

# Pioneer

Operating Instructions



BONUS *VIEW*™

**HDMI**

# ELITE

Blu-ray Disc PLAYER

BDP-09FD

Thank you for buying this Pioneer product.

Please read through these operating instructions so you will know how to operate your model properly.

After you have finished reading the instructions, put them away in a safe place for future reference.

## IMPORTANT



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

### CAUTION

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**

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



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

D3-4-2-1-1\_En-A

**IMPORTANT NOTICE** – THE SERIAL NUMBER FOR THIS EQUIPMENT IS LOCATED IN THE REAR. PLEASE WRITE THIS SERIAL NUMBER ON YOUR ENCLOSED WARRANTY CARD AND KEEP IN A SECURE AREA. THIS IS FOR YOUR SECURITY.

D1-4-2-6-1\_En

**NOTE:** 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment 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 equipment and receiver.
- Connect the equipment 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.

D8-10-2\_En

### Information to User

Alterations or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

D8-10-2\_A\_En

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

D8-10-1-3\_EF

**CAUTION:** This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances such as radios and televisions, use shielded cables and connectors for connections.

D8-10-3a\_En

**CAUTION :** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

**CAUTION :** THE USE OF OPTICAL INSTRUMENTS WITH THIS PRODUCT WILL INCREASE EYE HAZARD. D6-8-2-1\_En

# 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.

## CAUTION

This product is a class 1 laser product, but this product contains a laser diode higher than Class 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product. Refer all servicing to qualified personnel. The following caution label appears on your unit. Location: inside of the unit



D3-4-2-1-8\*\_C\_En

## WARNING

To prevent a fire hazard, do not place any naked flame sources (such as a lighted candle) on the equipment.

D3-4-2-1-7a\_A\_En

## Operating Environment

Operating environment temperature and humidity: +5 °C to +35 °C (+41 °F to +95 °F); less than 85 %RH (cooling vents not blocked)

Do not install this unit in a poorly ventilated area, or in locations exposed to high humidity or direct sunlight (or strong artificial light)

D3-4-2-1-7c\_A\_En

## VENTILATION CAUTION

When installing this unit, make sure to leave space around the unit for ventilation to improve heat radiation (at least 10 cm at top, 10 cm at rear, and 10 cm at each side).

## WARNING

Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the product, and to protect it from overheating. To prevent fire hazard, the openings should never be blocked or covered with items (such as newspapers, table-cloths, curtains) or by operating the equipment on thick carpet or a bed.

D3-4-2-1-7b\_A\_En

## WARNING

This equipment is not waterproof. To prevent a fire or shock hazard, do not place any container filled with liquid near this equipment (such as a vase or flower pot) or expose it to dripping, splashing, rain or moisture.

D3-4-2-1-3\_B\_En

## WARNING

Before plugging in for the first time, read the following section carefully.


The voltage of the available power supply differs according to country or region. Be sure that the power supply voltage of the area where this unit will be used meets the required voltage (e.g., 230 V or 120 V) written on the rear panel.

D3-4-2-1-4\_A\_En

If the AC plug of this unit does not match the AC outlet you want to use, the plug must be removed and appropriate one fitted. Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel. If connected to an AC outlet, the cut-off plug can cause severe electrical shock. Make sure it is properly disposed of after removal. The equipment should be disconnected by removing the mains plug from the wall socket when left unused for a long period of time (for example, when on vacation).

D3-4-2-2-1a\_A\_En

#### CAUTION

The  STANDBY/ON switch on this unit will not completely shut off all power from the AC outlet. Since the power cord serves as the main disconnect device for the unit, you will need to unplug it from the AC outlet to shut down all power. Therefore, make sure the unit has been installed so that the power cord can be easily unplugged from the AC outlet in case of an accident. To avoid fire hazard, the power cord should also be unplugged from the AC outlet when left unused for a long period of time (for example, when on vacation).

D3-4-2-2-2a\_A\_En

**WARNING:** Handling the cord on this product or cords associated with accessories sold with the product will expose you to chemicals listed on proposition 65 known to the State of California and other governmental entities to cause cancer and birth defect or other reproductive harm.

**Wash hands after handling**

D36-P4\_A\_En

This product contains mercury. Disposal of this material may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronics Industries Alliance : [www.eiae.org](http://www.eiae.org).

K057\_En

This product is for general household purposes. Any failure due to use for other than household purposes (such as long-term use for business purposes in a restaurant or use in a car or ship) and which requires repair will be charged for even during the warranty period.

K041\_En

#### POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. If you find it damaged, contact the Pioneer service center on the back cover, or your dealer for a replacement.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.





## We Want You Listening For A Lifetime

Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

### Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion-and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

#### To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

#### Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

#### Decibel Level Example

30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.

#### THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.



S001\_En

# Contents

## 01 Before you start

What's in the box	7
Putting the batteries in the remote control	7
Types of discs/files that can be played	8
Playable discs	8
Playable files	10
Part Names and Functions	11
Remote Control	11
Front Panel	13
Front Panel Display	13
Rear Panel	14

## 02 Connecting up

Connecting using an HDMI cable	15
About HDMI	15
About KURO LINK function	16
Connecting a TV	16
Connecting an AV receiver or amplifier	17
Connecting video and audio cables	18
Connecting a TV using a component video cable and an audio cable	18
Connecting a TV using a video cable and an audio cable	18
Connecting an AV receiver or amplifier using audio cables	19
Connecting an AV receiver or amplifier using a digital audio cable	19
Network connection	20
Connecting via an Ethernet hub	20
Connecting the power cord	20

## 03 Getting Started

Making settings using the Setup Navigator menu	21
Operating the TV with the player's remote control	23
TV Preset code list	23
Using the TOOLS menu	24
Switching the video output terminal to be viewed	25
Switching the output video resolution	25

## 04 Playback

Playing discs or files	27
Forward and reverse scanning	27
Playing specific titles, chapters or tracks	28
Skipping content	28
Playing in slow motion	28
Step forward and step reverse	28
Switching the camera angles	29
Switching the subtitles	29
Switching the audio streams/channels	30
Switching the secondary video	30
Displaying the disc information	30
Using the Play Mode functions	31
Playing from a specific time (Time Search)	31
Playing a specific title, chapter or track (Search)	31
Playing a specific section within a title or track repeatedly (A-B Repeat)	32
Playing repeatedly (Repeat Play)	32
Playing in random order (Random Play)	33
About Play Mode types	34

Playing from the Home Media Gallery	35
Playing discs	35
Playing video files	35
Playing image files	36
Playing audio files	37
Playing in the desired order (HMG Playlist)	38

## 05 Adjusting audio and video

Adjusting the video	40
Adjusting the audio	41
Adjusting the Audio DRC	41
Adjusting the output level of the different speakers during BD/DVD playback (Channel Level)	41
Adjusting the audio delay (Lip Sync)	42

## 06 Advanced settings

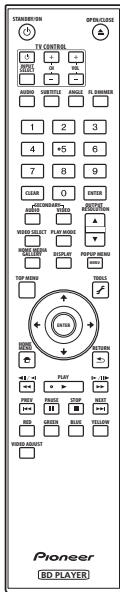
Changing the settings	43
Operating the Initial Setup screen	43
Stretching widescreen pictures vertically (Anamorphic Zoom)	52
Eliminating extraneous noise to play with high quality sound (Pure Audio)	53
Restoring all the settings to the factory default settings	53
About the audio output settings	54
Language Code Table and Country/Area Code Table	55

## 07 Additional information

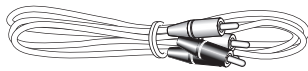
Licenses	56
Cautions on use	64
Moving the player	64
Place of installation	64
Turn the power off when not using the player	64
Condensation	64
Cleaning the player	64
Caution for when the unit is installed in a rack with a glass door	64
Cleaning the pickup lens	65
Handling discs	65
Troubleshooting	65
Playback	65
Software updating	68
KURO LINK	69
Others	69
Glossary	70
Specifications	73

## What's in the box

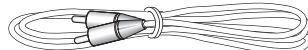
Remote control x 1



Audio cable (white/red plugs) x 1

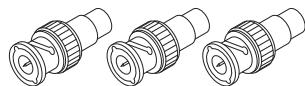


Video cable (yellow plugs) x 1

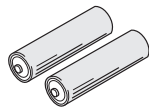


BNC-RCA adapter x 3

Use this to connect an RCA pin type video cable to the **COMPONENT VIDEO** terminal.



AA/R6 dry cell batteries x 2



LAN cable x 1

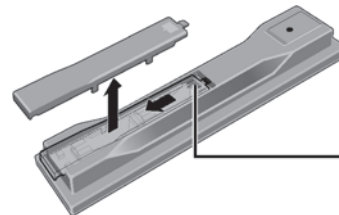
Power cord x 1

Warranty card

Operating instructions (this manual)

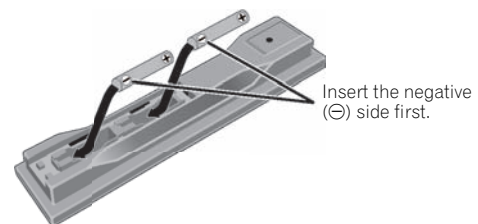
## Putting the batteries in the remote control

### 1 Open the rear cover.



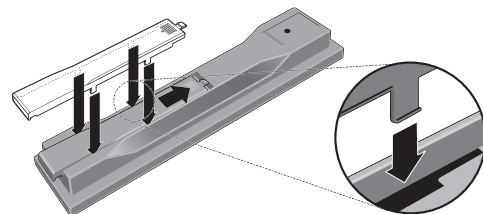
### 2 Insert the batteries (AA/R6 x 2).

Insert as indicated by the ⊕/⊖ marks into the battery compartment.



### 3 Close the rear cover.

Close securely (a click should be heard).



### ⚠ Caution

- Do not mix new and old batteries together.
- Batteries may have different voltages, even if they look similar. Do not use different kinds of batteries together.
- To prevent leakage of battery fluid, remove the batteries if you do not plan to use the remote control for a long period of time (1 month or more). If the fluid should leak, wipe it carefully off the inside of the case, then insert new batteries.
- When disposing of used batteries, please comply with governmental regulations or environmental public instruction's rules that apply in your country/area.

### ⚠ WARNING

Do not use or store batteries in direct sunlight or other excessively hot place, such as inside a car or near a heater. This can cause batteries to leak, overheat, explode or catch fire. It can also reduce the life or performance of batteries.

D3-4-2-3-3\_En

# 01 Types of discs/files that can be played

## Playable discs

Discs with the logo marks below indicated on the disc label, package or jacket can be played.

Disc type	Logo	Application format						
		BDMV <sup>1</sup>	BDAV	DVD-Video	DVD VR	CD-DA DTS-CD	DATA-DISC <sup>2</sup>	
BD	BD-ROM		✓	✓	X	X	X	X
	BD-R		✓	✓	X	X	X	X
	BD-RE		✓	✓	X	X	X	X
DVD	DVD-ROM		✓	X	✓	X	X	✓
								
	DVD-R		✓	X	✓	✓	X	✓
	DVD-R DL (Dual Layer)		✓	X	✓	✓	X	✓
	DVD-RW		✓	X	✓	✓	X	✓
	DVD+R		✓	X	✓	X	X	✓
	DVD+RW		✓	X	✓	X	X	✓
CD	CD-DA (Audio CD)		X	X	X	X	✓	X
	CD-R		X	X	X	X	✓	✓
	CD-RW		X	X	X	X	✓	✓
	CD-ROM		X	X	X	X	✓	✓

1. Including the AVCHD format.

2. Discs on which video, image or audio files are recorded

"Blu-ray Disc" and  are trademarks.

 is a trademark of DVD Format/Logo Licensing Corporation.



❖ **Discs that cannot be played**

- Non-finalized (Non-closed) BD-R discs in the BDMV format
- HD DVDs
- DVD Audio discs
- DVD-RAM discs
- Non-finalized DVD-R/-RW/+R/+RW discs in the DVD-Video format and AVCHD format
- Non-finalized Dual Layer DVD-R discs in the DVD VR format
- Non-finalized CD-R/-RW discs
- SACDs
- Video CDs
- SVCDs

This player conforms to NTSC standards. Discs for which "NTSC" is indicated on the disc label, package or jacket can be played.

 **Note**

- Some discs cannot be played, even if one of the logo marks on the previous page is indicated.
- To play 8 cm discs, set the disc in the 8 cm disc depression in the center of the disc tray. No adapter is necessary. 8 cm BD-ROMs cannot be played.

❖ **About audio formats**

The following audio formats are supported on this player:

- Dolby TrueHD
- Dolby Digital Plus
- Dolby Digital
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- DTS Digital Surround
- MPEG
- MPEG-2 AAC
- Linear PCM

To enjoy the surround sound of Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio and DTS-HD High Resolution Audio, it is recommended to connect the player to an AV receiver or amplifier compatible with these audio formats using an HDMI cable. After loading a BD containing sound in one of these audio formats, select the audio format on the menu screen.

See *About the audio output settings* on page 54 for the output conditions of the different formats.



*Manufactured under license under U.S. Patent #: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,487,535 & other U.S. and worldwide patents issued & pending. DTS is a registered trademark and the DTS logos, Symbol, DTS-HD and DTS-HD Advanced Digital Out are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.*

❖ **Playing BDs**

- BDs (BDMV) compatible with the formats below can be played.
  - Blu-ray Disc Read-Only (ROM) Format Version 2
  - Blu-ray Disc Recordable (R) Format Version 2 (finalize (close) them before playing them on this player)
  - Blu-ray Disc Rewritable (RE) Format Version 3

This player supports BD-ROM Profile 1 Version 1.1. BONUSVIEW Functions such as playback of secondary video (Picture-in-Picture) and secondary audio can be used. For details on secondary video and secondary audio playback, refer to the disc's instructions.

**BONUS VIEW™**

*"BONUSVIEW" is trademark of Blu-ray Disc Association.*

When a BD-ROM is played, additional data may be stored in the player's memory area (local storage). If the message indicating low memory (local storage) appears, erase the BDMV data (page 51).

- BDs (BD-RE) compatible with the formats below can be played.
  - Blu-ray Disc Recordable (R) Format Version 1
  - Blu-ray Disc Rewritable (RE) Format Version 2
- Dual Layer BDs can be played.
- Video, image and audio files recorded on BDs cannot be played.
- 8 cm BD-ROMs cannot be played.

❖ **Playing DVDs**

- DVD-Video can be played.
- DVD-R/-RW/+R/+RW discs recorded in the DVD-Video format can be played (finalize them before playing them on this player).
- DVD-R/-RW discs recorded in the VR format (Video Recording format) can be played.



*This label indicates playback compatibility with DVD-RW discs recorded in VR format (Video Recording format). However, for discs recorded with a record-only-once encrypted program, playback can only be achieved using a CPRM compatible device.*

- DVDs recorded in the AVCHD format can be played (finalize them before playing them on this player).



*“AVCHD” and the “AVCHD” logo are trademarks of Panasonic Corporation and Sony Corporation.*

- Video, image and audio files recorded on DVD-R/-RW/+R/+RW discs can be played. See *Playable files* below.
- Dual Layer DVDs can be played. However, non-finalized Dual Layer DVD-R discs recorded in the VR format cannot be played (finalize them before playing them on this player).
- HD DVD, DVD Audio and DVD-RAM discs cannot be played.

### ❖ About region numbers

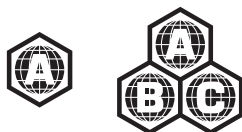
Blu-ray Disc Player and BD-ROM or DVD-Video discs are assigned region numbers according to the region in which they are sold.

This player's region numbers are:

- BD-ROM: A
- DVD-Video: 1

Discs not including these numbers cannot be played. Discs playable on this player are as shown below.

- BDs: A (including A) and ALL



- DVDs: 1 (including 1) and ALL



### ❖ Playing CDs

- Audio CDs (CD-DAs and DTS-CDs) can be played.
- Video, image and audio files recorded on CDs can be played. See *Playable files* below.
- CD-R/-RW discs that are not finalized cannot be played.
- SACD, Video CD and Super VCD discs cannot be played.
- Regarding copy protected CDs: This player is designed to conform to the specifications of the Audio CD format. This player does not support the playback or function of discs that do not conform to these specifications.

### ❖ DualDisc playback

A DualDisc is a new two-sided disc, one side of which contains DVD content — video, audio, etc. — while the other side contains non-DVD content such as digital audio material.

The DVD side of a DualDisc can be played on this player (excluding any DVD-Audio content).

The non-DVD, audio side of the disc is not compatible with this player.

It is possible that when loading or ejecting a DualDisc, the opposite side to that being played will be scratched. Scratched discs may not be playable.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

### ❖ Playing discs created on computers or BD/DVD recorders

- It may not be possible to play discs recorded using a computer due to the application settings or computer's environment settings. Record discs in a format playable on this player. For details, contact the dealer.
- It may not be possible to play discs recorded using a computer or a BD/DVD recorder, if burn quality is not good due to characteristics of the disc, scratches, dirt on the disc, dirt on the recorder's lens, etc.

### Playable files

Video, image and audio files recorded on DVDs and CDs can be played.



#### Caution

- In DVD, only the one recorded by the ISO 9660 file system can be played.
- Some files may not be playable.
- For some files, it may not be possible to use certain functions during playback.
- It may not be possible to play some files, even if they have the extension of a file playable on this player.
- Files protected by DRM (Digital Rights Management) cannot be played (not including DivX VOD files).

### ❖ Supported video file formats

#### DivX

DivX is a media technology created by DivX, Inc. DivX media files contain not only video but also advanced media features like subtitles and alternate audiotracks, etc.

Conform to the size under 720 x 480 pixels.

DivX files encoded with GMC/Qpel option cannot be played.

Only audio signals with MP3 or Dolby Digital (AC3) format are output.

Note that files other than the ones containing DivX video cannot be played, even if they have the extension “.avi”.



*Official DivX® Certified product.*

*Plays all versions of DivX® video (including DivX® 6) with standard playback of DivX® media files.*

*DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license.*

## Note

- DivX VOD files are protected by DRM. They can only be played on registered devices.
  - You may be requested by the file distributor to input the DivX VOD registration code for authorization of the player in order to play DivX VOD files. This player's DivX VOD registration code can be checked at **Initial Setup → Playback → DivX VOD → Registration Code** (page 45).
  - DivX VOD files for which the player's DivX VOD registration code is not authorized cannot be played (**Authorization Error** is displayed).
  - The number of views is restricted for some DivX VOD files. When such files are played on this player, the remaining number of views is displayed. Files for which the remaining number of views has reached 0 cannot be played (**Rental Expired** is displayed). Files for which the number of views is not restricted can be played as many times as you like (the remaining number of views is not displayed).

## ❖ Supported image file formats

### • JPEG

File format: JFIF Ver1.02/Exif Ver.2.2

Resolution: Up to 4096 x 4096 pixels

Only baseline JPEG files are supported.

## ❖ Supported audio file formats

### • Windows Media™ Audio 9 (WMA9)

Bit rate: Up to 192 kbps

Sampling frequencies: 22.05 kHz, 32 kHz, 44.1 kHz and 48 kHz

*Windows Media is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.*

*This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from Microsoft Licensing, Inc.*

### • MPEG-1 Audio Layer 3 (MP3)

Bit rate: Up to 320 kbps

Sampling frequencies: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz and 48 kHz

## ❖ Playable file extensions

### • Video files

.divx and .avi

### • Image files

.jpg and .jpeg

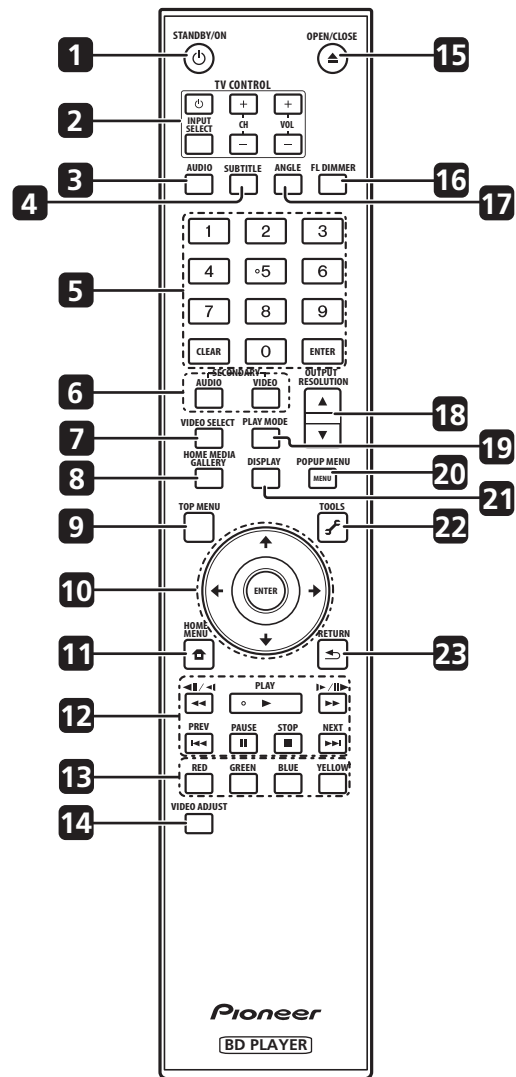
### • Audio files

.wma and .mp3

# Part Names and Functions

01

## Remote Control



### 1 STANDBY/ON

Press to turn the power on and off.

### 2 TV CONTROL

Your TV can be controlled using the player's remote control (page 23).

– Press to turn the TV's power on and off.

**INPUT SELECT** – Press to switch the TV's input.

**CH +/-** – Press to select the TV channel.

**VOL +/-** – Press to adjust the volume.

### 3 AUDIO

Press to switch the audio streams/channels (page 30).

### 4 SUBTITLE

Press to switch the subtitles (page 29).

**5 Number buttons** – Use these to select and play the title/ chapter/track you want to view or listen to and to select items from menus.

**CLEAR** – Press to clear the numeric number, etc.

**ENTER** – Press to execute the selected item or enter a setting that has been changed, etc.

**6 SECONDARY AUDIO** – When playing a BD-ROM on which secondary audio is recorded, press to switch to the secondary audio (page 30).

**SECONDARY VIDEO** – When playing a BD-ROM on which secondary video (Picture-in-Picture) is recorded, press to switch to the secondary video (page 30).

### 7 VIDEO SELECT

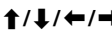
Press to switch the video output signal to be viewed between the one output from the **HDMI OUT (MAIN)** terminal, the **HDMI OUT (SUB)** terminal and an analog output terminal (**COMPONENT VIDEO, S-VIDEO** or **VIDEO** output terminals) (page 25).

### 8 HOME MEDIA GALLERY

Press to display/hide the Home Media Gallery screen (page 35).

### 9 TOP MENU


Press to display the top menu of the BD-ROM or DVD-Video.


**10**  – Use to select items, change settings and move the cursor.


**ENTER** – Press to execute the selected item or enter a setting that has been changed, etc.



### 11 HOME MENU




Press to display/hide the Home Menu.




**12**  **PLAY** – Press to start playback.

 **PAUSE** – Press to pause playback. Press again to restart playback.

 **STOP** – Press to stop playback.

 **PREV/**  **NEXT** – Press to skip to the beginning of the previous/next title/chapter/track/file (page 28).

   – Press during playback to start reverse scanning. While playback is paused, press for step reverse playback. Press and hold while playback is paused for reverse slow motion playback (pages 27 and 28).

   – Press during playback to start forward scanning. While playback is paused, press for step forward playback. Press and hold while playback is paused for forward slow motion playback (pages 27 and 28).

### 13 RED/GREEN/BLUE/YELLOW

Use these to navigate BD-ROM menus.

### 14 VIDEO ADJUST

Press to display/hide the Video Adjust menu (page 40).

### 15 OPEN/CLOSE

Press to open and close the disc tray.

### 16 FL DIMMER

Press to switch the brightness of the front panel display. The **FL OFF** indicator lights when **Off** is selected.

### 17 ANGLE

Press to switch the BD-ROM or DVD-Video camera angles (page 29).

### 18 OUTPUT RESOLUTION

Use these to switch the output video resolution from the **HDMI OUT** or **COMPONENT VIDEO** output terminals (page 25).

### 19 PLAY MODE

Press to display/hide the Play Mode screen (page 31).

### 20 POP UP MENU/MENU

Press to display the BD-ROM or DVD-Video menus.

### 21 DISPLAY

Press to display disc information (page 30).

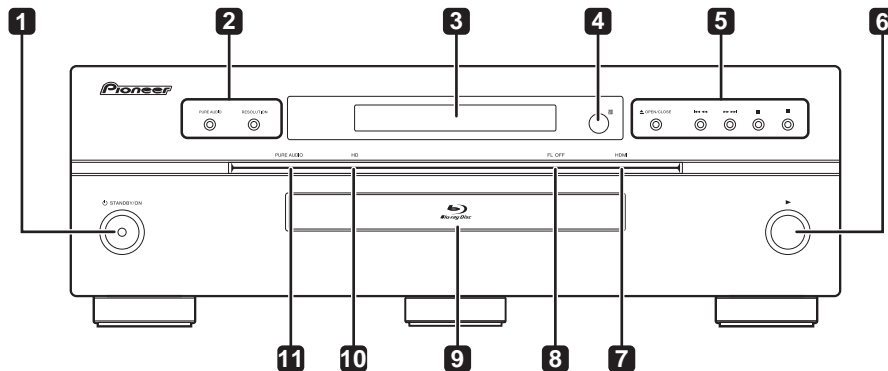
### 22 TOOLS

Press to display/hide the **TOOLS** menu (page 24).

### 23 RETURN

Press to return to the previous screen.

## Front Panel



### 1 STANDBY/ON

Press to turn the power on and off.

**2 PURE AUDIO** – High quality audio signals with any extraneous noise eliminated are output (page 53).

**RESOLUTION** – Press to switch the output video resolution from **HDMI OUT** or **COMPONENT VIDEO** output terminals (page 25).

### 3 Front panel display

#### 4 Remote control sensor

Point the remote control to this, then operate it within approximately 23 feet.

The player may have trouble capturing remote control signals if there is a fluorescent light nearby. If this happens, move the player away from the fluorescent light.

**5**  – Press to open and close the disc tray.

– Press to skip to the beginning of the previous title/chapter/track/file. Press and hold to start reverse scanning (pages 27 and 28).

– Press to skip to the beginning of the next title/chapter/track/file. Press and hold to start forward scanning (pages 27 and 28).

– Press during playback to pause. Press again to restart playback.

– Press to stop playback.

### 6

Press to start playback.

### 7 HDMI indicator

This lights when an HDMI-compatible device is connected to an **HDMI OUT (MAIN)** or **HDMI OUT (SUB)** terminal (page 15).

### 8 FL OFF indicator

This lights when **Off** is selected with **FL DIMMER**.

### 9 Disc tray

### 10 HD indicator

This lights when an HDMI cable is connected and video signals are being output with a resolution of 1080/24p, 1080/60i, 1080/60p or 720/60p. It also lights when a component video cable is connected and video signals are being output with a resolution of 1080/60i or 720/60p.

### 11 PURE AUDIO indicator

This lights when **PURE AUDIO** is set to **Mode 1** or **Mode 2** (page 53).

## Front Panel Display



### 1

Lights during playback.

### 2

Lights when playback is paused.

### 3 LAN

Lights when there is an active local area network (LAN) connection (page 20).

### 4 PQLS

Lights when the PQLS function is activated (page 16).

### 5 Character display

Displays the title/chapter/track number, elapsed time, etc.

### 6 24HZ/50HZ/60HZ

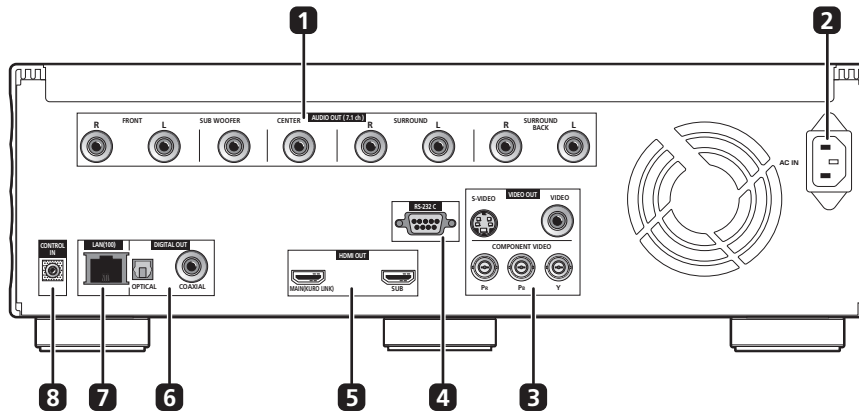
The frequency of the video frame or field being output lights.

### 7 CONTROL

Lights when the KURO LINK function is activated (page 16).

### 8 HDMI 1 2

**HDMI 1** lights when **VIDEO SELECT** is pressed and the **HDMI OUT (MAIN)** terminal is selected. **HDMI 2** lights when the **HDMI OUT (SUB)** terminal is selected (page 25).



### 1 AUDIO OUT (7.1 ch) terminals

Connect with the multi-channel (7.1- or 5.1-channel) audio input terminals on an AV receiver or amplifier, etc. (page 19).

To connect to the 2-channel audio input terminals on a TV, etc., connect to **FRONT (L/R)**.

### 2 AC IN

Connect the power cord here.

### 3 VIDEO OUT terminals

**VIDEO** – Connect with the video input terminal on a TV, AV receiver or amplifier, etc. (page 18).

**S-VIDEO** – Connect with the S-Video input terminal on a TV, AV receiver or amplifier, etc. (page 18).

**COMPONENT VIDEO** (BNC jacks) – Connect with the component video input terminals on a TV, AV receiver or amplifier, etc. (page 18).

### 4 RS-232C terminal

This terminal is not used.

### 5 HDMI OUT terminals

**MAIN (KURO LINK)** – Connect with an HDMI-compatible TV, AV receiver or amplifier, etc. (page 16).

**SUB** – Connect with an HDMI-compatible TV, projector, etc. (page 16). This terminal outputs linear PCM 2-channel audio signals. Do not connect an AV receiver or amplifier to this terminal. Also note that the KURO LINK function will not work for devices connected to this terminal (page 16).

### 6 DIGITAL OUT (COAXIAL/OPTICAL) terminals

Connect with the digital audio input terminal on an AV receiver or amplifier, etc. (page 19).

### 7 LAN (100) terminal

Ethernet port for 100BASE-TX (100 Mbps) network connection (page 20).

### 8 CONTROL IN terminal

Use to control this player from the remote sensor of another Pioneer component with a **CONTROL OUT** terminal and bearing the **SR** mark. Connect the **CONTROL OUT** terminal of the other component to **CONTROL IN** on this player using a mini-plug cord (commercially available).

### ⚠ Caution

- Be sure to connect cables for outputting the audio and video signals.
- When connected via System Control, point the remote control toward the connected component (such as an AV receiver or amplifier). The remote will not work correctly when pointed at this player.
- You cannot use System Control with components that do not have a System Control terminal or with components manufactured by companies other than Pioneer.

## Chapter 2

# Connecting up

Be sure to turn off the power and unplug the power cord from the power outlet whenever making or changing connections.

After connecting, make the settings at the **Setup Navigator** menu according to the type of cable connected (page 21).

Also refer to the operating instructions of the device being connected.

## Connecting using an HDMI cable

The audio and video signals can be transferred to HDMI-compatible devices as digital signals with no loss of sound or video quality.

