

Panasonic®

Operating Instructions

DVD Recorder

Model No. DMR-EX75EB
DMR-EX85EB



DIGA



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

Read the operating instructions, the safety precautions, and the information on setting up the unit on page 3 thoroughly before you connect, operate or adjust any settings on the unit.



Trademark of the DVB Digital Video Broadcasting Project (1991 to 1996)
Declaration of Conformity No.3959/3958, 12th January 2006

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Safety Precautions

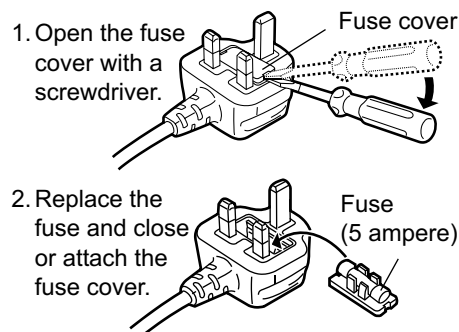


Important Safety Warnings

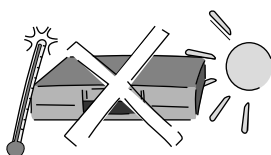
- The moulded three pin mains plug is supplied for your safety and convenience and must NOT be cut off.

- A 5 amp fuse is fitted in the mains plug. If the fuse has to be replaced, it must be of the same rating and approved by ASTA or BSI to BS1362. Check for the ASTA mark  or the BSI mark  on the body of the fuse.

To replace the fuse, open the fuse compartment with a screwdriver as shown and replace the fuse and the cover securely.



- To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service engineer only.
- 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.
- Do not insert metal object into the slots or openings of the unit.
- This unit is not disconnected from a.c. mains while it remains connected to a live mains outlet, even if it has been turned off.
- The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.
- This unit is intended for use in moderate climates.



Caution

- Avoid exposing the unit to direct sunlight or other heat sources.
- Avoid sudden change in temperature or humidity, dew or condensation may form, causing malfunction.
- Dispose of batteries in accordance with the instructions given in this book.
- Place the unit on a flat, stable surface. Do not place heavy object on top of the unit.
- Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast materials may infringe copyright laws.
- This unit is designed for indoor use only.
- Do not use in area with strong magnetic fields, e.g. near transmitting antenna.
- 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.

- 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.

- 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 by yourself. Refer servicing to qualified personnel.



Back of product, see page 7

Inside of product

DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. FDA 21 CFR/Class IIIb	
注意	→ 打开时有可见及不可见激光辐射。避免光束照射。
注意	→ ここを覗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。
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 LAGET ER ÅBENT, UNDGÅ AT BLIVE UDSAT FOR STRÅLEN.
VARO	→ AVATTAESSA OLET ALTTIINA LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTELYÄ, VÄRÖ ALITISTUMISTA SÄTEELLE.
VARNING	→ KLASSE 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK EXPOSERING FÖR STRÅLEN.
VORSICHT	→ SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 3B. WENN ABDECKUNG GEÖFFNET, NICHT DEM STRAHL AUSSETZEN.
CAUTION	→ VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. (IEC60825-1)
ATTENTION	→ RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	→ SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	→ AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	→ SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÅLEN.
VORSICHT	→ SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG. WENN ABDECKUNG GEÖFFNET, NICHT DEM STRAHL AUSSETZEN.
ADVARSEL	→ SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. VOL1J67



If you see this symbol, read last page.



Care and Maintenance

- The cabinet can be wiped clean with a damp cloth, disconnect from mains before cleaning. Do not use detergent or solution containing benzol or petroleum.

Dear customer



Thank you for your trust and your decision to purchase this top-quality unit. Panasonic is one of the leading manufacturers of entertainment electronics units. We are sure that you will be completely satisfied with this unit.

Matsushita Electric Industrial Co., Ltd.
<http://www.panasonic.co.jp/global/>

Panasonic®

Sales and Support Information

Customer Care Centre

- For customers within the UK:
08705 357357
- Visit our website for product information: **www.panasonic.co.uk**
- E-mail:
customer.care@panasonic.co.uk

Direct Sales at Panasonic UK

- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre
Monday - Thursday 9:00am - 5:30pm, Friday 9:30am - 5:30pm
(Excluding public holidays).
- Or go online through our Internet Accessory ordering application at
www.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.

Interested in purchasing an extended guarantee?
Please call 0870 240 6284 or visit our website www.panasonic.co.uk/guarantee

How to use this operating instruction



	You can find more information about this subject on the stated page.
	Press the illustrated button.
	The described function can be performed with the illustrated disc formats and media. More information about the disc formats and media is on pages 14 and 64-68.
[AV2 Settings]	The texts in brackets are entries from the screen shots.
	Navigation and direction buttons on the remote control.
RETURN	Remote control buttons which are not shown in the drawing.

Information about the unit



DVB DVB-T
Digital Video Broadcasting

This unit is a DVD Recorder with integrated tuner. You can receive and record both analog and terrestrial digital channels (DVB-T) without an additional reception unit (Set Top Box).

GUIDE

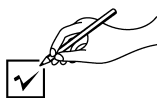
The TV Guide gives you a preview of the TV programmes for the next 7 days from your digital stations. Simply select each programme to store it for Timer programming.

HDMI

The HDMI connection makes it easy to connect up your multimedia units. One single cable transmits both digital video data and digital audio data. HDMI is the world's first complete digital consumer AV interface complying with a non-compression standard.

DV interface

You can connect your digital camcorder directly to this unit via the DV IN connection. This way it's easy to copy your movies.



Please check and identify the supplied accessories.

Use numbers when asking for replacement parts.

(Product numbers correct as of March 2006. These may be subject to change.)

Accessories

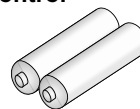


Included Accessories

☐ Remote Control
EUR7659YG0



☐ Batteries for the Remote Control
R6 size



☐ AC mains lead
RJA0044-3C or
K2CT3CA00004

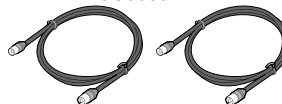


☐ Audio/video cable
K2KA6BA00003



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

☐ 2 RF coaxial cable (black)
K1TWACC00001



☐ 1 RF coaxial cable (grey)
K1TWACA00001



☐ Operating Instructions

☐ Quick Setup Guide

☐ Reference Guide

☐ Guarantee Card

Optional Accessories

HDMI cable 1.5m
RP-CDHG15E

HDMI cable 3.0m
RP-CDHG30E

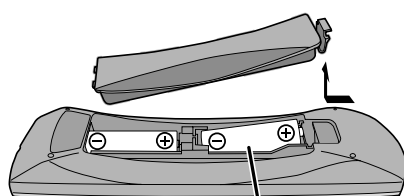
HDMI cable 5.0m
RP-CDHG50E

4.7GB DVD-RAM - 3 Pack.
LMAF120LE3

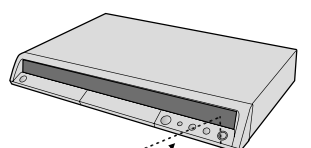
4.7GB DVD-RAM - 5 Pack.
LMAF120LE5

9.4GB DVD-RAM Double Sided - 3 Pack.
LMAD240LE3

Inserting batteries



R6/LR6, AA



Remote control
signal sensor

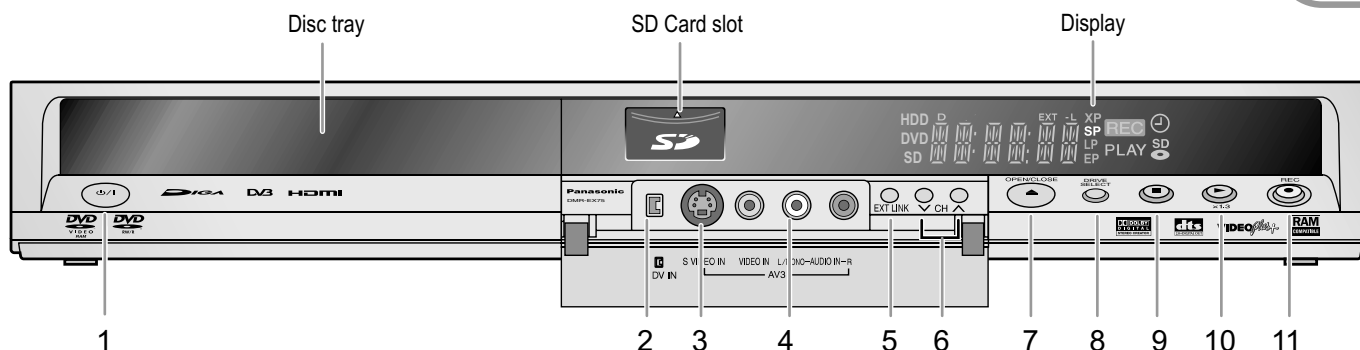
- The batteries last for about a year, depending on how often you use the remote control unit.
- Do not mix old with new batteries, or batteries of different types.
- Only use batteries without any harmful substances (lead, cadmium, mercury).
- Do not use rechargeable type batteries.
- Remove the batteries if the remote control unit will remain unused for longer periods of time.
- Do not heat or short-circuit the batteries. Immediately remove used-up batteries and replace with batteries of type AA, UM3 or R6.
- Be sure to put in the batteries the right way round + and -.

Dispose of **batteries**, packaging material and the unit according to statutory regulations. They must not be thrown into the household refuse.



Point the remote control at the unit's sensor. Avoid obstacles in the path of the transmission. The maximum range of the remote control is 7 m directly in front of the unit. Keep the transmission window and the unit sensor clean. The procedure can be impaired by direct sunlight or doors of glass cabinets.

Front panel



1 Standby/on switch : 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. Switching this unit into standby mode does not disconnect it from the mains.	2 DV input	3 S VIDEO input AV3
4 AV3 input terminal	5 EXT LINK Recording with external equipment	6 Channel select button
8 DRIVE SELECT Drive select HDD/DVD/SD	9 STOP	11 REC Record

Messages on the display

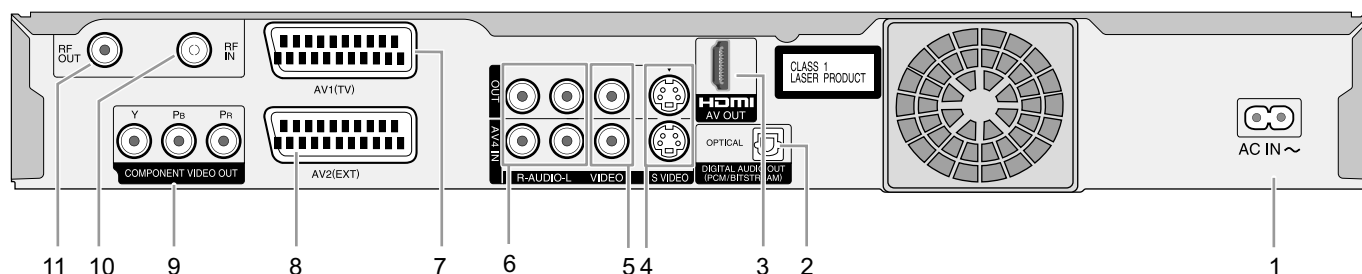
	Shows a Timer Recording or Timer mode.
DVD HDD SD	The selected drive is being displayed.
	The inserted medium is being shown.
REC	The selected drive is Recording. Flashes shortly before a Timer Recording starts.
PLAY	The selected drive is playing.
XP, SP LP, EP	Recording mode / All on: FR mode Flexible recordings/Timer Recordings.
EXT-L	External-Link: A timer controlled recording is being performed by an external unit.
D	Digital channel
	Current time, recording/playback counter, various messages.

On-screen displays

PLEASE WAIT	Please wait.
DVD 1, 2, 3	Wrong remote control code.
SETUP	You are in the Setup menu.
READ	Disc is being read.
No READ	Disc cannot be read.
FINAL	DVD is being finalized.
No DISC	No disc has been inserted.
PROTECT	Disc is write-protected.
RETURN	Cancellation of a function.
OFF0:30	The recording time is set to 30 minutes.
REPEAT	Repeat playback is on.
START	A function (copying) is beginning.
COPY	Copying is taking place.
SLIDE	Slideshow running.
99PER	99 % - copying is nearly finished.
STOP	A function has been stopped (copying).
PROG FULL	All 32 timer programme positions are full.
UNSUPPORT	Disc format is not supported.
UNFORMAT	Disc is unformatted.
SLEEP	The hard disk is in the SLEEP mode.
SW-DL	Software download.
X HOLD	Child protection is active.
No FIN	Finalization not possible during the recording.
HDMI	HDMI unit is connected.

Error messages

Rear panel



1	AC IN~ = Power supply Connection for the AC mains lead.	2	OPTICAL Digital audio output
3	HDMI AV OUT Digital audio video output	4	S VIDEO OUT = S VIDEO output S VIDEO AV4 IN = S VIDEO input
5	VIDEO OUT = Video output VIDEO AV4 IN = Video input	6	OUT = AUDIO output right/left channel AV4 IN = AUDIO input right/left channel
7	AV1 (TV) 21-pin Scart terminal TV set connection	8	AV2 (EXT) 21-pin Scart terminal Connection of an external unit
9	COMPONENT VIDEO OUT (PROGRESSIVE/INTERLACE) Y = Luminance signal (brightness), P _b = Chrominance signal (colour difference), P _r = Chrominance signal (colour difference)		
10	RF IN Aerial input	11	RF OUT Aerial output

For a conventional tube television, we recommend using the Scart terminal. You will get a high-quality RGB video picture with an RGB-compatible television.

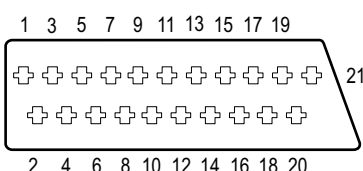
- If you want to use a progressive scan-capable LCD/plasma television or LCD projector, connect it to the component video outputs for a high-quality progressive video picture.

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.



AV1 Scart terminal (TV)

- Audio output CH2 (R)
- Audio input CH2 (R)
- Audio output CH1 (L)
- Audio ground
- Blue ground
- Audio input CH1 (L)
- Blue output
- Switching voltage
- Green ground
- Q Link control signal
- Green output
- Reserved
- Red ground
- Blanking ground
- Red output / chrominance output
- Blanking output
- Video output ground
- Video input ground
- Video output / luminance output
- Video input
- Ground

AV2 Scart terminal (EXT)

- Audio output CH2 (R)
- Audio input CH2 (R)
- Audio output CH1 (L)
- Audio ground
- Blue ground
- Audio input CH1 (L)
- Blue input
- Switching voltage
- Green ground
- Reserved
- Green input
- Reserved
- Red ground
- Blanking ground
- Red input / chrominance input
- Blanking input
- Video output ground
- Video input ground
- Video output
- Video input / luminance input
- Ground

Basic connections

Before connection, turn off all connected equipment and read the appropriate operating instructions.

BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD

3

Choose from one of the connection types A-B that suits your requirement.

Use of the supplied RF coaxial cable

To prevent interference patterns from appearing on your TV, use only the supplied RF coaxial cables when you connect this unit to your TV and aerial outlet or aerial cable and Satellite receiver, as shown in connection types A-B.

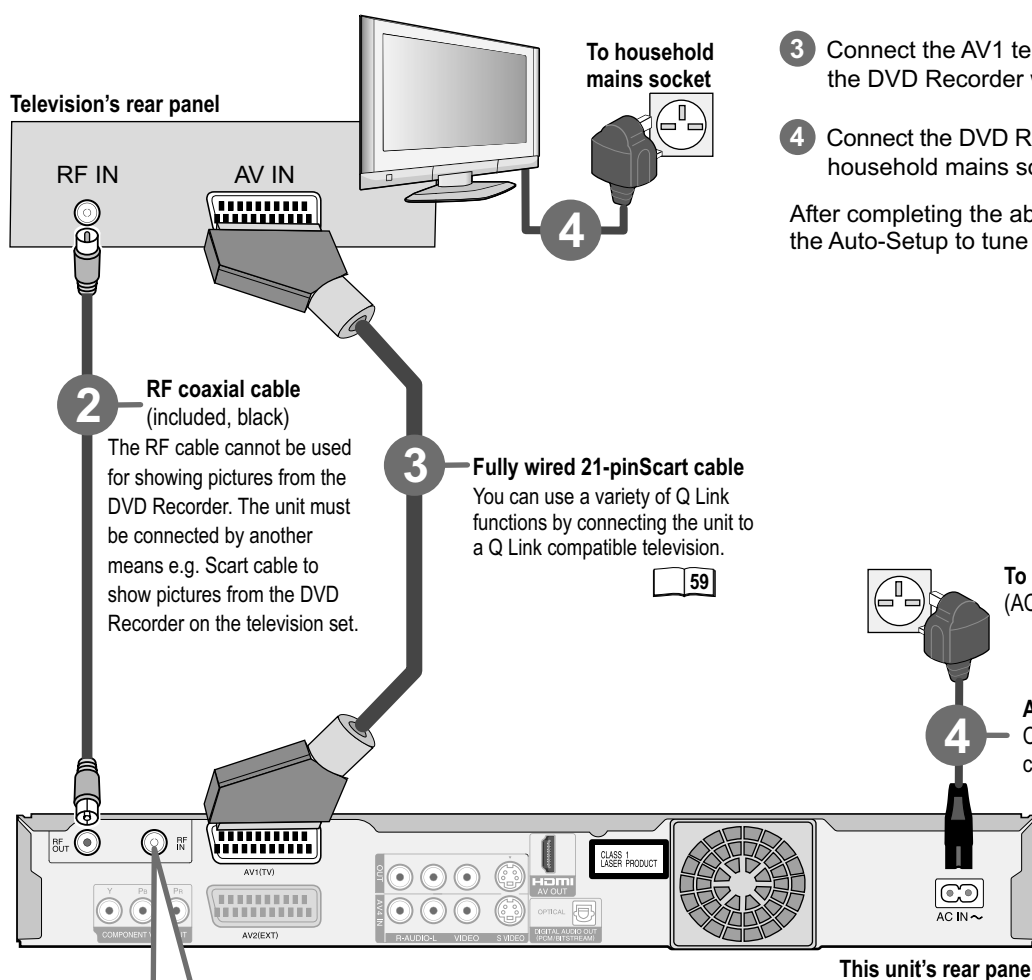
- Keep the RF coaxial cables as far away as possible from other cables.
- Do not roll up the RF coaxial cables.

Connecting to a television only

A

Connection with 21-pin Scart cable (not included)

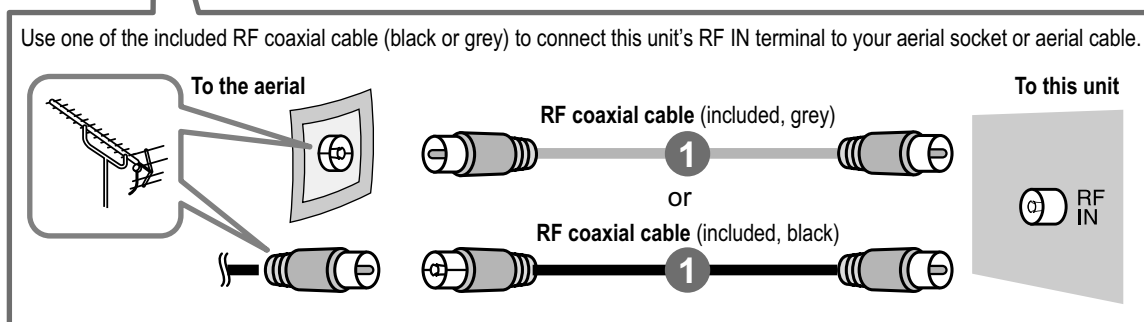
You can enjoy high-quality viewing by connecting the unit to an RGB compatible television.



- 1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.
- 2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.
- 3 Connect the AV1 terminal (21-pin Scart terminal) of the DVD Recorder with the Scart input of the TV.
- 4 Connect the DVD Recorder and the television to the household mains socket.

After completing the above connections, proceed to the Auto-Setup to tune in TV channels.

9

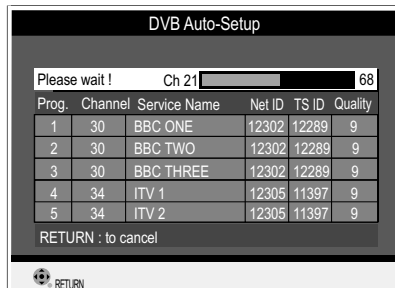


Automatic setup of the unit

After being switched on for the first time, the unit proceeds with an automatic station search for digital channels. This is followed by the search for analogue channels.

- Turn on the television and select the AV input that this unit is connected to.
- Switch the unit on using the **Standby/on**-switch.

1 | DVB Auto-Setup (Tuning digital channels)

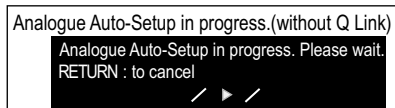


Depending on different countries or regions, the digital TV programme has its own selection of operating frequency channels, frequency bands, transmission parameters and frequencies. The unit automatically searches for all available digital stations.

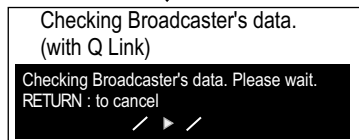
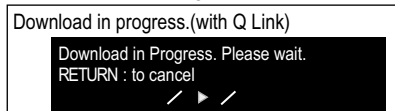
You can repeat the station search again.

45

2 | Auto-Setup (Tuning analogue channels)



or



Analogue Auto-Setup (without Q Link)

The auto setup tunes in all available analogue television stations. This takes approx. 5 minutes.

Q Link Download from TV with Q Link

If your television is equipped with the Q Link feature, it will start to download TV tuning information to this unit. In order to be able to use Q Link, the unit must be connected to a TV with Q Link or a similar feature via a fully wired 21-pin Scart cable.

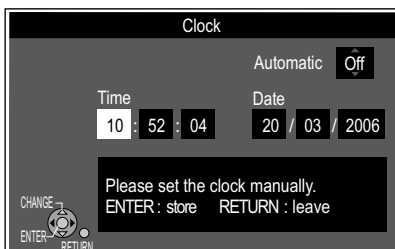
59

Checking Broadcaster's data (with Q Link)

Once the station data have been adopted from the television set, the analogue stations are sorted accordingly.

You can repeat the station search again.

45 46



Setting the date and time (if not found automatically)

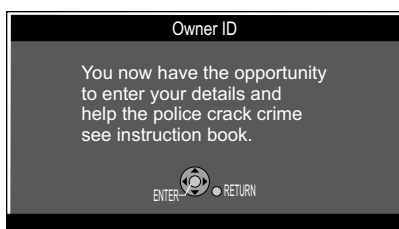
If the Date and Time are not transferred via a television station, the Clock menu appears.

- Set the clock manually.

52

An incorrect date or time affects the programmed recording of television programmes (note summer and winter time).

3 | Owner ID

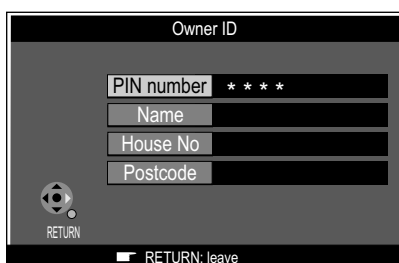


You can complete the Owner ID now. To skip this step and do it later, press the **RETURN** button. Your DVD Recorder is now ready to use.

You can later set the Owner ID in the Setup Menu.

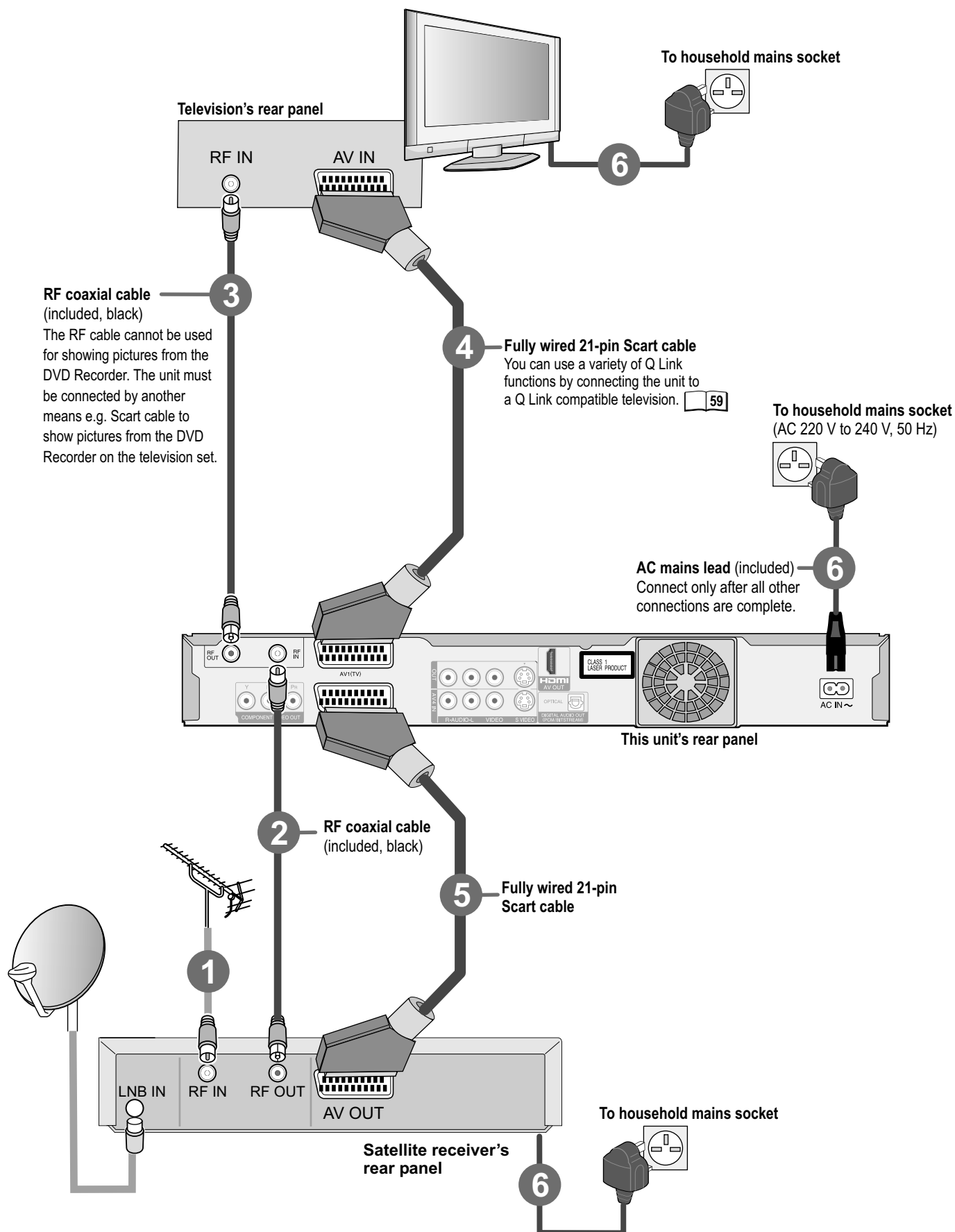
- To enter the Owner ID, press **ENTER**.
- Press **▶**. To set the Owner ID now, use **[0] - [9]** to enter a four-digit PIN number.
Press **▲▼◀▶** to correct the digit.
- Make sure that you will remember the PIN number (make a note of it).
- Press the **ENTER** button to confirm.
- Select [Yes] with **◀** and confirm with **ENTER**.
- Press **▶**. Enter the [Name], [House No] and [Postcode] in the same way, using **▲▼◀▶**.
- Press the **ENTER** button to confirm each entry.
- Press the **RETURN** button to leave the Owner ID screen. You will now see the TV picture. Your DVD Recorder is now ready to use.

