User Manual of Product 1:

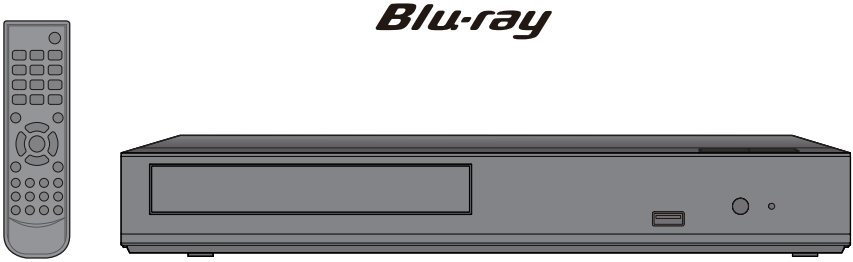
Panasonic DP-UB150EB-K 4K Ultra HD Blu-Ray Player with HDR10+ Black Compact

Panasonic

Operating Instructions

Blu-ray Disc™ Player

Model No. **DP-UB450**
DP-UB159
DP-UB150



Firmware updates

Panasonic is constantly improving the unit's firmware to ensure that our customers are enjoying the latest technology.
Panasonic recommends updating your firmware as soon as you are notified.
For details, refer to "Firmware updates" (⇨ 15) or http://panasonic.jp/support/global/cs/ (This site is in English only.)

Thank you for purchasing this product.
Please read these instructions carefully before using this product, and save this manual for future use.

Model number suffix "EB" denotes UK model.

EB

TQBS0337

Precautions

WARNING

Unit

To reduce the risk of fire, electric shock or product damage,

- Do not expose this unit to rain, moisture, dripping or splashing.
- Do not place objects filled with liquids, such as vases, on this unit.
- Use the recommended accessories.
- Do not remove covers.
- Do not repair this unit by yourself. Refer servicing to qualified service personnel.
- Do not let metal objects fall inside this unit.
- Do not place heavy items on this unit.

AC adaptor

To reduce the risk of fire, electric shock or product damage,

- Ensure that the power supply voltage corresponds to the voltage printed on this unit.
- Insert the mains plug fully into the socket outlet.
- Do not pull, bend, or place heavy items on the lead.
- Do not handle the plug with wet hands.
- Hold onto the mains plug body when disconnecting the plug.
- Do not use a damaged mains plug or socket outlet.

The mains plug is the disconnecting device.
Install this unit so that the mains plug can be unplugged from the socket outlet immediately.

Small object

Keep the batteries out of reach of children to prevent swallowing.

CAUTION

Unit

- This unit utilizes a laser. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Do not place sources of naked flames, such as lighted candles, on this unit.
- This unit may receive radio interference caused by mobile telephones during use. If such interference occurs, please increase separation between this unit and the mobile telephone.
- This unit is intended for use in moderate climates.
- Some portions of this unit may become hot during use. When moving or cleaning this unit, disconnect the AC mains lead and wait for 3 minutes or longer.

Placement

Place this unit on an even surface.

To reduce the risk of fire, electric shock or product damage,

- Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure this unit is well ventilated.
- Do not obstruct this unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.
- Do not place the unit on amplifiers/receivers or equipment that may become hot. The heat can damage the unit.
- Do not expose this unit to direct sunlight, high temperatures, high humidity, and excessive vibration.

Batteries

Mishandling of batteries can cause electrolyte leakage and may cause a fire.

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
- When disposing of the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.
- 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 a car exposed to direct sunlight for a long period of time with doors and windows closed.
- Do not take apart or short circuit.
- Do not recharge alkaline or manganese batteries.
- Do not use batteries if the covering has been peeled off.

Remove batteries if you do not intend to use the remote control for a long period of time. Store in a cool, dark place.

AC adaptor

The AC adaptor operates on AC between 110 V and 240 V. But obtain a suitable plug adaptor if the plug does not fit the AC mains socket.

Restriction on use of unauthorized copied content

This unit adopts the following technology for copyright protection.
Cinavia Notice
This product uses Cinavia technology to limit the use of unauthorized copies of some commercially-produced film and videos and their soundtracks. When a prohibited use of an unauthorized copy is detected, a message will be displayed and playback or copying will be interrupted.
More information about Cinavia technology is provided at the Cinavia Online Consumer Information Center at http://www.cinavia.com. To request additional information about Cinavia by mail, send a postcard with your mailing address to:
Cinavia Consumer Information Center, P.O. Box 86851, San Diego, CA, 92138, USA.

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. (⇨ 28, “To return all settings to the factory preset.”)

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

Disposal of Old Equipment and Batteries Only for European Union and countries with recycling systems



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.
By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.
For more information about collection and recycling, please contact your local municipality. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



Note for the battery symbol (bottom symbol):

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

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To enjoy Ultra HD Blu-ray Disc featured with High Dynamic Range (HDR)

If you see a message about High Dynamic Range (HDR) compatible issue while an Ultra HD Blu-ray Disc is played back, please check your TV settings as follows.

An example of the message:
“This player is not connected to a High Dynamic Range (HDR) compatible TV.”

1) When you use a Panasonic TV that is compatible with 4K/High Dynamic Range (HDR) and was released in 2015 or later, enable the HDR setting of the TV. (This setting may not be available depending on the TV. Refer to the operating instructions of the TV for details.)
2) If you use a TV not from Panasonic, compatible with 4K and High Dynamic Range (HDR), please refer to the operating instructions of the TV.
3) When you play a High Dynamic Range (HDR) disc on a TV without High Dynamic Range (HDR) capability, the disc can be played back (in non-HDR quality) even if the message appears.

PRIVACY POLICY (excerpt)

Panasonic Corporation, a company having its registered office of 1006, Oaza Kadoma, Kadoma City, Osaka 571-8501, Japan, automatically collects personal data such as IP address and/or Device ID from your device as soon as you connect it to the Internet. We do this to protect our customers and the integrity of our Service as well as to protect the rights or property of Panasonic.
You have a right of access, rectification and objection to in certain circumstances, a right of erasure, restriction of processing, data portability and a right to object to other forms of processing. If you wish to exercise any of the above rights and/or wish to know more about the processing of your personal data in this context, please refer to the full text of our privacy policy displayed at the support page of your device, http://av.jpn.support.panasonic.com/support/global/cs/bd/privacy/ or contact our customer communications/support number or address described in the Pan European Guarantee included in your device box to send you the full text of our privacy policy.

Accessories

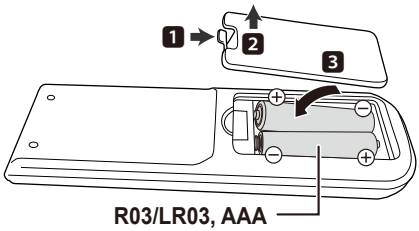
Check the supplied accessories before using this unit.

1 Remote control
(N2QAYA000205)
2 Batteries for remote control
1 AC adaptor
(TXH0009DA)

- Product numbers are provided in these operating instructions correct as of February 2019. These may be subject to change.
- Do not use AC adaptor with other equipment.
- Do not use any other AC adaptors except the supplied one.

■ Using the remote control

Insert the batteries to the terminal so that it (+ and –) matches those in the remote control.



(Alkaline or manganese batteries)

Point it at the remote control signal sensor on this unit. (⇨ 9)

Unit and media care

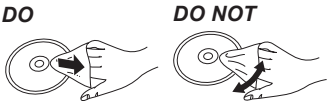
■ Clean this unit with a soft, dry cloth

- 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.

■ This unit's lens

Use the lens cleaner (not supplied) to clean the unit's lens.

■ Clean discs



Wipe with a damp cloth and then wipe dry with a dry cloth.

■ Disc 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 disc cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- 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.

Playable media

Device	Media markings	Device types	Contents format
BD		Ultra HD Blu-ray*1*2	Video
		BD-Video	Video
		BD-RE BD-RE DL	Video, MKV, MP4, MPEG2, JPEG, MPO, AAC, AIFF, ALAC, DSD (DFF, DSF), FLAC, MP3, WAV, WMA
		BD-R BD-R DL	
DVD		DVD-Video	Video
		DVD-R	Video, AVCHD, MKV, MP4, MPEG2, JPEG, MPO, AAC, AIFF, ALAC, DSD (DFF, DSF), FLAC, MP3, WAV, WMA
		DVD-R DL	
		DVD-RW	Video, AVCHD
	—	+R/+RW/+R DL	
CD		Music CD	Music [CD-DA]
	—	CD-R CD-RW	MKV, MP4, MPEG2, JPEG, MPO, AAC, AIFF, ALAC, FLAC, MP3, Music [CD-DA], WAV, WMA
USB	—	USB devices (up to 4 TB)	AVCHD, AVCHD 3D, MKV, MP4, MPEG2, JPEG, MPO, AAC, AIFF, ALAC, DSD (DFF, DSF), FLAC, MP3, WAV, WMA

- See pages 7 and 33 for more information on the types of content that can be played.

