

# Panasonic®

## Operating Instructions Blu-ray Disc Recorder Model No. **DMR-BW880** **DMR-BW780**

**DIGA**  
Blu-ray



### Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully. Before connecting, operating or adjusting this product, please read the instructions completely. Please keep this manual for future reference.

**This Blu-ray Disc Recorder is for viewing and recording free to view channels only. It does not receive pay TV or encrypted channels.**



BONUS VIEW™



AVCHD™



HDMI



VIERA Link



DVB and the DVB logos are trademarks of the DVB Project.

### ■ Region management information

**BD-Video:** This unit plays BD-Video marked with labels containing the region code "B".

Example:



**DVD-Video:** This unit plays DVD-Video marked with labels containing the region number "2" or "ALL".

Example:



Web Site: <http://www.panasonic-europe.com>

Model number suffix "EB" denotes UK model.

EB

VQT2J65

## Features

- **Easy access to various functions (⇒ 15)**  
You can access the main function quickly and easily from FUNCTION MENU display.
- **DVB-T / DVB-T2 tuner built-in (⇒ 16)**  
This unit has two DVB (Digital Video Broadcasting) terrestrial tuners built-in.  
DVB-T2 is an advanced digital terrestrial system for more efficient transmission.
- **Supports Audio Description signal (⇒ 18)**  
Audio Description (when broadcast) adds an additional soundtrack to describe events on screen (narration) and aids understanding and enjoyment, particularly for visually-impaired viewers.
- **Record with High Definition (⇒ 21)**  
It is possible to record in high definition quality when the broadcast is high definition.
- **2 programmes Simultaneous Recording (⇒ 22)**  
It is possible to record 2 programmes being broadcasted at the same time.
- **Copy to Blu-ray Disc (⇒ 44)**  
It can record in high definition quality in addition to large volume recording.
- **VIERA CAST (⇒ 65)**  
Internet services (such as YouTube, Picasa Web Albums, etc.) can be accessed easily by using the VIERA CAST button.
- **DLNA (⇒ 66)**  
You can enjoy the video and still pictures saved on the HDD of this unit on DLNA compatible equipment connected via a network.
- **VIERA Link “HDAVI Control™” (⇒ 68)**  
Operation of this unit can be controlled by the remote control of the TV (VIERA) by connecting with the HDMI cable to the TV (VIERA).
- **Owner ID (⇒ 86)**  
Owner ID is an anti-theft function. Entering the PIN number and owner’s personal information will help the Police to determine the owner in the case of theft.

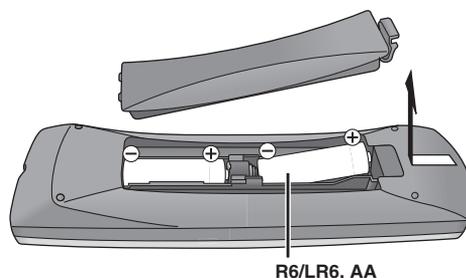
## Supplied accessories

Please check and identify the supplied accessories. (Product numbers correct as of March 2010. These may be subject to change.)

- 1 Remote control (N2QAYB000473)
- 2 Batteries for remote control
- 1 AC mains lead (K2CT2YY00003)
- 1 RF coaxial cable (K1TWACC00003)

## The batteries information

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



- Use alkaline or manganese batteries.
- 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 an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
- Do not take apart or short circuit.
- Do not attempt to recharge alkaline or manganese batteries.
- Do not use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

## Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

### CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13- AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.

If in any doubt please consult a qualified electrician.

### IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral, Brown: Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

**WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL  OR COLOURED GREEN OR GREEN/YELLOW.**

**THIS PLUG IS NOT WATERPROOF—KEEP DRY.**

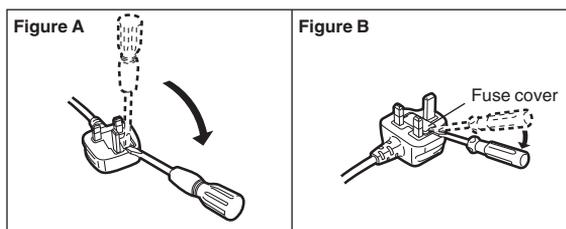
### Before use

Remove the connector cover.

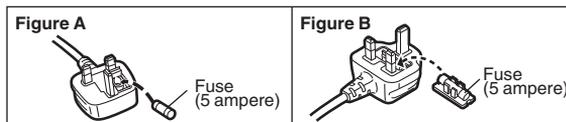
### How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below. Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



# Table of contents

## ■ Getting started

Features	2
Supplied accessories	2
The batteries information	2
Caution for AC Mains Lead	3
Control reference guide	6
Basic Connection	8
Network connection	10
Auto Setup	11
Easy setting	11
Network Easy Settings	13
Common Operations	14

## ■ Watching broadcasts

Watching broadcasts	16
Using Channel List	17
Channel information	17
Operations while watching broadcast	18
Using TV Guide system	19
REWIND LIVE TV/ PAUSE LIVE TV	20

## ■ Recording

Recording TV programmes	21
Operation during recording	22
Direct TV Recording	23
Timer recording	24
Various functions with Freeview+	26
Timer recording from channel information	27
Manual timer recording	28
To confirm and edit a timer programme	29
To cancel recording when timer recording has already begun	30
Notes on timer recording	30

## ■ Playing back video

Playing BD-Video or DVD-Video	31
Playing recorded video contents	33
Using the DIRECT NAVIGATOR (VIDEO)	34
Operation during play	36
Regarding DivX	38

## ■ Editing video

Deleting recorded video contents	39
Editing recorded video contents	40
Editing titles	40
To create/playback/edit the chapter	43

## ■ Copying video

Copying titles	44
Copying Title Playing	48
Copying HD Video (AVCHD format) from HDD	48
Copying a finalised disc	49

## ■ Still pictures

Playing still pictures	50
Start Slideshow	51
Still picture play option	51
Editing still pictures	52
Still pictures operation	53
Copying still pictures	54
Copying automatically	54
Copying using the copying list	54

## ■ Music

Playing music/Copying music to HDD	56
Playing music recorded on HDD	57
Operations during music play	58
Useful functions during music play	58
Editing music/playlist	59
Editing music	59
Album and track operation	59

## ■ With Other Equipment

Copying the HD Video or the SD Video	60
Copying HD Video (AVCHD format)	60
Copying SD Video (MPEG2 format)	61
Recording from external equipment	62
Recording from video equipment	62
Recording broadcasts from Set Top Box	64
Linked timer recording (SKY Digital STB, etc.)	64
-EXT LINK	64

## ■ Convenient functions

Enjoying VIERA CAST	65
DLNA feature	66
Linked operations with the TV (VIERA Link "HDMI Control™"/Q Link)	68
Playback menu	70
Disc and card management	72
Entering text	74
Changing the unit's settings	75
Common procedures	75
Tuning	75
HDD / Disc	78
Picture	80
Sound	80
Display	82
Connection	82
Network	84
Others	84
Software (Firmware) Update	87
Other Settings	88
Switching the aspect ratio of the screen	88
TV operation	88
HOLD function	88
Other Connections	89
Other TV connections	89
Amplifier connections	89

## ■ Troubleshooting

Messages on the unit's display .....	90
Troubleshooting guide .....	92
Power .....	92
Displays .....	92
TV screen and video .....	93
Sound .....	93
Operation .....	94
Recording, timer recording and copying .....	94
Play .....	95
Edit .....	96
Still pictures .....	96
Music .....	96
USB .....	96
TV Guide .....	96
Broadcast .....	97
VIERA Link .....	97
Network .....	97
To reset this unit .....	97

## ■ Reference

HDD and media information .....	98
Unit care .....	102
Media handling .....	103
Recording modes and recording contents .....	104
Operations that can be performed simultaneously .....	105
Audio information .....	106
Structure of folders displayed by this unit .....	107
Specifications .....	108
Licenses .....	113
Safety precautions .....	115
Glossary .....	116
Index .....	119

## Getting started

## Watching broadcasts

## Recording

## Playing back video

## Editing video

## Copying video

## Still pictures

## Music

## With Other Equipment

## Convenient functions

## Troubleshooting

## Reference

### About descriptions in these operating instructions

- These operating instructions are applicable to models DMR-BW880 and DMR-BW780. The illustrations in these Operating Instructions show images of DMR-BW880 unless otherwise indicated.

**BW880** :

indicates features applicable to DMR-BW880 only.

**BW780** :

indicates features applicable to DMR-BW780 only.

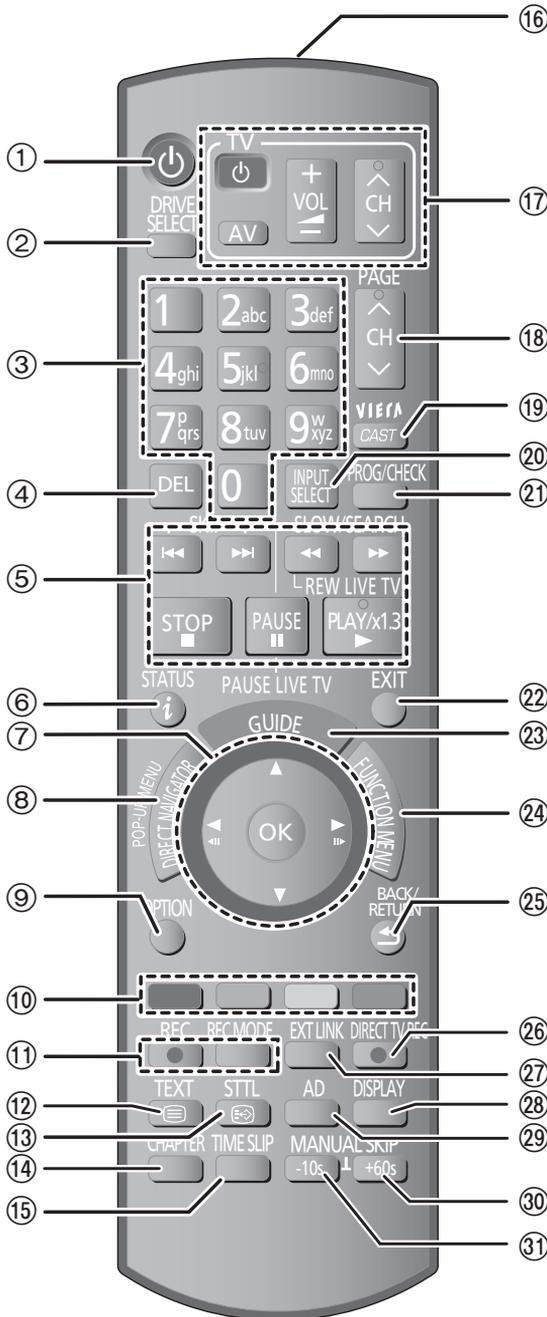
- Pages to be referred to are indicated as "⇒ ○○".

# Control reference guide

## Remote control

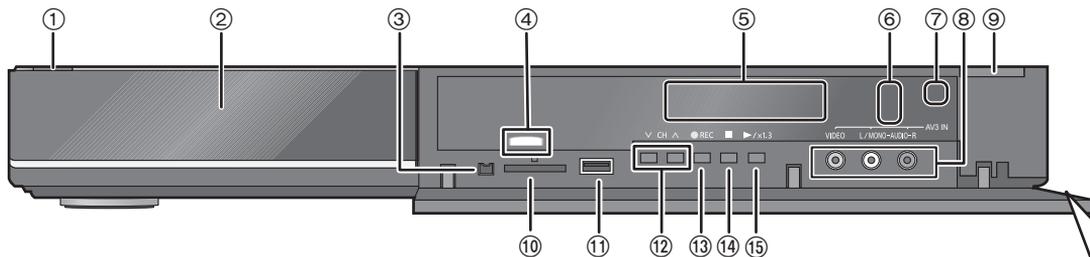
Instructions for operations are generally described using the remote control.

Getting started

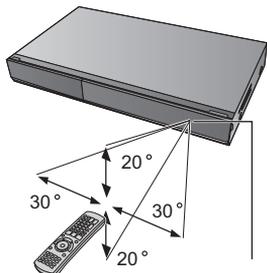


- ① Turn the unit on or off (⇒ 11, 14)
- ② Select drive (HDD, BD, SD or USB) (⇒ 14)
- ③ Select channels and title numbers, etc./Enter numbers or characters (The character buttons may be used when operating VIERA CAST contents.)
- ④ To delete unwanted recorded titles, timer programmes, still pictures or music (⇒ 39)
- ⑤ Basic operations for recording and play
- ⑥ Show channel information (⇒ 17)/Programme information within TV Guide screen (⇒ 19)/Show status messages (⇒ 37)/Show Information (⇒ 35)
- ⑦ Selection/OK, Frame-by-frame (⇒ 37)
- ⑧ Show DIRECT NAVIGATOR, Top menu, Pop-up Menu (⇒ 31, 34)
- ⑨ Show OPTION menu (⇒ 40, 52, 59)
- ⑩ Colour buttons  
Use in accordance with instruction on the screen.
- ⑪ Recording functions
- ⑫ Show digital text (⇒ 18)
- ⑬ Show subtitles (⇒ 18)
- ⑭ Create chapter (⇒ 43)
- ⑮ Skip the specified time (⇒ 37)
- ⑯ Transmit the remote control signal
- ⑰ TV operation area (⇒ 88)
- ⑱ Channel select (⇒ 16)/  
Change pages in the TV Guide system etc. (⇒ 19)
- ⑲ Show VIERA CAST (⇒ 65)
- ⑳ Input select (⇒ 16, 21, 62)
- ㉑ Show Timer Recording screen (⇒ 28)
- ㉒ Exit the menu screen
- ㉓ Show the TV Guide screen (⇒ 19)
- ㉔ Show FUNCTION MENU window (⇒ 15)
- ㉕ Return to previous screen
- ㉖ Direct TV recording (⇒ 23)
- ㉗ EXT LINK function (⇒ 64)
- ㉘ Show Playback menu (⇒ 70)
- ㉙ Listen to Audio Description (⇒ 18)
- ㉚ Skip approx. 1 minute forward (⇒ 36)
- ㉛ Skip approx. 10 seconds backward (⇒ 36)

## Main unit

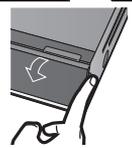


### Remote Control signal sensor



Distance: Within approx. 7 m in front of the unit

Pull to flip down the front panel.



#### ① Standby/on switch (⏻/⏻) (⇒ 11, 14)

Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

#### ② Disc tray (⇒ 14)

#### ③ Connection for digital video (DV) camcorder (⇒ 62)

#### ④ Blue LED

• It is possible to set the LED to turn on/off. (⇒ 82)

#### ⑤ Display (⇒ below)

#### ⑥ Recording indicator

#### ⑦ Remote control signal sensor (⇒ above)

#### ⑧ Connection for VCR, Panasonic's video camera, etc. (⇒ 62)

#### ⑨ Open/close disc tray (⇒ 14)

#### ⑩ SD card slot (⇒ 14)

#### ⑪ USB port (⇒ 14)

#### ⑫ Channel select (⇒ 16)

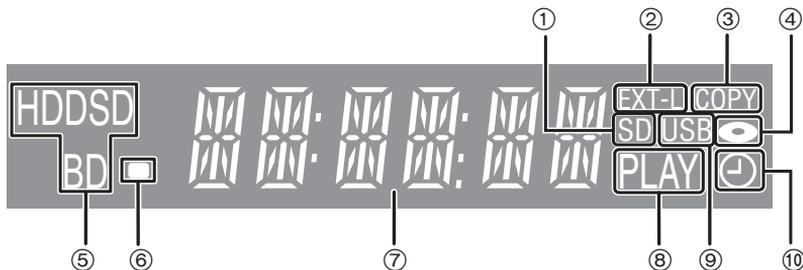
#### ⑬ Start recording (⇒ 21)/Specify a time to stop recording (⇒ 21)

#### ⑭ Stop

#### ⑮ Start play

Rear panel terminals (⇒ 8, 9, 10, 89)

## The unit's display



#### ① SD card slot indicator

#### ② EXT LINK indicator

#### ③ Copying indicator

#### ④ Disc indicator

#### ⑤ Drive (HDD, BD or SD) indicator

#### ⑥ Remote control signal indicator

#### ⑦ Main display section indicator

Current time/playback counter, various messages

#### ⑧ Playback indicator

#### ⑨ USB port indicator

#### ⑩ Timer recording indicator

This indicator lights up when the timer recording standby is activated.

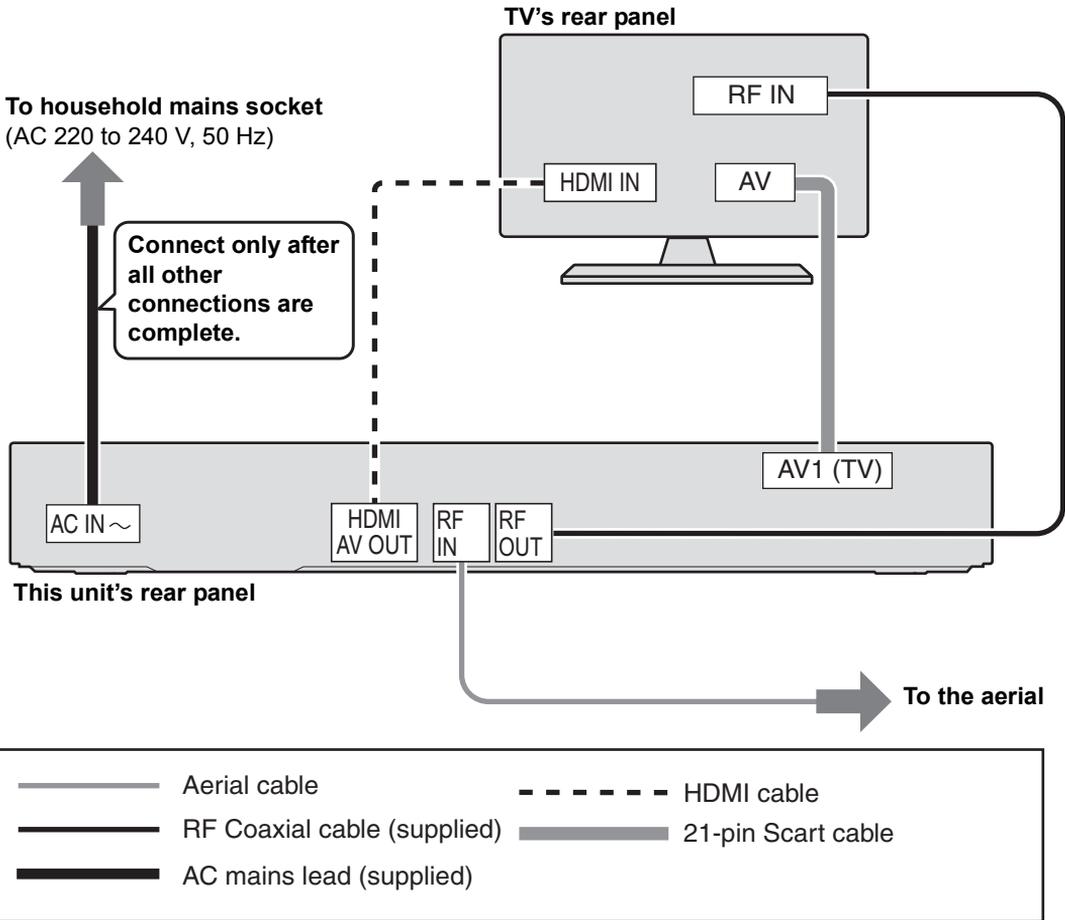
# Basic Connection

- Before connection, turn off all equipment and read the appropriate operating instructions.
- Other Connections (⇒ 89)

When connected to an HDMI compatible unit, you can enjoy high quality, digital video and audio.

- The HDMI connection supports VIERA Link "HDAVI Control" (⇒ 68).

**BE SURE TO READ THE CAUTION FOR AC MAINS LEAD ON PAGE 3**



## Required setting:

Set "HDMI Video Mode" and "HDMI Audio Output" to "On" (⇒ 83).  
(The default setting is "On".)

After completing the connections, proceed to Easy setting (⇒ 11).



- Keep the RF coaxial cables as far away as possible from other cables.
- Do not roll up the RF coaxial cables.

### About HDMI cable

- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When outputting 1080p signal, please use HDMI Cables 5.0 meters or less.
- Recommended Panasonic's HDMI cable part number:  
RP-CDHS15 (1.5 m), RP-CDHS30 (3.0 m), RP-CDHS50 (5.0 m), etc.



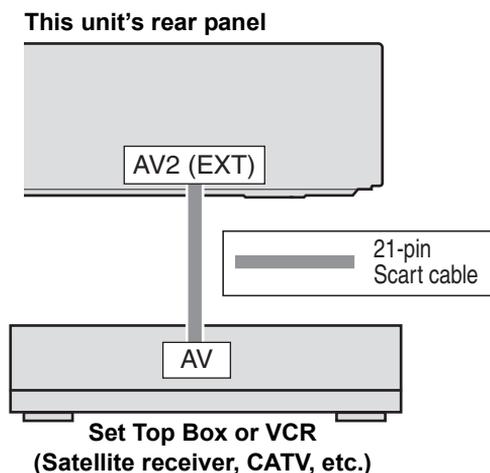
- If you connect a DVI device (PC monitors, etc.), we recommend the device compatible with HDCP (High-Band width Digital Content Protection):  
Depending on the device, images may not display properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)
- If you connect a DVI device that is not compatible with HDCP, set "HDCP on HDMI Output" to "Off" (⇒ 83).
- 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 (⇒ 116) and output as 2 channels, even if connecting with an HDMI cable. (Some discs cannot be down mixed.)

### About a 21-pin Scart cable

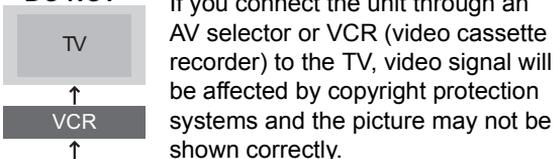
You can use a variety of Q Link functions by connecting the unit to a Q Link compatible TV.

- Set "AV1 Output" (⇒ 83)
- If the 21-pin Scart cable and HDMI cable are connected with a TV, you can use Direct TV Recording (⇒ 23) or PAUSE LIVE TV programme (⇒ 20) function when watching a programme via TV's tuner.

### When connecting the Set Top Box or VCR



#### DO NOT



#### Connect the unit directly to the TV

If you connect the unit through an AV selector or VCR (video cassette recorder) to the TV, video signal will be affected by copyright protection systems and the picture may not be shown correctly.

#### ● When connecting to a TV with a built-in VCR

Connect to the input terminals on the TV side if there are both TV and VCR input terminals.

### 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 it is turned off

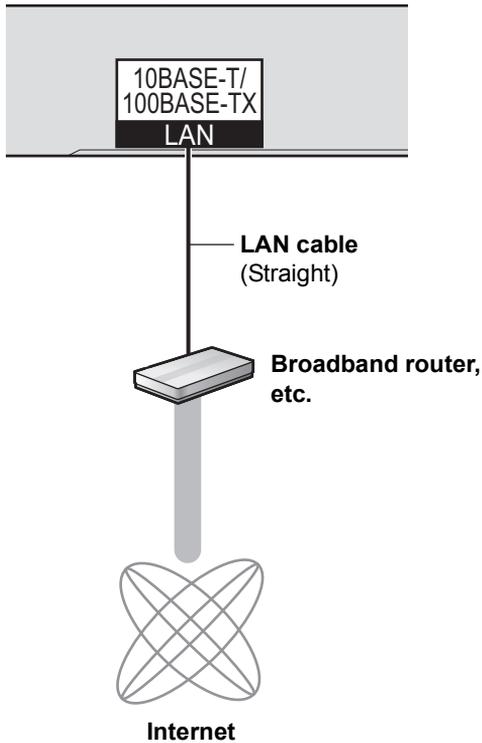
**[approx. 0.7 W (Power Save in Standby mode is activated)]**

## Network connection

Following functions will be available when this unit is connected to the network.

- Enjoying BD-Live discs with Internet (⇒ 31)
- Automatically acquiring the title of the CD (⇒ 56)
- Enjoying VIERA CAST (⇒ 65)
- DLNA function (⇒ 66)
- Updating the software (firmware) of this unit (⇒ 87)

### This unit's rear panel

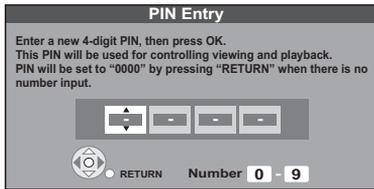


- Refer to the operating instructions for the connected device.
- Use only category 5 straight LAN cables (STP) when connecting to peripheral devices.
- Inserting any cable other than a LAN cable in the LAN terminal can damage the unit.
- Please be aware that if you connect to a network without encryption, a third party may illegitimately intervene and eavesdrop on the transmissions, and data such as personal information, confidential information etc. may be leaked.



**5** Press [BACK/RETURN ↵] to confirm.

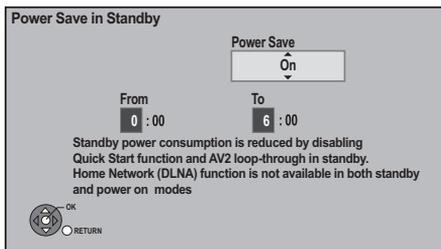
**6** Enter the new PIN.



- Make a note of PIN in case you forget it.
- The default PIN is "0000".

- ① Select the number, then press [▶].
- ② Repeat step ①.
- ③ Press [OK] twice.

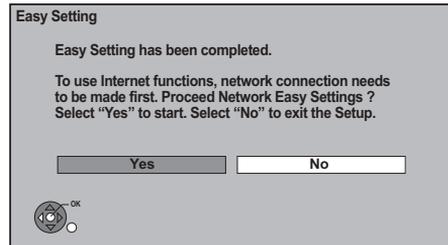
**7** Set "Power Save" to "On", "On Timer" or "Off", then press [OK].



<b>On</b>	Power consumption will be reduced to a minimum level in standby mode.
<b>On Timer</b>	Set period of power save and then press [OK]. • Power Save in Standby mode is activated at the set time period.
<b>Off</b>	It is possible to start quickly from the standby mode. (Quick Start mode) • If you use Home Network (DLNA) Function (⇒ 66), select "Off". This function is not available with other settings.

- Video from AV2 input cannot be viewed with this unit in standby mode when Power Save in Standby mode is activated.

When the following screen appears, Easy setting is complete.



- Select "Yes" to proceed to "Network Easy Settings". (⇒ 13)
- Select "No" to finish the Setup.

### To stop partway

Press [BACK/RETURN ↵].

### To restart set up

- 1 While stopped  
Press [FUNCTION MENU].
- 2 Select "Others", then press [OK].
- 3 Select "Setup", then press [OK].
- 4 Select "Auto Setup" in "Tuning", then press [OK].

### To display the Owner ID information on TV

Press and hold [■] on the main unit for more than 5 seconds.

The PIN is not displayed.

After 30 seconds this menu automatically disappears. You cannot change the Owner ID on this screen. You can perform this operation after step 6.

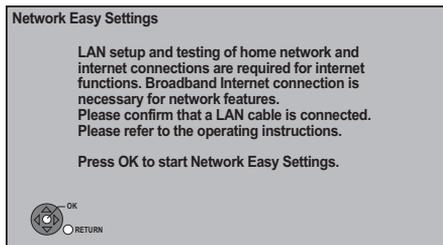
- To confirm the Channel List (⇒ 76, Channel List)
- To check the signal condition (⇒ 77, Signal Condition)
- To change PIN (⇒ 86, PIN Entry)
- To sort the Channel List by region (⇒ 76, Channel Sorting by Region)

## Network Easy Settings

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

### Follow the on-screen instructions and make the following settings.

- Network connection test
- Home Network (DLNA) function setting
- Internet connection test



When TV picture appears, Setup is complete.

### ■ When you experience problems with settings

#### • Network Easy Settings ( Connection Test )

Display	Check the following
1. LAN cable connection: “Fail” 2. IP address setting: “Fail” 3. Connection to gateway: “Fail”	• Connection of the LAN cables (⇒ 10)
1. LAN cable connection: “Pass” 2. IP address setting: “Fail” or “Home network available” 3. Connection to gateway: “Fail”	• Connection and settings of the hub and router • Settings of “IP Address / DNS Settings” (⇒ 84)
1. LAN cable connection: “Pass” 2. IP address setting: “Pass” 3. Connection to gateway: “Fail”	

#### • Network Easy Settings ( Internet Connection Test )

Display	Check the following
Cannot find the server. (B019)	• Network connections and settings • Settings of “IP Address / DNS Settings” (⇒ 84)
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” (⇒ 84)

#### To stop partway

Press [BACK/RETURN ⇐].

#### To restart Network Easy Settings

- 1 While stopped  
Press [FUNCTION MENU].
- 2 Select “Others”, then press [OK].
- 3 Select “Setup”, then press [OK].
- 4 Select “Network Easy Settings” in “Network”, then press [OK].

#### To redo settings individually

- 1 While stopped  
Press [FUNCTION MENU].
- 2 Select “Others”, then press [OK].
- 3 Select “Setup”, then press [OK].
- 4 Select “Network Settings” in “Network”, then press [OK].
- 5 Select “IP Address / DNS Settings” (⇒ 84) or “Proxy Server Settings” (⇒ 84), then press [OK].

#### Check security before using Home Network (DLNA) function

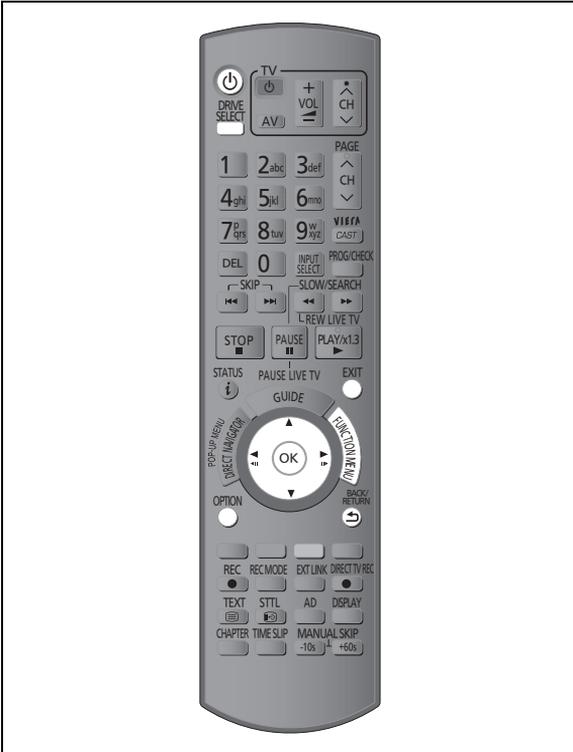
If you set “Home Network (DLNA) function” to “On”, all connected devices on the same network can access this unit. Ensure that the router for your home network has adequate security system to prevent unauthorized access.

- Refer to the operating instructions of the hub or router.



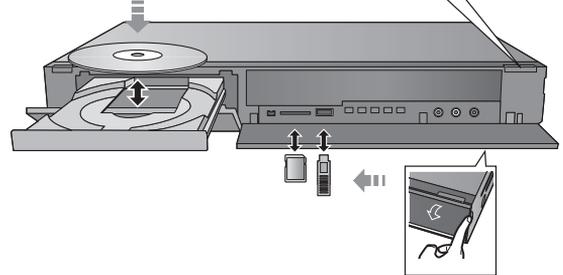
- Home Network (DLNA) function setting can not be set when “Power Save in Standby” mode is activated.
- If you set “Home Network (DLNA) function” to “Off”, it is possible to set to “On” later (⇒ 67).

# Common Operations



## Inserting or removing a media

Press [▲ OPEN/CLOSE] on the main unit to open the tray and insert a disc.



