

# Panasonic®

## Operating Instructions

### DVD Recorder

Model No. **DMR-XS350EB**

# DIGA



### 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.




Note: "EB" on the packaging indicates the United Kingdom.



Trademark of the DVB Digital Video Broadcasting Project  
Declaration of Conformity, No. 6263, 12th December 2008

This DVD Recorder is for viewing and recording free to view channels only, not Pay TV or encrypted channels.

This unit does not have a terrestrial tuner.

Region management information	
<b>DVD-Video</b> The unit plays DVD-Video marked with labels containing the region number "2" or "ALL".	<b>Example:</b>   

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

EB

RQT9431-1B

## freesat HD tuners built-in

### Receives freesat - free digital satellite broadcasts in the UK

This DVD Recorder has two freesat tuners built-in. freesat is a brand new free digital TV service which broadcasts via satellite so you can receive TV, radio, interactive TV.

To enjoy HD programme

You can enjoy the original HD programme by connecting to TV through HDMI.

- Connection (→ 10)
- Watching Television (→ 24)
- Also in HD (→ 29)
- Guide Link, Series recording, Split programme (→ 28)
- 7days EPG

Timer recording is made easier because the TV Guide allows you to see programme information up to 7 days ahead. (→ 43)



## High Quality Picture

### Record with High Definition

It is possible to record in high definition quality when the broadcast is high definition. (→ 19)



If the programme is broadcast with HD, this unit let you inform also in HD event on banner, EPG, HD Picture Quality recording mode (→ 19) Compress the recorded programme (→ 34)

### Parental Guidance

You can restrict viewing and playback of the titles that may include contents for adults. When you record the programme with **G** icon, PIN is needed to playback the title. (→ 34)

## Convenient Functions !

### VIERA CAST™

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

- Enjoying VIERA CAST™ (→ 83)

### Linked operations with the TV

You can enjoy linked operations with the TV and receiver by using VIERA Link or Q Link.

- Linked operations with the TV (VIERA Link "HDAVI Control™"/Q Link) (→ 84)
- Eco-LINK to save power consumption
- Pause Live TV (→ 91)



### Copy high definition video

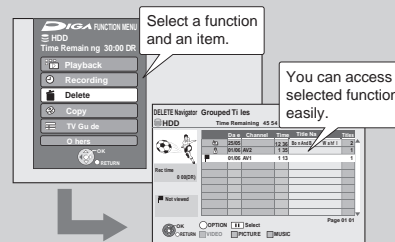
It is possible to input high definition video (AVCHD) from the Panasonic's video camera, etc.

- Copying HD Video (AVCHD format) (→ 66)

### Easy access to various functions

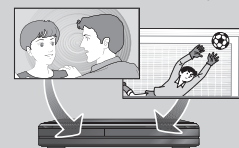
You can access the main function quickly and easily from FUNCTION MENU display.

- FUNCTION MENU display (→ 90)



### TWIN HD Satellite Tuner

It is possible to record 2 programmes being broadcasted at the same time. (→ 38)



## Accessories



Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts. (Product numbers correct as of April 2009. These may be subject to change.)

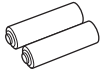


1 Remote control (N2QAYB000339)



1 AC mains lead (K2CT3CA00004)

• For use with this unit only. Do not use it with other equipment. Also, do not use cords for other equipment with this unit.



2 Batteries for remote control (R6 Size)

## 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 [shop.panasonic.co.uk](http://shop.panasonic.co.uk).
- 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 [shop.panasonic.co.uk](http://shop.panasonic.co.uk).

*Interested in purchasing an extended guarantee?  
Please call 0870 240 6284 or visit our website  
[www.panasonic.co.uk/guarantee](http://www.panasonic.co.uk/guarantee).*



# 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  $\perp$  OR COLOURED GREEN OR GREEN/YELLOW.**

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

### Before use

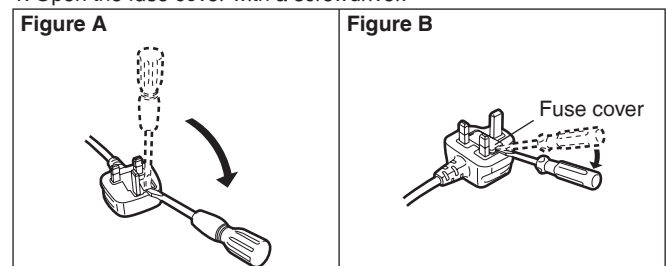
Remove the connector cover.

### How to replace the fuse

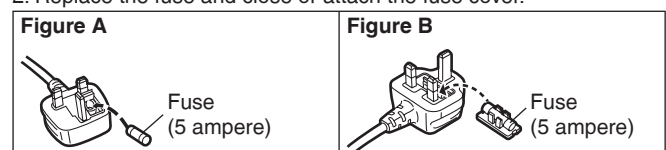
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

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.



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### About descriptions in these operating instructions

- Pages to be referred to are indicated as “→ ○ ○”.

# 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.

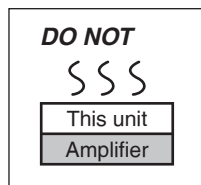
## ■ Immediately save (backup) all content as soon as you feel there may be a problem with the HDD

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 an 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.

### ■ Setup precautions

- Do not place in an enclosed area where the rear cooling fan and the cooling vents on the side are covered up.
- Place the unit on a surface that is flat and not subject to vibration or impact.
- Do not place on anything that generates much heat, for example an audio amplifier.
- Do not place in an area often subject to temperature changes.
- Place in an area where condensation does not occur. Condensation is a phenomenon where moisture forms on a cold surface when there is an extreme change in temperature. Condensation may cause internal damage to the unit.
- 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 the HDD (warms during operation) is subjected to cold air, condensation may form on the inside of the HDD and may cause damage to the HDD heads, etc.
  - 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/vapor, etc. gets inside the unit.

### ■ While operating

- Do not move the unit or subject to vibration or impact. (The HDD may become damaged.)
  - Do not remove the AC mains lead from the household mains socket, or flip the power breaker switch.
- While the unit is on, the HDD is rotating at high speed. Sound or movement due to rotation is normal.

### ■ When moving the unit

- 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. 2 minutes) in order to avoid subjecting to vibration and shock. (Even after turning the unit off, the HDD continues operating for a short time.)

### ■ Indemnity concerning recorded content

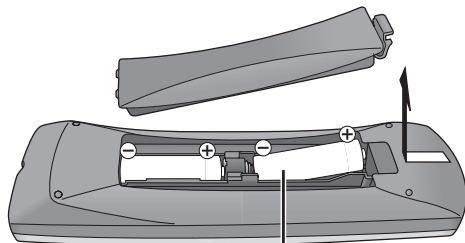
Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content (data), and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any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

# Remote Control Information/Unit Care

## Remote Control Information

### About batteries

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



R6/LR6, AA

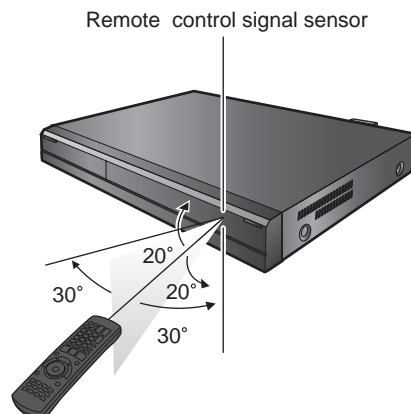
- Use alkaline or manganese batteries.
- Do not mix old and new batteries.
- Do not use different types at the same time.
- Do not heat or expose to flame.
- Do not leave the batteries in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
- Do not take apart 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.

### Using the remote control

Aim at the sensor, avoiding obstacles, up to a maximum range of 7 m directly in front of the unit.



## Unit Care

The precision parts in this unit are readily affected by the environment, especially temperature, humidity, and dust. Cigarette smoke also can cause malfunction or breakdown.

### To clean this unit, wipe with a soft, dry cloth.

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

### Observe the following points to ensure continued listening and viewing pleasure.

Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs.

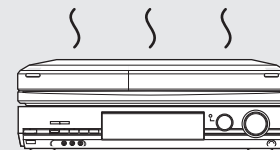
Use the **Lens cleaner** (not included) about once every year, depending on frequency of use and the operating environment. Carefully read the lens cleaner's instructions before use.

Lens cleaner: RP-CL720E

**Do not place the unit on amplifiers or equipment that may become hot.**

The heat can damage the unit.

**DO NOT**



Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.

**Before moving the unit, ensure the disc tray is empty. Failure to do so will risk severely damaging the disc and the unit.**

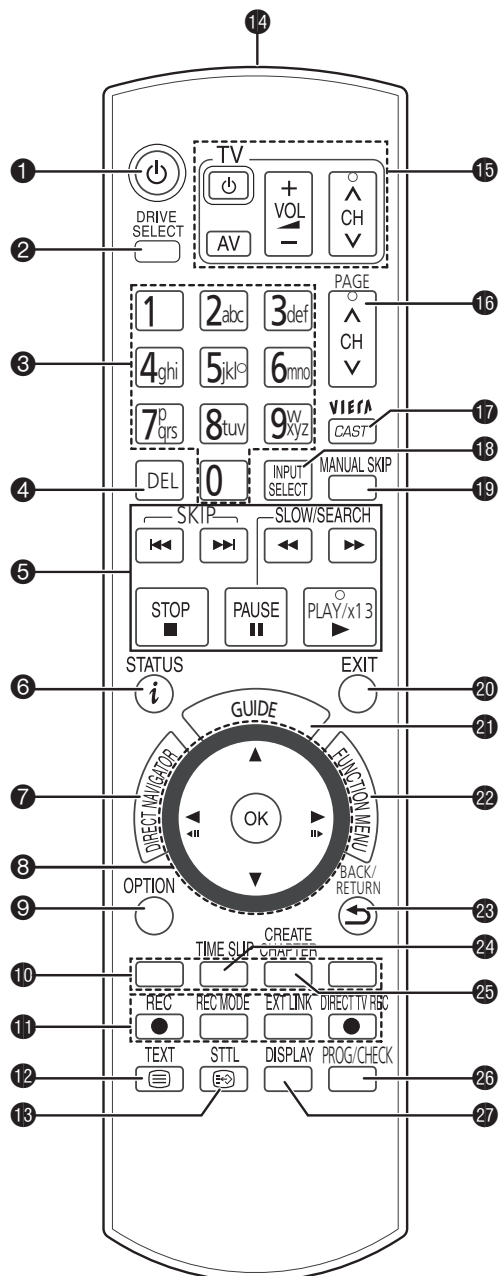
**The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.**

### Examples of causes of such losses are

- A disc copied and edited with this unit is played in a DVD 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 DVD Recorder or computer disc drive manufactured by another company is played in this unit.

# Location of Parts/Controls

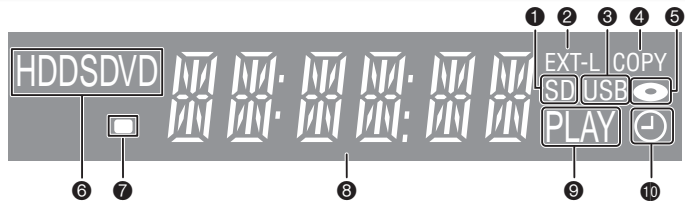
## Remote Control



- 1 Turn the unit on or off..... (→ 13)
- 2 Select drive [HDD, DVD or SD]..... (→ 26, 68)
- 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 ..... (→ 32, 41, 74, 81)
- 5 Basic operations for recording and play
- 6 Show the digital satellite channel information ..... (→ 88)  
Programme information within TV Guide screen ... (→ 43)  
Show status messages..... (→ 89)
- 7 Show DIRECT NAVIGATOR/Top Menu ..... (→ 26, 45)
- 8 Selection/OK, Frame-by-frame ..... (→ 13, 47)
- 9 Show OPTION menu
- 10 Use Colour buttons according to on-screen instructions.  
– for switching the DIRECT NAVIGATOR screen  
– for TV Guide operations  
– deactivating timer programme  
– for selecting programme category  
– for editing favourites
- 11 Recording function  
[● REC]: Start recording ..... (→ 27)  
[REC MODE]: Change recording mode ..... (→ 62)  
[EXT LINK]: Linked timer recordings with external equipment ..... (→ 62)  
[● DIRECT TV REC]: Direct TV recording ..... (→ 37)
- 12 Show Digital TEXT (MHEG)/Teletext service ..... (→ 89)
- 13 Show subtitles..... (→ 89)
- 14 Transmission window
- 15 TV operations ..... (→ 105)
- 16 Channel select/Change pages in the  
TV Guide system ..... (→ 24, 27, 43)
- 17 Show VIERA CAST ..... (→ 83)
- 18 Input select (freesat, Other Sat., AV1, AV2, AV3, AV4, DV) ..... (→ 24, 25, 62, 63)
- 19 Skip approx. 1 minute forward ..... (→ 47)
- 20 Exit the menu screen
- 21 Show the TV Guide screen..... (→ 24, 28, 43)
- 22 Show FUNCTION MENU display ..... (→ 90)  
By using the FUNCTION MENU display you may access the main functions (Playback, Recording, etc.) quickly and easily.
- 23 Return to previous screen
- 24 Skip the specified time ..... (→ 47)
- 25 Create chapters ..... (→ 54)
- 26 Show timer recording list ..... (→ 39)
- 27 Show menu for disc playback etc. .... (→ 86)

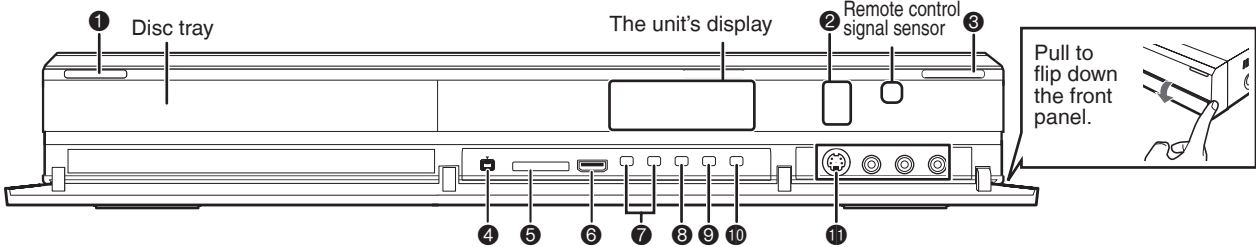


## The Unit's Display



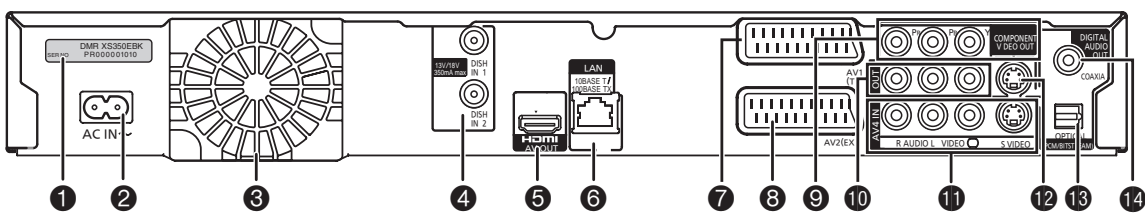
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>① SD card slot indicator</li> <li>② Linked timer recordings with external equipment indicator ..... (→ 62)</li> <li>③ USB port indicator</li> <li>④ Copying indicator</li> <li>⑤ Disc indicator<br/>This indicator lights up when a disc is inserted.</li> <li>⑥ Drive (HDD, DVD or SD) indicator<br/>Select "DVD" for any discs. DVD indicator will light up.</li> </ul> | <ul style="list-style-type: none"> <li>⑦ Remote control signal indicator<br/>This flashes when it is operated by the remote control.</li> <li>⑧ Main display section<br/>Current time/playback counter, various messages</li> <li>⑨ Playback indicator</li> <li>⑩ Timer recording indicator (⊖) ..... (→ 29)<br/><b>On:</b><br/>When a timer recording programme is registered.<br/><b>Flashes:</b><br/>When the unit cannot record a timer recording programme.</li> </ul> |
|--|---|

## Main Unit



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>① <b>Standby/on switch</b> (⏻/⏻) .....(→ 13)<br/>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.</li> <li>② Recording indicator ("REC1", "REC2")<br/>Red indicator light during recording.<br/>REC1, REC2 shows the status of one or twin recording.<br/>REC indication flash during Recording Pause.<br/>(e.g., when starting Guide LINK recording)</li> </ul> | <ul style="list-style-type: none"> <li>③ Disc tray open/close button .....(→ 26)</li> <li>④ DV IN terminal<br/>(for a digital video camcorder) .....(→ 63)</li> <li>⑤ SD card slot .....(→ 118)</li> <li>⑥ USB port .....(→ 118)</li> <li>⑦ Channel select button .....(→ 24, 27)</li> <li>⑧ Start recording button .....(→ 27)</li> <li>⑨ Stop button .....(→ 26, 27)</li> <li>⑩ Play/X1.3 button .....(→ 26)</li> <li>⑪ AV3 input terminals .....(→ 63)</li> </ul> |
|--|--|

## Rear Panel



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>① Serial number</li> <li>② AC IN ~ = Power supply<br/>Connection for the AC mains lead</li> <li>③ Cooling fan</li> <li>④ Satellite input terminals .....(→ 10, 11)</li> <li>⑤ HDMI AV OUT terminal .....(→ 10, 109)<br/>Digital audio and video output terminal</li> <li>⑥ LAN terminal .....(→ 112)</li> <li>⑦ AV1 (TV) 21-pin Scart terminal... (→ 10, 11, 109)<br/>TV set connection</li> <li>⑧ AV2 (EXT) 21-pin Scart terminal .....(→ 109)<br/>Connection of an external unit</li> </ul> | <ul style="list-style-type: none"> <li>⑨ COMPONENT VIDEO OUT (PROGRESSIVE/INTERLACE) terminals .....(→ 110)<br/>Y = Luminance signal (brightness), P<sub>B</sub> = Chrominance signal (colour difference), P<sub>R</sub> = Chrominance signal (colour difference)</li> <li>⑩ AUDIO/VIDEO output terminals ....(→ 110, 111)</li> <li>⑪ AV4 input terminals</li> <li>⑫ S VIDEO output terminal .....(→ 110)</li> <li>⑬ Digital audio output terminal (optical) ....(→ 111)</li> <li>⑭ Digital audio output terminal (coaxial) ....(→ 111)</li> </ul> |
|--|--|

For information about the 21-pin Scart terminal (→ 109)

# Basic Connection

This recorder requires 2 signal feeds from a satellite dish to be able to record 2 different channels at the same time. Please consult with your Panasonic dealer for details of dish installation.

- Connect both satellite terminals (DISH IN 1 and DISH IN 2) to the satellite dish when you want to record 2 programmes simultaneously or view TV during recording.
- Connect DISH IN 1 terminal to the satellite dish when you use only one terminal. (You cannot view if you connect only DISH IN 2 terminal.) In this case, you cannot record 2 programmes simultaneously or view TV during recording.
- Supply power from another device when you use 2 or more devices to receive satellite broadcast, because this unit does not supply power when it is turned in standby.

- Before connection, turn off the mains for all connected equipment and read the appropriate operating instructions. **READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 3 BEFORE CONNECTION.**

## When your Television has an HDMI input terminal

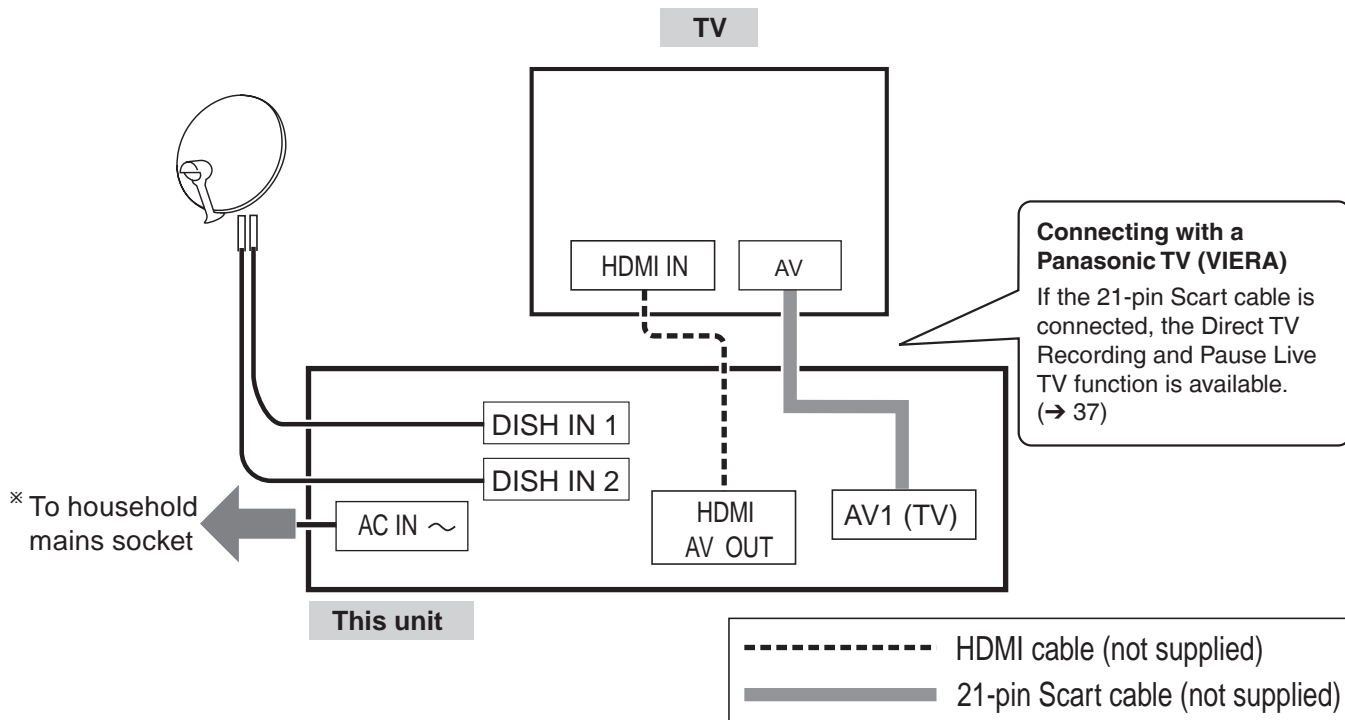
When connected to an HDMI compatible unit, an uncompressed digital audio and video signal is transmitted, enabling you to enjoy high quality, digital video and audio with just one cable. When connecting to an HDMI-compatible HDTV (High Definition Television), the output can be switched to 1080p, 1080i or 720p HD video.

## Regarding VIERA Link "HDAVI Control™" function

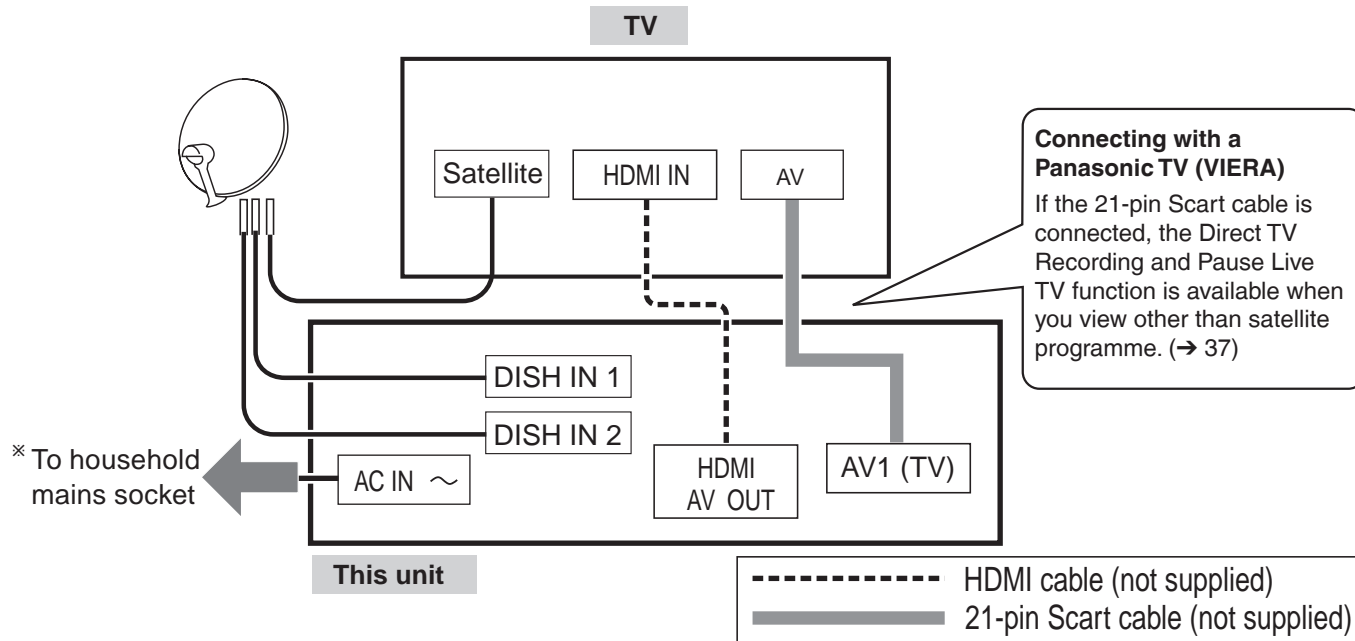
When connecting with a Panasonic TV (VIERA) or a receiver equipped with the "HDAVI Control" function, linked operations would be possible. [→ 84, Linked Operations with the TV (VIERA Link "HDAVI Control™"/Q Link)]

- Non-HDMI-compliant cables cannot be utilized.
- It is recommended that you use Panasonic's HDMI cable.  
Recommended part number: RP-CDHG10 (1.0 m), RP-CDHG15 (1.5 m), RP-CDHG20 (2.0 m), RP-CDHG30 (3.0 m), RP-CDHG50 (5.0 m), etc.

## Ⓐ When your television does not have a digital satellite tuner



**B** When your television has a digital satellite tuner



\*Connect only after all other connections are complete.

After completing the connections, proceed to the TV Tuning (→ 13).

- Refer to page 116 if “U50”, “U50 1” or “U50 2” appears on the unit’s display.

**HDMI features**

- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When outputting 1080p signal, please use the HDMI cables 5.0 meters or less.
- Set “HDMI Video Mode” and “HDMI Audio Output” to “On” (→ 102). (The default setting is “On”.)
- **This unit incorporates HDMI™ (V.1.3a with Deep Colour, x.v. Colour™) technology (→ 134, 135).**
- Video sources converted to 1920 × 1080 resolution, while of high quality, will exhibit somewhat lower subjective image resolution than true, native 1080p full-HD sources. See dealer for details.

**Notes**

- The freesat channel uses Astra 2 at 28.2° East, and Eurobird 1 at 28.5° East satellites. To ensure your satellite dish is correctly installed please consult your freesat registered dealer.
- If you connect 2 satellite dishes for different satellites (e.g., DISH IN 1: Astra 28.2, DISH IN 2: Astra 19.2), the unit cannot receive the signal correctly.
- You can use the unit as one tuner when connecting DISH IN 1 to a satellite dish that can receive SKY.
- If connecting to equipment that is only compatible with 2 channel audio output, audio with 3 channels or more will be down-mixed (→ 134) and output as 2 channels, even if connecting with an HDMI cable (some discs cannot be down-mixed).
- For display units compatible with HDCP (High-Band width Digital Content Protection) that are equipped with a digital DVI input terminal (PC monitors, etc.):  
 Depending on the unit, picture 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” in the Setup menu to “Off” (→ 102).

**Tips**

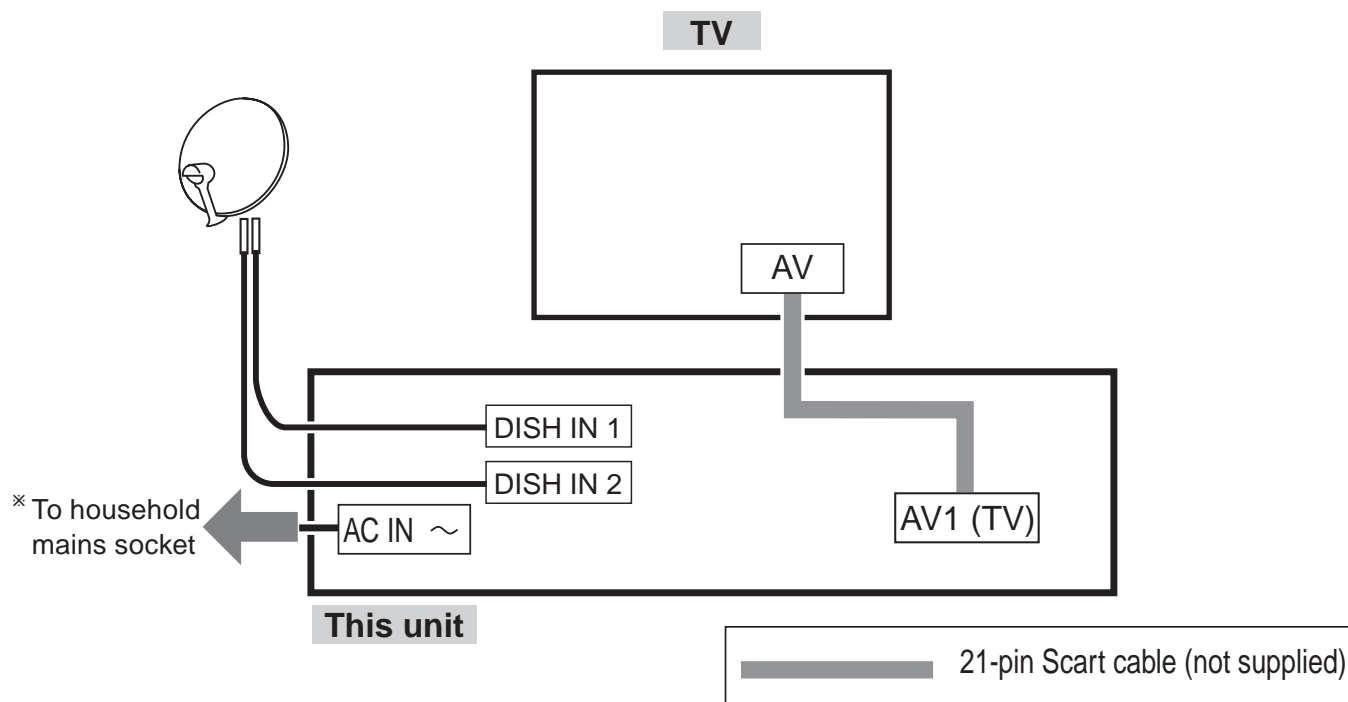
You can check the satellite signal condition using “Signal Condition” in the Setup menu (→ 96).

**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 in standby.  
 [approx. 0.4 W (“Power Save” is set to “On”)]

# Basic Connection

## When your Television does not have an HDMI input terminal

In this setting, you cannot enjoy HDTV in HD picture quality. The resolution will be 576i/480i.



\*Connect only after all other connections are complete.

After completing the connections, proceed to the TV Tuning (→ 13).

- Refer to page 116 if "U50", "U50 1" or "U50 2" appears on the unit's display.

### Notes

- The freesat channel uses Astra 2 at 28.2° East, and Eurobird 1 at 28.5° East satellites. To ensure your satellite dish is correctly installed please consult your freesat registered dealer.
- If you connect 2 satellite dishes for different satellites (e.g., DISH IN 1: Astra 28.2, DISH IN 2: Astra 19.2), the unit cannot receive the signal correctly.
- You can use the unit as one tuner when connecting DISH IN 1 to a satellite dish that can receive SKY.

### Tips

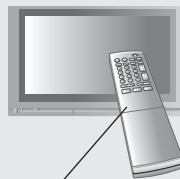
- You can check the satellite signal condition using "Signal Condition" in the Setup menu (→ 96).
- Additional Connections (→ 109).

# Auto Set Up (freesat)

Search and store TV programmes automatically. These steps are not necessary if the setup has been completed by your local dealer or freesat registered dealer.

## Preparation:

- Turn on the television (and connected equipment) and select the video input terminal that this unit is connected to.

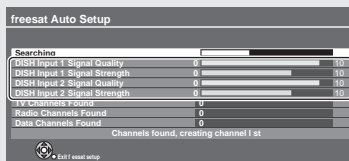


TV's remote control

## 1 to turn the unit on.

Auto Setup will start to search for TV programmes and store them in the numbered order as specified by the broadcasters.

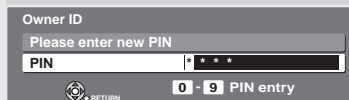
- Check signal quality/strength displayed on the screen (→ right). If the signal is weak, Auto Setup will not start. Check that the satellite dish is correctly positioned and connected.



The bar appears beside Signal Quality and Signal Strength when the signal is input.



You now have the opportunity to enter your details and help the police to crack crime. See Instruction Book.

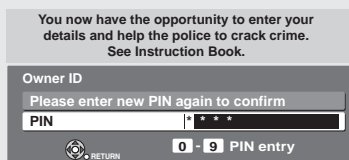


## 2 Enter your Postcode.

- 1 Press [▲, ▼, ◀, ▶] to select the character, then press [OK].
  - 2 Repeat step 1.
  - 3 Press the "Green" button to confirm.
- Your postcode is required to receive local services and sort the channel order.

## 3 Press the numbered buttons to enter your choice of a 4-digit PIN.

- This PIN will be used only for the Owner ID-Data Entry screen.



(continued on the next page)



## Tips

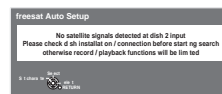
**To cancel the Auto Setup**  
Press [BACK/RETURN].

**To restart the Auto Setup (→ 96, freesat Auto Setup)**

**To correct the character**  
Press the "Red" button to delete character one by one.  
You can delete all input characters by pressing the "Blue" button.  
You can perform this operation in step 2, 5 or 6.

## Notes

- To initialise all settings (→ 104, Shipping Condition)
- When the below screen appears after step 1.



This screen appears when this unit does not detect the connection to DISH IN 2. When you connect DISH IN 1 only press [OK], then go to step 2. When you connect both DISH IN 1 and 2, turn this unit off and check your connection. Then perform from step 1.

- The Auto Setup may require a certain length of time.

# Auto Set Up (freesat)

- 4** Repeat step **3** to enter PIN again to confirm.

- The Owner ID-Data Entry screen appears.
- Make a note of PIN in case you forget it.

- 5** Enter your NAME.

- 1** Press [▲, ▼] to select "NAME", then press [OK].

- 2** Press [▲, ▼, ◀, ▶] to select the character, then press [OK].
- 3** Repeat step **2**.
- 4** Press [BACK/RETURN ↵] to return to the Owner ID-Data Entry screen.

- 6** Enter your HOUSE NO.

- 1** Press [▲, ▼] to select "HOUSE NO", then press [OK].

- 2** Press [▲, ▼, ◀, ▶] to select the character, then press [OK].
- 3** Repeat step **2**.
- 4** Press [BACK/RETURN ↵] to return to the Owner ID-Data Entry screen.

- 7** to confirm the Owner ID-Data Entry screen.

- 8** Enter new PIN.

- This PIN will be used for controlling
  - DVD-Video playback
  - Accessing to the channels you selected in "Child Lock" (→ 97)
  - Playback programmes for adults
  - Using VIERA CAST
- Make a note of PIN in case you forget it.
- The default PIN is "0000".

- 1** Press [▲, ▼] to select the number, then press [▶].
- You can also use the numbered buttons.
- 2** Repeat step **1** for enter 4-digit PIN.
- 3** Press [OK] to confirm.

- 9**

- 10** Power Save Function: ▲, ▼ to select "On" or "Off", then

- Set to "On" to reduce power consumption in standby mode.

The features of the power save function when the unit is in standby mode are as below.

Power Save	On	Off
Power consumption	Approx. 0.4 W	Approx. 12 W
Startup time	Not quick	Quick
Front display	Turns off (The clock is not displayed.)	Stays lighted
Watching the picture from the external equipment connected to the AV2 terminal	cannot do	can do

- Auto setup for your unit is complete. You can now make your favourite channels and store them in the required order in the favourites (→ 95).

To check the signal condition  
(→ 96, Signal Condition)

To tune in other satellite channels  
(→ 16, Tuning in Other Satellite Services)

To hide unwanted channels  
(→ 96, freesat Channel List)

To change PIN (→ 104, Owner ID)

#### To correct the character

Press the "Red" button to delete character one by one.  
You can delete all input characters by pressing the "Blue" button.  
You can perform this operation in step ②, ⑤ or ⑥.

#### 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 ⑩.

## To set the clock manually

Normally this unit obtains time and date information from TV channels to set its clock and automatically adjusts the time several times a day.

If the clock is incorrect or cannot be automatically set, perhaps due to bad signal reception, you will need to adjust the clock manually.

- In the case of a power failure, the clock setting remains in memory for approximately 60 minutes.

1. Press [FUNCTION MENU].
2. Press [▲, ▼] to select "Others", then press [OK].
3. Press [▲, ▼] to select "Setup", then press [OK].
4. Press [▲, ▼] to select "Others", then press [OK].
5. Press [▲, ▼] to select "Clock", then press [OK].
6. Press [◀, ▶] to select "Off" of "Auto Clock Setting".
7. Press [▲, ▼] to select "Manual Setting", then press [OK].
8. Press [◀, ▶] to select the item you want to change.  
Hour ↔ Minute ↔ Second ↔ Day ↔ Month ↔ Year  
↑
9. Press [▲, ▼] to change the setting.
10. Press [OK] to confirm new date and time and to initiate the clock.

## Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [EXIT].

## Notes


If a TV station transmits a time setting signal, and when "Auto Clock Setting" in the Clock setting menu is set to "On", the automatic time correction function checks the time and if necessary it is adjusted several times every day.

# Tuning in Other Satellite Services

You can also view or record other free channels (Astra 2 at 28.5 degree east) or free channels from other satellites that you can receive in your area.

This setup is not required if you are only viewing or recording from freesat channels.

Search and store TV programmes of the other satellite service automatically. These steps are not necessary if the setup has been completed by your local dealer or freesat registered dealer.

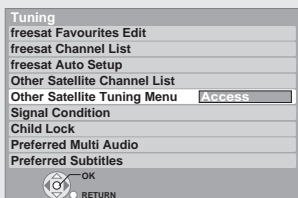
**1**  to turn the unit on.


**2** 

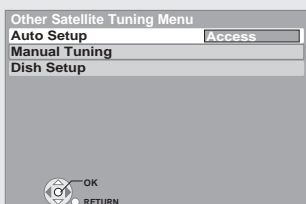
**3** ▲, ▼ to select "Others", then 


**4** ▲, ▼ to select "Setup", then 

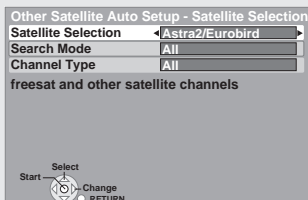
**5** ▲, ▼ to select "Tuning", then



**6** ▲, ▼ to select "Other Satellite Tuning Menu", then 



**7** ▲, ▼ to select "Auto Setup", then 



**8** ◀, ▶ to select the desired satellite.

– You can select from a list of following satellites.

- Astra2/Eurobird
- Astra1 (The dish will need to be repositioned to receive from these satellites.)
- Hotbird (The dish will need to be repositioned to receive from these satellites.)
- All (Any satellites that the dish can pick up from its current position.)

To tune to other satellites manually (→ 96)

**9** ▼ to select "Search Mode".

**10** ◀, ▶ to select the search mode.

– You can select the search mode from the followings.

- All : All channels including encrypted channels will be searched.
- Free channels

**11** ▼ to select "Channel Type".



## Tips

**To cancel the Auto Setup**  
Press [EXIT].

## Notes

- To initialise all settings (→ 104, Shipping Condition)

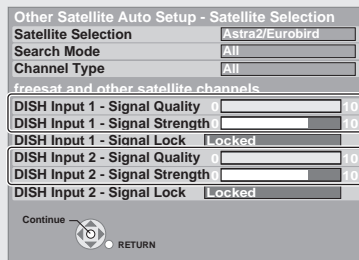


## 12 ◀, ▶ to select the channel type.

- You can select the channel type from the followings.
- All : All channels including TV, Radio, Data, etc. will be searched.
- TV
- Radio

## 13 to start the Auto Setup

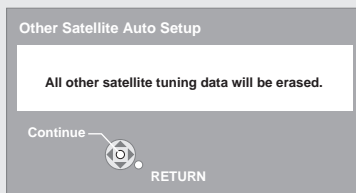
- Go to step 15 when you select "All" in step 8.
- It takes time. Please follow the instruction on the screen.
- This unit is checking signals during displaying "Please wait". "Locked" appears when the checking is finished. Both DISH IN 1 and 2 are checking the signals when both terminals are connected.
- If "Locked" does not appear, the signal is weak, and Auto Setup will not start. Check that the satellite dish is correctly positioned and corrected.



The bar appears beside signal Quality and Signal Strength when the signal is input.

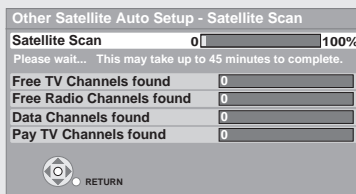
## 14 to continue the Auto Setup.

- Ensure that signals to both DISH IN 1 and 2 are locked before starting scan.



## 15 to start the scan.

- The scan starts.



## 16 Delete unwanted channels.

- To delete all channels of each type on the screen (other than Free TV), press the "Red" button. And then press [▲, ▼] to select the channel type you want to delete, press [OK].
- To remove the selected channel, press [▲, ▼] to select the channel you want to remove, press [OK]. The check mark is removed.



## 17 to confirm deletion.

## Notes

- When the below screen appears after step 13.



- This screen appears when this unit does not detect the connection to DISH IN 2. When you connect DISH IN 1 only press [OK], then go to step 14 or 15. When you connect both DISH IN 1 and 2, turn this unit off and check your connection. Then perform from step 1.
- Auto Setup can take up to 45 minutes.

## Tips

### To select the type

Press the "Blue" button in step 16. Each time you press the "Blue" button, the type will be changed as follows. All Channels → Free TV → Pay TV → Radio → Data → Unknown → All Channels → ...

### To restore all channels

Press the "Red" button, and then press [▲, ▼] to select "Restore all channels", press [OK] in step 16.

### To restore the channel

Press [▲, ▼] to select the channel you want to restore, press [OK] in step 16. The check mark is displayed.

# HDD and Disc Information

This unit can record to HDD and copy to the following recording media.

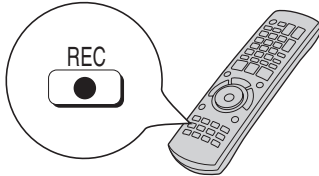
Internal



Recordings can only be made to HDD in DR mode first, with the same quality as broadcasted, then they can be copied to discs.

## Instant record

It can only record to HDD by pressing [● REC].



HDD



Can do

Discs



Cannot do

Record to the HDD and then copy to the disc.

## Timer record

It can only record to HDD when using timer recording.



HDD



Can do

Discs



Cannot do

Record to the HDD and then copy to the disc.

## Recording and copying programmes

This unit can record standard or high definition programmes from its built-in satellite tuners onto HDD with the same quality picture and sound as they are broadcasted.



**Recording**

**HDD**



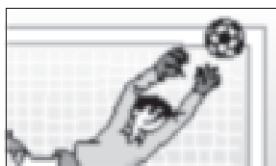
**DR mode**

- All subtitles and multi audio are recorded (selectable during playback).
- All recordings are first made to HDD in DR mode only.

**COPY**

**When copying titles to disc**

**Discs**



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

- Only one subtitle and one audio can be copied.\*
- Copy as standard definition (SD) quality.
- Copy in Normal Speed mode.

\*You cannot switch the subtitle or audio description on or off during playback of the copied title.

### Notes

- Teletext and Digital TEXT (MHEG) cannot be recorded.





# HDD and Disc Handling

## HDD and discs you can use for recording and play

(○: Possible, –: Impossible)

Disc type	Hard disk drive (HDD)
Standard symbol	HDD
Data that can be recorded and played	Video/Still picture/Music
Quality in which video is recorded	High definition (HD) quality/Standard definition (SD) quality
Recording mode in which video is recorded*	DR, HG, HX, HE, HL, XP, SP, LP, EP, FR
Rewritable	○
Timer recording	○
Recording copy-restricted programmes on freesat (→ 33)	○

\* Recording modes that can be selected differ depending on the recording methods. For details, please refer to the respective operating.

Disc type	DVD-RAM	DVD-R	DVD-R DL	DVD-RW
Standard symbol	 <b>RAM</b>	 <b>-R</b> before finalisation <b>DVD-V</b> after finalisation	 <b>-R DL</b> before finalisation <b>DVD-V</b> after finalisation	 <b>-RW(V)</b> before finalisation <b>DVD-V</b> after finalisation
Data that can be recorded and played	Video Still picture	Video		
Quality in which video is recorded	Standard definition (SD) quality			
Recording mode in which video is recorded	XP, SP, LP, EP, FR			
Rewritable	○	-		○
Timer recording	-			
Copying copy-restricted programmes on freesat titles (→ 33)	○ Copy in standard definition quality (XP, SP, LP, EP, FR mode) is possible.			
Play on other players	<b>RAM</b> can be played back on Panasonic DVD recorders and DVD-RAM compatible DVD players.	<ul style="list-style-type: none"> <li>Finalisation is needed for playback on other equipment.</li> <li><b>-R DL</b> can be played back only on equipment compatible with this disc.</li> </ul>		
Note	When using cartridge discs with the write protect tab in the protect position (→ 92), play automatically starts when inserted in the unit.	-		

Disc type	+R	+R DL	+RW
Standard symbol	<b>+R</b> before finalisation <b>DVD-V</b> after finalisation	<b>+R DL</b> before finalisation <b>DVD-V</b> after finalisation	<b>+RW</b>
Data that can be recorded and played	Video		
Quality in which video is recorded	Standard definition (SD) quality		
Recording mode in which video is recorded	XP, SP, LP, EP, FR		
Rewritable	-	○	
Timer recording	-		
Copying copy-restricted programmes on freesat titles (→ 33)	○ Copy in standard definition quality (XP, SP, LP, EP, FR mode) is possible.		
Play on other players	<ul style="list-style-type: none"> <li>Finalisation is needed for playback on other equipment.</li> <li><b>+R DL</b> can be played back only on equipment compatible with this disc.</li> </ul>	<b>+RW</b> can be played back only on equipment compatible with this disc. <ul style="list-style-type: none"> <li>If the disc failed to play on other equipment, we recommend you create top menu (→ 94).</li> </ul>	
Note	<ul style="list-style-type: none"> <li><b>+R +R DL</b> These discs recorded with this unit or with another Panasonic DVD Recorder may be incompatible. However, discs that are finalised are compatible and can be played.</li> <li>8X Speed +RW disc is not supported.</li> </ul>		

## Notes





- Discs recorded on equipment other than this unit may not be used for recording on this unit.
- This unit cannot record NTSC signals to discs that already have PAL signal recordings. (However, both types of programmes can be recorded onto the HDD.)
- You may not be able to record depending on the condition of the discs and you may not be able to play due to the condition of the recording.

### ■ Regarding 8 cm Disc

This unit cannot record or edit the 8 cm DVD-RAM, DVD-R, DVD-R DL, DVD-RW, +R DL or +RW. Only playback or copy to the HDD is possible.

# HDD and Disc Handling

## Play-only discs

Disc type	Logo	Standard symbol	Uses
DVD-Video		<b>DVD-V</b>	High quality movie and music discs
DVD-RW (DVD Video Recording format)		<b>-RW(VR)</b>	DVD-RW video recorded on another DVD recorder <ul style="list-style-type: none"> <li>• By formatting (→ 93) the disc, you can copy onto it in DVD-Video format.</li> <li>• It may be necessary to finalise the disc on the equipment used for recording.</li> </ul>
DVD-R DVD-R DL		DivX, MP3, JPEG	<ul style="list-style-type: none"> <li>• DVD-R* and DVD-R DL* with video recorded in DivX (→ 49)</li> <li>• DVD-R* and DVD-R DL* with music recorded in MP3 (→ 75)</li> <li>• DVD-R* and DVD-R DL* with still pictures recorded in JPEG (→ 68)</li> </ul>
CD		<b>CD</b>	<ul style="list-style-type: none"> <li>• Recorded audio and music (including CD-R/RW*) You can copy tracks to this unit's HDD.</li> </ul>
	–	DivX, MP3, JPEG	<ul style="list-style-type: none"> <li>• CD-R* and CD-RW* with video recorded in DivX (→ 49)</li> <li>• CD-R* and CD-RW* with music recorded in MP3 (→ 75)</li> <li>• CD-R* and CD-RW* with still pictures recorded in JPEG (→ 68)</li> </ul>
Disc with high definition video (AVCHD) recorded by Panasonic's camera, etc.	–	<b>AVCHD</b>	<p><b>Following disc can be played.</b></p> <ul style="list-style-type: none"> <li>• <b>DVD-RAM, DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW</b></li> <li>• Finalise (→ 134) the DVD-R, DVD-R DL, DVD-RW, +R or +R DL with the same equipment that was used to record.</li> </ul>

※Close the session after recording. Play may be impossible on some discs due to the condition of the recording.

- Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.
- 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.

## Discs that cannot be played

- Blu-ray Disc (BD-Video, BD-RE, BD-R)
- 2.6/5.2 GB DVD-RAM, 12 cm
- 3.95/4.7 GB DVD-R for Authoring
- DVD-R, DVD-R DL, DVD-RW, +R, +R DL recorded on another unit and not finalised (→ 134)
- DVD-Video with a region number other than "2" or "ALL"
- DVD-Audio
- HD DVD
- DVD-ROM, +R 8 cm, CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, Video CD, etc.