53



Auto setup for your unit is complete. The availability of stations may differ regionally. You can now select your favourite stations and store them in the required order in the profiles.

44



Connecting to a television and satellite receiver

B

If you receive your television programme via a satellite receiver (digital/analogue), connect your DVD Recorder as shown in connection type B.

If your television supports Q Link, use a fully wired 21-pin Scart cable to connect it to the TV.

The analogue stations automatically downloaded through [Download from TV].

If your television supports RGB, set the AV1 Output to RGB 1 or RGB 2 in the Setup menu.

50

- 1 Connect the aerial to the RF IN (aerial input) of the external unit.
- 2 Connect the RF OUT (aerial output) of the external unit with the RF IN (aerial input) of the DVD Recorder.
- 3 Connect the RF OUT (aerial output) of the DVD Recorder with the RF IN (aerial input) of the television unit.
- 4 Connect the AV1 terminal (21-pin Scart terminal) of the DVD Recorder with the Scart input of the television unit.
- 5 Connect the external unit with a 21-pin Scart cable to the AV2 terminal of the DVD Recorder.
- 6 Connect the DVD Recorder, the TV and the external unit to the household mains socket.

Auto-Setup

>>>

Auto-Setup with connected Satellite Receiver and aerial

After completing the above connections, proceed to the Auto-Setup.

9

Auto-Setup with connected Satellite Receiver

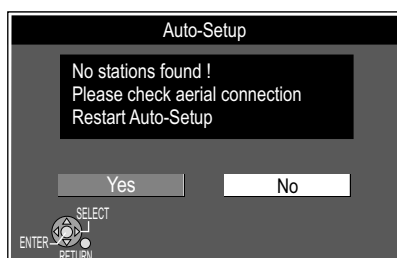
Turn on the television and select the AV input that this unit is connected to.

Switch on the external unit and DVD Recorder.

[Auto-Setup] follows automatically and if it ends with the note: [No stations found !].

- Select [No] with ► and confirm with **ENTER**.
- You can complete the Owner ID now. To skip this step and do it later, press the **RETURN** button.

53



The TV Guide does not show any information if you have connected the unit to a satellite receiver only.

The date and time are not set automatically. Set them manually.

An incorrect date or time affects the programmed recording of television programmes (note summer and winter time).

53

Your DVD Recorder is now ready to use.

- Switch the DVD Recorder to AV2 with **CH** ◀.

You see the television picture from the external unit.

View / record satellite programmes

Press **INPUT SELECT** to select the input channel AV2 or put this unit in standby mode.

To record satellite programmes refer to "Timer Recording from Sat with VIDEO Plus+".

22

Remote Control



DVD



Standby/on switch

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.



DRIVE SELECT

Select the HDD, DVD or SD drive.

Direct entry using the number buttons

Selection of channels, title numbers, etc.

VCD

5: 0 5

15: 1 5

JPEG/MP3

5: 0 0 5

15: 0 1 5

JPEG

5: 0 0 0 5

15: 0 0 1 5



Delete a function.



SKIP = Skip chapters, titles or pictures.



Stop a recording or playback.



Launch the digital channel information or programme details.



Direction buttons in the menu guide. Select **▲▼◀▶** groups or titles.

◀▶ Frame or slow-motion playback.

ENTER = Select or save a setting.



Launch SUB MENU's.



RED button: menu guide (Profile, GUIDE, Digital TEXT, Manual Tuning).



GREEN button: menu guide (Profile, GUIDE, Digital TEXT).



YELLOW button: menu guide (Profile, GUIDE, Digital TEXT)
Dividing a recording into chapters.

MANUAL SKIP



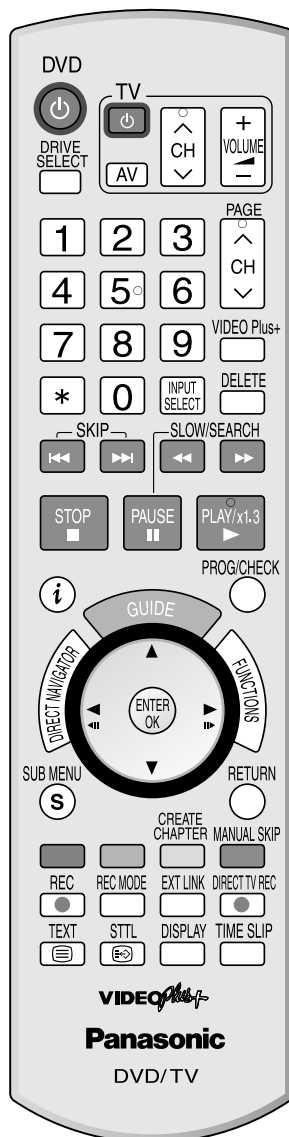
BLUE button: menu guide (Profile, GUIDE, Digital TEXT).
Jump forward 30 seconds.



Launch the Digital TEXT service.



Launch the picture and sound settings.



TV



Switch the TV on and off.



Select the AV input on the TV set.



CH = Select the programme position on the TV set.

VOLUME = Volume control of the TV set.

PAGE



CH = Programme selection button.

PAGE = Scroll in the TV Guide.

VIDEO Plus+



VIDEO Plus+ recording for analogue stations.



Delete a title.



Select button to switch AV input between AV1, AV2, AV3 (Front), AV4 and DV.

SLOW/SEARCH



SLOW = Slow-motion playback.

SEARCH = Search during playback.



Pause a recording or playback.



PLAY: Start playback.
x 1.3: You can increase the playback speed.

PROG/CHECK



Check/change a Timer Recording.

GUIDE



GUIDE = Launch the TV Guide.

DIRECT NAVIGATOR



DIRECT NAVIGATOR = Launch the Title View.

FUNCTIONS



FUNCTIONS = Launch the main menu.

RETURN



Return to the previous menu.



Recording.

REC MODE



Select recording mode (XP, SP, LP, EP).

EXT LINK



Timer Recording with external recording control.

DIRECT TV REC



Direct TV recording.



Subtitles.

TIME SLIP



TIME SLIP = Select the time frame.

You can also switch on the unit from Standby mode using the **PLAY**, **GUIDE**, **DIRECT NAVIGATOR**, **VIDEO Plus+** and **PROG/CHECK** buttons.

Preparation



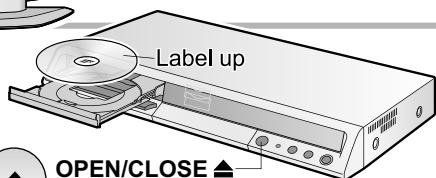
1 turn on the television and select the AV input that this unit is connected to



2 press **⏻** button to turn on the DVD Recorder



OPEN/CLOSE to insert a disc

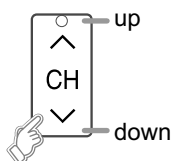


Select the HDD or DVD drive to record on or playback a disc.

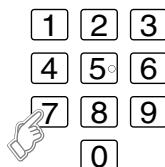


Just watching TV programme

Select the channel



or



Just PLAY

When a menu screen appears on the television (e.g. prerecorded DVD)



1 select,

2 set / play

Depending on the disc type, play may start automatically.

Start playing **HDD** **RAM**

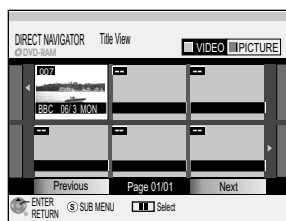


to stop

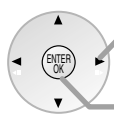


To select recorded programmes to play

1 Display the title view.



2 Start playing.



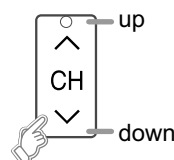
1 select,

2 play

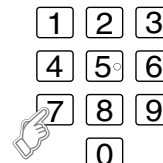
Just RECORD

Select the channel

The channel cannot be changed during recording.



or



Select the recording mode

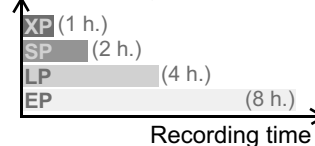


Inserted Disc



Remaining time

Picture quality



Start recording



to stop

Elapsed recording time



To record satellite programmes **22**

DELETE

To delete unnecessary title recorded on DVD-RAM, -RW(V) or +RW



while playing

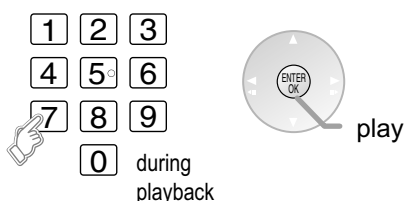
Advanced Playback



Playback of the last recorded title



Playback of a selected title



Pausing playback

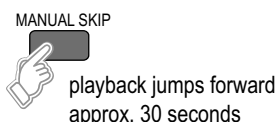


Dividing a recording into chapters



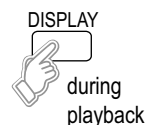
MANUAL SKIP

[CD] Not available



Changing the picture or sound settings

[56]

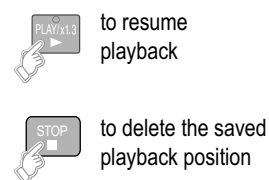


Stopping playback

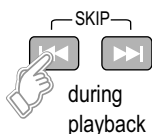


The television picture appears.
[DVD-A] [DVD-V] [VCD] [CD] the screensaver appears)

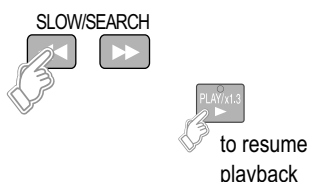
Options during stop mode



Skipping skip chapters, titles or pictures



Fast forward



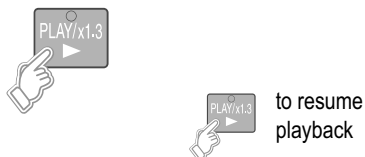
Each time the button is pushed, the speed increases up to a maximum of five levels.

[+R] [+R DL] [+RW(V)] Maximum of three levels.

The sound is only output at the first fast-forward speed.
[DVD-A] (except for moving pictures), [MP3] [CD] the sound is output at all fast-forward speeds.

Quick View (PLAY/x1.3)

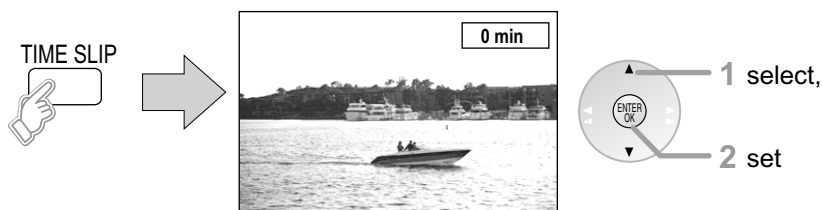
You can increase the playback speed without negative effects on the sound.



With a digital connection, playback is in PCM. [56]
Quick View is paused if the playback of a programme begins, which was not recorded with Dolby Digital.
Quick View does not function during simultaneous recording and playback in XP or FR mode.

TIME SLIP

Select the time span by which playback is to jump forward or backward.



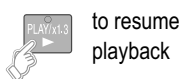
[DVD-A] [DVD-V] [VCD] [CD] Not available

Each time the navigation button is pressed, the time span increases or decreases in minute increments. For recordings that are longer than 10 minutes, the time span increases or decreases in 10-minute increments when the button is held down longer.

Slow-motion playback during pause

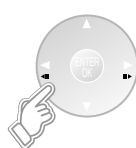


The speed can be controlled in 5 levels.
With some disc formats, the pause mode is switched on after 5 minutes.

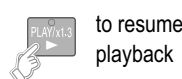


[CD] Not available
[VCD] Forwards only.
[DVD-A] Moving pictures only.

Frame playback during pause



Each time the button is pressed, the next or the previous frame is displayed.



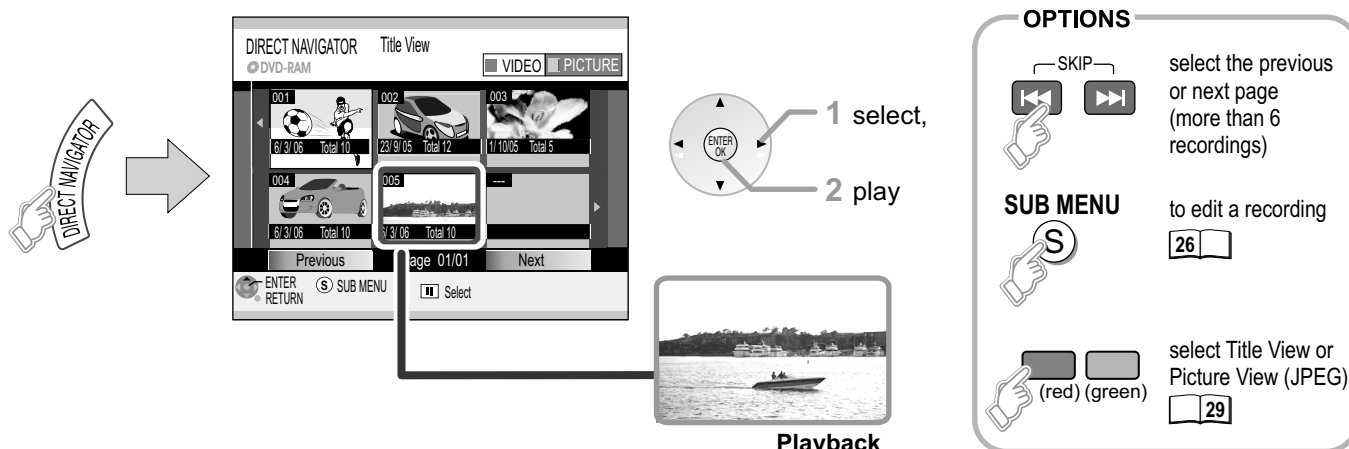
[CD] Not available
[VCD] Forwards only.
[DVD-A] Moving pictures only.

Advanced Playback



Playback from DIRECT NAVIGATOR

The DIRECT NAVIGATOR menu shows all the recordings and timer programmes you have created yourself. The recordings can be selected directly and replayed immediately without searching.



Simultaneous recording and playback **HDD** **RAM**

You can play the recording or a different title during the current recording or Timer Recording. Playback does not affect Timer Recordings. Recording begins at the programmed time.

Playback during recording **HDD** **RAM**

Playback can be started while the unit is still recording. You can watch the recording without stopping the current recording.



Note

Depending on the disc type, playing may start automatically.

RAM **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW** Disc playback stops when a Timer Recording starts.

Direct input via the number buttons

Selection of channels, title numbers, etc.

VCD 5: **0 5** 15: **1 5**
JPEG MP3 5: **0 0 5** 15: **0 1 5**
JPEG 5: **0 0 0 5** 15: **0 0 1 5**

DVD-A When the screen saver is shown, you can enter a group number. On some discs, this function is only available when playback stops.

HDD/DVD-RAM functions possible during playback in each case

DVD PLAY ►

HDD REC
DVD REC

HDD PLAY ►

HDD REC
DVD REC

Playback starts automatically (with prerecorded discs) **DVD-A** **DVD-V** **VCD** **CD** **-R(MP3)**

Playback always starts at the beginning of the disc. If the disc has its own disc menu, then it is displayed. The operation of the disc menu depends on the inserted disc.

Due to the programme structure determined by the manufacturer, the described functions may not be available.

If appears on the television unit, the procedure is inhibited by the unit or the disc.

Use the following buttons to launch the disc menu again:

DVD-V: **SUB MENU**, DVD-A: **DIRECT NAVIGATOR**, VCD: **RETURN**

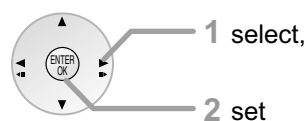
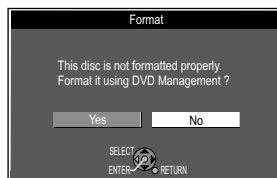
Discs you can record on



Formatting

[RAM] [-RW(V)] [+RW] [-RW(VR)] [+R] [+R DL] Only for new discs

If using an unformatted disc, you must format it before the first recording. After inserting the disc, the formatting message appears automatically. Formatting prepares the media, such as a recordable DVD-RAM, for recording. All data is irreversibly erased.



We recommend using a DVD RAM to utilise the greatest possible functional scope of this unit.

✓: Can do, ✗: Cannot do

Disc Type	DVD-RAM	DVD-R	DVD-R DL	DVD-RW	+R	+R DL	+RW
Function							
Recording	✓	✓	✓※	✓	✓	✓※	✓
Rewritable	✓	✗	✗	✓	✗	✗	✓
Copy-once recording (digital broadcasts)	✓ (CPRM compatible discs only)	✗	✗	✗	✗	✗	✗
Playing on other equipment	✓ (RAM compatible equipment only)	✓	✓	✓	✓	✓	✓

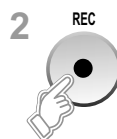
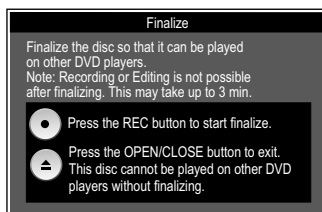
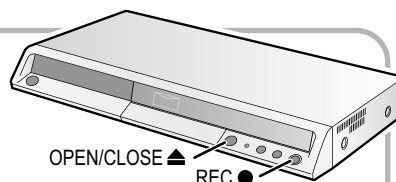
To play on other equipment,

Use the Finalize feature!

DVD-R, etc. recorded on this unit cannot be played on other players immediately after recording. Using the Finalize feature allows you to play these discs on other players. (However, once the disc is finalized you will no longer be able to record to the disc.)

Auto Finalize

Auto finalization is always offered before an unfinalized disc is ejected. Finalize the disc so that it can be played on other DVD players.



Finalize and eject.
After successful finalization, the disc is ejected automatically.

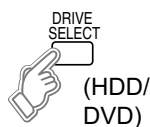


Eject.
This disc cannot be played on other DVD players.

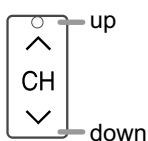
※ This unit cannot be used for direct recording on a DVD-R DL/+R DL.
You can record on the hard disk and then copy the recording to a disc.

Advanced Recording

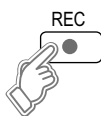
Select the drive



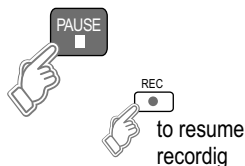
Select the channel



Start recording



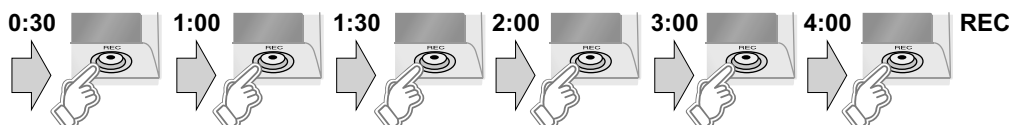
Pause the recording



Stop recording a title



Specifying a time as the recording duration



Note

The unit switches itself off at the end of the recording if no functions are being executed on another drive. This function is not available for Timer Recordings.

This function is not possible with Flexible Rec. If the channel or recording mode (XP, SP, LP, EP) is changed while recording is paused, the time is deleted.

Direct TV recording



If your TV is equipped with Q Link, you can record an analogue TV programme that you are currently watching. Other settings are not necessary. The recorder automatically switches to the appropriate station.

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Timer Recording with the television set

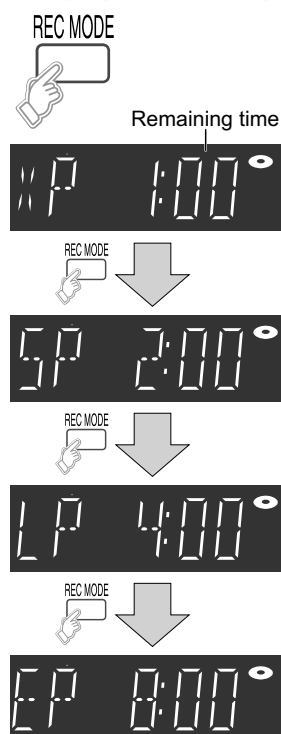
1 Programme the Timer on the TV set.

2  switch the DVD-Recorder to the Standby mode.

If your television set is equipped with the Q Link function and the possibility of programming with Timer Recording, then you can do a Timer Recording with the television set.

The recording will not start if the DVD Recorder is in Timer or EXT LINK standby mode. If several Timer Recordings follow on in quick succession, they are recorded as one title.

Changing the recording mode



Note

HDD If you want to copy recorded titles in High Speed Mode at a later point in time, set the setting [Rec for High Speed Copy] in the menu [Setup] - [Disc] - [Settings for Recording] to [On].

You cannot record on the hard disk and on a DVD at the same time. The internal hard disk saves up to 284 hours (DMR-EX75) / 443 hours (DMR-EX85) of your recordings when set to [EP (8 Hours)].

HDD Longer recordings are divided into 8-hour segments.

RAM If you activated the write-protection, cancel it.

After pause the recording the title is not divided.

You can only change the channel or recording mode in the **PAUSE** mode. The material is then recorded as a separate title.

After the recording is complete, it takes some time for the unit to process the unit control information.

To use Q Link functions (e.g. direct TV recording), connect the DVD Recorder with a fully wired 21-pin Scart cable to the television set.

RAM With the [EP mode (8Hours)] setting, playback on DVD-RAM-compatible DVD players may not be possible. Select [EP mode (6Hours)].

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Maximum number of recordable titles						
HDD	RAM	-R	-RW(V)	-R DL	+R	+RW
500	99				49	

HDD/DVD functions possible during recording in each case

DVD REC ●

HDD PLAY
DVD PLAY **RAM**

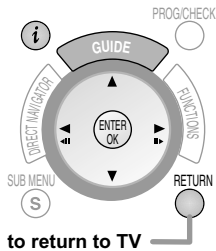
HDD REC ●

HDD PLAY
DVD PLAY

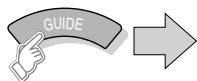
TV Guide

FUNCTIONS
To Others
TV Guide

TV Guide



The TV Guide gives you an overview of the programme for your digital television and radio stations up to 7-days. For many of these programmes, you can select additional information provided by the stations. You can sort the programme preview according to various topics such as sport, films etc., according to categories such as TV or radio and select programmes for Timer Recordings.



TV Guide: Landscape

Mon 06th

Category: All Services

Prog. Type: All Types

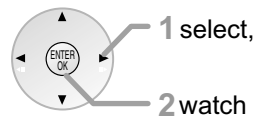
19:00 - 20:00 | Emmerdale : In today's show we will find a way...

Time	19:30	20:00	20:30	21:00	21:30
1 BBC1	CSINY	DIY S.O.S.	Red Cap		
2 BBC2	Hot Wars	Holiday Programme			
7 ITV1	Emmerd	Coronation Street	The Bill		
10 Channel4	Scrapheap Challenge	Pepsi Chart Show			
31 Channel5	News	Sex and the City	Terminator2		
45 ITV2	Me out of here!	Pop Idol	News		
70 S4C	Rugbi	15 to 1	Scrapheap Challenge		

SELECT VIEW info Page + Page -

RETURN Guide Change Display Mode

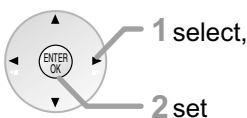
Select, to watch the current programme



(TV screen)

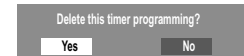
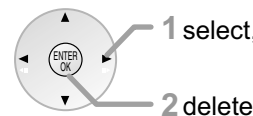
Select a future broadcasting to programming a Timer Recording

(Timer programming screen)



Press ENTER to store.

Select a programmed Timer Recording to delete the programming



Confirm [Yes] with ENTER to delete.

View TV Guide (landscape or portrait)

Portrait - sorted by time

Landscape - sorted by channels

TV Guide: Landscape

Mon 06th

Category: All Services

Prog. Type: All Types

19:00 - 20:00 | Emmerdale : In today's show we will find a way...

Time	19:30	20:00	20:30	21:00	21:30
1 BBC1	CSINY	DIY S.O.S.	Red Cap		
2 BBC2	Hot Wars	Holiday Programme			
7 ITV1	Emmerd	Coronation Street	The Bill		
10 Channel4	Scrapheap Challenge	Pepsi Chart Show			
31 Channel5	News	Sex in the City	Terminator2		
45 ITV2	Me out of here!	Pop Idol	News		
70 S4C	Rugbi	15 to 1	Scrapheap Challenge		

SELECT VIEW info Page + Page -

RETURN Guide Change Display Mode

Landscape

TV Guide: Portrait

Mon 06th

Category: All Services

Prog. Type: All Types

Time	19:30	20:00	20:30	21:00	21:30
1 BBC1	Red Cap				
2 BBC2	Hot Wars				
7 ITV1	Coronation Street				
10 Channel4	Scrapheap Challenge				
31 Channel5	News				
45 ITV2	Me out of here!				
70 S4C	Rugbi				

SELECT VIEW info Page + Page -

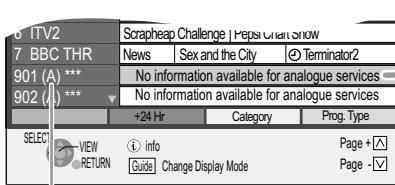
RETURN Guide Change Display Mode

Portrait



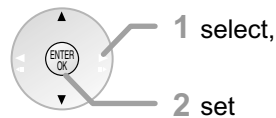
To change the layout (Portrait/Landscape)

Timer Recording menu for analogue stations (A)



Analogue stations (A)

[No information available for analogue services]

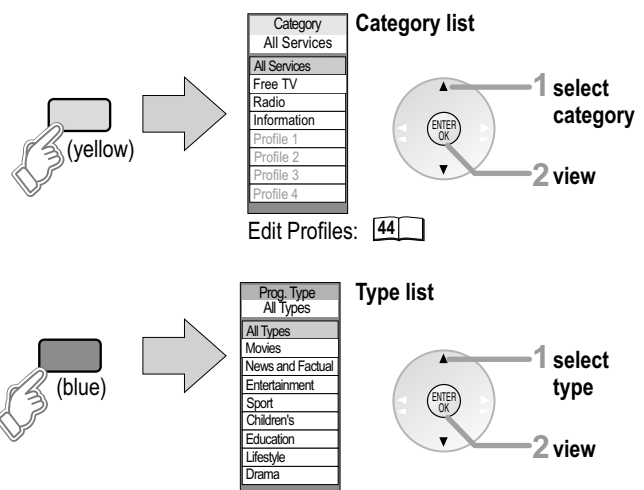
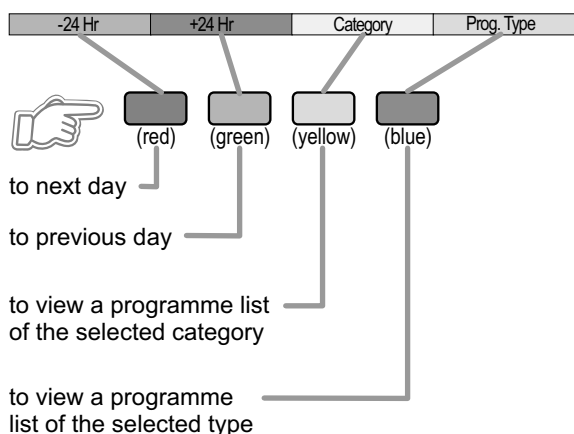


(Timer programming screen)

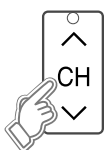
The TV Guide does not contain information for analogue programmes.

OPTIONS

Functions of the coloured buttons



Functions of the channel button



To scroll the programme page in the Portrait View.

