Thank you for purchasing this product.
For optimum performance and safety, please read these instructions carefully.
Please keep this manual for future reference.

- This HDD Recorder is for viewing and recording free to view channels only. It does not receive pay TV or encrypted channels.
Safety precautions

**WARNING**

**Unit**
- To reduce the risk of fire, electric shock or product damage,
  - Do not expose this unit to rain, moisture, dripping or splashing.
  - Do not place objects filled with liquids, such as vases, on this unit.
  - Use only the recommended accessories.
  - Do not remove covers.
  - Do not repair this unit by yourself. Refer servicing to qualified service personnel.
  - Do not let metal objects fall inside this unit.
  - Do not place heavy items on this unit.

**AC mains lead**
- To reduce the risk of fire, electric shock or product damage,
  - Ensure that the power supply voltage corresponds to the voltage printed on this unit.
  - Insert the mains plug fully into the socket outlet.
  - Do not pull, bend, or place heavy items on the lead.
  - Do not handle the plug with wet hands.
  - Hold onto the mains plug body when disconnecting the plug.
  - Do not use a damaged mains plug or socket outlet.
  - Install this unit so that the AC mains lead can be unplugged from the socket outlet immediately if any problem occurs.

**SD card**
- Keep the Memory Card out of reach of children to prevent swallowing.

**CAUTION**

**Unit**
- Do not place sources of naked flames, such as lighted candles, on this unit.
- This unit may receive radio interference caused by mobile telephones during use. If such interference occurs, please increase separation between this unit and the mobile telephone.
- This unit is intended for use in moderate climates.

**Placement**
- Place this unit on an even surface.
- To reduce the risk of fire, electric shock or product damage,
  - Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure this unit is well ventilated.
  - Do not obstruct this unit’s ventilation openings with newspapers, tablecloths, curtains, and similar items.
  - Do not expose this unit to direct sunlight, high temperatures, high humidity, and excessive vibration.
Batteries

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
- Mishandling of batteries can cause electrolyte leakage and may cause a fire.
  - Do not mix old and new batteries or different types at the same time.
  - Do not heat or expose to flame.
  - Do not leave the battery(ies) in a car exposed to direct sunlight for a long period of time with doors and windows closed.
  - Do not take apart or short circuit.
  - Do not recharge alkaline or manganese batteries.
  - Do not use batteries if the covering has been peeled off.
  - Remove batteries if you do not intend to use the remote control for a long period of time.
    Store in a cool, dark place.
- When disposing the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

Supplied accessories

Please check and identify the supplied accessories.
(Product numbers correct as of May 2012. These may be subject to change.)

Remote control (N2QAYB000781): 1 pc.
Batteries for remote control: 2 pcs.
AC mains lead: 1 pc.
RF coaxial cable: 1 pc.
Audio/Video cable: 1 pc.

- Do not use AC mains lead with other equipment.

Indemnity concerning recorded content

Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content (data), and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-HDD related component).
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Reference

About descriptions in these operating instructions
• Pages to be referred to are indicated as “⇒ 〇〇”.

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HDD and media information

Recordable/playable contents

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<td>DivX(^{6})</td>
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<td>JPEG</td>
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\(^{1}\) Referred to as “USB HDD” in these operating instructions.
\(^{2}\) It cannot be recorded directly. (Only compatible with copying from the built-in HDD)
\(^{3}\) Recorded with AVCHD format compatible devices (Panasonic video camera, etc.). It may not be able to play back depending on the device.
\(^{4}\) Recorded with SD-Video format compatible devices (Panasonic video camera, etc.). It can be played back only after copying to HDD. (⇒ 53)
\(^{5}\) It cannot be played back directly from the USB memory. Playback is possible by copying to the HDD. (⇒ 52)

Playable contents on a DLNA server

When this unit works as a DLNA client (⇒ 55), following contents are playable.

- Recorded video\(^{*}\)
- AVCHD\(^{*}\)
- MP4
- MPEG2
- JPEG
- MPO (3D photo)
- MP3
- FLAC

\(^{*}\) Only when the server is another DIGA. (⇒ 54)
- Depending on the server, the contents other than stated above can be played back.
### Notes

#### About extension of files

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* The video file and subtitles text files are inside the same folder, and the file names are the same except for the file extensions.

• Some files may not be played back even if they have these extensions.
### Getting started

**HDD and media information**

#### Notes for the USB devices
- This unit does not guarantee connection with all USB devices.
- This unit supports USB 2.0 High Speed.
- Although this unit can use USB 3.0 devices as USB 2.0 devices, in certain cases USB 3.0 devices cannot be used due to differing connector shape, larger current ratings, etc. (Use of USB 2.0 devices is recommended.)
- USB memories support FAT12, FAT16 and FAT32 file systems.
- USB memories support DivX and MKV files less than 4 GB.

#### Notes for the SD cards
- **Compatible SD card**
  - SD Memory Card
    - (from 8 MB to 2 GB, FAT12 and FAT16 formats)
  - SDHC Memory Card
    - (from 4 GB to 32 GB, FAT32 format)
  - SDXC Memory Card
    - (48 GB, 64 GB, exFAT format)
- **Using miniSD card or microSD card**
  Mini-type and micro-type cards can also be used, but must be used with adaptor cards (optional).

#### Media handling
- Do not touch the terminal surface of the SD cards.
- Do not expose the terminals of the SD card to water, garbage or other strange things.
- Do not place in the following areas:
  - In hot places, such as under the direct sunlight.
  - In very dusty or humid areas.
  - Locations susceptible to significant difference in temperature (condensation can occur).
  - Where static electricity or electromagnetic waves occur.

### Media handling

**DO NOT**

---

#### To format an SD card
Refer to “Format SD card”. (☞ 57)

- Usable memory is slightly less than the card capacity.
- If the SD card is formatted on other equipment, the time necessary for recording may be longer or the card may not be able to be used on this unit. In these cases, format the card on this unit.
- SDHC Memory Cards and SDXC Memory Cards can be used in equipment that is compatible with the appropriate cards. (SDHC Memory Cards can also be used in equipment compatible with SDXC Memory Cards.)
**Unit care**

**HDD/USB HDD handling care**

- **The HDD is a high precision device**
  The HDD is a high precision recording instrument and is easily susceptible to damage. Therefore, be careful of the following points while the unit is turned on, especially during operation, otherwise the HDD and the recorded content may be damaged:
  - Do not subject the unit to any vibration and shock.
  - Do not remove the AC mains lead from the household mains socket.

- **The HDD is a temporary storage device**
  This unit cannot save (backup) the HDD titles to media. You have to be very careful when handling the unit and editing the title.

- **If the HDD or USB HDD is damaged, the recorded content cannot be recovered.**

**Setup precautions**

- **Place the unit on a surface that is flat and not subject to vibration or impact.**
- **Do not place on anything that generates heat like a Set Top Box, etc.**
- **Place in an area where condensation does not occur. Conditions where condensation may occur**
  - When there is an extreme change in temperature (e.g., when subjected to an air conditioner or when cooled air directly impacts the unit).
  - When there is high humidity or a lot of steam in the room.

  In the above situation, **without turning the unit on**, let the unit adjust to the room temperature and wait 2–3 hours until condensation is gone.
- **Do not block the cooling fan on the rear of the unit.**
- **The unit may breakdown if cigarette smoke or bug spray/vapour, etc. gets inside the unit.**

**When moving the unit**

1. Switch the unit to standby mode. (Wait until "BYE" disappears from the display.)
2. Remove the AC mains lead from the household mains socket.
3. Move only after the unit has come to a complete stop (approx. 3 minutes) in order to avoid subjecting to vibration and shock. (Even after the unit is switched to standby mode, the HDD continues operating for a short time.)

**Cleaning**

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

**When requesting this unit for repair**

The registration of the USB HDD may be cancelled in the process of repairing this unit. You can use the USB HDD again by re-registering, but all recorded content already on the USB HDD will be lost. In such cases, the recorded content (data) cannot be recovered.
Getting started

Control reference guide

Instructions for operations are generally described using the remote control.

Remote control

1. Transmit the remote control signal
   - Point it at remote control signal sensor on this unit. ( ⇒ 11)
2. Switch the unit from on to standby mode or vice versa
3. Select drive (HDD, SD or USB)
4. Select channels and title numbers, etc./Enter numbers or characters
5. Switch to the previously watched channel ( ⇒ 22)
6. Basic operations for recording and play, REWIND LIVE TV/PAUSE LIVE TV ( ⇒ 24)
7. Show Information ( ⇒ 23, 32, 35)
8. Selection/OK, Frame-by-frame ( ⇒ 35)
9. Show DIRECT NAVIGATOR ( ⇒ 31)
10. Show OPTION menu ( ⇒ 39, 46, 51)
11. Colour buttons (red, green, yellow, blue) (Use in accordance with instruction on the screen.)
12. Start recording ( ⇒ 26)
13. Select audio ( ⇒ 24, 36)
14. Show the Timer Recording screen ( ⇒ 28)
15. Create chapter ( ⇒ 36)
16. Show Setup menu ( ⇒ 64)
17. To delete unwanted recorded titles, timer programmes, photos or music ( ⇒ 38)
18. TV operation buttons ( ⇒ 17)
19. Channel select ( ⇒ 22)/Change pages in the DIRECT NAVIGATOR screen etc.
20. Show the VIERA Connect screen ( ⇒ 61)
21. Switching to the radio channel list ( ⇒ 22)
22. Start up a video communication ( ⇒ 61)
23. Exit the menu screen
24. Show the TV Guide screen ( ⇒ 23)
25. Show the FUNCTION MENU screen ( ⇒ 21)
26. Return to previous screen
27. Show subtitles ( ⇒ 24, 36)
28. Show Teletext ( ⇒ 24)
29. Show Playback Menu ( ⇒ 62)
30. Skip the specified time ( ⇒ 36)
31. Skip approx. 1 minute forward ( ⇒ 35)
32. Skip approx. 10 seconds backward ( ⇒ 35)

Insert batteries

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

R6/LR6, AA

(Alkaline or manganese batteries)
**Getting started**

**Main unit**

1. **Standby/on switch (Ø/I)**
   - Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

2. **Recording indicator**
   - The indicator will light up while recording.
   - The indicator will blink while recording is paused and before recording starts.

3. **CALL LED**
   - The LED will light up when this unit receives incoming call etc. of the video communication. (⇒ 61)

4. **Remote control signal sensor**
   - Angle: Approx. 20° up and down, 30° left and right
   - Distance: Within approx. 7 m in front of the unit

5. **Start PAUSE LIVE TV (⇒ 24)**

6. **USB port**

7. **SD card slot**
   - When removing the SD card, press on the centre of the card and pull it straight out.

8. **Channel select (⇒ 22)**

9. **Start recording (⇒ 26)**

10. **Stop**

11. **Start play**

**Display**

1. SD card slot indicator
2. Copying indicator
3. Drive (HDD or SD) indicator
4. Remote control signal indicator
5. Main display section indicator
   - Current time
   - Playback counter
   - Various messages (⇒ 83)
6. Playback indicator
7. USB port indicator
8. Timer recording indicator
   - This indicator lights up when the timer recording standby is activated.

- While writing to/reading from the media, do not switch the unit to standby mode or remove the media. Such action may result in loss of the media contents.
Getting started

Connection

Basic connections

3D programmes can be played back when this unit is connected to a 3D compatible TV.
• Before connection, turn off all equipment and read the appropriate operating instructions.

If the TV does not have the HDMI terminal
Connect the TV with the Audio/Video cable. (⇒ 13)

To connect and register the USB HDD (optional)
Refer to “Registering the external HDD (USB HDD)”. (⇒ 58)

To connect the Communication Camera (optional)
Refer to “VIERA Connect (Enjoying Internet Service)”. (⇒ 61)

About HDMI cable
• Use the High Speed HDMI cables. Non-HDMI-compliant cables cannot be utilized.
• When outputting 1080p signal, please use HDMI Cables 5.0 meters or less.
• Recommended Panasonic HDMI cable part number: RP-CDHS15 (1.5 m), RP-CDHS30 (3.0 m), RP-CDHS50 (5.0 m), etc.
When the unit is not to be used for a long time
To save power, unplug it from the household mains socket. This unit consumes a small amount of power, even when the unit is in standby mode.

[approx. 0.2 W (“Power Save in Standby” is activated and “RF OUT (Aerial Signal)” is set to “Off”)]

- The HDMI connection supports VIERA Link "HDAVI Control" (⇒ 60).
- You cannot connect this unit to DVI devices that are incompatible with HDCP. Depending on the device, images may not display properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)
- If you are connecting to a TV that is only compatible with 2 channel audio output, audio with 3 channels or more will be down mixed and output as 2 channels, even if connecting with an HDMI cable.

Other TV connection
- Connect to terminals of the same colour.

3D video playback is not possible with this connection.
- Do not connect video signals through a video recorder. Due to copy guard protection the picture may not be displayed properly.
Connection

Amplifier/receiver connections

HDMI terminal

3D programmes can be played back when this unit is connected to a 3D compatible amplifier/receiver and a 3D compatible TV.
• You will not be able to view 3D programmes with this connection if your amplifier/receiver is not 3D compatible.

- VIERA Link function is possible by connecting to a TV or amplifier/receiver compatible with VIERA Link.
- When using a TV or an amplifier/receiver that does not display “ARC compatible” on the HDMI terminal, it is necessary to connect the TV and the amplifier/receiver with a digital audio cable to enjoy the TV audio on the amplifier/receiver.
• When you do not want the audio to be output from the TV, set "HDMI Audio Output" to "Off" (64, 71).

DIGITAL AUDIO OUT terminal

- Connect to terminals of the same colour.

AUDIO OUT terminal

- Connect to terminals of the same colour.
Getting started

Connection

Network connection
Following functions will be available when this unit is connected to the network.
• Smart Home Networking (DLNA) (⇒ 54)
• VIERA Connect (Enjoying Internet Service) (⇒ 61)
• Updating the software (firmware) of this unit from Internet (⇒ 76)

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

After you make the LAN cable/Wireless LAN connection, the network setting is needed. (⇒ 19, Easy Network Setting)

LAN cable connection

Wireless LAN connection

Precautions of Wireless LAN connection
The following limits are in place regarding the usage of this unit. You must be aware of these limits before using this unit.
Panasonic will in no way be responsible for any incidental damage which may arise due to a failure to obey these limits, or to any condition of use or disuse of this unit.
• Data transmitted and received over radio waves may be intercepted and monitored.
• This unit contains delicate electronic components.

Please use this unit in the manner in which it was intended and follow the following points:
- Do not expose this unit to high temperatures or direct sunlight.
- Do not bend, or subject this unit to strong impacts.
- Keep this unit away from moisture.
- Do not disassemble or alter this unit in any way.

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

For up-to-date compatibility information on your Wireless router refer to http://panasonic.jp/support/global/cs/ (This site is in English only.)
• The unit is not compatible with public wireless LAN services.
**Settings**

The TV can be operated from the TV operation buttons of the remote control.

- Perform the setting if you cannot operate the TV with the TV operation buttons.

