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**

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.

---

**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.

---

**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.

---

**Information to User**

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

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.

**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.

**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.
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.

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

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.

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).

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.

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.
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).

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.

**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.

---

**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).

**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

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.
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.

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.

<table>
<thead>
<tr>
<th>Decibel Level</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Quiet library, soft whispers</td>
</tr>
<tr>
<td>40</td>
<td>Living room, refrigerator, bedroom away from traffic</td>
</tr>
<tr>
<td>50</td>
<td>Light traffic, normal conversation, quiet office</td>
</tr>
<tr>
<td>60</td>
<td>Air conditioner at 20 feet, sewing machine</td>
</tr>
<tr>
<td>70</td>
<td>Vacuum cleaner, hair dryer, noisy restaurant</td>
</tr>
<tr>
<td>80</td>
<td>Average city traffic, garbage disposals, alarm clock at two feet</td>
</tr>
</tbody>
</table>

THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

<table>
<thead>
<tr>
<th>Decibel Level</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>Subway, motorcycle, truck traffic, lawn mower</td>
</tr>
<tr>
<td>100</td>
<td>Garbage truck, chain saw, pneumatic drill</td>
</tr>
<tr>
<td>120</td>
<td>Rock band concert in front of speakers, thunderclap</td>
</tr>
<tr>
<td>140</td>
<td>Gunshot blast, jet plane</td>
</tr>
<tr>
<td>180</td>
<td>Rocket launching pad</td>
</tr>
</tbody>
</table>

Information courtesy of the Deafness Research Foundation.
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 .......................................................... 12
-Front Panel Display ................................................ 13
-Rear Panel ................................................................ 13

02 Connecting up
- Connecting a TV ...................................................... 14
-Connecting using a commercially available HDMI cable ...... 14
-Connecting using a commercially available component video cable ............................................................. 16
-Connecting using the included audio cable and video cable 16
-Connecting an AV receiver or amplifier .......................... 17
-Connecting using a commercially available HDMI cable ...... 17
-Connecting using audio cables ..................................... 18
-Connecting using a commercially available digital audio cable ................................................................. 18
-Connecting the power cord ......................................... 19

03 Getting Started
- Making settings using the Setup Navigator menu .......... 20
-Operating the TV with the player’s remote control ....... 22
-TV Preset code list .................................................... 22
-Using the TOOLS menu ............................................ 23
-Erasing the additional data from BD-ROMs .................. 24
-Switching the video output terminal ............................ 24
-Switching the video output resolution .......................... 25

04 Playback
- Playing discs or files ............................................... 26
-Forward and reverse scanning .................................... 26
-Playing specific titles, chapters or tracks ...................... 27
-Skipping content ....................................................... 27
-Playing in slow motion ............................................. 27
-Step forward and step reverse .................................. 27
-Switching the camera angles ..................................... 28
-Switching the subtitles ............................................. 28
-Switching the audio streams/channels .......................... 28
-Switching the secondary video ................................... 29
-Displaying the disc information ................................... 29
-Using the Play Mode functions .................................. 29
-Playing from a specific time (Time Search) .................. 29
-Playing a specific title, chapter or track (Search) .......... 30
-Playing a specific section within a title or track repeatedly (A-B Repeat). .................................................. 31
-Playing repeatedly (Repeat Play) .................................. 31
-Playing in random order (Random Play) ....................... 32
-About Play Mode types ............................................ 33
-Playing from the Home Media Gallery ....................... 34
-Playing discs .......................................................... 34
-Playing music files ................................................. 34
-Playing in the desired order (HMG Playlist) .................. 35

05 Adjusting audio and video
- Adjusting the video .................................................. 37
- Adjusting the Audio DRC .......................................... 38

06 Advanced settings
- Changing the settings (Initial Setup) .......................... 39
-Operating the Initial Setup screen ............................... 39
-Changing to other language at language setting ............... 43
-Changing the speaker setup ....................................... 43
-Adjusting the output level of the various speakers (Channel Level) ......................................................... 44
-Registering or Changing the password ........................ 44
-Changing the Age Restriction for watching BD-ROMs ...... 45
-Changing the Parental Lock level for watching DVDs ......... 46
-Changing the Country/Area code ................................. 47
-Changing the terminals for outputting video and audio signals (Output Terminal Priority) ......................... 48
-Restoring all the settings to the factory default settings .... 49
-About the audio output settings .................................. 50

07 Additional information
- Troubleshooting ..................................................... 51
-Playback ............................................................... 51
-When connected using an HDMI cable ....................... 53
-Others .................................................................. 55
-Language Code Table and Country/Area Code Table .... 56
-Language Code Table .............................................. 56
-Country/Area Code Table ......................................... 56
-Specifications ........................................................ 57
-Cautions on use ....................................................... 58
-Moving the player .................................................... 58
-Place of installation .................................................. 58
-Turn the power off when not using the player ............... 58
-Condensation ........................................................ 58
-Cleaning the player .................................................. 58
-Caution for when the unit is installed in a rack with a glass door ................................................................. 58
-Cleaning the pickup lens .......................................... 58
-Handling discs ....................................................... 59
-Glossary ............................................................... 59
-Licenses ............................................................... 62

-Adjusting the video .................................................. 37
- Adjusting the Audio DRC .......................................... 38

6 En
Chapter 1
Before you start

What’s in the box

Remote control x 1
Audio cable (white/red plugs) x 1
Video cable (yellow plugs) x 1
Power cable x 1
AA/R6 dry cell batteries x 2
Warranty card
Operating instructions (this manual)

Putting the batteries in the remote control

1 Open the rear cover.

Press lightly on this part and slide into the direction of the arrow.

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
### 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.

<table>
<thead>
<tr>
<th>Disc type</th>
<th>Logo</th>
<th>Application format</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD-ROM</td>
<td>![BD-ROM Logo]</td>
<td>![CD-ROM]</td>
</tr>
<tr>
<td>BD-R</td>
<td>![BD-R Logo]</td>
<td>![CD-R]</td>
</tr>
<tr>
<td>BD-RE</td>
<td>![BD-RE Logo]</td>
<td>![CD-RW]</td>
</tr>
<tr>
<td><strong>DVD</strong></td>
<td>![DVD-ROM Logo]</td>
<td>![DVD-ROM]</td>
</tr>
<tr>
<td>DVD-ROM</td>
<td>![DVD-ROM Logo]</td>
<td>![DVD-ROM]</td>
</tr>
<tr>
<td><strong>DVD-R</strong></td>
<td>![DVD-R Logo]</td>
<td>![DVD-R]</td>
</tr>
<tr>
<td><strong>DVD</strong></td>
<td>![DVD DVD-R Logo]</td>
<td>![DVD-R DL]</td>
</tr>
<tr>
<td>DVD-R DL</td>
<td>![DVD-R DL Logo]</td>
<td>![DVD-R DL]</td>
</tr>
<tr>
<td><strong>DVD-RW</strong></td>
<td>![DVD-RW Logo]</td>
<td>![DVD-RW]</td>
</tr>
<tr>
<td><strong>DVD+R</strong></td>
<td>![DVD+R Logo]</td>
<td>![DVD+R]</td>
</tr>
<tr>
<td><strong>DVD+RW</strong></td>
<td>![DVD+RW Logo]</td>
<td>![DVD+RW]</td>
</tr>
<tr>
<td><strong>CD-DA</strong></td>
<td>![CD-DA Logo]</td>
<td>![CD-DA]</td>
</tr>
<tr>
<td>CD-DA</td>
<td>![CD-DA Logo]</td>
<td>![CD-DA]</td>
</tr>
<tr>
<td><strong>CD-R</strong></td>
<td>![CD-R Logo]</td>
<td>![CD-R]</td>
</tr>
<tr>
<td>CD-R</td>
<td>![CD-R Logo]</td>
<td>![CD-R]</td>
</tr>
<tr>
<td><strong>CD-RW</strong></td>
<td>![CD-RW Logo]</td>
<td>![CD-RW]</td>
</tr>
<tr>
<td>CD-RW</td>
<td>![CD-RW Logo]</td>
<td>![CD-RW]</td>
</tr>
<tr>
<td><strong>CD-ROM</strong></td>
<td>![CD-ROM Logo]</td>
<td>![CD-ROM]</td>
</tr>
</tbody>
</table>

1. Including the AVCHD format.
2. Discs on which music files are recorded.
Discs that cannot be played

- HD DVDs
- DVD Audio discs
- DVD-RAM discs
- Non-finalized DVD-R/DVD-RW/DVD+R/DVD+RW discs in the DVD-Video format and AVCHD format
- Non-finalized Dual Layer DVD-R discs in the DVD VR format
- 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.

“Blu-ray Disc” and are trademarks.

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.

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
  - 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 24).

- BDs (BDAV) 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.
- Music 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 Matsushita Electric Industrial Co., Ltd. and Sony Corporation.
- Music files recorded on DVD-R/-RW/+R/+RW discs can be played. See Playable files on page 10.
- 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
- Music CDs (CD-DAs and DTS-CDs) can be played.
- Music files recorded on CDs can be played. See Playable files on page 10.
- 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 will 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
- It may not be possible to play DVD-R/-RW or CD-R/-RW discs recorded using a personal recorder or computer. (This can be due to various reasons, including disc properties, scratches, dirt on the disc, dirt on the player’s lens, condensation and so on.)
- It may not be possible to play discs recorded using a computer due to the application settings or environment. Record discs in the proper format. For details, contact the dealer.

Playable files
Music 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.

Supported music 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
- 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
- Music files
  .wma and .mp3
- 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.
Part Names and Functions

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 22).
   – 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 28).

4  SUBTITLE
Press to switch the subtitles (page 28).

5  Number buttons – Use these to select and play the title/chapter/track you want to watch 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 28).
  SECONDARY VIDEO – When playing a BD-ROM on which secondary video (Picture-in-Picture) is recorded, press to switch to the secondary video (page 29).

7  VIDEO SELECT
Press to switch the terminal from which the video signals are output. Use to switch between digital output (HDMI output) and analog output (Component Video output, S-Video output or Video output) (the signals are only output from the selected video output terminal) (page 24).

8  HOME MEDIA GALLERY
Press to display/hide the Home Media Gallery screen (page 34).

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.
  ▲◄◄/◄◄/◄◄ – 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 26 and 27).
  ▶/◄◄/◄◄ – 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 26 and 27).

13  RED/GREEN/BLUE/YELLOW
Use these to navigate BD-ROM menus.

14  VIDEO ADJUST
Press to display/hide the Video Adjust menu (page 37).

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 28).
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 29).

20 POP UP MENU/MENU
Press to display the BD-ROM or DVD-Video menus.

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

21 DISPLAY
Press to display disc information (page 29).

22 TOOLS
Press to display/hide the TOOLS menu (page 23).

23 RETURN
Press to return to the previous screen.

Front Panel

1 STANDBY/ON
Press to turn the power on and off.

2 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.

3 Front panel display

4 OPEN/CLOSE
Press to open and close the disc tray.

5 RESOLUTION
Press to switch the output video resolution from the HDMI output or component video output terminals (page 25).

6 Press to skip to the beginning of the previous title/chapter/track/file. Press and hold to start reverse scanning (pages 26 and 27).

