time for more than 5 seconds. The ratings level returns to the factory preset.

Power

No power.
- Insert the AC power supply cord securely into a household AC outlet. (⇨ 18)

The unit switches to standby mode.
- (For the U.S.A. and Canada)
  This unit will automatically turn to standby mode after 30 minutes if it is inactive. (⇨ 7)
- (For units with PX printed on the packaging)
  This is a power saving feature. It can be changed if desired using "Off Timer" in the Setup menu. (⇨ 38)
- When the time set for the sleep timer has passed, the power will be turned off. (⇨ 6)
- One of the unit's safety devices is activated. Press [POWER ⏻/I] on the main unit to turn the unit on.

Power of this unit is turned off when the input for the TV is changed.
- This is a normal phenomenon when using VIERA Link (HDAVI Control 4 or later). For details please read the operating instructions for the TV.

Displays

The display is dim.
- Change "FL Display" in the Setup menu. (⇨ 37)

TV screen and video

The images from this unit do not appear on the TV.
Picture is distorted.
Jittering occurs.
- An incorrect resolution is selected in "HDMI Resolution". Reset the setting as follows:
  While the disc tray is empty and "BD/DVD" is selected as a source, press and hold [▶] (Play) and [■] (Stop) on the main unit at the same time for more than 5 seconds to cancel the setting.
- When Dolby Digital Plus, Dolby TrueHD, and DTS-HD audio are not output in bitstream, select "Yes" in "Restore Default Settings" and make proper settings. (⇨ 38)

Video is not output.
- Set the "High Clarity Sound" in the playback menu to "Off" to use the VIDEO OUT terminal. (⇨ 35)

Video is not output in high definition.
- Confirm that "HDMI Resolution" in the Setup menu are set properly. (⇨ 37)

No subtitles.
- When progressive output is on, closed captions cannot be displayed.

The subtitles overlap closed captions recorded on discs.
- Turn off the subtitles or turn off the closed caption setting on the TV. (⇨ 34)

A black band is displayed around the edge of the screen.
The aspect ratio of the screen is abnormal.
- Confirm the "TV Aspect" is set properly. (⇨ 37)
- Adjust the aspect setting on the television.
  (Adjustment using "Screen Aspect" (⇨ 26) on the unit is also possible.)

Sound

No sound.
Low volume.
Distorted sound.
Cannot hear the desired audio type.
- Check connections to speakers and other equipment. (⇨ 10, 11,13–18)
- Ensure the speaker settings for your speakers are correct. (⇨ 39)
- To output audio from a device connected with an HDMI cable, set "HDMI Audio Output" to "On" in the Setup menu. (⇨ 37)
- When "BD-Video Secondary Audio" is set to "On", Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio and DTS-HD High Resolution Audio are output as Dolby Digital or DTS Digital Surround.
- Re-master will not work when the bitstream signal is output from the HDMI AV OUT terminal. (⇨ 35)
- Depending on the connected equipment, the sound may be distorted if this unit is connected with an HDMI cable.
- The multi-channel audio from a device connected to the TV is not output in it's original multi-channel form.
  − If the device has an optical audio output terminal, connect the device to this unit's "OPTICAL 2" terminal. (⇨ 15, 30)

No surround sound.
- Press [SURROUND] to select a surround effect. (⇨ 24)
- **BT730** Ensure that the surround selector switch is set in the center position. Then, turn the wireless system off and then back on.
- **BT730** **BT330** **BT230** (When using the 7.1ch speaker system)
  Audio is not available from the surround back speakers even though Dolby Pro Logic II turns on.

Cannot switch audio.
- When audio is output from the HDMI AV OUT terminal, set "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" to "PCM". (⇨ 36)

No sound from the TV.
- Press [EXT-IN] to select the corresponding source. (⇨ 23)
- The ARC (Audio Return Channel) function is not available. Instead, use an optical digital audio cable or an audio cable to have the TV sound. (⇨ 14, 15)

- If the TV is not ARC compatible and only the HDMI connection is used, an extra audio connection is necessary (⇨ 14, 15).

iPod/iPhone operation

Cannot charge or operate.
- Check that the iPod/iPhone is connected firmly. (⇨ 32)
- The battery of the iPod/iPhone is depleted. Charge the iPod/iPhone, and then operate again.

Cannot display iPod/iPhone videos/photos on the TV.
- Make sure that TV is connected to the VIDEO OUT terminal on this unit. (⇨ 14)
- Operate the iPod/iPhone menu to make the appropriate video/photo output settings for your TV. (Refer to operating instructions for your iPod/iPhone.)

The TV input channel unintentionally changes to HDMI input.
- When the main unit is connected with an "HDAVI Control" compatible TV and VIDEO IN is selected for iPod/iPhone video or photo playback, the TV input channel will automatically change to the HDMI input channel when [START] is pressed.
  − Re-select the TV's VIDEO IN input channel.

Radio

Distorted sound or noise is heard.
- Adjust the position of the antenna.
- Use an outdoor antenna. (⇨ 16)

A beat sound is heard.
- Try to keep a certain amount of distance between the antenna and the TV.