**While pressing [TV .onClick], enter the code with the number buttons.**

**Manufacturer and Code No.**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Code</th>
<th>Brand</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panasonic</td>
<td>01/02/03/04</td>
<td>NEC</td>
<td>36</td>
</tr>
<tr>
<td>AIWA</td>
<td>35</td>
<td>NOBLEX</td>
<td>33</td>
</tr>
<tr>
<td>AKAI</td>
<td>27/30</td>
<td>NOKIA</td>
<td>25/26/27/60/61</td>
</tr>
<tr>
<td>BEKO</td>
<td>05/71/72/73/74</td>
<td>NORDMENDE</td>
<td>10</td>
</tr>
<tr>
<td>BENQ</td>
<td>58/59</td>
<td>OLEVIA</td>
<td>45</td>
</tr>
<tr>
<td>BRANDT</td>
<td>10/15</td>
<td>ONWA</td>
<td>30/35/70</td>
</tr>
<tr>
<td>BUSH</td>
<td>05</td>
<td>ORION</td>
<td>05</td>
</tr>
<tr>
<td>CENTREX</td>
<td>66</td>
<td>PEONY</td>
<td>49/69</td>
</tr>
<tr>
<td>CURTIS</td>
<td>05</td>
<td>PHILCO</td>
<td>41/48/64</td>
</tr>
<tr>
<td>DAEWOO</td>
<td>64/65</td>
<td>PHILIPS</td>
<td>05/06/46</td>
</tr>
<tr>
<td>DESMET</td>
<td>05</td>
<td>PHONOLA</td>
<td>05</td>
</tr>
<tr>
<td>DUAL</td>
<td>05</td>
<td>PIONEER</td>
<td>07/36</td>
</tr>
<tr>
<td>ELEMIS</td>
<td>05</td>
<td>PROVIEW</td>
<td>52</td>
</tr>
<tr>
<td>FERGUSION</td>
<td>10/34</td>
<td>PYE</td>
<td>05</td>
</tr>
<tr>
<td>FINLUX</td>
<td>61</td>
<td>RADIOLA</td>
<td>06</td>
</tr>
<tr>
<td>FISHER</td>
<td>21</td>
<td>SABA</td>
<td>10</td>
</tr>
<tr>
<td>FUJITSU</td>
<td>53</td>
<td>SALORA</td>
<td>26</td>
</tr>
<tr>
<td>FUNAI</td>
<td>63/67</td>
<td>SAMSUNG</td>
<td>32/42/43/65/68</td>
</tr>
<tr>
<td>GOLDSTAR</td>
<td>05/50/51</td>
<td>SANSUI</td>
<td>05</td>
</tr>
<tr>
<td>GOODMANS</td>
<td>05</td>
<td>SANYO</td>
<td>21/54/55/56</td>
</tr>
<tr>
<td>GRADIENTE</td>
<td>36</td>
<td>SCHNEIDER</td>
<td>05/29/30</td>
</tr>
<tr>
<td>GRUNDIG</td>
<td>09</td>
<td>SEG</td>
<td>05/69/75/76/77/78</td>
</tr>
<tr>
<td>HITACHI</td>
<td>05/22/23/40/41</td>
<td>SELECO</td>
<td>05/25</td>
</tr>
<tr>
<td>IRadio</td>
<td>30</td>
<td>SHARP</td>
<td>18</td>
</tr>
<tr>
<td>ITT</td>
<td>25</td>
<td>SIEMENS</td>
<td>09</td>
</tr>
<tr>
<td>JVC</td>
<td>17/30/39/70</td>
<td>SINUDYNE</td>
<td>05</td>
</tr>
<tr>
<td>KDS</td>
<td>52</td>
<td>SONY</td>
<td>08</td>
</tr>
<tr>
<td>KOLIN</td>
<td>45</td>
<td>TCL</td>
<td>31/33/66/67/69</td>
</tr>
<tr>
<td>KONKA</td>
<td>62</td>
<td>TELEFUNKEN</td>
<td>10/11/12/13/14</td>
</tr>
<tr>
<td>LG</td>
<td>05/60/51</td>
<td>TEVION</td>
<td>52</td>
</tr>
<tr>
<td>LOEWE</td>
<td>07/46</td>
<td>THOMSON</td>
<td>10/15/44</td>
</tr>
<tr>
<td>MAG</td>
<td>52</td>
<td>TOSHIBA</td>
<td>16/57</td>
</tr>
<tr>
<td>METZ</td>
<td>05/28/79</td>
<td>WHITE</td>
<td>05</td>
</tr>
<tr>
<td>MITSUBISHI</td>
<td>05/19/20/47</td>
<td>WESTINGHOUSE</td>
<td></td>
</tr>
<tr>
<td>MIVAR</td>
<td>24</td>
<td>YAMAHA</td>
<td>18/41</td>
</tr>
</tbody>
</table>

- If the brand of your TV is not listed or the code number is invalid for the TV, this remote control is not compatible with your TV.

- If your TV brand has more than one code listed, select the one that allows correct operation.
Getting started

Settings

Easy Setting

1. Turn on the TV, then select the appropriate AV input to suit the connections to this unit.

2. Press [ ] on the remote control or [ ] on this unit.
   - The Easy Setting will start at the initial power on.

3. Follow the on-screen instructions and perform the settings.
   - When the Download from TV screen appears, the setting information on the TV is acquired by this unit. (⇒ 60)
   - When the Auto Setup screen appears, the unit searches for the terrestrial digital channels. It takes about 3 minutes.

   After tuning has been completed, clock will be set automatically.
   If the clock setting screen appears, set the time manually (⇒ 74, Clock).

4. Set “Power Save” to “On”, “On Timer” or “Off”, then press [OK].

   - **On**
     It will go into the Power Save in Standby mode.
   - **On Timer**
     Set the start and stop time and then press [OK].
     - “Power Save in Standby” is activated when the set time comes.
   - **Off**
     It is possible to start quickly from standby mode. (Quick Start mode)
     - If you use Home Network function (⇒ 72), select “Off”. This function is not available with other settings.

   When “Easy Setting has been completed.” appears, Easy Setting is complete.

To stop partway
Press [RETURN].

To restart setup
1. Press [SETUP]. (⇒ 17)
2. Select “Auto Setup” in “Digital TV Tuning”, then press [OK].
3. Select “Yes”, then press [OK].

If the TV aspect setting screen appears
Refer to “TV Aspect”. (⇒ 70)

To confirm that channels have been tuned correctly
Refer to “Using Channel List”. (⇒ 22)

- If tuning is cancelled partway through, it may not be possible to receive the channels. Restart setup again.
Easy Network Setting

After completing “Easy Setting”, you can continue with “Easy Network Setting”.

**Preparation**

- Before beginning wireless connection setup, obtain your Network name (SSID).
- An SSID (Service Set IDentification) is a name used by wireless LAN to identify a particular network. Transmission is possible if the SSID matches for both devices.

1. Select “Wired” or “Wireless”, then press [OK].

2. Follow the on-screen instructions and make the following confirmation and settings.

   **“Wired” connection:**
   - Home Network Connection Check
   - Home Network function
   - Internet Connection Test

   **“Wireless” connection:**
   - Wireless Settings
   - Home Network Connection Check
   - Home Network function
   - Internet Connection Test

3. When “Easy Network Setting is finished.” appears, press [OK].

Connection method to wireless access point

**Search for wireless network:**

1. Select “Search for wireless network”, then press [OK].

2. The available wireless networks will be displayed. Select your network name and press [OK].
   - If your Network name is not displayed, search again by pressing the red button on the remote control.
   - Stealth SSID will not be displayed. Enter manually by using “Wireless Settings”. (⇒ 64, 71)
   - If your wireless network is encrypted, Encryption Key Input Screen will be displayed. Input the encryption key of your network.

**WPS (PUSH button):**

If your Wireless router supports WPS (PUSH button), you can easily perform the settings by pressing WPS button on it.

WPS (Wi-Fi Protected Setup™) is a standard that facilitates settings relating to the connection and security of wireless LAN devices.

1. Select “WPS (PUSH button)”, then press [OK].

2. Press WPS button or corresponding button of Wireless router until the lamp starts flashing.

   e.g.,

   - Wi-Fi Protected Setup™-compatible Wireless router may have the mark.
   - For details, refer to the operating instruction of Wireless router.

3. Press [OK].
Getting started

Settings

When you experience problems
Refer to "When you experience problems with Easy Network Setting". (⇒ 85)

To restart Easy Network Setting
1 Press [SETUP]. (⇒ 17)
2 Select "Easy Network Setting" in "Network", then press [OK].

To redo settings individually
If "Easy Network Setting" did not work properly or when you change the settings individually, perform the following steps:
1 Press [SETUP], (⇒ 17)
2 Select "Network Settings" in "Network", then press [OK].
3 Refer to “Network Settings”. (⇒ 71)

Check security before using Home Network function
If you set “Home Network function” to “On”, all connected devices on the same network can access this unit. Ensure that the router for your home network has adequate security system to prevent unauthorized access.

• Refer to the operating instructions of the hub or router.
• Home Network function setting can be set only when you selected "Off" for "Power Save in Standby" in "Easy Setting". (⇒ 18, step 4)
• Even if you set “Home Network function” to “Off”, it is possible to set to “On” later. (⇒ 64, 72)
• Do not use this unit to connect to any wireless network for which you do not have usage rights. During automatic searches in a wireless network environment, wireless networks (SSID) for which you do not have usage rights may be displayed; however, using these networks may be regarded as illegal access.
• After performing network settings on this unit, the settings (encryption level, etc.) of the Wireless router might change. When you have trouble getting online on your PC, perform the network settings on your PC in accordance with the settings of Wireless router.
• Please be aware that connecting to a network without encryption may result in the content of the communication being illegitimately viewed by a third party, or the leaking of data such as personal or secret information.
FUNCTION MENU screen

You can easily access the desired functions, such as playback, timer recording, the unit’s settings etc. via the FUNCTION MENU.

1 Press [FUNCTION MENU].

2 Select the item, then press [OK]

FUNCTION MENU list

<table>
<thead>
<tr>
<th>FUNCTION MENU</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Playback Contents</td>
<td></td>
</tr>
<tr>
<td>- Video (⇒ 31)</td>
<td></td>
</tr>
<tr>
<td>- Video (AVCHD) (⇒ 34)</td>
<td></td>
</tr>
<tr>
<td>- Video (MP4) (⇒ 34)</td>
<td></td>
</tr>
<tr>
<td>- Photo (⇒ 44)</td>
<td></td>
</tr>
<tr>
<td>- Music (⇒ 48)</td>
<td></td>
</tr>
<tr>
<td>- TV Guide (⇒ 23)</td>
<td></td>
</tr>
<tr>
<td>- Timer Recording (⇒ 28)</td>
<td></td>
</tr>
<tr>
<td>- Network</td>
<td></td>
</tr>
<tr>
<td>- Home Network (DLNA Client) (⇒ 55)</td>
<td></td>
</tr>
<tr>
<td>- Home Network (Media Renderer) (⇒ 56)</td>
<td></td>
</tr>
<tr>
<td>- Network Service (⇒ 61)</td>
<td></td>
</tr>
<tr>
<td>(When the SD card drive is selected)</td>
<td></td>
</tr>
<tr>
<td>- Others</td>
<td></td>
</tr>
<tr>
<td>- Copy Video (AVCHD) (⇒ 52)</td>
<td></td>
</tr>
<tr>
<td>- Copy Video (MPEG2) (⇒ 53)</td>
<td></td>
</tr>
<tr>
<td>- Copy New Photos (⇒ 47)</td>
<td></td>
</tr>
<tr>
<td>- SD Card Management (⇒ 57)</td>
<td></td>
</tr>
<tr>
<td>- Setup (⇒ 64)</td>
<td></td>
</tr>
<tr>
<td>- You can change the unit’s settings of Digital TV Tuning, Sound, Display, Connection, Network etc. in the Setup menu.</td>
<td></td>
</tr>
<tr>
<td>(When the SD card drive is not selected)</td>
<td></td>
</tr>
<tr>
<td>- Setup (⇒ 64)</td>
<td></td>
</tr>
<tr>
<td>- Drive Select</td>
<td></td>
</tr>
<tr>
<td>- HDD</td>
<td></td>
</tr>
<tr>
<td>- SD Card</td>
<td></td>
</tr>
<tr>
<td>- USB Device</td>
<td></td>
</tr>
<tr>
<td>- USB HDD</td>
<td></td>
</tr>
</tbody>
</table>

* Selectable items will change depending on the type and status of the media.
Watching broadcasts

Instructions for operations are generally described using the remote control. (⇒ 10)

Press [CH ∧ ∨] to select the channel.

- You can also select the channel by the following operations:
  - Using number buttons.
  - Using Channel List (⇒ right)
  - Using TV Guide system (⇒ 23)
  - Using channel information (⇒ 23)

To switch to the channel you have previously watched
Press [LAST VIEW 〇].
- This function does not work correctly depending on the situations.

To switch to the radio channels or the all channels
Press [RADIO/TV].

- If you have set a ratings level, you may be asked to enter the PIN to start viewing the broadcast. (⇒ 67, Child Lock (Parental Rating))
- When you are watching the 3D programme, subtitles and TV Guide, etc., may not display correctly depending on the settings. (⇒ 37, 3D video playback)

Using Channel List
You can select from the list of channel names.

1 Press [OK].

2 Select the channel, then press [OK].

To edit the Channel List
Refer to "Channel List". (⇒ 66)
Watching broadcasts

Using TV Guide system

1. Press [GUIDE].
   TV Guide screen appears.

2. Select the programme, then press [OK].

3. Select “View”, then press [OK].

Page up/down
Press [CH ▼].

To view a programme list for another day
Press the green button (Previous) or the yellow button (Next).

To see programme information
Press [STATUS ①].

To retrieve the programme data for the area where data have not been acquired
Select the area, then press [STATUS ①].

• Some broadcasters may not send the programme data. You cannot retrieve the data from them.

To set a timer Recording using the TV Guide System
Refer to “Timer recording”. (⇒ 28)

Using channel information

While watching a programme
Press [STATUS ①].

1. Current Category
2. Set timer (⇒ 29)
3. Subtitle
4. Teletext
5. Multiple audio

To show detailed information
Press [STATUS ①] again.

To hide the information screen
Press [EXIT ①].

To change Category
Press the blue button.

• To register your favourite channels
1. Press [OPTION].
2. Select “Digital TV Menu”, then press [OK].
3. Select “Favourites Edit”, then press [OK].
4. Refer to “Favourites Edit”. (⇒ 66)

To switch between the current programme and the next programme
Press [◄, ►].

To switch to another channel
Press [▲, ▼], then press [OK].

• Selection of channel is made easy by creating a Favourite of the channels you watch often. (⇒ 66, Favourites Edit)
### Watching broadcasts

#### Operations while watching broadcast

**To show subtitle**

When “ )))” appears in channel information ($\Rightarrow$ 23)

Press [STTL 23].
- Press again to hide subtitle.

**Switching audio**

Press [AUDIO].
- Audio will switch according to the contents of the programme every time it is pressed.

**To show Teletext**

When “ )))” appears in channel information ($\Rightarrow$ 23)

1. Press [TEXT 23].
2. Use [↑, ↓, ←, →, color buttons, etc.] according to on-screen instructions.

- You can change the display mode. ($\Rightarrow$ 64, 70, Teletext)

#### Aspect

You can switch the screen mode.
Refer to “Switching the aspect ratio of the screen”. ($\Rightarrow$ 77)

## REWIND LIVE TV/PAUSE LIVE TV

This unit temporarily saves a live TV programme you are watching with this unit’s tuner on HDD.

### REWIND LIVE TV

You can rewind live TV programme to the point where temporary save has started (up to 1.5 hours).

### PAUSE LIVE TV

You can pause live TV programme and restart watching from the paused position.

1. While watching TV

**REWIND LIVE TV:**

Press [SLOW/SEARCH 23] to rewind.

**PAUSE LIVE TV:**

Press [PAUSE 23] to pause.

- The maximum amount of the temporary save is 1.5 hours.

2. When you want to resume:

Press [PLAY/1.3 23].

- You can perform search or Quick View, etc.
- If temporary save stops ($\Rightarrow$ 25), playback will be performed by that point.
Watching broadcasts

Display information

While pausing or rewinding a broadcast:
Press [STATUS ①].

- Press [STATUS ①] again.

1 The time that you can rewind the live programme.
2 The amount of time temporarily saved on HDD.
3 The time of the current playback position.

To stop REWIND LIVE TV or PAUSE LIVE TV
1 Press [STOP □].
2 Select “Yes”, then press [OK].

To hide the display information
Press [EXIT ∞].

- The unit cannot rewind and play more than 1.5 hours prior to the current time.
- Temporary save stops in the following cases:
  - When switching to other channels or other screen
  - When recording of the watching programme is started
  - When two programmes simultaneous recording is started
  - When performing PAUSE LIVE TV or REWIND LIVE TV for more than 8 hours (This may vary depending on the HDD free space.)
- These functions do not work in the following cases:
  - When the clock is not set
  - While recording two programmes simultaneously
  - While copying
  - While watching a programme being recorded
  - When a radio programme is selected
  - REWIND LIVE TV:
    When “REWIND LIVE TV” is set to “Off” ( 68)
  - PAUSE LIVE TV:
    You can operate this unit with the TV remote control by using VIERA Link ( 60).
    Refer to the TV operating instructions.
Recording

Recording TV programmes

The titles can only be recorded to built-in HDD and cannot be copied from built-in HDD to the media other than USB HDD.

To set the recording time

1. Select “Recording Time” or “Continuous recording” in step 3 (⇒ left).

Recording Time:
You can set the length of recording time from 30 minutes to 4 hours.
• You can select the recording time with [◄, ►].

Continuous recording:
The recording is continued until you press [STOP ▼].

2. Press [OK].

One recording will terminate when simultaneous recording is being done and timer recording starts.
• Teletext will not be recorded.
• Following contents or media cannot be played back while recording:
  - DivX and MKV file
  - photo
  - USB memory
• Copying cannot be performed while recording.
• When “Automatic Standby after OTR” is set to “On” (⇒ 73), this unit is turned to standby mode if this unit is not operated for approximately 5 minutes after completing “Automatic Stop” or “Recording Time”.

1 Select the channel to record.

2 Press [REC ●].
Recording starts.
• “REC1” or “REC2” will light on the unit’s display.

3 Select “Automatic Stop”, then press [OK].
• One touch recording (OTR)
Recording stops automatically when the programme ends.

   REC1/OTR

   0000 8:00 AM - 8:45 AM
   Vacation
   Automatic Stop at 8:45 AM
   Recording Time 30 min
   Continuous recording

• You can also select “Recording Time” or “Continuous recording”. (⇒ right)

• This unit can record two programmes being broadcasted at the same time.
Operation during Recording

To check the recording programme
Press [STATUS ①].
e.g., While recording two programmes simultaneously

![Recording programme displayed on the TV](image)

When recording one programme:
If the following screen appears

![Stop Recording](image)

Select “Yes”, then press [OK].