- When the indicator on this unit's display blinks, do not turn off the unit or remove the media. Such action may result in loss of the media contents.
- When inserting the media, ensure that it is facing the right way up.
- When removing the SD card, press on the centre of the card and pull it straight out.
- 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.

## Preparations

### Turning on this unit

- 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 DVB Auto Setup will start at the initial power on after purchasing this unit. (⇒ 11)



- If the DVB Auto Setup does not start after the initial power on, turn this unit Off/On once.

### ■ To select a drive

Press [DRIVE SELECT] to select the media drive that you operate.

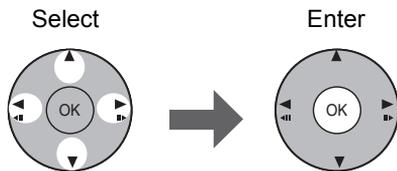
### ■ Release disc protection

**BD-RE** **BD-R** **RAM**

If the disc is protected when writing to the disc, release the protection (⇒ 72, Setting the protection).

## Basic operation

This unit is basically operated via the following method by using the remote control.

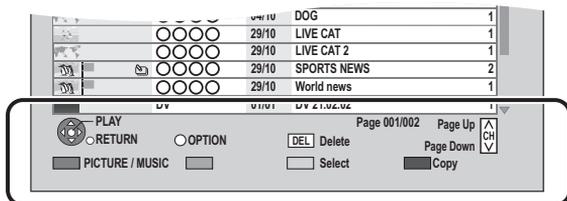


To return to the previous screen	Press <b>BACK/RETURN</b>
To exit the screen	Press <b>EXIT</b>

## Display Navigation

Operating method can also be confirmed on the screen.

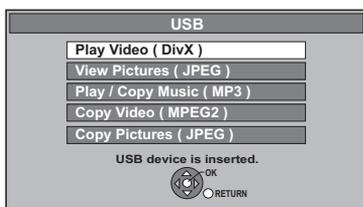
Available functions and buttons used are displayed on each screen.



## Menu screen

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

e.g., **USB**



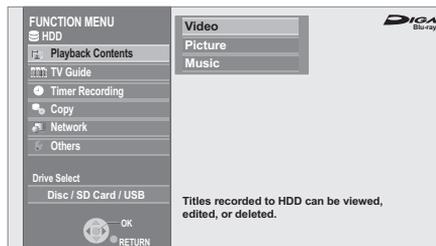
If the menu screen is not displayed, display it by performing the following operation.

- 1** While stopped  
Press **[OPTION]**.
- 2** Select “Drive Select”.
- 3** Select the media.  
• Menu screen for each media appears.

## FUNCTION MENU screen

You can easily access the desired functions via the FUNCTION MENU.

- 1** Press **[FUNCTION MENU]**.
- 2** Select the item, then press **[OK]**.  
• Repeat step 2 if necessary.



### Playback Contents\*

Video (⇒ 33)

Picture (⇒ 50)

Music (⇒ 56)

### TV Guide (⇒ 19)

### Timer Recording (⇒ 24)

### Copy (⇒ 44)

Copy (VIDEO / PICTURE)

Copy Video ( AVCHD ) to Disc

### Network (⇒ 65)

### Others\*

EXT Link Standby (⇒ 64)

Flexible Recording via AV input (⇒ 63)

DV Automatic Recording (⇒ 63)

Setup (⇒ 75)

### Drive Select\*

Disc / SD Card / USB

\* This is a display for when drive select is set to HDD.

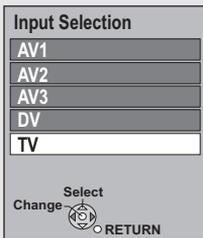


- Selectable items will change depending on the type and status of the media.

# Watching broadcasts

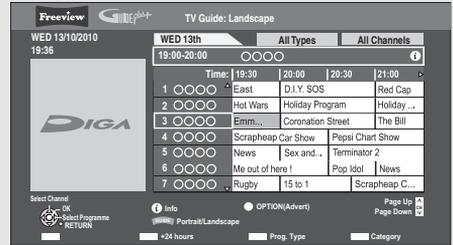


**1** Press **INPUT SELECT** a few times and select "TV" then press **OK**.



**2** Press **GUIDE**.

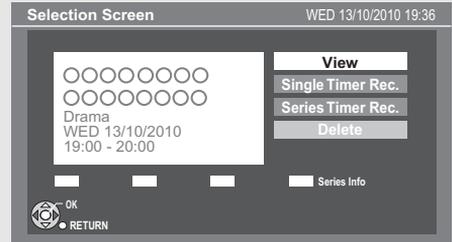
**3** Select the current programme, then press



**4** Select "View", then press



Every time you change the channel, channel information appears automatically.



Unit's display



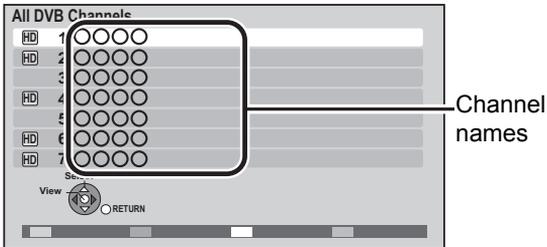
- You can set the time to display the channel information. (⇒ 82)
- You can also select the channel with [^ v CH] or the number buttons.

➤ To use TV Guide system (⇒ 19)

## Using Channel List

After performing step ① (⇒ 16)

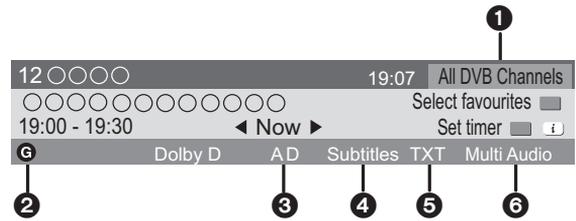
- 1 Press [OK].
- 2 Select the channel, then press [OK].



➤ To edit the Channel List (⇒ 76)

## Channel information

Press [STATUS ④].



- ① Current Category
- ② Title with Guidance information
- ③ Audio Description
- ④ Subtitle
- ⑤ Digital text
- ⑥ Multiple audio

### To show detailed information

Press [STATUS ④] again.

### To hide the information screen

Press [EXIT].

### To change Favourites

Press the "Blue" button.

- Selection of channel is made easy by creating Favourites of the channels. (⇒ 75, Favourites Edit)

### To switch between the current programme and the next programme

Press [◀, ▶].

### To switch to another channel

Press [▲, ▼].

- Press [OK] to watch the channel.

➤ To set the timer programme from channel information (⇒ 27)

## Operations while watching broadcast

### To show subtitle

When “Subtitles” appears in channel information (⇒ 17)

**Press [STTL ].**

### To hide subtitle

Press [STTL ].

### To select Multi Audio

When “Multi Audio” appears in channel information (⇒ 17)

- ① **Press [OPTION].**
- ② **Select “Multi Audio”, then press [OK].**
- ③ **Select the desired audio.**

### To exit the screen

Press [EXIT].

### To listen to the Audio Description

Audio Description adds an additional soundtrack to describe events on screen (narration) and aids understanding and enjoyment, particularly for visually-impaired viewers.

When “AD” appears in channel information (⇒ 17)

- ① **Press [AD].**
- ② **Select “Audio Description” and set to “Automatic”.**
- ③ **Select “Volume”, then adjust the volume with [, ].**



- Audio Description may not be available depending on the type of audio format.
- You can also set “Audio Description” active in the Setup menu. (⇒ 77)

### To show Digital text (MHEG)

When “TXT” appears in channel information (⇒ 17)

**Press [TEXT ].**

**To select the page or access to certain topic areas and navigation**

Use [, , , , number buttons or colour buttons, etc. according to on-screen instructions.

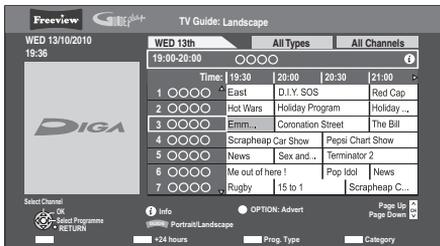


- Some functions of Digital text are deactivated during recording.

## Using TV Guide system

### Press [GUIDE].

- You can switch between Landscape view and Portrait view each time you press [GUIDE].



Landscape view



Portrait view

### Page up/down

Press [ $\wedge$   $\vee$  CH].

### To view a programme list for another day

Press the "Red" button (Previous) or the "Green" button (Next).

## To see programme information

(Programmes with the  $\textcircled{i}$  symbol)

Press [STATUS  $\textcircled{i}$ ].

### To show other pages

Press [CH  $\wedge$ ] (Previous) or [ $\vee$  CH] (Next).

### To exit the screen

Press [STATUS  $\textcircled{i}$ ].

## To see advertisement

Press [OPTION].

### To show other advertisement

Press [CH  $\wedge$ ] (Previous) or [ $\vee$  CH] (Next).

### To exit the screen

Press [OPTION].

## To search the programme

You can search the programme from programme type and Category.

- Press the "Yellow" button (Prog. Type) or the "Blue" button (Category).
- Select the item, then press [OK].



<b>Landscape view</b>	The programmes belonging to the selected type or category are highlighted.
<b>Portrait view</b>	Only the programmes belonging to the selected type or category are displayed.

- If you select "Highlights", the recommended programme list is displayed.

### To return to the previous TV Guide list

Select "All Types" in the "Prog. Type" or "All Channels" in the "Category" in step ②.



- Category and programme type may not be assigned correctly depending on the programme information.
- Some broadcast may not send programme information.

### ➤ Set the timer recording (⇨ 24)

## REWIND LIVE TV/PAUSE LIVE TV

This unit temporarily saves a live TV programme you are watching with this unit's tuner on HDD and you can use the following functions.

### REWIND LIVE TV

You can rewind live TV programme up to 2 hours before as long as temporary save has not been stopped.

### PAUSE LIVE TV

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

- VIERA Link function makes it possible to use the PAUSE LIVE TV function by pressing "Pause" button on TV remote control. (⇒ 68)
- PAUSE LIVE TV also works when watching a programme via external input.

- Select the HDD drive to perform these functions correctly.

## 1 While watching TV

### REWIND LIVE TV

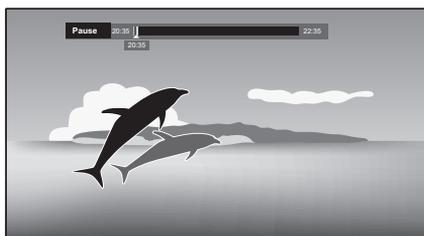
Press [**◀◀**] to rewind.

- "REWIND LIVE TV" appears on the unit's display.

### PAUSE LIVE TV

Press [**⏸**] to pause.

- "PAUSE LIVE TV" appears on the unit's display.



## 2 When you want to resume

Press [**▶**] (PLAY/×1.3).

- You can perform search or Quick View, etc.
- If temporary save stops (⇒ right), playback will be performed by that point.

### To stop REWIND LIVE TV or PAUSE LIVE TV

- 1 Press [**■**].
- 2 Select "Yes", then press [OK].

### To display the status

Press [STATUS **Ⓢ**].

### When watching a programme with this tuner



- 1 The time that you can rewind the live programme.
- 2 The time of the current playback position.
- 3 The time which is 2 hours after PAUSE LIVE TV or REWIND LIVE TV started.
  - After 2 hours from PAUSE LIVE TV or REWIND LIVE TV started, current time is displayed.

### (PAUSE LIVE TV only)

#### When watching a programme via external input



- 4 The time of the current playback position.

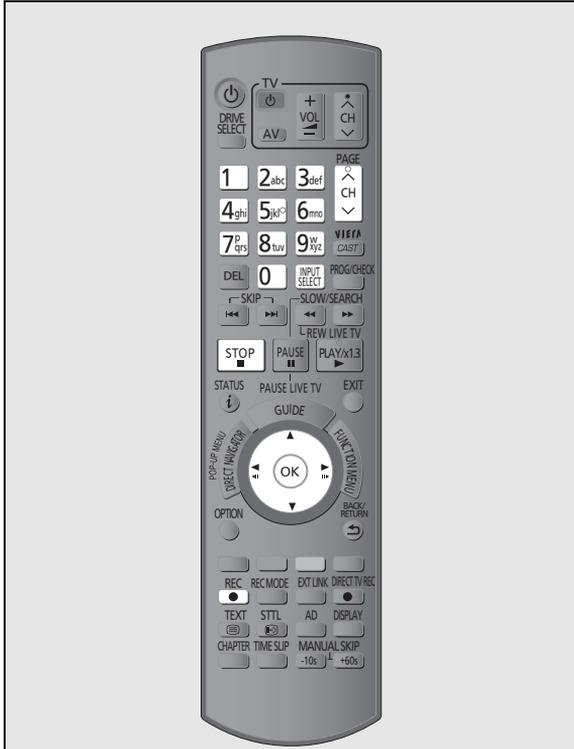


### Temporary save stops in the following cases:

- When switching to other channels or other screen
  - When recording of the watching programme is started
  - When 2 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 2 programmes simultaneously
  - While copying
  - While watching a programme being recorded
  - When a radio programme is selected
  - (REWIND LIVE TV only)  
When "REWIND LIVE TV" is set to "Off" (⇒ 79)
  - (PAUSE LIVE TV only)  
When a timer recording via external input is started while watching a programme via external input

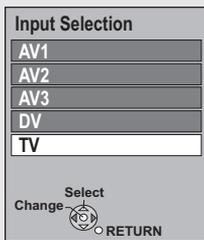
# Recording TV programmes

All recordings (including timer recordings) to HDD will be made in DR mode only (Direct Recording).



Recording disc: **HDD**  
Recording mode: **DR**

**1** Press **INPUT SELECT** a few times and select “TV” then press **OK**.



**2** Press **CH** to select the channel.

You can also select the channel with the number buttons.

**3** Press **REC**.

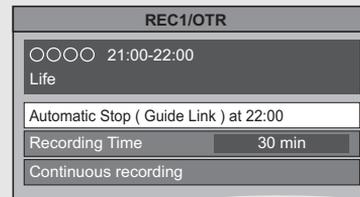
Recording starts.

“REC1” or “REC2” will light



**4** Select “Automatic Stop” then press **OK**.

Recording stops automatically when the programme ends.



● “Automatic Stop” cannot be selected depending on a programme. In this case select “Recording Time” or “Continuous recording”. (⇒ below)

## To set the recording time

1 Select “Recording Time” or “Continuous recording” in step **4**.

<b>Recording Time (One Touch Recording)</b>	You can set the length of recording time from 30 minutes to 4 hours. Select the recording time. ● You can also set the time with [● REC] on the main unit.
<b>Continuous recording</b>	The recording is continued until you press [■].

2 Press [OK].



- All subtitles, multiple audio and Audio Description are recorded.  
It can be switched on and off while playing back the title.
- When “Automatic Standby after OTR” is set to “On” (⇒ 84), this unit is turned to standby mode if this unit is not operated for approximately 5 minutes after completing Automatic Stop recording or One Touch Recording (⇒ above).

# Recording TV programmes

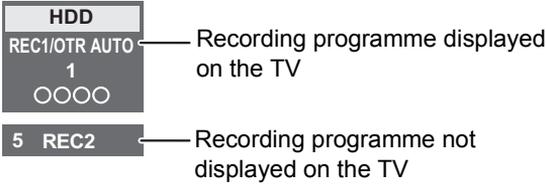
Recording

## Operation during recording

### To check the recording programme

Press **[STATUS]**

e.g., While recording 2 programmes simultaneously



### To switch the Channel

Press **[^ v CH]**.

### To display the recording programme on the TV

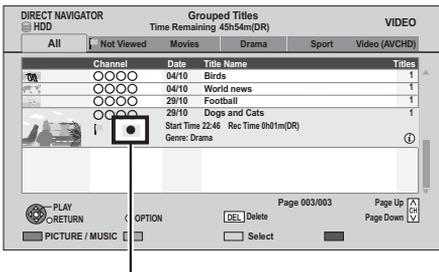
It is necessary to display the recording programme onto the TV screen to perform operations such as pause.

- Press **[INPUT SELECT]** to switch the input.
- Press **[^ v CH]** to switch the channel.

### Chasing playback

Playback the title in the HDD, during recording to the HDD.

- 1 Press **[DIRECT NAVIGATOR]** during recording.



“●” is displayed on the recording programme.

- 2 Select the title, then press **[OK]**.

## To stop recording

It is necessary to display the programme you want to stop on the TV. (⇒ left)

Press **[■]**.

If the following screen appears

Select “Yes”, then press **[OK]**.



## To pause recording

It is necessary to display the programme you want to pause on the TV. (⇒ left)

Press **[||]**.

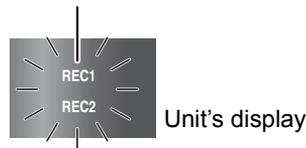
- Press again to restart recording. (A title is not split into separate titles.)
- If paused while recording in DR mode, the paused part may become a still picture for a moment during playback of that programme.

## To perform 2 programmes simultaneous recording

While recording

Record other programme with steps ① – ④ on page 21.

“REC1” and “REC2” will light



- Either of programmes is necessary to be recorded from this unit's tuner.
- 2 programmes simultaneous recording is not possible in the following conditions:
  - While recording from DV input, or executing “Flexible Recording via AV input”
  - While high speed copying
- Channel or input cannot be switched except the 2 recorded programmes during 2 recording.

## Direct TV Recording

Recording disc: **HDD**

Recording mode: **DR**

You can immediately start recording the watching programme on the TV without switching the channels on this unit.

- You can also use this function with VIERA Link.  
(⇒ 68)
- You can use the function by using the TV's tuner when you connect the unit to a Q Link compatible TV (Recording mode: XP, SP, LP, EP). (⇒ 68)

**Press [● DIRECT TV REC] and hold for about 1 second.**

---

### To stop recording partway

Press [■].



- If you switch TV channels while recording broadcasting using the TV's tuner, Direct TV Recording stops.
- During EXT Link Standby mode or recording, Direct TV Recording is unavailable.

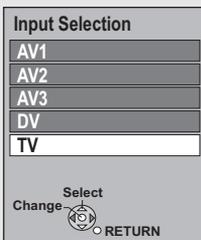
# Timer recording



Recording disc: **HDD**

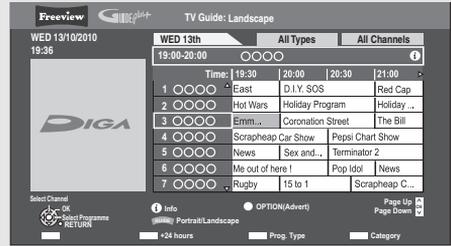
Recording mode: **DR**

**1** Press **INPUT SELECT** a few times and select **"TV"**, then press

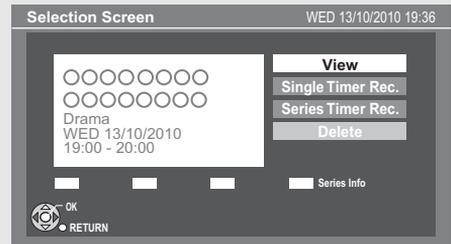


**2** Press **GUIDE**.

**3** Select the programme, then press **OK**.



**4** Select **"Single Timer Rec."** or **"Series Timer Rec."**, then press **OK**.



### Single Timer Rec.:

Timer programme is set for selected programme.

### Series Timer Rec.:

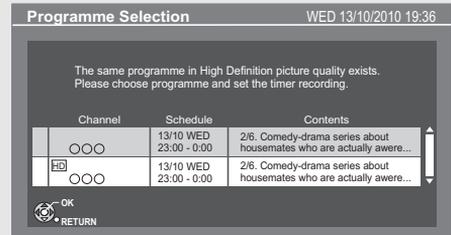
Timer programme is set for all the episodes of a series programme.

- This screen may not appear depending on the programme.

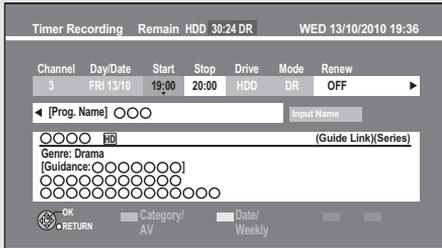
### If "Programme Selection" screen appears

Depending on the signal sent from the broadcaster, both High Definition picture programme and Standard Definition picture programme exist.

Select the programme, then press [OK].

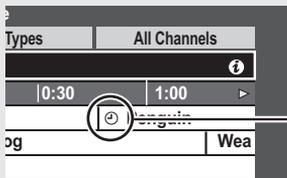


## 5 Press **OK**.



- Only “Start” and “Stop” can be changed. (You can adjust them up to 10 minutes in case of Series Timer Rec.)

The timer programme is stored and the timer icon (red) is displayed.



Timer icon (red)

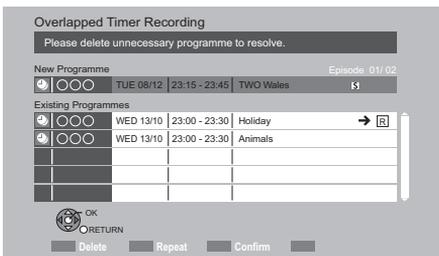
### To cancel a timer recording on the TV Guide screen

- 1 Select the programme with “⊖” icon, then press [OK].
- 2 Select “Delete” and press [OK].
- 3 Select “Yes”, then press [OK]. (“⊖” disappears.)

### “Overlapped Timer Recording” screen appears

You can eliminate the overlapping or may change with repeat event for the duplicated programme by following the on-screen instructions.

- 1 Select “Change”, then press [OK].
- 2 Follow the on-screen instructions.



Red: Delete programme  
Green: Record Repeat programme  
Yellow: Stop the operation

### To check the schedule of the series

Press the “Blue” button after performing steps 4



⊖ Programme for which you set the timer recording

S The episode to be recorded

R Repeat programme

HD High definition programme



- TV Guide system provides programme information only from the broadcaster displayed on the TV like a TV programme magazine.
- You can enter up to 32 programmes up to a month in advance. (Each daily, weekly or series programme is counted as one programme.)
- TV Guide does not work if the clock is not set correctly.
- The receipt of the TV Guide system data is only possible via the aerial input of this unit. The receipt of the TV Guide data via Set Top Box is not possible.
- Some broadcasters may not send programme information. In this case set the timer recording manually (⇒ 28).
- If the same episode has already been set for series timer recording at a different time or on another channel (Repeat programmes), “Series Timer Rec.” will not be selectable.
- Titles recorded using “Series Timer Rec.” are bundled and displayed as a “group” in the DIRECT NAVIGATOR screen (⇒ 34).
- If the unit cannot record the selected programme, the unit will record the repeat programme if it is available. However, this unit will not record the repeat programme, if any part of the selected programme is recorded.
- The series recording will be cancelled if there has been no episode of the series for 13 weeks.

## Various functions with Freeview+

This unit has several functions that enable timer recordings to be controlled by the signal sent from the broadcaster.

### Guide Link

The recording's start and stop times can be controlled by the broadcaster, e.g. delayed start.

In order to make the timer recording work successfully, we recommend you set the start time earlier and the end time later by some minutes, up to a maximum of 10 minutes.

- This is indicated by "Guide Link" in the Timer Recording screen in step ⑤ (⇒ 25).
- The "Guide Link" function may not work if you manually change the start time or the stop time over 10 minutes.

### Series Timer Recording (⇒ 24)

You can record all the episodes of a series by setting just one timer recording.

### Split Programme

You can record a programme separated into 2 or more parts by some other programmes, e.g., news. When setting timer from the 1st split programme, other parts of the programme will be automatically set and indicated by the timer icon on the TV Guide.

- This is indicated by "Split" in the Timer Recording screen in step ⑤ (⇒ 25).

### Recommendation Booking (⇒ right)

You can record a programme that the broadcaster recommends.



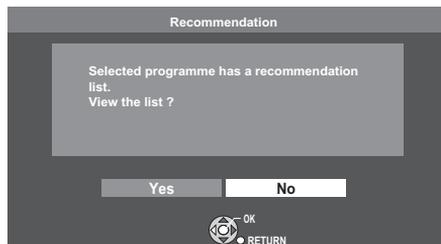
- If the signal is not sent correctly, the recording may lack the beginning or the ending part of the programmes.

## Recording recommended programme (Recommendation Booking)

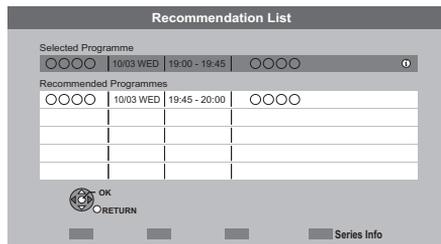
**Recording disc: HDD**

**Recording mode: DR**

After performing steps ①—③ on page 24 If the following screen appears,



- 1 **Select "Yes", then press [OK].**  
"Recommendation List" is displayed.



- 2 **Select the programme, then press [OK].**
- 3 **Go to step ⑤ on page 25.**
  - If "Selection Screen" appears, go to step ④ on page 24.

## Timer recording from channel information

- 1 While watching a programme**  
**Press [STATUS ].**



- 2 Display the channel information of a programme to record.**
  - Switch the programme with [, ].
  - Switch the channel with [, ].
- 3 Press the “Yellow” button.**
- 4 Go to step  on page 25.**

## Manual timer recording

Timer recording of the programme

**Recording disc:** **HDD**

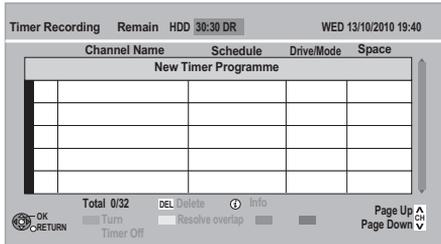
**Recording mode:** **DR**

Timer recording from the external equipment

**Recording disc:** **HDD**

**Recording mode:** **XP, SP, LP, EP, FR**

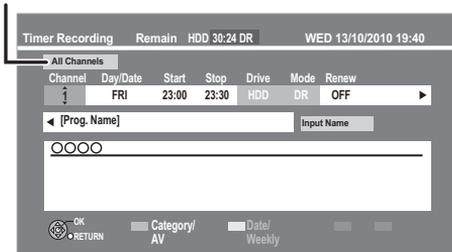
**1 Press [PROG/CHECK].**



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

**3 Select the items and change the items with [▲, ▼].**

Category/AV



**●Channel**

You can select Category/AV with the “Red” button.

**●Day/Date**

You can select “Date” or “Weekly” by pressing the “Green” button. If you select “Weekly”, you can record the programme weekly or daily.

**●Start/Stop**

Press and hold [▲, ▼] to alter in 15-minute increments.

**●Mode (⇒ 104, 112)**

**●Renew (Auto Renewal Recording)**

The unit will record the new programme over the old one, when “Weekly” is set in “Day/Date” (⇒ above).

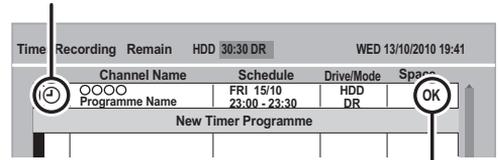
**●Input Name**

Press [OK]. (⇒ 74, Entering text)

**4 Press [OK].**

The timer programme is stored and the timer icon (red) is displayed.

Timer icon (red)



Check for available space on HDD, when “!” is displayed. (⇒ 29)

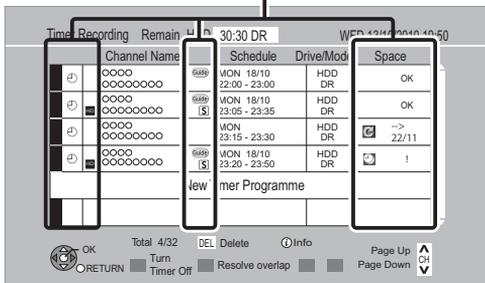


- You can enter up to 32 programmes up to a month in advance.  
(Each daily or weekly programme is counted as one programme.)

## To confirm and edit a timer programme

Press [PROG/CHECK].

### Icons



## To exit the timer recording list

Press [PROG/CHECK].



- Failed programmes are deleted from the timer recording list at 4 a.m. two days later.
- “-----” is displayed on a series recording item if there will be no episode of the series for the next 8 days. We recommend you delete the “-----” item after you confirm the last episode of the series is recorded.

## Screen icons

- Red: Timer recording standby is activated.  
Grey: Timer recording standby is deactivated.
- Currently recording programme  
Part or all of the programme will not be recorded since the programme is overlapping.  
 Press the “Green” button to resolve overlapping. (⇒ right)
- The disc was full.
- Copy-protected programme  
It was not recorded.
- The programme did not complete recording because of some reason.
- Auto Renewal Recording is set (⇒ 28)
- Guide Link (⇒ 26)
- Split Programme (⇒ 26)
- Series Timer Recording (⇒ 26)

**OK** Displayed if the recording can fit in the remaining space

→ Daily or weekly timer programme is set. (up to a maximum of one month from the present time)

- ! It may not be possible to record because:
- there is not enough space left.
  - the number of possible titles has reached its maximum. (⇒ 112)
  - programmes are deactivated.

## To show a programme information

Select the programme, then press [STATUS ].

Additional information is available for these programmes.

## To deactivate a timer programme

Select the programme, then press the “Red” button.

- The timer icon “⊖” (⇒ left) will change from red to grey.
- Press the “Red” button again to activate timer recording standby. (The timer icon “⊖” will change to red.)

## To change a timer programme

Select the programme, then press [OK]. (⇒ 28, step 3)

## To resolve Overlapping

- Select the programme with , then press the “Green” button.
- Follow the on-screen instructions.
  - Duplicated programme can be resolved with repeat programme, if repeat is available.



This function is not available for the timer programmes that were set manually.

## To delete a timer programme

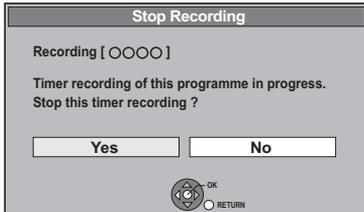
Select the programme, then press [DEL].

## To cancel recording when timer recording has already begun

Press [INPUT SELECT] or [ $\wedge$   $\vee$  CH] to display the programme to stop recording on the TV screen while recording 2 programmes simultaneously.

### 1 Press [■].

e.g.,

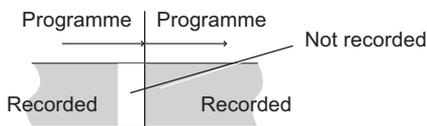


### 2 Select "Yes", then press [OK].

If you have already set a weekly, daily timer recording, the recording will start at the next scheduled time.

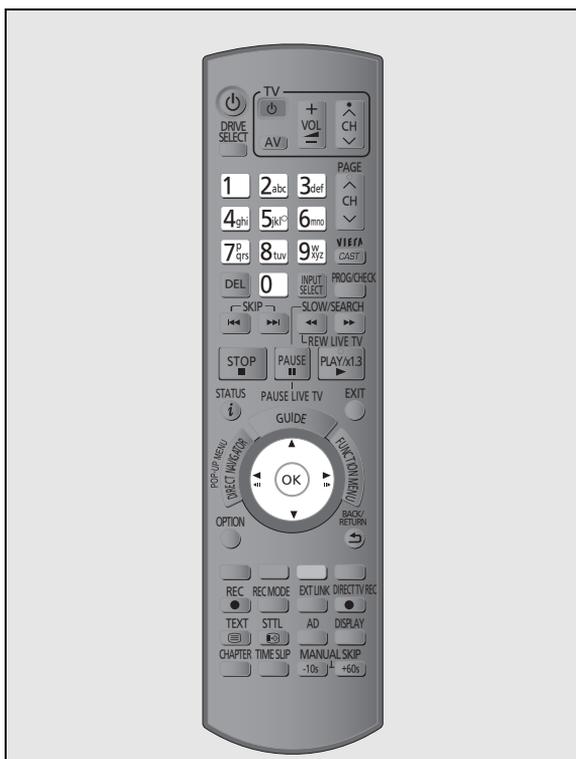
## Notes on timer recording

- Depending on the state of the unit, playback may stop when recording begins.
- Timer recordings do not begin while copying in normal speed mode.
- If you turn the unit off during the timer recording, the recording is continued.
- When you programme successive timer recordings to start, last 1 minute of those programmes will not be recorded.