BT730 Wireless system (SH-FX71)

No power.
- Ensure the AC power supply cord of the wireless system is connected properly.

The wireless link indicator (e.g., " W ") is flashing.
- There is no link between the main unit and the wireless system. Turn the wireless system off and then back on. Alternatively, turn the wireless system off, disconnect the AC power supply cord and then reconnect it.

The wireless link indicator (e.g., " W ") does not light.
- Check that the main unit is turned on, and the wireless system is turned on.
- Ensure that the digital transmitter is fully inserted into the slot of the main unit. (⇨ 16)

The wireless link indicator keeps flashing between red and green.
- There is a power supply problem. Consult the dealer.

Network

I can't connect to the network.
- Confirm the network connection and settings. (⇨ 17, 38)
- Check the operating instructions for each device and connect accordingly.

Other difficulties with playback

BD-Video or DVD-Video is not played.
- Ensure the disc is for the correct BD-Video region code or DVD-Video region number, and is not defective. (⇨ 8)
- You have set a ratings level to limit BD-Video or DVD-Video play. Change this setting. (⇨ 36)
- Some BD-Video can only be output with HDMI.

I cannot play back BD-Live.
- The SD card is write-protected. (⇨ 9)
- Confirm that this unit is connected to the broadband Internet. (⇨ 17)
- Confirm the "BD-Live Internet Access" settings. (⇨ 36)
- Confirm an SD Card is inserted into the SD Card slot. (⇨ 22)

Alternative soundtrack and subtitles cannot be selected.
- The languages are not recorded on the disc.
- You may not be able to use the playback menu to change the soundtrack and subtitles on some discs. Use the disc's menus to make changes. (⇨ 25)

Angle cannot be changed.
- Angles can only be changed during scenes where different angles are recorded.

Messages

The following messages or service numbers appear on the television or unit's display when something unusual is detected during startup and use.

On the television

Cannot play.
- You inserted an incompatible disc. (Discs recorded in PAL video, etc.)

Cannot display on this unit.
- You tried to play a non-compatible image.

No disc is inserted.
- The disc may be upside down.

⊘ This operation is not available.
- Some operations are unsupported by the unit. For example;
  - BD-Video: During playback, reverse slow-motion or reverse frame-by-frame is not possible.

IP address is not set.
- The "IP Address" in "IP Address / DNS Settings" is "---. ---. ---. ---". Set the "IP Address", "Subnet Mask", and "Default Gateway". (Select the automatic address acquisition if necessary.)

No Video
- Depending on the connected iPod/iPhone, video menu may not be available on the TV. Select "ALL" on the unit's display and operate video playback from your iPod/iPhone menu. (⇨ 33)

On the unit's display

F99
- The unit fails to operate properly. Press [POWER ⏻/I] on the main unit to switch the unit to standby for 3 seconds. Now press [POWER ⏻/I] on the main unit again to turn the unit on.

U59
- The unit is hot.
  The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears.
  Select a position with good ventilation when installing the unit. Do not block the ventilation hole on the rear and side of the unit.

U72
U73
- The HDMI connection acts unusually.
  - Turn the unit and TV off.
  - Disconnect the HDMI cable between the player and the TV.

HDMI ONLY
- Some BD-Video discs can only be output with HDMI.

NET
- Displays while VIERA CAST is starting up.

No PLAY
- There is a viewing restriction on a BD-Video or DVD-Video. (⇨ 36)

No READ
- The media is dirty or badly scratched. The unit cannot play.

PLEASE WAIT
- The unit is carrying out an internal process.This is not a malfunction. You cannot operate the unit while "PLEASE WAIT" is displayed.

SET ☐
(" ☐ " stands for a number.)
- The remote control and main unit are using different codes. Change the code on the remote control. (⇨ 22)

H☐☐ or F☐☐
(" ☐ " stands for a number.)
- Check and correct the speaker cable connections.
- There is something unusual.
- Check the unit using the troubleshooting guide. If the service number does not disappear, do the following.
① Disconnect the plug from the household AC outlet, wait a few seconds, then reconnect it.
② Press [POWER ⏻/I] to turn the power on.
  If the service number does not disappear despite doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.

UPD☐/☐

("☐" stands for a number.)
- The firmware is being updated. Please do not turn off power.

BT730 **"W" is flashing.**
- There is no link between this unit and the wireless system. Check that the wireless system is plugged into the household AC outlet and is turned on.
- Ensure that the digital transmitter is fully inserted into the slot of this unit.
- If the wireless system is not used, disconnect the digital transmitter from this unit.

IPOD OVER CURRENT ERROR
- The iPod/iPhone is drawing too much power. Remove the iPod/iPhone, and turn the unit off and on again.

START
- The system is being restarted during the firmware update. Please do not turn off power.

FINISH
- The firmware update is completed.

NOT CONDITIONAL
- The requested operation cannot be conducted.