When recording two programmes:
If the following screen appears

![Stop Recording](image)

1. Select the programme, then press [OK].
2. Select “Yes”, then press [OK].

To stop recording
Press [STOP ①].

When recording one programme:
If the following screen appears

![Stop Recording](image)

Select “Yes”, then press [OK].

When recording two programmes:
If the following screen appears

![Stop Recording](image)

1. Select the programme, then press [OK].
2. Select “Yes”, then press [OK].

To pause recording
After displaying the recording programme, press [PAUSE ①].

- Press again to restart recording.
  (A title is not split into separate titles.)
- Timer recording programme cannot be paused.

To record two programmes simultaneously
While recording, perform steps 1–3 on page 26.

- Channel can only be switched between the recording programmes.

Simultaneous rec and play
You can play the recording title from the beginning or the titles previously recorded to the HDD.

1. Press [DIRECT NAVIGATOR].
   - If the DIRECT NAVIGATOR screen of music is displayed, press the red button, then select “VIDEO”.

2. Select the title, then press [OK].
   - “●” is displayed on the recording programme.
**Recording**

### Timer recording

- This operation will only record to built-in HDD.
- This unit can record two programmes being broadcasted at the same time.

1. **Press [GUIDE].**
   
   TV Guide screen appears.

2. **Select the programme, then press the red button.**
   
   The timer icon “Ω” (red) is displayed.

---

To use TV Guide system

Refer to “Using TV Guide system”. (⇒ 23)

To edit the timer recording on the TV Guide screen

1. Select the programme to edit, then press the red button.
2. Select “Timer Rec Edit”, then press [OK].
3. Select the items and change the items. (⇒ 29, Timer recording options)

To cancel a timer recording on the TV Guide screen

1. Select the programme to cancel, then press the red button.
2. Select “Timer Rec Cancel”, then press [OK].
   
   (Ω” disappears)

Operation during Recording

Refer to “Operation during Recording”. (⇒ 27)

- Some broadcast may not send programme information. When programme information is not displayed correctly, use manual timer recording. (⇒ right)
- You can set the start and finish time to make the timer recording work successfully. (⇒ 64, 68, Timer Record Start Buffer, Timer Record Stop Buffer)

---

To select the programmes of a specific category

1. On the TV Guide screen:
   
   Press the blue button.
2. Select the item, then press [OK].

To return to the previous TV Guide list

Select “All Digital Channels” in step 2.

- Category may not be assigned correctly depending on the programme information.

Manually programming timer recording

1. **Press [PROG/CHECK].**

   TV Guide screen appears.

2. **Select the programme, then press the red button.**
   
   The timer icon “F” (red) is displayed.

   SUN 01.01.2012 8:05 AM Category: All Digital Channels

   8:00 AM AM AM AM AM AM 8:30 9:00 9:30 10:00 10:30

3. **Select “New Timer Programme”, then press [OK].**

4. **Select the items and change the items.**
   
   (⇒ 29, Timer recording options)

5. **Press [OK].**
   
   The timer programme is stored.

To confirm and edit the timer programme

Refer to “To confirm and edit a timer programme”. (⇒ 30)

Operation during Recording

Refer to “Operation during Recording”. (⇒ 27)
Timer recording options
Select the items and change the items.

Channel
- You can select Category with the red button.

Day/Date
- You can select “Date” or “Weekly” by pressing the green button.

Start/Stop
- Press and hold [>] to alter in 15-minute increments.

Auto Renewal Recording
(Only daily/weekly timer recording)
The unit will record the new programme over the old one.
1 Select “Renew”.
2 Select “ON”.

Title Name
1 Select “Title Name”, then press [OK].
2 Refer to “Entering text”. (☞ 77)

Timer recording from channel information
You can make timer recording of the current or next programme.

1 While watching a programme
   Press [STATUS ①].

2 Display the channel information of a programme to record.
   - Switch the programme with [◄, ►].

3 Press the yellow button.
4 Go to step 3 on page 28.

Notes on timer recording
- You can enter up to 32 programmes within a month in advance. (Each daily or weekly programme is counted as one programme.)
- Even if you switch the unit to standby mode during the timer recording, the recording is continued.
- When you programme successive timer recordings to start, about last 1 minute of earlier programme will not be recorded.
- Timer recording will not start while:
  - copying HD Video (AVCHD) from USB device or SD card
  - copying photos/music
  - formatting
Timer recording

To confirm and edit a timer programme

1. Press [PROG/CHECK].
   e.g.,

<table>
<thead>
<tr>
<th>Channel Name</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Time Recording
   Timed HDD

   Turn
   02:00 - 02:45
   03:00 - 03:45
   04:00 - 05:00
   06:00 - 06:45

   Total 3/32
   Dails
   Info
   Page Up
   Page Down

2. Select the programme, then perform the operations.

To deactivate a timer programme

Press the red button.
• The timer icon “○” will change from red to grey.
• Press the red button again to activate timer recording standby. (The timer icon “○” will change to red.)

To delete a timer programme

Press [DEL].

To edit a timer programme

1. Press [OK].
2. Change the timer recording options.
   • Refer to “Timer recording options”. (☞ 29)
3. Press [OK].

To show programme information

Press [STATUS ⓿].

To exit the timer recording list

Press [EXIT ⓿].

Screen icons

- Red: Timer recording standby is activated.
  Grey: Timer recording standby is deactivated.

- Currently recording programme

- A part or all of the programme will not be recorded since the programme is overlapping.

- The HDD is full.

- The recording of the programme was not completed because of some reason.

- Auto Renewal Recording is set (☞ 29).

OK

Displayed if the recording can fit in the remaining space

(Date)

- It may not be possible to record because:
  - there is not enough space left.
  - the number of possible titles has reached its maximum. (☞ 88)
  - programmes are deactivated, etc.
Playing titles on the HDD

1 Press [DRIVE SELECT] to select “HDD”, then press [DIRECT NAVIGATOR].
   • If the DIRECT NAVIGATOR screen of photo or music is displayed, press the red
     button, then select “VIDEO”.

2 Select the title, then press [OK].
   Playback starts.

Resume play function
If the following screen appears, select the point to start playback.

DIRECT NAVIGATOR (VIDEO)

Screen icons

Currently recording programme
Title cannot be played
(When data is damaged etc.)
Grouped titles
Title has not yet been played
Title is recorded using a different
encoding system from that of the
unit.
Change the “TV System” (64, 70).
Radio programme
3D contents
• This icon will not display even with
3D programmes when a broadcast
 programme is recorded.
Recorded in 1080/50p contents
Recorded in 1080/60p contents
Title is restricted by Child Lock
( Parental Rating ) (67).
Recording did not complete as the
timer recording has started.
Playing back video

Titles on the HDD

Tab
Titles will be categorised automatically. You can quickly find the recorded titles by selecting the tab.

To select the tab
Press [◄, ►].

To change the displayed programme type tab
1 Select the programme type, then press the green button.
2 Select the item, then press [OK].

To change the programme type of title
Refer to “Changing programme type of title”. (⇒ 40)

Switching the appearance
1 Press [OPTION].
2 Select “Grouped Titles” or “All Titles”, then press [OK].

Grouped Titles:
Two or more titles recorded in the daily/weekly timer recording mode are bundled and displayed as one item.

All Titles:
Displays all titles.

Playing back grouped titles
1 On the Grouped Titles screen:
   Select the item marked with 

2 When playing all titles:
   Press [PLAY/×1.3 ▶].

When playing the individual title:
Press [OK] and select the title, then press [OK].

Switching to the PHOTO or MUSIC screen
1 Press the red button.
2 Select “PHOTO” or “MUSIC”, then press [OK].

Showing Information
Select the title, then press [STATUS ◎].
Editing the grouped titles

1. Select the title or the group, then press the yellow button.
   - A check mark is displayed. Repeat this step.
   - Press the yellow button again to cancel.
   - If you perform “Remove”, select the title in the group.

2. Press [OPTION].

3. Select the item, then press [OK].
   - **Create Group:**
     Selected titles are bundled to form a group.
     Select “Create”, then press [OK].
   - **Release Grouping:**
     All the titles in the group are released.
     Select “Release”, then press [OK].
   - **Remove:**
     Selected titles are removed from the group.
     Select “Remove”, then press [OK].

Changing the group name

1. Select the group, then press [OPTION].
2. Select “Edit”, then press [OK].
3. Select “Enter Title Name”, then press [OK].
4. Refer to “Entering text”. (☞ 77)

Playback from Chapter View

Regarding chapters
You can divide a title into multiple chapters. Each section between the division points (Chapter Marks) becomes a chapter.

To edit the chapter in Chapter View
Refer to “Editing chapters”. (☞ 41)
Playing titles on the media

1 Insert the media.
   Depending on the type of the media, play starts from the specified position, or the screen appears.

2 When the menu screen etc., appears:
   Select the item or title, then press [OK].
   • Repeat this step if necessary.
   Playback starts.

• Some DivX and MKV files may not be played back, depending on the video resolution and frame rate condition.

Menu screen
Selecting screen for each operation is displayed when the media is inserted, and you can access the operation screen easily.

   e.g., [USB]

• Display items differ depending on what is recorded in each media.

If the menu screen is not displayed, display it by performing the following operation.
1 While stopped
   Press [OPTION].
2 Select “Drive Select”, then press [OK].
3 Select the media, then press [OK].

Video list screen

Screen icons:

- Folder
- Titles
- Move to the parent folder

DIRECT NAVIGATOR (AVCHD) screen

Showing Information
1 Select the title, then press [OPTION].
2 Select “Information”, then press [OK].

About screen icons on the DIRECT NAVIGATOR
Refer to “Screen icons”. (⇒ 31)
Operation during play

**Pause**
Press [PAUSE [II]]
- Press [PLAY/×1.3 ▶] to restart play.

**Slow-motion**
While paused, press [SLOW/SEARCH ◀◀] or [SLOW/SEARCH ▶▶].
- Press [PLAY/×1.3 ▶] to restart play.

- The speed increases up to 5 steps.
- DivX, MKV, MP4 and MPEG2 (USB): The Slow-motion function is not effective.
- AVCHD (SD): Forward direction [SLOW/SEARCH ▶▶] only.

**Frame-by-frame**
While paused, press [◀◀] (◀◀) or [▶▶] (▶▶.)
- Each press shows the next frame.
- Press and hold to change in succession forward or backward.
- Press [PLAY/×1.3 ▶] to restart play.

- DivX, MKV, MP4 and MPEG2 (USB): The Frame-by-frame function is not effective.
- AVCHD (SD): Forward direction [▶] (▶) only.

**Manual Skip**
Skip forward 1 minute:
Press [MANUAL SKIP +60s].
Skip backward 10 seconds:
Press [MANUAL SKIP -10s].

- DivX and MKV: The Manual Skip function is not effective.

**Search**
Press [SLOW/SEARCH ◀◀] or [SLOW/SEARCH ▶▶].
- Press [PLAY/×1.3 ▶] to restart play.

- The speed increases up to 5 steps.
- DivX, MKV, MP4 and MPEG2 (USB): Audio is not heard during all levels search.

**Resume play function**
Press [PLAY/×1.3 ▶] to restart from the stopped position.
- Stopped position
  - HDD, USB HDD, AVCHD (SD):
  - Stopped position for each title is memorized.

**Quick View**
Press and hold [PLAY/×1.3 ▶].
- Press again to return to normal speed.

- DivX, MKV, MP4 and MPEG2 (USB): The Quick View function is not effective.

**Status messages**

**Stop**
Press [STOP ■].

**General operations**

Depending on the media and the type of file, some operations may not be possible.
Depending on the media, it may take time for the menu screen, pictures, sound, etc. to start.
Playing back video

Operation during play

Skipping the specified time
1  Press [TIME SLIP].
2  Select the time with [▲, ▼].
   • Press and hold [▲, ▼] to change the time by 10-minute.
3  Press [OK].
   • Play skips the specified time.

DivX, MKV, AVCHD, MP4 and MPEG2 (USB): The Skipping the specified time function is not effective.

Skipping the title or chapter
Press [SKIP ◄] or [SKIP ►].

HDD, USB HDD: Titles will not be skipped. But the titles in the group will be skipped when playing all titles. (⇒ 32)

To create Chapter Marks
HDD, USB HDD
During the playback or pause
Press [CHAPTER].

To delete the Chapter Mark
HDD, USB HDD
1  While paused
   Press [SKIP ◄] or [SKIP ►] and skip to the location you want to delete.
2  Press [CHAPTER].
3  Select “Yes”, then press [OK].

Changing audio
Press [AUDIO].
• It will switch depending on the contents recorded every time it is pressed.

Switching subtitles
HDD, USB HDD:
1  Press [STTL ].
2  Select “On” or “Off”.
   • If you want to switch the subtitle language, select it in the Content menu (⇒ 62).

DivX and MKV:
Display with “Subtitles” in the Content menu (⇒ 62).

Aspect
You can switch the screen mode.
Refer to “Switching the aspect ratio of the screen”. (⇒ 77)
3D video playback

Preparation
Connect 3D compatible TV to this unit. (⇒ 12)
• Perform the necessary preparations for the TV.

Playback following the instructions displayed on the screen.

Preparatory 3D settings
Perform the following settings as necessary.

3D Type
If 3D video cannot be played back in 3D, you may be able to play it in 3D by changing the setting. (⇒ 64, 70)

3D AVCHD Output
If 2D AVCHD video is recognised as 3D video and cannot be played back correctly, you may be able to play it by changing the setting. (⇒ 64, 70)

3D Playback Message
Hide the 3D viewing warning screen. (⇒ 64, 70)

Graphic Display Level
Adjust the 3D position for the playback menu or message screen etc. (⇒ 62)

3D settings during playback
Change this setting when the screen is not correctly displayed for 3D compatible programmes.

1 Press [OPTION].
2 Select “3D Settings”, then press [OK].
3 Select the item, then press [OK].

Signal Format
• Original
  Keep original picture format.
• Side by side
  3D picture format comprising of left and right screens.
• 2D to 3D
  Converts 2D pictures to 3D effect while playing.

3D Picture Mode
• Normal
  Normal 3D effects.
• Soft
  Soft 3D effects.
  • This function cannot be enabled when “Signal Format” is set to “2D to 3D”.

Manual Settings
Set 3D effect manually.

• Distance
  Set the amount of depth perception.

• Screen Type
  Selects how the screen appears during 3D playback (flat or round).

• Frame Width
  Set the amount of feathering at the edge of screen.

• Frame Colour
  Set the colour of feathering at the edge of screen.

• Depending on the contents, displayed items are different.
• This unit only guarantees the playback of the Frame Sequential and the Side-by-Side (Half) programme types.
• Please refrain from viewing 3D images if you do not feel well or are experiencing visual fatigue.
  In the event that you experience dizziness, nausea, or other discomfort while viewing 3D images, discontinue use and rest your eyes.
• Depending on the connected TV, the video being played back might switch to 2D video due to changes in resolution etc. Check the 3D setting on the TV.
• 3D video might not output the way it is set in “HDMI Video Format” (⇒ 71).
• It may display as Side-by-Side when playback of the 3D video is started.
Deleting recorded titles

Once deleted, recorded content cannot be restored to its original state. Make certain before proceeding.

Deleting during play

1  Press [DEL] while playing.
2  Select “Delete”, then press [OK].

Multiple deleting

Select the title, then press the yellow button in step 1.

A check mark is displayed. Repeat this step.

- Press the yellow button again to cancel.
Editing recorded titles

Once deleted, divided or partially deleted, recorded content cannot be restored to its original state. Make certain before proceeding.

- PIN is required to edit the titles with in some functions. (⇒ 31)

1. On the DIRECT NAVIGATOR screen:
   - Select the title.

2. Press [OPTION].

3. Select the item, then press [OK].
   - e.g.,
     - “Edit” has several functions.

   **Multiple editing**
   - Select the title, then press the yellow button in step 1.
   - A check mark is displayed. Repeat this step.
   - Press the yellow button again to cancel.

<table>
<thead>
<tr>
<th>Deleting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Select “Delete Title”, then press [OK].</td>
</tr>
<tr>
<td>2. Select “Delete”, then press [OK].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entering title name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Select “Enter Title Name” in “Edit”, then press [OK].</td>
</tr>
<tr>
<td>2. Refer to “Entering text”. (⇒ 77)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Setting protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection setting prevents the title from accidental deletion.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partial deleting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Select “Partial Delete” in “Edit”, then press [OK].</td>
</tr>
<tr>
<td>2. Press [OK] at the start point and end point to delete.</td>
</tr>
<tr>
<td>- You can find the desired point by using play, search, etc. (⇒ 35)</td>
</tr>
<tr>
<td>3. Select “Continue”, then press [OK].</td>
</tr>
<tr>
<td>- Select “Next”, then press [OK] to delete other sections. Up to 20 sections can be set. (⇒ go to step 2)</td>
</tr>
<tr>
<td>4. Select “Delete”, then press [OK].</td>
</tr>
<tr>
<td>- Chapter Mark is generated in the scene that was partially deleted.</td>
</tr>
<tr>
<td>5. Press [RETURN].</td>
</tr>
</tbody>
</table>


direct navigator screen:
- Playback
- Delete Title
- Information
- Edit
- Chapter View
- Create Group
- Release Grouping
- All Titles

Enter Title Name:
- Set up Protection
- Cancel Protection
- Partial Delete
- Divide Title
- Change Thumbnail
- Change Prog.Type
Editing video

Editing recorded titles

Dividing title

1 Select “Divide Title” in “Edit”, then press [OK].
2 Press [OK] at the point to divide the title.
   • You can find the desired point by using play, search, etc. (⇒ 35)
3 Select “Continue”, then press [OK].
4 Select “Divide”, then press [OK].