To scroll the channel page in the Landscape View.

View details of the programme



Details available



to return to the start page

Automatic title transfer

When programmes are recorded from the TV Guide, the name of the selected programme is transferred automatically for the recording. If an analogue station broadcasts teletext, the unit automatically records the name of the programme and the station, on condition that the [Title page] setting has been entered correctly in the station table. It can take approx. 10 minutes to find the title with this unit, and sometimes this fails.

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Note

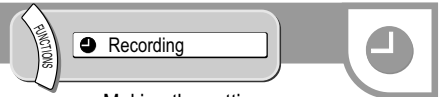
The programme overview is available immediately if your DVD Recorder has found a digital station and loaded the information in the memory. This process can take a while depending on the particular station.

The programme overview data are continuously downloaded in the background when the unit is switched on. That means that the programme overview can sometimes change while you are looking at it.

If the unit is disconnected from the AC mains, all programme data are lost

The broadcasters allocate individual programmes to topic areas. If the selection is not complete, this is not an error in the unit.

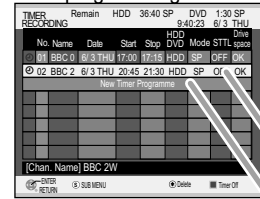
Manual Timer Recording



PROG/CHECK



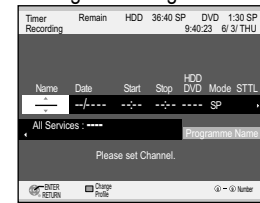
Timer programming overview



- 1 select,
- 2 access

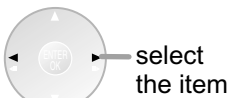
Select to edit a Timer programming
Select for a new Timer programming

Making the settings



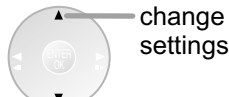
Making the settings

1



select the item

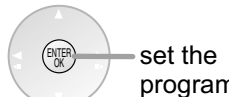
2



change settings

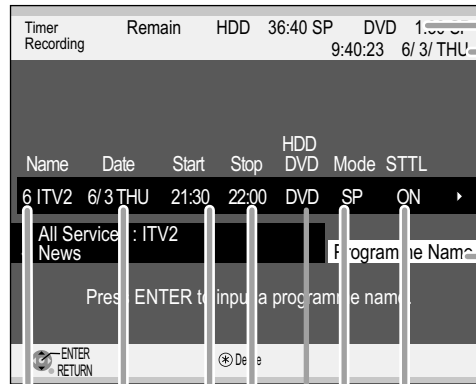
Repeat 1 and 2 for Name, Date Start, Stop, Mode and STTL.

3



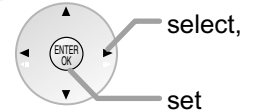
set the programming

* To delete entries



Remaining time
Actual time and date

To enter the programme name 23



select,
set

Programme position/name

to change the profile (blue)

Date

one day ahead

daily or weekly (press repeatedly)

- Weekly SAT/FRI/THU/WED/TUE/MON/SUN: Same time on the same day every week
- Daily MON-FRI: Monday to Friday
- Daily MON-SAT: Monday to Saturday
- Daily SUN-SAT: Sunday to Saturday

RENEW: [On]: when the date is set to daily or e.g. Mon. to Sat. The old recording is overwritten with the new recording. [Off]: the recordings are made continuously.

Subtitles [On] or [Off]
Recorded subtitles cannot be deleted later.

Recording mode
(XP, SP, LP, EP, FR)

Choice of drive (HDD/DVD)

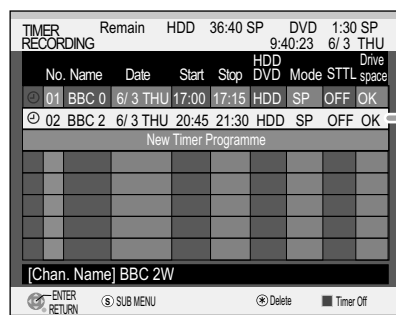
Ending time

Starting time

hold to increase/decrease starting or ending time in 30 minute intervals

Timer programming overview

PROG/CHECK



Drive space

Storage space (HDD/DVD)

OK: Enough storage space available.

→ (Date): For recordings that are made daily or weekly, there is enough storage space on the disc.

! : The disc was not inserted, it is write-protected or there is insufficient storage space available.

Relief Recording

The unit automatically switches over to HDD if the selected DVD does not have sufficient storage space for the programmed recording.

Symbols

23

SUB MENU

SUB MENU



Delete

to delete selected Timer programming
Timer On/Timer Off

Stop Recording

to stop the current
Timer Recording

(during Timer Recording)

Timer Off/Timer On
Deactivate or activate a Timer programming e.g. to interrupt a daily or weekly Timer programming.

OPTIONS



- 1 select,
- 2 to edit the Timer programming



Timer On/Timer Off



to delete a Timer programming

Manual Timer Recording



Recording



Note

The recorded titles can only be copied in High Speed Mode later on if the titles were originally recorded in High Speed Mode on the HDD. 47

Make sure that there is a recordable disc in the selected drive. Otherwise, the Timer Recording will not run.

The unit automatically switches to timer mode.

REC flashes in the unit's display one minute before the recording is set to start.

A Timer Recording does not start while a disc is being formatted, deleted or finalized. The recording begins afterwards.

[HDD] [RAM] If you programmed the timer programmes one after the other in sequential order, the first few seconds of the second Timer Recording are not recorded. With other types of discs, it is approx. 30 seconds.

If you receive your TV programme via a satellite receiver (digital/analogue):

On the external unit, select the station with the programme that you want to record.

The station can not be changed during the recording.

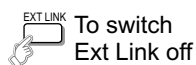
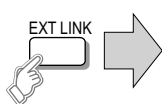
The programme on the set station is always recorded.

Name : Select [AV2] as the name of the TV station with ▲▼.

Timer Recording via external units (e.g. satellite receiver)



Recording programming on an external unit



The programming for a Timer Recording takes place on an external unit. Read the operating instructions for your external unit.

The recording begins if an appropriate signal is received from a connected unit. As long as a video picture is transmitted by the external unit, the selected drive will record it.

Prematurely cancelling recording

1 Stop the transfer of the recording signal on the external unit.



Playback from the selected drive during Ext Link mode



26

Setting for external units (EXT LINK)

50

VIDEO Plus+ Recording (for analogue channels)

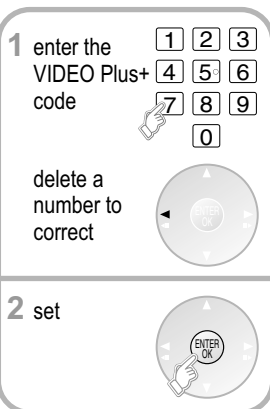
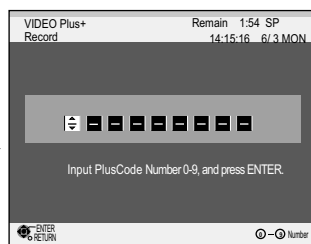


To Others

VIDEO Plus+ Record



Entering a VIDEO Plus+ number causes the data for programmes provided by broadcasters to be saved. The appropriate codes can be found in newspapers and TV guides. You can programme up to 32 programmes per month in advance.



Missing or incorrectly transferred data can be corrected 20

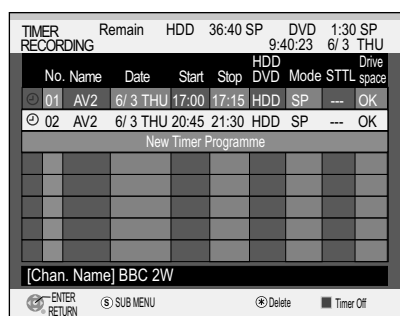


VIDEO Plus+ Codes for satellite receivers

This DVD Recorder is not designed to control (switch on or change channel) your satellite receiver. However, it can be taught to recognize VIDEO Plus+ Codes for satellite stations. The satellite receiver must be switched on and the correct station selected. Some receivers have their own timer facility for this purpose.

Please refer to your satellite receiver instructions for use of such timer facilities.

For your DVD Recorder to recognize the VIDEO Plus+ Codes for each satellite station, you must teach your DVD Recorder which channel or AV input to record from for the first time. Otherwise when setting a VIDEO Plus+ recording, the [–] symbol will appear in the channel position indicating that the DVD Recorder does not know which channel position to set. Once you have set the channel/AV input the DVD Recorder will remember it whenever you use a VIDEO Plus+ Code for the station again.



VIDEO Plus+

Press the **VIDEO Plus+** button.

- Enter a VIDEO Plus+ Code from a satellite TV Guide for a satellite channel, e.g. Sky 1 using the numeric buttons. Press ◀ to correct any mistakes.
- Press the **ENTER** button. [–] will appear instead of a channel number/AV input.
- Press the **CH** button to select the channel or AV input that is to be used for recording from the satellite channel.
- Press the **ENTER** button to memorize the setting. The DVD Recorder will now automatically set the programme position or AV input correctly when a VIDEO Plus+ recording is set for this satellite station in the future.
- Press ▲▼ to select the programme that you have just set. Now press the * button to delete it from the Timer Recording list. It is no longer needed.
- Repeat the steps above until you have set and deleted dummy Timer Recordings for each of the satellite stations that you will make VIDEO Plus+ recordings from.
- Press **RETURN** when you have finished.

Symbols



	The title is currently being recorded.	HDD	The title was recorded on HDD.
	Shows a Timer programming.	DVD	The title was recorded on DVD.
	A daily or weekly Timer Recording was stopped. The icon disappears when next Timer Recording starts.		The title is automatically renewed.
	The title overlaps other recordings.		The title is selected.
	HDD/DVD was full. The title could not be recorded.		Titles and playback lists which can be copied on a DVD-R etc. in the high speed mode, but not on +R, +R DL, and +RW.
	The programme cannot be played back due to damaged data or cannot be recorded for another reason.		Titles and playback lists which can be copied on a DVD-R etc. in the high speed mode.
	The title is write protected.		The title is provided for one-time copying and will be deleted after it is copied.
	The programme was copy-protected so that the title could not be recorded.		Titles or playlists with pictures (pictures cannot be copied).
	The title was transferred from DVD to HDD.		The title or the playlist was recorded with a TV system other than that currently set in the unit. Titles and playlists with these markings possibly cannot be played back. Switch your TV system to playback these titles/playlists.
	Title with restriction for one-time copying.		

Entering text



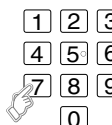
You can give names to your programmes or discs in the different menus and while setting up the Timer Recording.



1 select



or



e.g.: the letter "R":

Press 7 to switch to the 7th line.

Press 7 twice to select "R"

2 set



3 apply the name/title.



OPTIONS



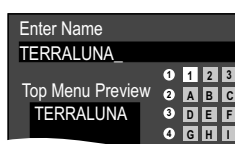
to delete a letter



add name to the Name List



to open the Name List

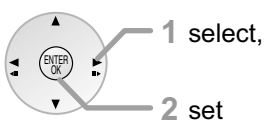
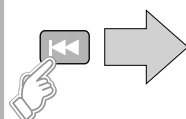


Top Menu Preview

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

In the DIRECT NAVIGATOR, select the setting [Enter Name]. The Top Menu Preview also appears. The later display of the title is shown. Add blanks, hyphens etc. to write the title as you want it.

Selecting a name from the Name List



Deleting a selected name from the List Names

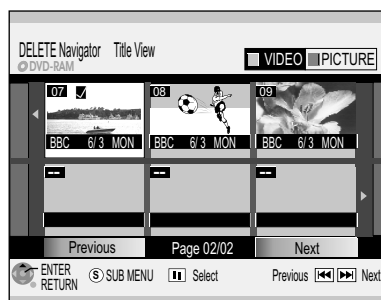
SUB MENU



Delete



Delete



OPTIONS



to select several elements



Title View (red) to edit recorded titles



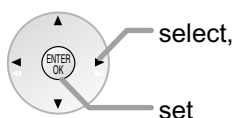
Album View (green) to edit Albums/ JPEG pictures



to the previous or next page

SUB MENU

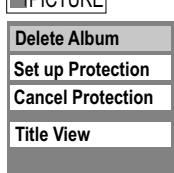
SUB MENU



select,

set

PICTURE



Properties

Information about the recorded title (e.g. Name, Date and Time).

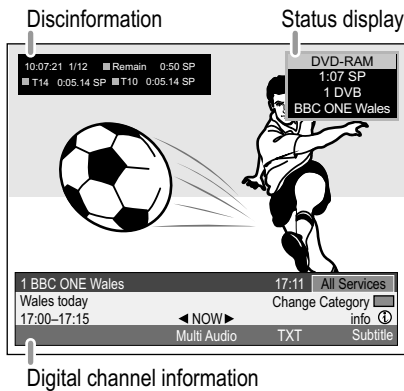
Edit (Title View only) Launch to [Set up Protection/Cancel Protection].

Album View Title View Switch between Album View (pictures) or Title View (titles).

Delete Album Delete an Album in the Album View.

Set up Protection Cancel Protection To protect titles, albums or pictures.

STATUS displays/Digital channel information



Screen information

Every time you change the station, a status display and digital channel information appear automatically. They disappear again after a short time. You can change the display time in the Setup menu.

49



To show the screen information again.

Status displays

DVD-RAM	Current medium
1:07 SP	Current recording/playback status and remaining time
1 DVB	Current station position. DVB shows a digital station.
BBC 1	Current station

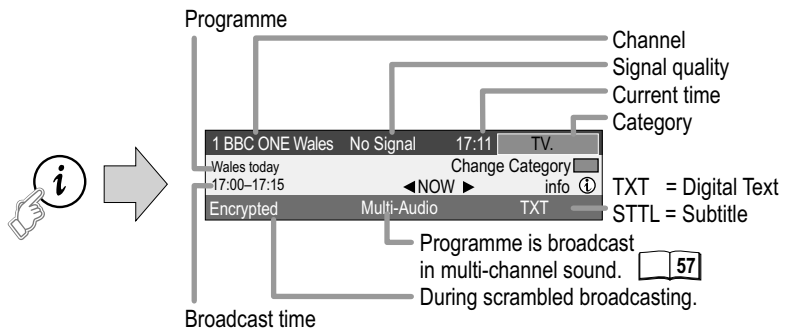
REC	Record	Fast forward (5 stages)	Rewind (5 stages)
PAUSE	Pause	Slow motion (5 stages)	Slow-motion rewind (5 stages)
PLAY	Playback	PLAY/x1,3 Quick View	Pause playback

OPTIONS

- select channel, view
- information on next programme
- Extra information Normal display
- to change the category (blue)

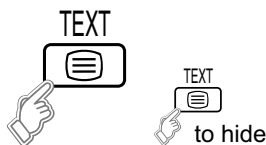
Digital channel information

The digital channel information cannot be selected during playback or recording.

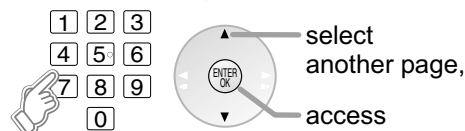


If the digital channel information shows [No Signal], [Bad Signal], [Encrypted] or [No Service] or on selecting a radio station, the digital channel information cannot disappear and is included in any current recording

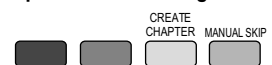
Digital TEXT for digital channels



To select another page



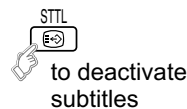
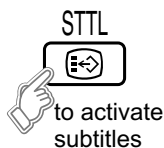
Quickly access to certain topic areas and navigation



Note

During a recording the Digital TEXT function is not possible. The features depend on the respective station. When subtitle is on or additional information in the digital channel information is displayed, Digital Teletext does not work.

Subtitles for digital channels



to select the subtitle language 49

Discinformation during playback and/or recording



FUNCTIONS menu

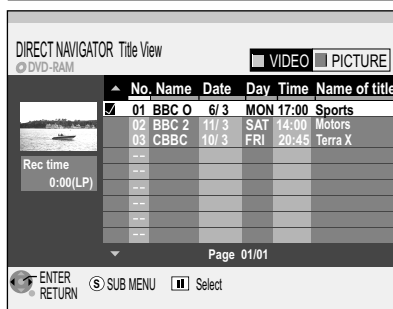
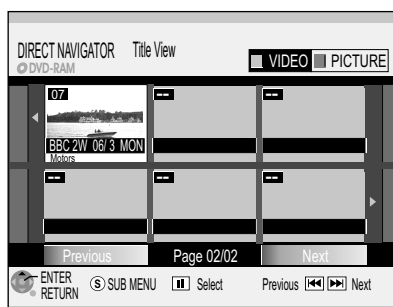


Display the FUNCTIONS menu to access the main functions on this unit quickly and select functions like Timer Recording etc.



	Playback	Menu DIRECT NAVIGATOR		26
	Recording	Timer programming in the Timer Recording menu		20
	Delete	Menu Delete Navigator		23
	Copy	Menu Copy		33

To Others			
TV Guide	TV Guide		 18
VIDEO Plus+ Record	Menu VIDEO Plus+ Record		 21
Advanced Copy	Menu Advanced Copy		 34
Copy All Pictures	Menu Copy All Pictures (when using SD Card)		 39
Playlists	Menu Playlists		 40
Flexible Rec	Recording in FR mode		 43
DV Auto Rec	Recording the DV signal		 43
Setup	Changing your unit's presets		 44
HDD Management	Formatting and deleting all titles from HDD		 54
DVD Management	Formatting and finalizing discs, write protection		 54
Card Management	Formatting SD Cards		 55

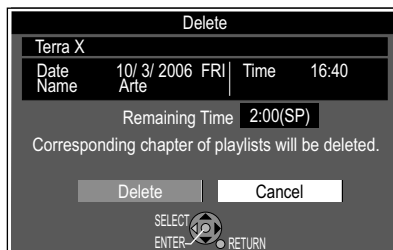


VIDEO

RED button: Title View

PICTURE

GREEN button: Picture View (JPEG)



Overview of DIRECT NAVIGATOR

You can archive, edit or start playback after selecting a title in DIRECT NAVIGATOR.

Selecting a title or chapter

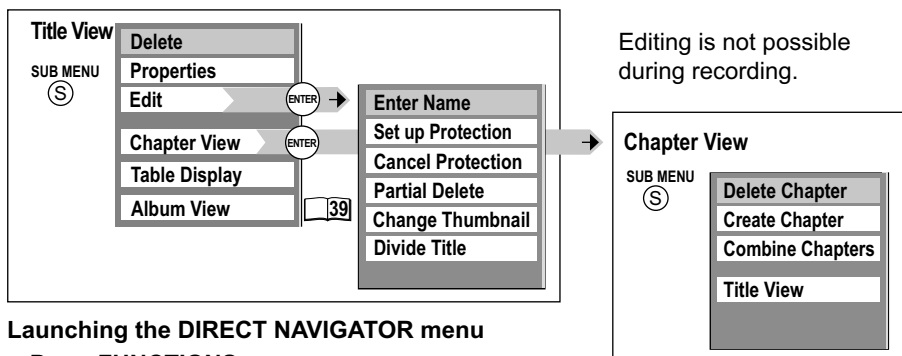
- Select a title or chapter with **▲▼◀▶** or **[0]—[9]**.

Selecting other pages

- Select [Previous] or [Next] with **▲▼◀▶** and confirm with **ENTER**.

Cancelling a function

- Depending on the specific entry, select [No] or [Cancel] with **▲▼◀▶** and confirm with **ENTER**. You can also cancel a function with **RETURN**.



Launching the DIRECT NAVIGATOR menu

- Press **FUNCTIONS**.
- Confirm [**▶** Playback] with **ENTER**. The DIRECT NAVIGATOR menu appears.

Playback

- Select a title with **▲▼◀▶** and start playback with **ENTER**.

SUB MENU

- Press **SUB MENU** to edit a title.
- Select the desired option with **▲▼** and confirm with **ENTER**.

Delete

When you execute this process, the title will be deleted and cannot be restored.

- Confirm [Delete] with **ENTER**.
- Select [Delete] with **◀** and confirm with **ENTER**.

The available recording time may remain the same after deleting a short title.

In the case of a DVD-RAM, the storage space of a deleted title becomes available for a new recording. For -RW(V), +RW: Available recording space increases only when the last recorded title is deleted. With other discs (-R, R DL, +R, +R DL), the storage space is not released by deleting titles.

Properties

Information on the title, such as name, date and time is displayed.

- Select [Properties] with **▲▼** and confirm with **ENTER**.

Table Display/Thumbnail Display: changing the Title View.

The last used display remains saved even when the unit is switched off.

Sort: Sorting in the Table Display of the Title View. **[HDD]**

The titles can be sorted according to No., Name, Date, Day, Start Time and Name of title. The adjusted search option is underlined.

- Select the required option with **▲▼** and press **ENTER** to confirm.

Album View/Title View: VIDEO (GREEN button) / PICTURE (RED button).

Display of video data or picture data.

Editing several elements

Select the desired title with **▲▼◀▶** and press **PAUSE II**. A check appears.

Repeat this process to select other titles. Press **PAUSE II** again to clear the selection.



Editing titles in the SUB MENU

SUB MENU



- Select [Edit] with **▲▼** and confirm with **ENTER**.
- In the submenu, select the desired option with **▲▼** and confirm with **ENTER**.

Enter Name 23 **-RW(VR)** Not available

Enter or change the title of the programmes.

The full name is displayed in the Properties submenu.

Set up Protection ☒ **HDD** **RAM** **+R DL** **+R** **+RW**

- Select [Yes] with **◀** and confirm with **ENTER**. is displayed.

Cancel Protection ☒ **HDD** **RAM** **+R DL** **+R** **+RW**

- Select [Yes] with **◀** and confirm with **ENTER**. disappears.

Partial Delete **HDD** **RAM**

Make sure that you really want to delete parts of the recording.

- At the desired start point, confirm [Start] with **ENTER**.
- At the desired end point, confirm [End] with **ENTER**.
- If you want to carry out the deletion, select [Exit] with **▲▼** and confirm with **ENTER**.
- In the next screen, select [Delete] with **◀** and confirm with **ENTER**.
You exit the menu after the deletion.

- To delete other parts, confirm [Next] with **ENTER**.
- Select [Delete] with **◀** and confirm with **ENTER**.
After each deletion, you can select the next start and end point.
- To exit the menu, select [Exit] with **▲▼** and press **ENTER**.

You may not be able to identify a start and end point if they are less than 3 seconds apart or if the recorded image is a still picture. The unit switches to **PAUSE** mode at the end of the title. The available recording time on the disc may remain the same after deletion.

Change Thumbnail **-RW(VR)** Not available

You can select any position in a title as the thumbnail for the title view.

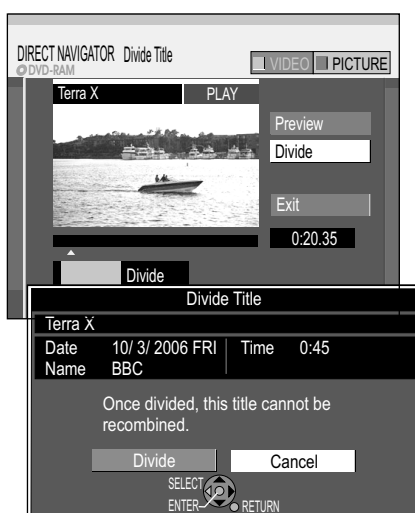
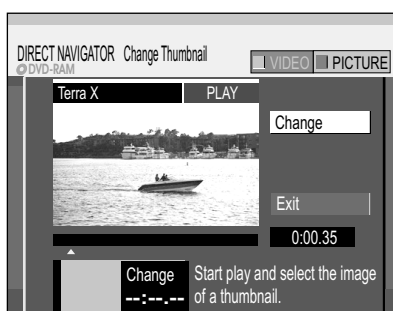
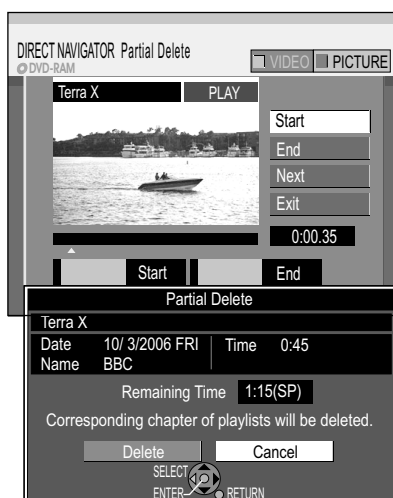
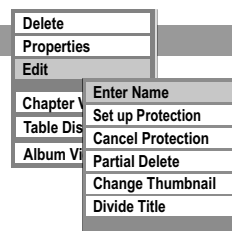
- Press **PLAY ▶** to start playback.
- At the position which is to be displayed as the new thumbnail, confirm [Change] with **ENTER**. The selected thumbnail is displayed.
- Confirm [Exit] with **ENTER**. The selected thumbnail is displayed in the title view.

Divide Title **HDD** **RAM**

You can divide a selected title. A divided title cannot be joined together again.

- At the position where the title is to be divided, confirm [Divide] with **ENTER**.
- Confirm [Preview] with **ENTER**. A section will be played back from 10 seconds before to 10 seconds after the dividing point.
- Confirm [Exit] with **ENTER**.
- In the next screen, select [Divide] with **◀** and confirm with **ENTER**.
A short section of the recording right before the dividing point may be lost. The divided titles retain the name of the original title.

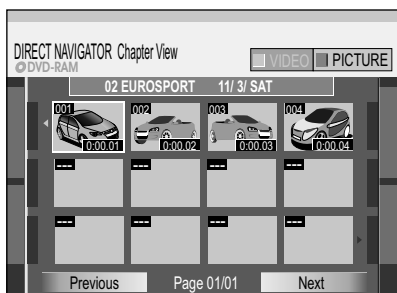
You cannot use this function if the resulting sections are extremely short or if you have saved more than 99 titles to DVD-RAM (500 titles to HDD).





Editing chapters in the SUB MENU HDD RAM

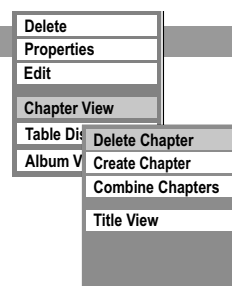
- Press **FUNCTIONS**.
- Confirm [Playback] with **ENTER**.
- Select the desired title with **▲▼◀▶** in the Title View menu.
- Press **SUB MENU**.
- Select [Chapter View] with **▲▼** and confirm with **ENTER**.



SUB MENU



- Select the desired chapter with **▲▼◀▶**.
- Press **SUB MENU**.
- Select the desired option with **▲▼** in the submenu and confirm with **ENTER**.



Delete Chapter

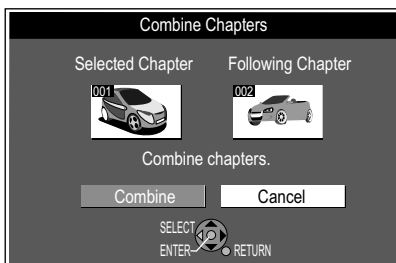
- Select [Delete] with **◀** and confirm with **ENTER**.

Create Chapter

Divide the title into chapters. Determine the points where a new chapter needs to begin. The chapters can be selected later during playback with **SKIP I◀▶▶▶I**.

- Press **ENTER** at the position where you want to create the chapter.
- Repeat this step to create additional chapters.
- Select [Exit] with **▼** and confirm with **ENTER**.

A short section right before the dividing point may be lost.



Combine Chapters

- Select [Combine] with **◀** and confirm with **ENTER**.
The selected chapter is combined with the following chapter.

