



HP BD-2000

Blu-ray Disc Player

User Manual



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CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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



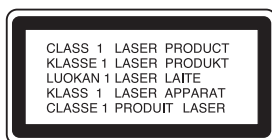
This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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 product.

CAUTION

This product is a Class 1 laser product. To ensure continued safety, do not remove any covers or attempt to disassemble the cabinet. Refer servicing to qualified personnel.



CAUTION

The use of optical instruments with this product may increase eye hazard.

WARNING

To prevent the risk of fire or electric shock hazard, do not expose this product to rain or moisture. Do not place near objects with liquid, such as a vase.

WARNING

Slots and openings in the cabinet are for ventilation purposes and to protect the equipment from heating. Do not cover or block the openings with items such as a newspaper, table-cloths or curtains).

Regulatory Information

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the product is operated in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the product and receiver.
- Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Warning

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in this manual. Alterations or modifications carried out without appropriate authorization may invalidate the user's right to operate this equipment.


Important Safety Instructions

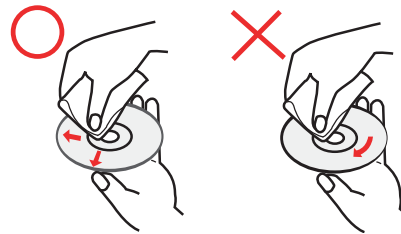
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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.

Notes About the Discs

- Do not touch the playback side of the disc. Hold the disc by its edge. 
- Never stick any paper or tape on the disc.
- After playing, store the disc in its case.
- Do not expose the disc to direct sunlight or sources of heat and never leave it in a parked car as the temperature may rise considerably inside the car.
- Clean the disc with a cleaning cloth.
- Wipe the disc from the center out.



- Do not use strong solvents such as benzine, thinner, alcohol, commercially available cleaners, or anti-static spray intended for vinyl LPs.

Precautions

Safety

- To prevent fire or electric shock hazard, do not place objects filled with liquids, such as vases, on the device.
- Should liquids spill or solid objects fall into the cabinet, have the device checked by a qualified personnel.

Operation

- Before moving the player, remove any discs inside the device. Otherwise, the disc may be damaged.
- If the device is moved from a cold to a warm location, moisture may form inside the device. Should this happen, do not operate the device and leave it for 2 to 3 hours until the moisture evaporates.

Power

- The device still consumes power when connected to a wall outlet even if the power has been turned off. To completely cut off the power, unplug the power cord from the wall outlet.
- If the device will not be used for long periods of time, disconnect the power cord from the wall outlet.
- When disconnecting the power cord, grasp the plug head, never pull the cord.

Placement

- Place the device in a well-ventilated location to prevent the device from overheating.
- Do not place the device on a soft surface such as a rug.
- Do not cover the slots and openings in the cabinet which are provided for ventilation.
- Do not place the device near heat sources.
- Do not place the device near liquids.
- Do not place heavy objects on the device.

- Install the device where the power cord can be easily connected and disconnected from the wall outlet.
- Keep the device or the discs away from equipment with magnets, such as a microwave oven.

About this Manual

The following icons that appear below a section title indicate the applicable discs or file types.

- Applies to BD, DVD, AVCHD, VCD, and CD discs.



- Applies to data discs or USB drive that contains video, music, or photo files.



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Chapter 1

Before You Start

Please read through this Operating Manual to operate your device properly and keep it in a safe place for future reference.

This chapter will introduce the features, supported types of discs and files, and the panel and remote control descriptions.

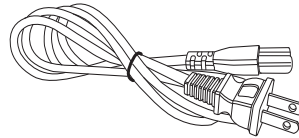
What's in the Box?

Check to ensure that the following items come with your package.

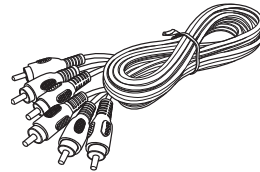
- BD player



- Power cable x 1



- Audio-Video cable x 1
(red/white/yellow)



- Remote control x 1



- HDMI cable x 1

- AAA batteries x 2

- Operating manual x 1

- Warranty card x 1

- Declaration of Conformity card x 1

Playable Discs and Files

Playable Discs

Your BD player supports playback of the following discs:

- Blu-ray Disc



- DVD-VIDEO



- DVD-R



- DVD-RW



- DVD+R



- DVD+RW



- Audio CD



- CD-R



- CD-RW



- CD-DA / CD-DTS

- VCD / SVCD

"Blu-ray Disc" and its logo are trademarks .

"DVD Video", "DVD-R", "DVD+R", "DVD-RW", "DVD+RW" and their logos are trademarks of DVD Format/Logo Licensing Corporation.

"CD" and its logo are trademarks.

Playing BD Discs

Features

- Supports BD profile 1.0, 1.1, and 2.0.
- Access to BD-Live which allows interactive functions when your BD player is connected to the Internet.



- Supports BONUSVIEW functions that allows virtual packages or Picture-in-Picture functions to be used.

BONUS VIEW™

"BONUSVIEW" and its logo are trademarks of Blu-ray Disc Association.

Playable BD Formats

- Blu-ray Disc Read Only (BD-ROM)
- Blu-ray Disc Recordable (BD-R)
- Blu-ray Disc Rewriteable (BD-RE)

Playing DVD Discs

- DVD-Video can be played.
- DVD-R /RW/+R/+RW disc recorded in DVD-Video format can be played
- DVD-R /RW/+R/+RW disc recorded in DVD-Video and Video Recording (VR) format can be played.
- DVD disc recorded in AVCHD format can be played, including discs in x.v.Color format.



"AVCHD" and its logo are trademarks of Matsushita Electric Industrial Co., Ltd and Sony Corporation.

"x.v.Color" is a trademark of Sony Corporation.

- Dual Layer DVD disc can be played.

Notes:

- A DVD disc will not play if it has not been finalized correctly.
- Some DVD and CD discs may not play on this BD player due to recording quality or the physical condition of the disc.

Audio Formats

Your BD player supports the following audio formats:

- Dolby Digital
- Dolby Digital Plus
- Dolby True HD
- DTS 2.0 + Digital Out
- Dolby Digital Sound
- MPEG
- MPEG-2
- Linear PCM



Playable Files

Your BD player supports playback of files recorded on DVD and CD discs, and USB drives with the following formats:

Video compression format	<ul style="list-style-type: none"> • MPEG • MPEG-2 • MPEG-4 (AVC)
Media container format	<ul style="list-style-type: none"> • *.AVI • *.MKV • *.MP4 • *.M4A • *.M4V • *.WMV • *.DAT • *.VOB • *.ASF
Photo file format	<ul style="list-style-type: none"> • JPEG • PNG • GIF
Music file format	<ul style="list-style-type: none"> • WMA

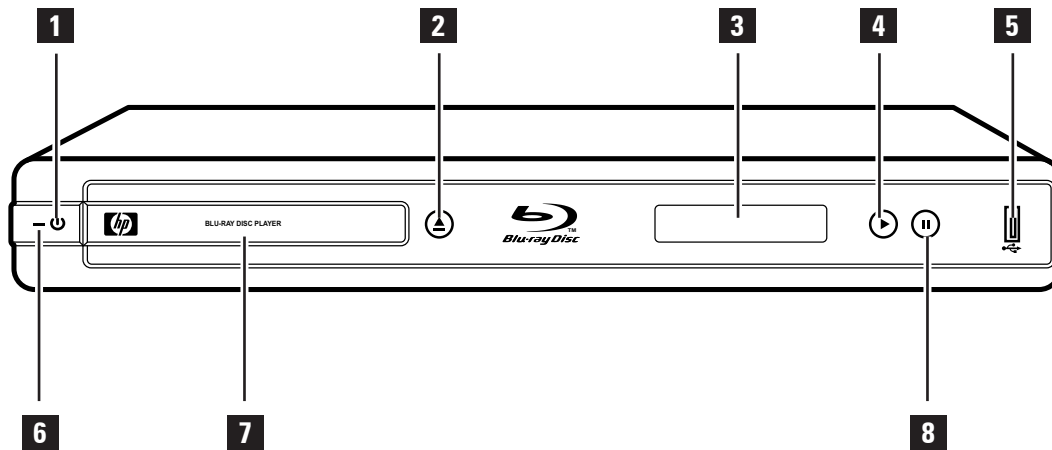
For Dolby Digital Plus, Dolby True HD, and DTS-HD, it is recommended to connect the BD player to an amplifier or receiver to enjoy the surround sound quality.

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

Manufactured under license under under U.S. Patent #'s: 4,631,603; 4,819,098; 4,907,093; 5,315,448; and 6,516,132 & other U.S. and worldwide patents issued & pending. DTS is a registered trademark and the DTS logos and Symbol are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.

Player Overview

Front Panel



1  **POWER ON/OFF button**

Press to switch the BD player on or off.

2  **OPEN/CLOSE button**

Press to open or close the disc tray.

3 **Front Panel DISPLAY**

Shows the current status information.

4  **PLAY button**

Press to start playback.

5 **USB port**

Use to connect a USB drive to play music or photo files. It can also be used for BD-Live storage.

6 **LED indicator**

Indicates BD player status. Lights red when the BD player is turned off.

7 **Disc tray**

Holds the disc for playback.

8  **PAUSE button**

Press to pause playback.

Note:

The device still consumes power even when the BD player has been switched off. To completely turn off power, unplug the power cable from the main outlet.

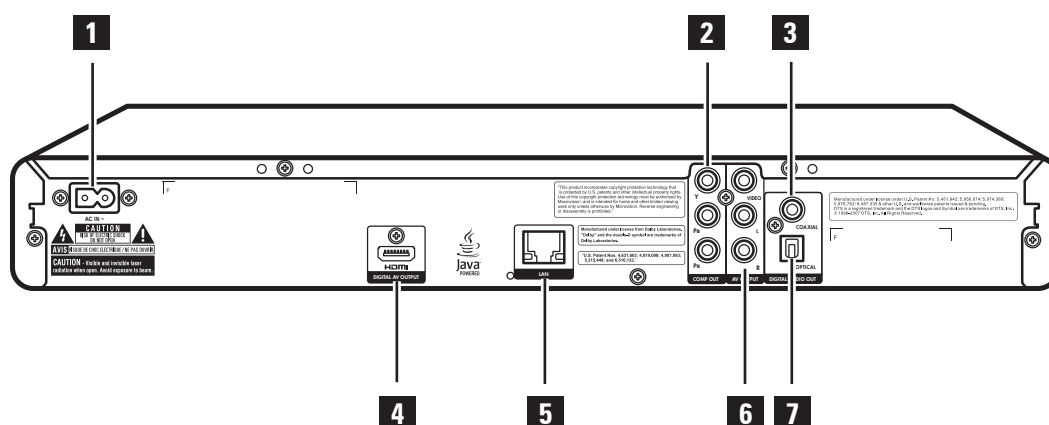
Front Panel Display

The front panel display shows the operation status of the BD player or the elapsed time of the discs being played.



Displays playback elapsed time.

Rear Panel



1 AC IN Terminal

Connects the power cable.

2 COMPONENT Video

Connects a TV, amplifier or receiver using a component video cable.

3 DIGITAL AUDIO OUT (COAXIAL)

Connects an amplifier or receiver using a coaxial audio cable.

4 HDMI OUT

Connects HDMI-compatible TV, amplifier or receiver.

5 LAN Port

Connects to a network using an Ethernet RJ-45 cable.