## Types of disc for the type of connected TV

When you use the discs recorded either PAL or NTSC, or playback a title recorded on HDD using PAL or NTSC, refer to this table.  
(O: Possible to view, -: Impossible to view)

TV type	Disc/Titles recorded on HDD	Yes/No
Multi-system TV	PAL	O
	NTSC	O
PAL TV	PAL	O
	NTSC	O*1 (PAL60)
NTSC TV	PAL	–
	NTSC	O*2

※1 Select "PAL60" in "NTSC Video Output" (→ 99).

If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.

※2 Select "NTSC" in "TV System" (→ 101).

- When playing back a disc or title recorded on the HDD, ensure that you match the "TV System" setting to the disc or title (PAL or NTSC) (→ 101).

# USB Memory and Card Handling

## USB memories you can use on this unit

USB memories can only be used for playback or copy to HDD or discs.

Compatible USB memories	<p><b>USB memories which are defined as USB mass storage class, and digital cameras that use PTP protocol:</b></p> <ul style="list-style-type: none"> <li>– USB memories that support USB 1.0/1.1 and USB 2.0 Full Speed/High Speed</li> <li>• USB memories of up to 128 GB can be used.</li> <li>• USB memories that support bulk only transfer. CBI (Control/Bulk/Interrupt) is not supported.</li> <li>• Digital Cameras which require additional programme installation when connected to a PC are not supported.</li> <li>• MTP (Media Transport Protocol) device is not supported.</li> <li>• A multi-port USB card reader is not supported.</li> </ul>
Format	<p>FAT16 and FAT32 file systems are supported.</p> <ul style="list-style-type: none"> <li>• UDF/NTFS/exFAT file system is not supported.</li> <li>• Depending on the sector size, some files may not work.</li> <li>• Only the first partition on USB memories with multi-partition is supported.</li> </ul>
Standard symbol	<b>USB</b>
Data that can be played	<b>DivX, MP3, Still pictures (JPEG)</b>
Data that can be copied	<p><b>MP3</b></p> <ul style="list-style-type: none"> <li>• It can be copied to HDD.</li> </ul> <p><b>Still pictures (JPEG)</b></p> <ul style="list-style-type: none"> <li>• It can be copied to HDD or DVD-RAM.</li> </ul> <p><b>SD Video (MPEG2 format)</b> <b>HD Video (AVCHD format)</b></p> <ul style="list-style-type: none"> <li>• If a Panasonic's video camera, etc. with HDD is connected to this unit's USB port: <ul style="list-style-type: none"> <li>– you can copy the SD Video shot with the camera to this unit's HDD or DVD-RAM. (→ 67)</li> <li>– you can copy the HD Video shot with the camera to this unit's HDD. (→ 66)</li> </ul> </li> </ul>

- Despite meeting the conditions mentioned above, there may be USB memories that cannot be used for this unit.

## Notes

- This unit's USB port does not support bus-powered USB device.

## Cards usable on this unit

SD cards can be used for playback, copy to HDD or discs or copy from HDD or discs.

Type	<ul style="list-style-type: none"> <li>• SD Memory Card*<sup>1</sup> (from 8 MB to 2 GB)</li> <li>• SDHC Memory Card*<sup>2</sup> (from 4 GB to 32 GB)</li> </ul> <p>*<sup>1</sup> Including miniSD Card and microSD Card *<sup>2</sup> Including miniSDHC Card and microSDHC Card The card types mentioned above will be referred to as "SD card" in these operating instructions.</p>
Standard symbol	<b>SD</b>
Data that can be played	<p><b>Still pictures (JPEG)</b> <b>HD Video (AVCHD format)</b></p>
Data that can be copied	<p><b>Still pictures (JPEG)</b></p> <ul style="list-style-type: none"> <li>• It can be copied to/from HDD or DVD-RAM.</li> </ul> <p><b>SD Video (MPEG2 format)</b> <b>HD Video (AVCHD format)</b></p> <ul style="list-style-type: none"> <li>• SD Video shot with a Panasonic's video camera, etc. can be copied to the HDD or DVD-RAM. (→ 67)</li> <li>• HD Video shot with a Panasonic's video camera, etc. can be copied to the HDD. (→ 66)</li> </ul>
Instructions	<p><b>You can insert directly into the SD card slot.</b></p> <p>*<sup>1</sup> A miniSD Card and a microSD Card must be used with the adaptor that comes with the card. *<sup>2</sup> A miniSDHC Card and microSDHC Card must be used with the adaptor that comes with the card.</p>

## Suitable SD cards

- When using SD cards 4 GB or larger, only SD cards that display the SDHC logo can be used.
- Usable memory is slightly less than the card capacity.
- Please confirm the latest information on the following website.  
<http://panasonic.co.jp/pavc/global/cs> (This site is in English only.)
- 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 (→ 93, 134).
- 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.
- SDHC Memory Cards used for recording with this unit can only be used with other SDHC Memory Card-compatible equipment. SDHC Memory Cards cannot be used with equipment that is only compatible with SD Memory Cards.
- We recommend using a Panasonic SD card.
- Keep the SD Card out of reach of children to prevent swallowing.

### ■ Setting the protection

Switch the write-protect switch to the "LOCK" position.



# Watching Television (freesat)

## Selecting a channel with TV Guide


Refer to “TV Guide system (freesat)” (→ 43) for detailed information.  
This unit can receive and record digital satellite channels.



### Preparation:

Turn on the television and select the video input terminal that this unit is connected to.

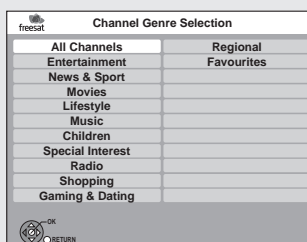
### Important:

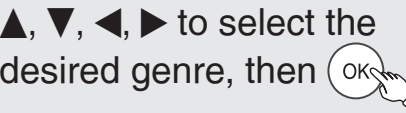

This unit has only digital satellite tuners.

**1**  to turn the unit on.

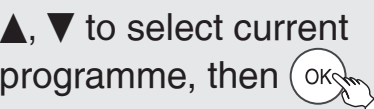

**2**  a few times and select “freesat”, then 

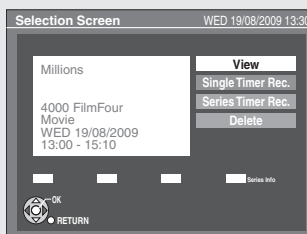
**3**  – The Channel Genre Selection screen appears.



**4**  to select the desired genre, then  – The TV Guide list appears.



**5**  to select current programme, then 



**6**  to select “View”, then 



### Tips

To show Digital TEXT (MHEG) and subtitles (→ 89)

To select or change Multi Audio/AD (→ 88, Multi Audio/AD)

To register the channel to “Favourites” (→ 95)

### Notes

- The TV Guide list is not displayed immediately after initial tuning is done.
- Channel number is indicated on the unit's display as an example, “FS151”.

## Selecting a channel without using TV Guide

### To select desired channel

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

### To directly enter channels

You can also select channels with the numbered buttons.

e. g., “151”: [1] → [5] → [1]

“504”: [5] → [0] → [4]



# Watching Television of the Other Satellite Service

To view or record free channels from other satellite services.  
There are no programme guides for these channels. Only the channel list is available.

## Selecting a channel with the channel list


This unit can receive and record digital satellite channels.



### Preparation:

Turn on the television and select the video input terminal that this unit is connected to.

### Important:

This unit has only digital satellite tuners.

**1**  to turn the unit on.

**2**  a few times and select "Other Sat.",  
then 

**3** 

– The channel list appears.

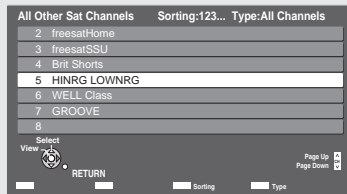
– To display the type of the selected channel, press the "Blue" button. Each time you press the "Blue" button, the type will be displayed as follows.

Free TV → Radio → Data → All Channels → Free TV → ...

– To sort the channel, press the "Yellow" button.  
Each time you press the "Yellow" button the item will be displayed as follows.

123 (channel number order) → ABC (channel name order) → ...

**4**   to select the desired channel, then 



All Other Sat Channels	Sorting:123...	Type:All Channels
2 freesatHome		
3 freesatSSU		
4 Brit Shorts		
5 HINRG LOWNRG		
6 WELL Class		
7 GROOVE		
8		

Select View RETURN Sorting Type Page Up Page Down



## Tips

To set the channel list (→ 96, Channel Settings)

## Notes

- There are no programme guide information in other satellite mode, only list of channel name is available.
- Channel number is indicated on the unit's display as an example, "S1234".

## Selecting a channel without using the channel list

### To select desired channel

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

You can perform this operation after step **4**.

### To directly enter channels

You can also select channels with the numbered buttons.

e. g., "5": [5] → [OK]

"88": [8] → [8] → [OK]

"1234": [1] → [2] → [3] → [4]


# Playback

Refer to “Advanced Playback” (→ 45 to 47) for detailed information.


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

## Preparation:

Turn on the television and select the video input terminal that this unit is connected to.

**1**  to turn the unit on.

**2** If you use a disc  
 to open the tray (Button located on front of the unit).  
– Insert a disc (→ 118) and press [ OPEN/CLOSE] again to close the tray.

**3**  a few times to select the HDD or DVD drive.

**4** 

## Stopping Play

Press [].

– The stopped position is memorized.

**(Resume play function\*)**

\*This operation may not work depending on a disc or the position where it was stopped.

## Pausing Play

Press [].

– Press again to restart play.






## Menu screens on the TV

### DVD-V

Generally, menu screens that appear on the TV may be navigated as follows:

e. g.,



, , ,  to select an item, then 



You can sometimes use the numbered buttons to select an item.



## Tips




### To display Top Menu

#### DVD-V

1. Press [OPTION].
2. Press [, ] to select “Top Menu”, then press [OK].

## Notes

#### DVD-V

- Playback starts from the point specified by the disc.
- Depending on the disc type, playing may automatically start without pressing [] (PLAY).
- The unit takes some time to read the disc before play starts.
- Discs continue to rotate while menus are displayed. Press [] when you finish to preserve the unit's motor and your television screen.
- If “” appears on the TV, the operation is prohibited by the unit or disc.





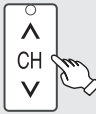

# Recording Television Programmes **HDD**

Refer to “Important Notes for Recording” (→ 33 to 34) and “Advanced Recording” (→ 35 to 38) for detailed information on recording.

**This operation will only record to HDD in DR mode.**

## Preparation:

Turn on the television and select the video input terminal that this unit is connected to.

- 1**  to turn the unit on.
- 2**  a few times and select the HDD drive.
- 3**  a few times and select “freesat” or “Other Sat.”, then .
- 4**  to select desired channel.
  - To select with the numbered buttons (→ 24 for freesat, 25 for other satellite services)
  - To record 2 programmes simultaneously. (→ 36)
- 5**  to start recording.
  - When [● REC] is pressed while a drive other than the HDD is selected, it will automatically switch to HDD and start the recording.

## Pausing Recording

Press [||].

- Press again to restart recording.  
(The title is not divided.)

## Stopping Recording

Press [■].



# Timer Recording Using the TV Guide (freesat) **HDD**

## Various function with freesat

This unit has a function that enables timer recordings to be controlled by the signal sent from the broadcaster. "Guide Link", "Series recording" (→ 40), and "Split Programme" are available.

**"Guide Link"** — If you set a timer recording from the TV Guide, the recording's start and stop times can be controlled by the broadcaster, e.g. delayed start. This is indicated by "Guide Link" in the Timer Recording screen in step ⑤ (→ 29).

**"Series Timer Recording"** — You can record all the episodes of a series by setting just one timer recording (→ 40).

**"Split Programme"** — If a programme is separated into 2 or more parts by some other programmes e.g. news, this unit pauses recording during the gap. This is indicated by "Split" in the Timer Recording screen in step ⑤ (→ 29). 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, but not shown on the timer recording list.

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

**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 for Guide Link to function.**


**e.g. When you set the timer recording for a programme that will start at 10:00 and end at 11:00, set "9:58" and "11:05" in step ③ (→ 29).**

**These functions are available for freesat channels only. Use "Manual timer recording" (→ 39) to timer record Other Sat. channels.**

**This operation will only record to HDD in DR mode.**

### Preparation:

- Turn on the television and select the video input terminal that this unit is connected to.
- Turn on this unit.
- Confirm that the clock on the unit's display is set to the correct time.



**1**  a few times and select "freesat",

then 

**2** 



– The channel genre selection screen appears.



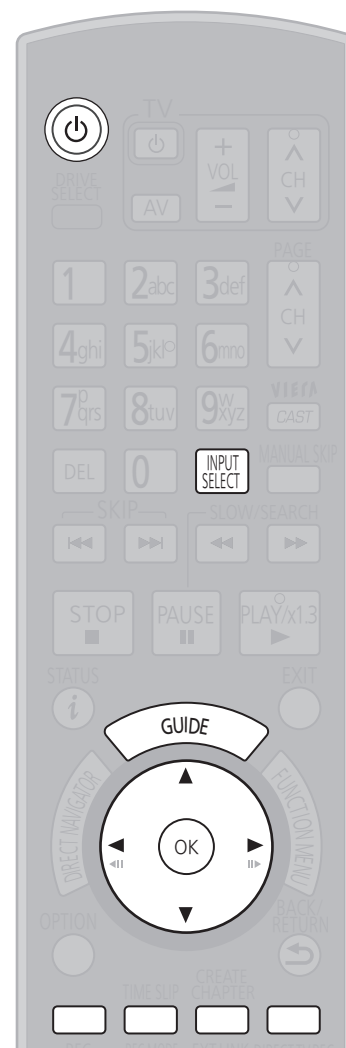
**3**  to select the desired genre, then 

– The TV Guide list appears.



**4**  to select the desired programme, then 

- To jump back 24 hours, press the "Red" button. You can only jump back to the current date and past information cannot be viewed.
- To jump ahead 24 hours, press the "Green" button to jump ahead by one day.
- To display channels sorted in prog. type, press the "Yellow" button.
- To display channels sorted in channel genre, press the "Blue" button.





### Tips

**To check programmes for which you set the timer recording (→ 41)**


**To cancel a timer recording programming**



Timer icon

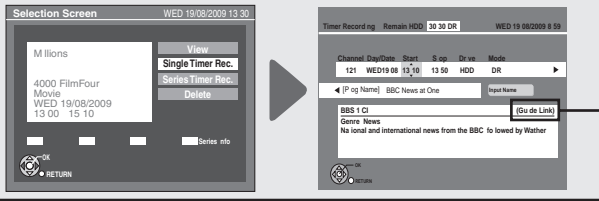
1. Press [] to select the programme (the timer icon is displayed), then press [OK].
  2. While "Delete" is selected, press [OK].
  3. Press [] to select "Yes", then press [OK].
- The timer icon disappears.

**To cancel a series timer recording programme (→ 40, Series recording)**

**5** ▲, ▼ to select “Single Timer Rec.”, then 

– If “Series Timer Rec.” can be selected on the Selection Screen, refer to “Series recording” (→ 40)

e.g.,\*



(Guide Link) : Guide Link (→28)

(Series) : Series recording (→ 40) is set.

(Split) : The programme is split in two or more parts by other programmes. This unit pauses recording during the gap between the parts of the programme.

\* This screen may not appear depending on the programme.

– The selection screen appears if there are both SD and HD programmes when you select the programme, go to **6** (→ below, Recording the ITV HD, etc. programme)

**6** Confirm the programme (start and end time) by TV magazine, etc. and correct if necessary using

▲, ▼, ◀, ▶, then 



- The timer icon is displayed when the settings are stored and the timer programme is on.
- “⌚” lights on the unit’s display to indicate timer recording standby has been activated.
- Repeat steps **3** – **6** to programme other recordings.
- Press [⏻] to turn the unit off.

“Guide Link” will not be displayed and will not function under the following conditions.


- Timer programmes set manually (→ 39).
- Timer programmes set from the TV Guide are modified or start/stop time changed by more than 10 minutes from original time.
- Timer programmes set from the TV Guide with the start time modified to later time or the stop time modified to earlier time than the original time.

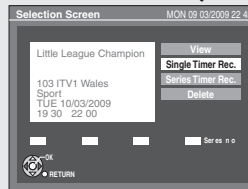
**Recording the ITV HD, etc. programme**


When ITV programme is also broadcast, the unit offers to select HD/SD programme based on the signal sent from the broadcaster.

You can record the ITV HD programme using this unit.

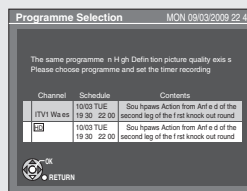
After performing steps **1** – **4** to select a programme (→ 28)


**5** ▲, ▼ to select “Single Timer Rec.”, then 



**6** ▲, ▼ to select the HD programme for recording, then 

– This screen will only appear if there is an HD broadcast of the programme.



**7**  to go to step **6** (→ above).

**Notes**

- You cannot display the TV Guide when you select “Other Sat.” on step **1**.
- The TV Guide list is not displayed immediately after initial tuning is done.
- The TV Guide system will not work if the clock is not set correctly.
- If “NTSC” has been selected for “TV System” (→ 101), the TV Guide system cannot be used.
- If you set a timer recording that will overlap with other timer recordings, the “Overlapped Timer Recording” screen appears to help you resolve the overlapping. Follow the on-screen instructions.
- TV Guide will disappear automatically when you do not operate this unit more than 5 minutes.

**Tips**


To set the series timer recording with ITV HD programme, etc. Select “Series Timer Rec.” in step **5**. (→ 40, Series recording)

# Copying Titles

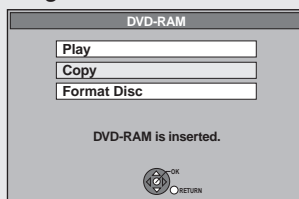
**HDD → RAM -R -R DL -RW(V) +R +R DL +RW**

## Preparation:

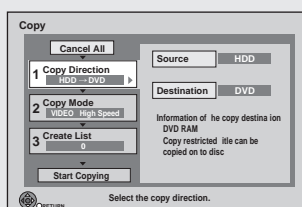
- Turn on the television and select the video input terminal that this unit is connected to.
- **RAM** If the disc is protected, release protection (→ 92).

**1**  to turn the unit on.


**2**  to open the tray (Button located on front of the unit).  
– Insert a disc (→ 118) and press [ OPEN/CLOSE] again to close the tray.  
e.g.,



**3** ,  to select “Copy”, then 



**4** Set the copy direction.

– If you are not going to change the copy direction, press [] (→ step **5**).



**1** Press [, ] to select “Copy Direction”, then press [].

**2** Press [, ] to select “Source”, then press [OK].


**3** Press [, ] to select “HDD”, then press [OK].

If you select “HDD”, “Destination” is automatically set to “DVD”.


**4** Press [, ] to select “Destination”, then press [OK].

**5** Press [, ] to select “DVD”, then press [OK].

The same drive as the copy source cannot be selected.

**6** Press [] to confirm.

**5** Set the recording mode.



– If you are not going to change the recording mode, press [] twice (→ step **6**).

**1** Press [, ] to select “Copy Mode”, then press [].

**2** Press [, ] to select “Format”, then press [OK].

**3** Press [, ] to select “VIDEO”, then press [OK].

**4** Press [, ] to select “Recording Mode”, then press [OK].

**5** Press [, ] to select the mode, then press [OK].

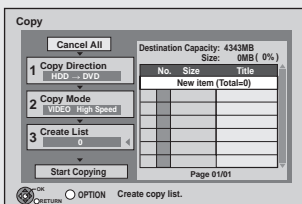
**6** Press [] to confirm.



## 6 Register titles for copy.

- If you are going to copy the registered list without making any change to it, press [▼] twice (→ step 7).

1 Press [▲, ▼] to select “Create List”, then press [▶].



2 Press [▲, ▼] to select “New item”, then press [OK].

3 Press [▲, ▼] to select the title, then press [■].

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

- Press [■] again to cancel.
- The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
- **To show other pages**  
Press [◀◀, ▶▶].

4 Press [OK].

- **To edit the copying list (→ 59)**

You cannot start copying when the value of “Size” (→ 60) exceeds 100% (“Destination Capacity” is not sufficient).

5 Press [◀] to confirm.

## 7 Set other settings.

- If you are not going to change these settings, press [▼] twice (→ step 8).

1 Press [▲, ▼] to select “Other setting”, then press [▶].

“Subtitles”

(Only when copying titles in DR mode and the recording mode other than High Speed is selected)

2 Press [▲, ▼] to select “Subtitles”, then press [OK].

3 Press [▲, ▼] to select “Automatic” or “Off”, then press [OK].

- If “Automatic” is selected  
Subtitle in the source titles will be copied.
- If “Off” is selected  
Subtitle in the source titles will not be copied.

“Finalise” or “Create Top Menu”

(HDD → -R -R DL -RW(V) +R +R DL +RW only)

2 Press [▲, ▼] to select “Finalise” or “Create Top Menu”, then press [OK].

3 Press [▲, ▼] to select “On” or “Off”, then press [OK].

- If “On” is selected
  - -R -R DL -RW(V) +R +R DL After finalising, the discs become play-only and you can also play them on other DVD equipment. However, you can no longer record or edit.
  - +RW Create the Top Menu. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.

“Audio Description”

(Normal Speed Copy only)


2 Press [▲, ▼] to select “Audio Description”, then press [OK].

3 Press [▲, ▼] to select “Automatic” or “Off”, then press [OK].

- If “Automatic” is selected  
If title recorded in DR mode includes Audio Description, the title will be copied with Audio Description.
- If “Off” is selected  
Title recorded in DR mode will be copied without Audio Description.

4 Press [◀] to confirm.

8 ▲, ▼ to select “Start Copying”, then 

9 ◀, ▶ to select “Yes”, then 

## Tips

### To stop copying

Press and hold [BACK/RETURN ↵] for 3 seconds after step 9. (You cannot stop while finalising or creating the top menu.)

### To return to the previous screen

Press [BACK/RETURN ↵].

**To select the subtitle language to copy (→ 97, Preferred Subtitles)**

**Regarding copy-restriction on freesat programmes (→ 33, Important Notes for Recording)**

**Copying list icons and functions (→ 56)**

**To check the properties of a title and sort copying list (→ 60)**

## Notes

- Titles in the grouped titles and other titles cannot be registered simultaneously.
- Titles recorded using a different encoding system (PAL or NTSC) from the TV system currently selected on the unit cannot be copied.
- The subtitle copied with “Subtitles” set to “Automatic” cannot be turned on or off during playback.
- During Normal Speed Copy with “Subtitles” set to “Automatic”, you cannot turn off the subtitle displayed on the television.

# Deleting Titles

You can delete unnecessary titles.

In order to save HDD capacity, it is recommended that you delete the original titles (in DR mode) after converting them to other recording modes using "DR File Conversion" (→ 53).

## Preparation:


- Turn on the television and select the video input terminal that this unit is connected to.
- **RAM** If the disc is protected, release protection (→ 92).
- Press [**▲** OPEN/CLOSE] and insert a disc. Press [**▲** OPEN/CLOSE] again to close the tray.

## Important:

Once deleted, contents cannot be recovered.

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

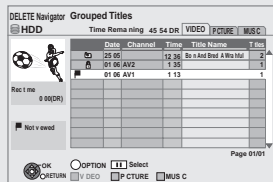
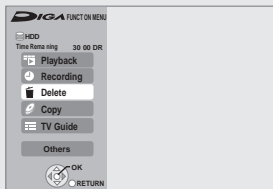
## DELETE Navigator

**1**  a few times to select the HDD or DVD drive.

**2** With the unit stopped




**3** **▲**, **▼** to select "Delete", then 



**HDD RAM** When "VIDEO" is not selected, press the "Red" button to select "VIDEO".

### To view other pages

Press [**◀**, **▶**].

**4** **▲**, **▼** to select the title, then 

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

- Press [**|||**] again to cancel.

**5** 

**6** **◀** to select "Delete", then 

## Delete Titles During Playback

**1** During playback



**2** **◀** to select "Delete", then 



## Notes

- You cannot delete while copying at Normal Speed.
- **+R +R DL +RW** Even if you have set protection on other equipment, such titles are deleted.

## Tips

### To return to the previous screen

Press [**BACK/RETURN** ⇐].

- **HDD RAM** Deleting an item increases the available disc space by the amount of space taken by the item deleted.
- **-R -R DL +R +R DL** Available disc space does not increase after deletion.
- **-RW(V) +RW** Available disc space increases when you delete the last title (If you format the disc, all of the disc space will be available. (→ 93)).
- **HDD RAM -RW(V) +RW** To recover total disc space, the disc needs to be formatted. (→ 93, 98)



# Important Notes for Recording

<b>Recording to HDD</b>	Recording or timer recording is performed in DR mode using this unit's tuner. <ul style="list-style-type: none"> <li>Recording or timer recording from external equipment is performed in XP, SP, LP, EP or FR mode.</li> </ul>
<b>Recording to discs</b>	<b>RAM -R -RW(V) +R +RW</b> Recording on the discs is performed using "Recording via AV3 input" (→ 65) and "DV Automatic Recording" (→ 64).
<b>Recording to DVD-R DL and +R DL</b>	<b>You cannot directly record to a DVD-R DL and +R DL disc on this unit.</b> Record to the HDD and then copy to the disc.
<b>Recording mode</b>	Recording modes that can be selected differ depending on the recording methods and discs. (→ 35)
<b>High definition quality image</b>	Quality of titles to be recorded differs depending on the recording mode. (→ 35) <ul style="list-style-type: none"> <li><b>When recording in DR mode</b>  Recorded as high definition quality.</li> <li><b>When converting recording mode to HG, HX, HE, HL from DR</b>  Recorded as high definition quality with compressed broadcast data.</li> <li><b>When copying in XP, SP, LP, EP, FR modes</b>  Recorded as standard definition quality.</li> </ul>
<b>Broadcast in multi-channel sound</b>	You can select the audio language when receiving audio in multi-channel broadcast using this unit's tuner ["Multi Audio" appears at the bottom of digital satellite channel information display (→ 88)]. <ul style="list-style-type: none"> <li><b>When recording in DR mode</b>  All multiple audio are recorded. It is possible to switch audio during the playback of the title.</li> <li><b>When converting recording mode to HG, HX, HE, HL from DR/When copying in XP, SP, LP, EP, FR modes</b>  Only one audio is recorded.  Before copying  – "Copy": Select the audio with "Preferred Multi Audio" in the Setup menu (→ 97).  – "Copy Title Playing": Select the audio with "Multi Audio/AD" in the Disc menu (→ 86).</li> </ul>
<b>Programmes with subtitles</b>	It is possible to display the subtitles when receiving a programme with the subtitles ["Subtitles" appears at the bottom of digital satellite channel information display (→ 88)]. <ul style="list-style-type: none"> <li><b>When recording in DR mode</b>  Subtitles will be recorded as is. It is possible to switch the subtitles during the playback of the title.</li> <li><b>When converting recording mode to HG, HX, HE, HL from DR/When copying in XP, SP, LP, EP, FR modes</b>  Subtitles will be recorded but it is not possible to switch off during playback.  Before copying  – "Copy": Select the subtitle language in "Preferred Subtitles" in the Setup menu (→ 97) and set "Automatic" in "Subtitles" in the copy setting screen.  – "Copy Title Playing": Select the subtitle language in "Preferred Subtitles" in the Setup menu (→ 97) and set "On" in "Subtitles" in the Disc menu (→ 86).</li> </ul>
<b>Surround audio</b>	You can enjoy surround audio when receiving a programme with surround audio (→ 35). <ul style="list-style-type: none"> <li><b>When recording in DR mode</b>  It is recorded as is.</li> <li><b>When converting recording mode to HG, HX, HE, HL from DR</b>  It is recorded with surround audio that was converted from broadcasted audio format.</li> <li><b>When copying in XP, SP, LP, EP, FR modes</b>  It is recorded with stereo audio.</li> </ul>
<b>Copy-restriction on freesat programmes</b>	Some programmes on freesat channels are copy-restricted. The title may be deleted automatically after the recording mode is converted to HG, HX, HE, HL with "DR File Conversion" (→ 53), if the title is copy-restricted.

# Important Notes for Recording

<p><b>16:9 image such as wide broadcasting</b></p>	<ul style="list-style-type: none"> <li>• When “Recording Format for DVD” (→ 98) in the Setup menu is “Video format”             <ul style="list-style-type: none"> <li>– Record from external equipment.</li> <li>– Copy from the finalised disc (DVD-Video) to the HDD.</li> </ul> </li> <li>• When copying to <b>-R -R DL -RW(V)</b></li> <li>• When converting the recording mode from DR mode to HG, HX, HE, HL, XP, SP, LP, EP, FR modes</li> </ul> <p style="text-align: center;">↓</p> <p><b>It will be recorded in accordance to the setting of “Aspect for Recording” (→ 98) in the Setup menu.</b></p> <ul style="list-style-type: none"> <li>• In the following cases, even when set to “Automatic” or “16:9”, recordings will be made or copied in 4:3.             <ul style="list-style-type: none"> <li>– <b>-R -R DL -RW(V)</b> When the recording mode is set to “EP” or “FR (recordings 5 hours or longer)” mode.</li> <li>– When copying to +R, +R DL and +RW.</li> </ul> </li> </ul>
<p><b>DR File Conversion</b></p>	<p>“DR File Conversion” is a function that converts the titles in DR mode to other recording modes. In general, Data size of a title will be smaller than the original title after conversion. <b>You can save HDD capacity by deleting the original title after conversion.</b></p> <div style="text-align: center;"> <p>The diagram illustrates the DR File Conversion process in three stages:             <ol style="list-style-type: none"> <li><b>Title DR</b>: A bar representing a title in DR mode with a small grey segment and a large white segment labeled 'Available disc space'.</li> <li><b>Converting to other mode</b>: An arrow points down to a bar where the grey segment has expanded and the white segment has shrunk, still labeled 'Available disc space'.</li> <li><b>Deleting the original data</b>: A second arrow points down to a bar where the grey segment is now the dominant part, and the white segment is significantly smaller, also labeled 'Available disc space'.</li> </ol> </p> </div> <p>The original title may be deleted automatically after conversion, if the title is copy-restricted (→ 33).</p>
<p><b>High Speed Copy</b></p>	<p>Speed to copy the title recorded on the HDD to a disc differs depending on the recording mode of the title and the disc to copy.</p> <p><b>Title in XP, SP, LP, EP, or FR modes</b></p> <p><b>RAM</b> Title can be copied at high speed.</p> <p><b>-R -R DL -RW(V) +R +R DL +RW</b></p> <p>Title can be copied at high speed if “Recording Format for DVD” was set to “Video format” before the programme is recorded to HDD from external input. (The default setting is “Video format”. → 98)</p> <p>But in the following cases, high speed mode does not work.</p> <ul style="list-style-type: none"> <li>– <b>+R +R DL +RW</b> Titles recorded in “EP” mode and “FR (recordings 5 hours or longer)” mode</li> <li>– <b>+R +R DL +RW</b> Titles recorded in 16:9 aspect</li> <li>– <b>-R -R DL -RW(V)</b> Titles recorded in 16:9 aspect using “EP” mode or “FR (recordings 5 hours or longer)” mode</li> </ul>
<p><b>Playing the disc on other players</b></p>	<p><b>-R -R DL -RW(V) +R +R DL</b></p> <p><b>The disc must be finalised. (→ 94)</b></p> <p>It is necessary to finalise DVD-R, etc. on this unit after recording or copying titles to them. You can then play them as a commercially sold DVD-Video. However, the discs become play-only and you can no longer record or copy.*</p> <p>* You can record and copy again if you format DVD-RW. (→ 93)</p> <div style="text-align: center;"> <p>The diagram shows a sequence: 1. A video frame of two people talking. 2. An arrow labeled 'Record to DVD-R, etc.' points to a DVD-R disc. 3. An arrow labeled 'Finalise' points to the disc. 4. An arrow points to a box labeled 'Play on other DVD equipment' containing images of a DVD player and a laptop.</p> </div> <p><b>+RW</b> If the disc failed to play on other equipment, we recommend you create top menu (→ 94).</p>
<p><b>Parental Control</b></p>	<p>Programmes with scenes unsuitable for children are broadcasted with “Guidance Information”, which allows you block the playback of the recorded titles.</p> <p>If “Parental Control” in the Setup menu is set to “On”, the titles recorded from the programme broadcasted with “Guidance Information” in the night (21:00–05:30) are indicated in DIRECT NAVIGATOR, DELETE Navigator and copy source selection screen with the <b>G</b> icon. You will have to enter the PIN (→ 14, step ③).</p>

# Advanced Recording

## Recording modes

This explains about recording and copying.

Recording modes that can be selected differ depending on the recording methods and discs.

Recording mode	DR	HG, HX, HE, HL	XP, SP, LP, EP	FR Flexible Recording Mode
<b>Features</b>	Record with the same quality of the broadcast	Record high definition programme as compressed* High Definition data * MPEG-4 AVC/H.264 encoding	Record in quality as in conventional analogue broadcast	Record in quality as in conventional analogue broadcast Record by automatically adjusting the quality between XP and EP (8 hours) depending on the remaining area on the disc
<b>Quality that can be recorded</b>	Quality same as broadcasted (HD quality and SD quality)	Quality produced by conversion of broadcast data (HD quality and SD quality)	SD quality only	
<b>Multiple audio</b>	Record all multiple audio	Record only one audio (→ 33)		
<b>Subtitles</b>	Can be recorded	Can be recorded *1 (→ 33)		
<b>The audio of the surround programme</b>	Surround audio as the broadcast	Surround audio produced by conversion of broadcast audio format *2	Stereo audio	

\*1 The subtitles cannot be switched on or off during playback.

\*2 If the audio sampling frequency is not 48 kHz, surround audio is mixed and recorded in front LR channels. Audio will be output from two front speakers only, even if you play it on 5.1 ch speaker connection.

### ■ Recording method

(○:Possible, -:Impossible)

Recording method		HDD	RAM	-R -RW(V)	+R +RW	-R DL +R DL
Recording	(DR)	○*1	-	-	-	-
	(HG, HX, HE, HL)	-	-	-	-	-
	(XP, SP, LP, EP)	○*2	-	-	-	-
	(FR)	-	-	-	-	-
Timer Recording	(DR)	○*1	-	-	-	-
	(HG, HX, HE, HL)	-	-	-	-	-
	(XP, SP, LP, EP)	○*2	-	-	-	-
	(FR)	○*2	-	-	-	-
Flexible Recording via AV Input	(DR)	-	-	-	-	-
	(HG, HX, HE, HL)	-	-	-	-	-
	(XP, SP, LP, EP)	-	-	-	-	-
	(FR)	○	-	-	-	-
Recording via AV3 input	(DR)	-	-	-	-	-
	(HG, HX, HE, HL)	-	-	-	-	-
	(XP, SP, LP, EP)	-	-	-	-	-
	(FR)	-	○	○	○	-
DV Automatic Recording	(DR)	-	-	-	-	-
	(HG, HX, HE, HL)	-	-	-	-	-
	(XP, SP, LP, EP)	○	○	○	○	-
	(FR)	-	-	-	-	-

\*1 When using this unit's tuner

\*2 When recording from external equipment

### ■ Maximum number of titles that can be recorded

#### HDD

• You can record up to 499 titles on HDD. (When continuously recording for long durations, titles are automatically divided every 8 hours.)

#### RAM -R -R DL -RW(V)

• You can record up to 99 titles on one disc.

#### +R +R DL +RW

• You can record up to 49 titles on one disc.

# Advanced Recording

## ■ FR (Flexible Recording Mode)

You can set FR (Flexible Recording) mode when copying or recording from external equipment. 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. For example with a 90 minute recording to an unused DVD-RAM, the picture quality is adjusted to between "XP" and "SP".

- When recording to the HDD, picture quality is automatically adjusted to fit a copied title on a 4.7 GB disc.

## ■ Recording modes and approximate recording time

Depending on the content being recorded, the recording time may become shorter than indicated. (The time provided on this chart are an estimate.)

Recording Mode	HDD (250 GB)	DVD-RAM		DVD-R DVD-RW +R +RW (4.7 GB)	DVD-R DL +R DL (8.5 GB)
		Single-sided (4.7 GB)	Double-sided* <sup>2</sup> (9.4 GB)		
DR* <sup>1</sup> (High Definition Quality: 14 Mbps)	37 hours 30 min.	–	–	–	–
DR* <sup>1</sup> (Standard Definition Quality: 5 Mbps)	105 hours	–	–	–	–
HG	40 hours	–	–	–	–
HX	60 hours	–	–	–	–
HE	90 hours	–	–	–	–
HL	120 hours	–	–	–	–
XP	55 hours	1 hour	2 hours	1 hour	1 hour 45 min.
SP	110 hours	2 hours	4 hours	2 hours	3 hours 35 min.
LP	221 hours	4 hours	8 hours	4 hours	7 hours 10 min.
EP* <sup>3</sup>	441 hours (331 hours* <sup>4</sup> )	8 hours (6 hours* <sup>4</sup> )	16 hours (12 hours* <sup>4</sup> )	8 hours (6 hours* <sup>4</sup> )	14 hours 20 min. (10 hours 45 min.* <sup>4</sup> )

\*<sup>1</sup> Recording time of DR mode depends on bit rate of broadcasting.

\*<sup>2</sup> It is not possible to record or play continuously from one side of a double sided disc to the other.

\*<sup>3</sup> When recording to the HDD in "EP" or "FR (recordings 5 hours or longer)" mode, you cannot perform high-speed copy to +R, +R DL or +RW discs.

\*<sup>4</sup> When "Recording time in EP mode" is set to "6 hours" in the Setup menu (→ 98). The sound quality is better when using "6 hours" than when using "8 hours".

- **RAM** When recording 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.

## ■ Regarding recording time remaining

### DR mode recording

Remaining time in the DR mode is calculated with a bit rate of approx. 14 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 (title conversion or from external input)

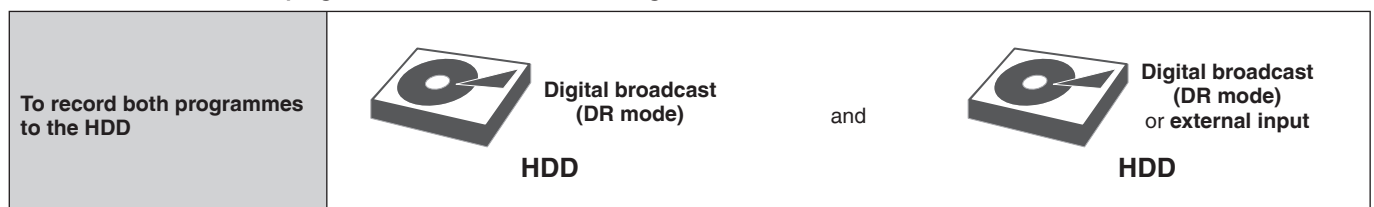
This unit records using a VBR (Variable bit rate) data compression system to vary recorded data segments to match video data segments which may cause differences in the displayed amount of time and space remaining for recording.

If the remaining amount of time is insufficient, delete any unwanted titles to create enough space before you start recording.

## 2 programmes simultaneous recording

It is possible to record 2 programmes simultaneously, if both DISH IN 1 and DISH IN 2 terminals are connected to the satellite dish (→ 10, Basic Connection).

### Possible combination for 2 programmes simultaneous recording



To perform 2 programmes simultaneous recording, 1 programme out of the 2 needs to be recorded to the HDD in DR mode.

## Notes

2 programmes simultaneous recording is not possible in following conditions:

- 2 programmes from the external input
- While recording from DV input, or executing "Recording via AV3 input"
- While high speed copying



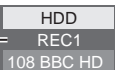
# Advanced Recording


## Operation during Recording

### To check the recording programme

Press [STATUS ⓘ].

e.g., while 2 programmes simultaneous recording

Recording programme displayed on the TV screen — 

Recording programme not displayed on the TV screen — 

### To display the recording programme on the TV screen

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

- If the input was switched: Press [INPUT SELECT].
- If the channel was switched: Press [^ ∨ CH].

### To stop recording

It is necessary to display the programme you want to stop on the TV screen. (→ above)

Press [■].

- From the start to the end of the recording is called one title.

### To pause recording

It is necessary to display the programme you want to pause on the TV screen. (→ above)

Press [⏸].

- Press again to restart recording.  
You can also press [● REC] to restart.  
(Title is not split into separate titles.)
- When recording is paused, the record indicator flashes.

### To switch the input

Press [INPUT SELECT].

### To switch to other channels

Press [^ ∨ CH].

### Perform 2 programmes simultaneous recording

Record other programme with steps ❶ – ❺ on page 27.

“REC1” and “REC2” will light.



- Channel switch / input switch while performing 2 programme simultaneous recording will switch between the 2 recording programmes.

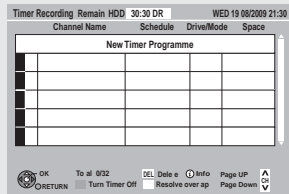
## Manual timer recordings

This operation will only record from the tuner to HDD in DR mode.

### Preparation:

- Turn on the television and select the video input terminal that this unit is connected to.
- Confirm that the clock on the unit's display is set to the correct time.

**1**



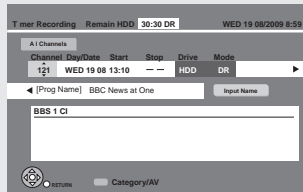
**2**

▲, ▼ to select “New Timer Programme”, then

- If “New Timer Programme” is already selected, press [OK].

**3**

◀, ▶ to move through the items and ▲, ▼ to set the items.



- Channel:** – The Channel number  
 You can press the “Red” button to change “Category/AV”.  
 You can perform this operation when you select a box of “Channel”.  
 [e.g., All Channels, Radio, Registered Favourites, AV1, AV2 etc. (→ 95, freesat Favourites Edit)]
- Day/Date:** – You can set date or weekly programme (→ right, Tips).
- Start (start time) / Stop (end time):**  
 – Hold [▲] or [▼] to change in 15-minute increments or decrements.
- Drive:** – HDD (You cannot change the drive.)
- Mode:** – DR mode (You cannot change the recording mode.) (→ 35)  
 • You can change it only when you select AV1, AV2, AV3 or AV4 in “Channel”.
- Renew:** – Auto Renewal Recording (→ 41) ON/OFF  
 • You can change its setting only when you select weekly programme in “Day/Date”.
- Input Name** – You can enter programme name.  
 Press [OK]. (→ 82, Entering Text)

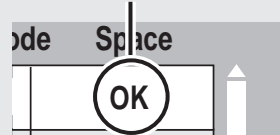
**4**



- The timer icon is displayed in left column.



- “⌚” lights on the unit's display to indicate timer recording standby has been activated.
- Check for available space on HDD, etc., when “!” is displayed.



- Repeat steps **2** – **4** to programme other recordings.
- Press [⏻] to turn the unit off.

### Notes

- “⌚” on the unit's display flashes when the unit cannot go to timer recording standby (e.g., HDD has no space to record).
- If three timer recording times overlap, the first and second recordings always have priority. The third recording will start only after the first recording has finished.

### Tips

#### To exit the timer recording list

Press [PROG/CHECK].

- “Date” Setting  
 Each press of [▲] changes items in the order below.  
 (Each press of [▼] changes items in the reverse order.)  
 Current date →→→ One month later  
                                 minus one day

Each press of the “Green” button changes item in the order below.  
 You can perform this operation when you select a box of “Day/Date”.

Date ↔ Weekly

Titles recorded using the same daily or weekly timer are bundled and displayed as a “group” in the DIRECT NAVIGATOR screen (→ 45) except when using Auto Renewal Recording (→ 41).

- You can also use the numbered buttons to enter “Channel”, “Start” and “Stop”.

## Series recording

This operation will only record to HDD in DR mode. You can record all the episodes of a series by setting just one timer recording using the TV Guide system.

**1** a few times and select

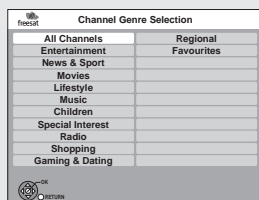
“freesat”, then

**2**

– The channel genre selection screen appears.

**3** to select the desired genre, then

– The TV Guide list appears.



**4** to select the desired programme, then



**5** to select “Series Timer Rec.”, then

– If the same episode has already been set for series timer recording at a different time or on another channel, “Series Timer Rec.” will not be selectable.

– You can select the HD programme for recording when there are both SD and HD programmes.  
[→ 29 Timer Recording Using the TV Guide (freesat)]

e.g.,\*



\* The series timer recording cannot be selected if the selection screen does not appear.

**6**

- You cannot change Channel, Day/Date, Drive, and “Input Name”.
- With “Start” and “Stop” automatically set by the “Guide Link” function, “Start” can be changed back by up to 10 minutes and “Stop” can be changed forward by up to 10 minutes.
- This unit automatically records the programmes that are identified to be of the same series by the TV Guide data.
- Titles recorded using series recording are bundled and displayed as a “group” in the Direct Navigator screen (→ 45) except when using Auto Renewal Recording. (→ 41)

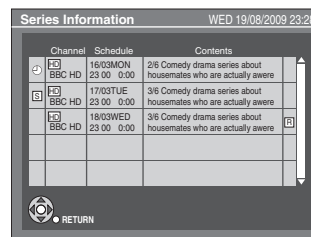


Series recording icon

## Tips

### To check the schedule of the series

Press the “Blue” button after performing steps **1** – **4**.



: The episode to be recorded

: Repeat programme

: Programme for which you set the timer recording

: HD programme

### To cancel the series timer recording programme

1. Press to select the programme (the timer icon is displayed), then press [OK].
  2. While “Delete” is selected, press [OK].
  3. Press to select “Yes”, then press [OK].
- The timer icon disappears.
- All programmes of the same series you select to cancel will be cancelled at the same time.




## Notes

- If the unit cannot record the first run, 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 first run is recorded.
- The series recording will be cancelled if there has been no episode of the series for 13 weeks.
- You cannot set series timer recording for the repeat programmes of the series that you have already set series timer recording.



## To cancel a timer recording in progress

Select the programme you want to cancel in advance when you record 2 programmes simultaneously.

- While the unit is on
  -  – Confirmation screen appears.
-  to select “Yes”, then 

### Notes










Recording stops and the timer programme is deleted. (Daily, weekly and series timer programmes remain and timer recording will start from the next time the timer recording is set.)

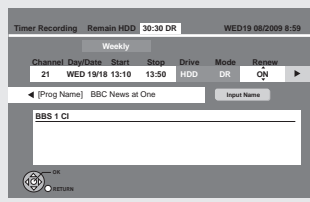
## Auto Renewal Recording

**This operation will only record to HDD in DR mode.**

If you record a programme onto HDD repeatedly everyday or every week using timer recording, the unit will record the new programme over the old one.

**This function can be used only when daily, weekly or series timer recording is selected.**

- 
-   to select the programme, then 
-   to select “Renew” column.
-   to select “ON”, then 



### Notes




- If a programme set for Auto Renewal Recording is protected or while playback is taking place from the HDD, or while copying, the programme will not be overwritten. Instead the programme set for recording will be saved as a separate programme, and this programme will be the one to be overwritten when the next Auto Renewal Recording takes place.
- When there is not enough space on the HDD, the programme may not be recorded completely.

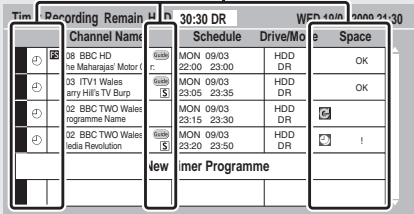
## If the “Overlapped Timer Recording” screen appears

If you set a timer recording that will overlap with other timer recordings using the TV Guide system, the “Overlapped Timer Recording” screen appears to help you eliminate the overlapping. Follow the on-screen instructions.


## Check, Change, Delete Programmes, or Resolve Overlapping

The timer recording list can be viewed even when the unit is off.







-    to select the programme.



**Icons**








### Icons

- : Red:Timer recording standby is activated.
- : Grey:Timer recording standby is not activated.
- : Currently recording
- : You stopped a daily, weekly or series timer recording. The icon disappears when the next timer recording starts recording.
- : Timer programmes set to Auto Renewal Recording (→ left).
- Drive:** Recording drive is set to HDD
- OK:** Recordable
- (Date):** For daily, weekly or series timer recordings, the display will show until when recordings can be made (up to one month ahead from the present time) based on the time remaining on the HDD.
- !:** It may not be possible to record because:
  - there is no more space left.
  - the number of possible titles has reached its maximum.
  - programmes are overlapped.
  - you stopped a daily, weekly or series timer recording.
- : Programmes are overlapped. Recording of the programme with the later start time starts when the earlier programme finishes recording.
- FS:** freesat programme is selected
- S:** Other Sat. programme is selected
- Guide:** Guide Link (→ 28)
- S/P:** Split Programme (→ 28)
- S:** Series Timer Recording (→ 28)


**2a**  to delete.

– You cannot delete programmes that are currently being recorded.

**2b**  to modify the programme.

    to make changes, then 

**2c** When a programme with  is selected

 then follow the on-screen instructions to resolve overlapping.

– If the on-screen instructions do not appear, change or delete the overlapped programme.

## Tips

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

### To exit the timer recording list

Press [PROG/CHECK].

## Notes

- Recording may fail if there are changes to the station's programming.
- "⏸" disappears from the unit's display when no timer programme is set or when all timer programmes are deactivated.
- "-----" 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.
- The "Guide Link" function may not work if you manually change the start/end time by over 10 minutes.
- The "Guide Link" function may not work if you manually change the start time later or the stop time earlier than the original time.
- Programmes that failed to record are deleted from the timer recording list at 4 a.m. two days later.