### Note

- Make the settings at the **Setup Navigator** menu according to connected HDMI-compatible device (page 21).
- The **HDMI indicator** on the player's front panel lights when an HDMI-compatible device is connected to an **HDMI OUT (MAIN)** or **HDMI OUT (SUB)** terminal (page 13).
- 1080p video signals may not be output, depending on the HDMI cable being used.

## About HDMI

This player incorporates High-Definition Multimedia Interface (HDMI™) technology.



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

The player supports Deep Color.

The conventional players can transmit a video signal with 8 bit color depth in the YCbCr 4:4:4 or RGB formats, the players supporting Deep Color can transmit a video signal with a color bit depth of greater than 8 bits per color component. Subtle color gradations can be reproduced when connected to a TV that supports Deep Color.

This product is compatible with "x.v.Color" that have the capability to realize a wide-gamut color space based on the xvYCC specifications.

Playing video signals conforming to "xvYCC" standards on this player when connected to an "x.v.Color"-compatible TV, etc., expands color reproduction capabilities, allowing natural colors to be reproduced more faithfully than ever.

"x.v.Color" is a promotion name given to the products that have the capability to realize a wide-gamut color space based on the international standard specifications defined as xvYCC.

## x.v.Color

"x.v.Color" and **x.v.Color** are trademarks of Sony Corporation.

### ❖ Audio signals that can be transferred with the player's HDMI OUT (MAIN) terminal

- Dolby TrueHD
- Dolby Digital Plus
- Dolby Digital
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- DTS Digital Surround
- MPEG-2 AAC
- Linear PCM

Linear PCM audio signals meeting the following conditions can be output:

- Sampling frequency: 32 kHz to 192 kHz
- Number of channels: Up to 8 (up to 6 for a 192 kHz sampling frequency)

For details, see *About the audio output settings* on page 54.

### ❖ About the HDMI High Speed Transmission

This player outputs 1080/60p and Deep Color video signals. If your TV supports 1080/60p or Deep Color signals, use a High Speed HDMI™ cable in order to take advantage of the maximum performance the player and TV can offer. Also set **HDMI High Speed Transmission** to **On**. **HDMI High Speed Transmission** can be set separately for the **HDMI OUT (MAIN)** and **HDMI OUT (SUB)** terminals (page 45).

High Speed HDMI™ cables are tested to carry signals up to 1080p. 1080/24p, 1080/60i, 1080/60p and 720/60p video signals that are capable of Deep Color can also be carried.

### Note

- Set **HDMI High Speed Transmission** to **Off** when using an HDMI cable other than a High Speed HDMI™ cable (a Standard HDMI™ cable).
- The following restrictions apply when **HDMI High Speed Transmission** is set to **Off**:
  - Deep Color signals are not output.
  - If the output video resolution is set to **Auto**, the signals are output with a resolution of 1080/60i when TV's preferred resolution is 1080/60p.
  - If the output video resolution is set to 480i or 480p when **HDMI High Speed Transmission** is set to **Off** for the **HDMI OUT (MAIN)** terminal, the Dolby TrueHD and DTS-HD Master Audio audio signals are output as DTS Digital Surround or linear PCM signals. 96 kHz or 192 kHz multi-channel audio signals are output as linear PCM 2-channel audio signals (page 54).
- When an HDMI cable with a built-in equalizer is connected, it may not operate properly.

## ❖ When connected to a DVI device

- It is not possible to connect DVI devices (computer displays, for example) that are not compatible with HDCP. HDCP is a specification to protect audiovisual content across the DVI/HDMI interface.
- No audio signals are output. Connect using an audio cable, etc.
- This player is designed for connection with HDMI-compatible devices. When connected to a DVI device, it may not operate properly depending on the DVI device.

## About KURO LINK function

When the player is connected to a Pioneer Flat Panel TV or AV system (AV receiver or amplifier, etc.) supporting the KURO LINK function, it can be operated from the Flat Panel TV.

The input switches automatically on the Flat Panel TV and AV system (AV receiver or amplifier, etc.) when playback is started on the player or the Home Menu or the Home Media Gallery is displayed. When the input is switched, the playback picture, the Home Menu or the Home Media Gallery appears on the Flat Panel TV (Auto-select function). If the Flat Panel TV's power is being turned off at this time, it may turn on automatically (Simultaneous power function). When the language information from a connected Flat Panel TV is received, you can have the player's on-screen display language change automatically to that of the Flat Panel TV (Unified language function). This function is available only when playback is stopped and the menu screen is not displayed.

Also refer to the operating instructions of the Flat Panel TV and AV system (AV receiver or amplifier, etc.).

### ⚠ Caution

- To use the KURO LINK function, connect the Flat Panel TV and AV system (AV receiver or amplifier, etc.) to the **HDMI OUT (MAIN)** terminal. The KURO LINK function will not work if connected to the **HDMI OUT (SUB)** terminal.

## ❖ To use the KURO LINK function

- The KURO LINK function operates when KURO LINK is set to On for all devices connected to the **HDMI OUT (MAIN)** terminal. Once connections and the settings of all the devices are finished, be sure to check that the player's picture is output to the Flat Panel TV. (Also check after changing the connected devices and reconnecting HDMI cables.) The KURO LINK function may not operate properly if the player's picture is not properly output to the Flat Panel TV.
- Use High Speed HDMI™ cables when using the KURO LINK function. The KURO LINK function may not operate properly if other HDMI cables are used.
- For some models, the KURO LINK function may be referred to as "HDMI Control".

## ❖ About PQLS function

The PQLS (Precision Quartz Lock System) is a transfer control technology using the KURO LINK function. The player's output signals are controlled from the AV receiver or amplifier to achieve high quality sound playback using the quartz oscillator of AV receiver or amplifier. This eliminates the influence of the jitter generated upon transfer which can adversely affect the sound quality.

- The PQLS function is only activated when a Pioneer AV receiver or amplifier compatible with the PQLS function is connected directly to the player's **HDMI OUT (MAIN)** terminal using an HDMI cable.
- The PQLS function is only activated when playing an audio CD (CD-DA).
- The PQLS function is activated when the player is set as follows (page 45):  
**KURO LINK: On**  
**PQLS: Auto**
- Also refer to the operating instructions of AV receiver or amplifier.

### ⚠ Caution

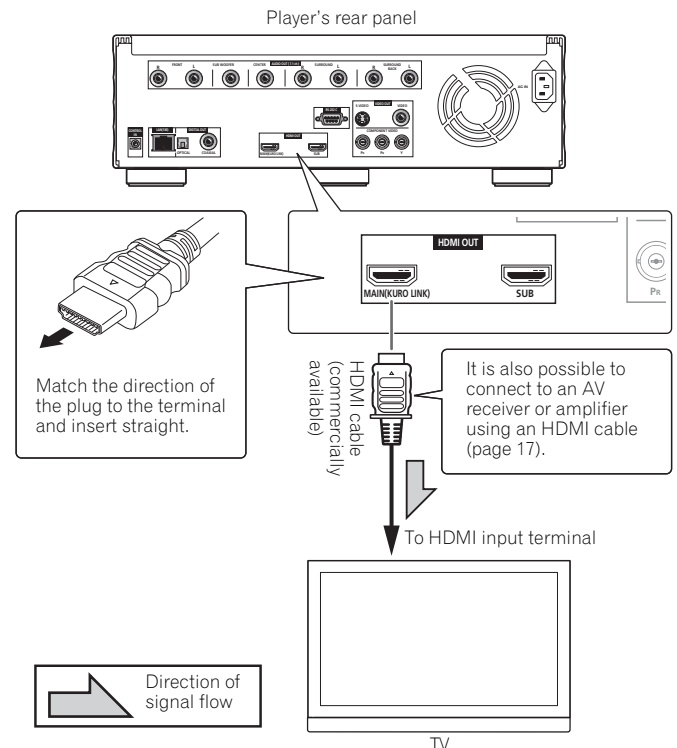
- If the output video resolution is switched when playing an audio CD (CD-DA), the PQLS function does not work. This function will work again after playback stops and restarts.

## Connecting a TV

Connect a TV to the **HDMI OUT (MAIN)** terminal. Another TV or a projector can be connected to **HDMI OUT (SUB)**. See *Connecting an AV receiver or amplifier* on page 17 to connect an AV receiver or amplifier using an HDMI cable.

### ⚠ Caution

- Hold the plug when connecting and disconnecting the cable.
- Placing a load on the plug could result in faulty contact and no video signals being output.
- The KURO LINK function will not work if connected to the **HDMI OUT (SUB)** terminal. To use the KURO LINK function, connect the TV to the **HDMI OUT (MAIN)** terminal.





# Connecting an AV receiver or amplifier

Connect to an AV receiver or amplifier in order to enjoy the surround sound of Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-HD Master Audio, DTS-HD High Resolution Audio or DTS Digital Surround. For instructions on connecting the TV and speakers to the AV receiver or amplifier, refer to the operating instructions of AV receiver or amplifier.

### Caution

- Hold the plug when connecting and disconnecting the cable.
- Placing a load on the plug could result in faulty contact and no video signals being output.
- To use the KURO LINK function, connect the AV receiver or amplifier to the **HDMI OUT (MAIN)** terminal. The KURO LINK function will not work if connected to the **HDMI OUT (SUB)** terminal.
- The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals. Be sure to connect the AV receiver or amplifier to the **HDMI OUT (MAIN)** terminal.

### Note

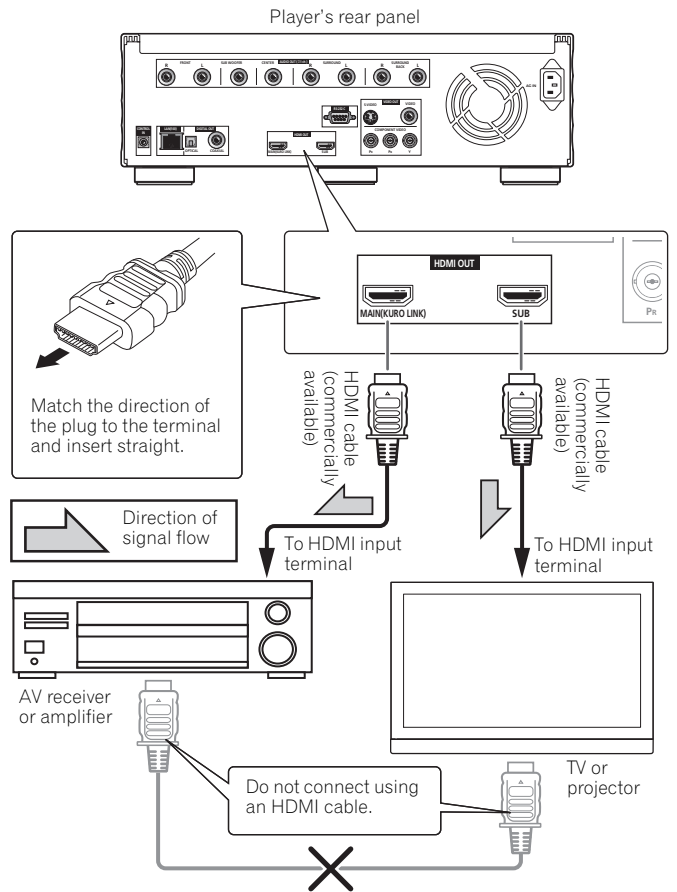
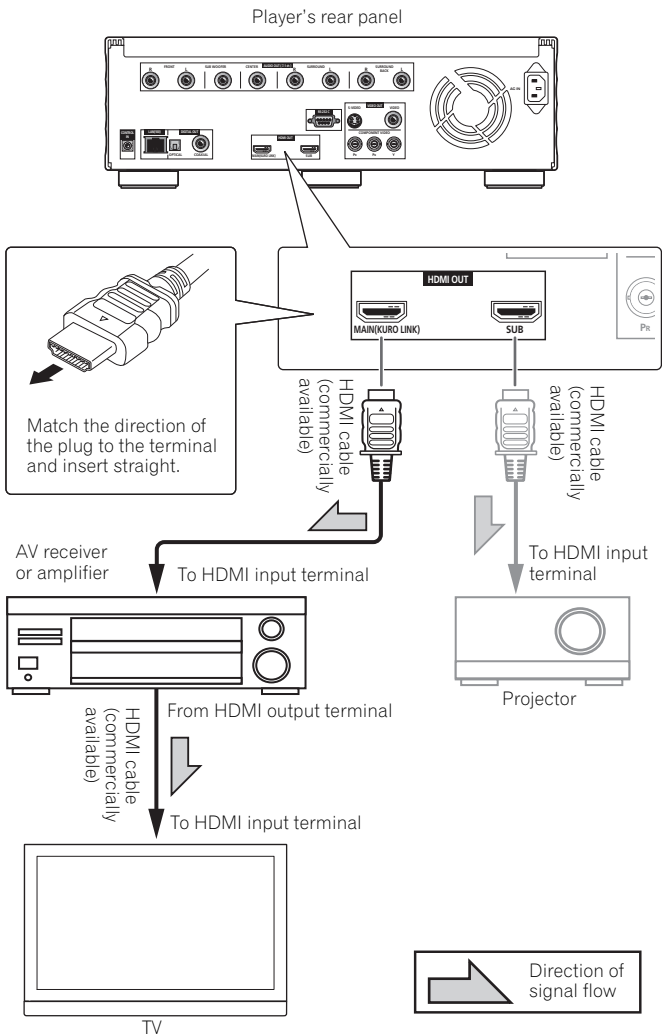
- When DTS-HD Master Audio and DTS-HD High Resolution Audio signals are output as linear PCM signals, the DTS Digital Surround signals are converted to linear PCM for output (page 54).
- See *Stretching widescreen pictures vertically (Anamorphic Zoom)* on page 52 for instructions on viewing 2.35:1 movies with a front projector equipped with an anamorphic lens.

### Achieving better sound quality

When connecting one TV (or projector) and AV amplifier to the player, connect in such a way that the video and audio signals are transferred separately in order to achieve higher quality sound.

### Note

- Using the Pure Audio function provides high quality sound with extraneous noise eliminated (page 53).

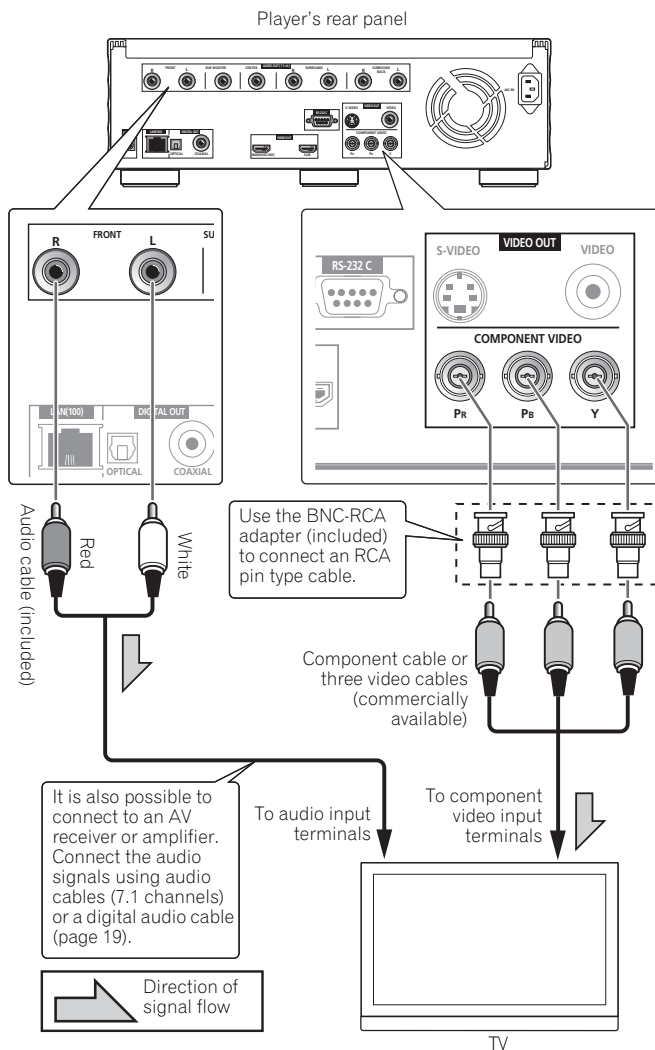


## 02 Connecting video and audio cables

### Note

- Make the settings in the **Setup Navigator** menu according to the type of cable connected (page 21).
- To output video signals from this player, connect using one of the following (not including when connected using an HDMI cable): a component video cable, an S-Video cable or a video cable.

### Connecting a TV using a component video cable and an audio cable



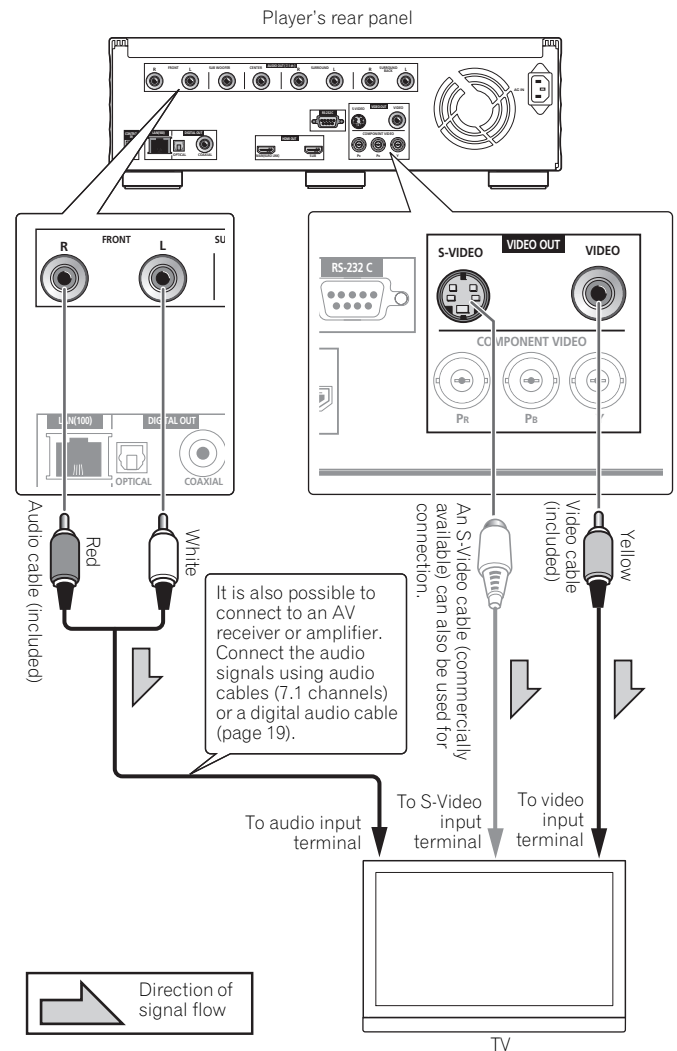
### Note

- When connected to the TV using a component video cable, video signals are not output with a resolution of 1080/24p or 1080/60p.
- Depending on the output video resolution setting, the picture may not be output (page 25).

## Connecting a TV using a video cable and an audio cable

### Caution

- **Connect the player's video output directly to your TV.**  
This player supports analog copy protection technology. Therefore the picture may not be displayed properly if connected to a TV via a DVD recorder/video deck or when playing the player's output material that is recorded by a DVD recorder/video deck. Furthermore, the picture may not be displayed properly due to the copy protection when the player is connected to a TV with a built-in video deck. For details, contact the manufacturer of your TV.



### Note

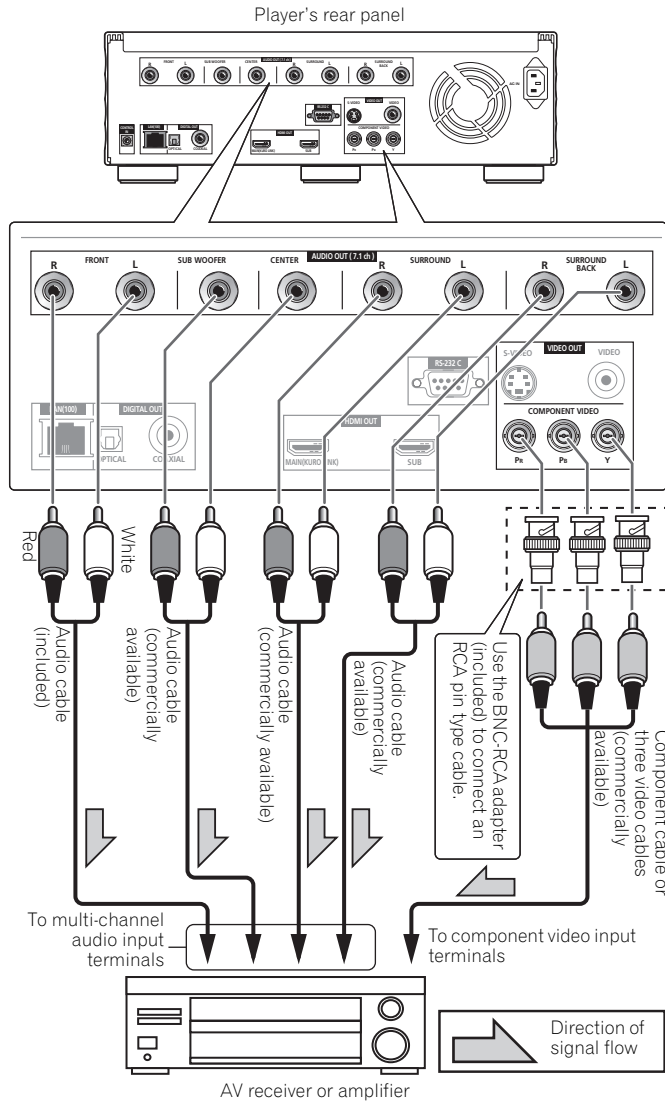
- Video signals are output with a resolution of 480/60i when connected using a video cable or an S-Video cable.

## Connecting an AV receiver or amplifier using audio cables

**When connecting to a 7.1-channel compatible AV receiver or amplifier** – Connect using 4 audio cables (diagram below).

**When connecting to a 5.1-channel compatible AV receiver or amplifier** – Connect using 3 audio cables (do not connect to the surround back left and right terminals).

- After connecting, set **Audio Output Mode** to **Multi-channel** (page 45).

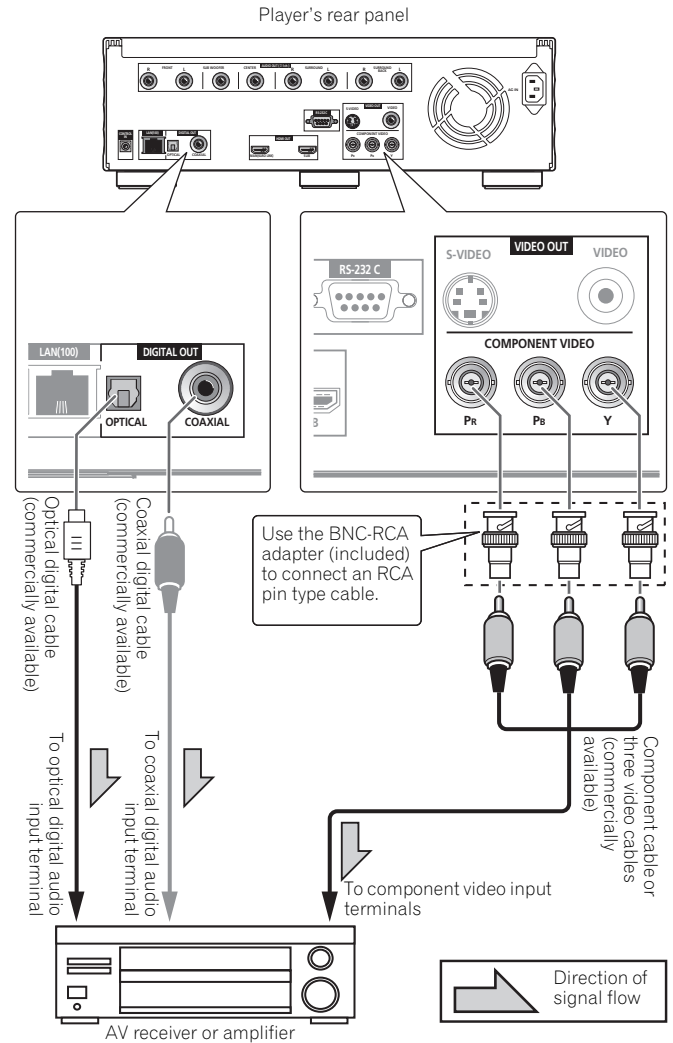


**Note**

- For DTS-HD Master Audio and DTS-HD High Resolution Audio signals, the DTS Digital Surround signals are converted to linear PCM for output (page 54).

## Connecting an AV receiver or amplifier using a digital audio cable

Connect either an optical digital audio cable or a coaxial digital audio cable.



**Note**

- Dolby TrueHD signals are output as Dolby Digital signals or signals converted from Dolby TrueHD to linear PCM (page 54).
- Dolby Digital Plus signals are output as Dolby Digital signals or signals converted from Dolby Digital to linear PCM (page 54).
- DTS-HD Master Audio and DTS-HD High Resolution Audio signals are output as the DTS Digital Surround signals or signals converted from DTS Digital Surround to linear PCM (page 54).

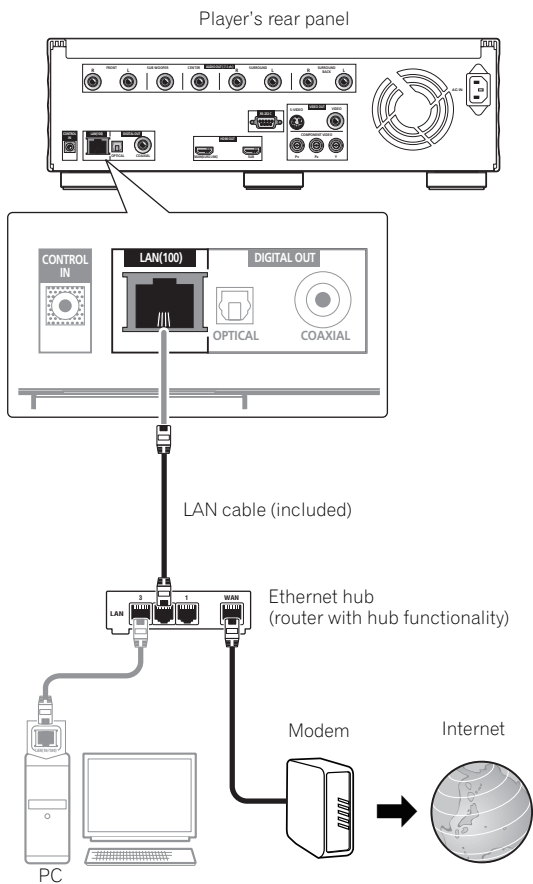
## 02 Network connection

The player's software can be updated over the Internet (page 52). Connect an Ethernet hub (or a router with hub functionality) that is connected to the Internet to the player.

Be sure to use a 100BASE-TX compatible Ethernet hub or router.

### Connecting via an Ethernet hub

If you already operate one or more PCs on a local area network, you can integrate this player by connecting it to the Ethernet hub using a LAN cable.

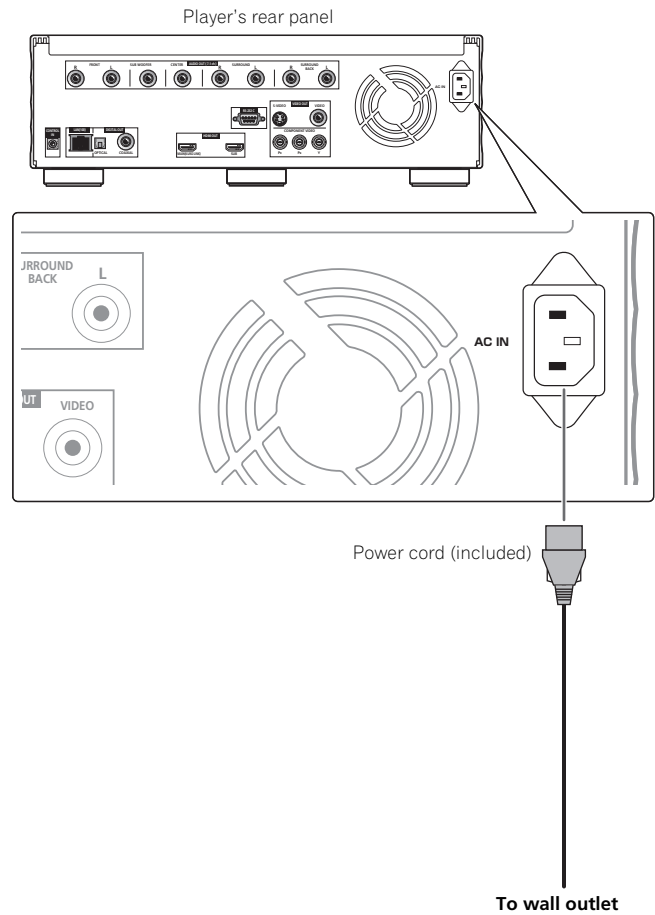


#### Note

- If there is an available DHCP server in your local area network, the IP address is obtained automatically. Otherwise, set IP address manually (page 50).
- For some Internet service providers, you may have to set the individual network configuration manually. In this case, see page 50.
- Pioneer is not responsible for any malfunction of the player due to communication error/ malfunctions associated with your network connection and/or your connected equipment. Please contact your Internet service provider or network device manufacturer.

## Connecting the power cord

Connect the power cord after all the connections between devices have been completed.



# Chapter 3 Getting Started

## Making settings using the Setup Navigator menu

Be sure to perform these settings when using the player for the first time.

**Caution**

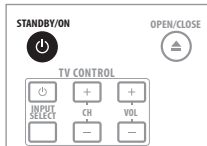
- Before turning on the power, check that the connections between the player and other devices are correct. Also, turn on the power of the devices connected to the player before turning on the player's power.

### 1 Turn on the TV's power and switch the input.

See the TV's operating instructions for instructions on operating the TV.  
If TV Control is set, the TV can be operated with the player's remote control (page 23).

### 2 Turn on the player's power.

Press **STANDBY/ON**.



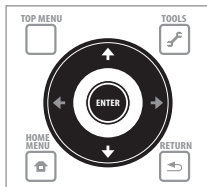
Check that the **Setup Navigator** menu is displayed.

### ❖ If the Setup Navigator menu is not displayed

▶ Press **HOME MENU** to display the Home Menu, select **Initial Setup** → **Setup Navigator** → **Start**, then press **ENTER**.

### 3 Select the OSD language.

Use **↑/↓** to select, then press **ENTER**.



**Setup Navigator  
BD PLAYER**

Please select the on-screen display language.

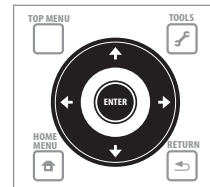
**English**  
 français  
 Español

Audio, subtitle and BDMV/DVD-Video menu language will also be set.

When a Pioneer Flat Panel TV that is compatible with KURO LINK is connected to this player's **HDMI OUT (MAIN)** terminal, language settings are imported from the Pioneer Flat Panel TV's language settings before **Setup Navigator** begins.

### 4 Select and set the video and audio output terminals.

Select the actually connected video and audio output terminals. Use **↑/↓/←/→** to select, then press **ENTER**.



**Setup Navigator  
BD PLAYER**

Select the output terminals to be used for the video and audio signals of this player.