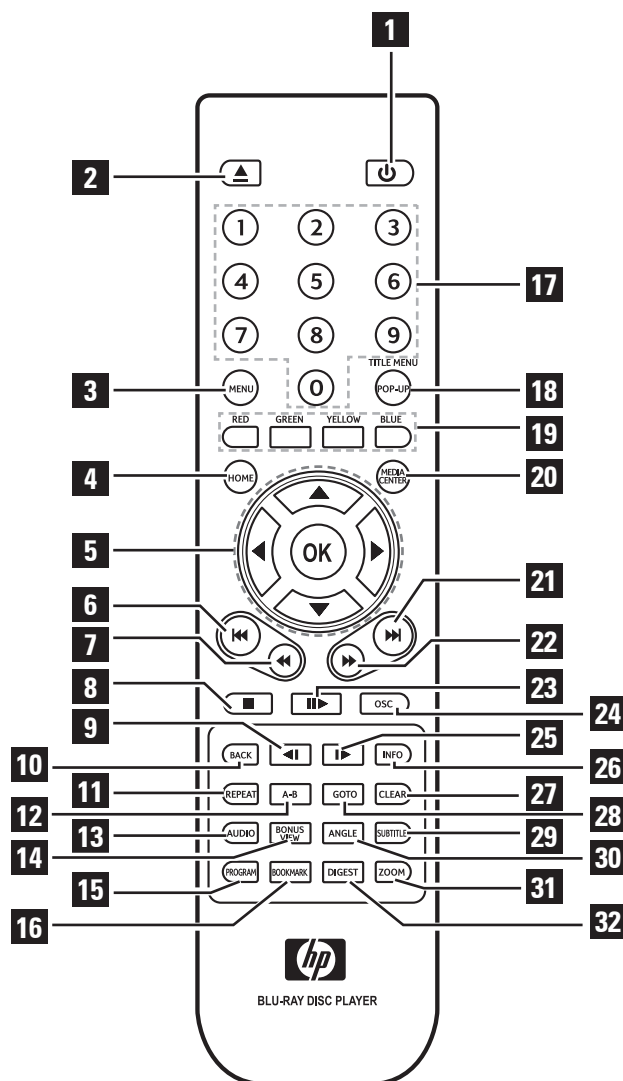
6 COMPOSITE Video

Connects a TV, amplifier or receiver using a composite video cable.

7 DIGITAL AUDIO OUT (OPTICAL)

Connects an amplifier or receiver using an optical audio cable.

Remote Control



- | | |
|---|--|
| <p>1 ⏻ POWER ON/OFF
Switches the BD player on or off.</p> <p>2 ⏏ OPEN/CLOSE
Opens or closes the disc tray.</p> <p>3 MENU
Displays the disc menu.</p> <p>4 HOME
Displays the Home Menu.</p> <p>5 Arrows (▲▼◀▶)
Select items, change settings or move the cursor.</p> <p>OK
Executes the selected item.</p> <p>6 ⏮ PREVIOUS
Goes to the previous chapter, title, track, or file.</p> | <p>7 ⏪ REVERSE
During playback, starts reverse scanning.</p> <p>8 ■ STOP
Stops playback.</p> <p>9 ◀ SLOW Rewind
Rewinds playback in slow motion.</p> <p>10 ⏮ BACK (RETURN)
Goes back to the previous screen..</p> <p>11 REPEAT
Repeats playback.</p> <p>12 A-B Repeat
Repeats playback from A to B.</p> <p>13 AUDIO
Displays the current audio stream.</p> |
|---|--|

14 BONUS VIEW

For BONUSVIEW functions.

15 PROGRAM

Displays the program list.

16 BOOKMARK

Bookmarks a point during playback.

17 NUMBERS**18 POP-UP MENU**

Displays BD or DVD disc menu.

19 RED / BLUE / YELLOW / GREEN

Navigates BD menus. They are also use for Photo and Music menu.

20 MEDIA CENTER

Browse and play media files on the data disc, USB drive, or playlist.

21 ►► NEXT

Goes to the next chapter, title, track, or file.

22 ►► FORWARD

During playback, starts forward scanning.

23 II► PLAY / PAUSE

Starts / pauses playback.

24 OSC

Displays OSC (on-screen controls) menu.

25 I► SLOW Forward

Forwards playback in slow motion.

26 INFO

Displays disc/file information.

27 CLEAR

Clears the numeric input.

28 GOTO

Goes to the entered chapter, title or track.

29 SUBTITLE

Displays the current subtitle.

30 ANGLE

Displays the current camera angle.

31 ZOOM

Enlarges or reduces image size.

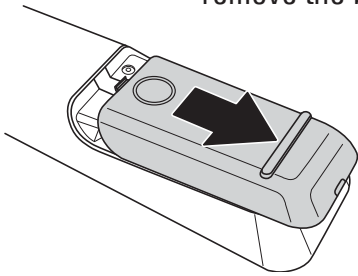
32 DIGEST

Displays photos as thumbnails.

Installing the Remote Control Batteries

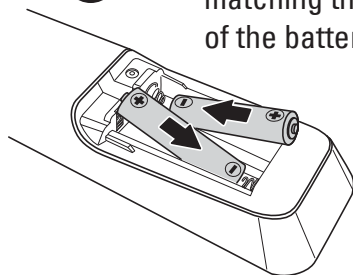
1

Slightly push then slide to remove the battery cover.



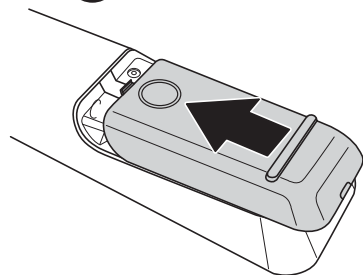
2

Insert two AAA batteries by matching the + and - ends of the batteries with the markings inside the battery compartment.



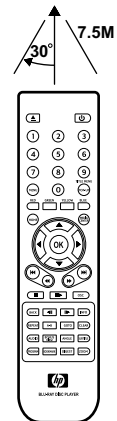
3

Replace the battery cover.



Remote Control Signal

The remote control has an operating range of approximately 7.5 m., and works best when pointed directly at the unit horizontally at an angle up to 30° from the sensor window of your BD player.



Notes:

- Do not mix old and new batteries or mix different types of batteries.
- Do not leave the remote control in an extremely hot or humid place.
- Do not expose the remote control to direct sunlight.
- If the remote control will not be used for long periods of time, remove the batteries.

Chapter 2

Getting Started

This chapter covers the following topics:

- Connecting to a TV
- Connecting to an amplifier or receiver
- Connecting a USB drive
- Connecting to the Internet
- Using Easy Setup

How to Set up Your BD Player

You can set up your BD player in 5 easy steps:

Step 1: Connect the TV

Step 2: Connect the amplifier

Step 3: Connect other peripherals

Step 4: Connect the power

Step 5: Run Easy Setup

WARNING

Before you begin making any connections, ensure that the BD player is turned off, and that the power cable is disconnected from the main outlet.

TIP

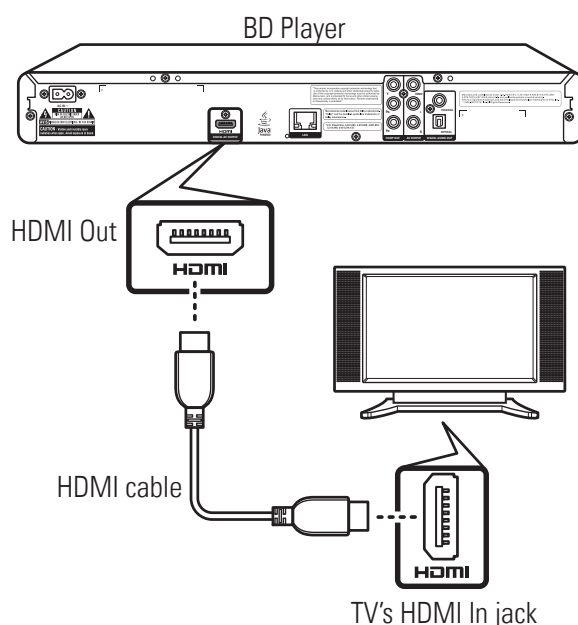
It is recommended to connect the VIDEO OUT jack of your BD player directly to the VIDEO IN jack of the TV. Connecting a TV via VCR may cause viewing problems when playing copy-protected discs.

Connecting to a TV

Depending on the capabilities of the TV, you can connect your BD player to the TV in various ways: HDMI, component, or composite video connections.

Connecting Using HDMI Cable

HDMI cables can transmit high quality video and audio at the same time. Normally, when you connect your TV using an HDMI cable, you do not need a separate analogue audio connection. Connect the HDMI OUT jack on the BD player to the HDMI IN jack on the TV.



CAUTION

- Hold the plug when connecting and disconnecting the cable.
- Do not force the plug into the HDMI jack. Match the connector's shape correctly. Make sure the connector is not upside down.
- Do not place any load on the cable.

TIP

If you wish to enjoy digital audio sound, connect your player to an amplifier or receiver using a coaxial or an optical cable. See '**Connecting an Amplifier**' (p. 20) for more information.

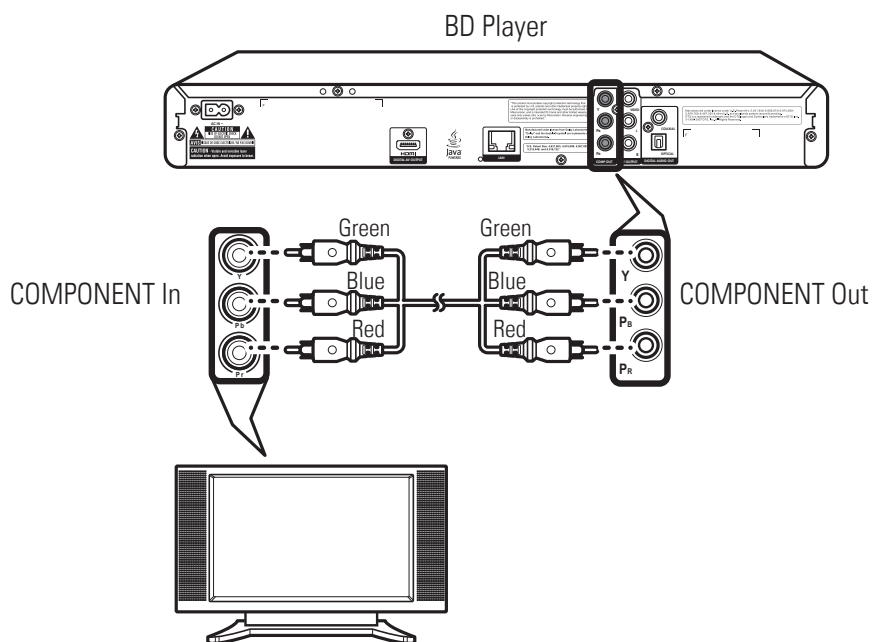
Notes on HDCP:

- Your BD player supports High-bandwidth Digital Content Protection (HDCP) technology. To play back HDCP-compliant discs, your TV must also support the HDCP copyright protection system.
- If your TV does not support HDCP, the picture will not be displayed properly.

HDMI This BD player incorporates High Definition Multimedia Interface (HDMI) technology. "HDMI", "High Definition Multimedia Interface", and their logo are registered trademarks of HDMI Licensing LLC.

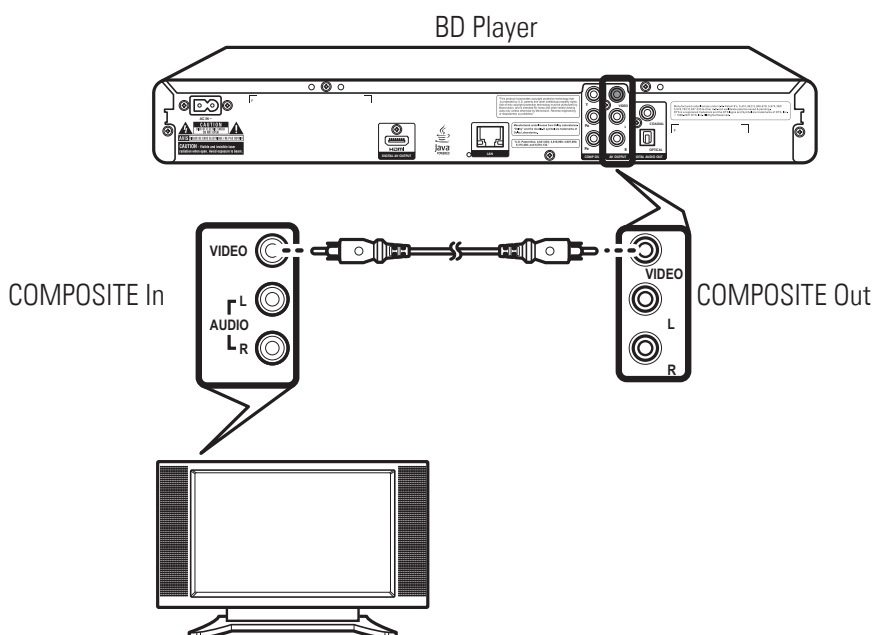
Connecting Using a Component Video Cable

Use a component video cable (green, blue, red) to connect the COMPONENT OUT jack on the BD player to the COMPONENT IN jack on the TV.