## To deactivate timer programme (e.g. to interrupt a daily or weekly timer programming)

After performing step ① (→ Previous page)

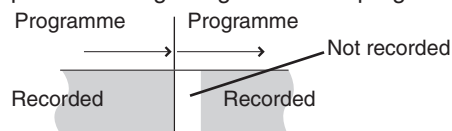
**2**



- "⏸" on the timer recording list turns gray.
- Press the "Red" button again to activate timer programme.

## Notes on timer recording

- Timer recording will not be performed if the clock is not set.
- During recording, timer recording standby or EXT LINK standby, this unit cannot play discs or titles that do not match the "TV System" setting. It is recommended "TV System" be set to match the discs or title before playing them. But to prevent the failure of the timer recording, change back the settings before the recording starts. (→ 101)
- Timer recordings are activated regardless of whether the unit is turned on/in standby.
- Timer recordings begin when the set time is reached even when playing.
- Timer recordings do not begin while copying in normal speed mode.
- If the unit is turned on when timer recording begins, it remains turned on after recording finishes. It does not turn off automatically. You can turn the unit off during timer recording.
- When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes.



- The "Overlapped Timer Recording" screen may be displayed immediately after you turn on this unit, if new overlapping occurred. Refer to "Check, Change, Delete Programmes, or Resolve Overlapping" (→ 41).

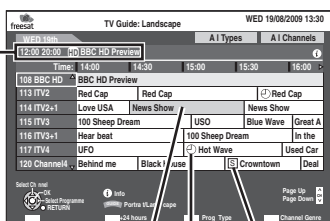
# TV Guide system (freesat)

## What is the TV Guide system?

The TV Guide system gives you an overview of digital satellite television and radio programmes up to 7 days in advance. For many of these programmes, you can select additional information provided by the stations. You can search the programme preview according to various topics such as sport, films etc., according to categories such as TV or radio. You can easily find the desired programmes and set timer recording.

### Landscape view

Broadcast date  
Broadcast time



Selected programme

Timer icon  
(→ 29, 39)

Series icon  
(→ 40)

: Timer Recording

: Series Recording

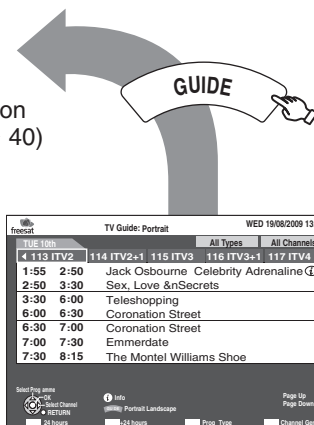
### Landscape view:

The TV Guide system offers detailed information as if you see a TV programme magazine. This is convenient to check the status of timer recording.

### Portrait view:

This is convenient to narrow down channels to search for the programme you want to watch.

**To switch between Landscape view and Portrait view**  
Press [GUIDE].



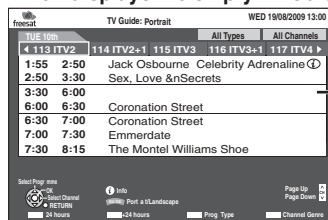
Portrait view

## Using the TV Guide list

<b>To change channels</b>	<p><b>Landscape view</b> Press [▲, ▼] to select a channel.</p> <p><b>Portrait view</b> Press [◀, ▶] to select a channel.</p> <p>The TV Guide list appears for this channel.</p>
<b>To view a programme list for another day</b>	<ul style="list-style-type: none"> <li>• Jump ahead 24 hours Press the "Green" button to jump ahead by one day.</li> <li>• Jump back 24 hours Press the "Red" button. You can only jump back to the current date. Past information cannot be viewed.</li> </ul>
<b>To change the page of the TV Guide list</b>	Press [∧, ∨ CH].
<b>To see programme information (programme name, programme duration, broadcast time, description) (Programmes with the  symbol)</b>	<p>Press [STATUS ].</p> <ul style="list-style-type: none"> <li>• Press [▲] and [▼] to scroll up and down.</li> </ul> <p><b>To show other pages</b> Press [∧ CH] (Previous) or [∨ CH] (Next).</p> <p><b>To return to the TV Guide list</b> Press [STATUS ].</p>
<b>To return to the previous screen</b>	Press [BACK/RETURN ↵].
<b>To exit the screen</b>	Press [EXIT].

## Tips

### When displays the empty TV Guide list:



The "empty" field

- Some digital broadcast may not send programme information.
- Set the timer recording manually (→ 39, Manual timer recordings).

## Notes


- The TV Guide system setup will not work if the clock is not set correctly or the wrong postcode is selected.


# TV Guide system (freesat)

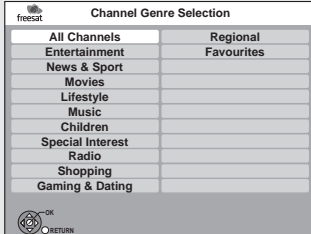
## Selecting the programme from the desired channel genre or programme type



This function lets you display a TV Guide list sorted by genre (e.g. All Channels, Radio) or programme type (e.g. Movies, Sport).

**1**  a few times to select

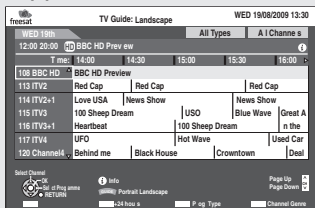
“freesat”, then 


**2** 




**3**  to select the desired genre, then 

– The TV Guide list appears.



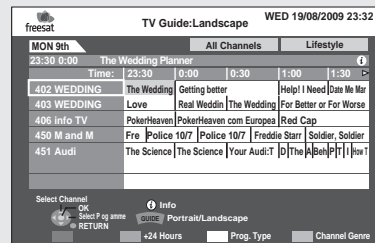
**4**  (Blue) to display the list of channel genre.




**5**  to select the desired item.

**6** 

- A list appears with all programmes of the selected item.
- When you select the landscape view, the programmes that belong to the selected channel genre are highlighted.



e.g., Channel Genre, “Lifestyle” is selected in step 3 of Landscape view.

**7**  to select the desired programme.

- To view the programme. (→ 24)
- To record the programme. (→ 28)

## Tips

**To display the programme type**  
Press the “Yellow” button in step 4.

**To return to the previous TV Guide list before you have selected the channel genre or programme type**  
Select “All Channels” of channel genre or “All Types” of the programme type in step 5.

**To exit**  
Press [BACK/RETURN].

## Notes

- The broadcasters allocate individual programmes to topic areas. This function does not work properly unless the information which distinguishes the channel genre and programme type sent from broadcast stations is correct.
- If the unit is disconnected from the AC mains, all programme data are lost.
- The programme list is available if this unit has found a digital station and loaded the information in the memory. This process can take a while depending on the particular station.
- The programme list data are continuously downloaded in the background when the unit is turned on. That means that the programme list can sometimes change while you are looking at it.

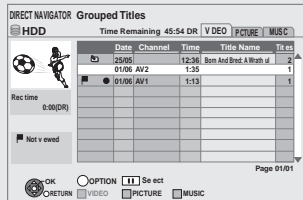
# Advanced Playback

## Selecting Titles to Play

You can easily select and play recorded programmes by using DIRECT NAVIGATOR.

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

While stopped



**HDD RAM**

When "VIDEO" is not selected, press the "Red" button to select "VIDEO".

**2** ▲, ▼ to select the title you want to watch, then OK

## Tips

**To view other pages**

Press [◀, ▶].

**To exit the DIRECT NAVIGATOR screen**

Press [DIRECT NAVIGATOR].

**DIRECT NAVIGATOR screen icons**

- Protected.
- Not recorded due to recording protection (Digital broadcasts, etc.)
- It cannot be played because data is damaged, etc.
- Currently recording.
- Groups of titles (**HDD** only)
- Title that was recorded but has not yet been played (**HDD** only)
- Titles that cannot be copied
- Titles with guidance information (→ 98, Parental Control) or title with child lock (→ 97, Child Lock)
- Radio programme
- (NTSC) Title recorded using a different encoding system from that of the TV system currently selected on the unit.
- (PAL) Title recorded using a different encoding system from that of the TV system currently selected on the unit.
  - Alter the "TV System" setting on this unit to suit (→ 101).

## Switching the DIRECT NAVIGATOR appearance

"Grouped Titles"/"All Titles" **HDD**

- 1** While the DIRECT NAVIGATOR screen is displayed Press [OPTION].
- 2** Press [▲, ▼] to select the item, then press [OK].

e. g.,



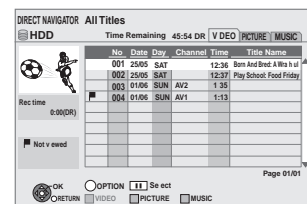
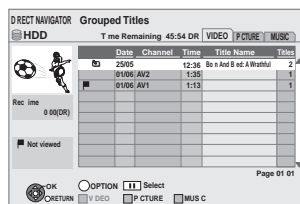
"Grouped Titles" or "All Titles" **HDD**

**Grouped Titles screen**

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

**All Titles screen**

Displays all titles.



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

## Playback the title that was viewed once **HDD**

You can choose to start the playback from the point you have last stopped, or from the beginning when the resume play function (→ 26) is operating.

- 1** While the DIRECT NAVIGATOR screen is displayed Press [OPTION].
- 2** Press [▲, ▼] to select "Play", then press [OK].
- 3** Press [◀, ▶] to select "Last Stopped" or "Beginning", then press [OK].

## To sort the titles for easy searching

**HDD** (All Titles screen only)

This function is convenient when searching for one title to playback from many titles.

- 1** Press [OPTION].
- 2** Press [▲, ▼] to select "Sort", then press [OK].
- 3** Press [▲, ▼] to select the item, then press [OK].

If you select an item other than "No."

- The DIRECT NAVIGATOR screen will reappear after playback of the selected title has finished. (You cannot play titles continuously.)
- Skip and Time Slip will function only with the title currently being played back.
- If you exit the DIRECT NAVIGATOR screen, or switch to another DIRECT NAVIGATOR screen, the sort will be cancelled.

# Advanced Playback

## To play grouped titles **HDD**

- 1 Press [▲, ▼] to select the group, then press [OK].
- 2 Press [▲, ▼] to select the title, then press [OK].

### Play the titles continuously (Grouped Playback)

While the Grouped Titles screen is displayed, Press [▲, ▼] to select the group and press [▶] (PLAY).

## To edit the group of titles **HDD**

**HDD** (Grouped Titles screen only)

- 1 Press [▲, ▼] to select a title or a group, then press [III].

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

- Press [III] to cancel.

- 2 Press [OPTION].

- 3 Press [▲, ▼] to select the option, then press [OK].

### Create Group:

Press [◀, ▶] to select "Create", then press [OK]. Selected titles are bundled to form a group.

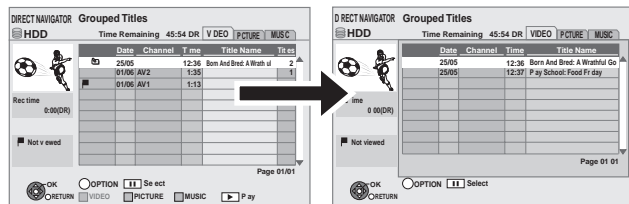
### Release Grouping:

Press [◀, ▶] to select "Release", then press [OK].

- When a group of titles has been selected, all the titles in the group are released.
- When a title in a group has been selected, the title is removed from the group.

### Regarding the group name

The name of the first title in the group is used as the group name.



### To change the group name

- 1 Press [▲, ▼] to select the group, then press [OPTION].
- 2 Press [▲, ▼] to select "Edit", then press [OK].
- 3 Press [▲, ▼] to select "Enter Title Name", then press [OK].
- 4 Enter the name. (→ 82, Entering Text)

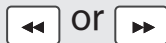
- Even if the group name is changed, the title names in the group will not be changed.

### Notes

- This function is only available for videos and not available for music and still pictures.

## Search

During playback



- There are 5 search speeds. Each press increases the search speed. (+R +R DL +RW Up to 3 speeds)
- Press [▶] (PLAY) to restart normal playback.

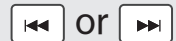
### Tips

Depending on the disc, search may not be possible.

## Skip

You can skip to the beginning (or the end) of Title/Chapter. Skip is operated for each chapter.

During playback or while paused



- Each press increases the number of skips.
- DivX: Press [◀◀] to return to the beginning of the title currently playing.

## Quick View (Play x1.3)

Except **-RW(V)** (It will not work even if it is finalised) **-RW(VR)**, **DivX**

Allows you to increase the play speed slightly without distorting the audio.

During playback



(Press and hold.)

- Press again to return to normal speed.
- Image may not be played back smoothly in case of DR, HG, HX, HE, HL mode titles or **AVCHD**.

## Direct Play

During playback, you can access specific titles or scenes through direct entry of the numbered buttons.



### • AVCHD

Input a 3-digit number.

e.g., 5: [0] → [0] → [5]  
15: [0] → [1] → [5]

### • DVD-V

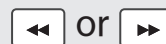
Input a 2-digit number.

e.g., 5: [0] → [5]  
15: [1] → [5]

## Slow-motion Play

Except **DivX**

While paused



- There are 5 slow-motion speeds. Each press increases the speed.
- Press [▶] (PLAY) to restart normal playback.

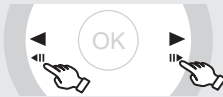
### Notes

- If continued for approx. 5 minutes, slow-motion play pauses automatically (except **DVD-V AVCHD**).
- **AVCHD** allows slow-motion in the forward direction only.
- You cannot perform this operation when you playback the radio programme.

## Frame-by-Frame Viewing

Except **DivX**

While paused



- Each press shows the next or previous frame.
- Press and hold to advance or reverse frame-by-frame in succession.
- Press [▶] (PLAY) to restart normal playback.

### Notes

- **AVCHD** allows Frame-by-Frame in the forward direction only.
- You cannot perform this operation when you playback the radio programme.

## Time Slip

Except **DVD-V**, **AVCHD**, **DivX**


- 1 During playback 
- 2 ▲, ▼ to select the time, then 

- Each time you press [▲, ▼], the time increases [▲] or decreases [▼] by 1 minute intervals.
- Press and hold [▲] or [▼] for 10-minute intervals.

## Manual Skip

Except **DivX**


Skips approx. 1 minute forward with each press.

During playback 

## Create Chapters

**HDD** **RAM**

When creating chapters in your favourite scenes, you can easily reach the head of scene using [◀◀, ▶▶] (SKIP) or play on Chapter View (→ 54).

During playback 

### Tips

Chapters cannot be created during EXT LINK standby (→ 62).

## Display the subtitle during play

**HDD**

It is possible to display the subtitles during the playback if the programme with subtitle is recorded with DR mode.



- It will switch between On/Off every time it is pressed.

**DVD-V** **AVCHD** **DivX**

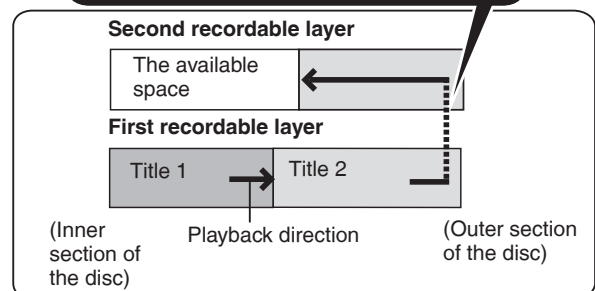
Display with “Subtitles” in the Disc menu (→ 86, Subtitles).

### Notes

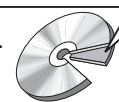
**When playing DVD-R DL (Dual Layer, single-sided) and +R DL (Double Layer, single-sided)**

DVD-R DL (Dual Layer, single-sided) and +R DL (Double Layer, single-sided) discs have two writable layers on one side. If there is not enough space on the first layer to record a programme, the remainder is recorded on the second layer. 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.

**When switching layers:**  
Video and audio may momentarily cut



**DVD-R DL**  
**+R DL**




# Playback of the High Definition Video (AVCHD) and playlists

## Playback of the High Definition Video (AVCHD)

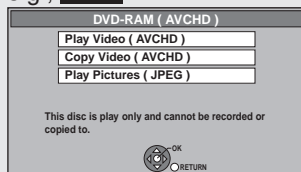
### AVCHD

It is possible to playback the high definition video (AVCHD) recorded on the Panasonic's video camera, etc. on the disc or SD card.

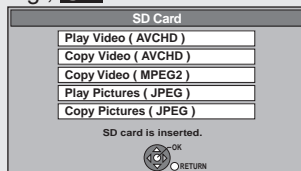
**1** Insert a disc or SD card.

**2** ▲, ▼ to select "Play Video (AVCHD)", then 

e.g., **RAM**



e.g., **SD**



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

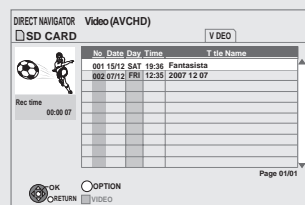
– If the top menu of the disc or SD card to play was

- Created: Display the top menu
- Not created: Display the "DIRECT NAVIGATOR" screen\*

\*It may not be able to display the "DIRECT NAVIGATOR" screen depending on the equipment used to record.

**3** ▲, ▼, ◀, ▶ to select the title, then 

e.g., **SD** DIRECT NAVIGATOR screen



### Tips

#### To exit the screen

Press [EXIT].

#### To display the top menu

Press [DIRECT NAVIGATOR].

#### When the top menu or "DIRECT NAVIGATOR" is not displayed

Refer to "Direct Play" (→ 46) to playback.

Operation during play (→ 45 to 47, Advanced Playback)

### Notes

- Multiple titles may not playback continuously depending on the disc. Press [DIRECT NAVIGATOR], and playback by selecting the title.
- It may pause for a few seconds on the break of images when editing such as partial deletion is performed.
- High definition video (transfer rate of 24 Mbps or faster) cannot be played back correctly if it was recorded on a DVD compatible to double speed or slower.


## Playback of the playlists created on other equipment


### RAM -RW(VR)

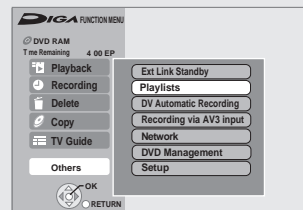
Creation or editing of playlists cannot be done on this unit.


#### Preparation:


- Insert a disc.
- Press [DRIVE SELECT] to select the DVD drive.

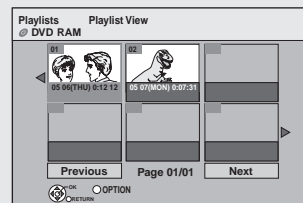
**1** With the unit stopped 

**2** ▲, ▼ to select "Others", then 



**3** ▲, ▼ to select "Playlists", then 

**4** ▲, ▼, ◀, ▶ to select the playlist, then 



Operation during play (→ 45 to 47, Advanced Playback)

### Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [EXIT].



## Playing DivX video contents

### -R -R DL CD USB

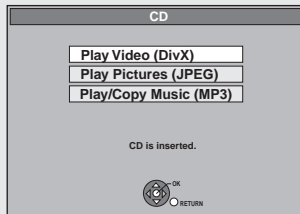
DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified device that plays DivX video. You can play DivX video contents recorded with a computer onto DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

### 1 Insert a disc or USB memory.

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

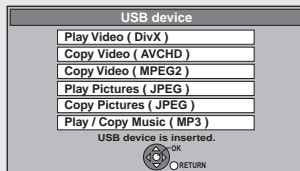
#### -R -R DL CD USB

e.g., **CD**



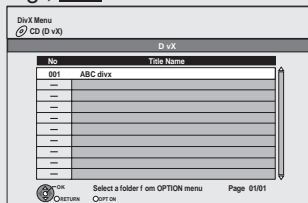
- It will go to 3 automatically if it is only DivX that is recorded.

#### USB



### 2 ▲, ▼ to select “Play Video (DivX)”, then

e.g., **CD**



- Files are treated as titles.

### 3 ▲, ▼ to select the title, then

Play starts on the selected title.

## Tips

**To stop playing**  
Press [■].

**To show other pages**  
Press [◀◀, ▶▶].

**To exit the screen**  
Press [DIRECT NAVIGATOR].

If the menu screen (→ left) is not displayed, display it by performing the following operation.

### -R -R DL CD USB

1 Press [FUNCTION MENU].

### 2 -R -R DL CD

Press [▲, ▼] to select “Playback”, then press [OK].

#### USB

1 Press [▲, ▼] to select “Others”, then press [OK].

2 Press [▲, ▼] to select “USB device”, then press [OK].

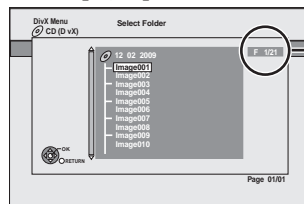
## Notes

- Picture sizes set at the recording time may prevent the unit from showing pictures in the adequate aspect. You may be able to adjust the aspect through the TV.
- Successive play is not possible.
- Playback is not possible if recording is performed on the HDD drive or the DVD drive.

## Using the tree screen to find a folder

1 While the file list is displayed  
Press [OPTION].

2 Press [▲, ▼] to select “Select Folder”.



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

You cannot select  
folders that contain no  
compatible files.

3 Press [▲, ▼] to select a folder, then press [OK].  
The file list for the folder appears.

## Tips

**To return to the previous screen**  
Press [BACK/RETURN ↵].

**Operation during play (→ 45 to 47, Advanced Playback)**

# Playing DivX

## Regarding DivX VOD content

### ABOUT DIVX VIDEO-ON-DEMAND:

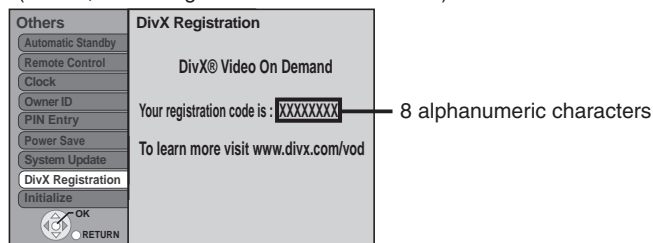
This DivX® Certified device must be registered in order to play DivX Video-on-Demand (VOD) content.

First generate the DivX VOD registration code for your device and submit it during the registration process. [Important: DivX VOD content is protected by a DivX DRM (Digital Rights Management) system that restricts playback to registered DivX Certified devices. If you try to play DivX VOD content not authorized for your device, the message "Authorisation Error." will be displayed and your content will not play.]

Learn more at [www.divx.com/vod](http://www.divx.com/vod).

### Display the unit's registration code.

(→ 104, "DivX Registration" in "Others" menu)



- After playing DivX VOD content for the first time, another registration code is then displayed in "DivX Registration". Do not use this registration code to purchase DivX VOD content. If you use this code to purchase DivX VOD content, and then play the content on this unit, you will no longer be able to play any content that you purchased using the previous code.
- 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. ("Authorisation Error." is displayed.)

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

Some DivX VOD content can only be played a set number of times.

When you play this content, the remaining number of plays is displayed. You cannot play this content when the number of remaining plays is zero. ("Rental Expired." is displayed.)

When playing this content

- The number of remaining plays is reduced by one if
  - you press [⏪].
  - you press [■].
  - you press [DIRECT NAVIGATOR].
  - you press [◀◀] or [◀, ▶▶] etc. and arrive at another content or the start of the content being played.
  - timer recording starts on the HDD.
  - you press [DRIVE SELECT] to change the drive.
- Resume functions work. The number of plays is not reduced when you restart by resume play function.

# Titles–Editing

## HDD RAM

**-R -R DL -RW(V) +R +R DL** (You can not edit finalised discs.)

## +RW

**-RW(VR)** Only “Properties” is possible.

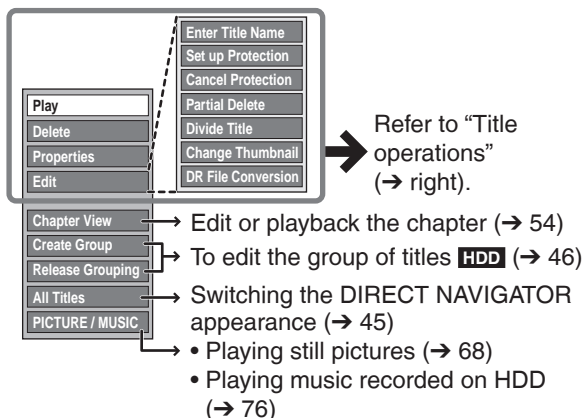
You can edit titles on the DIRECT NAVIGATOR screen: deleting unwanted parts of titles such as commercials, changing Thumbnail, dividing and deleting titles, etc.

## Accessing the Title View

### Preparation:

- **RAM** Release protection (disc, cartridge → 92, Setting Protection).

- 1 Press [DRIVE SELECT] to select the drive.
- 2 Press [DIRECT NAVIGATOR].  
**HDD RAM** When “VIDEO” is not selected, press the “Red” button to select “VIDEO”.
- 3 Press [▲, ▼] to select a title.  
– Multiple editing (→ below, Tips)
- 4 Press [OPTION] to display the menu list.
  - To view more options  
– Press [▲, ▼] to select “Edit”, then press [OK].
  - Items that cannot be selected are grey.



## Notes

- Restricted recording information remains even after editing (e.g. dividing a title etc).
- You cannot edit during recording or copying, etc.
- **+R +R DL** Management information is recorded in unused sections when you edit discs. The available space on these discs decreases each time you edit their contents. We recommend that you edit on the HDD and then copy to disc.

## Tips

### To return to the previous screen

Press [BACK/RETURN ↵].

### To exit the menu screens

Press [DIRECT NAVIGATOR].

### To view other pages

Press [◀◀, ▶▶].

### Multiple editing

(Only Delete, Set up Protection/Cancel Protection)

Select with [▲, ▼], then press [III]. (Repeat.)

–A check mark appears. Press [III] again to cancel.

## Title Operations

### Delete

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

Use to delete unneeded titles.

**Important:** Once deleted, contents cannot be recovered.

Perform steps 1–4 of “Accessing the Title View” (→ left).

- 5 Press [▲, ▼] to select “Delete”, then press [OK].
- 6 Press [◀] to select “Delete”, then press [OK] to confirm.

## Notes

- **HDD RAM** Deleting an item increases the available disc space by the amount of space taken by the item deleted.
- **-R -R DL +R +R DL** Available disc space does not increase after deletion.
- **-RW(V) +RW** Available disc space increases when you delete the last title (the recording space may increase slightly when other titles are deleted).
- Available disc space may not increase after erasing a short title.

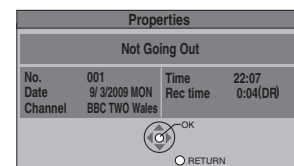
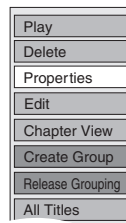
## Properties

## HDD RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR)

Title information is shown (e.g., date, time).

Perform steps 1–4 of “Accessing the Title View” (→ left).

- 5 Press [▲, ▼] to select “Properties”, then press [OK].



## Enter Title Name

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

You can give a name for the title.

Perform steps 1–4 of “Accessing the Title View” (→ left).

- 5 Press [▲, ▼] to select “Enter Title Name”, then press [OK].

Entering Text (→ 82)

- **HDD** Even if the group name is changed, the title names in the group will not be changed (→ 46, Regarding the group name).

# Titles–Editing

## Set up Protection/Cancel Protection

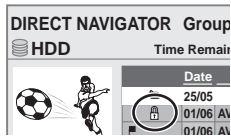
**HDD RAM +R +R DL +RW**

Use to prevent accidental erasure of titles.

Perform steps 1–4 of “Accessing the Title View” (→ 51).

- 5 Press [▲, ▼] to select “Set up Protection” or “Cancel Protection”, then press [OK].
- 6 Press [◀] to select “Yes”, then press [OK].

The lock symbol appears when the title is protected.



## Partial Delete

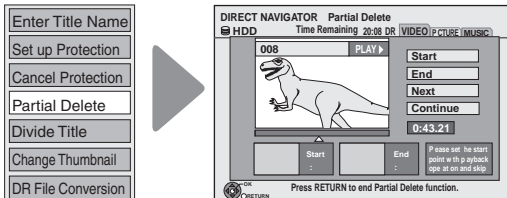
**HDD RAM**

Use to remove unwanted parts of titles, such as commercials.

**Important:** Once deleted, the parts cannot be recovered.

Perform steps 1–4 of “Accessing the Title View” (→ 51).

- 5 Press [▲, ▼] to select “Partial Delete”, then press [OK].



- 6 Press [▶] (PLAY) and [||] to set the start point of the section you want to erase.
- 7 Press [▲, ▼] to select “Start”, then press [OK].
- 8 Press [▶] (PLAY) and [||] to set the end point of the section you want to erase.
- 9 Press [▲, ▼] to select “End”, then press [OK].
  - For quicker editing (→ 53, Tips)
  - To delete multiple sections: Press [▲, ▼] to select “Next”, and repeat steps 6–9.
  - Up to 20 sections can be set.
- 10 Press [▲, ▼] to select “Continue”, then press [OK].
- 11 Press [◀] to select “Delete”, then press [OK] to confirm.

### Notes

- You may not be able to specify start and end points within 3 seconds of each other.
- Available disc space may not increase after erasing short parts of titles.

## Divide Title

**HDD RAM**

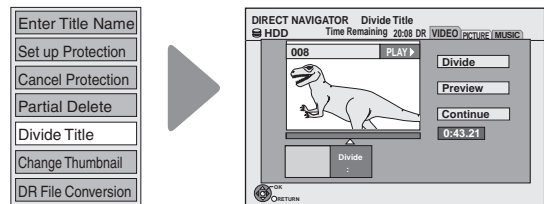
You can divide a title into two.

Once divided, titles cannot be recombined.

Perform steps 1–4 of “Accessing the Title View” (→ 51).

- 5 Press [▲, ▼] to select “Divide Title”, then press [OK].

- 6 Press [▶] (PLAY) and [||] to set the point you want to divide.



- 7 Press [▲, ▼] to select “Divide” then press [OK].
  - For quicker editing (→ 53, Tips)
  - Selecting “Preview” then pressing [OK] plays the title from 10 seconds prior, to 10 seconds after the division point.
  - To change the point to divide at: Perform steps 6–7 again.
- 8 Press [▲, ▼] to select “Continue”, then press [OK].
- 9 Press [◀] to select “Divide”, then press [OK].
  - The title is divided at that point.

### Notes

- A short amount of video and audio just before and after the division point get cut out.
- You cannot divide a title when the resulting parts are too short.
- **HDD** Divided titles form a group of titles.

## Change Thumbnail

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

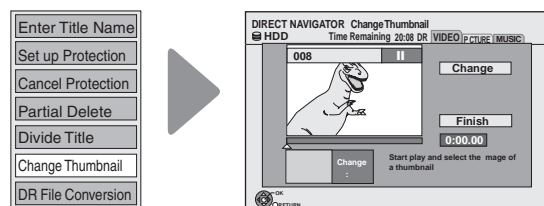
**-R -R DL -RW(V) +R +R DL** It is possible to change the image displayed on the top menu after finalising.

**+RW** It is possible to change the image displayed on the top menu after creating Top Menu.

**HDD** Settings for “Change Thumbnail” is saved when high speed copy is performed to DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW.

Perform steps 1–4 of “Accessing the Title View” (→ 51).

- 5 Press [▲, ▼] to select “Change Thumbnail”, then press [OK].



- 6 Press [▶] (PLAY) and [III] to set the point you want to use as the thumbnail.
  - For quicker editing (→ below, Tips)
- 7 Press [▲, ▼] to select “Change”, then press [OK].
  - To change the thumbnail: Perform steps 6–7 again.
- 8 Press [▲, ▼] to select “Finish”, then press [OK].

## Tips

### For quicker editing

- Use Search (→ 46) or Time Slip (→ 47) to find the desired point.
- To skip to the start or end of a title, press [◀◀] (start) or [▶▶] (end).
- For better precision, use Slow-motion (→ 46) and Frame-by-Frame (→ 47).

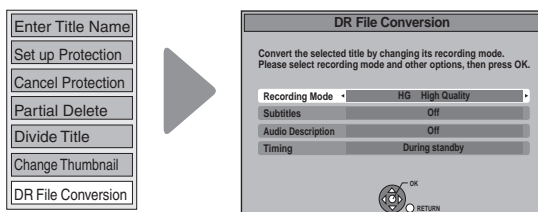
## DR File Conversion

### HDD

DR File Conversion is a function to convert the recording mode of the title in DR mode. The converted title will be copied to HDD. It will take about the same time as playback of the title to convert the recording mode.

Perform steps 1–4 of “Accessing the Title View” (→ 51).  
– Select HDD in step 1.

- 5 Press [▲, ▼] to select “DR File Conversion”, then press [OK].



- 6 Press [◀, ▶] to select the recording mode, then press [▼].
- 7 Press [◀, ▶] to select “Automatic” or “Off”, then press [▼].
- 8 Press [◀, ▶] to select “Automatic” or “Off”, then press [▼].
- 9 Press [◀, ▶] to select when to start the conversion, then press [OK].

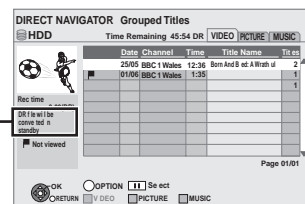
“Now” Conversion begins immediately. Recording and playback are not available during conversion. Note also that timer recording will not be performed during conversion.  
Press [◀, ▶] to select “Start”, then press [OK].

“During standby” The conversion will be performed a short time after switching off the power in a time slot for which no timer recording is set. If the power is switched on during the conversion, the conversion will be cancelled, and start from the beginning when the power is next switched off.

- If a title with the copy restriction was selected, the confirmation screen appears to inform you that the original title will be deleted after conversion. Press [◀, ▶] to select “Yes”, then press [OK].

- To cancel the conversion “During standby” After performing steps 1–5 Press [◀, ▶] to select “Yes” and press [OK].
- Conversion begins after the unit is put into standby, when “During standby” is selected. “COPY” on the unit’s display remains lighted during conversion. [Only when “Unit’s Display” in the Setup menu is set to “Bright” (→ 101).]

When “DR file will be converted in standby” is displayed in the DIRECT NAVIGATOR, the conversion has not finished.



## Tips

In order to save HDD capacity, it is recommended that you delete the original titles (in DR mode) after converting, if they remains after conversion. (→ 32, Deleting Titles)

## Notes

- To use “DR File Conversion”, the HDD needs enough storage capacity. Please make space available on the HDD.
- The original data (DR mode) will be deleted after converting them to HG, HX, HE or HL mode if the programme was copy-restricted. (→ 33)  
The original data remains after conversion if there is no copy-restriction.
- The size of the converted programme may increase for some combinations of programme and recording mode.
- If the power is switched on during the conversion, the conversion will be cancelled, and start from the beginning when the power is next switched off.
- The converted version of a programme including multiple video and audio content will contain only single video and audio content. The “Audio Mode for Digital Broadcast” setting in the Setup menu (→ 100) is applied.
- During Normal Speed Copy with “Subtitles” set to “Automatic”, you cannot turn off the subtitle displayed on the television.
- When converting to XP mode, select the audio to record with “Audio Mode for XP Recording” before converting the recording mode. (→ 100)
- Select the audio to record when converting to “HG”, “HX”, “HE”, or “HL” modes. (→ 100, Audio Channels for HG/HX/HE/HL Recording)
- In titles with the Auto Renewal Recording function (→ 41) set, a programme may be unintentionally converted while in “During standby”. So it is recommended to convert the recording mode by selecting “Now”.
- If converted to the “HG”, “HX”, “HE”, or “HL” mode, an image of the aspect ratio 4:3 becomes the aspect ratio set in “Aspect for Recording” in the Setup menu. (→ 98)
- **Regarding titles recorded from radio service**  
The data size of the title recorded from radio service will be larger after converted for copy.  
It is recommended that you keep them in DR mode.

# Create/Playback/Edit of the Chapter

## HDD RAM

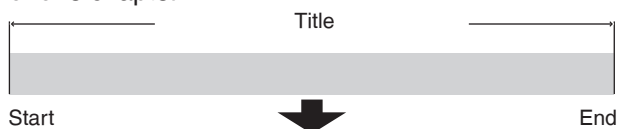
Creating/Playback/Editing is possible.

## -R -R DL -RW(V) -RW(VR) +R +R DL +RW

Only playback of chapter is possible.

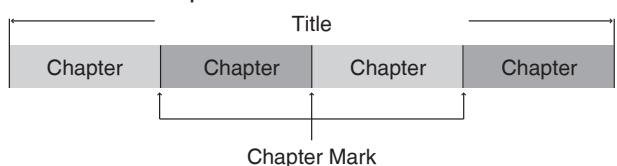
### Regarding Chapters

Programmes are recorded as a single title consisting of one chapter.



## HDD RAM

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



- The maximum number of items on a disc:  
(Depends on the state of recording.)

**HDD** : Approx. 1000 per title

**RAM** : Approx. 1000

## Notes

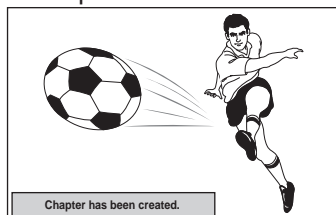
- **HDD** You will not be able to perform the Resume play function (→ 26) or “Change Thumbnail” (→ 52) with a title with the maximum number of chapters.
- **HDD** Chapter Marks created will be maintained when copied or used “DR File Conversion”. But, it will not maintain the exceeded amount if it exceeds the maximum chapter numbers.

## Create Chapter Mark

During the playback or pause

- 1 Press [CREATE CHAPTER].

– Chapters are divided at the point pressed.



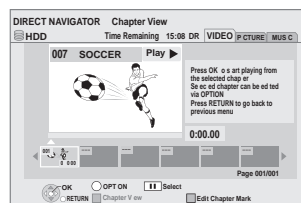
## Tips

### To delete the Chapter Mark

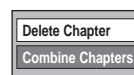
1. While paused  
Press [◀▶] and skip to the location you want to delete.
2. Press [CREATE CHAPTER].
3. Press [◀▶] to select “Yes”, then press [OK].

## Editing and playing chapters

- 1 Press [DRIVE SELECT] to select the drive.
- 2 Press [DIRECT NAVIGATOR].  
**HDD RAM** When “VIDEO” is not selected, press the “Red” button to select “VIDEO”.
- 3 Press [▲, ▼] to select the title, then press [OPTION].
- 4 Press [▲, ▼] to select “Chapter View”, then press [OK].
- 5 Press [◀, ▶] to select the chapter.  
To start play: Press [OK].  
To edit: Step 6.  
To create: Press the “Green” button. (→ below, Create Chapter)



- 6 Press [OPTION], then press [▲, ▼] to select the operation, then press [OK].



Refer to “Chapter operations” (→ below).

## Tips

### To return to the previous screen

Press [BACK/RETURN ↵].

### To exit the screen

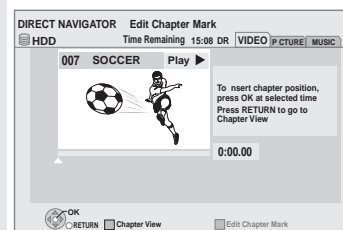
Press [EXIT].

## Chapter operations

After performing steps 1–5 (→ above)

### Create Chapter

Select the point where you want to start a new chapter while viewing the title.



- 1 Press [OK] at the point you want to divide.
  - Repeat this step to divide at other points.
- 2 Press [BACK/RETURN ↵] to go to Chapter View screen.

After performing steps 1–6 (→ above)

### Delete Chapter\*

Press [◀, ▶] to select “Delete”, then press [OK].

- Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.
- Select “Combine Chapters” (→ below) when you only want to delete the division point between chapters. (The recorded contents will not be deleted.)

### Combine Chapters

Press [◀, ▶] to select “Combine”, then press [OK].

- The selected chapter and following chapter are combined.

\*Multiple editing (→ 51) is possible.

# Copying Titles

There are following copying methods.

<b>Copy Title Playing</b>	Copy the playing title on the HDD to the disc. (→ 58)
<b>Copy</b>	Make a copying list and then copy. You can set the unit to copy titles in the way you want. (→ 59)
<b>Copy AVCHD</b>	High definition video (AVCHD format) can be copied from disc, SD card or USB. (→ 66)

## Copy direction

Copy source	Copy destination	Possible copying method	Copy speed
<b>HDD</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>	Copy Title Playing Copy	<ul style="list-style-type: none"> <li>The high speed copy may not be possible depending on the destination disc or the title to copy. (→ 57, When is high speed copy not possible?)</li> </ul>
<b>RAM</b> <b>-RW(VR)</b>	<b>HDD</b>	Copy	High speed
<b>+RW</b>	<b>HDD</b>	Copy	Normal speed
<b>Before finalise</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b>	Cannot copy		
<b>DVD-V*</b> <b>After finalise</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b>	<b>HDD</b>	Copy	Normal speed
<b>SD Video (MPEG2 format)</b> <ul style="list-style-type: none"> <li>From an SD card or Panasonic's video camera, etc. (from USB)</li> </ul>	<b>HDD</b> <b>RAM</b>	Copy	High speed
	<b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b> <b>+RW</b>	Cannot copy	
<b>HD Video (AVCHD format)</b> <ul style="list-style-type: none"> <li>From discs</li> </ul>	<b>HDD</b>	Copy AVCHD	High speed
<b>HD Video (AVCHD format)</b> <ul style="list-style-type: none"> <li>From an SD card or Panasonic's video camera, etc. (from USB)</li> </ul>	<b>HDD</b>	Copy AVCHD	High speed
	<b>RAM</b> <b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b> <b>+RW</b>	Cannot copy	

\*Almost all DVD-Video on sale have been treated to prevent illegal copying. Any software that has been so treated cannot be recorded using this unit.

# Copying Titles

## Copy speed

(○: Possible, -: Impossible)

	High speed mode	Normal speed mode
<b>Features</b>	Copy with shorter time than the recorded time of the title with same quality (recording mode).	It will take same or longer time as the recorded time of the titles to be copied. • Even if you select a recording mode with better picture quality than the original, the picture quality does not improve.
<b>Are chapters maintained?</b>	○ <sup>*1</sup>	○ <sup>*1</sup>
<b>Are thumbnails maintained?</b>	○	○ <sup>*2</sup>
<b>Recording and Playing while Copying</b>	○ <sup>*3</sup>	-

<sup>\*1</sup> Position of the chapter might shift slightly.

It will not maintain the exceeded amount if it exceeds the maximum chapter numbers on a disc.

- **RAM -R -R DL -RW(V)** : Approx. 1000

- **+R +R DL +RW** : Approx. 254

(Depends on the state of recording.)

<sup>\*2</sup> Position of the thumbnails might shift slightly. (May not be maintained depending on the state of recording.)

<sup>\*3</sup> Possible only with titles on the HDD

[However it is not possible when copying with finalisation/creating top menu or when copying SD Video (MPEG2 format) or when copying HD Video (AVCHD format).]

-You cannot perform chasing play or edit, etc. while copying.

-Still pictures or music cannot be played.

## Copy restrictions

Some programmes on freesat channels are copy-restricted.

## Copying list icons and functions

Depending on the icon, you may be informed about the on-screen display.



Titles that cannot be copied in high speed mode



Titles with guidance information (→ 34, Parental Control) or titles recorded from channels with child lock (→ 97, Child Lock)  
You have to enter your PIN when you select these titles.



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 time selected on the unit.

- Titles displaying these marks cannot be selected.



## Frequently Asked Questions

<p><b>When is high speed copy not possible?</b></p>	<p>It will copy at normal speed in following cases:</p> <ul style="list-style-type: none"> <li>• Copying to <b>RAM -R -R DL -RW(V) +R +R DL +RW</b> in following conditions: <ul style="list-style-type: none"> <li>– Titles in DR, HG, HX, HE, HL mode</li> <li>– Title of the AVCHD copied to the HDD</li> </ul> </li> <li>• Copying to <b>-R -R DL -RW(V) +R +R DL +RW</b> in following conditions: <ul style="list-style-type: none"> <li>– Copy including a title that was recorded to HDD with “Recording Format for DVD” set to “VR format”</li> <li>– Titles that contain many deleted segments.</li> <li>– Titles that have been copied to the HDD from an SD card or a Panasonic’s video camera, etc. with HDD (SD Video) (→ 67).</li> <li>– <b>+R +R DL +RW</b> Titles recorded in “EP” mode and “FR (recordings 5 hours or longer)” mode.</li> <li>– <b>+R +R DL +RW</b> Titles recorded in 16:9 aspect</li> <li>– <b>-R -R DL -RW(V)</b> Titles recorded in 16:9 aspect using “EP” mode or “FR (recordings 5 hours or longer)” mode</li> </ul> </li> <li>• Setting “Recording Mode” to anything but “High Speed”</li> <li>• Copying from +RW to HDD</li> <li>• <b>-R -R DL -RW(V) +R +R DL</b> When copying from the finalised disc to HDD</li> </ul>
<p><b>When copying titles in high speed mode to high speed recording compatible discs</b></p>	<p>The sound of the disc rotating becomes louder than normal. If you want copy to perform more quietly, select “Normal (Silent)” in “DVD Speed for High Speed Copy” in the Setup menu (→ 98).</p>
<p><b>-R -R DL -RW(V) +R +R DL +RW</b> <b>When copying to disc in normal speed mode</b></p>	<p>When not copying in high speed mode, titles are temporarily copied at normal speed to the HDD and then copied at high speed to the disc. The titles that were temporarily copied to the HDD are then deleted. You cannot copy to the disc in the following cases.</p> <ul style="list-style-type: none"> <li>– When there is not enough free space on the HDD. (When copying to a new blank disc, if you intend to fill a new disc when copying to it, the equivalent of up to 4 hours of free space in SP mode is needed on the HDD.)</li> <li>– When the number of titles recorded to the HDD and the number of titles to be copied to the disc is greater than 499 in total.</li> </ul>
<p><b>When stopping the copy during copy</b></p>	<p><b>When High-speed copying</b> All titles that have completely copied at the point cancelled are copied.</p> <p><b>When Normal Speed copying</b> Copies until the point cancelled.</p> <ul style="list-style-type: none"> <li>• <b>-R -R DL -RW(V) +R +R DL +RW</b> If copy is cancelled during the step while temporarily copying to the HDD, then nothing will be copied. However, if copy is cancelled during the step while copying to disc from the HDD, then only titles completely copied at the point cancelled are copied.</li> </ul> <p>Even if the title was not copied to the DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW, the amount of remaining writable disc space becomes less.</p>
<p><b>Is it possible to copy to the disc, SD card, or USB memory after copying HD video (AVCHD format) to the HDD?</b></p>	<ul style="list-style-type: none"> <li>• It can be copied to the disc. <ul style="list-style-type: none"> <li>– <b>RAM -R -R DL -RW(V) +R +R DL +RW</b> It will be copied with SD quality. (It cannot be copied as it is in HD picture quality.)</li> </ul> </li> <li>• It cannot be copied to SD card or USB memory.</li> </ul>
<p><b>MPEG-2 or AVCHD files are not recognised.</b></p>	<ul style="list-style-type: none"> <li>• Only MPEG-2 or AVCHD on a Panasonic’s video camera, etc. will be recognised. MPEG-2 or AVCHD copied to USB memory or an SD card will not be recognised.</li> </ul>
<p><b>Regarding titles recorded in DR mode from radio service</b></p>	<p>Picture data will be added to the titles recorded in DR mode from radio service when copying them or converting them to these recording modes using “DR File Conversion”. Therefore, the data size will be larger after copying or “DR File Conversion”.</p> <ul style="list-style-type: none"> <li>– If you are going to copy the titles to disc with least audio degradation It is recommended that you select LP mode.</li> <li>– If you are going to copy the titles to disc with least data size It is recommended that you select them to EP (8 hours) mode.</li> </ul>

# Copying Titles

## Copy Title Playing

Copy the playing title on the HDD to the disc.

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

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

### 1 Playback the title to copy.



When copying the title in DR mode with multiple audio and subtitles

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

- Only the audio selected in “Multi Audio/AD” in the Disc menu will be copied for the multiple audio. (→ 86)
- Subtitle displayed during playback will be copied. (→ 47)

### 2 OPTION



### 3 ▲, ▼ to select “Copy Title Playing”, then OK



### 4 ◀, ▶ to select “Start”, then OK



## Tips

### To stop copying

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

### To return to the previous screen

Press [BACK/RETURN ↵].

### Recording and playing while copying

You can record and play using the HDD while high speed copying.

- Still pictures and music recorded on the HDD cannot be played.

### • To confirm the current progress

Press [STATUS ⓘ].

## Speed and recording mode when copying

### Titles in DR, HG, HX, HE or HL mode

Copy destination	Copy speed	Recording mode
<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 mode

Copy destination	Copy speed	Recording mode
<b>RAM</b>	High speed* <sup>1</sup>	Same as title to be copied* <sup>1</sup>
<b>-R</b> <b>-R DL</b> <b>-RW(V)</b> <b>+R</b> <b>+R DL</b> <b>+RW</b>	High speed* <sup>1</sup> * <sup>2</sup>	Same as title to be copied* <sup>1</sup>

\*<sup>1</sup> When the copy destination (disc) does not have enough space, copy will perform at normal speed in FR mode.

\*<sup>2</sup> Titles that were recorded with “Recording Format for DVD” (→ 98) set to “VR format” will be copied with normal speed. In the following cases, even if “Recording Format for DVD” is set to “Video format”, copy will perform at normal speed.

- **+R** **+R DL** **+RW** When the copying source was recorded in “EP” or “FR (recordings 5 hours or longer)” mode.
- When the copy destination (disc) does not have enough space.
- When the title aspect for the copying source and “Aspect for Recording” do not match.
- When the title aspect for the copying source is 16:9:
  - **+R** **+R DL** **+RW**
  - **-R** **-R DL** **-RW(V)** copying source was recorded in “EP” or “FR (recordings 5 hours or longer)” mode.