7 Press to skip to the beginning of the next title/chapter/track/file. Press and hold to start forward scanning (pages 26 and 27).

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

9 Press to stop playback.

10 Press to start playback.

11 HDMI indicator
This lights when video signals from the HDMI terminal is output (page 14).

12 Disc tray

13 FL OFF indicator
This lights when Off is selected with FL DIMMER.

14 HD indicator
This lights when an HDMI cable is connected and video signals are being output with a resolution of 1080/60i, 1080/60p, 1080/24p 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.
Front Panel Display

1. Lights during playback.
2. Lights when playback is paused.
3. Lights when the PQLS function is activated (page 15).
4. Character display
   Displays the title/chapter/track number, elapsed time, etc.
5. 24HZ/50HZ/60HZ
   The frequency of the video frame or field being output lights.
6. CONTROL
   Lights when the HDMI Control function is activated (page 15).

Rear Panel

1. DIGITAL OUT (COAXIAL/OPTICAL)
   Connect with the digital audio input terminal on an AV receiver or amplifier, etc.
2. AUDIO OUT (2 ch) terminals
   Connect with the audio input terminals on a TV, AV receiver or amplifier, etc.
3. 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.
4. VIDEO OUT terminals
   VIDEO – Connect with the video input terminal on a TV, AV receiver or amplifier, etc.
   S-VIDEO – Connect with the S-Video input terminal on a TV, AV receiver or amplifier, etc.
   COMPONENT VIDEO – Connect with the component video input terminals on a TV, AV receiver or amplifier, etc.
5. AC IN
   Connect the power cord here.
6. HDMI OUT terminal
   Connect with an HDMI-compatible TV, AV receiver or amplifier, etc.
7. CONTROL IN terminal
   Use to control this player from the remote sensor of another Pioneer component with a CONTROL OUT terminal and bearing the mark. Connect the CONTROL OUT of the other component to the CONTROL IN of this player using a mini-plug cord.

Caution

- Be sure to connect cables for outputting the audio and video signals (pages 14 and 17).
- 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

Connecting a TV

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

*Note*
- Make the settings in the Setup Navigator menu according to the type of cable connected (page 20).

Connecting using a commercially available 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. After connecting, make the settings at the Setup Navigator menu according to the connected HDMI-compatible device (page 20).

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

*Note*
- The HDMI indicator on the player’s front panel lights when video signals are being output from the HDMI OUT terminal. (Depending on the connected device, in some cases it may only light when the player is selected as the device’s input.)
- 1080p video signals may not be output, depending on the HDMI cable being used.

*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.

*About HDMI*

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

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.

HDMI, the HDMI Logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.
Audio signals that can be transferred with the player’s HDMI output 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 50.

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 (page 41).

High Speed HDMI™ cables are tested to carry signals up to 1080p, 1080/60i, 1080/60p, 1080/24p 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 output video resolution is set to Auto, the signals are output with a resolution of 1080/60i, even if the TV’s preferred resolution is 1080/60p.
  - When the output video resolution is set to 480i or 480p, Dolby TrueHD and DTS-HD Master Audio signals are not output as such. They are either output as Dolby Digital or DTS Digital Surround signals or converted into linear PCM. Also, 96 kHz and 192 kHz multi-channel linear PCM audio signals cannot be output. They are output as 2-channel signals (page 50).
- When an HDMI cable with a built-in equalizer is connected, it may not operate properly.

About HDCP

HDCP (High-bandwidth Digital Content Protection) is a copyright protection system by which digital video signals are encrypted.

When connected to a DVI device

- It is not possible to connect DVI devices (computer displays, for example) that are not compatible with HDCP.
- No audio signals are output. Connect using an audio cable (included), 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 HDMI Control function

- When the player is connected to a Pioneer Flat Panel TV or AV system (AV receiver or amplifier, etc.), supporting the HDMI Control function, it can be operated from the Flat Panel TV or AV system (AV receiver or amplifier, etc.).
- The Flat Panel TV’s input is switched automatically 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 or AV system (AV receiver or amplifier, etc.).

To use the HDMI Control function

- The HDMI Control function only works when outputting video signals from the HDMI terminal.
- The HDMI Control function operates when HDMI Control is set to On for all devices connected with HDMI cables. 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 HDMI Control 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 HDMI Control function. The HDMI Control function may not operate properly if other HDMI cables are used.
- The function name of KURO LINK used on the web and in catalogs is referred to as HDMI Control in the operating instructions and on the player.

About PQLS function

The PQLS (Precision Quartz Lock System) is a transfer control technology using the HDMI Control 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 the player is connected to a Pioneer AV receiver or amplifier compatible with the PQLS function via HDMI connection.
- The PQLS function is only activated when playing a music CD (CD-DA).
- The PQLS function is activated when the player is set as follows (page 41):
  - HDMI Control: On
  - PQLS: Auto
- Also refer to the operating instructions of AV receiver or amplifier.

Caution

- If the output video resolution is switched when playing a music CD (CD-DA), the PQLS function does not work. This function will work again after playback stops and restarts.
Connecting using a commercially available component video cable

- When connected to the TV using a component video cable (commercially available), video signals are not output with a resolution of 1080/60p or 1080/24p.
- Depending on the output video resolution setting, the picture may not be output (page 25).
- When connected to the TV using component video cables, also connect using either an optical digital audio cable (commercially available), a coaxial digital audio cable (commercially available), or audio cables (use the included optical digital audio cable for 2-channel connections, a combination of the included cable and commercially available cables for 7.1-channel connections). It is not possible to listen to the sound from devices connected with HDMI cables (commercially available).

Connecting using the included audio cable and video cable

- It is also possible to connect to an AV receiver or amplifier. Connect the audio signals using audio cables (7.1 channels), an optical digital audio cable or a coaxial digital audio cable (page 18).
- An S-Video cable (commercially available) can also be used for connection.

Caution
- When connected to the TV using a component video cable (commercially available), video signals are not output with a resolution of 1080/60p or 1080/24p.
- Depending on the output video resolution setting, the picture may not be output (page 25).
- When connected to the TV using component video cables, also connect using either an optical digital audio cable (commercially available), a coaxial digital audio cable (commercially available), or audio cables (use the included optical digital audio cable for 2-channel connections, a combination of the included cable and commercially available cables for 7.1-channel connections). It is not possible to listen to the sound from devices connected with HDMI cables (commercially available).
Caution

- Video signals are only output with a resolution of 480/60i when connected using a video cable (included) or an S-Video cable (commercially available).
- When connected to a TV using a video cable or an S-Video cable, also connect using either audio cables (use the included cable for 2-channel connections, a combination of the included cable and commercially available cables for 7.1-channel connections), an optical digital audio cable (commercially available), or a coaxial digital audio cable (commercially available). It is not possible to listen to the sound from devices connected with HDMI cables (commercially available).
- 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.

Connecting using a commercially available HDMI cable

Caution

- When connected to an AV receiver or amplifier using an HDMI cable (commercially available), use another HDMI cable (commercially available) to connect the AV receiver or amplifier with the TV. If a component video cable (commercially available), an S-Video cable (commercially available) or a video cable (included) is connected to watch the picture, it is not possible to listen to the sound of devices connected with HDMI cables.
- 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 50).

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.

Note

- Make the settings in the Setup Navigator menu according to the type of cable connected (page 20).
- 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 (commercially available), an S-Video cable (commercially available) or a video cable (included).
Connecting using audio cables

**Caution**

- 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 50).

When connecting to a 7.1-channel compatible AV receiver or amplifier – Connect using the included audio cable and 3 commercially available audio cables (diagram below).

When connecting to a 5.1-channel compatible AV receiver or amplifier – Connect using the included audio cable and 2 commercially available audio cables (do not connect to the surround back left and right terminals).

- After connecting, set Audio Output Mode to Multi-channel (page 40).

Connecting using a commercially available digital audio cable

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

**Caution**

- Dolby TrueHD and Dolby Digital Plus signals are output as the Dolby Digital signals or signals converted from Dolby Digital to linear PCM (page 50).
- 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 50).
Connecting the power cord

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

Power cable (included)

To wall outlet
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.

1 Turn on the power.
Press STANDBY/ON.

2 Turn on the TV’s power and switch the input.
See the TV’s operating instructions for instructions on operating the TV.
Check that the Setup Navigator menu is displayed.
If TV Control is set, the TV can be operated with the player’s remote control (page 22).

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.

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.

• When HDMI is selected for Video or Audio, proceed to step 5.
• When Component Video is selected for Video, proceed to step 6.
• When S-Video/Video is selected for Video, proceed to step 7.

<table>
<thead>
<tr>
<th>Setting item</th>
<th>Output terminal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI</td>
<td>HDMI Output</td>
</tr>
<tr>
<td>Component Video</td>
<td>Video Output Component Video</td>
</tr>
<tr>
<td>S-Video/Video</td>
<td>S-Video</td>
</tr>
<tr>
<td>Analog Audio</td>
<td>Audio Output (2ch)</td>
</tr>
<tr>
<td>Digital Audio</td>
<td>Digital Audio Output Coaxial Optical</td>
</tr>
</tbody>
</table>

Caution
• When HDMI is selected for Video, no video signals are output from the COMPONENT VIDEO, S-VIDEO or VIDEO output terminals.
• When Component Video or S-Video/Video is selected for Video, no video signals are output from the HDMI OUT terminal.
• The video and audio signals output from the set output terminals are output synchronously (lip synchronization).
• When S-Video/Video or Component Video is selected at Video, no sound is output if HDMI is selected at Audio (the warning message shown below is displayed). Follow the procedure below to redo the connections, then select the proper connection at the setup screen.

When you have this player connected to a Pioneer Flat Panel TV that is compatible with HDMI Control, language settings are imported from the Pioneer Flat Panel TV’s language settings before Setup Navigator begins.
- When connecting using component video cables, an S-Video cable or a video cable to watch the picture, connect to an AV receiver or amplifier, or a TV using either analog audio cables (7.1 channels or 2 channels), an optical digital audio cable or a coaxial digital audio cable (page 18).

- When connecting the player to an AV receiver or amplifier using an HDMI cable in order to listen to the Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio or DTS-HD High Resolution Audio signals converted into linear PCM, connect the TV to the AV receiver or amplifier using an HDMI cable (pages 14 and 17).

  • Linear PCM audio signals (2 channels) are output from all terminals other than the ones selected for Audio, regardless of the audio format or the player’s settings.

5 Select and set the HDMI High-Speed Transmission setting.
Use †/ ․ to select, then press ENTER.

![Setup Navigator](image)

When HDMI High-Speed Transmission is set to On, use a High Speed HDMI™ cable. The picture and sound may not be output properly if any other HDMI cable (standard HDMI™ cable) is used. Proceed to step 8.

6 Select the output video resolution from the COMPONENT VIDEO output terminals.
Use †/ ․ to select, then press ENTER.

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

7 Select the aspect ratio of your TV.
Use †/ ․ to select, then press ENTER.

![Setup Navigator](image)

8 Check the settings.
Select Proceed, then press ENTER.

![Setup Navigator](image)

9 Output test tones.
Use †/ ․ to select Yes, then press ENTER.

![Setup Navigator](image)

Caution

• The screen in step 10 and test tones are output simultaneously according to the settings in steps 4 to 7. Lower the volume of the devices connected with the player.
10 Finish the Setup Navigator menu.
Use \( \leftarrow \rightarrow \) 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.