**Video** ← **HDMI MAIN** →

Audio                      HDMI MAIN

Use [ **↑** ] [ **↓** ] to select video or audio, then press [ **←** ] [ **→** ] to select the output terminal.

Setting item	Output terminal name	
Video	HDMI MAIN	HDMI OUT (MAIN)
	HDMI SUB	HDMI OUT (SUB)
	COMPONENT/S/VIDEO	VIDEO OUT COMPONENT VIDEO S-VIDEO VIDEO
Audio	HDMI MAIN	HDMI OUT (MAIN)
	DIGITAL AUDIO	DIGITAL OUT COAXIAL OPTICAL
	ANALOG AUDIO	AUDIO OUT (7.1 ch)

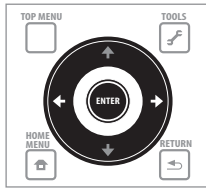
**Caution**

- The video and audio signals output from the set output terminals are output synchronously (lip synchronization).
- When **HDMI MAIN** or **DIGITAL AUDIO** is selected at **Audio**, linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at **Audio**.
- When **ANALOG AUDIO** is selected at **Audio**, no audio signals are output from the **HDMI OUT** or **DIGITAL OUT** terminals.
- The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals. **HDMI SUB** cannot be selected for **Audio**. To listen to the device connected to the **HDMI OUT (SUB)** terminal, select **HDMI MAIN**.

For steps 5 to 8, the step to which you should proceed depends on the combination of the Video and Audio settings.

### 5 Select and set the HDMI High Speed Transmission setting for the HDMI OUT (MAIN) terminal.

Use **←/→** to select, then press **ENTER**.



**Setup Navigator  
BD PLAYER**

Select the HDMI High Speed Transmission setting for HDMI MAIN.

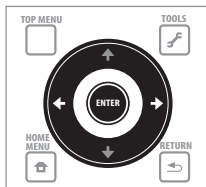
**On**    Off

Normally select [On] (Recommended).  
Select [Off] if the video or audio of HDMI-connected was not output in the test output.

When **HDMI High Speed Transmission** for the **HDMI OUT (MAIN)** terminal is set to **On**, use a High Speed HDMI™ cable. The picture and sound may not be output properly if any other HDMI cable (for example a standard HDMI™ cable) or an HDMI cable with built-in equalizer is used.

### 6 Select and set the HDMI High Speed Transmission setting for the HDMI OUT (SUB) terminal.

Use **←/→** to select, then press **ENTER**.



**Setup Navigator  
BD PLAYER**

Select the HDMI High Speed Transmission setting for HDMI SUB.

**On**    Off

Normally select [On] (Recommended).  
Select [Off] if the video or audio of HDMI-connected was not output in the test output.

When **HDMI High Speed Transmission** for the **HDMI OUT (SUB)** terminal is set to **On**, use a High Speed HDMI™ cable. The picture and sound may not be output properly if any other HDMI cable (for example a standard HDMI™ cable) or an HDMI cable with built-in equalizer is used.

### 7 Select the output video resolution from the COMPONENT VIDEO output terminals.

Use **↑/↓** to select, then press **ENTER**.

**Setup Navigator  
BD PLAYER**

Select the output video resolution at the Component video terminal.

**480i**  
480p  
720p  
1080i  
Source Direct  
Don't Know

If you select [Source Direct], the output resolution is determined according to the video format of the playing source.

For details on the resolution settings, see *Switching the output video resolution* on page 25.

### 8 Select the aspect ratio of your TV.

Use **↑/↓** to select, then press **ENTER**.

**Setup Navigator  
BD PLAYER**

Select the screen aspect ratio to match your TV.

**16:9 (Widescreen)**  
4:3 (Standard)

### 9 Check the settings.

Select **Proceed**, then press **ENTER**.

**Setup Navigator  
BD PLAYER**

Select [Proceed] if you want to start testing your audio and video settings.

**Proceed**

### 10 Output test tones.

Use **←/→** to select **Yes**, then press **ENTER**.

**Setup Navigator  
BD PLAYER**

The test tone will be output.  
Reduce the volume to an appropriate level.

Yes    **No**

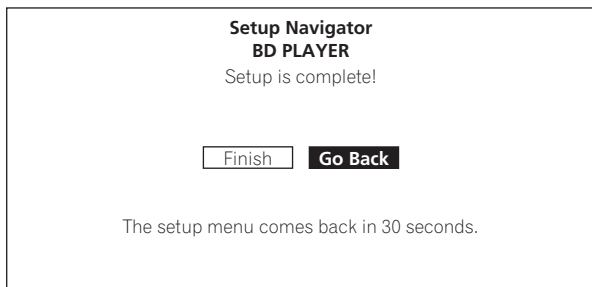
The video and/or audio may not be output under certain setup.  
The setup menu comes back in 30 seconds.

### Caution

- The screen in step 11 and test tones are output simultaneously according to the settings in steps 4 to 8. Lower the volume of the devices connected with the player.

## 11 Finish the Setup Navigator menu.

Use **←/→** to select **Finish**, then press **ENTER**.



To redo the settings from the start, select **Go Back**.

Depending on the output terminal setting of step 4 or the HDMI cable being used, it may happen that no picture and/or sound is output. If this happens, the setup returns to step 4 if there is no operation for over 30 seconds. Once the setup returns to step 4, redo the settings according to the connected devices and the HDMI cable being used.

## Operating the TV with the player's remote control

When the manufacturer code for your brand of TV is set on the player's remote control, the TV can be operated using the player's remote control.

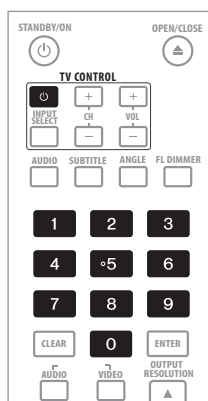


### Caution

- For some models it may not be possible to operate the TV with the player's remote control, even for TVs of brands listed on the manufacturer code list.
- The setting may be restored to the default after the batteries are replaced. If this happens, reset it.

### 1 Input the 2-digit manufacturer code.

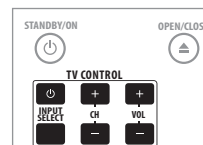
Press the number buttons (0 to 9) to input the code while pressing **TV CONTROL** **⏻**.



### Note

- The factory setting is **PIONEER 00**.
- If you make a mistake when inputting the code, release **TV CONTROL** **⏻** then start over from the beginning.
- When there are multiple codes for a manufacturer, try inputting them in the indicated order until the TV can be operated.

## 2 Check that the TV can be operated.



## TV Preset code list

### Manufacturer Code(s)

<b>PIONEER</b> 00, 31, 32, 07, 36, 42, 51	<b>GENEXXA</b> 31, 41
<b>ACURA</b> 44	<b>GOLDSTAR</b> 10, 23, 21, 02, 07, 50
<b>ADMIRAL</b> 31	<b>GOODMANS</b> 07, 39, 47, 48, 56
<b>AIWA</b> 60	<b>GORENJE</b> 38
<b>AKAI</b> 32, 35, 42	<b>GPM</b> 41
<b>AKURA</b> 41	<b>GRAETZ</b> 31, 42
<b>ALBA</b> 07, 39, 41, 44	<b>GRANADA</b> 07, 35, 42, 43, 48
<b>AMSTRAD</b> 42, 44, 47	<b>GRADIENTE</b> 30, 57
<b>ANITECH</b> 44	<b>GRANDIN</b> 18
<b>ASA</b> 45	<b>GRUNDIG</b> 31, 53
<b>ASUKA</b> 41	<b>HANSEATIC</b> 07, 42
<b>AUDIOGONIC</b> 07, 36	<b>HCM</b> 18, 44
<b>BASIC LINE</b> 41, 44	<b>HINARI</b> 07, 41, 44
<b>BAUR</b> 31, 07, 42	<b>HISAWA</b> 18
<b>BEKO</b> 38	<b>HITACHI</b> 31, 33, 34, 36, 42, 43, 54, 06, 10, 24, 25, 18
<b>BEON</b> 07	<b>HUANYU</b> 56
<b>BLAUPUNKT</b> 31	<b>HYPSON</b> 07, 18, 46
<b>BLUE SKY</b> 41	<b>ICE</b> 46, 47
<b>BLUE STAR</b> 18	<b>IMPERIAL</b> 38, 42
<b>BPL</b> 18	<b>INDIANA</b> 07
<b>BRANDT</b> 36	<b>INGELEN</b> 31
<b>BTC</b> 41	<b>INTERFUNK</b> 31, 32, 07, 42
<b>BUSH</b> 07, 41, 42, 44, 47, 56	<b>INTERVISION</b> 46, 49
<b>CASCADE</b> 44	<b>ISUKAI</b> 41
<b>CATHAY</b> 07	<b>ITC</b> 42
<b>CENTURION</b> 07	<b>ITT</b> 31, 32, 42
<b>CGB</b> 42	<b>JEC</b> 05
<b>CIMLINE</b> 44	<b>JVC</b> 13, 23
<b>CLARIVOX</b> 07	<b>KAISUI</b> 18, 41, 44
<b>CLATRONIC</b> 38	<b>KAPSCH</b> 31
<b>CONDOR</b> 38	<b>KENDO</b> 42
<b>CONTEC</b> 44	<b>KENNEDY</b> 32, 42
<b>CROSLEY</b> 32	<b>KORPEL</b> 07
<b>CROWN</b> 38, 44	<b>KOYODA</b> 44
<b>CRYSTAL</b> 42	<b>LEYCO</b> 07, 40, 46, 48
<b>CYBERTRON</b> 41	<b>LIESENK&amp;TTER</b> 07
<b>DAEWOO</b> 07, 44, 56	<b>LOEWE</b> 07
<b>DAINICHI</b> 41	<b>LUXOR</b> 32, 42, 43
<b>DANSAI</b> 07	<b>M-ELECTRONIC</b> 31, 44, 45, 54, 56, 07, 36, 51
<b>DAYTON</b> 44	<b>MAGNADYNE</b> 32, 49
<b>DECCA</b> 07, 48	<b>MAGNAFON</b> 49
<b>DIXI</b> 07, 44	<b>MAGNAVOX</b> 07, 10, 03, 12, 29
<b>DUMONT</b> 53	<b>MANESTH</b> 39, 46
<b>ELIN</b> 07	<b>MARANTZ</b> 07
<b>ELITE</b> 41	<b>MARK</b> 07
<b>ELTA</b> 44	<b>MATSUI</b> 07, 39, 40, 42, 44, 47, 48
<b>EMERSON</b> 42	<b>MCMICHAEL</b> 34
<b>ERRES</b> 07	<b>MEDIATOR</b> 07
<b>FERGUSON</b> 07, 36, 51	<b>MEMOREX</b> 44
<b>FINLANDIA</b> 35, 43, 54	<b>METZ</b> 31
<b>FINLUX</b> 32, 07, 45, 48, 53, 54	<b>MINERVA</b> 31, 53
<b>FIRSTLINE</b> 40, 44	<b>MITSUBISHI</b> 09, 10, 02, 21, 31
<b>FISHER</b> 32, 35, 38, 45	<b>MULTITECH</b> 44, 49
<b>FORMENTI</b> 32, 07, 42	<b>NEC</b> 59
<b>FRONTECH</b> 31, 42, 46	<b>NECKERMANN</b> 31, 07
<b>FRONTECH/PROTECH</b> 32	<b>NEI</b> 07, 42
<b>FUJITSU</b> 48	<b>NIKKAI</b> 05, 07, 41, 46, 48
<b>FUNAI</b> 40, 46, 58	<b>NOBLIKO</b> 49
<b>GBC</b> 32, 42	<b>NOKIA</b> 32, 42, 52
<b>GE</b> 00, 01, 08, 07, 10, 11, 17, 02, 28, 18	<b>NORDMENDE</b> 32, 36, 51, 52
<b>GEC</b> 07, 34, 48	
<b>GELOSO</b> 32, 44	
<b>GENERAL</b> 29	

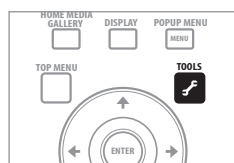
**OCEANIC** 31, 32, 42  
**ORION** 32, 07, 39, 40  
**OSAKI** 41, 46, 48  
**OSO** 41  
**OSUME** 48  
**OTTO VERSAND** 31, 32, 07, 42  
**PALLADIUM** 38  
**PANAMA** 46  
**PANASONIC** 31, 07, 08, 42, 22  
**PATHO CINEMA** 42  
**PAUSA** 44  
**PHILCO** 32, 42  
**PHILIPS** 31, 07, 34, 56, 68  
**PHOENIX** 32  
**PHONOLA** 07  
**PROFEX** 42, 44  
**PROTECH** 07, 42, 44, 46, 49  
**QUELLE** 31, 32, 07, 42, 45, 53  
**R-LINE** 07  
**RADIOLA** 07  
**RADIOSHACK** 10, 23, 21, 02  
**RBM** 53  
**RCA** 01, 10, 15, 16, 17, 18, 61, 62, 09  
**REDIFFUSION** 32, 42  
**REX** 31, 46  
**ROADSTAR** 41, 44, 46  
**SABA** 31, 36, 42, 51  
**SAISHO** 39, 44, 46  
**SALORA** 31, 32, 42, 43  
**SAMBERS** 49  
**SAMSUNG** 07, 38, 44, 46, 69, 70  
**SANYO** 35, 45, 48, 21, 14, 91  
**SBR** 07, 34  
**SCHAUB LORENZ** 42  
**SCHNEIDER** 07, 41, 47  
**SEG** 42, 46  
**SEI** 32, 40, 49  
**SELECO** 31, 42  
**SHARP** 02, 19, 27, 67, 90  
**SIAREM** 32, 49  
**SIEMENS** 31  
**SINUDYNE** 32, 39, 40, 49  
**SKANTIC** 43  
**SOLAVOX** 31  
**SONOKO** 07, 44  
**SONOLOR** 31, 35  
**SONTEC** 07  
**SONY** 04  
**SOUNDWAVE** 07  
**STANDARD** 41, 44  
**STERN** 31  
**SUSUMU** 41  
**SYSLINE** 07  
**TANDY** 31, 41, 48  
**TASHIKO** 34  
**TATUNG** 07, 48  
**TEC** 42  
**TELEAVIA** 36  
**TELEFUNKEN** 36, 37, 52  
**TELETECH** 44  
**TENSAI** 40, 41  
**THOMSON** 36, 51, 52, 63  
**THORN** 31, 07, 42, 45, 48  
**TOMASHI** 18  
**TOSHIBA** 05, 02, 26, 21, 53  
**TOWADA** 42  
**ULTRAVOX** 32, 42, 49  
**UNIDEN** 92  
**UNIVERSUM** 31, 07, 38, 42, 45, 46, 54  
**VESTEL** 07  
**VICTOR** 13  
**VOXSON** 31  
**WALTHAM** 43  
**WATSON** 07  
**WATT RADIO** 32, 42, 49  
**WHITE WESTINGHOUSE** 07  
**YOKO** 07, 42, 46  
**ZENITH** 03, 20

## Using the TOOLS menu

Various functions can be called out according to the player's operating status.

### 1 Display the TOOLS menu.

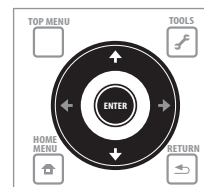
Press **TOOLS**.



BD PLAYER TOOLS	Angle
	Audio
	Subtitle
	Audio Adjust
	Video Adjust

### 2 Select and set the item.

Use **↑/↓** to select, then press **ENTER**.



#### Note

- Items that cannot be changed are displayed in gray. The items that can be selected depend on the player's status.

### ❖ To change the setting of the selected item

Use **←/→** to change.

### ❖ To close the TOOLS menu

Press **TOOLS** or **RETURN**.

### ❖ TOOLS menu item list

Item	Description
Play from Beginning	Play the selected title, track or file from the start.
Slideshow	Play a slideshow of the image files on the selected disc or folder.
Play Mode	Display the Play Mode screen (page 31).
Video Adjust	Display the picture quality adjustment screen (page 40).
Secondary Video	Switch the BD-ROM's secondary video (Picture-in-Picture) (page 30).
Subtitle	Switch the subtitles (page 29).
Angle	Switch the BD-ROM/DVD-Video disc's camera angles (page 29).
Rotate	Rotate the image while playing a slideshow (page 37).
Anamorphic Zoom	Use to view 2.35:1 movies with a front projector equipped with an anamorphic lens (page 52).
Audio Adjust	Display the audio adjustment menu (page 41).
Audio	Switch the audio streams/channels (page 30).
Secondary Audio	Switch the BD-ROM's secondary audio streams/channels (page 30).
Now Playing	Display the playback screen of the currently playing track or file.
Original/Play List	Switch the DVD-R/-RW's (VR format) list screen between the original list and the playlist.
Add to HMG Playlist	Add the selected track or file to the HMG Playlist (page 38).
Delete from HMG Playlist	Delete the selected track or file from the HMG Playlist (page 39).
Output Video Resolution	Switch the output video resolution from the various output terminals (page 25).



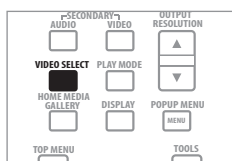
## Switching the video output terminal to be viewed

Use the procedure below to switch the video output signal to be viewed between the one output from the **HDMI OUT (MAIN)** terminal, the **HDMI OUT (SUB)** terminal and an analog output terminal (**COMPONENT VIDEO**, **S-VIDEO** or **VIDEO** output terminals).

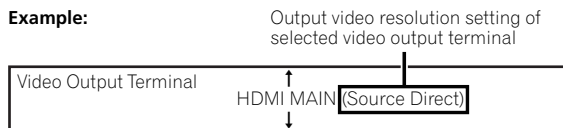
The settings below are valid for the selected video output terminal.

- The output video resolution (below)
- The Lip Sync function (page 42)
- The Pure Audio function (page 53)

### ► Press VIDEO SELECT.



- The current video output terminal is displayed on the TV screen and on the player's front panel display. To switch the video output terminals, press **VIDEO SELECT** again or press **↑/↓**.



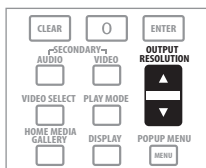
### ⚠ Caution

- The picture may not be displayed for a while when the video output terminal is switched.
- Depending on the player's settings, the picture of a TV connected to a terminal other than the selected video output terminal may not be properly displayed.
- When Pure Audio is set to **Mode 2**, no picture will be output from any video output terminal other than the selected one (page 53).

## Switching the output video resolution

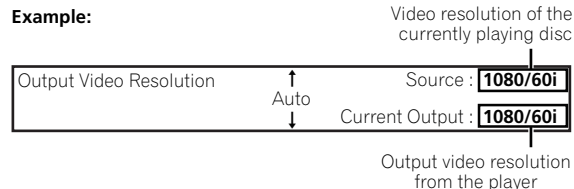
Use the procedure below to switch the output video resolution from the various video output terminals.

### ► Press OUTPUT RESOLUTION.



- The current output video resolution setting is displayed on the TV screen and on the player's front panel display. To switch the output video resolution, press **OUTPUT RESOLUTION** again or press **↑/↓**.

- The output video resolution depends on the video output terminal. (page 26)



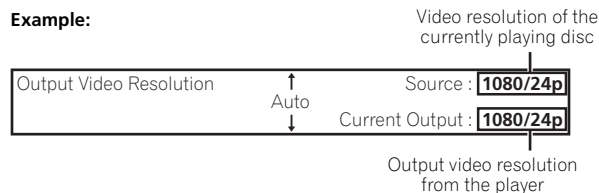
- The output video resolution setting can also be switched by pressing **RESOLUTION** on the player's front panel.
- The output video resolution setting can also be switched by selecting **Output Video Resolution** from the **TOOLS** menu.

### ⚠ Caution

- On some devices (TV, AV receiver or amplifier, etc.), the video or audio may not be output properly when the resolution is switched. If this happens, use **OUTPUT RESOLUTION** to set a resolution at which the video and audio are properly output.
- When video signals are being output with a resolution of 1080/24p, 1080/60i, 1080/60p or 720/60p from the **HDMI OUT** terminals or **COMPONENT VIDEO** output terminals, the picture may be output with an aspect ratio of 16:9, even if the **TV Aspect Ratio** is set to **4:3 (Standard)**.
- The picture may not be displayed for a while when the resolution is switched.

### ❖ About Film material

The film material is a video signal with a frame rate of 24 frames/second. For example, these materials include 1080/24p, 720/24p, etc.



### ❖ To output film material

To output 1080/24p film material from **HDMI OUT** terminals, set the output video resolution to either **Auto**, **1080/24p** or **Source Direct**.

### ⚠ Caution

- 1080/24p signals can only be output from the **HDMI OUT** terminals. They cannot be output from other video terminals.
- When **Auto** is selected, the picture is output at 60 frames/second if your TV is not compatible with 1080/24p signals.
- When **1080/24p** or **Source Direct** is selected, the signals are output as such, even if your TV is not compatible with 1080/24p signals. If the picture is not displayed properly, use **OUTPUT RESOLUTION** to set an output video resolution at which the video and audio signals are properly output.
- Even if **Auto**, **1080/24p** or **Source Direct** is selected, 720/24p video signals are output at 60 frames/second.
- When **1080/24p** is selected, the motion may be unnatural or the picture may not be clear, depending on the source. In this case, set the resolution to something other than **1080/24p**.

### 03 ❖ About the output video resolution

The resolution setting and the resolution of the picture that is actually output differ for the different terminals. See the table below.

Output video resolution setting	HDMI MAIN, HDMI SUB <sup>1</sup>		COMPONENT/S/VIDEO <sup>1</sup>		—
	HDMI OUT terminals	COMPONENT VIDEO output terminals <sup>2</sup>	HDMI OUT terminals	COMPONENT VIDEO output terminals <sup>2</sup>	S-VIDEO/VIDEO output terminal <sup>2</sup>
Auto <sup>3</sup>	Resolution preferred by TV <sup>4,5</sup>	480/60i	—	—	480/60i
480i	480/60i		480/60i	480/60i	
480p	480/60p		480/60p	480/60p	
720p	720/60p		720/60p	720/60p <sup>6</sup>	
1080i	1080/60i		1080/60i	1080/60i <sup>6</sup>	
1080p <sup>3</sup>	1080/60p <sup>7</sup>		—	—	
1080/24p <sup>3</sup>	1080/24p <sup>5,8,9</sup>		—	—	
Source Direct	Resolution recorded on disc <sup>5,8,10</sup>		Resolution recorded on disc <sup>8,10,11</sup>	Resolution recorded on disc <sup>8,10,11</sup>	

1. The video output terminal set at **Video** in the **Setup Navigator** (page 21) or the video output terminal selected with **VIDEO SELECT** (page 25).
2. Depending on the BD, the pictures may not be output.
3. This cannot be selected when the video output terminal is set to **COMPONENT/S/VIDEO**.
4. The pictures are output with the preferred output resolution of the device (TV, AV receiver or amplifier, etc.) connected to the selected video output terminal. However, if devices are connected to both **HDMI MAIN** and **HDMI SUB**, the pictures are output with a resolution which both devices support. If the devices connected to **HDMI MAIN** and **HDMI SUB** support different resolutions, turn off the power of the device not being used so that the picture is output with the optimum resolution for the device to be viewed.
5. For details on the output of film material (1080/24p or 720/24p video signals), see *To output film material* on page 25.
6. DVD-Video or DVD VR format may be output at 480/60p. BDs format may be output at 480/60p. At this time, the video signals from the **HDMI OUT** terminals are output at the same resolution of 480/60p as the video signals output from the **COMPONENT VIDEO** terminals.
7. Depending on the connected HDMI cable, the video signals may not be output.
8. Depending on the connected TV, the video signals may not be output.
9. Sources recorded in 480/60p, 720/60p or 720/24p are output at 1080/60i.
10. 720/24p film material is output at 720/60p.
11. 1080/24p film material is output at 1080/60i.

## Chapter 4 Playback

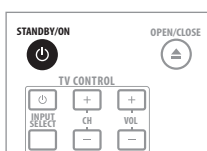
### Playing discs or files

This section describes the player's main operations.

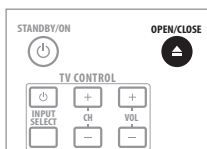
For the types of discs that can be played, see *Playable discs* on page 8. For the types of files that can be played, see *Playable files* on page 10. Video, image and audio files recorded on discs are played with Home Media Gallery (page 35).

#### 1 Press **STANDBY/ON** to turn on the power.

Turn the TV's power on and switch its input beforehand.



#### 2 Press **OPEN/CLOSE** to open the disc tray and load the disc.



#### Note

- Load the disc with the printed side facing up.
- Several dozen seconds are required to read the disc. Once reading is completed, the type of disc is displayed on the player's front panel display.



#### 3 Press **PLAY** to play the disc.



To pause, press **PAUSE** during playback.

To stop, press **STOP** during playback.

#### Note

- Some discs start playing automatically when the disc tray is closed.
- DVD-Video discs have parental lock features. Input the password registered in the player's settings to unlock the parental lock. For details, see page 49.
- For some BD-R/-RE, playback protection is set for the disc or titles. Input the code number set for the disc to unlock the protection.
- Check *Troubleshooting* on page 65 if video or audio signals are not being output properly.

#### ❖ If the disc menu is displayed

For some discs, the disc menu is displayed automatically when playback starts. The contents of the disc menu and the way to operate differ from disc to disc.

#### ❖ Resuming playback from where it was stopped (resume playback function)

- When **STOP** is pressed during playback, the point at which the disc stopped is stored in the memory. When **PLAY** is pressed, playback resumes from that point.
- For audio CDs and audio files, playback starts from the beginning of the track/file that was playing.
- If the stop mode was set while playing a slideshow of image files, playback starts from the image file last displayed.
- To cancel the resume playback function, press **STOP** while playback is stopped.

#### Note

- The resume playback function is canceled automatically in the following cases:
  - When the disc tray is opened.
  - When the file list window is switched.
  - When the power is turned off. (For BDs and DVDs this does not cancel the resume playback function.)
- The resume playback function cannot be used for some discs.

### Forward and reverse scanning



#### 1 During playback, press **◀◀** or **▶▶**.



- The scanning speed switches each time the button is pressed. The speed steps depend on the disc or file (the speed is displayed on the TV screen).
- Forward or reverse scanning is also possible by holding the button down. Normal playback resumes when the button is released.

#### Note

- No sound is output when scanning BDs, DVDs and video files.
- Sound is output when scanning audio CDs and audio files.
- For some discs, normal playback resumes automatically when the chapter switches.

## ❖ To resume normal playback

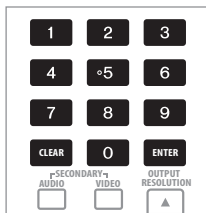
- ▶ Press ► **PLAY**.

## Playing specific titles, chapters or tracks



- ▶ **Input the number of the title, chapter or track you want to play.**

- Use the number buttons (0 to 9) to input the number, then press **ENTER**.



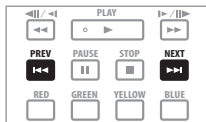
### **Note**

- For some discs, it is not possible to specify and play titles, chapters or tracks.
- Press **CLEAR** to clear the values you have input.

## Skipping content



- ▶ Press **I◀◀ PREV** or **▶▶I NEXT**.



- When **▶▶I NEXT** is pressed, the playback skips ahead to the beginning of the next title/chapter/track/file.
- When **I◀◀ PREV** is pressed, the playback skips back to the beginning of the currently playing title/chapter/track/file. Press twice to skip back to the beginning of the previous title/chapter/track/file.

### **Note**

- There are some discs for which skipping is not possible.

## Playing in slow motion



- ▶ **While playback is paused, press and hold ◀II/◀I or I▶/II▶.**



- The speed switches each time the button is pressed (the speed is displayed on the TV screen). The speed steps depend on the disc or file.

### **Note**

- It is not possible to switch the speed during reverse slow motion playback.
- No sound is output during slow motion playback.
- For some discs, normal playback resumes automatically when the chapter switches.
- Reverse slow motion playback is not possible with video files.
- There are some discs for which slow motion playback is not possible.

## ❖ To resume normal playback

- ▶ Press ► **PLAY**.

## Step forward and step reverse



- ▶ **While playback is paused, press ◀II/◀I or I▶/II▶.**



- The picture moves a step forward or reverse each time the button is pressed.

### **Note**

- For some discs, normal playback resumes automatically when the chapter switches.
- Reverse step playback is not possible with video files.
- There are some discs for which step forward/reverse playback is not possible.

## ❖ To resume normal playback

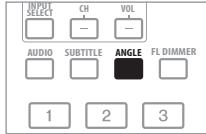
- ▶ Press ► **PLAY**.

# Switching the camera angles

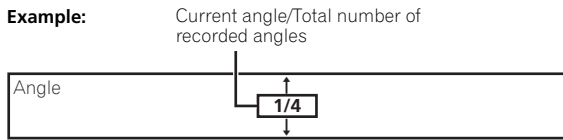
For BD-ROM and DVD-Video discs on which multiple angles are recorded, the angles can be switched during playback.



▶ During playback, press **ANGLE**.



- The current angle and total number of recorded angles are displayed on the TV screen and on the player's front panel display. To switch the angles, press **ANGLE** again or press **↑/↓**.



- The angles can also be switched by selecting **Angle** from the **TOOLS** menu.

**Note**

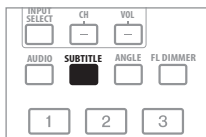
- For some discs, the angle can also be switched on the menu screen.
- Angle mark is displayed for scenes at which multiple angles are recorded if **Angle/Secondary Indicator** is set to **On** (page 45).

# Switching the subtitles

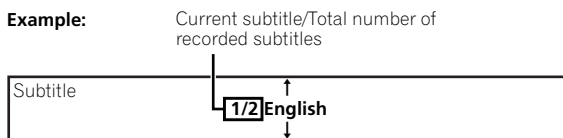
For discs or files on which multiple subtitles are recorded, the subtitles can be switched during playback.



▶ During playback, press **SUBTITLE**.



- The current subtitle and total number of recorded subtitles are displayed on the TV screen and on the player's front panel display. To switch the subtitle, press **SUBTITLE** again or press **↑/↓**.



- The subtitles can also be switched by selecting **Subtitle** from the **TOOLS** menu.

**Note**

- In some cases the subtitle may switch or the switching screen provided on the disc may be displayed immediately, without the current subtitle or the total number of subtitles recorded on the disc being displayed.
- The types of recorded subtitles depend on the disc and file.
- If the subtitles are not switched when **SUBTITLE** is pressed, switch them from the menu screen.

## ❖ Turning the subtitles off

▶ Press **SUBTITLE**, then press **CLEAR**.

## ❖ About displaying external subtitle files while playing DivX media files

In addition to the subtitles recorded in DivX media files, this player also supports the display of external subtitle files. If a file has the same name as a DivX media file aside from the file extension and the extension is one of the extensions listed below, the file is treated as an external subtitle file. Note that DivX media files and external subtitle files must be located in the same folder.

Only one external subtitle file can be displayed on this player. Use a computer, etc., to delete any external subtitle files you do not want to display from the disc.

.srt, .sub, .txt, .smi, .ssa, .ass

If the language code is specified for the external subtitle file, the subtitles are displayed with the font corresponding to that language code. If no language code is specified, the subtitles are displayed with the font corresponding to the language code set at **Subtitle Language** (page 46). The same font is used for the all the languages in each of the groups below.