To confirm the division point
After performing step 2.
Select “Preview”, then press [OK].
   • The unit plays 10 seconds before and after the division point.

To change the division point
After performing step 2.
Restart play and select “Divide”, then press [OK] at the division point.

   • Divided titles will become a group of titles.

Changing programme type of title

Programme type information in the title can be edited.

1 Select “Change Prog.Type” in “Edit”, then press [OK].
2 Select the item to change a programme type, then press [OK].
3 Select the programme type, then press [OK].
4 Select “Set”, then press [OK].

Changing thumbnail

1 Select “Change Thumbnail” in “Edit”, then press [OK].
2 Press [OK] at the point to use as a thumbnail.
   • You can find the desired point by using play, search, etc. (⇒ 35)
3 Select “Finish”, then press [OK].

To change the point
After performing step 2.
Restart play and select “Change”, then press [OK] at the point to change.
Editing chapters

1. Select “Chapter View”, then press [OK].
2. Perform the editing operations.

**Edit Chapter Mark:**
Select the point where you want to start a new chapter while viewing the title.

1. Press the green button.
2. Press [OK] at the point you want to divide.
   - Repeat this step.
3. Press [RETURN] to go to Chapter View screen.

**To delete the chapter:**
1. Select the chapter, then press [DEL].

**Multiple editing**
Select the chapter, then press the yellow button.
A check mark is displayed. Repeat this step.
- Press the yellow button again to cancel.
2. Select “Delete”, then press [OK].

**To combine chapters (Delete chapter mark):**
1. Select the chapter, then press [OPTION].
2. Select “Combine Chapters”, then press [OK].
3. Select “Combine”, then press [OK].
The selected chapter is combined to the next chapter.

Playback from Chapter View
Refer to “Playback from Chapter View”. (⇒ 33)

- The maximum number of chapters:
  (Depends on the state of recording.)
  Approx. 1000 per title
- When the title has the maximum number of chapters, you cannot perform the Resume play function (⇒ 31) or the “Change Thumbnail” (⇒ 40) with the title.
Copying video

Copying titles

1 Connect the USB HDD.

2 Press [DRIVE SELECT] to select “HDD”, then press [DIRECT NAVIGATOR].
   • If the DIRECT NAVIGATOR screen of photo or music is displayed, press the red button, then select “VIDEO”.

3 Select the title, then press the yellow button.
   A check mark is displayed. Repeat this step.
   • Press the yellow button again to cancel.

4 Press the blue button.

5 Select “Yes”, then press [OK].
   • If you select “No”, you can change the selection. (⇒ 43)

6 Set other settings, then press [OK].
   e.g.,
   ![Automatic Standby after Copy]
   Standby status can be changed if required. Please press OK to start copying.
   (⇒ 43, Setting the copying options)

7 Select “Yes”, then press [OK].

To register the external HDD (USB HDD)
Refer to “Registering the external HDD (USB HDD)”. (⇒ 58)

• You can only play back the titles in built-in HDD while copying.
To change the selection
1 Select “No”, then press [OK] in step 5 (⇒ 42).
2 Select the title, then press the yellow button.
   Repeat this step to select titles.
3 Go to step 4 (⇒ 42).

About screen icons on the DIRECT NAVIGATOR
Refer to “Screen icons”. (⇒ 31)

Setting the copying options
1 Select the item in step 6 (⇒ 42).
2 Press [◄, ►] to change the settings.

• Automatic Standby after Copy
  On:
  This unit is turned to standby mode when it is not operated for approximately 5 minutes after completing copy.
Playing photos

To exit the Calendar screen
Press [PAUSE II].

• When there are many files and/or folders, some files may not be displayed or be playable. (⇒ 88)

DIRECT NAVIGATOR (PHOTO) screen

Event
It is displayed for each recording date.
• It is displayed for each folder for media other than HDD.

Screen icons

Album
Placing photos in albums of your choice makes it easier to find them. (⇒ 46)

3D
3D photos (MPO) are automatically sorted. Select from this tab to play back in 3D. (It will play back in 2D when selected from other tabs.)

Photo protected

New photo which is stored and not viewed

1 HDD
1 Press [FUNCTION MENU].
2 Select “Photo” in “Playback Contents”, then press [OK].

SD USB
1 Insert the media.
The menu screen appears. (⇒ 34)
2 Select “View Photos”, then press [OK].

2 Select the event, then press [OK].
 e.g., HDD

Tab

• To select the tab
Press [▲, ▶].

• Start Slideshow
Refer to “Slideshow Settings”. (⇒ 45)

• Switching to the Calendar screen
(HDD)
Press [PAUSE II].

3 Select the photo, then press [OK].
• Press [▲, ▶] to display the previous or next photo.
Switching to the VIDEO or MUSIC screens

1. On the DIRECT NAVIGATOR screen: Press the red button.
2. Select “VIDEO” or “MUSIC”, then press [OK].

Photo play option

1. While displaying a photo: Press [OPTION].
2. Select the item, then press [OK].

- **Aspect**
  You can switch the screen mode. (☞ 77)

- **Graphic Display Level**
  You can change the 3D position of the screen display, etc., during the 3D photo playback.

- **Photo Menu**

  - **Start Slideshow**
    You can start a slideshow.

  - **Rotate RIGHT/Rotate LEFT**
    Example:

    - The information of the rotated photos will not be stored depending on the media.
    - This function is not available during the 3D photo playback.

  - **Information**
    Information (shooting date etc.) is shown.

Slideshow Settings

1. On the DIRECT NAVIGATOR screen: Press the green button.

   - **Start Slideshow**
   - **Interval**
   - **Transition Effect**
   - **Repeat Play**
   - **Music Selection**
   - **Background Music**
   - **Random BGM**

2. Select the item, then press [OK].

- **Start Slideshow**
  You can start a slideshow.

- **Interval**
  You can set up the time until the next photo is to display.

- **Transition Effect**
  Effect for the next photo to display can be set.

- **Repeat Play**
  You can set up to play back repeatedly.

- **Music Selection**
  You can select background music on (either from HDD or USB) or off.

- **Background Music**
  You can select background music from HDD (My Favourites or Playlists) or USB (Folder).

- **Random BGM**
  You can play back the BGM (Background Music) in random order.

  * This function is not available during the 3D photo playback.

To pause the Slideshow

Press [PAUSE II].

To stop the Slideshow

Press [RETURN /reset].
### Editing photos

1. On the DIRECT NAVIGATOR screen:
   - e.g., HDD

   ![DIRECT NAVIGATOR screen with Photo mode selected](image)

   **To edit the event:**
   Select the event.

   **To edit the photo:**
   1. Select the event, then press [OK].
   2. Select the photo to edit.

   2. Press [OPTION].
   - Selectable items will change depending on the media and the type of file.

   3. Select the item, then press [OK].

   **Edit**
   - **Add to Album**
     - HDD
     1. Select the destination album, then press [OK].
     2. Press [OK].
   - **Combine Events**
     - HDD
     Select “Yes”, then press [OK].
   - **Remove from Album**
     - HDD
     Select “Yes”, then press [OK].
   - **Enter Album Name**
     - HDD
     Refer to “Entering text”. (⇒ 77)
   - **Enter Event Name**
     - HDD
     Refer to “Entering text”. (⇒ 77)

   **Delete Photos**
   Select “Yes”, then press [OK].

   **Set up Protection**
   - SD
   Select “Yes”, then press [OK].
   - Appears when the protection is set.
   - Even if the protection is set, the photo may be deleted by another unit.

   **Cancel Protection**
   - SD
   Select “Yes”, then press [OK].
Copying photos

1. On the DIRECT NAVIGATOR screen:
   - To copy the event:
     Select the event, then press the blue button.

2. When copying to HDD:
   - Select “Yes” or “No”, then press [OK].
   - If you select “Yes”:
     Select the album, then press [OK].
     e.g., [SD]

3. Select “Yes”, then press [OK].

To stop copying
Press and hold [RETURN] for 3 seconds.

• The name of the copied photos will be changed.

• If the number of files/folders to be copied exceeds the maximum (⇒ 89), copying will stop partway through.

Copying automatically

1. Insert the media.
   The menu screen appears. (⇒ 34)

2. Select “Copy New Photos”, then press [OK].
   e.g., [SD]

3. Select “Yes”, then press [OK].
   Copying starts.

4. Once the copy is completed, select “Yes” or “No”, then press [OK].

To stop copying
Press and hold [RETURN] for 3 seconds.

• Photos without shooting date will be categorised using the creation date.

• If the space on the destination drive runs out or the number of files/folders to be copied exceeds the maximum (⇒ 88), copying will stop partway through.

• The name of the copied photos will be changed.

1. Insert the media.
2. Select “Copy New Photos”, then press [OK].
3. Select “Yes”, then press [OK].
4. Once the copy is completed, select “Yes” or “No”, then press [OK].

To stop copying
Press and hold [RETURN] for 3 seconds.

• Photos without shooting date will be categorised using the creation date.

• If the number of files/folders to be copied exceeds the maximum (⇒ 88), copying will stop partway through.

• The name of the copied photos will be changed.

Selecting and copying the photos

| HDD → SD |
| SD USB → HDD |

1. On the DIRECT NAVIGATOR screen:
   - To copy the event:
     Select the event, then press the blue button.

2. Select the photos to copy, then press the blue button.

3. A check mark is displayed. Repeat this step.

4. Press the yellow button again to cancel.

• You can categorise and manage the events and photos on the HDD by copying to the album. (⇒ 44)
Music

**Playing music**

1. Insert the USB memory.
   The menu screen appears. (→ 34)

2. Select “Play / Copy Music (MP3)”, then press [OK].
   Playback will start.
   - Using the tree screen to find a folder
     1. Press [OPTION].
     2. Select “Select Folder”, then press [OK].
     3. Select the folder, then press [OK].

**To play other music (track)**
Select the item, then press [OK].

**Copying music to HDD**

<table>
<thead>
<tr>
<th>USB</th>
<th>→</th>
<th>HDD</th>
</tr>
</thead>
</table>

After performing steps 1–2 (→ left)

1. Press the blue button.
2. Select “Copy”, then press [OK].

**To stop copying**
Press and hold [RETURN] for 3 seconds.

- While copying, no other operations can be performed.
  Timer recordings will not proceed.
- All tracks in the folder will be recorded.
- Tracks recorded to HDD in one operation will be regarded as one album.

- The track/artist name will be displayed if the information is contained in ID3 tag of the MP3 file.
- If there is a large amount of photo data etc. within a MP3 file, play may not be possible.
Playing music recorded on HDD

1 Press [FUNCTION MENU].
2 Select “Music” in “Playback Contents”, then press [OK].
3 Select the item, then press [OK].

- Artists
  1 Press [←, →] to select the initial of the artist.
  2 Select the name of the artist, then press [OK].
  3 Select the album, then press [OK].
  4 Select the track, then press [OK].

- Albums
  1 Press [←, →] to select the initial of the album.
  2 Select the album, then press [OK].
  3 Select the track, then press [OK].

- My Favourites
  Tracks registered in “My Favourites”.
  Select the track, then press [OK].
  - Registering a track to the “My Favourites”.
    (Up to 99 tracks)
    While the Track List screen is displayed:
    Select the track, then press the green button.

- Playlists
  1 Select the playlist, then press [OK].
  2 Select the track, then press [OK].

- Frequently Played
  - Tracks most often played recently (up to 30 tracks).
    Select the track, then press [OK].

- Random Play
  Random playback of all tracks.
  Playback starts.

Switching to the VIDEO or PHOTO screens

1 On the DIRECT NAVIGATOR (Music Menu) screen:
   Press the red button.
2 Select “VIDEO” or “PHOTO”, then press [OK].

Showing Track Information

On the Track List screen:
1 Select the track, then press [OPTION].
2 Select “Information”, then press [OK].
### Music

#### Playing music

<table>
<thead>
<tr>
<th><strong>Operations during music play</strong></th>
<th><strong>Displaying photos (Slideshow)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDD USB</strong> Stop <strong>Pause</strong> Search <strong>Skip</strong> Repeat Play/Random Sound Effects</td>
<td>Photos stored on the “Album” of the HDD can be played back as slideshow during playback of the music.</td>
</tr>
<tr>
<td>Press [STOP □]. Press [PAUSE ▶]. Press [SLOW/SEARCH ◀◀] or [SLOW/SEARCH ▶▶]. Press [SKIP ◀◀] or [SKIP ▶▶]. Press [PLAY/×1.3 ▶] to restart play. Press [OPTION]. Select “Select Photo Album”, then press [OK]. Select the album, then press [OK]. e.g.,</td>
<td>While playing the music Press the red button. • To change the photos to display 1 While slideshow playing Press [OPTION]. 2 Select “Select Photo Album”, then press [OK]. 3 Select the album, then press [OK].</td>
</tr>
<tr>
<td></td>
<td>To end the slideshow Press [RETURN ◄].</td>
</tr>
</tbody>
</table>

#### How to create the photo album
Refer to “Add to Album”. (⇒ 46)

#### To play music continuously even if the Power off link works
Refer to “Playing music continuously even after turning off power to the TV”. (⇒ 60)
Editing music/playlist

1 On the DIRECT NAVIGATOR screen:
   Press [OPTION].
   e.g.,

2 Select the item, then press [OK].
   e.g., while selecting an Album

   - Editing operations will change depending on the screen.

Delete All Tracks
1 If the confirmation screen appears:
   Select “Yes”, then press [OK].
   2 Select “Delete”, then press [OK].

Delete Album
Select “Delete”, then press [OK].

Delete
Select “Delete”, then press [OK].

Edit Album Name/Edit Track Name/Edit Artist Name/Edit Playlist Name
Refer to “Entering text” on page 77.

Remove All Tracks
Select “Remove”, then press [OK].
   - Tracks themselves are not deleted from the HDD.

Clear My Favourites/Clear Frequently Played
Select “Clear”, then press [OK].
   - Tracks themselves are not deleted from the HDD.

Remove
Select “Remove”, then press [OK].
   - Tracks themselves are not deleted from the HDD.

Add to Playlist
You can register your favourite albums and tracks into 10 preset playlists.
Select the playlist, then press [OK].
   - New playlist cannot be added.
   - Up to 999 tracks can be registered to each playlist.
With Other Equipment

Copying the HD Video or the SD Video

This unit cannot copy the titles in the HDD to the media. Be careful when deleting the original title on the media.

e.g., Connecting to the Panasonic video camera

USB connection cable (optional)

• If you connect a Panasonic product with a USB connection cable, setup screen may be displayed on the connected equipment. For details, refer to the instructions for the connected equipment.

Copying HD Video (AVCHD)

• SD, USB, video camera, etc. → HDD
• The original file must be in the AVCHD standard.

1. Connect the video camera or insert the media.
   The menu screen appears. (34)
   • Make the video camera ready for data transfer.

2. Select “Copy Video (AVCHD)”, then press [OK].

3. Select the title, then press the yellow button.
   A check mark is displayed. Repeat this step.

   e.g., [SD]

   • Press the yellow button again to cancel.
   (All the recordings on the same date become a title.)

4. Press [OK].

5. Select “Start”, then press [OK].
   • It may take time for the copying to start.

To stop copying

Press and hold [RETURN] for 3 seconds.

• An AVCHD title with 100 or more scenes will be divided into titles every 99th scene and copied.

Screen icons

(NTSC) Title recorded using a different encoding system from that of the unit.
   • Titles displaying these marks cannot be selected.
Copying SD Video (MPEG2)

SD USB, video camera, etc. → HDD

• The original file must be in the SD-Video standard.

1 Connect the video camera or insert the media.
   • Make the video camera ready for data transfer.

   The menu screen appears. (⇒ 34)

2 Select “Copy Video (MPEG2)”, then press [OK].
   e.g., All titles of SD video on the media that can be copied are registered in the copying list.

3 Select “Start”, then press [OK].
4 Select “Yes”, then press [OK] to start copying.

To stop copying
Press and hold [RETURN] for 3 seconds.

• The titles will be copied in the order of the copying list. If you want to specify the order, edit the copying list after the titles are selected.
• The total data size shown may be larger than the sum of the data sizes for each registered item.

To edit the copying list

1 Select “List”, then press [▶] (right) after step 2. (⇒ left)
2 Press [OPTION].
3 Select the item, then press [OK].

Delete All:
All titles that you registered to copy are deleted.
Select “Yes”, then press [OK].