Connecting Using a Composite Video Cable

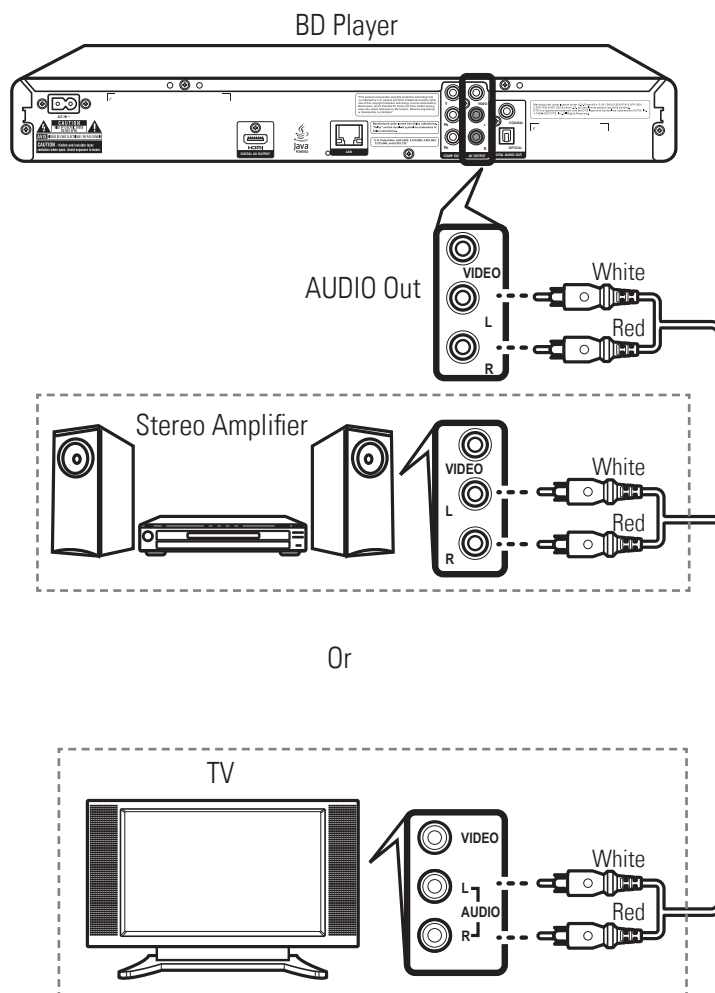
Use a composite video cable to connect the COMPOSITE OUT jack on the BD player to the COMPOSITE IN jack on the TV.



Connecting an Amplifier

Connecting Using Analogue Audio Cable

Use a composite AV cable or a composite audio cable (red/white) to connect the AUDIO OUT jack on the BD player to the AUDIO IN jack on the TV, amplifier or receiver.

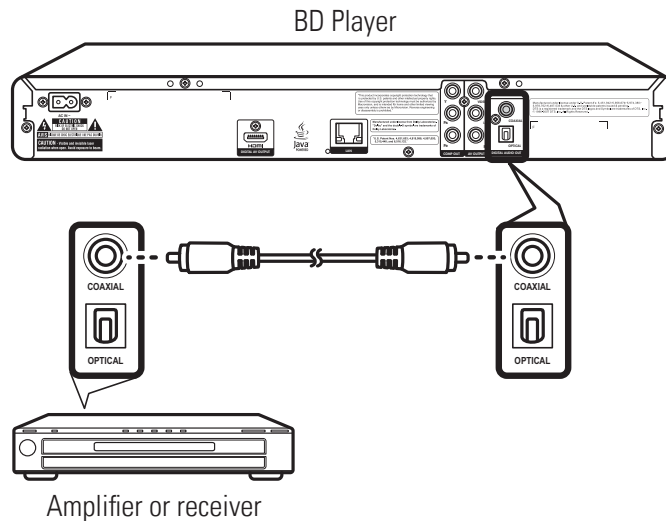


Connecting Using Digital Audio Cable

If you want to enjoy Dolby Digital, or DTS decoder function on your amplifier or receiver, use either a coaxial or optical audio cable.

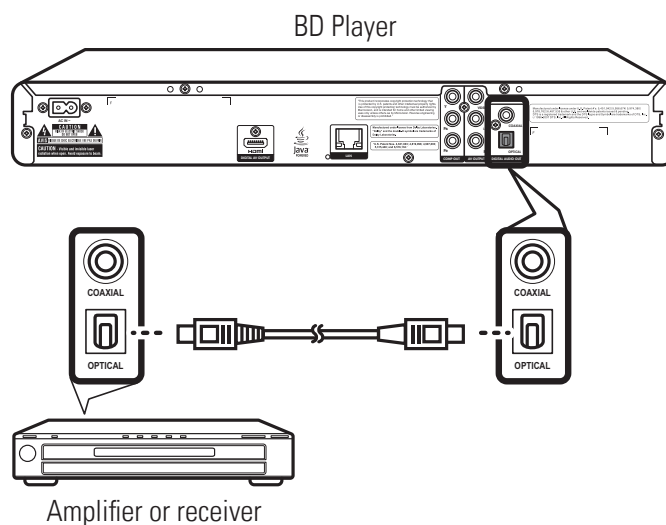
Using a Coaxial Cable

Use a coaxial cable to connect the COAXIAL DIGITAL OUT jack on your BD player to the COAXIAL DIGITAL INPUT on the amplifier or receiver.



Using an Optical Cable

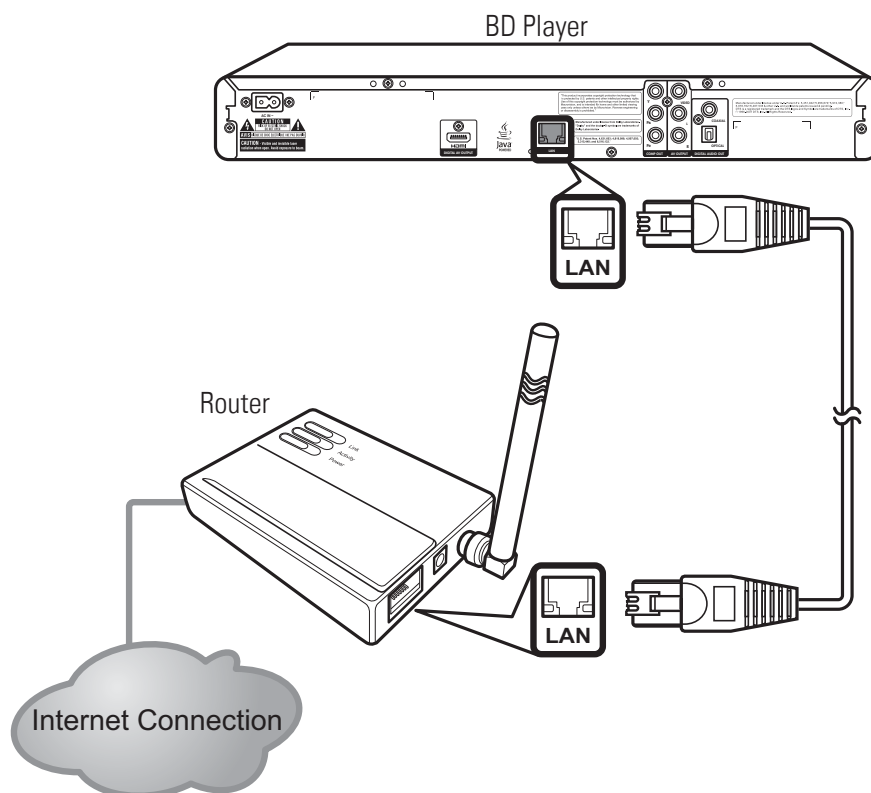
Use an optical cable to connect the OPTICAL DIGITAL OUT jack on your BD player to the OPTICAL DIGITAL INPUT on the amplifier or receiver.



Connecting to the Internet

Your BD player can connect to a local area network (LAN) via the LAN port on the rear panel. By connecting to the Internet, your BD player can use a BD disc that supports BD-Live function. See **'Using BD-Live™' (p. 33)**.

Use an Ethernet RJ-45 cable to connect the LAN port on the BD player to the LAN port on your modem or router.



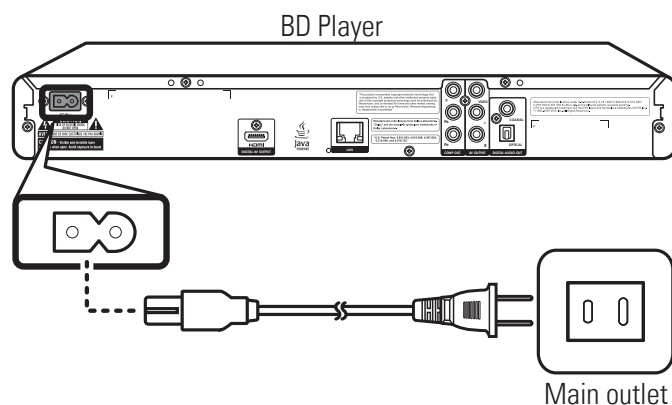
After connecting, configure your BD player for network communication in the Network menu. See **'Network' (p. 47)** for further details.

Note:

Depending on the internet service provider (ISP), the number of devices that can receive Internet connection may be limited. If your ISP limits subscription to one device, your BD player may not be allowed to connect when a PC is connected. Disconnect the PC first.

Connecting the Power Cable


After all the required connections are completed, connect the power cable to the AC IN terminal of your BD player. Then plug the power cable of your BD player into the main outlet.



Turning the Power On

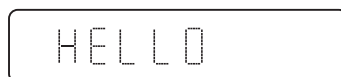
After completing all the required connections, you are now ready to start using your BD player.

1 Turn on the power of the TV first.

2 Press  on the front panel of the BD player or on the remote control to turn on your BD player.



The LED indicator turns off and the front panel displays:



3 Select the input signal source of your TV so that the signal from the BD player appears on the TV screen.

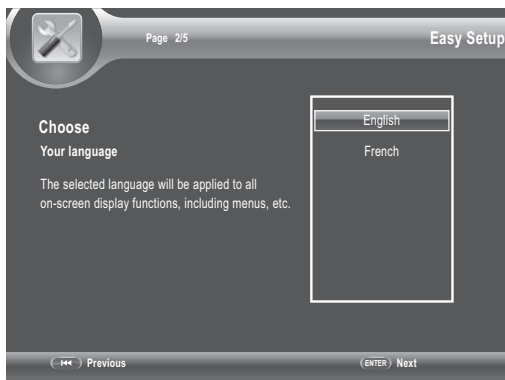
Easy Setup Wizard

When turning on for the first time, the Easy Setup Wizard is displayed on screen. Follow the wizard to configure the basic settings of your BD player.

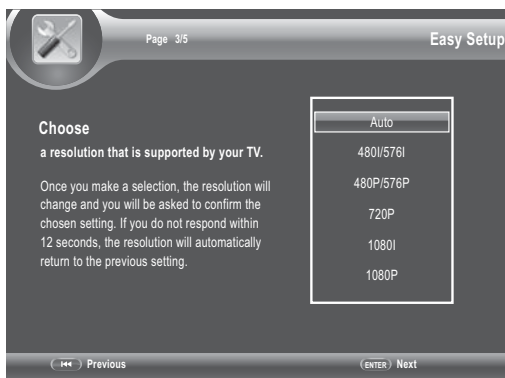
1 Press **OK** to continue.