About the screen saver
The screen saver is automatically activated if there is no operation for over 1 minute after playback is stopped or paused. The screen saver turns off when an operation is performed on the player or remote control.

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 CDs and music files, the screen saver is automatically activated if no button is operated for over 1 minute, even while the CD or music file is playing.

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.

1 Input the 2-digit manufacturer code.
Press the number buttons (0 to 9) to input the code while pressing TV CONTROL.

\[\text{Note}\]
- The factory setting is PIONEER 00.
Using the TOOLS menu

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

1. Display the TOOLS menu.
   Press \( \text{TOOLS} \).

2. Select and set the item.
   Use \( \uparrow/\downarrow \) to select, then press \( \text{ENTER} \).

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

To close the TOOLS menu

Press \( \text{TOOLS} \) or \( \text{RETURN} \).

### TOOLS menu item list

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Video Resolution</td>
<td>Switch the output video resolution from the various output terminals (page 25).</td>
</tr>
<tr>
<td>Play from Beginning</td>
<td>Play the selected title, track or file from the start.</td>
</tr>
<tr>
<td>Play Mode</td>
<td>Display the Play Mode screen (page 29).</td>
</tr>
<tr>
<td>Angle</td>
<td>Switch the BD-ROM/DVD-Video disc’s camera angles (page 28).</td>
</tr>
<tr>
<td>Subtitle</td>
<td>Switch the subtitles (page 28).</td>
</tr>
<tr>
<td>Audio</td>
<td>Switch the audio streams/channels (page 28).</td>
</tr>
<tr>
<td>Secondary Audio</td>
<td>Switch the BD-ROM’s secondary audio streams/channels (page 28).</td>
</tr>
<tr>
<td>Secondary Video</td>
<td>Switch the BD-ROM’s secondary video (Picture-in-Picture) (page 29).</td>
</tr>
<tr>
<td>Original/Play List</td>
<td>Switch the DVD-R/RW’s (VR format) list screen between the original list and the playlist.</td>
</tr>
</tbody>
</table>
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.

1 Display the Tools menu.
With no disc loaded, press the TOOLS button.

2 Select and set the item.
Use \[\leftarrow,\rightarrow\] to select BDMV Data Erase, then press ENTER.

3 Erase the data.
Use \[\leftarrow,\rightarrow\] to select Yes, then press ENTER.

Caution

- It takes time to erase the BDMV data for a while. Do not unplug the power cord for about 10 seconds after performing the above procedure.

Switching the video output terminal

Use the procedure below to switch the video output terminal. Switch between the digital output (HDMI output) and the analog output (Component Video output, S-Video output or Video output).

- Switch the terminal from which the video signals are output.

The video output terminal switches each time the button is pressed.

Caution

- The picture may not be displayed for a while when the video output terminal is switched.
- When the HDMI OUT terminal is selected, no video signals are output from the other video output terminals.
- When a video output terminal other than the HDMI OUT terminal is selected, no audio and video signals are output from the HDMI OUT terminal.
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 is displayed on the TV screen and on the player’s front panel display.

When pressed again, the output video resolution switches.

The output video resolution can also be switched using /.

The output video resolution can also be switched by pressing RESOLUTION on the player’s front panel.

The output video resolution can also be switched by selecting Output Video Resolution from the TOOLS menu.

The output video resolution depends on the video output terminal. See the table below.

<table>
<thead>
<tr>
<th>Output video resolution setting</th>
<th>HDMI OUT terminal</th>
<th>COMPONENT VIDEO output terminals</th>
<th>S-VIDEO/VIDEO output terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto²</td>
<td>Resolution preferred by TV³,⁴</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>480i</td>
<td>480/60i</td>
<td>480/60i</td>
<td>480/60i</td>
</tr>
<tr>
<td>480p</td>
<td>480/60p</td>
<td>480/60p</td>
<td>480/60p</td>
</tr>
<tr>
<td>1080i</td>
<td>1080/60i</td>
<td>1080/60i⁵</td>
<td>1080/60i⁵</td>
</tr>
<tr>
<td>1080p²</td>
<td>1080/60p²</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Source Direct</td>
<td>Resolution recorded on disc³,⁷,⁸</td>
<td>Resolution recorded on disc³,⁷,⁸,⁹</td>
<td>480/60i</td>
</tr>
</tbody>
</table>

1. Depending on the BD, the pictures may not be output.
2. Cannot be selected when the video signals are being output from the COMPONENT VIDEO output terminals, S-VIDEO output terminal or the VIDEO output terminal.
3. For details on the output of film material (1080i or 1080p video signals), see To output film material.
4. Sources with a resolution of 720/60p and 720/24p are output at 1080/60p, even if the TV’s recommended resolution is 1080/60p.
5. DVD-Video or DVD VR format is output at 480/60p. BDs format may be output at 480/60p.
6. Depending on the connected HDMI cable, the video signals may not be output. Also, sources with a resolution of 720/60p and 720/24p are output at 1080/60p.
7. Depending on the connected TV, the video signals may not be output.
8. 720/24p film material is output at 720/60p.
9. 1080/24p film material is output at 1080/60i.

Caution

- On some TVs, the picture may not be displayed properly when the resolution is switched. If this happens, use OUTPUT RESOLUTION to set to a resolution at which the picture is properly displayed.
- When video signals are being output with a resolution of 1080/60i, 1080/60p, 1080/24p or 720/60p from the HDMI output terminal 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 the HDMI output terminal, set the output video resolution to either Auto or Source Direct.

Caution

- 1080/24p signals can only be output from the HDMI OUT terminal. 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 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 to the output video resolution at which the picture is properly displayed.
- 720/24p video signals are output at 60 frames/second, even if the resolution is set to Auto or Source Direct.
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. Music files recorded on discs are played with Home Media Gallery (page 34).

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 46.
   • 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.

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 CDs and music files, playback starts from the beginning of the track/file that was playing.
• 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 and DVDs.
• Sound is output when scanning CDs and music 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 PREV or NEXT.

- When NEXT is pressed, the disc skips ahead to the beginning of the next title/chapter/track/file.
- When PREV is pressed, the disc 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 and files for which skipping is not possible.

Playing in slow motion

- While playback is paused, press and hold / or >/.

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

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.
- 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 / or >/.

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

Note
- For some discs, normal playback resumes automatically when the chapter switches.
- 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. When pressed again, the angle switches.

<table>
<thead>
<tr>
<th>Angle</th>
<th>1/4</th>
</tr>
</thead>
</table>

- The angles can also be switched using ↑ / ↓.
- The angles can also be switched by selecting Angle from the TOOLS menu.
- Angle mark is displayed for scenes at which multiple angles are recorded.

Note
- For some discs, the angle can also be switched on the menu screen.
- Angle mark is not displayed if Angle/Secondary Indicator is set to Off (page 42).

Switching the subtitles

For discs 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. When pressed again, the subtitle switches.

<table>
<thead>
<tr>
<th>Subtitle</th>
<th>1/2 English</th>
</tr>
</thead>
</table>

- The subtitles can also be switched using ↑ / ↓.
- The subtitles can also be switched by selecting Subtitle from the TOOLS menu.

Note
- The types of recorded subtitles depend on the disc.
- 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.

Switching the audio streams/channels

For discs 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.

- To switch the secondary audio, press SECONDARY 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. When pressed again, the audio stream/channel switches.

<table>
<thead>
<tr>
<th>Audio type</th>
<th>Number of channels</th>
<th>Channels recorded on disc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolby True HD</td>
<td>5.1 ch</td>
<td>L C R Ls Rs LFE</td>
</tr>
</tbody>
</table>

- The audio streams/channels can also be switched using ↑ / ↓.
- The audio streams/channels can also be switched by selecting Audio or Secondary Audio from the TOOLS menu.
- Secondary audio mark is displayed for scenes at which secondary audio is recorded.
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. When pressed again, the secondary video stream switches.

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

- The secondary video streams can also be switched using ↑/↓.

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

- Secondary video mark $\text{[C]}$ is displayed for scenes at which secondary video is recorded.

**Note**

- Some BD-ROMs do not include secondary video.

- Secondary video mark $\text{[C]}$ is not displayed if **Angle/Secondary Indicator** is set to Off (page 42).

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.

2 Select the type of search.
Use ↑/↓ to select, then press ENTER.
See the table on page 33 for the search types.

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.

To cancel Time Search
Press PLAY MODE or RETURN.

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.

3 Input the number.
Use the number buttons (0 to 9) or ↑/↓ to input the number.
Use ←/→ to move the cursor.

To cancel the search
Press PLAY MODE or RETURN.

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 / to select, then press ENTER.

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

   Use / to select A (Start), then press ENTER.

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

   Use / 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
   • 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 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 33 for the types of repeat playback.

   ❖ 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 33.
   • 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 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.

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.

<table>
<thead>
<tr>
<th>Play Mode type</th>
<th>Mark</th>
<th>Disc/file type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BD-ROM&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Repeat play</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing a specific section within a title or track repeatedly (A-B Repeat)</td>
<td>A-B</td>
<td>✓</td>
</tr>
<tr>
<td>Playing a title repeatedly (Title Repeat)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Playing a chapter repeatedly (Chapter Repeat)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Playing a track or file repeatedly (Track Repeat)</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Playing all the titles, tracks or files on the disc repeatedly (All Repeat)</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Random play</td>
<td>RDM</td>
<td>x</td>
</tr>
<tr>
<td>Playing the tracks or files in random order (Random Track)</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Search</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing from a specific time (Time Search)</td>
<td>—</td>
<td>✓</td>
</tr>
<tr>
<td>Playing a specific chapter (Chapter Search)</td>
<td>—</td>
<td>✓</td>
</tr>
<tr>
<td>Playing a specific track (Track Search)</td>
<td>—</td>
<td>✓</td>
</tr>
</tbody>
</table>

1. During playback in a Play Mode, 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 or HMG Playlist are played repeatedly.
5. 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
- Music CDs (CD-DAs and DTS-CDs)
- DVDs/CDs on which only data files of music 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 a music 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 23).

Playing music 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. Press ENTER.

CD-ROM

View available music.

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.

Folders CD-ROM

A list of the files and/or the sub-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. 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.
- Music CDs (CD-DAs and DTS-CDs)
- DVDs/CDs on which music 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.

Search for the part you want to play from a list of the disc's content.
Select the track/file to be added.  
Use \( \uparrow / \downarrow \) to select.

Press TOOLS to display the TOOLS menu.

Select Add to HMG Playlist.  
Use \( \uparrow / \downarrow \) 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.

\( \text{To add the currently playing track/file to the HMG Playlist} \)

While the track/file is playing, press \( \text{TOOLS} \) to display the TOOLS menu.

Use \( \uparrow / \downarrow \) to select Add to HMG Playlist, then press ENTER.

\( \text{Note} \)

- 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.

\( \text{Playing the HMG Playlist} \)

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 \( \uparrow / \downarrow \) to select, then press ENTER.

3. Select the track/file to be played.  
Use \( \uparrow / \downarrow \) to select, then press ENTER.

Playback starts. The Now Playing screen (shown below) is displayed.