<b>Group 1</b>	Afrikaans(af/af), Basque(eu/eus), Catalan(ca/cat), Danish(da/dan), Dutch(nl/nld), English(en/eng), Faroese(fo/fao), Finnish(fi/fin), French(fr/fra), Galician(gl/glg), German(de/deu), Guarani(gn/grn), Icelandic(is/isl), Irish(ga/gle), Italian(it/ita), Latin(la/lat), Norwegian(no/nor), Portuguese(pt/por), Rhaeto-Romance(rm/roh), Scots-Gaelic(gd/gla), Spanish(es/spa), Swahili(sw/swa), Swedish(sv/swe), Zulu(zu/zul)
<b>Group 2</b>	Albanian(sq/sqi), Croatian(hr/hrv), Czech(cs/ces), Hungarian(hu/hun), Polish(pl/pol), Romanian(ro/ron), Slovak(sk/slk), Slovenian(sl/slv)
<b>Group 3</b>	Belarusian(be/bel), Bulgarian(bg/bul), Macedonian(mk/mkd), Moldavian(mo/mol), Russian(ru/rus), Serbian(sr/srp), Ukrainian(uk/ukr)
<b>Group 4</b>	Greek(el/ell)
<b>Group 5</b>	Estonian(et/est), Kurdish(ku/kur), Turkish(tr/tur)

**Note**

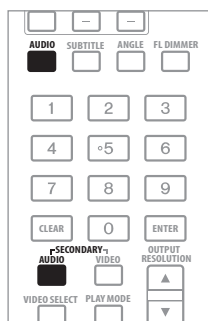
- Depending on the file, the external subtitles may not be displayed properly.

## 04 Switching the audio streams/channels

For discs or files on which multiple audio streams/channels are recorded, audio streams/channels can be switched during playback. Also use this procedure to switch the secondary audio for BD-ROMs on which secondary audio is recorded.

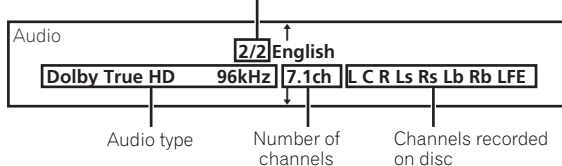


▶ During playback, press **AUDIO**.



- The current audio stream/channel and total number of recorded audio streams/channels are displayed on the TV screen and on the player's front panel display. To switch the audio streams/channels, press **AUDIO** again or press **↑/↓**.
- To switch the secondary audio, press **SECONDARY AUDIO**.

**Example:** Current audio stream/Total number of recorded audio streams



- The audio streams/channels can also be switched by selecting **Audio** or **Secondary Audio** from the **TOOLS** menu.

### Note

- The types of recorded audio streams/channels depend on the disc and file.
- If the audio stream/channel is not switched when **AUDIO** is pressed, switch it from the menu screen.
- In some cases the secondary audio may switch or the switching screen provided on the disc may be displayed immediately, without the current secondary audio or the total number of secondary audio streams recorded on the disc being displayed.
- Some BD-ROMs do not include secondary audio.
- Secondary audio mark is displayed for scenes at which secondary audio is recorded if **Angle/Secondary Indicator** is set to **On** (page 45).

### ❖ Turning the Secondary Audio off

▶ Press **SECONDARY AUDIO**, then press **CLEAR**.

## Switching the secondary video

Use the procedure below to switch the secondary video (Picture-in-Picture) recorded on the BD-ROM.

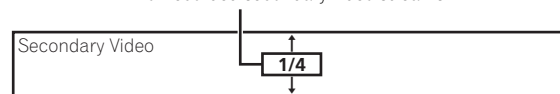


▶ During playback, press **SECONDARY VIDEO**.



- The current secondary video stream and total number of recorded secondary video streams are displayed on the TV screen and on the player's front panel display. To switch the secondary video streams, press **SECONDARY VIDEO** again or press **↑/↓**.

**Example:** Current secondary video stream/Total number of recorded secondary video streams



- The secondary video streams can also be switched by selecting **Secondary Video** from the **TOOLS** menu.

### Note

- In some cases the secondary video may switch or the switching screen provided on the disc may be displayed immediately, without the current secondary video or the total number of secondary video streams recorded on the disc being displayed.
- Some BD-ROMs do not include secondary video.
- Secondary video mark is displayed for scenes at which secondary video is recorded if **Angle/Secondary Indicator** is set to **On** (page 45).

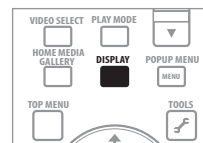
### ❖ Turning the Secondary Video off

▶ Press **SECONDARY VIDEO**, then press **CLEAR**.

## Displaying the disc information



▶ Press **DISPLAY**.



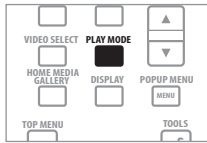
The disc information appears on the TV screen. The information switches each time the button is pressed.

The information display differs during playback and when playback is stopped.

# Using the Play Mode functions

## Playing from a specific time (Time Search)

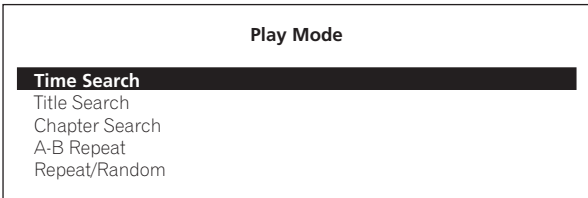
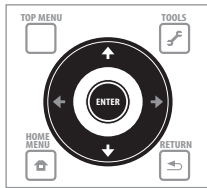
1 During playback, press **PLAY MODE** to display the Play Mode screen.



The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

2 Select Time Search.

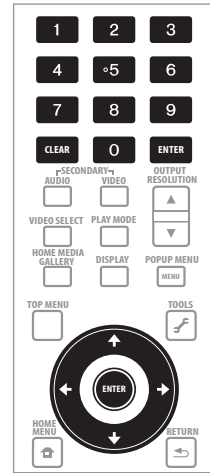
Use **↑/↓** to select, then press **ENTER**.



3 Input the time.

Use the number buttons (0 to 9) or **↑/↓** to input the time.

Use **←/→** to move the cursor.



### Note

- To play from 45 minutes, input **0, 0, 4, 5, 0** and **0**, then press **ENTER**.
- To play from 1 hour 20 minutes, input **0, 1, 2, 0, 0** and **0**, then press **ENTER**.
- Press **CLEAR** to clear the values you have input.

4 Starting playback from the specified time.

Use **←/→** to select **Search**, then press **ENTER**.

### ❖ Closing the Play Mode screen

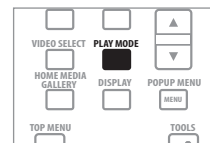
Press **PLAY MODE** or **HOME MENU**.

### Note

- There are some discs for which Time Search is not available.

## Playing a specific title, chapter or track (Search)

1 Press **PLAY MODE** to display the Play Mode screen.

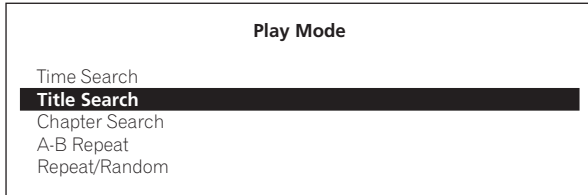
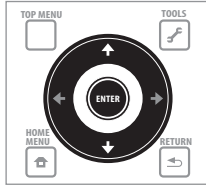


The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

2 Select the type of search.

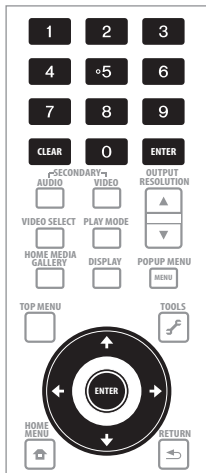
Use **↑/↓** to select, then press **ENTER**.

See the table on page 34 for the search types.



### 3 Input the number.

Use the number buttons (0 to 9) or  $\uparrow/\downarrow$  to input the number.  
Use  $\leftarrow/\rightarrow$  to move the cursor.



### 4 Starting playback from the specified title, chapter or track.

Use  $\leftarrow/\rightarrow$  to select **Search**, then press **ENTER**.

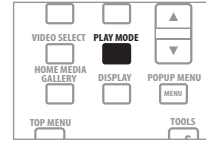
#### Note

- To search for title 32, input **0, 3** and **2**, then press **ENTER**.
- There are some discs for which searching is not available.
- Press **CLEAR** to clear the values you have input.

## Playing a specific section within a title or track repeatedly (A-B Repeat)

Use this procedure to play a specific section within a title or track repeatedly.

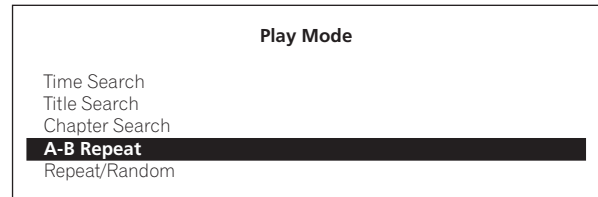
### 1 During playback, press **PLAY MODE** to display the Play Mode screen.



The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

### 2 Select A-B Repeat.

Use  $\uparrow/\downarrow$  to select, then press **ENTER**.



### 3 Select the starting point for A-B Repeat.

Use  $\leftarrow/\rightarrow$  to select **A (Start)**, then press **ENTER**.



### 4 Select the end point for A-B Repeat.

Use  $\leftarrow/\rightarrow$  to select **B (End)**, then press **ENTER**.

A-B Repeat playback starts.

### ❖ To cancel A-B Repeat play

- Select **Off** from the Repeat/Random screen, then press **ENTER**.
- During playback, press **STOP** or **CLEAR**.

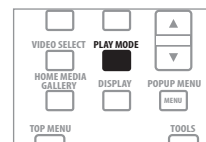
#### Note

- There are some discs for which A-B Repeat play is not available.
- A-B Repeat play is canceled in the following cases:
  - When the angle is switched (for BD-ROM and DVD-Video discs only).
  - When you search outside the repeat range.
  - When you start other Repeat Play or Random Play.

## Playing repeatedly (Repeat Play)

Use this procedure to play the currently playing disc, title, chapter, track or file repeatedly.

### 1 During playback, press **PLAY MODE** to display the Play Mode screen.

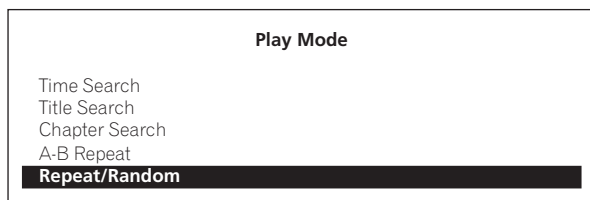
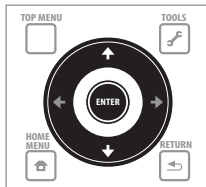


The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.



## 2 Select Repeat/Random.

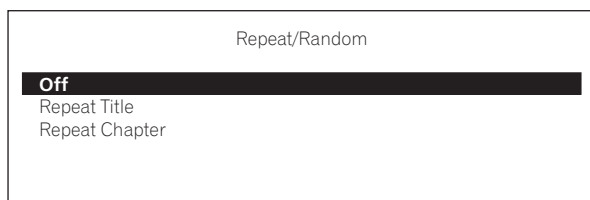
Use **↑/↓** to select, then press **ENTER**.



## 3 Select the type of Repeat Play.

Use **↑/↓** to select, then press **ENTER**.

See the table on page 34 for the types of Repeat Play.



### ❖ To cancel Repeat Play

- Select **Off** from the Repeat/Random screen, then press **ENTER**.
- During playback, press **■ STOP** or **CLEAR**.

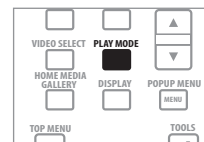
#### Note

- There are some discs and files for which Repeat Play is not available.
- The type of repeat modes depends on the disc and file being played. See the table on page 34.
- Repeat Play is canceled in the following cases:
  - When the angle is switched (for BD-ROM and DVD-Video discs only).
  - When you search outside the repeat range.
  - When you start other Repeat Play or Random Play.

## Playing in random order (Random Play)

Use this procedure to play the tracks or files in random order.

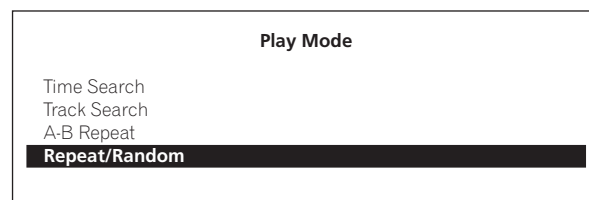
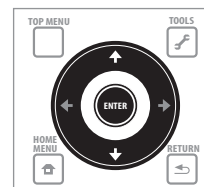
### 1 During playback, press **PLAY MODE** to display the Play Mode screen.



The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

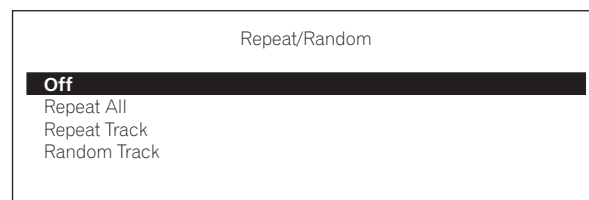
### 2 Select Repeat/Random.

Use **↑/↓** to select, then press **ENTER**.



### 3 Select the Random Play.

Use **↑/↓** to select, then press **ENTER**.



### ❖ To cancel Random Play

- Select **Off** from the Repeat/Random screen, then press **ENTER**.
- During playback, press **■ STOP** or **CLEAR**.

#### Note

- There are some discs and files for which Random Play is not available.
- Random Play is canceled in the following cases:
  - When you use the search function.
  - When you start Repeat Play.

## About Play Mode types

The functions that can be used differ according to the type of disc and file. In some cases, some of the functions cannot be used. Check the usable functions on the table below.

Play Mode type	Mark <sup>1</sup>	Disc/file type									
		BD-ROM <sup>2</sup>	BD-R BD-RE	DVD- Video <sup>2</sup>	DVD-R DVD-RW (VR format)	AVCHD	Video file	Image file	Audio file	Audio CD	
Repeat Play	Playing a specific section within a title or track repeatedly (A-B Repeat)	A-B	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Playing a title repeatedly (Title Repeat)		✓	✓	✓	✓	✓	✓	✗	✗	✗
	Playing a chapter repeatedly (Chapter Repeat)		✓	✓	✓	✓	✓	✗	✗	✗	✗
	Playing a track or file repeatedly (Track Repeat)		✗	✗	✗	✗	✗	✗	✗	✓	✓
	Playing all the titles, tracks or files on the disc repeatedly (All Repeat)		✗	✓	✗	✓ <sup>3</sup>	✗	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>5</sup>	✓ <sup>6</sup>
Random Play	Playing the tracks or files in random order (Random Track)	RDM	✗	✗	✗	✗	✗	✗	✗	✓	✓
	Playing the tracks or files in random order (Random File)	RDM	✗	✗	✗	✗	✗	✗	✓	✗	✗
Search	Playing from a specific time (Time Search)	—	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Playing a specific title (Title Search)	—	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Playing a specific chapter (Chapter Search)	—	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Playing a specific track (Track Search)	—	✗	✗	✗	✗	✗	✗	✗	✗	✓

1. The type of Play Mode is indicated by the mark.

2. For BD-ROM and DVD-Video discs, some of the functions cannot be used with some titles.

3. The original titles are played repeatedly. However, the playlist titles cannot be played repeatedly.

4. The files in the folder are played repeatedly.

5. The files in the folder or HMG Playlist are played repeatedly.

6. The tracks in the disc or HMG Playlist are played repeatedly.

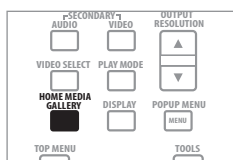
# Playing from the Home Media Gallery

The Home Media Gallery lets you display a list of the titles, tracks or files recorded on the disc. The discs that can be played from the Home Media Gallery are as shown below (see also page 8).

- BD-R/-RE discs
- DVDs recorded in VR format
- Audio CDs (CD-DAs and DTS-CDs)
- DVDs/CDs on which only data files of video, image or audio files, etc. are recorded

## Playing discs

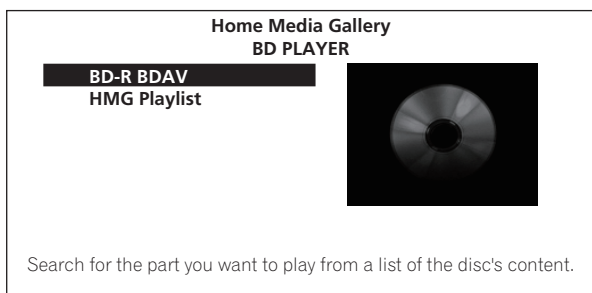
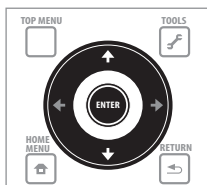
**1 Press HOME MEDIA GALLERY to display the Home Media Gallery.**



The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu then pressing **ENTER**.

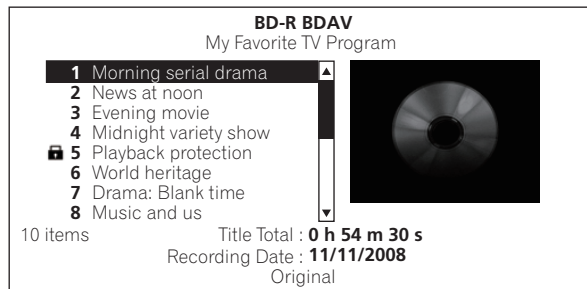
**2 Select the disc.**

Use **↑/↓** to select, then press **ENTER**.



**3 Select the title or track to be played.**

Use **↑/↓** to select, then press **ENTER**.



Playback starts.

### ❖ Closing the Home Media Gallery

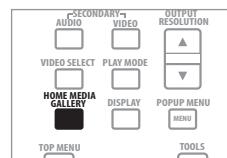
Press **HOME MEDIA GALLERY** or **HOME MENU**.

#### Note

- When playing an audio CD (CD-DA or DTS-CD), the Now Playing screen is displayed.
- Some BD-R/-RE discs have playback protection. To cancel the protection, input the password set for the disc.
- To play DVD-R/-RW (VR format) playlists, switch to the playlist using the **Original/Play List** command on the **TOOLS** menu (page 24).

## Playing video files

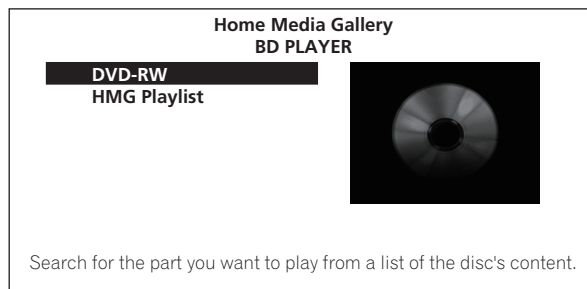
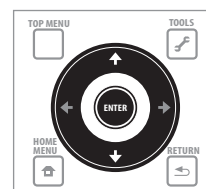
**1 Press HOME MEDIA GALLERY to display the Home Media Gallery.**



The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu then pressing **ENTER**.

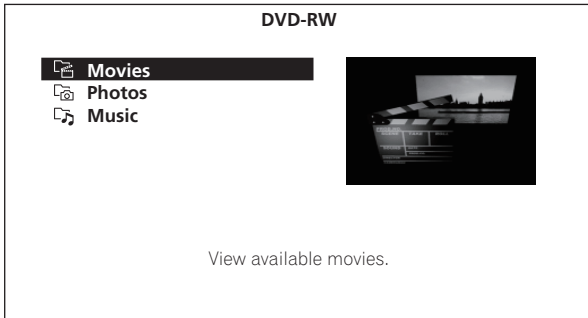
**2 Select the disc.**

Use **↑/↓** to select, then press **ENTER**.



### 3 Select Movies.

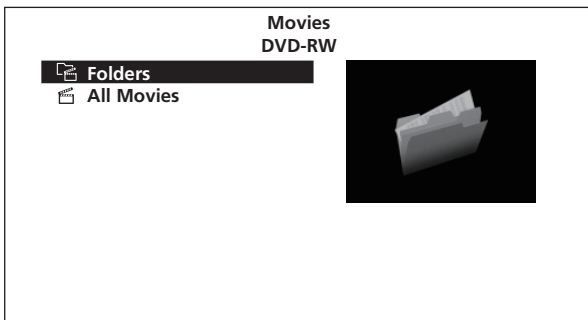
Use **↑/↓** to select **Movies**, then press **ENTER**.



### 4 Select Folders or All Movies.

Use **↑/↓** to select, then press **ENTER**.

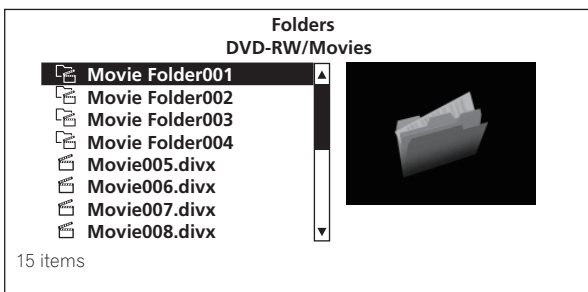
- **Folders** – The files in the selected folder are displayed.
- **All Movies** – All the recorded files are displayed.



If you have selected **All Movies**, proceed to step 6.

### 5 Select the folder containing the file you want to play.

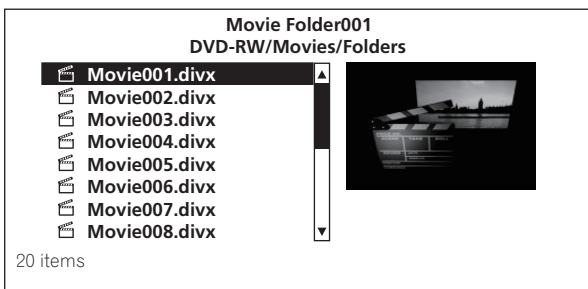
Use **↑/↓** to select, then press **ENTER**.



A list of the files and folders in the selected folder is displayed.

### 6 Select and set the file you want to play.

Use **↑/↓** to select, then press **ENTER**.



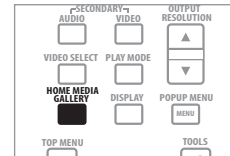
Playback starts from the selected file, and continues until the end of the list is reached. Use **⏪/⏩** to play the previous or next file.

### Note

- It may take a few seconds before playback starts. This is normal.
- It may not be possible to play some files properly.
- The number of views may be restricted (page 10).

## Playing image files

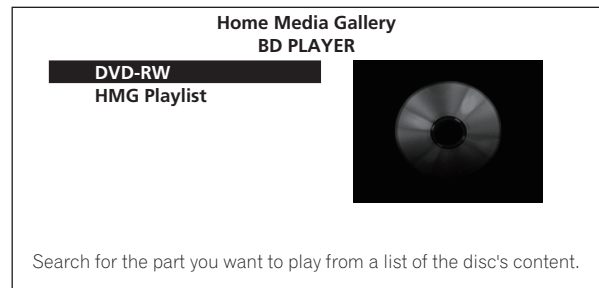
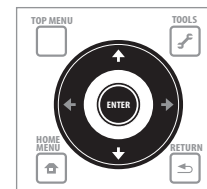
### 1 Press HOME MEDIA GALLERY to display the Home Media Gallery.



The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from the Home Menu then pressing **ENTER**.

### 2 Select the disc.

Use **↑/↓** to select, then press **ENTER**.



### 3 Select Photos.

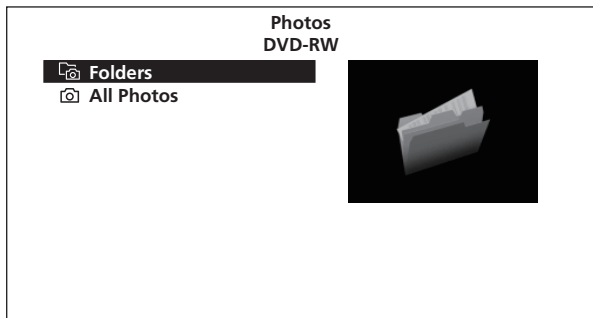
Use **↑/↓** to select **Photos**, then press **ENTER**.



#### 4 Select Folders or All Photos.

Use **↑/↓** to select, then press **ENTER**.

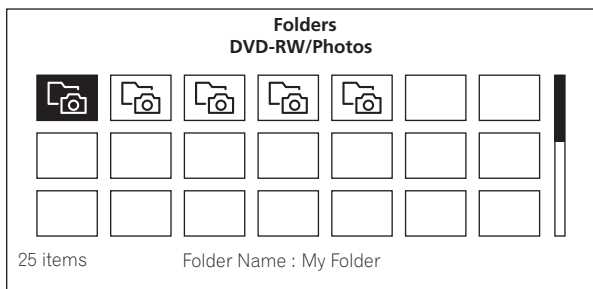
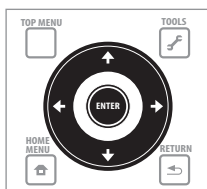
- **Folders** – The files in the selected folder are displayed.
- **All Photos** – All the recorded files are displayed.



If you have selected **All Photos**, proceed to step 6.

#### 5 Select the folder containing the file you want to play.

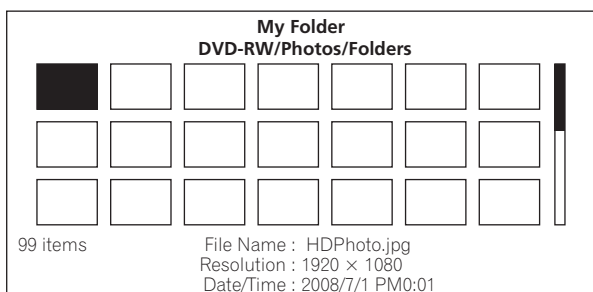
Use **↑/↓/←/→** to select, then press **ENTER**.



A list of the files and folders in the selected folder is displayed.

#### 6 Select and set the file you want to play.

Use **↑/↓/←/→** to select, then press **ENTER**.



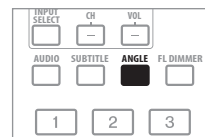
A slideshow starts from the selected file, and continues until the end of the list is reached. Use **⏪/⏩** to display the previous or next file.

#### ❖ About Slideshow

A display of the files on the disc or in the folder that switches automatically.

#### ❖ Rotating images

▶ Press **ANGLE** while playing a slideshow.

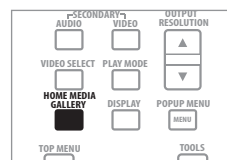


- The image rotates each time the button is pressed (90° → 180° → 270° → 0° → ...).

The image can also be rotated by selecting **Rotate** from the **TOOLS** menu.

### Playing audio files

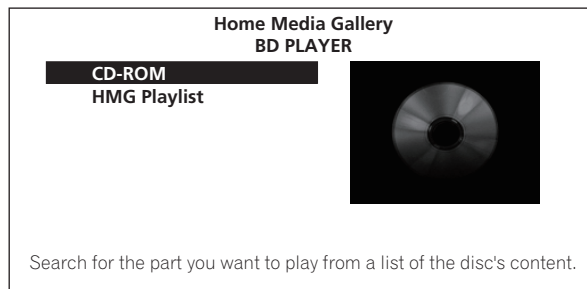
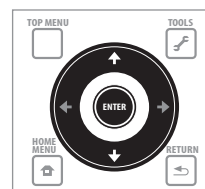
1 Press **HOME MEDIA GALLERY** to display the Home Media Gallery.



The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu then pressing **ENTER**.

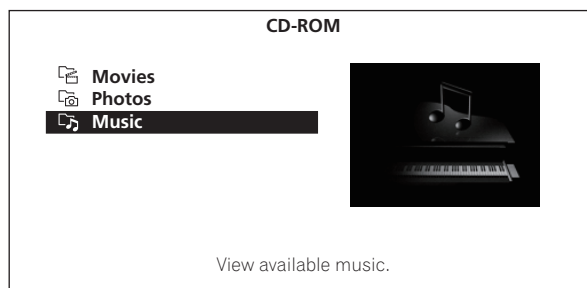
2 Select the disc.

Use **↑/↓** to select, then press **ENTER**.



3 Select Music.

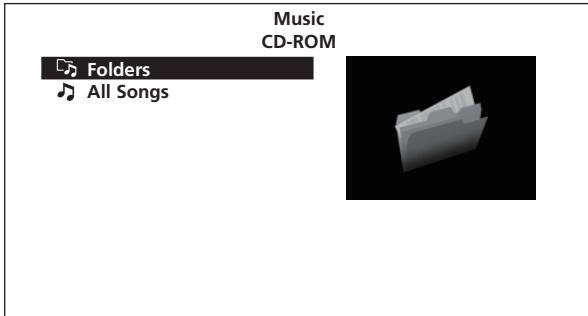
Use **↑/↓** to select **Music**, then press **ENTER**.



#### 4 Select Folders or All Songs.

Use **↑/↓** to select, then press **ENTER**.

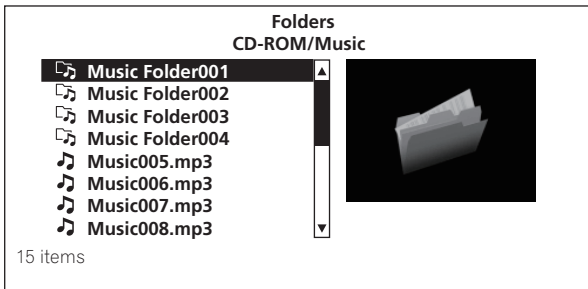
- **Folders** – The files in the selected folder are displayed.
- **All Songs** – All the recorded files are displayed.



If you have selected **All Songs**, proceed to step 6.

#### 5 Select the folder containing the file you want to play.

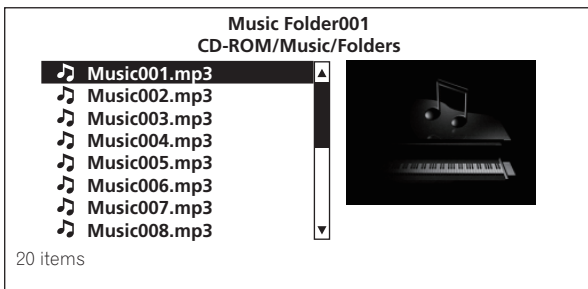
Use **↑/↓** to select, then press **ENTER**.



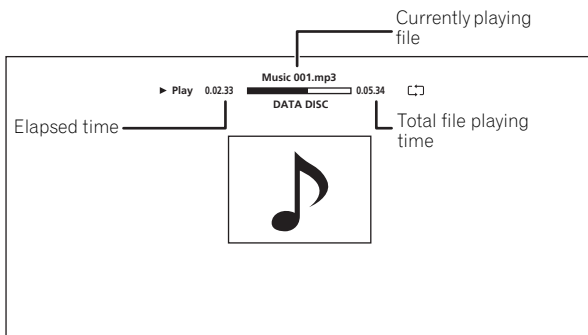
A list of the files and folders in the selected folder is displayed.

#### 6 Select and set the file you want to play.

Use **↑/↓** to select, then press **ENTER**.



Playback starts from the selected file, and continues until the end of the list is reached. Use **⏮/⏭** to play the previous or next file. The Now Playing screen (shown below) is displayed.