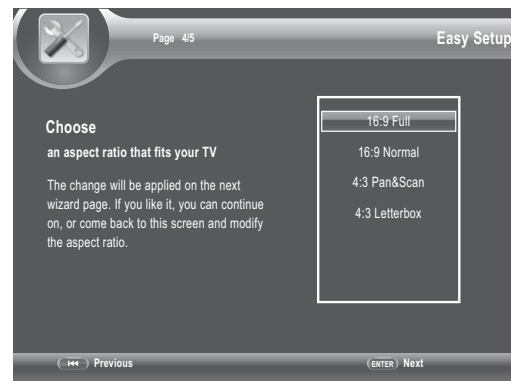
2 Press **▲▼** then **OK** to select the on-screen display (OSD) language.



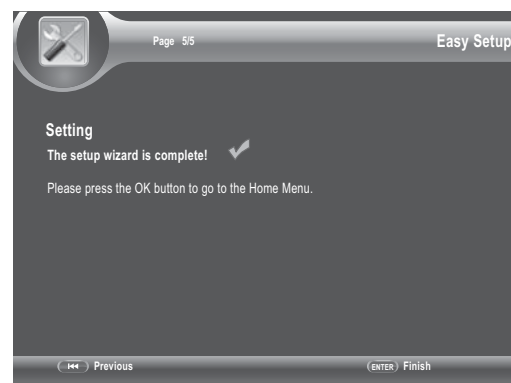
3 Press **▲▼** then **OK** to select the resolution.



4 Press **▲▼** then **OK** to select the aspect ratio.



5 Press **OK** to complete setup.



Chapter 3

Playback

This chapter describes the main operations of your BD player, such as:

- Playing a Disc
- Playing USB drive content
- Using BD-Live™
- Other Playback Functions

The procedures described are remote control based. Similar buttons can also be pressed on the front panel of your BD player.

Playing a Disc



- 1 Press to open the disc tray.



- 2 Place the disc on the disc tray with the playback side facing down.

- 3 Press to close the disc tray.

The BD player will determine the type of disc inserted. It may take a short while to load the disc. The disc type is displayed on the TV screen.

- 4 Some discs start playing automatically, and others do not. In this case, press to start playback.



Playback Controls

Some discs start playing automatically after the BD player loads the disc. If not, use the remote control to start playback.



- 1 Press **▶** to start playback.
 - To pause, press **⏸**.
 - To stop playback, press **■**.
 - To resume playback, press **▶** again.
- 2 When playback is finished, press **⏏** to open the disc tray.
- 3 Remove the disc, then press **⏏** to close the disc tray.
- 4 Press **⏻** to turn off the BD player.

» Resuming playback

- Some discs do not support resume playback function.
- When **■** is pressed, the point where it stopped is saved in the BD player's memory. When **▶** is pressed, playback resumes from the point where it stopped. Unless due to the following conditions:
 - When the disc tray is opened.
 - When the BD player's power is turned off.
- To cancel resume playback, press **■** twice.

WARNING

Do not leave the disc inside the BD player.

Forward or Reverse Playback



- 1 During playback, press **⏮** or **⏭** to reverse or forward playback.



- 2 Press the button repeatedly to switch scanning speed (2x, 4x, 8x, 16x, 32x, 64x, 128x).

Note:

You can also reverse or forward scan by holding the button down. Normal playback resumes when the button is released.

- 3 To resume to normal playback, press **▶**.

Some discs automatically resumes normal playback when switching to a new chapter.

Notes:

- When scanning BD, DVD, and VCD discs, no sound output is produced.
- Sound is output during CD disc scanning.

Skipping Content



- 1 Press **⏮** to skip to the beginning of the next chapter/title/track.



- 2 Press **⏪** to skip to the beginning of the current chapter/title/track.
- 3 Press **⏪** twice to skip to the beginning of the previous chapter/title/track.

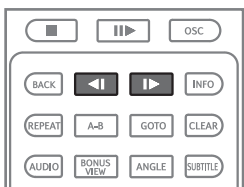
Note:

Some discs may not support this function.

Slow Rewind or Slow Forward Playback



- 1 During playback, press **⏮** or **⏭** to rewind or forward playback in slow motion.



- 2 Press the button repeatedly to switch slow motion speed (1/16, 1/8, 1/4, 1/2).
- 3 Press **⏭** to resume playback at normal speed.

Note:

Some discs may not support this function.

Step Rewind or Step Forward



- 1 Press **⏸** to pause playback.



- 2 Press **⏮** or **⏭** to rewind or forward the playback one step or frame at a time.



- 3 Press **⏭** to resume playback at normal speed.

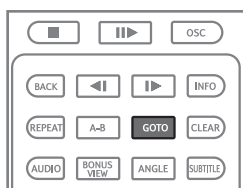
Note:

Some discs may not support this function.

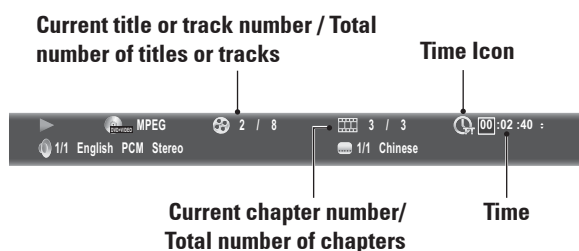
Playing Specific Titles, Chapters, or Tracks



- 1 Press **GOTO** to jump to a specific title/chapter/track/time.



The Info bar appears on the TV screen.



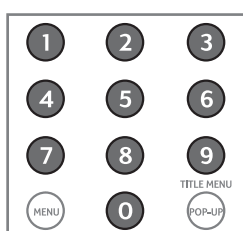
- 2 To select title or chapter/track, press **◀▶** then **OK**.

To select time, press **▲▼**. The time icon changes as follows:

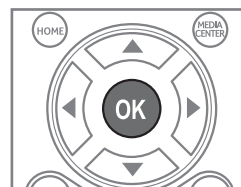
- Chapter time is selected.
- Title time is selected.
- Track time is selected.
- Disc time is selected.

To select type of time, press **OK**. To move between time field, press **◀▶**.

- 3 Press **▲▼** or the number buttons of the title/chapter/track/time you wish to jump to.



- 4 Press **OK**.



- 5 Press **INFO** to close the Info bar.

Notes:

- Press **CLEAR** to delete the numbers you have entered.
- Displayed items vary depending on the inserted disc.
- Some discs may not support this function.

Playing a Specific Section Repeatedly (A-B)



- 1 During playback, press **A-B** to select the starting point (A).



- 2 Press **A-B** again to select the end point (B).

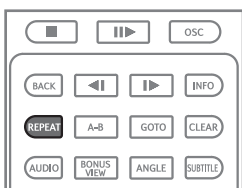
- 3 Press **A-B** again to cancel A-B Repeat.

Playing Repeatedly



Use the repeat function to play the current title, chapter or track repeatedly.

- 1 During playback, press **REPEAT** repeatedly to select repeat mode option: **REPEAT CHAPTER/TRACK** → **REPEAT ALL** → **REPEAT OFF**.



- 2 Press **REPEAT** repeatedly again to select **REPEAT OFF**.

Note:

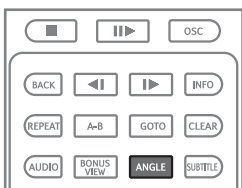
Repeat function is cancelled when you press **■**.

Switching Camera Angles



When you insert a disc that is recorded with different camera angles, use this function to switch the angle view.

During playback, press **ANGLE** repeatedly to select angle options.



Note:

Some discs may not support this function.

Switching Subtitles



During playback, press **SUBTITLE** repeatedly to select subtitle options.



Note:

Some discs may not support this function.

Switching Audio Streams



Some discs are recorded with multiple audio streams. Use this function to switch audio streams during playback.

During playback, press **AUDIO**.



Note:

Some discs may not support this function.

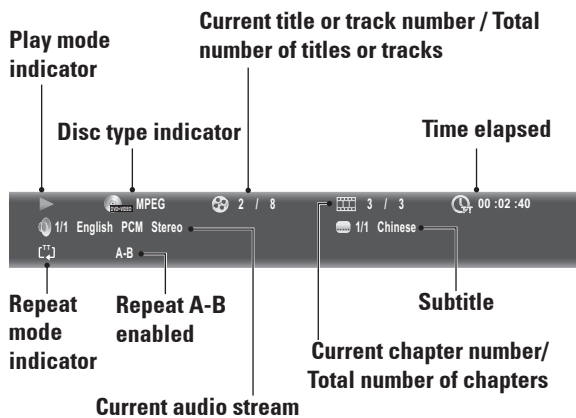
Displaying the Disc Information



1 During playback, press **INFO**.



2 The disc information is displayed on the upper left corner of the screen.



3 Press **INFO** again to close disc information.

Note:

Displayed items vary depending on the inserted disc.

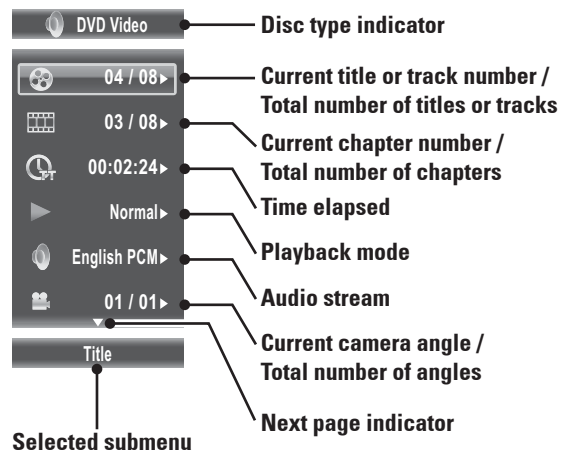
Using On-Screen Controls (OSC)



1 During playback, press **OSC**.



2 The OSC menu is displayed on the left of the screen.

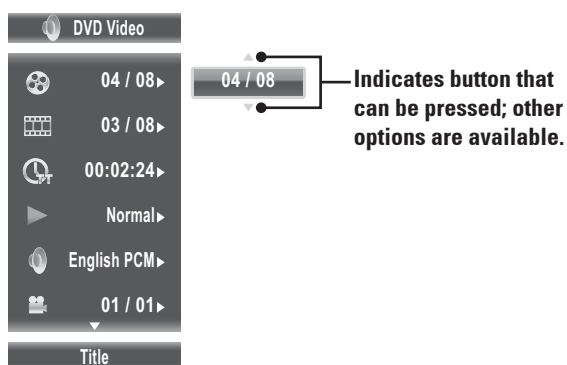


3 Press **▲▼** to highlight submenu. The following submenu may be available:

- Title/Track
- Chapter
- Time
- Playback mode - Select this option to choose normal, shuffle, or random play mode options. During shuffle mode, each chapter/title will be played only once. During random mode, titles/chapters are randomly cued, repetition of titles/chapters may also occur. Available options are: Random ALL, Random TT, Random CH, Shuffle ALL, Shuffle TT, Shuffle CH, and Normal.

- Audio stream
- Angle
- Subtitle
- Bitrate
- Still On/Off - Some DVD discs supports freezing of video pictures as a still picture to provide better image view. Select this option to enable or disable the Still function. Availability of the Still submenu depends on the inserted disc.
- Instant Search - Forwards playback for 10 seconds.
- Instant Replay - Rewinds playback from 10 seconds ago.

4 Press ► to enter submenu. The current option is displayed.



5 Press ▲▼ to select other options.

6 Press **OK** or ◀ to apply selected option.

7 Press **OSC** to close OSC menu.

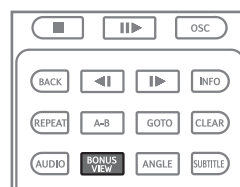
BONUSVIEW™



Your BD player supports BONUSVIEW™. BONUSVIEW™ allows you to enjoy more functions such as picture-in-picture, secondary audio, and virtual packages, among others with a BD disc that supports BONUSVIEW™.