*1 See “Enjoying Ultra HD Blu-ray” (⇨ 18)

*2 Unless otherwise indicated, BD-Video content includes Ultra HD Blu-ray content in these operating instructions.

■ Types of discs that cannot be played by this unit

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

- DVD-RAM
- Super Audio CD
- Photo CD
- DVD-Audio
- Video CD and Super Video CD
- HD DVD

■ Region management information

The unit can play back BD-Video/DVD-Video discs of the following regions codes, including "**ALL**":

Example: BD-Video DVD-Video





■ Finalize

Any DVD-R/RW/R DL, +R/+RW/+R DL and CD-R/RW that are recorded by a recorder need 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.
- **UB150**
  If "Dolby Audio" is set to "PCM" and "DTS Neo:6" is set to "Off", the maximum possible number of Dolby® sound is 2 ch PCM. (⇨ 24)

■ 3D

3D videos and 3D still pictures can be played back when this unit is connected to a 3D compatible TV using a High Speed HDMI Cable.

■ Music CD

Operation and sound quality of CDs that do not comply with CD-DA specifications (copy control CDs, etc.) cannot be guaranteed to work.

■ USB device

- Connect a USB device while the Home screen is displayed.
- This unit does not guarantee connection with all USB devices.
- This unit does not support USB device charging.
- FAT12, FAT16, FAT32, and NTFS file systems are supported.
- This unit supports USB 2.0 High Speed.
- This unit supports an HDD formatted in FAT32 and NTFS. If the HDD is not recognized, the power to the HDD may not be supplied. Supply power from an external source.

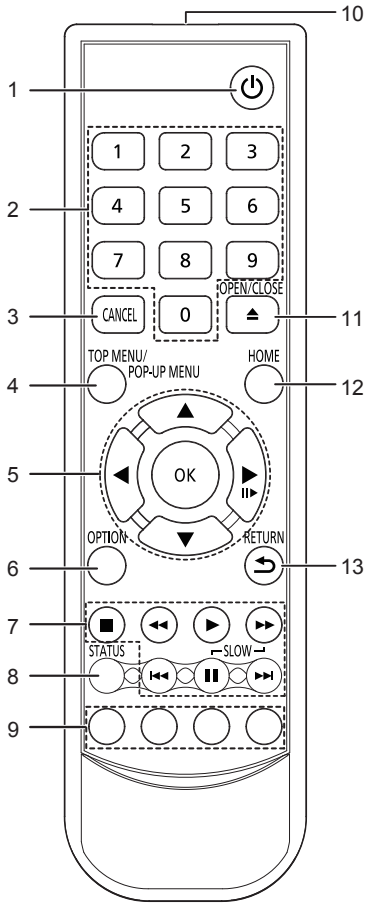
■ BD-RE, BD-R

This unit may not correctly play back the audio portion of a video recorded to a disc in multiple languages with a Blu-ray disc recorder.

- 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.

Control reference guide

■ Remote control



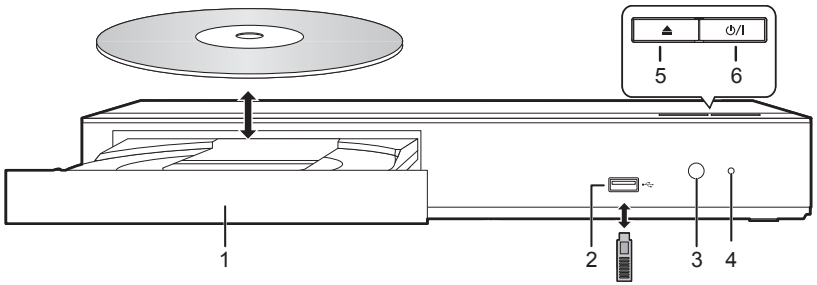
1 Turn the unit on and off
2 Select title numbers, etc./Enter numbers
3 Cancel
4 Show Top menu/Pop-up menu (⇨ 17)
5 [▲, ▼, ◄, ►] : Move the highlight for selection
[OK] : Confirm the selection
(❚❚►) : Frame-by-frame (⇨ 17)
6 Show Option menu (⇨ 21)
7 Basic playback control buttons (⇨ 16)
8 Show the status messages (⇨ 17)
9 Coloured buttons (red, green, yellow, blue)
Used for various purposes depending on the screen
10 Transmit the remote control signal
11 Open or close the disc tray (⇨ 9)
12 Show HOME menu (⇨ 16)
13 Return to previous screen

■ Available keys for HDMI CEC (⇨ 20)

2 Number keys
5 [▲, ▼, ◄, ►]/[OK] button
6 Option button
7 Basic playback control buttons
9 Coloured buttons (red, green, yellow, blue)
13 Return button

- When other Panasonic devices respond to this remote control, change the remote control code of other Panasonic devices to other than code 1.

■ Front



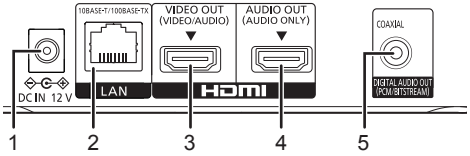
1 Disc tray
2 USB port (⎓ DC 5 V 500 mA)
This port supports USB 2.0 High Speed.
3 Remote control signal sensor
Distance: Within approx. 7 m
Angle: Approx. 20° up and down, 30° left and right
4 POWER LED
The LED lights up when the unit is turned on, and flashes when error occurs. (⇨ 32)
5 Open or close the disc tray
6 **Standby/on switch (⏻/I)** (⇨ 14)
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.

CAUTION
Do not place objects in front of the unit. The disc tray may collide with objects when it is opened, and this may cause malfunction.

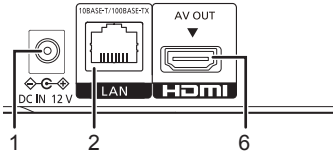
- When inserting a media item, ensure that it is facing the correct way, which is the right side facing up.
- If you connect a Panasonic product with a USB connection cable, the setup screen may be displayed on the connected equipment. For details, refer to the instructions for the connected equipment.

■ Rear

UB450 **UB159**



UB150



1 DC IN (12 V) terminal (⇨ 10)
2 LAN port (⇨ 13)
3 **UB450** **UB159**
HDMI VIDEO OUT terminal (⇨ 11)
4 **UB450** **UB159**
HDMI AUDIO OUT terminal (⇨ 11)
(Outputs digital audio signal only)
5 **UB450** **UB159**
DIGITAL AUDIO OUT terminal (COAXIAL terminal) (⇨ 11)
6 **UB150**
HDMI AV OUT terminal (⇨ 10)

The symbols on this product (including the accessories) represent the following.

~	AC
⎓	DC
⧈	Class II equipment (The construction of the product is double-insulated.)

Connecting to a TV

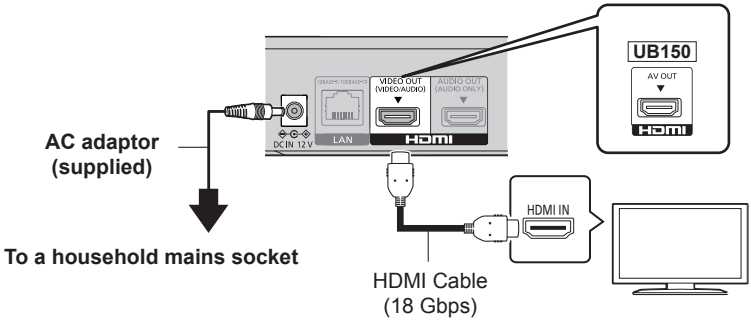
4K images can be played back when this unit is connected to 4K compatible TV.

- Before making any connections, please disconnect all the units from AC power. (Connect the AC adaptor after making all connections.)
- Use the High Speed HDMI cables. Non-HDMI-compliant cables cannot be utilized.
- This unit consumes a small amount of AC power (⇨ 33) even when turned off in standby mode. For the purpose of energy conservation, the unit should be disconnected if you will not be using it for extended period of time.
- The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always “live” as long as the AC adaptor is connected to an electrical outlet.

■ Enjoying 4K output

- To enjoy images in 4K (50p/60p), you need an HDMI cable that supports 18 Gbps. When outputting 1080p or 24p (4K) signal, please use HDMI cables 5.0 meters or less. It is recommended that you use Panasonic’s HDMI cable.
- **If you connect this unit to a 4K-compatible TV and perform “Easy Settings”, 4K (50p/60p) will be automatically selected. (⇨ 14, 27)**
- To view Ultra HD Blu-ray content in 4K/HDR format, connect to the HDMI terminal of a device that supports HDCP2.2, 4K (50p/60p) 4:4:4, and HDR signals that meet Ultra HD Blu-ray standards.