Add:
Add new items to the copying list.
1 Select the title, then press the yellow button.
   Repeat this step to select titles.
2 Press [OK].

Delete:
Selected titles are deleted.
• Select the title, then press the yellow button before step 2.
   Repeat this step to select titles.
Select “Yes”, then press [OK].

Move:
Change the order of items on the copying list.
• Select the title to move before step 2.
Select the destination, then press [OK].
4 Press [◀].

Screen icons

Data size of each registered item

<table>
<thead>
<tr>
<th>Size:</th>
<th>Data size recorded to the HDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTSC</td>
<td>Title recorded using a different encoding system from that of the unit.</td>
</tr>
<tr>
<td>PAL</td>
<td>• Titles displaying these marks cannot be selected.</td>
</tr>
</tbody>
</table>
With Other Equipment

Smart Home Networking (DLNA)

Smart Home Networking (DLNA) allows you to watch the contents on Server equipment connected on the same network from Client equipment.

This unit can be used both as Server and Client. Additionally, if used as Client, this unit can also be used as Media Renderer, which can be controlled by a Smartphone, etc.

Preparation

• Network connection (⇒ 16, 19)
• Perform Home Network settings of the DLNA compatible equipment.

Prepare	• When DLNA (Server) Function is deactivated, make the settings. (⇒ 64, 72, Home Network Settings)
1 Operate the playback equipment (Client) to display the list of contents on this unit.
   • Refer to their respective operating instructions.
2 Select the item, then press [OK].

For more details, refer to the following website and the operating instructions for each item of equipment.

http://panasonic.jp/support/global/cs/
(This site is in English only.)

• Some video cannot be played back depending on the equipment, the condition of this unit, or the file type.
• Ensure that the router for your home network has adequate security system to prevent unauthorized access.

Using this unit as Server

You can enjoy the video and photos saved on the HDD of this unit on DLNA (Client) compatible equipment connected via a network.

• The titles with access restriction (e.g., copy restriction) signals sent from broadcasters are not available for this function.
• You cannot play back music from the playback equipment (Client).

For details regarding the connection and operation of equipment connected via a network, refer to their respective operating instructions.
Using this unit as Client

You can share videos, photos and music stored in the DLNA Certified media server (such as a PC with Windows 7 installed etc.) connected via a network with this unit.

1. Press [FUNCTION MENU].
2. Select “Home Network (DLNA Client)” in “Network”, then press [OK].
   A list of equipment connected via the network is displayed.
   • This list can be updated by pressing the red button.
3. Select the equipment, then press [OK].
4. Select the item, then press [OK].
   • Menu structure will be different depending on the equipment. Select the contents by repeating the operation.
   • Convenient functions can be used by pressing [OPTION] depending on the contents.
   • Control Panel
   Control Panel is displayed once the playback starts.
   Operation can be performed with [△, ▽, ◀, ▶, ], [OK] and [EXIT ⊗].
   • Press [OK] if the Control Panel is not displayed.
   • Press [RETURN ⊗] to hide the Control Panel.

Support format of DLNA client

Video

<table>
<thead>
<tr>
<th>Container</th>
<th>Video codec</th>
<th>Audio codec</th>
<th>Example of file extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVCHD</td>
<td>H.264</td>
<td>Dolby® Digital</td>
<td>.mts</td>
</tr>
<tr>
<td>MP4</td>
<td>H.264</td>
<td>AAC</td>
<td>.mp4</td>
</tr>
<tr>
<td>MOV</td>
<td>H.264</td>
<td>AAC</td>
<td>.mov</td>
</tr>
<tr>
<td>Recorded programmes (XP/SP/LP/EP/FR)*</td>
<td>MPEG2</td>
<td>Dolby® Digital</td>
<td>.mpg</td>
</tr>
<tr>
<td>Recorded programmes (DR/HG/HX/HE/HL/HM)*</td>
<td>MPEG2</td>
<td>MPEG</td>
<td>.m2ts</td>
</tr>
<tr>
<td>Recorded programmes</td>
<td>MPEG2</td>
<td>Dolby® Digital</td>
<td>.ts</td>
</tr>
</tbody>
</table>

* Recording mode in Panasonic Blu-ray Disc recorder

Photo

<table>
<thead>
<tr>
<th>Format</th>
<th>Example of file extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPEG</td>
<td>.jpg</td>
</tr>
</tbody>
</table>

Audio

<table>
<thead>
<tr>
<th>Audio codec</th>
<th>Example of file extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP3</td>
<td>.mp3</td>
</tr>
<tr>
<td>FLAC</td>
<td>.flac</td>
</tr>
<tr>
<td>Linear PCM</td>
<td></td>
</tr>
</tbody>
</table>
Smart Home Networking (DLNA)

Using this unit as Media Renderer

This unit will work as Media Renderer, which allows you to play back the contents on DLNA Server by operating a Digital Media Controller (a smartphone, etc.).

Possible applications:

- Digital Media Controller compatible software should be installed.

Following steps are necessary to use this unit as Media Renderer:

1. Press [FUNCTION MENU].
2. Select "Home Network (Media Renderer)" in "Network", then press [OK].
3. Operate the Digital Media Controller compatible equipment.

To exit from Home Network (Media Renderer) screen

Press [RETURN].

- Depending on the contents and the connected equipment, playback may not be possible.
- Items displayed in grey on the display cannot be played back by this unit.
- This unit can be played back via connected equipment only when controlled using Digital Media Controller.
- Depending on the performance of the connected PC, video frames may be dropped during playback, or video may not be played back at all. (⇒ 82)
Format SD card

Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding.

1. Press [FUNCTION MENU].
2. Select “SD Card Management” in “Others”, then press [OK].
4. Select “Yes”, then press [OK].
5. Select “Start”, then press [OK].
6. Press [OK].

• The contents are deleted when you format a card even if you have set protection.
• Do not disconnect the AC mains lead while formatting. This can render the card unusable.
• When a card has been formatted using this unit, it may not be possible to use it on any other equipment.
Convenient functions

Registering the external HDD (USB HDD)

If you connect and register a USB HDD, you can move the titles in the built-in HDD to the USB HDD, thus saving the capacity in the built-in HDD.

If you use a USB HDD with this unit, the USB HDD must first be registered on this unit.

• Registering of a USB HDD will format the USB HDD and all the content already recorded will be deleted.
• Up to eight USB HDDs can be registered on this unit.
• Registered USB HDDs cannot be used with devices other than this unit.

Regarding the external HDD (USB HDD)

Please use a recommended USB HDD.
For the latest information on recommended USB HDDs, please check the following website.
http://panasonic.jp/support/global/cs/

• Certain non-recommended USB HDDs cannot be used with this unit.
• If a problem occurs with the USB HDD, please contact the manufacturer of the device.

Connecting the USB HDD

Connect this unit with optional USB HDD.

Disconnecting the USB HDD

Please use the following procedure to disconnect. Disconnecting without following this procedure may result in the loss of recorded content from the USB HDD or the internal HDD.

1 Press [SETUP].
2 Select “Settings for USB HDD” in “HDD / USB HDD”, then press [OK].
3 Select “USB HDD Disconnection”, then press [OK].
4 Select “Yes”, then press [OK].
5 Disconnect the USB HDD from this unit.

This unit's rear panel

USB HDD

• Only one USB HDD can be connected at the same time.
• Do not connect additional HDDs using a USB hub.
• For details about connection method, refer to the instructions supplied with the USB HDD.
Registering the USB HDD

- If the registering screen appears when connecting the USB HDD, go to step 4.

1. Press [SETUP].

2. Select “Settings for USB HDD” in “HDD / USB HDD”, then press [OK].

3. Select “USB HDD Registration”, then press [OK].

4. Select “Yes”, then press [OK].
   - If you have already registered eight USB HDDs, it will be necessary to delete one or more of them before registering a new USB HDD.
   - The message screen appears:
     1. Select “Yes”, then press [OK].
     2. Select the USB HDD to cancel, then press [OK].
     - The confirmation screen appears
     3. Select “Yes”, then press [OK].

5. When the registering is complete, message screen appears.
   - Press [OK].

6. The confirmation screen appears.
   - Press [OK].

To cancel all USB HDD registrations
Refer to “Cancellation of all USB HDD Registrations”. (⇒ 68)

- If you register a USB HDD, all the content already recorded on the USB HDD will be deleted.
- It is not possible to play back the content on the USB HDD whose registration has been cancelled.
- You can check the registration number of the USB HDD on the DIRECT NAVIGATOR. (⇒ 31)
Convenient functions

VIERA Link functions

What is VIENA Link “HDAVI Control”? 
VIENA Link “HDAVI Control” is a convenient function which will link the operations of this unit and a Panasonic TV (VIENA) or an amplifier/receiver. You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment.

Download from TV
When you connect the unit to a TV for the first time, the setting information on the TV is acquired by this unit. (⇒ 18).
• This function is available with the TV that supports “HDAVI Control 3” or later.

Automatic input switching/ Power on link
When the following operations are performed, the input channel of the TV will be automatically switched and the screen of this unit will be displayed. Additionally when the TV is off, the TV will automatically turn on.
- When play starts on this unit
- When an action that uses DIRECT NAVIGATOR or FUNCTION MENU etc, is performed

Power off link
When you set the TV to standby mode, this unit is also automatically set to standby mode.
• Power off link function does not work when recording, copying etc.

Playing music continuously even after turning off power to the TV
The following operations make it possible to keep the power of the unit on and to play music continuously.
When the unit is directly connected to an amplifier/receiver.
1 While playing music
Press [OPTION].
2 Select “TV Power Off”, then press [OK].
• Sound may be discontinued for several seconds when the power to the TV is turned off.
• This function is available with the TV that supports “HDAVI Control 2” or later.

PAUSE LIVE TV
You can operate this unit with the TV remote control.
Refer to “PAUSE LIVE TV”. (⇒ 24)
• This function is available with the TV that supports “HDAVI Control 3” or later.

Direct TV Recording
This function allows you to immediately start recording the programme that you are viewing on the TV.
Refer to the TV operating instructions for operation.
• This function is available with the TV that supports “HDAVI Control 3” or later.

Easy control only with VIENA remote control
You can operate this unit using the TV remote control.
Refer to the operating instructions of the TV about the buttons that you can use.
• This function is available with the TV that supports “HDAVI Control 2” or later.

This unit supports “HDAVI Control 5” function.
“HDAVI Control 5” is the newest standard (current as of November, 2011) for Panasonic HDAVI Control compatible equipment. This standard is compatible with Panasonic’s conventional HDAVI equipment.
Please refer to individual manuals for other manufacturers’ equipment supporting VIENA Link function.
• VIENA Link “HDAVI Control”, based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers’ equipment that supports HDMI CEC cannot be guaranteed.
• These functions may not work normally depending on the equipment condition.
• Use the remote control supplied with this unit if you cannot operate this unit using buttons on the TV remote control.
• The operation of this unit may be interrupted when you press certain buttons on the TV remote control.
Convenient functions

VIERA Connect (Enjoying Internet Service)

VIERA Connect allows you to access some specific websites supported by Panasonic, and enjoy Internet contents such as photos, videos, etc. from VIERA Connect home screen. This unit has no full browser function and all features of websites may not be available.

1. Press [INTERNET].
The message is displayed. Please read it carefully and then press [OK].
   • The video communication service can be accessed directly by pressing [ ] button.

2. Select the item, then press [OK].
   • Operable buttons:
     [ ▲, ▼, ◀, ◀, ], [OK], [RETURN ], colour buttons and number buttons.

To exit from VIERA Connect
Press [EXIT ].

- When playing content from an SD card or USB device VIERA Connect cannot be accessed.
- In the following cases, settings are possible using “Network Service Settings” - When restricting the use of VIERA Connect.
  - When the audio is distorted.
  - If using slow Internet connection, the video may not be displayed correctly. A high-speed Internet service with a speed of at least 6 Mbps is recommended.
  - Be sure to update the software (firmware) when a software (firmware) update notice is displayed on the screen. If the software (firmware) is not updated, you will not be able to use the VIERA Connect function.
  - The services through VIERA Connect are operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services.
  - All features of websites or content of the service may not be available.
  - Some contents may be inappropriate for some viewers.
  - Some contents of VIERA Connect may only be available for specific countries and may be presented in specific languages.
  - If timer recording starts, VIERA Connect will stop.

Preparation
- Network connection ( ⇒ 16, 19)

To enjoy video communication (e.g., Skype™)
- Connect this unit with optional Communication Camera (TY-CC20W or TY-CC10W).
  Depending on the area, this optional camera may not be available. Please consult your local Panasonic dealer for advice.

To enjoy video communication (e.g., Skype™)
- Connect this unit with optional Communication Camera (TY-CC20W or TY-CC10W).
  Depending on the area, this optional camera may not be available. Please consult your local Panasonic dealer for advice.

- For operating method refer to the following website.
  http://panasonic.jp/support/global/cs/
  (This site is in English only.)
- Cannot be used while recording or copying, etc.
Convenient functions

Playback menu

A variety of operations and settings such as changing the subtitles and audio languages can be performed during playback of video or music. Also, picture and sound quality can be set to your personal taste.

1 Press [DISPLAY].
2 Select the menu, then press [►] (right).
3 Select the item, then press [►] (right).
4 Select the setting.
   • Some items can be changed by pressing [OK].

Depending on the condition of the unit (playing, stopped, etc.) and media contents, there may be some items which cannot be selected or for which the effects do not work properly.

To clear the Playback menu
Press [DISPLAY].

Content

Video
The original video recording method (MPEG-4 AVC etc.) appears.

Soundtrack
Show or change the soundtrack.

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

Audio Selection
Switch in the case of multiple audio.

Audio Channel
Change audio (LR/L/R) during playback.

Play
Repeat Play
Select the item which you want to repeat.

Random
Select whether to play random or not.

Graphic Display Level
You can change the 3D position of the playback settings display, etc., during the 3D playback.

Picture

Mode
Select the picture quality mode during play.
   • Normal
      Default setting
   • Soft
      Soft picture with fewer video artifacts
   • Fine
      Details are sharper
   • Cinema
      Mellows movies, enhances detail in dark scenes.
   • Cartoon
      A mode suitable for viewing animations.
Advanced Settings

• HD optimizer
  This will compensate the mosaic noise in the video and haze around the characters precisely.

• Chroma Process
  The high-resolution processing of HDMI chroma signals produces a high-resolution picture with rich picture quality.

• Detail Clarity
  The picture becomes sharp and detailed.

• Super Resolution
  Standard picture quality video is corrected to sharp and crisp picture quality when it is output as 1080i/1080p from the HDMI terminal.

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

• Auto
  Automatically detects the film and video content, and appropriately converts it.

• Video
  Select this setting when the content is distorted if “Auto” is selected.

• Film
  Select this if the edges of the film content appear jagged or rough when “Auto” is selected. However, if the video content is distorted as shown in the illustration to the right, then select “Auto”.

Sound

Sound Effects
• This function is effective when “Digital Audio Output” is set to “PCM”. (☞ 69)

• Re-master 1/Re-master 2
  Sound becomes more natural by adding higher frequency signals not recorded on the track.

Dialogue Enhancer
The volume of the centre channel is raised to make dialogue easier to hear.

Other

Position
Change the position where this menu screen appears on your TV.

Audio attribute

<table>
<thead>
<tr>
<th>Digital/Digital+</th>
<th>Signal type</th>
</tr>
</thead>
<tbody>
<tr>
<td>k (kHz):</td>
<td>Sampling frequency</td>
</tr>
<tr>
<td>b (bit):</td>
<td>Number of bits</td>
</tr>
<tr>
<td>ch (channel):</td>
<td>Number of channels</td>
</tr>
</tbody>
</table>

Language

| ENG: English | CHI: Chinese |
| FRA: French | KOR: Korean |
| DEU: German | MAL: Malay |
| ITA: Italian | VIE: Vietnamese |
| ESP: Spanish | THA: Thai |
| NLD: Dutch  | POL: Polish |
| SVE: Swedish | CES: Czech |
| NOR: Norwegian | SLK: Slovak |
| DAN: Danish | HUN: Hungarian |
| POR: Portuguese | FIN: Finnish |
| RUS: Russian | *: Others |
| JPN: Japanese | |

• The menu is not displayed when playing photos.
Changing the unit’s settings (Setup)

You can change the unit’s settings of Digital TV Tuning, Sound, Display, Connection, Network etc. in the menu.

**Common procedures**

1. Press [SETUP].

2. Select the menu, then press [OK].

3. Select the item, then make the setting.

   - Follow the instructions on the screen if further operations are necessary.
   - Depending on the connection or the status of this unit some items cannot be selected or changed.

**To return to the previous screen**

Press [RETURN].

**About the PIN**

PIN is required to change the following settings. Enter the 4-digit PIN with the number buttons following the on-screen instructions.

- The PIN is common for the following items.
  - Child Lock (Parental Rating)
  - Lock (Network Service Settings)

PIN can be changed via the “PIN Entry” in “Others”. (⇒ 74)

**Menu list**

The locations of the setting items are as follows. For details on each setting item, please refer to the following pages.