1 Insert the BD disc in the disc tray.

2 After the BD disc loads, press **BONUSVIEW** to play secondary video.



Notes:

- Some BD discs do not support BONUSVIEW features. The availability of the BONUSVIEW function of your BD player, depends on the inserted BD disc.
- When playing secondary video, some playback functions may not be available. Functions like slow motion or step forward works only during primary video playback.

BD-Live™



Some BD discs contain additional features that are made available to players that are connected to the Internet. These additional features may include things like:

- The ability to download new movie trailers
- Additional commentaries by actors or directors
- Multiple people game and chat

You can access these features on your BD player using BD-Live™.

» Requirements

You need the following:

- Internet access
- Ethernet RJ-45 cable
- At least 1GB USB memory drive (FAT32 formatted)
- BD disc that supports BD-Live™ features

Setting Up the Player for BD-Live™

In order to access BD-Live™, do the following steps:

1 Connect your BD player to the Internet connection.

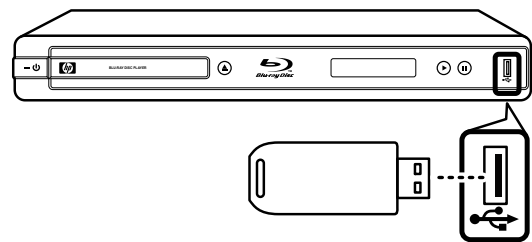
- Connect one end of the Ethernet RJ-45 cable to the LAN port of your BD player and the other end to a router or modem. See '**Connecting to the Internet**' (p. 22).

2 Allow BD-Live access in the BD player's home menu.

- Press **HOME** on the remote control to access the home menu.
- Go to **General Setting > Network**. Set **BD-Live Connection** to '**Permitted**'.

See '**Network**' (p. 47) for details.

3 Insert the USB drive with at least 100MB free space in the USB port of your BD player.



When a USB drive is inserted, the BD player automatically assigns it as the BD storage.

Note:

If there is not at least 100MB of free space on the USB drive, clear up some space.

Using BD-Live™

When you insert a BD disc that supports BD-Live, access BD-Live in its Special Features menu.

You can download contents to your USB drive. Downloaded contents are stored under the 'My Downloads' folder.

WARNING

- Do not remove the USB drive while downloading contents or when a BD disc is still in the disc tray. The USB drive may be damaged and become unusable with BD-Live.

Notes:

- BD-Live™ may take several minutes to load.
- Depending on the BD disc, BD-Live™ function may not be accessible.
- Internet connection and speed affect access and download time.

Chapter 4

Using Media Center

Media Center allows you to browse and play media files such as videos, photos, and music files saved in a data disc or a USB drive.

Setting Up Data Disc and USB Drive



Many audio, video, and photo files that can be viewed on a personal computer can also be played back on the BD player. This is accomplished by first putting the audio, video, or photo files onto a data disc or a USB drive.

Setting Up Data Disc For Playback

Use a computer to set up a data disc. A data disc is a disc where files have been copied to or “burned” using a computer.

Insert the data disc into a computer and copy the desired files onto the disc. You can burn files onto any of the following discs:


- CD / -DA / -R / -RW
- VCD
- SVCD
- DVD+R / +RW / Dual Layer
- DVD-R / -RW / Dual Layer
- BD-R
- BD-RE
- BD-ROM

Setting Up the USB Drive For Playback

» USB Drive Requirements




- USB drive must be formatted as "FAT".

Note:

- Use only a USB drive or sometimes called a thumb drive .
- Never use an MP3 player or an external hard disk drive.



Insert a USB drive into a computer and copy the desired files onto the USB drive.

Playing Files from a Data Disc

- 1 If turned off, press  to turn on the BD player.
 - 2 Press  to open the disc tray.
 - 3 Insert the data disc into the disc tray.
 - 4 Press  to close the disc tray.
- 3 The BD player determines whether files on the data disc contain music, videos, or photos.

If the data disc contains supported files, the Media Browser screen is displayed on screen. See '**Media Center Menu**' (p.36) for details.

Playing Files From a USB Drive

- 1 If turned on, press  to turn off the BD player.
- 2 Insert the USB drive into the USB port of your BD player.
- 3 Press  to turn on the BD player.
- 4 Press **Media Center** to display the Media Center menu. See '**Media Center Menu**' (p.36) for details.

WARNING

- Do not insert or remove the USB drive when the BD player is turned on. Doing so may corrupt the data on the USB drive. Turn off power first before inserting or removing the USB drive.

Note:

Only the files with the following extensions are supported by the BD player:

- **Video files:** *.WMV, *.AVI, *.MP4, *.M4V, *.MKV
- **Music files:** *.WMA, *.AAC
- **Picture files:** *.JPG, *.JPEG, *.PNG, *.GIF

Media Center Menu

1 Press **MEDIA CENTER** to display the Media Center menu.

The items on the Media Center menu vary depending on the type of disc inserted, or the type of files that is contained on the disc or the USB drive.



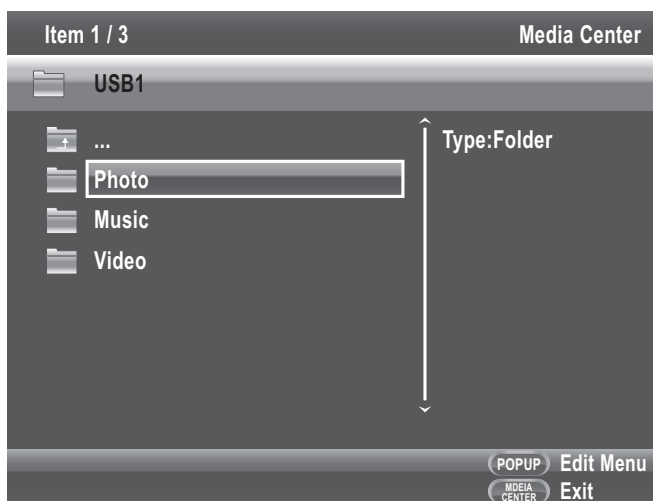
This icon appears when supported video files are saved on an inserted data disc or USB drive.

This icon appears when a disc is inserted in the disc tray. In this case, a DVD disc is inserted.



2 Press **▲▼**, then **OK** to select the source device or folder.

3 The Media Browser screen is displayed.



4 Press **▲▼**, then **OK** to select the type of file to browse.

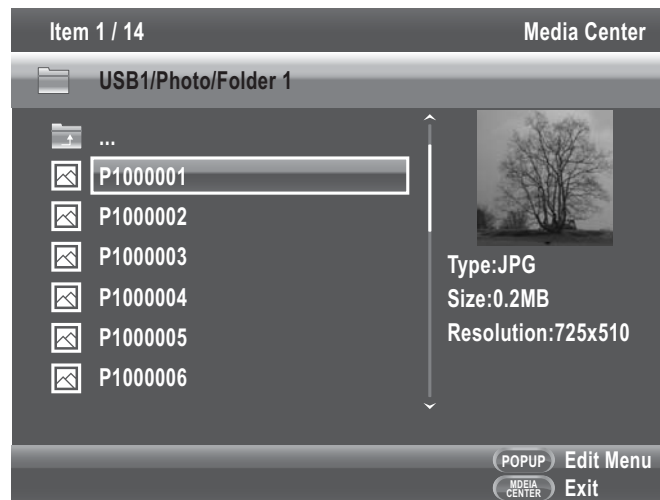
5 To return to the previous screen, press **◀**.

Note:

Even if the inserted data disc or USB drive contains a mix of music, video, and photo files, you can only browse and playback one type of file at a time. For example, if you enter the Music folder, only music files can be browsed, added to playlist and played back. To browse photo files, go back to the Media Browser screen and select **Photo**.

Viewing Photos

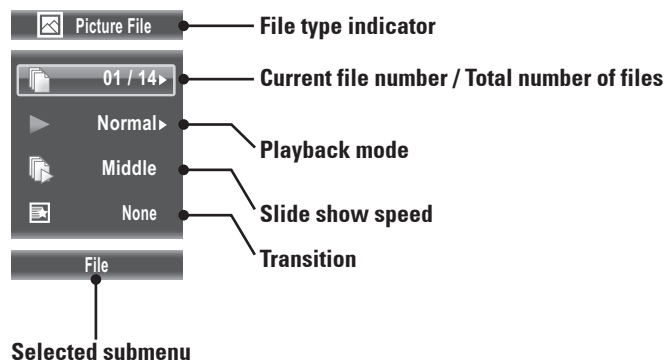
- 1 From the Media Browser menu, press ▲▼ to highlight **Photo**.
- 2 Press **OK**. The File Selection screen is displayed.
- 3 Press ▲▼ to choose a subfolder or file.



- 4 The thumbnail and information of the highlighted photo file is displayed on the right panel of the screen.
- 5 To view slide show of photos in the folder, press **OK**.

Using Photo On-Screen Control

- 1 During slide show, press **OSC**. The Photo on-screen control (OSC) menu is displayed on the left side of the screen.



- 2 Press ▲▼ to highlight submenu. The following submenu may be available:
 - File - Press ► to enter submenu, then press ▲▼ and **OK** to select an option.
 - Playback mode - Press ► to enter submenu, then press ▲▼ and **OK** to select an option.
 - Slide show speed - Press **OK** repeatedly to select speed: Slow, Middle, Fast.
 - Transition - Press **OK** repeatedly to select transition: None, Wipe left/right, Wipe up/down, Box in/out, Bleeding, Dissolve, Interlace H/V, Split in H/V, Split out H/V.
- 3 Press **OSC** to close OSC menu.

Slide Show Functions

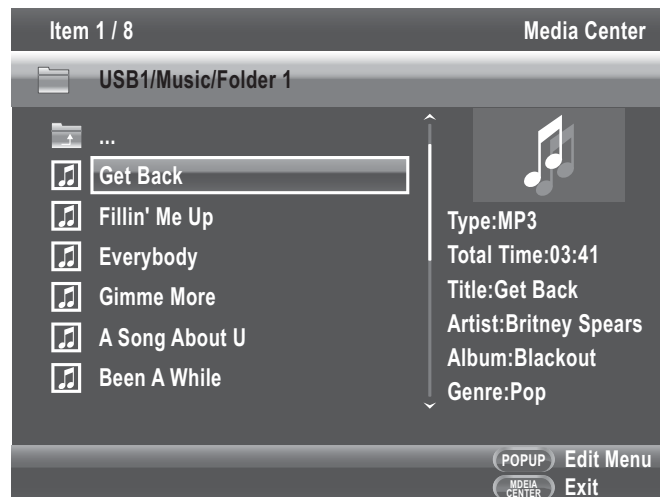
During slide show, use the following buttons to perform slide show functions:

- To rotate an image, press ▲▼◀▶. Slide show is paused while rotating image.
- To continue slide show after pausing, press ▶.
- To stop slide show, press ■.
- To adjust slide show speed (Slow, Middle, Fast), press ◀◀ ▶▶.
- To view previous/next image, press ◀◀ ▶▶.
- To set repeat mode (Repeat, Repeat All, Off), press **REPEAT** repeatedly.
- To zoom in/out an image, press **ZOOM** repeatedly.
- To view thumbnails, press **DIGEST**. To return to slide show, press **DIGEST** again.