Title View: Return to Title View.

You can jump to the beginning/end of a title/chapter with **PAUSE II** and **SKIP I◀▶▶▶I**. Find the position for a marker with **SKIP I◀▶▶▶I**, **SLOW/SEARCH ◀▶▶**, **TIME SLIP**, **MANUAL SKIP** or **◀▶**. You can jump between set markers with **SKIP I◀▶▶▶I**.

Editing several elements

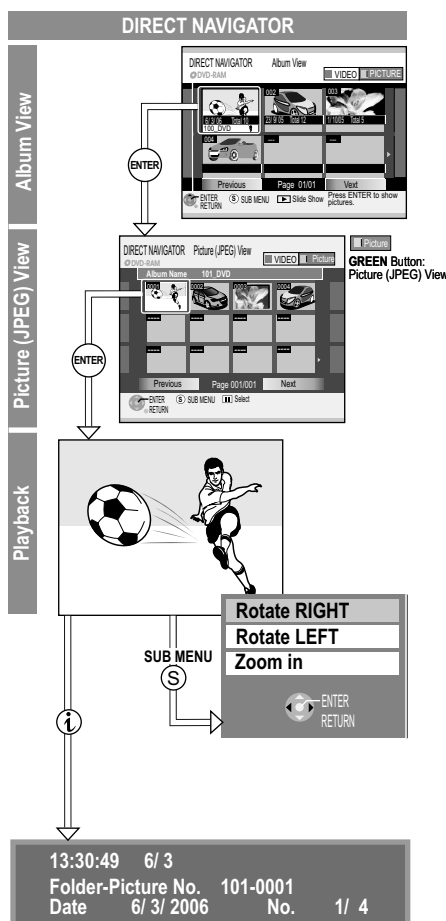
Select the desired title with **▲▼◀▶** and press **PAUSE II**. A check appears. Repeat this process to select other titles. Press **PAUSE II** again to clear the selection.



JPEG/TIFF playback from HDD/DVD-RAM/SD

JPEG (Joint Photographic Experts Group), a system for compressing/decoding coloured still pictures. There are only slight losses in picture quality in spite of the extreme compression.

TIFF (Tag Image File Format), a system for compressing/decoding coloured still pictures. It allows digital cameras and other units to save top quality pictures.



If TIFF still pictures are played back or if there are a lot of files, sessions and/or folders, it can take a relatively long time to display the data.

Picture playback **HDD** **RAM** **SD**

If you have saved pictures in JPEG format on HDD or DVD-RAM, you can playback and edit these using the Album View function.

The albums are displayed with preview pictures.

To playback the pictures, an album must be selected and opened.

- Press **DIRECT NAVIGATOR**.
- **HDD** **RAM** In the title view, press **SUB MENU**. Select Album View with **▲▼** and press **ENTER** to confirm.
- In the Album View select the required album with **▲▼◀▶** and press **ENTER** to confirm.
- Select the required picture in the Picture (JPEG) View with **▲▼◀▶** or **[0]–[9]** and press **ENTER** to start the playback
- Press **STOP** ■ to stop the playback.

Display picture attributes

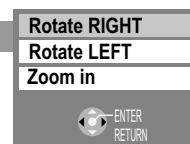
- Press twice ① during the playback to select the display.
- Press ① again to leave the display.

SUB MENU



SUB MENU during picture playback **HDD** **RAM** **SD** **-R** **CD**

- Press **SUB MENU**.
- Select the required option with **▲▼** and press **ENTER** to confirm.



Rotate RIGHT/Rotate LEFT

- Press **SUB MENU** during the playback.
- Select the required setting with **▲▼** and press **ENTER** to confirm.

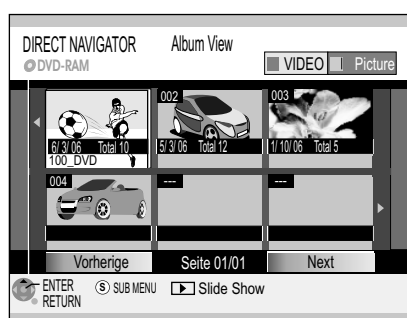
Zoom in/Zoom out (Only available for pictures smaller than 640 x 480 pixels)

- Press **SUB MENU** during the playback.
- Select [Zoom in] with **▲▼** and press **ENTER** to confirm.
- To go back to the original size, press **ENTER** to confirm [Zoom out].

- Press **RETURN** to return to the Album View.

Editing several elements ■

Select the desired title with **▲▼◀▶** and press **PAUSE** ■.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ■ again to clear the selection.



Album View HDD RAM SD

Slide Show from the Album View

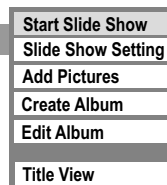
- Select the required Album from the Album View with **▲▼◀▶**.
- Press **PLAY ▶**.

SUB MENU



SUB MENU in the Album View

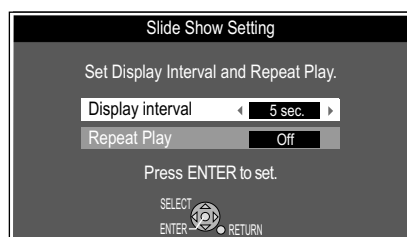
- Press **SUB MENU**.
- Select the required option with **▲▼** and press **ENTER** to confirm.



Start Slide Show

The pictures of the selected folder are played back automatically in succession in the selected display interval. The Slide Show is repeated if you have set [Repeat Play] to [On] in the Slide Show.

- Press **STOP ■** to stop the Slide Show.



Slide Show Settings

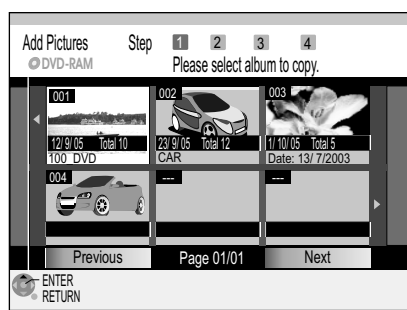
You can stipulate the Display Interval for each picture, together with Repeat Play of the Slide Show.

- Select [Display interval] with **◀▶** for each picture.
- For Repeat Play of the Slide Show select [Display interval] with **▲▼** and change the setting with **◀▶**.
- Press **ENTER** to confirm.

Add Pictures

Pictures are assigned to the selected album from other albums.

- Select [Start] with **◀** and press **ENTER** to confirm.



Step 1 • Select the required album with **▲▼◀▶** and press **ENTER** to confirm.

Step 2 Use Copy Pictures to copy individual pictures or Copy Album to copy a complete album.

- Select [Copy Pictures] or [Copy Album] with **▲▼**.
- Press **ENTER** to confirm.
- Copy pictures: select the pictures you want to copy and press **ENTER** to confirm. **■**

Step 3 The pictures of the selected Album are copied.

Step 4 • To continue copying, select [Yes] with **◀** and press **ENTER** to confirm. Repeat steps 1-3.

- To end copying, press **ENTER** to confirm [No].

Create Album

To create a new album, pictures must already exist on the disc or SD card. Pictures from the selected album are copied into the new album on being created.

- Select [Yes] with **◀** and press **ENTER** to confirm.

Step 1 • Select the required Album which you would like to copy the pictures with **▲▼◀▶** and press **ENTER** to confirm.

Step 2 Use Copy Pictures to copy individual pictures or Copy Album to copy a complete album.

- Select [Copy Pictures] or [Copy Album] with **▲▼**.
- Press **ENTER** to confirm.
- Copy pictures: select the pictures you want to copy and press **ENTER** to confirm. **■**

Step 3 The pictures of the selected Album are copied.

Step 4 • To continue copying, select [Yes] with **◀** and press **ENTER** to confirm. Repeat steps 1-3.

- To end copying, press **ENTER** to confirm [No].

Select [Yes] to give the Album a name.
Enter the Album name.

If you select [No], then the date is saved as name of the Album.



SUB MENU in the Album View

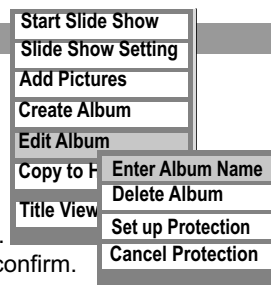
SUB MENU



- Press **SUB MENU**.
- Select the required option with **▲▼** and press **ENTER** to confirm.

Edit Album

- Select [Edit Album] with **▲▼** and press **ENTER** to confirm.
- Select the required option with **▲▼** and press **ENTER** to confirm.



Enter Album Name Enter the Album name. 23

Delete Album

The selected Album is deleted and cannot be recovered.

- Select [Delete] with **◀** and press **ENTER** to confirm.

Set up Protection/Cancel Protection

You can set up or remove cancel protection for pictures.

- Select [Yes] with **◀** and press **ENTER** to confirm.

Copy to HDD / copy to DVD-RAM

The pictures of the album are copied to the HDD or to DVD-RAM

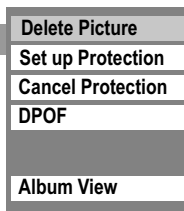
- Select [Start] with **◀** and press **ENTER** to confirm.

SUB MENU



SUB MENU in the Picture (JPEG) View

- Select an Album in the Album View with **▲▼◀▶** and press **ENTER** to confirm.
- Press **SUB MENU** in the Picture (JPEG) View
- Select the required option with **▲▼** and press **ENTER** to confirm.



Delete Picture

The selected picture is deleted and cannot be recovered.

- Select [Delete] with **◀** and press **ENTER** to confirm.

Set up Protection/Cancel Protection

You can set up or remove cancel protection for pictures.

- Select [Yes] with **◀** and press **ENTER** to confirm.

DPOF

SD

Stipulates the number of picture prints in the selected folder.

- Select the number with **◀▶** or with the numerical buttons and press **ENTER** to confirm. The pictures are marked with Picture (JPEG) View.
- 0 resets the setting. Settings adjusted previously with other units are reset.

DPOF (Digital Print Order Format) is a standard format for printing freeze frames recorded for example with a digital camera.

It may be possible that other units cannot show the printer settings adjusted with this unit (DPOF). If the folders or files do not correspond to the DCF standard or there is not enough capacity on the card, the setting cannot be adjusted.

Album View

Return to Album View.

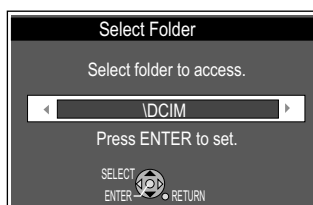
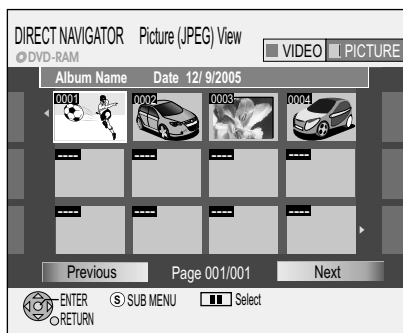
Select Folder

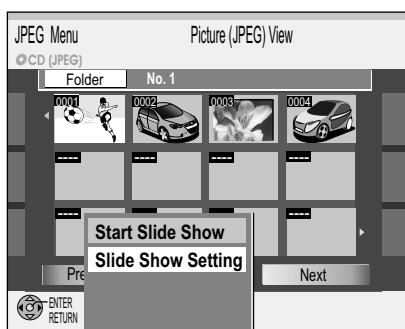
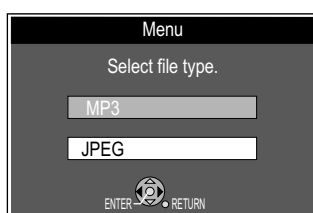
You can select a folder directly and open it. It may be possible that folders which were not created with this unit cannot be opened.

- Select the required folder with **◀▶** and press **ENTER** to confirm.

Editing several elements

Select the desired title with **▲▼◀▶** and press **PAUSE II**.
A check appears. Repeat this process to select other titles.
Press **PAUSE II** again to clear the selection.





JPEG/TIFF playback from CD/DVD-R

The Disc contains JPEG/TIFF data as well as MP3 data. After inserting the disk, the message appears referring to the preset playback mode.

- Press **ENTER** to confirm.
- Press **FUNCTIONS** and press **ENTER** to confirm the menu.
- Select the required file type with **▲▼** and press **ENTER** to confirm.
- Press **DIRECT NAVIGATOR**. The screen Picture (JPEG) View appears.

Playback of single pictures

- Select the required picture with **▲▼◀▶** or with **[0]-[9]** and press **ENTER** to start playback.
- Stop picture playback with **STOP ■** or **DIRECT NAVIGATOR**.

Folder

- Select [Folder] with **▲**.
- Press **SUB MENU**.
- Select the required option with **▲▼** and press **ENTER** to confirm.

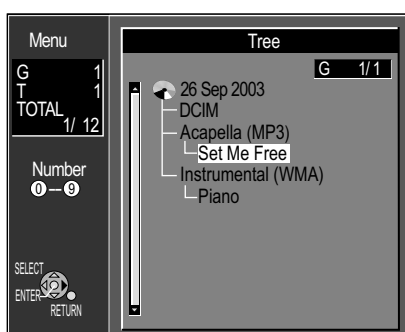
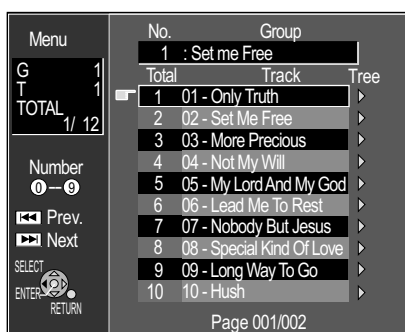
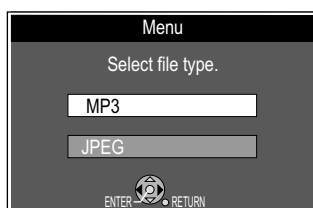
Start Slide Show

Slide Show Setting

Change folder

- Select [Folder] with **▲** and press **ENTER** to confirm. The available folders are shown.
- Select the required folder with **▲▼** and press **ENTER** to confirm.

You can select a folder directly and open it. It may be possible that you cannot open folders not created with this unit.



MP3 playback

This unit can play MP3 that were recorded with a computer. Files are captured as tracks and folders as groups.

"TOTAL" includes all tracks in all groups on the disc.

In addition to MP3 data, the disc also contains JPEG data:

After a disc is inserted, a message appears regarding the preset playback mode.

- Confirm the message with **ENTER**.
- Press **FUNCTIONS** and confirm [Menu] with **ENTER**.
- Select the desired file type with **▲▼** and confirm with **ENTER**.

Starting playback

- Press **DIRECT NAVIGATOR** to launch the Menu screen.
- Select the desired track with **▲▼** or **[0]-[9]** and confirm with **ENTER**. Playback takes place up to the last track in the selected group.
- Press **STOP ■** to end playback.

Use **DIRECT NAVIGATOR** or **RETURN** to exit the screen.

Browse through the pages with **SKIP ◀▶▶▶**.

The lists of groups follow one after the other.

	Shows the track currently being played	TOTAL: Selected track number/ Total number of tracks
G:	Group number	No.: Selected group number
T:	Track number in the group	Group: Selected group name

Selecting a group

- Press **▶** to switch to the Tree menu.
- Select the desired group with **▲▼◀▶** and confirm with **ENTER**. The contents of the selected group are displayed.

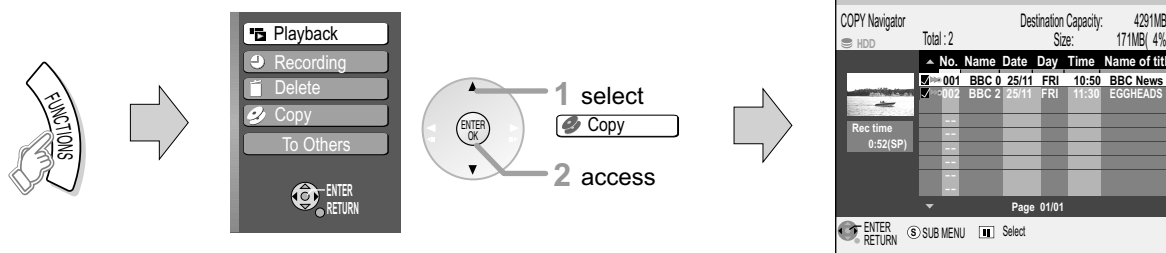


You can use the COPY Navigator to copy titles or pictures from HDD to DVD. Other media than RAM are finalized after copying. They can then be played back on other players. Further recording is not possible on a finalized disc.

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

Copying in High Speed Mode is only possible if the title was recorded previously in High Speed Mode on HDD. While copying in High Speed Mode, the unit makes noises which can be reduced.

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COPY Navigator

Symbols 47

Available storage space
Required storage space

Preview of the selected title.
Recording time and Recording mode of the selected title

Title list

Rec time 0:52(SP)

Page 01/01

ENTER RETURN SUB MENU Select

SUB MENU

SUB MENU

Properties

Terra X

No. 03	Time 0:45
Date 10/3/2006 FRI	Rec time 0:01(SP)
Name ARTE	

ENTER RETURN

Properties

Information on the title, such as name, date and time is displayed.

Sort

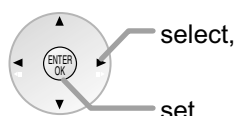
Titles are sorted according to the following items.

No.	Name
Date	Day
Start Time	Name of title

SELECT ENTER RETURN

Sort

The titles can be sorted according to No., Name, Date, Day, Start Time and Name of title. The adjusted search option is underlined.



1 select title
to select several elements

2 copy

3 Copy to DVD-R
Copy starts in High Speed mode.
Finalize the disc to play it on other DVD players.
The disc becomes play-only.
Start copying?
Start Cancel
Recording or playback is impossible during copying.

select,
set
Copying now begins.

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

COPY Navigator

Finalizing the disc in progress.
It will take approximately 3 min.
Cannot stop finalizing.

Percent complete 67%

Finalising begins directly after copying and finishes automatically. This procedure cannot be stopped.


HDD Information about High Speed copying

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Copying in the High Speed Mode allows for fast copying of titles, pictures and playlists. Set the [Rec for High Speed Copy] setting to [On] in the [Setup] menu. For copying to High Speed compatible discs, press **ENTER** to confirm [DVD Speed for High Speed Copy] and adjust the necessary setting.

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

However, the High Speed Copy Mode does not work in the following cases:

- the playlists consist of titles from different recording modes
- the playlists consist of several titles with the FR recording mode
- the playlists contain different audio modes
- the titles contain lots of deleted segments
- copying titles with MPEG2 moving pictures from SD card to HDD
- **+R +R DL +RW** titles recorded in FR and EP mode (min. 5 hours long) (indicated by ►►!)

If you select a recording mode with higher quality than the original, this does not improve the picture quality. However, it does prevent a deterioration in picture quality.

Notes for copying to DVD-R DL/+R DL

If you are not copying in High Speed Mode, the titles are temporarily copied on the hard disk at normal speed and then copied to DVD-R DL/+R DL at high speed. The temporary titles are then deleted from the hard disk. Copying to DVD-R DL/+R DL is not possible if

- there is not sufficient capacity on the hard disk
- the number of titles on the hard disk and the number of titles copied to DVD-R DL/+R DL together exceed 500.

If there is not sufficient capacity on the disc, the unit changes to the FR Mode. If you are not copying in High Speed Mode, titles are copied in the original recording mode and playback lists in the FR mode.

During copying, timer-controlled recordings are always made to the HDD regardless of the selected recording drive.

No playlist can be reproduced when copying titles which are restricted for copying just once.

Titles which are restricted for copying just once can be deleted from the hard disk after copying to a CPRM-compatible DVD-RAM.

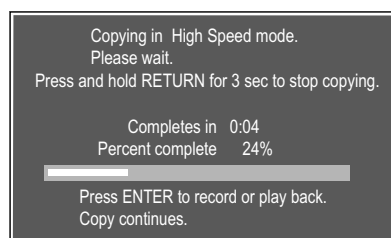
Titles with recording restrictions and playlists cannot be transferred to the same copying list.

If you stop copying a title in the High Speed Mode in the middle, the corresponding title is not recorded. Even if the title was not copied to DVD-R, DVD-RW(V) or +R, this still reduces the remaining capacity of the disc.

Recording and playback during copying in High Speed Mode

HDD RAM Recording and playback are possible while copying in High Speed Mode but with the following exceptions:

- delayed playback and copy list editing is not possible
- does not apply to copying with automatic finalizing
- does not apply to copying MPEG2 moving pictures to an SD card
- no playback of freeze frames
- no playback of playlists when copying titles permitting only one-off recording.



- Press **ENTER** to switch the screen display off. This does not affect copying.
 - Select information about the copying procedure with ①.
- If you stop copying a title in the High Speed Mode in the middle, the corresponding title is not recorded.

Approximate copying timer (at maximum speed)

HDD Recording mode/-time		5x high speed compatible RAM		16x high speed compatible -R		4x high speed compatible -R DL		4x high speed compatible -RW(V)		8x high speed compatible +R		2,4x high speed compatible +R DL		4x high speed compatible +RW	
		Required time	Speed	Required time	Speed	Required time	Speed	Required time	Speed	Required time	Speed	Required time	Speed	Required time	Speed
XP		12 min.	5x	6 min.	10x	15 min.	4x	15 min.	4x	8 min.35.	7x	25 min.	2,4x	15 min.	4x
SP		6 min.	10x	2 min.25	25x	7 min.30	8x	7 min.30	8x	4 min.10	14x	12 min.30	4,8x	7 min.30	8x
LP 1 Hour		3 min.	20x	1 min.15	48x	3 min.45	16x	3 min.45	16x	2 min.25	25x	6 min.15	7,2x	3 min.45	16x
EP(6 Hours)		2 min.	30x	52 sek.	69x	2 min.30	24x	2 min.30	24x						
EP(8 Hours)		1.5 min.	40x	42 sek.	86x	1 min.53	32x	1 min.53	32x						

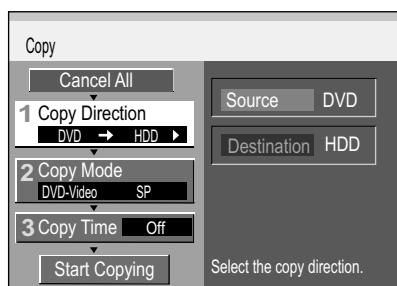


Copying from DVD-Video with time control

DVD-V → HDD

The complete disc can be copied or the copying time can be defined. The titles are copied without chapters.

Nearly all commercially available videos and DVD-Videos have copy protection. The contents of such media cannot be copied with this unit.



- Press **FUNCTIONS**, select [To Others] with **▲▼** and press **ENTER**.
- Select [Advanced Copy] with **▲▼** and press **ENTER** to confirm.
- Select the required option with **▲▼**.

Cancel All

All adjusted settings and copy lists are deleted!

- Select [Yes] with **◀** and press **ENTER** to confirm.



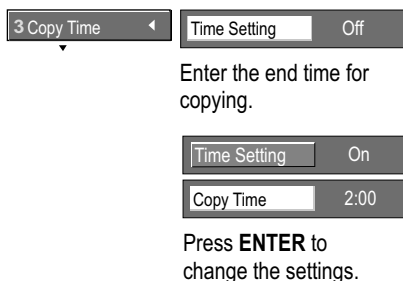
1 Copy Direction

- Select [Source] with **▶** and press **ENTER** to confirm.
- Select DVD with **▲▼** and press **ENTER** to confirm. The target drive is recognised automatically.
- Go back to [Copy Direction] with **◀** and select [Copy Mode] with **▼**.



2 Copy Mode

- Select [Recording Mode] with **▶** and press **ENTER** to confirm.
- Select the required recording mode [XP, SP, LP, EP] with **▲▼** and press **ENTER** to confirm. The format is automatically detected. The High Speed or Normal Speed setting is not possible during time-controlled copying.
- Go back to [Copy Mode] with **◀** and select [Copy Time] with **▼**.



3 Copy Time

- Select [Time Setting] with **▶** and press **ENTER** to confirm.
- Select [On] or [Off] with **▲▼** and press **ENTER** to confirm.
- [On]: Select [Copy Time] with **▼** [Copy Time] and press **ENTER** to confirm. Change the time setting with **▲▼◀▶** and press **ENTER** to confirm. Enter a time which is longer by a few minutes to compensate for the delay when starting playback.
- [Off]: when the copy time is off, the whole disc is copied if there is sufficient capacity on the target drive.
- Press **◀** to go back to [Copy Time] and select [Start Copying] with **▼**.

Start Copying

- Press **ENTER** to start copying.
- Select [Yes] with **◀** and press **ENTER** to confirm.
- Press **PLAY ▶** to start playing the DVD-V. Copying stops at the set time setting.
- Press **STOP ■** to stop copying prematurely and press **ENTER** to confirm the message that then appears.

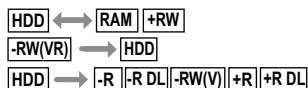
The **PAUSE II** and **SLOW/SEARCH ◀▶** functions are possible during copying. If the disc begins with a Top menu, start the corresponding titles. If playback does not begin automatically, press **PLAY ▶**.

These procedures and screen shots are also recorded.

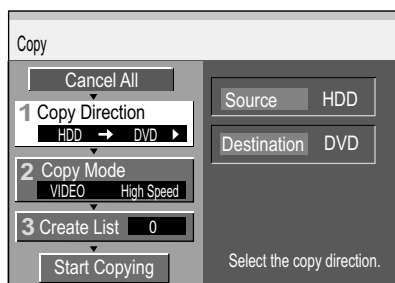
When copying a DVD-Video, it is possible that the video and audio quality are not quite the same as the original.



Copying titles and playlists with the copy list



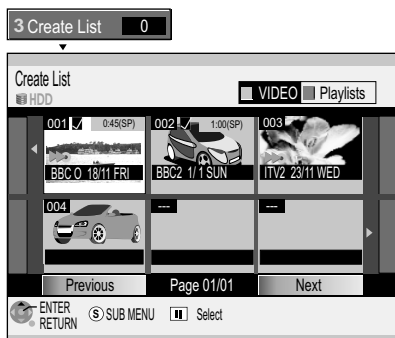
Titles and playlists can be put together in the required sequence in a copy list and then copied.



Select the copy direction.



Press **ENTER** to change the settings.



Copying titles and playlists

- Press **FUNCTIONS**, select [To Others] with **▲▼** and press **ENTER** to confirm.
- Select [Advanced Copy] with **▲▼** and press **ENTER** to confirm.
- Select the required option with **▲▼**.

Cancel All

All created settings and copy lists are deleted!

- Select [Yes] with **◀** [Yes] and press **ENTER** to confirm.

1 Copy Direction

- Select [Source] with **▶** and press **ENTER** to confirm.
- Select the corresponding source drive with **▲▼** and press **ENTER** to confirm.
- Select [Destination] with **▼** and press **ENTER** to confirm.
- Select the corresponding target drive with **▲▼** and press **ENTER** to confirm.
- Press **◀** to go back to copy direction and select [Copy Mode] with **▼**.

2 Copy Mode

- Select [Format] with **▶** and press **ENTER** to confirm.
- Press **ENTER** to confirm [VIDEO].
- Select [Recording Mode] with **▼** and press **ENTER** to confirm.
- Select the recording quality or copying speed and press **ENTER** to confirm. The High Speed copying speed can only be selected if the corresponding setting was adjusted in the [Setup] menu before recording a title.
- Press **◀** to go back to [Copy Mode] and select [Create List] with **▼**.



3 Create List

Create a copy list from the existing titles or playlists.

- Select [New item] with **▶** and press **ENTER** to confirm.