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 (→ 94). To play +RW on other players, we recommend you “Create Top Menu” (→ 94), but they may not play on all DVD players.

# Copying using the copying list —Copy

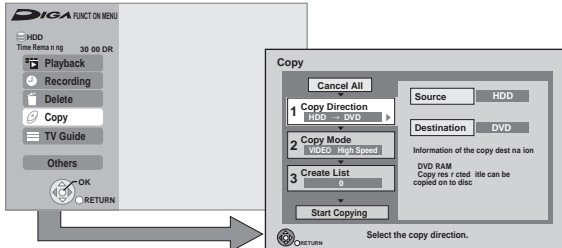
HDD ↔ RAM +RW

-RW(VR) → HDD

HDD → -R -R DL -RW(V) +R +R DL

You can order titles as desired for copy to disc.

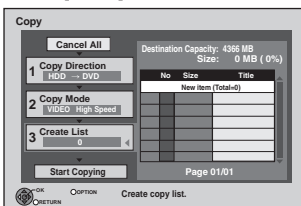
- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Copy”, then press [OK].



– If you are not going to change each setting, press [▼] several times (→ step 7).

- 3 Set the copy direction.
  - If you are not going to change the copying direction, press [▼] (→ step 4).
  - 1 Press [▲, ▼] to select “Copy Direction”, then press [▶].
  - 2 Press [▲, ▼] to select “Source”, then press [OK].
  - 3 Press [▲, ▼] to select the drive, then press [OK].  
If you select “HDD”, “Destination” is automatically set to “DVD” or vice versa. (→ step 6)
  - 4 Press [▲, ▼] to select “Destination”, then press [OK].
  - 5 Press [▲, ▼] to select the drive, then press [OK].  
The same drive as the copy source cannot be selected.
  - 6 Press [◀] to confirm.
- 4 Set the recording mode.
  - If you are not going to change the recording mode, press [▼] twice (→ step 5).
  - 1 Press [▲, ▼] to select “Copy Mode”, then press [▶].
  - 2 Press [▲, ▼] to select “Format”, then press [OK].
  - 3 Press [▲, ▼] to select “VIDEO”, then press [OK].
  - 4 Press [▲, ▼] to select “Recording Mode”, then press [OK].
  - 5 Press [▲, ▼] to select the mode, then press [OK].
  - 6 Press [◀] to confirm.

- 5 Register titles for copy.
  - If you are going to copy a registered list without making any changes to it, press [▼] twice (→ step 6).
  - 1 Press [▲, ▼] to select “Create List”, then press [▶].



- 2 Press [▲, ▼] to select “New item”, then press [OK].
- 3 Press [▲, ▼] to select the title, then press [III].  
A check mark is displayed. Repeat this step until you select all necessary items.
  - Press [III] again to cancel.
  - The items will be copied in the order of the copying list.  
If you want to specify the order, repeat selecting one item at a time.
  - To view other pages  
Press [◀◀, ▶▶].
- 4 Press [OK].
  - To edit the copying list (→ right)  
You cannot start copying when the value of the “Size” exceeds 100% (“Destination Capacity” is not sufficient) (→ 60, About the data size for copying).
- 5 Press [◀] to confirm.

- 6 Set other settings.

– If you are not going to change these settings, press [▼] twice (→ step 7)

- 1 Press [▲, ▼] to select “Other Settings”, then press [▶].  
“Subtitles”

(Only when copying titles in DR mode and the recording mode other than High Speed is selected)

- 2 Press [▲, ▼] to select “Subtitles”, then press [OK].
- 3 Press [▲, ▼] to select “Automatic” or “Off”, then press [OK].
  - If “Automatic” is selected  
Subtitle selected in “Preferred Subtitles” in the Setup menu (→ 97) will be copied. (The copied subtitle cannot be switched during playback.)
  - If “Off” is selected  
Subtitle in the source titles will not be copied.

“Finalise” or “Create Top Menu”

(HDD → -R -R DL -RW(V) +R +R DL +RW only)

- 2 Press [▲, ▼] to select “Finalise” or “Create Top Menu”, then press [OK].
- 3 Press [▲, ▼] to select “On” or “Off”, then press [OK].  
If “On” is selected
  - -R -R DL -RW(V) +R +R DL After finalising, the discs become play-only and you can also play them on other DVD equipment. However, you can no longer record or edit.
  - +RW Create the Top Menu. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.

“Audio Description”

(Normal Speed Copy only)

- 2 Press [▲, ▼] to select “Audio Description”, then press [OK].
- 3 Press [▲, ▼] to select “Automatic” or “Off”, then press [OK].
  - If “Automatic” is selected  
If title recorded in DR mode includes Audio Description, the title will be copied with Audio Description.
  - If “Off” is selected  
Title recorded in DR mode will be copied without Audio Description.
- 4 Press [◀] to confirm.

- 7 Press [▲, ▼] to select “Start Copying”, then press [OK].
- 8 Press [◀] to select “Yes”, then press [OK] to start copying.

## Edit the copying list

Select the item after step 5–4 (→ left).  
Press [OPTION].



Delete All	Delete all items registered on the copying list. 1. Press [▲, ▼] to select “Delete All”, then press [OK]. 2. Press [◀, ▶] to select “Yes”, then press [OK].
Add	Add new items to the copying list. 1. Press [▲, ▼] to select “Add”, then press [OK]. 2. Press [▲, ▼] to select the title, then press [III]. A check mark is displayed. Repeat this step until you select all necessary items. • Press [III] again to cancel. 3. Press [OK].
Delete	Delete the selected items. 1. Press [▲, ▼] to select “Delete”, then press [OK]. 2. Press [◀, ▶] to select “Yes”, then press [OK].
Move	Move selected items or change the order of items on the copying list. 1. Press [▲, ▼] to select “Move”, then press [OK]. 2. Press [▲, ▼] to select the destination, then press [OK].

# Copying Titles

## Cancel all registered copying setting and lists

After performing steps ①–② (→ 59)

- ③ Press [▲, ▼] to select “Cancel All”, then press [OK].
  - ④ Press [◀] to select “Yes”, then press [OK].
- The settings and lists may be cancelled in the following situations.
    - When a title, still picture, etc. has been recorded or deleted at the copy source
    - When steps have been taken, for instance, to turn off the unit, remove the card open the tray, change the copy direction, etc.

## About the data size for copying

Data size of each registered item

No.	Size	Title
	New Item	(Total=#)

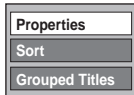
Data size recorded to the copy destination

- 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.

## To check the properties of a title and sort Copying list

After performing ⑤–② (→ 59)

- ③ Press [▲, ▼] to select the title, then press [OPTION].



- ④ Press [▲, ▼] to select “Properties” or “Sort”, then press [OK].

### Properties:

The name, recording date, channel etc. of the selected title are shown. (You cannot select this item if a title has a check mark.)

### Sort (All Titles screen only):

Press [▲, ▼] to select the item, then press [OK].

This changes the way that titles are displayed. You can select to display titles by No., Date, Day, Channel, Start Time and Title Name. (You cannot select this item if a title has a check mark.) If you close the Copying list screen, the display order is cancelled.

## Tips

**To return to the previous screen in steps ①–⑦**  
Press [BACK/RETURN ⏪].

**To view other pages in step ⑤–③**  
Press [◀, ▶].

**While copying (after step ③)**

### To stop copying

Press and hold [BACK/RETURN ⏪] for 3 seconds. (You cannot stop while finalising.)

### When you stop High-speed copying

All titles that have completely copied at the point cancelled are copied.

### When you stop Normal Speed copying

Copies until 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. However, if copy is cancelled during the step while copying to disc from the HDD, then only titles completely copied at the point cancelled are copied.

Even if the title was not copied to the DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW, the amount of remaining writable disc space becomes less.

### Recording and playing while copying

You can record or play using the HDD while high speed copying. (Only when high speed copying without finalising or creating Top Menu)

– Still pictures and music recorded on the HDD cannot be played.

Press [OK] to cancel the screen display.

– **To confirm the current progress**

Press [STATUS ⓘ].

## Notes

- Titles in the grouped titles and other titles cannot be registered simultaneously.
- 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. To play +RW on other players, we recommend you “Create Top Menu” (→ 94), but they may not play on all DVD players.

## Copying a finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL

### DVD-V → HDD

You can copy the content of finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, and +R DL to the HDD and re-edit the content copied to the HDD.

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

- When “Recording Format for DVD” (→ 98) is set to “Video format” and you make a copy, the copy will be made using the picture size selected in “Aspect for Recording” (→ 98) of the Setup menu.
- **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 following cannot be copied: Video CD, Audio CD and so on.

### Preparation:

- Insert the finalised disc (→ 118).

After performing steps ①–④ (“Format” is automatically set to “DVD-Video”) (→ 59, Copying using the copying list–Copy)

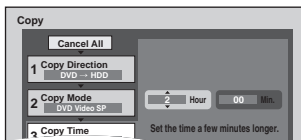
### ⑤ Set “Copy Time”.

- If you are not going to change the setting (→ step ⑥).

#### Setting the unit to copy according to the set time

- ① Press [▲, ▼] to select “Copy Time”, then press [▶].
  - ② Press [▲, ▼] to select “Time Setting”, then press [OK].
- Setting the unit to copy all the content on the disc
    - ③ Press [▲, ▼] to select “Off”, then press [OK].
    - ④ Press [◀] to confirm.

Copy will continue until there is not enough available recording space on the HDD.
  - Setting the copying time
    - ③ Press [▲, ▼] to select “On”, then press [OK].
    - ④ Press [▲, ▼] to select “Copy Time”, then press [OK].



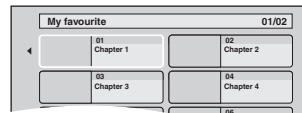
- ⑤ Press [◀, ▶] to select “Hour” or “Min.”, then press [▲, ▼] to set the recording time.
  - ⑥ Press [OK].
  - ⑦ Press [◀] to confirm.
- Copying to the HDD continues for the set time even after the content being played finishes.
- Set a few minutes longer than the source title, in order to include the operation time before play begins.

### ⑥ Press [▲, ▼] to select “Start Copying”, then press [OK].

### ⑦ Press [◀] to select “Yes”, then press [OK] to start copying.

- The disc top menu is displayed.
- Disc play automatically begins from title 1 when “Title 1” is selected from the “Auto-Play Select” menu when finalising the disc (→ 94).

- ⑧ When the top menu is displayed Press [▲, ▼, ◀, ▶] to select the title you want to start copying, then press [OK].



While playing in order, all the titles after the selected title are recorded until the set time. (After the last title on the disc has finished playing the top menu is recorded until the set time is reached.)

### Tips

**To return to the previous screen in steps ①–⑥**  
Press [BACK/RETURN ↵].

#### To stop copying after step ⑦

Press [■].  
You can also press and hold [BACK/RETURN ↵] for 3 seconds to stop copying.

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

### Notes

- The screen on the right is recorded at the beginning.
- The content is recorded as 1 title from the start of copy to the end.
- If play does not begin automatically or if the top menu does not display automatically, press [▶] (PLAY) to start.
- Even if you copy a high quality video/audio DVD, the original picture and audio quality cannot be exactly replicated.
- If you want to copy a title from a DVD-RW (DVD Video Recording format), create a copying list and then copy (→ 59, Copying using the copying list–Copy).







# Recording from a Satellite or Cable Receiver

## HDD

### Manual Recording

#### Preparation:

- Connect a satellite or cable receiver to this unit's input terminals (→ 109).
- When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the Setup menu (→ 101).

- 1** With the unit stopped  to select "AV2" for the satellite or cable receiver you have connected.
- 2**  to select the HDD drive.
- 3**  to select the recording mode.  
–DR, HG, HX, HE, HL, FR mode cannot be selected.
- 4** Select the channel on the satellite or cable receiver.
- 5**  to start recording.

#### Tips

##### To skip unwanted parts

Press [II] to pause recording. (Press again to restart recording.)

##### To stop recording




Press [■].

### Linked timer recordings with external equipment (SKY Digital STB, satellite/cable receiver)–EXT LINK

To record programmes from a SKY Digital STB, satellite/cable receiver using timer programming

#### Preparation:

- Make sure you connect the AV2 input terminal of this unit to "VCR Scart Terminal" of a SKY Digital STB, satellite/cable receiver with a 21-pin scart cable (→ 109).
- Set the "AV2 Input" and "Ext Link" to match the connected equipment in the Setup menu (→ 102).

- 1** Make timer programming on SKY Digital STB, satellite/cable receiver.  
– Refer to the equipment's operating instructions.
- 2**  to select the HDD drive.
- 3**   
– "EXT-L" lights on the unit's display to indicate timer recording standby has been activated.  
– The guidance information of EXT LINK appears.
- 4** 

#### Tips

##### To set external link standby using the FUNCTION MENU display

Perform step **1** (→ above)

1. Press [FUNCTION MENU].
2. Press [▲, ▼] to select "Others", then press [OK].
3. Press [▲, ▼] to select "Ext Link Standby", then press [OK].
4. Press [◀, ▶] to select "Yes", then press [OK].

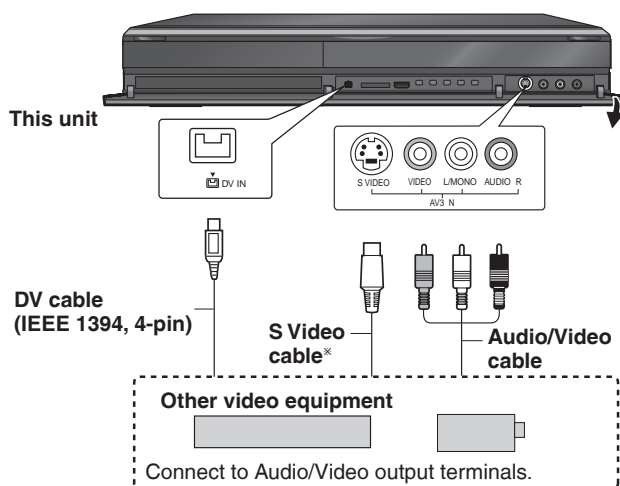
##### To cancel the external control

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

#### Notes

- During EXT LINK standby mode or recording, you cannot press [INPUT SELECT] to select external input other than AV2.
- In order to prevent accidental operation, press [EXT LINK] to cancel the setting after recording is finished.
- This function does not work when "TV System" is set to "NTSC" in the Setup menu (→ 101).
- This function does not work with some equipment. Refer to the equipment's operating instructions.
- The beginnings of recordings may not be recorded correctly in some cases.
- When "Ext Link" is set to "Ext Link 2", this function does not work if the input signal is NTSC system.
- 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" (→ 52).
- While the unit is in EXT LINK standby mode or recording, AV1 output terminal outputs the signal which is input from the AV2 input terminal irrespective of "AV1 Output" setting (→ 102).
- EXT LINK recording is available on HDD only.
- During EXT LINK standby mode or recording, playback is available on both HDD and DVD drive. However, during EXT LINK recording, DVD-Video, still pictures or music cannot be played back.
- When "EXT-L" lights on the unit's display, Direct TV Recording is unavailable.

# Recording from an External Device





- \* The S VIDEO terminal achieves a more vivid picture than the VIDEO terminal.
- If the audio output of the external device is monaural, connect to L/MONO on the AV3 input terminals at the front.
- If DV cable is connected, the S Video and Audio/Video cable are not required.

## Recording from a VCR, etc.


### HDD

#### Preparation:

- Press [DRIVE SELECT] to select the HDD drive.
- When the output signal from the external device is NTSC, change the “TV System” to “NTSC” in the Setup menu (→ 101).


**1**  a few times to select the input where your external device is connected, then 

- Select “AV3” for connection with S Video or Audio/Video cable.
- Select “DV” for connection with DV cable.

**2**  a few times to select the recording mode.

- DR, HG, HX, HE, HL, FR mode cannot be selected.

**3** Start play on the external device.

**4**  at the point you want to start recording.

## Tips

### To skip unwanted parts

Press [II] to pause recording. (Press again to restart recording.)

### To stop recording

Press [■].

The confirmation screen appears. Press [OK].

## Notes

- When timer recording starts while recording from an external device, timer recording takes priority. Recording from the external device stops:
  - When a timer recording from an external device starts.
  - When another timer recording using this unit’s tuner starts.
- If video is copied from another piece of equipment to this unit, then the video quality will be degraded.
- Almost all videos and DVD-Video on sale have been treated to prevent illegal copying. Any software that has been so treated cannot be recorded using this unit.
- During EXT LINK standby mode or recording, you cannot press [INPUT SELECT] to select external input other than AV2.

# Recording from an External Device

## Recording from a DV Camcorder

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

### Preparation:

- Turn on this unit.
- If you record to a disc, insert a disc (→ 118).
- **RAM** If the disc is protected, release protection (→ 92).
- When the output signal from the external device is NTSC, change the “TV System” to “NTSC” in the Setup menu (→ 101).
- This unit connects to DV camcorder with DV cable.

- 1 Turn on the DV equipment and pause play at the point you want to start recording.

The following screen appears.




### When the screen does not appear


Perform step 1 (→ above).

1. Press [FUNCTION MENU].
2. Press [▲, ▼] to select “Others”, then press [OK].
3. Press [▲, ▼] to select “DV Automatic Recording”, then press [OK].

You can proceed to step 2 (→ below).

- 2 ▲, ▼ to select “Rec to HDD” or “Rec to DVD”, then 

– It may take a while for the next screen to display while preparing to record.

- 3  to select the recording mode.

– DR, HG, HX, HE, HL, FR mode cannot be selected.

- 4 ◀ to select “Start”, then 

## Notes

- Only one piece of DV equipment (e.g., Panasonic’s video camera, etc.) can be connected to the unit via the DV input terminal.
- It is not possible to operate the unit from the connected DV equipment.
- The DV input on this unit is for use with DV equipment only. (It cannot be connected to a computer, etc.)
- The DV equipment name may not be shown correctly.
- Depending on the DV equipment, the images or audio may not be input properly.
- Date and time information is not recorded, even if displayed on the DV camcorder.
- You cannot record and play simultaneously.
- **+R** It may not be able to record after repeating about 30 times of step 4 or recording or editing.
- **-R -RW(V)** After finalising, chapters for every 5 minutes will be created.
- **+R** After finalising, chapters for every 8 minutes will be created.
- **+RW** Regardless of creating the top menu, chapters for every 8 minutes will be created.

## Tips

### When recording finishes

The confirmation screen appears.

Press [OK] to finish DV camcorder recording.

### To stop recording

Press [■].

The confirmation screen appears. Press [OK].

If the DV camcorder recording function does not work properly, check the connections and DV equipment settings, and turn the unit off and back on. If that does not work, follow the instructions on page 63.



## Recording via AV3 Input

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

It is possible to record to disc from equipment connected to the AV3 input terminals.

Recording mode is FR mode.

### Preparation:

- Press [DRIVE SELECT] to select the DVD drive.
- When the output signal from the external equipment is NTSC, change “TV System” to “NTSC” in the Setup menu (→ 101).

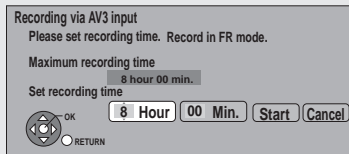
### 1 With the unit stopped



### 2 ▲, ▼ to select “Others”, then OK

### 3 ▲, ▼ to select “Recording via AV3 Input”, then OK

– It may take a while for the next screen to display while preparing to record.



### 4 ◀, ▶ to select “Hour” and “Min.” and ▲, ▼ to set the recording time.

– You can also set the recording time with the numbered buttons.

### 5 Start play on the other equipment.

### 6 When you want to start recording, ◀, ▶ to select “Start”, then OK

## Flexible Recording via AV Input

**HDD**

The title is recorded to the size of a new DVD (4.7GB) by automatically selecting optimal quality between XP and EP (8 hours).

### Preparation:

- When the output signal from the external equipment is NTSC, change “TV System” to “NTSC” in the Setup menu (→ 101).

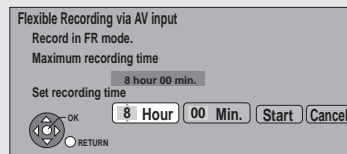
### 1 With the unit stopped



### 2 ▲, ▼ to select “Others”, then OK

### 3 ▲, ▼ to select “Flexible Recording via AV Input”, then OK

– It may take a while for the next screen to display while preparing to record.



### 4 ◀, ▶ to select “Hour” and “Min.” and ▲, ▼ to set the recording time.

– You can also set the recording time with the numbered buttons.

### 5 Start play on the other equipment.

### 6 When you want to start recording, ◀, ▶ to select “Start”, then OK

## Tips

**To return to the previous screen without recording**  
Press [BACK/RETURN ↵].

**To exit the screen without recording**  
Press [EXIT].

**To stop recording partway**  
Press [■].

**To show the remaining time**  
Press [STATUS ⓘ].

## Notes

- You cannot record more than 8 hours.

## Tips

**To return to the previous screen without recording**  
Press [BACK/RETURN ↵].

**To exit the screen without recording**  
Press [EXIT].

**To stop recording partway**  
Press [■].

**To show the remaining time**  
Press [STATUS ⓘ].

## Notes

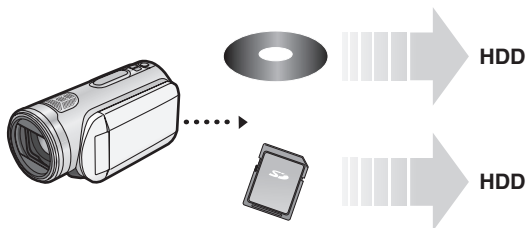
- **-R** It may not be able to record after repeating about 30 times of step 6 recording or editing.
- **-R -RW(V)** After finalising, chapters for every 5 minutes will be created.
- **+R** After finalising, chapters for every 8 minutes will be created.
- **+RW** Regardless of top menu, chapters for every 8 minutes will be created.

# 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.

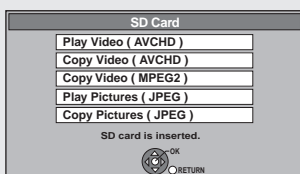
## From an SD card or Discs

AVCHD (Disc) → HDD  
AVCHD (SD card) → HDD



### 1 Insert a disc or card.

e.g., SD



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

### 2 ▲, ▼ to select "Copy Video (AVCHD)", then

### 3 When copying from an SD card The confirmation screen appears, then

### 4 ▲, ▼ to select the title, then



- A check mark is displayed. Repeat this step until you select all necessary titles.
- Press [PAUSE] again to cancel. (All the recordings on the same date become a title.)

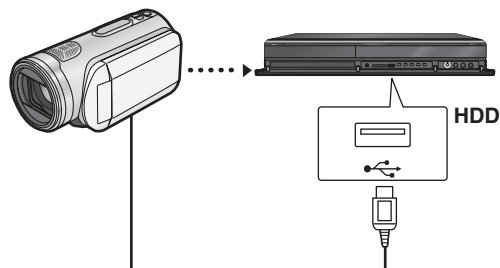
### 5

### 6 ◀, ▶ to select "Start", then

## From a video equipment

HDD of Panasonic's video camera, etc. → HDD

- You cannot playback HD Video in the HDD of Panasonic's video camera, etc. with this unit. You must copy the files to the HDD.



### Preparation:

- Turn on both this unit and the Panasonic's video camera, etc.

### 1 Connect the Panasonic's video camera, etc. to this unit.

### 2 Select the appropriate mode that makes the Panasonic's video camera, etc. ready for data transfer (such as "PC CONNECT") on the Panasonic's video camera, etc.

- Refer to the camera's operating instructions for detail.



Display items differ depending on what is recorded in the USB device.

### 3 ▲, ▼ to select "Copy Video (AVCHD)", then

### 4 The confirmation screen appears, then

### 5 ▲, ▼ to select the title, then



- A check mark is displayed. Repeat this step until you select all necessary titles.
- Press [PAUSE] again to cancel. (All the recordings on the same date become a title.)

### 6

### 7 ◀, ▶ to select "Start", then

## Tips

### To stop copying

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

## Notes

- Record, playback or timer recording cannot be executed while copying.
- 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.
- Copied video will be displayed as "AVCHD" in the "Channel" column of the DIRECT NAVIGATOR screen.
- Depending on the recording condition with the high definition camera, scenes recorded on same day might have different titles ("-1", "-2" appended to date).
- See the instructions of the equipment used to record.

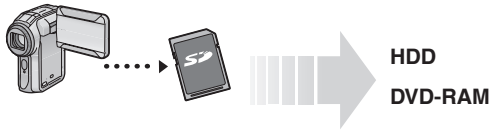
# Copying SD Video (MPEG2 format)

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

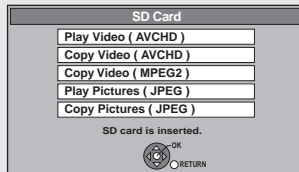
## From an SD card

SD → HDD | RAM

(All the recordings on the same date become a title.)



### 1 Insert a card.



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

### 2 ▲, ▼ to select “Copy Video (MPEG2)”, then

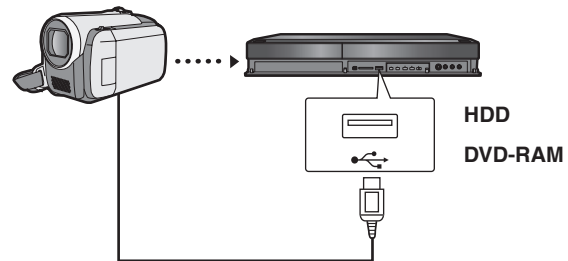
### 3 ▲, ▼ to select “Start Copying”, then

• SD Video on an SD card are automatically registered on the copy list.

### 4 ◀, ▶ to select “Yes”, then

## From a video equipment

HDD of Panasonic's video camera, etc. → HDD | RAM  
(All the recordings on the same date become a title.)



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

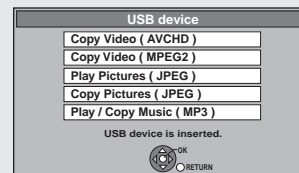
### Preparation:

- Turn on both this unit and the Panasonic's video camera, etc.

### 1 Connect the Panasonic's video camera, etc. to this unit.

### 2 Select the appropriate mode that makes the Panasonic's video camera, etc. ready for data transfer (such as “PC CONNECT”) on the Panasonic's video camera, etc.

– Refer to the camera's operating instructions for detail.



– Display items differ depending on what is recorded in the USB device.

### 3 ▲, ▼ to select “Copy Video (MPEG2)”, then

### 4 ▲, ▼ to select “Start Copying”, then

• SD Video on the Panasonic's video camera, etc. are automatically registered on the copy list.

### 5 ◀, ▶ to select “Yes”, then

## Tips

### To stop copying

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

## Notes

- You cannot playback SD Video on an SD card or in the HDD of 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.

# Playing still pictures

## HDD RAM -R -R DL CD USB SD

- You can play still pictures recorded with a computer onto a DVD-R, DVD-R DL, CD-R/CD-RW, USB memory and SD card.
- You cannot play still pictures while recording or copying.

### Preparation

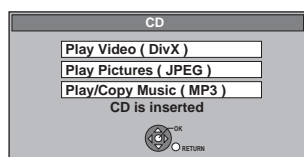
- **RAM -R -R DL CD USB SD** Insert a disc, USB memory or SD card.
- Press [DRIVE SELECT] to select the drive. Select "DVD" for any discs.

The display below automatically appears when you insert an SD card, USB memory or the discs while stopped. Press [▲, ▼] to select "Play Pictures (JPEG)", then press [OK]. Then go to step 2 (→ right).

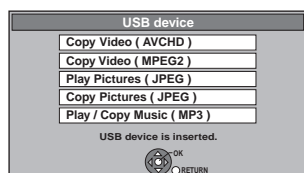
- **-R -R DL CD** It will go to step 2 (→ right) automatically if it is only still pictures that is recorded.

Disc

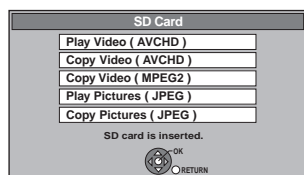
e.g., **CD**



e.g., **USB**



e.g., **SD**



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

If the menu screen (→ above) is not displayed, display it by performing the following operation.

### -R -R DL CD USB SD

1 Press [FUNCTION MENU].

### -R -R DL CD SD

Press [▲, ▼] to select "Playback", then press [OK].

### USB

① Press [▲, ▼] to select "Others", then press [OK].

② Press [▲, ▼] to select "USB device", then press [OK].

## 1 With the unit stopped



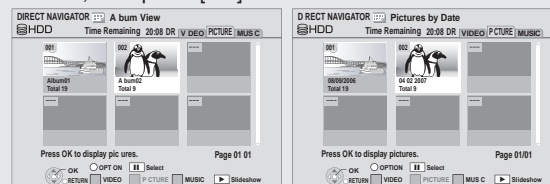
### HDD RAM

- When "PICTURE" is not selected, press the "Green" button to select "PICTURE".
- To switch the display method  
Still pictures copied from SD cards and USB memories are grouped by the shooting date on Pictures by Date screen.

### Switching the DIRECT NAVIGATOR appearance

① Press [OPTION].

② Press [▲, ▼] to select "A bum View" or "Pictures by Date", then press [OK].



Album View screen

Pictures by Date screen

### DIRECT NAVIGATOR screen icons

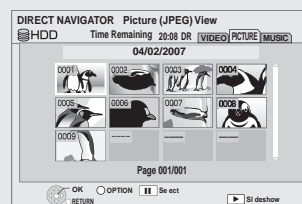
Picture and A bum protected.

**HDD**  
Date that has not yet been viewed  
(Only still pictures copied with "Copy All Pictures" or "Copy New Pictures")

### To show other pages

Press [◀, ▶].

## 2 ▲, ▼, ◀, ▶ to select the album or date, then



e.g., **HDD**

## 3 ▲, ▼, ◀, ▶ to select the still picture, then

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

– Useful functions during still picture play (→ 69)

### Tips

#### To return to previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [DIRECT NAVIGATOR].

## Useful functions during still picture play

### Start Slideshow

You can display still pictures one by one at a constant interval.  
After performing steps ①–② (→ 68)

- 1 Press [▲, ▼, ◀, ▶] to select the album of “Album View” or the date of “Pictures by Date”.
- 2 Press [▶] (PLAY).

You can also start Slideshow with following steps.

After performing step 1 (→ above)

- ① Press [OPTION].
- ② Press [▲, ▼] to select “Start Slideshow”, then press [OK].

#### To end the slideshow

Press [BACK/RETURN ↵].

### Slideshow Settings

After performing steps ①–② (→ 68)

- 1 Press [▲, ▼, ◀, ▶] to select the album of “Album View” or the date of “Pictures by Date”.
- 2 Press [OPTION].
- 3 Press [▲, ▼] to select “Slideshow Settings”, then press [OK].



#### • To change the display interval

After performing steps 1–3

- ① Press [▲, ▼] to select “Display interval”.
- ② Press [◀, ▶] to select the desired interval.
- ③ Press [▲, ▼, ◀, ▶] to select “Set”, then press [OK].

#### • To change the transition effect

After performing steps 1–3

- ① Press [▲, ▼] to select “Transition Effect”.
- ② Press [◀, ▶] to select the transition effect.

“Fade” : Pictures are changed by fading out and fading in.

“Motion” : Pictures are changed by fading out and fading in, while it is enlarged, reduced, or moved up or down.

“Random” : In addition to the “Motion”, pictures are changed by various methods.

- ③ Press [▲, ▼, ◀, ▶] to select “Set”, then press [OK].

#### • To set repeat play

After performing steps 1–3

- ① Press [▲, ▼] to select “Repeat Play”.
- ② Press [◀, ▶] to select “On” or “Off”.
- ③ Press [▲, ▼, ◀, ▶] to select “Set”, then press [OK].

#### • To playback the music

Sample music in this unit or music stored on the HDD (My Favourites or Playlist) (→ 76) can be played during the playback of the slideshow.

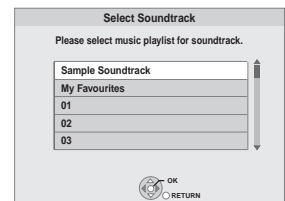
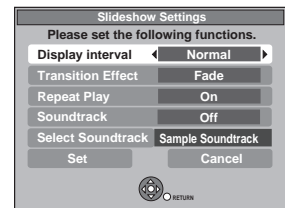
After performing steps 1–3

- ① Press [▲, ▼] to select “Soundtrack”.
- ② Press [◀, ▶] to select “On”.
- ③ Press [▲, ▼, ◀, ▶] to select “Set”, then press [OK].

#### • To change the music to playback

After performing steps 1–3

- ① Press [▲, ▼] to select “Select Soundtrack”, then press [OK].
- ② Press [▲, ▼] to select storage location of soundtrack, then press [OK].
- ③ Press [▲, ▼] to select the music playlist, then press [OK].
- ④ Press [▲, ▼, ◀, ▶] to select “Set”, then press [OK].



### Rotate

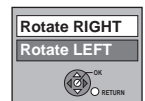
While playing

- 1 Press [OPTION].
- 2 Press [▲, ▼] to select “Rotate RIGHT” or “Rotate LEFT”, then press [OK].

• Rotation information will not be stored in the following cases.

- [R] [R DL] [CD] [USB] Still pictures
- When disc or card is protected
- When played on other equipment
- When copying pictures
- When changing date

• If you remove the SD card while the DIRECT NAVIGATOR screen is displayed, picture rotation information may not be properly stored. Remove the SD card after you exit the DIRECT NAVIGATOR screen.



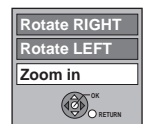
### Zoom in Zoom out

While playing

- 1 Press [OPTION].
- 2 Press [▲, ▼] to select “Zoom in”, then press [OK].

• Press [▲, ▼] to select “Zoom out” in step 2, then press [OK] to resume the display size of the still picture.

- When zooming in, the picture may be cut off.
- The Zoom in information will not be stored.
- This function is only available for small-sized still pictures.



### Properties

Information (e.g., time and date) is shown.

After performing steps ①–② (→ 68)

- 1 Press [▲, ▼, ◀, ▶] to select the album or date, then press [OK].
- 2 Press [▲, ▼, ◀, ▶] to select the still picture.
- 3 Press [OPTION].
- 4 Press [▲, ▼] to select “Properties”, then press [OK].

While playing

Press [STATUS ⓘ] twice.

e.g., [HDD]

2:00 01/01/2009.

■ Remain HDD 30:30 DR

Folder - Picture No. 103 - 0006

Date 01/01/2009 No. 3 / 9

To exit the picture properties screen

Press [STATUS ⓘ].

Shooting date

# Editing still pictures

## Editing still pictures (JPEG)

**HDD** **RAM** **SD**

- Editing can be done in units of pictures, albums, or dates.
- You cannot edit still pictures recorded on DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

### Preparation:

- Press [DRIVE SELECT] to select the drive.
- **RAM** **SD** Release protection (disc, cartridge → 92, card → 23).

### 1 With the unit stopped



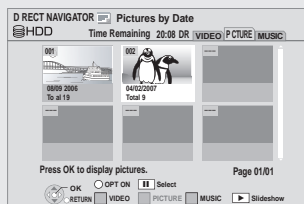
**HDD** **RAM**

When "PICTURE" is not selected, press the "Green" button to select "PICTURE".

**HDD** **RAM**

#### To switch the display method

- ① Press [OPTION].
- ② Press [▲, ▼] to select "Album View" or "Pictures by Date", then press [OK].



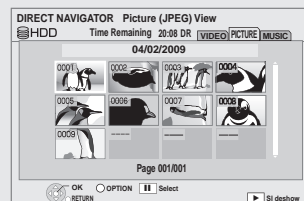
e.g., **HDD**  
Pictures by Date screen

### 2 Editing an album or date:

Select the album or date to be edited, then 

Editing a still picture:

- ① Select the album or date which contains the still picture to edit, then press [OK].



e.g., **HDD**

- ② Select the still pictures to edit, then press [OPTION].

#### To show other pages

Press [◀, ▶].

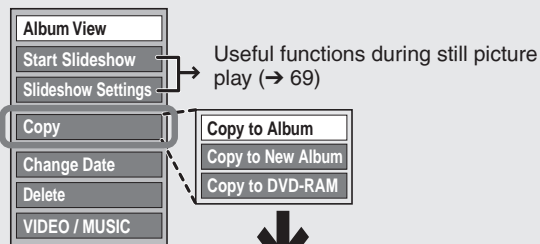
#### Multiple editing

Select with [▲, ▼, ◀, ▶], then press [■]. (Repeat.) A check mark appears. Press [■] again to cancel.

### 3 ▲, ▼ to select the operation, then

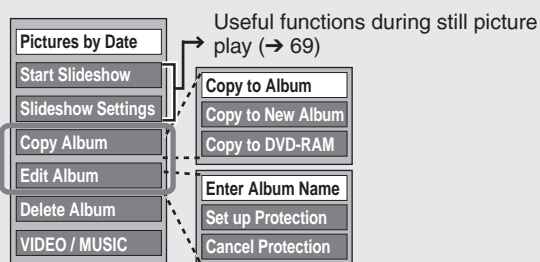


(e.g., **HDD** Pictures by Date)



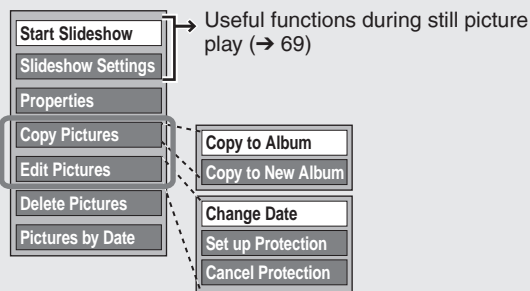
Still pictures operation (→ 71)

(e.g., **HDD** Album View)



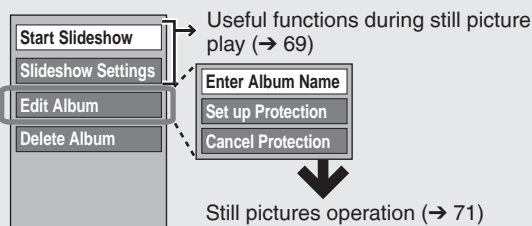
Still pictures operation (→ 71)

(e.g., **HDD** Picture (JPEG) View)



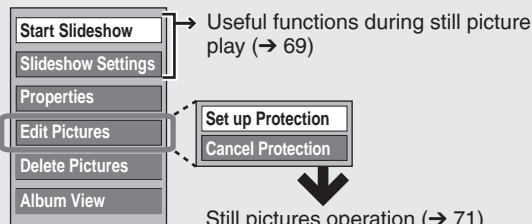
Still pictures operation (→ 71)

(e.g., **SD** Album View)



Still pictures operation (→ 71)

(e.g., **SD** Picture (JPEG) View)



Still pictures operation (→ 71)

### Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [DIRECT NAVIGATOR].

## Still pictures operation

<b>Copy to Album*</b> <b>HDD RAM</b>	Copy the selected album, date or pictures to an existing album. ① <b>Press [◀, ▶] to select “Start”, then [OK].</b> ② <b>Press [▲, ▼, ◀, ▶] to select the destination album, then [OK].</b> • The destination album with protect setting cannot be copied to. • After copying, the screen shows the Album View automatically.
<b>Copy to New Album*</b> <b>HDD RAM</b>	Copy the selected album, date or pictures to new album. ① <b>Press [◀, ▶] to select “Start”, then [OK].</b> ② <b>Press [OK].</b> ③ <b>Press [◀, ▶] to select “Yes” or “No”, then [OK].</b> • If “Yes” is selected: You can give a name to the album. (→ 82, Entering Text) • If “No” is selected: Date of the first recorded picture in the album becomes the album name automatically. (If there is no information about the recording date, it will become “--.--.--.”.) • After copying, the screen shows the Album View automatically.
<b>Copy to DVD-RAM</b> <b>HDD</b> <b>Copy to HDD</b> <b>RAM</b>	<b>Press [◀, ▶] to select “Start”, then [OK].</b> • If you carry out the “Copy to DVD-RAM”, insert a disc advance.
<b>Change Date*</b> <b>HDD RAM</b> (Pictures by Date only)	Change the date of a folder and move the picture in it into the folder of the changed date. ① <b>Press [◀, ▶] to select the item, then [▲, ▼] to change.</b> ② <b>Press [OK].</b> • You can also change the date of a picture. • Date folder of the original is maintained even if all original pictures were deleted after changing the date of folder. Delete it if unrequired. • If there is no folder with the changed date, a new folder will be created.
<b>Enter Album Name</b> <b>HDD RAM SD</b> (Album View only)	You can give a name to the a bum. (→ 82, Entering Text) • Album names input using this unit may not be displayed on other equipment.
<b>Set up Protection*</b> <b>Cancel Protection*</b> <b>HDD RAM SD</b> [Album View and Picture (JPEG) View only]	If set, this will protect the still picture or album from accidental deletion. <b>Press [◀, ▶] to select “Yes”, then [OK].</b> The lock symbol appears when the still picture or album is protected. • Even if the protection setting is used by this unit to protect an album, the album may be deleted by another unit.
<b>Delete*</b> <b>Delete Album*</b> <b>Delete Pictures*</b> <b>HDD RAM SD</b>	<b>Press [◀, ▶] to select “Delete”, then [OK].</b> • Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding. • <b>RAM SD</b> If there is a file other than DCF format or other folder exists in the date or a bum, only the pictures will be deleted, and the date or the album itself will not be deleted.

\* Multiple editing is possible.

[Copy to A bum, Copy to New Album, Change Date : Only when the “Picture (JPEG) View” screen is displayed]

### Notes

- Timer recordings do not start when performing “Copy to A bum”, “Copy to New Album”, “Change Date”, “Copy to DVD-RAM” or “Copy to HDD”.

# Copying still pictures

## HDD RAM USB SD

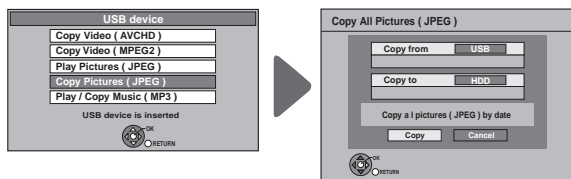
- Pictures copied from SD card and USB memory will be categorised according to the shooting date. Pictures without shooting date will be categorised using the creation date.
- You cannot copy pictures recorded to DVD-R, DVD-R DL, CD-R/CD-RW or USB memory.
- If the space on the destination drive runs out or the number of files/folders to be copied exceeds the maximum (→ 131), copying will stop partway through.
- You cannot copy the information about the picture rotation.
- Timer recording will not start while copying still pictures.

## Copying all the still pictures on the USB memory—Copy All Pictures

### USB → HDD

- 1 While stopped  
Insert the USB memory.  
The menu is automatically displayed.

- If the menu is not displayed (→ 68)



– Display items differ depending on what is recorded in the USB memory.

- 2 Press [▲, ▼] to select “Copy Pictures (JPEG)”, then [OK].
- 3 Press [◀, ▶] to select “Copy”, then press [OK].  
– [▶] will be displayed on the Pictures by Date screen of the Direct Navigator for the added pictures.

### Tips

#### To stop copying during copy

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

### Notes

The structure of folders on the USB memory may not be the same as the copy destination.

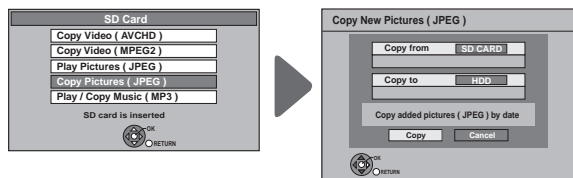
## Copying new still pictures on the SD card—Copy New Pictures

### 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 imported.

- 1 While stopped  
Insert the SD card.  
The menu is automatically displayed.

- If the menu is not displayed (→ 68)



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

- 2 Press [▲, ▼] to select “Copy Pictures (JPEG)”, then [OK].
- 3 Press [◀, ▶] to select “Copy”, then press [OK].  
– Protection of the card is
  - Set: Copy will start
  - Not set: Go to step 4

- 4 Press [◀, ▶] to select “Copy & Delete” or “Copy Only”, then [OK].

If “Copy & Delete” is selected

Copied pictures in the SD card will be deleted after copying.

If “Copy Only” is selected

Pictures will not be deleted.

- [▶] will be displayed on the Pictures by Date screen of the Direct Navigator for the added pictures.

### Tips

#### To stop copying during copy

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

### Notes

This unit saves the information on up to 12,000 still pictures and 30 SD cards. If additional still pictures are imported, then the older information will be deleted.

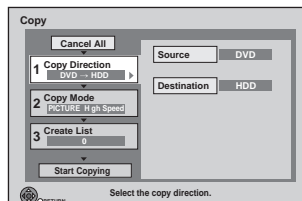
## Copying using the copying list

### HDD ↔ RAM SD

### SD ↔ RAM

### USB → HDD RAM

- 1 While stopped  
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Copy”, then press [OK].



– If you are not going to change the registered list press [▼] several times (→ step 6).

- 3 Set the copy direction.  
– If you are not going to change the copying direction, press [▼] (→ step 4).

- 1 Press [▲, ▼] to select “Copy Direction”, then press [▶].
- 2 Press [▲, ▼] to select “Source”, then press [OK].
- 3 Press [▲, ▼] to select the drive, then press [OK].
- 4 Press [▲, ▼] to select “Destination”, then press [OK].
- 5 Press [▲, ▼] to select the drive, then press [OK].  
The same drive as the copy source cannot be copied.
- 6 Press [◀] to confirm.

- 4 Set the copy mode.

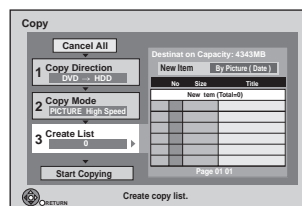
– If you are not going to change the copy mode, press [▼] twice (→ step 5).

- 1 Press [▲, ▼] to select “Copy Mode”, then press [▶].
- 2 Press [▲, ▼] to select “Format”, then press [OK].
- 3 Press [▲, ▼] to select “PICTURE”, then press [OK].  
“Recording Mode” is automatically set to “High Speed”.
- 4 Press [◀] to confirm.

- 5 Register still pictures for copy.

– If you are going to copy a registered list without making any changes to it, press [▼] twice (→ step 6).

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





### ■Select the units to register

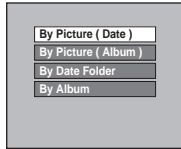
- ① Press [▲, ▼] to select "Create List", then press [▶].
- ② Press [▲, ▼] to select "New Item", then press [OK].



- ③ Press [▲, ▼] to select the item, then press [OK].

e.g., **HDD**

e.g., **SD**



Register with "By Picture (Date/Album)"/"Picture"

1. Press [▲, ▼] to select "New item", then press [OK].
2. Press [▲, ▼, ◀, ▶] to select the still picture, then press [III]. A check mark is displayed. Repeat this step until you select all necessary items.
  - Press [III] again to cancel.
  - Press [◀◀, ▶▶] to show other pages.
  - The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
  - To select another folder (→ right)
3. Press [OK].
  - To edit the copying list (→ right)
4. Press [◀] to confirm.

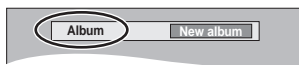
Register with "By Date Folder"/"By Album"/"Album"

1. Press [▲, ▼] to select "New item", then press [OK].
2. Press [▲, ▼, ◀, ▶] to select the folder, then press [III]. A check mark is displayed. Repeat this step until you select all necessary items.
  - Press [III] again to cancel.
  - Press [◀◀, ▶▶] to show other pages.
  - The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
3. Press [OK].
  - To edit the copying list (→ right)
4. Press [◀] to confirm.

- ⑥ Press [▲, ▼] to select "Start Copying", then press [OK].

–Only when copied with "By Picture (Album)" from **HDD** to **RAM SD** or from **RAM** to **HDD SD**

When specifying another album as the copying destination, select "Album".



- ⑦ Press [◀, ▶] to select "Yes", then press [OK] to start copying.

### Tips

**To return to the previous screen in steps ① to ⑥**  
Press [BACK/RETURN ↵].

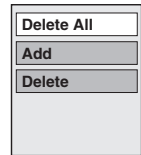
**To stop copying after step ⑦**  
Press and hold [BACK/RETURN ↵] for 3 seconds.

### Notes

- The sequence in which the still pictures are registered on the copy list may not be the same at the copy destination.
- If still pictures are already contained inside the copy destination folder, the new still pictures are recorded following the existing still pictures.

### Edit the copying list

Select the item after step ⑤–③–3 (→ left).  
Press [OPTION].



Delete All	Delete all items registered on the copying list. 1. Press [▲, ▼] to select "Delete All", then press [OK]. 2. Press [◀, ▶] to select "Yes", then press [OK].
Add	Add new items to the copying list. 1. Press [▲, ▼] to select "Add", then press [OK]. 2. Press [▲, ▼, ◀, ▶] to select the still picture or folder, then press [III]. A check mark is displayed. Repeat this step until you select all necessary items. <ul style="list-style-type: none"> <li>• Press [III] again to cancel.</li> </ul> 3. Press [OK].
Delete	Delete the selected items. 1. Press [▲, ▼] to select "Delete", then press [OK]. 2. Press [◀, ▶] to select "Yes", then press [OK].

### Cancel all registered copying setting and lists

After performing steps ①–② (→ 72, Copying using the copying list)

- ③ Press [▲, ▼] to select "Cancel All", then press [OK].
  - ④ Press [◀] to select "Yes", then press [OK].
- The settings and lists may be cancelled in the following situations.
    - When a title, still picture, etc. has been recorded or deleted at the copy source
    - When steps have been taken, for instance, to turn off the unit, open the tray, change the copy direction, etc.