Playing Music

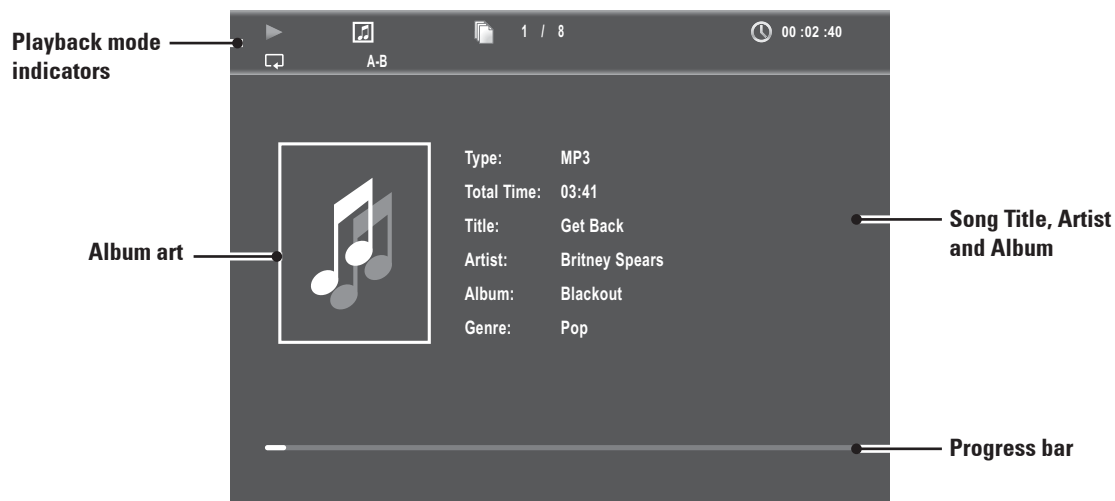
- 1 From the Media Browser menu, press ▲▼ to highlight **Music**.
- 2 Press **OK**. The File Selection screen is displayed.
- 3 Press ▲▼ to choose a subfolder or file.



- 4 The information of the highlighted music file is displayed on the right panel of the screen.
- 5 To play the music files in the folder, press **OK**.

Music Playback Status Screen

Once music starts playing, the Music Playback Status screen appears.



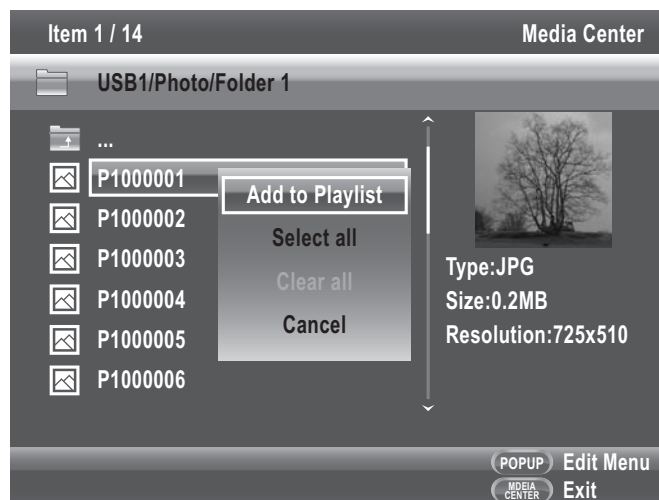
- Press **INFO** to view or hide the Music Playback Status screen.
- During music playback, you can continue to browse for other music files or view photos. Press **MEDIA CENTER**.
- Press **OSC** to display music on-screen control menu. See 'Using On-Screen Controls (OSC)' (p. 30) for details.

Playing Videos

- 1 From the Media Browser screen, press **▲▼** to highlight **Video**.
- 2 Press **OK**. The File Selection screen is displayed.
- 3 Press **▲▼** to choose a subfolder or file.
- 4 Press **▶** to start playing the video file.
- 5 To stop playback, press **■**.

Creating a Playlist

- 1 From the File Selection screen, press ▲▼ to highlight the file you want.
- 2 Press ► to select the file. A check mark before the file name is displayed.
- 3 Press **MENU**. A pop-up menu is displayed.



- 4 To select all files, select **Select All**, then press **OK**. All files will be checked.
- 5 To add selected files to playlist, press **MENU**.
- 6 Select **Add to Playlist**, then press **OK**.

Playing Files from the Playlist

- 1 From the Media Center menu, press ▲▼ to highlight **Playlist**.
- 2 Press **OK**. The File Selection screen is displayed.
- 3 Press ▲▼ to select the type of playlist file to browse.
- 4 Press **OK** to play playlist.

» To remove files from the playlist

- 1 Press ▲▼ to highlight the file to remove.
- 2 Press **MENU** to display the pop-up menu.
- 3 Select **Remove from Playlist**, then press **OK** to remove the highlighted file.
- 4 To select all files, select **Select All** from the pop-up menu. All files will be checked.
- 5 To remove selected files from the playlist, press **MENU**.
- 6 Select **Remove from Playlist**, then press **OK**.

Chapter 5

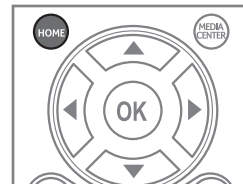
Settings and Further Adjustments

In order to configure the BD player for proper audio and video output, configure the required settings in the Home menu.

This chapter explains how to configure your BD player.

Using the Home Menu

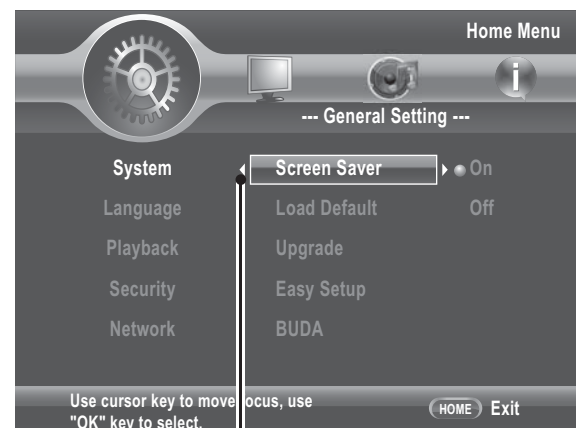
- 1 Press **HOME** to display the Home Menu.



- 2 Press **▲▼** to move up and down the menu selection.



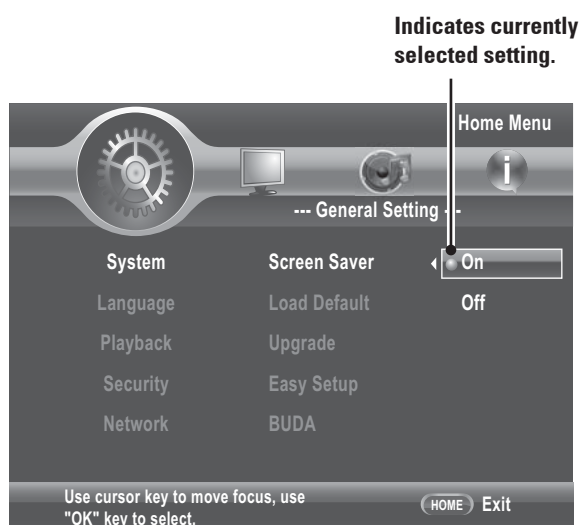
- 3 Press **OK** or **▶** to enter menu.



Arrows indicate buttons that can be pressed.

- 4 Press **▲▼** to move up and down the submenu.

- 5 Press **OK** or **▶** to access the next level submenu.



- 6 Press **▲▼** to select desired setting then press **OK** to confirm.
- 7 Press **◀** to return to the previous screen or menu.
- 8 Press **HOME** again to exit Home menu.

General Settings

System



Screen Saver

Set to 'On' to activate the screen saver capability of the BD player. This function causes the TV to display a moving logo after a certain period of time without pressing any buttons on the front panel or the remote control when a setup menu or disc title menu is displayed on the screen.

Disc Auto Upgrade

- Set to 'On' to automatically upgrade a disc that contains an upgrade file package as soon as it loads.
- Set to 'Off' to disable auto upgrade.

Load Default

Use this option to reset the BD player to its default factory settings.

Upgrade

Use this option to select the system upgrade method. Available options are via:

- Disc
- USB Storage

Note:

Ensure that Disc Auto Playback is set to On when using upgrade via disc.

Easy Setup

Use this option to activate the initial setup wizard. See '**Easy Setup Wizard**' (p.24) for details.

BUDA

Use this option to view BUDA information and set BUDA mode.

Language



The Language menu allows you to configure the language that is displayed for the following:

OSD

Set the on-screen display (OSD) language. Available options are English, German, French, Italian, Spanish, Dutch, Portuguese, Traditional Chinese, Russian, Turkish, and Japanese.

Menu

Set the menu language. Available options are English, French, Chinese, Spanish, German, Italian, Dutch, Portuguese, Danish, Swedish, Finnish, Norwegian, Russian, Korean, and Japanese.

Audio

Set the audio language. Available options are English, French, Chinese, Spanish, German, Italian, Dutch, Portuguese, Danish, Swedish, Finnish, Norwegian, Russian, Korean, and Japanese.

Subtitle

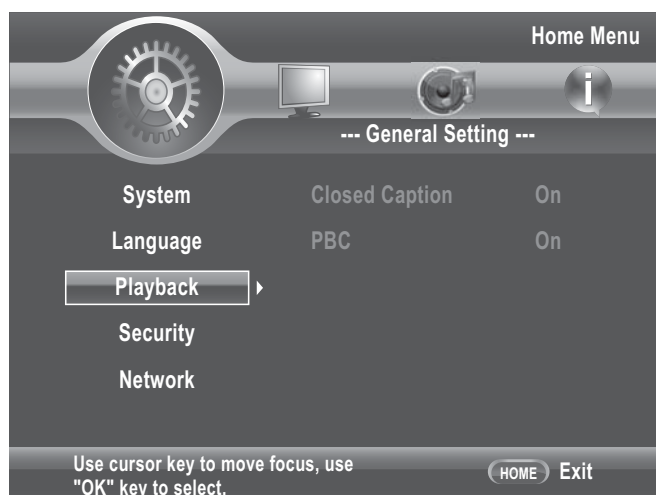
Set the subtitle language. Available options are English, French, Chinese, Spanish, German, Italian, Dutch, Portuguese, Danish, Swedish, Finnish, Norwegian, Russian, Korean, and Japanese.

To disable subtitle, select 'Off'.

Notes:

- Not all the supported languages of the BD player are also available on most discs.
- Some discs may not allow the audio language to be set on the settings menu of the BD player. In this case, select the audio language from the menu of the disc.

Playback



Closed Caption

Use this option to enable or disable closed caption function.

PBC

Use this option to display or hide the playback control (PBC) menu.

Security



The Security menu allows you to control the playback of inappropriate discs.

After parental control is set and a disc with a higher rating level than the one set is inserted into the disc tray, you will be prompted to enter the password first before playing the disc.

Change Password

Set the 4-digit security password.

- 1 Press the number buttons to enter the current password.
- 2 Press **OK**.
- 3 Enter the new password, then press **OK**.
- 4 Re-enter the new password, then press **OK**.

Once a password has been saved, it must be entered first before you can change any item in the security menu.

Note:

The default initial password is **0000**.

Parental Control

Use this option to restrict playback of discs encoded with a rating level equal to or higher than the level you set. Available settings are:

- Off
- KID SAFE
- G
- PG
- PG-13
- PGR
- R
- NC-17
- ADULT

Note:

You will be prompted to enter the password before being allowed to change this setting.

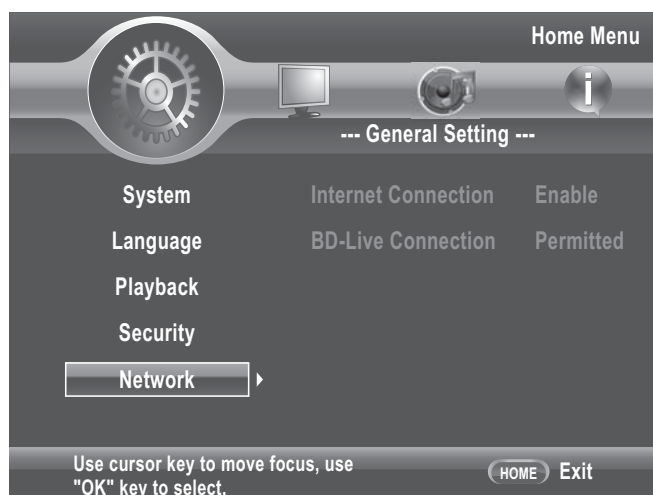
Country Code

Set the country where you are in.