About MP3/JPEG/AVCHD/MPEG2 files

MP3

File format	MP3
Extension	Files must have the extension ".mp3" or ".MP3".
Compression rate	32 kbps to 320 kbps
Sampling rate	44.1 kHz/48 kHz
Reference	ID3 tags: version 1, 2.2, 2.3, 2.4 (Only titles and the names of artists)

JPEG

File format	JPEG
Extension	Files must have the extension ".jpg" or ".JPG".
Picture resolution	between 34×34 and 8192×8192 pixels (sub sampling is 4:2:2 or 4:2:0)
Reference	JPEG conforming DCF* is supported. • MOTION JPEG and Progressive JPEG is not supported

* Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).
- DVD-RAM must conform to UDF 2.0.
- BD-RE must conform to UDF 2.5.

AVCHD

File format	AVCHD format (V1.0) used on High Definition Video Camera (Panasonic and some other's)
Codec	MPEG-4 AVC/H.264

- Discs must conform to UDF 2.5.

MPEG2

File format	SD-Video format* used on Standard Definition Video Camera (Panasonic and some other's)
Codec	MPEG2

* SD-Video Entertainment Video Profile

📖

- With certain recording states and folder structures, the play order may differ or playback may not be possible.
- CD-R, CD-RW : ISO9660 level 1 or 2 (except for extended formats), Joliet This unit is compatible with multi-session. This unit is not compatible with packet writing.
- DVD-R, DVD-R DL (except for AVCHD) : ISO9660 level 1 or 2 (except for extended formats), Joliet, UDF bridge (UDF 1.02/ISO9660) This unit is not compatible with multi-session. This unit is not compatible with packet writing.

Structure of folders that can be played in this unit

You can play files on this unit by structure of folders as shown below. However depending on the method of writing data (writing software), play may not be in the order you numbered the folders.

📁 Folder which can be displayed with this unit

✱✱✱: Numbers

XXX: Letters

*1 ✱✱✱: from 001 to 999
*2 ✱✱✱: from 100 to 999
    XXXXX: 5 figures
*3 ✱✱✱✱: from 0001 to 9999
    XXXX: 4 figures

Structures of still picture (JPEG) folders

in DVD-R*4/DVD-R DL*4/CD-R*5/CD-RW*5

Files inside a folder are displayed in the order they were updated or taken.

```
Root                        e.g.,
├── P0000001.jpg
├── P0000002.jpg
├── Folder A
│   ├── P0000003.jpg
│   ├── P0000004.jpg
│   ├── P0000005.jpg
│   └── Folder B
│       ├── P0000006.jpg
│       ├── P0000007.jpg
│       ├── P0000008.jpg
│       └── P0000009.jpg
└── Folder C
    ├── P0000010.jpg
    ├── P0000011.jpg
    └── P0000012.jpg
```
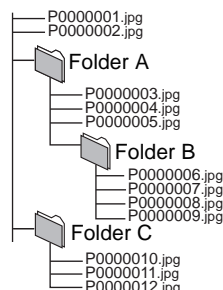
in BD-RE*6/DVD-RAM*4

- Folder structure is not displayed.

```
Root                        e.g.,
├── P0000001.jpg
├── P0000002.jpg
├── JPEG
│   └── DCIM∗∗∗ *1
│       └── ∗∗∗XXXXX *2
│           └── XXXX∗∗∗∗.jpg *3
└── DCIM
    └── ∗∗∗XXXXX *2
        └── XXXX∗∗∗∗.jpg *3
```

in SD card*4

Displays JPEG files in all folders.

- Folder structure is not displayed.

```
Root                        e.g.,
├── P0000001.jpg
├── P0000002.jpg
├── DCIM
│   └── ∗∗∗XXXXX *2
│       └── XXXX∗∗∗∗.jpg *3
└── Folder A
    ├── P0000003.jpg
    └── P0000004.jpg
```
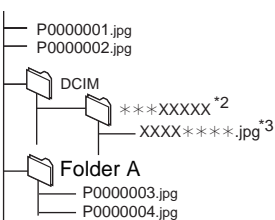
Structure of MP3 folders

in DVD-R/DVD-R DL/CD-R/CD-RW

Prefix the file names with 3-digit numbers in the order you want to play them.

```
Root                        e.g.,
├── 001XXXX.mp3
├── 002XXXX.mp3
├── Folder A
│   ├── 003XXXX.mp3
│   ├── 004XXXX.mp3
│   ├── 005XXXX.mp3
│   └── Folder B
│       ├── 006XXXX.mp3
│       ├── 007XXXX.mp3
│       ├── 008XXXX.mp3
│       └── 009XXXX.mp3
└── Folder C
    ├── 010XXXX.mp3
    ├── 011XXXX.mp3
    └── 012XXXX.mp3
```

*4 The total combined maximum number of recognizable picture contents and folders: 3000 picture contents and 300 folders.
*5 The total combined maximum number of recognizable picture contents and folders: 999 picture contents and 99 folders.
*6 The total combined maximum number of recognizable picture contents and folders: 9999 picture contents and 300 folders.