## Playing in the desired order (HMG Playlist)

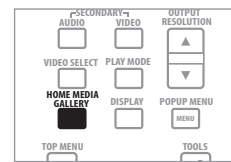
The discs that can add tracks and files to the HMG (Home Media Gallery) Playlist are as shown below.

- Audio CDs (CD-DAs and DTS-CDs)
- DVDs/CDs on which audio files are recorded

### ❖ Adding tracks/files

Use this procedure to add tracks and files, and create the HMG Playlist.

#### 1 Press HOME MEDIA GALLERY to display the Home Media Gallery.

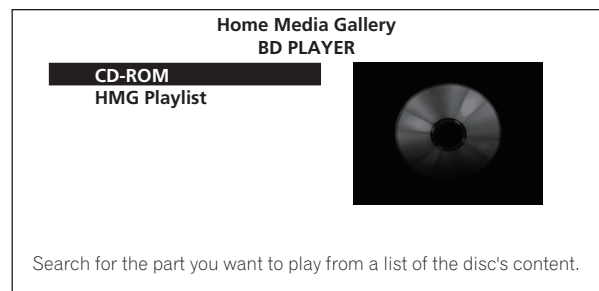
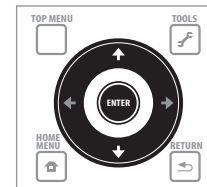


The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu pressing **ENTER**.

#### 2 Select the disc.

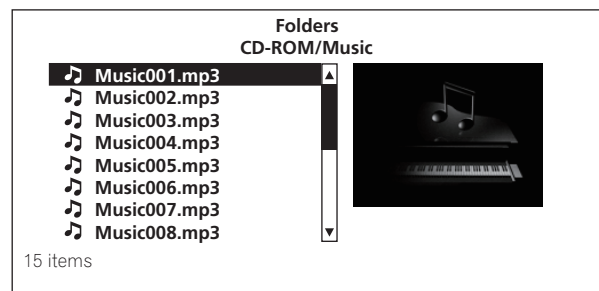
Load the disc beforehand.

Use **↑/↓** to select, then press **ENTER**.

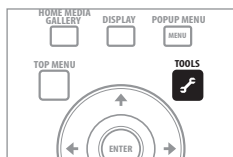


#### 3 Select the track/file to be added.

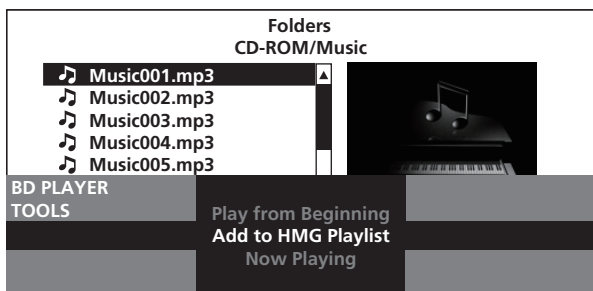
Use **↑/↓** to select.



4 Press **TOOLS** to display the **TOOLS** menu.



5 Select **Add to HMG Playlist**. Use **↑/↓** to select, then press **ENTER**.



The track or file selected in step 3 is added to the HMG Playlist. To add more tracks or files, repeat steps 3 to 5.

### ❖ To add the currently playing track/file to the HMG Playlist

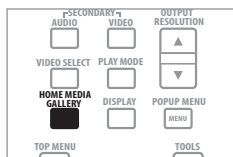
- ▶ While the track/file is playing, press **TOOLS** to display the **TOOLS** menu.
- ▶ Use **↑/↓** to select **Add to HMG Playlist**, then press **ENTER**.

#### **Note**

- A maximum of 24 tracks/files can be added to the HMG Playlist.
- The HMG Playlist is cleared in the following cases:
  - When the power is turned off.
  - When the disc tray is opened.

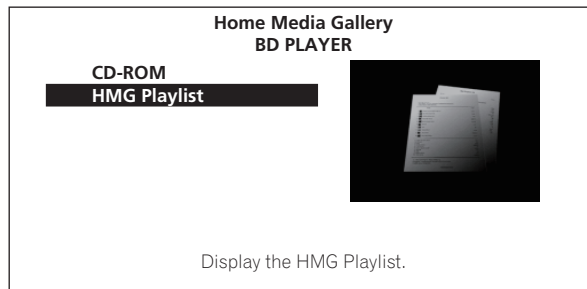
### ❖ Playing the HMG Playlist

1 Press **HOME MEDIA GALLERY** to display the **Home Media Gallery**.

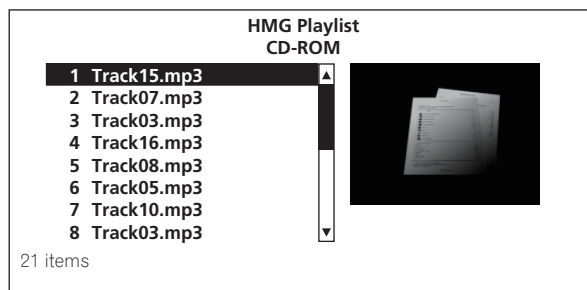


The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu pressing **ENTER**.

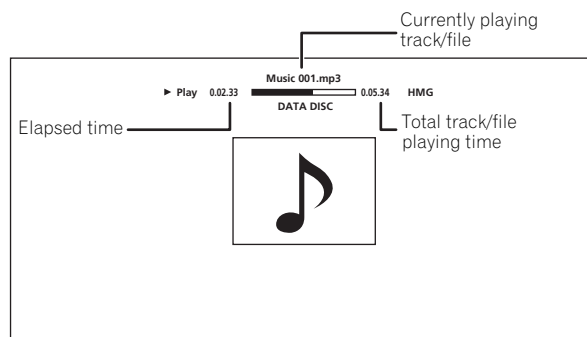
2 Select **HMG Playlist**. Use **↑/↓** to select, then press **ENTER**.



3 Select the track/file to be played. Use **↑/↓** to select, then press **ENTER**.



Playback starts from the selected track/file, and continues until the end of the list is reached. Use **◀▶** to play the previous or next track/file. The **Now Playing** screen (shown below) is displayed.



Press **■ STOP** to stop playback. When playback of an audio CD is stopped, the **Now Playing** screen turns off. When playback of an audio file is stopped, the **HMG Playlist** screen reappears.

### ❖ Deleting tracks/files from the HMG Playlist

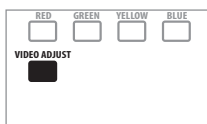
- ▶ Select the track/file to be deleted, then press **TOOLS** to display the **TOOLS** menu.
- ▶ Use **↑/↓** to select **Delete from HMG Playlist**, then press **ENTER**.

# Adjusting audio and video

## Adjusting the video

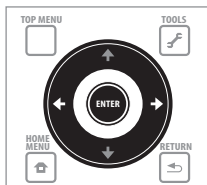
The quality of the playback picture can be adjusted according to the TV you are using.

### 1 During playback, press VIDEO ADJUST to display the Video Adjust screen.



The Video Adjust screen can also be displayed by selecting **Video Adjust** from the **TOOLS** menu.

### 2 Select a preset.



Select using  $\leftarrow/\rightarrow$  according to the TV being used.



- **LCD** – Select this when connected to a liquid crystal display TV.
- **PDP** – Select this when connected to a plasma TV of another brand.
- **Pioneer PDP** – Select this when connected to a Pioneer plasma TV.
- **Projector** – Select this when connected to a front projector.
- **Professional** – With this setting, video signal processing is restrained. Select this when connected to a professional monitor.
- **Memory1 to 3** – Picture quality settings with adjusted parameters can be stored in the memory. For a description of the parameters, see *When Memory1, 2 or 3 is selected* below.

### ❖ When Memory1, 2 or 3 is selected

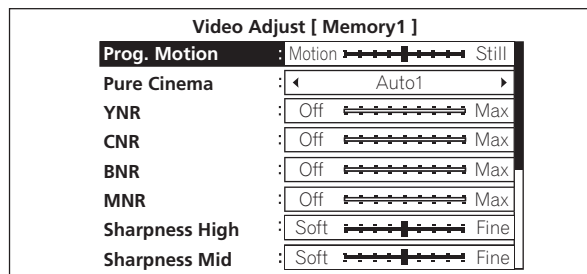
#### 1 Select Adjustments.

Use  $\downarrow$  to select **Adjustments**, then press **ENTER**.

A detailed settings screen appears.

### 2 Select the item to be adjusted.

Use  $\uparrow/\downarrow$  to select.



### 3 Adjust the picture quality.

When  $\leftarrow/\rightarrow$  are pressed, the adjustments can be made viewing the picture. The detailed settings screen reappears when **ENTER** is pressed.



- **Prog.Motion** – Adjust according to the type of image (moving or still image). This is effective mainly when outputting video materials as progressive images.
- **Pure Cinema** – This setting optimizes the operation of the progressive scanning circuit for playing film materials. Normally set it to **Auto1**. If the picture seems unnatural, switch this to **Auto 2**, **On** or **Off** (page 41).
- **YNR** – Reduces noise in the luminance (Y) signal.
- **CNR** – Reduces noise in the chroma (C) signal.
- **BNR** – Reduces the block noise (block-shaped distortion generated upon MPEG compression).
- **MNR** – Reduces the mosquito noise (distortion along the contours of the picture generated upon MPEG compression).
- **Sharpness High** – Adjusts the sharpness of the high-frequency (detailed) elements in the picture.
- **Sharpness Mid** – Adjusts the sharpness of the mid-frequency (less detailed) elements in the picture.
- **Detail** – Adjusts the picture's contours.
- **White Level** – Adjusts the level of the white portions.
- **Black Level** – Adjusts the level of the black portions.
- **Black Setup** – Select the black level as the setup level. Normally select **7.5 IRE**. If the black level is too bright due to the combination with the connected TV, select **0 IRE**.
- **Gamma Correction** – Adjusts how the dark portions of the picture look.
- **Hue** – Adjusts the balance between green and red.
- **Chroma Level** – Adjusts the density of the colors.

#### Note

- **Prog.Motion** and **Pure Cinema** have the effect only for pictures recorded in the interlaced scan format (480i or 1080i signals).
- **Prog.Motion** is disabled when **Pure Cinema** is set to **On**.
- **Black Setup** has the effect only for pictures output from the **VIDEO** and **S-VIDEO** output terminals.



• The items below do not apply to video signals output from the **VIDEO** and **S-VIDEO** output terminals, nor to 480i video signals output from the **COMPONENT VIDEO** output terminal (except when the **Output Video Resolution** is set to 480i (page 25)).

- Sharpness High
- Detail
- Black Level
- Hue
- Sharpness Mid
- White Level
- Gamma Correction
- Chroma Level

### ❖ Closing the Video Adjust screen

Press HOME MENU.

### ❖ About Pure Cinema

There are two types of video signals:

- **Video material** – Video signals recorded at 30 frames/second
- **Film material** – Video signals recorded at 24 frames/second

“Pure Cinema” uses signal processing suited for “film material” when converting 480i or 1080i interlaced video signals into progressive video signals, resulting in clear picture reproduction without losing the quality of the material.

is displayed on the disc information screen when playing the “film material” pictures of BD-ROM, BD-R/-RE and DVD-Video discs (page 30).

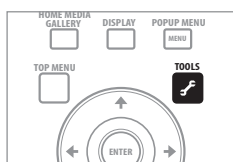
## Adjusting the audio

### Adjusting the Audio DRC

Audio DRC (Dynamic Range Control) has the effect of playing loud sounds softly and soft sounds loudly. Adjust the setting for example when viewing movies late at night and the dialogs are difficult to hear.

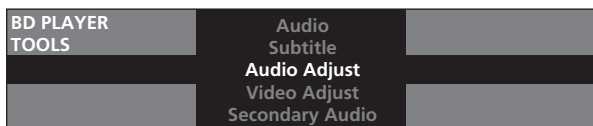
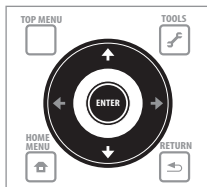
#### 1 During playback, display the TOOLS menu.

Press TOOLS.



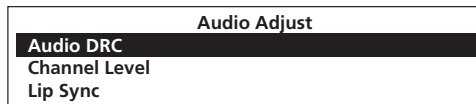
#### 2 Select and set Audio Adjust.

Use  $\uparrow/\downarrow$  to select, then press **ENTER**.

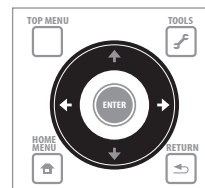


#### 3 Select and set Audio DRC.

Use  $\uparrow/\downarrow$  to select, then press **ENTER**.



#### 4 Adjust the setting.



Use  $\leftarrow/\rightarrow$  to switch between **Off**, **Low**, **Medium**, **High** and **Auto**.



### ❖ Closing the Audio DRC screen

Press **ENTER** or HOME MENU.

#### Note

- This only affects the Dolby TrueHD, Dolby Digital Plus and Dolby Digital audio signals of BDs, DVDs and video files.
- When **Auto** is selected, the setting has the same effect as **High** or **Off** for Dolby TrueHD signals, depending on the content. For Dolby Digital Plus and Dolby Digital, the setting has the same effect as **Off**.
- Audio DRC affects the audio signals output from the following audio output terminals:
  - Analog audio signals output from the **AUDIO OUT (7.1 ch)** terminals.
  - Linear PCM audio signals output from the **DIGITAL OUT** terminals or **HDMI OUT** terminals.
- The effect may be weak for some discs.

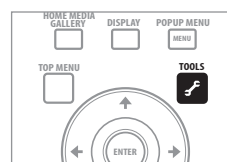
## Adjusting the output level of the different speakers during BD/DVD playback (Channel Level)

#### Caution

- **Channel Level** of the speakers set to **None** or **No** at **Speaker Setup** cannot be adjusted (page 47).

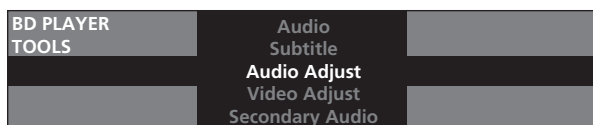
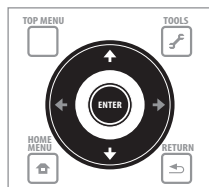
#### 1 During playback, display the TOOLS menu.

Press TOOLS.



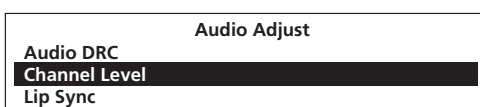
## 2 Select and set Audio Adjust.

Use **↑/↓** to select, then press **ENTER**.



## 3 Select and set Channel Level.

Use **↑/↓** to select, then press **ENTER**.



## 4 Adjust the output level.

Use **↑/↓** to select, **←/→** to adjust.

The output levels of the **L**, **C**, **R**, **SL**, **SR**, **SBL**, **SBR** and **SW** speakers can be adjusted within the range of  $-6.0$  dB to  $+6.0$  dB.

L	◀ 0.0 dB ▶
C	0.0 dB
R	0.0 dB
SR	0.0 dB
SBR	0.0 dB
SBL	0.0 dB
SL	0.0 dB
SW	0.0 dB

## 5 Press ENTER to set.

### Note

- The adjustment of **Channel Level** is only applicable to the sound output from **AUDIO OUT (7.1 ch)**.
- This cannot be adjusted when in the following cases:
  - Output Terminal** is set to **HDMI MAIN** or **DIGITAL AUDIO** (page 44).
  - Audio Output Mode** is set to **2 Channel** (page 45).
  - Channel Level** is set to **Fix** (page 45).

## ❖ Closing the Channel Level screen

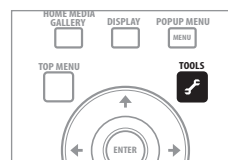
Press **HOME MENU**.

## Adjusting the audio delay (Lip Sync)

Adjust the audio delay for the selected video output terminal if the video and audio are not synchronized.

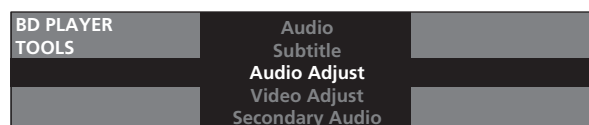
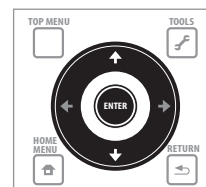
## 1 During playback, display the TOOLS menu.

Press **TOOLS**.



## 2 Select and set Audio Adjust.

Use **↑/↓** to select, then press **ENTER**.



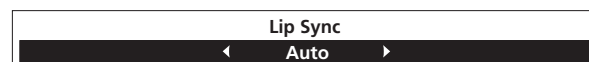
## 3 Select and set Lip Sync.

Use **↑/↓** to select, then press **ENTER**.



## 4 Select Auto or Manual.

Use **←/→** to select.

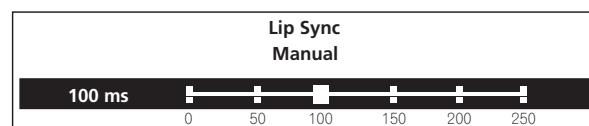


- Auto** – The player automatically adjusts the timing of the video and audio when connected to a device equipped with the HDMI Auto Lipsync Correction feature using an HDMI cable.
- Manual** – Adjust manually while viewing the video.

If you have selected **Manual**, proceed to step 5.

## 5 Adjusting the amount of audio delay.

Press **↓**, then use **←/→** to adjust.



The audio delay can be adjusted from 0 to 250 ms in steps of 5 ms.

### Note

- The **Lip Sync** adjustment is only applicable to the output terminal set at **Output Terminal** (page 44).
- The sound may be interrupted while setting the delay.

## ❖ Closing the Lip Sync screen

Press **ENTER** or **HOME MENU**.

# Chapter 6 Advanced settings

## Changing the settings

### Operating the Initial Setup screen

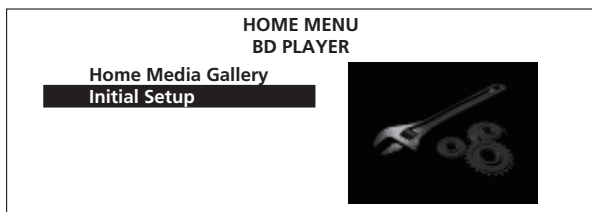
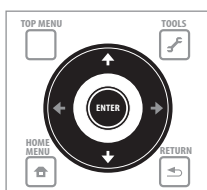
1 When playback is stopped, display the Home Menu screen.

Press HOME MENU.



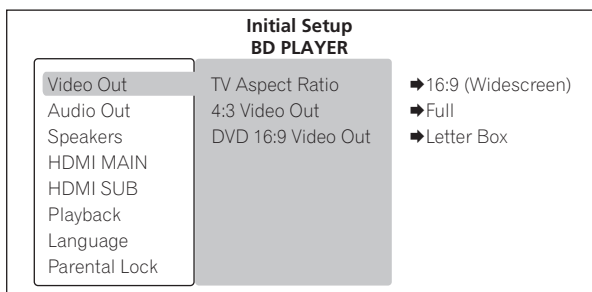
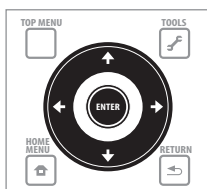
2 Select and set Initial Setup.

Use to select, then press ENTER.



3 Select the item and change the setting.

Use to select, then press ENTER.



### ❖ Closing the Initial Setup screen

Press HOME MENU.

 **Note**

- Items that cannot be changed are indicated in gray. The items that can be selected depend on the player's status.
- In Options, the factory default settings are indicated in bold.

Setting	Options	Explanation
Video Out	TV Aspect Ratio	<b>16:9 (Widescreen)</b> Select this when connected to a wide (16:9) TV. 4:3 (Standard) Select this when connected to a conventional TV.
	4:3 Video Out	<b>Full</b> 4:3 pictures are displayed over the entire screen. Normal 4:3 pictures are displayed with vertical black bars along the sides. Select this when you cannot switch the aspect ratio to 4:3 on the TV.
<b>4:3 Video Out</b> is only valid when <b>TV Aspect Ratio</b> is set to <b>16:9 (Widescreen)</b> .		
DVD 16:9 Video Out	<b>Letter Box</b>	16:9 pictures are displayed with black bars at the top and bottom when viewing on a 4:3 screen.
	Pan & Scan	The picture is displayed over the entire screen, with the left and right sides of the 16:9 picture cropped. Select this to view 4:3 pictures over the entire screen. For some discs, the picture will be displayed in the <b>Letter Box</b> mode even if <b>Pan &amp; Scan</b> is set.
<ul style="list-style-type: none"> <li>• <b>DVD 16:9 Video Out</b> is only valid when <b>TV Aspect Ratio</b> is set to <b>4:3 (Standard)</b>.</li> <li>• <b>DVD 16:9 Video Out</b> is only valid when playing 16:9 pictures of DVD-Video discs. When other 16:9 pictures are played, they are output in the <b>Letter Box</b> mode.</li> </ul>		
Audio Out	Output Terminal	<b>HDMI MAIN</b> Select this to output audio signals from the <b>HDMI OUT (MAIN)</b> terminal. DIGITAL AUDIO Select this to output audio signals from the <b>DIGITAL OUT</b> terminals. ANALOG AUDIO Select this to output audio signals from the <b>AUDIO OUT (7.1 ch)</b> terminals.
	<ul style="list-style-type: none"> <li>• The optimum audio signals for the audio format and the player's settings are output from the output terminal(s) set here.</li> <li>• When <b>HDMI MAIN</b> or <b>DIGITAL AUDIO</b> is selected at <b>Output Terminal</b>, linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at <b>Output Terminal</b>.</li> <li>• When <b>ANALOG AUDIO</b> is selected at <b>Output Terminal</b>, no audio signals are output from the <b>HDMI OUT</b> or <b>DIGITAL OUT</b> terminals.</li> <li>• To listen to the device connected to the <b>HDMI OUT (SUB)</b> terminal, select <b>HDMI MAIN</b> and turn off the power of the device connected to the <b>HDMI OUT (MAIN)</b> terminal.</li> </ul>	
	Dolby Digital Out * Only valid for the <b>DIGITAL OUT</b> terminals.	<b>Dolby Digital 1</b> Dolby Digital audio signals are output. With BD-ROMs, the secondary audio and interactive audio are mixed for output. Dolby Digital 2 Dolby Digital audio signals are output. With BD-ROMs, the signals are output without mixing the secondary audio and interactive audio signals. Dolby Digital → PCM Select this when the connected AV receiver or amplifier, etc., is not compatible with Dolby Digital audio signals. The Dolby Digital audio signals are converted into linear PCM audio signals for output.
DTS Out * Only valid for the <b>DIGITAL OUT</b> terminals.	<b>DTS 1</b> DTS Digital Surround audio signals are output. With BD-ROMs, the secondary audio and interactive audio are mixed for output. DTS 2 DTS Digital Surround audio signals are output. With BD-ROMs, the signals are output without mixing the secondary audio and interactive audio signals. DTS → PCM Select this when the connected AV receiver or amplifier, etc., is not compatible with DTS Digital Surround audio signals. The DTS Digital Surround audio signals are converted into linear PCM audio signals for output.	
AAC Out * Only valid for the <b>DIGITAL OUT</b> terminals.	AAC Select this when the connected AV receiver or amplifier, etc., is compatible with AAC audio signals. The AAC audio signals are output. <b>AAC → PCM</b> Select this when the connected AV receiver or amplifier, etc., is not compatible with AAC audio signals. The AAC audio signals are converted into linear PCM audio signals for output.	
DTS Downmix	<b>Stereo</b>	DTS-HD Master Audio signals, DTS-HD High Resolution Audio signals or DTS Digital Surround audio signals converted to linear PCM audio signals are converted into 2-channel (stereo) signals for output.
	Lt/Rt	DTS-HD Master Audio signals, DTS-HD High Resolution Audio signals or DTS Digital Surround audio signals converted to linear PCM audio signals are converted into 2-channel signals compatible with Dolby Surround for output (when the connected AV receiver or amplifier, etc., is compatible with Dolby Pro Logic, the AV receiver or amplifier outputs the linear PCM audio signals as surround audio signals).

Setting	Options	Explanation
Speakers	Audio Output Mode * Only valid for the <b>AUDIO OUT (7.1 ch)</b> terminals.	<b>2 Channel</b> Select this when the TV's analog 2-channel (stereo) audio input terminals are connected to the player's <b>AUDIO OUT (7.1 ch)</b> terminals.
		Multi-channel Select this when the multi-channel audio input terminals of an AV receiver or amplifier, etc., are connected to the player's <b>AUDIO OUT (7.1 ch)</b> terminals.
	Speaker Setup * Only valid for the <b>AUDIO OUT (7.1 ch)</b> terminals.	Set whether or not speakers are connected to the AV receiver or amplifier, as well as the size of the speakers. For details, see <i>Changing the speaker setup</i> on page 47.
	Speaker Distance * Only valid for the <b>AUDIO OUT (7.1 ch)</b> terminals.	Specify the distance of your speakers from your listening position (page 47).
Channel Level * Only valid for the <b>AUDIO OUT (7.1 ch)</b> terminals.	<b>Fix</b>	The output for the various speakers is set to the maximum.
	Variable	The output level of the various speakers is set within the range of -6.0 dB to +6.0 dB (in 0.5 dB steps) (page 47).
HDMI High Speed Transmission	On	Select this when connected with a High Speed HDMI™ cable (page 15).
	<b>Off</b>	Select this when connected with a Standard HDMI™ cable (page 15).
The player's setting screen is closed if the output video resolution is switched by changing the <b>HDMI High Speed Transmission</b> setting.		
HDMI MAIN/HDMI SUB	HDMI Color Space	<b>Auto</b> Select this to automatically switch the video output between YCbCr and RGB signals according to the connected equipment.
		YCbCr 4:4:4 Select this to output the video signals as YCbCr 4:4:4 signals.
		YCbCr 4:2:2 Select this to output the video signals as YCbCr 4:2:2 signals.
		RGB (16 to 235) Select this to output the video signals as RGB signals. Choose this if the colors seem too dense and all the dark colors are displayed in a uniform black when <b>RGB (0 to 255)</b> is selected.
		RGB (0 to 255) Select this to output the video signals as RGB signals. Choose this if the colors seem too faint and the black seems too bright when <b>RGB (16 to 235)</b> is selected.
Normally it is recommended to set this to <b>Auto</b> . When set to <b>Auto</b> , the optimum video signals for your TV are output.		
HDMI Audio Out * HDMI MAIN only.	<b>Auto</b>	The signals are output with as many audio channels as possible. In cases when the number of channels does not decrease when the signals are output as such without converting them to linear PCM, they are output as such (page 54).
	PCM	Select this when you want the secondary audio and interactive audio signals to be mixed for output or when you want to output prioritizing sampling frequency over the number of channels (page 54).
PQLS * HDMI MAIN only.	<b>Auto</b>	Enables PQLS function (page 16).
	Off	Disables PQLS function (page 16).
KURO LINK * HDMI MAIN only.	<b>On</b>	Select this to control the player with the remote control of the AV device connected using an HDMI cable. Also refer to <i>About KURO LINK function</i> on page 16.
	Off	Select this when you do not want to control the player with the remote control of the AV device connected using an HDMI cable.
Playback	Still Picture	Field This eliminates instability of the picture when playback is paused.
		Frame This makes pictures clear when playback is paused, but instability may be observed.
		<b>Auto</b> <b>Field</b> or <b>Frame</b> is switched automatically according to the disc or file being played.
Angle/Secondary Indicator	On	Select this to display the angle mark, secondary video mark and secondary audio mark on the TV screen (pages 29 and 30).
	<b>Off</b>	Select this if you do not want to display the angle mark, secondary video mark and secondary audio mark on the TV screen.
DivX VOD	Registration Code	Displays the player's registration code required to play DivX VOD files (page 11).
Hybrid Disc Playback	<b>BD</b>	The BD layer of hybrid discs with two or more layers (BD and DVD or CD) is played.
	DVD	The DVD layer of hybrid discs with two or more layers (BD and DVD) is played. If there is no DVD layer, the BD layer is played.
	CD	The CD layer of hybrid discs with two or more layers (BD and CD) is played. If there is no CD layer, the BD layer is played.
Remove the disc from the disc tray when changing the setting.		
BDMV/BDAV Playback Priority	BDMV	Select this to play the BDMV format on BD-R/-RE discs containing both BDMV and BDAV formats.
	<b>BDAV</b>	Select this to play the BDAV format on BD-R/-RE discs containing both BDMV and BDAV formats.
Remove the disc from the disc tray when changing the setting.		

	Setting	Options	Explanation
Language	OSD Language	<b>English</b>	Select this to set the language of the on-screen displays to English.
		<i>available languages</i>	Choose a language for the on-screen displays from the listed languages.
	Audio Language * For some discs, it may not be possible to change to the selected language.	<b>English</b>	Select this to set both the BD-ROM and DVD-Video default audio language to English.
		<i>available languages</i>	Choose a language from the listed languages to set the default audio language for BD-ROM and DVD-Video playback.
	Other	Continue to the next screen to set the default audio language for BD-ROM and DVD-Video playback. You can select the language name or enter the code number (see on page 55 for the code table).	
	If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.		
Subtitle Language * For some discs, it may not be possible to change to the selected language.	<b>English</b>		Select this to set the default subtitle language for BD-ROM and DVD-Video playback to English.
		<i>available languages</i>	Choose a language from the listed languages to set the default subtitle language for BD-ROM and DVD-Video playback.
	Other	Continue to the next screen to set the default subtitle language for BD-ROM and DVD-Video playback. You can select the language name or enter the code number (see on page 55 for the code table).	
	If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.		
BDMV/DVD-Video Menu Lang. * For some discs, it may not be possible to change to the selected language.	<b>w/Subtitle Language</b>		Sets the language of BD-ROM and DVD-Video menus to the same as that set for the subtitle language.
		<i>available languages</i>	Choose a language from the listed languages to set the default language for BD-ROM and DVD-Video menus.
	Other	Continue to the next screen to set the default menu language for BD-ROM and DVD-Video menus. You can select the language name or enter the code number (see on page 55 for the code table).	
	If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.		
Subtitle Display	<b>On</b>		Select this to display the subtitles.
		Off	Select this if you do not want to display the subtitles. Note that on some discs the subtitles are displayed by force.
Parental Lock	Set Password (Change Password)		Register (change) the password for parental lock settings or for unlocking to play DVD-Video with parental lock feature (page 48).
	DVD-Video Parental Lock		Change the player's parental lock level (page 49).
	BDMV Parental Lock		Change the restricted age (page 49).
	Country Code		Change the Country/Area code (page 50).
Network	IP Address		Select this to set the IP address of the player and DNS server (page 50).
	Proxy Server		Only set the proxy server if so instructed by your Internet service provider (page 50).
	Display Network Configuration		Select this to display a list of the network settings (page 51).
	Connection Test		Select this to test the network connection (page 51).
Options	On Screen Display	<b>On</b>	Select this to display the operation indicators (Play, Stop, etc.) on the TV screen.
		Off	Select this if you do not want to display the operation indicators (Play, Stop, etc.) on the TV screen.
	Screen Saver	<b>On</b>	The screen saver is automatically activated if there is no operation for over 1 minute after playback is stopped or paused. The screen saver is automatically activated if there is no operation for over 1 minute after the Home Menu or Home Media Gallery is displayed while playing a BD or DVD. With audio CDs and audio files, the screen saver is automatically activated if no button is operated for over 1 minute, even while the audio CD or audio file is playing. The screen saver turns off when an operation is performed on the player or remote control.
		Off	The screen saver is not activated.
Auto Power Off	<b>On</b>	Select this to turn the power off automatically (the power turns off automatically if no operation is performed for over 30 minutes).	
	Off	Select this if you do not want the power to turn off automatically.	
BDMV Data Erase		When a BD-ROM is played, additional data may be stored in the player's memory (local storage). If the message indicating low memory (local storage) appears, erase the BDMV data (page 51).	
Software Update		The Software Update function can check for and download updated system software from the network server (page 52).	
Setup Navigator		Start making the settings using the Setup Navigator menu. For details, see <i>Making settings using the Setup Navigator menu</i> on page 21.	