Note:

You will be prompted to enter the password before being allowed to change this setting.

Network



Internet Connection

Use this option to enable or disable internet connection.

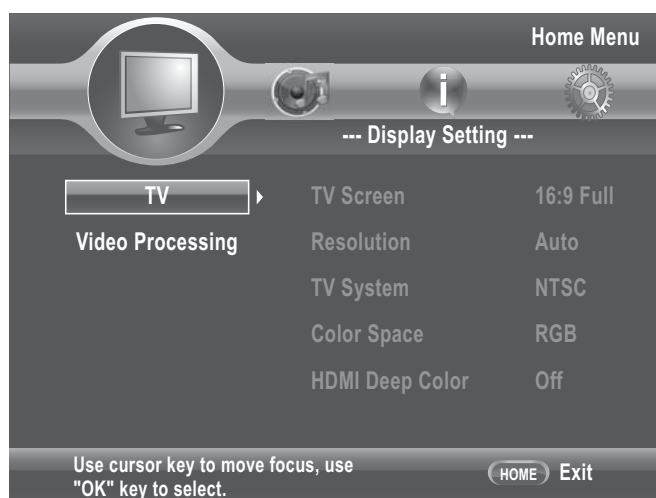
BD-Live Connection

Use this option to control which websites the BD player is allowed to access additional content when connected to BD-Live Internet. Available settings are:

- **Permitted:** Allow the inserted BD disc to access content from all BD-Live Internet sites whose Internet address is encoded onto the disc. There is no danger of malicious code download from valid commercial BD discs, but choosing this option and downloading BD-Live content via illegally authored BD discs, or discs obtained from questionable sources, could result in malicious code being downloaded onto the BD player.
- **Partial Permitted:** Only allow the inserted BD disc to download content from a BD-Live website which has a valid online certificate. This will reduce the chances of downloading malicious content onto the BD player.
- **Prohibited:** Blocks inserted BD disc from accessing BD-Live content over the Internet.

Display Settings

TV



TV Screen

Select this option to set aspect ratio of your TV. Available settings are:

- **16:9 Full:** Select when connected to a 16:9 wide TV.
- **16:9 Normal:** Select when connected to a 16:9 TV.
- **4:3 Pan&Scan:** Displays when a standard 4:3 TV is connected. Pictures are cropped to fill the TV screen with both sides cut off.
- **4:3 Letterbox:** Select when a 4:3 standard TV is connected. Displays pictures with black bars on top and below the picture.

Resolution

Select the video resolution according to the maximum resolution of your TV. Check your TV's user manual. Available settings are:

- Auto
- 480I/576I
- 480P/576P
- 720P
- 1080I
- 1080P

Notes:

- Setting the BD player for an output resolution that is not supported by your TV will result in a blank or unreadable TV screen.
- To play a BD or DVD disc when connected to an HDMI TV, the TV **MUST** support the HDCP copyright protection system.

TV System

Select this option to set the TV system in your area. Available settings are:

- NTSC
- PAL
- Multi

Note:

TV Type must be set appropriately. Choosing the wrong type may result in a black screen.

Color Space

Select the color space. Available settings are:

- RGB
- YCbCr
- YCbCr422
- Full RGB

HDMI Deep Color

Select this option to set HDMI deep color.
Available settings are:

- 30 bits
- 36 bits
- Off

HDMI 1080P 24Hz

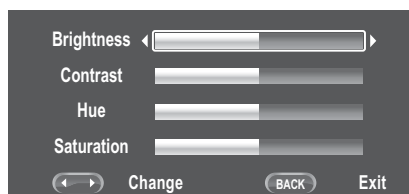
Set to 'On' if connected to a 1920 x 1080/24P
HDMI TV.

Video Processing

The Video Process menu allows you to adjust basic display settings such as brightness, contrast, hue, saturation, and sharpness.

Video Adjust

Select this option to adjust the video brightness, contrast, hue, and saturation.



- 1 Press ▲▼ to move up and down the selection.
- 2 Press ◀▶ to adjust the selected setting.
- 3 Press **BACK (Return)** to exit the screen.

Sharpness

Select the sharpness level of the video.
Available settings are:

- High
- Medium
- Low

Audio Setting

The Audio Setting menu allows you to configure the proper audio settings according to the type of audio system you use.



Audio Output

Spdif

SPDIF (Sony Philips Digital InterFace) is a digital audio format which carries digital audio signals between devices.

Select this option to set the SPDIF audio output format if your BD player is connected to an amplifier or receiver which supports Dolby Digital or DTS surround sound using a digital coaxial cable. Available settings are:

- **Bitstream:** Outputs the original bitstream audio signal without processing.
- **PCM:** Audio output is converted to Linear PCM.
- **Reencode:** Select this option if the BD player is connected to a decoder.
- **Off**

Note:

To achieve the best audio quality, you must also set up the menu on the disc to set the highest quality audio track supported by the receiver or amplifier.

HDMI

Select this option to set the audio output format if your BD player is connected to an amplifier or receiver which supports Dolby Digital or DTS surround sound using an HDMI cable. Available settings are:

- **Bitstream:** Outputs the original bitstream audio signal without processing.
- **PCM:** Audio output is converted to linear PCM.
- **Reencode:** Select this option if the BD player is connected to a decoder.
- **Off**

Down_samp

Set the PCM capabilities of the connected surround receiver or amplifier. This setting is applicable when the BD player is connected to an amplifier or receiver and has no effect when connected via HDMI. Check the PCM sampling rate of your surround receiver or amplifier to set the appropriate PCM sampling rate:

- **48K:** This is the default setting. It is best to retain this setting in the following conditions:

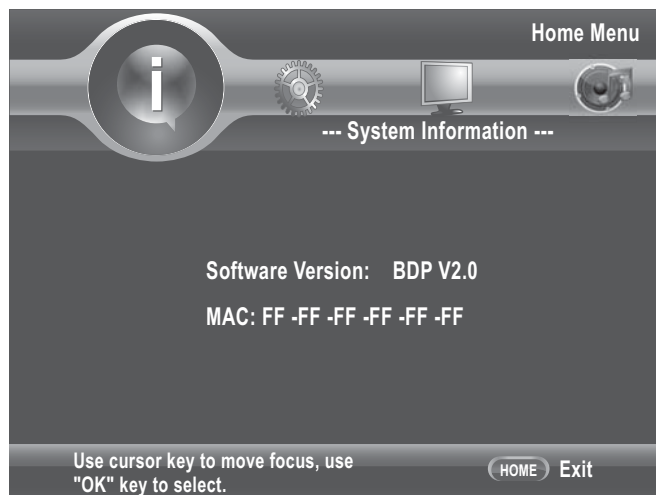
- If the BD player is not connected to a surround receiver or amplifier.
- If the BD player is connected to a surround receiver or amplifier via HDMI output.
- If you are unsure of the surround receiver or the amplifier's PCM sampling rate.
- **96K:** Select this option if the connected amplifier or receiver is not capable of handling 192 kHz signals.
- **192K:** Select this option if the connected amplifier or receiver is capable of handling 192 kHz signals.

Note:

Setting an incorrect PCM sampling rate may result in unpredictable audio playback.

System Information

The System Information menu displays the software version and the MAC address of your BD player.



Chapter 6

Troubleshooting

Use this chapter to find solutions to some questions that may arise when using your BD player.

» **No power.**

- Check if the power cord is connected securely.
- The POWER button is not pressed.

» **Disc tray opens automatically.**

- The disc is scratched.
- The disc is dirty.
- The disc is not properly fit on the disc tray.

» **Disc does not play / The front panel display shows "NO DISC".**

- The disc is turned over. Re-insert the disc with the printed side facing up.
- The inserted disc is not supported.
- The region code of the disc does not match the BD player.

» **No picture is displayed.**

- The connection cords are not properly connected.
- The connection cords are damaged. Replace with new ones.
- Check the settings in the Display Settings menu.
- Select the appropriate video input source of your TV.
- The video output from the BD player goes through a VCR before it gets to your TV. Connect the BD player directly to your TV.

» **The picture is not displayed properly.**

- Check the settings in the Display Settings menu.
- Check if the video input signal source of your TV is set appropriately.

» **There is no sound.**

- The connection cords are not properly connected.
- The connection cords are damaged. Replace with new ones.
- The audio setting is not set appropriately.
- Slow motion / step mode is on.
- The playback is paused.
- If connected via optical or coaxial digital cable, check if the settings in the Audio Settings menu is set appropriately.

» **The music file does not play**

- The data disc is not recorded in MP3 format that conforms to UDF (Universal Disc Format)
- The audio file does not have the extension *.mp3.

» **The photo file cannot be played.**

- The data disc is dirty.
- The photo files does not have the extension *.jpg / *.jpeg / *.png / *.gif.

» **The disc does not start playback from the beginning.**

- Random mode is on.
- Repeat mode is on.
- Last memory mode is on.

» **The BD player does not start playing the disc automatically.**

- Disc Auto Playback is set to 'Off'.

» **Some function, such as Search, Slow, Step, Repeat, Random, do not work.**

- Some discs do not support these functions. Refer to the disc's manual.


» **The remote control does not work.**

- The remote control is not pointed at the remote sensor on the BD player.
- The remote control batteries are depleted. Change with new batteries.
- The remote control is too far from the BD player.

» **The angles cannot be changed.**

- The inserted disc is recorded with single angle only.

» **The disc tray does not open.**

- Turn off and turn on the BD player again. Press the .
- Contact your dealer.

» **BD-Live feature does not work.**

- Check if the Ethernet RJ-45 cable is properly connected.
- Internet connection is not established.
- The USB drive is not connected.
- The connected USB drive is not FAT formatted.
- The connected USB drive is damaged.
- There is no BD disc inserted.
- The inserted disc does not support BD-Live features.

Chapter 7

Additional Information

This chapter covers the following topics:

- How to upgrade your BD player
- Supported video resolution
- Supported audio output format
- Language code table
- Region code table
- Player specifications

Upgrading Your Player

The BD player's firmware is updated regularly. Updates are available from the manufacturer's website.

To upgrade firmware using a USB drive

- 1 From your computer, connect to the Internet and visit the manufacturer's website.
- 2 Insert the USB drive into the USB port on your computer.
- 3 Copy the firmware upgrade file (*.iso) to the root directory of the USB drive.
- 4 Remove any inserted disc or USB drive from the BD player. And turn off the BD player.
- 5 Insert the USB drive into the USB port on the BD player.
- 6 Turn on the BD player.
- 7 Press **HOME** on the remote control.
- 8 Press **▲▼◀▶** to select **General Setting > System > Upgrade > USB Storage**, then press **OK**. The firmware begins upgrade.
- 9 Once completed, a message will appear on screen.

» **WARNING**

DO NOT TURN OFF THE POWER while upgrading is in progress!

To upgrade firmware using a data disc

- 1 From your computer, connect to the Internet and visit the manufacturer's website.
- 2 Download the firmware upgrade file (*.iso) to your computer.
- 3 Use a commercial software, such as Nero™, to convert *.iso file to a disc image.
- 4 Burn the converted file onto a disc.
- 5 Remove any inserted disc or USB drive from the BD player. And turn off the BD player.
- 6 Turn the BD player back on.
- 7 Insert the upgrade disc. The upgrade screen may take some time to appear.
- 8 Follow the on-screen instructions to start upgrade. If the disc does not automatically upload update, press **HOME** on the remote control. Press **▲▼◀▶** to select **General Setting > System > Upgrade > Disc**, then press **OK**. The firmware begins upgrade.
- 9 Once completed, a message will appear on screen.

» **WARNING**

DO NOT TURN OFF THE POWER while upgrading is in progress!