Supplemental information

■ Display languages list

Display	Language	Display	Language	Display	Language
ENG	English	JPN	Japanese	ARA	Arabic
FRA	French	CHI	Chinese	HIN	Hindi
DEU	German	KOR	Korean	PER	Persian
ITA	Italian	MAL	Malay	IND	Indonesian
ESP	Spanish	VIE	Vietnamese	MRI	Maori
NLD	Dutch	THA	Thai	BUL	Bulgarian
SVE	Swedish	POL	Polish	RUM	Romanian
NOR	Norwegian	CES	Czech	GRE	Greek
DAN	Danish	SLK	Slovak	TUR	Turkish
POR	Portuguese	HUN	Hungarian	∗	Others
RUS	Russian	FIN	Finnish		

■ Video attribute

Display	Meaning
MPEG-2/MPEG-4 AVC/VC-1	Video recording method
480/576/720/1080	Video Format
24p/50i/60i/50p/60p	Video Frame rate
YCbCr4:2:2/YCbCr4:4:4/RGB	Color Space
bps (bit per second)	Transfer rate of bit

■ Audio attribute

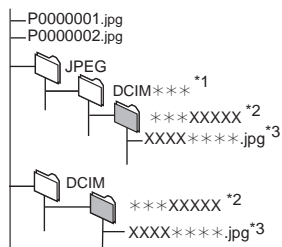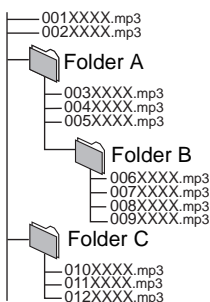| Display	Meaning
LPCM/⫿⫿Digital/⫿⫿Digital+/ ⫿⫿TrueHD/DTS/DTS 96/DTS-HD HI RES/ DTS-HD MSTR/MPEG	Signal type
ch (channel)	Number of channels
k (kHz)	Sampling frequency
b (bit)	Number of bits
bps (bit per second)	Transfer rate of bit

■ Language code list

Language	Code	Language	Code	Language	Code
Abkhazian	6566	Gujarati:	7185	Rhaeto-Romance:	
Afar:	6565	Hausa:	7265		8277
Afrikaans:	6570	Hebrew:	7387	Romanian:	8279
Albanian:	8381	Hindi:	7273	Russian:	8285
Amharic:	6577	Hungarian:	7285	Samoan:	8377
Arabic:	6582	Icelandic:	7383	Sanskrit:	8365
Armenian:	7289	Indonesian:	7378	Scots Gaelic:	7168
Assamese:	6583	Interlingua:	7365	Serbian:	8382
Aymara:	6589	Irish:	7165	Serbo-Croatian:	8372
Azerbaijani:	6590	Italian:	7384	Shona:	8378
Bashkir:	6665	Japanese:	7465	Sindhi:	8368
Basque:	6985	Javanese:	7487	Singhalese:	8373
Bengali; Bangla:		Kannada:	7578	Slovak:	8375
	6678	Kashmiri:	7583	Slovenian:	8376
Bhutani:	6890	Kazakh:	7575	Somali:	8379
Bihari:	6672	Kirghiz:	7589	Spanish:	6983
Breton:	6682	Korean:	7579	Sundanese:	8385
Bulgarian:	6671	Kurdish:	7585	Swahili:	8387
Burmese:	7789	Laotian:	7679	Swedish:	8386
Byelorussian:	6669	Latin:	7665	Tagalog:	8476
Cambodian:	7577	Latvian, Lettish:	7686	Tajik:	8471
Catalan:	6765	Lingala:	7678	Tamil:	8465
Chinese:	9072	Lithuanian:	7684	Tatar:	8484
Corsican:	6779	Macedonian:	7775	Telugu:	8469
Croatian:	7282	Malagasy:	7771	Thai:	8472
Czech:	6783	Malay:	7783	Tibetan:	6679
Danish:	6865	Malayalam:	7776	Tigrinya:	8473
Dutch:	7876	Maltese:	7784	Tonga:	8479
English:	6978	Maori:	7773	Turkish:	8482
Esperanto:	6979	Marathi:	7782	Turkmen:	8475
Estonian:	6984	Moldavian:	7779	Twi:	8487
Faroese:	7079	Mongolian:	7778	Ukrainian:	8575
Fiji:	7074	Nauru:	7865	Urdu:	8582
Finnish:	7073	Nepali:	7869	Uzbek:	8590
French:	7082	Norwegian:	7879	Vietnamese:	8673
Frisian:	7089	Oriya:	7982	Volapük:	8679
Galician:	7176	Pashto, Pushto:	8083	Welsh:	6789
Georgian:	7565	Persian:	7065	Wolof:	8779
German:	6869	Polish:	8076	Xhosa:	8872
Greek:	6976	Portuguese:	8084	Yiddish:	7473
Greenlandic:	7576	Punjabi:	8065	Yoruba:	8979
Guarani:	7178	Quechua:	8185	Zulu:	9085

-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

The model number and serial number of this product can be found on either the back or the bottom of the unit.
Please note them in the space provided below and keep for future reference.

MODEL NUMBER _____

SERIAL NUMBER _____

User memo:
DATE OF PURCHASE _____
DEALER NAME _____
DEALER ADDRESS _____
_____
TELEPHONE NUMBER _____

Glossary

AVCHD
AVCHD is a new format (standard) for high definition video cameras that can be used to record and play high-resolution HD images.

BD-J
Some BD-Video discs contain Java applications, and these applications are called BD-J. You can enjoy various interactive features in addition to playing normal video.