Title

- In the [Create List] menu, select the required title with **▲▼◀▶** and press **ENTER** to confirm. Select several titles with **PAUSE II**. **✓**
The title is copied completely into the copy list.

Playlists

- Press the **GREEN** button in the [Create List] menu.
- Select the required playlist with **▲▼◀▶** and press **ENTER** to confirm. Select several playlists with **PAUSE II**. The playlist is copied into the copylist. **✓**

SUB.MENU



- Press **SUB MENU** in the Create List screen.
- Select the required option with **▲▼** and press **ENTER** to confirm.

Properties

Table Display
Other View

Properties

Shows information such as time, date or file size of the title.

Table Display

Change over to Table Display.

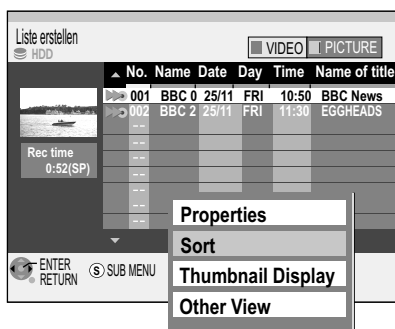
Other View

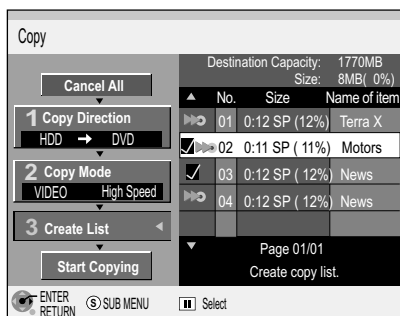
Change over to playlist or VIDEO view.

Sort **HDD**

The table display in the SUB MENU also offers the [Sort] option. The titles or playlists can be sorted according to No., Name, Date, Day, Time or Name of title.

- Select the required setting with **▲▼** and press **ENTER** to confirm.
The setting is marked with a coloured bar.





SUB MENU



SUB MENU in the copy list

The inserted title/playlists can be edited in the copy list using the SUB MENU.

- Press **SUB MENU**.
- Select the required option with **▲▼** and press **ENTER** to confirm.

Cancel All

All items entered in the copy list are deleted.

- Select [Yes] with **◀** and press **ENTER** to confirm.

Add

Add new items to the copy list.

- Select the required title with **▲▼◀▶** and press **ENTER** to confirm.

Delete

Delete the selected items.

- Select [Yes] with **◀** and press **ENTER** to confirm.

Move

The selected items are moved in the copy list, changing the sequence.

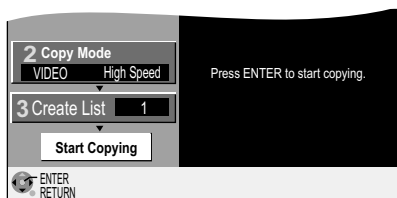
- Select the required item with **▲▼** and press **ENTER** to confirm.

Delete All

Add

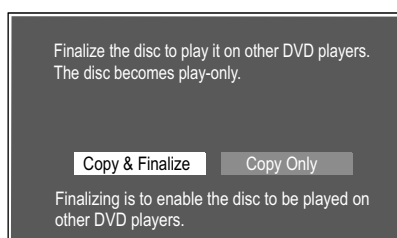
Delete

Move



Start Copying

- Press **◀** to return to [Create List]. Select [Start Copying] with **▼** and press **ENTER** to confirm.
- Select [Yes] with **◀** and press **ENTER** to confirm.
- Press and hold **RETURN** for 3 seconds to stop copying prematurely.
- **[HDD] [RAM]** Press **ENTER** to record or watch television while copying.



Finalize

Media apart from RAM can be finalized after copying and then played on other DVD players. After a disc has been finalized, no more recording is possible.

[R] [R DL] [RW(V)] [R] [R DL] Before copying, please select in the menu [Setup]-[DVD Management], whether the playback should begin as a title or as a Top Menu. 54

Chapters are created automatically **[R] [RW(V)]** (approx. every 5 min.), **[R]** (approx. every 8 min), if the disc is finalized after copying.

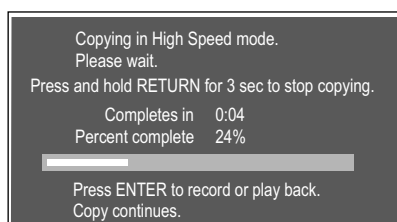
[RAM] [R DL] [R DL] [RW] A title becomes a chapter.

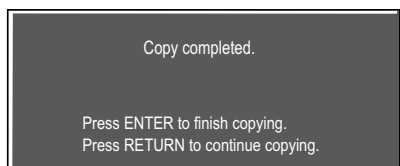
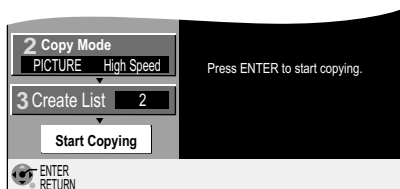
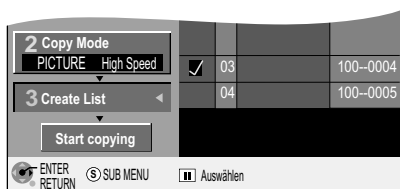
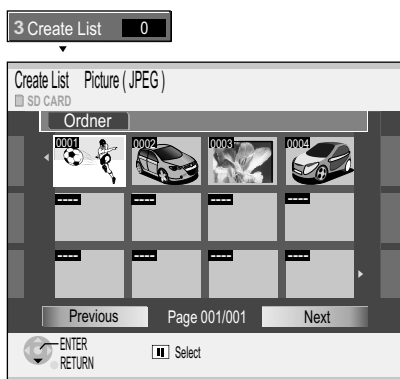
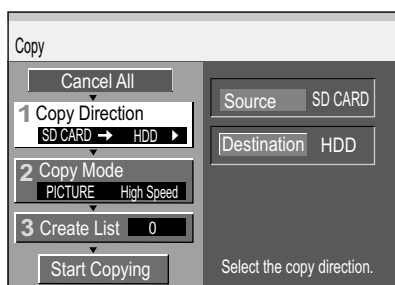
- Select with **◀** [Copy & Finalize] and press **ENTER** to confirm. Finalizing begins immediately after copying and finishes automatically. This procedure cannot be stopped.
- If you do not want to finalize, select [Copy Only] and press **ENTER** to confirm.

When copying in High Speed Mode

[R] [R DL] [RW(V)] [R] [R DL] During High Speed recording, only programmes marked with **⏏** can be recorded. Copying cannot be started if the required memory exceeds more than 100% of the storage capacity on the target drive.

Transfer chapters when copying in High Speed Mode: yes.
Transfer chapters when copying in Normal Speed Mode: no.





Only pictures can be copied with the SD card.

HDD | RAM | SD ↔ HDD | RAM | SD

If the source drive is also the target drive, only pictures can be copied.

Copying pictures

- Press **FUNCTIONS**, select [To Others] with **▲▼** and press **ENTER** to confirm.
- Select [Advanced Copy] with **▲▼** and press **ENTER** to confirm.
- Select the required option with **▲▼**.

1 Copy Direction

- Select [Source] with **▶** and press **ENTER** to confirm.
- Select the corresponding source drive with **▲▼** and press **ENTER** to confirm.
- Select [Destination] with **▼** and press **ENTER** to confirm.
- Select the corresponding target drive with **▲▼** and press **ENTER** to confirm.
- Press **◀** to go back to copy direction and select [Copy Mode] with **▼**.

2 Copy Mode

- Select [Format] with **▶** and press **ENTER** to confirm.
- Press **ENTER** to confirm [PICTURE].
- Press **◀** to return to [Copy Mode] and select [Create List] with **▼**.

3 Create List

Create a copy list from the existing pictures.

- Select [New item] with **▶** and press **ENTER** to confirm.

Change folder

- Select [Folder] with **▲** in the [Create List Picture (JPEG)] menu and press **ENTER** to confirm.
- Press **ENTER** to confirm the required folder.

Picture ☒

- In the [Create List Picture (JPEG)] menu, select the required picture with **▲▼◀▶** and press **ENTER** to confirm.

The pictures are copied to the copy list.

Copy folder ☒

- Select picture/folder in the copy list with **▲** and press **ENTER** to confirm.
- Press **ENTER** to confirm the folder.
- Select [New item] with **▼** [New item] and press **ENTER** to confirm.
- Press **ENTER** to confirm the required folder.

The folder is copied to the copy list.

SUB MENU



SUB MENU in the menu list

- Press **SUB MENU** in the Create List screen.
- Select the required option with **▲▼** and press **ENTER** to confirm.

Delete All

Add

Delete

Start Copying

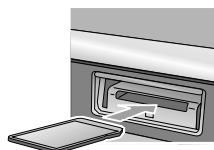
- Press **◀** to go back to [Create List]. Select [Start Copying] with **▼** and press **ENTER** to confirm.
- Select [Yes] with **◀** and press **ENTER** to confirm if you want to copy the pictures to a new folder.
- Press **ENTER** if you don't want to copy any more.
- If you want to copy more pictures, press **RETURN** and repeat steps 1 to 3.

Editing several elements ☒

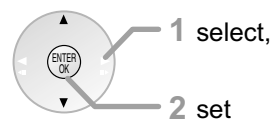
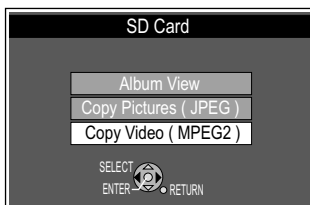
Select the desired title with **▲▼◀▶** and press **PAUSE II**.
A check appears. Repeat this process to select other titles.
Press **PAUSE II** again to clear the selection.

**Automatic detection of an SD card**

SD cards are detected automatically on being inserted.

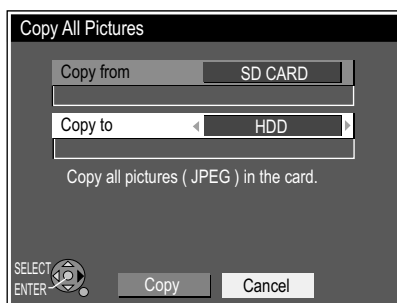


Place the SD card in the SD card slot.

**Album View:****Copy Pictures (JPEG)**

You can copy the entire contents of the SD card onto HDD/DVD with the function [Copy All Pictures].

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and press **ENTER** to confirm.
- Press **ENTER** to confirm [Copy All Pictures].



- To change the copy target select [Copy to] with **▲▼**.
- Select DVD or HDD with **◀▶**.
- Select [Copy] with **▼** and **◀** and press **ENTER** to confirm.

- To stop copying prematurely, press and hold **RETURN** for 3 seconds.

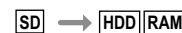
The copied folders are placed behind the folders already on the selected drive. The print setting DPOF is not transferred during copying. The order in which the pictures are registered in the copying list may possibly not correspond to the order in the copying target.

If you copy the pictures folder for folder or card for card, all other files in this folder will be copied as well as the picture files. However, this does not apply to sub-folders contained in the folder.

If the target folder already contains pictures, the new pictures are recorded after the existing ones.

If the target drive does not have enough capacity or the number of files/folders being copied exceeds the maximum, then the copying process is stopped prematurely.

If the copying source folder has no name, this folder may be given another name on the copying target. Give the folder a name before copying.

Copy Video (MPEG2) (only available when saved on the SD Card)

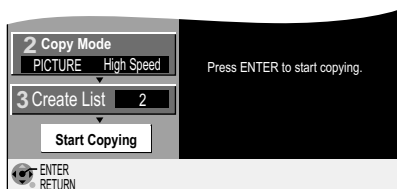
All videos in MPEG2 format on the SD Card are copied. You cannot use this unit to play MPEG2 videos directly from the SD Card. First copy the MPEG2 videos to DVD-RAM or HDD.

Moving pictures coded in MPEG2 format recorded with a Panasonic SD video camera, digital video camera etc. can be saved on HDD or DVD-RAM (all recordings on one day are saved as one title). Playback or recording is not possible while copying MPEG2 pictures.

The menu [Copy] appears. The copy list will be created automatically. You can change the [Copy Direction] to DVD or change the copy list.

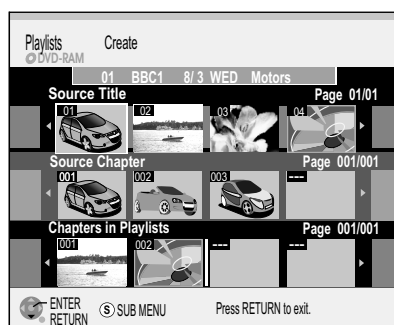
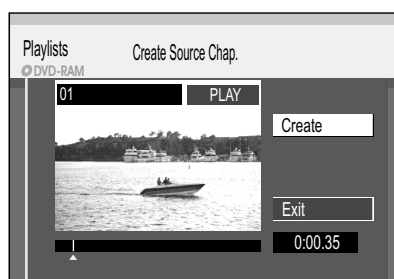
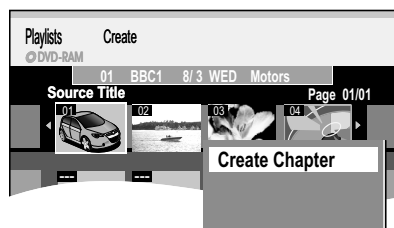
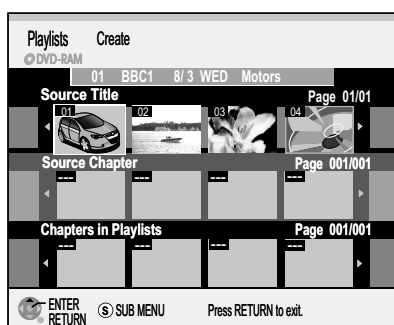
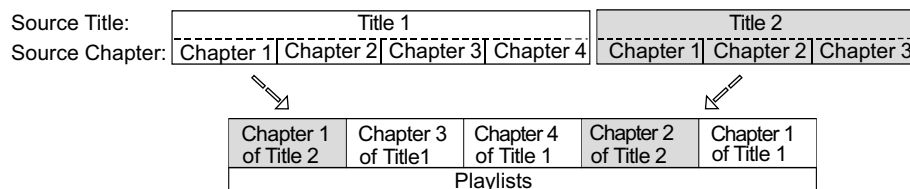
- Confirm [Start Copying] with **ENTER**.

- To stop copying prematurely, press and hold **RETURN** for 3 seconds.





Use this function to edit your movies/recordings made by a recorder or camcorder. You can remove unwanted scenes (e.g. commercials) or change the sequence. You can also divide your recordings (titles) into chapters. You can create a playlist with your favourite chapters and edit this later.



Insert a recorded disc.

If you activated write-protection, deactivate it.

RAM

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [Playlists] with **▲▼** and confirm with **ENTER**.

Creating a playlist

HDD RAM

You can create a playlist from both source titles and source chapters.

- Select the free field [Create] with **▲▼◀▶** and confirm with **ENTER**.

1 Selecting a Source Title

- Select the desired source title with **◀▶** and press **SUB MENU**.
- Confirm [Create Chapter] with **ENTER**.

A complete source title can be inserted directly into Chapters in Playlists with **ENTER**.

2 Creating a Source Chapter

- Select the chapter section with **ENTER**. The length of the chapter sections is displayed as a time entry.
- Stop playback with **PAUSE II**.
- Locate the position for an exact chapter marker with **◀▶**.
- Select [Exit] with **▼** and confirm with **ENTER**.

3 Inserting a chapter into the playlist

- Switch from Source Title to Source Chapter with **▼**.
- Select a source chapter that you want to add to the playlist with **◀▶** and confirm with **ENTER**.
- Select the position where the source chapter should be inserted into the Chapters in Playlists with **◀▶** and confirm with **ENTER**.
You cannot select a position when inserting the first chapter. Repeat step 3 to add another chapter.
- Return to the Playlist View with **RETURN**.

You can also insert a Source Title as a chapter into the playlist.

- Select a Source Title with **▲▼◀▶** and confirm with **ENTER**.
- Select the position where the Source Title should be inserted in Chapters in Playlists with **◀▶** and confirm with **ENTER**.

Jump to the beginning/end of a title/chapter with **PAUSE II** and **SKIP I◀▶▶I**.
Locate the position for a marker with **SKIP I◀▶▶I**, **SLOW/SEARCH ◀▶▶**, **TIME SLIP**, **MANUAL SKIP** or **◀▶**.
You can jump between set markers with **SKIP I◀▶▶I**.



Launching the Playlists menu

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [Playlists] with **▲▼** and confirm with **ENTER**.

Playback **HDD** **RAM** **-RW(VR)**

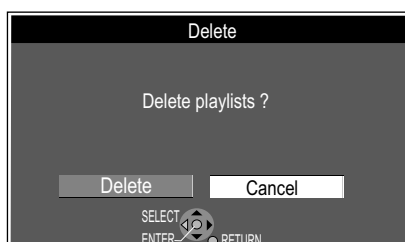
- Select a playlist with **▲▼◀▶** and start playback with **ENTER**.

SUB MENU



- Select a playlist with **▲▼◀▶**.
- Press **SUB MENU**.

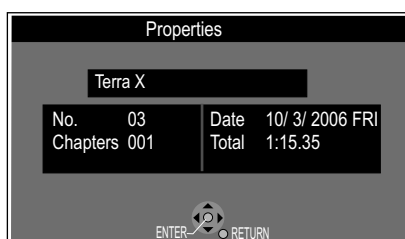
Delete
Properties
Edit
Chapter View



Delete ☒ **HDD** **RAM**

This procedure deletes the playlist and it cannot be restored.
The source titles are retained.

- Confirm [Delete] with **ENTER**.
- Select [Delete] with **◀** and confirm with **ENTER**.



Properties **HDD** **RAM** **-RW(VR)**

Information on the playlist, such as chapter, date and time, is displayed.

- Select [Properties] with **▲▼** and confirm with **ENTER**.

SUB MENU



Editing playlists in the SUB MENU. **HDD** **RAM**

- Select [Edit] with **▲▼** and confirm with **ENTER**.
- Select the desired option in the SUB MENU.

Create

Please read Creating a playlist.

Copy

- Select [Copy] with **◀** and confirm with **ENTER**.

Enter Name

Change or enter the title of the programme. If you enter a long name, it is only partially displayed.

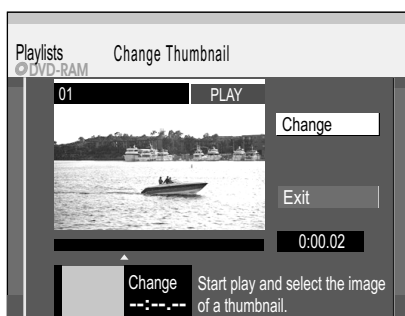
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Change Thumbnail

You can select any position in a title as the thumbnail for the Playlist View.

- Press **PLAY ▶** to start playback.
- At the position to be displayed as the new thumbnail, confirm [Change] with **ENTER**. The selected thumbnail is displayed.
- Confirm [Exit] with **ENTER**.

The selected thumbnail is added to the Playlist View.



Jump to the beginning/end of a title/chapter with **PAUSE II** and **SKIP ◀▶▶▶**.
Locate the position for a marker with **SKIP ◀▶▶▶**, **SLOW/SEARCH ◀▶▶▶**,
TIME SLIP, **MANUAL SKIP** or **◀▶**.

You can jump between set markers with **SKIP ◀▶▶▶**.

Editing several elements ☒

Select the desired title with **▲▼◀▶** and press **PAUSE II**.

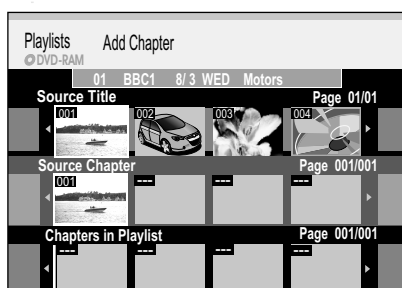
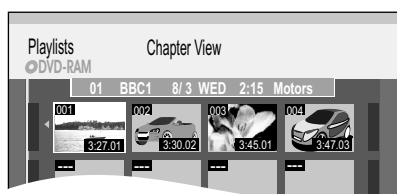
A check appears. Repeat this process to select other titles.

Press **PAUSE II** again to clear the selection.



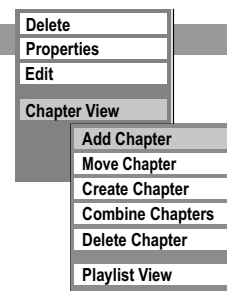
Editing chapters in the SUB MENU HDD RAM

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [Playlists] with **▲▼** and confirm with **ENTER**.
- Select a playlist in the Playlist View with **▲▼◀▶**.
- Press **SUB MENU**.
- Select [Chapter View] with **▲▼** and confirm with **ENTER**.



SUB MENU

- Select the desired chapter with **▲▼◀▶** and press **SUB MENU** again.
- Select the desired option in the SUB MENU with **▲▼** confirm with **ENTER**.



Add Chapter

You can create a new chapter from the Source Title.

- Select a Source Title with **▲▼◀▶** and press **▼**.
- Select a Source Chapter with **◀▶** and confirm with **ENTER**.
Cancel the process with **▲**.
- Select the position where the chapter is to be inserted with **◀▶** and confirm with **ENTER**.
- Repeat the steps to add another chapter.
You can select other source titles with **▲**.
- Exit the menu with **RETURN**.

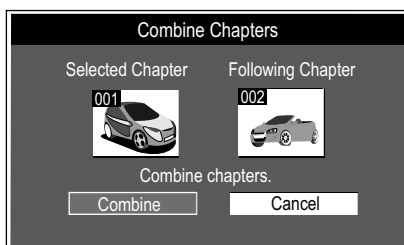
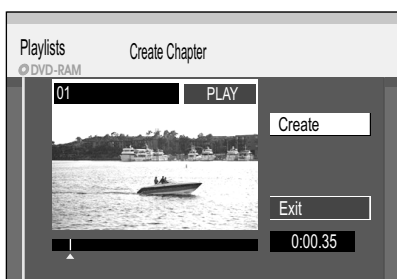
Move Chapter

- Select the position where the chapter is to be moved with **▲▼◀▶** and confirm with **ENTER**.

Create Chapter

Divide the title into chapters. Identify the points where a new chapter is to start. The chapters can be selected later during playback with **SKIP ◀▶▶▶**.

- Press **ENTER** at the position where you want to create the chapter. Repeat this step to create a chapter at another location.
- Select [Exit] with **▼** and confirm with **ENTER**.
A short section of the recording right before the separation point may be lost.



Combine Chapters

- Select [Combine] with **◀** and confirm with **ENTER**.
The selected chapter is combined with the next chapter.

Delete Chapter ☒

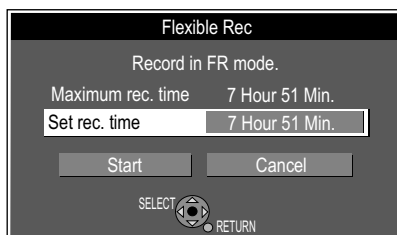
- Select [Delete] with **◀** and confirm with **ENTER**.
The original title is not deleted when the chapter is deleted.

Playlist View: Return to Playlist View.

Jump to the beginning/end of a title/chapter with **PAUSE II** and **SKIP ◀▶▶▶**.
Locate the position for a marker with **SKIP ◀▶▶▶**, **SLOW/SEARCH ◀▶▶**, **TIME SLIP**, **MANUAL SKIP** or **◀▶**.
You can jump between set markers with **SKIP ◀▶▶▶**.

Editing several elements ☒

Select the desired title with **▲▼◀▶** and press **PAUSE II**.
A check appears. Repeat this process to select other titles.
Press **PAUSE II** again to clear the selection.



When a Timer Recording starts, recording in FR mode is cancelled.

Displaying the available recording time

- Press ① multiple times.

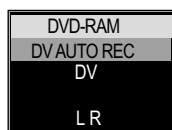
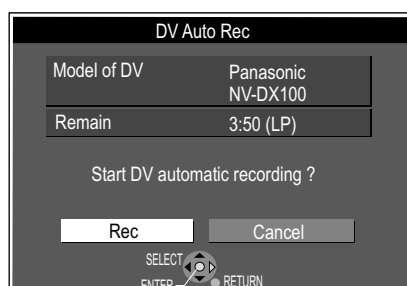
Flexible recording mode (FR)

[RAM] [-R] [-RW(V)] [+R] [+RW] The unit calculates the best possible recording quality between XP and EP. It is adjusted for the space available on the disc. This function is not available during an EXT LINK recording.

[HDD] Titles recorded in FR mode on the hard disk are recorded in such a way that they can will fit exactly onto a 4.7 GB disc later on.

The title does not have to be edited when copying to the disc, or the recording mode (XP-EP) does not need to be changed.

- Select the station with **CH** ◀ or the number buttons.
- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [Flexible Rec] with **▲▼** and confirm with **ENTER**.
- Select [Hour] or [Min.] with **◀▶** and change the recording time with **▲▼**.
- Go back to [Set rec. time] with **◀▶**.
- Select [Start] with **▲▼**, **◀** and confirm with **ENTER**. Recording begins.
- Press **STOP ■** to cancel the recording before it has ended.
- The channel and recording mode cannot be changed in **PAUSE** mode.



Automatic detection of a Camcorder at DV IN **[HDD] [RAM]**

- Connect your Camcorder to the DV IN input of the DVD Recorder with a DV cable. The DVD Recorder automatically detects the Camcorder.
- Select [Rec to DVD] or [Rec to HDD] with **◀▶** and confirm with **ENTER**.
- Confirm [REC] with **ENTER**. Recording begins.

Not all DV units are automatically detected. In this case, copy with the function [DV Auto Rec] in the FUNCTIONS menu.

Recording via DV input **[HDD] [RAM] [-R] [-RW(V)] [+R] [+RW]**

DV means Digital Video. Digital satellite tuners and digital VHS video recorders are not compatible with this unit. The DVD recorder cannot be controlled using an external unit connected to the DV IN terminal.

The programmes (e.g. via a digital video unit) are recorded as one title.

[HDD] [RAM] Each time the picture is interrupted, a chapter is created and a playlist is automatically created.

Switch off this unit and the DV unit (e.g. digital camcorder) before you connect it to the DV terminal. If the SD drive is selected, select the DVD drive with **DRIVE SELECT**.

- In the Setup menu under Audio Mode for DV Input, select [Stereo 1/2] or [Mix].
- Set the DV unit to Pause at the desired start position.
- Press **REC MODE** to select the recording mode SP, LP, EP, XP.
- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [DV Auto Rec] with **▲▼** and confirm with **ENTER**.
- Confirm [Rec] with **ENTER**. Recording begins.
- Confirm the message at the end of the recording with **ENTER**.
- To prematurely stop the recording, press **STOP ■**. Confirm the message to prematurely stop the recording with **ENTER** or **RETURN**.

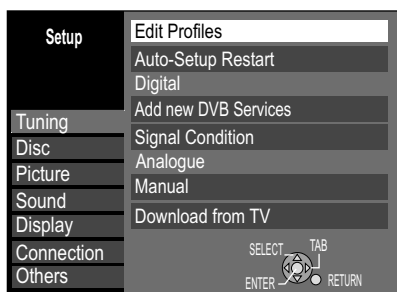
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Manual recording via DV input **[HDD] [RAM] [-R] [-RW(V)] [+R] [+RW]**

- Start playback on your external DV unit.
- Press Pause at the desired start position.
- Select the DV channel with **INPUT SELECT**.
- Select the recording mode with **REC MODE**.
- Press **● REC** on the DVD Recorder.
- Start playback on the external DV unit.
- End the recording on the DVD Recorder with **STOP ■**.
- End playback on the DV unit.