Video Output Resolutions

HDMI Video Output

Supported Resolution	HDMI Video Output Resolution
1080p Film mode	BD - 1080p24 ¹ DVD - 1080p60
1080p	1080p60
1080i	1080i
720p	720p
480p	480p
480i	480i
HDMI Auto	Depends on disc content and TV capabilities

Note

- This output resolution applies only if the TV supports the selected resolution.

¹ Applies only if TV supports 1080p24. Otherwise, the highest resolution supported by the TV is the output resolution.

Component Video Outputs

Supported Resolution	Commercial Discs	Non-Commercial Discs
1080p Film mode	480p	1080i
1080p	480p	1080i
1080i	480p	1080i
720p	480p	720p
480p	480p	480p
480i	480i	480i
HDMI Auto	N/A	N/A

Note

- Applies when video output is not connected via HDMI.
- Digital Rights Management (DRM) on commercial discs prohibits output of resolution higher than 480p on component outputs.

Composite Video Output

Composite output is always 480i (standard definition).

Language Code Table

Language	Abbr.	Code
Japanese	(ja/jpn)	1001
English	(en/eng)	0514
French	(fr/fra)	0618
German	(de/deu)	0405
Italian	(it/ita)	0920
Spanish	(es/spa)	0519
Chinese	(zh/zh)	2608
Dutch	(nl/nld)	1412
Portuguese	(pt/por)	1620
Swedish	(sv/swe)	1922
Russian	(ru/rus)	1821
Korean	(ko/kor)	1115
Greek	(el/ell)	0512
Afar	(aa/aar)	0101
Abkhazian	(ab/abk)	0102
Afrikaans	(af/af)	0106
Amharic	(am/amh)	0113
Arabic	(ar/ara)	0118
Assamese	(as/asm)	0119
Aymara	(ay/aym)	0125
Azerbaijani	(az/aze)	0126
Bashkir	(ba/bak)	0201
Belarusian	(be/bel)	0205
Bulgarian	(bg/bul)	0207
Bihari	(bh/bih)	0208
Bislama	(bi/bis)	0209
Bengali	(bn/ben)	0214
Tibetan	(bo/bod)	0215
Breton	(br/bre)	0218
Catalan	(ca/cat)	0301
Corsican	(co/cos)	0315
Czech	(cs/ces)	0319
Welsh	(cy/cym)	0325
Danish	(da/dan)	0401
Dzongkha	(dz/dzo)	0426
Esperanto	(eo/epo)	0515
Estonian	(et/est)	0520
Basque	(eu/eus)	0521
Persian	(fa/fas)	0601
Finnish	(fi/fin)	0609
Fijian	(fj/fij)	0610
Faroese	(fo/fao)	0615

Language	Abbr.	Code
Frisian	(fy/fry)	0625
Irish	(ga/gle)	0701
Scots-Gaelic	(gd/gla)	0704
Galician	(gl/glg)	0712
Guarani	(gn/grn)	0714
Gujarati	(gu/guj)	0721
Hausa	(ha/hau)	0801
Hindi	(hi/hin)	0809
Croatian	(hr/hrv)	0818
Hungarian	(hu/hun)	0821
Armenian	(hy/hye)	0825
Interlingua	(ia/ina)	0901
Interlingue	(ie/ile)	0905
Inupiaq	(ik/ipk)	0911
Indonesian	(in/ind)	0914
Icelandic	(is/isl)	0919
Hebrew	(iw/heb)	0923
Yiddish	(ji/yid)	1009
Javanese	(jw/jav)	1023
Georgian	(ka/kat)	1101
Kazakh	(kk/kaz)	1111
Kalaallisut	(kl/kal)	1112
Khmer	(km/khm)	1113
Kannada	(kn/kan)	1114
Kashmiri	(ks/kas)	1119
Kurdish	(ku/kur)	1121
Kirghiz	(ky/kir)	1125
Latin	(la/lat)	1201
Lingala	(ln/lin)	1214
Lao	(lo/lao)	1215
Lithuanian	(lt/lit)	1220
Latvian	(lv/lav)	1222
Malagasy	(mg/mlg)	1307
Maori	(mi/mri)	1309
Macedonian	(mk/mkd)	1311
Malayalam	(ml/mal)	1312
Mongolian	(mn/mon)	1314
Moldavian	(mo/mol)	1315
Marathi	(mr/mar)	1318
Malay	(ms/msa)	1319
Maltese	(mt/mlt)	1320
Burmese	(my/mya)	1325
Nauru	(na/nau)	1401
Nepali	(ne/nep)	1405
Norwegian	(no/nor)	1415
Occitan	(oc/oci)	1503
Oromo	(om/orm)	1513
Oriya	(or/ori)	1518
Panjabi	(pa/pan)	1601

Language	Abbr.	Code
Polish	(pl/pol)	1612
Pushto	(ps/pus)	1619
Quechua	(qu/que)	1721
Rhaeto-Romance	(rm/roh)	1813
Rundi	(rn/run)	1814
Romanian	(ro/ron)	1815
Kinyarwanda	(rw/kin)	1823
Sanskrit	(sa/san)	1901
Sindhi	(sd/snd)	1904
Sango	(sg/sag)	1907
Serbo-Croatian	(sh/scr)	1908
Sinhalese	(si/sin)	1909
Slovak	(sk/slk)	1911
Slovenian	(sl/slv)	1912
Samoan	(sm/smo)	1913
Shona	(sn/sna)	1914
Somali	(so/som)	1915
Albanian	(sq/sqi)	1917
Serbian	(sr/srp)	1918
Swati	(ss/ssw)	1919
Sotho, Southern	(st/sot)	1920
Sundanese	(su/sun)	1921
Swahili	(sw/swa)	1923
Tamil	(ta/tam)	2001
Telugu	(te/tel)	2005
Tajik	(tg/tgk)	2007
Thai	(th/tha)	2008
Tigrinya	(ti/tir)	2009
Turkmen	(tk/tuk)	2011
Tagalog	(tl/tgl)	2012
Tswana	(tn/tsn)	2014
Tong	(to/ton)	2015
Turkish	(tr/tur)	2018
Tsonga	(ts/tso)	2019
Tatar	(tt/tat)	2020
Twi	(tw/twi)	2023
Ukrainian	(uk/ukr)	2111
Urdu	(ur/urd)	2118
Uzbek	(uz/uzb)	2126
Vietnamese	(vi/vie)	2209
Volapük	(vo/vol)	2215
Wolof	(wo/wol)	2315
Xhosa	(xh/xho)	2408
Yoruba	(yo/yor)	2515
Zulu	(zu/zul)	2621

Region Code Table

Area	abbr.	Code
Argentina	(ar)	0118
Australia	(au)	0121
Austria	(at)	0120
Belgium	(be)	0205
Brazil	(br)	0218
Canada	(ca)	0301
Chile	(cl)	0312
China	(cn)	0314
Denmark	(dk)	0411
Finland	(fi)	0609
France	(fr)	0618
Germany	(de)	0405
Hong Kong	(hk)	0811
India	(in)	0914
Indonesia	(id)	0904
Italy	(it)	0920
Japan	(jp)	1016
Korea	(kr)	1118
Malaysia	(my)	1325
Mexico	(mx)	1324
Netherlands	(nl)	1412
New Zealand	(nz)	1426
Norway	(no)	1415
Pakistan	(pk)	1611
Philippines	(ph)	1608
Portugal	(pt)	1620
Russia	(ru)	1821
Singapore	(sg)	1907
Spain	(es)	0519
Switzerland	(ch)	0308
Sweden	(se)	1905
Taiwan	(tw)	2023
Thailand	(th)	2008
United Kingdom	(gb)	0702
USA	(us)	2119

Specifications

Model	BD-2000
Type	Blu-ray Disc Player
Product Dimension	L 435 mm x W 307.5 mm x H 58 mm
Power Consumption	< 0.5 W
Video Outputs	HDMI Composite Component
Audio Outputs	Coaxial Digital Audio Optical Digital Audio Composite Audio Component Audio HDMI
Video Disc Formats	BD-ROM (DL, SL), BD-R/RE, DVD Digital Video 8cm/12cm, DVD+RW (DL, SL), DVD+R (DL, SL), DVD-RW (DL, SL), DVD-R (DL, SL), CD Digital Video 8cm/12cm, CD-R/RW
Video Compression formats	AVI, MPEG-2, MPEG-4 AVC (H.264), SMPTE VC-1, VCD 1.1/2.0, SVCD, WMV, MKV, MP4, M4V, MPG, DAT, VOB, ASF
Video disc playback system	NTSC/PAL
Video Enhancement	Progressive Scan
Audio Compression formats	WMA, m4a, WAV, CD Digital Audio, LPCM, Dolby Digital, DTS
Multichannel decoding	Dolby Digital/Dolby Digital Plus, Dolby True HD, DTS 2.0 + Digital Out
Image Compression formats	JPEG, PNG, GIF
Blu-ray Special	Blu-ray Live 1.1/2.0

Chapter 8

Appendix

GNU General Public License

Version 2, June 1991

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Chapter 9

Glossary

» **Aspect ratio**

The ratio of a TV screen's width to its height. Standard TVs have an aspect ratio of 4:3, while high definition (HD) and widescreen TVs have an aspect ratio of 16:9.

» **AVCHD**

(Advanced Video Codec High Definition)

The AVCHD is a high definition (HD) digital video camera recorder format recording high-definition onto certain media by using highly efficient codec technologies.

» **Component video output**

This video output terminal provides clearer pictures when connected to a TV equipped with component inputs. Component video signals consist of three signals, Y, PB and PR.

» **Composite video output**

Signals mixing the luminance signal (Y) and the color signal (C) so they can be transferred on a single cord are output from this terminal.

» **Dolby Digital**

Dolby Digital is an audio format to record the sound in up to 5.1 channels with a fraction of the amount of data as compared to linear PCM audio signals.

» **Dolby Digital Plus**

Dolby Digital Plus is an audio format for high-definition media. Built on Dolby Digital, it combines the efficiency and flexibility to provide high quality multi-channel audio. With BD-ROMs, up to 7.1 channels of digital sound can be recorded.

» **Dolby TrueHD**

Dolby TrueHD is an audio format using lossless coding. With BD-ROMs, up to 8 channels can be recorded at 96 kHz/24 bits, or up to 6 channels at 192 kHz/24 bits.

» **DTS 2.0 + Digital Out**

DTS 2.0 + Digital Out denotes the dual ability to pass the DTS encoded digital bitstream to an external DTS decoder for playback as well as fold down the digital surround soundtrack for playback in a 2-channel environment through analog outputs.

» **Dynamic range**

This refers to the difference between the maximum and minimum level of the sound. The dynamic range is measured in units of decibels (dB). When the dynamic range is compressed (Audio DRC), the minimum signal level is increased and the maximum signal level decreased. This way, the volume of loud sounds such as explosions is reduced, while the sounds with a low level, such as human voices, are easier to listen to.

» **HDCP**

(High-bandwidth Digital Content Protection)

A technology for protecting copyrights that encrypts digital video signals.

» **HDMI**

(High-Definition Multimedia Interface)

A digital interface standard for next-generation TVs expanding the DVI (Digital Video Interface) terminal used for example for computer displays. It allows transfer of non-compressed digital video and audio signals (Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-HD Master Audio, DTS-HD High Resolution Audio, DTS Digital Surround, MPEG-2 AAC, linear PCM, etc.) with a single connector.

» **Linear PCM**

This is referred as the audio signals that are not compressed, frequently used for DVD-Video discs containing musicals or music concerts. This can also be indicated "48 kHz/16 bit", "96 kHz", etc.

» **MPEG**

(Moving Picture Experts Group)

The name of a family of standards used to encode video and audio signals in a digital compressed format. The video encoding standards include MPEG-1 Video, MPEG-2 Video, MPEG-4 Visual, MPEG-4 AVC, etc. The audio encoding standards include MPEG-1 Audio, MPEG-2 Audio, MPEG-2 AAC, etc.

Chapter 10

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