Enjoying video and audio with a 4K-compatible TV



UB450 **UB159**

Setting

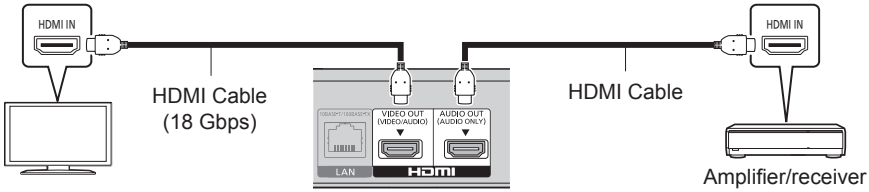
Set the following item in the setup menu (⇨ 23):

- Set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 23)

Connecting to an amplifier/receiver

UB450 UB159 Enjoying video with a 4K-compatible TV and audio with an amplifier

You can enjoy richer sound by using the HDMI AUDIO OUT terminal.
(Audio is output in high resolution.)



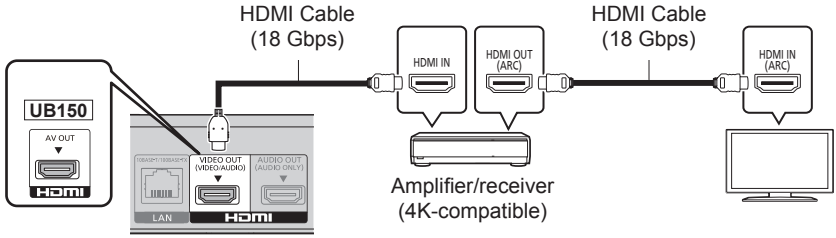
Setting

Set the following items in the setup menu (⇨ 23):

- Set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 23)
- To enjoy audio with a TV
  Set “HDMI(VIDEO) Output Mode” to “Video+Audio”. (⇨ 23)

- The HDMI AUDIO OUT terminal is not compatible with video signals and the HDMI CEC function (⇨ 20).

Enjoying video with a 4K-compatible TV and audio with a 4K-compatible amplifier



UB450 UB159

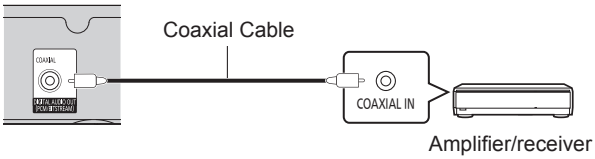
Setting

Set the following item in the setup menu (⇨ 23):

- Set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 23)

- About ARC:
  When using the TV or amplifier/receiver that does not have the indication of “(ARC)” (non-ARC-compatible) on the HDMI terminal, the amplifier/receiver and TV must also be connected using an optical digital cable or coaxial cable in order to enjoy the TV’s sound through the amplifier/receiver.

UB450 UB159 Enjoying audio with an amplifier connected to the COAXIAL terminal



Setting

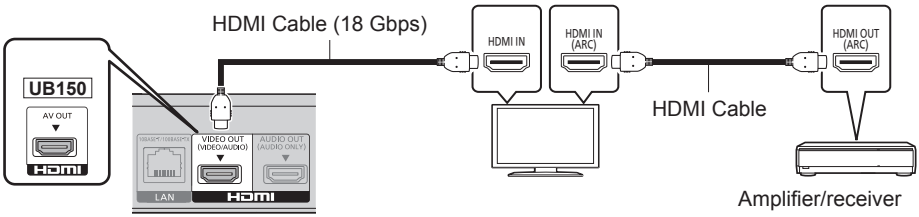
Set the following items in the setup menu (⇨ 23):

- Set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 23)
- Set “HDMI Audio Output” to “Off” in “Digital Audio Output”. (⇨ 24)

Connecting an amplifier to a 4K-compatible TV

3D or 4K images can be played back when this unit is connected to a 3D or 4K compatible TV.

- This connection only supports up to 5.1ch.
- To connect a TV and amplifier with an HDMI cable, connecting terminals on both the TV and amplifier must be ARC-compatible. (⇨ 11, “About ARC”)



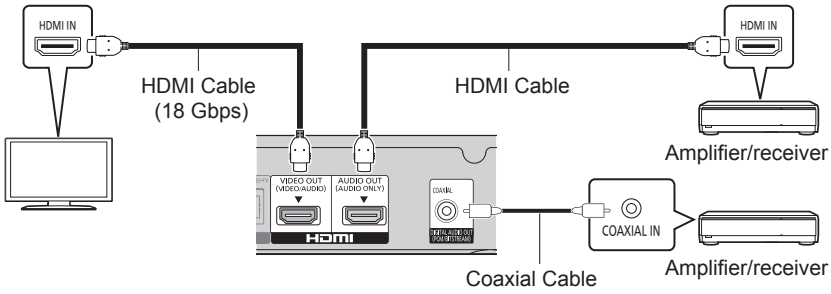
UB450 **UB159**

Setting

Set the following item in the setup menu (⇨ 23):

- Set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 23)

UB450 UB159 Enjoying video with a 4K-compatible TV in combination with an amplifier connected to the HDMI AUDIO OUT terminal and another amplifier connected to the COAXIAL terminal



Setting

Set the following items in the setup menu (⇨ 23):

- Set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 23)
- To enjoy audio with an amplifier connected to the COAXIAL terminal
  Set “HDMI Audio Output” to “Off” in “Digital Audio Output”. (⇨ 24)
- To enjoy audio with a TV
  Set “HDMI(VIDEO) Output Mode” to “Video+Audio”. (⇨ 23)

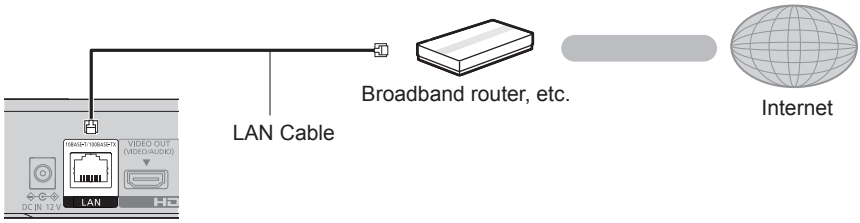
Connecting to the network

The following services can be used when this unit is connected to broadband.

- Firmware can be updated (⇨ 15)
- You can enjoy BD-Live (⇨ 18)
- **UB450** You can access other devices (Home Network) (⇨ 19)

For details about connection method, refer to the instructions supplied with the connected equipment.

LAN cable connection



- Use category 5e or above straight LAN cables (STP) when connecting to peripheral devices.
- Inserting any cable other than a LAN cable in the LAN port can damage the unit.

Settings

The following settings can be performed anytime in the Setup menu. (⇨ 26, 27)

Easy Settings

After connecting your new player for the first time and pressing [⏻], the basic settings screen will appear.

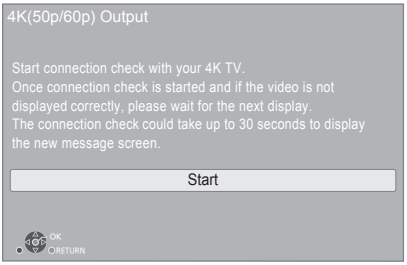
Preparation
Turn on the TV and select the appropriate video input.

1 **Press [⏻].**
Setup screen appears.

2 **Follow the on-screen instructions to continue with the settings.**
(e.g., “Quick Start”)

■ When connected to a 4K (50p or 60p)-compatible TV

When connected to a 4K (50p or 60p)-compatible TV, you can set the video output format.



Follow the on-screen instructions to set the format.

- To reconnect this unit to a 4K (50p or 60p)-compatible TV after connecting this unit to a 2K-compatible TV and completing “Easy Settings”, set “4K(50p/60p) Output” to “4K(50p/60p) 4:4:4” or “4K(50p/60p) 4:2:0”. (⇨ 23)

Easy Network Setting

After completing “Easy Settings”, you can perform “Easy Network Setting”.

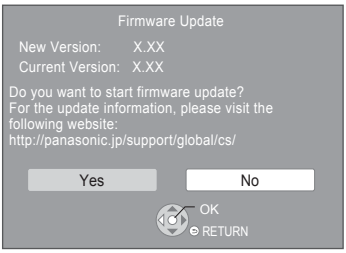
Follow the on-screen instructions to establish your connection settings.

In your use of internet functions
Your use of internet-enabled functions and software updates must follow the rules set forth in the “Terms and Conditions of Use”. Please review “Terms and Conditions of Use” and “Privacy Policy” carefully and confirm your understanding of “Privacy Policy” and agreement to the “Terms and Conditions of Use” by checking the box and select “OK”.
(⇨ 26, “Legal Notices”)

- Refer to the operating instructions of the hub or router.
- If you have trouble getting online on your PC after performing network settings on this unit, perform the network settings on your PC.