## ❖ Changing the speaker setup

Set whether or not speakers are connected to the AV receiver or amplifier, as well as the size of the speakers. This setting is only valid for the **AUDIO OUT (7.1 ch)** terminals.

### ⚠ Caution

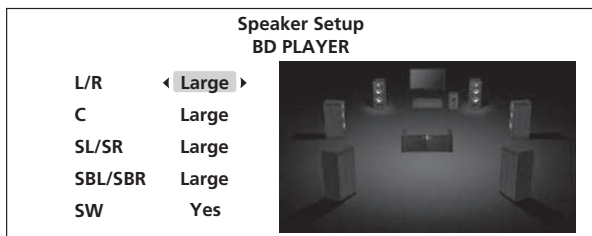
- The **Speaker Setup** cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 45).

#### 1 Select and set Speakers → Speaker Setup → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

#### 2 Select the speaker and change the setting.

Use **↑/↓** to select, then use **←/→** to change the setting.



- L/R** (front left and right speakers): **Large/Small**
- C** (center speaker): **Large/Small/None**
- SL/SR** (left and right surround speakers): **Large/Small/None**
- SBL/SBR** (left and right surround back speakers): **Large/Small/None**
- SW** (subwoofer): **Yes/No**

### 📝 Note

- Depending on the combination of settings of the different speakers, the settings of speakers other than the one you have changed may also change automatically.

## ❖ Adjusting the distance of the different speakers

Adjust the distance between you and the different speakers. This setting is only valid for the **AUDIO OUT (7.1 ch)** terminals.

### ⚠ Caution

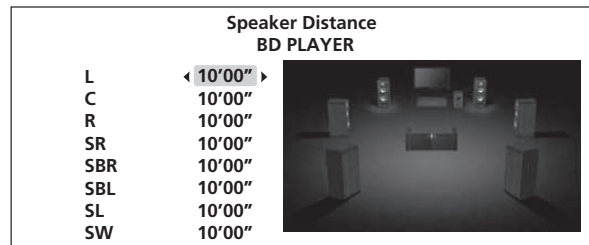
- This cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 45).
- Speaker Distance** of the speakers set to **None** or **No** at **Speaker Setup** cannot be adjusted (above).

#### 1 Select and set Speakers → Speaker Distance → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

#### 2 Select the speaker and adjust the distance.

Use **↑/↓** to select, then use **←/→** to adjust.



- The distance of all the speakers can be set to between 1 inch and 45 feet, in units of 1 inch.

## ❖ Adjusting the output level of the different speakers (Channel Level)

Adjust each output level of the different speakers by using test tones. This setting is only valid for the **AUDIO OUT (7.1 ch)** terminals.

### ⚠ Caution

- This cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 45).
- Channel Level** of the speakers set to **None** or **No** at **Speaker Setup** cannot be adjusted (above).
- Test tones are output. Lower the volume of the device connected to the player.

#### 1 Select and set Speakers → Channel Level, then Fix or Variable.

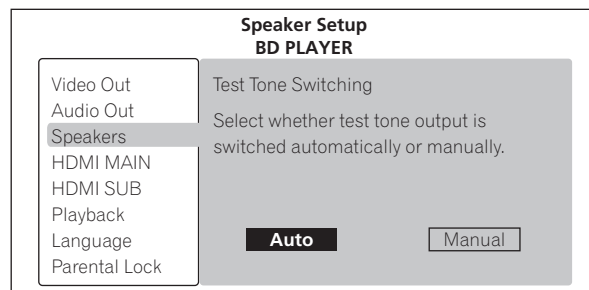
Use **↑/↓** to select, then press **ENTER**.

- Fix** – The output level of all the speakers is set to the maximum.
- Variable** – The output level of all the speakers is set 6.0 dB lower than when **Fix** is selected. From this point, the output levels of the **L, C, R, SL, SR, SBL, SBR** and **SW** speakers can be adjusted within the range of  $-6.0$  dB to  $+6.0$  dB.

If you have selected **Variable**, proceed to step 2.

#### 2 Select and set the method for switching the speaker to be adjusted.

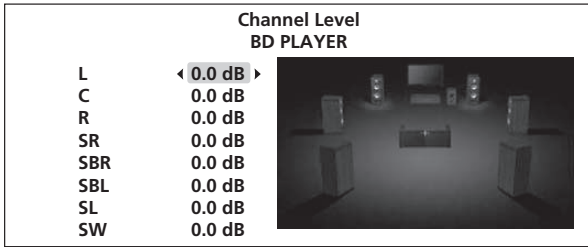
Use **←/→** to select, then press **ENTER**.



- Auto** – Switch the speaker to be adjusted automatically.
- Manual** – Switch the speaker to be adjusted manually.

### 3 Adjust the output level.

Use  $\uparrow/\downarrow$  to select,  $\leftarrow/\rightarrow$  to adjust.



#### Note

- You can also adjust while listening to the sound being played (page 41).
- The volume of the test tones output from the subwoofer may seem lower than the tones output from the other channels. Adjust the subwoofer based on the sound during playback (page 41).
- When **Auto** is selected, the speaker cannot be selected with  $\uparrow/\downarrow$ . In this case, test tones are not output from the subwoofer.

### ❖ Changing to other language at language setting

#### 1 Select and set Language.

Use  $\uparrow/\downarrow$  to select, then press **ENTER**.

#### 2 Select and set Audio Language, Subtitle Language or BDMV/DVD-Video Menu Lang.

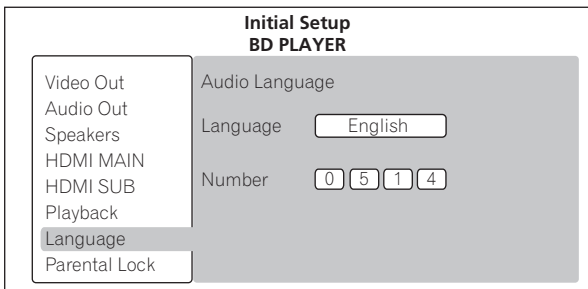
Use  $\uparrow/\downarrow$  to select, then press **ENTER**.

#### 3 Select and set Other.

Use  $\uparrow/\downarrow$  to select, then press **ENTER**.

#### 4 Change the language.

Use  $\leftarrow/\rightarrow$  to change, then press **ENTER**.



- The language can also be changed using the number buttons. Use  $\uparrow/\downarrow$  to move the cursor to **Number**, use the number buttons (0 to 9) to input the number, then press **ENTER**. Refer to *Language Code Table and Country/Area Code Table* on page 55.

#### Note

- If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.

### ❖ Registering or Changing the password

Use this procedure to register or change the code number required for the Parental Lock settings.

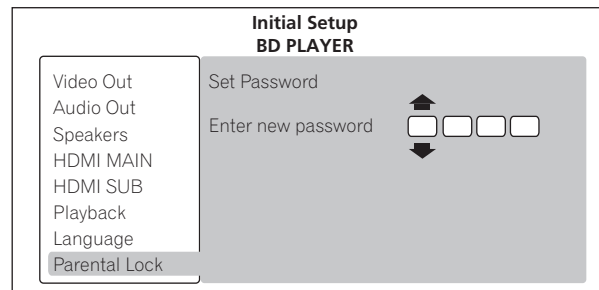
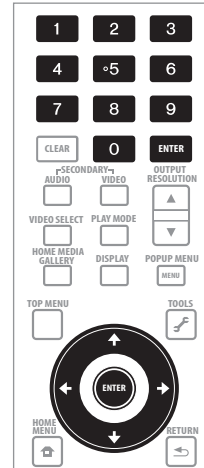
#### 1 Select and set Parental Lock → Set Password → Next Screen.

Use  $\uparrow/\downarrow$  to select, then press **ENTER**.

#### 2 Input the password.

Use the number buttons (0 to 9) or  $\uparrow/\downarrow$  to input the number, then press **ENTER** to set.

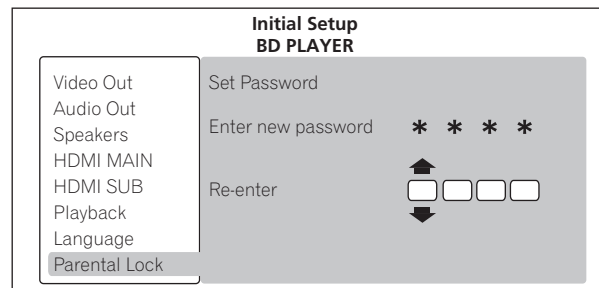
Use  $\leftarrow/\rightarrow$  to move the cursor.



#### 3 Re-input the password.

Use the number buttons (0 to 9) or  $\uparrow/\downarrow$  to input the number, then press **ENTER** to set.

Use  $\leftarrow/\rightarrow$  to move the cursor.



- To change the password, input the previously registered password, then input the new password.

#### Note

- We recommend making a note of the password.
- If you forget the password, reset the player to the factory default setting, then register the password again (page 53).



### ❖ Changing the Parental Lock level for viewing DVDs

Some DVD-Video discs containing scenes of violence, for example, have Parental Lock levels (check the indications on the disc's jacket or elsewhere). To restrict viewing these discs, set the player's level to the level lower than the discs.

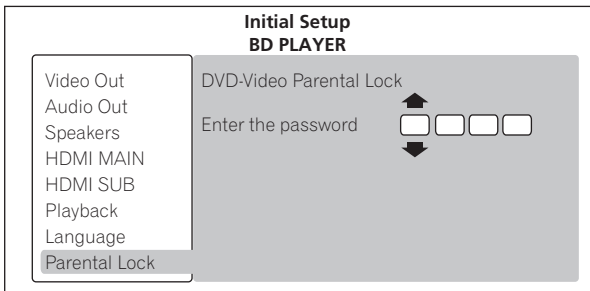
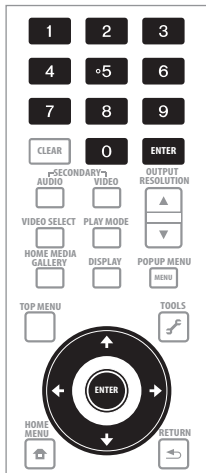
#### 1 Select and set Parental Lock → DVD-Video Parental Lock → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

#### 2 Input the password.

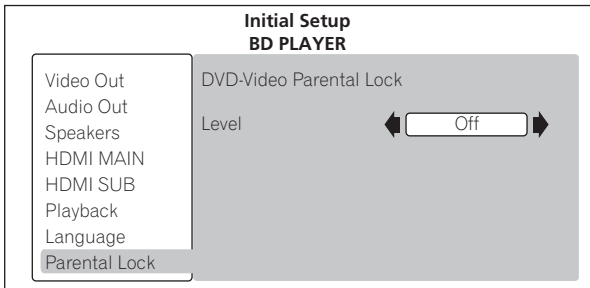
Use the number buttons (0 to 9) or **↑/↓** to input the number, then press **ENTER** to set.

Use **←/→** to move the cursor.



#### 3 Change the level.

Use **←/→** to change, then press **ENTER** to set.



#### Note

- The level can be set to **Off** or between **Level1** and **Level8**. When set to **Off**, viewing is not restricted.

### ❖ Changing the Age Restriction for viewing BD-ROMs

For BD-ROMs containing scenes of violence, for example, viewing can be restricted by setting an age restriction for the BD-ROMs.

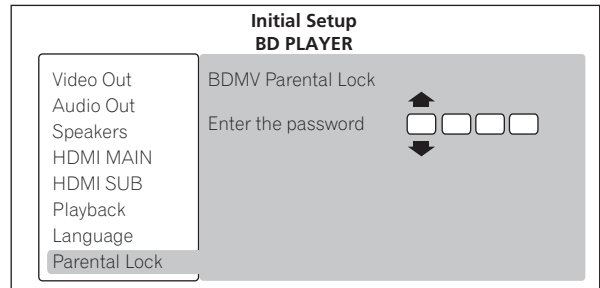
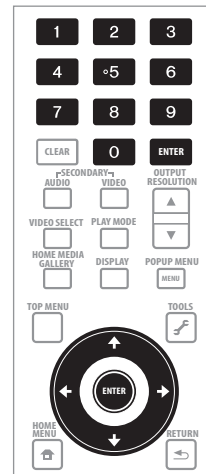
#### 1 Select and set Parental Lock → BDMV Parental Lock → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

#### 2 Input the password.

Use the number buttons (0 to 9) or **↑/↓** to input the number, then press **ENTER** to set.

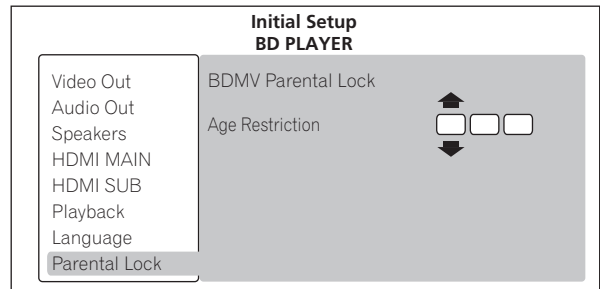
Use **←/→** to move the cursor.



#### 3 Change the age.

Use the number buttons (0 to 9) or **↑/↓** to input the number, then press **ENTER** to set.

Use **←/→** to move the cursor.



#### Note

- When **Age Restriction** is set to **255**, viewing is not restricted.

## ❖ Changing the Country/Area code

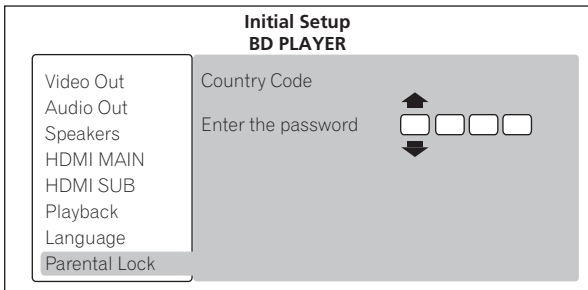
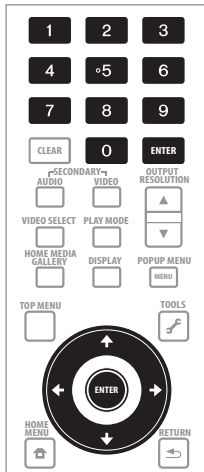
### 1 Select and set Parental Lock → Country Code → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

### 2 Input the password.

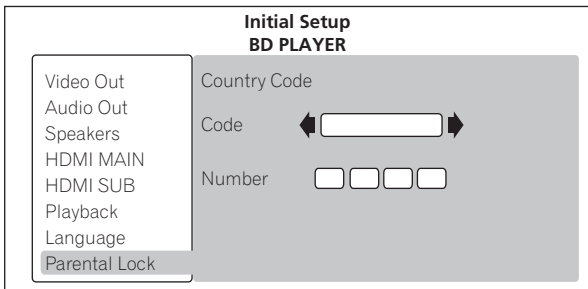
Use the number buttons (0 to 9) or **↑/↓** to input the number, then press **ENTER** to set.

Use **←/→** to move the cursor.



### 3 Change the country/area code.

Use **←/→** to change, then press **ENTER** to set.



- The the country/area code can also be changed using the number buttons. Use **↑/↓** to move the cursor to **Number**, use the number buttons (0 to 9) to input the number, then press **ENTER**. Refer to *Language Code Table and Country/Area Code Table* on page 55.

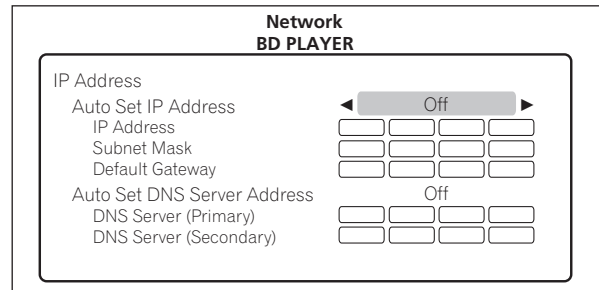
## ❖ Setting the IP address

### 1 Select and set Network → IP Configuration → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

### 2 Set IP address.

Use **↑/↓/←/→** to set the IP address of the player or DNS server, then press **ENTER**.



#### • Auto Set IP Address

**On** – The player's IP address is obtained automatically. Select this when using a broadband router or broadband modem that has a DHCP (Dynamic Host Configuration Protocol) server function. This player's IP address will automatically be allocated from the DHCP server.

**Off** – The player's IP address must be set manually. Use the number buttons (0 to 9) to input the IP address, subnet mask and default gateway.

#### • Auto Set DNS Server Address

**On** – The DNS server's IP address is obtained automatically.

**Off** – The DNS server's IP address must be set manually. Use the number buttons (0 to 9) to input the DNS server's IP address stipulated by your Internet service provider.

#### Note

- When **Auto Set IP Address** is set to **Off**, **Auto Set DNS Server Address** is also set to **Off**.
- For information on DHCP server function, refer to the network device's operating instructions.
- You may need to contact your Internet service provider or network administrator when inputting the IP address manually.

## ❖ Setting the proxy server

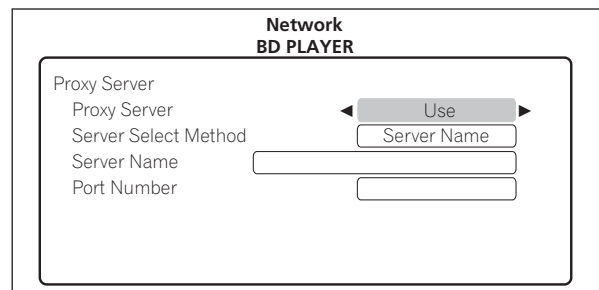
Only set the proxy server if so instructed by your Internet service provider.

### 1 Select and set Network → Proxy Server → Next Screen.

Use **↑/↓** to select, then press **ENTER**.

### 2 Select and set Use or Not use at Proxy Server.

Use **←/→** to change, then press **↓**.

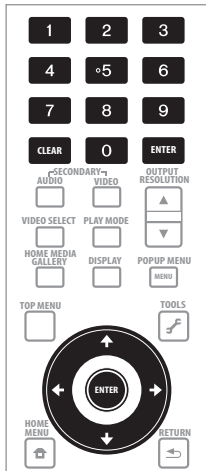


- **Use** – Select this when using a proxy server.
- **Not use** – Select this when not using a proxy server.

If you have selected **Use**, proceed to step 3.

**3 Select and set Server Select Method.**

Use **←/→** to change, then press **↓**.



- **IP Address** – Input the IP address.
- **Server Name** – Input the server name.

**4 Input IP Address or Server Name**

Use the number buttons (0 to 9) to input the number if you select IP address by step 3. Use **←/→** to move the cursor.

Use the number buttons (0 to 9) to input characters if you select Server Name by step 3.

The characters that can be input for the server name are listed on the table below. Pressing a button repeatedly cycles through the characters shown.

- If you want to enter two characters in succession that are both on the same button (for example a **P** and an **R**), press **→** after inputting the first character then input the second character.
- Use **CLEAR** to delete the last character.
- Use **←/→** to move the displayed characters when all the input characters cannot be displayed.

Key	Characters	Key	Characters
1	1 . -	6	m n o 6
2	a b c 2	7	p q r s 7
3	d e f 3	8	t u v 8
4	g h i 4	9	w x y z 9
5	j k l 5	0	0

**5 Input Port Number.**

Press **↓**, use the number buttons (0 to 9) to input the number.

**6 Press ENTER to set.**

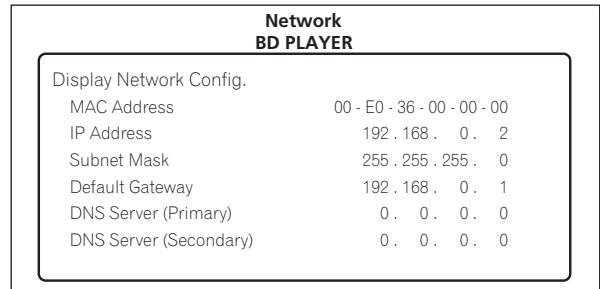
**❖ Displaying the network settings**

**1 Select and set Network → Display Network Configuration → Next Screen.**

Use **↑/↓** to select, then press **ENTER**.

The MAC address, IP address, subnet mask, default gateway and DNS server (primary and secondary) settings are displayed.

When **Auto Set IP Address** is set to **On**, the values obtained automatically are displayed.



**Note**

- "0.0.0.0" is displayed when each IP address has not been set.

**❖ Testing the network connection**

**1 Select and set Network → Connection Test → Start.**

Use **↑/↓** to select, then press **ENTER**.

"Network connection test completed successfully." is displayed once the test is completed. If any other message is displayed, check the connections and/or settings (pages 20 and 50).

**❖ Erasing the additional data from BD-ROMs**

When a BD-ROM is played, additional data may be stored in the player's memory (local storage).

If the message indicating low memory (local storage) appears, erase the BDMV data.

**Caution**

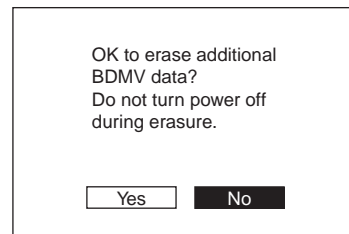
- When the BDMV data is erased, all the data of secondary video (Picture-in-Picture), secondary audio, bookmark, etc. that has been stored is erased.
- It takes time to erase the BDMV data for a while. Do not unplug the power cord while the data is being erased.

**1 Select and set Options → BDMV Data Erase → Next Screen.**

Use **↑/↓** to select, then press **ENTER**.

**2 Erase the data.**

Use **←/→** to select **Yes**, then press **ENTER**.



## ❖ Software updating

The software of the player can be updated by connecting it to the Internet using a LAN cable.

Before updating the software, make sure that you have connected the player to the network and made the necessary settings (pages 20 and 50).

### ⚠ Caution

- Do not unplug the power cord during software updating. Otherwise, the updating will be aborted and malfunction may occur with the player.
- There are two processes for software updating, downloading and updating. Both processes may take a certain period of time.
- Depending on the Internet connection conditions, downloading may take a long time.
- Other operations are defeated during software updating. Furthermore updating process cannot be canceled.
- When the front panel display is off, turn it on with **FL DIMMER**. When updating the player's software with the front panel display off, do not unplug the power cord until the **FL OFF** indicator turns off.

### 📝 Note

- Steps **1** to **2** are the operations performed by the user (they are intended to download the software from the Internet).
- Steps **3** to **5** are the operations performed (automatically) by the player (they are intended to update the software).

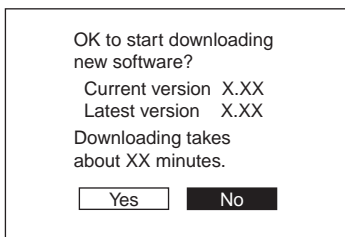
#### 1 Select and set Options → Software Update → Start.

Use **↑/↓/←/→** to select, then press **ENTER**.

- If the player is already running the latest software, the message "The player's software is up to date and does not need updating." is displayed.

#### 2 Select and set Yes.

Use **←/→** to select **Yes**, then press **ENTER**.



- The help menu is displayed if the player cannot connect to the Internet. Check the connections and settings (pages 20 and 50).

#### 3 Downloading of the software start.

The software download status is displayed on the screen.

- Depending on the Internet connection conditions, software downloading may take a certain period of time.

#### 4 Updating starts.

The front panel display shows messages such as "DATA CHECK", "WRT SYS1", "WRT DRV" and "WRT FLC".

- Software updating may take a certain period of time.

#### 5 Updating completes.

The front panel display shows "DOWNLOAD OK" and the player turns off automatically.

## Stretching widescreen pictures vertically (Anamorphic Zoom)

Some discs include movies, etc., with a vertical-to-horizontal picture rate of 2.35:1 recorded as 16:9 pictures with black bars at the top and bottom of the screen. Turn this function on when projecting this type of picture with a front projector equipped with an anamorphic lens.

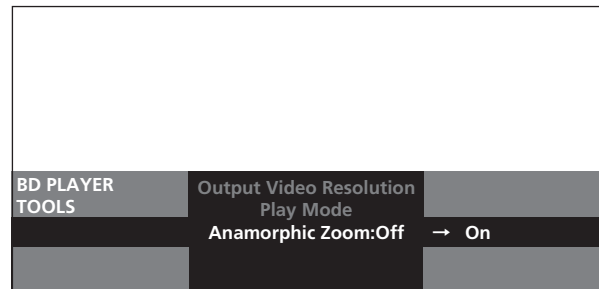
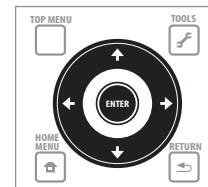
#### 1 During playback, display the TOOLS menu.

Press **TOOLS**.



#### 2 Select and set Anamorphic Zoom.

Use **↑/↓** to select, then use **←/→** to change the setting.



- **On** – 16:9 pictures are stretched vertically, cropping the black bars at the top and bottom of the 2.35:1 picture for output.
- **Off** – 16:9 pictures are output as such, without stretching them vertically.

### 📝 Note

- This is valid when **TV Aspect Ratio** is set to **16:9 (Widescreen)** (page 44).
- When set to **On**, the top and bottom of 16:9 pictures with no black bars at the top and bottom are also cropped.
- Even when set to **On**, the vertical stretch is canceled and the original picture with the black bars reappears temporarily when the Video Adjust screen is displayed. For other operation screens, the top and bottom may be cropped, making the screen hard to see.

#### ❖ To close the TOOLS menu

Press **TOOLS** or **RETURN**.

## Eliminating extraneous noise to play with high quality sound (Pure Audio)

This function suppresses unnecessary signals to reduce noise and output high quality audio signals.

The Pure Audio function includes the following modes:

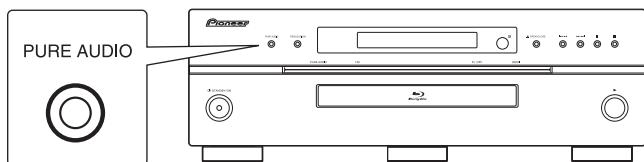
- **Mode 1** – Select this when listening to audio CDs and audio files. This mode also provides higher quality sound than **Mode 2** when playing only the audio portion of such video sources as BDs, DVDs and video files.
- **Mode 2** – Select this when also viewing the video portion of such video sources as BDs, DVDs and video files.
- **Off** – Select this to disable the Pure Audio function.

### Caution

- When **Mode 1** or **Mode 2** is set, the operation is as described below.
  - When **Mode 1** is set, only audio signals are output during playback (except when an operation is being performed and the disc menus are being displayed).
  - Video signals are only output from the output terminal selected with **VIDEO SELECT** (page 25).
  - Audio signals are only output from the output terminal set at **Output Terminal** (page 44).
  - The player’s front panel display turns off during playback (except when an operation is being performed and the disc menus are being displayed).
  - The **PURE AUDIO** indicator on the player’s front panel lights.

### ❖ Switching the Pure Audio Mode

- ▶ Press **PURE AUDIO** on the front panel.



The currently set Pure Audio mode is indicated on the player’s front panel display.

The Pure Audio mode changes each time the button is pressed.

“PURE MODE1” → “PURE MODE2” → “PURE OFF”

└──┘

### Note

- The Pure Audio mode cannot be changed during playback.

## Restoring all the settings to the factory default settings

- 1 Check that the player’s power is turned on.
- 2 When a disc is playing, press **■** to stop playback. Eject the disc from the player.
- 3 While pressing **■**, press **⏻** **STANDBY/ON**. Operate using the buttons on the player’s front panel.

### Note

- After restoring all the settings to the factory default settings, use **Setup Navigator** to reset the player (page 21).
- When all the settings are restored to the factory defaults, all the data for the secondary video (Picture-in-Picture), secondary audio, bookmarks, etc., is erased.

## 06 About the audio output settings

The audio signals that are output differ according to the audio format recorded on the disc and the player's settings. Check on the table below.

### Caution

- When **ANALOG AUDIO** is selected at **Output Terminal**, no audio signals are output from the **HDMI OUT** or **DIGITAL OUT** terminals (page 44).
- When **HDMI MAIN** or **DIGITAL AUDIO** is selected at **Output Terminal**, linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at **Output Terminal** (page 44).
- The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals.

Audio format	AUDIO OUT (7.1 ch) terminals		DIGITAL OUT terminals		HDMI OUT (MAIN) terminal		
	2ch <sup>1</sup>	Multi-channel <sup>1</sup>	Converted to linear PCM audio <sup>2</sup>	Not converted to linear PCM audio <sup>3</sup>	PCM <sup>4</sup>	Auto <sup>4</sup>	
BD-ROM	Dolby Digital	5.1-channel audio			5.1-channel audio	Dolby Digital <sup>6,7</sup>	
	Dolby Digital Plus			Dolby Digital <sup>5</sup>	7.1-channel audio	Dolby Digital Plus <sup>6,7</sup>	
	Dolby TrueHD				7.1-channel audio <sup>8</sup>	Dolby TrueHD <sup>6,7,9</sup>	
	DTS Digital Surround	Converted to 2-channel audio	Converted to 2-channel audio		5.1-channel audio	DTS Digital Surround <sup>6,10</sup>	
	DTS-HD High Resolution Audio			DTS Digital Surround <sup>5</sup>	5.1-channel audio <sup>11</sup>	DTS-HD High Resolution Audio <sup>6,8,10</sup>	
	DTS-HD Master Audio					DTS-HD Master Audio <sup>6,10,12</sup>	
	Linear PCM		7.1-channel audio		Converted to 2-channel audio	7.1-channel audio <sup>8</sup>	7.1-channel audio <sup>8</sup>
BD-R/-RE	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital	5.1-channel audio	Dolby Digital <sup>7</sup>
	MPEG-2 AAC				MPEG-2 AAC		MPEG-2 AAC
	MPEG						
	Linear PCM				2-channel audio		
DVD-Video	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital	5.1-channel audio	Dolby Digital <sup>7</sup>
	DTS Digital Surround				DTS Digital Surround		DTS Digital Surround <sup>10</sup>
	MPEG						
	Linear PCM				2-channel audio		
DVD (VR format)	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital	5.1-channel audio	Dolby Digital <sup>7</sup>
	MPEG						
	Linear PCM				2-channel audio		

1. When **Audio Output Mode** is set to **2 Channel** or **Multi-channel** (page 45).
2. When **Dolby Digital Out** is set to **Dolby Digital → PCM**, **DTS Out** is set to **DTS → PCM**, or **AAC Out** is set to **AAC → PCM** (page 44).
3. When **Dolby Digital Out** is set to **Dolby Digital 1/Dolby Digital 2**, **DTS Out** is set to **DTS 1/DTS 2** or **AAC Out** is set to **AAC** (page 44).
4. When **HDMI Audio Out** is set to **PCM** or **Auto** (page 45).
5. When outputting Dolby Digital or DTS Digital Surround bitstream with settings of **Dolby Digital 2** at **Dolby Digital Out**, **DTS 2** at **DTS Out**, the secondary audio and interactive audio signals are not mixed for output.
6. When outputting the bitstream of Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-HD Master Audio, DTS-HD High Resolution Audio or DTS Digital Surround, the secondary audio and interactive audio signals are not mixed.
7. If the connected HDMI device is not compatible with Dolby TrueHD or Dolby Digital Plus bitstream, the signals are output in linear PCM (7.1 channels) or Dolby Digital bitstream.  
If the connected HDMI device is not compatible with Dolby Digital bitstream, the signals are output in linear PCM (2 channels).
8. When the output video resolution is set to 480i or 480p, the signals may be output in linear PCM (2 channels), depending on **HDMI High Speed Transmission** setting and/or the connected HDMI device (page 15).
9. When the output video resolution is set to 480i or 480p, the signals may be output in linear PCM (2 channels) or Dolby Digital bitstream, depending on **HDMI High Speed Transmission** setting and/or the connected HDMI device (page 15).
10. If the connected HDMI device is not compatible with DTS-HD Master Audio or DTS-HD High Resolution Audio, the signals are output in DTS Digital Surround bitstream.  
If the connected HDMI device is not compatible with DTS Digital Surround bitstream, the signals are output in linear PCM (2 channels).
11. DTS Digital Surround signals converted to linear PCM audio signals are output.
12. When the output video resolution is set to 480i or 480p, the signals may be output in linear PCM (2 channels) or DTS Digital Surround bitstream, depending on **HDMI High Speed Transmission** setting and/or the connected HDMI device (page 15).