### Select another folder

After performing step ⑤–③–1 [→ left, Register with "By Picture (Date/Album)"/"Picture"]

- ① Press [OPTION].
- ② Press [OK].
- ③ Press [▲, ▼, ◀, ▶] to select the folder, then press [OK].
  - The still pictures of different folders cannot be registered on the same list.

# Deleting still pictures

Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

**HDD RAM SD**

## Preparation:

- Press [DRIVE SELECT] to select the drive.
- **RAM SD** Release protection (disc, cartridge → 92, card → 23).

## 1 While stopped



## 2 ▲, ▼ to select “Delete”, then

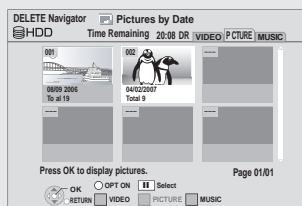


**HDD RAM**

When “PICTURE” is not selected, press the “Green” button to select “PICTURE”.

**HDD RAM**

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



## 3 Deleting a still picture

- ① Press [▲, ▼, ◀, ▶] to select the item which contains the still picture to delete, then press [OK].
- ② Press [▲, ▼, ◀, ▶] to select the still picture, then press [OK].

### Deleting the album/date folder

- ① Press [▲, ▼, ◀, ▶] to select the album/date folder you want to delete.
- ② Press [DEL].

You can confirm the still picture that you have selected using the option menu. (→ 69, Properties, step 2)

### To show other pages

Press [◀◀, ▶▶].

### Multiple deleting

Select with [▲, ▼, ◀, ▶], then press [III]. (Repeat.)

A check mark appears. Press [III] again to cancel.

## 4 ◀, ▶ to select “Delete”, then



The item is deleted.

## Tips

### To return to the previous screen

Press [BACK/RETURN ↵].

### To exit the screen

Press [EXIT].

# Playing music

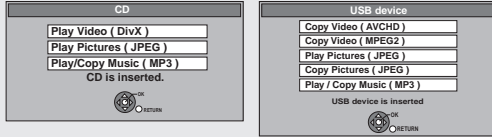
## Playing MP3 files

### -R -R DL CD USB

You can play MP3 files recorded with a computer onto a DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

- You cannot play MP3 files on the USB memory while recording.

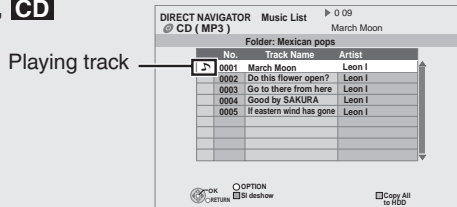
- 1 While stopped  
Insert a disc or USB memory.



- Display items differ depending on what is recorded in each media.
- **-R -R DL CD** Playback will automatically start if only MP3 is recorded.

- 2 ▲, ▼ to select “Play/Copy Music (MP3)”, then

- Playback will automatically start.  
e.g., **CD**



- Playing different track**  
Press [▲, ▼] to select the track, then press [OK].

### Tips

#### To exit the screen

Press [EXIT].  
Playback of track will stop.

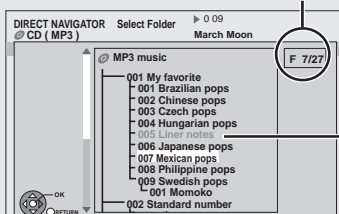
If the menu screen (→ above) is not displayed, display it by performing the following operation.

- 1 Press [FUNCTION MENU].
- 2 **-R -R DL CD**  
Press [▲, ▼] to select “Playback”, then press [OK].  
**USB**  
① Press [▲, ▼] to select “Others”, then press [OK].  
② Press [▲, ▼] to select “USB device”, then press [OK].

## Using the tree screen to find a folder

- 1 While the Music List is displayed
- 2 ▲, ▼ to select “Select Folder”, then

**Selected folder No. /Total folders**  
If the folder has no track, “- -” is displayed as folder number.



You cannot select folders that contain no compatible files.

- 3 ▲, ▼, ◀, ▶ to select a folder, then



The Music List for the folder appears.

### Tips

**To return to the previous screen**  
Press [BACK/RETURN ↵].

### Notes

When this unit is not operated for approximately 5 minutes during music playback, the screen saver is displayed [only when “Screen Saver” in the Setup menu is set to “On” (→ 101)]. To return to the previous screen, press [BACK/RETURN ↵].

## Playing music CD

### CD

While stopped

### Insert a music CD.

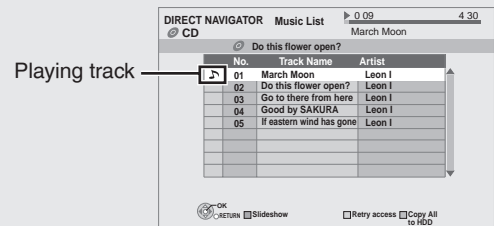
The unit starts accessing the Gracenote® Database (→ 80) and searches for the title information.



### If search results indicate that multiple titles were found

Press [▲, ▼] to select the appropriate title, then [OK].

- Playback will automatically start.



### Playing different track

Press [▲, ▼] to select the track, then press [OK].

### Reacquire the CD title

Press the “Yellow” button.

### Tips

**To exit the screen**  
Press [DIRECT NAVIGATOR].  
Playback of track will stop.

### Notes

When this unit is not operated for approximately 5 minutes during music playback, the screen saver is displayed [only when “Screen Saver” in the Setup menu is set to “On” (→ 101)]. To return to the previous screen, press [BACK/RETURN ↵].

# Playing music

## Playing music recorded on HDD

Copying music to HDD (→ 80)

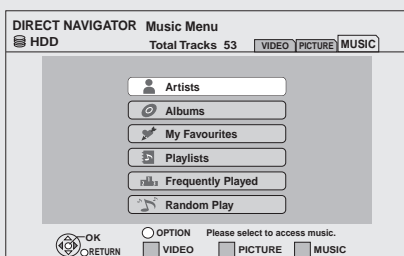
### Preparation:

- Press [DRIVE SELECT] to select the HDD drive.

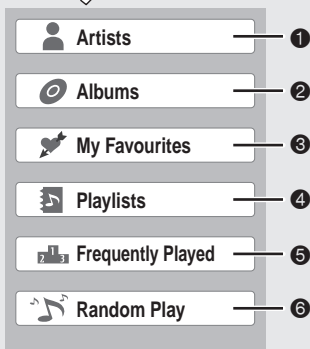
### 1 While stopped



When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".



### 2 ▲, ▼ to select the item, then



- ① Categorise by artist
- ② Categorise by album
- ③ Tracks registered in "My Favourites"
- ④ Tracks registered in "Playlists"
- ⑤ Tracks played most within 200 tracks played recently (up to 30 Tracks)
- ⑥ Random playback of all tracks

#### ■When "Artists" is selected

- ① Press [◀, ▶] to select the initial of the artist.
- ② Press [▲, ▼] to select the name of the artist, then [OK].
- ③ Press [▲, ▼] to select the album, then press [OK].

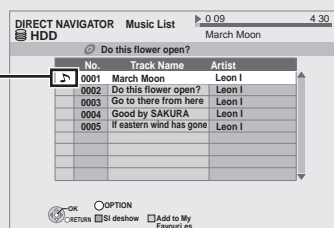
#### ■When "Albums" is selected

- ① Press [◀, ▶] to select the initial of the album.
- ② Press [▲, ▼] to select the album, then press [OK].

### 3 ▲, ▼ to select the track, then



Playing track



### Playing different track

Press [▲, ▼] to select the track, then press [OK].

## Tips

### To return to the previous screen

Press [BACK/RETURN ⇐].

### To exit the screen

Press [DIRECT NAVIGATOR]. Playback of track will stop.

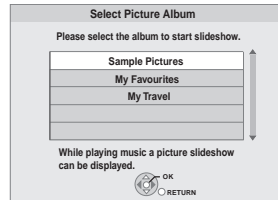
## Notes

- You cannot play music tracks on HDD while copying.
- When this unit is not operated for approximately 5 minutes during music playback, the screen saver is displayed [only when "Screen Saver" in the Setup menu is set to "On" (→ 101)]. To return to the previous screen, press [BACK/RETURN ⇐].

## Useful functions during music play

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

Operations during play

Stop	Press [■].
Pause	Press [⏸]. Press [⏸] again or [▶] (PLAY) to restart play.
Search	Press [◀◀] or [▶▶]. Press [▶](PLAY) to restart play.
Skip	During play or while paused, press [◀◀] or [▶▶]. Skip to the track you want to play. • Each press increases the number of skips.
Register a track to "My Favourites" <b>HDD</b>	While Music List screen is displayed Press [▲, ▼] to select the track, then press the "Green" button. • Up to 99 tracks can be registered.
Properties <b>HDD</b>	While Music List screen is displayed 1 Press [OPTION]. 2 Press [▲, ▼] to select "Properties", then press [OK]. • To exit the Properties screen, press [OK].
Repeat Play Random	1 Press [DISPLAY]. 2 Press [▲, ▼] to select "Play", then press [▶]. 3 Press [▲, ▼] to select "Repeat Play" or "Random", then press [▶]. 4 Press [▲, ▼] to select the item.  • Repeat Play "All": Repeatedly playback the selected album, etc. "Track": Repeatedly playback the selected track "Off" • Random "On": Randomly playback the selected album, etc. "Off"
Re-master	This feature gives you a more natural sound by adding higher frequency signals not recorded on the track. 1 Press [DISPLAY]. 2 Press [▲, ▼] to select "Sound", then press [▶]. 3 Press [▲, ▼] to select "Sound Effects", then press [▶]. 4 Press [▲, ▼] to select "Re-master1" or "Re-master2". • This function is effective for audio from the HDMI terminal or the DIGITAL AUDIO OUT terminal only when "Do by Digital", "DTS", or "MPEG" is set to "PCM". (However, in this case, audio is output as 2 ch from the DIGITAL AUDIO OUT terminal.)
Display Still Pictures (Slideshow)	Sample pictures in this unit or pictures stored on "Album View" of the HDD can be played back as slideshow during playback of the music.  While playing the music Press the "Red" button.  Change the pictures to display 1 Press [OPTION]. 2 Press [▲, ▼] to select "Select Picture Album", then press [OK]. 3 Press [▲, ▼] to select the album, then press [OK].    <b>To end the slideshow</b> Press [BACK/RETURN ↵]. • It will also end when the music is stopped.
Playing music continuously even after turning off power to the television	When the unit is connected to a Panasonic TV (VIERA) that supports HDAVI Control 2 or later and the unit is turned in standby if the power to the television is turned in standby, since "Power off link" (→ 84) operates. The following operations make it possible to keep the power of the unit ON and to play music continuously.  While playing music 1 Press [OPTION]. 2 Press [▲, ▼] to select "TV Power Off", then press [OK].  • Sound may be discontinued for several seconds when the power to the television is turned in standby. • If the operation mentioned above is executed while audio is output from the television, the sound may not be output from the amplifier/receiver. It is recommended to set the amplifier/receiver beforehand so that audio will be output from the amplifier/receiver.

# Editing music/playlist

## Editing music

### HDD

#### Preparation:

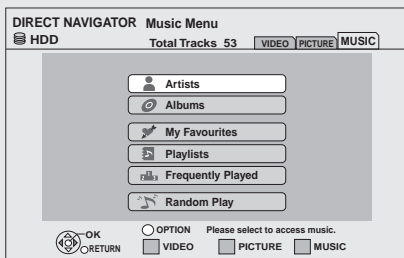
- Press [DRIVE SELECT] to select the HDD drive.

#### 1 While stopped



When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

- When doing "Delete All Tracks", "Clear My Favourites" or "Clear Frequently Played" (→ go to step 3)



#### 2 ▲, ▼ to select item, then

##### ■When "Artists" is selected

- ① Press [◀, ▶] to select the initial of the artist.
- ② Press [▲, ▼] to select the name of the artist, then press [OK].
- ③ Press [▲, ▼] to select the album.
  - To edit the track, press [OK], and select the track with [▲, ▼].

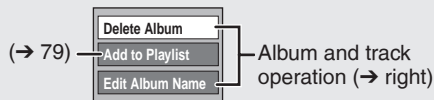
##### ■When "Albums" is selected

- ① Press [◀, ▶] to select the initial of the album.
- ② Press [▲, ▼] to select the album.
  - To edit the track, press [OK], and select the track with [▲, ▼].

#### 3 OPTION

#### 4 ▲, ▼ to select item, then

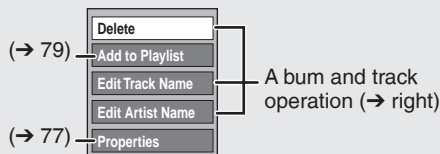
e.g., while selecting album



e.g., while selecting artist



e.g., while selecting track



## Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [DIRECT NAVIGATOR].

## Album and track operation

After performing step 1-4 (→ left)

#### Delete All Tracks

- While displaying Music Menu screen

Delete all tracks in the HDD.

① Press [◀, ▶] to select "Yes", then press [OK].

② Press [◀, ▶] to select "Delete", then press [OK].

- Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

#### Delete All Tracks

- While displaying "Artists" screen

#### Delete Album

- While displaying "Albums" screen

#### Delete

All tracks in the selected Artist or Album are deleted in case of "Delete All Tracks" or "Delete Album".

Press [◀, ▶] to select "Delete", then press [OK].

- Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

#### Edit Album Name

(→ 82, Entering Text)

#### Edit Track Name

#### Edit Artist Name

#### Clear My Favourites

- While displaying Music Menu screen

Remove all tracks in "My Favourites". Tracks themselves are not deleted from the HDD.

Press [◀, ▶] to select "Clear", then press [OK].

#### Clear Frequently Played

- While displaying Music Menu screen

Remove all tracks in "Frequently Played". Tracks themselves are not deleted from the HDD.

Press [◀, ▶] to select "Clear", then press [OK].

#### Remove

- While displaying "My Favourites" or "Frequently Played" screen

Selected track is removed. Track itself is not deleted from the HDD.

Press [◀, ▶] to select "Remove", then press [OK].

## Register track to Playlist

### HDD

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

- Name of the playlist can be changed. (→ right)
- New playlist cannot be added.
- Up to 999 tracks can be registered to each playlist.

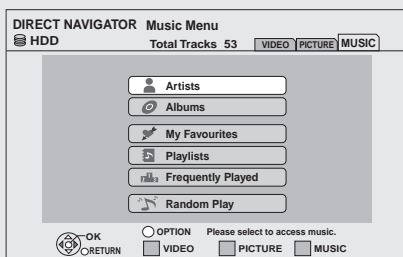
#### Preparation:

- Press [DRIVE SELECT] to select the HDD drive.

### 1 While stopped



When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".



### 2 ▲, ▼ to select item, then

#### ■When "Artists" is selected

- ① Press [◀, ▶] to select the initial of the artist.
- ② Press [▲, ▼] to select the name of the artist, then press [OK].
- ③ Press [▲, ▼] to select the album.
  - To register the track, press [OK], and select the track with [▲, ▼].

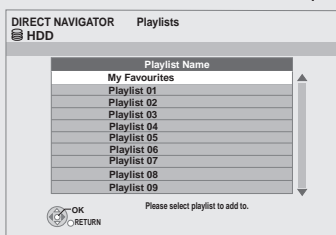
#### ■When "Albums" is selected

- ① Press [◀, ▶] to select the initial of the album.
- ② Press [▲, ▼] to select the album.
  - To register the track, press [OK], and select the track with [▲, ▼].

### 3

### 4 ▲, ▼ to select "Add to Playlist", then

### 5 ▲, ▼ to select the playlist to register, then



### Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [DIRECT NAVIGATOR].

## Editing Playlist

### HDD

### 1 While stopped



When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

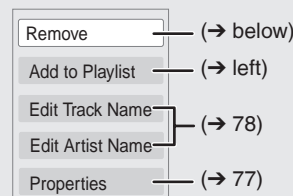
### 2 ▲, ▼ to select "Playlists", then



### 3a Edit the track in the playlist

- ① Press [▲, ▼] to select the playlist, then press [OK].
- ② Press [▲, ▼] to select the track, then press [OPTION].

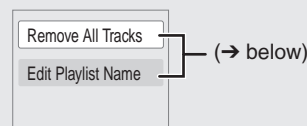
e.g., while selecting the track in playlist



### 3b Edit the playlist

- ① Press [▲, ▼] to select the playlist, then press [OPTION].

e.g., while selecting playlist



### 4 ▲, ▼ to select item, then

### Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [DIRECT NAVIGATOR].

## Playlist operation

After performing step 1-4 (→ above, Editing Playlist)

Remove All Tracks	Remove all tracks in the selected playlist. Tracks themselves are not deleted from the HDD.  <b>Press [◀, ▶] to select "Remove", then press [OK].</b>
Remove	Selected track is removed. Track itself is not deleted from the HDD.  <b>Press [◀, ▶] to select "Remove", then press [OK].</b>
Edit Playlist Name	(→ 82, Entering Text)

# Copying music to HDD

You can store the two formats of music data in this unit's HDD.

## Music CD (CD-DA)

When inserting music CDs, this unit makes access to the internal Gracenote® Database to obtain title information. The album name, track name and artist name are assigned automatically allowing you find the track easily when playing back.

## MP3

You can copy MP3 files from the DVD-R, DVD-R DL, CD or USB memory.

The track name and artist name will be displayed on this unit if the information is contained in ID3 tag of the MP3 file.

## About the Gracenote® Database

The Gracenote® Database is a database used to search and retrieve music CD title information.

When a music CD is inserted, the unit will automatically search for and obtain information about the inserted music CD.

The Gracenote® Database comes pre-installed on this unit, so titles and artist information can be obtained. This unit has an internal database containing information for approximately 350,000 album titles.

If the title of the newly released music CD is not in the built-in database, it is possible to acquire the title automatically by connecting to the network via the Internet. (→ 112)

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.

## Copying music from a disc or a USB memory

### -R -R DL CD USB → HDD

- **CD** (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.
- Audio quality

**CD** (Music CD): LPCM,

**-R -R DL CD USB** (MP3): MP3

- The maximum number of tracks on HDD: 40000 (Depends on the remaining capacity.)  
If titles or pictures are recorded, then the number of albums that can be recorded will be reduced.

## 1 While stopped

### Insert a disc or USB memory.

#### **CD** (Music CD)

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



If search results indicate that multiple titles were found

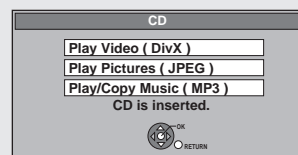
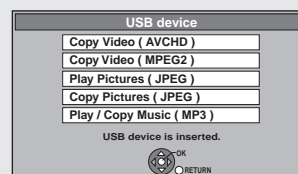
Press [▲, ▼] to select the appropriate title, then press [OK].

#### **-R -R DL CD USB** (MP3)

The menu is automatically displayed.

Press [▲, ▼] to select "Play/Copy Music (MP3)", then press [OK].

e.g., **CD USB** (MP3)

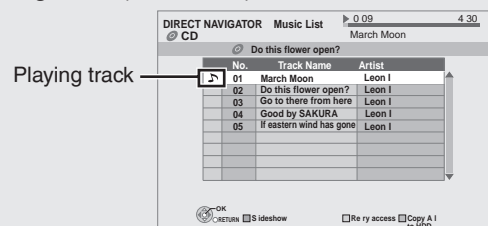


– Display items differ depending on what is recorded in each media.

## 2



(Blue)  
e.g., **CD** (Music CD)



## 3

◀, ▶ to select "Copy", then OK  
Recording starts.

## Tips

### To return to the previous screen

Press [BACK/RETURN ↵] in steps 1 to 2.

### To stop copying

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

## Notes

- While copying, no other operations can be performed. Timer recordings will not proceed.
- Tracks recorded on the HDD cannot be transferred to a disc, USB memory or SD card.
- CDs which have SCMS (Serial Copy Management System) restrictions cannot be recorded to the HDD.



# Deleting music

Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

## HDD

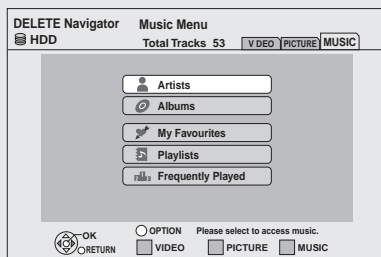
### 1 While stopped



### 2 ▲, ▼ to select “Delete”, then



When “MUSIC” is not selected, press the “Yellow” button to select “MUSIC”.



### 3 Deleting an artist/album (music)

- 1 Press [▲, ▼] to select the item, then press [OK].
- 2 Press [▲, ▼, ◀, ▶] to select the item, then press [DEL].

#### Deleting a track

- 1 Press [▲, ▼] to select the item, then press [OK].
- 2 Press [▲, ▼, ◀, ▶] to select the item, then press [OK].
- 3 Press [▲, ▼] to select the track, then press [OK].

You can confirm the item that you have selected using the option menu. (→ 78, step 3)

### 4 ◀, ▶ to select “Delete”, then



The item is deleted.

## Tips

### To return to the previous screen

Press [BACK/RETURN ↵].

### To exit the screen

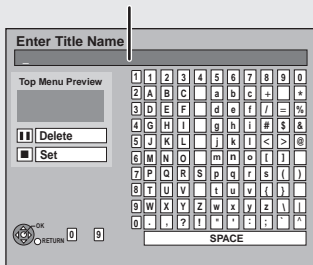
Press [EXIT].

# Entering Text

You can give names to recorded titles, etc.

## 1 When viewing the Enter Title Name screen, etc.

e.g., Entering a title name for a title on **-R**  
**Name field** : shows the text you have entered



## 2 ▲, ▼, ◀, ▶ to select a character, then press

– Repeat this step to enter other characters.

## 3 when you've finished entering text.

### Tips

#### Using the numbered buttons to enter characters

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].

#### To delete a character

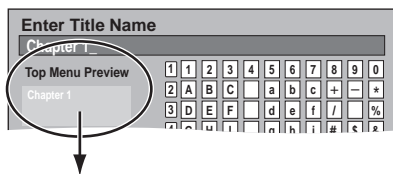
Press [Delete] on a character in the name field.

#### To cancel in the middle

Press [BACK/RETURN ↵].

Characters will not be saved.

### Notes



If you enter a long name, only part of it is shown in the Top Menu after finalisation (→ 94). When entering a title name, the name that will appear in the Top Menu can be previewed in "Top Menu Preview" window.

# Enjoying VIERA CAST™

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

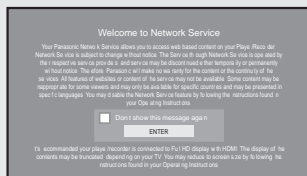
- VIERA CAST requires a broadband Internet connection. Dial-up Internet connections cannot be used.

## Preparation:

- Network connection (→ 112)
- Network setting (→ 106)

## 1 VIERA CAST

– Message is displayed. Please read these instructions carefully and then press [OK] to start VIERA CAST function.



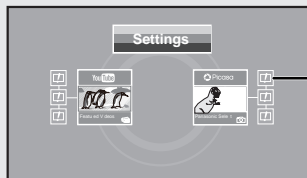
Images are for illustration purpose, message may change without notice.

## 2 ▲, ▼, ◀, ▶ to select the item



- You can operate VIERA CAST using the following buttons on the unit's remote control. [▲, ▼, ◀, ▶], [OK], [BACK/RETURN ↵], [OPTION], coloured buttons and numbered buttons
- To access more features on YouTube or Picasa Web Albums site, enter your user ID and password that you have previously set up with these sites through the internet on your PC. However, not all features may be accessible through VIERA CAST.

### VIERA CAST Home screen;



After you access YouTube or Picasa Web Albums from the VIERA CAST Home screen and add your favourite videos or albums to VIERA CAST, you can choose them easily from the Home screen.

Images are for illustration change without notice.

### Regarding "Settings"

Set VIERA CAST Home screen.

- **My Account:** You can remove your account from the unit.
- **Lock:** Enter a password to lock YouTube and Picasa Web Albums.
- **Notices**

## Notes

- 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.
- Depending on the usage conditions, it may take a while to read all the data.
- The connection to the Internet may take time or the Internet may not be connected depending on the connection environment.
- The unit is connected to the Internet when VIERA CAST is used, generating communication charges.
- If timer recording starts, VIERA CAST will stop.

## Tips

### To return to VIERA CAST Home screen

Press [VIERA CAST].

### To exit

Press [EXIT].

- Set "Network Lock" to "On" to restrict using VIERA CAST. (→ 103)
- Set "Automatic Volume Control" to "Off" when the audio is warped while using VIERA CAST. (→ 107)
- When display of the contents is truncated, set "Picture Zoom" to "Out". (→ 107)

# Linked Operations with the TV (VIERA Link "HDAVI Control™"/Q Link)

You can enjoy linked operations with the TV and receiver by using VIERA Link or 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.

- 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.
- This unit supports "HDAVI Control 4" function. "HDAVI Control 4" is the newest standard (current as of December, 2008) for Panasonic's VIERA Link 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.

## Preparation:

1. Connect this unit to your TV using an HDMI cable and a fully wired 21-pin Scart cable (→ 10), or to your receiver using an HDMI cable (→ 111).
2. Set "VIERA Link" to "On" (→ 102). (The default setting is "On".)
3. Set the "HDAVI Control" operations on the connected equipment (e.g., TV).
  - Set the input channel on VIERA to suit the terminal to be used as "HDAVI Control".
4. Turn on all "HDAVI Control" compatible equipment and 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 (→ 10,11,109).

## Notes

The following systems from other manufacturers have similar function to Q Link from Panasonic. For details, refer to your television'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)

## Notes

- These functions may not work normally depending on the equipment condition.
- About "VIERA Link" function, read the manual of the connected equipment (e.g., TV) too.

## (When the TV is on) Easy playback

### VIERA Link Q Link

When the TV is on and the following operations are performed, the TV's input will automatically switch to HDMI input mode (VIERA Link) or AV input mode (Q Link) and the TV displays the corresponding action. (Picture or sound may not be available for the first few seconds.)

Press [FUNCTION MENU]\*1, [▶] (PLAY)\*2, [DIRECT NAVIGATOR], [GUIDE], [PROG/CHECK] etc.

## (When the TV is off) Power on link

### VIERA Link Q Link

When the TV is off and the following operations are performed, the TV will automatically turn on and display the corresponding action.

(Picture or sound may not be available for the first few seconds.)

Press [FUNCTION MENU]\*1, [▶] (PLAY)\*2, [DIRECT NAVIGATOR], [GUIDE], [PROG/CHECK] etc.

- DVD-V CD

The TV is automatically turned on when you insert the discs.

## Power off link VIERA Link Q Link

When you turn the TV off, the unit is also automatically turned in standby. The unit is automatically turned in standby even if the FUNCTION MENU screen, the status message or the on-screen display is displayed, during playback or when the unit is set to a timer recording. Even if the TV is turned in standby, the unit will not be turned in standby at the same time when recording, copying, finalising, etc.

- When this unit is connected to an "VIERA Link" compatible Panasonic receiver with an HDMI cable, the receiver will also turn off.

**About the Standby Power Save function\***<sup>3</sup>

Even with "Power Save" set to "Off" (→ 104), this unit turns to "Power Save" states (→ 14) when Power off link works, so it is possible to reduce the power consumption while this unit is in standby mode.

- "Standby Power Save" setting is required to be activated on the TV.
- When turning this unit on or off without using Power off link function, this unit will not turn to "Power Save" states.

## Direct TV Recording VIERA Link<sup>※4</sup> Q Link

This function allows you to immediately start recording the programme that you are viewing on the TV.

- Depending on the TV type connected with this unit, this function may not work if you select the TV channels on this unit.
- The titles are recorded to the HDD.
- When the Digital Teletext (→ 89) is displayed, intended image may not be recorded.
- If you switch TV channels while using Direct TV recording, the Direct TV recording stops.
- When "EXT-L" lights on the unit's display (→ 62), Direct TV recording is unavailable.

### To stop recording

Press [■].

## Playing music continuously even after turning off power to the television VIERA Link<sup>※5</sup>

(→ 77, Playing music continuously even after turning off power to the television)

- ※1 This button is available only when this unit is on.
- ※2 When this button is pressed, the playback image is not immediately displayed on the screen and it may not be possible to watch the contents from where playback started. In this case, press [◀◀] or [◀◀] to go back to where playback started.
- ※3 This function is available with the TV that supports "HDAVI Control 4".
- ※4 This function is available with the TV that supports "HDAVI Control 3" or later.
- ※5 This function is available with the TV that supports "HDAVI Control 2" or later.

## Easy control only with VIERA remote control

If you connect this unit to the TV that supports “HDAVI Control 2” or later with an HDMI cable, you can enjoy using more convenient functions.

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

The buttons that you can use for this unit vary depending on the TV. For details, refer to the operating instructions of the TV.

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 buttons on the TV remote control.

## Using the FUNCTION MENU display to operate this unit **VIERA Link**

This function is available with the TV that supports “HDAVI Control 2” or later.

Refer to the TV operating instructions for operating the TV.

### ❶ Display this unit’s “FUNCTION MENU” display using the TV remote control.

- If this unit is turned in standby, this unit will turn on automatically.

### ❷ Select the item you want to operate with the TV remote control, then press [OK].

## Pause live TV programme **VIERA Link**

This function is available with the TV that supports “HDAVI Control 3” or later.

You can pause the TV programme you are watching and resume later by temporarily saving it on the HDD. This is useful when you have to briefly stop watching TV to run an errand.

If you stop the Pause Live TV function, then the TV programme temporarily saved on the HDD will be deleted.

Refer to the TV operating instructions for operating the TV.

### ❶ When you want to pause the TV programme

Turn on the “Pause Live TV” function using the TV remote control.

- This unit turns on automatically.

### ❷ When you want to resume

Display the Control Panel (→ right), then press [OK].

- The TV programme resumes.

Refer to “Notes” on page 91, “To pause the TV programme you are watching—Pause Live TV”.

## Tips

### To stop Pause Live TV

- Press [▼] while the Control Panel is displayed.
- Press [◀, ▶] to select “Yes”, then press [OK].

## Using the OPTION menu window to operate this unit **VIERA Link**

This function is available with the TV that supports “HDAVI Control 2” or later.

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

e.g.,

### ❶ Press [OPTION].

- You cannot use the OPTION menu while the Top Menu for DVD-Video is displayed and while DVD-Video is copied.



### ❷ Select an item, then press [OK].

Control Panel	Control Panel is displayed (→ below).
FUNCTION MENU	FUNCTION MENU is displayed (→ left).
Aspect	Switch the screen mode (→ 90).
Play Menu	Play menu is displayed (→ 87).
Top Menu <b>DVD-V</b>	Top Menu is displayed (→ 26).
Menu <b>DVD-V</b>	Menu is displayed (→ 26).
Drive Select	Select the HDD, DVD or SD drive.
Rotate RIGHT/ Rotate LEFT (JPEG)	Rotate the still pictures (→ 69).
Zoom in /Zoom out (JPEG)	Enlarge or shrink the still picture (→ 69).
TV Power OFF	Play music continuously even after turning off power to the television (→ 77).

## Using the Control Panel **VIERA Link**

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

Select “Control Panel”, then press [OK] in step ❷ of “Using the OPTION menu window to operate this unit” (→ above).

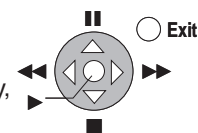
The Control Panel is displayed (→ right).

- While playing a title, etc.

– [▲]: Pause, [▼]: Stop, [◀]: Search backward, [▶]: Search forward, [OK]: Play, [EXIT]: Exit the screen.

- While playing still pictures

– [▼]: Stop, [◀]: View previous picture, [▶]: View next picture, [EXIT]: Exit the screen.



### ■ When you want to leave the TV on and set only this unit to standby mode

Press [⏻] on this unit’s remote control and set to standby mode.

### ■ When not using “HDAVI Control”

Set “VIERA Link” in the Setup menu to “Off” (→ 102).

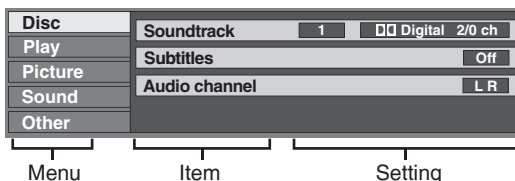
# Setting On-Screen Display

## Accessing the On-Screen Display

When playing discs (except for JPEG discs), you can display and set the options including disc audio, subtitle, image quality, sound effect, Repeat Play, etc. In addition, when receiving the multi-channel broadcast, you can change the audio settings.

Menu options will differ based on disc type and contents.

### 1 Press [DISPLAY].



### 2 Press [▲, ▼] to select a menu, then press [▶].

### 3 Press [▲, ▼] to select an item, then press [▶].

### 4 Press [▲, ▼] to select a setting.

Follow the on-screen prompts to change individual settings.

### Notes

- Some settings may not be changeable, based on the unit's current activity (playing, stopped, etc.) and disc contents.

### Tips

#### To exit the on-screen display

Press [DISPLAY].

## Disc Menu

### Video **AVCHD**

The video recording method appears

### Soundtrack

**HDD** (except the title copied the title in DR mode or the high definition video (AVCHD format))

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

The disc's audio attributes appear. (→ right, Audio attributes)

### **DVD-V AVCHD**

Select the audio and language.

(→ right, Audio attributes, Sound track/Subtitle language)

### DivX

Select the soundtrack number.

- Soundtrack numbers are displayed even when there is only one audio type.

### Subtitles

#### **DVD-V AVCHD**

Turn the subtitle on/off and select the language (→ below, Language).

**HDD** (except the title copied the title in DR mode or the high definition video (AVCHD format))

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

(Only discs that contain subtitle on/off information)

Turn the subtitle on/off.

- Subtitle on/off information cannot be recorded using this unit.

### DivX

Turn the subtitle on/off and select the subtitle number.

- "Text" or subtitle number is displayed even if there are not multiple subtitles.

**Multi Audio/AD HDD** (titles recorded in DR mode, or copied from HD video (AVCHD format))

Switch in the case of multiple audio.

**Subtitle Language HDD** (titles in recorded in DR mode, or copied from HD video (AVCHD format))

Select the subtitle language in the case of multiple languages.

**Audio channel HDD RAM -R -R DL -RW(V) -RW(VR)**

Change audio during playback.

LR / L / R

**Angle DVD-V +R +R DL +RW**

Change the number to select an angle.

### Sound track/Subtitle language

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

### Audio attributes

LPCM/ <input type="checkbox"/> Digital/DTS/MPEG:	Signal type
k (kHz):	Sampling frequency
b (bit):	Number of bits
ch (channel):	Number of channels

### Notes

- You cannot make a change when there is no recording.
- Some discs allow changes to soundtracks, subtitles, and angles only by using the disc's menus (→ 26).

## Play Menu

### Repeat Play

This function works only when the elapsed play time is displayed.

Select the item for repeat play. Depending on the disc, the items that can be selected will differ.

Select "Off" to cancel.

## Picture Menu

### Mode

Select the picture quality mode during play.

Normal:	Default setting
Soft:	Soft picture with fewer video artifacts
Fine:	Details are sharper
Cinema:	Mellows movies, enhances detail in dark scenes. (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.

### Progressive<sup>\*</sup>

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

(When the tray is opened, the setting will return to "Auto".)

Auto:	Automatically detects the film and video content, and appropriately converts it.
Video:	Select when using "Auto", and the content is distorted.
Film:	Select this if the edges of the film content appear jagged or rough when "Auto" is selected.



However, if the video content is distorted as shown in the illustration to the above, then select "Auto".

- <sup>\*</sup> It will work when playing **DVD-V** with the following settings:
- "HDMI Video Mode" is set to "Off" (→ 102)
  - "AV1 Output" is set to "Video (with component)" (→ 102) or "S Video (with component)" (→ 102)
  - "Component Resolution" is set to "576p/480p" (→ 102)

## Sound Menu

### Sound Effects

**HDD RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) CD AVCHD**

#### • Re-master1

#### • Re-master2

(Discs record at 48 kHz or less)

This feature gives you a more natural sound by adding higher frequency signals not recorded on the track.

- This function is effective for audio from the HDMI terminal or the DIGITAL AUDIO OUT terminal only when "Dolby Digital", "DTS", or "MPEG" is set to "PCM". (However, in this case, audio is output as 2ch from the DIGITAL AUDIO OUT terminal.)

### Dialogue Enhancer

**HDD RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) AVCHD**

(3-channel or over only, including a centre channel)

When "On", the volume of the centre channel is raised to make dialogue easier to hear.

## Other Menu

### Position

Change where this menu screen appears on your TV.


# Information Messages

## Digital Satellite Channel Information


You can display the information about programmes (programme name, broadcast time, etc.).

With the unit stopped

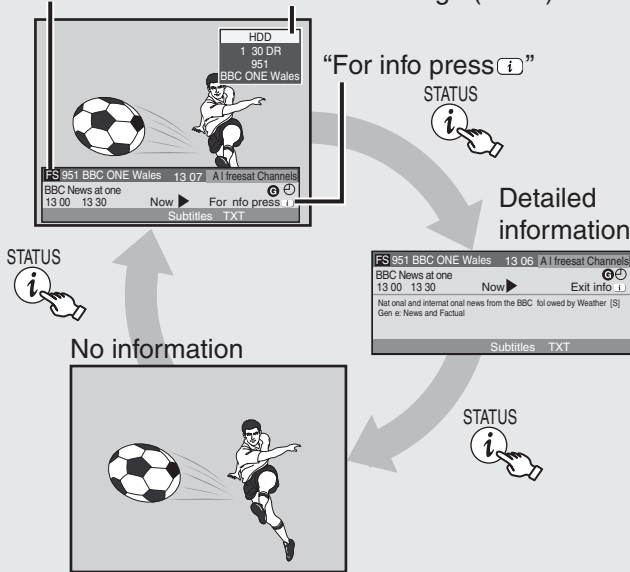
STATUS

 to show the screen information.

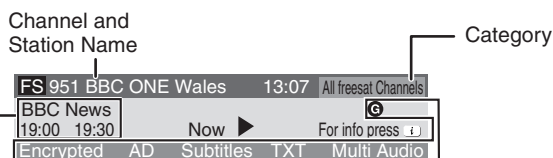
When the digital satellite channel information is being displayed,



– Press [STATUS 

Digital satellite channel information Status message (→ 89)

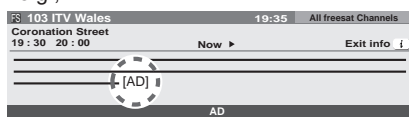


Programme name and Broadcast time



- Encrypted** During scrambled broadcasting (You cannot watch the broadcast).
- AD** Audio Description service may be available.
- Subtitles** Subtitle can be displayed.
- TXT** Digital TEXT is possible.
- Multi Audio** Programme is broadcast in multi-channel sound.
- G** Personal guidance information exists. PIN is needed to playback the title when you record the programme with  mark. You can check the information by pressing [STATUS 

“AD”, “Subtitles”, “TXT”, “Multi Audio” indications are displayed as available on particular programmes, but may not be available for all individual programmes being broadcast. Display the extra information to confirm availability of these functions.



## Tips

**To switch information of the current programme and the next programme**

Press [◀, ▶].

- Now: current programme
- Next: next programme

**To select the information of another channel**

Press [▲, ▼].

- Press [OK] to watch the selected channel.

**To change the length of time digital satellite channel information is displayed for**




(→ 101, On-Screen Messages)

## Notes

- Every time you change the channel, digital satellite channel information appears automatically. They disappear again after a short time.
- If you record a digital satellite radio broadcast or a digital satellite broadcast that is not being received correctly, digital satellite channel information is also recorded and will remain visible during playback.

## Selecting Multi Audio




When “Multi Audio” appears in digital satellite channel information

- 1  to show the OPTION menu.
- 2 ▲, ▼ to select “Multi Audio/AD”, then 
  - Multi Audio/AD panel appears.
- 3 ◀, ▶ to select the desired audio, then .

## Listening to the Audio Description

This function can aid visually-impaired viewers by adding an audio track to describe events on-screen.

When “AD” appears in digital satellite channel information

- 1  to show the OPTION menu.
- 2 ▲, ▼ to select “Multi Audio/AD”, then 
  - Multi Audio/AD panel appears.
- 3 ◀, ▶ to select “AD”, then .

## Notes

- Programmes are recorded with Audio Description when you record them with set to “AD”.

## Tips


**To turn off the Audio Description**

In the step 3 above, press [◀, ▶] to select other than “AD”, then press [EXIT].



## Showing the Digital TEXT (MHEG)

When "TXT" appears in digital satellite channel information

 to show the Digital TEXT.

– Press again to hide.

### Notes

- During recording the Digital TEXT function is not possible.
- The Digital TEXT function depends on respective stations.
- When subtitle is on or the digital satellite channel information is displayed, the Digital TEXT function does not work.

### Tips

**To view another page of Digital TEXT (MHEG)**

Press [▲, ▼] to select another page, then press [OK].

- You can also use the numbered buttons to select another page.


**Quickly access to certain topic areas and navigation**

Use colour buttons according to on-screen instructions.

## Showing Teletext

### Regarding Teletext

Teletext may be displayed when viewing Other Sat. channels. (→ 101, Teletext)

**1**  to show teletext.

**2** ▲, ▼, the numbered buttons, or the colour buttons to select the page.

– Follow the instruction on the screen to select the page.

### Tips

**To change the teletext mode (→ 101)**

**To show the sub page (Only when there are sub pages)**

Press [◀, ▶].

**To store frequently viewed page (List mode only)**

During the page is displayed


- 1 Press the colour button of the colour to store.
- 2 Press and hold [OK].

**To change stored pages (List mode only)**

- 1 Press the colour button of the colour to change.
- 2 Enter the new page number with the numbered buttons.
- 3 Press and hold [OK].

## Showing Subtitles

When "Subtitles" appears in digital satellite channel information

 to show subtitles.

– Press again to hide.

### Notes

- Programmes are recorded with subtitles when you record them with the subtitles on.

### Tips

**To select subtitle language (→ 97, Preferred Subtitles)**

## Signal Quality

No Signal	The digital satellite broadcast signal is not being received.
No Service	No broadcasts are currently available.

If "No Signal" is displayed, check the following;


- Check that the satellite dish is correctly positioned.
- Check that the current digital broadcast channel is correctly broadcasting.

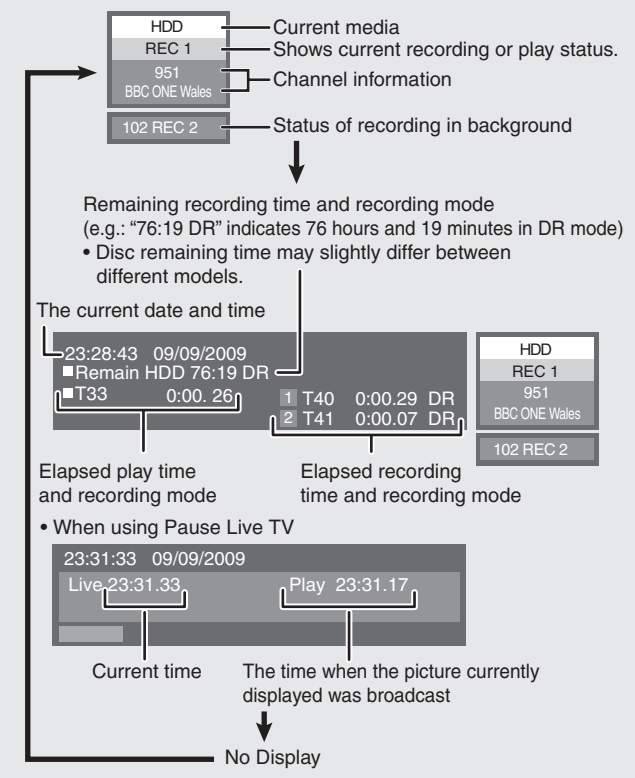
## Status Messages

The following messages and displays appear to let you know what operations are being performed and the status of the unit.

During playback and/or recording

STATUS

 Keep pressing to cycle through available displays.



# Convenient Functions

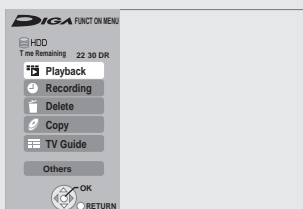
## FUNCTION MENU display

By using the FUNCTION MENU display you may access the main functions quickly and easily.

1



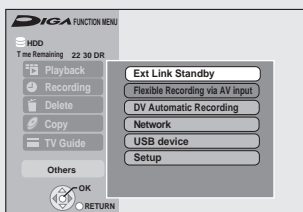
Functions displayed depend on the selected drive or type of disc.



2

▲, ▼ to select an item, then OK

- If you select "Others", then press [OK], the following screen appears. Press [▲, ▼] to select an item, then press [OK].



- If you press [BACK/RETURN ↵], you can return to the previous screen.

### Tips

**To exit the FUNCTION MENU display**  
Press [FUNCTION MENU].

## Switch 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



2

▲, ▼ to select "Aspect", then OK

3

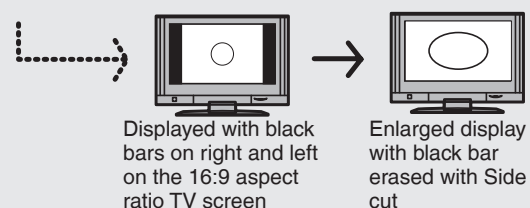
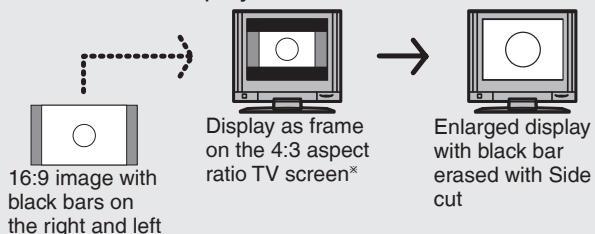
◀, ▶ to select the item.

• **Normal:**

Normal output

• **Side cut:**

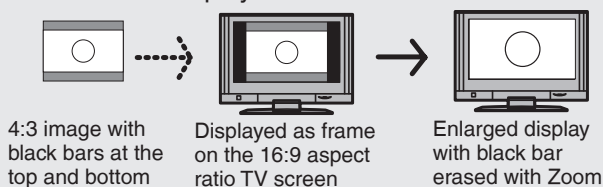
The black bars on the right and left sides of the 16:9 image disappear and the image is enlarged. Please note that the right and left sides of the image are cut off when the black bar is not displayed.



\*Only when "TV Aspect" (→ 101) is set to "Letterbox".

• **Zoom:**

The black bars on the top and bottom sides of the 4:3 image disappear and the image is enlarged. Please note that the top and bottom sides of the image are cut off when the black bar is not displayed.



4



### Notes

- The screen mode is switched to "Normal" in the following situations:
  - when you change channel
  - when you start or end the playback of a title
  - when the unit is turned in standby or on.
- DVD-V** "Side cut" does not have any effect.
- When "TV Aspect" (→ 101) is set to "4 : 3" or "Letterbox", the "Zoom" effect is disabled.

### Tips

**To return to the previous screen**

Press [BACK/RETURN ↵].

**To exit the screen**

Press [EXIT].

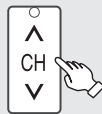
## To pause the TV programme you are watching—Pause Live TV

You can pause the TV programme you are watching using this unit's tuner and resume later by temporarily saving it on the HDD. This is useful when you have to briefly stop watching TV to run an errand.

If you stop the Pause Live TV function, then the TV programme temporarily saved on the HDD will be deleted.

**1** Turn on the television and select the appropriate AV input to suit the connections to this unit.

**2** Turn on this unit and select the channel.



**3** When you want to pause the TV programme



**4** When you want to resume



The programme is saved on the HDD in DR recording mode.

- Programmes can be saved temporary up to 8 hours on the HDD. (This may vary depending on the HDD free space.)

## Notes

- Temporary save is stopped in following cases.
  - When save time exceeds 8 hours
  - When there is no HDD free space
  - When 2 programmes are recorded simultaneously
- The Pause Live TV function does not work
  - The clock is not set.
  - While 2 programmes simultaneous recording
  - While watching a programme being recorded
  - When DV is selected
- When paused for approximately 5 minutes the screen saver is displayed [only when “Screen Saver” in the Setup menu is set to “On” (→ 101)].  
To return to the previous screen, press [BACK/RETURN ↵].

### Operation during Pause Live TV

Search	<b>Press [◀◀, ▶▶].</b> The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play.
Pause	<b>Press [⏸].</b> • Press [▶] (PLAY) to restart.
Quick View	<b>Press and hold [▶] (PLAY/x1.3).</b> • Press again to return to the normal speed.
Slow-motion	<b>While paused, press [◀◀] or [▶▶].</b> The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play.
Stop Pause Live TV	<b>1 Press [■].</b> <b>2 Press [◀, ▶] to select “Yes”, then press [OK].</b>

# Disc and Card Management

You can manage discs through formatting, finalising and other operations.

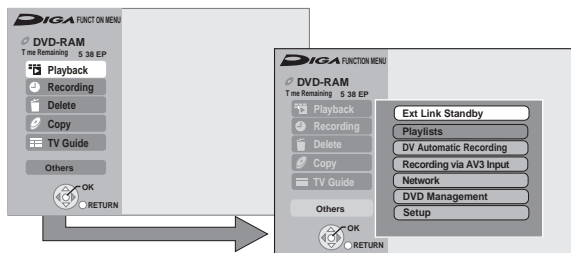
## Accessing the Management Menus

### Preparation:

- **SD RAM** Release protection (disc, cartridge → right, card → 23).
- Insert a disc and card.

With the unit stopped

- 1 Press [DRIVE SELECT] to select the DVD or SD drive.
- 2 Press [FUNCTION MENU].
- 3 Press [▲, ▼] to select “Others”, then press [OK].