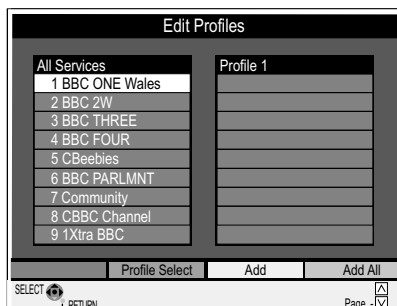
Recording cannot be cancelled with **PAUSE II**.

This unit cannot be controlled from a connected DV unit. The DV input of this unit is only designed for DV units. (A computer etc. cannot be displayed.) The name of the DV unit may not be displayed correctly. Some DV units do not enable proper input of the picture and sound signal. The date and time information on the tape in the DV unit is not recorded. Simultaneous recording and playback is not possible.



Setup menu overview

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [Setup] with **▲▼** and confirm with **ENTER**.
- Select the desired sub menu with **▲▼** and switch to setup with **►**.
- Select the desired setting with **▲▼** and confirm with **ENTER**.
- Select the desired option with **▲▼** and confirm with **ENTER**. Follow the menu guide. The unit saves your settings.
- Press **RETURN** multiple times to exit the menus.



Creating new profiles

You can create four different profiles where you can put together your favourite analog and digital TV stations. The profiles are stored in the TV Guide.

- Use **PAGE** **◀▶** to scroll backwards or forwards page for page through the two tables.

Profile Select

Four different profiles are available.

- Use the **GREEN** button to select a profile.

Add

- Select the required station in the left table with **▲▼**.
- Use the **YELLOW** button to accept the selected station. Every station can only be added to the profile once.
- Press **ENTER** to save the profile.

Add All

- Use the **BLUE** button to add all available stations to the profile.
- Press **ENTER** to save the profile.

Edit profile

- Use **►** to go to the column of the selected profile. Use the coloured buttons to edit the profiles.

Profile Name

- Press the **RED** button to change the profile name.

Move

You can change the order of stations in the selected profile.

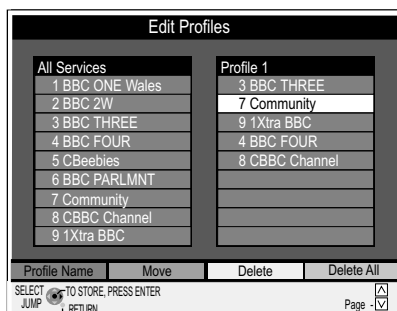
- Select the required station with **▲▼**.
- Use the **GREEN** button to mark the station.
- Move the station to the required position with **▲▼**.
- Press the **GREEN** button again to insert the station.
- Press **ENTER** to save the profile.

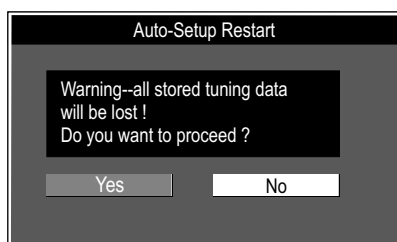
Delete

- Select the required station with **▲▼**.
- Use the **YELLOW** button to delete the station from the profile.
- Press **ENTER** to save the profile.

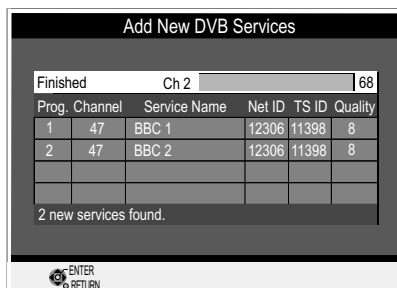
Delete All

- Use the **BLUE** button to delete all stations from the profile.
- Press **ENTER** to save the profile.



**Auto-Setup Restart**

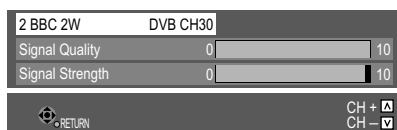
- Select [Yes] with ◀ and confirm with **ENTER**. The station search begins.
- To cancel the process, select [No] with ▶ and confirm with **ENTER** or press **RETURN**.
- Press **RETURN** to prematurely end the station search.
- Press **RETURN** to prematurely end the station search. All station settings and all created profiles are deleted.

**Add New DVB Services**

The unit looks for new digital stations. The station search is automatic.

The bar over the table shows you the search progress. At the end of the search, the number of found new digital stations appears.

- Press **RETURN** to stop the station search prematurely. The channels found before stopping are not saved.

**Signal Condition**

The display in the [Signal Condition] menu shows the quality and strength of the selected digital station.

- You can select and check the stations consecutively with CH ◊. The Signal Quality is only displayed for digital stations.

**Signal Quality**

Display red; signal quality below 2: the signal quality is poor so that there may be interference in the pictures and sound.

Display orange; signal quality 2-5: the signal quality is basically adequate, but brief interference in the pictures and sound is possible in isolated cases.

Display green; signal quality over 5: optimum picture and sound quality.

Signal Strength

The display for signal strength is grey. 0 means signal strength = 0 %, 10 means signal strength = 100%.

The signal strength can also be >100 % (> 10). In this case, the display is red.



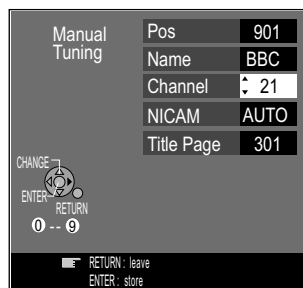


▲▼ Tuning ▶

▲▼ Manual

**Entering a new television station** (for analogue channels)

- Select a free station location with ▲▼◀▶ and confirm with **ENTER**.
- Enter the channel with ▲▼ or [0]—[9].
- The channel tuning starts. Wait a moment until the desired station is set and confirm the setting with **ENTER**.

**Options available for tuning the channels**

Pos			Station position in the station table.
Name ▶	⬆ ⬆ [A-Z, 0-9, -, +, *]	ENTER	Set the station name.
Channel ◀▶	⬆ ⬆ [21-68]	ENTER	Set the channel.
NICAM ◀▶	⬆ ⬆ [On] [Off]	ENTER	Switches NICAM on or off.
Title Page ◀▶	⬆ ⬆ [100-899]	ENTER	Select the video text page which supplies the title information.

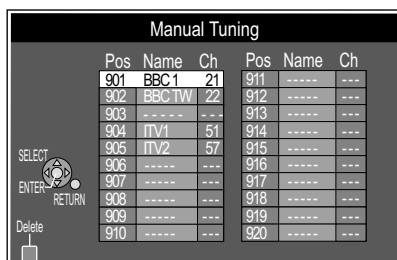
Station positions

Your digital channels can be found at positions 1-900.

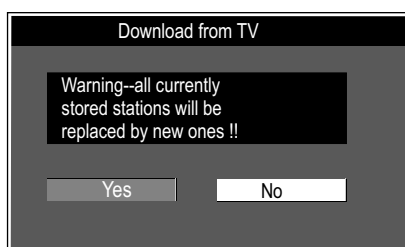
Your analogue channels can be found at positions 901-999.

Changing the name of the television station

- Select the name of the television station with ▲▼◀▶ and confirm with **ENTER**.
- Select [Name] with ▲▼ and the name field with ▶.
- The cursor jumps to the first letter **B**BC.
- Change the letter with ▲▼.
- Select the next letter with ▶, **B**BC.
- Press **ENTER**. The new name is saved in the station table.

**Deleting television stations**

- Select the station that you want to delete with ▲▼◀▶.
- Press the **RED** button to delete the station.
- The station position settings are deleted.

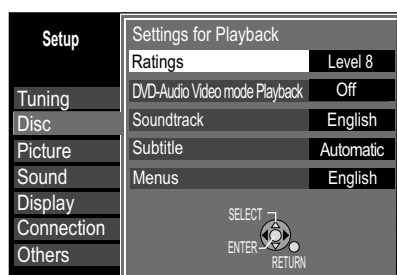


▲▼ Tuning ▶

▲▼ Download from TV

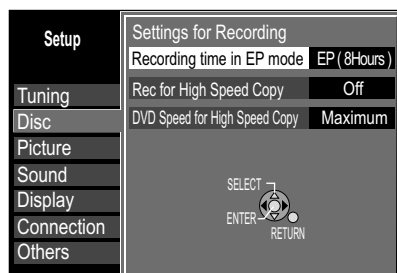
**Download from TV** (with Q Link or similar functions for analogue channels)

- Select [Yes] with ◀ and confirm with **ENTER**. Data transfer begins.
- To cancel the procedure, use to select [No] and confirm with **ENTER** or press **RETURN**.
- To prematurely end the data transfer, press **RETURN**.



▲▼ Disc	▶ ▲▼ Settings for Playback	▲▼ Option								
Ratings		[8] [1-7] [0]								
You can restrict the playback of DVD-Video after entering a password. 8 Allows all titles. 1-7 Prevents the playback of DVD-Video with the registered security levels. 0 Blocks all titles. Changing the security level <table border="1"> <tr> <td>Unlock Recorder</td> <td>Return to level 8</td> </tr> <tr> <td>Change Password</td> <td>Change the password</td> </tr> <tr> <td>Change Level</td> <td>Change the authorisation level</td> </tr> <tr> <td>Temporary Unlock</td> <td>You can temporarily authorise a disc for playback.</td> </tr> </table> The security level is retained if you switch to standby or open the disc tray.			Unlock Recorder	Return to level 8	Change Password	Change the password	Change Level	Change the authorisation level	Temporary Unlock	You can temporarily authorise a disc for playback.
Unlock Recorder	Return to level 8									
Change Password	Change the password									
Change Level	Change the authorisation level									
Temporary Unlock	You can temporarily authorise a disc for playback.									
DVD-Audio Video mode Playback		[On] [Off]								
On: You want to play DVD-Video content from a DVD-Audio. If you change the disc or switch off the unit, the setting is reset to [Off].										
Soundtrack Subtitle Menus		[DVD-V]								
Select the language for audio, subtitles and disc menus. Under [Other], enter the language code for another language.										

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▲▼ Disc	▶ ▲▼ Settings for Recording	▲▼ Option
Recording time in EP mode		[EP (6Hours)] [EP (8Hours)]
Select the maximum number of hours for recording in EP mode. EP (6Hours): Recording time on a 4.7 GB disc. EP (8Hours): Recording time on a 4.7 GB disc. The sound quality is lower.		
Rec for High Speed Copy		[On] [Off]
On: Enables copying from HDD to a DVD-R, -R DL, +R DL, DVD-RW(V) (DVD-Video format), +RW oder +R in high-speed mode. Titles are saved in 4:3 format. When recording a dual channel sound programme, only the main or only the secondary sound can be recorded. Select the audio type you want to copy under [Bilingual Audio Selection]. 16:9 format programmes (wide picture) are also recorded in 4:3 format.		
DVD Speed for High Speed Copy		[Maximum] [Normal (Silent)]
When using high-speed compatible DVD-RAM 5x, DVD-R-, +R 8x or +RW 4x discs. In the [Normal (Silent)] setting, this unit generates less noise than in the [Maximum] setting. The time required for copying is doubled.		

49



Setup	Comb Filter	Off
	Still Mode	Automatic
Tuning	Seamless Play	On
Disc		
Picture		
Sound		
Display		
Connection		
Others		



 Picture		 Setting	 	 Option	 
Comb Filter				[On] [Off]	
On: The picture is clear and contour-rich. The setting is always set to [On] if you selected [TV System - NTSC]. Off: If the picture to be recorded is distorted.					
Still Mode				[Automatic] [Field] [Frame]	
Select how the still picture should be displayed. Field: Select this function if the picture is distorted with the setting [Automatic]. Frame: Select this function if small text or line structures are not displayed clearly with the setting [Automatic]. Every full picture consists of two half pictures. Distortions are possible in a full picture, but as a rule the picture quality is better than in the half picture. The half picture appears to be coarse-grained but is not distorted.					
Seamless Play				RAM -RW(VR)	[On] [Off]
Seamless playback of a chapter in a playlist. On: The chapter in a playlist are playback seamlessly. This is only possible if the playlist contains the same audio types. This function is not possible with Quick View. The position of the chapter segments may change slightly. Off: The boundaries of the chapters in the playlist are followed exactly, but the picture may freeze for a short period of time.					



Setup	Dynamic Range Compression	Off
	Bilingual Audio Selection	M1
Tuning	Digital Audio Output	
Disc	Audio Mode for XP Recording	Dolby Digital
Picture	Audio Mode for DV Input	Stereo 1
Sound		
Display		
Connection		
Others		

Setup	Digital Audio Output	
	PCM Down Conversion	Off
Tuning	Dolby Digital	Bitstream
Disc	DTS	Bitstream
Picture	MPEG	PCM
Sound		
Display		
Connection		
Others		

Dolby Digital
Bitstream
PCM

▲▼ Sound	▶	▲▼ Setting	ENTER	▲▼ Option	ENTER
Dynamic Range Compression [DVD-V] [On] [Off] (Dolby Digital Only)					
On: The level of quieter passages increases and the level of louder passages decreases. The audio can be clearly understood even when the volume is lowered.					
Bilingual Audio Selection [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW] [M 1] [M 2]					
If you want to record programmes that are broadcast in dual-channel sound, you can select between the original language [M1] or another available language [M2]. If you are copying from an external source or from a tape position, select the sound track on the other unit.					
Digital Audio Output [PCM Down Conversion] [Dolby Digital] [DTS] [MPEG]					
Select the appropriate setting if you have connected an external unit to the DIGITAL AUDIO OUT of the DVD Recorder.					
PCM Down Conversion [On] [Off]					
Select the audio output mode for a scan frequency of 96 kHz or 88.2 kHz. Despite this setting, signals are converted to 48 kHz or 44.1 kHz if they have a scan frequency over 96 kHz or 88.2 kHz or if the disc is copy-protected. On: The connected unit cannot process signals with a scan frequency of 96 kHz or 88.2 kHz. Signals are converted with 48 kHz or 44.1 kHz. Off: The connected unit can process signals with a scan frequency of 96 kHz or 88.2 kHz. Signals are output as 96 kHz or 88.2 kHz.					
Dolby Digital, DTS, MPEG [Bitstream] [PCM]					
Bitstream: The connected unit can decode the corresponding signal. PCM: If the connected unit cannot decode the corresponding signal, the setting must be changed to [PCM]. Otherwise, the loud noise can lead to damage to your hearing or loudspeaker. Make the necessary changes depending on your audio system.					
Audio Mode for XP Recording [Dolby Digital] [LPCM]					
Choosing the audio type when recording in XP mode. The picture quality of LPCM recordings may possibly be poorer than normal recordings in XP mode					
Audio Mode for DV Input [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW] [Stereo 1] [Stereo 2] [Mix]					
Select the audio type when copying from the DV input. Stereo 1: Original sound; Stereo 2: Voice-over, Mix: Original sound + voice-over					

Setup	DVB Preferred Subtitles	English
	On-Screen Messages	5 sec.
Tuning	Grey Background	On
Disc	FL Display	Bright
Picture	New Service Message	Automatic
Sound		
Display		
Connection		
Others		

▲▼ Display	▶	▲▼ Setting	ENTER	▲▼ Option	ENTER
DVB Preferred Subtitle [English] [Welsh] [Gaelic]					
Subtitle language for digital programmes (standard or for the hard-of-hearing).					
On-Screen Messages [Off] [3 sec.] [5 sec.] [7 sec.] [10 sec.]					
Select the time for screen displays. Off: The screens are not shown on changing the station.					
Grey Background [On] [Off]					
On: The grey background is displayed when there is no analogue TV reception.					
FL Display [Bright] [Dim]					
Changes the brightness of the display on the unit.					
New Service Messages [Automatic] [Off]					
Off: The Service Messages are not shown.					



Setup	TV Aspect	16:9
	Progressive	Off
Tuning	TV System	PAL
Disc	HDMI Settings	
Picture	AV1 Output (Scart)	Video
Sound	AV2 Settings	
Display		
Connection		
Others		



▲▼ Connection ▶		▲▼ Setting		 ENTER		▲▼ Option		 ENTER	
TV Aspect					[16:9] [4:3] [Letterbox]				
Select the TV screen format of your television. Programmes in 16:9 format are recorded in 4:3 format. 16:9 format is used to record to RAM. Letterbox: Black bars appear on the upper and lower edges of the screen (16:9).									
Progressive					[On] [Off]				
On: The signal is displayed in full-picture quality using COMPONENT VIDEO OUT.									
TV System					[PAL] [NTSC]				
PAL: You connect the unit to a PAL or multi-system television. Programmes that were recorded with NTSC are played as PAL60. NTSC: You connect the unit to an NTSC television. Programmes that were recorded with NTSC are played as NTSC.									
HDMI Settings									
HDMI (High Definition Multimedia Interface) is a digital interface for Audio and Video. One single cable transfers both digital video data (picture data) and also digital audio data. HDMI is the world's first complete digital consumer AV interface complying with a non-compression standard.									
AV1 Output (Scart)					[Video (with component)] [S Video (with component)] [RGB 1 (without component)] [RGB 2 (without component)]				
Video (with component): If RGB 1 or 2 is set, there is no signal available on COMPONENT VIDEO OUT. [Video (with component)] is switched on automatically if the unit is connected via HDMI. S Video (with component): Select when a TV is connected that can receive an S Video signal. RGB 1 (without component): RGB output is available all the time while this unit is on. RGB 2 (without component): RGB output is available only during playback or on-screen display.									

Setup	AV2 Settings
	AV2 Input RGB / Video
Tuning	Ext Link Ext Link 2
Disc	
Picture	
Sound	
Display	
Connection	
Others	

AV2 Input
RGB / Video
RGB
Video
S Video



AV2 Settings	AV2 Input	Perform the settings in the following submenus for the connected unit.
	Ext Link	
AV2 Input		[RGB / Video] [RGB] [Video] [S Video]
RGB / Video: When receiving or recording RGB output from external equipment (not NTSC). RGB, Video, S Video: The input is switched to the selected signal (S Video/not NTSC).		
Ext Link		[Ext Link1] [Ext Link 2]
Setting for external units (EXT LINK) You control the recording function via an external unit (e.g. a receiver) with EXT LINK. Connect the unit to the AV2 terminal with a 21-pin Scart cable. Ext Link 1: For digital receivers that send a special recording control signal, e.g. the F.U.N. receiver (TU-DSF41). Ext Link 2: External recording control for satellite or digital receivers (video signal). The Ext Link 2 setting cannot be used if the input signal is in NTSC format. If the television is connected to the AV1 terminal via the 21-pin Scart cable, the recorded picture appears on the screen. The beginning of the recording may not be recorded correctly.		



Setup	TV Aspect	16:9
	Progressive	Off
Tuning	TV System	PAL
Disc	HDMI Settings	
Picture	AV1 Output (Scart)	Video
Sound	AV2 Settings	
Display		
Connection		
Others		

HDMI Video Format	Automatic
Aspect for 4:3 Video	4:3
Digital Audio Output	HDMI/Optical
Control with HDMI / Q Link	HDMI/Q Link

ENTER RETURN

▼ HDMI ▶	▼ Setting	ENTER	▼ Option	ENTER
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HDMI Video Format	[576i/480i][576p/480p][720p][1080i][Automatic]
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Select the screen resolution of your connected television set.
Automatic: Automatically selects the setting belonging to the connected unit. If you are not satisfied with the picture quality, a change in the setting may possibly result in an improvement.
 You can only select the settings supported by the connected unit.

Aspect for 4:3 Video	[4:3] [16:9]
-----------------------------	--------------

Use this setting if you want to replay videos in 4:3 format on the connected television set in 16:9 format. (Only possible for an HDMI resolution of [720p] or [1080i].)
4:3: Picture is output as original aspect.
16:9: Picture is output as 16:9 aspect with side panels.

Digital Audio Output	[HDMI and Optical] [Optical Only]
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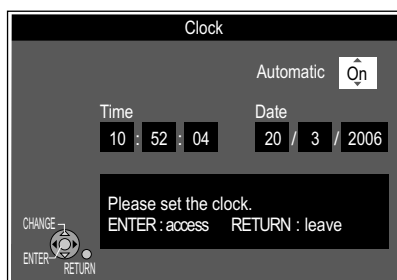
HDMI and Optical: Both outputs are activated with one signal.
Optical Only: Only the optical output is activated with one signal.

Control with HDMI / Q Link	[HDMI and Q Link] [Q Link Only]
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HDMI and Q Link: Simultaneous interaction of HDMI and Q Link functions. Select this setting if you have connected a unit via HDMI.
Q Link Only: If your TV set is equipped with the Q Link function, select this setting for the link.
 Select the screen resolution of your connected television set.

	HDMI and Q Link	only Q Link (via AV1)	only HDMI
Easy Playback	✓	✓	✓
Direct TV recording	✓ (not via HDMI)	✓	—
Power on link	✓	✓	✓
Power off link	✓	✓	✓
Download from TV	✓ (not via HDMI)	✓	—

List of language codes													
Abkhazian	6566	Burmese	7789	Galician	7176	Kannada	7578	Marathi	7782	Scots Gaelic	7168	Thai	8472
Afar	6565	Byelorussian	6669	Georgian	7565	Kashmiri	7583	Moldavian	7779	Serbian	8382	Tibetan	6679
Afrikaans	6570	Cambodian	7577	German	6869	Kazakh	7575	Mongolian	7778	Serbo-Croat.	8372	Tigrinya	8473
Albanian	8381	Catalan	6765	Greek	6976	Kirghiz	7589	Nauru	7865	Shona	8378	Tonga	8479
Ameharic	6577	Chinese	9072	Greenlandic	7576	Korean	7579	Nepali	7869	Sindhi	8368	Turkish	8482
Arabic	6582	Corsican	6779	Guarani	7178	Kurdish	7585	Norwegian	7879	Singhalese	8373	Turkmen	8475
Armenian	7289	Croatian	7282	Gujarati	7185	Kurdish	7585	Oriya	7982	Slovak	8375	Twi	8487
Assamese	6583	Czech	6783	Hindi	7273	Laotian	7679	Pashto	8083	Slovenian	8376	Ukrainian	8575
Aymara	6589	Danish	6865	Hausa	7265	Latin	7665	Persian	7065	Somali	8379	Urdu	8582
Azerbaijani	6590	Dutch	7876	Hebrew	7387	Latvian	7686	Polish	8076	Spanish	6983	Uzbek	8590
Bashkir	6665	English	6978	Hindi	7273	Lingala	7678	Portuguese	8084	Sudanese	8385	Vietnamese	8673
Basque	6985	Esperanto	6979	Hungarian	7285	Lithuanian	7684	Punjabi	8065	Swahili	8387	Volapük	8679
Bengali	6678	Indonesian	7079	Icelandic	7383	Macedonian	7775	Quechua	8185	Swedish	8386	Welsh	6789
Bhutani	6890	Faroese	7074	Interlingua	7365	Malagasy	7771	Rhaeto-Rom.	8277	Tagalog	8476	Wolof	8779
Bihari	6672	Fiji	7074	Irish	7165	Malay	7783	Romanian	8279	Tajik	8471	Xhosa	8872
Breton	6682	Finnish	7073	Italian	7384	Malayalam	7776	Russian	8285	Tamil	8465	Yiddish	7473
Bulgarian	6671	French	7082	Japanese	7465	Maltese	7784	Samoan	8377	Tatar	8484	Yoruba	8979
						Maori	7773	Sanskrit	8365	Telugo	8469	Zulu	9085



▲▼ Others ▶ ▲▼ Setting ENTER ▲▼ Option ENTER

Remote Control

[DVD 1] [DVD 2] [DVD 3]

Setting the remote control

If you use another Panasonic unit at the same location, change the mode of the remote control so that you can operate the units independently of each other. Change the code of the remote control so that you can simultaneously operate another Panasonic DVD unit.

Set up the remote control for the unit.

- Select [DVD 1, 2 or 3] with **▲▼** and confirm with **ENTER**.

Apply the selected setting [DVD 1, 2 or 3] to the remote control.

- Press and hold **ENTER** and press the appropriate number button 1, 2 or 3 for at least 2 seconds.
- Exit the menu with **RETURN**.

If the remote control setting does not match that of the unit, DVD 1, 2 or 3 appears on the unit's display.

- Press **ENTER** and press the appropriate number key 1, 2 or 3 simultaneously for at least 2 seconds.

If you want to operate two units independently of each other using the same remote control, then change the remote control setting.

Clock

Clock setting

The clock will normally be set correctly during Auto-Setup however, under certain circumstances the DVD Recorder cannot set the clock automatically. In this case follow the operation steps below to manually set the clock.

- Switch with **▲▼** automatic mode to [Off] and confirm with **ENTER**.
- Change with **▲▼** and **▶** Time and Date.
- Confirm the change with **ENTER**.

Don't forget to change summer time and winter time.

Activating the automatic time correction function

The correct time for the clock can be automatically maintained when the DVD Recorder is tuned to a station that transmits a time signal.

- Switch with **▲▼** automatic mode to [On] and confirm with **ENTER**.

The automatic setting of the clock begins.

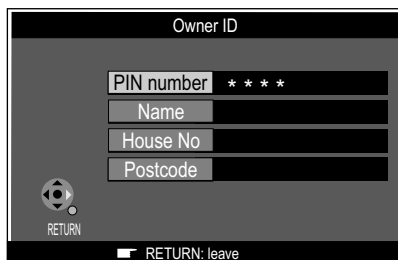
Under adverse reception conditions, etc., the Automatic time correction function may not work. In this case the indication for Clock setting is automatically reset to [Off]. If the reception conditions improve later on, it is possible to activate this function.

If the Clock setting is set to [On], do not set it to [Off], otherwise the automatic time correction function is deactivated.

This DVD Recorder uses a 24-hour-clock.

In the event of a power failure an automatic back-up system maintains the clock for approximate 60 minutes.

When the Clock setting is set to [On], the automatic time correction function checks and if necessary adjusts the time several times every day. The automatic time correction function only works when the DVD Recorder is in standby. It does not work in the Timer Recording mode.



▲▼ Others

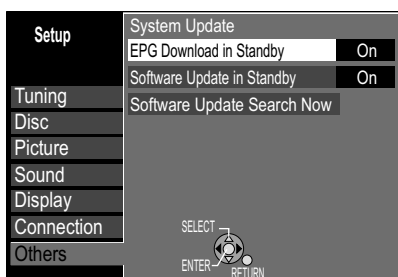
▲▼ Owner ID

▲▼ Option

Owner ID

- To set the PIN number press ►. Use [0]—[9] to enter a four-digit PIN number. Press ▲▼◀▶ to correct the digit.
- Make sure that you will remember the PIN number (make a note of it).
- Press the **ENTER** button to confirm.
- Select [Yes] with ◀ and confirm with **ENTER**.
- Press ►. Enter the [Name], [House No] and [Postcode] in the same way, using ▲▼◀▶.
- Press the **ENTER** button to confirm each entry.
- Press the **RETURN** button to leave the Owner ID screen.

- To display the Owner ID information on TV
 - On the unit press STOP for more than 5 seconds. The PIN number is not displayed. After 30 seconds this menu automatically disappears.



System Update



EPG Download in Standby-Modus [On] [Off]

On: EPG data are loaded in standby mode.

Software Update in Standby [On] [Off]

The software is automatically updated when the unit is in standby mode. This is shown in the unit display. If the unit is in standby to record, the timer-controlled recordings are not affected. If you want to prevent the automatic updates, select the setting [Software Update in Standby - Off].