Press \( \text{STOP} \) to stop playback. When a music CD is stopped, the Now Playing screen turns off. When a music file is stopped, the HMG Playlist screen reappears.

\( \text{Deleting tracks/files from the HMG Playlist} \)

Select the track/file to be deleted, then press \( \text{TOOLS} \) to display the TOOLS menu.

Use \( \uparrow / \downarrow \) to select Delete from HMG Playlist, then press ENTER.
Chapter 5
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 ↑/↓ 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.

When Memory1, 2 or 3 is selected, use ↓ to select Adjustments, then press ENTER.

A detailed settings screen appears.

2. Select the item to be adjusted.

Use ↑/↓ to select.

- Prog.Motion – Adjust according to the type of image (movie or still image). This is effective 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 38).
- 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).
- Detail – Emphasizes 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 monitor, 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 have the effect only for pictures output from the VIDEO and S-VIDEO output terminals.
- YNR, CNR, BNR and MNR are disabled when 1080/24p signals are output from the HDMI OUT terminal.
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.

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 watching 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 DRC.
Use to select, then press ENTER.

3 Adjust the setting.
Use 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 and DVDs.
- 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 (2 ch) or AUDIO OUT (7.1 ch) terminals.
  - Linear PCM audio signals output from the DIGITAL OUT terminals or HDMI OUT terminal.
- The effect may be weak for some discs.
Chapter 6
Advanced settings

Changing the settings (Initial Setup)

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.
- The factory default settings are indicated in bold.

### Setting Options | Explanation
--- | ---
**Video Out**

<table>
<thead>
<tr>
<th>TV Aspect Ratio</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:3 (Standard)</td>
<td>Select this when connected to a conventional TV.</td>
<td></td>
</tr>
<tr>
<td>16:9 (Widescreen)</td>
<td>Select this when connected to a wide (16:9) TV.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4:3 Video Out</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>4:3 pictures are displayed with black bands along the sides. Select this when you cannot switch the aspect ratio to 4:3 on the TV.</td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td>4:3 pictures are displayed over the entire screen.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DVD 16:9 Video Out</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan &amp; Scan</td>
<td>The picture is displayed over the entire screen, with the left and right sides of the 16:9 picture cut off. Select this to watch 4:3 pictures over the entire screen.</td>
<td></td>
</tr>
<tr>
<td>Letter Box</td>
<td>16:9 pictures are displayed with black bands at the top and bottom when watching on a 4:3 screen.</td>
<td></td>
</tr>
</tbody>
</table>

**Still Picture**

<table>
<thead>
<tr>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field</td>
<td>This eliminates instability of the picture when playback is paused.</td>
</tr>
<tr>
<td>Frame</td>
<td>This makes pictures clear when playback is paused, but instability may be observed.</td>
</tr>
<tr>
<td>Auto</td>
<td>Field and Frame is selected automatically according to the disc being played.</td>
</tr>
</tbody>
</table>

**Audio Out**

<table>
<thead>
<tr>
<th>Dolby Digital Out</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolby Digital 1</td>
<td>Dolby Digital audio signals are output. With BD-ROMs, the secondary audio and interactive audio are mixed for output.</td>
<td></td>
</tr>
<tr>
<td>Dolby Digital 2</td>
<td>Dolby Digital audio signals are output. With BD-ROMs, the signals are output without mixing the secondary audio and interactive audio signals.</td>
<td></td>
</tr>
</tbody>
</table>

| 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. |

<table>
<thead>
<tr>
<th>DTS Out</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTS 1</td>
<td>DTS Digital Surround audio signals are output. With BD-ROMs, the secondary audio and interactive audio are mixed for output.</td>
<td></td>
</tr>
<tr>
<td>DTS 2</td>
<td>DTS Digital Surround audio signals are output. With BD-ROMs, the signals are output without mixing the secondary audio and interactive audio signals.</td>
<td></td>
</tr>
<tr>
<td>DTS → PCM</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AAC Out</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAC</td>
<td>Select this when the connected AV receiver or amplifier, etc., is compatible with AAC audio signals. The AAC audio signals are output.</td>
<td></td>
</tr>
<tr>
<td>AAC → PCM</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DTS Downmix</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Lt/Rt</td>
<td>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).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audio Output Mode</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Channel</td>
<td>Select this when the TV’s analog 2-channel (stereo) audio input terminals are connected to the player’s AUDIO OUT (2 ch) terminals.</td>
<td></td>
</tr>
<tr>
<td>Multi-channel</td>
<td>Select this when the multi-channel audio input terminals of an AV receiver or amplifier, etc., are connected to the player’s AUDIO OUT (7.1 ch) terminals.</td>
<td></td>
</tr>
</tbody>
</table>

**Speakers**

<table>
<thead>
<tr>
<th>Speaker Setup</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>When an AV receiver or amplifier, etc., is connected to the player’s AUDIO OUT (7.1 ch) terminals, this sets whether or not to use the speakers which are connected to the AV receiver or amplifier, as well as the size of the speakers. For details, see Changing the speaker setup on page 43.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Channel Level</th>
<th>Options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fix</td>
<td>The output for the various speakers is set to the maximum.</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>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 44).</td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td>Options</td>
<td>Explanation</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>HDMI High-Speed Transmission</td>
<td>On</td>
<td>Select this when connected with a High Speed HDMI™ cable (page 15).</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Select this when connected with a Standard HDMI™ cable (page 15).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The player’s setting screen is closed if the output video resolution is switched by changing the HDMI High-Speed Transmission setting.</td>
</tr>
<tr>
<td>HDMI Color Space</td>
<td>Auto</td>
<td>The video signal that is output (YCbCr or RGB) is switched automatically.</td>
</tr>
<tr>
<td></td>
<td>YCbCr 4:4:4</td>
<td>Select this to output the video signals as YCbCr 4:4:4 signals.</td>
</tr>
<tr>
<td></td>
<td>YCbCr 4:2:2</td>
<td>Select this to output the video signals as YCbCr 4:2:2 signals.</td>
</tr>
<tr>
<td></td>
<td>RGB (16 to 235)</td>
<td>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 RGB (0 – 255) is selected.</td>
</tr>
<tr>
<td></td>
<td>RGB (0 to 255)</td>
<td>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 RGB (16 – 235) is selected.</td>
</tr>
<tr>
<td>Normaly it is recommended to set this to Auto. When set to Auto, the optimum video signals for your TV are output.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDMI Audio Out</td>
<td>Auto</td>
<td>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 50).</td>
</tr>
<tr>
<td></td>
<td>PCM</td>
<td>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 50).</td>
</tr>
<tr>
<td>PQLS</td>
<td>Auto</td>
<td>Enables PQLS function (page 15).</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Disables PQLS function (page 15).</td>
</tr>
<tr>
<td>HDMI Control</td>
<td>On</td>
<td>Select this to control the player with the remote control of the AV device connected using an HDMI cable. Also refer to About HDMI Control function on page 15.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Select this when you do not want to control the player with the remote control of the AV device connected using an HDMI cable.</td>
</tr>
<tr>
<td>OSD Language</td>
<td>English</td>
<td>Select this to set the language of the on-screen displays to English.</td>
</tr>
<tr>
<td>Audio Language</td>
<td>English</td>
<td>Select this to set both the BD-ROM and DVD-Video default audio language to English.</td>
</tr>
<tr>
<td></td>
<td>available languages</td>
<td>Choose a language for the on-screen displays from the listed languages.</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>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 56 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.</td>
</tr>
<tr>
<td>Subtitle Language</td>
<td>English</td>
<td>Select this to set the default subtitle language for BD-ROM and DVD-Video playback to English.</td>
</tr>
<tr>
<td></td>
<td>available languages</td>
<td>Choose a language from the listed languages to set the default subtitle language for BD-ROM and DVD-Video playback.</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Continue to the next screen to set the default subtitle language for BD-ROM and DVD-Video playback. If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.</td>
</tr>
<tr>
<td>BDMV/DVD-Video Menu Lang.</td>
<td>w/Subtitle</td>
<td>Sets the language of BD-ROM and DVD-Video menus to the same as that set for the subtitle language.</td>
</tr>
<tr>
<td></td>
<td>available languages</td>
<td>Choose a language from the listed languages to set the default language for BD-ROM and DVD-Video menus.</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>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 56 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.</td>
</tr>
<tr>
<td>Subtitle Display</td>
<td>On</td>
<td>Select this to display the subtitles. Note that on some discs the subtitles are displayed by force.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Select this if you do not want to display the subtitles.</td>
</tr>
<tr>
<td>Parental Lock</td>
<td>Set Password (Change Password)</td>
<td>Register (change) the password for parental lock settings or for unlocking to play DVD-Video with parental lock feature. For details, see Registering or Changing the password on page 44.</td>
</tr>
<tr>
<td></td>
<td>DVD-Video Parental Lock</td>
<td>Change the player’s parental lock level. For details, see Changing the Parental Lock level for watching DVDs on page 46.</td>
</tr>
<tr>
<td></td>
<td>BDMV Parental Lock</td>
<td>Change the restricted age. For details, see Changing the Age Restriction for watching BD-ROMs on page 45.</td>
</tr>
<tr>
<td></td>
<td>Country Code</td>
<td>Change the Country/Area code. Refer to the Changing the Country/Area code on page 47.</td>
</tr>
<tr>
<td>Setting</td>
<td>Options</td>
<td>Explanation</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Output Terminal Priority</td>
<td></td>
<td>Select the terminals for outputting video and audio signals with priority. For details, see Changing the terminals for outputting video and audio signals (Output Terminal Priority) on page 48.</td>
</tr>
<tr>
<td>On Screen Display</td>
<td><strong>On</strong></td>
<td>Select this to display the operation indicators (Play, Stop, etc.) on the TV screen.</td>
</tr>
<tr>
<td></td>
<td><strong>Off</strong></td>
<td>Select this if you do not want to display the operation indicators (Play, Stop, etc.) on the TV screen.</td>
</tr>
<tr>
<td>Angle/Secondary Indicator</td>
<td><strong>On</strong></td>
<td>Select this to display the angle mark, secondary video mark and secondary audio mark on the TV screen (pages 28 and 29).</td>
</tr>
<tr>
<td></td>
<td><strong>Off</strong></td>
<td>Select this if you do not want to display the angle mark, secondary video mark and secondary audio mark on the TV screen.</td>
</tr>
<tr>
<td>Hybrid Disc Playback</td>
<td><strong>BD</strong></td>
<td>The BD layer of hybrid discs with two or more layers (BD and DVD or CD) is played.</td>
</tr>
<tr>
<td></td>
<td><strong>DVD</strong></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>CD</strong></td>
<td>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.</td>
</tr>
<tr>
<td>BDMV/BDAV Playback Priority</td>
<td><strong>BDMV</strong></td>
<td>Select this to play the BDMV format on BD-R/RE discs containing both BDMV and BDAV formats.</td>
</tr>
<tr>
<td></td>
<td><strong>BDAV</strong></td>
<td>Select this to play the BDAV format on BD-R/RE discs containing both BDMV and BDAV formats.</td>
</tr>
<tr>
<td>Auto Power Off</td>
<td><strong>On</strong></td>
<td>Select this to turn the power off automatically (the power turns off automatically if no operation is performed for over 30 minutes).</td>
</tr>
<tr>
<td></td>
<td><strong>Off</strong></td>
<td>Select this if you do not want the power to turn off automatically.</td>
</tr>
<tr>
<td>Setup Navigator</td>
<td></td>
<td>Start making the settings using the Setup Navigator menu. For details, see Making settings using the Setup Navigator menu on page 20.</td>
</tr>
</tbody>
</table>
Changing to other language at language setting

Note

• Refer to Language Code Table on page 56.
• If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.