Bitstream
This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

Deep Color
Deep Color is a name for a device that can reproduce greater color gradation (4096 steps) when connected to a TV that supports the Deep Color with HDMI cable. You can enjoy exceptionally rich, natural-looking colors, with smooth, detailed gradation and minimal color banding. [A lower color gradation (256 steps), without Deep Color, will be reproduced if connected to a TV which does not support Deep Color. The unit will automatically set appropriate output to suit the connected TV.]

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio.

Dolby Digital Plus
Multi-channel audio and higher audio quality is made possible using Dolby Digital Plus. BD-Video supports up to 7.1 channel output.

Dolby Pro Logic II
Dolby Pro Logic II enables you to play stereo sources on 5.1 channel.

Dolby TrueHD
Dolby TrueHD is a very high quality audio format that reproduces the studio master audio. BD-Video supports up to 7.1 channel output.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into fewer channels.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters. There is good separation between the channels, so realistic sound effects are possible.

DTS-HD
DTS-HD is a high-quality, sophisticated audio format used in movie theatrers. Previous DTS Digital Surround-compatible equipment can play DTS-HD as DTS Digital Surround audio. BD-Video supports up to 7.1 channel output.

DTS-HD High Resolution Audio
This is a signal format achieved by improving the previous DTS, DTS-ES and DTS 96/24 formats. It is compatible with sampling frequency 96 kHz/48 kHz. BD-Video supports up to 7.1 channel output.

DTS-HD Master Audio
This is a lossless audio format and compatible with 96 kHz/7.1 ch or less. In addition, faithful reproduction of the master audio is enabled using lossless audio encoding technology. BD-Video supports up to 7.1 channel output.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.
Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialog clearly.

HDMI (High-Definition Multimedia Interface)
HDMI is a digital interface for consumer electronic products. Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable.

Local storage
This storage area is used as a destination for sub contents for playing BD-Live on BD-Video.

LPCM (Linear PCM)
These are a kind of PCM format.
These are uncompressed digital signals, similar to those found on CDs.

PCM (Pulse Code Modulation)
This is one format for converting analog audio into digital audio, enabling you to enjoy digital audio with no hassle.

P4HD (Pixel Precision Progressive Processing for HD)
This is a processor which makes use of an exclusive Panasonic algorithm. Various processing is supported, including a high-level conversion of the TV scanning format from interlace to progressive and a high-level conversion of standard resolution (480i or 576i) video signal to a 1080 High Definition video signal.
Consequently, this unit is able to provide video of optimal resolution to the connected TV.

x.v.Color™
x.v.Color™ is a name for devices that are compatible with the xvYCC format, an international standard for expanded color in motion pictures, and that follow the rules for signal transmission.
You can enjoy vivid colors of wider color ranges for a more realistic picture when connected to a TV that supports the x.v.Color™ with HDMI cable.

24p
This is a progressive image recorded at a rate of 24 frames per second (motion-picture film). Many BD-Video movie contents are recorded in 24 frames/second in accordance with the film materials.

Specifications

GENERAL

Power consumption:	
(For the U.S.A. and Canada):	90 W
(For units with PX printed on the packaging):	100 W
Power consumption in standby mode:	
(For the U.S.A. and Canada):	
BT730 **BT330** :	Approx. 0.05 W
BT230 **BT235** :	Approx. 0.1 W
(For units with PX printed on the packaging):	
BT730 :	Approx. 0.1 W
BT230 :	Approx. 0.2 W
Power supply:	
(For the U.S.A. and Canada):	AC 120 V, 60 Hz
(For units with PX printed on the packaging):	AC 110 V to 127 V, 220 V to 240 V, 50 Hz/60 Hz

iPod/iPhone Connector:	DC OUT 5 V 500 mA MAX
BT730 **BT330** **BT230**	
WIRELESS LAN Connector:	DC OUT 5 V 500 mA
Dimensions (W×H×D)	430 mm×54 mm×287 mm (16^{15}/$_{16}$″×2^1/$_8$″×11^5/$_{16}$″)
BT730 (with transmitter):	430 mm×54 mm×298 mm (16^{15}/$_{16}$″×2^1/$_8$″×11^{23}/$_{32}$″)
Mass (Weight):	
(For the U.S.A. and Canada):	Approx. 3.2 kg (7.1 lbs)
(For units with PX printed on the packaging):	Approx. 3.1 kg (Dimensions and Weight do not include speakers)
Operating temperature range:	0 ºC to 40 ºC (32 ºF to 104 ºF)
Operating humidity range:	35 % to 80 % RH (no condensation)

AMPLIFIER SECTION

BT730

RMS TTL POWER OUTPUT:	1000 W (with WIRELESS SYSTEM)
1 kHz, 10 % total harmonic distortion	
FRONT:	125 W per ch (3 Ω)
CENTER:	250 W per ch (6 Ω)
SURROUND:	125 W per ch (3 Ω) (with WIRELESS SYSTEM)
100 Hz, 10 % total harmonic distortion	
SUBWOOFER:	250 W per ch (6 Ω)
FTC TTL POWER OUTPUT:	446 W (with WIRELESS SYSTEM)
200 Hz to 20 kHz, 1.0 % total harmonic distortion	
FRONT:	86 W per ch (3 Ω)
CENTER:	106 W per ch (6 Ω)
SURROUND:	34 W per ch (3 Ω) (with WIRELESS SYSTEM)
45 Hz to 200 Hz, 1.0 % total harmonic distortion	
SUBWOOFER:	100 W per ch (6 Ω)