Firmware updates

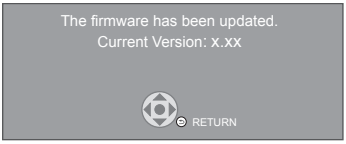
This unit is capable of checking the firmware automatically when connected to the Internet via a broadband connection.
When a new firmware version is available, the following message is displayed.



*

Select “Yes” to start downloading the firmware.

You cannot operate the unit until the update is complete. Don’t remove the AC adaptor during the update. Removing the AC adaptor while the update is in progress may damage the unit.
After the firmware is installed, unit will restart and the following screen will be displayed.



*

- **You can also download the latest firmware from the following website and store it to a USB device to update the firmware.**
  http://panasonic.jp/support/global/cs/
  (This site is in English only.)
  When the update is complete, turn off and on the unit.
- **To show the firmware version on this unit.**
  (⇨ 27, “Firmware Version Information”)
- **Downloading will require several minutes. It may take longer or may not work properly depending on the connection environment.**

* “X.XX” represents the firmware version number.

HOME menu

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

Preparation

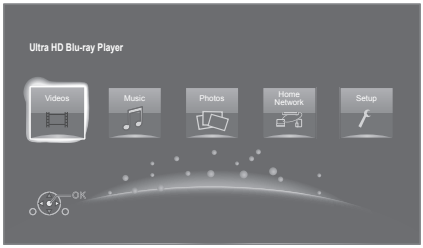
Turn on the TV and select the appropriate video input.

1 Press [⏻] to turn on the unit.

2 Press [OK] or [◄, ►] to select the item.

- Press [OK] or [▲, ▼] to select the item if necessary.

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Videos/Music/Photos

Disc	Play back the contents. (⇨ right) • When multiple contents are recorded, select the types of contents or the title. • See “Playable media” (⇨ 6)
USB	

UB450

Home Network

Network Contents Playback	(⇨ 19)
Media Renderer	(⇨ 20)

Setup

Player Settings	(⇨ 23)
Wallpaper	Changes the background of HOME menu.
USB Management	(⇨ 18)

To show the HOME menu

Press [HOME].

- Items to be displayed may vary with the media.

Playback

1 Insert the media.

Playback starts depending on the media.

2 Select the item to play and press [OK].

Repeat this step if necessary.

- DISCS CONTINUE TO ROTATE WHILE MENUS ARE DISPLAYED. Press [■] when you have finished playback to protect the unit’s motor, your TV screen and so on.
- When the following conditions are met, still pictures are played back in 4K regardless of the image quality.
  – The unit is connected to a 4K compatible TV
  – “Video Format” is set to “Automatic” or “4K” (⇨ 23)
- This unit can not output 4K images when playing back in 3D.
- It is not possible to play back AVCHD and MPEG2 videos which have been dragged and dropped or copied and pasted to the media.
- To enjoy BD-Video that supports Dolby Atmos® or DTS:X® (⇨ 24)

Operations during playback

Some operations may not work depending on the media and contents.

Stop

Press [■].

The stopping point is memorized.

Resume play function

Press [►] to restart from this point.

- The point is cleared if the media is removed.
- **On BD-Video discs including BD-J, the resume play function does not work.**

Pause

Press [❚❚].

- Press [❚❚] again or [►] to restart play.

Search/Slow motion

Search

While playing, press [◀◀] or [▶▶].

- Ultra HD Blu-ray, MKV, MP4 and MPEG2: Audio is not heard.

Slow motion

While paused, press [▶▶].

- MKV, MP4 and MPEG2: Not effective.

The speed increases up to 5 steps.

- Music, MP3, etc.: The speed is fixed to a single step.
- Press [▶] to revert to normal playback speed.

Skip

While playing or paused, press [I◀◀] or [▶▶I].

Skip to the title, chapter or track.

Frame-by-frame

While paused, press [▶] (❚❚▶).

- Each press shows the next frame.
- Press and hold to change in succession forward.
- Press [▶] to revert to normal playback speed.
- MKV, MP4 and MPEG2: Not effective.

Show top menu/pop-up menu

Press [TOP MENU/POP-UP MENU].

Select the item and press [OK].

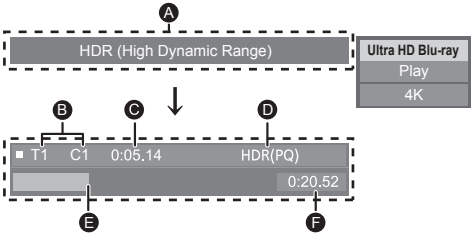
Show the status messages

While playing, press [STATUS].

The status messages give you information about what is currently being played. Each time you press [STATUS], the display information may change or disappear from the screen.

- Depending on media and contents, the display may change or not appear.

e.g., Ultra HD Blu-ray



A Displayed when an HDR (High Dynamic Range) video signal is being output.
  – “Dynamic Range Conversion Output” : The video signal is converted to SDR (Standard Dynamic Range)

B T: Title, P: Programme, C: Chapter

C Elapsed time in the title

D Method of HDR (High Dynamic Range) video

E Current position

F Total time

e.g., JPEG



Enjoying Ultra HD Blu-ray

You can enjoy the playback of Ultra HD Blu-ray discs with this unit.

Preparation

- For 4K/HDR viewing, connect to a device and terminals that support HDCP2.2[*1], 4K (50p/60p) 4:4:4 and HDR signals that meet Ultra HD Blu-ray standards. (⇨ 10)

Due to copyright restrictions, it may not be possible to play back certain discs unless this unit is connected to the Internet.

- When connected to a device or terminal that does not support HDCP2.2[*1], this unit applies Dynamic Range Conversion[*2] to HDR signals to output them in 2K resolution. In addition, depending on the disc, it may not be possible to perform playback correctly.
- When connected to a device or terminal that supports 4K (50p/60p) 4:2:0 (8 bit) and lower, this unit plays back 50p/60p content by applying Dynamic Range Conversion[*2] to its HDR signals to output them.
- When connected to a device or terminal that does not support 4K resolution, this unit applies Dynamic Range Conversion[*2] to HDR signals to output them in 2K resolution.
- When connected to a device or terminal that does not support HDR, this unit applies Dynamic Range Conversion[*2] to HDR signals to output them. In addition, depending on the disc, it may not be possible to output content in 2K resolution or perform playback correctly.

*1 HDCP is a technology designed to prevent illegal copying. “2.2” represents a version.

*2 Dynamic Range Conversion is a function that converts HDR video signals into video signals suited to TVs that do not support HDR input.

Enjoying 3D video and photos

Preparation

Connect this unit to a 3D compatible TV. (⇨ 10)

- Perform the necessary preparations for the TV.
- Play back following the instructions displayed on the screen.
- 3D Settings (⇨ 22, 25)

- Please refrain from viewing 3D images if you do not feel well or are experiencing visual fatigue.
  In the event that you experience dizziness, nausea, or other discomfort while viewing 3D images, discontinue use and rest your eyes.
- 3D video might not output the way it is set in “Video Format” and “24p Output” (⇨ 23).
- When playing back 3D photos from “Photos” screen, select from the “3D” list. (Still pictures in “2D” are played back in 2D.)
  If “2D” and “3D” indications are not displayed, press the red button on the remote control to switch the view of playback contents.

Enjoying BD-Live

With “BD-Live” discs, you can enjoy bonus contents that use Internet access.
For this BD-Live function, connection of a USB device is necessary along with Internet connection.

1 **Perform network connection and settings. (⇨ 13, 14)**

2 **Connect a USB device with 1 GB or more free space.**

- The USB device is used as the local storage.

3 **Insert the disc.**

■ Deleting data on the USB device

Select “USB Management” in the HOME menu (⇨ 16), then select “BD-Video Data Erase” and press [OK].

- 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.
- “BD-Live Internet Access” may need to be changed for certain discs. (⇨ 26)

Slideshow

Play a slideshow of photos and adjust various settings during the playback.

1 **Insert the media.**

2 **Select “View Photos”.**

3 **Select an item and press the green button.**
The following items can be set.

Start Slideshow	Start the slideshow. You can display still pictures in the selected folder one by one at a constant interval.
Interval	Change the display interval.
Transition Effect	Select the effect when sliding pictures.
Repeat Play	Set whether to repeat the slideshow.

- Still pictures displayed as “ ” cannot be displayed as thumbnail with this unit.

Home Network feature

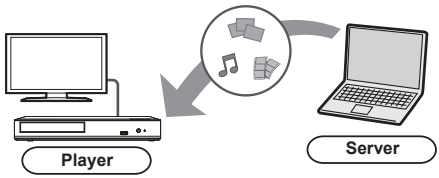
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Before using the following features, be sure to configure the connected equipment on your Home Network.