1 Select and set Other.
Use ↑/↓ to select, then press ENTER.

2 Change the language.
Use ←/→ to change, then press ENTER.

To change the language using numbers

1 Use ↑/↓ to select Number.
2 Use the number buttons (0 to 9) to input the number, then press ENTER.

Changing the speaker setup

Set whether or not to use the speakers which are connected to the AV receiver or amplifier, as well as the size of the speakers. This setting is only valid for analog audio outputs.

Note

• Select Initial Setup from the Home Menu, then press ENTER.

1 Select and set Speakers.
Use ↑/↓ to select, then press ENTER.

2 Select and set Speaker Setup → Next Screen.
Use ↑/↓ to select, then press ENTER.

Caution

• This cannot be selected when Audio Output Mode is set to 2 Channel. Change the setting to Multi-channel (page 40).

3 Select the speaker and change the setting.
Use ↑/↓ to select, then use ←/→ to change the setting.

Closing the speaker settings screen

Press ENTER.
Adjusting the output level of the various speakers (Channel Level)

Adjust each output level of the different speakers by using test tones. This setting is only valid for analog audio outputs.

1. **Select and set Speakers.**
   Use 
   to select, then press 
   ENTER.

2. **Select and set 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 3.

   **Caution**
   This cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 40).

3. **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.

   **Caution**
   Test tones are output. Lower the volume of the device connected to the player.

4. **Adjust the output level.**
   Use 
   to select, 
   to adjust.

**Closing the Channel Level screen**
Press 

**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.**
   Use 
   to select, then press 
   ENTER.

2. **Select and set Set Password → Next Screen.**
   Use 
   to select, then press 
   ENTER.
3 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.

4 Re-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.

To change the code number
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 49).

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

1 Select and set Parental Lock.
Use ↑/↓ to select, then press ENTER.

2 Select and set BDMV Parental Lock → Next Screen.
Use ↑/↓ to select, then press ENTER.
3 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.

4 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, watching is not restricted.

Changing the Parental Lock level for watching 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 watching these discs, set the player’s level to the level lower than the discs.

1 Select and set Parental Lock.
Use ↑/↓ to select, then press ENTER.

2 Select and set DVD-Video Parental Lock → Next Screen.
Use ↑/↓ to select, then press ENTER.
3 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.

4 Change the level.
Use ←/→ to change, then press ENTER to set.

Changing the Country/Area code

Note
• Refer to Country/Area Code Table on page 56.

1 Select and set Parental Lock.
Use ↑/↓ to select, then press ENTER.

2 Select and set Country/Area Code.
Use ↑/↓ to select, then press ENTER.

Note
• The level can be set to Off or between Level1 and Level8. When set to Off, watching is not restricted.
3. 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.

Changing the terminals for outputting video and audio signals (Output Terminal Priority)

Set the video and audio terminals to be used.
1. Select and set Options.
Use ↑/↓ to select, then press ENTER.

2. Select and set Output Terminal Priority → Next Screen.
Use ↑/↓ to select, then press ENTER.

4. Change the country/area code.
Use ←/→ to change, then press ENTER to set.

To change the country/area code using numbers
1. Use ↑/↓ to select Number.
2. Use the number buttons (0 to 9) to input the number, then press ENTER.
3 Select the terminal for outputting video signals. Use ◄ ► to select, then press ↓.
When a digital output is selected for the video output terminal, Video is fixed at HDMI and cannot be changed.
When an analog output is selected for the video output terminal, Component Video or S-Video/Video can be selected for Video.

- HDMI – HDMI OUT terminal
- Component Video – COMPONENT VIDEO output terminals
- S-Video/Video – S-VIDEO output terminal or VIDEO output terminal

The video and audio signals output from the set output terminals are output synchronously (lip synchronization).

Caution
- If the output terminal you want to select at Video is not displayed, use the VIDEO SELECT button to switch between digital and analog output (page 24).

4 Select the terminal for outputting audio signals. Use ◄ ► to select, then press ENTER.
- HDMI – HDMI OUT terminal
- Digital Audio – DIGITAL OUT terminal (COAXIAL/OPTICAL)
- Analog Audio – AUDIO OUT (2 ch) terminals or AUDIO OUT (7.1 ch) terminals

The optimum audio signals for the audio format and the player’s settings are output from the output terminal(s) set here.

Caution
- When S-Video/Video or Component Video is selected at Video, no sound will be output if HDMI is selected at Audio (the warning message shown below is displayed). When listening to the audio by the HDMI-compatible device, connect to the TV with the HDMI cable to watch the video (pages 14 and 17).

- Linear PCM (2-channel) audio signals are output from the audio terminals other than the one set at Audio, regardless of the audio format and the player’s settings.

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 20).
### 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.

<table>
<thead>
<tr>
<th>Audio format</th>
<th>DIGITAL OUT terminal</th>
<th>HDMI OUT terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2ch&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Multi-channel&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>BD-ROM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolby Digital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolby Digital Plus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolby TrueHD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTS Digital Surround</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTS-HD High Resolution Audio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTS-HD Master Audio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear PCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BD-R/RE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolby Digital</td>
<td>Converted to 2-channel audio</td>
<td>5.1-channel audio</td>
</tr>
<tr>
<td>MPEG-2 AAC</td>
<td>Converted to 2-channel audio</td>
<td>5.1-channel audio</td>
</tr>
<tr>
<td>Linear PCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVD-Video</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolby Digital</td>
<td>Converted to 2-channel audio</td>
<td>5.1-channel audio</td>
</tr>
<tr>
<td>DTS Digital Surround</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear PCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVD (VR format)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolby Digital</td>
<td>Converted to 2-channel audio</td>
<td>5.1-channel audio</td>
</tr>
<tr>
<td>MPEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear PCM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. 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.
2. When Audio Output Mode is set to 2 Channel or Multi-channel (page 40).
3. 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 40).
4. 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 40).
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 HDMI Audio Out is set to PCM or Auto (page 41).
7. 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.
8. If the connected HDMI device is not compatible with Dolby TrueHD or Dolby Digital Plus bitstream, the signals are output in Dolby Digital bitstream. 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.
9. 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.
10. When the output video resolution is set to 480i or 480p, the signals may be output in 2 channel, depending on HDMI High-Speed Transmission setting and/or the connected HDMI device (page 15).
11. When the output video resolution is set to 480i or 480p, the signals may be output in Dolby Digital bitstream, depending on HDMI High-Speed Transmission setting and/or the connected HDMI device (page 15).
12. DTS Digital Surround signals converted to linear PCM audio signals are output.
13. When the output video resolution is set to 480i or 480p, the signals may be output in DTS Digital Surround bitstream, depending on HDMI High-Speed Transmission setting and/or the connected HDMI device (page 15).

**Caution**

- Linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at Audio under Output Terminal Priority, regardless of the audio format or the player’s settings (pages 20 and 48).
- The audio signals output from the DIGITAL OUT terminals have a sampling frequency of 48 kHz (44.1 kHz for CDs).
- MPEG audio is output in linear PCM.
## Chapter 7
### Additional information