- 4 Press [▲, ▼] to select “DVD Management” or “Card Management”, then press [OK].

### Tips

**To return to the previous screen**  
Press [BACK/RETURN ↵].

**To exit the screen**  
Press [EXIT].

## Setting Protection

### RAM

Use to prevent accidental erasure of disc.

Perform preparation steps 1 – 4 of “Accessing the Management Menu” (→ left).

- 5 Press [▲, ▼] to select “Disc Protection”, then press [OK].
- 6 Press [◀] to select “Yes”, then press [OK].

### Protection of cartridge disc

#### RAM (With a cartridge)

With the write-protect tab in the protect position, you cannot record to, edit, format, or erase from the disc.



## Naming Discs

### RAM -R -R DL -RW(V) +R +R DL +RW

You can give a name for the disc.

Perform preparation steps 1 – 4 of “Accessing the Management Menu” (→ left).

- 5 Press [▲, ▼] to select “Disc Name”, then press [OK].  
– Entering Text (→ 82).

### Tips

- The disc name is displayed in the 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.

## Deleting All Titles

You can delete all titles on the disc at once.

**Important:** Once deleted, contents cannot be recovered.

### RAM

Perform preparation steps ① – ④ of “Accessing the Management Menu” (→ 92).

- ⑤ Press [▲, ▼] to select “Delete all titles”, then press [OK].
- ⑥ Press [◀] to select “Yes”, then press [OK].
- ⑦ Press [◀] to select “Start”, then press [OK].
  - A message appears when deleting is finished.
- ⑧ Press [OK] to complete.

### Notes

- Still picture data (JPEG), music data or computer data cannot be deleted.
- Deleting does not work if one or more titles are protected.

## Formatting Discs or Cards

### RAM -RW(V) +RW -RW(VR)

### +R +R DL (New disc only)

### SD

Formatting is the process of making media recordable on recording equipment.

You can record or edit after formatting the finalised DVD-RW.

**Important:** Once formatted, contents cannot be recovered.

Perform preparation steps ① – ④ of “Accessing the Management Menu” (→ 92).

- ⑤ Press [▲, ▼] to select “Format Disc” or “Format Card”, then press [OK].
- ⑥ Press [◀] to select “Yes”, then press [OK].
- ⑦ Press [◀] to select “Start”, then press [OK].
  - Formatting starts (RAM may take up to a maximum of 70 minutes).
  - A message appears when formatting is finished.
- ⑧ Press [OK] to complete.

### Notes

- Do not disconnect the AC mains lead while formatting. This can render the disc unusable.
- When a disc has been formatted using this unit, it may not be possible to use it on any other equipment.
- **-R -R DL CD** Formatting cannot be performed.
- **-RW(V) -RW(VR)** You can format only as DVD-Video format on this unit.
- **RAM SD** The disc or card cannot be formatted if the write-protect tab or switch (disc → 92, card → 23) is switched to “PROTECT” or “LOCK”. Release the protection to continue.
- The message “Unable to format” appears when trying to format discs the unit cannot use.

### Tips

#### 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.

# Disc and Card Management

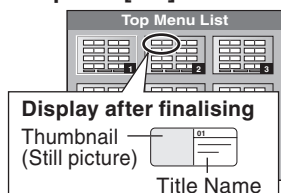
## Selecting the background style—Top Menu

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

The background selected here will be displayed as the DVD-Video top menu after finalising or Create Top Menu (**+RW**).

Perform preparation steps ① – ④ of “Accessing the Management Menus” (→ 92).

- 5 Press [**▲**, **▼**] to select “Top Menu”, then press [OK].
- 6 Press [**▲**, **▼**, **◀**, **▶**] to select the background, then press [OK].



- You can change thumbnails displayed in the top menu. (→ 52, Change Thumbnail)

## Selecting Whether to Show the Top Menu First—Auto-Play Select

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

Before finalising a disc or creating top menu, select whether the top menu shows after finalising or creating top menu.

Perform preparation steps ① – ④ of “Accessing the Management Menus” (→ 92).

- 5 Press [**▲**, **▼**] to select “Auto-Play Select”, then press [OK].
- 6 Press [**▲**, **▼**] to select “Top Menu” or “Title 1”, then press [OK].
  - Top Menu:  
The Top Menu appears first.
  - Title 1:  
The disc content is played without displaying the Top Menu.

## Finalising

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

You can play these discs on compatible DVD players by finalising it on the unit, effectively making it into DVD-Video that complies with DVD-Video standards. Before finalising, select the background on the “Top Menu” (→ above). The menu you create with the unit can also be used on most DVD players.

Perform preparation steps ① – ④ of “Accessing the Management Menus” (→ 92).

- 5 Press [**▲**, **▼**] to select “Finalise”, then press [OK].
- 6 Press [**◀**] to select “Yes”, then press [OK].
- 7 Press [**◀**] to select “Start”, then press [OK].
  - Finalising starts and cannot be cancelled. (may take up to 15 minutes) (**-R DL +R DL** up to 60 minutes)
  - A message appears when finalising is finished.
- 8 Press [OK] to complete.

## Notes

- 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 4 times longer).
  - After finalising
    - **-R -R DL +R +R DL** The disc becomes play-only and you can no longer record or edit it.
    - **-RW(V)** You can record and edit the disc after formatting although it becomes play-only after finalising.
    - When copying in high speed, chapters will be replicated.
    - The disc finalised on the unit may not be playable on other players depending on the condition of the recording.
    - There is a pause of several seconds between titles and chapters during playback.
    - **-R -RW(V)** Titles are divided into about 5-minute (**+R** 8-minute) chapters, if\*
      - the titles were directly recorded to the disc.
      - the titles were copied using the normal speed mode (excluding **-R DL +R DL**).
- \* This time varies greatly depending on the condition and mode of recording.

## Tips

After you have finished recording and try to eject the disc, a screen asking if you want to finalise the disc appears (→ 117).

## Create Top Menu

**+RW**

+RW discs contain no Top Menu data. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.

Perform preparation steps ① – ④ of “Accessing the Management Menus” (→ 92).

- 5 Press [**▲**, **▼**] to select “Create Top Menu”, then press [OK].
- 6 Press [**◀**] to select “Yes”, then press [OK].
- 7 Press [**◀**] to select “Start”, then press [OK].
  - “Create Top Menu” cannot be cancelled once started.
  - “Create Top Menu” takes a few minutes.
  - A message appears when “Create Top Menu” is finished.
- 8 Press [OK] to complete.

## Notes

- Recording or editing on the disc may delete the top menu. In that case, create the top menu again.
- You cannot use the top menu for playing on this unit.

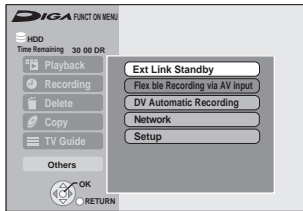
# Setup Menu

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

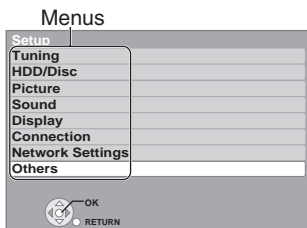
## Accessing the Setup Menu

With the unit stopped

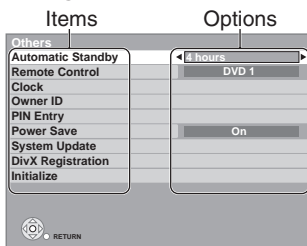
- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select "Others", then press [OK].



- 3 Press [▲, ▼] to select "Setup", then press [OK].
- 4 Press [▲, ▼] to select the menu, then press [OK].



- 5 Press [▲, ▼] to select the item you want to change.



- 6 Press [◀, ▶] to select the option.
  - Follow the instruction on the screen if the operation method is different.

For Setting details, refer to pages 95–104, 106, 107.

### Notes

Changed settings remain intact even when switching the unit to standby mode.

### Tips

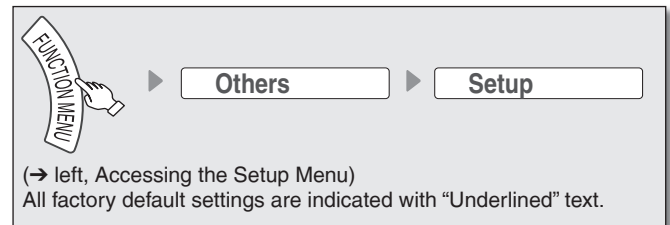
#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

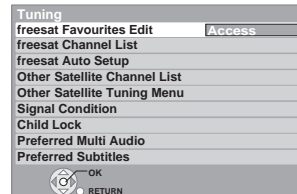
Press [EXIT].

# Channel Settings



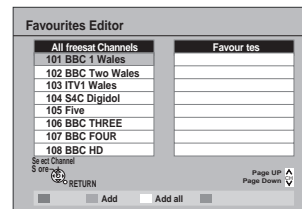
## Tuning

- ▲, ▼ select "Tuning" → [OK]



### freesat Favourites Edit

You can create Favourites of freesat channels for making viewing and recording easier. Editing Favourites does not affect the channel setting itself.



Press [▲, ▼] to select "freesat Favourites Edit" and then press [OK].

- Timer recording may not work correctly if you edit the Favourites during timer recording standby.
- Channel numbers cannot be changed, due to broadcast restrictions.

#### To add channels to Favourites

- 1 Press [▲, ▼] to select the channel in the "All freesat Channels" column to add, then press the "Green" button.
  - Repeat this step to add other channels.
  - Press the "Yellow" button to add all the available channels to the Favourites. (Only when no channels have been added to the Favourites.)
- 2 Press [OK] to store the Favourites.

#### To delete channels on Favourites

- 1 While the Favourites Editor screen is displayed, press [◀, ▶] to focus on a channel of the "Favourites" column.
  - 2 Press [▲, ▼] to select the channel in the "Favourites" column, then press the "Yellow" button.
    - Repeat this step to delete other channels.
    - Press the "Blue" button to delete all channels from the Favourites.
  - 3 Press [OK] to store the Favourites.
 

Deleting a channel from a Favourites does not affect the channel itself.

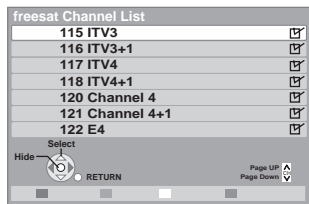
You can still select the channel from the "All freesat Channels" column.

# Channel Settings

## freesat Channel List

You can set channel list of freesat.

- 1 Press [▲, ▼] to select "freesat Channel List", then press [OK].



- 2 Press [▲, ▼] to select the channel.

### To hide unwanted channels

Press [OK]. The check mark disappears.

You cannot select it by pressing [^, v CH].

(But you can select it by pressing the numbered buttons to enter the channel number directly.)

Press [OK] again to reveal.

## freesat Auto Setup

You can restart auto setting for freesat channels if the setup (→ 13) fails for some reason.

However, if you perform "freesat Auto Setup", all channel settings are deleted. Confirm the programme you set the timer recording after freesat Auto Setup. Please reset it if the setting information is not correct. Recordings on the HDD are not be deleted.

- 1 Press [▲, ▼] to select "freesat Auto Setup", then press [OK].

When the confirmation screen appears

- 2 Press [◀] to select "Yes", then press [OK].

## Tips

- You can also use the following method to restart freesat Auto Setup. When the unit is turned on and stopped, press and hold [^ CH] and [CH v] on the main unit simultaneously for about 5 seconds.
  - freesat Auto Setup screen appears.

## Other Satellite Channel List

You can set channel list of other satellite services.

- 1 Press [▲, ▼] to select "Other Satellite Channel List", then press [OK].
- 2 Press [▲, ▼] to select the channel.
  - Press the "Red" button to delete the channel.
  - Press the "Green" button to swap the channel. And, press the numbered buttons to enter the channel number you want to swap, then press [OK].
  - Press the "Yellow" button to sort channels.
  - Press the "Blue" button to profile the channel.

### To hide unwanted channels

Press [OK]. The check mark disappears.

You cannot select it by pressing [^, v CH].

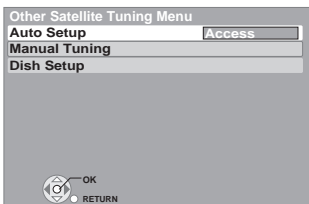
(But you can select it by pressing the numbered buttons to enter the channel number directly.)

Press [OK] again to reveal.

## Other Satellite Tuning Menu

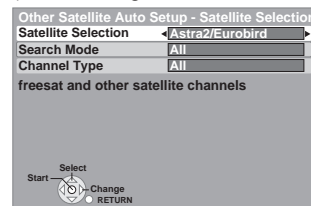
You can tune channels from other satellites.

- Press [OK] to show the following settings.



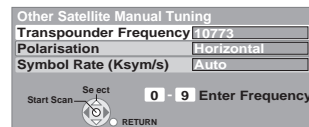
## Auto Setup

You can start the auto setup of the other satellite services. (→ 16, Tuning in Other Satellite Services)



## Manual Tuning

You can set the channel of the other satellite manually.

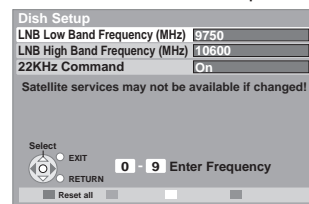


- 1 Press [▲, ▼] to select "Transponder Frequency"
- 2 Press the numbered buttons to enter the transponder frequency.
- 3 Press [▲, ▼] to select "Polarisation".
- 4 Press [◀, ▶] to select "Horizontal" or "Vertical".
- 5 Press [▲, ▼] to select "Symbol Rate (Ksym/s)".
- 6 Press [◀, ▶] to select the desired symbol rate, then press [OK].

–The scan starts.

## Dish Setup

You can set the dish setup manually.

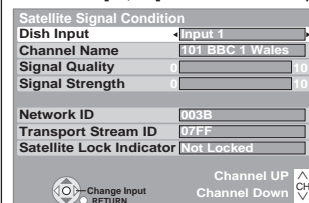


- 1 Press [▲, ▼] to select "LNB Low Band Frequency (MHz)".
- 2 Press the numbered buttons to enter the LNB Low Band frequency.
- 3 Press [▲, ▼] to select "LNB High Band Frequency (MHz)".
- 4 Press the numbered buttons to enter LNB High Band frequency.
- 5 Press [▲, ▼] to select "22KHz Command".
- 6 Press [◀, ▶] to select "On" or "Off".
  - Press the "Red" button to reset all settings.

## Signal Condition

You can check the quality and strength of digital satellite broadcast signals. Realign the dish if you are receiving a poor signal.

- 1 Press [▲, ▼] to select "Signal Condition", then press [OK].
- 2 Press [◀, ▶] to select the input you want to check.



The quality and strength of the signal are shown. Press [^, v CH] to select the channel.

### Signal Quality

Below 2 (display red)	The signal quality is so poor that there may be interference in the pictures and sound.
2-5 (display orange)	The signal quality is basically adequate, but brief interference in the pictures and sound is possible in isolated case.
Over 5 (display green)	Optimum picture and sound quality.



## Signal Strength

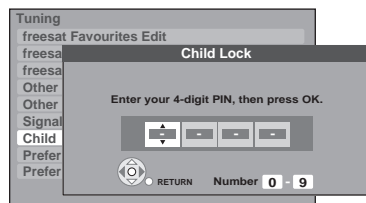
The display for signal strength is grey. "0" means signal strength 0%, "10" means signal strength 100%.

- If the signal is too strong, the display will change from grey to red. Reduce the signal amplification at your satellite dish.
- When the signal is weak:
  - check that the satellite dish is correctly positioned.
  - adjust the satellite dish reception.

check that the current digital satellite broadcast channel is correctly broadcasting.

## Child Lock

You can lock a channel or AV input to prevent access to it.

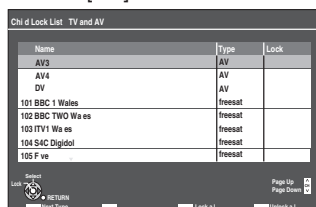


- 1 Press [▲, ▼] to select "Child Lock", then press [OK].
- 2 Press [▲, ▼] to enter PIN.

You can also use the numbered buttons.

It will be the common PIN for "DVD-Video Ratings", "Child Lock", "Parental Control" and "Network Lock".

- 3 Press [OK].



- 4 Press [▲, ▼] to select the channel or AV input to prevent access to.
- 5 Press [OK].
  - Press [OK] again to cancel.
  - Press the "Yellow" button to lock all channel and AV input.
  - Press the "Blue" button to unlock all channel and AV input.
  - Press the "Red" button to change the channel type displayed.  
AV → freesat → Other sat
- Should you see a lock symbol to show the channel locked. To unlock, select the channel and press [OK]. The lock symbol will disappear.
- To change the PIN, see page 104.

## Preferred Multi Audio

You can choose the audio language for digital broadcast. If the selected language is not available, then the original language will be selected.

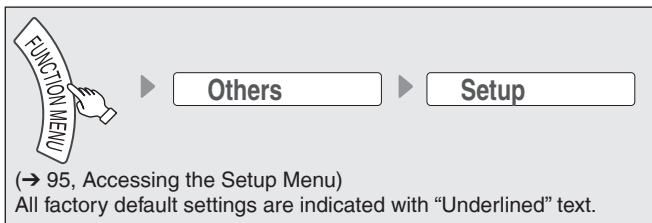
- 1 Press [▲, ▼] to select "Preferred Multi Audio", then press [OK].
- 2 Press [▲, ▼] to select "Multi Audio".
- 3 Press [◀, ▶] to select the language from the followings.  
[English] [Welsh] [Gaelic]
- 4 Press [▲, ▼] to select "Audio Description".
- 5 Press [◀, ▶] to select "On" or "Off".

## Preferred Subtitles

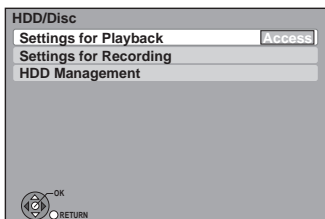
You can choose the subtitle language for digital broadcast. If the selected language is not available, then the original language will be selected.

- 1 Press [▲, ▼] to select "Preferred Subtitles", then press [OK].
- 2 Press [◀, ▶] to select the language from the followings.  
[English] [Welsh] [Gaelic]  
[English for hearing impaired]  
[Welsh for hearing impaired]  
[Gaelic for hearing impaired]

# HDD/Disc Settings



## HDD/Disc



### Settings for Playback

Press [OK] to show the following settings.

#### Soundtrack

[English] [German] [French] [Italian] [Spanish] [Original]  
[Other \*\*\*\*]

#### Subtitles

[Automatic] [English] [German] [French] [Italian] [Spanish]  
[Other \*\*\*\*]

#### Menu

[English] [German] [French] [Italian] [Spanish] [Other \*\*\*\*]

#### DVD-Video Ratings

Set a ratings level to limit DVD-Video play.

Follow the on-screen instructions. Enter a 4-digit PIN with the numbered buttons when the PIN screen is shown. It will be the common PIN for “DVD-Video Ratings”, “Child Lock”, “Parental Control” and “Network Lock”.

Setting ratings (When level 8 is selected)

[8 No Limit] All DVD-Video can be played.  
[1 to 7] Proh bits play of DVD-Video with corresponding ratings recorded on them.


[0 Lock All] Proh bits play of all DVD-Video.

• Changing settings (When level 0 to 7 is selected)

[Unlock Recorder] [Change Level] [Temporary Unlock]

#### Parental Control

You can restrict playback of the recorded titles that may include contents for adult. Follow the on-screen instructions. Enter a 4-digit PIN with the numbered buttons when the PIN screen is shown. It will be the common PIN for “DVD-Video Ratings”, “Child Lock”, “Parental Control” and “Network Lock”.

[On] Titles recorded from programmes that were broadcasted with guidance information in the night (21:00–05:30) will be indicated with the  icon in DIRECT NAVIGATOR, DELETE Navigator and copy source selection screen. You will have to enter the PIN when playing back these titles.

[Off]

## Notes

**DVD-V** Choose the language for audio, subtitles and disc menus. If a language which is not recorded is selected, or if languages are already fixed on the disc, the language set as the default on the disc will be played instead.

[Original] The original language of each disc will be selected.

[Other \*\*\*\*] This is the language code setting. Input a code number with the numbered buttons (→ 129, “Language code list”).

[Automatic] If the language selected for “Soundtrack” is not available, subtitles of that language will automatically appear if available on the disc.

## Settings for Recording

Press [OK] to show the following settings.

### Recording time in EP mode

Select the maximum number of hours for recording in EP mode (→ 36, Recording modes and approximate recording time).

[6 hours] You can record for 6 hours on an unused 4.7 GB disc.

[8 hours] You can record for 8 hours on an unused 4.7 GB disc.

• The sound quality is better when using “6 hours” than when using “8 hours”.

### Aspect for Recording

Sets the aspect ratio when recording in HX, HG, HE, HL, XP, SP, LP, EP, FR mode.

[Automatic] The programme will be recorded in the original aspect used when recording started (including when recording started at a commercial, etc.).

[16:9] [4:3]

• **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”, the programme will be recorded with the original aspect ratio.

• In the following cases, even when set to “Automatic” or “16:9”, recordings will be made or copied in 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

Titles recorded to the HDD from external input with “Recording Format for DVD” set to “Video format” can be copied to DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW using high speed mode.

We recommend turning the setting “VR format” if high speed copy to DVD-R, etc. is not necessary when recording a programme. This setting is effective when recording from external equipment (including DV equipment), or when copying from a finalised DVD-Video disc.

[Video format] You can high-speed copy to DVD-R, etc.

[VR format] High speed copy from HDD is possible only to DVD-RAM.

• In some cases, copying to DVD-R, etc. using the high speed mode does not work.

### DVD Speed for High Speed Copy

Select the speed of high-speed copying (When using high-speed copy compatible discs).

[Maximum]

[Normal (Silent)] Selecting “Normal (Silent)” means the noise generated by this unit is less than “Maximum”, however the time required for copying will double (approximately).

## HDD Management

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

### Delete all titles

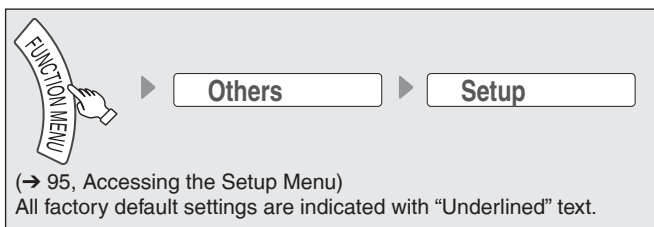
Delete all titles in HDD.

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

### Format HDD

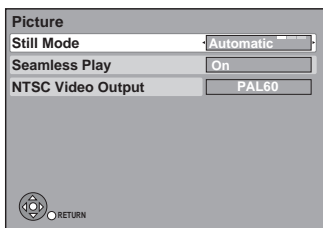
Format of the HDD is performed.

# Picture and Sound Settings



## Picture

▲, ▼ select “Picture” →



### Still Mode

Select the type of picture shown when you pause play. (→ 134, “Frames and fields”)

[Automatic]

[Field] Select if jittering occurs when “Automatic” is selected.

[Frame] Select if you cannot see small text or fine patterns clearly when “Automatic” is selected.

### Seamless Play

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

- It is not valid for titles in DR mode or AVCHD videos.

[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 x1.3). Additionally, the positioning of chapter segments may change slightly.

[Off] The points where chapters in playlists change are played accurately, but the picture may freeze for a moment.

### NTSC Video Output

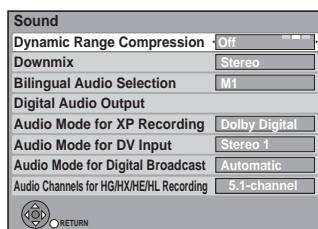
Select how the NTSC image is output.

[NTSC] Output as NTSC.

[PAL60] Convert and output as PAL60. Select this when connected to the PAL format TV.

## Sound

▲, ▼ select “Sound” →



### Dynamic Range Compression

#### DVD-V

Change the dynamic range for late night viewing.

[On] [Off] [Automatic]

### Downmix

Switch the downmix system for playing back multi-channel surround sound.

- When “Dolby Digital”, “DTS” or “MPEG” is set to “Bitstream”, there are no downmix effects for the audio output.
- The audio output will be in “stereo” in the following cases.
  - AVCHD playback

[Stereo]

When connected to equipment that does not support the virtual surround function

[Surround encoded] When connected to equipment that supports the virtual surround function

### Bilingual Audio Selection

Select whether to record the main or secondary audio type when:

- Recording to a DVD-R, DVD-RW (DVD-Video format), +R and +RW.
- “Recording Format for DVD” is set to “Video format”. (→ 98)
- Recording sound in LPCM (→ 100, “Audio Mode for XP Recording”).

[M 1] [M 2]

- You cannot select the audio on this unit when recording from an external source, such as when copying from a video cassette recorder (except from DV equipment connected to this unit’s DV input terminal). Select the audio on the other equipment.
- When recording from the unit’s DV terminal, select the type of audio recording from “Audio Mode for DV Input” (→ 100).

# Picture and Sound Settings

## Digital Audio Output

Change the settings when you have connected equipment through the unit's DIGITAL AUDIO OUT terminal (→ 111). Press [OK] to show the following settings.

### PCM Down Conversion

Select how to output audio with a sampling frequency of 96 kHz. Signals are converted to 48 kHz despite the above settings if the signals have a sampling frequency of over 96 kHz, or the disc has copy protection.

- [On] Signals are converted to 48 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)
- [Off] Signals are output as 96 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz.)

### Dolby Digital<sup>\*1</sup>

### DTS<sup>\*2</sup>

### MPEG<sup>\*1</sup>

Select to output Do by Digital, DTS Digital Surround, or MPEG as bitstream or PCM.

#### Notes

- Incorrect settings can cause noise to be output which can be harmful to your ears and speakers, and audio will not be recorded properly on media such as mini discs. Refer to the operating instructions for connected equipment to verify whether or not they can decode each of the audio formats.
- If the unit is connected with the HDMI AV OUT terminal, the specifications of the connected equipment take preference over this unit and audio selected in these items may not be output (e.g., when a television is connected, the HDMI audio output of this unit is limited to down-mixed 2 ch.).

- [Bitstream] Select "Bitstream" when the connected equipment can decode the respective audio format.
- [PCM] Select "PCM" when the connected equipment cannot decode the respective audio format.

Refer to the operating instructions for connected devices to verify whether or not they can decode each of the audio formats.  
Set the speaker output on the amplifier when output with PCM.

<sup>\*1</sup> The default setting is "PCM".

<sup>\*2</sup> The default setting is "Bitstream".

## Audio Mode for XP Recording

Choose the audio type when recording or copying with XP mode.

[Do by Digital] (→ 134)

[LPCM] (→ 135)

- The picture quality of LPCM recordings may be lower than that of normal XP mode recordings.
- The audio recording becomes Dolby Digital even if you selected LPCM when using a recording mode other than XP.

## Audio Mode for DV Input

Select the kind of audio when recording from the unit's DV input terminal (→ 63).

[Stereo 1] Records audio (L1, R1)

[Stereo 2] Records added audio such as narration (L2, R2) subsequent to original recording.

[Mix] Records both Stereo 1 and Stereo 2.

When recording bilingual broadcast, select the type of audio in advance from "Bilingual Audio Selection" (→ 99).

## Audio Mode for Digital Broadcast

Selects the initial setting for Audio tracks.

If programme has both Dolby Digital and MPEG audio tracks, priority is given to what you select.

Only the selected audio is recorded when converted or copied in XP, SP, LP, EP or FR recording mode.

(It is recorded in accordance with the setting of "Multi Audio/AD" in the Disc menu only when it is copied with "Copy Title Playing".)

[Automatic] Automatically selects the audio tracks if programme has more than two tracks. The priority is given in the following order - Dolby Digital, MPEG.

[MPEG] An audio compression method that compresses audio to small size without any considerable loss of audio quality.

## Audio Channels for HG/HX/HE/HL Recording

This will set the audio when converting to the HDD in HG, HX, HE or HL modes (→ 53).

[5.1-channel]<sup>\*</sup> Record using 5.1 ch audio.

[2-channel] Record using 2 ch audio.

- <sup>\*</sup> If the audio sampling frequency is not 48 kHz, surround audio is mixed and recorded in front LR channels. Audio will be output from two front speakers only, even if you play it on 5.1 ch speaker connection.

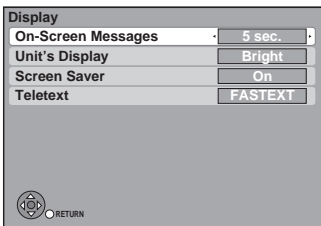
# Display and Connection Settings

FUNCTION MENU → Others → Setup

(→ 95, Accessing the Setup Menu)  
All factory default settings are indicated with "Underlined" text.

## Display

▲, ▼ select "Display" → OK



### On-Screen Messages

Choose the approximate time until the digital satellite channel information screen (→ 88) disappears automatically. The length of time the control panel (→ 85) is displayed can also be changed, but "Off" does not work.

[Off] The digital satellite channel information is not displayed.  
[3 sec.] [5 sec.] [7 sec.] [10 sec.]

### Unit's Display

Changes the brightness of the unit's display. Regardless of the setting, when "Power Save" (→ 104) is "On" and this unit is turned off, the unit's display is turned off.

[Bright] [Dim]

### Screen Saver

This is to prevent burn-in on the screen.

- When this is set to "On", the masked-off area on the screen becomes black.  
[Only when connecting with an HDMI cable or a component video cable and "HDMI Video Format" (→ 102) is set to any other mode than "576p/480p", or "Component Resolution" (→ 102) is set to "720p" or "1080i".]
- [On] If there is no operation for 5 minutes or more, the displayed screen switches to the other states automatically.
  - When the DIRECT NAVIGATOR, Copying list, DELETE Navigator or FUNCTION menu is displayed, the screen saver is not displayed.
  - When music is played, the display returns to the screen saver mode. (Playback continues.)
  - When still pictures are shown (except for slideshows), the display returns to the DIRECT NAVIGATOR screen.
  - The display returns to the screen saver mode when it is paused by the Pause Live TV. (Pause status will continue.)

[Off]

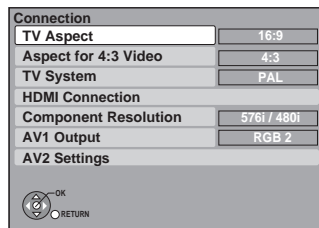
### Teletext

Select the Teletext display mode. (→ 89)

- [FASTEXT] Four differently coloured subjects are situated at the bottom of the screen. To access more information about one of these subjects, press the appropriately colour button. This facility enables fast access to information on the subjects shown.
- [List] Four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in this unit.

## Connection

▲, ▼ select "Connection" → OK



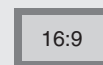
### TV Aspect

This setting needs to be changed when connected to a 4:3 standard aspect TV.

[16:9] [4:3] [Letterbox]

#### Notes

##### • Aspect 4:3/16:9



4:3 standard aspect television      16:9 widescreen television

- 16:9: When connected to a 16:9 widescreen television. However, the 4:3 aspect ratio picture expands left and right.
- 4:3: When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture (→ 135, Pan&Scan). The "4:3" setting may not work and the pictures may be shown in the letterbox style depending on the content.
- Letterbox: When connected to a 4:3 aspect television, widescreen picture is shown in the letterbox style (→ 135).

### Aspect for 4:3 Video

To play a 4:3 title when connected with an HDMI cable, set how to show pictures on a 16:9 widescreen television. 4:3 picture from HDMI output will be slightly smaller than that from the other outputs, e.g. Scart and component, this is not a malfunction of the unit.

[4:3] Picture output expands left or right.



[16:9] Picture is output as original aspect with side panels.



### TV System

Change this setting if you connect an NTSC television or to record NTSC video from another source.

- [PAL] – Select when connecting to a PAL or Multi-system television. Programmes recorded using NTSC are played as PAL60.
- Select to record television programmes and PAL input from other equipment.
  - [HDD] Select when playing a PAL input title recorded on the HDD.
- [NTSC] – Select when connecting to an NTSC television. Television programmes cannot be recorded properly.
- Select to record NTSC input from other equipment.
  - [HDD] Select when playing an NTSC input title recorded on the HDD.

# Display and Connection Settings

## Tips

**To change the setting without using the menu (PAL ↔ NTSC)**  
While stopped, press and hold [■] and [▲ OPEN/CLOSE] on the main unit simultaneously for about 5 seconds.

## Notes

- This unit cannot record NTSC signals to discs that already have PAL signal recordings. (However, both types of programmes can be recorded onto the HDD.)
- If "NTSC" has been selected, the TV Guide system cannot be used.
- If the current "TV System" setting does not match the "TV System" of a disc or a title recorded on the HDD:
  - the title cannot be played.
  - the disc cannot be played during recording, timer recording standby or EXT LINK standby.Change the "TV System" to play the disc or the title. Also note that the "TV System" setting should be changed back to the previous setting after the playback.

## HDMI Connection\*1

- Press [OK] to show the following settings.

### HDMI Video Mode

Select "On" when video is output from HDMI AV OUT terminal.

[On]

[Off] When the equipment such as amplifiers is connected using HDMI cable, and TV is connected to the COMPONENT VIDEO OUT terminal. (Setup before connecting to the amplifiers.)

### HDMI Video Format\*2

You can only select items compatible with the connected equipment. If you are concerned about output picture quality, it may be improved by changing the setting.

[576p/480p] [720p] [1080i]

[1080p] When outputting 1080p signal, we recommend using High Speed HDMI cables that have the HDMI logo (as shown on the cover) and are less than 5 meters to prevent video distortion etc.

[Automatic] Automatically selects the output resolution best suited to the connected television (1080p, 1080i, 720p or 576p/480p).

### HDMI Audio Output

[On]

[Off] When connected to TV with HDMI cable, and connected to amplifiers not compatible to HDMI with a DIGITAL AUDIO OUT terminal.

### HDCP on HDMI Output

[On]

[Off] If you connect a DVI device that is not compatible with HDCP, set to "Off". In this case, some programmes or DVD-Video cannot be seen.

### VIERA Link

[On]

[Off] Select when you do not want to use "HDAVI Control".

## Component Resolution

This sets the video output resolution when using the component video terminal.

[576i/480i] [576p/480p] [720p] [1080i]

- You cannot change the setting while the "HDMI Video Mode" is set to "On".
- Set the "HDMI Video Mode" to "Off" and set the "AV1 Output" to "Video (with component)" or "S Video (with component)".
- If it is set to "720p", images other than "720p" will be output as "1080i".
- Even if you select "720p" or "1080i", the video output resolution is restricted to "576p/480p" when:
  - freesat programmes in HD quality is output.
  - DVD-Video discs and DivX discs recorded at a rate of 50 fields per second are played.
  - images via AV1, AV2, AV3, AV4 or DV input are output.

## AV1 Output

Select "Video (with component)" or "S Video (with component)" for component output (progressive output).

Set according to the signal and terminal of the connected TV.

[Video (with component)]

Select when a TV is connected that can receive a composite signal.

[S Video (with component)]

Select when a TV is connected that can receive an S Video signal.

[RGB 1 (without component)]

Select when a TV is connected that can receive an RGB signal.

If you always would like to view the picture from the unit in RGB signal, select this mode. The TV screen will automatically switch to display the picture from the unit when the unit is turned on.

[RGB 2 (without component)]

Select when a TV is connected that can receive an RGB signal.

If you would like to switch to display the picture from the unit only when playback or viewing menus, select this mode.

- If this unit is connected with an HDMI cable and "HDMI Video Mode" is set to "On", you cannot select "RGB 1 (without component)" or "RGB 2 (without component)".

## AV2 Settings

Set to match the connected equipment.

- Press [OK] to show the following settings.

### AV2 Input

Set to "RGB/Video" or "RGB" when receiving or recording RGB output from external equipment.

[RGB/Video] The unit automatically detects whether the input signal from the AV2 terminal is an RGB signal or other signals and makes settings.

[RGB]

[Video]

[S Video]

### Ext Link

This setting cannot be made when the "TV System" is set to "NTSC" (→ 101).

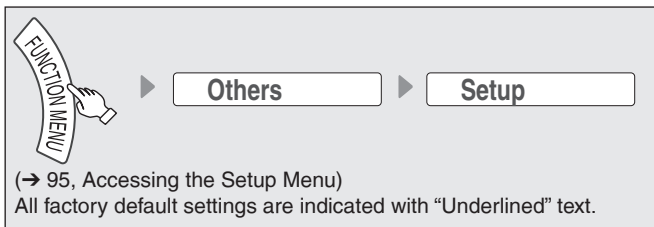
[Ext Link 1] When this unit is connected to a satellite or cable receiver with a 21-pin Scart cable and this unit receives a control signal. Start and stop timings of recording are controlled by the control signal.

[Ext Link 2] When external equipment with a timer function is connected. Recording is continued while the image signal is being sent to the unit from the external equipment. Recording is stopped when the image signal is halted by turning the external equipment off.

\*1 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.

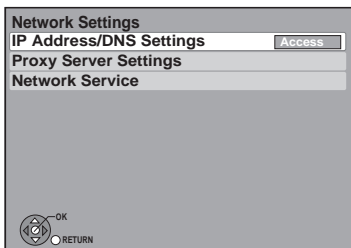
\*2 Choose the setting to suit your TV and preference.

# Network Settings



## Network Settings

▲, ▼ select "Network Settings" →



### IP Address/DNS Settings (→ 106)

• Press [OK] to show the following settings.

#### Connection Test

[--]

#### IP Address Auto-assignment

[On] [Off]

#### IP Address

[---.---.---.---]

#### Subnet Mask

[---.---.---.---]

#### Gateway Address

[---.---.---.---]

#### DNS-IP Auto-assignment

[On] [Off]

#### Primary DNS

[---.---.---.---]

#### Secondary DNS

[---.---.---.---]

#### Connection Speed Auto-configure

[On] [Off]

#### Connection Speed Setting

This is enabled only when "Connection Speed Auto-configure" is turned "Off".

[10BASE half duplex]

[10BASE full duplex]

[100BASE half duplex]

[100BASE full duplex]

### Proxy Server Settings (→ 107)

• Press [OK] to show the following settings.

#### Initialize

Set the setting of the "Proxy Server Settings" back.

#### Proxy Address

(The initial setting is blank.)

#### Proxy Port Number

(The initial setting is "0".)

#### Connection Test

[---]

### Network Service (→ 107)

• Press [OK] to show the following settings.

#### Network Lock

You can restrict using VIERA CAST.

Follow the on-screen instructions. Enter a 4-digit PIN with the numbered buttons when the PIN setting screen is shown. It will be the common PIN for "DVD-Video Ratings", "Child Lock", "Parental Control" and "Network Lock".

• Do not forget your PIN.

[On]

[Off]

#### Automatic Volume Control

[On]

[Off]

Select "Off" when the audio is warped while using VIERA CAST.

#### Picture Zoom

[In]

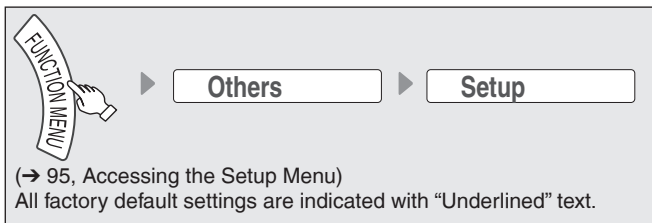
The picture is enlarged.

[Out]

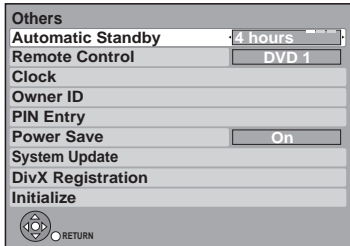
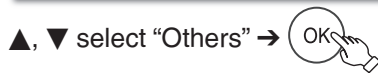
The picture is reduced.

• Select "Out" when display of the contents is truncated.

# System Settings



## Others



### Automatic Standby

Select how long the unit remains on when it is not being used.

[2 hours] [4 hours] [6 hours] [Off]

### Remote Control (→ 119)

[DVD 1] [DVD 2] [DVD 3]

### Clock

Press [OK] to show the following settings.

#### Auto Clock Setting

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 the "Manual Setting". (→ below)

[On] [Off]

#### Time Zone

Adjust the time data.

[Automatic] The time data will be adjusted according to your area automatically.

[GMT -6 to + 6] The time data will be corrected on GMT.

### Manual Setting (→ 15)

### Owner ID (→ 13)

In order to prevent another person from using this unit if it is stolen, you can set a PIN and input your personal information. Once the PIN has been set, you cannot return to the factory preset. Make sure not to forget this.

- You can enter the PIN (→ 13) to change the following personal information.

- PIN
- NAME
- HOUSE NO
- POSTCODE

### PIN Entry (→ 14)

### Power Save

[On] [Off]

Refer to the following when "Power Save" is set to "On".

- Power consumption is minimized when the unit is turned off (→ 14, step ⑩).
- Startup of the unit becomes slower compared to when "Power Save" is "Off".

### System Update

In order to update this unit's software and to support system changes made by broadcasts, this unit periodically performs software updates.

- Press [OK] to show the following settings.

#### Software Update in Standby

[On] You can perform the unit updates automatically when the unit is turned in standby.

[Off]

#### Software Licence

Information about software licence is displayed.

### DivX Registration

You need this registration code to purchase and play DivX Video-on-Demand (VOD) content (→ 50).

### Initialize

Press [OK] to show the following settings.

#### Shipping Condition

This returns Setup menus to default settings, except for the ratings level, PIN<sup>\*</sup>, Owner ID and Clock setting, etc.

[Yes] [No]

- The timer recording programmes are also cancelled.

\* PIN for DVD-Video playback, Child Lock, Parental Control and VIERA CAST

#### Default Settings

This returns Setup menus to default settings, except for the programmed channels, time settings, disc language settings, ratings level, PIN<sup>\*</sup>, Owner ID and remote control code, etc.

[Yes] [No]

\* PIN for DVD-Video playback, Child Lock, Parental Control and VIERA CAST



# Other Settings

## HOLD function

The HOLD function deactivates all buttons on the unit and remote control. Use it to prevent other people from operating the unit.

**Press and hold [OK] and [BACK/RETURN ↵] at the same time until "X HOLD" appears on the unit's display.**



If you press a button while the HOLD function is on, "X HOLD" appears on the unit's display and operation is impossible.

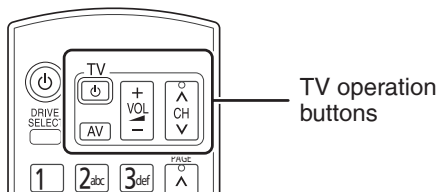
### Tips

#### To cancel the HOLD function

Press and hold [OK] and [BACK/RETURN ↵] at the same time until "X HOLD" disappears.

## Using the Unit's Remote Control to Operate the TV

You can configure the remote control TV operation buttons to turn the television on/off, change the television input mode, select the television channel and change the television volume.



- 1 Point the remote control at the TV.
- 2 While pressing and holding [TV], enter the code from the table below using the numbered buttons.  
e.g., 01: press [0] → [1]
- 3 Test the TV functions of the remote control for operability.
  - If the functions do not work, repeat steps 1 – 3 using different codes, if available. Some TVs may not be compatible with the unit's remote control.

### Remote Control Codes for the TV

Manufacturer	Code No.
Panasonic	01 / 02 / 03 / 04
AIWA	35
AKAI	27 / 30
BEJING	33
BEKO	05 / 71 / 72 / 73 / 74
BENQ	58 / 59
BP	09
BRANDT	10 / 15
BUSH	05
CENTREX	66
CHANGHONG	69
CURTIS	05

Manufacturer	Code No.
DAEWOO	64 / 65
DESMET	05
DUAL	05
ELEMIS	05
FERGUSON	10 / 34
FINLUX	61
FISHER	21
FUJITSU	53
FUNAI	63 / 67
GOLDSTAR	05 / 50 / 51
GOODMANS	05
GRADIENTE	36
GRUNDIG	09
HIKONA	52
HITACHI	05 / 22 / 23 / 40 / 41
INNO HIT	05
IRRADIO	30
ITT	25
JINGXING	49
JVC	17 / 30 / 39 / 70
KDS	52
KOLIN	45
KONKA	62
LG	05 / 50 / 51
LOEWE	07 / 46
MAG	52
METZ	05 / 28
MITSUBISHI	05 / 19 / 20 / 47
MIVAR	24
NEC	36
NOBLEX	33
NOKIA	25 / 26 / 27 / 60 / 61
NORDMENDE	10
OLEVIA	45
ONWA	30 / 39 / 70
ORION	05
PEONY	49 / 69
PHILCO	41 / 48 / 64
PHILIPS	05 / 06 / 46
PHONOLA	05
PIONEER	37 / 38
PROVIEW	52
PYE	05
RADIOLA	05
SABA	10
SALORA	26
SAMSUNG	32 / 42 / 43 / 65 / 68
SANSUI	05
SANYO	21 / 54 / 55 / 56
SCHNEIDER	05 / 29 / 30
SEG	05 / 69 / 75 / 76 / 77 / 78
SELECO	05 / 25
SHARP	18
SIEMENS	09
SINUDYNE	05
SONY	08
TCL	31 / 33 / 66 / 67 / 69
TELEFUNKEN	10 / 11 / 12 / 13 / 14
TEVION	52
TEX ONDA	52
THOMSON	10 / 15 / 44
TOSHIBA	16 / 57
WHITE	05
WESTINGHOUSE	
YAMAHA	18 / 41

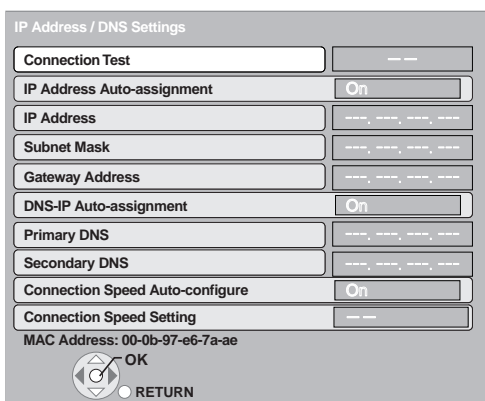
# Network Settings

These settings are used when you will connect this unit to a network. The connection to the Internet may take time or the internet may not be connected depending on the connection environment. It is recommended that you use a broadband connection.

## Testing the connection

Always test the connection when a LAN cable is connected or when new "IP Address/DNS Settings" have been made.

- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select "Others", then press [OK].
- 3 Press [▲, ▼] to select "Setup", then press [OK].
- 4 Press [▲, ▼] to select "Network Settings", then press [OK].
- 5 Press [▲, ▼] to select "IP Address/DNS Settings", then press [OK].



- 6 Press [▲, ▼] to select "Connection Test", then press [OK].

"Testing" : The test is in progress.

"OK" : The connection is completed.

"Failed" : Please check the connection and settings.

## Notes

- Perform the "Connection Test" also when any change was made to the "IP Address / DNS Settings".
- If the connection test fails, it may be necessary to set the MAC address of this unit at the router side. The MAC address can be displayed by selecting "Network Settings" and "IP Address / DNS Settings" in steps 1 – 5 (→ above).

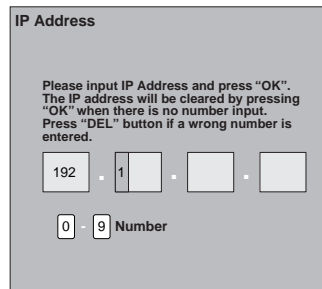
## Setting the IP address

In most cases, default settings can normally be used without making any changes.

Set the IP address only when the router has no DHCP server functions or when the router's DHCP server function is disabled.

After performing steps 1 – 5 (→ above)

- 6 Press [▲, ▼] to select "IP Address Auto-assignment", then press [◀, ▶] to select "Off".
- 7 Press [▲, ▼] to select "IP Address", "Subnet Mask" or "Gateway Address", then press [OK].
- 8 Enter numbers with the numbered buttons, then press [OK].
  - After checking the specifications for your broadband router, enter each number.  
If the number is unknown, then check the number of other devices such as personal computers connected via a LAN cable. Assign a different number from those of other devices for "IP Address" and the same number for others.
  - If a wrong number is entered, then press [DEL].



- 9 Press [◀, ▶] to select "Yes", then press [OK].

## Notes

- The numeric input range is between 0 and 255.

## Setting the DNS-IP

In most cases, default settings can normally be used without making any changes.

When setting an assigned DNS server from your internet service provider, perform the following settings.

After performing steps 1 – 5 (→ left)

- 6 Press [▲, ▼] to select "DNS-IP Auto-assignment", then press [◀, ▶] to select "Off".
- 7 Press [▲, ▼] to select "Primary DNS" or "Secondary DNS", then press [OK].
- 8 Enter numbers with the numbered buttons, then press [OK].
  - Follow the instructions given by your internet service provider and enter the numbers. If the number is unknown, then check the number of other devices such as personal computers connected via a LAN cable and assign the same number.
  - If a wrong number is entered, then press [DEL].
- 9 Press [◀, ▶] to select "Yes", then press [OK].

## Notes

- The numeric input range is between 0 and 255.

## Setting the connection speed

When the connection test results in "Failed" after the IP and DNS-IP addresses are assigned, perform the following settings.

After performing steps 1 – 5 (→ left)

- 6 Press [▲, ▼] to select "Connection Speed Auto-configure", then press [◀, ▶] to select "Off".
- 7 Press [▲, ▼] to select "Connection Speed Setting", then press [◀, ▶] to select a connection speed.
  - Select a connection speed in accordance with the environment of the network connected.
  - When the settings are changed, the network connection may be disabled depending on the device.