BT330 **BT230** **BT235**

RMS TTL POWER OUTPUT:	1000 W
1 kHz, 10 % total harmonic distortion	
FRONT:	125 W per ch (3 Ω)
CENTER:	250 W per ch (6 Ω)
SURROUND:	125 W per ch (3 Ω)
100 Hz, 10 % total harmonic distortion	
SUBWOOFER:	250 W per ch (6 Ω)
FTC TTL POWER OUTPUT:	446 W
120 Hz to 20 kHz, 1.0 % total harmonic distortion	
FRONT:	60 W per ch (3 Ω)
CENTER:	106 W per ch (6 Ω)
SURROUND:	60 W per ch (3 Ω)
45 Hz to 120 Hz, 1.0 % total harmonic distortion	
SUBWOOFER:	100 W per ch (6 Ω)

Audio Input	
AUX:	× 1
Digital Audio Input	
Optical:	× 2
Sampling frequency:	32 kHz, 44.1 kHz, 48 kHz
Audio Format:	PCM, Dolby Digital

FM TUNER SECTION

Preset memory:	30 stations
Frequency range:	87.9 MHz to 107.9 MHz (200 kHz step), 87.5 MHz to 108.0 MHz (100 kHz step)
Antenna terminals:	75 Ω (unbalanced)

SPEAKER SECTION

FRONT SPEAKERS
BT730 SB-HF730

Type:	2 WAY 3 SPEAKER Bass-ref.
Woofer:	3.5 cm × 10 cm (1^3/$_8$″×4″) CONE TYPE× 2
Tweeter:	2.5 cm (1″) SEMI-DOME TYPE
Impedance:	3 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	100 Hz to 30 kHz (−16 dB), 130 Hz to 25 kHz (−10 dB)
Dimensions (W×H×D):	255 mm×1024 mm×255 mm (10^1/$_{16}$″×40^{11}/$_{32}$″×10^1/$_{16}$″)
Mass (Weight):	Approx. 2.3 kg (5.07 lbs)

BT330 **BT235** SB-HF330

Type:	1 WAY 1 SPEAKER Bass-ref.
Full range:	6.5 cm (2^1/$_2$″) CONE TYPE
Impedance:	3 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	85 Hz to 25 kHz (−16 dB), 95 Hz to 22 kHz (−10 dB)
Dimensions (W×H×D):	100 mm×530 mm×78 mm (3^{15}/$_{16}$″×20^7/$_8$″×3^1/$_{16}$″)
Mass (Weight):	Approx. 0.92 kg (2.03 lbs)

Full assembly with stand base

Dimensions (W×H×D)	
max:	255 mm×1020 mm×255 mm (10^1/$_{32}$″×40^5/$_{32}$″×10^1/$_{32}$″)
Dimensions (W×H×D)	
min:	255 mm×550 mm×255 mm (10^1/$_{32}$″×21^{21}/$_{32}$″×10^1/$_{32}$″)
Mass (Weight):	Approx. 2.3 kg (5.1 lbs)

BT230 SB-HF230

Type:	1 WAY 1 SPEAKER Bass-ref.
Full range:	6.5 cm (2^1/$_2$″) CONE TYPE
Impedance:	3 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	105 Hz to 25 kHz (−16 dB), 130 Hz to 22 kHz (−10 dB)
Dimensions (W×H×D):	80 mm×118.5 mm×68 mm (3^5/$_{32}$″×4^{11}/$_{16}$″×2^{11}/$_{16}$″)
Mass (Weight):	Approx. 0.4 kg (0.88 lbs)

CENTER SPEAKER

BT730 SB-HC730

Type:	2 WAY 3 SPEAKER Bass-ref.
Woofer:	3.5 cm × 10 cm ($1^3/_8″$×$4″$) CONE TYPE× 2
Tweeter:	2.5 cm ($1″$) SEMI-DOME TYPE
Impedance:	6 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	100 Hz to 30 kHz (−16 dB), 130 Hz to 25 kHz (−10 dB)
Dimensions (W×H×D):	424 mm×59 mm×76 mm ($16^{23}/_{32}″$×$2^{11}/_{32}″$×$3″$)
Mass (Weight):	Approx. 1.06 kg (2.34 lbs)

BT330 BT230 BT235 SB-HC230

Type:	1 WAY 1 SPEAKER Bass-ref.
Full range:	6.5 cm ($2^1/_2″$) CONE TYPE
Impedance:	6 Ω
Output sound pressure:	79 dB/W (1 m)
Frequency range:	90 Hz to 25 kHz (−16 dB), 115 Hz to 22 kHz (−10 dB)
Dimensions (W×H×D):	145 mm×85 mm×71.5 mm ($5^{23}/_{32}″$×$3^{11}/_{32}″$×$2^{13}/_{32}″$)
Mass (Weight):	Approx. 0.6 kg (1.32 lbs)