#### 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

<table>
<thead>
<tr>
<th>Problem</th>
<th>Check</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc does not play. Disc tray opens automatically.</td>
<td>Is the disc scratched?</td>
<td>It may not be possible to play scratched discs.</td>
</tr>
<tr>
<td></td>
<td>Is the disc dirty?</td>
<td>Clean the disc (page 59).</td>
</tr>
<tr>
<td></td>
<td>Is the disc properly set in the disc tray?</td>
<td>• Set the disc with the printed side facing up. • Set the disc properly in the depression in the disc tray.</td>
</tr>
<tr>
<td></td>
<td>Is the region number correct?</td>
<td>The region numbers of discs that can be played on this set are as shown below (page 10). • BDs: “A” (or including “A”) and “ALL” • DVDs: “1” (or including “1”) and “ALL”</td>
</tr>
<tr>
<td></td>
<td>Is the player set in a humid place?</td>
<td>There could be condensation inside. Wait for the condensation to dissipate. Do not set the player near an air-conditioner, etc. (page 58).</td>
</tr>
<tr>
<td>Picture freezes and the front panel and remote control buttons stop working.</td>
<td>Is the video cable properly connected?</td>
<td>Insert the cable firmly and all the way in.</td>
</tr>
<tr>
<td></td>
<td>Is the video cable damaged?</td>
<td>If the cable is damaged, replace it with a new one.</td>
</tr>
<tr>
<td></td>
<td>Is the input setting on the connected TV or AV receiver or amplifier right?</td>
<td>Read the operating instructions of the connected components and switch to the proper input.</td>
</tr>
<tr>
<td></td>
<td>Are the terminals for outputting video signals properly set?</td>
<td>Press VIDEO SELECT to switch the terminal from which the video signals are output.</td>
</tr>
<tr>
<td></td>
<td>Is the output video resolution properly set?</td>
<td>Depending on the player's output video resolution, the picture may not be displayed at all or displayed properly. Use OUTPUT RESOLUTION to switch to a resolution at which the picture is displayed properly (page 25).</td>
</tr>
<tr>
<td></td>
<td>Is the player connected with an HDMI cable other than a High Speed HDMI™ cable (with a Standard HDMI™ cable)?</td>
<td>Press ■ while pressing ◄ on the player’s front panel to restore the video outputs to the factory default settings. After use Setup Navigator to reset the player.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are some BDs for which the picture will only be output when connected by HDMI cable.</td>
</tr>
<tr>
<td></td>
<td>Is the TV’s aspect ratio properly set?</td>
<td>Read the TV's operating instructions and set the TV's aspect ratio properly.</td>
</tr>
<tr>
<td></td>
<td>Is 4:3 Video Out properly set?</td>
<td>• Set 4:3 Video Out properly (page 40). • When video signals with a resolution of 1080/60i, 1080/60p, 1080/24p or 720/60p are being output from the HDMI OUT terminal or the COMPONENT VIDEO output terminals, they may be output in with an aspect ratio of 16:9 even if TV Aspect Ratio is set to 4:3 (Standard) (page 25).</td>
</tr>
<tr>
<td>Sound and picture are not synchronized.</td>
<td>Is Output Terminal Priority properly set?</td>
<td>Set Output Terminal Priority properly (pages 20 and 48).</td>
</tr>
<tr>
<td>Problem</td>
<td>Check</td>
<td>Remedy</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Picture is disturbed during playback. Picture is dark.</td>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td>No picture is displayed or picture is not output in high definition when playing BDs</td>
<td></td>
<td>With some content protected discs, it may not be possible to output the video signals from the <strong>VIDEO</strong> output terminals, the <strong>S-VIDEO</strong> output terminal or the <strong>COMPONENT VIDEO</strong> output terminals. In this case, connect using an HDMI cable (page 14).</td>
</tr>
<tr>
<td>No sound is output. Sound is disturbed.</td>
<td>Is the disc played back in slow motion?</td>
<td>No sound is output during slow motion play and forward and reverse scanning.</td>
</tr>
<tr>
<td></td>
<td>Is the disc played back in fast forward or fast reverse?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the disc scratched?</td>
<td>The sound may not be output if the disc is scratched.</td>
</tr>
<tr>
<td></td>
<td>Is the disc dirty?</td>
<td>Clean the disc (page 59).</td>
</tr>
<tr>
<td></td>
<td>Is the player properly connected to the other components (AV receiver or amplifier, etc.)?</td>
<td>• Check that you connect the player to the audio output terminals of a different component, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check that you connect the player to the PHONO input terminals of the AV receiver or amplifier, etc.</td>
</tr>
<tr>
<td></td>
<td>Are the connected components (AV receiver or amplifier, etc.) properly set?</td>
<td>Read the operating instructions of the connected components and check the volume, input, speaker settings, etc.</td>
</tr>
<tr>
<td></td>
<td>Are the audio cables properly connected?</td>
<td>Insert the cables firmly and all the way in.</td>
</tr>
<tr>
<td></td>
<td>Is the audio cable damaged?</td>
<td>If the cable is damaged, replace it with a new one.</td>
</tr>
</tbody>
</table>
|                                                                       | Is the player connected to the TV using an HDMI cable to watch the picture? | When connecting using component video cables, an S-Video cable or a video cable to watch the picture, it is not possible to listen to the sound of devices connected with HDMI cables. Take one of the measures below (pages 14 and 17).  
  - To watch the picture on a device that is not HDMI compatible, connect using either an optical digital audio cable, coaxial digital audio cable or analog audio cables (7.1 or 2 channels) to listen to the sound.  
  - To listen to the sound on an HDMI-compatible device, connect to the TV using an HDMI cable to watch the picture.  
After one of the above measures, use Setup Navigator to reset the player (page 20). |
|                                                                       | Is **Audio Output Mode** properly set?                               | If **Audio Output Mode** is set to Multi-channel, the audio signals may not be output properly from the **AUDIO OUT (2 ch)** terminals (page 40). Set **Audio Output Mode** to 2 Channel. |
|                                                                       | Are the speakers properly set?                                       | Set **Speaker Setup** properly (page 40).                                                                                           |
|                                                                       |                                                                       | For some BDs, audio signals are only output from the optical digital audio output terminal, the coaxial digital audio output terminal or the HDMI output terminal. |
| Multi-channel sound is not output.                                     | Is the AV receiver or amplifier, etc. connected to the **HDMI OUT** terminal, the **AUDIO OUT (7.1 ch)** terminals or **DIGITAL OUT** (COAXIAL/OPTICAL) terminal? | Read the operating instructions of the connected AV receiver or amplifier and check the audio output settings of AV receiver or amplifier. |
|                                                                       | Is **Output Terminal Priority** properly set?                        | Linear PCM (2-channel) audio signals are output from output terminals other than the one set at Audio under **Output Terminal Priority**. Set **Output Terminal Priority** properly (page 48). |
|                                                                       | Is the audio output of the connected AV receiver or amplifier, etc., properly set? | Read the operating instructions of the connected AV receiver or amplifier and check the audio output settings of AV receiver or amplifier. |
Problem | Check | Remedy
--- | --- | ---
Multi-channel sound is not output (continuous). | Is multi-channel sound selected? | Use the menu screen or **AUDIO** to switch the disc's sound to multi-channel.  
Is **Audio Out** set to audio formats supported by the connected AV receiver or amplifier? | • Read the operating instructions of the connected AV receiver or amplifier and check the supported audio formats.  
• Set **Audio Out** properly (page 40).  
Are **Audio Output Mode** and **Speaker Setup** properly set? | • When the AV receiver or amplifier, etc., is connected to the **AUDIO OUT (7.1 ch)** terminals, set **Audio Output Mode** to **Multi-channel** (page 40).  
• Set **Speaker Setup** properly (page 40).

Digital audio signals are not output from the **DIGITAL OUT** output (COAXIAL/OPTICAL) terminals (analog audio signals are output). | Is **Audio Out** set to audio formats supported by the connected AV receiver or amplifier? | • Read the operating instructions of the connected AV receiver or amplifier and check the supported audio formats.  
• Set **Audio Out** properly (page 40).

Noise can be heard when outputting DTS Digital Surround signals. | 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 **DIGITAL OUT** terminal, set **DTS Out** to **DTS → PCM**. Noise will be heard if **DTS Out** is set to **DTS** (page 40).

192 kHz or 96 kHz digital audio signals cannot be output from the **DIGITAL OUT** (COAXIAL/OPTICAL) terminals. | Is **HDMI Audio Out** properly set? | It is not possible to output 192 kHz or 96 kHz digital audio signals from this player's **DIGITAL OUT** (COAXIAL/OPTICAL) terminals. The signals are automatically converted to under 96 kHz for output.
Are **Dolby Digital Out** and **DTS Out** properly set? | Set **Dolby Digital Out** to **Dolby Digital 1, DTS Out to DTS 1** (page 40).

Secondary audio or interactive audio is not output. | When an HDMI cable is connected, are audio signals being output from devices connected with cables other than HDMI cables? | When this player is connected by HDMI cable to a Pioneer AV receiver or amplifier compatible with the PQLS function via HDMI connection, the PQLS function is activated when playing a music 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 **PQLS to Off** (page 41).

Sound is fast or slow. | 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? | • Check whether the file is one that can be played on this player (page 10).  
• Check whether or not the file is damaged.
Is the file protected by DRM? | Files protected by DRM cannot be played.

Files recorded on discs cannot be played. | A message indicating low memory (local storage) appears while playing a BD-ROM disc. | Erase the BDMV data (page 24).

**When connected using an HDMI cable**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Check</th>
<th>Remedy</th>
</tr>
</thead>
</table>
| HDMI indicator does not light. | Is the video output terminal other than the HDMI OUT terminal selected? | The HDMI indicator lights when video signals are being output from the **HDMI OUT** terminal. Press **VIDEO SELECT** to switch to the **HDMI OUT** terminal (page 24).  
Is the input of the connected HDMI device properly set? | Read the HDMI device’s operating instructions and set the input properly.
Is a DVI device connected? | Read the DVI device's operating instructions and check whether it is compatible with HDCP. |
<table>
<thead>
<tr>
<th>Problem</th>
<th>Check</th>
<th>Remedy</th>
</tr>
</thead>
</table>
| No picture is displayed. | Is the HDMI indicator lit? | • If the HDMI indicator is not lit, read the HDMI device’s operating instructions and switch to the proper input.  
• If the HDMI indicator is lit, use **OUTPUT RESOLUTION** to switch the output video resolution (page 25). |
| Are the terminals for outputting video signals properly set? | Press **VIDEO SELECT** to switch the **HDMI OUT** terminal. |
| Is the resolution properly set? | Depending on the output video resolution setting, the picture may not be output. Use **OUTPUT RESOLUTION** to switch the output video resolution (page 25). |
| Is the HDMI cable properly connected? | • Insert the cable firmly and all the way in.  
• With some cables, 1080p video signals cannot be properly output. |
| Is a DVI device connected? | The picture may not be displayed properly if a DVI device is connected. |
| Is the HDMI cable damaged? | If the cable is damaged, replace it with a new one. |
| Pictures do not display properly on the TV. | Change the **HDMI Color Space** setting (page 41). |
| No sound is produced. | Are you watching the picture with the TV connected via an HDMI cable? | If video signals are being output from a terminal other than the HDMI terminal, no audio signals are output from the HDMI terminal. Connect to the TV using an HDMI cable and press **VIDEO SELECT** to switch to the HDMI output terminal (pages 14, 17 and 24). |
| Is a DVI device connected? | The sound will not be output from the **HDMI OUT** terminal if a DVI device is connected. Connect the device to a **DIGITAL OUT** (**OPTICAL**/**COAXIAL**) terminal or the **AUDIO OUT (2 ch)** terminals. |
| HDMI Control function does not work. | Is the HDMI cable properly connected? | Connect the HDMI cable properly. |
| Is the HDMI cable you are using a High Speed HDMI™ cable? | Use a High Speed HDMI™ cable. The HDMI Control function may not work properly if HDMI cable other than a High Speed HDMI™ cable is used. |
| Are you connected to the TV using an HDMI cable to watch the picture? | If video signals are being output from a terminal other than the HDMI terminal, HDMI Control function does not work. Connect to the TV using an HDMI cable and press **VIDEO SELECT** to switch to the HDMI output terminal (pages 14, 17 and 24). |
| Is HDMI Control set to On on the player? | Set HDMI Control to **On** on the player (page 41). |
| Does the connected device support the HDMI Control function? | • The HDMI Control function will not work with devices manufactured by companies other than Pioneer, even when connected using an HDMI cable.  
• The HDMI Control function will not work if devices that do not support the HDMI Control function or devices manufactured by companies other than Pioneer are connected between the HDMI Control-compatible device and the player.  
• The HDMI Control function may not work with certain Flat Panel TVs.  
Also refer to the operating instructions of the connected device. |
| Is HDMI Control set to On on the connected device? | Set HDMI Control to **On** on the connected device. The HDMI Control function works when HDMI Control is set to On for all the devices connected by HDMI cable.  
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 HDMI Control function may not work properly.  
For details, refer to the operating instructions of the connected device. |
| Are multiple players connected? | The HDMI Control function may not work if three or more players, including this player, are connected by HDMI cable. |
## Others

<table>
<thead>
<tr>
<th>Problem</th>
<th>Check</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The power turns off automatically.</td>
<td>Is <strong>Auto Power Off</strong> set to <strong>On</strong>?</td>
<td>If <strong>Auto Power Off</strong> is set to <strong>On</strong>, the power turns off automatically if no operation is performed for over 30 minutes (page 42).</td>
</tr>
<tr>
<td></td>
<td>Is <strong>HDMI Control</strong> set to <strong>On</strong>?</td>
<td>The player's power may turn off together with the power of the connected TV. If you do not want the player’s power to turn off when the TV’s power is turned off, set <strong>HDMI Control</strong> to <strong>Off</strong> (page 41).</td>
</tr>
<tr>
<td>The power turns on automatically.</td>
<td>Is <strong>HDMI Control</strong> set to <strong>On</strong>?</td>
<td>The player’s power may turn on together with the power of the connected TV. If you do not want the player’s power to turn on when the TV’s power is turned on, set <strong>HDMI Control</strong> to <strong>Off</strong> (page 41).</td>
</tr>
<tr>
<td>Inputs of connected TV and AV system, switches automatically.</td>
<td>Is <strong>HDMI Control</strong> set to <strong>On</strong>?</td>
<td>The inputs of the connected TV or AV system (AV receiver or amplifier, etc.) 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/or AV system (AV receiver or amplifier, etc.) to switch automatically, set <strong>HDMI Control</strong> to <strong>Off</strong> (page 41).</td>
</tr>
<tr>
<td>Player cannot be operated with remote control.</td>
<td>Is an AV receiver or amplifier connected to the <strong>CONTROL IN</strong> terminal on the player’s rear panel?</td>
<td>Operate with the remote control of the device connected to the <strong>CONTROL IN</strong> terminal. If the power cord is disconnected or there is a power failure while the player’s power is on, the settings you have made may be cleared. Always press <strong>STANDBY/ON</strong> on the player’s front panel or <strong>STANDBY/ON</strong> on the remote control and check that <strong>POWER OFF</strong> 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. We recommend plugging the power cord into a wall outlet whenever possible.</td>
</tr>
</tbody>
</table>
| Settings you have made have been cleared.   | • Have you disconnected the power cord while the player’s power was on?  
• Has there been a power failure?      | Replace the batteries (page 7). If the power cord is disconnected or there is a power failure while the player’s power is on, the settings you have made may be cleared. Always press **STANDBY/ON** on the player’s front panel or **STANDBY/ON** on the remote control and check that **POWER OFF** 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. We recommend plugging the power cord into a wall outlet whenever possible. |
| After a disc is inserted, **Loading** 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. The characters that cannot be displayed on this player are displayed in **.”** |
| The DVD layer of BD and DVD hybrid discs cannot be played. | Is **Hybrid Disc Playback** properly set? | Set **Hybrid Disc Playback** to **DVD** (page 42). |
| The CD layer of BD and CD hybrid discs cannot be played. | Is **Hybrid Disc Playback** properly set? | Set **Hybrid Disc Playback** to **CD** (page 42). |
| The **Hybrid Disc Playback** setting cannot be changed (displayed in gray). | Is a disc set in the disc tray? | The **Hybrid Disc Playback** setting cannot be changed when a disc is set. Remove the disc, then change the setting. |
| **BDMV/BDAV Playback Priority** setting cannot be changed (displayed in gray). | Is a disc set in the disc tray? | The **BDMV/BDAV Playback Priority** setting cannot be changed when a disc is set. Remove the disc, then change the setting. |
# Language Code Table