**Digital TV Tuning**

- Favourites Edit (⇒ 66)
- Channel List (⇒ 66)
- Auto Setup (⇒ 67)
- Download from TV (⇒ 67)
- Manual Tuning (⇒ 67)
- Update Channel List (⇒ 67)
- Child Lock (Parental Rating) (⇒ 67)
- Signal Condition (⇒ 67)
- New Channel Message (⇒ 67)

**HDD / USB HDD**

- Timer Record Start Buffer (⇒ 68)
- Timer Record Stop Buffer (⇒ 68)
- REWIND LIVE TV (⇒ 68)
- HDD Management (⇒ 68)
  - Delete all titles (⇒ 68)
  - Delete all photos (⇒ 68)
  - Format HDD (⇒ 68)
- Settings for USB HDD (⇒ 68)
  - USB HDD Registration (⇒ 68)
  - USB HDD Disconnection (⇒ 68)
  - USB HDD Management (⇒ 68)
  - Delete all titles (⇒ 68)
  - Format USB HDD (⇒ 68)
  - Cancellation of all USB HDD Registrations (⇒ 68)
Convenient functions

Picture
- Still Mode (p. 69)
- Seamless Play (p. 69)
- NTSC Video Output (p. 69)

Sound
- Dynamic Range Compression (p. 69)
- Downmix (p. 69)
- Digital Audio Output (p. 69)
  - PCM Down Conversion (p. 69)
  - Dolby Digital (p. 70)
  - MPEG (p. 70)
- Audio Delay (p. 70)
- Audio Type for Digital Broadcast (p. 70)

Display
- On-Screen Information (p. 70)
- Unit’s Display (p. 70)
- Screen Saver (p. 70)
- Teletext (p. 70)

Connection
- 3D Settings (p. 70)
  - 3D Type (p. 70)
  - 3D AVCHD Output (p. 70)
  - 3D Playback Message (p. 70)
- TV Aspect (p. 70)
- Aspect for 4:3 Video (p. 70)
- TV System (p. 70)
- HDMI Connection (p. 71)
  - HDMI Video Format (p. 71)
  - Deep Colour Output (p. 71)
  - HDMI Audio Output (p. 71)
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Network
- Easy Network Setting (p. 71)
- Network Settings (p. 71)
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  - Double Speed Mode Setting (2.4GHz) (p. 71)
  - IP Address / DNS Settings (p. 72)
  - Proxy Server Settings (p. 72)
  - Network Service Settings (p. 72)
  - Lock (p. 72)
  - Automatic Volume Control (p. 72)
  - Home Network Settings (p. 72)
  - Home Network function (p. 72)
  - Setting device name (p. 72)
  - Registration type for remote devices (p. 72)
  - Remote device list (p. 72)

Others
- Standby Settings (p. 73)
  - Power Save in Standby (p. 73)
  - Automatic Standby (p. 73)
  - Automatic Standby after OTR (p. 73)
  - Automatic Standby after Copy (p. 73)
  - RF OUT (Aerial Signal) (p. 73)
- Remote Control (p. 73)
- Clock (p. 74)
- PIN Entry (p. 74)
- System Update (p. 74)
  - Software Update in Standby (p. 74)
  - Software Update Now (Broadcast) (p. 74)
  - Software Update Now (Internet) (p. 74)
  - Software Licence (p. 74)
- System Information (p. 74)
- DivX Registration (p. 74)
- Initialize (p. 75)
  - Shipping Condition (p. 75)
  - Default Settings (p. 75)
Changing the unit’s settings (Setup)

Digital TV Tuning

Favourites Edit
You can create four favourites of channels for making viewing and recording easier.

After editing as follows, save the Favourites. Press [RETURN], then press [OK].

- To select the other Favourites list:
  Press the green button.

- To add channels to the Favourites list:
  Select the channel in the “All Digital Channels” column, then press [OK]. Repeat this step.
  - Yellow: Add all the available channels to the Favourites. (This function is available only when there are no channels in the “Favourites”)

- To change the order of the channels list:
  1 Select the channel in the “Favourites” column to move, then press the green button.
  2 Select the new position, then press the green button.

- To delete channels:
  Select the channel in the “Favourites” column, then press [OK].
  - Yellow: Delete all channels.

- To change the name of the Favourites list:
  1 Press the red button in the “Favourites” column.
  2 Press [▲, ▼, ◀, ▶] to select a character, then press [OK].
  3 Press [RETURN]. Repeat this step to enter other characters.
  - Red: Delete a character.
  - Blue: Delete all characters.

Channel List
You can edit the Channel List.

- To hide unwanted channels
  1 Select the channel.
  2 Press [OK]. The check mark is removed.
  - Yellow: Reveal all channels.

- To change the channel number assignment
  1 Select the channel, then press the green button.
  2 Enter the channel number to reassign with the number buttons.
  3 Press [OK].
  - If another channel is already assigned to the channel number, the two channels will be switched.

- To set the channel manually
  1 Press the red button.
  2 Refer to “Manual Tuning”. (☞ 67)
Auto Setup
You can restart the Auto Setup. (☞ 18)
Select “Yes”, then press [OK].

Download from TV
Select “Download from TV” when you connect
the unit to a VIERA Link (HDAVI Control 3 or
later) compatible TV with an HDMI cable.
Select “Yes”, then press [OK].

Manual Tuning
You can add new channels manually.
1 Select the channel.
2 Adjust the frequency.
   • Adjust the frequency by checking the signal
     strength and signal quality displays.
3 Press [OK] to start scan.
   • The set channel is displayed in the table.

Update Channel List
You can update the channel list to the latest one.
* After performing “Update Channel List” or “Manual Tuning”
  if the channel number has already been assigned,
  channel number for them will be assigned from 800ch
  onward.

Child Lock (Parental Rating)
You can restrict the viewing of channels
unsuitable to children.
Set a ratings level to limit broadcast viewing and
playback.
• PIN is required to change. (☞ 64)

Signal Condition
You can check the quality and strength of
signals.
Press [CH ▲ ▼ ] to select the channel.

• Signal Quality:
  Red bar: Bad
  Yellow bar: Poor
  Green bar: Good

• Signal Strength:
  “0”: 0%
  “10”: 100%

* The channels you can receive are affected by weather
  conditions, seasons, time (day/night), region, length of the
cable that is connected to the aerial, etc.
* When the signal is too strong (red bar), reduce the signal
  amplification at your aerial.

New Channel Message
Set whether to obtain the information
automatically when a new DVB channel is
added.
Changing the unit’s settings (Setup)

**HDD / USB HDD**

**Timer Record Start Buffer**
This function sets the timer recording to start earlier than the TV Guide time.

**Timer Record Stop Buffer**
This function sets the timer recording to stop later than the TV Guide time.

**REWIND LIVE TV**
Turn on/off the REWIND LIVE TV function.
- When “Automatic Standby” is set to “Off” (⇒ 73), “On” cannot be selected.

**HDD Management**
Press and hold [OK] for 3 seconds to show the following settings.

- **Delete all titles**
  Delete all titles (video) on the built-in HDD.
  - Delete does not work if one or more titles are protected.

- **Delete all photos**
  Delete all photos on the built-in HDD.

- **Format HDD**
  Formatting deletes all contents on the built-in HDD, and they cannot be restored. Check carefully before proceeding.

**Settings for USB HDD**

**USB HDD Registration**
Register the USB HDD. (⇒ 59)

**USB HDD Disconnection**
This function puts the USB HDD in a state in which it can be safely disconnected. (⇒ 58)

**USB HDD Management**
Press and hold [OK] for 3 seconds to show the following settings.

- **Delete all titles**
  Delete all titles on the USB HDD.
  - Delete does not work if one or more titles are protected.

- **Format USB HDD**
  Formatting deletes all contents, and they cannot be restored. Check carefully before proceeding.

**Cancellation of all USB HDD Registrations**
This function cancels the registrations of all the USB HDDs registered on this unit.
Only do this if you are going to dispose of this unit.

- Before operation, perform “USB HDD Disconnection” (⇒ above) and remove the USB HDD.
- It is not possible to play back the content from a USB HDD whose registration has been cancelled.
**Picture**

**Still Mode**
Select the type of picture shown when you pause play.
- **Field:**
  Select if jittering occurs when "Automatic" is selected. (The picture is coarser.)
- **Frame:**
  Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected. (The picture is clearer and finer.)

**Seamless Play**
The segments can be played back seamlessly.
- When "Off" is selected, frame-dropping between the segments can be avoided, but the video may freeze for a moment between the segments.
- Seamless Play function does not work depending on the condition or the kind of programme.

**NTSC Video Output**
(This works only for video output from the VIDEO OUT terminal.)
Select how to output the NTSC image.

**Sound**

**Dynamic Range Compression**
To lower the dynamic range for playback (e.g., at night).
- This does not work depending on broadcasts and recorded titles.

**Downmix**
Select the downmix system of multi-channel to 2-channels sound.
- Select "Surround encoded", when the connected equipment supports the virtual surround function.
- There is no effect on “Bitstream” via HDMI AV OUT and DIGITAL AUDIO OUT terminal.
- The audio will be output in “Stereo” during AVCHD playback.

**Digital Audio Output**

**PCM Down Conversion**
Select how to output audio with a sampling frequency of 96 kHz.
- **On:**
  Signals are converted to 48 kHz.
  (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)
- **Off:**
  Signals are output as 96 kHz
  - The signals will be converted to 48 kHz regardless of the setting when the signals have a sampling frequency of over 96 kHz.
Changing the unit’s settings (Setup)

**Dolby Digital**

Select the audio signal to output.
- Select “PCM” when the connected equipment cannot decode the respective audio format.
- Not making the proper settings may result in noise.

- When using the DIGITAL AUDIO OUT terminal, there are following restrictions on Dolby Digital.
  - When “PCM” is selected, audio is output as Down-mixed 2ch PCM.

**MPEG**

**Audio Delay**

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

**Audio Type for Digital Broadcast**

If the programme has more than one track (Dolby Digital, MPEG, etc.), you can set priorities.
- This setting will give effect in the following conditions.
  - The default setting when watching broadcasts.
  - The default setting when playing back the title.

**Display**

**On-Screen Information**

Select the time until the channel information screen (⇒ 23) disappears automatically.

**Unit’s Display**

Changes the brightness of the unit’s display.

**Screen Saver**

This is to prevent burn-in on the screen.

**Teletext**

Select the Teletext (⇒ 24) display mode.

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**Connection**

**3D Settings**

**3D Type**

If 3D video cannot be played back in 3D, you may be able to play it in 3D by changing the setting.
- Change the settings for 3D on the TV also when “Side by side” is selected.

**3D AVCHD Output**

If 2D AVCHD video is recognised as 3D video and cannot be played back correctly, you may be able to play it by changing the setting.

**3D Playback Message**

Set to display or hide the 3D viewing warning screen.

**TV Aspect**

Set to match the type of TV connected.
- Pan & Scan:
  
  Side picture is trimmed for 16:9 picture.
  The pictures may be shown in the letterbox style depending on the content.
- Letterbox:
  
  Black bands appear for 16:9 picture.

**Aspect for 4:3 Video**

To play a 4:3 title, set how to show pictures on a 16:9 TV.

**TV System**

Set in accordance with the TV System for the connected TV.
Convenient functions

HDMI Connection

HDMI Video Format
You can only select items compatible with the connected equipment.
• If “Automatic” is selected, the output resolution best suited to the connected TV (1080p, 1080i, 720p or 576p/480p) is automatically selected.
• To enjoy High Quality Video up-converted to 1080p, you need to connect the unit to 1080p compatible HDTV. If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.

Deep Colour Output
This setting is for selecting whether to use Deep Colour output when a TV that supports Deep Colour is connected.

HDMI Audio Output
Select “Off” when connected to a TV with an HDMI cable, and connected to an amplifier/receiver not compatible with HDMI with a DIGITAL AUDIO OUT terminal.

Contents Type Flag
If “Automatic” is selected, the optimal method of playback depending on the TV (e.g. cinema) will automatically be selected (only when the TV supports Contents Type Flag).

VIERA Link
Select “Off” when you do not want to use “HDAVI Control”.

Network

Easy Network Setting
Press [OK] to start Easy Network Setting. (⇒ 19)

Network Settings

LAN Connection Mode
Select the LAN connection method.

Wireless Settings
This allows to set and check the connection settings of the Wireless router.

Connection Setting
The Wireless router connection wizard will be displayed.

Double Speed Mode Setting (2.4GHz)
When a 2.4 GHz wireless format is used, this setting sets the connection speed.
• If you connect using the “Double Speed Mode (40MHz)”, 2 channels use the same frequency band, and there is consequently a greater risk of reception interference. This can cause the connection speed to drop or the connection to become unstable.
Changing the unit’s settings (Setup)

**IP Address / DNS Settings**
Check the connection of the network or set the IP address and DNS.
- To set the IP address and DNS
  1. Set “IP Address Auto-assignment” and “DNS-IP Auto-assignment” to “Off”.
  2. Select the item, then press [OK] to show the respective setting.
- When the router’s DHCP server function is not activated, check the numbers of other connected devices such as personal computers, then assign a number different from those of other devices for the “IP Address” and assign the same number for “Subnet Mask” and “Gateway Address”.

**Proxy Server Settings**
Check and set the connection to the Proxy server.
- Press [OK] to show the respective setting.

**Network Service Settings**

**Lock**
You can restrict using VIERA Connect.
- PIN is required to change. (☞ 64)

**Automatic Volume Control**
Volume is adjusted automatically to the standard volume while using VIERA Connect.
- Depending on contents, this function will not work.
- Select “Off” when the audio is warped.

**Home Network Settings**
You can set the DLNA (Server) function. (☞ 54)

**Home Network function**
You can switch between enable/disable of the DLNA (Server) and DMR (Media Renderer) function.
- If “On” is selected, “Power Save in Standby” is fixed to “Off”. (☞ 73)

**Setting device name**
It is also possible to change the name of this unit on the network.
- Select from a preset list
  Select the preset name, then press [OK].
- Create name
  Enter the name.
  Refer to “Entering text”. (☞ 77)

**Registration type for remote devices**

- **Automatic:**
  All connected devices on the same network can access this unit.
- **Manual:**
  Only registered devices can access this unit.

**Remote device list**
- To register equipment manually
  1. Select the device name or the MAC Address for the device you want to register, then press [OK].
  2. Select “Yes”, then press [OK].
- To deregister equipment
  1. Select the registered equipment, then press [OK].
  2. Select “Yes”, then press [OK].

This function cannot be enabled when “Automatic” is selected in “Registration type for remote devices”. (☞ above)
- The maximum number of equipment that can be registered is 16.
Others

Standby Settings

Power Save in Standby
- On:
  It will go into the “Power Save in Standby” mode.
- On Timer:
  “Power Save in Standby” is activated when the set time comes.
  - If the clock has not been set, “Power Save in Standby” is activated at all hours.
- Off:
  It is possible to start quickly from standby mode. (Quick Start mode)

  • This function cannot be enabled when the DLNA function is enabled in “Home Network function”.
  (⇒ 72)
  • The setting may be changed to “Off” automatically when the setting for video communication is changed.
  (⇒ 61)

Automatic Standby
Set the time to turn the unit to standby mode automatically.
When the unit is not operating, the unit will be turned to standby mode once the set time has passed.
- When “REWIND LIVE TV” is set to “On” (⇒ 68), “Off” cannot be selected.

Automatic Standby after OTR
- On:
  This unit is turned to standby mode when it is not operated for approximately 5 minutes after completing “Automatic Stop” or “Recording Time” (⇒ 26).

Automatic Standby after Copy
- On:
  This unit is turned to standby mode when it is not operated for approximately 5 minutes after completing copy (⇒ 53).

RF OUT (Aerial Signal)
Set whether to output the aerial signal or not from RF OUT while in standby mode (When “Power Save in Standby” is activated).
- If “On” is selected, the aerial signal is output from this unit.

Remote Control
Change the remote control code on the main unit and the remote control if you place other Panasonic products close together.
- Use “Set Code1”, the factory set code, under normal circumstances.

1 Select the code, then press [OK].
2 While pressing [OK], press and hold the number button ([1] to [6]) for more than 5 seconds.
3 Press and hold [OK] for more than 5 seconds.
4 Press [OK].
- Operation is possible only with Panasonic remote controls with “IR6” printed at the bottom when the remote control code of this unit is set to “Set Code 4”, “Set Code 5” or “Set Code 6”.

HDD RECORDER IR6
Changing the unit’s settings (Setup)

Clock
If the time is not set correctly, use the settings listed in the method below.
• Automatic
  This unit usually obtains time and date information from digital broadcasts.
• Region Selection
  Select the region where you live to adjust the standard time.
  • The time contained in the broadcast signal is UTC (Universal time, coordinated).
• Daylight Saving Time
  Select time offset from the standard time for Summer Time.
  • If there is a gap between displayed time and actual time, set this function.
• Manual Setting
  1 Select “Off” of “Automatic”, then press [OK].
  2 Select the item you want to change.
  3 Change the setting.
  4 Press [OK] when you have finished the settings.