Playing back contents on the Network Contents server

You can share photos, videos and music stored in the Network Contents server*1 [PC, smartphone, recorders, etc.] connected to your home network.

- **About support format of Network Contents (⇨ 35)**



- When this unit is connected to a Panasonic recorder with a server function, register this unit to the recorder.

1 **Press [HOME].**

2 **Select “Home Network” and press [OK].**

3 **Select “Network Contents Playback” and press [OK].**
- The list can be updated by pressing the red button on the remote control.

4 **Select the equipment and press [OK].**

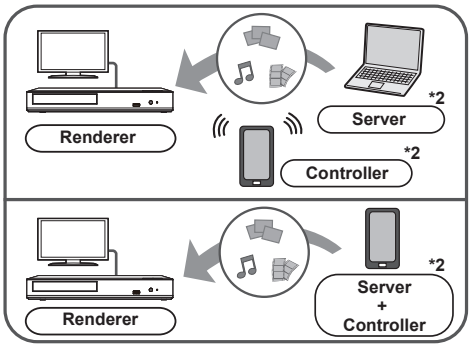
5 **Select the item to play and press [OK].**
- You may be able to use convenient functions depending on the content by pressing [OPTION].

To exit from Network Contents Playback screen
Press [HOME].

Using the Digital Media Controller

You can use a smartphone or tablet as the Digital Media Controller (DMC) to playback contents from Network Contents server*1 on the Renderer (this unit).

Possible applications:



1 Press [HOME].

2 Select “Home Network” and press [OK].

3 Select “Media Renderer” and press [OK].

4 Operate the DMC compatible devices.

To exit from Media Renderer screen
Press [HOME].

- Depending on the device or connection environment, the data transfer rate may decrease.
- Depending on the contents and the connected equipment, playback may not be possible.
- Items displayed in grey on the display cannot be played back by this unit.

*1 DLNA compatible server, etc.

*2 DMC compatible software should be installed.

“HDMI CEC”

This unit supports “HDMI CEC” (Consumer Electronics Control) function.
You can use this function by connecting the equipment that supports “HDMI CEC” with an HDMI cable*.
See the operating instructions for connected equipment for operational details.

- UB450 UB159 Only when connecting via an HDMI VIDEO OUT terminal on this unit.

Preparation

① Set “HDMI CEC” to “On” (⇨ 27).
(The default setting is “On”.)

② Set the “HDMI CEC” operations on the connected equipment (e.g., TV).

③ Turn on all “HDMI CEC” compatible equipment and select this unit’s input channel on the connected TV so that the “HDMI CEC” function works properly.

Repeat this procedure when the connections or settings are changed.

Automatic input switching Power on link

When the unit starts playback, the TV will automatically switch the input channel and the screen of the unit will be displayed.
Additionally when the TV is off, the TV will automatically turn on.

Power off link

All connected equipment compatible with “HDMI CEC”, including this unit, automatically turns off when you switch the TV off.

Easy control only with TV remote control

By using the TV remote control, you can perform the same operations as you use the remote control of this unit. (⇨ 8)

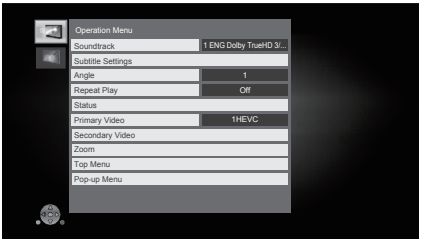
- This unit supports the “HDMI CEC” (Consumer Electronics Control) function. However, operation cannot be guaranteed on all HDMI CEC devices.

Option menu

A variety of playback operations and settings can be performed from this menu.
Available options differ depending on the playing contents and the condition of the unit.

1 Press [OPTION].

e.g., Ultra HD Blu-ray



2 Select an item and change the settings.

To exit the screen
Press [OPTION].

Regarding Language : (⇨ 35)

Operation Menu

■ **Soundtrack**
Show or change the soundtrack.

■ **Audio channel**
Select the audio channel number.

■ **Subtitles**
■ **Subtitle Settings**
Change the subtitle settings.

■ **Angle**
Select the number of the angle.

■ **Repeat Play**
Select the item that you want to repeat.
- You can repeat the playback of a chapter, playlist, the entire disc, etc., but the items displayed will differ depending on the type of the media.
- Select “Off” to cancel.

■ **Shuffle**
Select whether to play shuffle or not.

■ **Start Slideshow**
Start the slideshow.

■ **Status**
Show the status messages.

■ **Rotate RIGHT**
■ **Rotate LEFT**
Rotate the still picture.

■ **Wallpaper**
Set the still picture to the wallpaper of HOME menu. (⇨ 16)

■ **Video**
The recording method of original video appears.

■ **Primary Video**
The recording method of original primary video appears.

■ **Secondary Video**

Video	Select on/off for images. The recording method of original video appears. • During search/slow motion, only the primary video is displayed.
Soundtrack	Select on/off for audio and the language.

■ **Zoom**
Videos and pictures are magnified.
- On BD-Video discs including BD-J, the zoom function does not work.

■ **Top Menu**
Display Top Menu.

■ **Pop-up Menu**
Display Pop-up Menu.

■ **Menu**
Display Menu.

Picture Settings

■ **Dynamic Range Conversion Adjustment**

When this unit is connected to a TV that does not support HDR (High Dynamic Range) input, HDR video is output converting to a SDR (Standard Dynamic Range) video signal. If you set a smaller value, their contrast will be reproduced more faithfully, but the entire screen will appear darker. To increase the brightness, set a larger value.

■ **Picture Mode**

Select the picture quality mode during play.

- If you select “User”, you can change settings in “Picture Adjustment”.

■ **Picture Adjustment**

Specific picture quality settings can be changed.

■ **Progressive**

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

- If the video is disrupted when “Auto” is selected, select either “Video” or “Film” depending on the material to be played back.

■ **Reset to Default Picture Settings**

Return picture settings to the factory defaults.

3D Settings

■ **Signal Format**

Original	Keep original picture format.
Side by side	3D picture format comprising of left and right screens.

■ **Graphic Display Level**

3D position for the Option menu or message screen, etc. can be adjusted during 3D playback.

Setup menu

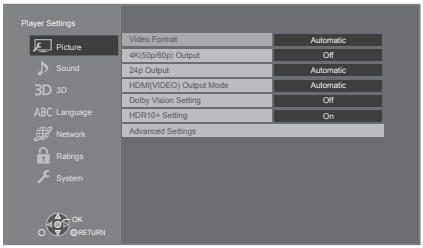
Change the unit's settings if necessary. The settings remain intact even if you switch the unit to standby.

1 Press [HOME].

2 Select "Setup".

3 Select "Player Settings".

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4 Select an item and change the settings.

To exit the screen

Press [HOME].

Picture

■ Video Format

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 "Automatic"*1 is selected, the best suited output resolution to the connected TV is automatically selected.

■ 4K(50p/60p) Output

This unit automatically chooses to output images in 4K*2 (50p/60p) when connected to a 4K (50p or 60p) compatible TV.

- This item is available only when "Video Format" is set to "Automatic" and "4K".
- To connect to a TV that supports 4K (50p/60p) 4:4:4/8 bit or 4K (50p/60p) 4:2:2/12 bit, select "4K(50p/60p) 4:4:4".
  Images will not be output correctly with an HDMI cable that does not support 18 Gbps.
- To connect to a TV that supports 4K (50p/60p) 4:2:0/8 bit, select "4K(50p/60p) 4:2:0".

■ 24p Output

Content recorded at 24p*3, such as BD-Video films, is output at 24p when played back.

- When this unit is connected to TV compatible with 4K/24p and "Video Format" is set to "Automatic" or "4K", images will be output in 4K/24p.
- When this unit is connected to a TV compatible with 1080/24p and "Video Format" is set to "Automatic", "1080i" or "1080p", images will be output in 1080/24p.
- If images output in 24p are distorted, change the setting to "Off".

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■ HDMI(VIDEO) Output Mode

Set whether or not to output audio from the HDMI VIDEO OUT terminal.

- When an amplifier is connected to the HDMI AUDIO OUT terminal and this menu item is set to "Automatic (Video Only / Video+Audio)", the TV may not output audio. In that case, select "Video+Audio".

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■ Dolby Vision Setting

You can set enable/disable of the Dolby Vision function.

By changing this setting to "On", you can use the Dolby Vision function under the following conditions:

– A device (TV, etc.) that supports Dolby Vision is connected (⇨ 10).
– A disc that supports Dolby Vision is played back.

- The "Picture Settings" setting is disabled while using the Dolby Vision function. (⇨ 22)
- If all the conditions below are met, both Dolby Vision and HDR10+ are enabled. In that case, playback in HDR10+ format takes precedence.
  – The playback media or content is recorded in both Dolby Vision and HDR10+ formats.
  – Both Dolby Vision and HDR10+ are supported by the connected device (TV, etc.).
  – Both this function and "HDR10+ Setting" are set to "On".