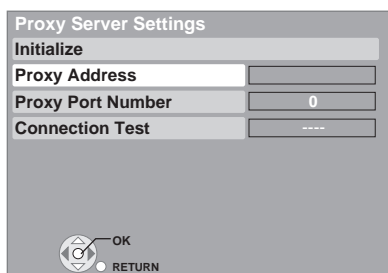
## Setting the proxy server

In most cases, default settings can normally be used without making any changes.

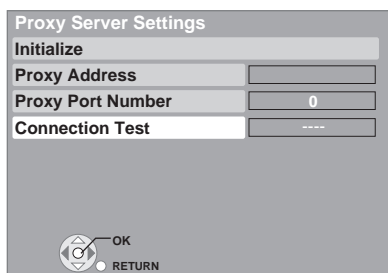
Please use this setting when instructed to by your Internet provider.

- Set the proxy server only after the connection test is completed properly.

- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Others”, then press [OK].
- 3 Press [▲, ▼] to select “Setup”, then press [OK].
- 4 Press [▲, ▼] to select “Network Settings”, then press [OK].
- 5 Press [▲, ▼] to select “Proxy Server Settings”, then press [OK].



- 6 Press [▲, ▼] to select “Connection Test”, then press [OK].



“Testing...”: The test is in progress.

“Pass”: The connection is completed.  
Press [BACK/RETURN ↵] to exit.

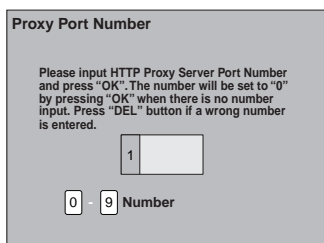
“Fail”: Please check the connection and settings.

- 7 Press [▲, ▼] to select “Proxy Address”, then press [OK].

(→ 82, Entering Text)

After the input of “Proxy Address” is completed

- 8 Press [▲, ▼] to select “Proxy Port Number”, then press [OK].
- 9 Enter numbers with the numbered buttons, then press [OK].



- 10 Press [◀] to select “Yes”, then press [OK].

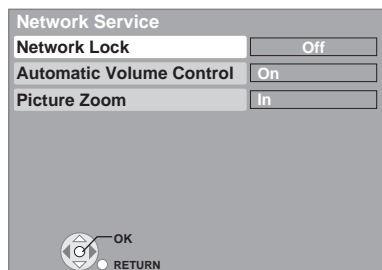
To set back to default setting

After performing steps 1 – 5 (→ above)

- 1 Press [▲, ▼] to select “Initialize”, then press [OK].
- 2 Press [◀] to select “Yes”, then press [OK].

## Setting the network service (VIERA CAST)

- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Others”, then press [OK].
- 3 Press [▲, ▼] to select “Setup”, then press [OK].
- 4 Press [▲, ▼] to select “Network Settings”, then press [OK].
- 5 Press [▲, ▼] to select “Network Service”, then press [OK].



- Network Lock (→ 103)
- Automatic Volume Control  
Select “On”, the volume is controlled by this unit automatically. If you want to enjoy the original volume, set it to “Off”.
- Picture Zoom  
Select “In” to enlarge the picture, or select “Out” to reduce the picture.

# Software Update

Software of this unit can be updated automatically by following method.

- From broadcasts
- From Internet [network connection and setting is required. (→ 106, 112)]

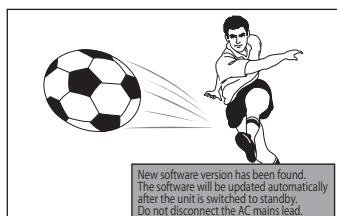
Update of the software is done when it is in standby mode. Once the new software is found, it will start the download of the software, and then update.

Download of the software will start automatically when the power of this unit is turned in standby or when it is 3 a.m.

- The time it takes to update depends on the connection.
  - For Broadcast: About 1 hour. (It may change depending on the condition of the broadcast.)
  - For Internet: About 1 hour (It may take longer than specified above to download because the download time differs depending on the network environment. It is recommended to be used in a broadband environment.)

If you do not want to perform the software update during the standby mode, set “Software Update in Standby” in the Setup menu to “Off”. (→ 104)

## If a software update is available, a notification is displayed



- Update of the software will start when the power is turned off.

### To start downloading

Press [OK].

### To ignore the new software

Press [EXIT].

## The unit's display during the update

- “SW-DL” : Software is downloading. Download will stop when the power is turned on, or the timer recording starts.
- “START” \* : Update of the software will start once the download is completed.
- “UPD□/□” \* : Software is updating.
- “FINISH” : Updated of the software 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.

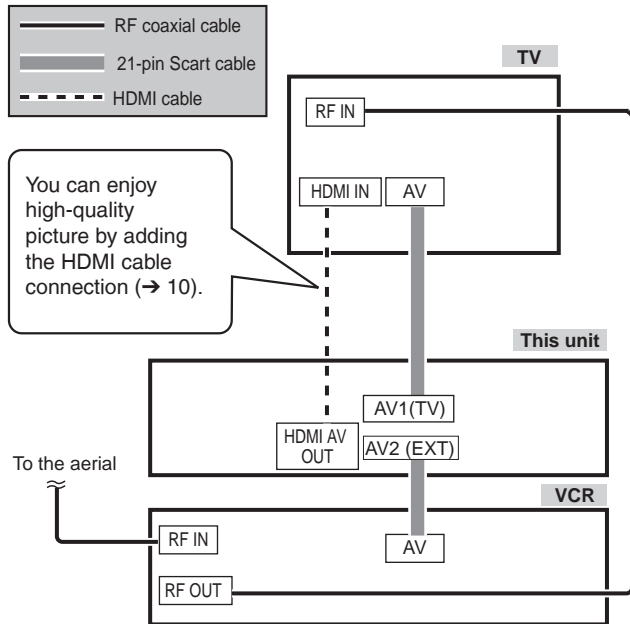
## Notes

- If the timer recording is scheduled within the following time at the start of the download, the download will not be executed.
  - For broadcast: Within 4 hours
  - For Internet: Within 1 hour
- If downloading on this unit fails or this unit is not connected to the Internet, then you can download the latest software from the following website and burn it to a CD-R to update the software. <http://panasonic.net/support/>

# Additional Connections

- Before connection, turn off the mains for all connected equipment and read the appropriate operating instructions.

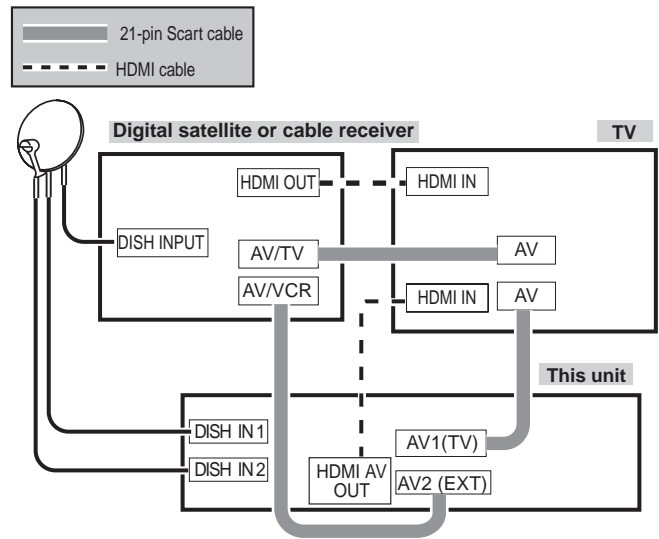
## Adding a VCR: Connecting to a Television and a Video Cassette Recorder



### To record from a VCR

Refer to “Recording from an External Device” (→ 63).

## Adding a Digital Satellite or Cable Receiver: Connecting to a Television and a Digital Satellite or Cable Receiver



### To record from a digital satellite or cable receiver

Refer to “Recording from a Satellite or Cable Receiver” (→ 62).

Your existing dish may require an upgrade to allow additional satellite outputs.

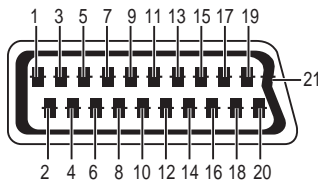
## 21-pin Scart terminal

The 21 pin Scart terminal transmits both input and output signals for picture and sound.

TVs equipped with the same type of terminal can be connected here.

This type of terminal is also called Peritel, Euro Connector and Euro AV.

- When the unit is connected to a Q Link compatible TV with a fully wired 21 pin Scart cable, you can use convenient functions of Q Link.



### AV1 Scart terminal (TV)

- 1 Audio output CH2 (R)
- 2 Audio input CH2 (R)
- 3 Audio output CH1 (L)
- 4 Audio ground
- 5 Blue ground
- 6 Audio input CH1 (L)
- 7 Blue output
- 8 Switching voltage output
- 9 Green ground
- 10 Q Link control signal
- 11 Green output
- 12 Reserved
- 13 Red ground
- 14 Blanking ground
- 15 Red output / chrominance output
- 16 Blanking output
- 17 Video output ground
- 18 Video input ground
- 19 Video output / luminance output
- 20 Video input
- 21 Ground

### AV2 Scart terminal (EXT)

- 1 Audio output CH2 (R)
- 2 Audio input CH2 (R)
- 3 Audio output CH1 (L)
- 4 Audio ground
- 5 Blue ground
- 6 Audio input CH1 (L)
- 7 Blue input
- 8 Switching voltage input
- 9 Green ground
- 10 Reserved
- 11 Green input
- 12 Reserved
- 13 Red ground
- 14 Blanking ground
- 15 Red input / chrominance input
- 16 Blanking input
- 17 Video output ground
- 18 Video input ground
- 19 Video output
- 20 Video input / luminance input
- 21 Ground

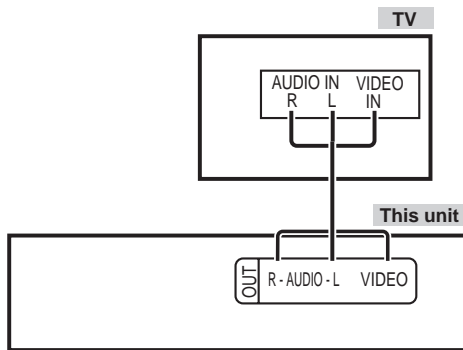
## Using a fully wired 21-pin Scart cable

- You can use a variety of Q Link functions by connecting the unit to a Q Link compatible television (→ 84).
- You can enjoy high-quality viewing by connecting the unit to an RGB compatible television when you are viewing in the standard definition (SD) quality. Set “AV1 Output” in the Setup menu to “RGB 1 (without component)” or “RGB 2 (without component)” (→ 102).
- “AV2 Input” settings in the Setup menu (→ 102).

# Additional Connections

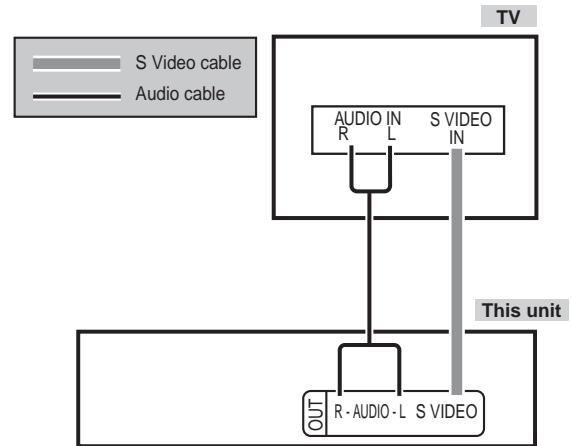
- You can connect this unit to a TV using the audio/video (AV) cable, S Video cable or component video cables instead of the 21-pin Scart cable (→ 10, 11, 12, 109).

## Using an Audio/Video Cable (not included)



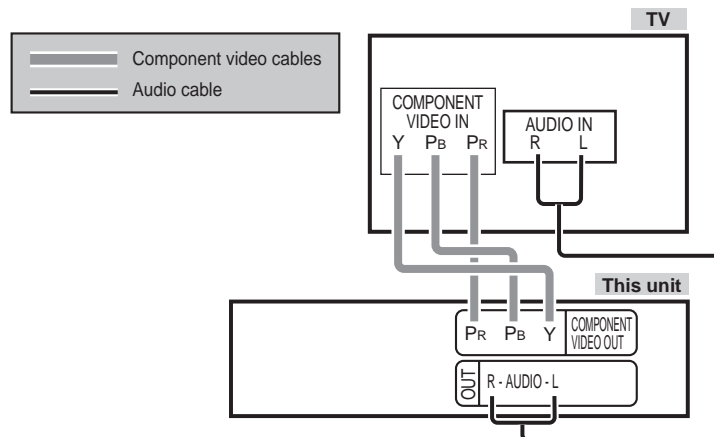
## Using an S Video Cable (not included)

The S VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the television.)



## Using Component Video Cables (not included)

The COMPONENT VIDEO OUT terminals on this unit can be used for either interlace or progressive output (→ 135) to provide a purer picture than the S VIDEO OUT terminal.



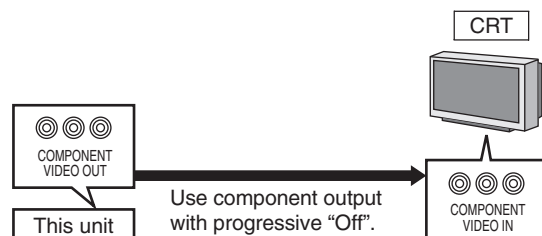
### Required settings

- Set "HDMI Video Mode" to "Off" (→ 102).
- Set "AV1 Output" to "Video (with component)" or "S Video (with component)" (→ 102).
- Set "Component Resolution" to the item compatible with connected equipment (→ 102).

### Notes

#### If you have a regular television (CRT: cathode ray tube)

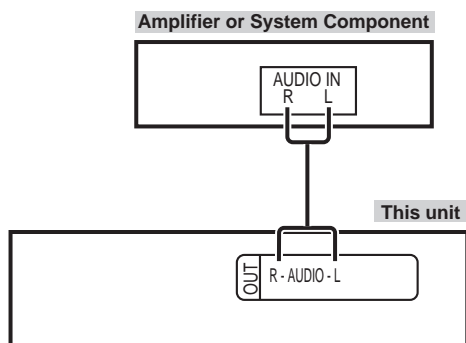
Progressive output may cause some flickering, even if it is progressive compatible. Set "HDMI Video Mode" in the Setup menu to "Off" and "Component Resolution" in the Setup menu to "576i/480i" if you are concerned about it (→ 102). This is the same for multi-system televisions using PAL mode.



You can improve sound quality by connecting this unit to an amplifier or system component using the audio cable or the digital audio cable (optical/coaxial).

## Using an Audio Cable (not included) for Better Sound

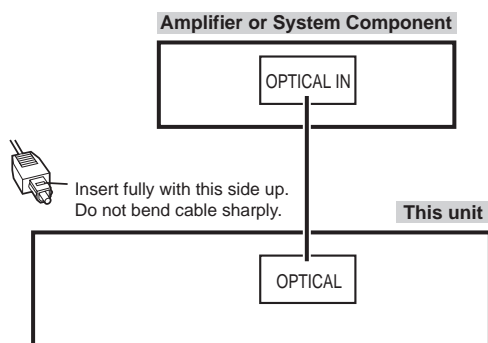
Use this connection to play sound through speakers connected to an amplifier or system component.



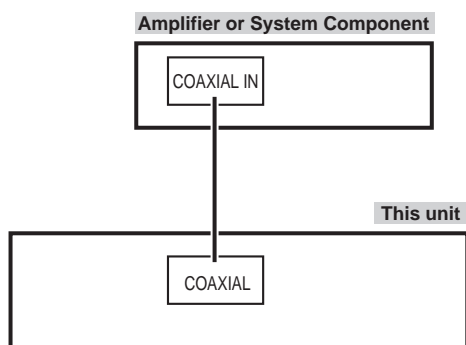
## Using a Optical Digital Audio Cable (not included) for Better Sound

This method allows you to enjoy multi-channel surround sound.

### ■ With OPTICAL



### ■ With COAXIAL



- Connect an amplifier or system component with a built-in Dolby Digital, DTS or MPEG decoder.
- Adjust settings in "Digital Audio Output" (→ 100).

### Notes

- When this unit is connected to an amplifier with a digital audio cable and connected to a television with an HDMI cable, you can enjoy the highest quality of audio from the disc by setting "HDMI Audio Output" to "Off" in the Setup menu (→ 102). In this case audio is only output from the amplifier not the television.
- You cannot use DTS Digital Surround decoders not meant for DVD.
- Before purchasing an optical digital audio cable, check the terminal shape of the equipment to be connected.

## Connecting with an HDMI (High Definition Multimedia Interface) Terminal

When connected to an HDMI compatible unit, an uncompressed digital audio and video signal is transmitted, enabling you to enjoy high quality, digital video and audio with just one cable. When connecting to an HDMI-compatible HDTV (High Definition Television), the output can be switched to 1080p, 1080i or 720p HD video.

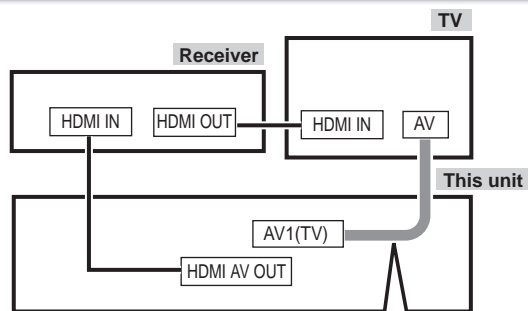
- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When outputting 1080p signal, please use the HDMI cables 5.0 meters or less.

### Regarding VIERA Link "HDAVI Control™" function

When connecting with a Panasonic TV (VIERA) or a receiver equipped with the "HDAVI Control" function, linked operations would be possible. [→ 84, Linked Operations with the TV (VIERA Link "HDAVI Control™"/Q Link)]

- Non-HDMI-compliant cables cannot be utilized.
- It is recommended that you use Panasonic's HDMI cable. Recommended part number: RP-CDHG10 (1.0 m), RP-CDHG15 (1.5 m), RP-CDHG20 (2.0 m), RP-CDHG30 (3.0 m), RP-CDHG50 (5.0 m), etc.

### Using an HDMI (High Definition Multimedia Interface) Cable (not included)



### Connecting with a Panasonic TV (VIERA)

If the 21-pin Scart cable is connected, the Direct TV Recording and Pause Live TV function is available. (→ 37)

- Set "HDMI Audio Output" to "On" (→ 102). (The default setting is "On".)
- To enjoy High Quality Video up-converted to 1080p, you need to connect the unit to 1080p compatible HDTV and set "HDMI Video Format" in the Setup menu to "1080p" (→ 102).

### Notes

- If connecting to equipment that is only compatible with 2 channel audio output, audio with 3 channels or more will be down-mixed (→ 134) and output as 2 channels, even if connecting with an HDMI cable (some discs cannot be down-mixed).
- For display units compatible with HDCP (High-Band width Digital Content Protection) that are equipped with a digital DVI input terminal (PC monitors, etc.): Depending on the unit, picture 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" in the Setup menu to "Off" (→ 102).

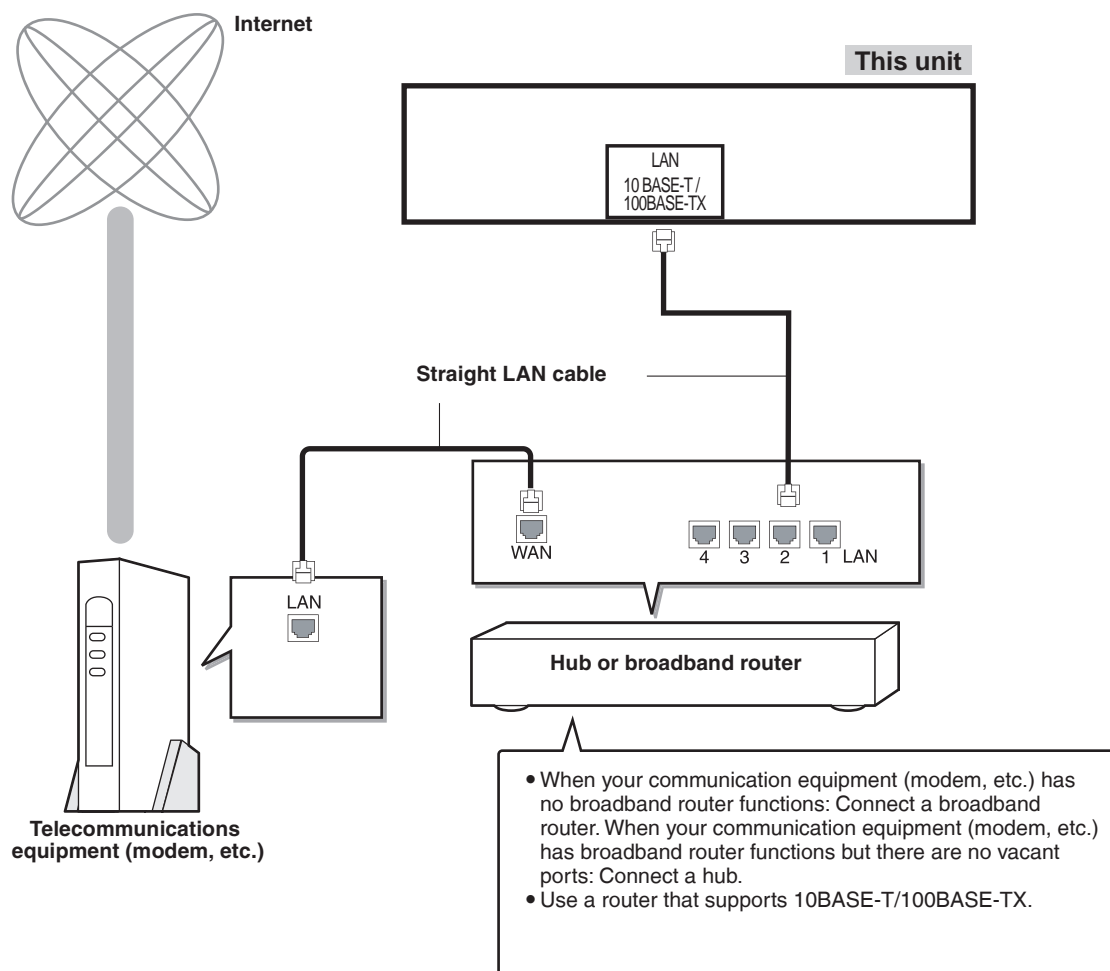
# Additional Connections

## Network connection

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

- This document is assuming that you already have a broadband connection.
- This connection is not necessary if following functions are not to be used.
- The unit is connected to the internet when the following functions are used, which may generate communication charges depending on your internet provider.

<b>Enjoying VIERA CAST™</b>	You can access a selection of Internet services from the Home screen with VIERA CAST, for example YouTube, Picasa Web Albums. (Current as of February 2009) (→ 83) • VIERA CAST requires a broadband Internet connection. Dial-up Internet connections cannot be used.
<b>Automatically acquire the title of the CD</b>	Automatically acquire the title of the CD or the information about the artist. (→ 80)
<b>Update the software of this unit</b>	Automatically update the software of this unit. (→ 108) • Update of the software can be done from the broadcast too.



- Make the necessary settings in "Network Settings" after connecting. (→ 106)

## Notes

- Refer to the operating instructions for the connected device.
- It may not work properly depending on the equipment or environment used.
- Depending on the contract with the provider, you may not be able to connect multiple numbers of terminals such as this unit or computers, or an additional fee might be required.
- Use only category 5 straight LAN cables (STP) when connecting to peripheral devices.
- When operating the VIERA CAST, use high-speed Internet service no less than 1.5 Mbps for SD (Standard Definition) and 6 Mbps for HD (High Definition) picture quality by your local broadband company.
  - If using slow Internet connection, the video may not be displayed correctly.
- Inserting any cable other than a LAN cable in the LAN terminal can damage the unit.



# 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)	○	○	-	○
While recording from external equipment to HDD (in XP, SP, LP, EP and FR mode)	○	○*	-	○
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)]	○	-	-	-

※ **AVCHD** It cannot playback.

• Simultaneous operation is not possible while executing "DV Automatic Recording" or "Recording via AV3 input".

## Starting of the timer recording while executing other operation

Starting of timer recording possible during the following operations	Starting of timer recording not possible during the following operations
<ul style="list-style-type: none"> <li>• Recording the title<sup>*1</sup></li> <li>• Playing the title<sup>*2</sup></li> <li>• Editing the title</li> <li>• Copying a title in high speed mode (without finalising/creating top menu)                             <ul style="list-style-type: none"> <li>- Only 1 programme can be recorded</li> </ul> </li> <li>• Executing "DV Automatic Recording"<sup>*3</sup></li> <li>• Executing "Recording via AV3 input"<sup>*3</sup></li> <li>• Executing Pause Live TV<sup>*1</sup></li> </ul> <p><sup>*1</sup> Executing operation will terminate when 2 programmes simultaneous recording cannot be performed.  <sup>*2</sup> Playback of disc stops when a timer recording in recording mode other than DR has started.  <sup>*3</sup> Executing operation will be terminated.</p>	<ul style="list-style-type: none"> <li>• Copying a title in normal speed mode</li> <li>• Copying a title in high speed mode (with finalising/creating top menu)</li> <li>• Copying HD Video (AVCHD format)</li> <li>• Editing still pictures or music</li> <li>• Copying still pictures</li> <li>• Copying music</li> <li>• Formatting</li> <li>• Finalising/Creating Top Menu (+RW)</li> </ul>

# Frequently Asked Questions

<b>Setup</b>		Page
How can I enjoy High Quality Video up-converted to 1080p?	<ul style="list-style-type: none"> <li>Connect the unit to 1080p compatible HDTV using an HDMI cable. Set "HDMI Video Format" in the Setup menu to "1080p".</li> </ul>	10, 102, 109
What equipment is necessary to play multi-channel surround sound?	<ul style="list-style-type: none"> <li>You cannot playback multi-channel sound on this unit without other equipment. You must connect this unit with an HDMI cable, an optical digital audio cable or a coaxial digital audio cable to an amplifier with a built-in (Dolby Digital, DTS or MPEG) decoder.</li> </ul>	111
Can the headphones and speakers be directly connected to the unit?	<ul style="list-style-type: none"> <li>You cannot directly connect to the unit. Connect through the amplifier, TV, etc.</li> </ul>	–
The television has a Scart terminal and component video input terminal. Which terminal should I connect with?	<ul style="list-style-type: none"> <li>If you have a regular television (CRT: cathode ray tube), we recommend using the Scart terminal. You can enjoy high-quality RGB video from this unit by connecting to an RGB compatible television.</li> <li>If you have an LCD/plasma television or LCD projector compatible with progressive scan, connect through the component video terminals for high quality progressive video.</li> <li>If you have a CRT television or a multi-system television using PAL mode that is compatible with progressive scan, we cannot recommend progressive output as some flickering can occur.</li> </ul>	10-12, 109, 110
Is my TV progressive output compatible?	<ul style="list-style-type: none"> <li>All Panasonic televisions that have 625 (576)/50i · 50p, 525 (480)/60i · 60p input terminals are compatible.</li> <li>Consult the manufacturer if you have another brand of TV.</li> </ul>	–
When are the software updates broadcast ?	<ul style="list-style-type: none"> <li>The unit shows automatically when a software update has been broadcast, and also automatically updates the software if this function has not been switched off in the Setup menu.</li> </ul>	108

<b>Discs</b>		Page
Can I play DVD-Video bought in another country?	<ul style="list-style-type: none"> <li>Playback of the following discs is not possible.                             <ul style="list-style-type: none"> <li>DVD-Video discs that do not include region "2" or "ALL".</li> </ul>                             Refer to the disc's jacket for more information.                         </li> </ul>	Cover
Can a DVD-Video that does not have a region number be played?	<ul style="list-style-type: none"> <li>The region management information for DVD-Video indicates that the disc conforms to industry standards. You cannot play discs that do not conform to industry standards or do not have a region number.</li> </ul>	–
Please tell me about disc compatibility with this unit.	<ul style="list-style-type: none"> <li>Refer to "HDD and Disc Handling".</li> </ul>	20–22

<b>Recording</b>		Page
Can I record from a commercially purchased video cassette, DVD?	<ul style="list-style-type: none"> <li>Most commercially sold video cassette, DVD are copy protected; therefore, recording is usually not possible.</li> </ul>	–
Can the disc recorded on the unit be played on other equipment?	<ul style="list-style-type: none"> <li>Refer to “Play on other players” in “HDD and Disc Handling”.</li> </ul>	20-21
Can I high speed copy to a disc?	<ul style="list-style-type: none"> <li>Yes, you can. (But you may not high speed copy depending on the disc to copy or the title.)</li> <li>Depending on the disc type, the maximum speed varies.</li> </ul>	55
Is it possible to copy to the disc, SD card, or USB memory after copying HD video (AVCHD format) to the HDD?	<ul style="list-style-type: none"> <li>It can be copied to the disc.</li> <li>– <b>RAM -R -R DL -RW(V) +R +R DL +RW</b> It will be copied with SD quality. (It cannot be copied as it is in HD picture quality.)</li> <li>It cannot be copied to SD card or USB memory.</li> </ul>	–
MPEG-2 or AVCHD files are not recognised.	<ul style="list-style-type: none"> <li>Only MPEG-2 or AVCHD on a Panasonic's video camera, etc. will be recognised. MPEG-2 or AVCHD copied to USB memory or an SD card will not be recognised.</li> </ul>	–

<b>TV Guide</b>		Page
Is it possible to programme a recording, with a start and end time that are different from the TV Guide system?	<ul style="list-style-type: none"> <li>You can manually change the start and end time of programmes in the Timer Recording menu.</li> <li>But if timings are altered by more than 10 minutes, “Guide Link” will not be able to function.</li> </ul>	41, 42
Can I receive TV Guide system data via a connected satellite or cable receiver	<ul style="list-style-type: none"> <li>No, only via the built-in tuner. To perform timer recordings with satellite or cable receiver, please use the External Link feature or your unit's manual timer programming.</li> </ul>	39, 62
How can I cancel a timer programming?	<ul style="list-style-type: none"> <li>Press [PROG/CHECK] and select the desired entry and then press [DEL].</li> </ul>	41, 42
What happens when I unplug my unit from the household mains socket?	<ul style="list-style-type: none"> <li>The TV Guide system data will not be updated. If the unit is disconnected from the AC mains for a longer period of time, then the TV Guide data is lost. And if the unit is left unplugged for approximately 60 minutes, the clock and timer recordings that have been set are lost.</li> </ul>	–

<b>USB</b>		Page
What can or cannot be done using the USB port on this unit?	<ul style="list-style-type: none"> <li>You can play DivX, MP3 or still picture (JPEG) files on a USB memory. 49, 68, 75</li> <li>You can copy still pictures (JPEG) files on a USB memory to the HDD or DVD-RAM. 72</li> <li>You can copy MP3 files on a USB memory to the HDD. 80</li> <li>You can connect a video equipment and copy SD Video to the HDD or DVD-RAM. 67</li> <li>You can connect a video equipment and copy HD Video to the HDD. 66</li> <li>Data on the HDD or a disc cannot be transferred to a USB memory. –</li> <li>Data on a USB memory cannot be edited or a USB memory cannot be formatted on this unit. –</li> <li>Some USB memories cannot be used with this unit. 23</li> </ul>	

<b>Music</b>		Page
What will happen if I try to record the same CD multiple times?	<ul style="list-style-type: none"> <li>New album will be made following the existing album.</li> </ul>	–
Can I transfer the music tracks from HDD to the disc or USB memory?	<ul style="list-style-type: none"> <li>No, you cannot.</li> </ul>	–

# Messages

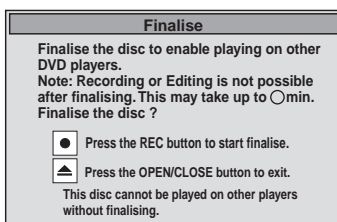
On the Unit's Display		Page
H□□, F□□ ("□" stands for a service number.)	<ul style="list-style-type: none"> <li>An error has occurred. The number following "H" or "F" depends on the status of the unit. Check the items below and in the Troubleshooting Guide. If the service number still does not disappear after the check, reset the unit (→ 119, "To restore the unit if it freezes").</li> <li>If the service numbers fail to clear, note the service numbers and contact a qualified service person.</li> </ul>	–
DVD □ ("□" stands for a number.)	<ul style="list-style-type: none"> <li>The remote control and the main unit are using different codes. Change the code on the remote control.</li> </ul>	119
EXT-L	<ul style="list-style-type: none"> <li>This unit is in EXT LINK standby. EXT LINK has been turned on and will stop operation on the unit until the recording has completed. Press [EXT LINK] to stop recording or cancel linked timer.</li> </ul>	62
FINISH	<ul style="list-style-type: none"> <li>The software update is completed.</li> </ul>	108
GUIDE	<ul style="list-style-type: none"> <li>TV Guide data is being downloaded.</li> </ul>	44
HARD ERR*	<ul style="list-style-type: none"> <li>If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.</li> </ul>	–
NoERAS	<ul style="list-style-type: none"> <li>You cannot delete items on this disc. The disc may be damaged. Use a new disc.</li> </ul>	–
NoREAD	<ul style="list-style-type: none"> <li>The disc is dirty or badly scratched. The unit cannot record, play, or edit.</li> <li>The disc may be incompatible or of poor quality.</li> <li>You have used a lens cleaner and it has finished operation. Press [▲ OPEN/CLOSE] on the main unit to eject the disc.</li> </ul>	118 21, 22 7
NoWRIT	<ul style="list-style-type: none"> <li>You cannot write to this disc. The disc may be damaged. Use a new disc.</li> </ul>	–
PLEASE WAIT*	<ul style="list-style-type: none"> <li>Displayed when the unit is started or when turned to standby. This is not a malfunction.</li> <li>The unit is carrying out its recovery process. You cannot operate the unit while the message is displayed.</li> </ul>	–
PROG FULL*	<ul style="list-style-type: none"> <li>There are already 32 timer recording programmes. Delete unnecessary timer recording programmes.</li> </ul>	41
REMOVE	<ul style="list-style-type: none"> <li>The USB device is drawing too much power. Remove the USB device.</li> </ul>	–
START	<ul style="list-style-type: none"> <li>Update of the software is started. You cannot operate the unit until the update is complete.</li> </ul>	108
SW-DL	<ul style="list-style-type: none"> <li>The unit is performing a software update. Download will stop when the power is turned on, or the timer recording starts.</li> </ul>	108
UNFORMAT*	<ul style="list-style-type: none"> <li>You inserted an unformatted DVD-RAM, DVD-RW, +RW, an unused +R, +R DL or DVD-RW (DVD-Video format) that has been recorded on other equipment. Format the disc to use it. However all the recorded contents on the disc are deleted.</li> </ul>	93
UNSUPPORT*	<ul style="list-style-type: none"> <li>You have inserted a disc the unit cannot play or record onto.</li> <li>You tried to operate with a non-compatible USB memory.</li> </ul>	21, 22 23
UPD □/□ ("□" stands for a number.)	<ul style="list-style-type: none"> <li>The software is being updated. You cannot operate the unit until the update is complete.</li> </ul>	108
U50	<ul style="list-style-type: none"> <li>The terminal, antenna cable or DISH is short-circuited as for both DISH IN 1 and DISH 2. Check the connection status.</li> </ul>	10, 11
U50 1	<ul style="list-style-type: none"> <li>The terminal, antenna cable or DISH is short-circuited as for DISH IN 1. Check the connection status.</li> </ul>	10, 11
U50 2	<ul style="list-style-type: none"> <li>The terminal, antenna cable or DISH is short-circuited as for DISH IN 2. Check the connection status.</li> </ul>	10, 11
U59	<ul style="list-style-type: none"> <li>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.</li> </ul>	–
U61	<ul style="list-style-type: none"> <li>(When a disc is not inserted) Displays when a malfunction has occurred during recording or playback. This is displayed when the unit is in the recovery process to return to normal operation; it is not broken. Once the display clears you can use the unit again.</li> </ul>	–
U72 U73	<ul style="list-style-type: none"> <li>The HDMI connection acts unusually.                             <ul style="list-style-type: none"> <li>The connected equipment is not HDMI compatible.</li> <li>Please use HDMI cables that have the HDMI logo (as shown on the cover).</li> <li>The HDMI cable is damaged.</li> </ul> </li> </ul>	–
U76	<ul style="list-style-type: none"> <li>HDMI cannot be output because you are connected to a model that does not support copyright protection.</li> </ul>	–
U77	<ul style="list-style-type: none"> <li>Due to the current disc not having authorised copyright information, video output is not performed.</li> </ul>	–
U88	<ul style="list-style-type: none"> <li>There was something unusual detected with the disc while recording, playing or copying; there was a power failure or the AC mains lead 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.</li> </ul>	121
U99	<ul style="list-style-type: none"> <li>The unit fails to operate properly. Press [⏻] on the main unit to switch the unit to standby mode. Now press [⏻] on the main unit again to turn the unit on.</li> </ul>	–
X HOLD	<ul style="list-style-type: none"> <li>The HOLD function is activated. Press and hold [OK] and [BACK/RETURN ↵] at the same time until "X HOLD" disappears.</li> </ul>	105

On the TV		Page
Authorisation Error.	• You are trying to play the DivX VOD content that was purchased with a different registration code. You cannot play the content on this unit. (DivX)	50
Cannot finish recording completely.	• The programme was copy-protected. • The HDD or disc may be full. • The maximum number of title has been exceeded.	– – 35
Cannot playback. TV system is different from the setting. To playback, please change the TV System in Setup.	• You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the “TV System” setting on this unit to suit.	101
Cannot record to the disc.	• The disc may be dirty or scratched.	118
Unable to format.		
Cannot play on this unit.	• You tried to play a non-compatible image. • Turn the unit off and re-insert the card.	131 118
Cannot record. Disc is full.	• <b>HDD RAM -RW(V) +RW</b> Create space by deleting unwanted titles. Even if you delete recorded content from the DVD-R, DVD-R DL, +R or +R DL, there is no increase in disc space. Available recording space on a DVD-RW (DVD-Video format) or +RW disc increases when the last title is deleted (space may increase slightly when you delete other titles). • Use a new disc.	32, 51, 93, 98
Cannot record. Maximum number of titles exceeded.		–
No Disc.	• The disc is upside down. If it is a single-sided disc, insert it so the label is facing up.	118
No folders.	• There is no compatible folder in this unit.	132
No SD CARD No valid SD card.	• The card is not inserted. If this message is displayed with a compatible card already inserted, turn off the unit, remove and then re-insert the card. • The format of the card inserted is incomplete. • MPEG-2 or AVCHD will only be recognised when recorded on to the card from Panasonic’s video camera, etc. • Files on the card are not of the right type.	118
		23
		–
Not enough space in the copy destination.	• Create space by deleting any unnecessary items.  • Delete one or more items registered on the copying list to ensure that the “Destination Capacity” is not exceeded.	32, 51, 93, 98 59, 73
The disc is not recordable.	• The unit cannot record on the disc you inserted. Insert an unfinalised disc. • You inserted an unformatted disc.	–
This disc is not formatted properly.		93
Rental Expired.	• The DivX VOD content has zero remaining plays. You cannot play it. (DivX)	50
⊙ This operation cannot be performed now.	• Some operations are unsupported by the unit. For example; – <b>AVCHD</b> During playback, reverse slow-motion or reverse frame-by-frame is not possible.	–
⊙ This operation is prohibited by this disc.	• Depending on the disc, you may not be able to perform search or skip when film previews and warning screens are being played back.	–

## When removing a recorded disc

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

The following screen appears when you have not processed the disc for play on other equipment.



### ■ To finalise the disc

Press [● REC].

• You cannot stop this process once you have started it.

• If you want to set the background, play menu select or provide a disc name, select “Top Menu” (→ 94), “Auto-Play Select” (→ 94) or “Disc Name” (→ 92) in “DVD Management” before finalising.

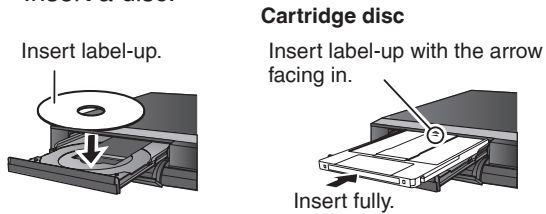
### ■ To open the tray without disc finalisation

Press [▲ OPEN/CLOSE] on the main unit.

# Media (Disc/USB Memory/SD Card) Handling

## Inserting Discs

- 1 Press [**▲ OPEN/CLOSE**] to open the tray.  
– Insert a disc.



- 2 Press [**▲ OPEN/CLOSE**] to close the tray.

### Notes

- When using 8 cm DVD-RAM or 8 cm DVD-R, remove the disc from the cartridge.
- It is not possible to record or play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.

### Automatic drive select function

**RAM** [Only for discs with the write-protect tab on the cartridge set to “PROTECT” (→ 92, Setting Protection)]

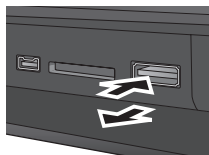
**DVD-V CD**, MP3, JPEG, DivX

- If the unit is recording to the HDD or stopped, it automatically switches to the DVD drive when a disc is inserted.
- If you eject a disc and close the disc tray, the HDD drive is automatically selected.

## Inserting/Removing the USB memory

### Inserting the USB memory

When the USB indicator (“USB”) is flashing, the USB memory is being read from. Do not turn off the unit or remove the USB memory. Such action may result in malfunction or loss of the USB memory’s contents.



- Before inserting any USB memory to this unit, ensure that the data stored therein has been backed up.
- Check the orientation of the USB connector and insert it straight in.
- Insert a USB device while the unit is stopped, so the “USB device” screen is displayed. Select an item and press [OK] to switch to the USB-related operations (→ 49, 66, 67, 68, 72, 75, 80).

### Removing the USB memory

- Complete all USB-related operations and pull the USB memory straight out.
- If a USB memory being accessed is pulled out, then the data may be damaged.

## Inserting/Removing the SD Card

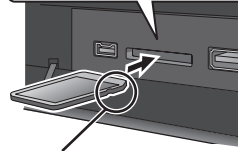
When the card indicator (“SD”) on the unit’s display is flashing, the card is being read from or written to. Do not turn off the unit or remove the card.

Such action may result in malfunction or loss of the card’s contents.

- Inserting foreign objects can cause a malfunction.

### Inserting the card

Press on the centre of the card until it clicks into place.



Insert the card label up with the cut-off corner on the right.

If you are using a e.g., miniSD  
miniSD card, or a  
microSD card, insert  
it into the adaptor that  
comes with the card.  
Insert and remove this  
adaptor from the unit.



### Removing the card

- 1 Press on the centre of the card.
- 2 Pull it straight out.

### Automatic drive select function

- If you insert an SD card while the unit is stopped, the “SD Card” screen is displayed (→ 66, 67, 68, 72).
- If you remove an SD card, the HDD drive is automatically selected.

## Disc and Card Care

### Holding a disc or card

Handle discs by the edges to avoid inadvertently scratching or getting oil from your fingers on the disc. Do not touch the signal surface of discs (the shiny side) or the terminal surface (the metal part) of SD cards.

### Cleaning discs or cards

Discs are not indestructible and occasionally dirt or condensation may appear. Clean by gently wiping with a soft, dry lint-free cloth in a straight line from the centre of the disc to the edge of the disc. Return discs and SD cards to their cases when not in use; this helps to protect against scratches and dirt.

### Storing discs and cards

- Do not place or store discs and cards in the following locations:
  - Direct sunlight
  - Very dusty or humid areas
  - Near a heat source
  - Places that undergo extreme shifts in temperature (condensation can occur)
  - Where static electricity or electromagnetic waves occur
- Keep the Memory Card out of reach of children to prevent swallowing.

### Discs to avoid

- Discs that are not perfectly circular in shape
- Warped discs, which may not balance properly in your unit, causing improper operation or damage to the unit
- Cracked discs
- Discs with exposed adhesive (from removed stickers or labels, such as may occur with rental discs or improperly cared-for discs that were previously labeled or re-labeled)

# Troubleshooting Guide

## When Other Panasonic Products Respond to this Remote Control

Use this function to synchronize the codes for the remote control and the main unit when there are other Panasonic products close to your unit.

With the unit stopped

- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select "Others", then press [OK].
- 3 Press [▲, ▼] to select "Setup", then press [OK].
- 4 Press [▲, ▼] to select "Others", then press [OK].
- 5 Press [▲, ▼] to select "Remote Control", then press [OK].
- 6 Press [▲, ▼] to select the code ("DVD 1", "DVD 2" or "DVD 3"), then press [OK] to set.
- 7 While pressing and holding [OK], press and hold the numbered button [1], [2] or [3] corresponding to the code set in step 6 for more than 5 seconds to set.
- 8 Press [OK] to complete.

When the following indicator appears on the unit's display



– Change the code on the remote control to match the code displayed for the main unit (→ step 7).

### Tips

#### To return to the previous screen

Press [BACK/RETURN ↵].

#### To exit the screen

Press [EXIT].

## To reset this unit

### To reset the unit's settings

All the settings except for the ratings level, PIN\*, Owner ID and Clock, etc. return to the factory preset. The timer recording programmes are also cancelled.

\* PIN for DVD-Video playback, Child Lock, Parental Control and VIERA CAST

On the main unit

**Press and hold [▼ CH] and [CH ▲] for about 5 seconds.**

– "freesat Auto Setup" (→ 96) starts.

To reset the unit's settings by using the menu, see page 104.

### To reset the ratings level settings

With the unit stopped

- 1 Press [▲ OPEN/CLOSE] to open the disc tray.
- 2 Press [DRIVE SELECT] to select the DVD drive.

On the main unit

- 3 Press and hold [● REC] and [▶/×1.3] for about 5 seconds.

### To restore the unit if it freezes

On the main unit

**Press and hold [⏻/|] for more than 10 seconds.**

– The unit is turned in standby.

### To eject the disc forcibly

On the main unit

- 1 Press [⏻/|] to switch to standby mode.  
– If the unit doesn't switch to standby mode, restore the unit. (→ above)

While the unit is turned in standby

- 2 Press and hold [■] and [CH ▲] at the same time for about 5 seconds.

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, consult your dealer for instructions.

Updating to the latest software may solve the problem. (→ 108)

#### The following does not indicate a problem with the unit:

- Regular disc rotating sound.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Periodic interruptions to the reception due to satellite broadcasting breaks.
- Operations are slow to respond when "Power Save" is set to "On".
- Operations are not working due to a poor-quality disc. (Try again using a Panasonic disc.)
- The unit freezing due to the activation of one of its safety devices (→ above, To restore the unit if it freezes).
- When the unit is turned on or off, there may be an unexpected sound.