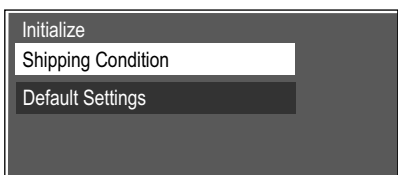
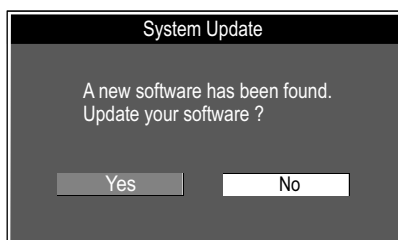
Software Update Search Now

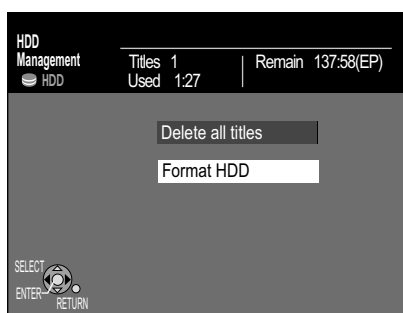
Start the search for new software manually.
A new software version is announced by a message. Do not switch your unit off during the update. This could result in the loss of data. A message shows that the update has finished. If a new software version is not going to be broadcast until the next few days, a corresponding message also appears.

Initialize [Shipping Condition] [Default Settings]

Shipping Condition: All settings, except for the security levels with the associated password and the time settings and the owner ID, are reset to the factory-default settings.

Default Settings: All settings, except for the programmed channels, time and disc-language settings, the security levels including password and the remote control code and the owner ID, are reset to the factory-default settings.

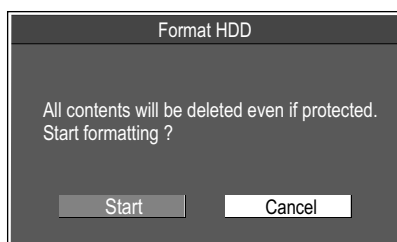




- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [HDD Management] with **▲▼** and confirm with **ENTER**.
- Select the desired menu with **▲▼** and confirm with **ENTER**.
- Return to the FUNCTIONS menu with **FUNCTIONS**.

Delete all Titles

- Confirm [Delete all Titles] with **ENTER**.
- In the next screen, select [Yes] with **◀** and confirm with **ENTER**.
- In the security question, select [Start] with **◀** and confirm with **ENTER**.
All titles and playlists are deleted and cannot be restored.
Protected titles cannot be deleted.



Format HDD

The formatting process deletes all data from the HDD.

- Select [Yes] with **◀** and confirm with **ENTER**.
- Select [Start] with **◀** and confirm with **ENTER**.
The formatting process begins. A message appears upon completion.
- Press **ENTER**.



If you activated write-protection, deactivate it. **RAM**

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [DVD Management] with **▲▼** and confirm with **ENTER**.
- Select the desired menu with **▲▼** and confirm with **ENTER**.
- Return to the FUNCTIONS menu with **FUNCTIONS**.

Disc Name **23**

- Enter the name. The name is displayed in the DVD Management menu.
You cannot name a disc after it has been finalized.

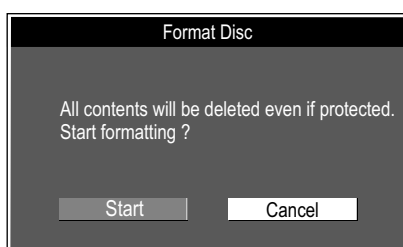
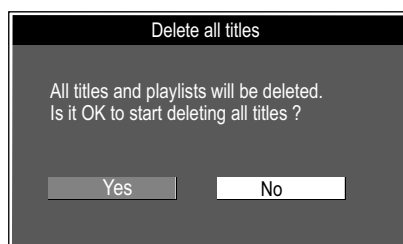
Disc Protection **RAM**

This procedure makes it possible to activate or deactivate write-protection.

- Select [Yes] with **◀** and confirm with **ENTER**.
Disc Protection On: The padlock is closed.
- To deactivate write-protection, select [Yes] with **◀** and confirm with **ENTER**.
Disc Protection Off: The padlock is opened.

Delete all Titles **RAM**

- Confirm [Delete all Titles] with **ENTER**.
- In the next screen, select [Yes] with **◀** and confirm with **ENTER**.
- In the security question, select [Start] with **◀** and confirm with **ENTER**.
All titles and playlists are deleted and cannot be restored. If the discs or one or more titles are protected, the disc cannot be deleted.



Format Disc

RAM -RW(V) +RW -RW(VR) +R +R DL Only for new discs

Some discs are not formatted. They must be formatted before they can be used in this unit. The formatting process deletes all data from the disc. The estimated duration of the formatting process is displayed in the menu.

- Select [Yes] with **◀** and confirm with **ENTER**.
- Select [Start] with **◀** and confirm with **ENTER**. The formatting process begins.
A message appears upon completion.
- Press **ENTER**.

Do not unplug the unit while the disc is being formatted or finalized.

Formatting can be cancelled and restarted. The formatting process deletes all data, including the recordings created with this unit.

**Top Menu** [-R] [-RW(V)] [+R] [-R DL] [+R DL] [+RW]

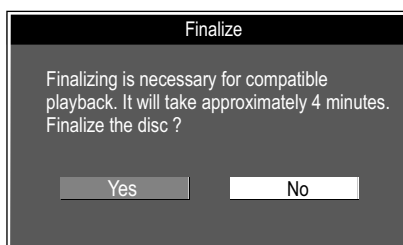
Before finalizing the disc, you can choose between 9 different colour samples to appear in the disc menu.

- Select the corresponding menu sample between 1 - 9 with **▲▼** and press **ENTER** to confirm.

Auto-Play Select [-R] [-RW(V)] [+R] [-R DL] [+R DL] [+RW]

Before finalization, you can select whether playback should start from the beginning of the disc or whether it should be launched from a disc menu.

- Select [Top Menu] or [Title 1] with **▲▼** and confirm with **ENTER**.
If [Top Menu] is selected, the disc menu appears first.
If [Title 1] is selected, playback begins at the beginning of the disc.

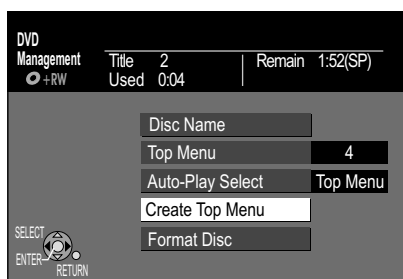
**Finalize** [-R] [-RW(V)] [+R] [-R DL] [+R DL]

The discs become DVD-Videos in DVD-Video format through finalization. They can be played on all DVD Players that support DVD-Video format.

53

- Select [Yes] with **◀** and confirm with **ENTER**.
- Select [Start] with **◀** and press **ENTER**. The finalization process begins. A message is displayed upon completion.
- Press **ENTER**.

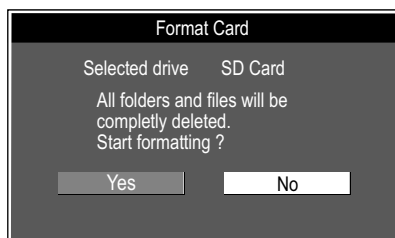
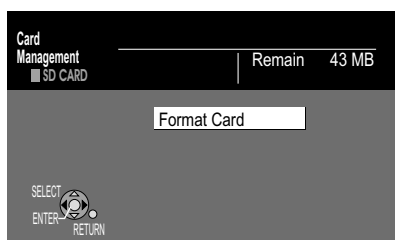
You can only finalize DVDs that were recorded on this unit. You can no longer record to DVDs that have already been finalized. A finalized DVD-RW(V) can be recorded again after it is reformatted.

**Create Top Menu** [+RW]

With a +RW, you have the option of creating a Top Menu.

The Top Menu created can be used for playback on another DVD-Player.

- Select [Create Top Menu] with **▲▼** and confirm with **ENTER**.
- In the following menu, select [Yes] with **◀** and confirm with **ENTER**.
- Select [Start] with **◀** and confirm with **ENTER**. The Top Menu is created. The procedure concludes with the message: Top Menu was created. Return to DVD Management with **ENTER**.

**Format card**

Formatting deletes all data on the SD card.

If you have activated the write-protection function, deactivate it.

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and press **ENTER** to confirm.
- Select [Card Management] with **▲▼** and press **ENTER** to confirm.
- Select [Format Card] with **▲▼** and press **ENTER** to confirm.
- Select [Yes] with **◀** and press **ENTER** to confirm.
- In the confirmation prompt, select [Start] with **◀** and press **ENTER** to confirm. Formatting begins. A message appears when it has finished.
- Press **ENTER** to confirm.
- Press **FUNCTIONS** to return to the FUNCTIONS menu.

Picture and sound setting during playback



DISPLAY menus contain information on the disc or the unit. With DVD-Videos, you can use the repeat function, change subtitles and the angle, change the picture and sound settings for DVD playback. Depending on the status of the unit (playback, STOP), there are some entries that cannot be selected or changed.



Subtitles, sound track and recording angle can only be selected if they were recorded on the disc. For some discs, they can only be changed via the disc menus. When bilingual recordings are played back, "1+1 ch" is displayed.

▲▼ Disc ▶	▲▼ Option ▶	▲▼ Setting																								
	Soundtrack	Soundtrack lang. DVD-A DVD-V Select the sound and the language. Sound properties RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR) The disc sound properties are displayed. LPCM/PPCm/Dolby Digital, DTS and MPEG: signal type, ch (channel): number of channels, k (kHz): scan frequency, b (bit): number of bits VCD Select the audio channel.																								
	Subtitle	[On] [Off] DVD-A DVD-V Switch subtitles on or off, select the language. RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR) Only for discs with the Subtitle On/Off setting. The Subtitle On/Off setting cannot be recorded with this unit. VCD Switch subtitles on or off, select the number of the subtitle.																								
	Language	<table border="0"> <tr> <td>ENG: English</td><td>DAN: Danish</td><td>THA : Thai</td></tr> <tr> <td>FRA : French</td><td>POR: Portuguese</td><td>POL : Polish</td></tr> <tr> <td>DEU : German</td><td>RUS: Russian</td><td>CES : Czech</td></tr> <tr> <td>ITA : Italian</td><td>JPN : Japanese</td><td>SLK : Slovak</td></tr> <tr> <td>ESP : Spanish</td><td>CHI : Chinese</td><td>HUN: Hungarian</td></tr> <tr> <td>NLD : Dutch</td><td>KOR: Korean</td><td>FIN : Finnish</td></tr> <tr> <td>SVE : Swedish</td><td>MAL: Malay</td><td>* : Others</td></tr> <tr> <td>NOR: Norwegian</td><td>VIE : Vietnamese</td><td></td></tr> </table> * Others: Enter the appropriate language code. 51	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	
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SVE : Swedish	MAL: Malay	* : Others																								
NOR: Norwegian	VIE : Vietnamese																									
	Audio Channel	L+R / L / R RAM -RW(VR) VCD Change audio during playback.																								
	Angle	DVD-A DVD-V Select another recording angle.																								
	Still Picture	DVD-A Select the still image playback type. Disc playback in the original sequence. Select the still image number and playback. RANDOM: Playback in random order. Return to the standard page: Select [Return] and press ENTER.																								
	PBC	VCD PBC shows whether the menu playback control is on/off.																								

Picture and sound setting during playback



▲▼ Play ▶	▲▼ Option ▶	▲▼ Setting
	Repeat Play	[On] [Off] The function is only available if the elapsed time is displayed. CD VCD ▶ Track ↔ All ↔ Off ◀ RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) ▶ Title ↔ Chapter ↔ Off ◀ DVD-A MP3 ▶ Track ↔ Group ↔ Off ◀ During playback of a playlist RAM -RW(VR) ▶ PL (Playlists) ↔ Off ◀ If the Video-CD has playback control, select a track in STOP mode with the number buttons.

▲▼ Picture ▶	▲▼ Option ▶	▲▼ Setting
	Playback NR	[On] [Off] Reduces screen interference.
	Progressive	[On] [Off] Select [On] to activate full picture output.
	Transfer.	[Progressive - On] Select the appropriate conversion method for full-picture output. PAL output signal [Auto] Film and video content is detected and converted appropriately. [Video] If problems occur with the [Auto] setting. [Film] Select Video or Film if the video content is not displayed correct with the Auto setting. NTSC output signal [Auto 1] Film and video content is detected and converted appropriately. [Auto 2] Movies with different picture frequencies are converted [Video] If content does not display correct with the [Auto 1] or [Auto 2] settings.
	AV-in NR	[Automatic] [On] [Off] Reduces noise during tape recording. Only for AV1, AV2, AV3 or DV. Only with picture input from a video cassette. Noise reduction is activated for video input. The input signal can be recorded unchanged.

▲▼ Sound ▶	▲▼ Option ▶	▲▼ Setting
	DVB Multi Audio	[Other 1] [Other 2] If more than one audio channel is broadcast, you can set the desired channel here (only applies to digital channels).
	V.S.S.	RAM -R -R DL -RW(V) +R +R DL +RW DVD-A DVD-V -RW(VR) [Natural] [Emphasis] [Off] Surround sound effect with 2 front speakers. Only with Dolby Digital with 2 or more channels. Switch off V.S.S. if this causes problems. V.S.S. does not work with recordings in dual-channel sound.
	Dialog Enhancer	RAM -R -R DL -RW(V) +R +R DL +RW DVD-A DVD-V -RW(VR) [On] [Off] Dolby Digital, only with 3 or more channels, including a center channel. The volume is increased so that dialogue is easier to understand.

▲▼ Other ▶	▲▼ Option ▶	▲▼ Setting
	Position	[1 - 5] Position of the OSD displays on the screen.



The HDMI connection can be used only with units that are suited for HDMI.

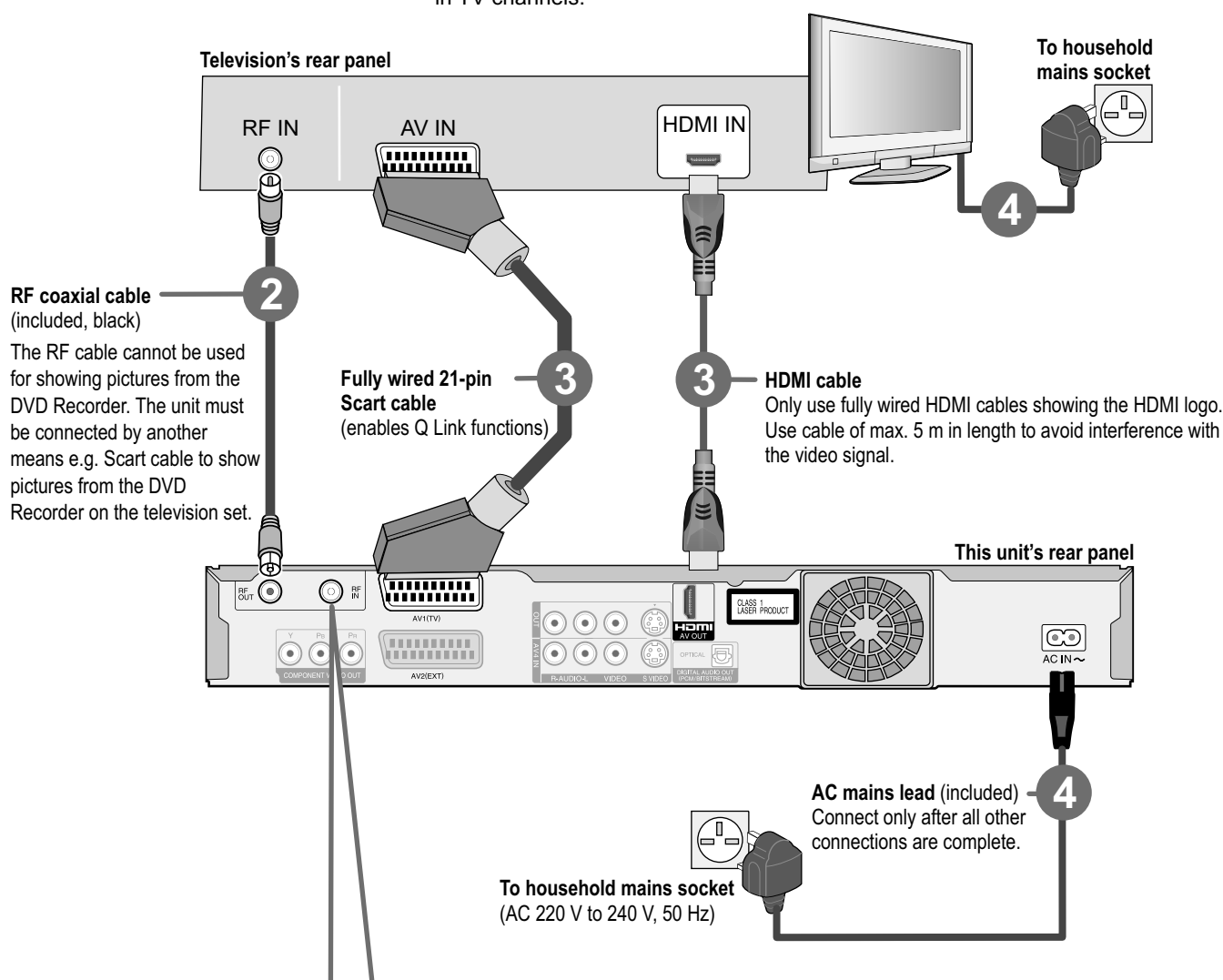
- 1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.
- 2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.
- 3 Connect HDMI AV OUT of the DVD Recorder with the HDMI input of the TV.

For Q Link functions:

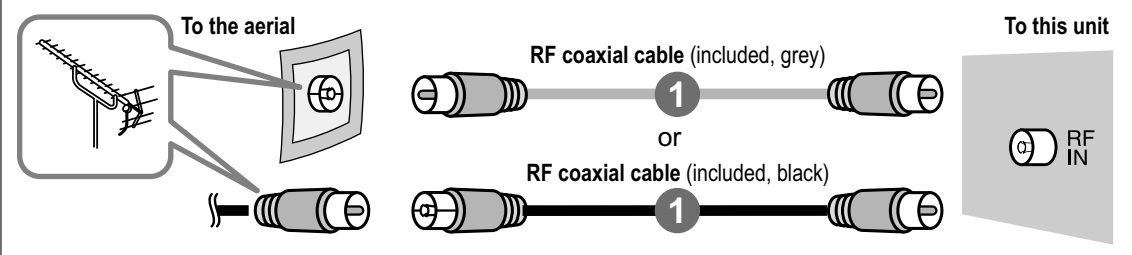
Connect the AV1 terminal (21-pin Scart terminal) of the DVD Recorder with the Scart input of the TV.

- 4 Connect the DVD Recorder and the television to the household mains socket.

After completing the above connections, proceed to the Auto-Setup to tune in TV channels.



Use one of the included RF coaxial cable (black or grey) to connect this unit's RF IN terminal to your aerial socket or aerial cable.





HDMI (High Definition Multimedia Interface)

If you connect the DVD Recorder to an HDMI-compatible unit, just one cable transfers a high quality digital audio and video signal without interference.

- Once an HDAVI Control-compatible unit has been connected to the HDMI terminal, switch the units on and switch on the external unit, select the input channel for the DVD Recorder. Repeat the procedure if there is any change to the HDMI terminal.

The audio signal cannot be transmitted via HDMI if an externally connected unit does not support CPPM (Content Protection for Prerecorded Media), or when playing a DVD audio with copy protection. In this case, use an audio cable. 63

If an connected TV only supports dual-channel audio, then an audio signal with 3 or more channels is down-converted, with output through 2 audio channels. 49

It is not always possible to down-convert all discs.

Titles where down-converting is not possible can only be reproduced via HDMI through an amplifier which corresponds to the HDMI Ver. 1.1 standard or higher and is CPPM compatible.

For HDCP (High-Bandwidth Digital Content Protection) compatible units with DVI connection (e.g. PC monitors): depending on the unit, it is possible that a DVI/HDMI adapter does not reproduce the video signal perfectly. The audio signal is not transmitted in this case.

If you connect this unit with an HDMI cable to a Panasonic television set with HDAVI control function, then both units can be controlled. If you connect this unit with an fully wired 21 pin scart cable you can use the Q Link functions to control the television and this unit. You can use both kinds of connection at the same time.

Settings for control with HDMI and Q Link: 51

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

- Easy Link (Trademark of Philips)
- SMARTLINK (Trademark of Sony)
- DATA LOGIC (Trademark of Metz)
- Megalogic (Trademark of Grundig)

For details, refer to your television's operating instructions or consult your dealer.

A TV takes a certain time to change over the input channel for the DVD Recorder automatically. It is therefore possible that the television set does not display the playback at the start of the title. Press SKIP ◀◀▶▶ or SLOW/SEARCH ◀▶▶ to return to the start of the playback.

Control via Q Link and HDMI (HDAVI Control)

	Automatic input changeover (Easy Playback) If you start the playback function or select a menu (e.g. Direct Navigator, Timer Recording), the TV automatically switches to the input channel for the DVD Recorder. If you are recording on the DVD drive, the TV does not automatically change to the input channel.
	Direct TV recording Press DIRECT TV REC to directly record the programme you are currently watching. You do not need to enter anything else.
	Power on link If you start the playback function or e.g. select the menu Direct Navigator or Timer Recording or by inserting a disc, the television set switches on and automatically selects the input channel for the DVD Recorder. If you are recording on the DVD drive, the TV does not automatically change to the input channel. TV/DVD automatic switch-on If the TV set and DVD Recorder are switched off (in standby), both units are switched on automatically by pressing PLAY , DIRECT NAVIGATOR , GUIDE , VIDEO Plus+ or PROG/CHECK .
	Power off link If the television set is switched off, this unit automatically switches off as well. The unit also switches off while the menu FUNCTIONS, DISPLAY or status messages are being displayed, and even when a Timer-controlled recording has been programmed or during playback. The unit does not switch off during a recording with the ●REC button, the Copying function or while a disc is being finalized.
	Download from TV (analogue channels only) Station transfer from television set. During [data transfer from TV], data for the station list are automatically downloaded from the TV set. The stations are stored in the same presets of the DVD Recorder as on your TV set. This unit allows for Timer Recordings using the programming function of the television (e.g. IDTV).



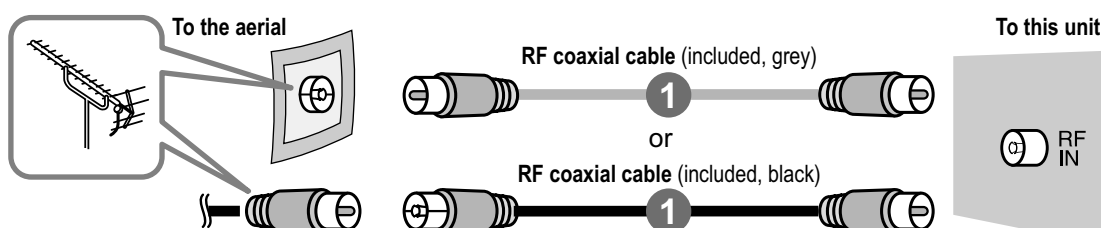
The terminals can be used for INTERLACE or PROGRESSIVE output and deliver a clearer picture than the S VIDEO OUT terminal.

The Q Link functions are not available with this kind of connection.

- 1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.
- 2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.
- 3 Connect the COMPONENT VIDEO OUT terminals of the unit with the COMPONENT VIDEO IN of the TV unit. Use a video cable. Always connect terminals with the same colour. Connect the audio cables to the corresponding audio input terminals on the TV.
- 4 Connect the DVD Recorder and the television to the household mains socket.

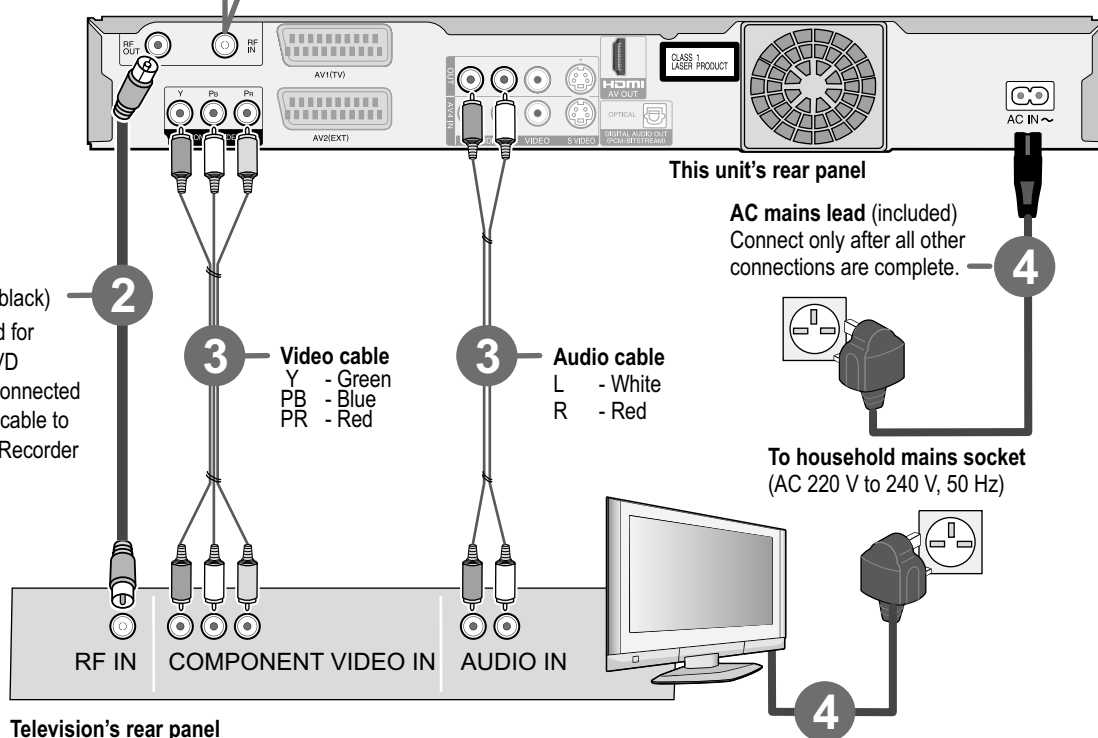
After completing the above connections, proceed to the Auto-Setup to tune in TV channels. 9

Use one of the included RF coaxial cable (black or grey) to connect this unit's RF IN terminal to your aerial socket or aerial cable.



RF coaxial cable (included, black)

The RF cable cannot be used for showing pictures from the DVD Recorder. The unit must be connected by another means e.g. Scart cable to show pictures from the DVD Recorder on the television set.





COMPONENT VIDEO OUT terminal

The terminals can be used for INTERLACE or PROGRESSIVE output and deliver a clearer picture than the S VIDEO OUT terminal. Connections via these terminals output the colour difference signals (P_B/P_R) and the brightness signal (Y) separately. Colours can be reproduced true to the original colour. The properties of the COMPONENT VIDEO input terminal are dependent on the TV or screen.

Setup	TV Aspect	16:9
Tuning	Progressive	On
Disc	TV System	PAL
Picture	HDMI Settings	
Sound	AV1 Output	RGB 1
Display	AV2 S	
Connection		
Others		

AV1 Output
Video (with component)
S Video (with component)
RGB 1 (without component)
RGB 2 (without component)
RGB output is available all the time while this unit is on.

Connecting a TV with COMPONENT VIDEO input terminals

If your TV with LCD or plasma screen supports the progressive process, connect it to the COMPONENT VIDEO OUT terminals.

If you want to enjoy full progressive video, set Progressive to [On].

If the AV1 Output setting in the Setup menu is set to [RGB 1/2 (without component)], there is no output to the COMPONENT VIDEO OUT terminals.