■ **HDR10+ Setting**

You can set enable/disable of the HDR10+ function.

By changing this setting to “On”, you can use the HDR10+ function under the following conditions:

– A device (TV, etc.) that supports HDR10+ is connected (⇨ 10).

– A disc that supports HDR10+ is played back.

• The “Picture Settings” setting is disabled while using the HDR10+ function. (⇨ 22)

■ **Advanced Settings**

Press [OK] to show the following settings:

➢ **Colour Mode**

This setting is for selecting colour-space conversion of the image signal.

➢ **Deep Colour Output**

Set the output method to be used when this unit is connected to a TV that supports Deep Colour.

➢ **HDR/Colour Gamut Output**

Set the output type for HDR (High Dynamic Range) material.

➢ **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.

*1 It displays images at the highest resolution available on your TV.

*2 A high resolution image/display technology of approximately 4000 (width) x 2000 (height) pixels.

*3 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.

Sound

■ **Dynamic Range Compression**

You can listen at low volumes but still hear dialogue clearly.

(Dolby Digital, Dolby Digital Plus and Dolby TrueHD only)

• “Automatic” is effective only when playing Dolby TrueHD.

■ **Digital Audio Output**

Press [OK] to show the following settings:

➢ **Dolby Audio**

➢ **DTS/DTS-HD**

➢ **DSD Output Mode**

Select the audio signal to output.

• Select “PCM”, when the connected equipment cannot decode the respective audio format. This unit decodes the audio format and transmits to the connected equipment.

• If you do not make proper settings the audio may be static or noisy.

• “DSD Output Mode” is effective only when connecting the unit with an HDMI cable.

• When playing DSD 11.2 MHz format file regardless of the settings for “DSD Output Mode”, PCM signals are output from HDMI terminal and **UB450** **UB159** COAXIAL terminal.

➢ **BD-Video Secondary Audio**

Select whether or not to mix the primary and secondary audio (including the button click sound).

If “Off” is selected, the unit outputs the primary audio only.

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➢ **HDMI Audio Output**

This setting selects whether or not to output audio from HDMI.

• To enjoy audio with the HDMI terminal, select “On”. To enjoy audio with the COAXIAL terminal, select “Off”. Audio will not be output from the HDMI terminal regardless of the settings for “HDMI(VIDEO) Output Mode”.

• **To enjoy BD-Video that supports Dolby Atmos® or DTS:X®**

Connect this unit to an AV amplifier or similar device that supports it with an HDMI cable, and select the following settings:

– Dolby Audio: “Bitstream”

– DTS/DTS-HD: “Bitstream”

– BD-Video Secondary Audio: “Off”

Dolby Atmos is a trademark of Dolby Laboratories.

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■ **COAXIAL Down Sampling**

Set the maximum sampling frequency to be used when outputting down-sampled audio from the COAXIAL terminal.

- Set a frequency supported by the connected device.
- When playing back BD-Video, signals are converted to 48 kHz despite the settings in the following cases:
  – when the signals have a sampling frequency of 192 kHz
  – when the disc has copy protection
  – when “BD-Video Secondary Audio” is set to “On”

■ **Downmix**

Select the downmix system of multi-channel to 2-channel sound.

- Select “Surround encoded”, when the connected equipment supports the virtual surround function.
- The downmix effect is not available when “Digital Audio Output” is set to “Bitstream”.
- The audio will be output in “Stereo” in the following cases:
  – AVCHD playback
  – Playback of secondary audio (including the button click sound).

■ **DTS Neo:6**

2ch (2.1ch) audio is expanded to 7ch (7.1ch).

- This function works when the following conditions are met:
  – “DTS Neo:6” is effective only when connecting the unit with an HDMI cable.
  – Audio recorded at 96 kHz or lower is output.
  – “Digital Audio Output” is set to PCM when audio other than “PCM” is output.

3D

■ **3D BD-Video Playback**

Select the playback method of 3D compatible video software.

■ **3D AVCHD Output**

Select the output method of 3D AVCHD videos.

■ **3D Playback Message**

Set to display or hide the 3D viewing warning screen when playing back the 3D compatible video software.

Language

■ **Soundtrack Preference**

Choose the language for audio.

- If “Original” is selected, the original language of each disc will be selected.
- When the selected language is not recorded on the disc, or depending on how the navigation is created on the disc, it may playback in a different language than the selected language.
- Enter a code (⇨ 35) when you select “Other ****”.

■ **Subtitle Preference**

Choose the language for the subtitle.

- When “Automatic” is selected, a subtitle for the language selected in the “Soundtrack Preference” is displayed only when the language other than the language selected in the “Soundtrack Preference” is played back.
- When the selected language is not recorded on the disc, or depending on how the navigation is created on the disc, it may playback in a different language than the selected language.
- Enter a code (⇨ 35) when you select “Other ****”.

■ **Menu Preference**

Choose the language for the disc menus.

- Enter a code (⇨ 35) when you select “Other ****”.

■ **Subtitle Text**

Select a desired item according to the language used for MKV subtitles text.

- This item is displayed only after playing back a file.

■ **On-Screen Language**

Choose the language for menus and on-screen messages.

Network

■ **Easy Network Setting (⇨ 14)**

■ **Network Settings**

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

➤ **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.

➤ **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.

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➤ **Network Drive Connection**

This unit can access a hard disk shared folder on a network and play back videos, still pictures, and music.

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➤ **Remote Device Settings (⇨ 20)**

Press [OK] to show the following settings:

Device Name Entry

Set the name of this unit to be displayed on the connected equipment.

Registration Type

Automatic	Allow connections to all the equipment accessing this unit.
Manual	Set the permission for individual equipment connections accessing this unit.

Remote Device List

Registering/deregistering of the displayed equipment can be performed when “Manual” in “Registration Type” is selected.

- You can register up to 16 devices.

➤ **BD-Live Internet Access (⇨ 18)**

You can restrict Internet access when BD-Live functions are used.

- If “Limit” is selected, Internet access is permitted only for BD-Live contents which have content owner certificates.

■ **Legal Notices**

Displays the terms of service for the cloud services.
Displays the “Terms and Conditions of Use / Privacy Policy”.
Your use of internet-enabled functions and software updates must follow the rules set forth in the “Terms and Conditions of Use”. Please review “Terms and Conditions of Use” and “Privacy Policy” carefully and confirm your understanding of “Privacy Policy” and agreement to the “Terms and Conditions of Use” by checking the box and select “OK”.

Ratings

The following items use the same password.
Don't forget your password.

■ **DVD-Video Ratings**
Set a ratings level to limit DVD-Video play.

■ **BD-Video Ratings**
Set an age limit of BD-Video (including Ultra HD Blu-ray) play.

System

■ **Easy Settings**
You can execute basic settings.

■ **TV Settings**
Press [OK] to show the following settings:

➤ **TV System**
Perform the setup so it matches the TV System of the connected TV.

➤ **Screen Saver Function**
This is to prevent image retention on the screen.
- When this is set to "On":
  If a list of playback content is displayed and there is no operation for 5 minutes or more, the screen switches to HOME menu automatically.
- While playing and pausing, etc., this function is not available.

➤ **On-Screen Messages**
Choose whether to show status messages automatically.

➤ **HDMI CEC**
Set to use "HDMI CEC" function when connected via HDMI cable to a device that supports "HDMI CEC".
Select "Off" when you do not want to use "HDMI CEC".

■ **Quick Start**
Speed of start-up from standby mode is increased.
- When set to "On", the internal control unit will be powered. The idle power consumption will increase so compared to when set to "Off".

■ **Firmware Update (⇨ 15)**
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 if a firmware update is available.

■ **System Information**
Press [OK] to show the following settings:

➤ **Software Licence**
Information about the software used by this unit is displayed.

➤ **Firmware Version Information**
Display firmware version of this unit.

■ **Default Settings**
This returns all values in the Setup menu and the Option menu to the default settings, except for some settings of network, ratings, on-screen language, etc.

Troubleshooting guide

Before requesting service, please perform the following checks.
If the problem remains unresolved, consult your dealer for instructions.

Do you have the latest firmware installed?
Panasonic is constantly improving the unit's firmware to ensure that our customers are enjoying the latest technology. (⇨ 15)

The following do not indicate a problem with this unit:
– Regular disc rotating sounds.
– Image disturbance during search.
– Image disturbance when replacing 3D discs.

■ Unit does not respond to remote control or unit's buttons.

Disconnect the AC adaptor, wait 1 minute, then reconnect the AC adaptor.

■ Cannot eject disc.

① While the unit is on
Press and hold [⏏] on the main unit and the [0] on the remote control at the same time for more than 5 seconds.
– POWER LED starts to flash, and "00 RET" is displayed on the screen.