- To start the timer recording while executing other operation (⇒ 105)

# Playing BD-Video or DVD-Video



## BD-V DVD-V

### 1 Insert a disc.

- Play starts from the point specified by the disc.

### 2 Select the item, then press



- Some items can also be selected using the number buttons.
- Playback starts.

### To display Pop-up Menu

Press [DIRECT NAVIGATOR].

- Press again to exit.

### To display Top Menu

1 Press [OPTION].

2 Select "Top Menu", then press [OK].

- If the Top menu is not displayed Press [DIRECT NAVIGATOR].



- **BD-V** You cannot playback while recording other than in DR mode. Also, playback stops when the timer recording except in DR mode starts.

## Enjoying BONUSVIEW or BD-Live

### BD-V

#### What is BONUSVIEW?

BONUSVIEW allows you to enjoy functions such as picture-in-picture or secondary audio etc.

#### What is BD-Live?

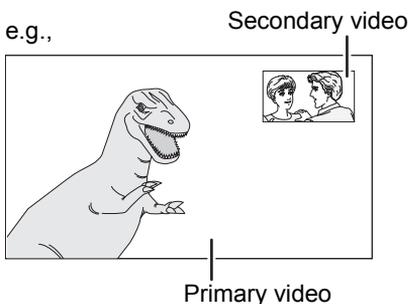
In addition to the BONUSVIEW function, BD-Video allows you to enjoy more functions such as subtitles, exclusive images and online games by connecting this unit to the Internet.

- These discs may not be on sale in certain regions.
- The usable functions and the operating method may vary with each disc, please refer to the instructions on the disc and/or visit their website.

## Playing picture-in-picture

For the playback method, refer to the instructions for the disc.

- Image of the secondary video



### When the secondary video does not display

Turn the "Video" and "Soundtrack" to "On" in the "Secondary Video" in the "Signal Type" in the Disc menu. (⇒ 70)

- To output the audio of the secondary video, set the "BD-Video Secondary Audio" to "On" (⇒ 81).



- Only the primary video is played during search/slow-motion/Quick View or frame-by-frame.
- When the secondary video is turned off, the secondary audio is not played.

## Enjoying BD-Live discs with Internet

Some BD-Live content available on the Blu-ray Disc may require an Internet account to be created in order to access the BD-Live content. Follow the screen display or instruction manual of the disc for information on acquiring an account.

### Preparation

- Network connection (⇒ 10)
- Network Easy Settings (⇒ 13, 84)

#### ① Insert an SD card (With 1 GB or more free space.) (⇒ 14).

SD card is used as the local storage (⇒ 117)

- If the SD card menu screen is displayed, press [BACK/RETURN ↵] to exit the SD card menu screen.

#### ② Insert the disc (⇒ 14).

If prompted to download extra content prior to viewing disc, press [OK].

To use the above functions, it is recommended that you format the card on this unit. (⇒ 72)

### ■ To delete data on SD card

Delete the unnecessary video data recorded in the SD card.

- ① Insert an SD card.
- ② Press [FUNCTION MENU].
- ③ Select "Card Management" in "Others", then press [OK].
- ④ Select "Delete BD-Video data", then press [OK].
- ⑤ Select "Yes", then press [OK].
- ⑥ Select "Start", then press [OK].
- ⑦ Press [OK].



- When discs supporting BD-Live are played back, the player or disc IDs may be sent to the content provider via the Internet.
- The playback may be paused depending on the communication environment. Some functions may be disabled to prevent skipping to sections that have not been downloaded, etc.

# Playing recorded video contents



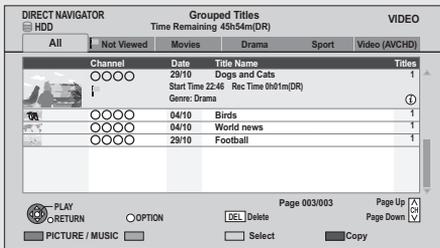
**HDD BD-RE BD-R RAM -R -R DL -RW(V) +R  
+R DL +RW -RW(VR) SD USB**

## 1 ■ HDD:

① Press **DRIVE SELECT**, then select "HDD".

② Press **DIRECT NAVIGATOR**.

e.g., DIRECT NAVIGATOR (VIDEO) screen



## ■ Except HDD:

- Insert the media.
- Select the item in the menu

screen, then press **OK**.

## DivX:

- It will go to step ② automatically if only DivX content is recorded on the disc.

## 2 Select the title, then press

**OK**.

- If the following screen appears  
Select the point to start playback. (Resume play function)



## AVCHD:

If the Top Menu screen or DIRECT NAVIGATOR screen is not displayed, press **[▶]** (PLAY/× 1.3).

## ➤ Regarding DivX (⇒ 38)



- Multiple titles may not playback continuously depending on the disc. Press [DIRECT NAVIGATOR], and playback by selecting the title.
- Playback of DivX is not possible during recording.

## If the menu screen is not displayed (⇒ 15)

### To playback of the playlist created on other equipment

- Press [FUNCTION MENU].
- Select "Playlists" in "Others", then press [OK].
- Select the playlist, then press [OK].

## ■ Switching the MUSIC or PICTURE screens

While the DIRECT NAVIGATOR screen is displayed

### HDD

- Press the "Red" button.
- Select "MUSIC" or "PICTURE", then press [OK].

### BD-RE RAM

Press the "Red" button.

The screen switches from "VIDEO" to "PICTURE".

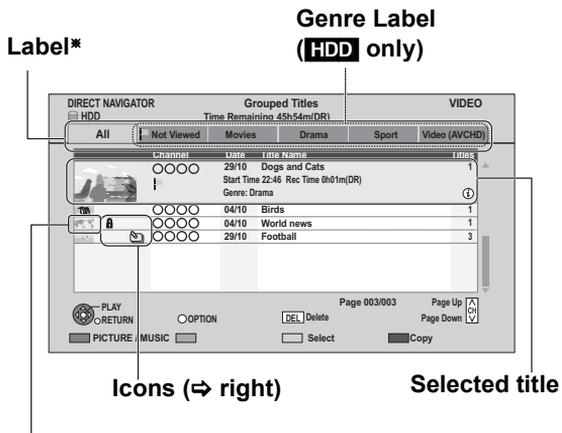
## Using the DIRECT NAVIGATOR (VIDEO)

You can quickly find the recorded titles and easily play them.

Press **[DIRECT NAVIGATOR]**.

e.g., **HDD**

Playing back video



**Thumbnail (HDD only)**

\* "All" will be displayed in "Label" only when using the media other than HDD.

## Screen icons

-  Title of the current recording

---

-  Protected title

---

-  Title was not recorded due to recording protection

---

-  Title cannot be played (When copying a title to the HDD, or when data is damaged etc.)

---

-  Grouped titles (**HDD** only)

---

-  Title has not yet been played (**HDD** only)

---

-  Title is recorded using a different encoding system from that of the TV system on the unit. Alter the "TV System" setting on this unit to suit (=> 82).

---

-  Radio programme

---

-  Title with Guidance information or title restricted by Child Lock (=> 77, Child Lock).

---

-  Titles that cannot be copied in high definition quality mode (DR, HG, HX, HE, HL, HM) any more.

---

-  Titles that can be copied in high definition quality mode (DR, HG, HX, HE, HL, HM) once.

---

-  Recording did not complete as the second timer recording has started.

## Label

### HDD

Titles recorded to HDD will be categorized automatically.

**Select the label with [◀, ▶] then press [OK].**

**Genre Label:** Titles sorted in categories (**News&Factual, Movies, etc.**) according to the information of the recorded programme

- Some titles may not be sorted correctly.

**Video ( AVCHD ):** High Definition video acquired from the disc, SD card or USB device

## Switching the DIRECT NAVIGATOR appearance

### HDD

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

#### ●Grouped Titles screen

Two or more titles recorded in the Daily/weekly timer recording or series recording mode are bundled and displayed as one item.

Select the item marked with , then press [OK] to display the bundled titles.

#### ●All Titles screen

Displays all titles.

## Changing the Genre Label

### HDD

Genre displayed in the Genre Label can be changed.

- ① Select the Genre Label, then press the “Green” button.
- ② Select the item, then press [OK].



- “All”, “Not Viewed” and “Video ( AVCHD )” cannot be changed.

## Showing Information

Select the title, then press [STATUS ].



- The information of recording title is impossible to show.

## Playback Grouped Titles

### HDD

The titles will be played continuously.

Select the group, then press [▶] (PLAY/ × 1.3).

## Editing the grouped titles

### HDD

- 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.
- ② Press [OPTION].
- ③ Select the item, then press [OK].

<b>Create Group</b>	Selected titles are bundled to form a group. Select “Create”, then press [OK].
<b>Release Grouping</b>	All the titles in the group are released. Select “Release”, then press [OK].
<b>Remove</b>	Selected titles are removed from the group. Select “Remove”, then press [OK].

## Changing the group name

### HDD

- ① Select the group, then press [OPTION].
- ② Select “Edit”, then press [OK].
- ③ Select “Enter Title Name”, then press [OK].
- ④ Enter the name. (⇒ 74, Entering text)
  - Even if the group name is changed, the title names in the group will not be changed.

## Copying the titles

HDD → **BD-RE** **BD-R** **RAM** **-R** **-R DL** **-RW(V)**  
**+R** **+R DL** **+RW**  
**BD-RE** **BD-R** **RAM** → **HDD**

- ① Select the title, then press “Yellow” button.  
A check mark is displayed. Repeat this step.
  - Press the “Yellow” button again to cancel.
- ② Press the “Blue” button.
- ③ Select “Start Copying”, then press [OK].
- ④ Select “Yes”, then press [OK].



- These functions for Group are only available for videos and not available for music and still pictures.

## Operation during play



- Depending on the media, some operations may not be possible.
- Depending on the media, it may take time for the menu screen, pictures, sound, etc. to start.
- Discs continue to rotate while menus are displayed. Press [■] when you have finished playback to protect the unit's motor, your TV screen and so on.

## Stop

### Press [■].

The stopped position is memorized.

### Resume play function

Press [▶] (PLAY/×1.3) to restart from this position.

- The resume play function does not work depending on the disc.

### Stopped position

**HDD:** Stopped position for each title is memorized.

**Discs:** Only previous stopped position is memorized.

The position is cleared if the tray is opened or the unit is turned off.

## Search

### Press [◀◀] or [▶▶].

- The speed increases up to 5 steps.  
(**+R +R DL +RW** Up to 3 steps)
- Press [▶] (PLAY/×1.3) to restart play.
- Audio is heard during first level search forward.  
DivX: Audio is not heard during all levels search.
- **BD-V** Only primary video is played while performing this operation.

## Manual Skip

### ■ Skip forward 1 minute

Press [**MANUAL SKIP +60s**].

### ■ Skip backward 10 seconds

Press [**MANUAL SKIP -10s**].

- Each time you press, play skips forward or backward.
- DivX: This function is not effective.

## Quick View

### Press and hold [▶] (PLAY/×1.3).

Play speed is quicker than normal.

- Press again to return to normal speed.
- **-RW(VR)**, DivX: This function is not effective.
- **-RW(V)** This function is not effective even if it is finalised.
- **BD-V** Only primary video is played while performing this operation.

## Pause

### Press [||].

Press [||] again or [▶] (PLAY/×1.3) to restart play.

## Slow-motion

### While paused, press [◀◀] or [▶▶].

The speed increases up to 5 steps.

- Press [▶] (PLAY/×1.3) to restart play.
- DivX: This function is not effective.
- **BD-V**, AVCHD: Forward direction [▶▶] 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: This function is not effective.
- **BD-V**, AVCHD: Forward direction [▶] (▶▶) only.

## Skipping the title or chapter

**During play or while paused, press [◀◀] or [▶▶].**

Skip to the title or chapter you want to play.

- It will skip to the beginning of chapters (⇒ 43) if the title contains chapters.
- **HDD** It will not skip the title. But the title in the grouped titles during the “Playback Grouped Titles” (⇒ 35) will be skipped.

## Skipping the specified time (Time Slip)

- ① Press [TIME SLIP].
- ② Select the time with [▲, ▼], then press [OK].

Play skips the specified time.

- Press and hold [▲, ▼] to change the time by 10-minute.

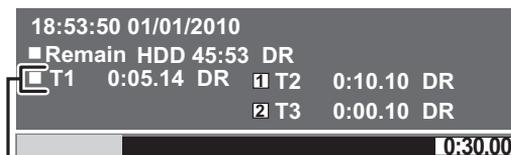


This automatically disappears after approximately 5 seconds. To show the screen again press [TIME SLIP] again.

- **BD-V**, **DVD-V**, DivX and AVCHD: This function is not effective.

## Showing status messages

Press [STATUS ⓘ] twice.



Title number and elapsed time during play and recording mode

## Changing audio

- ① Press [OPTION].
- ② Select “Multi Audio”, then press [OK]
- ③ Select the desired audio.

## Displaying the subtitle

■ **HDD** **BD-RE** **BD-R**

Press [STTL ⓘ].

■ **BD-V** **DVD-V**, DivX and AVCHD:

Display with “Subtitles” in the Disc menu (⇒ 70).

## Listening to the Audio Description

■ **HDD** **BD-RE** **BD-R**

- ① Press [AD].
- ② Select “Audio Description” and set to “Automatic”.
- ③ Select “Volume”, then adjust the volume with [◀, ▶].



- You can also set “Audio Description” active in the Setup menu. (⇒ 77)

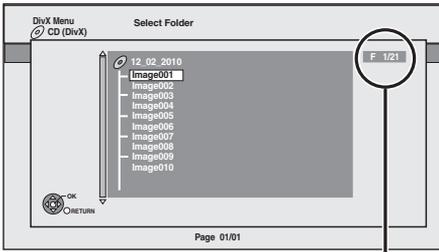
# Regarding DivX

## ABOUT DIVX VIDEO:

DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified device that plays DivX video. Visit [www.divx.com](http://www.divx.com) for more information and software tools to convert your files into DivX video.

## Using the tree screen to find a folder

- ① While the file list is displayed Press [OPTION].
- ② Select "Select Folder", then press [OK].



F: Selected folder no./Total folder no. including DivX title.

You cannot select folders that contain no compatible files.

- ③ Select the folder, then press [OK].  
The file list for the folder appears.

## Regarding DivX VOD content

BD-R -R -R DL CD USB\*

### ABOUT DIVX VIDEO-ON-DEMAND:

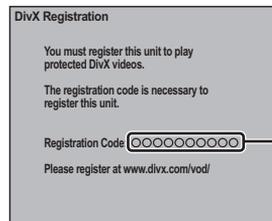
This DivX Certified® device must be registered in order to play DivX Video-on-Demand (VOD) content. To generate the registration code, locate the DivX VOD section in the device setup menu.

Go to [vod.divx.com](http://vod.divx.com) with this code to complete the registration process and learn more about DivX VOD.

\* Video images of the copyright-protected DivX VOD contents stored on USB device can be output only through the HDMI output terminal.

### ■ Display the unit's registration code.

(⇒ 86, "DivX Registration")



DivX Registration screen before registration

10 alphanumeric characters

- 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

(⇒ 86, "DivX Registration")

Select "Yes" in "DivX Registration".

Use the deregistration code to cancel the registration in [www.divx.com](http://www.divx.com).

### Regarding DivX VOD content that can only be played a set number of times

Some DivX VOD contents can only be played a set number of times. When you play this content, the number of times already played and initially playable number of times is displayed.

- The remaining number of plays decreases each time a programme is played. However, when playing from the point where play was previously stopped, the remaining number of plays does not decrease due to the resume play function.

# Deleting recorded video contents



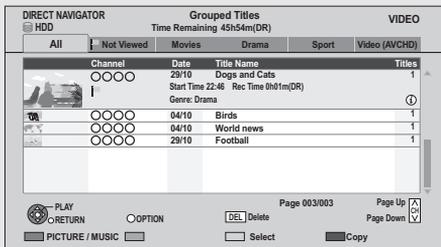
**HDD BD-RE BD-R RAM -R -R DL -RW(V) +R +R DL +RW**

(You cannot delete items on finalised discs.)

● **A title cannot be restored once it is deleted.**  
Make certain before proceeding.

**1 While stopped**  
Press **DRIVE SELECT**, then select  
“HDD” or “BD”.

**2 Press** **DIRECT NAVIGATOR**.



**3 Select the title, then press**



A check mark is displayed. Repeat this step.  
● Press the “Yellow” button again to cancel.

**4 Press** **DEL**.

**5 Select “Delete”, then press**

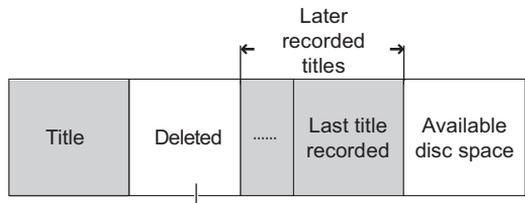


## Deleting during play

- While playing**  
Press **[DEL]**.
- Select “Delete”, then press **[OK]**.

### Available disc space after deleting

- **HDD BD-RE RAM** The space deleted becomes available for recording.
- **-RW(V) +RW** Available recording space increases only when the last recorded title is deleted.



This space becomes available for recording after all the later recorded titles are deleted.

- **BD-R -R -R DL +R +R DL** Available space does not increase even after the contents are deleted.

# Editing recorded video contents

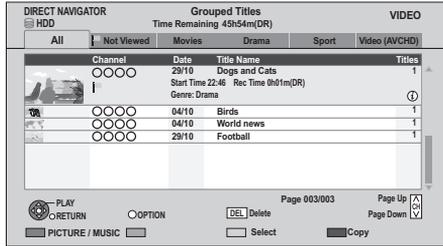
Once deleted, divided or partially deleted, recorded content cannot be restored to its original state. Make certain before proceeding.

## Editing titles

**HDD BD-RE BD-R RAM -R -R DL -RW(V) +R +R DL +RW**

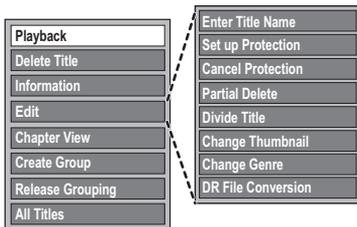
• You cannot edit finalised discs.

- 1 Press [DIRECT NAVIGATOR].
- 2 Select the title.



- **Multiple editing**  
Press the “Yellow” button.  
A check mark is displayed. Repeat this step.  
• Press the “Yellow” button again to cancel.

- 3 Press [OPTION].
- 4 Select the item, then press [OK].



• “Edit” has several functions (e.g., DR File Conversion).

## Deleting

- ① Select “Delete Title”, then press [OK].
- ② Select “Delete”, then press [OK].

## Entering title name

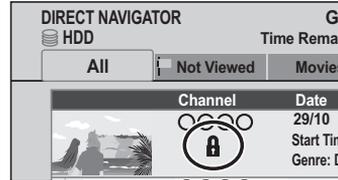
Select “Enter Title Name” in “Edit”, then press [OK].

(⇒ 74, Entering text)

## Setting protection

**HDD BD-RE BD-R RAM +R +R DL +RW**

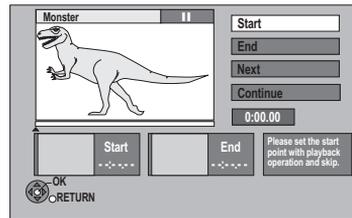
Protection setting prevents the title from accidental deletion.



- ① Select “Set up Protection” or “Cancel Protection” in “Edit”, then press [OK].
- ② Select “Yes”, then press [OK].  
A lock icon appears when setting the protection.

## Partial deleting

**HDD BD-RE BD-R RAM**



- ① Select “Partial Delete” in “Edit”, then press [OK].
- ② Press [OK] at the start point and end point to delete.  
• Press [▶] (PLAY/× 1.3) to start the playback when the title is paused.
- ③ Select “Continue”, then press [OK].  
• Select “Next”, then press [OK] to delete other sections. Up to 20 sections can be set. (⇒ go to step ②)
- ④ Select “Delete”, then press [OK].  
• Chapter Mark is generated in the scene that was partially deleted.

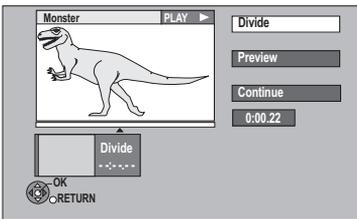
- ⑤ Press [BACK/RETURN ↵].



- You can find the desired point by using search or Time slip function, etc.
- You cannot set points if they are too close to each other.  
You cannot set an end point before a start point.

## Dividing title

**HDD** **BD-RE** **BD-R** **RAM**



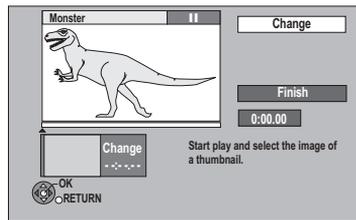
- 1 Select “Divide Title” in “Edit”, then press [OK].
- 2 Press [OK] at the point to divide the title.
- 3 Select “Continue”, then press [OK].
- 4 Select “Divide”, then press [OK].
  - To confirm the division point  
Select “Preview”, then press [OK]. (The unit plays 10 seconds before and after the division point.)
  - To change the division point  
Restart play and select “Divide”, then press [OK] at the division point.



- Video and audio just before and after the division point may momentarily cut out.
- **HDD** Divided titles form a grouped titles.
- You can find the desired point by using search or Time slip function, etc.

## Changing thumbnail

**HDD** **RAM** **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW**



- 1 Select “Change Thumbnail” in “Edit”, then press [OK].
- 2 Press [▶] (PLAY/× 1.3) to start play.
- 3 Press [OK] at the point to use as a thumbnail.
  - To change the thumbnail  
Restart play and select “Change”, then press [OK] at the point to change.
- 4 Select “Finish”, then press [OK].

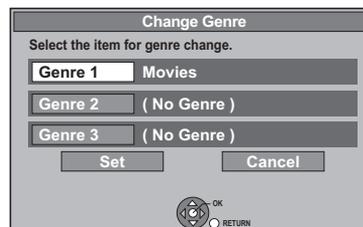


- **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW**  
It is possible to change the image displayed on the Top Menu after finalising or Creating Top Menu.
- You can find the desired point by using search or Time slip function, etc.

## Changing genre of title

**HDD**

Genre information in the title can be edited.



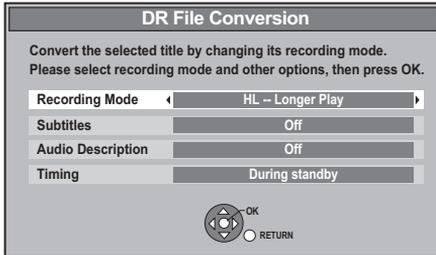
- 1 Select “Change Genre” in “Edit”, then press [OK].
- 2 Select the item to change a genre, then press [OK].
- 3 Select the genre, then press [OK].
- 4 Select “Set”, then press [OK].

## DR File Conversion

### HDD

DR File Conversion is a function to convert the recording mode of the title in DR mode. The size of the converted title will be small regularly. It will take about the same time as the recorded duration.

- 1 Select "DR File Conversion" in "Edit", then press [OK].



- 2 Select the recording mode (⇒ 104), then press [▼].

- 3 Select whether to record the subtitle or not, then press [▼].

- 4 Select whether to record the Audio Description or not, then press [▼].

- 5 Select when to start the conversion, then press [OK].

"Now" Conversion begins immediately after step ⑦.

Recording and playback are impossible during conversion. Timer recording will not be performed during conversion.

"During standby" Conversion will be performed after the unit is turned off in a time slot for which no timer recording is set.

- 6 Select whether to delete the original title or not, then press [OK].

"Convert & Delete" The original title will be deleted to save HDD capacity after conversion.

"Convert Only" The original title remains after conversion.

- The original titles with copy restriction (⇒ 47) will be deleted after converting them to HG, HX, HE, HL or HM mode regardless of setting.

- 7 ■ "Now" conversion: Select "Start", then press [OK].

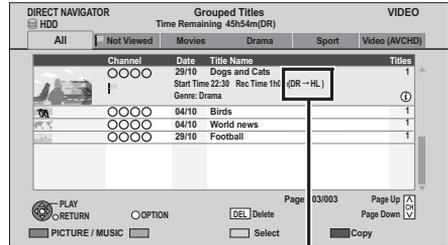
#### • To cancel a "Now" conversion

Press and hold [BACK/RETURN ↵] for more than 3 seconds.

- "During standby" conversion: Press [OK].

• Conversion begins soon after the unit is turned off.

"COPY" on the unit's display remains lighted during conversion.



When "DR → ○○ (Recording mode for conversion)" is displayed, the conversion has not finished.

- To cancel a "During standby" conversion After performing steps 1–3 (⇒ 40)

- 1 Select "DR File Conversion" in "Edit", then press [OK].
- 2 Select "Yes", then press [OK].



- To use "DR File Conversion", the HDD needs enough storage capacity.
- The Subtitle and Audio Description on/off cannot be switched during the playback after the title has been converted.
- The size of converted title might increase depending on the title (such as radio programmes).
- DR File Conversion is stopped when this unit is turned on during performing "During standby" conversion. Conversion will start from the beginning again once the unit is turned off.
- The audio content (audio type and audio channel number) is recorded according to the setting of "Audio for HG / HX / HE / HL / HM Recording" and "Audio Type for XP Recording" (⇒ 81).
- Other titles may be converted if the Auto Renewal Recording (⇒ 28) should be performed.

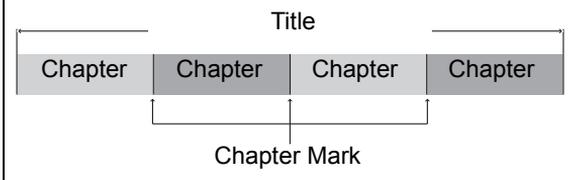
## To create/playback/edit the chapter

**HDD** **BD-RE** **BD-R** **RAM**

**-R** **-R DL** **-RW(V)** **-RW(VR)** **+R** **+R DL** **+RW** Only playback.

### Regarding chapters

**HDD** **BD-RE** **BD-R** **RAM** You can divide a title into multiple chapters. Each section between the division points (Chapter Marks) becomes a chapter.



- The maximum number of chapters: (Depends on the state of recording.)

**HDD**: Approx. 1000 per title

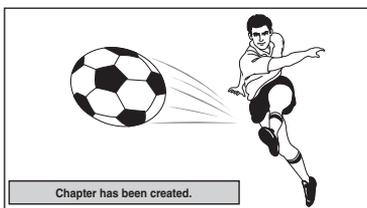
**BD-RE** **BD-R** **RAM**: Approx. 1000 per disc



- **HDD** You will not be able to perform the Resume play function (⇒ 36) or the “Change Thumbnail” (⇒ 41) with a title with the maximum number of chapters.

## To create Chapter Marks

During the playback or pause  
Press [CHAPTER].



### To delete the Chapter Mark

#### 1 While paused

Press [◀◀, ▶▶] and skip to the location you want to delete.

#### 2 Press [CHAPTER].

#### 3 Select “Yes”, then press [OK].

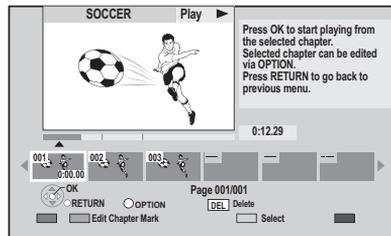
## To edit and playback chapters

### 1 Press [DIRECT NAVIGATOR].

### 2 Select the title, then press [OPTION].

### 3 Select “Chapter View”, then press [OK].

Chapter View screen



### ■ 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 [BACK/RETURN ↵] to go to Chapter View screen.

### 4 ■ To start play: Select the chapter, then press [OK].

### ■ To delete the chapter:

#### ① 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.

# Copying titles



HDD ↔ **BD-RE** **BD-R** **RAM** **+RW**  
**-RW(VR)** → **HDD**  
**HDD** → **-R** **-R DL** **-RW(V)** **+R** **+R DL**

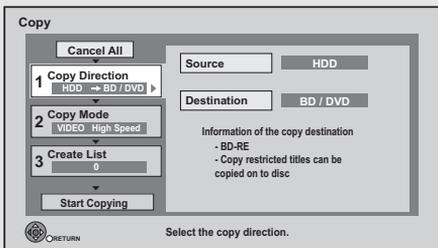
**1** **Insert a disc.**  
 The menu screen appears.  
 e.g.,



If the menu screen is not displayed (⇒ 15, Menu screen)

**2** **Select “Copy”, then press** **.**

**3** **Set the copy direction.**  
 ① Select “Copy Direction”, then press .  
 ② Set “Source”.  
 ③ Set “Destination”.  
 ④ Press to confirm.

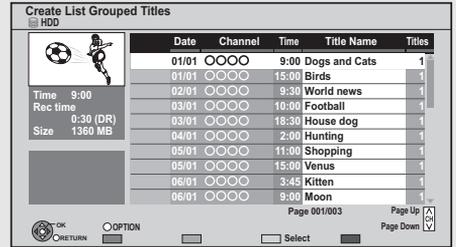


**4** **Set the recording mode** (⇒ 104).

- ① Select “Copy Mode”, then press .
- ② Set “Format” to “VIDEO”.
- ③ Set “Recording Mode”.
- ④ Press to confirm.

**5** **Register titles for copy.**

- ① Select “Create List”, then press .
- ② Select “New item”, then press .
- ③ Select the titles, then press .



(⇒ 45, Selecting the titles for the copying list)

- ④ Press to confirm.

**6** **Set other settings.**

- ① Set other settings.  
 (⇒ 46, Setting the copying options)
- ② Press to confirm.

**7** **Select “Start Copying”, then press** **.**

**8** **Select “Yes”, then press** **to start copying.**

## To cancel all registered copying settings and lists

After performing steps ① – ②

- 1 Select “Cancel All”, then press [OK].
- 2 Select “Yes”, then press [OK].



- **-R -R DL** Use “Copy Video ( AVCHD ) to Disc” when copying HD Video (AVCHD format) in high definition. (⇒ 48)
- Titles in the grouped titles and other titles cannot be registered simultaneously.
- **RAM** When copying to DVD-RAM using “8 hours” mode, play may not be possible on DVD players that are compatible with DVD-RAM. Use “6 hours” mode if playback may be on other equipment. (⇒ 79, Recording time in EP mode)

## Selecting the titles for the copying list

Select the title in step ⑤ – ③ (⇒ 44)

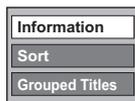
### Press the “Yellow” button.

A check mark is displayed. Repeat this step until you select all necessary items.

- Press the “Yellow” button again to cancel.
- The title will be copied in the order of the copying list. If you want to specify the order, edit the copying list after the items are selected. (⇒ 46)

### Other operation

- ① Press [OPTION].
- ② Select with operation, then press [OK].



<b>Information</b>	Information is shown.
<b>Sort</b> (All Titles screen only)	Titles are sorted according to the selected item.
<b>Grouped Titles</b> <b>All Titles</b>	Switch to Grouped Titles screen or All Titles screen

## Copying list icons and functions

### Copying list indicators



Titles that cannot be copied in high speed mode to the inserted disc



Title contains still picture(s)  
● Still picture(s) cannot be copied.



Title recorded using a different encoding system from that of the TV system currently selected on the unit.

● Titles displaying these marks cannot be selected.



Title with Guidance information or title restricted by Child Lock (⇒ 77, Child Lock).



Titles that cannot be copied in high definition quality mode (DR, HG, HX, HE, HL, HM) any more.



Titles that can be copied in high definition quality mode (DR, HG, HX, HE, HL, HM) once.