<table>
<thead>
<tr>
<th>Language name (language code), input code</th>
<th>Language code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese (ja/ja)</td>
<td>0901</td>
</tr>
<tr>
<td>English (en/eng)</td>
<td>0514</td>
</tr>
<tr>
<td>French (fr/fr)</td>
<td>0618</td>
</tr>
<tr>
<td>German (de/de)</td>
<td>0405</td>
</tr>
<tr>
<td>Italian (it/it)</td>
<td>0520</td>
</tr>
<tr>
<td>Spanish (es/es)</td>
<td>0618</td>
</tr>
<tr>
<td>Chinese (zh/zh)</td>
<td>0680</td>
</tr>
<tr>
<td>Dutch (nl/nl)</td>
<td>1412</td>
</tr>
<tr>
<td>Portuguese (pt/pt)</td>
<td>1620</td>
</tr>
<tr>
<td>Swedish (sv/sv)</td>
<td>1922</td>
</tr>
<tr>
<td>Russian (ru/ru)</td>
<td>1921</td>
</tr>
<tr>
<td>Korean (ko/ko)</td>
<td>1115</td>
</tr>
<tr>
<td>Greek (el/el)</td>
<td>0512</td>
</tr>
<tr>
<td>Afaar (aa/aa)</td>
<td>0101</td>
</tr>
<tr>
<td>Abkhazian (ab/ab)</td>
<td>0102</td>
</tr>
<tr>
<td>Afrikaans (af/af)</td>
<td>0106</td>
</tr>
<tr>
<td>Amharic (am/am)</td>
<td>0113</td>
</tr>
<tr>
<td>Arabic (ar/ar)</td>
<td>0118</td>
</tr>
<tr>
<td>Assamese (as/as)</td>
<td>0119</td>
</tr>
<tr>
<td>Aymara (ay/ay)</td>
<td>0125</td>
</tr>
<tr>
<td>Azerbaijani (az/az)</td>
<td>0126</td>
</tr>
<tr>
<td>Bashkir (ba/ba)</td>
<td>0201</td>
</tr>
<tr>
<td>Belarusian (be/be)</td>
<td>0205</td>
</tr>
<tr>
<td>Bulgarian (bg/bg)</td>
<td>0207</td>
</tr>
<tr>
<td>Bhutan (bh/bh)</td>
<td>0209</td>
</tr>
<tr>
<td>Bikini (bi/bi)</td>
<td>0212</td>
</tr>
<tr>
<td>Bengali (bd/bd)</td>
<td>0214</td>
</tr>
<tr>
<td>Tibetan (bo/bo)</td>
<td>0215</td>
</tr>
<tr>
<td>Breton (br/br)</td>
<td>0218</td>
</tr>
<tr>
<td>Catalan (ca/ca)</td>
<td>0301</td>
</tr>
<tr>
<td>Corsican (co/co)</td>
<td>0315</td>
</tr>
<tr>
<td>Czech (cs/cs)</td>
<td>0319</td>
</tr>
<tr>
<td>Welsh (cy/cym)</td>
<td>0325</td>
</tr>
<tr>
<td>Danish (da/da)</td>
<td>0401</td>
</tr>
<tr>
<td>Dutch (nl/nl)</td>
<td>0515</td>
</tr>
<tr>
<td>Esperanto (eo/eo)</td>
<td>0521</td>
</tr>
<tr>
<td>Estonian (et/et)</td>
<td>0521</td>
</tr>
<tr>
<td>Finnish (fi/fi)</td>
<td>0609</td>
</tr>
<tr>
<td>Faroese (fo/fo)</td>
<td>0616</td>
</tr>
<tr>
<td>Galician (gl/gl)</td>
<td>0712</td>
</tr>
<tr>
<td>Gujarati (gu/gu)</td>
<td>0714</td>
</tr>
<tr>
<td>Hungarian (hu/hu)</td>
<td>0800</td>
</tr>
<tr>
<td>Indonesian (id/id)</td>
<td>0919</td>
</tr>
<tr>
<td>Icelandic (is/is)</td>
<td>0919</td>
</tr>
<tr>
<td>Irish (ga/ga)</td>
<td>0919</td>
</tr>
<tr>
<td>Javanese (jw/jw)</td>
<td>0919</td>
</tr>
<tr>
<td>Arabic (ar/ara)</td>
<td>0106</td>
</tr>
<tr>
<td>Greek (el/ell)</td>
<td>0118</td>
</tr>
<tr>
<td>Korean (ko/kor)</td>
<td>0125</td>
</tr>
<tr>
<td>Turkmen (tk/tk)</td>
<td>0134</td>
</tr>
<tr>
<td>Uzbek (uz/uzb)</td>
<td>0140</td>
</tr>
<tr>
<td>Vietnamese (vi/vi)</td>
<td>0209</td>
</tr>
<tr>
<td>Volapük (vo/vo)</td>
<td>0215</td>
</tr>
<tr>
<td>Xhosa (xh/xh)</td>
<td>0248</td>
</tr>
<tr>
<td>Yoruba (yo/yo)</td>
<td>0251</td>
</tr>
<tr>
<td>Zulu (zu/zu)</td>
<td>0261</td>
</tr>
</tbody>
</table>

# Country/Area Code Table

<table>
<thead>
<tr>
<th>Country/Area name, input code, Country/Area code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anguilla, 0109, ai</td>
</tr>
<tr>
<td>Antigua and Barbuda, 0107, ag</td>
</tr>
<tr>
<td>Argentina, 0118, ar</td>
</tr>
<tr>
<td>Armenia, 0113, am</td>
</tr>
<tr>
<td>Australia, 0121, au</td>
</tr>
<tr>
<td>Austria, 0120, at</td>
</tr>
<tr>
<td>Azerbaijan, 0126, az</td>
</tr>
<tr>
<td>Bahamas, 0219, bs</td>
</tr>
<tr>
<td>Barbados, 0202, bb</td>
</tr>
<tr>
<td>Belarus, 0225, by</td>
</tr>
<tr>
<td>Belgium, 0205, be</td>
</tr>
<tr>
<td>Belize, 0226, bz</td>
</tr>
<tr>
<td>Bermuda, 0213, bm</td>
</tr>
<tr>
<td>Brazil, 0218, br</td>
</tr>
<tr>
<td>Bulgaria, 0207, bg</td>
</tr>
<tr>
<td>Canada, 0301, ca</td>
</tr>
<tr>
<td>Cayman Islands, 1125, ky</td>
</tr>
<tr>
<td>Chile, 0312, cl</td>
</tr>
<tr>
<td>China, 0314, cn</td>
</tr>
<tr>
<td>Colombia, 0315, co</td>
</tr>
<tr>
<td>Croatia, 0318, hr</td>
</tr>
<tr>
<td>Cyprus, 0325, cy</td>
</tr>
<tr>
<td>Czech Republic, 0326, cz</td>
</tr>
<tr>
<td>Denmark, 0411, dkk</td>
</tr>
<tr>
<td>Dominica, 0413, dm</td>
</tr>
<tr>
<td>Dominican Republic, 0415, do</td>
</tr>
<tr>
<td>Estonia, 0505, ee</td>
</tr>
<tr>
<td>Finland, 0609, fi</td>
</tr>
<tr>
<td>France, 0618, fr</td>
</tr>
<tr>
<td>Georgia, 0705, ge</td>
</tr>
<tr>
<td>Germany, 0405, de</td>
</tr>
<tr>
<td>Greece, 0718, gr</td>
</tr>
<tr>
<td>Grenada, 0704, gd</td>
</tr>
<tr>
<td>Guatemala, 0725, gy</td>
</tr>
<tr>
<td>Haiti, 0820, h</td>
</tr>
<tr>
<td>Hong Kong, 0811, hk</td>
</tr>
<tr>
<td>Hungary, 0821, hu</td>
</tr>
<tr>
<td>Iceland, 0919, is</td>
</tr>
<tr>
<td>Indonesia, 0904, id</td>
</tr>
<tr>
<td>Ireland, 0505, ie</td>
</tr>
<tr>
<td>Israel, 0912, il</td>
</tr>
<tr>
<td>Italy, 0920, it</td>
</tr>
<tr>
<td>Jamaica, 1013, jm</td>
</tr>
<tr>
<td>Japan, 1016, jp</td>
</tr>
<tr>
<td>Kazakhstan, 1126, kz</td>
</tr>
<tr>
<td>Korea, Republic of, 1118, kr</td>
</tr>
<tr>
<td>Kyrgyzstan, 1107, kg</td>
</tr>
<tr>
<td>Latvia, 1222, lv</td>
</tr>
<tr>
<td>Liechtenstein, 1209, li</td>
</tr>
<tr>
<td>Lithuania, 1220, lt</td>
</tr>
<tr>
<td>Luxembourg, 1221, lu</td>
</tr>
<tr>
<td>Macedonia, the Former Yugoslav Republic of, 1311, mk</td>
</tr>
<tr>
<td>Malaysia, 1325, my</td>
</tr>
<tr>
<td>Malta, 1320, mt</td>
</tr>
<tr>
<td>Mexico, 1324, mx</td>
</tr>
<tr>
<td>Moldova, Republic of, 1304, md</td>
</tr>
<tr>
<td>Monaco, 1303, mc</td>
</tr>
<tr>
<td>Montserrat, 1319, ms</td>
</tr>
<tr>
<td>Netherlands, 1412, nl</td>
</tr>
<tr>
<td>New Zealand, 1426, nz</td>
</tr>
<tr>
<td>Norway, 1415, no</td>
</tr>
<tr>
<td>Pakistan, 1611, pk</td>
</tr>
<tr>
<td>Peru, 1605, pe</td>
</tr>
<tr>
<td>Philippines, 1608, ph</td>
</tr>
<tr>
<td>Poland, 1612, pl</td>
</tr>
<tr>
<td>Portugal, 1620, pt</td>
</tr>
<tr>
<td>Puerto Rico, 1618, pr</td>
</tr>
<tr>
<td>Romania, 1815, ro</td>
</tr>
<tr>
<td>Russian Federation, 1821, ru</td>
</tr>
<tr>
<td>Saint Kitts and Nevis, 1114, kn</td>
</tr>
<tr>
<td>Saint Lucia, 1203, lc</td>
</tr>
<tr>
<td>Saint Vincent and the Grenadines, 203, vc</td>
</tr>
<tr>
<td>San Marino, 1913, sm</td>
</tr>
<tr>
<td>Singapore, 1907, sg</td>
</tr>
<tr>
<td>Slovakia, 1911, sk</td>
</tr>
<tr>
<td>Slovenia, 1910, si</td>
</tr>
<tr>
<td>Spain, 0519, es</td>
</tr>
<tr>
<td>Suriname, 1918, sr</td>
</tr>
<tr>
<td>Sweden, 1905, se</td>
</tr>
<tr>
<td>Switzerland, 0638, ch</td>
</tr>
<tr>
<td>Taiwan, Province of China, 2023, tw</td>
</tr>
<tr>
<td>Tajikistan, 2010, tj</td>
</tr>
<tr>
<td>Thailand, 2008, th</td>
</tr>
<tr>
<td>Trinidad and Tobago, 2020, tt</td>
</tr>
<tr>
<td>Tunisia, 2014, tn</td>
</tr>
<tr>
<td>Turkey, 2018, tr</td>
</tr>
<tr>
<td>Turkmenistan, 2013, tm</td>
</tr>
<tr>
<td>Turks and Caicos Islands, 2003, tc</td>
</tr>
<tr>
<td>Ukraine, 2101, ua</td>
</tr>
<tr>
<td>United Kingdom, 0702, gb</td>
</tr>
<tr>
<td>United States, 2119, us</td>
</tr>
<tr>
<td>Uruguay, 2125, uy</td>
</tr>
<tr>
<td>Uzbekistan, 2126, uz</td>
</tr>
<tr>
<td>Venezuela, 2205, ve</td>
</tr>
<tr>
<td>Virgin Islands, British, 2207, vg</td>
</tr>
<tr>
<td>Virgin Islands, U.S., 2208, vg</td>
</tr>
</tbody>
</table>
## Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>BDP-51FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Blu-ray Disc PLAYER</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>AC 120 V</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>34 W</td>
</tr>
<tr>
<td>Power consumption (standby)</td>
<td>0.5 W</td>
</tr>
<tr>
<td>Weight</td>
<td>5.6 kg (12 lb 6 oz)</td>
</tr>
<tr>
<td>External dimensions (including projecting parts)</td>
<td>420 mm (W) x 124 mm (H) x 361 mm (D) (16 13/16 in. (W) x 4 15/16 in. (H) x 14 1/4 in. (D))</td>
</tr>
<tr>
<td>Tolerable operating temperature</td>
<td>+5 °C to +35 °C (+41 °F to +95 °F)</td>
</tr>
<tr>
<td>Tolerable operating humidity</td>
<td>5 % to 85 % (no condensation)</td>
</tr>
</tbody>
</table>