② Press [▶] (right) repeatedly on the remote control until "06 FTO" is displayed on the screen.

③ Press [OK].

General operation

To return to the factory default.

➤ Select "Yes" in "Default Settings" in the Setup menu. (⇨ 27)

To return all settings to the factory preset.

➤ Reset the unit as follows:

① While the unit is on
Press and hold [⏏] on the main unit and the [0] on the remote control at the same time for more than 5 seconds.
– POWER LED starts to flash, and "00 RET" is displayed on the screen.

② Press [▶] (right) repeatedly on the remote control until "08 FIN" is displayed on the screen.

③ Press and hold [OK] for more than 5 seconds.

The remote control doesn't work properly.

➤ Change the batteries in the remote control. (⇨ 5)

Other Panasonic products respond to this remote control.

➤ Change the remote control code of other Panasonic products to other than code 1.

This unit is turned off automatically.

➤ To save on electricity, this unit is turned off automatically depending on the media if there is no button operation for about 20 minutes when not playing back (such as when paused or displaying the menu, displaying still pictures, etc.).

You have forgotten your ratings password. You want to cancel the ratings level.

➤ The ratings level returns to the factory defaults.

① While the unit is on

Press and hold [⏏] on the main unit and the [0] on the remote control at the same time for more than 5 seconds.

– POWER LED starts to flash, and “00 RET” is displayed on the screen.

② Press [▶] (right) repeatedly on the remote control until “03 VL” is displayed on the screen.

③ Press [OK].

The TV screen turns black.

➤ In the following cases, HDMI authentication takes place and a black screen is displayed:
– When “24p Output” is set to “Automatic”.
– When the display is switched between 2D and 3D images.
– When you quit the 4K playback by displaying another screen, including the HOME menu.

This unit does not recognize the USB connection correctly.

➤ Disconnect and re-connect the USB cable. If it still does not recognize the connection, turn this unit off and on again.
➤ USB devices may not be recognized by this unit when connected using the following :
– a USB hub
– a USB extension cable
➤ If you connect USB HDD to this unit, use the USB cable that is supplied with the HDD.
➤ If the USB HDD is not recognized, the power to the USB HDD may not be supplied. Supply power from an external source.

Picture

Images from this unit do not appear on the TV screen, or they are distorted.

➤ An incorrect resolution is selected in “Video Format”. Reset the setting as follows:
➤ The connected devices are changed. Reset the setting as follows:

① While the unit is on

Press and hold [⏏] on the main unit and the [8] on the remote control at the same time for more than 5 seconds.

② Set the item again. (⇨ 23)

– When Dolby Digital Plus, Dolby TrueHD, and DTS-HD® audio are not output properly, select “Yes” in “Default Settings” (⇨ 27) and make proper settings.
– “4K(50p/60p) Output” will be set to “Off”. Make the correct setting again. (⇨ 23)

➤ PAL discs cannot be correctly viewed on an NTSC TV.
➤ When “3D BD-Video Playback” in the Setup menu is set to “Automatic”, images may not be output depending on the connection method. After removing the disc from this unit, select “Set before play” in the Setup menu, and select “2D Playback” in the setup screen displayed when playing 3D discs. (⇨ 25)
➤ When outputting in 4K, images may be distorted depending on the HDMI cable. Use an HDMI cable that supports 18 Gbps.

Video is not output in 4K or high-definition.

- ➤ Confirm that “Video Format” in the Setup menu is set properly. (⇨ 23)
- ➤ Confirm the HDMI cable, related connections and the compatibility of TV video input.
- ➤ To output images in 4K, connect the HDMI cable to a 4K compatible terminal of the connected device. (⇨ 10)
- ➤ To enjoy image in 4K (50p/60p) with the connected 4K-compatible TV, set “4K(50p/60p) Output” to “4K(50p/60p) 4:4:4” or “4K(50p/60p) 4:2:0”. (⇨ 23)
- ➤ If “4K(50p/60p) Output” is set to “4K(50p/60p) 4:4:4”, check to see if the connected HDMI cable supports 18 Gbps. (⇨ 10, 23)
- ➤ When the unit is connected to a TV that supports formats up to 4K(50p/60p) 4:2:0 or “4K(50p/60p) Output” is set to “4K(50p/60p) 4:2:0”, material recorded in 4K(50p/60p) cannot be output in 4K/HDR.
  To play back material recorded in 24p, set “24p Output” to “Automatic”. (⇨ 23)

Cannot output video in HDR quality even when connected to an HDR-compatible TV.

- ➤ When connected to a device or terminal that does not support HDR, this unit applies Dynamic Range Conversion to HDR signals to output them. In addition, depending on the disc, it may not be possible to output content in 2K resolution or perform playback correctly. (⇨ 18)
- ➤ Video may not be output from your TV in HDR quality, depending on the content.
  Set “HDR/Colour Gamut Output” to “HDR/BT.2020 (Auto)”. (⇨ 24)

3D video is not output.

- ➤ Connect to a 3D compatible device (e.g., TV and amplifier/receiver).
- ➤ When a non-3D compatible amplifier/receiver is connected between this unit and a TV, 3D video is not output. (⇨ 12)
- ➤ Confirm the settings on this unit and the TV for 3D. (⇨ 18)

3D video is not output correctly as 2D.

- ➤ Select “Set before play” in the Setup menu, and select “2D Playback” in the setup screen displayed when playing 3D discs. (⇨ 25, “3D BD-Video Playback”)
- ➤ Discs that have recorded titles with Side by side (2 screen structure) and that can be enjoyed in 3D are played back in accordance with the settings of the TV.

A black band is displayed around the edge of the screen.

The aspect ratio of the screen is abnormal.

- ➤ Adjust the aspect setting on the TV.

The screen brightness changes automatically.

- ➤ The screen brightness changes automatically to suit the scene while using the HDR10+ and **UB450** Dolby Vision function.

Audio

Cannot switch audio.

- The audio cannot switch, if “Digital Audio Output” is set to “Bitstream” or “On”*. Set “Digital Audio Output” to “PCM” or “Off”*. (⇨ 24)

* For “DSD Output Mode”

Cannot hear the desired audio.

- Check the connections and the “Digital Audio Output” settings. (⇨ 11, 24)
- UB450 UB159 To output audio from a device connected with an HDMI cable, set “HDMI Audio Output” to “On” in the Setup menu. (⇨ 24)
- UB450 UB159 When connecting this unit to a TV via an HDMI VIDEO OUT and to an amplifier/receiver via an HDMI AUDIO OUT, set “HDMI(VIDEO) Output Mode” to “Automatic (Video Only / Video+Audio)”. (⇨ 11, 23)

There is no sound coming out.

- UB450 UB159 To output audio using COAXIAL terminal, set “COAXIAL Down Sampling” properly. (⇨ 25)
- Refer to “Connecting to an amplifier/receiver” (⇨ 11 - 12) to check the audio output settings suited to the connections of your device.
  UB450 UB159 In the following cases, audio is not output from the terminals listed below:
  - **HDMI VIDEO OUT terminal**
  – When a device is connected to the HDMI AUDIO OUT terminal and “HDMI(VIDEO) Output Mode” is set to “Automatic (Video Only / Video+Audio)” (⇨ 23)
  – When “HDMI Audio Output” in “Digital Audio Output” is set to “Off” (⇨ 24)
  - **HDMI AUDIO OUT terminal**
  – When “HDMI Audio Output” in “Digital Audio Output” is set to “Off” (⇨ 24)

Playback

Disc cannot be played.

- The disc is dirty. (⇨ 5)
- The disc is not finalized. (⇨ 7)
- Depending on the Ultra HD Blu-ray disc, it may not be possible to perform playback unless this unit is connected to the Internet.

Still pictures (JPEG) do not play back normally.

- The images that were edited on the PC, such as Progressive JPEG, etc., may not be played back.

I can’t play back BD-Live.

- Confirm that this unit is connected to the broadband Internet. (⇨ 13)
- Confirm the “BD-Live Internet Access” settings. (⇨ 26)
- Confirm a USB device is connected to the USB port. (⇨ 9)

Network

I can’t connect to the network.

- Confirm the network connection and settings. (⇨ 13, 14, 26)
- Check the operating instructions for each device and connect accordingly.

Messages on the screen

No compatible content on the disc.

➤ You inserted an incompatible disc.

Cannot play this file.

➤ You tried to play a non-compatible video.

This disc is incompatible.

➤ You inserted an incompatible disc.

➤ The disc may be upside down.

⃠ This operation is not available.

➤ Some operations (reverse slow motion, etc.) are unsupported by the unit.

IP address is not set.

➤ The “IP Address / DNS Settings” ⇨ “Advanced Settings” ⇨ “IP Address” is “---. ---. ---. ---”. Set the “IP Address”, “Subnet Mask”, and “Gateway Address”. (Select the automatic address acquisition if necessary.)