PIN Entry
You can set/change the PIN for parental control.
1 Enter your 4-digit PIN with the number buttons.
2 Enter the new 4-digit PIN with the number buttons.
• Make a note of PIN in case you forget it.
  e.g.,
3 Press [OK].

System Update

Software Update in Standby
When you set this unit to standby mode, software (firmware) updates (⇒ 76) are downloaded automatically at the time you have specified.

Software Update Now (Broadcast)
Refer to ”Software (Firmware) Update”. (⇒ 76)

Software Update Now (Internet)
Refer to ”Software (Firmware) Update”. (⇒ 76)

Software Licence
Information about the software licence is displayed.

System Information
Display software (firmware) version, HDAVI Control version and Wireless Module version (When using wireless connection only) of this unit.

DivX Registration
You need this registration code to purchase and play DivX Video-on-Demand (VOD) content.
• After playing DivX VOD content for the first time, the registration code is not displayed.
• If you purchase DivX VOD content using a registration code different from this unit’s code, you will not be able to play this content.
• To cancel the unit’s registration
  Select “Yes”.
  Use the deregistration code to cancel the registration in www.divx.com.
Initialize

Shipping Condition
All the settings except for basic settings return to the factory preset. The timer recording programmes are also cancelled.

Default Settings
All the settings other than the tuning settings, clock settings, rating PIN, remote control code, etc. return to the factory presets.
Software (Firmware) Update

You cannot operate the unit until the update is complete. Don’t remove the AC mains lead during the update. Removing the AC mains lead while the update is in progress may damage the unit.

Software of this unit can be updated automatically by the following methods at the specified time. (Default setting is 3 a.m. ⇒ 74, Software Update in Standby)
- From broadcasts
- From Internet*

- To update the software (Firmware) immediately, use the following function:
  - Software Update Now (Broadcast): Software of this unit will be updated from broadcasts if update information is detected.
  - Software Update Now (Internet)*: Software of this unit will be updated from Internet if update information is detected.

* Network connection and setting are required. (⇒ 16, 19)

If a software (firmware) update is available, a notification is displayed.

New software version has been found. The software will be updated automatically after this unit is switched to standby. Do not disconnect the AC mains lead.

- It is displayed on the channel information (⇒ 23) when the Software (Firmware) can be updated immediately.

e.g.,

To execute, press the red button while the channel information is displayed, and follow the instructions on the screen.

Update of the software (firmware) will start when the unit is turned to standby mode.

The unit’s display during the update

e.g.,

- When “FINISH” is displayed, update of the software (firmware) has completed.

- It may take up to a few hours until the update is completed depending on the network or broadcast environment.
- The timer recording always takes preference over the software (Firmware) download; if the timer recording is scheduled to start, the downloading will be performed at the next opportunity.
- You can also download the latest software (firmware) from the following website.
  http://panasonic.jp/support/global/cs/
Other operations

Entering text

Preparation
- Show the “Enter Title Name” screen, etc.

1. Select a character, then press [OK].
   Repeat this step to enter other characters.
   e.g.,
   Name field: shows the text you have entered

2. Press [STOP] (Set).
   “Writing...” appears then the screen returns to the previous screen and so on.

To end partway
Press [RETURN]. (Text is not added.)

- If a name is long, parts of it may not be shown in some screens.

Switching the aspect ratio of the screen

When the image does not match the screen size of the TV, you can enlarge the image to fill the screen.

1. Press [OPTION].
2. Select “Aspect”, then press [OK].
3. Select the item, then press [OK].

Normal:
Normal output

Side cut:
The black bars on the right and left sides of the 16:9 image disappear and the image is enlarged.

Zoom:
The black bars on the top and bottom sides of the 4:3 image disappear and the image is enlarged.

- This function does not work when watching 3D programme and playing back 3D title or 3D photo.
- It may also be adjusted using the screen mode of the TV etc.
- The screen mode is switched to “Normal” in the following situations:
  - when you change the channel
  - when you start or end the playback of a title
  - when you switch the unit on or to standby mode.
- When “TV Aspect” (⇒ 70) is set to “Pan & Scan” or “Letterbox”, the “Zoom” effect is disabled.

HOLD function

The HOLD function deactivates all buttons on the unit and remote control.
Press and hold [OK] and [RETURN] simultaneously until “X HOLD” appears on the unit’s display.

To cancel the HOLD function
Press and hold [OK] and [RETURN] simultaneously until “X HOLD” disappears.
Troubleshooting

Troubleshooting guide

Before requesting service, make the following checks. If the problem still persists, consult your dealer for instructions.

Updating to the latest software (firmware) may solve the problem. (⇒ 76)

The followings do not indicate a problem with this unit:
• Regular HDD rotating sounds.
• Poor reception due to atmospheric conditions.
• Image disturbance during search.
• Interruptions in reception due to periodic broadcasting breaks.
• When you switch the unit on or to standby mode, there may be an unexpected sound.

The unit does not work.
• Check the connections. (⇒ 12)
• One of the unit’s safety devices may have been activated. Reset the unit as follows:
  1 Press [II] on the main unit to switch the unit to standby.
     • If the unit does not switch to standby, press [II] on the main unit for about 3 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.
  2 Press [II] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.

The unit is switched to standby mode automatically.
• ViERa Link has worked. (⇒ 60, Power off link)

The remote control does not work.
• The remote control and main unit are using different codes. Change the code on the remote control.

  Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. (⇒ 73)

  - Software (firmware) is updating when “UPD” is displaying on the unit’s display. Wait until the update is completed. (⇒ 76)
  - The HOLD function is activated. (⇒ 77)

Startup is slow.
• Startup takes time in the following situations:
  - The clock is not set.
  - Immediately after a power failure or the AC mains lead is connected.
  - When the “Power Save in Standby” is activated. (⇒ 73)

General operation

Unit’s display

Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. (⇒ 73)

• Software (firmware) is updating when “UPD” is displaying on the unit’s display. Wait until the update is completed. (⇒ 76)
• The HOLD function is activated. (⇒ 77)
Troubleshooting

Displays

“0:00” is flashing on the unit’s display.
• Set the clock. (⇒ 64, 74)

The clock does not display on the unit when switched to standby.
• The clock does not display when “Power Save in Standby” is activated. (⇒ 73)

TV screen and video

Screen size is wrong.
• Check the “TV Aspect” or “Aspect for 4:3 Video”. (⇒ 70)
• Adjust the aspect ratio setting on TV.
• If you connect to 4:3 TV, set “HDMI Video Format” to “576p/480p”. (⇒ 64, 71)

The black screen appears on the TV.
• This phenomenon may occur, depending on the TV setting, when “Power Save in Standby” is set to “Off”. Depending on the TV, this phenomenon may be prevented by reconnecting to a different HDMI input terminal.

TV reception is not displayed.
• Broadcast signals are not output from this unit’s RF OUT terminal. Select “On” in “RF OUT (Aerial Signal)”. (⇒ 64, 73)

Picture does not appear with the HD quality although HD setting was made.
• The pictures are output with 576p/480p depending on the title.

The screen changes automatically.
• If “Screen Saver” is set to “On”, the screen saver function will be activated when there is no operation for 5 minutes or more. (⇒ 70)

There is a lot of image lag when playing video.
• Set “HD optimizer” in the Picture menu to “Off”. (⇒ 63)
• Set “Audio Delay”. (⇒ 64, 70)

The images do not appear on the TV.
The picture is distorted during play, or video will not play correctly.
• Check the connections. (⇒ 12)
• Check the settings of the connected TV, etc.
• An incorrect resolution is selected in “HDMI Video Format”. Reset the setting as follows:
  1. While the unit is on, press and hold [OK], the yellow button and the blue button at the same time for more than 5 seconds.
  2. “00 RET” is displayed on the unit’s display.
  3. Repeatedly press [▶] (right) until “04 PRG” is displayed on the unit’s display.
  4. Press and hold [OK] for at least 3 seconds. Set the item again. (⇒ 64, 71)
  • When audio is not output properly, select “Yes” in “Default Settings” and make proper settings. (⇒ 64, 75)

• Picture may not be seen when more than 4 devices are connected with HDMI cables.
  Reduce the number of connected devices.
• The picture may be distorted or a black screen may appear between scenes recorded with different aspect ratios.
• Set “Deep Colour Output” (⇒ 64, 71) or “Contents Type Flag” (⇒ 64, 71) to “Off”.

Picture may not be seen when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.
• The picture may be distorted or a black screen may appear between scenes recorded with different aspect ratios.
• Set “Deep Colour Output” (⇒ 64, 71) or “Contents Type Flag” (⇒ 64, 71) to “Off”.

Displays
Troubleshooting

3D video is not output correctly.
• 3D video may be output correctly by changing the following settings:
  - “3D Type” of “3D Settings” (⇒ 70)
  - “Signal Format” (⇒ 37, 3D settings during playback)
  - Check the settings of the connected TV.
• When a non-3D compatible amplifier/receiver is connected between this unit and a TV, 3D video is not output. (⇒ 14)
• When the amplifier/receiver which is connected between this unit and a TV is off, 3D video is not output. (⇒ 14)
• When “HDMI Audio Output” is set to “Off”, 3D video may not be output correctly. (⇒ 71)

The same video is displayed in each left and right half of the screen.
• This is a 3D programme of the Side-by-Side type.
  Change the setting as follows if connecting with a 3D compatible TV:
  1 Press [OPTION].
  2 Select “3D Settings”, then press [OK].
  3 Select “Side by side” in “Signal Format”, then press [OK].

Sound

No sound.
Distorted sound.
• Check the connections. (⇒ 12)
• Check the settings of the connected TV, etc.
• Press [AUDIO] to select the audio. (⇒ 24, 36)
• To output audio from a device connected with an HDMI cable, set “HDMI Audio Output” to “On”. (⇒ 64, 71)

Cannot change audio channel.
• You cannot change the audio channel if “Digital Audio Output” is set to “Bitstream” (⇒ 69)

Recording, timer recording and copying

Cannot record.
Cannot copy.
• Some broadcasts are copyright protected.

Timer recording does not work properly.
• Failed timer recordings are displayed in grey with [ ] on the Timer Recording screen. (⇒ 30)
  When you programme a timer recording, check the screen icons. If “!” is displayed, this timer programme may not be recorded because:
  - there is not enough space left.
  - the number of possible titles has reached its maximum.
  - programmes are deactivated, etc.

Auto Renewal Recording does not work properly.
• The programme will not be overwritten in the following cases:
  - the programme is protected
  - any programme is being played back or copied
  - a screen such as DIRECT NAVIGATOR is displayed
  Instead, the programme will be saved as a separate programme and that will be overwritten.

A part or whole of a recorded title has been lost.
• If there is a power failure or the AC mains lead is disconnected from the household mains socket while recording or editing, the title may be lost or the HDD may become unusable. We cannot offer any guarantee regarding lost programmes.
Troubleshooting

Play

You have forgotten your rating PIN.
- The rating level returns to the factory preset.
  
  1. While the unit is on, press and hold [OK], the yellow button and the blue button at the same time for more than 5 seconds.
     - "00 RET" is displayed on the unit's display.
  
  2. Repeatedly press [▶] (right) until "03 VL" is displayed on the unit's display.
  
  3. Press [OK].
     - "INIT" is displayed on the unit's display.

Image for the Quick View is not smooth.
- Image may not be played back smoothly in case of High definition titles.

Edit

Cannot edit.
- You may not be able to edit on the HDD if there is no available space. Delete any unwanted titles to create empty space. (☞ 38)

Photo

The contents of the SD card cannot be read.
- Remove the card from the slot and then insert again. If this does not solve the problem, switch the unit to standby mode and turn it on again.

Copying, deleting and setting protection takes a long time.
- When there are a lot of folders and files, it may sometimes take a long time.

Photos do not play back normally.
- The images that were edited on the PC, such as Progressive JPEG, etc., may not play back. (☞ 88)

USB

This unit does not recognize the USB device correctly.
- If USB device is connected to this unit while using a video communication the USB device will not be recognized. Press [EXIT] and reconnect USB device.
- If inserted during playback the USB device may not be recognized by this unit. Disconnect and reconnect the USB device. If it still does not recognize the connection, switch the unit to standby mode and turn it on again.
- USB devices connected using a USB extension cable other than a dedicated one or a USB hub may not be recognized by this unit.

TV Guide

The TV Guide information is not displayed properly.
- Set the clock correctly. (☞ 64, 74, Clock)
- Some broadcast may not send programme information.
- There was a programme change, or TV Guide information from a broadcast station was possibly not correctly transmitted.
- If signal quality is bad, the TV Guide system may not be able to receive any data.
Troubleshooting
guide

Troubleshooting

Broadcast

Picture regularly breaks up on some channels.
• Adjust the aerial reception with “Manual Tuning”. (64, 67)

Problem
Picture very infrequently breaks up on some or all channels.
• Electrical atmospheric interference caused by bad weather may cause pictures to break up and audio to mute or distort momentarily.

VIERA Link

VIERA Link does not work.
• Some functions may not work depending on the version of “HDAVI Control” of the connected TV, etc. This unit supports “HDAVI Control 5” functions.
• Check the settings of the connected TV, etc.
• If the connection for the equipment connected with HDMI was changed, or if there was a power failure or the plug was removed from the household mains socket, “HDAVI Control” may not work. In this case, change TV (VIERA) setting for “HDAVI Control” again.
• This unit does not support “ONE TOUCH PLAY” function of the Panasonic AV Control Receiver.

Network

You cannot access this unit from DLNA compatible equipment on the network.
• Check the network connection and the network settings. (16, 19)
• It may not be possible to connect depending on the types of the equipment or the status of the equipment.

You cannot play contents properly from DLNA compatible equipment on the network.
• There may be some video that cannot be played back on DLNA compatible equipment depending on the equipment.
• Following titles cannot be played back:
  - A title with access restriction
  - A title with audio only format
  - A title with incompatible format
• Playback via DLNA compatible equipment may not be performed when this unit is in the following conditions:
  - While simultaneously copying and recording
  - While displaying the Setup menu
  - While executing functions using a network, such as “VIERA Connect”
• You cannot play back simultaneously from two or more items of DLNA compatible equipment.

When using Wireless LAN connection, video from the DLNA Certified media server is not played back or video frames are dropped during playback.
• Use 802.11n (2.4 GHz) Wireless router. Simultaneous use with a microwave, cordless telephone etc. at 2.4 GHz may result in connection interruptions or other problems.
• On the “Wireless Settings” screen (71), the continuous lighting of at least four “Reception” indicators is the target for a stable connection. If three or fewer indicators are lit or the connection is being interrupted, change the position or angle of your Wireless router. If there is no improvement, connect to a wired network and perform the “Easy Network Setting” (19) again.
Troubleshooting

**Reset**

**To return all the settings to the factory preset**
Perform “Shipping Condition” or “Default Settings”. (⇒ 64, 75)

**Messages on the unit’s display**

The following messages or service numbers appear on the unit’s display when something unusual is detected.

**SET □**
(“□” stands for a number.)
The remote control and main unit are using different codes. Change the code on the remote control. (⇒ 78)

**GUIDE**
TV Guide data is being downloaded.

**HARD ERR**
If there is no change after switching the unit to standby mode and turning it on, consult the dealer.

**PLEASE WAIT**
- Displayed when the unit is started and is switched to standby mode.
- There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. Wait until the message disappears.

**PROG FULL**
There are already 32 timer programmes. Delete unnecessary timer programmes. (⇒ 30)
Troubleshooting guide

**REMOVE**
The USB device is drawing too much power. Remove the USB device.

**START**
Update of the software (firmware) is started. You cannot operate the unit until the update is complete. (⇒ 76)

**SW-DL**
Software (firmware) is downloading. Download will stop when the unit is turned on, or the timer recording starts. (⇒ 76)

**UNSUPPORT**
The media is not supported.

**UPD □□**
("□" stands for a number.)
The software (firmware) is being updated. You cannot operate the unit until the update is complete. (⇒ 76)

**U59**
The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Do not block the cooling fan on the rear of the unit.

**U61**
A malfunction has occurred. The unit is trying to restore to the normal operation. Once the message disappears you can use the unit again. If it remains displayed, consult the dealer.

**H□□ or F□□**
("□" stands for a number.)
There is something unusual. (The service number displayed after H and F depends on the unit’s condition.)
Reset the unit as follows:
1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it.
2. Press [□/□] to turn the power on. (The unit may be fixed.)
Request service from the dealer. Inform the dealer of the service number when requesting service.

**U76**
HDMI cannot be output because it is connected to a model that does not support copyright protection.

**U99**
The unit fails to operate properly. Press [□/□] on the main unit to switch the unit to standby mode. Now press [□/□] on the main unit again to turn the unit on.

**X HOLD**
The HOLD function is activated. (⇒ 77)
When you experience problems with Easy Network Setting

If there is any problem, the following message is displayed on the screen.