 **Note**

- Only compatible with 7.1-channel surround back. 6.1-channel surround back is output in 7.1 channels. In other cases, output as audio signals of 5.1-channels or less.
- When outputting linear PCM audio signals, if the number of compatible channels of the connected HDMI device is lower, the signals are output with the number of channels for which the device is compatible.
- The audio signals output from the **HDMI OUT (SUB)** and **DIGITAL OUT** terminals have a sampling frequency of 48 kHz (44.1 kHz for audio CDs).

## Language Code Table and Country/Area Code Table

### ❖ Language Code Table

Language name, **language code**, **input code**

Abkhazian, <b>ab/abk</b> , 0102	Frisian, <b>fy/fry</b> , 0625	Macedonian, <b>mk/mkd</b> , 1311	Slovak, <b>sk/slk</b> , 1911
Afar, <b>aa/aar</b> , 0101	Galician, <b>gl/glg</b> , 0712	Malagasy, <b>mg/mlg</b> , 1307	Slovenian, <b>sl/slv</b> , 1912
Afrikaans, <b>af/af</b> , 0106	Georgian, <b>ka/kat</b> , 1101	Malay, <b>ms/msa</b> , 1319	Somali, <b>so/som</b> , 1915
Albanian, <b>sq/sqi</b> , 1917	German, <b>de/deu</b> , 0405	Malayalam, <b>ml/mal</b> , 1312	Sotho, Southern, <b>st/sot</b> , 1920
Amharic, <b>am/amh</b> , 0113	Greek, <b>el/ell</b> , 0512	Maltese, <b>mt/mlt</b> , 1320	Spanish, <b>es/spa</b> , 0519
Arabic, <b>ar/ara</b> , 0118	Guarani, <b>gn/grn</b> , 0714	Maori, <b>mi/mri</b> , 1309	Sundanese, <b>su/sun</b> , 1921
Armenian, <b>hy/hye</b> , 0825	Gujarati, <b>gu/guj</b> , 0721	Marathi, <b>mr/mar</b> , 1318	Swahili, <b>sw/swa</b> , 1923
Assamese, <b>as/asm</b> , 0119	Hausa, <b>ha/hau</b> , 0801	Mongolian, <b>mn/mon</b> , 1314	Swati, <b>ss/ssw</b> , 1919
Aymara, <b>ay/aym</b> , 0125	Hebrew, <b>iw/heb</b> , 0923	Moldavian, <b>mo/mol</b> , 1315	Swedish, <b>sv/swe</b> , 1922
Azerbaijani, <b>az/aze</b> , 0126	Hindi, <b>hi/hin</b> , 0809	Nauru, <b>na/nau</b> , 1401	Tagalog, <b>tl/tgl</b> , 2012
Bashkir, <b>ba/bak</b> , 0201	Hungarian, <b>hu/hun</b> , 0821	Nepali, <b>ne/nep</b> , 1405	Tajik, <b>tg/tgk</b> , 2007
Basque, <b>eu/eus</b> , 0521	Icelandic, <b>is/isl</b> , 0919	Norwegian, <b>no/nor</b> , 1415	Tamil, <b>ta/tam</b> , 2001
Belarusian, <b>be/bel</b> , 0205	Indonesian, <b>in/ind</b> , 0914	Occitan, <b>oc/oci</b> , 1503	Tatar, <b>tt/tat</b> , 2020
Bengali, <b>bn/ben</b> , 0214	Interlingua, <b>ia/ina</b> , 0901	Oriya, <b>or/ori</b> , 1518	Telugu, <b>te/tel</b> , 2005
Bihari, <b>bh/bih</b> , 0208	Interlingue, <b>ie/ile</b> , 0905	Oromo, <b>om/orm</b> , 1513	Thai, <b>th/tha</b> , 2008
Bislama, <b>bi/bis</b> , 0209	Inupiaq, <b>ik/ipk</b> , 0911	Panjabi, <b>pa/pan</b> , 1601	Tibetan, <b>bo/bod</b> , 0215
Breton, <b>br/bre</b> , 0218	Irish, <b>ga/gle</b> , 0701	Persian, <b>fa/fas</b> , 0601	Tigrinya, <b>ti/tir</b> , 2009
Bulgarian, <b>bg/bul</b> , 0207	Italian, <b>it/ita</b> , 0920	Polish, <b>pl/pol</b> , 1612	Tonga (Tonga Islands), <b>to/ton</b> , 2015
Burmese, <b>my/mya</b> , 1325	Japanese, <b>ja/jpn</b> , 1001	Portuguese, <b>pt/por</b> , 1620	Tsonga, <b>ts/tso</b> , 2019
Catalan, <b>ca/cat</b> , 0301	Javanese, <b>jav/jav</b> , 1023	Pushto, <b>ps/pus</b> , 1619	Tswana, <b>tn/tsn</b> , 2014
Chinese, <b>zh/zho</b> , 2608	Kalaallisut, <b>kl/kal</b> , 1112	Quechua, <b>qu/que</b> , 1721	Turkmen, <b>tk/tuk</b> , 2011
Corsican, <b>co/cos</b> , 0315	Kannada, <b>kn/kan</b> , 1114	Rhaeto-Romance, <b>rm/roh</b> , 1813	Turkish, <b>tr/tur</b> , 2018
Croatian, <b>hr/hrv</b> , 0818	Kashmiri, <b>ks/kas</b> , 1119	Rundi, <b>rn/run</b> , 1814	Twi, <b>tw/twi</b> , 2023
Czech, <b>cs/ces</b> , 0319	Kazakh, <b>kk/kaz</b> , 1111	Russian, <b>ru/rus</b> , 1821	Ukrainian, <b>uk/ukr</b> , 2111
Danish, <b>da/dan</b> , 0401	Khmer, <b>km/khm</b> , 1113	Romanian, <b>ro/ron</b> , 1815	Urdu, <b>ur/urd</b> , 2118
Dutch, <b>nl/nld</b> , 1412	Kinyarwanda, <b>rw/kin</b> , 1823	Samoan, <b>sm/smo</b> , 1913	Uzbek, <b>uz/uzb</b> , 2126
Dzongkha, <b>dz/dzo</b> , 0426	Kirgiz, <b>ky/kir</b> , 1125	Sango, <b>sg/sag</b> , 1907	Vietnamese, <b>vi/vie</b> , 2209
English, <b>en/eng</b> , 0514	Korean, <b>ko/kor</b> , 1115	Sanskrit, <b>sa/san</b> , 1901	Volapük, <b>vo/vol</b> , 2215
Esperanto, <b>eo/epo</b> , 0515	Kurdish, <b>ku/kur</b> , 1121	Scots-Gaelic, <b>gd/gla</b> , 0704	Welsh, <b>cy/cym</b> , 0325
Estonian, <b>et/est</b> , 0520	Lao, <b>lo/lao</b> , 1215	Serbian, <b>sr/srp</b> , 1918	Wolof, <b>wo/wol</b> , 2315
Finnish, <b>fi/fin</b> , 0609	Latin, <b>la/lat</b> , 1201	Serbo-Croatian, <b>sh/scr</b> , 1908	Xhosa, <b>xh/xho</b> , 2408
Fijian, <b>fj/fij</b> , 0610	Latvian, <b>lv/lav</b> , 1222	Shona, <b>sn/sna</b> , 1914	Yiddish, <b>ji/yid</b> , 1009
Faroes, <b>fo/fao</b> , 0615	Lingala, <b>ln/lin</b> , 1214	Sindhi, <b>sd/snd</b> , 1904	Yoruba, <b>yo/yor</b> , 2515
French, <b>fr/fra</b> , 0618	Lithuanian, <b>lt/lit</b> , 1220	Sinhalese, <b>si/sin</b> , 1909	Zulu, <b>zu/zul</b> , 2621

### ❖ Country/Area Code Table

Country/Area name, **Country/Area code**, **input code**

Anguilla, <b>ai</b> , 0109	Dominican Republic, <b>do</b> , 0415	Liechtenstein, <b>li</b> , 1209	San Marino, <b>sm</b> , 1913
Antigua and Barbuda, <b>ag</b> , 0107	Estonia, <b>ee</b> , 0505	Lithuania, <b>lt</b> , 1220	Singapore, <b>sg</b> , 1907
Argentina, <b>ar</b> , 0118	Finland, <b>fi</b> , 0609	Luxembourg, <b>lu</b> , 1221	Slovakia, <b>sk</b> , 1911
Armenia, <b>am</b> , 0113	France, <b>fr</b> , 0618	Macedonia, the Former Yugoslav Republic of, <b>mk</b> , 1311	Slovenia, <b>si</b> , 1909
Australia, <b>au</b> , 0121	Georgia, <b>ge</b> , 0705	Malaysia, <b>my</b> , 1325	Spain, <b>es</b> , 0519
Austria, <b>at</b> , 0120	Germany, <b>de</b> , 0405	Malta, <b>mt</b> , 1320	Suriname, <b>sr</b> , 1918
Azerbaijan, <b>az</b> , 0126	Greece, <b>gr</b> , 0718	Mexico, <b>mx</b> , 1324	Sweden, <b>se</b> , 1905
Bahamas, <b>bs</b> , 0219	Greenland, <b>gl</b> , 0712	Moldova, Republic of, <b>md</b> , 1304	Switzerland, <b>ch</b> , 0308
Barbados, <b>bb</b> , 0202	Grenada, <b>gd</b> , 0704	Monaco, <b>mc</b> , 1303	Taiwan, Province of China, <b>tw</b> , 2023
Belarus, <b>by</b> , 0225	Guyana, <b>gy</b> , 0725	Montserrat, <b>ms</b> , 1319	Tajikistan, <b>tj</b> , 2010
Belgium, <b>be</b> , 0205	Haiti, <b>ht</b> , 0820	Netherlands, <b>nl</b> , 1412	Thailand, <b>th</b> , 2008
Belize, <b>bz</b> , 0226	Hong Kong, <b>hk</b> , 0811	New Zealand, <b>nz</b> , 1426	Trinidad and Tobago, <b>tt</b> , 2020
Bermuda, <b>bm</b> , 0213	Hungary, <b>hu</b> , 0821	Norway, <b>no</b> , 1415	Tunisia, <b>tn</b> , 2014
Brazil, <b>br</b> , 0218	Iceland, <b>is</b> , 0919	Pakistan, <b>pk</b> , 1611	Turkey, <b>tr</b> , 2018
Bulgaria, <b>bg</b> , 0207	India, <b>in</b> , 0914	Peru, <b>pe</b> , 1605	Turkmenistan, <b>tm</b> , 2013
Canada, <b>ca</b> , 0301	Indonesia, <b>id</b> , 0904	Philippines, <b>ph</b> , 1608	Turks and Caicos Islands, <b>tc</b> , 2003
Cayman Islands, <b>ky</b> , 1125	Ireland, <b>ie</b> , 0905	Poland, <b>pl</b> , 1612	Ukraine, <b>ua</b> , 2101
Chile, <b>cl</b> , 0312	Israel, <b>il</b> , 0912	Portugal, <b>pt</b> , 1620	United Kingdom, <b>gb</b> , 0702
China, <b>cn</b> , 0314	Italy, <b>it</b> , 0920	Puerto Rico, <b>pr</b> , 1618	United States, <b>us</b> , 2119
Colombia, <b>co</b> , 0315	Jamaica, <b>jm</b> , 1013	Romania, <b>ro</b> , 1815	Uruguay, <b>uy</b> , 2125
Croatia, <b>hr</b> , 0818	Japan, <b>jp</b> , 1016	Russian Federation, <b>ru</b> , 1821	Uzbekistan, <b>uz</b> , 2126
Cyprus, <b>cy</b> , 0325	Kazakhstan, <b>kz</b> , 1126	Saint Kitts and Nevis, <b>kn</b> , 1114	Venezuela, <b>ve</b> , 2205
Czech Republic, <b>cz</b> , 0326	Korea, Republic of, <b>kr</b> , 1118	Saint Lucia, <b>lc</b> , 1203	Virgin Islands, British, <b>vg</b> , 2207
Denmark, <b>dk</b> , 0411	Kyrgyzstan, <b>kg</b> , 1107	Saint Vincent and the Grenadines, <b>vc</b> , 2203	
Dominica, <b>dm</b> , 0413	Latvia, <b>lv</b> , 1222		

# Additional information

## Licenses

The licenses for the software used on this player are shown below.

### ❖ libxml2

#### The MIT License

Copyright © <year> <copyright holders>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

### ❖ OpenSSL

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit.

See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact [openssl-core@openssl.org](mailto:openssl-core@openssl.org).

#### OpenSSL License

Copyright © 1998-2007 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact [openssl-core@openssl.org](mailto:openssl-core@openssl.org).
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)). This product includes software written by Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com)).

#### Original SSLeay License

Copyright © 1995-1998 Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com))

All rights reserved.

This package is an SSL implementation written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)). The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com)).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com))" The word 'cryptographic' can be left out if the rouines from the library being used are not cryptographic related :-).
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com))"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

### ❖ zlib

This software is based in part on zlib see <http://www.zlib.net> for information.

### ❖ FreeType2

#### The FreeType Project LICENSE

2006-Jan-27 Copyright 1996-2002, 2006 by David Turner, Robert Wilhelm, and Werner Lemberg

#### Introduction

The FreeType Project is distributed in several archive packages; some of them may contain, in addition to the FreeType font engine, various tools and contributions which rely on, or relate to, the FreeType Project.

This license applies to all files found in such packages, and which do not fall under their own explicit license. The license affects thus the FreeType font engine, the test programs, documentation and makefiles, at the very least.

This license was inspired by the BSD, Artistic, and IJG (Independent JPEG Group) licenses, which all encourage inclusion and use of free software in commercial and freeware products alike. As a consequence, its main points are that:

- We don't promise that this software works. However, we will be interested in any kind of bug reports. ('as is' distribution)
- You can use this software for whatever you want, in parts or full form, without having to pay us. ('royalty-free' usage)
- You may not pretend that you wrote this software. If you use it, or only parts of it, in a program, you must acknowledge somewhere in your documentation that you have used the FreeType code. ('credits')



We specifically permit and encourage the inclusion of this software, with or without modifications, in commercial products. We disclaim all warranties covering The FreeType Project and assume no liability related to The FreeType Project.

Finally, many people asked us for a preferred form for a credit/disclaimer to use in compliance with this license. We thus encourage you to use the following text:

Portions of this software are copyright © <year> The FreeType Project (www.freetype.org). All rights reserved.

Please replace <year> with the value from the FreeType version you actually use.

#### Legal Terms

#### 0. Definitions

Throughout this license, the terms 'package', 'FreeType Project', and 'FreeType archive' refer to the set of files originally distributed by the authors (David Turner, Robert Wilhelm, and Werner Lemberg) as the 'FreeType Project', be they named as alpha, beta or final release.

'You' refers to the licensee, or person using the project, where 'using' is a generic term including compiling the project's source code as well as linking it to form a 'program' or 'executable'. This program is referred to as 'a program using the FreeType engine'.

This license applies to all files distributed in the original FreeType Project, including all source code, binaries and documentation, unless otherwise stated in the file in its original, unmodified form as distributed in the original archive. If you are unsure whether or not a particular file is covered by this license, you must contact us to verify this.

The FreeType Project is copyright (C) 1996-2000 by David Turner, Robert Wilhelm, and Werner Lemberg. All rights reserved except as specified below.

#### 1. No Warranty

THE FREETYPE PROJECT IS PROVIDED 'AS IS' WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL ANY OF THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY DAMAGES CAUSED BY THE USE OR THE INABILITY TO USE, OF THE FREETYPE PROJECT.

#### 2. Redistribution

This license grants a worldwide, royalty-free, perpetual and irrevocable right and license to use, execute, perform, compile, display, copy, create derivative works of, distribute and sublicense the FreeType Project (in both source and object code forms) and derivative works thereof for any purpose; and to authorize others to exercise some or all of the rights granted herein, subject to the following conditions:

- Redistribution of source code must retain this license file ('FTL.TXT') unaltered; any additions, deletions or changes to the original files must be clearly indicated in accompanying documentation. The copyright notices of the unaltered, original files must be preserved in all copies of source files.
- Redistribution in binary form must provide a disclaimer that states that the software is based in part of the work of the FreeType Team, in the distribution documentation. We also encourage you to put an URL to the FreeType web page in your documentation, though this isn't mandatory.

These conditions apply to any software derived from or based on the FreeType Project, not just the unmodified files. If you use our work, you must acknowledge us. However, no fee need be paid to us.

#### 3. Advertising

Neither the FreeType authors and contributors nor you shall use the name of the other for commercial, advertising, or promotional purposes without specific prior written permission.

We suggest, but do not require, that you use one or more of the following phrases to refer to this software in your documentation or advertising materials: 'FreeType Project', 'FreeType Engine', 'FreeType library', or 'FreeType Distribution'.

As you have not signed this license, you are not required to accept it. However, as the FreeType Project is copyrighted material, only this license, or another one contracted with the authors, grants you the right to use, distribute, and modify it. Therefore, by using, distributing, or modifying the FreeType Project, you indicate that you understand and accept all the terms of this license.

#### 4. Contacts

There are two mailing lists related to FreeType:

- [freetype@nongnu.org](mailto:freetype@nongnu.org)  
Discusses general use and applications of FreeType, as well as future and wanted additions to the library and distribution. If you are looking for support, start in this list if you haven't found anything to help you in the documentation.
- [freetype-devel@nongnu.org](mailto:freetype-devel@nongnu.org)  
Discusses bugs, as well as engine internals, design issues, specific licenses, porting, etc.

Our home page can be found at  
<http://www.freetype.org>

## ❖ libpng

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

libpng versions 1.2.6, August 15, 2004, through 1.2.26, April 2, 2008, are Copyright © 2004, 2006-2008 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright © 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux

Eric S. Raymond

Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright © 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane

Glenn Randers-Pehrson

Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright © 1996, 1997 Andreas Dilger Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler

Kevin Bracey

Sam Bushell

Magnus Holmgren

Greg Roelofs

Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright © 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger

Dave Martindale

Guy Eric Schalnat

Paul Schmidt

Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

A "png\_get\_copyright" function is available, for convenient use in "about" boxes and the like: `printf("%s",png_get_copyright(NULL));` Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31) and "pngnow.png" (98x31).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson

[glennrp@users.sourceforge.net](mailto:glennrp@users.sourceforge.net)

2-Apr-08

## ❖ libjpeg

The Independent JPEG Group's JPEG software  
README for release 6b of 27-Mar-1998

This distribution contains the sixth public release of the Independent JPEG Group's free JPEG software. You are welcome to redistribute this software and to use it for any purpose, subject to the conditions under LEGAL ISSUES, below.

Serious users of this software (particularly those incorporating it into larger programs) should contact IJG at [jpeg-info@uunet.uu.net](mailto:jpeg-info@uunet.uu.net) to be added to our electronic mailing list. Mailing list members are notified of updates and have a chance to participate in technical discussions, etc.

This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

IJG is not affiliated with the official ISO JPEG standards committee.

### DOCUMENTATION ROADMAP

This file contains the following sections:

OVERVIEW	General description of JPEG and the IJG software.
LEGAL ISSUES	Copyright, lack of warranty, terms of distribution.
REFERENCES	Where to learn more about JPEG.
ARCHIVE LOCATIONS	Where to find newer versions of this software.
RELATED SOFTWARE	Other stuff you should get.
FILE FORMAT WARS	Software *not* to get.
TO DO	Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

install.doc	How to configure and install the IJG software.
usage.doc	Usage instructions for cjpeg, djpeg, jpegtran, rdjpgcom, and wrjpgcom.
*.1	Unix-style man pages for programs (same info as usage.doc).
wizard.doc	Advanced usage instructions for JPEG wizards only.
change.log	Version-to-version change highlights.

Programmer and internal documentation:

libjpeg.doc	How to use the JPEG library in your own programs.
example.c	Sample code for calling the JPEG library.
structure.doc	Overview of the JPEG library's internal structure.
filelist.doc	Road map of IJG files.
codrules.doc	Coding style rules --- please read if you contribute code.

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

### OVERVIEW

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images. JPEG is intended for compressing real-world scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included jpegtran, a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files. The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

We welcome the use of this software as a component of commercial products. No royalty is required, but we do ask for an acknowledgement in product documentation, as described under LEGAL ISSUES.

### LEGAL ISSUES

In plain English:

1. We don't promise that this software works. (But if you find any bugs, please let us know!)
2. You can use this software for whatever you want. You don't have to pay us.
3. You may not pretend that you wrote this software. If you use it in a program, you must acknowledge somewhere in your documentation that you've used the IJG code.

In legalese:

The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy.

This software is copyright © 1991-1998, Thomas G. Lane. All Rights Reserved except as specified below.

Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:

- (1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.
- (2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".
- (3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us. Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software". We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

ansi2knr.c is included in this distribution by permission of L. Peter Deutsch, sole proprietor of its copyright holder, Aladdin Enterprises of Menlo Park, CA. ansi2knr.c is NOT covered by the above copyright and conditions, but instead by the usual distribution terms of the Free Software Foundation; principally, that you must include source code if you redistribute it. (See the file ansi2knr.c for full details.) However, since ansi2knr.c is not needed as part of any program generated from the IJG code, this does not limit you more than the foregoing paragraphs do. The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce uncompressed GIFs. This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

"The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

### REFERENCES

We highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard",

Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44.

(Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at <ftp://ftp.uu.net/graphics/jpeg/wallace.ps.gz>. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the

Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in *The Data Compression Book* by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2). This is by far the most complete exposition of JPEG in existence, and we highly recommend it.

The JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.) In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging \$95 for Part 1 and \$47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department  
C-Cube Microsystems, Inc.  
1778 McCarthy Blvd.  
Milpitas, CA 95035  
phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at <ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz>. There is also a plain text version at <ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz>, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from <ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz>. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from <ftp://ftp.sgi.com> or from <ftp://ftp.uu.net/graphics/jpeg/>. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from <ftp://ftp.sgi.com/graphics/tiff/>.

#### ARCHIVE LOCATIONS

The "official" archive site for this software is <ftp://ftp.uu.net> (Internet address 192.48.96.9). The most recent released version can always be found there in directory [graphics/jpeg](ftp://ftp.uu.net/graphics/jpeg/). This particular version will be archived as <ftp://ftp.uu.net/graphics/jpeg/jpegsr.v6b.tar.gz>. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact [help@uunet.uu.net](mailto:help@uunet.uu.net) for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only <ftp://ftp.uu.net> is guaranteed to have the latest official version. You can also obtain this software in DOS-compatible "zip" archive format from the SimTel archives (<ftp://ftp.simtel.net/pub/simtelnet/msdos/graphics/>), or on CompuServe in the Graphics Support forum (GO CIS:GRAPHSUP), library 12 JPEG Tools. Again, these versions may sometimes lag behind the <ftp://ftp.uu.net> release. The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups [comp.graphics.misc](mailto:comp.graphics.misc), [news.answers](mailto:news.answers), and other groups. It is available on the World Wide Web at <http://www.faqs.org/faqs/jpeg-faq/> and other [news.answers](mailto:news.answers) archive sites, including the official [news.answers](mailto:news.answers) archive at [rtfm.mit.edu](mailto:rtfm.mit.edu): <ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/>. If you don't have Web or FTP access, send e-mail to [mail-server@rtfm.mit.edu](mailto:mail-server@rtfm.mit.edu) with body

send usenet/news.answers/jpeg-faq/part1  
send usenet/news.answers/jpeg-faq/part2

#### RELATED SOFTWARE

Numerous viewing and image manipulation programs now support JPEG. (Quite a few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet.

If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBMPPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making [cjpeg/djpeg](http://cjpeg/djpeg) considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites, notably <ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/>. Unfortunately PBMPPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from <ftp://havefun.stanford.edu/pub/jpeg/>. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

#### FILE FORMAT WARS

Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read. (For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.) The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation. We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.

The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear whether SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)

Various proprietary file formats incorporating JPEG compression also exist. We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format! TO DO

The major thrust for v7 will probably be improvement of visual quality. The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.

In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions --- principally, variable quantization and the SPIFF file format.

As always, speeding things up is of great interest.

Please send bug reports, offers of help, etc. to [jpeg-info@uunet.uu.net](mailto:jpeg-info@uunet.uu.net).

## ❖ libupnp

Copyright (c) 2000-2003 Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither name of Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR

TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## ❖ AVC/H.264

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE [HTTP://MPEGLA.COM](http://MPEGLA.COM).

## ❖ GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright © 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software - to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you". Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.
1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  - c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it. Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  - c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this

License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.  
If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.  
It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice. This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.
8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.  
Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.
10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright © <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright © year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items - whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program

'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

#### ❖ GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright © 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software - to make sure the software is free for all its users. This license, the Lesser General Public License, applies to some specially designated software packages - typically libraries - of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights. We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this

license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### **TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION**

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library. Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful. (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy. This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License. However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications. You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients'

exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library. If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.
 

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice. This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.
12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.
 

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.
14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of

warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright © <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version. This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library 'Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## [Notice on GNU General Public License]

This product include the software licensed for use under the terms of a GNU General Public License. A copy of the corresponding source code can be obtained by being charged the fee for distribution.

To obtain a copy, contact your local Pioneer Customer Support Center.

See the GNU website (<http://www.gnu.org>) for details of the GNU General Public License.

## Cautions on use

### Moving the player

If you need to move this unit, first remove the disc if there's one loaded, and close the disc tray. Next, press **⏻ STANDBY/ON** to switch the power to standby, checking that the **POWER OFF** indication on the front panel display goes off. Wait at least 10 seconds. Lastly, disconnect the power cord.

Never lift or move the unit during playback — discs rotate at a high speed and may be damaged.

### Place of installation

Select a stable place near the TV and AV system to which the unit is connected.

Do not place the player on top of a TV or color monitor. Keep it away from cassette decks or other components easily affected by magnetism.

Avoid the following types of places:

- Places exposed to direct sunlight
- Humid or poorly ventilated places
- Extremely hot or cold places
- Places subject to vibration
- Dusty places
- Places exposed to soot, steam or heat (in kitchens, etc.)

#### ❖ Do not place objects on top

Do not place objects on top of the player.

#### ❖ Do not obstruct the ventilation holes

Do not use the player on a shaggy rug, bed, or sofa, and do not cover the player with a cloth, etc. Doing so will prevent heat dissipation and could lead to damage.

#### ❖ Keep away from heat

Do not place the player on top of an amplifier or other device generating heat. When installing in a rack, to avoid the heat generated by the amplifier and other devices, place it on a shelf below the amplifier whenever possible.

## Turn the power off when not using the player

Depending on the conditions of the TV broadcast signals, striped patterns may appear on the screen when the TV is turned on while the player's power is turned on. This is not a malfunction with the player or TV. If this happens, turn the player's power off. In the same way, noise may be heard in the sound of a radio.

## Condensation

If the player is moved suddenly from a cold place into a warm room (in winter, for example) or if the temperature in the room in which the player is installed rises suddenly due to a heater, etc., water droplets (condensation) may form inside (on operating parts and the lens). When condensation is present, the player will not operate properly and playback is not possible. Let the player stand at room temperature for 1 or 2 hours with the power turned on (the time depends on the extent of condensation). The water droplets will dissipate and playback will become possible.

Condensation can also occur in the summer if the player is exposed to the direct wind from an air-conditioner. If this happens, move the player to a different place.

## Cleaning the player

Normally, wipe the player with a soft cloth. For tough dirt, apply some neutral detergent diluted in 5 to 6 parts water to a soft cloth, wring out thoroughly, wipe off the dirt, then wipe again with a dry cloth.

Note that getting alcohol, thinner, benzene or insecticide on the player could cause the print and coating to peel off. Also, avoid leaving rubber or vinyl products in contact with the player for long periods of time, as this could damage the cabinet.

When using chemical-impregnated wipes, etc., read the wipe's cautions carefully.

Unplug the power cord from the power outlet when cleaning the player.

## Caution for when the unit is installed in a rack with a glass door

Do not press the **▲ OPEN/CLOSE** on the remote control to open the disc tray while the glass door is closed. The door will hamper the movement of the disc tray, and the unit could be damaged.

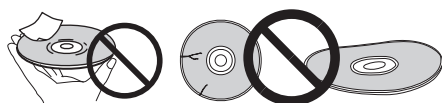


## Cleaning the pickup lens

The player's lens should not become dirty in normal use, but if for some reason it should malfunction due to dust or dirt, consult your nearest Pioneer authorized service center. Although lens cleaners for players are commercially available, we advise against using them since some may damage the lens.

## Handling discs

- Do not use damaged (cracked or warped) discs.
- Do not scratch the disc's signal surface or let it get dirty.
- Do not load more than one disc into the player at a time.
- Do not glue paper or put stickers onto the disc, or use a pencil, ball-point pen or other sharp-tipped writing instrument. These could all damage the disc.

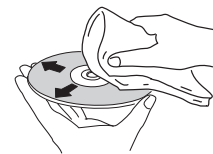


### ❖ Storing discs

Always store discs in their cases, and place the cases vertically, avoiding places exposed to high temperature or humidity, direct sunlight or extremely low temperatures. Be sure to read the cautions included with the disc.

### ❖ Cleaning discs

It may not be possible to play the disc if there are fingerprints or dust on it. In this case, using a cleaning cloth, etc., to wipe the disc gently from the center toward the outer edge. Do not use a dirty cleaning cloth.



Do not use benzene, thinner or other volatile chemicals. Also do not use record spray or antistatic agents.

For tough dirt, apply some water to a soft cloth, wring out thoroughly, wipe off the dirt, then wipe off the moisture with a dry cloth.

### ❖ Specially shaped discs

Specially shaped discs (heart-shaped, hexagonal, etc.) cannot be used on this player. Never use such discs, as they will damage the player.



### ❖ Condensation on discs

If the disc is moved suddenly from a cold place into a warm room (in winter, for example), water droplets (condensation) may form on the disc surface. Discs will not play properly if there is condensation on them. Carefully wipe off the water droplets from the disc surface before using the disc.