POWER LED

When the POWER LED is flashing other than during power up or down of this unit, check the message on the TV screen. If a message is not displayed on the TV screen, determine the type of the error by checking the way the POWER LED is flashing.

Symbols indicate the following states:	
✦	Flash
——	No illumination
·····	Repetition

✦✦✦✦✦✦ ·····

(Flashes)

➤ The copyright protected disc cannot be played back.
One of the devices connected to this unit (TV, amplifier, etc.) does not support copyright protection.

✦✦✦ —— ✦✦✦ —— ·····

(Flashes 3 times)

➤ The disc in use cannot be played back since the copyright information is invalid.

Specifications

General

Signal system	PAL/NTSC
Operating temperature range	+5 ºC to +35 ºC
Operating humidity range	10 % to 80 % RH (no condensation)
UB450 UB159 **DIGITAL AUDIO OUT (COAXIAL)**	1 pc. Output format : PCM, Dolby Digital, DTS®
HDMI OUT (19 pin type A)	UB450 UB159 2 pcs. UB150 1 pc. Output Audio format : PCM, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS®, DTS-HD® High Resolution Audio, DTS-HD® Master Audio
USB port (Type A)	1 pc. DC 5 V, Max. 500 mA [High-Speed USB (USB 2.0)]
LAN (Ethernet) Port	1 pc. 10BASE-T/100BASE-TX
LASER Specification	**Class 1 LASER Product Wave length:** 770-800 nm (CDs)/ 650-666 nm (DVDs)/ 400-410 nm (BDs) **Laser power:** No hazardous radiation is emitted with the safety protection
Power supply	**DC 12 V, 1.5 A** (DC IN terminal)
Power consumption	UB450 UB159 **Approx. 13 W** UB150 **Approx. 12 W**
Power consumption in standby mode	**Approx. 0.3 W** (Quick Start: Off)
Dimensions (W x H x D) Including the projecting parts	UB450 UB159 320 mm x 46 mm x 198 mm UB150 320 mm x 46 mm x 193 mm
Mass	Approx. 1.2 kg

- Specifications are subject to change without notice.

File format

File format	Extension	Reference
MKV (Compression methods Video: H.264/HEVC Audio:AAC, PCM, Vorbis, FLAC, Dolby Digital, DTS®)	“.MKV”, “.mkv”	• Resolution up to 3840x2160 25p/30p, 4096x2160 24p. • The video file and subtitles text file are inside the same folder, and the file names are the same except for the file extensions. • Some MKV files may not be played back correctly, depending on the video resolution, frame rate condition, subtitle format and so on.
	Subtitles text file “.SRT”, “.srt”, ““.SSA”, “.ssa”, “.ASS”, “.ass”	
mp4 (Compression methods Video: H.264/HEVC Audio: AAC)	“.MP4”, “.mp4”, “.MOV”, “.mov”	• Resolution up to 3840×2160 25p/30p, 4096×2160 24p. (except MPEG2) • Some mp4/MPEG files may not be played back correctly, depending on the video resolution, frame rate condition and so on. • MOTION JPEG is not supported. • Depending on the audio compression method, only images may be played back and it may not be possible to output audio.
MPEG (TS/PS) (Compression methods Video: MPEG2 /H.264*1/HEVC*1 Audio: AAC*1 /Dolby Digital /DTS®/LPCM*2)	“.MPG”, “.mpg”, “.MPEG”, “.mpeg”, “.M2TS”, “.m2ts”, “.MTS”, “.mts”, “.TS”, “.ts”	
JPEG	“.JPG”, “.jpg”, “.JPEG”, “.jpeg”	• MOTION JPEG and Progressive JPEG are not supported. • You may not be able to play back the file if you have edited the folder structure or the file name on a PC or other device.
MPO	“.MPO”, “.mpo”	3D still picture
MP3	“.MP3”, “.mp3”	This unit supports ID3 tags, but only titles, artist names and album names can be displayed.
FLAC	“.FLAC”, “.flac”	Maximum sampling rate: 192 kHz/24 bit
WAV	“.WAV”, “.wav”	Maximum sampling rate: 384 kHz/24 bit
AAC	“.M4A”, “.m4a”	This unit supports tags, but only titles, artist names and album names can be displayed. Maximum sampling rate: 48 kHz/320 kbps

File format	Extension	Reference
WMA	".WMA", ".wma"	This unit supports tags, but only titles, artist names and album names can be displayed. Maximum sampling rate: 48 kHz/385 kbps
DSD (DFF, DSF)	".DSF", ".dsf", ".DFF", ".dff"	2.8 MHz (2 ch/5.1 ch), 5.6 MHz (2 ch/5.1 ch), 11.2 MHz (2 ch only)
ALAC	".M4A", ".m4a"	This unit supports tags, but only titles, artist names and album names can be displayed. Maximum sampling rate: 192 kHz/24 bit
AIFF	".aif", ".aiff"	Maximum sampling rate: 384 kHz/24 bit

*1 TS only
*2 PS only

- With certain recording states and folder structures, the play order may differ or playback may not be possible.
- Up to 10,000 files and up to 300 folders can be displayed as playable data in each folder regardless of their format. (Even when the picture playback menu is displayed, for example, if a folder in the menu contains playable videos and music files, they are also counted as playable data.)

Audio information

The audio output differs depending on the settings on the unit **UB450** **UB159** and which terminals are connected to the amplifier/receiver. (⇨ 24, "Digital Audio Output")

- The number of channels listed is the maximum possible number of output channels when connected to amplifier/ receiver compatible with the respective audio format.

	Terminal	"Digital Audio Output"	
		"Bitstream"/ "On"*5	**"PCM"*1/ "Off"*5**
Output channel	**HDMI OUT*4**	Outputs using original audio*2	BD-Video : 7.1ch PCM*2*3 DVD-Video : 5.1ch PCM
	UB450 **UB159** **DIGITAL AUDIO OUT (COAXIAL)**	Dolby Digital/ DTS® Digital Surround™	Down-mixed 2ch PCM

*1 **UB150** The maximum possible number of Dolby sound is 2ch PCM.

*2 When "BD-Video Secondary Audio" is set to "On", the audio will be output as Dolby Digital, DTS® Digital Surround™ or 5.1ch PCM. However, when playing BD-Video without secondary audio or navigation sounds, the audio is output as the original format.

*3 The audio output is amplified from 5.1ch or 6.1ch to 7.1ch depending on the DTS, Inc. specifications.

*4 When "DTS Neo:6" is set to "Cinema" or "Music", 2ch (2.1ch) audio can be expanded to 7ch (7.1ch) and output. (⇨ 25)

*5 For "DSD Output Mode"

UB450

Supported format for Network Contents Playback

When this unit works as a Network Contents client, following contents are playable.

- File formats that are not supported by your Network Contents server* cannot be played.

* DLNA compatible server, etc.

Video

Container	Video codec	Audio codec	Example of file extension
MKV	H.264 HEVC	AAC PCM Vorbis FLAC Dolby Digital DTS®	.mkv
AVCHD	H.264	Dolby Digital	.mts
MP4	H.264 HEVC	AAC	.mp4, .mov
PS	MPEG2	Dolby Digital Linear PCM DTS®	.mpg, .mpeg
TS	MPEG2 H.264 HEVC	AAC Dolby Digital DTS®	.m2ts, .ts

Photo

Format	Example of file extension
JPEG	.jpg

Audio

Audio codec	Example of file extension
MP3	.mp3
FLAC	.flac
WAV	.wav
AAC	.m4a, .adts
WMA	.wma
ALAC	.m4a
DSD	.dsf, .dff
AIFF	.aif, .aiff
Linear PCM	—

- Depending on the server, the contents other than stated above can be played back.

Language code list

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

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		

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Contact Information: oss-cd-request@gg.jp.panasonic.com
The source code and the copyright notice are also available for free in our website below.
https://panasonic.net/cns/oss/

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(4) Vorbis, FLAC
The software licenses are displayed when "Software Licence" in the Setup menu is selected. (⇨ 27)


DOLBY
AUDIO


DOLBY
VISION


dts-HD
Master Audio


Java
POWERED

Sales and Support Information

Customer Communications Centre

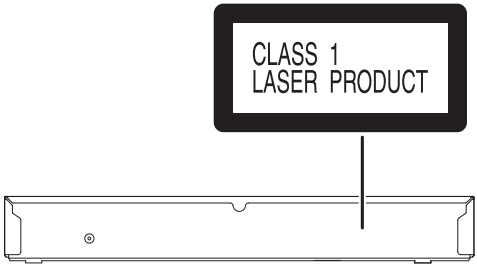
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- For customers within Ireland: 01 289 8333
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(Inside of product)



(Back of product)

EU

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Kadoma, Osaka, Japan
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Panasonic Testing Centre
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