### Data size of each registered item



### Size:

Data size recorded to the copy destination

- When copying at normal speed, the total data size will change according to the recording mode.
- The total data size shown may be larger than the sum of the data sizes for each registered item, because of data management information being written to the copy destination, etc.

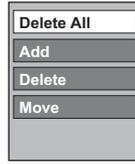
### Editing the copying list

Select the item after step ⑤-③

(⇒ 44)

① Press [OPTION].

② Select the operation, then press [OK].



<b>Delete All</b>	Select "Yes", then press [OK].
<b>Add</b>	Add new items to the copying list. 1 Select the title, then press the "Yellow" button. A check mark is displayed. Repeat this step. ● Press the "Yellow" button again to cancel. 2 Press [OK].
<b>Delete</b>	Select "Yes", then press [OK].
<b>Move</b>	Move selected items on the copying list. Select the destination, then press [OK].

### Setting the copying options

Select the item in step ⑥-① (⇒ 44)

① Select "Other Settings", then press [▶].

② Select the copying option, then press [OK].

<b>Subtitles*</b>	1 Select "Subtitles", then press [OK]. 2 Select "Automatic" or "Off", then press [OK].
<b>Finalise</b> (HDD → -R -R DL -RW(V) +R +R DL only)	1 Select "Finalise" or "Create Top Menu", then press [OK]. 2 Select "On" or "Off", then press [OK]. ● If "On" is selected, the discs become play-only and you can also play them on other DVD equipment. However, you can no longer record or edit. ● If "Off" is selected, it is possible to perform "Finalise" or "Create Top Menu" later. (⇒ 73)
<b>Create Top Menu</b> (HDD → +RW only)	
<b>Audio Description*</b>	1 Select "Audio Description", then press [OK]. 2 Select "Automatic" or "Off", then press [OK].

\* Only when titles are copied in DR mode and the recording mode other than High Speed is selected

### Copyable media and copy speed

■ HDD → Disc

(-: Impossible)

Original title's recording mode	Destination		Copy speed
	Media	Picture quality	
DR	BD-RE BD-R	Original Picture Quality	High speed
		High Definition	Normal speed*1,2
		Standard Definition	Normal speed*1
	RAM -R -R DL -RW(V) +R +R DL +RW	Original Picture Quality	-
		High Definition	-
		Standard Definition	Normal speed*1
HG, HX, HE, HL or HM	BD-RE BD-R	Original Picture Quality	High speed
		High Definition	Normal speed
		Standard Definition	Normal speed
	RAM -R -R DL -RW(V) +R +R DL +RW	Original Picture Quality	-
		High Definition	-
		Standard Definition	Normal speed
XP, SP, LP, EP or FR	BD-RE BD-R	Original Picture Quality	Normal speed
		High Definition	-
		Standard Definition	Normal speed
	RAM	Original Picture Quality	High speed
		High Definition	-
		Standard Definition	Normal speed
-R -R DL -RW(V) +R +R DL +RW	Original Picture Quality	High speed	
	High Definition	-	
	Standard Definition	Normal speed*3	

## ■ Disc → HDD

(–: Impossible)

Original		Destination picture quality	Copy speed
Recording mode	Media		
DR	BD-RE BD-R	Original Picture Quality	–
		High Definition	Normal speed <sup>※1, 2</sup>
		Standard Definition	Normal speed <sup>※1</sup>
HG, HX, HE, HL or HM	BD-RE BD-R	Original Picture Quality	–
		High Definition	Normal speed
		Standard Definition	Normal speed
XP, SP, LP, EP or FR	BD-RE BD-R	Original Picture Quality	–
		High Definition	–
		Standard Definition	Normal speed
	RAM -RW(VR)	Original Picture Quality	High speed
		Standard Definition	Normal speed
	-R -R DL -RW(V) +R +R DL	Original Picture Quality	–
		High Definition	–
		Standard Definition	–
		Standard Definition	–

※1 Subtitles and Audio Description are optional. (⇒ 46, Setting the copying options)

※2 If the programme has multi channel audio, priority is given to what you select. (⇒ 81, Audio for HG / HX / HE / HL / HM Recording)

※3 It is impossible to copy at high speed in the following cases:

- Copy including a title that was recorded to HDD with “Recording Format for DVD” set to “VR format” (⇒ 79)
- Titles that contain many deleted segments.
- Titles that have been copied to the HDD from an SD card or a Panasonic’s video camera, etc. with HDD (SD Video) (⇒ 61).
- **+R +R DL +RW** Titles recorded in “EP” mode and “FR (recordings 5 hours or longer)” mode.
- **+R +R DL +RW** Titles recorded in 16:9 aspect
- **-R -R DL -RW(V)** Titles recorded in 16:9 aspect using “EP” mode or “FR (recordings 5 hours or longer)” mode

## ■ When copying to the disc in normal speed mode **-R -R DL -RW(V) +R +R DL +RW**

You cannot copy to the disc in the following cases.  
 – When there is not enough free space on the HDD.  
 – When the number of titles recorded to the HDD and the number of titles to be copied to the disc is greater than 999 in total.

## ■ When stopping the normal speed copy during copy

Copying will be up to the point cancelled.

– **-R -R DL -RW(V) +R +R DL +RW** If copy is cancelled during the step while temporarily copying to the HDD, then nothing will be copied. **BD-R -R -R DL -RW(V) +R +R DL +RW** Even if the title was not copied to the disc, the amount of remaining writable disc space becomes less.

## ■ About maintaining the chapter mark

- The position of the chapter might shift slightly.
- It will not maintain the exceeded amount if it exceeds the maximum chapter numbers on a disc.
  - **BD-RE BD-R RAM -R -R DL -RW(V)**: Approx. 1000
  - **+R +R DL +RW**: Approx. 254 (Depends on the state of recording.)

## ■ About copy-restricted programmes

Some programmes on the digital broadcast are copy-restricted.

The recorded titles are indicated with “” icon and can be copied in high definition quality mode (Original Picture Quality, HG, HX, HE, HL or HM) once.

After completing copy, the titles cannot be copied anymore in high definition quality mode and the icon is changed to “”.

## Copying Title Playing

**HDD** → **BD-RE** **BD-R** **RAM** **-R** **-R DL** **-RW(V)** **+R**  
**+R DL** **+RW**

### 1 Playback the title to copy.

- If you also want to record the subtitles, display the subtitles by pressing [STTL ]. If you want to switch the subtitles, select the subtitles with "Subtitles" in the Disc menu. (⇒ 70)

### 2 Press [OPTION].

### 3 Select "Copy Title Playing", then press [OK].

### 4 Select "Start", then press [OK].

- Copying will start from the beginning of the title regardless of the playing position.

#### To stop copying

Press and hold [BACK/RETURN ] for 3 seconds.



- You can record to or play HDD while high speed copying. Press [OK] to exit the screen display.
- Press [STATUS ] to confirm the current progress.

To play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL on other players, it is necessary to finalise them after copy (⇒ 73). To play +RW on other players, we recommend you create Top Menu (⇒ 73), but they may not play on all DVD players.

#### ■ Speed and recording mode when copying Titles in DR, HG, HX, HE, HL or HM modes

Copy destination	Copy Speed	Recording mode
<b>BD-RE</b> <b>BD-R</b>	High speed*1	Same as title to be copied*1
<b>RAM</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b> <b>+RW</b>	Normal speed	FR

#### Titles in XP, SP, LP, EP or FR modes

Copy destination	Copy Speed	Recording mode
<b>BD-RE</b> <b>BD-R</b>	Normal speed	Recording mode of playing back title*2
<b>RAM</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b> <b>+RW</b>	High speed*2	Same as title to be copied*2

- \*1 When copying over the available space on the disc, one from HG, HX, HE, HL or HM modes will be selected to match the available space, and it will be copied with normal speed.
- \*2 When the copy destination (disc) does not have enough space, copy will perform at normal speed in FR mode.

## Copying HD Video (AVCHD format) from HDD

You can copy HD Video (AVCHD format) recorded on HDD by a Panasonic video camera etc. to a disc.

■ **HDD** → **BD-RE** **BD-R** (High Definition)

Go to step **1** on page 44, "Copying titles".

- Select "Original Picture Quality" or HG, HX, HE, HL or HM mode in step **4**–**3**.

■ **HDD** → **-R** **-R DL** (High Definition)

### 1 Insert a new disc.

### 2 Select "Copy Video ( AVCHD ) to Disc", then press [OK].

If the menu screen is not displayed (⇒ 15)

### 3 Go to step **5** on page 44, "Copying titles".



- This function can only be used for unformatted DVD-R or DVD-R DL.
- Discs will be automatically finalised after copy, making recording no longer possible.

■ **HDD** → **BD-RE** **BD-R** **RAM** **+RW** **-R** **-R DL**  
**-RW(V)** **+R** **+R DL** (Standard Definition)

Go to step **1** on page 44, "Copying titles".

- Select XP, SP, LP, EP or FR mode in step **4**–**3**.

## Copying a finalised disc

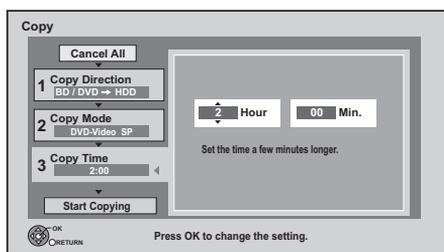
DVD-V → HDD

While playing a disc, the content being played is copied to the HDD according to the set time.

After performing steps ①–④ (“Format” is automatically set to “DVD-Video”) (⇒ 44, Copying titles)

### 1 Set “Copy Time”.

- ① Select “Copy Time”, then press [▶].
- ② Select “Time Setting”, then press [OK].
- ③ Select “On”, then set the copying time.
  - When copying all the content on the disc select “Off”.
- ④ Press [OK].

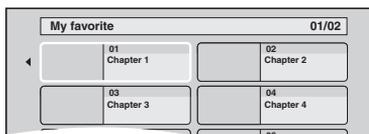


- ⑤ Press [◀] to confirm.
  - Set a few minutes longer than the source title, in order to include the operation time before play begins.

### 2 Select “Start Copying”, then press [OK].

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

### 4 When the Top Menu is displayed Select the title you want to start copying, then press [OK].



After the last title on the disc has finished playing the Top Menu is recorded until the set time is reached.

### To stop copying

Press [■].

You can also press and hold [BACK/RETURN ⇐] for 3 seconds.

- If stopped partway, copying will be up to that point.



- Operations and on-screen displays during copy are also recorded.
- Almost all DVD-Video on sale have been treated to prevent illegal copying, and cannot be copied.
- The content is recorded as 1 title from the start of copy to the end.
- If play does not begin automatically press [▶] (PLAY/×1.3) to start.

# Playing still pictures

HDD BD-RE RAM -R -R DL CD SD USB

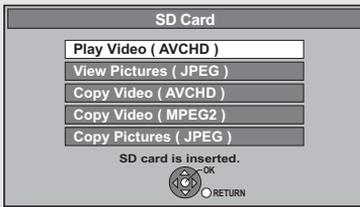
1 ■ **HDD**

Press



■ **BD-RE RAM -R -R DL CD SD USB**  
**Insert a disc, SD card or USB memory.**

e.g., **SD**

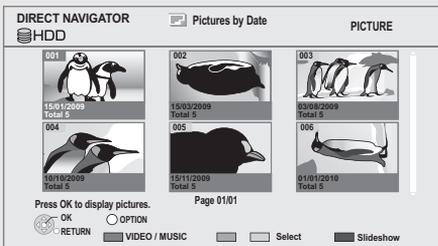


2 ■ **HDD**  
**Select “Picture” in “Playback Contents”, then press **OK**.**

■ **BD-RE RAM -R -R DL CD SD USB**  
**Select “View Pictures (JPEG)”, then press **OK**.**

3 **Select the date of “Pictures by Date” or album of “Album View”, then press **OK**.**

e.g., **HDD**



“Pictures by Date” screen

4 **Select the still picture, then press **OK**.**

- Press [◀, ▶] to display the previous or next still picture.



- You cannot play still pictures while recording or copying.
- It may take a few moments for still pictures to display.
- When there are many files and/or folders, some files may not display or be playable.

## ■ Screen icons



Picture and Album protected



**HDD**  
 Date that has not yet been viewed

## ■ Switching the DIRECT NAVIGATOR (PICTURE) appearance

**HDD** **BD-RE** **RAM**

Still pictures copied from SD cards and USB memories are grouped by the shooting date on Pictures by Date screen.

- ① Press [OPTION].
- ② Select “View Album” or “Pictures by Date”, then press [OK].



Pictures by Date screen



Album View screen

- To create an Album (⇒ 53, Copy the selected item to a new album)

## ■ Switching the VIDEO or MUSIC screens

While the DIRECT NAVIGATOR (“View Album” or “Pictures by Date”) screen is displayed

**HDD**

- ① Press the “Red” button.
- ② Select “VIDEO” or “MUSIC”, then press [OK].

**BD-RE** **RAM**

Press the “Red” button.

- The screen switches from “PICTURE” to “VIDEO”.

## Start Slideshow

You can display still pictures one by one at a constant interval.

After performing steps ①–② (⇒ 50, Playing still pictures)

**Select the date of “Pictures by Date” or an album of “Album View”, then press the “Blue” button.**

### To stop the slideshow

Press [BACK/RETURN ↵].

## Still picture play option

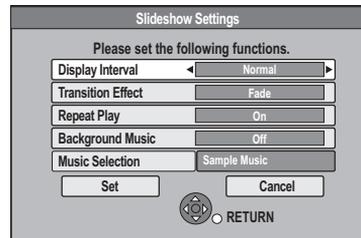
- 1 Press [OPTION].
- 2 Select the item, then press [OK].

## ■ While displaying DIRECT NAVIGATOR (PICTURE)

### Slideshow Settings

You can set the following items for slideshow.

**After completing the following settings, select “Set”, then press [OK].**



- **Display Interval**
- **Transition Effect**  
You can set to “Fade”, “Motion” or “Random”.
- **Repeat Play**
- **Background Music**
- **Music Selection**  
You can select Background Music from HDD (sample music, My favourites or Playlists) or USB memory.

### Information (Still picture)

Information is shown.

## ■ While displaying a still picture

### Rotate RIGHT, Rotate LEFT

- Rotation information will not be stored depending on the disc or card.

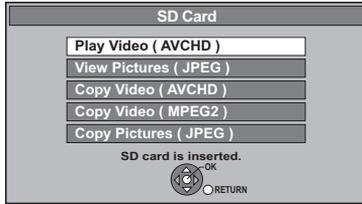
### Zoom in, Zoom out

- This function is only available for small-sized still pictures.

# Editing still pictures

**HDD** **BD-RE** **RAM** **SD**

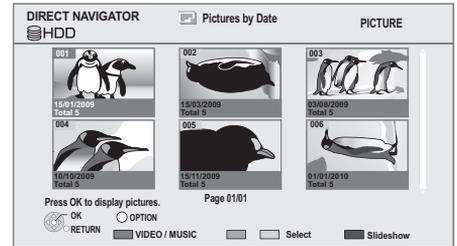
- HDD**  
Press [FUNCTION MENU].
  - BD-RE** **RAM** **SD**  
Insert the disc or the SD card.  
e.g., **SD**



- HDD**  
Select "Picture" in "Playback Contents", then press [OK].
  - BD-RE** **RAM** **SD**  
Select "View Pictures (JPEG)", then press [OK].

- Editing an album or date:  
Select the album or date, then press [OPTION].  
⇒ 51, Switching the DIRECT NAVIGATOR (PICTURE) appearance

- Editing a still picture:
  - Select the item, then press [OK].

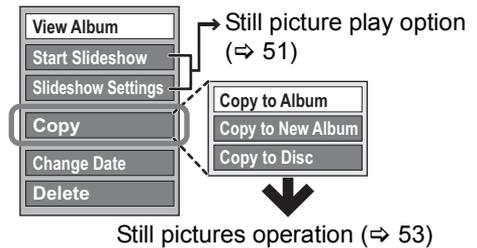


- Select the still pictures to edit, then press [OPTION].

- Multiple editing**  
Select the item, then press the "Yellow" button. Repeat this step.  
A check mark appears. Press the "Yellow" button again to cancel.

- Select the operation, then press [OK].

(e.g., **HDD** Pictures by Date)



## Still pictures operation

After performing steps 1–3 (⇒ 52)

### Copy to Album

**HDD** **BD-RE** **RAM**

- ① Select “Copy to Album” in “Copy”, “Copy Album” or “Copy Pictures”, then press [OK].
- ② Select “Start”, then press [OK].
- ③ Select the destination album, then press [OK].

- The destination album with protect setting cannot be copied to.

### Copy the selected item to a new album

**HDD** **BD-RE** **RAM**

Copy the selected item to a new album.

- ① Select “Copy to New Album” in “Copy”, “Copy Album” or “Copy Pictures”, then press [OK].
- ② Select “Start”, then press [OK].
- ③ Press [OK].
- ④ Select “Yes” or “No”, then press [OK].
  - “Yes”:  
You can give names to albums. (⇒ 74, Entering text)
  - “No”:  
Date of the first recorded picture becomes the album name automatically.  
(For the pictures without recording date, the name will become “--/--/----”.)
  - After copying, the screen shows the Album View screen automatically.

### Copy to disc or HDD

**HDD** **BD-RE** **RAM**

(Pictures by Date and Album View only)

- ① Select “Copy to Disc” or “Copy to HDD” in “Copy” or “Copy Album”, then press [OK].
- ② Select “Start”, then press [OK].

### Change the date of a folder

**HDD** **BD-RE** **RAM**

(Pictures by Date only)

- ① Select “Change Date”, then press [OK].
- ② Select the item and change the date.
- ③ Press [OK].
  - A new folder will be created.
  - The original folder is not deleted. Delete it if unrequired.
  - If there is a same date folder, pictures move into the folder.

### Enter Album Name

(Album View only)

Select “Enter Album Name” in “Edit Album”, then press [OK].  
(⇒ 74, Entering text)

Album names input using this unit may not be displayed on other equipment.

### Changing Protection

(Album View and Picture (JPEG) View only)

- ① Select “Set up Protection” or “Cancel Protection” in “Edit Album” or “Edit Pictures”, then press [OK].
- ② Select “Yes”, then press [OK].
  - Ⓜ appears when the protection is set.
  - Even if the protection is set, the album may be deleted by another unit.

### Deleting

- ① Select “Delete”, “Delete Album” or “Delete Pictures”, then press [OK].
- ② Select “Delete”, then press [OK].

# Copying still pictures

## Copying automatically

**SD** → **HDD**

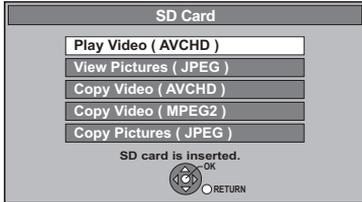
This unit saves information about imported still pictures. Therefore, if still pictures are imported from the same SD card, then only new still pictures will be copied.

**USB** → **HDD**

All pictures in USB memory will be copied.

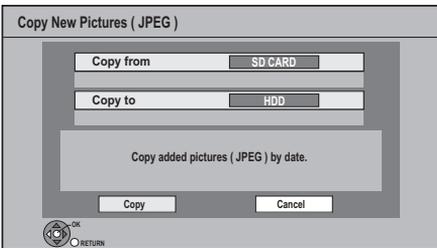
### 1 While stopped

Insert the SD card or the USB memory.



- Display items differ depending on what is recorded.

### 2 Select “Copy Pictures ( JPEG )”, then press [OK].



### 3 Select “Copy”, then press [OK].

- **SD** Even if protection of the card is set, copy will start.
- **USB** Copy will start.

### 4 **SD** Select “Copy & Delete” or “Copy Only”, then press [OK].

If “Copy & Delete” is selected, copied pictures in the SD card will be deleted after copying.

#### To stop copying

Press and hold [BACK/RETURN ↵] for 3 seconds.



- Pictures 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 (⇒ 111), copying will stop partway through.
- This unit saves the information on up to 12,000 still pictures and 30 SD cards. If additional still pictures are imported, the older information will be deleted.

## Copying using the copying list

**HDD** ↔ **BD-RE** **RAM** **SD**

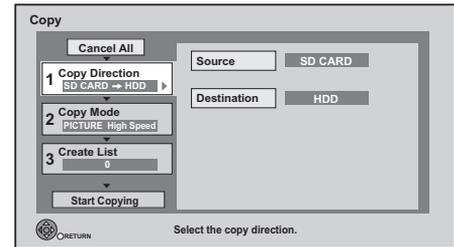
**SD** ↔ **BD-RE** **RAM**

**USB** → **HDD** **BD-RE** **RAM**

### 1 While stopped

Press [FUNCTION MENU].

### 2 Select “Copy (VIDEO / PICTURE)” in “Copy”, then press [OK].



### 3 Set the copy direction.

- ① Select “Copy Direction”, then press [▶].
- ② Set “Source”.
- ③ Set “Destination”.
- ④ Press [◀] to confirm.

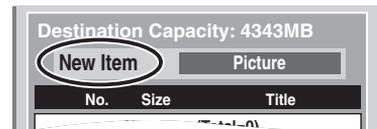
### 4 Set the copy mode.

- ① Select “Copy Mode”, then press [▶].
- ② Set “Format” to “PICTURE”.
- ③ Press [◀] to confirm.

### 5 Register still pictures to copy.

- Pictures from different dates or albums will not be registered to the same list.

- ① Select “Create List”, then press [▶].
- ② Select “New Item”, then press [OK].



- ③ Select the item, then press [OK].
- ④ Select “New item”, then press [OK].
- ⑤ Select the folder or still picture.
  - To select another “Album” or “Date”, press [OPTION] and select “Select Album” or “Select Date”, then press [OK].
- ⑥ Press the “Yellow” button.
  - A check mark is displayed. Repeat step ⑤ and ⑥ until you select all necessary items.
- ⑦ Press [OK].
- ⑧ Press [◀] to confirm.

## 6 Select “Start Copying”, then press [OK].

- **HDD** → **BD-RE** **RAM** **SD**  
**BD-RE** **RAM** → **HDD** **SD**

You can select another album as the copying destination when copied with “By Picture (Album)”.



## 7 Select “Yes”, then press [OK] to start copying.

### To cancel all registered copying settings and lists

After performing steps 1–2

- 1 Select “Cancel All”, then press [OK].
- 2 Select “Yes”, then press [OK].

### To stop copying

Press and hold [BACK/RETURN ↵] for 3 seconds.

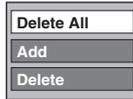


- If the number of files/folders to be copied exceeds the maximum (⇒ 111), copying will stop partway through.

## Editing the copying list

Select the item after step 5–⑦ (⇒ 54)

- ① Press [OPTION].
- ② Select the operation, then press [OK].



<b>Delete All</b>	Select “Yes”, then press [OK].
<b>Add</b>	<ol style="list-style-type: none"><li>1 Select the item, then press the “Yellow” button. A check mark is displayed. Repeat this step.<ul style="list-style-type: none"><li>• Press the “Yellow” button again to cancel.</li></ul></li><li>2 Press [OK].</li></ol>
<b>Delete</b>	Select “Yes”, then press [OK]. <ul style="list-style-type: none"><li>• <b>Multiple editing</b> Press the “Yellow” button before step ① (⇒ above). A check mark is displayed. Repeat this step.<ul style="list-style-type: none"><li>• Press the “Yellow” button again to cancel.</li></ul></li></ul>

# Playing music/Copying music to HDD

**-R -R DL CD USB**

- Music CD: All tracks in the CD will be recorded.
- **-R -R DL CD USB** (MP3): All tracks in the folder will be recorded.  
(Cannot record track-by-track.)
- It will be recorded as 1 album to the HDD in 1 recording.

## 1 While stopped

### ■ Music CD Insert a disc.

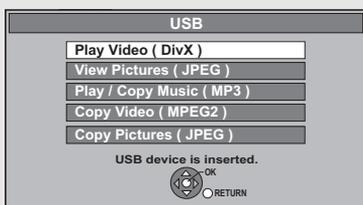
The unit starts accessing the Gracenote® Database and searches for the title information.



- **If multiple titles were found**  
Select the appropriate title, then press [OK].
- Playback will automatically start.

### ■ MP3

## ① Insert a disc or USB memory.



- Display items differ depending on what is recorded.

## ② Select “Play / Copy Music (MP3)”, then

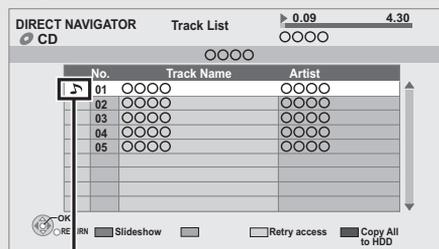
press **OK**.

- **-R -R DL CD** Playback will automatically start if only MP3 is recorded.

## 2 When copying to HDD

Press **Blue**.

e.g., Music CD



Playing track

## 3 Select “Copy”, then press

**OK**.

Copying starts.

### To stop copying

Press and hold [BACK/RETURN ↵] for 3 seconds.



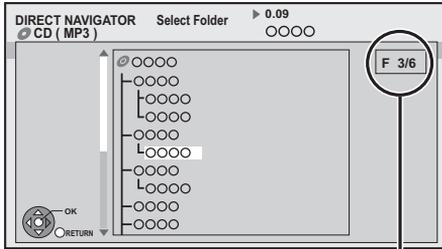
- Only the track/artist name will be displayed if the information is contained in ID3 tag of the MP3 file.
- If there is a large amount of still picture data etc. within a MP3 file, play may not be possible.
- While copying, no other operations can be performed.  
Timer recordings will not proceed.

### ■ About the Gracenote® Database

- The maximum number of tracks on HDD: 40000 (Depends on the remaining capacity.)
- This unit has an internal database containing information for approximately 350,000 album titles.
- If the title is not in the built-in database, it is possible to acquire the title automatically by connecting to the network via the Internet. (⇒ 10, 13)
- If there are music CDs with very similar title information, then the incorrect title information may be obtained. If no title suggestions are found, it is displayed as “Unknown Artist”, “Unknown Album”. In these cases, enter the music CD title information manually, after recording to the HDD has completed.

## To find a folder (MP3 only)

- 1 While the Track List is displayed Press [OPTION].
- 2 Select "Select Folder", then press [OK].



Selected folder No. /Total folder  
If the folder has no track, "--" is displayed as folder number.

- 3 Select the folder, then press [OK].

## Playing music recorded on HDD

- 1 When the HDD is selected Press [FUNCTION MENU].
- 2 Select "Music" in "Playback Contents", then press [OK].



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



- 1 Categorise by artist
- 2 Categorise by album
- 3 Tracks registered in "My Favourites"
- 4 Tracks registered in "Playlists"
- 5 Tracks most often played recently (up to 30 tracks)
- 6 Random playback of all tracks

### ■ When "Artists" is selected

- 1 Select the initial of the artist.
- 2 Select the name of the artist, then press [OK].
- 3 Select the album, then press [OK].

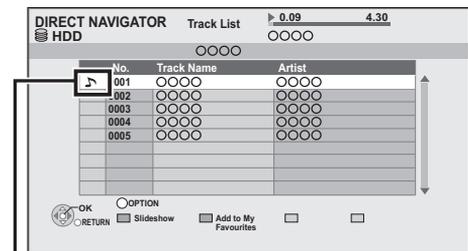
### ■ When "Albums" is selected

- 1 Select the initial of the album.
- 2 Select the album, then press [OK].

### ■ When "Playlists" is selected

Select the playlist, then press [OK].

- 4 Select the track, then press [OK].



Playing track



- You cannot play music tracks on HDD while copying.

### ■ Switching the VIDEO or PICTURE screens

While the DIRECT NAVIGATOR (Music Menu) screen is displayed

- 1 Press the "Red" button.
- 2 Select "VIDEO" or "PICTURE", then press [OK].

## Operations during music play

**HDD -R -R DL CD USB**

<b>Stop</b>	Press [■].
<b>Pause</b>	Press [⏸]. Press [⏸] again or [▶] (PLAY/× 1.3) to restart play.
<b>Search</b>	Press [◀◀] or [▶▶]. ● Press [▶] (PLAY/× 1.3) to restart play.
<b>Skip</b>	<b>During play or while paused, press [◀◀] or [▶▶].</b> Skip to the track you want to play. ● Each press increases the number of skips.

## Useful functions during music play

**HDD -R -R DL CD USB**

### Registering a track to the “My Favourites”

**HDD**

While the Track List screen is displayed

**Select the track, then press the “Green” button.**

● Up to 99 tracks can be registered.

### Information

**HDD**

While the Track List screen is displayed

- ① **Select the track.**
- ② **Press [OPTION].**
- ③ **Select “Information”, then press [OK].**

### Repeat Play Random

Refer to “Repeat Play” or “Random” in “Playback menu” (⇒ 70).

### Re-master 1 Re-master 2

Refer to “Sound Effects” in “Playback menu” (⇒ 71).

## Displaying Still Pictures (Slideshow)

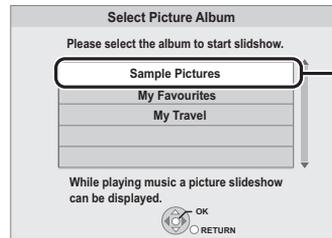
Pictures stored on the “Album” of the HDD can be played back as slideshow during playback of the music.

While playing the music

**Press the “Red” button.**

**To change the pictures to display**

- ① While slideshow playing  
Press [OPTION].
- ② Select “Select Picture Album”, then press [OK].
- ③ Select the album, then press [OK].  
e.g.,



Sample pictures pre-installed on HDD

**To end the slideshow**

Press [BACK/RETURN ↵].

- **To play music continuously even if the Power off link works (⇒ 68)**

# Editing music/playlist

## Editing music

**HDD**

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



- When doing “Delete All Tracks”, “Clear My Favourites” or “Clear Frequently Played” (⇒ go to step 4).

- 3 Select the item, then press [OK].
- 4 Press [OPTION].
- 5 Select the item, then press [OK].  
e.g., while selecting “Albums”



## Album and track operation

After performing steps 1–4 (⇒ above)

### Deleting all tracks

- While displaying the “Music Menu” screen
  - ① Select “Delete All Tracks”, then press [OK].
  - ② Select “Yes”, then press [OK].
  - ③ Select “Delete”, then press [OK].
- While displaying the “Artists” screen
  - ① Select “Delete All Tracks”, then press [OK].
  - ② Select “Delete”, then press [OK].

### Deleting albums

- While displaying the “Albums” screen
  - ① Select “Delete Album”, then press [OK].
  - ② Select “Delete”, then press [OK].

## Deleting

- While displaying the “Track List” screen
  - ① Select “Delete”, then press [OK].
  - ② Select “Delete”, then press [OK].

## Editing the name

Select “Edit Album Name”, “Edit Track Name”, “Edit Artist Name” or “Edit Playlist Name”, then press [OK].

(⇒ 74, Entering text)

## Removing all tracks

Tracks themselves are not deleted from the HDD.

- While displaying the “Playlists” screen
  - ① Select “Remove All Tracks”, then press [OK].
  - ② Select “Remove”, then press [OK].
- While displaying the “Music Menu” screen
  - ① Select “Clear My Favourites” or “Clear Frequently Played”, then press [OK].
  - ② Select “Clear”, then press [OK].

## Removing tracks

- While displaying the “My Favourites”, “Track List” of “Playlists” or “Frequently Played” screen
  - ① Select “Remove”, then press [OK].
  - ② Select “Remove”, then press [OK].The selected track is removed.

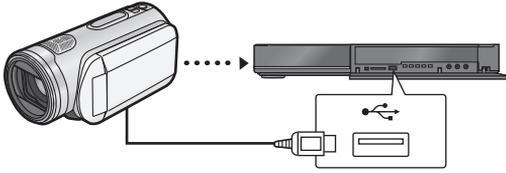
## Add to Playlist

You can register your favourite albums and tracks into 10 preset playlists.