SURROUND SPEAKERS

BT730 BT330 BT230 BT235 SB-HS230

Type:	1 WAY 1 SPEAKER Bass-ref.
Full range:	6.5 cm ($2^1/_2″$) CONE TYPE
Impedance:	3 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	105 Hz to 25 kHz (−16 dB), 130 Hz to 22 kHz (−10 dB)
Dimensions (W×H×D):	80 mm×118.5 mm×68 mm ($3^5/_{32}″$×$4^{11}/_{16}″$×$2^{11}/_{16}″$)
Mass (Weight):	Approx. 0.4 kg (0.88 lbs)

SUBWOOFER

BT730 BT330 SB-HW330

Type:	1 WAY 1 SPEAKER (Kelton type)
Woofer:	16 cm ($6^1/_2″$) CONE TYPE
Passive radiator:	25 cm ($10″$)
Impedance:	6 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	35 Hz to 180 Hz (−16 dB), 40 Hz to 160 Hz (−10 dB)
Dimensions (W×H×D):	180.5 mm×322 mm×351 mm ($7^1/_8″$×$12^{11}/_{16}″$×$13^{13}/_{16}″$)
Mass (Weight):	Approx. 4.6 kg (10.1 lbs)

BT230 BT235 SB-HW480

Type:	1 WAY 1 SPEAKER Bass- ref.
Woofer:	16 cm ($6^1/_2″$) CONE TYPE
Impedance:	6 Ω
Output sound pressure:	78 dB/W (1 m)
Frequency range:	40 Hz to 220 Hz (−16 dB), 45 Hz to 180 Hz (−10 dB)
Dimensions (W×H×D):	145 mm×289.5 mm×258 mm ($5^{23}/_{32}″$×$11^{13}/_{32}″$×$10^5/_{32}″$)
Mass (Weight):	Approx. 2.8 kg (6.17 lbs)

TERMINAL SECTION

BT730 BT330 BT230 USB:	USB 2.0 (Use for Wireless LAN Adaptor only)
Ethernet:	10BASE-T/100BASE-TX 1 system
SD card slot:	Connector : 1 system
BT730 BT330 Calibration Mic	
Sensitivity:	100 mV, 4.7 kΩ
Terminal:	Mono, 3.5 mm ($1/_8″$) jack

VIDEO SECTION

Signal system:	NTSC
Video output	
Output level:	1.0 Vp-p (75 Ω)
Output connector:	Pin jack (1 system)
HDMI AV output	
Output format:	1080p/1080i/720p/480p
Output connector:	Type A (19 pin) HDMI (Deep Color, x.v.Color™, High Bit rate Audio) This unit supports "HDAVI Control 5" function.

LASER Specification:
(For the U.S.A. and Canada):
Class I LASER Product
(For units with PX printed on the packaging):
Class 1 LASER Product

Wave length:	790 nm (CDs)/655 nm (DVDs)/405 nm (BDs)
Laser power:	No hazardous radiation is emitted with the safety protection

BT730 WIRELESS SYSTEM AND DIGITAL TRANSMITTER

<AMPLIFIER SECTION>
(For the U.S.A. and Canada)

RMS TTL POWER OUTPUT:	250 W
1 kHz, 10 % THD	
SURROUND:	125 W per ch (3 Ω)
FTC TTL POWER OUTPUT:	68 W
120 Hz to 20 kHz, 1.0 % THD	
SURROUND:	34 W per ch (3 Ω)

(For units with PX printed on the packaging)

RMS TTL POWER OUTPUT:	250 W
1 kHz, 10 % THD	
SURROUND:	125 W per ch (3 Ω)
DIN TTL POWER OUTPUT:	140 W
1 kHz, 1.0 % THD	
SURROUND:	70 W per ch (3 Ω)

<RF SECTION>
Wireless module

Frequency range:	2.4 to 2.4835 GHz
No. of channels:	3

<GENERAL>
Power supply:

(For the U.S.A. and Canada)	AC 120 V, 60 Hz
(For units with PX printed on the packaging)	AC 110 V to 240 V, 50 Hz/60 Hz

Power consumption

Digital transmitter:	1.2 W
Wireless system:	
(For the U.S.A. and Canada)	35 W
(For units with PX printed on the packaging)	43 W

Power consumption in off mode:

(For the U.S.A. and Canada)	Approx. 0.2 W
(For units with PX printed on the packaging)	Approx. 0.3 W

Dimensions (W×H×D)

Digital transmitter:	43.3 mm×37.3 mm×8.2 mm ($1^{11}/_{16}″$×$1^{15}/_{32}″$×$5/_{16}″$)
Wireless system:	165 mm×91.5 mm×164 mm ($6^1/_2″$×$3^5/_8″$×$6^{15}/_{32}″$)

Mass (Weight):

Digital transmitter:	Approx. 0.01 kg (0.02 lbs)
Wireless system:	
(For the U.S.A. and Canada)	Approx. 0.66 kg (1.46 lbs)
(For units with PX printed on the packaging)	Approx. 0.695 kg

Operating temperature range: 0 ℃ to 40 ℃ (32 ℉ to 104 ℉)

Operating humidity range:

(For the U.S.A. and Canada)	35 % to 80 % RH (no condensation)
(For units with PX printed on the packaging)	20 % to 80 % RH (no condensation)

VQT2M13

Specifications are subject to change without notice.