### Video outputs
- **Video**: 1 set, RCA jack (1.0 Vp-p (75 Ω))
- **S-Video**: 1 set, S-Video jack:
  - Y (luminance): 1.0 Vp-p (75 Ω)
  - C (color): 0.286 Vp-p (75 Ω)
- **Component video**: 1 set, RCA jacks:
  - Y: 1.0 Vp-p (75 Ω)
  - PB, PR: 0.7 Vp-p (75 Ω)
- **HDMI**: 1 set, 19-pin (5V, 150 mA)

### Audio outputs
- **2-channel (stereo)**: Number of channels: 2, RCA jacks
- **7.1-channel (multi-channel: front left/right, surround left/right, center, surround back left/right, subwoofer)**: Number of channels: 8, RCA jacks
  - Audio output level: 200 mVrms (1 kHz, –20 dB)
  - Frequency response: 4 Hz to 88 kHz (192 kHz sampling)
  - S/N ratio: 115 dB
  - Dynamic range: 103 dB
  - Total harmonic distortion: 0.0015 %
  - Wow & flutter: Below measurable limits (±0.001 % W. PEAK)

### Digital audio outputs
- **Optical**: 1 set, Optical digital jack
- **Coaxial**: 1 set, RCA jack

### Control
- **Input**: 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.
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.

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 watching 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.

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 movies, images and music 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.

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)
A technology for protecting copyrights that encrypts digital video signals.

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

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).

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

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

Multi angle
Up to 9 camera angles can be recorded simultaneously on BD-ROM or DVD-Video discs, letting you watch 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.

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).

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".

**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 watching 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.
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 AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL THE AUTHOR 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.

  **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 acknowledgment: "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.
  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.
  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/)."

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

  **FreeType2**
  The FreeType Project LICENSE
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 UG (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 (WTFPL) 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:

FreeType Project and assume no liability related to The FreeType Project.

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 refer 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.

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@mongnusorg
  - freetype-devel@mongnusorg

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.

- Discussions bugs, as well as engine internals, design issues, specific licenses, porting, etc.

Our home page can be found at www.freetype.org

- Discussed 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.

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 12, 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 Volant

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
This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, a low-quality image. For more details, see the references, or just experiment with various compression settings.

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 (8x31) and "pngnow.png" (98x31).

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

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 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, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

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

This file contains the following sections:

DOCUMENTATION ROADMAP

This file contains the following sections:

OVERVIEW

General description of JPEG and the UG 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 UG releases.

Other documentation files in the distribution are:

User documentation:

install.doc How to configure and install the UG 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 UG files.
coderules.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.

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.

We have included facilities for 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 have 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 © 1991-1999, 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 library, 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, config.com, 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 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.


(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 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 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.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.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.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 "JIF" conventions, revision 1.02. A copy of the JIF 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/jif/jif.ps.gz. There is also a plain text version at ftp://ftp.uu.net/graphics/jpeg/jif.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.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.uu.net (Internet address 192.168.96.9). The most recent version released can always be found there in directory graphics/jpeg. This particular version will be archived as ftp://ftp.uu.net/graphics/jpeg/pjpegsrc.v6.larg.tar.gz. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact help@uu.net for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only 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:GRAPHSLP), library /2/JPEG Tools. Again, these versions may sometimes lag behind the 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 Usersnet newsgroups comp.graphics.misc, 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 archive sites, including the official news.answers archive at 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 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 PBMPLUS 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 considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites, notably ftp://archive.wustl.edu/graphics/graphics/packages/NetPBM/. Unfortunately PBMPLUS/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://havelun.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 UUNET library, but JPEG is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it does 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 JIF, in the sense that most JIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JIF, 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 JIF or whether JIF 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 JIF 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 open, standard formats 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.

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, which means 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 sure 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 includes inclusion without limitation in the term "modification".) Each licensee is addressed as "you".

1. You may copy and distribute verbatim copies of the program (and modified versions) verbatim, in any medium, provided the copyright notice and this license notice are preserved on all copies.

2. You may modify copies of the program or any part 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 in modified versions:

   a) the copyright notice is preserved, and

   b) this license notice and the following disclaimers are preserved in all copies; and

   c) you agree to distribute the modified program under this license regardless of the changes you made.

3. You may sell or give away copies of this program for any purpose, provided that you do not charge for the copy and that you clearly state that the program is released under this license; if the program is modified or linked with other software, under version 2 of the GNU General Public License the source code for the modified program is published and distributed along with the object code.

4. You may establish a private, limited distribution of the program with no propagation outside your reporting organization or small corporation, under terms consistent with this license.

5. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this license. Any other copying, modification, sublicense or distribution is prohibited, and may be severely penalized. Violation of this license will cause severe civil and criminal penalties in the United States. 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 St, Fifth Floor, Boston, MA 02110-1301 USA.
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.

2. You may modify the Program or make derivative works of the Program in any way, 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 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.)

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.)

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 those 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 simultaneous obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program as a whole.

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 of this License 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.
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 use 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.

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 a copy of this unsold notice; 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.

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, as described above. This means that he or she agrees to release all copyright claims in the library in that manner. In case these disclaimers are not feasible, to relieve the user of these restrictions, we have added another requirement:

You can change the library if you know how to do so, or you canask someone who does. There is no obligation to do so, so if you do not wish to have this ability, you do not have to.

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.

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, 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.

We trust that you will do these things自愿ly, and that you understand that if you do them voluntarily, you are doing it out of a need for freedom that you value, not to make a profit.

In order to protect those自愿者的 rights, we need to add 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.

We want the library to be used on many different kinds of machines and for very different purposes. Therefore, except when we explicitly say so, we try to make sure that what you do with the library is legal. However, it is impossible to guarantee that everyone has an unambiguous "right to do what they want with their own software." Therefore, we use the "least restrictive" Public License instead of public domain.

Copyright © <year> <name of author>

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

END OF TERMS AND CONDITIONS

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.
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 executable programs.

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, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation includes without limitation 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 or copy parts of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and a Full Disclosure Notice describing the status of the modified work, and giving a full description of the changes of the original work to the modified work, as the modifying party must satisfy this License. If a technique used by an add-on has been copied from the Library, then the add-on is treated as a derivative work of the Library.

3. You may apply to 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.

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 the 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 "work that uses the Library" means one that contains a derivative of the Library, but is designed to work with the Library by being compiled or linked with it. If a"work that uses the Library" uses GNU General Public License (GPL) licensed code (or a modified version of such code), and linked with the Library, the one covered by this exception, the terms of the GPL license are applicable to the entire work, and also to each and every part regardless of who wrote it.

6. As a special exception, the modules of the Library may link and use libraries (which are themselves covered by the terms of this License) regardless of the license of those libraries. The intent is to allow the development of a network of libraries without the burden that a GPL license may impose on the freedom to use those libraries.

7. Any problem with terms of this license can be resolved by sending an email to the copyright holder.
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 notice in the ordinary 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 any work 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.

12. If the Library is being redistributed by you under the terms of this License, please take steps to ensure that a single coherent entity is distributed per Section 10. For example, if a C Library is originally distributed as a bundle of object files, you should not redistribute the object files without the accompanying reference files.

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.

14. 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:

   Ty Coon, President of Vice

END OF TERMS AND CONDITIONS

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.

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 wish to distribute your library as part of a larger free software distribution, you may add a copy of the GNU Lesser General Public License, version 2.1, to your distribution so that the recipient may also use it under the terms of either the 2.1 version or the 2.0 version of the GNU Lesser General Public License.

If you modify or redistribute the library, you should state in prominent position your modification of the copyright notice, giving the name of the author of the library, the title of the library, and an indication of the changes you have made, such as:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library ‘Frob’ (a library for tweaking knobs) written by James Random Hacker.

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 contributed generously 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 licencsee cannot impose that choice.

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.
[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.
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 – 8 0 0 – 4 2 1 – 1 4 0 4

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 Électro-\niques 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.