- ① Select “Add to Playlist”, then press [OK].
  - ② Select the playlist, then press [OK].
- New playlist cannot be added.
  - Up to 999 tracks can be registered to each playlist.

# Copying the HD Video or the SD Video

e.g., Connecting to the Panasonic's video camera



**USB connection cable**  
(specified cable such as accessories of the USB equipment)

## Copying HD Video (AVCHD format)

It is possible to copy the HD video (AVCHD format) recorded on the Panasonic's video camera, etc. to the HDD or disc.

AVCHD (Disc) → **HDD**

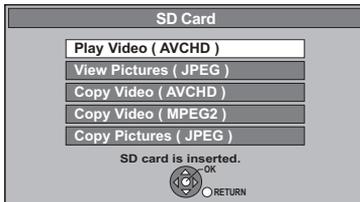
AVCHD (SD card, video camera, etc.) →

**HDD BD-RE BD-R**

With Other Equipment

- 1 ■ **From video equipment**  
**Connect the video camera.**
  - Make the video camera ready for data transfer on the video camera.
- 1 ■ **From a disc or an SD card**  
**Insert a disc or SD card.**

e.g., **SD**



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

- 2 **Select "Copy Video ( AVCHD )", then press [OK].**

- 3 **When copying from an SD card or video equipment**  
**Select "Copy to HDD" or "Copy to Blu-ray Disc", then press [OK].**

- 4 **Select the title, then press the "Yellow" button.**

A check mark is displayed. Repeat this step.

- Press the "Yellow" button again to cancel.  
(All the recordings on the same date become a title.)

- 5 **Press [OK].**

- 6 **Select "Start", then press [OK].**

It will automatically format the unformatted disc, such as a new disc.

- It may take time for the copying to start.

### To stop copying

Press and hold [BACK/RETURN ↵] for 3 seconds.



- Copy cannot be executed while recording or playback.
- An AVCHD title with more than 100 scenes will be divided into titles every 99th scene and copied.

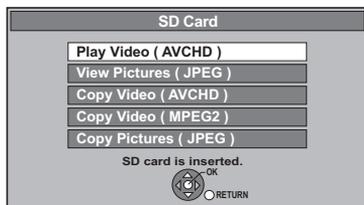
## Copying SD Video (MPEG2 format)

It is possible to copy the SD video (MPEG2 format) recorded on the Panasonic video camera, etc. to the HDD or disc.

**SD**, Panasonic's video camera → **HDD** **RAM**

- 1 ■ **From video equipment**  
**Connect the video camera.**
  - Select the appropriate mode that makes the video camera ready for data transfer on the video camera.

- 1 ■ **From an SD card**  
**Insert an SD card.**



- Display items differ depending on what is recorded in the card.

- 2 Select “Copy Video ( MPEG2 )”, then press [OK].
- 3 Select “Start Copying”, then press [OK].
- 4 Select “Yes”, then press [OK] to start copying.

### To stop copying

Press and hold [BACK/RETURN ↵] for 3 seconds.



- You cannot playback SD Video on an SD card or in the HDD of the Panasonic's video camera, etc. with this unit. You must copy the files to the HDD or a DVD-RAM.
- You cannot playback or record while copying SD Video.

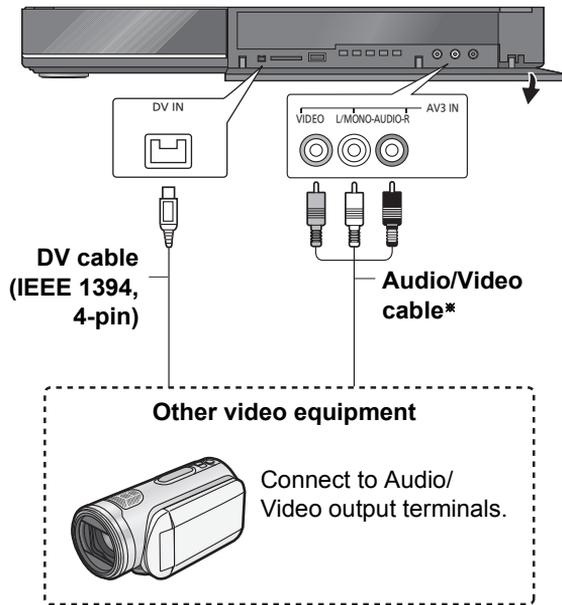
# Recording from external equipment

## Recording from video equipment

- Turn off the unit and other video equipment before connecting.

e.g., Connecting to the AV3 or DV input terminals on the front

This unit



With Other Equipment

\* Connect to terminals of the same colour.

### When recording from the unit's DV terminal

- Select the audio type in "Audio Type for DV Input" (⇒ 81).
- When recording from DV equipment (e.g., digital video camcorder), you can record audio/video recordings from the DV tape only.



- The video quality will be degraded.
- While copying from DV input or executing the "Flexible Recording via AV input" (⇒ 63)
  - Copy will stop when timer recording starts.
  - Chasing playback, simultaneous rec and play, switching of input cannot be performed.
  - **-R -RW(V) +R +RW** Chapter will be created automatically.

## Manual recording

Recording disc: **HDD**

Recording mode: **XP, SP, LP, EP**

### ① While stopped

Press **[INPUT SELECT]** to select the input channel.

e.g., If you have connected to AV3 input terminals, select "AV3".

### ② Press **[REC MODE]** to select the recording mode.

### ③ Start play on the connected equipment.

### ④ Press **[● REC]**.

Recording starts.

### ⑤ Set the time to record. (⇒ 21)

### To skip unwanted parts

Press **[|||]** to pause recording.

- Press again to restart recording.

### To stop recording

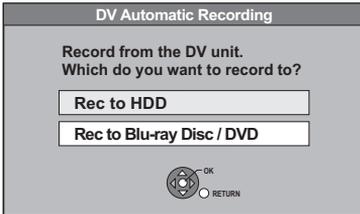
Press **[■]**.

## DV Automatic Recording

Recording disc: **HDD** **BD-RE** **BD-R** **RAM** **-R**  
**-RW(V)** **+R** **+RW**

Recording mode: **XP, SP, LP, EP**

- ① Turn off this unit and DV equipment.
- ② Connect the DV equipment (⇒ 62).
- ③ Turn on this unit.
- ④ Turn on the DV equipment, and pause play at the point you want recording to start.



- ⑤ Select “Rec to HDD” or “Rec to Blu-ray Disc / DVD”, then press [OK].
- ⑥ Press [REC MODE] to select the recording mode.
- ⑦ Select “Start”, then press [OK].

### To stop recording

Press [■].



- It is not possible to operate the unit from DV equipment.
- The DV input cannot be connected to a computer, etc.
- The DV equipment name may not be shown correctly.

If the DV automatic recording function does not work properly, check the connections and settings, and turn the unit off and back on.

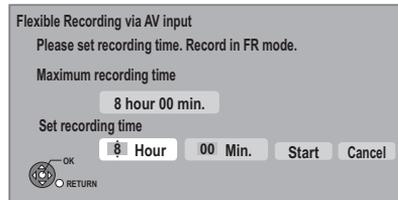
**If that does not work, follow the instructions for manual recording (⇒ 62).**

## Flexible Recording via AV input

Recording disc: **HDD** **BD-RE** **BD-R** **RAM** **-R**  
**-RW(V)** **+R** **+RW**

Recording mode: **FR**

- ① While stopped  
Press [INPUT SELECT] to select the input channel.  
e.g., If you have connected to AV2 input terminals, select “AV2”.
- ② While stopped  
Press [FUNCTION MENU].
- ③ Select “Others”, then press [OK].
- ④ Select “Flexible Recording via AV input”, then press [OK].



- ⑤ Select “Hour” and “Min.” and set the recording time.
- ⑥ Start play on the other equipment.
- ⑦ Select “Start”, then press [OK].

### To stop recording partway

Press [■].

### To show the remaining time

Press [STATUS ①].

## Recording broadcasts from Set Top Box

Recording disc: **HDD**

Recording mode: **XP, SP, LP, EP**

- Connect the Set Top Box (⇒ 9).

- 1 While stopped**  
Press **[INPUT SELECT]** to select the input channel.
- 2 Press [REC MODE]** to select the recording mode.
- 3 Select the channel on the other equipment.**
- 4 Press [● REC].**  
Recording starts.
- 5 Set the time to record. (⇒ 21)**

### To skip unwanted parts

Press **[II]** to pause recording.

- Press again to restart recording.

### To stop recording

Press **[■]**.



- It will be recorded in standard definition quality even if the programme is in high definition quality.

## Linked timer recording (SKY Digital STB, etc.)—EXT LINK

Recording disc: **HDD**

Recording mode: **XP, SP, LP, EP**

- Connect the equipment with AV2 input terminal (⇒ 9).
- Set “AV2 Input” and “Ext Link” (⇒ 83).
- Make timer programming on the external equipment.

- 1 Press [EXT LINK].**
  - “EXT-L” lights on the unit’s display

### To cancel the External link

- 1 Turn on this unit.
- 2 Press **[EXT LINK]** to stop recording or to cancel linked timer recording standby. (“EXT-L” disappears.)



- It will be recorded in standard definition quality even if the programme is in high definition.
- During Ext Link Standby mode or recording, you cannot select external input other than AV2.
- This function does not work when “TV System” is set to “NTSC” (⇒ 82).
- This function does not work while recording 2 programmes simultaneously with timer recording.
- The beginnings of recordings may not be recorded correctly in some cases.
- Programmes are recorded as one title on this unit when the end time of the earlier timer recording and the start time of the later timer recording are close to each other. To divide the titles, go to “Divide Title” (⇒ 41).
- When “EXT-L” lights on the unit’s display, Direct TV Recording is unavailable.

# Enjoying VIERA CAST

## Preparation

- Network connection (⇒ 10)
- Network Easy Settings (⇒ 13, 84)

You can access a selection of Internet services from the Home screen with VIERA CAST, for example YouTube, Picasa Web Albums. (Current as of December 2009)

## 1 Press [VIERA CAST].

- The message is displayed. Please read these instructions carefully and then press [OK].

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

- Operable buttons:  
[▲, ▼, ◀, ▶], [OK], [BACK/RETURN ⇐], coloured buttons and number buttons

### VIERA CAST Home screen;

e.g.,



Images are for illustration purpose, contents may change without notice.



- 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 CAST function.
- The VIERA CAST Home screen is subject to change without notice.
- The services through VIERA CAST 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 content may be inappropriate for some viewers.
- Some content may only be available for specific countries and may be presented in specific languages.
- If timer recording starts, VIERA CAST will stop.

### To return to the VIERA CAST Home screen

Press [VIERA CAST].

### To exit from VIERA CAST

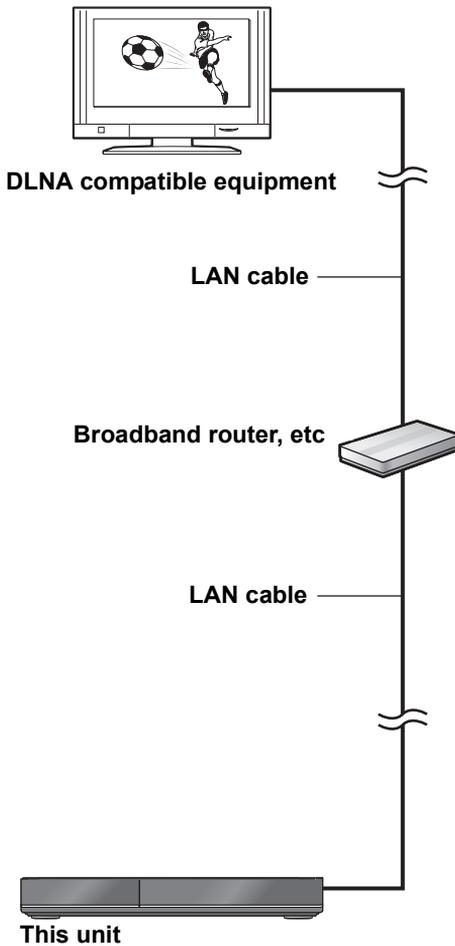
Press [EXIT].

- Set "Lock" to "On" to restrict using VIERA CAST. (⇒ 84)
- Set "Automatic Volume Control" to "Off" when the audio is warped while using the VIERA CAST. (⇒ 84)

# DLNA feature

You can enjoy the video and still pictures saved on the HDD of this unit on DLNA compatible equipment connected via a network.  
Music cannot be played back.

e.g.,



Convenient functions

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

## Preparation

- Network connection (⇒ 10)
- Network Easy Settings (⇒ 13, 84)

## Playing back from the equipment

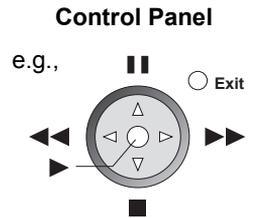
- 1 Operate the playback equipment to display the list of titles on this unit.**
  - Refer to their operating instructions.
- 2 Select the item to playback (folder), then press [OK]**

### To use the Control Panel (Only Panasonic DLNA compatible equipment)

The Control Panel is displayed once the playback starts.

Operation can be performed with [▲, ▼, ◀, ▶], [OK], [BACK/RETURN ↵] and [EXIT].

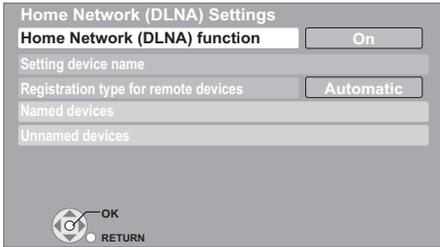
- Press [OK] if the Control Panel is not displayed.
- Press [BACK/RETURN ↵] to hide the Control Panel.



- You may not be able to use the Control Panel even if you use the Panasonic DLNA compatible equipment.
- The DLNA compatible device that is to be connected to the unit should be connected to the same hub or broadband router as the unit.
- You cannot playback the titles on other DLNA compatible equipment from this unit.
- Files not on the HDD cannot be played back.
- Editing is not possible. (Only delete can be performed from Panasonic equipment)
- Programme during recording cannot be played back.
- Playback via DLNA compatible equipment cannot be performed when this unit is in the following conditions:
  - While simultaneously recording 2 programmes
  - While playing back a disc
  - While simultaneously performing High speed copy and recording
  - While displaying the Setup menu
  - While executing functions using a network, such as “VIERA CAST”
- There may be some video that cannot be played back on DLNA compatible equipment depending on the equipment.
- You cannot playback simultaneously from 2 or more items of DLNA compatible equipment.

**When “DLNA Function” is deactivated make the following settings.**

- ① While stopped  
Press [FUNCTION MENU].
- ② Select “Others”, then press [OK].
- ③ Select “Setup”, then press [OK].
- ④ Select “Network”, then press [OK].
- ⑤ Select “Network Settings”, then press [OK].
- ⑥ Select “Home Network ( DLNA ) Settings”, then press [OK].



- ⑦ Select “Home Network ( DLNA ) function”, then press [OK].
- ⑧ Select “On”, then press [OK].
  - “Power Save in Standby” in the Setup is set to “Off”. (⇒ 84)
- ⑨ Select “Registration type for remote devices”, then press [OK].
- ⑩ Select “Automatic” or “Manual”, then press [OK].

<b>Automatic</b>	<p>All connected devices on the same network can access this unit.</p> <p>4 Panasonic DLNA compatible equipment and 12 Non-Panasonic DLNA compatible equipment will be automatically registered.</p> <ul style="list-style-type: none"> <li>● Equipment registered earliest will be deregistered when the 5th Panasonic DLNA compatible equipment or 13th Non-Panasonic DLNA compatible equipment is connected to this unit.</li> <li>● Ensure that the router for your home network has adequate security system to prevent unauthorized access.</li> </ul>
<b>Manual</b>	<p>Select the devices to register. (⇒ right, To register equipment manually)</p>

**To register equipment manually**

After selecting “Manual” in step ⑩ (⇒ left)

- ① Select “Named devices” or “Unnamed devices”, then press [OK].

<b>Named devices</b>	<p>Four Panasonic DLNA compatible equipment can be registered.</p> <ul style="list-style-type: none"> <li>● Even if it is Panasonic equipment, you may not be able to register from “Named devices”. In this case select “Unnamed devices”.</li> </ul>
<b>Unnamed devices</b>	<p>12 non-Panasonic DLNA compatible equipment can be registered.</p>

- ② **Named devices**  
Select “Add new device” then press [OK].
- Unnamed devices**  
Select the MAC Address for the connected equipment, then press [OK].
- ③ Select “Yes”, then press [OK].
- ④ Access this unit from the connected DLNA compatible equipment within 10 minutes.

**To deregister equipment**

After selecting “Manual” in step ⑩ (⇒ left)

- ① Select “Named devices” or “Unnamed devices”, then press [OK].
- ② Select the equipment, then press [OK].
- ③ Select “Yes”.

**To set the name of this unit for displaying on the connected equipment**

After performing step ⑧ (⇒ left)

- ① Select “Setting device name”, then press [OK].
- ② Select “Select from a preset list” or “Create name”, then press [OK].
- ③ **Select from a preset list**  
Select the preset name, then press [OK].
- ④ **Create name**  
Enter the name. (⇒ 74, Entering text)

# Linked operations with the TV (VIERA Link “HDAVI Control™”/Q Link)

## What is VIERA Link “HDAVI Control”?

VIERA Link “HDAVI Control” is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) or receiver under “HDAVI Control”. You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details.

### Preparation

- 1 Connect this unit to your TV or receiver using an HDMI cable. (⇒ 8)
- 2 Set “VIERA Link” to “On” (⇒ 83). (The default setting is “On”.)
- 3 Set the “HDAVI Control” operations on the connected equipment (e.g., TV).
  - Set the input channel on the VIERA to suit the terminal to be used as “HDAVI Control”.
- 4 Turn on all “HDAVI Control” compatible equipment, then select this unit’s input channel on the connected TV so that the “HDAVI Control” function works properly.

**Also when the connection or settings are changed, repeat this procedure.**

## What is Q Link?

Q Link is a convenient function that offers linked operations of this unit and a Panasonic TV. You can use this function by connecting the equipment with a fully wired 21-pin Scart cable.

### Preparation

Connect this unit to your TV with a fully wired 21-pin Scart cable.

### For your reference

The following systems from other manufacturers have similar functions to Q Link from Panasonic.

For details, refer to your TV’s operating instructions or consult your dealer.

- Q Link (registered trademark of Panasonic)
- DATA LOGIC (registered trademark of Metz)
- Easy Link (registered trademark of Philips)
- Megalogic (registered trademark of Grundig)
- SMARTLINK (registered trademark of Sony)

## Automatic input switching

Power on link **VIERA Link** **Q Link**

When the following operations are performed, the TV will automatically switch the input channel and display the corresponding action. Additionally when the TV is off, the TV will automatically turn on.

- When play starts on the unit
- When an action that uses Direct Navigator or Function Menu etc, is performed

## Power off link **VIERA Link** **Q Link**

When you set the TV to standby mode, the unit is also automatically set to standby mode.

- Power off link function does not work when recording, copying, finalising etc.

## Playing music continuously even after turning off power to the TV\*<sup>1</sup>

**VIERA Link**

The following operations make it possible to keep the power of the unit ON and to play music continuously.

When the unit is connected to an amplifier/receiver supporting VIERA Link.

- 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.

## Direct TV Recording\*<sup>2</sup> **VIERA Link**

**Q Link**

You can immediately start recording the watching programme on the TV without switching the channels on this unit.

**Refer to page 23 for operation.**

## PAUSE LIVE TV \*<sup>2</sup> **VIERA Link**

You can pause the TV programme you are watching and resume later by temporarily saving it on the HDD.

**Refer to page 20 for operation.**

## Easy control only with VIERA remote control<sup>※1</sup> **VIERA Link**

You can operate this unit using buttons on the TV remote control.

Refer to the operating instructions of the TV about the buttons that you can use.

### Using the OPTION MENU

By using the TV remote control, you can play discs using the “Control Panel” (⇒ below).

- ① Press [OPTION].
- ② Select the item, then press [OK].

e.g.,

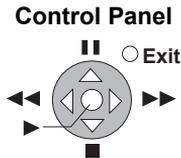


### ■ Using the Control Panel

Using the Control Panel, you can operate search backward, search forward, stop, etc, with the TV remote control.

Select “Control Panel” from the OPTION MENU.

The Control Panel is displayed.



<sup>※1</sup> This function is available with the TV that supports “HDAVI Control 2” or later.

<sup>※2</sup> This function is available with the TV that supports “HDAVI Control 3” or later.



- This unit supports “HDAVI Control 5” function. “HDAVI Control 5” is the newest standard (current as of December, 2009) for Panasonic’s HDAVI Control compatible equipment. This standard is compatible with Panasonic’s conventional HDAVI equipment. Please refer to individual manuals for other manufacturers’ equipment supporting VIERA Link function.
- VIERA 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. About “HDAVI Control” function, read the manual of the connected equipment (e.g., TV) too.
- 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 incompatible buttons on the TV remote control.



## Picture menu—Change the picture quality

### Mode

Select the picture quality mode during play.

<b>Normal</b>	Default setting
<b>Soft</b>	Soft picture with fewer video artifacts
<b>Fine</b>	Details are sharper
<b>Cinema</b>	Mellows movies, enhances detail in dark scenes. (This does not affect the titles in DR mode.)

### HD optimizer

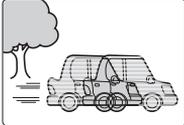
It will compensate the mosaic noise in the video and haze around the characters precisely.

### Detail Clarity

The picture becomes sharp and detailed.

### Progressive

Select the method of conversion for progressive output to suit the type of title being played. (⇒ 118)

<b>Auto:</b>	Automatically detects the film and video content, and appropriately converts it.
<b>Video:</b>	Select when using “Auto”, and the content is distorted.
<b>Film:</b>	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 menu—Change the sound effect

### Sound Effects

#### ●Re-master 1

#### ●Re-master 2

(Discs recorded at 48 kHz or less)

Sound becomes more natural by adding higher frequency signals not recorded on the track.

- This function is effective when “Digital Audio Output” is set to “PCM”. (⇒ 81)

### Dialogue Enhancer

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

## Other menu—Change the display position

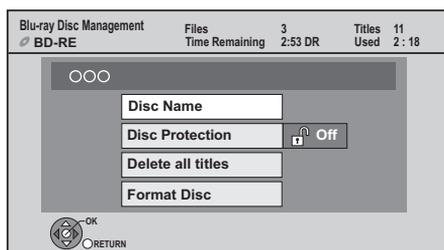
### Position

Change where this menu screen appears on your TV.

# Disc and card management

**BD-RE** **BD-R** **RAM** **-R** **-R DL** **-RW(V)** **+R** **+R DL**  
**+RW** **-RW(VR)** **SD**

- 1 While stopped  
Press [FUNCTION MENU].
- 2 Select “Others”, then press [OK].
- 3 Select “Blu-ray Disc Management”,  
“DVD Management” or “Card  
Management”, then press [OK].



## Providing a name for a disc

**BD-RE** **BD-R** **RAM** **-R** **-R DL** **-RW(V)** **+R** **+R DL**  
**+RW**

After performing steps 1–3 (⇒ above)  
Select “Disc Name”, then press [OK].  
(⇒ 74, Entering text)

- The disc name is displayed in the Blu-ray Disc Management/DVD Management window.
- **-R** **-R DL** **-RW(V)** **+R** **+R DL** With a finalised disc, the name is displayed on the Top Menu.
- **+RW** The disc name is displayed only if you play the disc on other equipment after creating Top Menu.



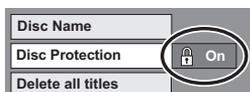
- Do not perform this operation when copying HD Video (AVCHD format) to DVD-R or DVD-R DL. (⇒ 48)

## Setting the protection

**BD-RE** **BD-R** **RAM**

After performing steps 1–3 (⇒ above)

- ① Select “Disc Protection”, then press [OK].
- ② Select “Yes”, then press [OK].  
e.g., when the disc is write-protected



## Delete all titles

**BD-RE** **BD-R** **RAM**

After performing steps 1–3 (⇒ left)

- ① Select “Delete all titles”, then press [OK].
- ② Select “Yes”, then press [OK].
- ③ Select “Start”, then press [OK].  
A message appears when finished.
- ④ Press [OK].



- Still picture data (JPEG) or computer data cannot be deleted.

## Format

**BD-RE** **RAM** **-RW(V)** **+RW** **-RW(VR)**  
**BD-R** **+R** **+R DL** (New disc only)  
**SD**

Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding. The contents are deleted when you format a disc or card even if you have set protection.

After performing steps 1–3 (⇒ left)

- ① Select “Format Disc” or “Format Card”, then press [OK].
- ② Select “Yes”, then press [OK].
- ③ Select “Start”, then press [OK].
- ④ Press [OK].

### To stop formatting **RAM**

Press [BACK/RETURN ↵].

- You can cancel formatting if it takes more than 2 minutes. The disc must be reformatted if you do this.



- Formatting normally takes a few minutes; however, it may take up to a maximum of 70 minutes (**RAM**).
- Do not disconnect the AC mains lead while formatting. This can render the disc or the card unusable.
- When a disc or card has been formatted using this unit, it may not be possible to use it on any other equipment.
- **-RW(V)** **-RW(VR)** You can format DVD-RW only as DVD-Video format on this unit.

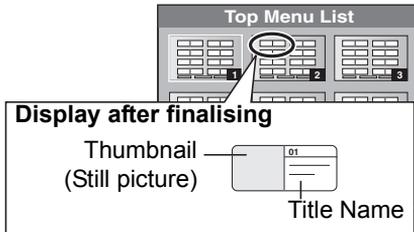
## Top Menu

**-R -R DL -RW(V) +R +R DL +RW**

You can select the background for DVD-Video Top Menu.

After performing steps 1–3 (⇒ 72)

- ① Select “Top Menu”, then press [OK].
- ② Select the background, then press [OK].



- You can change thumbnails displayed in Top Menu. (⇒ 41, Changing thumbnail)

## Auto-Play Select

**-R -R DL -RW(V) +R +R DL +RW**

You can select whether to show Top Menu after finalising or creating Top Menu (**+RW**).

After performing steps 1–3 (⇒ 72)

- ① Select “Auto-Play Select”, then press [OK].
- ② Select “Top Menu” or “Title 1”, then press [OK].

Top Menu: Top Menu appears first.

Title 1: The disc content is played without displaying Top Menu.

## Finalise

**-R -R DL -RW(V) +R +R DL**

You can play the disc on compatible DVD players by finalising it on the unit.

**BD-R**

Finalising BD-R prevents accidental recording or editing.

After performing steps 1–3 (⇒ 72)

- ① Select “Finalise”, then press [OK].
- ② Select “Yes”, then press [OK].
- ③ Select “Start”, then press [OK].
- ④ Press [OK].

After finalising

- **BD-R -R -R DL +R +R DL** The disc becomes play-only and you can no longer record or edit.
- **-RW(V)** You can record and edit the disc after formatting (⇒ 72).



- You cannot cancel finalising.
- Finalising takes up to 15 minutes. (**-R DL +R DL** 60 minutes.)
- **Do not disconnect the AC mains lead while finalising.** This can render the disc unusable.
- When finalising a high-speed recording compatible disc, it may take longer than displayed on the confirmation screen (approximately four times longer).
- You cannot finalise discs recorded on other manufacturer's equipment.
- **-R -R DL -RW(V) +R +R DL** If you finalise discs recorded on Panasonic equipment other than this unit, the background selected as “Top Menu” may not be displayed.
- Discs finalised on this unit may not be playable on other players due to the condition of the recording.

## Create Top Menu

**+RW**

You can create Top Menu for displaying on other equipment.

Make selections from “Top Menu” and “Auto-Play Select” (⇒ left) before creating Top Menu.

After performing steps 1–3 (⇒ 72)

- ① Select “Create Top Menu”, then press [OK].
- ② Select “Yes”, then press [OK].
- ③ Select “Start”, then press [OK].
  - Creating Top Menu starts. You cannot cancel creating.
  - Creating Top Menu can take a few minutes.
- ④ Press [OK].



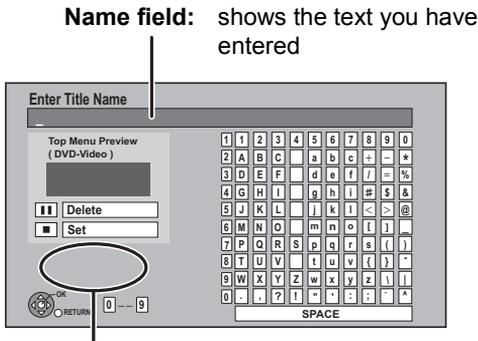
- You cannot use the Top Menu for playing on this unit.
- The created menu is deleted when you record or edit the disc.

# Entering text

## Preparation

- Show the Enter Title Name screen.

## 1 Select a character, then press [OK].



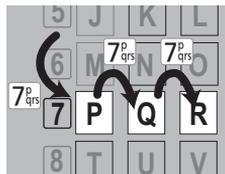
**AVCHD:** If a name is long, the warning message will appear.

Repeat this step to enter other characters.

- **To delete a character**  
Select the character in the name field, then press [Delete]. (The selected characters are deleted.)

- **To enter characters with number buttons**  
e.g., entering the letter “R”

- ① Press [7] to move to the 7th row.
- ② Press [7] twice to highlight “R”.
- ③ Press [OK].



## 2 Press [Set].

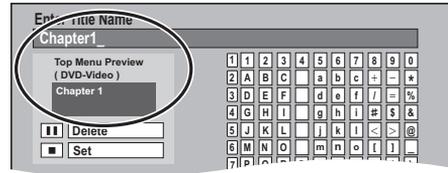
“Writing...” appears then the screen returns to the DIRECT NAVIGATOR screen and so on.

## To end partway

Press [BACK/RETURN ↵].  
Text is not added.

## For your reference

The name of the DVD-Video that will be displayed in the Top Menu after finalising is previewed.



- The maximum number of characters is different depending on the media.
- If a name is long, parts of it may not be shown in some screens.

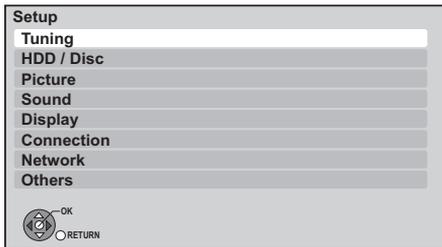
# Changing the unit's settings

You can change the unit's settings using the Setup menu.

- The settings remain intact even if you switch the unit to standby.

## Common procedures

- 1 While stopped**  
Press [FUNCTION MENU].
- 2 Select "Others", then press [OK].**
- 3 Select "Setup", then press [OK].**



- 4 Select the menu, then press [OK].**
- 5 Select the item, then press [OK].**
- 6 Select the option, then press [OK].**
  - Follow the instruction on the screen if the operation method is different.
  - Depending on the connection or the status of this unit some items cannot be selected or changed.

### About the PIN

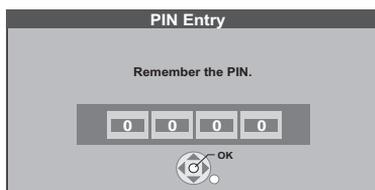
PIN is required to change the following settings. Enter the 4-digit PIN following the on-screen instructions.

- The PIN is common for the following items.
  - Child Lock
  - BD-Video Parental Control
  - DVD-Video Parental Control
  - Lock (Internet Content Settings)

PIN can be changed via the PIN Entry. (⇒ 86)

- Select the number, then press [▶].
  - You can also use the number buttons.
- Repeat step ① to enter 4-digit PIN.
- Press [OK] to confirm.

e.g., PIN Entry

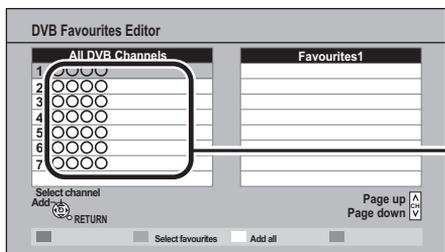


- Make a note of PIN in case you forget it.