### Wireless Settings

<table>
<thead>
<tr>
<th>Display</th>
<th>Check the following</th>
</tr>
</thead>
<tbody>
<tr>
<td>A conflict with other devices occurred.</td>
<td>• Please wait a few moments, and then try again.</td>
</tr>
</tbody>
</table>
| A time out error occurred. | • Setting of the Wireless router for MAC Address etc.  
• The signal may be weak.  
• The SSID and the encryption key of the Wireless router.  
• Please wait a few moments, and then try again. |
| An authentication error or a time out error occurred. | • If the problem is not solved, consult your dealer. |

### Easy Network Setting (Home Network Connection Check)

<table>
<thead>
<tr>
<th>Display</th>
<th>Check the following</th>
</tr>
</thead>
</table>
| 1. LAN cable connection or Wireless setting: "Fail" | • Connection of the LAN cables (⇒ 16)  
• Settings of the hub and router |
| 2. IP address setting: "Fail" | |
| 3. Connection to gateway: "Fail" | |
| 1. LAN cable connection or Wireless setting: "Pass" | • Connection and settings of the hub and router  
• Settings of "IP Address / DNS Settings" (⇒ 64, 72) |
| 2. IP address setting: "Pass" | |
| 3. Connection to gateway: "Fail" | |
| 1. LAN cable connection or Wireless setting: "Pass" | • Home network available" |
| 2. IP address setting: "Home network available" | |
| 3. Connection to gateway: "Fail" | |
Troubleshooting guide

Easy Network Setting (Internet Connection Test)

<table>
<thead>
<tr>
<th>Display</th>
<th>Check the following</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot find the server. (B019)</td>
<td>• “Primary DNS” and “Secondary DNS” settings of “IP Address / DNS Settings” (64, 72)</td>
</tr>
</tbody>
</table>
| No connection could be made to the server. (B020) | • The server may be busy or the service may have been suspended. Please wait a few moments, and then try again.  
  • Settings of “Proxy Server Settings” (64, 72) and the router. |
Specifications

Specifications are subject to change without notice.

- **General**
  - Dimensions: 430 mm (W) 59 mm (H)
  - (excluding the projecting parts) 238 mm (D)
  - (including the projecting parts) 249 mm (D)
  - Mass: Approx. 2.4 kg
  - Power supply: AC 220 to 240 V, 50 Hz
  - Power consumption: Approx. 25 W
    - “Power Save in Standby” is activated and “RF OUT (Aerial Signal)” is set to “Off” Approx. 0.2 W
    - “Power Save in Standby” is not activated Approx. 4 W
  - Operating temperature: 5 °C to 40 °C
  - Operating humidity range: 10 % to 80 % RH (no condensation)

- **TV system**
  - Tuner System: DVB-T
  - Country: Australia
  - Channel Coverage: VHF 6~12 UHF 27~69

- **Recording system**
  - Video: MPEG-2, MPEG-4 AVC/H.264
  - Audio: Dolby Digital (DR mode: Max 5.1ch (DVB-T)) HE-AAC (DR mode: 2ch (DVB-T)) MPEG (DR mode: 2ch)

- **Video**
  - Video system: PAL/NTSC
  - Analog video output (pin jack): 1 pc.
    - Output level: 1 Vp-p (75 Ω)

- **Audio**
  - Analog audio L/R out (pin jack): 1 pc.
    - Output level: Full scale 2.0 Vrms at 1 kHz (< 1 kΩ)
    - Digital audio out (optical): 1 pc.
    - Output format: PCM, Dolby Digital, MPEG

- **HDMI terminal**
  - HDMI output (19 pin type A): 1 pc.
    - Output format: PCM, Dolby Digital, MPEG, Dolby Digital Plus
    - This unit supports “HDAVI Control 5” function.

- **Internal HDD capacity**
  - 1 TB

- **Other terminals**
  - USB Port (Type A): 2 pcs.
  - SD Card Slot: 1 pc.
  - LAN (Ethernet) Port: 1 pc.
    - 10BASE-T/100BASE-TX

- **Wireless LAN**
  - Standard compliance: IEEE802.11b/g/n
  - Frequency range: 2.4 GHz band
  - Security*: WPA™/WPA2™ (Encryption type: TKIP/AES, Authentication type: PSK)
    - WEP (64 bit/128 bit)
  - This unit supports WPA™ and WPA2™ encryption.

---

<ref>Reference</ref>
Specifications

- **SD Card**
  - Compatible media: SD Memory Card
  - Format: FAT12, FAT16, FAT32, exFAT
  - Data that can be played: JPEG, MPO, AVCHD format, MPEG-2, MP4

  Includes SDHC/SDXC cards.
  Includes miniSD™ cards (need a miniSD™ adaptor).
  Includes microSD™/microSDHC™/microSDXC™ cards (need a microSD™ adaptor).

- **USB device**
  - USB standard: USB2.0 High Speed
  - Format: FAT12, FAT16, FAT32
  - Data that can be played: MP3, JPEG, MPO, DivX, MKV, MP4, MPEG-2

Information for the files other than recorded programmes

- **JPEG/MPO**
  - Playable media: HDD, SD Card, USB device
  - Compatible pixels: Between 34×34 and 8192×8192 pixels (Sub sampling is 4:2:2 or 4:2:0)
  - Files: JPEG conforming DCF (Design rule for Camera File system), MPO conforming MPF (Multi Picture Format)

Maximum numbers of folders and files:

<table>
<thead>
<tr>
<th>Media</th>
<th>Maximum folders</th>
<th>Maximum files</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD</td>
<td>~</td>
<td>20000</td>
</tr>
<tr>
<td>SD Card</td>
<td>500</td>
<td>10000</td>
</tr>
<tr>
<td>USB device</td>
<td>500</td>
<td>10000</td>
</tr>
</tbody>
</table>

- This unit is not compatible with Motion JPEG or Progressive JPEG.

About recorded titles

- **Recording quality and approximate recording times**
  - Depending on the content being recorded, the recording time may become shorter than indicated.

<table>
<thead>
<tr>
<th>Recording quality</th>
<th>Approximate recording time</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD quality</td>
<td>140 hours</td>
</tr>
<tr>
<td>SD quality</td>
<td>264 hours</td>
</tr>
</tbody>
</table>

- Recording time may vary depending on the bit rate of broadcasting:
  - High Definition (HD) quality: estimated bit rate is 15 Mbps
  - Standard Definition (SD) quality: estimated bit rate is 8 Mbps

- Regarding recording time remaining:
  - Remaining time is calculated with a bit rate of 15 Mbps. But the bit rate differs depending on the broadcast, so the displayed remaining time might be different from the actual remaining time.

- **Maximum number of titles that can be recorded**
  - 999 titles
  - (When continuously recording for long durations, titles are automatically divided every 8 hours.)
**MP3**

**Playable media:** HDD, USB device  
**Compression rate:** 32 kbps to 320 kbps  
**Sampling rate:** 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz  
Max. number of folders/file:  

<table>
<thead>
<tr>
<th>Media</th>
<th>Maximum folders</th>
<th>Maximum files</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD</td>
<td></td>
<td>40000</td>
</tr>
<tr>
<td>USB device</td>
<td>300</td>
<td>3000</td>
</tr>
</tbody>
</table>

**DivX**

**Playable media:** USB device  
**Official DivX Certified® product**  
**DivX Certified to play DivX video up to HD 1080p, including premium content. GMC (Global Motion Compensation) is not supported.**  
Max. number of folders: 300 folders (including the root folder)  
Max. number of files: 200 files

- **Support version**
  - Picture resolution:  
    - Up to 1920×1080 pixels
  - Video:  
    - Number of streams: Up to 1  
    - Codec: DIV3, DIV4, DIVX, DV50, DIV6
  - Audio:  
    - Number of streams: Up to 8  
    - Format: MP3, MPEG, Dolby Digital
    - Multi channel: Dolby Digital is possible. MPEG multi is 2 ch conversion.

**MP4**

**Playable media:** SD Card, USB device  
**MPEG-4 AVC/H.264:**  
**Video resolution:** Up to 1920×1080  
**MPEG-4 AAC-LC**  
**Sampling rate:** 8 kHz to 48 kHz  
**Number of audio channel:** 1 or 2

**MKV**

**Playable media:** USB device  
**MPEG-4 AVC (H.264) profile is up to High Profile, Level 4. AAC-LC, MP3, Dolby Digital audio, PCM, Vorbis and FLAC can be decoded.**  
Max. number of folders: 300 folders (including the root folder)  
Max. number of files: 200 files

**SD-Video (Standard Definition)**

**Playable media:** SD Card, USB device  
**Codec:** MPEG-2  
**File Format:** SD-Video format*  
= SD-Video Entertainment Video Profile

**HD-Video (High Definition)**

**Playable media:** SD Card, USB device  
**Codec:** MPEG-4 AVC/H.264  
**File Format:** AVCHD format conforming
## Licenses

<table>
<thead>
<tr>
<th>License Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
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<td>DLNA, the DLNA Logo and DLNA CERTIFIED</td>
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</tr>
<tr>
<td>DVB and the DVB logos</td>
<td>Are trademarks of the DVB Project.</td>
</tr>
<tr>
<td>Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol</td>
<td>Are trademarks of Dolby Laboratories.</td>
</tr>
<tr>
<td>MPEG Layer-3 audio coding technology licensed from Fraunhofer IIS and Thomson.</td>
<td></td>
</tr>
<tr>
<td>This product is licensed under the AVC patent portfolio license and VC-1 patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC Standard and VC-1 Standard (“AVC/VC-1 Video”) and/or (ii) decode AVC/VC-1 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC/VC-1 Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, LLC.</td>
<td>See <a href="http://www.mpegla.com">http://www.mpegla.com</a>.</td>
</tr>
<tr>
<td>This item incorporates copy protection technology that is protected by U.S. patents and other intellectual property rights of Rovi Corporation. Reverse engineering and disassembly are prohibited.</td>
<td></td>
</tr>
<tr>
<td>SDXC Logo</td>
<td>Is a trademark of SD-3C, LLC.</td>
</tr>
<tr>
<td>Skype, associated trade marks and logos and the “Skype” logo</td>
<td>Are trade marks of Skype Limited.</td>
</tr>
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<td>VIERA Connect is a trademark of Panasonic Corporation.</td>
<td>The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance. The Wi-Fi Protected Setup Mark is a mark of the Wi-Fi Alliance.</td>
</tr>
<tr>
<td>“Wi-Fi”, “Wi-Fi Protected Setup”, “WPA” and “WPA2”</td>
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</tr>
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<td>HDAVI Control™</td>
<td>Is a trademark of Panasonic Corporation.</td>
</tr>
<tr>
<td>HDMI, the HDMI Logo, and High-Definition Multimedia Interface</td>
<td>Are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.</td>
</tr>
<tr>
<td>Windows</td>
<td>Is a trademark or a registered trademark of Microsoft Corporation in the United States and other countries.</td>
</tr>
</tbody>
</table>
This product incorporates the following software or technology:
(1) the software developed independently by or for Panasonic Corporation,
(2) the software owned by third party and licensed to Panasonic Corporation,
(3) the software developed by the Independent JPEG Group,
(4) the software developed by the Freetype Project,
(5) the software licensed under the GNU LESSER General Public License (LGPL) and/or,
(6) open sourced software other than the software licensed under the LGPL,
(7) Windows Media digital right management technology (WM-DRM) licensed by Microsoft Corporation or its affiliates.

For the software categorized as (5), please refer to the terms and conditions of LGPL, as the case may be at http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html
In addition, the software categorized as (5) are copyrighted by several individuals. Please refer to the copyright notice of those individuals at http://panasonic.net/avc/oss/diga/FCRCP12.html

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At least three (3) years from delivery of products, Panasonic will give to any third party who contacts us at the contact information provided below, for a charge no more than our cost of physically performing source code distribution, a complete machine-readable copy of the corresponding source code covered under LGPL.

Contact Information
  cdrequest.diga@gg.jp.panasonic.com

Source code covered under LGPL is also freely available to you and any other member of the public via our website below.
http://panasonic.net/avc/oss/diga/FCRCP12.html

For the software categorized as (5) and (6), please refer to the applicable license terms included in the "Software Licence" menu on product.

Further, for WM-DRM categorized as (7), please be aware of the following.
(a) This product is protected by certain intellectual property rights of Microsoft.
Use or distribution of this technology outside of this product is prohibited without a license from Microsoft or an authorized Microsoft subsidiary.
(b) Content providers are using the digital rights management technology for Windows Media contained in this device ("WM-DRM") to protect the integrity of their content ("Secure Content") so that their intellectual property, including copyright, in such content is not misappropriated. This device uses WM-DRM software to play Secure Content ("WM-DRM Software"). If the security of the WM-DRM Software in this device has been compromised, owners of Secure Content ("Secure Content Owners") may request that Microsoft revoke the WM-DRM Software’s right to acquire new licenses to copy, display and/or play Secure Content. Revocation does not alter the WM-DRM Software’s ability to play unprotected content. A list of revoked WM-DRM Software is sent to your device whenever you download a license for Secure Content from the Internet or from a PC. Microsoft may, in conjunction with such license, also download revocation lists onto your device on behalf of Secure Content Owners.

Vorbis, FLAC, WPA Supplicant
The software licenses are displayed when "Software Licence" in the Setup menu is selected. (⇒ 74)
Limited Warranty

Panasonic Warranty

1. The product is warranted for 12 months from the date of purchase. Subject to the conditions of this warranty Panasonic or its Authorised Service Centre will perform necessary service on the product without charge for parts or labour, if in the opinion of Panasonic, the product is found to be faulty within the warranty period.

2. This warranty only applies to Panasonic products purchased in Australia and sold by Panasonic Australia or its Authorised Distributors or Dealers and only where the products are used and serviced within Australia or its territories. Warranty cover only applies to service carried out by a Panasonic Authorised Service Centre and only if valid proof of purchase is presented when warranty service is requested.

3. This warranty only applies if the product has been installed and used in accordance with the manufacturer’s recommendations (as noted in the operating instructions) under normal use and reasonable care (in the opinion of Panasonic). The warranty covers normal domestic use only and does not cover damage, malfunction or failure resulting from use of incorrect voltages, incorrect installation, accident, misuse, neglect, build-up of dirt or dust, abuse, maladjustment of customer controls, mains supply problems, thunderstorm activity, infestation by insects or vermin, tampering or repair by unauthorised persons (including unauthorised alterations), introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, exposure to abnormally corrosive conditions or any foreign object or matter having entered the product.

4. This warranty does not cover the following items unless the fault or defect existed at the time of purchase:
   (a) Cabinet Part(s)
   (b) Video or Audio Tapes
   (c) SD cards or USB devices
   (d) User replaceable Batteries
   etc

5. Some products may be supplied with Ethernet connection hardware. The warranty is limited on such products and will not cover:
   (a) Internet and or DLNA connection / setup related problems
   (b) Access fees and or charges incurred for internet connection
   (c) The use of incompatible software or software not specifically stipulated in the product operations manual;
   and
   (d) Any indirect or consequential costs associated with the incorrect use or misuse of the hardware, its connection to the internet or any other device.

6. To claim warranty service, when required, you should:
   • Telephone Panasonic’s Customer Care Centre on 132600 or visit our website referred to below and use the Service Centre Locator for the name/address of the nearest Authorised Service Centre.
   • Send or take the product to a Panasonic Authorised Service Centre together with your proof of purchase receipt as a proof of purchase date. Please note that freight and insurance to and/or from your nearest Authorised Service Centre must be arranged by you.
   • Note that home or pick-up/delivery service is available for the following products in the major metropolitan areas of Australia or the normal operating areas of the nearest Authorised Service Centres:
     - Plasma/LCD televisions / displays (screen size greater than 103 cm)
   7. The warranties hereby conferred do not extend to, and exclude, any costs associated with the installation, de-installation or re-installation of a product, including costs related to the mounting, de-mounting or remounting of any screen, (and any other ancillary activities), delivery, handling, freighting, transportation or insurance of the product or any part thereof or replacement of and do not extend to, and exclude, any damage or loss occurring by reason of, during, associated with, or related to such installation, de-installation, re-installation or transit.

Panasonic Authorised Service Centres are located in major metropolitan areas and most regional centres of Australia. However, coverage will vary dependant on product. For advice on exact Authorised Service Centre locations for your product, please telephone our Customer Care Centre on 132600 or visit our website and use the Service Centre Locator.

In addition to your rights under this warranty, Panasonic products come with consumer guarantees that cannot be excluded under the Australian Consumer Law. If there is a major failure with the product, you can reject the product and elect to have a refund or to have the product replaced or if you wish you may elect to keep the goods and be compensated for the drop in value of the goods. You are also entitled to have the product repaired or replaced if the product fails to be of acceptable quality and the failure does not amount to a major failure.

If there is a major failure in regard to the product which cannot be remedied then you must notify us within a reasonable period by contacting the Panasonic Customer Care Centre. If the failure in the product is not a major failure then Panasonic may choose to repair or replace the product and will do so in a reasonable period of time from receiving notice from you.
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Information on Disposal in other Countries outside the European Union

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

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