Limited Warranty (ONLY FOR U.S.A. AND PUERTO RICO)

Panasonic Consumer Electronics Company,
Division of Panasonic Corporation of North America
One Panasonic Way, Secaucus, New Jersey 07094

Panasonic Blu-ray and DVD Products Limited Warranty

Limited Warranty Coverage (For USA and Puerto Rico Only)

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company (referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, (b) replace it with a new or a refurbished equivalent value product, or (c) refund your purchase price. The decision to repair, replace or refund will be made by the warrantor.

Product or Part Name	Parts	Labor
Blu-ray Disc Player, Portable Blu-ray Disc Player	1 year	90 days
Blu-ray Home Theater System	1 year	1 year
DVD Player, Portable DVD Player	1 year	90 days
DVD Recorder	1 year	90 days
Rechargeable Batteries (pack), DVD-RAM Disc (defective exchange)	10 days	Not Applicable

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. This Limited Warranty excludes both parts and labor for non-rechargeable batteries, antennas, and cosmetic parts (cabinet). This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is".

Mail-In Service

For assistance in the U.S.A. and Puerto Rico in obtaining repairs, please ship the product prepaid to:

Panasonic Exchange Center
4900 George McVay Drive
Suite B
McAllen, TX 78503
panacare@us.panasonic.com

When shipping the unit, carefully pack, include all accessories, and send it prepaid, adequately insured and preferably in the original carton. If Lithium Ion batteries are shipped by air the package must be labeled "Contains Lithium Ion Battery (No lithium metal)". Damaged batteries are prohibited from shipment by US Mail. Batteries must be securely packed in a manner to prevent short-circuiting and a package cannot contain more than 3 Lithium Ion batteries. Include a letter detailing the complaint, a return address and provide a daytime phone number where you can be reached. A valid registered receipt is required under the Limited Warranty.

IF REPAIR IS NEEDED DURING THE WARRANTY PERIOD, THE PURCHASER WILL BE REQUIRED TO FURNISH A SALES RECEIPT/PROOF OF PURCHASE INDICATING DATE OF PURCHASE, AMOUNT PAID AND PLACE OF PURCHASE. CUSTOMER WILL BE CHARGED FOR THE REPAIR OF ANY UNIT RECEIVED WITHOUT SUCH PROOF OF PURCHASE.

Limited Warranty Limits And Exclusions

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a Factory Service Center or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE".
THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY.
(As examples, this excludes damages for lost time, travel to and from the servicer, loss of or damage to media or images, data or other memory or recorded content. The items listed are not exclusive, but for illustration only.)
ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you.
This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Service Center. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.

Customer Services Directory (United States and Puerto Rico)

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Service Center; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:
http://www.panasonic.com/help
or, contact us via the web at:
http://www.panasonic.com/contactinfo
You may also contact us directly at:
1-800-211-PANA (7262)
Monday-Friday 9am-9pm,
Saturday-Sunday 10am-7pm EST

For hearing or speech impaired TTY users, TTY: 1-877-833-8855

Accessory Purchases (United States and Puerto Rico)

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:
http://www.pstc.panasonic.com
Or, send your request by E-mail to:
npcparts@us.panasonic.com
You may also contact us directly at:
1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only)
(Monday-Friday 9am-9pm EST)
Panasonic Service and Technology Company
20421 84th Avenue South, Kent, WA 98032
(We accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY: 1-866-605-1277

As of November 2009

Limited Warranty (Only for CANADA)

Panasonic Canada Inc.

PANASONIC PRODUCT—LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

Technics Audio Product	**One (1) year, parts and labour**
Panasonic Portable/Clock Radio (without Tape, CD, MD)	**One (1) year, parts and labour**
Panasonic Audio/SD Audio Product	**One (1) year, parts and labour**
Panasonic BD/DVD Product	**One (1) year, parts and labour**
Panasonic Combination DVD Player/VCR	**One (1) year, parts and labour**
Panasonic Combination DVD Recorder/VCR	**One (1) year, parts and labour**
Accessories including rechargeable batteries	**Ninety (90) days**

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.

This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

WARRANTY SERVICE

FOR PRODUCT OPERATION ASSISTANCE, please contact:

Our Customer Care Centre:	Telephone #:	(905) 624-5505
	1-800 #:	1-800-561-5505
	Fax #:	(905) 238-2360
	Email link:	"Customer support" on www.panasonic.ca

FOR PRODUCT REPAIRS, please locate your nearest Authorized Servicentre at www.panasonic.ca :

Link : "Servicentres™ locator" under "Customer support"

IF YOU SHIP THE PRODUCT TO A SERVICENTRE
Carefully pack and send prepaid, adequately insured and preferably in the original carton.
Include details of the defect claimed, and proof of date of original purchase.

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