# Troubleshooting Guide

## General Issues

### Power

		Page
No power. The unit does not turn on pressing [⏻].	• Insert the AC mains lead securely into a known active household mains socket.	10, 11
	• 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.	62
The unit switches to standby mode.	• One of the unit's safety devices is activated. Press [⏻/ ] on the main unit to turn the unit on.	–
The unit is turned in standby automatically.	• If you connected this unit to an "HDAVI 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.	84
This unit turns off when the TV input is switched.	• If connected with an HDAVI Control 4 compatible TV (VIERA) with the "Intelligent Auto Standby" setting activated on the TV, when switching the TV input, the unit will be automatically turned to standby. For details please read the operating instructions of the TV.	–

## General Issues

### Displays

		Page
The display is dim.	• Change "Unit's Display" in the Setup menu.	101
"0:00" is flashing on the unit's display.	• Set the clock.	15
The displayed time of this unit is different from the actual recording time or MP3 recording time.	• Times shown may disagree with actual times.	–
	• <b>-R -R DL +R +R DL</b> The remaining capacity does not increase even if titles are deleted.	–
	• Available space on a DVD-RW (DVD-Video format) or +RW disc increases when you delete the last title (space may increase slightly when you delete other titles).	–
	• 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 be displayed accurately.	–
Compared to the actual recorded time, the elapsed time displayed is less. (Only when recording in NTSC)	• The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be a slight difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.	–
The clock does not display on the unit when switched to standby.	• Ensure "Power Save" is set to "Off".	104
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.	–



## General Issues

## Operation

		Page
Cannot operate the TV with the unit's remote control.	<ul style="list-style-type: none"> <li>Change the manufacturer code on the remote control.</li> <li>It may be necessary to set the code on the remote control again after changing the batteries.</li> </ul>	105 119
Cannot operate the disc.	<ul style="list-style-type: none"> <li>Press [DRIVE SELECT] to select the DVD drive when operating the disc.</li> </ul>	26
The remote control doesn't work.	<ul style="list-style-type: none"> <li>The remote control code is wrong. Change to the correct code.</li> <li>The batteries are depleted. Replace them with new ones.</li> <li>Point the remote control at the remote control sensor on the main unit.</li> <li>Remove obstacles between the remote control and the main unit.</li> <li>Remove dust from the transmission window and the unit's sensor.</li> <li>Coloured glass may obstruct the signal reception/transmission.</li> <li>Don't place the signal sensor in direct sunlight or in areas that may be subject to sun exposure.</li> <li>It may be necessary to set the manufacturer code again after changing the batteries.</li> <li>The HOLD function is activated.</li> <li>Software is updating when "UPD □/□" is displaying on the unit's display. Wait until the update is completed.</li> </ul>	119 7 7 – – – – 105 105 108
The unit is on but cannot be operated.	<ul style="list-style-type: none"> <li>Recording drive or playback drive has not been selected properly.</li> <li>Some operations are prohibited by the disc.</li> <li>The unit is warm ("U59" appears on the unit's display). Wait until "U59" disappears.</li> <li>One of the unit's safety devices may have been activated.</li> </ul> <p>Reset the unit as follows: Press [⏻] on the main unit to switch to standby mode. If the unit doesn't switch to standby mode, reset the unit (→ 119, "To restore the unit if it freezes").</p>	26, 27 – 116 –
"U88" is displayed and the disc cannot be ejected.	<ul style="list-style-type: none"> <li>The unit is carrying out the recovery process. The disc may be defective. Do the following to eject the disc. Try another disc.</li> </ul> <p>(1) Press [⏻] on the main unit to switch to standby mode. If the unit doesn't switch to standby mode, reset the unit (→ 119, "To restore the unit if it freezes").</p> <p>(2) While the unit is turned in standby, press and hold [■] and [CH ^] on the main unit at the same time for about 5 seconds. (Ejection may take extra time depending on discs.)</p>	–
Cannot eject a disc.	<ul style="list-style-type: none"> <li>The unit is recording.</li> <li>The unit may have a problem. Eject the disc as in (2) above.</li> <li>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.</li> </ul> <p>If the HOLD function is activated, above operation does not work. Cancel the HOLD function.</p>	– – 62, 105
Startup is slow.	<ul style="list-style-type: none"> <li>Startup takes time in the following situations: <ul style="list-style-type: none"> <li>A disc other than a DVD-RAM is inserted.</li> <li>The clock is not set.</li> <li>Immediately after a power failure or the AC mains lead is connected.</li> <li>When the unit is connected with an HDMI cable.</li> </ul> </li> <li>Set "Power Save" to "Off" in the Setup menu. If connected with an HDAVI Control 4 compatible TV (VIERA) with the "Standby Power Save" setting activated on the TV, even with "Power Save" set to "Off" when the TV is in Standby mode, the unit may take some time to startup.</li> </ul>	–     104

## General Issues

## TV Guide

		Page
The TV Guide system does not receive any data.	<ul style="list-style-type: none"> <li>Check whether the clock is properly set.</li> <li>If signal quality is bad (ghost images or limited reception), the TV Guide system may not be able to receive any data. Check the connection and retune unit.</li> </ul>	15 96
The empty field is displayed for some or all stations.	<ul style="list-style-type: none"> <li>Some stations are not supported by the TV Guide system.</li> <li>Programme the Timer recording manually.</li> </ul>	– 39
The TV Guide information is not displayed properly.	<ul style="list-style-type: none"> <li>There was a programme change or TV Guide information from a broadcast station was possibly not correctly transmitted.</li> </ul> <p>Check the current programme, e.g. on the Web site for the TV Guide system provider or station provider.</p>	–
The TV Guide data is not updated.	<ul style="list-style-type: none"> <li>Make sure that the time is set correctly. Set the clock manually.</li> </ul>	15

# Troubleshooting Guide

## General Issues

### Digital satellite broadcast

		Page
freesat Auto Setup cannot be done completely.	<ul style="list-style-type: none"> <li>• Check connections and dish alignment. The dish needs to be pointing at Astra 2 at 28.2° East, and Eurobird 1 at 28.5° East.</li> <li>• If the problem persists, consult your freesat registered retailer or call Freesat (UK) Ltd on <b>0844 881 6700</b> or visit <b>www.freesat.co.uk</b></li> </ul>	– –
freesat channels cannot be received.	<ul style="list-style-type: none"> <li>• Check the connections.</li> <li>• The satellite dish may not be pointing in the direction of the satellite, or the direction of the satellite dish may have changed due to strong winds or vibration. If problem persists consult your freesat registered dealer.</li> <li>• Perform “freesat Auto Setup” in the Setup menu.</li> </ul>	10, 11 – 96
TV reception worsens after connecting the unit.	<ul style="list-style-type: none"> <li>• This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from electronics retailers.</li> </ul>	–
Picture regularly breaks up on some channels, “No Signal” message is displayed.	<ul style="list-style-type: none"> <li>• Check “Signal Condition”. If “Signal Quality” or “Signal Strength” are displayed in red or constantly changing, check satellite dish. If problem persists consult your freesat registered dealer.</li> <li>• Interference (known as impulse noise) from household appliances such as light switches, fridges, etc. may cause picture break up and/or audio distortion. Use a high quality quad shielded coaxial cable fly lead between this unit and antenna wall socket to minimise impulse noise pickup. If problem persists consult your freesat registered dealer.</li> <li>• When “No Signal” message is displayed, check satellite dish connection.</li> <li>• Perform “freesat Auto Setup” in the Setup menu.</li> </ul>	96 – – 96
Picture very infrequently breaks up on some or all channels.	<ul style="list-style-type: none"> <li>• Electrical atmospheric interference caused by local or distant lighting storms or heavy rain and/or wind may cause pictures to break up and audio to mute or distort momentarily.</li> <li>• Impulse noise interference from an infrequently used electrical appliance, or a passing vehicle or lawn mower with a “noisy” ignition system.</li> </ul>	– –
The digital satellite channel information does not appear.	<ul style="list-style-type: none"> <li>• Select the length of time (3-10 sec.) in the “On-Screen Messages” in the Setup menu.</li> <li>• The digital satellite channel information will not appear during playback.</li> </ul>	101 –
No Digital TEXT Some functions of digital text do not work.	<ul style="list-style-type: none"> <li>• When subtitle is on or additional information in the digital satellite channel information is displayed, Digital TEXT does not work.</li> <li>• New functions introduced by broadcasters cannot be guaranteed to work.</li> </ul>	– –
After the Auto-setup, there aren't any stations in the station list.	<ul style="list-style-type: none"> <li>• “Shipping Condition” was performed or the unit was in the delivery status. The Auto-setup was then started and interrupted. Do an Auto-setup again and let it continue right through to the end. The data is only saved after this has been completed.</li> </ul>	–
The Signal Strength is over 100 % (> 10)	<ul style="list-style-type: none"> <li>• Reduce the signal amplification at your satellite dish.</li> </ul>	96
Interference or frozen / disappearing image	<ul style="list-style-type: none"> <li>• Check “Signal Condition”. If “Signal Quality” or “Signal Strength” are displayed in red, the signal is weak.</li> <li>• Check dish.</li> <li>• Check your postcode area is able to receive the freesat channels at <b>www.freesat.co.uk</b></li> <li>• Weather conditions will affect signal reception (heavy rain, snow, etc.), in particular in poor reception areas. Even during good weather the high pressure can cause poor reception of some channels.</li> <li>• Turn off the unit and disconnect the AC mains lead then turn on again.</li> </ul>	96 – – – –
Some freesat channels do not produce the sound in English by default.	<ul style="list-style-type: none"> <li>• This is due to broadcasts even if they have English sound. In this case, press [OPTION] and set “Multi Audio/AD”. Please note that this setting cannot be memorized if you disconnect the AC mains lead.</li> </ul>	88
No picture output after changing the “HDCP on HDMI Output” setting.	<ul style="list-style-type: none"> <li>• After changing the “HDCP on HDMI Output” setting, turn the power of this unit off once, and turn it back on.</li> </ul>	102

## General Issues

### VIERA Link

		Page
VIERA Link doesn't work.	<ul style="list-style-type: none"> <li>• Check the HDMI cable connection. Check that “HDMI” is displayed on the front display when the power for the main unit is set to On.</li> <li>• Make sure that “VIERA Link” is set to “On”.</li> <li>• Check the “VIERA Link” settings on the connected device.</li> <li>• Some functions may not work if depending on the version of “HDAVI Control” of the connected equipment. This unit supports “HDAVI Control 4” functions.</li> <li>• If the connection for the equipment connected with an HDMI cable was changed, or if there was a power failure or the plug was removed from the household mains socket, “VIERA Link” may not work. In this case, perform the following operations.               <ol style="list-style-type: none"> <li>1. When the HDMI cable is connected to all equipment with the power on, turn the TV (VIERA) on again.</li> <li>2. Change the TV (VIERA) settings for the “VIERA Link” function to off, and then set to on again. (For more information, see the VIERA operating instructions.)</li> <li>3. Switch the VIERA input to HDMI connection with this unit, and after this unit's screen is displayed, check that “VIERA Link” is working.</li> </ol> </li> </ul>	– 102 – – –
The control panel does not appear.	<ul style="list-style-type: none"> <li>• The control panel is only displayed when connected to a TV with “HDAVI Control 2” or later function.</li> </ul>	84
The operation on this unit (music playback etc.) is interrupted.	<ul style="list-style-type: none"> <li>• The operation on this unit may be interrupted when you press buttons on the TV remote control that do not work for VIERA Link functions.</li> </ul>	–

		Page
The images from the unit do not appear on the TV. Picture is distorted.	<ul style="list-style-type: none"> <li>• Make sure the connections are pushed in firmly.</li> <li>• Try connecting an alternative cable.</li> <li>• Make sure recorder is connected to an appropriate AV input of the TV.</li> <li>• Make sure the TV's input setting (e.g., HDMI 1) is correct.</li> <li>• The TV isn't compatible with progressive signals. Press and hold [■] and [▶/x1.3] on the main unit for about 5 seconds. The setting will change to interlace.</li> <li>• The TV isn't compatible with RGB signals. Set "AV1 Output" in the Setup menu to "Video (with component)".</li> <li>• 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.</li> <li>• When this unit is connected with an HDMI cable, use a disc that matches with this unit's TV system.</li> <li>• Picture may not be seen when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.</li> <li>• After changing the "HDCP on HDMI Output" setting, turn the power of this unit off once, and turn it back on.</li> </ul>	<p>10, 11, 109, 110, 111</p> <p>–</p> <p>10, 11, 109, 110, 111</p> <p>–</p> <p>–</p> <p>102</p> <p>101</p> <p>–</p> <p>–</p> <p>102</p>
Television reception worsens after connecting the unit.	<ul style="list-style-type: none"> <li>• This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers. If it is not solved by using a signal booster, consult the dealer.</li> </ul>	–
Picture does not appear during timer recording.	<ul style="list-style-type: none"> <li>• Timer recordings work regardless of whether the unit is on or off. To confirm the timer recording is going to work properly, turn the unit on.</li> </ul>	–
The screen changes automatically.	<ul style="list-style-type: none"> <li>• The screen saver function is activated.</li> <li>• Set "Screen Saver" in the Setup menu to "Off" to turn off the screen saver function.</li> </ul>	– 101
The 4:3 aspect ratio picture expands left and right. Screen size is wrong.	<ul style="list-style-type: none"> <li>• Use the TV to change the aspect. If your TV does not have that function, set "HDMI Video Mode" to "Off" and "Component Resolution" to "576i/480i" in the Setup menu.</li> <li>• If you connect an HDMI cable, set "Aspect for 4:3 Video" in the Setup menu to "16:9".</li> <li>• Check the settings for "TV Aspect" in the Setup menu.</li> </ul> <p>It may be possible to adjust the display mode on the TV. Refer to your television's operating instructions.</p>	102 101 101
Titles recorded with 16:9 aspect are stretched vertically.	<ul style="list-style-type: none"> <li>• 16:9 aspect programmes are recorded in 4:3 aspect in the following cases. <ul style="list-style-type: none"> <li>– <b>-R -R DL -RW(V)</b> If you recorded or copied using "EP" or "FR" (recordings 5 hours or longer) recording mode</li> <li>– If you recorded or copied to a +R, +R DL or +RW</li> </ul> </li> </ul> <p>It may be possible to adjust the display mode on the TV. Refer to your television's operating instructions.</p>	–
There is a lot of after-images when playing video.	<ul style="list-style-type: none"> <li>• Set "HD optimizer" in the Picture menu to "Off".</li> </ul>	87
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	<ul style="list-style-type: none"> <li>• If outputting from the COMPONENT VIDEO OUT terminal, set "HDMI Video Mode" to "Off" and "Component Resolution" to "576i/480i" in the Setup menu. If outputting from the HDMI terminal, "HDMI Video Format" to "576i/480i". This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlaced output.</li> </ul>	102
There is no apparent change in picture quality when making adjustments in the Picture menu using the on-screen display.	<ul style="list-style-type: none"> <li>• The effect cannot be seen with certain types of video.</li> </ul>	–
The picture is distorted during play, or video will not play correctly.	<ul style="list-style-type: none"> <li>• You may be playing a TV programme recorded with poor reception or unfavourable weather conditions.</li> <li>• The picture may be distorted or a black screen may appear briefly between recorded titles in the following situations: <ul style="list-style-type: none"> <li>– between titles recorded with different recording modes.</li> <li>– between scenes recorded with different aspect ratios.</li> <li>– between scenes recorded with different resolutions.</li> <li>– between playlist chapters.</li> </ul> </li> <li>• Make sure the connections are pushed in firmly.</li> <li>• Try connecting an alternative cable.</li> </ul>	– – 10, 11, 109, 110, 111 –

# Troubleshooting Guide

## General Issues

## Sound

		Page
No sound. Low volume. Distorted sound. Cannot hear the desired audio type.	• Check the connections and the “Digital Audio Output” settings. Check the input mode on the amplifier if you have connected one.	100, 111
	• Check if TV is muted.	–
	• Check if amplifier is muted.	–
	• Sound is not output while fast-forwarding during chasing playback and simultaneous record and playback.	–
	• Turn “Sound Effects” in the Sound menu to “Off” in the following cases: –When using discs that do not have surround sound effects, such as Karaoke discs –When playing bilingual broadcast programmes	87
	• Audio may not be output due to how files were created. (DivX)	–
	• The sound effects will not work when the bitstream signal is output from the HDMI AV OUT terminal or the DIGITAL AUDIO OUT terminal.	–
Cannot switch audio.	• Audio may not be heard when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.	–
	• To output audio from a device connected with an HDMI cable, set “HDMI Audio Output” to “On” in the Setup menu.	102
	• Depending on the connected equipment, the sound may be distorted if this unit is connected with an HDMI cable.	–
	• You cannot switch the audio in the following cases. –When the recording mode is XP and “Audio Mode for XP Recording” is set to “LPCM”. –When “Recording Format for DVD” is set to “Video format”. (The default setting is “Video format”).	100 98
	• You have used a digital connection. Set “Dolby Digital”, “DTS” or “MPEG” to “PCM” or connect using audio cables (analogue connection).	100
	• There are discs whose audio cannot be changed due to how the disc was created.	–

## General Issues

## USB

		Page
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.	–
	• Check that the USB memory is inserted correctly.	118
	• The format of the USB memory or of its contents is not compatible with the unit. (The contents on the USB memory may be damaged.)	23, 131
	• The USB memory contains a folder structure and/or file extensions that are not compatible with this unit.	132
	• Turn off and then turn on the unit again.	–
	• USB memories connected using a USB extension cable or a USB hub may not be recognized by this unit.	–
	• Some USB memories cannot be used with this unit.	23
USB memory cannot be operated.	• If inserted during playback, recording or copying etc., the USB memory may not be recognized by this unit.	–
	• You can use USB memories with capacities up to 128 GB.	–
	• Turn the power of this unit off once, and turn it back on. If it cannot be operated after that, set “VIERA Link” to “Off”.	102

<p>Play fails to start even when <b>[▶]</b> (PLAY) is pressed. Play starts but then stops immediately.</p>	<ul style="list-style-type: none"> <li>• Insert the disc correctly with the label facing up.</li> <li>• The disc is dirty, scratched or marked.</li> <li>• You tried to play a blank disc or a disc that is unplayable on the unit.</li> <li>• You tried to play a +RW that needs to have a top menu created on the equipment used for recording.</li> <li>• You may be able to copy a “One time only recording” title that was recorded to DVD-RAM using a different Panasonic DVD Recorder to this unit’s HDD, but play is not possible due to copyright protection.</li> <li>• When recording to DVD-RAM using EP (8 hours) mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use EP (6 hours) mode.</li> <li>• You cannot playback while executing “Recording via AV3 input” or when recording from the DV input.</li> <li>• Make sure that the TV is turned on. If the menu or messages are displayed, follow the on-screen instructions.</li> </ul>	<p>118 118 20–22 – – 98 65 –</p>
<p>Audio and video momentarily pause.</p>	<ul style="list-style-type: none"> <li>• This occurs between playlist chapters.</li> <li>• This occurs between chapters and with partially deleted titles on finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW that have been copied using the high speed mode.</li> <li>• This occurs as scenes change during Quick View (Play x1.3).</li> <li>• <b>[R DL] +R DL</b> 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.</li> </ul>	<p>– – – 47</p>
<p>DVD-Video is not played.</p>	<ul style="list-style-type: none"> <li>• You have set a ratings level to limit DVD-Video play. Change this setting.</li> <li>• Ensure the disc is for the correct DVD-Video region number, and is not defective.</li> </ul>	<p>98 Cover</p>
<p>Alternative soundtrack and subtitles cannot be selected.</p>	<ul style="list-style-type: none"> <li>• The languages are not recorded on the disc.</li> <li>• You may not be able to use the on-screen menus to change the soundtrack and subtitles on some discs. Use the disc’s menus to make changes.</li> <li>• After conversion from DR mode or copy to disc in mode other than DR it is not possible to switch soundtrack and subtitles.</li> </ul>	<p>– 26 –</p>
<p>No subtitles.</p>	<ul style="list-style-type: none"> <li>• Subtitles are not recorded on the HDD or disc.</li> <li>• Turn the subtitles on. Set “Subtitles” on the on-screen menu to “On”.</li> <li>• Subtitles are not recorded in the following cases. <ul style="list-style-type: none"> <li>– When the “Subtitle” on the on-screen menu is set to “Off” and a DR mode programme on HDD is converted to a different mode</li> <li>– When the “Subtitle” on the on-screen menu is set to “Off” and a DR mode programme on HDD is copied onto a disc with a different mode</li> </ul> </li> </ul>	<p>– 86 –</p>
<p>Angle cannot be changed.</p>	<ul style="list-style-type: none"> <li>• This function depends on software availability. Angles can only be changed during scenes where different angles are recorded.</li> </ul>	<p>–</p>
<p>You have forgotten your ratings PIN. You want to cancel the ratings level.</p>	<ul style="list-style-type: none"> <li>• With the tray open, press [DRIVE SELECT] to select the DVD drive, then press and hold <b>[● REC]</b> and <b>[▶/x1.3]</b> on the main unit simultaneously for about 5 or more seconds.</li> <li>• The PIN and the ratings level return to the factory preset (“0000”).</li> </ul>	<p>– –</p>
<p>Quick View (Play x1.3) does not work.</p>	<ul style="list-style-type: none"> <li>• Image may not be played back smoothly in case of DR mode titles, or <b>[AVCHD]</b>.</li> <li>• This does not work while recording in XP or FR mode.</li> </ul>	<p>– –</p>
<p>The resume play function does not work.</p>	<ul style="list-style-type: none"> <li>• Memorized positions are cancelled when <ul style="list-style-type: none"> <li>– open the disc tray.</li> <li>– <b>[SD] [CD] [USB]</b> turn off the power.</li> <li>(<b>[HDD]</b> Memorized positions will not be cancelled)</li> </ul> </li> </ul>	<p>–</p>
<p>Time Slip, Manual Skip, etc. do not work. Slow-motion playback does not go reverse. Reverse frame-by-frame does not work properly.</p>	<ul style="list-style-type: none"> <li>• These functions do not work with finalised discs.</li> <li>• Time Slip does not work when the unit’s “TV System” settings are different from the title recorded on the disc.</li> <li>• Slow-motion playback in reverse does not work for title that has copied the AVCHD, and <b>[AVCHD]</b>.</li> <li>• <b>[AVCHD]</b> Reverse frame-by-frame cannot be done.</li> <li>• Frame-by-frame backward for titles that have copied the AVCHD will be reversed in 10 frame units.</li> <li>• Slow-motion and frame-by-frame do not work with the title recorded from radio service.</li> </ul>	<p>– 101 – – – –</p>
<p>It takes time before play starts.</p>	<ul style="list-style-type: none"> <li>• This is normal on DivX video. (DivX)</li> </ul>	<p>–</p>
<p>Picture stops.</p>	<ul style="list-style-type: none"> <li>• Picture may stop if the DivX files are greater than 2 GB. (DivX)</li> </ul>	<p>–</p>
<p>Cannot see the beginning of the title played.</p>	<ul style="list-style-type: none"> <li>• (If connecting to a TV that supports VIERA Link with an HDMI cable) When <b>[▶]</b> (PLAY) is pressed on this unit’s remote control, you may not be able to see the beginning of the title played until the picture is displayed on the TV. Using <b>[◀◀]</b>, return to the beginning of the title.</li> </ul>	<p>–</p>

# Troubleshooting Guide

## Recording Issues    Recording / Timer Recording / Copying / External input

		Page
Timer recording does not work properly.	• The timer programme is incorrect or different timer programme times overlap (Ⓢ is displayed). Correct the programme.	41
	• The programme is not in timer recording standby. (The timer icon “Ⓢ” in the timer recording list is grey.) 1 Press [PROG/CHECK]. 2 Press [▲, ▼] to select the programme and press the “Red” button. Confirm the timer icon “Ⓢ” turns red.	41
	• The clock is not correct. Set the clock.	15
	• The programme information in the TV Guide system may not be correct. It is recommended to modify the start and end times to allow a margin of a few minutes.	28
Cannot record 2 programmes simultaneously.	• It cannot in following conditions. – Record 2 programmes from external input – When performing high speed copying (1 programme can be recorded to HDD) – Recording from DV input, while “Recording via AV3 input”	–
	• 2 dish inputs are required to record 2 programmes simultaneously.	–
The recording lacks the beginning or ending part of the programme although the timer recording was set on TV Guide.	• This occurs when the broadcast signals are not correct. We recommend you set the timer again, allowing enough time for the start and end time. (Guide Link function allows you to set the start time earlier and the end time later up to a maximum of 10 minutes.)	28
Timer recording does not stop even when [■] is pressed.	• When using the linked timer recording with external equipment, press [EXT LINK]. (“EXT-L” on the unit’s display disappears.)	62
The timer programme remains even after recording finishes.	• The timer programme remains if set to daily, weekly or series timer recording.	39, 40
Cannot record. Cannot copy.	• You can not record to the disc by pressing the [● REC].	–
	• [RAM -RW(V) +R +R DL +RW] The disc is unformatted. Format the disc.	93
	• The write-protect tab on the cartridge is set to “PROTECT” or the disc is protected with DVD Management.	92
	• Some programmes have limitations on the number of times they can be copied.	33
	• You cannot record when there is not enough space or when the number of titles has reached its limit. Delete unwanted titles or use a new disc.	32, 51, 93, 98
	• In the following situations, you cannot copy. Delete unnecessary titles from the HDD and then copy. – If there is not enough space available on the HDD (If you will copy titles from the HDD to a blank disc and fill the entire disc, HDD disc space equivalent to 4 hours of SP mode recording is necessary.) – If the number of recorded titles and the number of titles to be copied has exceeded 499	32, 51
	• You cannot record and copy on finalised discs. However, you can record and copy again if you format [RW(V) -RW(VR)].	–
	• Due to peculiarities of [-R -R DL -RW(V) +R +R DL +RW] you may be unable to record onto or edit them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of 30 times.	–
	• The discs recorded on this unit may not be recordable on other Panasonic DVD Recorders.	–
	• Discs recorded on equipment other than this unit may not be able to be recorded to.	–
	• This unit cannot record NTSC signals to discs that already have PAL signal recordings. (However, both types of programmes can be recorded onto the HDD.) Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.	101
	• Some broadcasts are copyright protected.	–
	• Some programmes on freesat channels are copy-restricted.	33
Part or all of a recorded title has been lost.	• If the power shuts down 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 titles or discs. You will have to format the disc ([HDD RAM -RW(V) +RW] or use a new disc.	–
	• If you use Auto Renewal Recording, the old title will be deleted after the new title is recorded.	41
The quality has dropped when the title in HDD is copied to the disc.	• Titles in HD quality (titles recorded in DR, HG, HX, HE, HL mode or titles in AVCHD) will be copied as SD quality when copied.	–

## Recording Issues

## Recording / Timer Recording / Copying / External input (Continued)

		Page
Stripe-shaped black noise is recorded.	<ul style="list-style-type: none"> <li>An external playback device is interfering with the TV because the device is too close to the TV. Move the device away from the TV.</li> </ul>	–
The programme name and the recorded title do not match.	<ul style="list-style-type: none"> <li>There was a programme change after timer recording was set but the recorded title still has the old programme name.</li> </ul>	–
Cannot copy to a disc using the high speed mode.	<ul style="list-style-type: none"> <li>High speed copying cannot be performed depending on the disc or title that is being copied. Refer to “When is high speed copy not possible?” for details.</li> </ul>	57
When copying, it takes a long time even in high speed mode.	<ul style="list-style-type: none"> <li>Use a disc that is compatible with high speed recording. Even if the disc is high speed recording compatible, the maximum speed may not be possible due to the condition of the disc.</li> </ul>	–
	<ul style="list-style-type: none"> <li>It takes longer than normal to copy many titles.</li> </ul>	–
	<ul style="list-style-type: none"> <li>You cannot high speed copy to DVD-R titles longer than 6 hours when using other Panasonic DVD Recorders that are not compatible with EP (8 hours) mode recording.</li> </ul>	–
An unusually loud sound is coming from the rotating disc.	<ul style="list-style-type: none"> <li>When high speed copying to a disc the sound of the disc rotating may be louder than normal, however, this is not a problem.</li> </ul>	–
	<ul style="list-style-type: none"> <li>If you want copy to perform more quietly, select “Normal (Silent)” in “DVD Speed for High Speed Copy” in the Setup menu.</li> </ul>	98
Cannot record from the external device.	<ul style="list-style-type: none"> <li>The external device is not correctly connected.</li> </ul>	63
	<ul style="list-style-type: none"> <li>The proper external input channel (AV1, AV2, AV3, AV4, or DV) is not selected. Press [INPUT SELECT] to change.</li> </ul>	–
	<ul style="list-style-type: none"> <li>Select the input channel for the equipment you have connected.</li> </ul>	–
The DV Automatic Recording function does not work.	<ul style="list-style-type: none"> <li>If images cannot be recorded or if the recording is aborted, check the connections and the DV equipment settings.</li> </ul>	63
	<ul style="list-style-type: none"> <li>You cannot start recording until the images from the DV equipment appear on the television.</li> </ul>	–
	<ul style="list-style-type: none"> <li>Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive.</li> </ul>	–
	<ul style="list-style-type: none"> <li>Depending on the equipment, the DV Automatic Recording may not operate properly.</li> </ul>	–
	<ul style="list-style-type: none"> <li>You can only record audio/video images on a DV tape.</li> </ul>	–
You cannot press [INPUT SELECT] to select external input other than AV2.	<ul style="list-style-type: none"> <li>Press [EXT LINK] to cancel EXT LINK Standby mode.</li> </ul>	62

## Recording Issues

## Music

		Page
Tracks could not be copied to the HDD.	<ul style="list-style-type: none"> <li>If there are copyright protected tracks such as SCMS restrictions, they will not be copied.</li> </ul>	–
	<ul style="list-style-type: none"> <li>Recording from CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.</li> </ul>	–
	<ul style="list-style-type: none"> <li>Bonus tracks may not be copied.</li> </ul>	–
Title of the newly released CD cannot be acquired.	<ul style="list-style-type: none"> <li>Title cannot be acquired if the title is not registered in the built-in Gracenote® Database. Connection to the network is necessary to acquire title for the newly released CD.</li> </ul>	80
ID3 tag of an MP3 file is not completely displayed.	<ul style="list-style-type: none"> <li>Only the track name and artist name can be displayed with this unit.</li> </ul>	–

# Troubleshooting Guide

## Editing Issues

### HDD and Discs

		Page
Cannot edit.	<ul style="list-style-type: none"> <li>You may not be able to edit on the HDD if there is no available space. Delete any unwanted titles to create empty space.</li> </ul>	32, 51, 93, 98
Cannot format.	<ul style="list-style-type: none"> <li>The disc is dirty. Wipe with a damp cloth and then wipe dry.</li> <li>Disc may be defective or of poor quality.</li> <li>You tried formatting a disc that is not compatible with the unit.</li> </ul>	118 – 93
Cannot create chapters. Cannot mark the start point or the end point during “Partial Delete” operation.	<ul style="list-style-type: none"> <li>The unit writes the chapter division information to the disc when you turn it off or remove the disc. The information is not written if there is an interruption in the power.</li> <li>These operations are not possible with still pictures.</li> <li>You cannot set points if they are too close to each other. You cannot set an end point before a start point.</li> </ul>	– – –
Cannot delete chapters.	<p><b>HDD RAM</b> When the chapter is too short to delete, use “Combine Chapters” to make the chapter longer.</p>	54
The available recording time doesn’t increase even after deleting titles on the disc.	<ul style="list-style-type: none"> <li>Available space on DVD-R, DVD-R DL, +R, or +R DL does not increase even after deleting previous titles.</li> <li>Available space on DVD-RW (DVD-Video format) or +RW increases when you delete the last title.</li> </ul>	– –
Cannot create a playlist.	<ul style="list-style-type: none"> <li>Creation or editing of playlists cannot be done on this unit.</li> </ul>	–

## Editing Issues

### Still Pictures

		Page
The contents of the card cannot be read.	<ul style="list-style-type: none"> <li>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.</li> <li>The card format is not compatible with the unit. (The contents on the card may be damaged.) 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.</li> <li>The card contains a folder structure and/or file extensions that are not compatible with this unit.</li> <li>You can use SD Memory Cards with capacities from 8 MB to 2 GB and SDHC Memory Cards with capacities from 4 GB to 32 GB.</li> </ul>	– 23 131, 132 –
Copying, deleting, and setting protection takes a long time.	<ul style="list-style-type: none"> <li>When there are a lot of folders and files, it may sometimes take a few hours.</li> <li>When repeating copying or deleting, it may sometimes take a long time. Format the disc or card.</li> </ul>	– 93
Still pictures (JPEG) do not playback normally.	<ul style="list-style-type: none"> <li>The images that were edited on the PC, such as Progressive JPEG, etc., may not play back.</li> </ul>	131



## Other Issues

## Network

		Page
I can't connect to the network.	• Has the LAN cable come unplugged? Check that the LAN cable is properly connected.	112
	• Have you plugged in a modular cable for use with a telephone into the LAN terminal on this unit? Connect with a straight LAN cable.	112
	• Is the power for the modem or broadband router turned on? Turn the power on for each device.	–
	• Is there a mistake in the network settings? Follow any instructions you may have received from your ISP (Internet Service Provider) and make changes to the settings.	–
	• Are the broadband router settings correct? Read the operating instructions for the broadband router.	–
	• Is the broadband router and/or modem correctly connected? Check the operating instructions for each device and connect accordingly.	–
While using my PC, I cannot connect to the network.	• Does your Internet Service Provider (ISP) or service contract prevent multiple terminals connecting at the same time? Check the content of your contract.	–

## Other Issues

## Other

		Page
After performing an update, you can no longer receive broadcasts.	• Depending on the content of the update, some settings may have returned to the preset values. Fix the settings again.	–
Pause Live TV stops.	• Pause Live TV from AV1, AV2, AV3 or AV4 input stops when a timer recording from external input started.	–

## Language code list

Enter the code with the numbered buttons.

Abkhazian: 6566	Chinese: 9072	Hausa: 7265	Lithuanian: 7684	Rhaeto-Romance: 8277	Tamil: 8465
Afar: 6565	Corsican: 6779	Hebrew: 7387	Macedonian: 7775	Romanian: 8279	Tatar: 8484
Afrikaans: 6570	Croatian: 7282	Hindi: 7273	Malagasy: 7771	Samoan: 8377	Telugu: 8469
Albanian: 8381	Czech: 6783	Hungarian: 7285	Malay: 7783	Sanskrit: 8365	Thai: 8472
Amharic: 6577	Danish: 6865	Icelandic: 7383	Malayalam: 7776	Scots Gaelic: 7168	T betan: 6679
Arabic: 6582	Dutch: 7876	Indonesian: 7378	Maltese: 7784	Serbian: 8382	Tigrinya: 8473
Armenian: 7289	English: 6978	Interlingua: 7365	Maori: 7773	Serbo-Croatian: 8372	Tonga: 8479
Assamese: 6583	Esperanto: 6979	Irish: 7165	Marathi: 7782	Shona: 8378	Turkish: 8482
Aymara: 6589	Estonian: 6984	Italian: 7384	Moldavian: 7778	Sindhi: 8368	Turkmen: 8475
Azerbaijani: 6590	Faroese: 7079	Japanese: 7465	Mongolian: 7778	Singhalese: 8373	Twi: 8487
Bashkir: 6665	Fiji: 7074	Javanese: 7487	Nauru: 7865	Slovak: 8375	Ukrainian: 8575
Basque: 6985	Finnish: 7073	Kannada: 7578	Nepali: 7869	Slovenian: 8376	Urdu: 8582
Bengali; Bangla: 6678	French: 7082	Kashmiri: 7583	Norwegian: 7879	Somali: 8379	Uzbek: 8590
Bhutani: 6890	Frisian: 7089	Kazakh: 7575	Oriya: 7982	Spanish: 6983	Vietnamese: 8673
Bihari: 6672	Galician: 7176	Kirghiz: 7589	Pashto, Pushto: 8083	Sundanese: 8385	Volapük: 8679
Breton: 6682	Georgian: 7565	Korean: 7579	Persian: 7065	Swahili: 8387	Welsh: 6789
Bulgarian: 6671	German: 6869	Kurdish: 7585	Polish: 8076	Swedish: 8386	Wolof: 8779
Burmese: 7789	Greek: 6976	Laotian: 7679	Portuguese: 8084	Tagalog: 8476	Xhosa: 8872
Byelorussian: 6669	Greenlandic: 7576	Latin: 7665	Punjabi: 8065	Tajik: 8471	Yiddish: 7473
Cambodian: 7577	Guarani: 7178	Latvian, Lettish: 7686	Quechua: 8185	Zulu: 9085	Yoruba: 8979
Catalan: 6765	Gujarati: 7185	Lingala: 7678			

# Specifications

**Recording system**  
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

**Recordable discs**  
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)

**Maximum writing speed of discs**  
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 discs;  
Refer "Recordable discs" (→ above).

## Notes

- When recording or playing while copying, this unit may not copy at the maximum speed.
- Depending on the condition of the disc, this unit may not copy at the maximum speed.

## Playable discs

DVD-RAM: DVD Video Recording format, AVCHD format, JPEG  
DVD-R: DVD-Video format<sup>\*1</sup>, AVCHD format<sup>\*1</sup>, MP3<sup>\*1,2</sup>, JPEG<sup>\*1,2</sup>,  
DivX<sup>\*1,2</sup>  
DVD-R DL (Dual Layer): DVD-Video format<sup>\*1</sup>, AVCHD format<sup>\*1</sup>,  
MP3<sup>\*1,2</sup>, JPEG<sup>\*1,2</sup>, DivX<sup>\*1,2</sup>  
DVD-RW: DVD-Video format<sup>\*1</sup>, DVD Video Recording format,  
AVCHD format<sup>\*1</sup>  
+R<sup>\*1</sup>, +R DL (Double Layer)<sup>\*1</sup>, +RW  
DVD-Video, CD-Audio (CD-DA)  
CD-R/CD-RW: CD-DA<sup>\*1</sup>, MP3<sup>\*1,2</sup>, JPEG<sup>\*1,2</sup>, DivX<sup>\*1,2</sup>

**Optical pick-up** System with 1 lens, 2 integration units  
(662 nm wavelength for DVDs, 780 nm wavelength for CDs)

## LASER specification

Class 1 LASER Product (Pickup)

Wave length:

CD 780 nm wave length  
DVD 662 nm wave length

Laser power:

No hazardous radiation is emitted with the safety protection

## Video

Video system: PAL colour signal, 625 lines, 50 fields  
NTSC colour signal, 525 lines, 60 fields  
MPEG2 (Hybrid VBR)/MPEG-4 AVC/H.264  
Recording system:  
Video in (PAL/NTSC):  
AV1/AV2 (21 pin), AV3/AV4 (pin jack) 1 Vp-p 75 Ω, termination  
S-Video in (PAL/NTSC):  
AV2 (21 pin), AV3/AV4 (S terminal) 1 Vp-p 75 Ω, termination  
RGB in (PAL): AV2 (21 pin) 0.7 Vp-p 75 Ω, termination  
Video out (PAL/NTSC):  
AV1/AV2 (21 pin), Video Out (pin jack) 1 Vp-p 75 Ω, termination  
S-Video out (PAL/NTSC):  
AV1 (21 pin), S-Video Out (S terminal) 1 Vp-p 75 Ω, termination  
RGB out (PAL/NTSC): AV1 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination  
Component video output  
(PAL 576i/576p/720p/1080i, NTSC 480i/480p/720p/1080i)  
Y: 1.0 Vp-p 75 Ω, termination  
P<sub>B</sub>: 0.7 Vp-p 75 Ω, termination  
P<sub>R</sub>: 0.7 Vp-p 75 Ω, termination

## Audio

Recording system: Dolby Digital (XP, SP, LP, EP mode: 2 ch),  
Linear PCM (XP mode),  
Dolby Digital [DR mode (freesat), HG, HX, HE, HL mode: Max 5.1 ch]  
Dolby Digital Plus [DR mode (freesat): Max 5.1 ch]  
MPEG [DR mode: 2 ch]  
Audio in: AV1/AV2 (21 pin), AV3/AV4 (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)

## HDMI Output

19 pin type A: 1 pc  
HDMI™ (V.1.3a with Deep Colour, x.v.Colour™)  
• This unit supports "HDAVI Control 4" function.

## Internal HDD capacity

250 GB

## DV input

IEEE 1394 Standard, 4 pin : 1 pc

## USB port

Type A: 1 pc

## SD Card Slot

1 pc

## LAN (Ethernet) Port

10 BASE-T/100BASE-TX

## Television system

Tuner system: Satellite (freesat, Other Sat.)  
Antenna receive frequency: 950 MHz to 2150 MHz  
Input impedance: Nominal 75 Ω  
Demodulation: QPSK, 8PSK  
LNB input: F shape terminal female, power supply 13 V/18 V  
max. 350 mA, 22 kHz 0.6 Vp-p  
LNB output: Not provided  
RF converter output: Not provided

## Others

Region code: #2  
Operating temperature: 5 °C to 40 °C  
Operating humidity range: 10 % to 80 % RH (no condensation)  
Power supply: AC 220 to 240 V, 50 Hz  
Power consumption: Approx. 57 W  
Dimensions (W×H×D): 430 mm × 59 mm × 330 mm  
Mass: Approx. 4.3 kg

## Power consumption in standby mode:

**Approx. 0.4 W (Power Save mode:ON)**

**Approx. 12 W (Power Save mode:OFF)**

### SD Card

Slot: SD Memory Card slot: 1 pc  
 Compatible media: SD Memory Card<sup>\*3</sup>, SDHC Memory Card  
 Format: FAT12, FAT16<sup>\*4</sup> (In case of SD Memory Card)  
 FAT32<sup>\*4</sup> (In case of SDHC Memory Card)  
 Data that can be played: JPEG, SD (Standard Definition)-Video<sup>\*5</sup>,  
 HD (High Definition)-Video

### 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>\*6</sup>,  
 HD (High Definition)-Video<sup>\*7</sup>

### MP3


Playable media	<b>HDD -R -R DL CD USB</b>
File format	MP3 • Files must have the extension “.mp3” or “.MP3”.
Compression rates	32 kbps to 320 kbps
Sampling rate	16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz
Number of folders	Maximum number of folders recognizable (except for HDD) : 300 folders (including the root folder)
Number of files	Maximum number of files recognizable (except for HDD) : 3000 files
ID3 tags	compatible

### JPEG

Playable media	<b>HDD RAM -R -R DL CD SD USB</b>
File format	JPEG conforming DCF (Design rule for Camera File system) • Files must have the extension “.jpg” or “.JPG”.
Number of 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)
Number of folders	<b>CD</b> Maximum number of folders recognizable: 99 folders (including the root folder) <b>HDD RAM -R -R DL SD USB</b> Maximum number of folders recognizable: 300 folders (including the root folder)
Number of files	<b>CD</b> Maximum number of files recognizable: 999 files <b>HDD RAM -R -R DL SD USB</b> Maximum number of files recognizable: 3000 files
MOTION JPEG Progressive JPEG	not supported

- 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.

### DivX

Playable media	<b>-R -R DL CD USB</b>
File format	DivX • Files must have the extension “.DIVX” or “.divx”, “.AVI” or “.avi”. 
Number of folders	Maximum number of folders recognizable: 300 folders (including the root folder)
Number of files	Maximum number of files recognizable: 200 files

Support version	Official DivX <sup>®</sup> Certified product. Plays all versions of DivX <sup>®</sup> video (including DivX <sup>®</sup> 6) with standard playback of DivX <sup>®</sup> media files. Certified to the DivX Home Theater Profile. GMC (Global Motion Compensation) is not supported. DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license.
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### SD (Standard Definition)-Video

Playable media	<b>SD</b> <sup>*5</sup> <b>USB</b> <sup>*6</sup>
Codec	MPEG2 (SD-Video Entertainment Video Profile)
File format	SD-Video format conforming

### HD (High Definition)-Video

Playable media	<b>SD</b> <b>USB</b> <sup>*7</sup>
Codec	MPEG4 AVC/H.264
File format	AVCHD format conforming

### **-R -R DL CD**

- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (tracks) and/or folders and some files (tracks) may not display or be playable.
- English alphabet and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording conditions, the disc may not play.

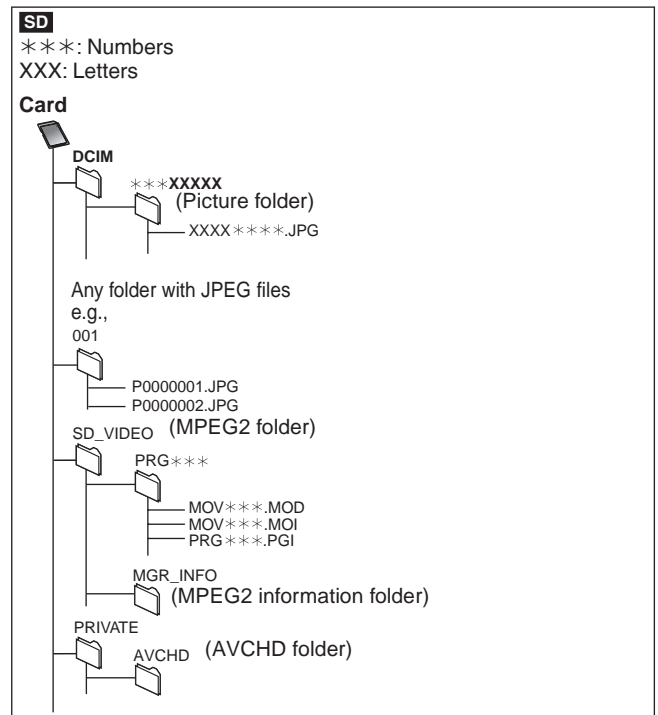
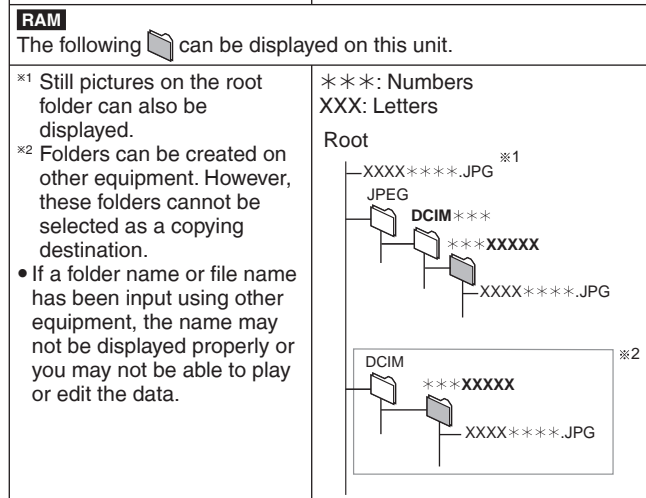
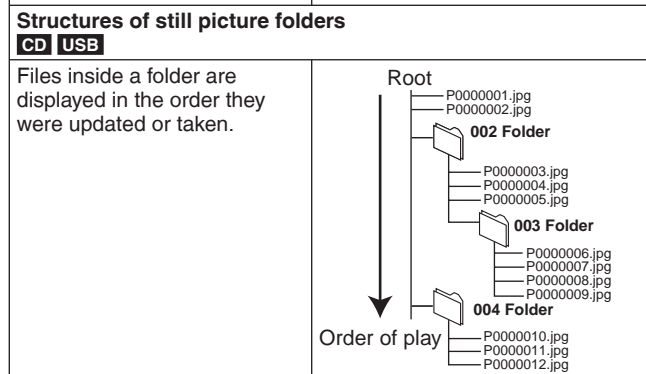
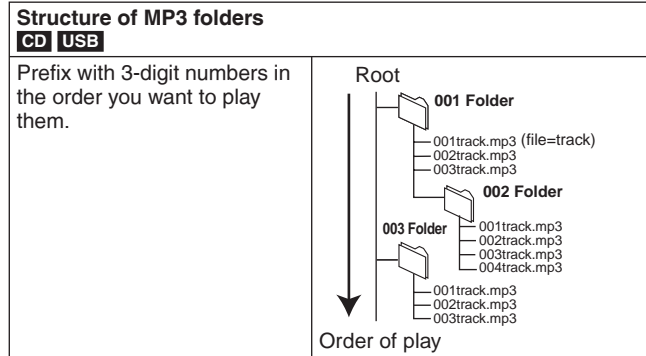
### Notes

- Specifications are subject to change without notice.
- Useable capacity will be less. (SD card)

- <sup>\*1</sup> Finalising is necessary for compatible playback.
- <sup>\*2</sup> 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-write format.
- <sup>\*3</sup> Includes miniSD cards. (A miniSD adaptor needs to be inserted.)  
Includes microSD cards. (A microSD adaptor needs to be inserted.)
- <sup>\*4</sup> Long file name is unsupported.
- <sup>\*5</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.
- <sup>\*6</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>\*7</sup> Video Recording conversion and transfer is possible from USB device to HDD.  
After Video Recording conversion and transfer to HDD, is completed, the playback becomes possible.

# Specifications

■ **Structure of folders displayed by this unit**  
 You can play 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.



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# 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.

## Bitstream

This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

## Decoder

A decoder restores the coded audio signals on discs to normal. This is called decoding.

## Deep Colour

This unit incorporates HDMI™ (V.1.3a with Deep Colour) 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.]

## DivX

DivX is a popular media technology created by DivX, Inc. DivX media files contain highly compressed video with high visual quality that maintains a relatively small file size.

## DNS Server

A server which acts like a telephone directory and translates Internet domain names into IP addresses.

## 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.

## Down-mixing

This is the process of remixing the multi-channel audio found on some discs into fewer channels.

## Drive

In the instance of this unit, this refers to the hard disk (HDD), disc (DVD) and SD card (SD). These perform the reading and writing of data.

## DTS (Digital Theater Systems)

This surround system is used in many movie theaters. There is good separation between the channels, so realistic sound effects are possible.

## 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.

## Film and video

DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.

**Film:** Recorded at 25 frames per second (PAL discs) or 24 frames per second (NTSC discs). (NTSC discs recorded at 30 frames per second as well.) Generally appropriate for motion picture films.

**Video:** Recorded at 25 frames/50 fields per second. (PAL discs) or 30 frames/60 fields per second (NTSC discs). Generally appropriate for TV drama programmes or animation.

## 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, 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.

## Folder

This is a place on the hard disk, disc or SD card where groups of data are stored together. In the case of this unit, it refers to the place where still pictures (JPEG) and MPEG2, etc. are stored.

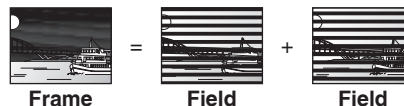
## Formatting

Formatting is the process of making media such as DVD-RAM recordable on recording equipment.

You can format, DVD-RAM, DVD-RW (only as DVD-Video format), +RW, SD cards and the HDD or unused +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 television. 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.

## Gateway

IP address of the electronic device providing Internet access. Usually called a router IP address. (e.g., 192.168.0.1)

## HDD (Hard disk drive)

This is a mass data storage device used in computers, etc. A disk with a surface that has been treated with magnetic fluid is spun and a magnetic head is brought in close proximity to facilitate the reading and writing of large amounts of data at high speed.

## 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 television is required.

## Hub

Used for connecting more than one device to the network.

## IP address

A set of numbers which distinguish each PC on the network when, for example, connected to the Internet. When using a PC in a LAN to access a PC or device that is not included in the LAN, the IP address is called the local IP address. (e.g., 192.168.0.10)

## 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.

### LAN (Local Area Network)

A group of linked devices in a company, school or home. Indicates the boundaries of a particular network.

### 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-4AVC/H.264

A standard for efficiently compressing and expanding colour video. MPEG-4AVC/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.

### Pan&Scan/Letterbox

In general, DVD-Video is produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. 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.

### Router

Distinguishes the IP address assigned to each device, such as the PC, and relays the flow of data within the network.

### RGB

This refers to the three primary colours of light, red (R), green (G), and blue (B) and also the method of producing video that uses them. By dividing the video signal into the three colours for transmission, noise is reduced for even higher quality images.

### Sampling frequency

Sampling is the process of converting the heights of sound wave (analogue 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 satellite dish 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 satellite dish, etc.

### Subnet mask

Enables efficient network use. A set of numbers which identify which part of the IP address allocated to every device connected to the router is the network portion.

### Thumbnail

This refers to a miniature representation of a picture used to display multiple pictures in the form of a list.

### VIERA CAST

An information service unique to Panasonic where specific Web sites can be viewed on this unit by connecting to the Internet without using a PC.

### 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 television 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 1/50th 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 1/50th 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.

# 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.

## 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.

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### 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]

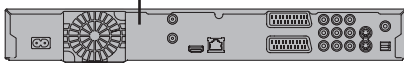
These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



#### 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



(Back of product)

DANGER – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. FDA21 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 ALLTINNA LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. VARO ALTISTUMISTA SÄTEELLE.	
WARNING – KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. UNDVIK 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	

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