## Tuning

### Favourites Edit

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



#### To add channels to the Favourites list

- Select the channel in the "All DVB Channels" column, then press [OK].
  - Repeat this step.
    - "Green": Select "Favourites".
    - "Yellow": Add all channels.
- Press [BACK/RETURN ↵].
- Press [OK] to save the Favourites.

#### To change the order of the channels list

- Select the channel in the "Favourites" column to move, then press the "Green" button.
- Select the new position, then press the "Green" button.
- Press [BACK/RETURN ↵].
- Press [OK] to save the Favourites.

#### To delete channels

- Select the channel in the "Favourites" column, then press [OK].
  - "Yellow": Delete all the channels.
- Press [BACK/RETURN ↵].
- Press [OK] to save the Favourites.

#### To change the name of the Favourites list

- Press the "Red" button in the "Favourites" column.
- Press [▲, ▼, ◀, ▶] to select a character, then press [OK].
  - Repeat this step.
    - "Red": Delete a character.
    - "Blue": Delete all characters.
- Press [BACK/RETURN ↵].

# Changing the unit's settings

**How to access each item.**

⇒ Others ⇒ Setup ⇒ Tuning

## ■ Channel List

You can edit the Channel List.

Channel names

### ● To skip unwanted channels

- ① Select the channel.
- ② Press [OK].
  - The check mark is removed.
  - “Yellow”: Clear the all skip setting.

### ● To change the channel number assignment

- ① Select the channel, then press the “Green” button.
- ② Enter the channel number you want to reassign with the number buttons.

e.g.,            5:     [0] ⇒ [0] ⇒ [5]  
                      15:    [0] ⇒ [1] ⇒ [5]  
                      115: [1] ⇒ [1] ⇒ [5]

- ③ Press [OK].
  - If another channel is already assigned to the channel number you wish to use, the two channels will be switched.

### ● To set the channel manually

Press the “Red” button.  
 “DVB Manual Tuning” screen appears. (⇒ right)

## ■ Auto Setup

You can restart Auto Setup.

### Select “Yes”, then press [OK].



- If you perform “Channel Sorting by Region” (⇒ below), you can sort the channel list best suited to your region after Auto tuning is finished.

## ■ Channel Sorting by Region

If you want to sort the channel list best suited to your region, follow the on-screen instructions to select the region you live in.

## ■ Manual Tuning

You can set each channel manually when the Auto Setup could not complete successfully.

- ① Select the frequency with [▲, ▼].
  - Select the frequency by checking the signal strength and signal quality displays.
- ② Press [OK] to start scan.  
 The set channel is displayed in the table.

## ■ Update Channel List

You can update the channels to the latest one.

- This takes about 3 minutes.

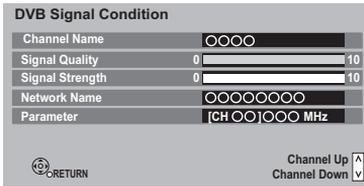
“Finished” is displayed when the search is finished.  
 Press [BACK/RETURN ↵].



- 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.

## ■ Signal Condition

You can check the quality and strength of signals.  
Press [ $\wedge$   $\vee$  CH] to select the channel.



### Signal Quality

Red bar: The signal quality is bad.  
Orange bar: The signal quality is poor.  
Green bar: The signal quality is good.

### Signal Strength

“0”: Signal strength is 0%.

“10”: Signal strength is 100%.

- When the signal is too strong (red bar), reduce the signal amplification at your aerial.

## ■ New Channel Message

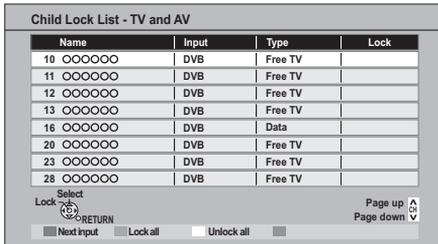
When a new DVB channel is added, this unit will be informed automatically.

## ■ Child Lock

You can restrict the viewing and recording of channels unsuitable to children.

PIN is required. Enter PIN. ( $\Rightarrow$  75)

You can lock each channel or AV input.



① Select the channel or AV input to lock.

② Press [OK].

**G** is displayed.

- Press [OK] again to cancel.
- “Red”: Change the input.
- “Green”: Lock all channel and AV input.
- “Yellow”: Unlock all channel and AV input.

## ■ Preferred Multi Audio

### ➤ Multi Audio

Choose the audio language for broadcast. If the selected language is not available, then the original language will be selected.

### ➤ Audio Description

Select whether the Audio Description is set to be active or not.

## ■ Preferred Subtitles

Choose the subtitle language for broadcast. If the selected language is not available, then the original language will be selected.

# Changing the unit's settings

## How to access each item.



## HDD / Disc

### ■ Settings for Playback

#### ➤ Soundtrack

Choose the audio language.

- If "Original" is selected, the original language of each disc will be selected.
- Enter a code with the number buttons when you select "Other \*\*\*\*". (⇒ 86, Language code list)

#### ➤ Subtitles

Choose the language for subtitle.

- If "Automatic" is selected and the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc.
- Enter a code with the number buttons when you select "Other \*\*\*\*". (⇒ 86, Language code list)

#### ➤ Menu

Choose the language for disc menus.

- Enter a code with the number buttons when you select "Other \*\*\*\*". (⇒ 86, Language code list)

#### ➤ Play Video ( AVCHD ) on BD-RE / BD-R

Set when you are playing a disc that has High Definition video (AVCHD) recorded by the Panasonic's video camera, etc. and High Definition quality title that was recorded on this unit.

On	Playback High Definition video (AVCHD)
Off	Playback High Definition quality title

#### ➤ BD-Live

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

- If "On ( Limit )" is selected, internet access is permitted only for BD-Live contents which have content owner certificates.

#### ➤ BD-Video Parental Control

Set an age limit of BD-Video play.

- Follow the on-screen instructions.
- PIN is required to change. (⇒ 75)

#### ➤ DVD-Video Parental Control

Set a ratings level to limit DVD-Video play.

- Follow the on-screen instructions.
- PIN is required to change. (⇒ 75)

#### ➤ Child Lock

You can restrict playback of the following titles:

- Titles that are recorded with guidance information at night (21:00–05:30).
- Titles restricted by Child Lock (⇒ 77)  
(Titles with  icon in DIRECT NAVIGATOR, etc.)
- PIN is required to change. (⇒ 75)

## ■ Settings for Recording

### ➤ Recording time in EP mode

Select the maximum number of hours for recording in EP mode (⇒ 112, Recording modes and approximate recording times).

- When recording to DVD-RAM using “8 hours” mode, it may not be possible to play on DVD players.

### ➤ Aspect for Recording

Sets the aspect ratio when recording or copying in except DR mode.

- If “Automatic” is selected, the title will be recorded with the original aspect ratio at the time when recording started (including when recording started at a commercial, etc.).
- In the following cases, the programme will be recorded with the original aspect ratio.
  - **BD-RE** **BD-R** When the recording mode is set to “XP”, “SP”, “LP”, “EP” or “FR”
  - **HDD** **RAM** When the recording mode is set to “XP”, “SP”, “LP”, “EP” or “FR” with the “Recording Format for DVD” set to “VR format”
- In the following cases, aspect is fixed to 4:3.
  - **-R** **-R DL** **-RW(V)** When the recording mode is set to “EP” or “FR (recordings 5 hours or longer)” mode.
  - When recording to a +R, +R DL and +RW.

### ➤ Recording Format for DVD

You can copy titles to DVD in high speed mode, if you set to “Video format” when recording a programme.

- This setting is valid for the following cases:
  - Recording from external equipment (including DV equipment)
  - Copying from a finalised DVD-Video disc
- If high speed copy is not necessary we recommend setting to “VR format” as the following restrictions are applied to recorded titles in case of “Video format”.
  - The settings in “Aspect for Recording” (⇒ left) and in “Bilingual Audio Selection”(⇒ 80) are applied to titles.
  - You cannot switch the audio when watching a programme via AV input.

### ➤ BD / DVD Speed for High Speed Copy

Select the speed of high-speed copying.

If “Normal ( Silent )” is selected, the time required for copying will double (approximately).

### ➤ REWIND LIVE TV

Turn on/off the REWIND LIVE TV function.

- To set “On”, please set “Automatic Standby” to the setting other than “Off” (⇒ 84)

---

## ■ HDD Management

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

### ➤ Delete all titles

Delete does not work if one or more titles are protected.

### ➤ Format HDD

Formatting deletes all contents, and they cannot be restored. Check carefully before proceeding.

# Changing the unit's settings

## How to access each item.



⇒ Others ⇒ Setup ⇒ Picture or Sound

## Picture

### ■ Still Mode

Select the type of picture shown when you pause play (⇒ 117, Frames and fields).

Automatic	
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

Select the play mode between playlist chapter segments and partially deleted titles.

- If you set "On" the chapters in playlists are played seamlessly. This does not work when there are several audio types included on the playlist and when using Quick View (PLAY × 1.3).

### ■ NTSC Video Output

Select how to output the NTSC image.

## Sound

### ■ Dynamic Range Compression

**BD-V** **DVD-V**

Change the dynamic range for late night viewing.

### ■ 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.
- The audio will be output in "Stereo" in the following cases.
  - AVCHD playback
  - **BD-V**: Playback of clicking sound on the menu and audio with secondary video in picture-in-picture mode

### ■ Bilingual Audio Selection

(Only when recording from DV input)

Select whether to record the main or secondary audio type when:

- Copying to a DVD-R, DVD-RW (DVD-Video format), +R and +RW.
- "Recording Format for DVD" is set to "Video format". (⇒ 79)
- Recording sound in LPCM (⇒ 81, Audio Type for XP Recording).
- When recording from the unit's DV terminal, select the type of audio recording from "Audio Type for DV Input" (⇒ 81).

## ■ Digital Audio Output

### ➤ PCM Down Conversion

Select how to output audio with a sampling frequency of 96 kHz.

- It will be converted to 48 kHz regardless of the setting in the following cases.
  - The signals have a sampling frequency of over 96 kHz.
  - The disc has copy protection.
  - “BD-Video Secondary Audio” is set to “On”.

#### (BD-V)

- If “Off” is selected, signals are output as 96 kHz
- If “On” is selected, signals are converted to 48 kHz.  
(Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)

### ➤ Dolby D / Dolby D + / Dolby TrueHD

### ➤ DTS / DTS-HD

### ➤ MPEG

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.
- Sound with Audio Description or sound of HE-AAC audio type is output as PCM signal regardless of settings.

### ➤ BD-Video Secondary Audio

(BD-V with secondary audio)

Turn on/off the clicking sound on the menu and audio with secondary video.

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

---

## ■ Audio Delay

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

---

## ■ Audio Type for XP Recording

Choose the audio type when recording or copying with XP mode.

- The picture quality of LPCM recordings may be lower than that of normal XP mode recordings.
- The audio becomes Dolby Digital even if you selected LPCM when using a recording mode other than XP.

---

## ■ Audio Type for DV Input

You can select the kind of audio when recording from the unit's DV input terminal (⇒ 62).

- If “Mix” is selected, both Stereo 1 and Stereo 2 are recorded.
- When recording bilingual broadcast, select the type of audio in advance from “Bilingual Audio Selection” (⇒ 80).

---

## ■ Audio for HG / HX / HE / HL / HM Recording

If the programme has multi channel audio, priority is given to what you select.

- This setting will give effect in the following cases.
  - Convert to HG, HX, HE, HL or HM mode in “DR File Conversion” (⇒ 42)
  - Normal speed copy in HG, HX, HE, HL or HM mode from a title recorded in DR mode. (⇒ 44, 46)

# Changing the unit's settings

## How to access each item.



⇒ Others ⇒ Setup  
⇒ Display or Connection

## Display

### ■ On-Screen Information

Choose the approximate time until the channel information screen (⇒ 17) disappears automatically.

### ■ Unit's Display

Changes the brightness of the unit's display.

- If "Dim" is selected the display turns dark during play and disappears when the unit is turned off. It reappears momentarily if a button is pressed. While using this mode, the standby power consumption can be reduced.

### ■ Screen Saver

This is to prevent burn-in on the screen.

- If "On" is selected, the masked-off area on the screen becomes grey.  
Depending on the condition of the unit (Connection, Setting) the masked-off area on the screen becomes grey.

### ■ Blue LED

Set the lighting method for the lamp on the SD card slot.

- If "SD inserted" is selected, when this unit is turned on and SD card is inserted, the lamp is lighted.

## Connection

Depending on the connected equipment, some items may be shaded in grey on the display and cannot be selected, or you may not be able to change the settings.

### ■ TV Aspect

Set to match the type of TV connected.

#### 16:9

When connected to a 16:9 widescreen TV.

#### 4:3

When connected to a 4:3 aspect TV, side picture is trimmed for 16:9 picture.

The pictures may be shown in the letterbox style depending on the content.



#### Letterbox

When connected to a 4:3 aspect TV, 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 widescreen TV.

### ■ TV System

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

## ■ HDMI Connection

### ➤ HDMI Video Mode

Select "On" when video is output from HDMI AV OUT terminal. Select "Off" for all other conditions.

### ➤ 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 directly to 1080p compatible HDTV. If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.

### ➤ 24p Output

When playing BD-Video recorded in 24 frames, this unit displays each frame at 1/24 second intervals—the same interval originally shot with the film movie.

- This item is effective only when this unit is connected to a TV supporting 1080/24p output using an HDMI cable and "HDMI Video Format" is set to "Automatic" or "1080p".
- When BD-Video images other than 24p are played, images are output at 60p.

### ➤ 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 not compatible with HDMI with a DIGITAL AUDIO OUT terminal

### ➤ 7.1ch Audio Reformatting

#### **BD-V**

Surround sound with 6.1 ch or less is automatically expanded and played back at 7.1 ch.

- If "Off" is selected, sound is played over the original number of channels. (Note that in the case of 6.1 ch audio, playback will be at 5.1 ch)
- Audio reformatting is enabled in the following cases:
- When you have selected "PCM" in "Digital Audio Output".
  - When the audio is Dolby Digital, Dolby Digital Plus, Dolby TrueHD or LPCM.

### ➤ HDCP on HDMI Output

If you connect a DVI device that is not compatible with HDCP, set to "Off". In this case, some programmes, BD-Video or DVD-Video cannot be seen.

### ➤ Contents Type Flag

Depending on the playback content, the TV will output adjusting to the optimal method when a TV that supports Contents Type Flag is connected.

### ➤ VIERA Link

Set to use "HDAVI Control" function when connected with an HDMI cable to a device that supports "HDAVI Control".

- Select "Off" when you do not want to use "HDAVI Control".

---

## ■ AV1 Output

Set according to the terminal of the connected TV.

- If this unit is connected with an HDMI cable, you cannot select "RGB 1" or "RGB 2".
- When a decoder is connected, do not set to "RGB 1".

---

## ■ AV2 Settings

### ➤ AV2 Input

Set to "RGB / Video" or "RGB" when receiving or recording RGB output from external equipment.

### ➤ Ext Link

Set "Ext Link 1" when a Set Top Box which transmits a control signal via the 21-pin Scart cable is connected.

- This setting cannot be made when "TV System" is set to "NTSC" (⇒ 82).

## How to access each item.



⇒ Others ⇒ Setup  
⇒ Network or Others

## Network

### ■ Network Easy Settings

Press [OK] to start Network Easy Settings. (⇒ 13)

### ■ Network Settings

#### ➤ IP Address / DNS Settings

Check the connection of the network or set the IP address and DNS.

- Press [OK] to show the respective setting.



- "Connection Speed Setting" is enabled only when "Connection Speed Auto-configure" is turned "Off".

#### ➤ Proxy Server Settings

Check and set the connection to the Proxy server.

- Press [OK] to show the respective setting.

#### ➤ Internet Content Settings

##### ➤ Lock

You can restrict using VIERA CAST.

- Follow the on-screen instructions.
- PIN is required to change. (⇒ 75)

##### ➤ Automatic Volume Control

Volume that is different depending on the contents is adjusted automatically to the standard volume while using the VIERA CAST.

- Depending on contents, this function will not work.
- Select "Off" when the audio is warped.

#### ➤ Home Network ( DLNA ) Settings

You can set the DLNA function (⇒ 67)

It is also possible to change the name of this unit on the network.

## Others

### ■ Standby Settings

#### ➤ Power Save in Standby

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

- This function cannot be enabled when the DLNA function is enabled in "Home Network ( DLNA ) Settings". (⇒ left)

#### ➤ Automatic Standby

Set the time to turn the unit to standby mode automatically.

After the unit has finished operating, the unit will be turned to standby mode once the set time has passed.

- When "REWIND LIVE TV" is set to "On"(⇒ 79), "Off" cannot be selected.

#### ➤ Automatic Standby after OTR

If "On" is selected, this unit is turned to standby mode when it is not operated for approximately 5 minutes after completing Automatic Stop recording or One Touch Recording (⇒ 21).

#### ➤ Automatic Standby after Copy

If "On" is selected, this unit is turned to standby mode when it is not operated for approximately 5 minutes after completing copy (⇒ 44).

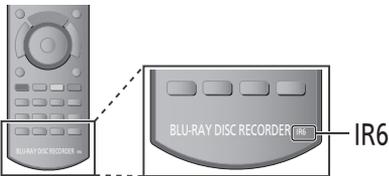
## ■ Remote Control

Change the remote control code on the main unit and the remote control if you place other Panasonic products close together.

● Use “BD 1”, the factory set code, under normal circumstances.

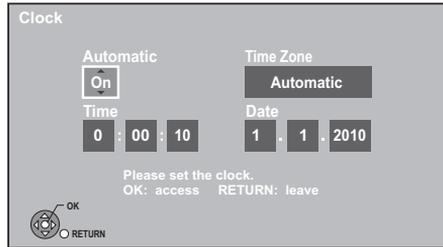
- ① Select the code, then press [OK].
- ② While pressing [OK], press and hold the number button ([1] to [6]) for more than 5 seconds.
- ③ Press and hold [OK] for more than 5 seconds.
- ④ Press [OK].

● 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 “BD 4”, “BD 5” or “BD 6”.



## ■ 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.

But, if the time is not set correctly, set it to “Off” and perform “Manual Setting”.

### ➤ 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.

### ➤ Time Zone

Adjust the time data automatically or from GMT -6 to + 6.

# Changing the unit's settings

## How to access each item.



### ■ Owner ID

In order to prevent another person from using this unit if it is stolen, you can set a PIN and input your personal information (NAME, HOUSE NO, POSTCODE).

**Once the PIN has been set, you cannot return to the factory preset. Make sure not to forget this.**

### ■ PIN Entry

You can set/change the PIN. (⇒ 75)

### ■ System Update (⇒ 87)

#### ➤ Software Update in Standby

When you set this unit to standby mode, software (firmware) updates are downloaded automatically.

#### ➤ Software Licence

Information about the software licence is displayed.

#### ➤ Post Code

Input the postal code which is necessary to download area specific information of GUIDE Plus+ system.

#### ➤ Guide Plus+ System Information

You can check the condition of GUIDE Plus+ system of this unit.

### ■ System Information

Display software (firmware) and HDMI Control version of this unit.

### ■ DivX Registration

You need this registration code to purchase and play DivX Video-on-Demand (VOD) content (⇒ 38).

## ■ 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, disc language settings, Parental Control settings, ratings PIN, remote control code, network settings etc. return to the factory presets.

## Language code list

Enter the code with the number buttons.

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

# Software (Firmware) Update

Software of this unit can be updated automatically by the following methods when this unit is in the standby mode or when it is 3 a.m.

(⇒ 86, Software Update in Standby)

- From broadcasts
- From Internet [network connection and setting is required. (⇒ 10, 13)]

It takes about 1 hour to update the software (firmware).

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



- 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.

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



- The download time differs depending on the network or broadcast environment.
- If the timer recording is scheduled within the following time at the start of the download, the download will not be executed.
  - From broadcast: Within 5 hours
  - From Internet: Within 1 hour
- You can also download the latest software (firmware) from the following website and burn it to a CD-R to update the software (firmware).  
<http://panasonic.jp/support/global/cs/>
- If you do not want to perform the software (firmware) update, set the "Software Update in Standby" to "Off".  
(⇒ 86)

# Other Settings

## Switching the aspect ratio of the screen

When black bars are shown at the top, bottom, left, and right sides of the screen, you can enlarge the image to fill the screen.

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

<b>Normal:</b>	Normal output
<b>Side cut:</b>	The black bars on the right and left sides of the 16:9 image disappear and the image is enlarged.
<b>Zoom:</b>	The black bars on the top and bottom sides of the 4:3 image disappear and the image is enlarged.

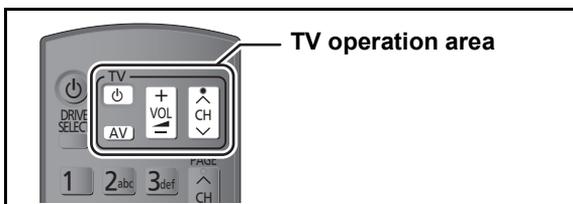
- 4 Press [OK].



- 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 the unit is turned off or on
- **BD-V** **DVD-V** "Side cut" does not have any effect.
- When "TV Aspect" (⇒ 82) is set to "4:3" or "Letterbox", the "Zoom" effect is disabled.

## TV operation

Once set, the TV can be operated from the TV operation area of the remote control.



- 1 Point the remote control at the TV. While pressing [TV], enter the code (⇒ right) with the number buttons.
- 2 Test by turning on the TV and changing channels.
  - Repeat the procedure until you find the code that allows correct operation.
  - 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 television.



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

## Manufacturer and Code No.

Brand	Code	Brand	Code
Panasonic	01/02/03/04	NEC	36
AIWA	35	NOBLEX	33
AKAI	27/30	NOKIA	25/26/27/60/61
BEKO	05/71/72/73/74	NORDMENDE	10
BENQ	58/59	OLEVIA	45
BRANDT	10/15	ONWA	30/39/70
BUSH	05	ORION	05
CENTREX	66	PEONY	49/69
CURTIS	05	PHILCO	41/48/64
DAEWOO	64/65	PHILIPS	05/06/46
DESMET	05	PHONOLA	05
DUAL	05	PIONEER	37/38
ELEMIS	05	PROVIEW	52
FERGUSON	10/34	PYE	05
FINLUX	61	RADIOLA	05
FISHER	21	SABA	10
FUJITSU	53	SALORA	26
FUNAI	63/67	SAMSUNG	32/42/43/65/68
GOLDSTAR	05/50/51	SANSUI	05
GOODMANS	05	SANYO	21/54/55/56
GRADIENTE	36	SCHNEIDER	05/29/30
GRUNDIG	09	SEG	05/69/75/76/77/78
HITACHI	05/22/23/40/41	SELECO	05/25
IRRADIO	30	SHARP	18
ITT	25	SIEMENS	09
JVC	17/30/39/70	SINUDYNE	05
KDS	52	SONY	08
KOLIN	45	TCL	31/33/66/67/69
KONKA	62	TELEFUNKEN	10/11/12/13/14
LG	05/50/51	TEVION	52
LOEWE	07/46	THOMSON	10/15/44
MAG	52	TOSHIBA	16/57
METZ	05/28	WHITE	05
MITSUBISHI	05/19/20/47	WESTINGHOUSE	
MIVAR	24	YAMAHA	18/41

## HOLD function

The HOLD function deactivates all buttons on the unit and remote control.

Press and hold [OK] and [BACK/RETURN ↵] simultaneously until "X HOLD" appears on the unit's display.



### To cancel the HOLD function

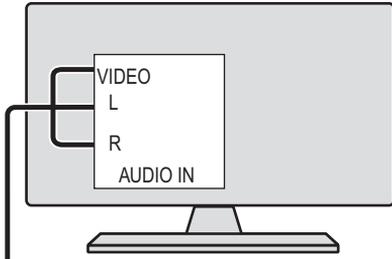
Press and hold [OK] and [BACK/RETURN ↵] simultaneously until "X HOLD" disappears.

# Other Connections

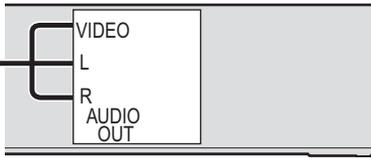
## Other TV connections

- Connect to terminals of the same colour.

### TV's rear panel



Audio/Video cable

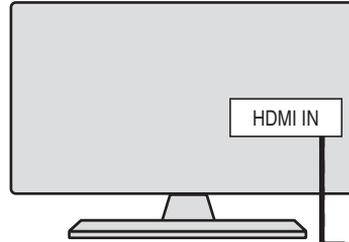


This unit's rear panel

## Amplifier connections

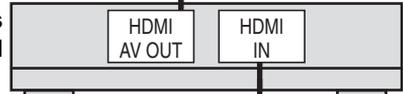
### HDMI AV OUT terminal

#### TV's rear panel



HDMI cable

#### Amplifier's rear panel



HDMI cable



This unit's rear panel

### DIGITAL AUDIO OUT terminal

#### Amplifier's rear panel



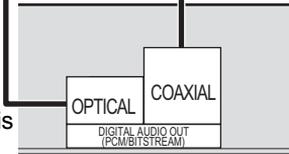
Optical digital audio cable

or

Coaxial cable



Insert fully with this side up. Do not bend the cable sharply.



This unit's rear panel



- When connecting a TV with an HDMI OUT terminal, set "HDMI Audio Output" to "Off" (⇒ 83).
- When you use the optical digital audio cable, insert the tip correctly into the terminal.

# Messages on the unit's display

The following messages or service numbers appear on the unit's display when something unusual is detected during startup and use.

## BD □

("□" stands for a number.)

- The remote control and main unit are using different codes. Change the code on the remote control.



- ① Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. (⇒ 85)
- ② Press and hold [OK] for more than 5 seconds.

## GUIDE

- TV Guide data is being downloaded. (⇒ 19)

## FINISH

- The software (firmware) update is complete. (⇒ 87)

## HARD ERR

- If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.

## NoERAS

- You cannot delete items on this disc. The disc may be damaged. Use a new disc.

## NoREAD

- The disc is dirty or badly scratched. The unit cannot record, play, or edit. (⇒ 103)
- This message may appear when the lens cleaner has finished cleaning. Press [▲ OPEN/CLOSE] on the main unit to eject the disc. (⇒ 14)

## NoWRIT

- You cannot write to this disc. The disc may be damaged. Use a new disc.

## PLEASE WAIT

- Displayed when the unit is started and turned off.
- There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.

## PROG FULL

- There are already 32 timer programmes. Delete unnecessary timer programmes. (⇒ 29)

## 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. (⇒ 87)

## SW-DL

- Software (firmware) is downloading. Download will stop when the unit is turned on, or the timer recording starts. (⇒ 87)

## UNSUPPORT

- You have inserted a disc the unit cannot play or record on. (⇒ 98)  
You tried to operate with a non-compatible USB memory.

## UPD □/□

("□" stands for a number.)

- The software (firmware) is being updated. You cannot operate the unit until the update is complete. (⇒ 87)

## U59

- The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.

## U61

- (When a disc is not inserted) Displays when a malfunction has occurred. This is displayed when the unit is in the recovery process to return to normal operation. Once the display clears you can use the unit again.  
If it remains displayed, consult the dealer where the unit was purchased.
- 

## U72

## U73

- The HDMI connection acts unusually.
    - The connected equipment is not HDMI compatible.
    - Please use HDMI cables that have the HDMI logo (as shown on the cover).
    - The HDMI cable is damaged.
- 

## U76

- HDMI cannot be output because you are connected to a model that does not support copyright protection.
- 

## U77

- Due to the current disc not having authorised copyright information, video output is not performed.
- 

## U88

- (When a disc is inserted) Displays when there was something unusual detected with the disc while recording, playback or copy. This is displayed when the unit is in the recovery process to return to normal operation. Once the display clears you can use the unit again. (⇒ 92)  
If it remains displayed, consult the dealer where the unit was purchased.
- 

## U99

- The unit fails to operate properly. Press [⏻/I] on the main unit to switch the unit to standby mode. Now press [⏻/I] on the main unit again to turn the unit on.
- 

## 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.)
- Check the unit using the troubleshooting guide (⇒ 92–97). If the service number does not disappear, do the following.
  1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it.
  2. Press [⏻/I] to turn the power on. (The unit may be fixed.)

If the service number does not disappear despite after doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.

---

## X HOLD

- The HOLD function is activated.  
Press and hold [OK] and [BACK/RETURN ↵] at the same time until "X HOLD" disappears. (⇒ 88)

# 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. (⇒ 87)

## The followings do not indicate a problem with this unit:

- Regular disc rotating sounds or louder rotating sounds when recording or high speed copying.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions in reception due to periodic terrestrial broadcasting breaks.
- When the unit is turned on or off, there may be an unexpected sound.

### ■ The unit doesn't work.

One of the unit's safety devices may have been activated.

Reset the unit as follows:

- ① Press [⏻/|] on the main unit to switch the unit to standby.
  - If the unit doesn't switch to standby, press [⏻/|] 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 [⏻/|] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.

### ■ Cannot eject a disc.

The unit may have a problem. While the unit is off, press and hold [■] and [CH ^] on the main unit at the same time for about 5 seconds.

## Power

### The unit is turned off automatically.

- If you connected this unit to a "HDMI Control" compatible TV with an HDMI cable, or connected this unit to a Q Link-compatible TV with a fully wired 21-pin Scart cable, this unit will be automatically set to standby mode when the TV is set to standby mode.

### The unit does not turn on when pressing [⏻].

- Linked timer recordings with external equipment is in recording standby ("EXT-L" on the unit's display blinks when [⏻] is pressed). Press [EXT LINK] to cancel the recording standby.

## Displays

### The display is dim.

- Change "Unit's Display". (⇒ 82)

### "0:00" is flashing on the unit's display.

- Set the clock. (⇒ 85)

### The time recorded on the disc and the available time shown do not add up.

- If you record or edit about 200 times or more, the remaining capacity of DVD-R, DVD-R DL, +R, and +R DL is reduced and then recording or editing may be disabled (for the second layer on DVD-R DL and +R DL, this happens after about 60 times).
- While searching, the elapsed time may not display correctly.

### The clock does not display on the unit when switched to standby.

- The clock does not display when Power Save in Standby mode is activated. Ensure "Power Save in Standby" is set to "Off". (⇒ 84)

### Available disc space display is showing different from what was used

- Available disc space display may be different from actual. Varying may be large especially when recorded in DR mode.

## TV screen and video

### Screen size is wrong.

- Check the “TV Aspect” or “Aspect for 4:3 Video”. (⇒ 82),
- Adjust the aspect ratio setting on TV. Refer to your TV’s operating instructions.
- If the 16:9 aspect ratio image is output to a 4:3 TV and the image will be stretched vertically, set “TV Aspect” to “4:3”. (⇒ 82)
- Check “Aspect for Recording” before recording or file conversion. (⇒ 79)
- If you connect to 4:3 TV, set “HDMI Video Format” to “576p/480p”. (⇒ 83)

### Pictures do not appear with the HD quality although HD setting was made.

- The pictures are output with 576p/480p depending on the programme.

### The screen changes automatically.

- If there is no operation for 5 minutes or more, the displayed screen switches to the other states automatically (only when the “Screen Saver” is set to “On”). (⇒ 82)

### There is a lot of image lag when playing video.

- Set “HD optimizer” in the Picture menu to “Off”. (⇒ 71)

### The images from this unit do not appear on the TV.

### The picture is distorted during play, or video will not play correctly.

- Check the connection and the TV’s input settings.
- The unit’s “TV System” setting differs from the TV system used by the disc now playing. While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit for 5 or more seconds. The system switches from PAL to NTSC or vice versa. (⇒ 82)
- 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.
- DVD-R DL and +R DL discs have two writable layers on one side. Video and audio may momentarily cut out when the unit is switching layers.
- Set “Deep Colour Output” or “Contents Type Flag” in the Picture menu to “Off”. (⇒ 83)

## Sound

### No sound.

### Distorted sound.

- Check the connections or amplifier’s settings. (⇒ 8, 89)
- To output audio from a device connected with an HDMI cable, set “HDMI Audio Output” to “On”. (⇒ 83)

### Cannot switch audio.

- You cannot switch the audio if “Digital Audio Output” is set to “Bitstream” (⇒ 81)

## Operation

### The remote control doesn't work.

- The remote control and main unit are using different codes. Change the code on the remote control.



① Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.

② Press and hold [OK] for more than 5 seconds.

- Software (firmware) is updating when "UPD □/□" is displaying on the unit's display. Wait until the update is completed. (⇒ 87)
- The HOLD function is activated. (⇒ 88)

### The unit is on but cannot be operated.

- Drive has not been selected properly.

### Startup is slow.

- Startup takes time in the following situations:
  - A disc is inserted.
  - The clock is not set.
  - Immediately after a power failure or the AC mains lead is connected.
  - When the unit is connected with an HDMI cable.
  - When the BD-J (⇒ 116) application is executing.
  - When the "Power Save in Standby" is activated. (⇒ 84)

## Recording, timer recording and copying

### Cannot record.

#### Cannot copy.

- Some broadcasts are copyright protected.
- You can not record to the disc by pressing the [● REC] or timer recording.
- The disc is protected with DVD Management or Blu-ray Disc Management. (⇒ 72)
- Some programmes on digital broadcast channels are copy-restricted and the number of times you can copy in DR, HG, HX, HE, HL, HM mode is assigned by the broadcaster
- **-R -R DL -RW(V) +R +R DL +RW** Since it will copy to HDD temporarily, copying is not possible if there is insufficient available capacity on the HDD. Delete unnecessary titles on the HDD (⇒ 29, 39, 72)
- You cannot record and copy on finalised discs.
- **-R -R DL -RW(V) +R +R DL +RW** Recording or editing may not be possible on these discs after ejecting and loading the disc or turning the unit on/off for approximately 30 times after being recorded to.
- Discs recorded on equipment other than this unit may not be able to be recorded to.
- This unit cannot record/copy NTSC signals to discs that already have PAL signal recordings. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.

### Cannot record from external equipment.

- Check that the connection and input channel is correct. (⇒ 62)

### Cannot record 2 programmes simultaneously.

- There are conditions that 2 programmes simultaneous recording is possible. (⇒ 22)

### Timer recording does not work properly.

- Refer to "Notes on timer recording" (⇒ 30)

### 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/disc may become unusable. We cannot offer any guarantee regarding lost programmes or discs. (⇒ 72, 79)

## An unusually loud sound is coming from the rotating disc.

- If you want copy to perform more quietly, select “Normal ( Silent )” in “BD/DVD Speed for High Speed Copy”. (⇒ 79)

## The DV automatic recording function does not work.

- If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings. (⇒ 62)
- You cannot start recording until the images from the DV equipment appear on the TV.
- Depending on the equipment, the DV automatic recording may not operate properly.

## Play

### Cannot playback.

- The disc is dirty, scratched or marked. (⇒ 103)
- You tried to play a +RW that needs to have a Top Menu on the equipment used for recording.
- You cannot playback while executing the “Flexible Recording via AV input” or when recording from the DV input.
- **BD-R** **BD-RE**  
Set “Play Video ( AVCHD ) on BD-RE / BD-R” to “On” and the playback may be possible.
- The disc that is recorded by using other equipment and not finalised may not be able to playback.

### Audio and video momentarily pause.

- **-R DL** **+R DL** When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers.

### BD-Video or DVD-Video is not played.

- You have set a ratings level. (⇒ 78)
- Ensure the disc is for the correct BD-Video region code or DVD-Video region number, and is not defective. (⇒ 100)
- **BD-V** You cannot playback while recording from external equipment.

### Cannot playback BD-Live

- Playback of BD-Live requires the internet access and SD card.

### You have forgotten your ratings PIN. You want to cancel the ratings level.

- The ratings level returns to the factory preset. While the disc tray is open, press [DRIVE SELECT] to select the BD drive, then press and hold [● REC] and [▶] (PLAY/×1.3) on the main unit at the same time for 5 or more seconds (“INIT” will appear on the unit’s display).

### Image for the Quick View is not smooth.

- Image may not be played back smoothly in case of DR, HG, HX, HE, HL, HM mode titles, AVCHD format titles or BD-Video.
- This function does not work when recording is in XP or FR mode.

### The resume play function does not work.

- Memorized positions are cancelled when –open the disc tray.  
– **CD** **SD** **USB** turn off the unit.  
(**HDD** will not be cancelled)
- This function does not work for some BD-Video disc that contains BD-J.

### Cannot play the disc on other players.

- **BD-RE** **BD-R** Titles may not playback on other Blu-ray Disc player.
- **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW** The disc must be finalised or have a Top Menu created after recording or copying (⇒ 73).
- **-R** **-R DL** The disc created in AVCHD format can only be played back on AVCHD compatible equipment.

## Edit

### The available recording time doesn't increase even after deleting titles on the disc.

- Available space on BD-R, DVD-R, DVD-R DL, +R, or +R DL does not increase even after deleting titles.
- Available space on DVD-RW (DVD-Video format) or +RW increases when you delete the last title.

### 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. (⇒ 39)

### Cannot create a playlist.

- Creation or editing of playlists cannot be done on this unit.

## Still pictures

### 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, turn off and turn on the unit again.

### Copying, deleting and setting protection takes a long time.

- When there are a lot of folders and files, it may sometimes take a few hours.

### Still pictures (JPEG) do not playback normally.

- The images that were edited on the PC, such as Progressive JPEG, etc., may not play back. (⇒ 111)

## Music

### Tracks could not be copied to the HDD.

- If there are copyright protected tracks such as SCMS restrictions, they will not be copied.
- Recording from CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.

## USB

### The contents of the USB memory cannot be read.

- Remove the USB memory from the USB port and then insert again. If this does not solve the problem, turn off and turn on the unit again. If it cannot be operated after that, set "VIERA Link" to "Off" and turn the unit off again, and turn it back on. (⇒ 83)
- USB memories connected using a USB extension cable or a USB hub may not be recognized by this unit.

## TV Guide

### The TV Guide System does not receive any data.

- Set the clock. (⇒ 85)
- If signal quality is bad (ghost images or limited reception), the TV Guide system may not be able to receive any data.

### The empty field is displayed for some or all channels.

- Some channels are not supported by the TV Guide system.

### The TV Guide information is not displayed properly.

- There was a programme change, or TV Guide information from a broadcast station was possibly not correctly transmitted. Check the current programme, e.g. on the Web site for the TV Guide system provider or station provider.

### The TV Guide data transfer was interrupted.

- The TV Guide system shows the data that was received up to the interruption.
- The programme information may be incomplete.

### The TV Guide data is not updated.

- Make sure that the time is set correctly. (⇒ 85)

## Broadcast

### Picture regularly breaks up on some channels.

- Adjust the aerial reception with "Manual Tuning". (⇒ 76)

### Picture very infrequently breaks up on some or all channels.

- Electrical atmospheric interference caused by local or distant lightning storms or heavy rain with wind in "leafy" locations may cause pictures to break up and audio to mute or distort momentarily.

### After the Auto-setup, there aren't any channels in the channel list.

- The Auto-setup was started and interrupted. Do an Auto-setup again.

## VIERA Link

### VIERA Link doesn't work.

- Some functions may not work depending on the version of "HDAVI Control" of the connected equipment. This unit supports "HDAVI Control 5" functions.
- 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.

## Network

### You cannot access this unit from DLNA compatible equipment on the network.

- Check the network connection and the network settings. (⇒ 10, 13, 66, 84)
- It may not be possible to connect depending on the types of the equipment or the status of the equipment.

## To reset this unit

### To return all the settings other than the main ones to the factory preset

- Perform "Shipping Condition" or "Default Settings". (⇒ 86)

### To reset the ratings level settings

- While the disc tray is open, press [DRIVE SELECT] to select the BD drive, then press and hold [● REC] and [▶] (PLAY/×1.3) on the main unit at the same time for 5 or more seconds.

# HDD and media information

## Discs

### HDD and discs you can use for recording and play

(○: Possible, -: Impossible)

Disc type	Standard symbol	Data that can be recorded	Rewritable	Note
Hard disk drive (HDD)	<b>HDD</b>	Video (Including AVCHD)/ JPEG/MP3/ Music copied from music CD	○	
BD-RE (50 GB/25 GB) 	<b>BD-RE</b>	Video (Including AVCHD)/JPEG	○	<ul style="list-style-type: none"> <li>DL is also included. "DL" is a single-side dual-layer disc.</li> <li>BD-RE (Ver. 1.0) with a cartridge cannot be used with this unit. (It cannot be used even if it is taken out from the cartridge)</li> </ul>
BD-R (50 GB/25 GB) 	<b>BD-R</b>	Video (Including AVCHD)	-	<ul style="list-style-type: none"> <li>DL is also included. "DL" is a single-side dual-layer disc.</li> <li>LTH type is also included.</li> </ul>
DVD-RAM 	<b>RAM</b>	Video (Not including AVCHD)/ JPEG	○	<ul style="list-style-type: none"> <li>Take the disc out from the cartridge to use the DVD-RAM with a cartridge. (TYPE1 cannot be used)</li> </ul>
DVD-R 	<b>-R</b>	Video (Including AVCHD)	-	
DVD-R DL 	<b>-R DL</b>		-	
DVD-RW 	<b>-RW(V)</b>		○	
+R	<b>+R</b>	Video (Not including AVCHD)	-	
+R DL	<b>+R DL</b>		-	
+RW	<b>+RW</b>		○	

Reference



• The DVD-R, DVD-R DL, DVD-RW, +R, and +R DL after the finalisation are referred to as "**DVD-V**" in these operating instructions.

#### ■ 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).

## Play-only discs

Disc type	Standard symbol	Uses
<b>BD-Video</b> 	<b>BD-V</b>	High Definition (HD) movie and music discs <ul style="list-style-type: none"> <li>Information for High Bit Rate Audio (⇒ 106)</li> </ul>
<b>BD-R</b> <b>(50 GB/25 GB)</b> 	<b>BD-R</b>	DivX®
<b>DVD-Video</b> 	<b>DVD-V</b>	Movie and music
<b>DVD-RW</b> <b>(DVD Video Recording format)</b> 	<b>-RW(VR)</b>	DVD-RW video recorded on another DVD recorder <ul style="list-style-type: none"> <li>By formatting (⇒ 72) the disc, you can record onto it in DVD-Video format.</li> <li>It may be necessary to finalise the disc on the equipment used for recording (⇒ 73).</li> </ul>
<b>DVD-R*1</b> <b>DVD-R DL*1</b>  	<b>-R</b> <b>-R DL</b>	DivX®, MP3, JPEG
<b>BD-RE, BD-R, DVD-RAM, DVD-R*1,</b> <b>DVD-R DL*1, DVD-RW*1,</b> <b>+R*1, +R DL*1, +RW</b>	<b>BD-R</b> <b>BD-RE</b> <b>RAM</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b> <b>+RW</b>	High Definition video recorded by Panasonic's video camera, etc.
<b>CD</b> <b>(including CD-R/RW*2)</b> 	<b>CD</b>	Music
<b>CD</b> <b>(including CD-R/RW*2)</b>	<b>CD</b>	DivX®, MP3, JPEG

\*1 It may be necessary to finalise on the equipment used for recording.

\*2 Close the session after recording.



- The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
- Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.

## Notes for the disc

### ■ Play on other players

#### **BD-RE** **BD-R**

It can be played on the players compatible with BD-RE (Ver. 2.1) and BD-R.

#### **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW**

Finalisation is needed. (⇒ 73)

#### **+RW**

If the disc failed to play on other equipment, we recommend you create a Top Menu (⇒ 73).

### ■ Regarding 8 cm Disc

This unit cannot record or edit the 8 cm disc. Only playback or copy to the HDD is possible.

### ■ Discs that cannot be played

- DVD-RAM that cannot be removed from their cartridges
- 2.6 and 5.2 GB DVD-RAM, 12 cm
- DVD-Audio
- HD DVD
- Super Video CD, Super Audio CD, Video CD
- +R (8 cm), CD-ROM, Photo CD, PD, etc.

### ■ Region management information

#### **BD-Video**

This unit plays BD-Video marked with labels containing the region code “**B**”.

Example:



#### **DVD-Video**

This unit plays DVD-Video marked with labels containing the region number “**2**” or “**ALL**”.

Example:



- Discs recorded on equipment other than this unit may not be used for recording on this unit.

## SD cards

Standard symbol	Contents
<b>SD</b>	JPEG AVCHD MPEG2 (Copy only)

### Compatible SD card

- SD Memory Card (from 8 MB to 2 GB)  
(Including miniSD Card and microSD Card)
- SDHC Memory Card (from 4 GB to 32 GB)  
(Including miniSDHC Card and microSDHC Card)
- SDXC Memory Card (48 GB, 64 GB)  
(Including microSDXC Card)
- This unit is compatible with SD Memory Cards that meet SD Card Specifications FAT12 and FAT16 formats, as well as SDHC Memory Cards in FAT32 format and SDXC Memory Cards in exFAT format.



- If the SD card is formatted on other equipment, the time necessary for recording may be longer. Also, if the SD card is formatted on a PC, you may not be able to use it on this unit. In these cases, format the card on this unit (⇒ 72, 117).
  - Keep the Memory Card out of reach of children to prevent swallowing.
  - SDHC Memory Cards and SDXC Memory Cards can be used in equipment that is compatible with the appropriate card or cards. (SDHC Memory Cards can also be used in equipment compatible with SDXC Memory Cards)
- Using either of these cards in a non-compatible PC or non-compatible equipment may result in formatting etc. and the loss of recorded content.**

### Setting the protection

Switch the write-protect switch to the “LOCK” position.



### Using miniSD card or microSD card

miniSD Cards, microSD Cards, miniSDHC Cards, microSDHC Cards and microSDXC Cards can be used, but must be used with an adaptor card. These are usually supplied with such cards, or otherwise customer provided.

e.g.,



## USB memories

Standard symbol	Contents
<b>USB</b>	DivX (Play only)* JPEG MP3 AVCHD (Copy only) MPEG2 (Copy only)

\* Video images of the copyright-protected DivX contents stored on USB device can be output only through the HDMI output terminal.

### Compatible USB memories

- USB memories that support USB 1.0/1.1 and USB 2.0 Full Speed/High Speed.
- USB memories of up to 128 GB can be used.
- FAT16 and FAT32 file systems are supported.



- This unit's USB port does not support bus-powered USB device.
- Despite meeting the conditions mentioned above, there may be USB memories that cannot be used for this unit.
- This unit supports connecting a USB memory, digital camera and video camera produced by Panasonic, etc. It is not warranted that all USB devices will meet this unit.
- USB memories support DivX files less than 4GB.

# Unit care

## Cleaning

### ■ This unit

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

### ■ This unit's lens

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

Lens cleaner: RP-CL720E

- This lens cleaner may not be available for sale in all countries, e.g. not available in Germany, please consult your Panasonic dealer for advice.

## 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 VCR, etc.**

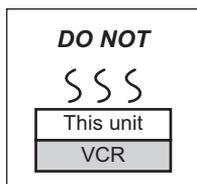
- **Place in an area where condensation does not occur. Conditions where condensation may occur**

–When there is an extreme change in temperature (moving from a very hot location to a very cold location, or vice versa, or 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.

–During the rainy season.

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.



- **Cigarette smoke etc. causes malfunction or breakdown**

The unit may breakdown if cigarette smoke or bug spray/vapour, etc. gets inside the unit.

## When moving the unit

Before moving the unit, ensure the disc tray is empty.

- ① Turn the unit off. (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 turning the unit off, the HDD continues operating for a short time.)

## HDD (Hard disk drive) handling care

The HDD is a high precision recording instrument and because of its long recording capability and high speed operation it is a very special device that is easily susceptible to damage.

As a basic rule, save important content to a disc as backup.

- **The HDD is a device that is not built to withstand vibration/shock or dust**

Depending on the setup environment and handling of the HDD some content may become damaged and play and recording may no longer be possible.

Especially during operation, do not subject the unit to any vibration, shock, or remove the AC mains lead from the household mains socket. In the event of a power failure during recording or play, the content may be damaged.

- **The HDD is a temporary storage device**

The HDD is not an everlasting storage device for recorded content. Use the HDD as a temporary storage place for one-off viewing, editing, or copying. It is recommended to save the recorded content on a disc or to keep the original data or CDs that they were copied from.

- **Immediately save (backup) all content as soon as you feel there may be a problem with the HDD**

If there is an irregularity within the HDD, repetitive strange sounds or problems with picture (block noise, etc.) may result. Using the HDD in this condition may worsen the problem and in the worst case the HDD may no longer be usable. As soon as you notice this type of problem, copy all content to disc and request service. Recorded content (data) on a HDD that has become unusable is unrecoverable.

- When the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

# Media handling

## ■ How to hold a disc or SD card

Do not touch the recorded surface or the terminal surface.



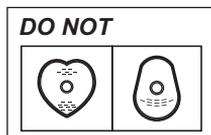
## ■ If there is dirt or condensation on the disc

Wipe with a damp cloth and then wipe dry.



## ■ Handling precautions

- Do not attach labels or stickers to discs.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use ballpoint pens or other hard writing implements, when writing on the label side of the disc.
- Do not expose the terminals of the SD card to water, garbage or other strange things.
- Do not drop stack, or impact discs. Do not place objects on them.
- Do not use the following discs:
  - Discs with exposed adhesive from removed stickers or labels (rental discs, etc.).
  - Discs that are badly warped or cracked.
  - Irregularly shaped discs, such as heart shapes.



- Do not place in the following areas:
  - In direct sunlight.
  - In very dusty or humid areas.
  - Near a heater.
  - Locations susceptible to significant difference in temperature (condensation can occur).
  - Where static electricity or electromagnetic waves occur.

# Recording modes and recording contents

Recording mode	Quality	Multiple audio	Subtitles	Surround audio
DR	Same as broadcasted	Record all multiple audio	Can be recorded	Surround audio as the broadcast
HG, HX, HE, HL, HM	HD quality produced by conversion of broadcast data*1	Record only one audio*2, 3	Can be recorded*2, 4	Surround audio produced by conversion of broadcast audio format
XP, SP, LP, EP, FR (⇒ below)	SD quality only			Stereo audio

\*1 The SD quality programme is not converted to HD quality.

\*2 After copying or DR File Conversion, multiple audio or subtitle cannot be changed.

\*3 Before copying or DR File Conversion, select the audio to record.

–“Copy” or “DR File Conversion”: Select the audio with “Preferred Multi Audio” (⇒ 77).

–“Copy Title Playing”: Select the audio with “Multi Audio” in the Disc menu (⇒ 70).

\*4 Before copying or DR File Conversion, select the subtitle to record.

–“Copy” or “DR File Conversion”: Select the subtitle with “Preferred Subtitles” (⇒ 77).

–“Copy Title Playing”: Subtitles displayed during playback are recorded.

Press [STTL ] to display the subtitle.

Select the subtitle with “Subtitles” in the Disc menu (⇒ 70)

## ➤ Recording modes and approximate recording times (⇒ 112)

### ■ Regarding recording time remaining

#### ●DR mode

Remaining time in the DR mode is calculated with a bit rate of approx. 8 Mbps. But the bit rate differs depending on the broadcast, so the displayed remaining time might be different from the actual remaining time.

#### ●Other recording modes

This unit records using a VBR (Variable bit rate) data compression system to vary recorded data segments to match video data segments which may cause differences in the displayed amount of time and space remaining for recording.

If the remaining amount of time is insufficient, delete any unwanted titles to create enough space before you start recording.

### ■ FR (Flexible Recording Mode)

The unit automatically selects a recording rate between XP and EP (8 hours) that will enable the recordings to fit in the remaining disc space with the best possible recording quality.

# Operations that can be performed simultaneously

## Operations that can be performed while recording or copying a title

(○: Possible, –: Impossible)

	Playback of HDD	Playback of discs	Playback of still pictures	Playback of music recorded on HDD
While recording to HDD in DR mode	○	○ <sup>*1</sup>	–	○
While recording to HDD in XP, SP, LP, EP or FR modes	○	○ <sup>*1, 2, 3</sup>	–	○
While recording from DV input	–	–	–	–
While copying in normal speed mode	–	–	–	–
While copying in high speed mode [With finalising or creating Top Menu (+RW)]	–	–	–	–
While copying in high speed mode [Without finalising or creating Top Menu (+RW)]	○	–	–	–

\*1 DivX video cannot playback.

\*2 AVCHD format titles cannot playback.

\*3 BD-Video cannot playback.

● Simultaneous operation is not possible while executing the “DV Automatic Recording” or “Flexible Recording via AV input”.

## Starting of the timer recording while executing other operation

Executing operation	Starting of the timer recording	Executing operation	Starting of the timer recording
Recording the title <sup>*1</sup>	○	Executing “Flexible Recording via AV input” <sup>*3</sup>	○
Playing the title <sup>*2</sup>	○	Executing PAUSE LIVE TV or REWIND LIVE TV <sup>*1</sup>	○
Editing the title	○	Editing still pictures or music	–
Copying a title in high speed mode (without finalising or creating Top Menu)	○	Copying still pictures	–
Copying a title in high speed mode (with finalising or creating Top Menu)	–	Copying music	–
Copying a title in normal speed mode	–	Formatting	–
Copying HD Video (AVCHD format)	–	Finalising/Creating Top Menu (+RW)	–
Executing “DV Automatic Recording” <sup>*3</sup>	○		

\*1 Executing operation will terminate when 2 programme simultaneous recording cannot be performed.

\*2 Playback of BD-Video will terminate when the timer recording other than the DR mode has started.

\*3 Executing operation will be terminated.

# Audio information

The digital audio output might be different depending on the terminal connected to the amplifier/receiver and the setting of this unit. (⇒ 81, Digital Audio Output)

- The number of channels listed is the maximum possible number of output channels.

## ■ HDMI AV OUT/DIGITAL AUDIO OUT

Terminal	HDMI AV OUT				DIGITAL AUDIO OUT			
	“Bitstream” <sup>※1</sup>		“PCM” <sup>※2</sup>		“Bitstream”		“PCM”	
“BD-Video Secondary Audio”	“On” <sup>※3</sup>	“Off”	“On” <sup>※4</sup>	“Off”	“On”	“Off”	“On”	“Off”
Dolby Digital/ Dolby Digital EX <sup>※5</sup>	Dolby Digital	Output original audio	DVD-Video: 5.1ch: PCM		Dolby Digital/ Dolby Digital EX <sup>※7</sup>		Down-mixed 2ch PCM	
			BD-Video: 7.1ch: PCM <sup>※6</sup>					
			7.1ch PCM		Dolby Digital			
Dolby Digital Plus								
Dolby TrueHD								
DTS Digital Surround/ DTS ES <sup>※5</sup>	DTS Digital Surround		DVD-Video: 5.1ch PCM		DTS Digital Surround/ DTS ES <sup>※7</sup>		Down-mixed 2ch PCM	
			BD-Video: 7.1ch PCM <sup>※8</sup>					
DTS-HD High Resolution Audio			7.1ch PCM <sup>※8</sup>		DTS Digital Surround			
DTS-HD Master Audio								
7.1ch LPCM	7.1ch PCM				Down-mixed 2ch PCM			

- ※1 When the connected equipment is not supported with these audio formats, the audio is output as Dolby Digital bitstream, DTS Digital Surround bitstream or down-mixed 2ch PCM (e.g., TV).
- ※2 When the connected equipment is not supported with multi channel surround, the audio is output as down-mixed 2ch PCM.
- ※3 **BD-V** When playing BD-Video without secondary audio or button click sound, the audio is output as the same format as if “BD-Video Secondary Audio” was set to “Off”.
- ※4 **BD-V** When playing BD-Video with secondary audio or button click sound, the audio is output as 5.1ch.
- ※5 With PCM output, Dolby Digital EX becomes PCM audio decoded as Dolby Digital, DTS ES recorded to DVD-Video becomes PCM audio decoded as DTS Digital Surround, and DTS ES recorded to BD-Video becomes PCM audio decoded as DTS ES.
- ※6 **BD-V** When BD-Video is played and “7.1ch Audio Reformating” is set to “Off”, the audio is output as 5.1ch.
- ※7 **BD-V** When “BD-Video Secondary Audio” is set to “On”, Dolby Digital EX is output as Dolby Digital and DTS ES is output as DTS Digital Surround, however if playing BD-Video without secondary audio or button click sound, the audio is output as the original format.
- ※8 **BD-V** When BD-Video is played and the connected equipment is supported with 7.1 channel surround, the audio output is amplified from 5.1ch or 6.1ch to 7.1ch depending on the DTS, Inc. specifications.

# Structure of folders displayed by this unit

You can play DivX, MP3 and still pictures (JPEG) on this unit by making folders as shown below. However depending on the method of writing data (writing software), play may not be in the order you numbered the folders.

**BD-R** Structure of DivX folders  
**-R -R DL CD USB** Structure of MP3, still picture or DivX folders

Prefix with 3-digit numbers in the order you want to play them. Files inside a folder are displayed in the order they were updated or taken.

**MP3**

**Still picture**

**DivX**

**BD-RE** **RAM**

\*\*\*: Numbers XXX: Letters

※ Folders can be created on other equipment. However, these folders cannot be selected as a copying destination.

● If a folder name or file name has been input using other equipment, the name may not be displayed properly or you may not be able to play or edit the data.

**SD**

\*\*\*: Numbers XXX: Letters

# Specifications

Specifications are subject to change without notice.

## ■ General

Dimensions (W×H×D):

**BW880**

430 mm×66 mm×238 mm  
(excluding the projecting parts)  
430 mm×66 mm×247 mm  
(including the projecting parts)

**BW780**

430 mm×59 mm×238 mm  
(excluding the projecting parts)  
430 mm×59 mm×247 mm  
(including the projecting parts)

Mass:

Approx. 3.1 kg

Power supply: AC 220 to 240 V, 50 Hz

Power consumption: **BW880** Approx. 36 W

**BW780** Approx. 35 W

### Power consumption in standby mode:

#### Power Save in Standby mode

**Activated: Approx. 0.7 W**

**Deactivated: Approx. 7 W**

Operating temperature: 5 °C to 40 °C

Operating humidity range: 10 % to 80 % RH  
(no condensation)

## ■ Television system

Tuner System: DVB-T, T2

Channel Coverage: UK

UHF: 21 to 68

RF converter output: Not provided

## ■ Video

Video system: PAL/NTSC

Recording system: MPEG2 (Hybrid VBR)/  
MPEG-4 AVC/H.264

Video in (PAL/NTSC):  
AV1/AV2 (21 pin)  
AV3 (pin jack)  
1 Vp-p (75 Ω)

S-Video in (PAL/NTSC):  
AV2 (21 pin) 1 Vp-p (75 Ω)

RGB in (PAL): AV2 (21 pin) 0.7 Vp-p (75 Ω)

Video out (PAL/NTSC):  
AV1/AV2 (21 pin),  
Video Out (pin jack) 1 Vp-p (75 Ω)

S-Video out (PAL/NTSC):  
AV1 (21 pin) 1 Vp-p (75 Ω)

RGB out (PAL/NTSC):  
AV1 (21 pin) 0.7 Vp-p (PAL) (75 Ω)

Component video output (PAL 576i/576p/720p/  
1080i, NTSC 480i/480p/720p/1080i):

Not provided

## ■ Audio

Recording system:

Dolby Digital (XP, SP, LP, EP mode: 2ch),  
Linear PCM (XP mode)

Dolby Digital

(DR, HG, HX, HE, HL, HM mode: Max 5.1ch),

Dolby Digital Plus (DR mode: Max 5.1ch),

MPEG (DR mode: 2ch),

HE-AAC (DR mode: Max 5.1ch)

Audio in: AV1/AV2 (21 pin), AV3 (pin jack)

Input level: Standard: 0.5 Vrms,

Full scale: 2.0 Vrms at 1 kHz

Input impedance: More than 10 kΩ

Audio out: AV1/AV2 (21 pin),

Audio Out (pin jack)

Output level: Standard: 0.5 Vrms,

Full scale: 2.0 Vrms at 1 kHz

Output impedance: Less than 1 kΩ

Digital audio out: Optical terminal

(PCM, Dolby Digital, DTS, MPEG),

Coaxial terminal

(PCM, Dolby Digital, DTS, MPEG),

HDMI terminal

(PCM, Dolby Digital, DTS, MPEG,

Dolby Digital Plus,

Dolby TrueHD, DTS-HD Master Audio,

DTS-HD High Resolution Audio)

## ■ HDMI Output

19 pin type A: 1 pc

HDMI (V.1.4, Content Type)

- This unit supports “HDAVI Control 5” function.

## ■ Other terminals

DV Input IEEE 1394 Standard, 4 pin: 1 pc

USB Port Type A: 1 pc

SD Card Slot 1 pc

LAN (Ethernet) Port 10BASE-T/100BASE-TX

## ■ Internal HDD capacity

<b>BW880</b>	500 GB
<b>BW780</b>	250 GB

## ■ Recording system

BD-RE (SL/DL): Blu-ray Disc Rewritable Format

BD-R (SL/DL): Blu-ray Disc Recordable Format

DVD-RAM: DVD Video Recording format

DVD-R: DVD-Video format

DVD-R DL (Dual Layer): DVD-Video format

DVD-RW: DVD-Video format

+R, +R DL (Double Layer), +RW

## ■ Region code:

DVD: #2

BD: Region B

### ■ Playable discs

BD-RE (SL/DL):	BD-RE Ver. 2.1 conforming, JPEG
BD-R (SL/DL):	BD-R LTH TYPE Ver. 1.3 conforming, BD-R Ver. 1.3 conforming
BD-Video	
DVD-RAM*1:	DVD Video Recording format, AVCHD format, JPEG
DVD-R:	DVD-Video format*2, AVCHD format*2, MP3*2,3, JPEG*2,3, DivX*2,3
DVD-R DL (Dual Layer):	DVD-Video format*2, AVCHD format*2, MP3*2,3, JPEG*2,3, DivX*2,3
DVD-RW:	DVD-Video format*2, DVD Video Recording format, AVCHD format*2
+R*2, +R DL (Double Layer)*2, +RW	
DVD-Video, CD-Audio (CD-DA)	
CD-R/CD-RW:	CD-DA*2, MP3*2,3, JPEG*2,3, DivX*2,3

\*1 Remove the disc from cartridge case (TYPE1 cannot be used).

\*2 Finalising is necessary for compatible playback.

\*3 ISO9660 level 1 or 2 (except for extended formats) and Joliet  
This unit is compatible with multi-session/border (except for DVD-R DL).  
This unit is not compatible with packet-writing.

### ■ Maximum writing speed of discs

BD-RE (DL):	Up to 2x Speed
BD-RE:	Up to 2x Speed
BD-R (DL):	Up to 6x Speed
BD-R:	Up to 6x Speed
DVD-RAM:	Up to 5x Speed
DVD-R:	Up to 12x Speed
DVD-R DL:	Up to 4x Speed
DVD-RW:	Up to 4x Speed
+R:	Up to 8x Speed
+R DL:	Up to 4x Speed
+RW:	Up to 4x Speed

Maximum supporting speed of drive for each disc:  
Refer to "Recordable discs" (⇒ right).

### ■ Copying speed from HDD to BD-R in High Speed Copy

Approx.

HDD		6X Speed BD-R (DL, 50 GB/SL, 25 GB)	
Recording Mode	Recorded Programme	Required time	Speed
HM	1 hour	1 min.	60x

- The above rate in the list indicates the shortest time and fastest speed required for copying one-hour title from HDD to the disc by High-Speed copying.
- The required amount of time and speed may vary depending on the conditions such as the area where information is written or unique feature on the disc.