## Troubleshooting

Incorrect operation is often mistaken for trouble or malfunction. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Inspect the other components and electrical appliances being used. If the trouble cannot be rectified after checking the items below, please contact customer services. In the US, call Toll Free (800) 421-1404. (Telephone lines are open Monday through Friday 6:00 AM to 4:30 PM (Pacific Time).) In Canada, call Local (905) 479-4411, or Long distance +1(877) 283-5901. (Telephone lines are open Monday through Friday 9:00 AM to 5:30 PM (EST).)

## Playback

Problem	Check	Remedy
<ul style="list-style-type: none"> <li>• Disc does not play.</li> <li>• Disc tray opens automatically.</li> </ul>	Is the disc one that is playable on this player?	Check whether the disc is one that can be played on this player (page 8).
	Is the file one that is playable on this player?	<ul style="list-style-type: none"> <li>• Check whether the file is one that can be played on this player (page 10).</li> <li>• Check whether or not the file is damaged.</li> </ul>
	Is the disc scratched?	It may not be possible to play scratched discs.
	Is the disc dirty?	Clean the disc (above).
	Is there a piece of paper or sticker attached to the disc?	The disc may be warped and unplayable.
	Is the disc properly set in the disc tray?	<ul style="list-style-type: none"> <li>• Set the disc with the printed side facing up.</li> <li>• Set the disc properly in the depression in the disc tray.</li> </ul>
	Is the region number correct?	See <i>About region numbers</i> on page 10 for the region numbers of discs that can be played on this player.

Problem	Check	Remedy
No picture is displayed or the picture is not displayed properly.	Is the video cable properly connected?	<ul style="list-style-type: none"> <li>• Connect the cable properly according to the connected devices (page 15).</li> <li>• Insert the cable firmly and all the way in.</li> </ul>
	Is the video cable damaged?	If the cable is damaged, replace it with a new one.
	Is the input setting on the connected TV or AV receiver or amplifier right?	Read the operating instructions of the connected components and switch to the proper input.
	Are you viewing the picture from the video output terminal selected with <b>VIDEO SELECT</b> ?	Press <b>VIDEO SELECT</b> to switch the video output terminal to be viewed (page 25). If Pure Audio is set to <b>Mode 2</b> , video signals are only output from the selected output terminal (page 53).
	Is the output video resolution properly set?	Use <b>OUTPUT RESOLUTION</b> to switch to a resolution at which the video and audio signals are output (page 25).
	<ul style="list-style-type: none"> <li>• Is the player connected with an HDMI cable other than a High Speed HDMI™ cable (with a Standard HDMI™ cable)?</li> <li>• Are you using an HDMI cable with built-in equalizer?</li> </ul>	1080p or Deep Color video signals may not be output properly, depending on the HDMI cable being used or the player's settings. Press <b>■</b> while pressing <b>▶</b> on the player's front panel to restore the video outputs to the factory default settings. After this, if you wish to output the video signals with 1080p or Deep Color, connect the TV using a High Speed HDMI™ cable without built-in equalizer, then reset the player using the <b>Setup Navigator</b> (page 21).
	Is Pure Audio set to <b>Mode 1</b> ?	When set to <b>Mode 1</b> , no picture is displayed during playback (page 53).
	Is a DVI device connected?	The picture may not be displayed properly if a DVI device is connected.
Picture freezes and the front panel and remote control buttons stop working.	Is <b>HDMI Color Space</b> properly set?	Change the <b>HDMI Color Space</b> setting (page 45).
		<ul style="list-style-type: none"> <li>• Press <b>■ STOP</b> to stop playback, then restart playback.</li> <li>• If the playback cannot be stopped, press <b>⏻ STANDBY/ON</b> on the player's front panel to turn off the power, then turn the power back on.</li> <li>• If the power cannot be turned off, press and hold <b>⏻ STANDBY/ON</b> on the player's front panel for over 5 seconds. The power will turn off.</li> </ul>
Motion is unnatural or picture is not clear.	Is the output video resolution set to <b>1080/24p</b> ?	<ul style="list-style-type: none"> <li>• The picture may not be displayed properly, depending on the source. Set the resolution to something other than <b>1080/24p</b>.</li> <li>• Change the <b>Pure Cinema</b> setting (page 40).</li> </ul>
No picture is displayed or picture is not output in high definition when playing BDs.		With some discs, it may not be possible to output the video signals from the <b>VIDEO</b> output terminals, the <b>S-VIDEO</b> output terminal or the <b>COMPONENT VIDEO</b> output terminals. In this case, connect using an HDMI cable (page 15).
	<ul style="list-style-type: none"> <li>• Picture is disturbed during playback.</li> <li>• Picture is dark.</li> </ul>	<ul style="list-style-type: none"> <li>• This player supports Macrovision analog copy protection technology. With some TVs (such as with built-in video deck), the picture will not be displayed properly when the copy protected DVD title is played. This is not a malfunction.</li> <li>• If the player and TV are connected via a DVD recorder/video deck, etc., the picture will not be displayed properly due to analog copy protection. Connect the player and TV directly.</li> </ul>
<ul style="list-style-type: none"> <li>• Picture is stretched.</li> <li>• Picture is cropped.</li> <li>• Aspect ratio cannot be switched.</li> </ul>	Is the TV's aspect ratio properly set?	Read the TV's operating instructions and set the TV's aspect ratio properly.
	Is <b>TV Aspect Ratio</b> properly set?	Set <b>TV Aspect Ratio</b> properly (page 44).
	Is <b>4:3 Video Out</b> properly set?	Set <b>4:3 Video Out</b> properly (page 44).
	Is <b>DVD 16:9 Video Out</b> properly set?	Set <b>DVD 16:9 Video Out</b> properly (page 44).
	Is <b>Anamorphic Zoom</b> set to <b>On</b> ?	When video signals with a resolution of 1080/24p, 1080/60i, 1080/60p or 720/60p are being output from the <b>HDMI OUT</b> terminals or the <b>COMPONENT VIDEO</b> output terminals, they may be output with an aspect ratio of 16:9 even if <b>TV Aspect Ratio</b> is set to <b>4:3 (Standard)</b> (page 44).
Picture is interrupted.		Set <b>Anamorphic Zoom</b> to <b>Off</b> (page 52).
		The picture may be interrupted when the resolution of the recorded video signal switches. Press <b>OUTPUT RESOLUTION</b> to select a setting other than <b>Auto</b> , <b>1080/24p</b> or <b>Source Direct</b> (page 25).

Problem	Check	Remedy
Sound and picture are not synchronized.  • No sound is output. • Sound is not output properly.	Is <b>Output Terminal</b> properly set?	Set <b>Output Terminal</b> properly (pages 21 and 44).
	Is <b>Lip Sync</b> properly set?	Adjust the amount of audio delay with the <b>Lip Sync</b> setting (page 42).
	Is the disc played back in slow motion?	No sound is output during slow motion play and forward and reverse scanning.
	Is the disc played back in fast forward or fast reverse?	
	Are the audio cables properly connected?	<ul style="list-style-type: none"> <li>• Connect the cable properly according to the connected devices (page 15).</li> <li>• Insert the cable firmly and all the way in.</li> </ul>
	Is the audio cable damaged?	If the cable is damaged, replace it with a new one.
	Are the connected components (AV receiver or amplifier, etc.) properly set?	Read the operating instructions of the connected components and check the volume, input, speaker settings, etc.
	Is <b>Output Terminal</b> properly set?	When <b>ANALOG AUDIO</b> is selected at <b>Output Terminal</b> , no audio signals are output from the <b>HDMI OUT</b> or <b>DIGITAL OUT</b> terminals (page 44).
	Is the output video resolution properly set?	Use <b>OUTPUT RESOLUTION</b> to switch to the resolution at which the video and audio signals are output (page 25).
	Is the AV receiver or amplifier, etc., connected to the <b>AUDIO OUT (7.1 ch)</b> terminals?	To listen to 2-channel analog audio, connect to <b>FRONT (L/R)</b> of the <b>AUDIO OUT (7.1 ch)</b> terminals (page 14) and set <b>Audio Output Mode</b> to <b>2 Channel</b> (page 45).
	Are the speakers properly set?	When the AV receiver or amplifier, etc., is connected to the <b>AUDIO OUT (7.1 ch)</b> terminals and <b>Audio Output Mode</b> is set to <b>Multi-channel</b> , set <b>Speaker Setup</b> properly (page 47).
	Is Pure Audio set to <b>Mode 1</b> or <b>Mode 2</b> ?	If set to <b>Mode 1</b> or <b>Mode 2</b> , signals are only output from the output terminal set at <b>Output Terminal</b> (page 53).
	Is a DVI device connected?	The sound will not be output from the <b>HDMI OUT</b> terminals if a DVI device is connected. Connect the device to a <b>DIGITAL OUT</b> terminals or the <b>AUDIO OUT (7.1 ch)</b> terminals (page 18).
Are you playing a DTS-CD?	To output the sound of DTS-CDs from the <b>HDMI OUT (SUB)</b> terminal, set <b>HDMI Audio Out</b> to <b>PCM</b> (page 45).	
Multi-channel sound is not output.	Is <b>Output Terminal</b> properly set?	For some BDs, audio signals are only output from <b>DIGITAL OUT</b> terminals or the <b>HDMI OUT</b> terminals.
	Is the AV receiver or amplifier connected to the <b>HDMI OUT (SUB)</b> terminal?	Linear PCM (2-channel) audio signals are output from output terminals other than the one set at <b>Output Terminal</b> under <b>Audio Out</b> . Set <b>Output Terminal</b> properly (page 44).
	Is the audio output of the connected AV receiver or amplifier, etc., properly set?	The <b>HDMI OUT (SUB)</b> terminal outputs linear PCM 2-channel audio signals. Be sure to connect the AV receiver or amplifier to the <b>HDMI OUT (MAIN)</b> terminal.
	Is multi-channel sound selected?	Read the operating instructions of the connected AV receiver or amplifier and check the audio output settings of AV receiver or amplifier.
	Is the AV receiver or amplifier, etc., connected to the <b>AUDIO OUT (7.1 ch)</b> terminals?	Use the menu screen or <b>AUDIO</b> to switch the disc's sound to multi-channel.
Noise can be heard when outputting DTS Digital Surround signals from the <b>DIGITAL OUT</b> terminals.	Is the AV receiver or amplifier, etc., connected to the <b>AUDIO OUT (7.1 ch)</b> terminals?	When the AV receiver or amplifier, etc., is connected to the <b>AUDIO OUT (7.1 ch)</b> terminals, set <b>Audio Output Mode</b> to <b>Multi-channel</b> (page 45). Also, set <b>Speaker Setup</b> properly (page 47).
	Is the connected AV receiver or amplifier compatible with DTS Digital Surround?	If an AV receiver or amplifier that is not compatible with DTS Digital Surround is connected to the <b>DIGITAL OUT</b> terminals, set <b>DTS Out</b> to <b>DTS → PCM</b> (page 44).
192 kHz or 96 kHz digital audio signals cannot be output from the <b>DIGITAL OUT</b> terminals.		It is not possible to output 192 kHz or 96 kHz digital audio signals from this player's <b>DIGITAL OUT</b> terminals. The signals are automatically converted to 48 kHz or less for output.
Secondary audio or interactive audio is not output.	Is <b>HDMI Audio Out</b> properly set?	When listening to the sound from an <b>HDMI OUT (MAIN)</b> terminal, set <b>HDMI Audio Out</b> to <b>PCM</b> (page 45).
	Are <b>Dolby Digital Out</b> and <b>DTS Out</b> properly set?	When listening to the sound from an <b>DIGITAL OUT</b> terminal, set <b>Dolby Digital Out</b> to <b>Dolby Digital 1</b> , <b>DTS Out</b> to <b>DTS 1</b> (page 44).

Problem	Check	Remedy
Sound is fast or slow.	When an HDMI cable is connected, are audio signals being output from devices connected with cables other than HDMI cables?	When a Pioneer AV receiver or amplifier compatible with the PQLS function is connected directly to the player's <b>HDMI OUT (MAIN)</b> terminal using an HDMI cable, the PQLS function is activated when playing an audio CD (CD-DA). Because of this, the sound output from components other than the ones connected by HDMI cable may be fast or slow. If this happens, set <b>PQLS</b> to <b>Off</b> (page 45).
After a disc is inserted, <b>Loading</b> stays displayed and playback does not start.	Are there too many files recorded on the disc?	When a disc on which files are recorded is inserted, depending on the number of files recorded on the disc, loading may take several dozen minutes.
■ is displayed in file names, etc.		The characters that cannot be displayed on this player are displayed in ■.
A message indicating low memory (local storage) appears while playing a BD-ROM disc.		Erase the BDMV data (page 51).
The DVD layer of BD and DVD hybrid discs cannot be played.	Is <b>Hybrid Disc Playback</b> properly set?	Set <b>Hybrid Disc Playback</b> to <b>DVD</b> (page 45).
The CD layer of BD and CD hybrid discs cannot be played.	Is <b>Hybrid Disc Playback</b> properly set?	Set <b>Hybrid Disc Playback</b> to <b>CD</b> (page 45).
The BDMV format on BD-R/-RE discs cannot be played.		To play the BDMV format on BD-R/-RE discs containing both BDMV and BDAV formats, set <b>BDMV/BDAV Playback Priority</b> to <b>BDMV</b> (page 45).

## Software updating

Problem	Check	Remedy
"Connection to the software updating server failed" is displayed when you try to update the software.		Perform <b>Connection Test</b> (page 51). If "Network connection test completed successfully." is displayed, check the proxy server settings (page 50). Also there may be a problem with the Internet connection. Contact your Internet service provider.
Software updating is slow.		Depending on the Internet connection and other conditions, some time may be required to update the software.
<ul style="list-style-type: none"> <li>• "WRT NG ****" is displayed on the front panel display during software updating. (**** meaning any characters)</li> <li>• "WRT FAILED" is displayed on the front panel display during software updating.</li> </ul>		The message is displayed when software updating has failed. Check again whether it can be updated properly.
A message other than "Network connection test completed successfully" is displayed when <b>Connection Test</b> is performed.	<p>Is "LAN cable not connected" displayed?</p> <ul style="list-style-type: none"> <li>• Is "IP address cannot be obtained." displayed?</li> <li>• Is "No response from the gateway." displayed?</li> </ul>	<p>Check that this player and Ethernet hub (or router with hub functionality) are properly connected.</p> <ul style="list-style-type: none"> <li>• If the IP address is obtained using the DHCP server function, check the setting is correct at the <b>Display Network Configuration</b> (page 51). For details on the DHCP server function, see the operating instructions of the Ethernet hub (or router with hub functionality).</li> <li>• Set the IP address manually.</li> </ul>
	Is "IP address is overlapped." displayed?	<ul style="list-style-type: none"> <li>• Check the operation and settings of the DHCP server function of the Ethernet hub (or router with hub functionality). For details on the DHCP server function, see the operating instructions of the Ethernet hub (or router with hub functionality).</li> <li>• If this player's has been set manually, reset the IP address of this player or other components.</li> </ul>
	Is the Ethernet hub (or router with hub functionality) operating properly?	<ul style="list-style-type: none"> <li>• Check the settings and operation the Ethernet hub (or router with hub functionality). For details, see the operating instructions of the Ethernet hub.</li> <li>• Reboot the Ethernet hub (or router with hub functionality).</li> </ul>

# KURO LINK

Problem	Check	Remedy
KURO LINK function does not work.	<ul style="list-style-type: none"> <li>Is the HDMI cable properly connected?</li> <li>Are you connected to the <b>HDMI OUT (SUB)</b> terminal?</li> </ul>	To use the KURO LINK function, connect the Flat Panel TV and AV system (AV receiver or amplifier, etc.) to the <b>HDMI OUT (MAIN)</b> terminal (page 16).
	Is the HDMI cable you are using a High Speed HDMI™ cable?	Use a High Speed HDMI™ cable. The KURO LINK function may not work properly if HDMI cable other than a High Speed HDMI™ cable is used.
	Is <b>KURO LINK</b> set to <b>On</b> on the player?	Set <b>KURO LINK</b> to <b>On</b> on the player (page 45).
	Does the connected device support the KURO LINK function?	<ul style="list-style-type: none"> <li>The KURO LINK function will not work with devices manufactured by companies other than Pioneer, even when connected using an HDMI cable.</li> <li>The KURO LINK function will not work if devices that do not support the KURO LINK function or devices manufactured by companies other than Pioneer are connected between the KURO LINK-compatible device and the player.</li> <li>Even when connected to a Pioneer product compatible with the KURO LINK function, some of the functions may not work. Also refer to the operating instructions of the connected device.</li> </ul>
	Is KURO LINK set to On on the connected device?	Set KURO LINK to On on the connected device. The KURO LINK function operates when KURO LINK is set to On for all devices connected to the <b>HDMI OUT (MAIN)</b> terminal. Once connections and settings of all the devices are finished, be sure to check that the player's picture is output to the Flat Panel TV. (Also check after changing the connected devices and connecting and/or disconnecting HDMI cables.) If the player's picture is not being output to the Flat Panel TV, the KURO LINK function may not work properly. For details, refer to the operating instructions of the connected device.
Are multiple players connected?	The KURO LINK function may not work if three or more players, including this player, are connected by HDMI cable.	

# Others

Problem	Check	Remedy
The player's power turns off automatically.	Is <b>Auto Power Off</b> set to <b>On</b> ?	If <b>Auto Power Off</b> is set to <b>On</b> , the player's power turns off automatically if no operation is performed for over 30 minutes (page 46).
The player's power turns on or off automatically.	Is <b>KURO LINK</b> set to <b>On</b> ?	The player's power may turn on and off together with the power of the TV connected to the <b>HDMI OUT (MAIN)</b> terminal. If you do not want the player's power to turn on and off when the TV's power is turned on and off, set <b>KURO LINK</b> to <b>Off</b> (page 45).
Player cannot be operated with remote control.	Is an AV receiver or amplifier connected to the <b>CONTROL IN</b> terminal on the player's rear panel?	Operate with the remote control of the device connected to the <b>CONTROL IN</b> terminal.
	Are you operating the remote control from a point too far away from the player?	Operate from within 23 feet of the remote control sensor.
	Are the batteries dead?	Replace the batteries (page 7).
Input of connected TV and AV system switches automatically.	Is <b>KURO LINK</b> set to <b>On</b> ?	The input of the TV and AV system (AV receiver or amplifier, etc.) connected to the <b>HDMI OUT (MAIN)</b> terminal may automatically switch to the player when playback starts on the player or the menu screen (Home Media Gallery, etc.) is displayed. If you do not want the inputs of the connected TV and AV system (AV receiver or amplifier, etc.) to switch automatically, set <b>KURO LINK</b> to <b>Off</b> (page 45).

Problem	Check	Remedy
Settings you have made have been cleared.	<ul style="list-style-type: none"> <li>• Have you disconnected the power cord while the player's power was on?</li> <li>• Has there been a power failure?</li> </ul>	Always press <b>STANDBY/ON</b> on the player's front panel or <b>STANDBY/ON</b> on the remote control and check that <b>POWER OFF</b> has turned off from the player's front panel display before disconnecting the power cord. Be particularly careful when the power cord is connected to the AC outlet on another device because the player turns off in conjunction with the device.
"Processing failed." is displayed.		If the message appears repeatedly, please ask your nearest Pioneer authorized service center or your dealer to carry out repair work.

## Glossary

### ❖ Aspect ratio

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

### ❖ Audio language

Multiple audio tracks, for example the original sound and the dubbed sound, can be recorded on BD-ROM or DVD-Video discs. Up to 32 languages (32 audio tracks) can be recorded on BD-ROM discs, up to 8 languages (8 audio tracks) on DVD-Video discs, so you can select the desired language when viewing the disc.

### ❖ 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.

### ❖ BD-J

With BD-ROMs, it is possible to use Java applications to create highly interactive titles, for example including games.



*Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.*

### ❖ BDAV

Of the BD format, the Audio Visual Format Specifications for HD digital broadcast recording is referred to as BDAV on this player and in this operating instructions.

### ❖ BDMV

Of the BD format, the Audio Visual Format Specifications designed for pre-packaged high definition (HD) movie contents is referred to as BDMV on this player and in this operating instructions.

### ❖ 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.

### ❖ Deep Color

This is one of the capabilities of HDMI™. The players supporting Deep Color can transmit a video signal with a color bit depth of greater than 8 bits per color component. Subtle color gradations can be reproduced when connected to a TV that supports Deep Color.

### ❖ Default Gateway

A default gateway is a communication device such as a router which passes data between networks. It is used to direct data to networks on which the destination gateway is not explicitly specified.

### ❖ DHCP (Dynamic Host Configuration Protocol)

This protocol provides configuration parameters (IP address, etc.) for computers and other devices connected to the network.

### ❖ DivX

DivX is a media technology developed by DivX Inc. DivX media files include moving picture data.

### ❖ DNS (Domain Name System)

This is a system for associating Internet host names with IP addresses.

### ❖ 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.

### ❖ **DRM**

A technology for protecting copyrighted digital data. Digitized videos, images and audio retain the same quality even when they are copied or transferred repeatedly. DRM is a technology for restricting the distribution or playback of such digital data without the authorization of the copyright holder.

### ❖ **DTS Digital Surround**

DTS Digital Surround is an audio format to record 48 kHz/24 bits audio signals in 5.1 channels.

### ❖ **DTS-HD High Resolution Audio**

DTS-HD High Resolution Audio is an audio format using lossy coding. It can record 7.1 channels at 96 kHz/24 bits.

### ❖ **DTS-HD Master Audio**

DTS-HD Master Audio is an audio format using lossless coding. With BD-ROMs, 7.1 channels can be recorded at 96 kHz/24 bits, or 5.1 channels at 192 kHz/24 bits.

### ❖ **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.

### ❖ **Ethernet**

A standard for local area networks (LANs) used to connect multiple computers, etc. in the same location. This player supports 100BASE-TX.

### ❖ **Frames and fields**

A frame is the unit for one of the still pictures which compose motion pictures. One frame consists of a picture of odd lines and a picture of even lines called fields in video signal with interlaced scan method (480i, 1080i, etc.).

### ❖ **HDCP (High-bandwidth Digital Content Protection)**

HDCP is a specification to protect audiovisual content across the DVI/HDMI interface.

### ❖ **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.

### ❖ **Interactive audio**

The audio signals recorded in the titles of BD-ROMs. They include for example the clicking sound made when the menu screen is operated.

### ❖ **Interlaced scan**

With this method, one picture is displayed by scanning it twice. The odd lines are displayed in the first pass, the even lines are displayed in the second, to form a single picture (frame). Interlaced scan is indicated in this player and operating instructions by an "i" after the resolution value (for example, 480i).

### ❖ **IP address**

An address that identifies a computer or other device connected to the Internet or local area network. It is represented a number in four sections.

### ❖ **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.

### ❖ **MAC (Media Access Control) address**

A hardware identification number assigned specifically to the network device (LAN card, 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.

### ❖ **Multi angle**

Up to 9 camera angles can be recorded simultaneously on BD-ROM or DVD-Video discs, letting you view the same scene from different angles.

### ❖ **Parental Lock**

Playback of the contents of some BD-ROM or DVD-Video discs can be restricted, for example for discs containing scenes of violence. With BD-ROM discs, an age restriction can be set to restrict playback. Playing DVD-Video title can be restricted by setting the parental lock level.

### ❖ **Picture-in-Picture (P-in-P)**

This is a function for superimposing a sub video on the main video. Some BD-ROMs include secondary video, which can be superimposed on the primary video.

### ❖ **Port number**

This is a sub-address provided below the IP address for simultaneously connecting to multiple parties during Internet communications.

### ❖ **Progressive scan**

With this method, one picture is consisted of a single picture, without dividing it in two pictures. Progressive scan provides clear pictures with no flicker, in particular for still pictures that contain much text, graphics, or horizontal lines. Progressive scan is indicated in this player and operating instructions by a "p" after the resolution value (for example, 480p).

### ❖ **Proxy server**

This is a relay server for ensuring fast access and safe communications when connecting to the Internet from an internal network.

### ❖ **Region number**

A number assigned to Blu-ray Disc Players, BD-ROM and DVD-Video discs according to the region in which they are sold. A disc can be played if the region numbers indicated on the disc include the number set for the player or if "ALL" is indicated.

### ❖ **S-Video output**

An output terminal for transmitting separate luminance (Y) and color (C) signals over a single cord. It offers clearer pictures than the composite video output.

### ❖ **Secondary audio**

Some BD-ROMs include sub audio streams mixed with the main audio. These sub audio streams are called "secondary audio". On some discs this secondary audio is recorded as the audio for the secondary video.

### ❖ **Secondary video**

Some BD-ROMs include sub videos superimposed on the main videos using the Picture-in-Picture function. These sub videos are called "secondary video".

### ❖ **Subnet mask**

This is used to identify which part of the IP address corresponds to the subnet (a separately managed network). The subnet mask is expressed as '255.255.255.0'.

### ❖ **Subtitle language**

This refers to the language of the subtitles often used on movies. Up to 255 languages (255 types of subtitles) can be recorded on BD-ROM discs, 32 languages (32 types of subtitles) on DVD-Video discs, so you can select the desired subtitle when viewing the disc.

### ❖ **VC-1**

A video codec developed by Microsoft and standardized by the Society of Motion Picture and Television Engineers (SMPTE). Some BDs include videos encoded in this codec.

### ❖ **x.v.Color**

"x.v.Color" is a promotion name given to the products that have the capability to realize a wide-gamut color space based on the international standard specifications defined as xvYCC.

A wider range of colors than before can be reproduced by playing video signals conforming to "xvYCC" standards on this player when connected to an "x.v.Color"-compatible TV, etc.



# Specifications

<b>Model</b>		BDP-09FD	
<b>Type</b>		Blu-ray Disc PLAYER	
<b>Rated voltage</b>		AC 120V	
<b>Rated frequency</b>		60 Hz	
<b>Power consumption</b>		58 W	
<b>Power consumption (standby)</b>		0.3 W	
<b>Weight</b>		13.9 kg (30 lb 11 oz)	
<b>External dimensions (including projecting parts)</b>		420 mm (W) x 143 mm (H) x 365 mm (D) (16 <sup>9</sup> / <sub>16</sub> in. (W) x 5 <sup>11</sup> / <sub>16</sub> in. (H) x 14 <sup>6</sup> / <sub>16</sub> in. (D))	
<b>Tolerable operating temperature</b>		+5 °C to +35 °C (+41 °F to +95 °F)	
<b>Tolerable operating humidity</b>		5 % to 85 % (no condensation)	
<b>Output terminals</b>	<b>HDMI</b>	2 sets, 19-pin: 5 V, 250 mA (Total value for the HDMI OUT (MAIN) and HDMI OUT (SUB) terminals)	
	<b>Video outputs</b>	<b>Video</b>	1 set, RCA jack: 1.0 Vp-p (75 Ω)
		<b>S-Video</b>	1 set, S-Video jack:
			Y (luminance): 1.0 Vp-p (75 Ω) C (color): 0.286 Vp-p (75 Ω)
	<b>Component video</b>	1 set, BNC jacks: Y: 1.0 Vp-p (75 Ω) PB, PR: 0.7 Vp-p (75 Ω)	
	<b>Audio outputs</b>	<b>7.1-channel (multi-channel: front left/right, surround left/right, center, surround back left/right, subwoofer)</b>	1 set, Number of channels: 8, RCA jacks
		<b>Audio output level</b>	200 mVrms (1 kHz, -20 dB)
		<b>Frequency response</b>	4 Hz to 88 kHz (192 kHz sampling)
		<b>S/N ratio</b>	115 dB
		<b>Dynamic range</b>	103 dB
<b>Total harmonic distortion</b>		0.0015 %	
<b>Wow &amp; flutter</b>		Below measurable limits (±0.001 % W. PEAK)	
<b>Digital audio outputs</b>	<b>Optical</b>	1 set, Optical digital jack	
	<b>Coaxial</b>	1 set, RCA jack	
<b>LAN</b>		1 set, Ethernet jack (100BASE-TX)	
<b>Control</b>	<b>Input</b>	1 set, Minijack (3.5 ø)	



**Note**

- The specifications and design of this product are subject to change without notice.
- This product includes FontAvenue® fonts licensed by NEC Corporation. FontAvenue is a registered trademark of NEC Corporation.



Should this product require service in the U.S.A. and you wish to locate the nearest Pioneer Authorized Independent Service Company, or if you wish to purchase replacement parts, operating instructions, service manuals, or accessories, please call the number shown below.

1-800-421-1404

Please do not ship your product to Pioneer without first calling the Customer Support at the above listed number for assistance.

Pioneer Electronics Service, Inc.  
P.O. BOX 1760, Long Beach,  
CA 90801-1760, U.S.A.

For warranty information please see the Limited Warranty sheet included with your product.

Should this product require service in Canada, please contact a Pioneer Canadian Authorized Dealer to locate the nearest Pioneer Authorized Service Company in Canada. Alternatively, please contact the Customer Satisfaction Department at the following address:

Pioneer Electronics of Canada, Inc.  
Customer Satisfaction Department  
300 Allstate Parkway, Markham, Ontario L3R 0P2  
1-877-283-5901  
905-479-4411

For warranty information please see the Limited Warranty sheet included with your product.

Si ce produit doit être réparé au Canada, veuillez vous adresser à un distributeur autorisé Pioneer du Canada pour obtenir le nom du Centre de Service Autorisé Pioneer le plus près de chez-vous. Vous pouvez aussi contacter le Service à la clientèle de Pioneer:

Pioneer Électroniques du Canada, Inc.  
Service Clientèle  
300, Allstate Parkway, Markham, Ontario L3R 0P2  
1-877-283-5901  
905-479-4411

Pour obtenir des renseignements sur la garantie, veuillez vous reporter au feuillet sur la garantie restreinte qui accompagne le produit.

S018\_C\_EF

Register Your Product on

<http://www.pioneerelectronics.com> (US)

<http://www.pioneerelectronics.ca> (Canada)

## PIONEER CORPORATION

4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan

### PIONEER ELECTRONICS (USA) INC.

P.O. BOX 1540, Long Beach, California 90801-1540, U.S.A. TEL: (800) 421-1404

### PIONEER ELECTRONICS OF CANADA, INC.

300 Allstate Parkway, Markham, Ontario L3R 0P2, Canada TEL: 1-877-283-5901, 905-479-4411

### PIONEER EUROPE NV

Haven 1087, Keetberglaan 1, B-9120 Melsele, Belgium TEL: 03/570.05.11

### PIONEER ELECTRONICS ASIACENTRE PTE. LTD.

253 Alexandra Road, #04-01, Singapore 159936 TEL: 65-6472-7555

### PIONEER ELECTRONICS AUSTRALIA PTY. LTD.

178-184 Boundary Road, Braeside, Victoria 3195, Australia, TEL: (03) 9586-6300

### PIONEER ELECTRONICS DE MEXICO S.A. DE C.V.

Blvd.Manuel Avila Camacho 138 10 piso Col.Lomas de Chapultepec, Mexico,D.F. 11000 TEL: 55-9178-4270

K002\_B\_En

PIONEER, ELITE, and the PIONEER and ELITE logos are registered trademarks of Pioneer Corporation.

Published by Pioneer Corporation.  
Copyright © 2008 Pioneer Corporation.  
All rights reserved.