### ■ Recordable discs

BD-RE (SL/DL):	1-2X SPEED (Ver. 2.1)
BD-R (SL/DL):	1-2X SPEED (Ver. 1.1), 1-4X SPEED (Ver. 1.2), 1-6X SPEED (Ver. 1.3), 1-2X SPEED LTH type (Ver. 1.2), 1-6X SPEED LTH type (Ver. 1.3)
DVD-RAM:	2X SPEED (Ver. 2.0), 2-3X SPEED (Ver. 2.1), 2-5X SPEED (Ver. 2.2)
DVD-R (SL):	1X SPEED (Ver. 2.0), 1-4X SPEED (Ver. 2.0), 1-8X SPEED (Ver. 2.0), 1-16X SPEED (Ver. 2.1)
DVD-R (DL):	2-4X SPEED (Ver. 3.0), 2-8X SPEED (Ver. 3.0)
DVD-RW:	1X SPEED (Ver. 1.1), 1-2X SPEED (Ver. 1.1), 2-4X SPEED (Ver. 1.2), 2-6X SPEED (Ver. 1.2)
+R (SL):	2.4X SPEED (Ver. 1.0), 2.4-4X SPEED (Ver. 1.1), 2.4-8X SPEED (Ver. 1.2), 2.4-16X SPEED (Ver. 1.3)
+R (DL):	2.4X SPEED (Ver. 1.0), 2.4-8X SPEED (Ver. 1.1)
+RW:	2.4X SPEED (Ver. 1.1), 2.4-4X SPEED (Ver. 1.2)

# Specifications

## ■ SD Card

Slot: SD Memory Card slot: 1 pc  
Compatible media: SD Memory Card  
Format: FAT12\*<sup>1</sup>, FAT16\*<sup>1</sup>  
(In case of SD Memory Card)  
FAT32\*<sup>1</sup> (In case of SDHC Memory Card)  
exFAT (In case of SDXC Memory Card)  
Data that can be played: JPEG,  
SD (Standard Definition)-Video\*<sup>2</sup>,  
HD (High Definition)-Video

---

\*<sup>1</sup> Long file name is unsupported.

\*<sup>2</sup> Video Recording conversion and transfer is possible from SD card to HDD or DVD-RAM disc.  
After Video Recording conversion and transfer to HDD or DVD-RAM disc is completed, the playback becomes possible.

## ■ USB device

USB standard: USB 2.0 High Speed  
Format: FAT16, FAT32  
Data that can be played: MP3, JPEG, DivX,  
SD (Standard Definition)-Video\*<sup>1</sup>,  
HD (High Definition)-Video\*<sup>2</sup>

---

\*<sup>1</sup> Video Recording conversion and transfer is possible from USB device to HDD or DVD-RAM disc.  
After Video Recording conversion and transfer to HDD or DVD-RAM disc is completed, the playback becomes possible.

\*<sup>2</sup> Video Recording conversion and transfer is possible from USB device to HDD, BD-RE (SL/DL) or BD-R (SL/DL) disc.  
After Video Recording conversion and transfer to HDD, BD-RE (SL/DL) or BD-R (SL/DL) disc is completed, the playback becomes possible.

## ■ Optical pick-up

System with 2 lens, 3 integration units  
(405 nm wavelength for BDs,  
661 nm wavelength for DVDs,  
783 nm wavelength for CDs)

## ■ LASER specification

Class 1 LASER Product

Wave length:

783 nm (CDs)  
661 nm (DVDs)  
405 nm (BDs)

Laser power:

No hazardous radiation is emitted with the safety protection

## About JPEG/MP3/DivX/ MPEG2/AVCHD files

### ■ DivX

Playable media BD-R, DVD-R, DVD-R DL,  
CD-R, CD-RW, USB device\*

Maximum number of folders recognizable:  
300 folders (including the root folder)

Maximum number of files recognizable: 200 files

#### ● Support version

##### Extension

Files must have the extension “.DIVX”, “.divx”, “.AVI” or “.avi”.

##### Picture resolution

Up to 1920×1080 pixels

##### Reference

DivX certified to play DivX video up to HD 1080p, including premium content.

##### Video

- Number of stream: Up to 1
- Codec: DIV3, DIV4, DIVX, DV50, DIV6
- FPS (Frame Per Second): Up to 60 fps

##### Audio

- Number of stream: Up to 8
- Format: MP3, MPEG, Dolby Digital
- Multi channel: Dolby Digital is possible.  
MPEG multi is 2 ch conversion.

- GMC (Global Motion Compensation) is not supported.

- 
- DVD-R and DVD-R DL must conform to UDF 1.02 without ISO9660 and UDF 1.5 with ISO9660.

\* DivX VOD contents cannot be played back.

### ■ SD (Standard Definition)-Video

Playable media SD Card\*1, USB device\*2  
Codec MPEG2 (SD-Video Entertainment Video Profile)  
File Format SD-Video format conforming

\*1 Video Recording conversion and transfer is possible from SD card to HDD or DVD-RAM disc.

After Video Recording conversion and transfer to HDD or DVD-RAM disc is completed, the playback becomes possible.

\*2 Video Recording conversion and transfer is possible from USB device to HDD or DVD-RAM disc.

After Video Recording conversion and transfer to HDD or DVD-RAM disc is completed, the playback becomes possible.

### ■ HD (High Definition)-Video

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

\* Video Recording conversion and transfer is possible from USB device to HDD, BD-RE (SL/DL) or BD-R (SL/DL) disc.

After Video Recording conversion and transfer to HDD, BD-RE (SL/DL) or BD-R (SL/DL) disc is completed, the playback becomes possible.

### ■ JPEG

Playable media HDD, BD-RE (SL/DL),  
DVD-RAM, DVD-R, DVD-R DL,  
CD-R, CD-RW, SD Card, USB device  
Format JPEG conforming DCF  
(Design rule for Camera File system)\*

Compatible pixels Between 34×34 and  
8192×8192 pixels  
(Sub sampling is 4:2:2 or 4:2:0)

Thawing Time Approx. 2 sec. in case of SD card  
(8.1 M pixels, JPEG)

Maximum number of folders recognizable:  
CD 99 folders (including the root folder)

HDD BD-RE RAM -R -R DL USB SD  
300 folders (including the root folder)

Maximum number of files recognizable:

CD 999 files  
RAM -R -R DL USB SD 3000 files  
HDD BD-RE 9999 files

- JPEG files must have the extension “.jpg” or “.JPG”.
- MOTION JPEG and PROGRESSIVE JPEG are not supported.

\* Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).

### ■ MP3

Playable media HDD, DVD-R, DVD-R DL, CD-R,  
CD-RW, USB device  
Compression rate 32 kbps to 320 kbps  
Sampling frequency 16 kHz/22.05 kHz/24 kHz/  
32 kHz/44.1 kHz/48 kHz

This unit is compatible with ID3 tags.

Maximum number of folders recognizable  
(except for HDD):

300 folders (including the root folder)

Maximum number of files recognizable  
(except for HDD): 3000 files

- MP3 files must have the extension “.mp3” or “.MP3”.

## Recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated.

Recording Mode	HDD		BD-RE BD-R		RAM		-R -RW(V) +R +RW (4.7 GB)	-R DL +R DL (8.5 GB)
	BW880 (500 GB)	BW780 (250 GB)	Single Layer (25 GB)	Dual Layer (50 GB)	Single-sided (4.7 GB)	Double-sided (9.4 GB)		
<b>DR*1</b> (High Definition (HD) quality: estimated bit rate is 8 Mbps)	130 hours	63 hours	6 hours 30 min.	13 hours	–	–	–	–
<b>DR*1</b> (Standard Definition (SD) quality: estimated bit rate is 4 Mbps)	260 hours	126 hours	13 hours	26 hours	–	–	–	–
<b>HG</b>	79 hours	39 hours	4 hours	8 hours	–	–	–	–
<b>HX</b>	118 hours	58 hours	6 hours	12 hours	–	–	–	–
<b>HE</b>	177 hours	87 hours	9 hours	18 hours	–	–	–	–
<b>HL</b>	237 hours	117 hours	12 hours	24 hours	–	–	–	–
<b>HM</b>	343 hours	169 hours	17 hours 30 min.	35 hours	–	–	–	–
<b>XP</b>	108 hours	53 hours	5 hours 15 min.	10 hours 30 min.	1 hour	2 hours	1 hour	1 hour 45 min.
<b>SP</b>	216 hours	106 hours	10 hours 30 min.	21 hours	2 hours	4 hours	2 hours	3 hours 35 min.
<b>LP</b>	432 hours	212 hours	21 hours	42 hours	4 hours	8 hours	4 hours	7 hours 10 min.
<b>EP</b>	864 hours (648 hours*2)	424 hours (318 hours*2)	42 hours (31 hours 30 min.*2)	84 hours (63 hours*2)	8 hours (6 hours*2)	16 hours (12 hours*2)	8 hours (6 hours*2)	14 hours 20 min. (10 hours 45 min.*2)

\*1 Recording time of DR mode may vary depending on bit rate of broadcasting.

\*2 When "Recording time in EP mode" is set to "6 hours" (⇒ 79).

Reference

## Maximum number of titles that can be recorded

<b>HDD</b> :	999 titles (When continuously recording for long durations, titles are automatically divided every 8 hours.)
<b>BD-RE</b> <b>BD-R</b> :	200 titles on one disc.
<b>RAM</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> :	99 titles on one disc.
<b>+R</b> <b>+R DL</b> <b>+RW</b> :	49 titles on one disc.

# Licenses

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries.

Manufactured under license under U.S. Patent #'s: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,226,616; 6,487,535; 7,392,195; 7,272,567; 7,333,929; 7,212,872 & other U.S. and worldwide patents issued & pending.  
DTS and the Symbol are registered trademarks, & DTS-HD, DTS-HD Master Audio | Essential and the DTS logos are trademarks of DTS, Inc. Product includes software.  
© DTS, Inc. All Rights Reserved.

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

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

SDXC Logo is a trademark of SD-3C, LLC.

HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

DLNA®, the DLNA Logo and DLNA CERTIFIED™ are trademarks, service marks, or certification marks of the Digital Living Network Alliance.

DivX® is a registered trademark of DivX, Inc., and is used under license.

This product incorporates the following software:

- (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 licensed under the GNU General Public License, Version 2 (GPL v2),
- (4) the software licensed under the GNU LESSER General Public License, Version 2.1 (LGPL v2.1) and/or,
- (5) open sourced software other than the software licensed under the GPL v2 and/or LGPL v2.1

For the software categorized as (3) and (4), please refer to the terms and conditions of GPL v2 and LGPL v2.1, as the case may be at

<http://www.gnu.org/licenses/old-licenses/gpl-2.0.html> and  
<http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html>.

In addition, the software categorized as (3) and (4) are copyrighted by several individuals. Please refer to the copyright notice of those individuals at

<http://www.am-linux.jp/dl/JPRCBW98>

The GPL/LGPL software is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

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 GPL v2/ LGPL v2.1.

Contact Information  
[cdrequest@am-linux.jp](mailto:cdrequest@am-linux.jp)

Source code is also freely available to you and any other member of the public via our website below.  
<http://www.am-linux.jp/dl/JPRCBW98>

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. See <http://www.mpegla.com>.

"AVCHD" and the "AVCHD" logo are trademarks of Panasonic Corporation and Sony Corporation.

HDAVI Control™ is a trademark of Panasonic Corporation.

"Blu-ray Disc" is a trademark.

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

"BD-LIVE" logo is a trademark of Blu-ray Disc Association.

x.v.Colour™ is a trademark.

VIERA CAST is a trademark of Panasonic Corporation.

YouTube and Picasa are trademarks of Google, Inc.

The FREEVIEW service is subject to coverage. An aerial upgrade may be required. The FREEVIEW, FREEVIEW+, FREEVIEW HD and FREEVIEW+ HD words and logos are trade marks of DTV Services LTD. DTV Services Ltd 2002, 2008.

GUIDE Plus+, SHOWVIEW are (1) registered trademarks or trademarks of, (2) manufactured under license from and (3) subject of various international patents and patent applications owned by, or licensed to, Gemstar-TV Guide International, Inc. and/or its related affiliates.

**GEMSTAR-TV GUIDE INTERNATIONAL, INC. AND/OR ITS RELATED AFFILIATES ARE NOT IN ANY WAY LIABLE FOR THE ACCURACY OF THE PROGRAM SCHEDULE INFORMATION PROVIDED BY THE GUIDE PLUS+ SYSTEM. IN NO EVENT SHALL GEMSTAR-TV GUIDE INTERNATIONAL, INC. AND/OR ITS RELATED AFFILIATES BE LIABLE FOR ANY AMOUNTS REPRESENTING LOSS OF PROFITS, LOSS OF BUSINESS, OR INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE PROVISION OR USE OF ANY INFORMATION, EQUIPMENT, OR SERVICES RELATING TO THE GUIDE PLUS+ SYSTEM.**

<http://www.europe.guideplus.com/>

## Gracenote® Corporate Description

Music and video recognition technology and related data are provided by Gracenote®. Gracenote is the industry standard in music recognition technology and related content delivery. For more information, please visit [www.gracenote.com](http://www.gracenote.com).

## Gracenote® Proprietary Legends

CD, DVD, Blu-ray Disc, and music and video-related data from Gracenote, Inc., copyright © 2000 to present Gracenote. Gracenote Software, copyright © 2000 to present Gracenote. One or more patents owned by Gracenote apply to this product and service. See the Gracenote website for a non-exhaustive list of applicable Gracenote patents. Gracenote, CDDB, MusicID, MediaVOCS, the Gracenote logo and logotype, and the "Powered by Gracenote" logo are either registered trademarks or trademarks of Gracenote in the United States and/or other countries.

## Gracenote® End User License Agreement

This application or device contains software from Gracenote, Inc. of Emeryville, California ("Gracenote"). The software from Gracenote (the "Gracenote Software") enables this application to perform disc and/or file identification and obtain music-related information, including name, artist, track, and title information ("Gracenote Data") from online servers or embedded databases (collectively, "Gracenote Servers") and to perform other functions. You may use Gracenote Data only by means of the intended End-User functions of this application or device.

You agree that you will use Gracenote Data, the Gracenote Software, and Gracenote Servers for your own personal non-commercial use only. You agree not to assign, copy, transfer or transmit the Gracenote Software or any Gracenote Data to any third party. **YOU AGREE NOT TO USE OR EXPLOIT GRACENOTE DATA, THE GRACENOTE SOFTWARE, OR GRACENOTE SERVERS, EXCEPT AS EXPRESSLY PERMITTED HEREIN.**

You agree that your non-exclusive license to use the Gracenote Data, the Gracenote Software, and Gracenote Servers will terminate if you violate these restrictions. If your license terminates, you agree to cease any and all use of the Gracenote Data, the Gracenote Software, and Gracenote Servers. Gracenote reserves all rights in Gracenote Data, the Gracenote Software, and the Gracenote Servers, including all ownership rights. Under no circumstances will Gracenote become liable for any payment to you for any information that you provide. You agree that Gracenote, Inc. may enforce its rights under this Agreement against you directly in its own name.

The Gracenote service uses a unique identifier to track queries for statistical purposes. The purpose of a randomly assigned numeric identifier is to allow the Gracenote service to count queries without knowing anything about who you are. For more information, see the web page for the Gracenote Privacy Policy for the Gracenote service.

The Gracenote Software and each item of Gracenote Data are licensed to you "AS IS." Gracenote makes no representations or warranties, express or implied, regarding the accuracy of any Gracenote Data from in the Gracenote Servers. Gracenote reserves the right to delete data from the Gracenote Servers or to change data categories for any cause that Gracenote deems sufficient. No warranty is made that the Gracenote Software or Gracenote Servers are error-free or that functioning of Gracenote Software or Gracenote Servers will be uninterrupted. Gracenote is not obligated to provide you with new enhanced or additional data types or categories that Gracenote may provide in the future and is free to discontinue its services at any time.

**GRACENOTE DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT. GRACENOTE DOES NOT WARRANT THE RESULTS THAT WILL BE OBTAINED BY YOUR USE OF THE GRACENOTE SOFTWARE OR ANY GRACENOTE SERVER. IN NO CASE WILL GRACENOTE BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OR FOR ANY LOST PROFITS OR LOST REVENUES.**

# Safety precautions

## Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration.

These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

## Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

## AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

## Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

## Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service centre. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

The recording and playback of content on this or any other device may require permission from the owner of the copyright or other such rights in that content. Panasonic has no authority to and does not grant you that permission and explicitly disclaims any right, ability or intention to obtain such permission on your behalf. It is your responsibility to ensure that your use of this or any other device complies with applicable copyright legislation in your country. Please refer to that legislation for more information on the relevant laws and regulations involved or contact the owner of the rights in the content you wish to record or playback.

## Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



### For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

### [Information on Disposal in other Countries outside the European Union]

These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



### Note for the battery symbol (bottom two symbol examples):

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

Cd

# Glossary

## **AVCHD**

AVCHD is a new format (standard) for High Definition video cameras that can be used to record and play high-resolution HD images.

## **BD-J**

Some BD-Video discs contain Java applications, and these applications are called BD-J. You can enjoy various interactive features in addition to playing normal video.

## **Bitstream**

This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

## **CPRM (Content Protection for Recordable Media)**

CPRM is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

## **Deep Colour**

This unit incorporates HDMI (V.1.4, Content Type) technology that can reproduce greater colour gradation (4096 steps) when connected to a compatible TV.

You can enjoy exceptionally rich, natural-looking colours, with smooth, detailed gradation and minimal colour banding.

[A lower colour gradation (256 steps), without Deep Colour, will be reproduced if connected to a TV which does not support Deep Colour. The unit will automatically set appropriate output to suit the connected TV.]

## **Dolby Digital**

This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio.

## **Dolby Digital Plus**

Multi-channel audio and higher audio quality is made possible using Dolby Digital Plus. BD-Video supports up to 7.1 channel output.

## **Dolby TrueHD**

Dolby TrueHD is a very high quality audio format that reproduces the studio master audio. BD-Video supports up to 7.1 channel output.

## **Down-mixing**

This is the process of remixing the multi-channel audio found on some discs into fewer channels.

## **DTS (Digital Theater Systems)**

This surround system is used in many movie theatres. There is good separation between the channels, so realistic sound effects are possible.

## **DTS-HD**

DTS-HD is a high-quality, sophisticated audio format used in movie theatres. Previous DTS Digital Surround-compatible equipment can play DTS-HD as DTS Digital Surround audio. BD-Video supports up to 7.1 channel output.

## **Dynamic range**

Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.

Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialogue clearly.

## Finalise

A process that makes play of a recorded CD-R, CD-RW, DVD-R, etc. possible on equipment that can play such media. You can finalise BD-R, DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL on this unit.

After finalising, the disc becomes play-only and you can no longer record or edit. However, finalised DVD-RW can be formatted for recording again.

## Formatting

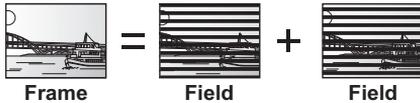
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.

You can format BD-RE, DVD-RAM, DVD-RW (only as DVD-Video format), +RW, SD cards and the HDD or unused BD-R, +R and +R DL on this unit.

Formatting permanently deletes all contents.

## Frames and fields

Frames refer to the single images that constitute the video you see on your TV. Each frame consists of two fields.



- A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

## HDMI (High-Definition Multimedia Interface)

Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable. This unit supports high-definition video output [720p (750p), 1080i (1125i), 1080p (1125p)] from HDMI AV OUT terminals. To enjoy high-definition video a High Definition compatible TV is required.

## JPEG (Joint Photographic Experts Group)

This is a system used for compressing/decoding colour still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

## Local storage

This storage area is used as a destination for sub contents for playing virtual packages on BD-Video.

## LPCM (Linear PCM)

These are uncompressed digital signals, similar to those found on CDs.

## MPEG2 (Moving Picture Experts Group)

A standard for efficiently compressing and expanding colour video. MPEG2 is a compression standard used for DVD and satellite based digital broadcasting.

## MPEG-4 AVC/H.264

A standard for efficiently compressing and expanding colour video. MPEG-4 AVC/H.264 is an encoding method used for recording of the High Definition videos.

## MP3 (MPEG Audio Layer 3)

An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality.

# Glossary

## Pan&Scan/Letterbox

In general, BD-Video and DVD-Video are produced with the intention that they be viewed on a widescreen TV (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) TVs. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.

Pan & Scan: The sides are cut off so the picture fills the screen.



Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.



## Progressive/Interlace

Interlace is a conventional image signal that displays the image in 2 phases by splitting the display into odd and even scans.

Progressive will display whole image in 1 scan.

Therefore, it will give High Definition image without flickering compared with interlace.

## Protection

You can prevent accidental deletion by setting writing protection or deletion protection.

## Sampling frequency

Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

## Signal Quality

This is the guide for checking the aerial direction. The numbered values displayed do not indicate the strength of the signal, but the quality of the signal (the signal to noise ratio, or "S/N"). 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.

## Thumbnail

This refers to a miniature representation of a picture used to display multiple pictures in the form of a list.

## x.v.Colour™

x.v.Colour™ is a name for devices that are compatible with the xvYCC format, an international standard for expanded colour in motion pictures, and that follow the rules for signal transmission.

You can enjoy vivid colours of wider colour ranges for a more realistic picture when connected to a TV that supports the x.v.Colour™ with HDMI cable.

## 1080i

In one High Definition image, 1080 (1125) alternating scan lines pass every 1/50th of a second to create an interlace image. Because 1080i (1125i) more than doubles current TV broadcasts of 480i (525i), the detail is much clearer and creates a more realistic and rich image.

## 1080p

In one High Definition image, 1080 (1125) scan lines pass at the same time every 1/50<sup>th</sup> of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

## 24p

This is a progressive image recorded at a rate of 24 frames per second.

## 720p

In one High Definition image, 720 (750) scan lines pass at the same time every 1/50<sup>th</sup> of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

# Index

## A

<b>Aspect</b> .....	82, 88
<b>Audio Description</b> .....	18, 37
<b>Audio information</b> .....	106
<b>AVCHD</b> .....	60, 111

## B

<b>BD-Video</b>	
BD-Live .....	31, 32, 78
BONUSVIEW .....	31
Picture-in-picture .....	31
Playback .....	31
Region code .....	100

### Broadcasts

Channel list .....	17
Channel information .....	17
Subtitle .....	18
Digital text .....	18
TV Guide .....	19
Watching digital broadcasts .....	16

## C

<b>Child Lock</b> .....	77
<b>Clock setting</b> .....	85
<b>Connection</b> .....	8-10, 89
Amplifier .....	89
Audio/Video terminals .....	89
DIGITAL AUDIO OUT terminal .....	89
HDMI terminals .....	8, 89
Network .....	10
Set Top Box .....	9

<b>Copying</b> .....	44
Copying title playing .....	48
Finalised discs .....	49
HD Video (AVCHD format) .....	60
Music .....	56
SD Video (MPEG2 format) .....	61
Still pictures .....	54

## D

<b>DIRECT NAVIGATOR</b>	
Operations .....	34, 35
Screen icons .....	34

### Disc management

Auto-Play Select .....	73
Create top menu .....	73
Delete all titles .....	72
Finalise .....	73
Format .....	72
Protection .....	72
Providing a name .....	72
Top menu .....	73

<b>DivX</b> .....	111
Play .....	38
<b>DLNA</b> .....	66, 84
<b>DVD-Video</b>	
Playback .....	31
Region code .....	100

## E

<b>Editing (Music)</b> .....	59
<b>Editing (Still picture)</b> .....	52
<b>Editing (Video)</b> .....	40
Change genre .....	41
Change thumbnail .....	41
Chapter .....	43
Delete .....	40
Divide Title .....	41
DR File Conversion .....	42
Partial Delete .....	40
Protection .....	40
<b>Entering text</b> .....	74

## F

<b>Features</b> .....	2
<b>Format</b>	
Disc .....	72
HDD .....	79
SD Card .....	72
<b>Free View</b> .....	26
<b>FUNCTION MENU</b> .....	15

## G

<b>Glossary</b> .....	116
-----------------------	-----

## H

<b>HD Video (AVCHD format)</b> .....	111
Copy .....	60
Play .....	33
<b>HDD management</b>	
Delete all titles .....	79
Format .....	79
<b>HDMI</b> .....	8, 83
<b>HOLD function</b> .....	88
<b>Home Network ( DLNA )</b> .....	66

**J**

**JPEG file** ..... 50, 111

**L**

**Language code list** ..... 86

**Linked Timer Recording** ..... 64

**M****Media**

Discs ..... 98

Handling ..... 102, 103

HDD ..... 98

Inserting or removing ..... 14

Region management information ..... 100

SD cards ..... 101

Structure of folders ..... 107

USB memories ..... 101

**MP3 file** ..... 56, 111

**MPEG2** ..... 61, 111

**Music**

Copying ..... 56

Editing ..... 59

Gracenote® Database ..... 56

Playback ..... 56

**N****Network**

BD-Live ..... 31

Connection ..... 10

DLNA ..... 66, 84

Gracenote® Database ..... 56

Setting ..... 84

Software (Firmware) Update ..... 87

VIERA CAST ..... 65

**O****Operations**

Copying titles ..... 44

Deleting recorded video contents ..... 39

DIRECT NAVIGATOR ..... 34

Display Navigation ..... 15

During playback video ..... 36

Editing recorded video contents ..... 40

HOLD function ..... 88

Inserting or removing media ..... 14

Music ..... 58

Reset ..... 86, 97

Still picture ..... 53

Television operation ..... 88

Turning on ..... 14

**P**

**PAUSE LIVE TV** ..... 20

**PIN** ..... 75

**Playback (Music)** ..... 56

Recorded on HDD ..... 57

**Playback (Still picture)** ..... 50

Slideshow ..... 51, 58

**Playback (Video)**

BD-Video or DVD-Video ..... 31

BD-Video Ratings ..... 78

Changing audio ..... 37

DivX ..... 38

DVD-Video Ratings ..... 78

Menu ..... 78

Playlist created on other equipment ..... 33

Recorded video contents ..... 33

Soundtrack ..... 70, 78

Status message ..... 37

Subtitles ..... 35, 70, 78

**Playback menu**

Common procedures ..... 70

Disc menu ..... 70

Other menu ..... 71

Picture menu ..... 71

Play menu ..... 70

Sound menu ..... 71

**Protection**

Disc ..... 72

SD card ..... 101

Video ..... 40

**R**

**Recording** ..... 21

2 programmes simultaneous recording ..... 22

Aspect ..... 79

Direct TV Recording ..... 23

From a video equipment ..... 62

From Set Top Box ..... 64

One Touch Recording ..... 21

Recording mode ..... 112

Recording time ..... 112

Timer recording ..... 24

**Remote control** ..... 6

Manufacturer and Code No. .... 88

**Reset** ..... 86, 97

**REWIND LIVE TV** ..... 20

## S

### Screen

Channel list	17
Channel information	17
DIRECT NAVIGATOR	34
FUNCTION MENU screen	15
Menu screen	15
PIN Entry	75
Timer Recording	28
TV Guide	19

### Screen saver

### SD card

Delete BD-Video data	32
Format	72
Handling	103
miniSD, microSD	101
Protection	101

### SD Video (MPEG2 format)

Copy	61
------	----

### Setting

Easy setting	11
Setup menu	75

### Setup menu

Common procedures	75
Connection	82
Display	82
HDD / Disc	78
Network Setting	84
Others	84
Picture	80
Sound	80
Tuning	75

### Software (Firmware) Update

### Specifications

### Standby Power Save

### Still pictures

Copying	54
Deleting	53
Editing	52
Playback	50
Slideshow	51, 58

### Supplied accessories

Batteries	2
Remote control	6, 85, 88

## T

### Timer recording

Auto Renewal Recording	28
Confirm and edit	29
Manually programming timer recording	28
Recommended programme recording	26

### Tuning

Channel List	76
Edit Favourites	75
Manual Tuning	76
Parental Rating	77
Signal condition	77

### TV Guide

Operate	19
Timer recording	24

### TV system

## U

### Unit's display

Message	7, 82
---------	-------

### USB memory

## V

### VIERA CAST

### VIERA Link (HDAVI Control)



## CAUTION!

THIS PRODUCT UTILIZES A LASER.  
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.  
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

## WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE,  
●DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.  
●USE ONLY THE RECOMMENDED ACCESSORIES.  
●DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

## CAUTION!

●DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.  
●DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.  
●DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.  
●DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.

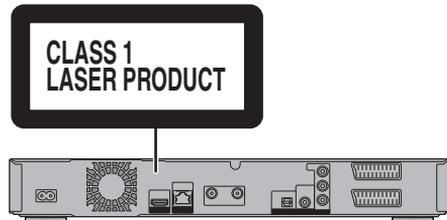
## CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

The socket outlet shall be installed near the equipment and easily accessible.  
The mains plug of the power supply cord shall remain readily operable.  
To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from AC receptacle.



(Back of product)

DANGER -VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. FDA 21 CFR/Class IIIb	
CAUTION -CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. IEC60825-1 +A2/Class 3B	
ATTENTION -RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 3B, EN CAS D'OUVERTURE, EVITER UNE EXPOSITION AU FAISCEAU.	
FORSIGTIG -SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 3B. NÅR LÅGET ER ÅBENT, UNDGÅ AT BLIVE UDSAT FOR STRÅLEN.	
VARO -AVATTAESSA OLET ALTIINA LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. VÄRÖ ALTIISTUMISTA SÄTEELLE.	
WARNING -KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDIK EXPONERING FÖR STRÅLEN.	
VORSICHT -SICHTBARE UND UNSICHTBARE LASERSTRÄHLUNG KLASSE 3B. WENN ABDECKUNG GEÖFFNET, NICHT DEM STRAHL AUSSETZEN.	
注意 -打开时有可见及不可见激光辐射。避免光束照射。	
注意 -ここを開くと可視及び不可視レーザー光が出ます。ビームを見たり、触れたりしないでください。 VQL1J70	

(Inside of product)

The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.

Examples of causes of such losses are

- A disc recorded and edited with this unit is played in a Blu-ray Disc Recorder or computer disc drive manufactured by another company.
- A disc used as described above and then played again in this unit.
- A disc recorded and edited with a Blu-ray Disc Recorder or computer disc drive manufactured by another company is played in this unit.

## Sales and Support Information

### Customer Care Centre

- For customers within the UK: 0844 844 3852
- For customers within the Republic of Ireland: 01 289 8333
- Visit our website for product information  
[www.panasonic.co.uk](http://www.panasonic.co.uk)
- E-mail: [customer.care@panasonic.co.uk](mailto:customer.care@panasonic.co.uk)

### Direct Sales at Panasonic UK

- For customers: 0844 844 3856
- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday–Thursday 9:00 a.m.–5:30 p.m., Friday 9:30 a.m.–5:30 p.m. (Excluding public holidays).
- Or go on line through our Internet Accessory ordering application at [www.pas-europe.com](http://www.pas-europe.com).
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

## Digital Switchover for Terrestrial broadcasts

Starting in late 2007 and ending in 2012, TV services in the UK will go completely digital, TV region by TV region. If you have any questions, please call Digital UK on **08456 50 50 50** or visit [www.digitaluk.co.uk](http://www.digitaluk.co.uk) Digital Switchover will cover a period of several weeks.

When it starts you will lose all Analogue TV channels and some Digital TV channels will be missing. You will need to retune this unit each time this happens to recover your digital channels.

Pursuant to at the directive 2004/108/EC, article 9(2)  
Panasonic Testing Centre  
Panasonic Marketing Europe GmbH  
Winsbergring 15, 22525 Hamburg, Germany



Panasonic Corporation  
Web Site: <http://panasonic.net>

En  
VQT2J65  
F0410TJ0

© Panasonic Corporation 2010



\*VQT2J65\*