Set this option to [Video (with component)].

If the unit is connected to the TV via the S VIDEO OUT or the AV1 terminal, output is Interlace regardless of the settings.

50

Setup	TV Aspect	16:9
Tuning	Progressive	On
Disc	TV System	PAL
Picture	HDMI Settings	
Sound	AV1 Output	Video
Display	AV2 Settings	
Connection		
Others		

- Press **FUNCTIONS**.
- Select [To Others] with **▲▼** and confirm with **ENTER**.
- Select [Setup] with **▲▼** and confirm with **ENTER**.
- Select [Connection] with **▲▼**, [Progressive] with **▶, ▲▼** and confirm with **ENTER**.
- Select the option [On] with **▲▼** and confirm with **ENTER**.

Progressive television picture

The progressive picture aspect ratio (height to width) is set to 16:9. DVD-Video with a picture aspect ratio of 16:9 is properly displayed. However, video material with an image page ratio of 4:3 is shown stretched from right to left. If it is possible to adjust the picture aspect ratio on your television, select the setting [Progressive - On].

With a normal television, the progressive output can cause the picture to flicker, even if the television is progressive-capable.

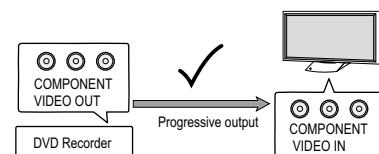
Select the setting [Progressive - Off].

50

Notes on progressive-capable televisions (PAL)

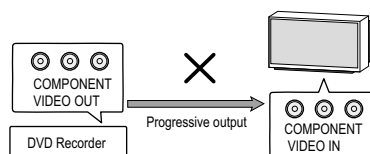
LCD/plasma televisions or LCD projectors

If progressive output is used, high resolution, e.g. DVD-Videos, can be viewed. COMPONENT VIDEO OUT of this unit is connected with the COMPONENT VIDEO IN of the television. Select the setting [Progressive - On].



Conventional televisions

In normal television sets, the progressive output process can lead to flickering, even if the television is progressive-capable. Select the setting [Progressive - Off].



Additional connections

Connection with Video cable or S Video cable



You can use this frequently used standard connection with the provided accessories (Video cable).

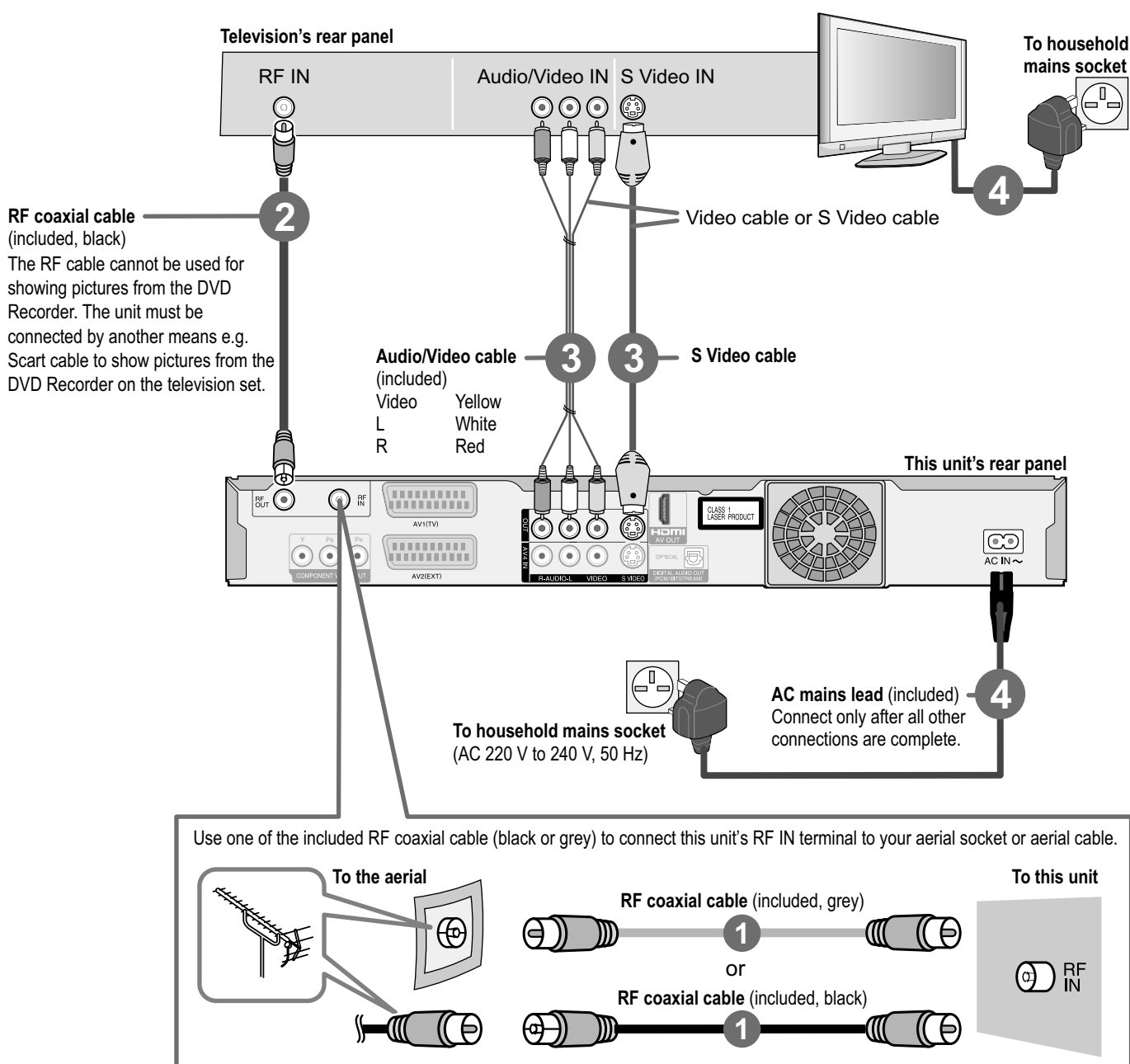
Depending on the television, the connection with the S VIDEO cable results in a higher quality picture than the connection with an Audio/Video cable.

The Q Link functions are not available with this kind of connection.

- 1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.
- 2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.
- 3 Connect the AUDIO OUT (L-white/R-red) of the DVD Recorder with the audio of the television.
Connect the VIDEO OUT or S VIDEO OUT of the DVD Recorder with the input of the television.
- 4 Connect the DVD Recorder and the television to the household mains socket.

After completing the above connections, proceed to the Auto-Setup to tune in TV channels. 9

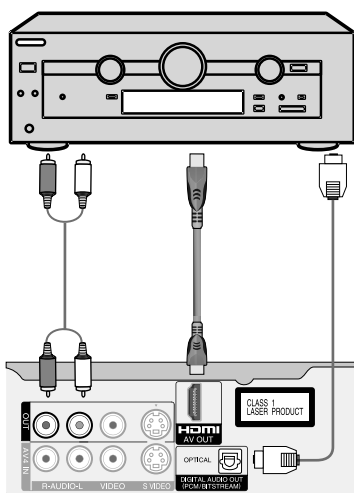
If the unit is connected via S Video output, select the setting S Video (with component) in the setup menu under [Connection] - [AV1 Output] . 50





This connections can be done in addition to the basic connection (page 8 + 10). The diagrams shows our recommendation for how to connect the DVD Recorder to your various equipment. For this and other connections consult the instructions of each piece of equipment.

Connecting an Amplifier



If the unit is connected to the television set with an HDMI cable and you are using the DIGITAL AUDIO OUT (Optical) for audio output, change the HDMI settings [Digital Audio Output] to [Optical Only] in the [Setup] menu.

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- Connect an amplifier with a Dolby Digital-, DTS- or MPEG decoder.
- You cannot use a DTS Digital Surround Decoder that is not designed for DVD.
- In the Setup menu Sound, change the [Digital Audio Output] setting according to your connected digital amplifier.

49

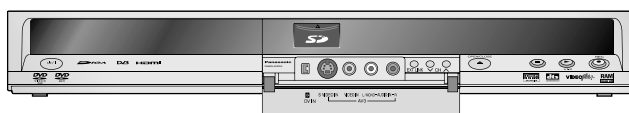


Connect this unit to a device with a DTS decoder in order to be able to play DVDs with this symbol.



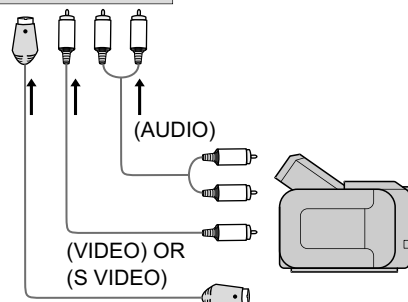
This unit can record and playback stereo sound in Dolby Digital (Format: dual channel). Pre recorded discs can be played back in multi channel sound.

Camcorder / Game equipment



You cannot receive signals from PCs with this unit.

If the audio output of the other unit is mono, connect it to the L/MONO terminal. Both the left and the right channels will be recorded.



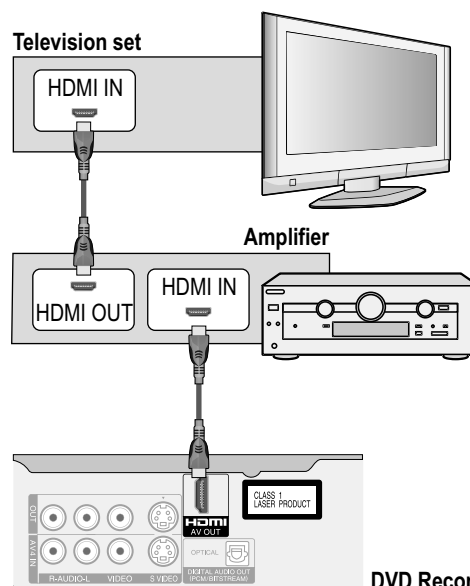
Selecting the sound track (programmes with dual-channel sound) Not RAM Analog channels:

- Before recording, select Sound setting Bilingual Audio Selection [M1] or [M2] in the Setup menu. Select [M1] or [M2] on an external unit before recording.
- If the output signal of the external unit is an NTSC signal, set the TV System to [NTSC] in the Setup menu.

Digital channels:

- Press **DISPLAY** and select the setting [Multi Audio] under Audio.

Connecting with HDMI over an amplifier



DVD Recorder

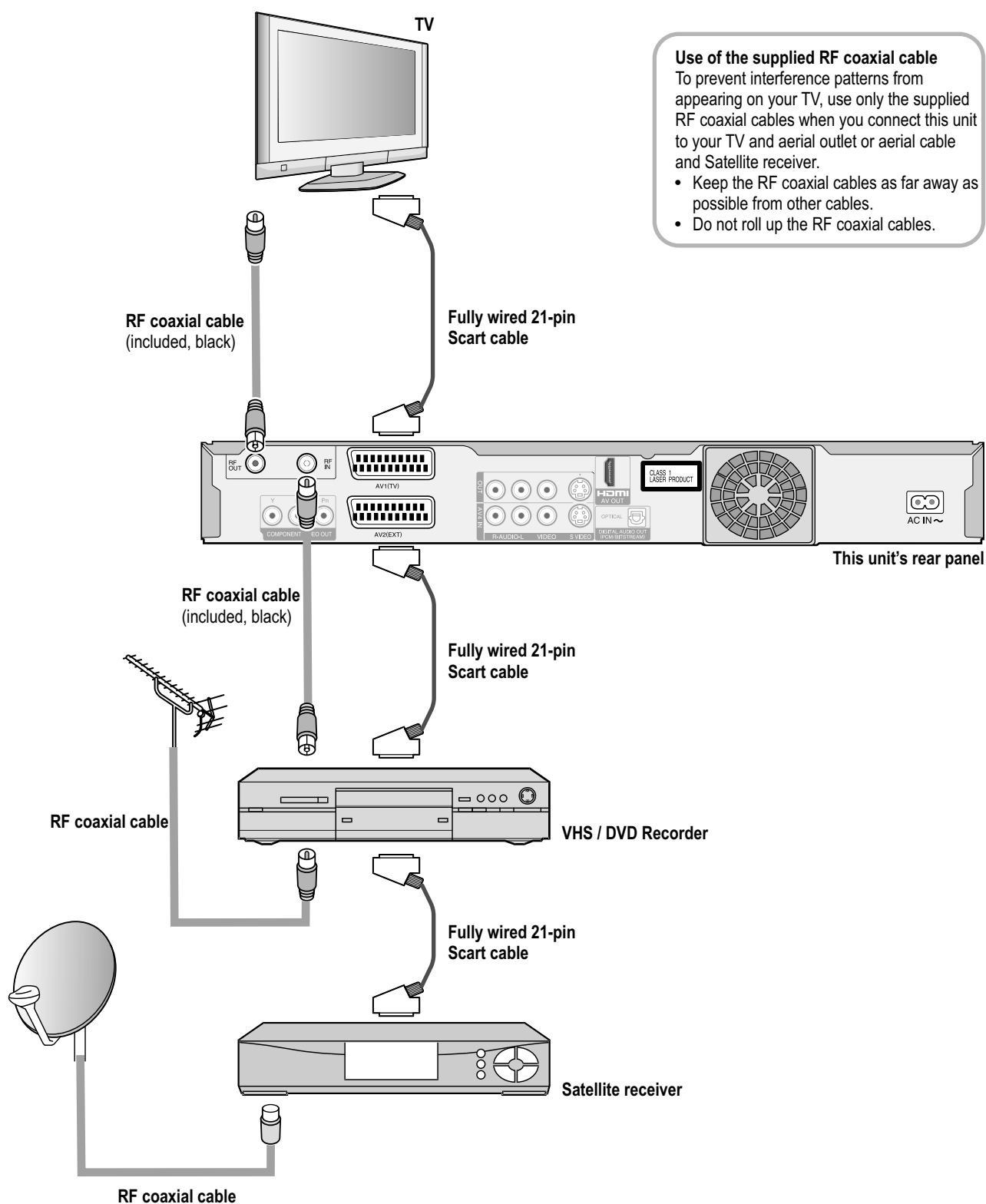
Equipment	Connector	AV1	AV2	AV3 (Front)	AV4 IN	AV4 OUT	COMPONENT	HDMI
Connecting to TV		✓				✓	✓	✓
Connecting an other VCR / DVD recorder			✓	✓	✓			
To watch camcorder images (Video camera)				✓	✓			
To watch satellite broadcasts (Set top box)			✓					
To play games (Game equipment)				✓	✓			
Q Link		✓						
Control with HDMI (HDAVI)								✓



Using a fully wired 21-pin Scart cable (not included) 59

You can use a variety of Q Link functions by connecting the unit to a Q Link compatible television. You can enjoy high-quality viewing by connecting the unit to an RGB compatible television.

The RF cable cannot be used for showing pictures from the DVD Recorder. The unit must be connected by another means e.g. Scart cable to show pictures from the DVD Recorder on the television set.



Informations

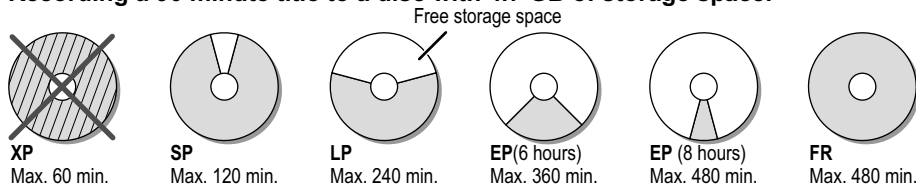
Recording informations



It is not possible to record a 90 minute title in XP mode.

The available storage space is used optimally in FR mode. The title is recorded in the best possible quality.

Recording a 90 minute title to a disc with 4.7 GB of storage space.



Discs suitable for recording

Rewritable			Writable			
RAM	-RW	+RW	-R	+R	-R DL	+R DL
x2	x1	x2.4	x1	x2.4	x4	x2.4
x3	x2	x4	x4	x4		
x5	x4	x8*	x8	x8		
	x6		x16	x16		

* Playback only

Under certain circumstances, digital sound signals may not be recorded in their original format. Digital programmes limited to "one-time recording" can only be recorded to 12 cm DVD-RAM.

Titles in PAL or NTSC format can be displayed on the following TV sets:

TV-typ	Disc	Yes/No
Multi system TV	PAL	Yes
	NTSC	Yes
NTSC-TV	PAL	No
	NTSC	Yes
PAL-TV	PAL	Yes
	NTSC	Yes (PAL60)

Approximate recording times in hours

Rec mode FR: **43**

	HDD (160 GB) DMR-EX75	HDD (250 GB) DMR-EX85	DVD-RAM (4.7 GB) (9.4 GB) double sided		DVD-R (4.7 GB)	DVD-R DL /+R DL (8.5 GB)	
			-R DL	+R DL		-R DL	+R DL
XP	36	55	1	2	1	1:45	1:45
SP	70	111	2	4	2	3:35	3:35
LP	138	222	4	8	4	7:10	7:10
EP (6 Hours)*	212	333	6	12	6	10:45	
EP (8 Hours)	284	443	8	16	8	14:20	

* Only if Recording time in EP mode is set to [EP (6 Hours)] in the Setup menu.

RAM With the [EP mode (8Hours)] setting, playback on DVD-RAM-compatible DVD players may not be possible. Select [EP mode (6Hours)]. **47**

Disc Protection

Protect your recordings from accidental deletion or overwriting.

Folder: **31** Pictures: **31** Recordings: **26** The entire disc: **54**

If you activated write-protection, remove it before processing.

For recording

The recording is saved to free areas on the disc. If there is no more space left on the disc/HDD, you must delete recordings or use a new disc.

Continuous recording or playback of both sides of a double-sided disc is not possible. After the end of the recording, the unit needs approx. 30 seconds to record data for recording management.

Programmes in 16:9 format are recorded in 4:3 format.

16:9 format is used to record to RAM.

The unit does not record in the HD ready format.

Conventional DVD-Vs are usually equipped with copy protection and cannot be copied.

Informations

Remote Control



Switching to AV input on your Panasonic television

- Press **AV**.

Switches between TV reception and AV input each time the button is pressed.

Child lock

You can lock the buttons of the unit and the remote control.

- Press and hold **RETURN** and **ENTER** until **X HOLD** appears in the display. The unit is now locked.
- To unlock the child lock, repeat the procedure until **X HOLD** disappears.

Operating a television set

Change the remote control code to operate your television set.

- Press and hold the **TV** on and off switch button.
- Enter the two-digit code for your television set.

Some television models of the brands listed above, (e.g. older Panasonic units), cannot be operated using the remote control.

Trademark	Code	Trademark	Code	Trademark	Code	Trademark	Code
Panasonic	01-04,45	GOODMANS	05,06,31	NOKIA	25-27	SANYO	21
AIWA	35	GRUNDIG	09	NORDMENDE	10	SBR	06
AKAI	27,30	HITACHI	22,23,31,40-42	ORION	37	SCHNEIDER	05,06,29-31
BLAUPUNKT	09	INNO HIT	34	PHILIPS	05,06	SELECO	06,25
BRANDT	10,15	IRRADIO	30	PHONOLA	31,33	SHARP	18
BUSH	05,06	ITT	25	PIONEER	38	SIEMENS	09
CURTIS	31	JVC	17,39	PYE	05,06	SINUDYNE	05,06,33
DESMET	05,31,33	LOEWE	07	RADIOLA	05,06	SONY	08
DUAL	05,06	METZ	28,31	SABA	10	TELEFUNKEN	10-14
ELEMIS	31	MITSUBISHI	06,19,20	SALORA	26	THOMSON	10,15,44
FERGUSON	10	MIVAR	24	SAMSUNG	31,32,43	TOSHIBA	16
GOLDSTAR/LG	31	NEC	36	SANSUI	05,31,33	WHITE WESTINGHOUSE	05,06



	DVD-RAM 4.7 GB 12 cm 9.4 GB 12 cm 2.8 GB 8 cm rewritable	
---	---	---

DVD-RAM

The DVD-RAM can be compared with the hard disk and can be written to 100,000 times on average. The disc can only be played on DVD-RAM-compatible players. The recording occurs in DVD Video Recording format (VR). Movies and parts of movies can be edited and deleted. The deletion of movies frees previously used storage space. The creation of playlists does not require any additional storage space. Dual-channel sound and 16:9 format are supported in addition to the TIME SLIP function.

DVD-R/+R (Recordable)

The DVD-R/+R can only be recorded once. Movies or parts of them can be deleted during processing, but storage space is still taken up and cannot be used for other movies. Through finalization, the DVD-R/+R becomes DVD-V that can be played on other units.

	DVD-R (DVD-Video format) 4.7 GB 12 cm 1.4 GB 8 cm recordable	
--	+R 4.7 GB 12 cm recordable	

DVD-R/-R DL/+R/+R DL    	Finalization On the recording unit		 55
The movies can no longer be processed after finalization.			
Recording with this recorder		Playback on another unit	
Recording with another unit		Playback on this recorder	

DVD-RW(V)/+RW (Rewritable)

DVD-RW(V)/+RW is rewritable and erasable. You must format the disc to be able to rewrite it again. Through finalization, the DVD-RW(V) becomes a DVD-V that can be played on other units. A finalized DVD-RW(V) can be reformatted and rewritten. Formatting deletes all data! A +RW becomes a DVD-V on creating a Top Menu.  55

	DVD-RW(V) (DVD-Video format) 4.7 GB 12 cm 1.4 GB 8 cm rewritable	
--	+RW rewritable	

DVD-RW 	Finalizing On the recording unit		Formatting	DVD-RW 
The movies can no longer be processed after finalization.				
Recording with this recorder		Playback on another unit		
Recording with another unit		Playback on this recorder		

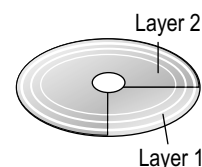
	DVD-R DL 8.5 GB 12 cm writable	
--	+R DL 8.5 GB 12 cm writable	

DVD-R DL/+R DL (Double Layer DVD / Dual Layer DVD)

The data are saved on two parallel layers. You have more space available. If the laser changes layers during playback, brief image and sound distortions may occur.

If there is not enough capacity to record a title on the first layer, the rest is recorded on the second layer. During the playback of a title recorded on two layers, the unit automatically switches between the layers and plays the title back like a normal title.

This unit cannot be used for direct recording on a DVD-R DL/+R DL. You can record on the hard disk and then copy the recording to a disc.



After finalization, these formats can only be replayed on DVD-R DL/+R DL/+RW-compatible players.

Informations

Playback discs



	DVD-RW (DVD-VR format) playable only	[RW(VR)]
	DVD-Video playable only	[DVD-V]
	DVD-Audio playable only	[DVD-A]
	CD CD-R/RW playable only	[CD]
	Video CD CD-R/RW playable only	[VCD]

A DVD-RW that was recorded on another DVD recorder is played back in DVD-VR format by this unit. Programmes limited to "one-time recording" can be played back if they were recorded on a CPRM-compatible disc. If you format the disc, you can record and playback the DVD-Video format.

High-quality video and music discs.

Digital-quality music discs. Playback in stereo.

Music and audio recordings, music in MP3 format, pictures in JPEG and TIFF format.

Music and video recordings.
SVCD in accordance with IEC62107.

[MP3] [JPEG] You can playback data in MP3 and JPEG/TIFF formats from a finalized CD-R, CD-RW or DVD-R. After the recording you must finish the session. Depending on the recording conditions, playback can nonetheless have problems.

Some DVD-Audio with multi-channel sound is designed by the manufacturer to prevent intermixing on the entire disc or in certain areas. Depending on the disc type, the regional code and the recording conditions, it may not be possible to playback recorded discs. Additional information can be found on the disc case.

Regional codes



DVD-Video only

DVD-Videos with the regional code 2 or ALL can be played with this unit. The code is listed on the backside of the unit.
England and Continental Europe: 2.

Unplayable discs

- 2.6 GB and 5.2 GB DVD-RAM, 12 cm.
- 3.95 GB and 4.7 GB DVD-R for authoring.
- DVD-R, recorded in the DVD Video Recording format (VR).
- DVD-R (V), DVD-R DL, DVD-RW (V), +R, +R DL recorded on another unit and not finalized.
- Commercially available Blu-ray, DVD-ROM, +R (8 cm), CD-ROM, CDV, CD-G, Photo-CD, DivX, CVD, SACD, MV-Disc, PD, "Chaoji VCD", including CVD, DVCD and SVCD, which are not IEC62107 compliant, etc.

Informations

Handling discs



Only play round discs.

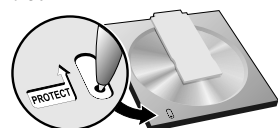


Do not touch the recording surface of the disc.

Cartridge discs

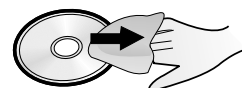
[RAM]

When the write protection device is active, you can neither record to nor process and delete the contents of the disc.



Cartridge write protection

Remove 8 cm discs from the cartridge before using them with this unit.



If the surface of a disc that does not have a cartridge or that was removed from the cartridge is not clean, recording, playback or processing can be impaired by scratches, dirt, dust or fingerprints. Such impairments may also still occur when the disc is inserted into the cartridge.

Note: You can only write on the label side of the disc. Use a soft, oil-based felt-tip pen. Do not use a ball-point pen or other hard writing instrument. Do not apply stickers or labels to the disc. When not in use, put the disc in its case or cartridge.

Cleaning the DVD-RAM

Clean the disc with a special DVD-RAM cleaner (optional) and read the cleaner instructions before use. Stubborn dirt may not be removable so that recording, playback or processing is still impaired even after cleaning. In this case, the disc should no longer be used. Do not use petrol, alcohol, water, cleaning sprays, household cleaners or other solvents.

DVD lens cleaner (RP-CL720E)

Compatible models: Only for DVD recorders.

Do NOT use this cleaner with any other Panasonic DVD products or with the DVD products of any other companies since doing so may damage the products.

Cleaning of DVD-Videos, Video CDs and CDs

Wipe them with a damp and then a dry cloth.



-- **SD Memory Card** 
miniSD™ Card
MultimediaCard
 8 MB to 2 GB (Maximum)
 Pictures

The used memory can deviate from the card capacity.

Use an SD card for playback and transfer (copying) pictures taken for example with a Digital Camera. MPEG2 moving pictures can be copied to the hard disc or DVD-RAM. Direct playback of MPEG2 moving pictures from the SD card is not possible.

If the SD Memory Card was formatted with another unit, under certain circumstances you may possibly not be able to use it with this unit.

In this case, reformat the card with this unit.

Caution! All saved data are deleted during formatting.

55



Use an appropriate adapter for miniSD™ cards.



Do not touch the memory card contacts.

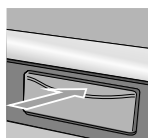


Write protection

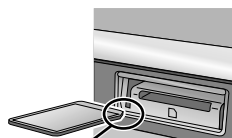
Keep the small memory cards such as the SD Memory Card out of reach of children. If swallowed, seek medical advice immediately.

Inserting the storage card

Opening the cover.
 Press the protruding section to open the cover to the slot.



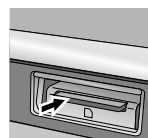
Press on the centre of the card until it clicks into place.



Insert the card label up with the cut-off corner on the right.

Removing the storage card

Press on the centre of the card.
 Pull it straight out.



Closing the cover
 Press down.



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.

When the write protection device is activated, you can neither record nor edit or delete the contents of the SD Card.

This unit supports SD Memory Cards that are formatted with FAT 12 and FAT 16 systems (based on SD Memory Card spec.).

Additional information is available on the Internet

<http://panasonic.co.jp/pavc/global/cs>

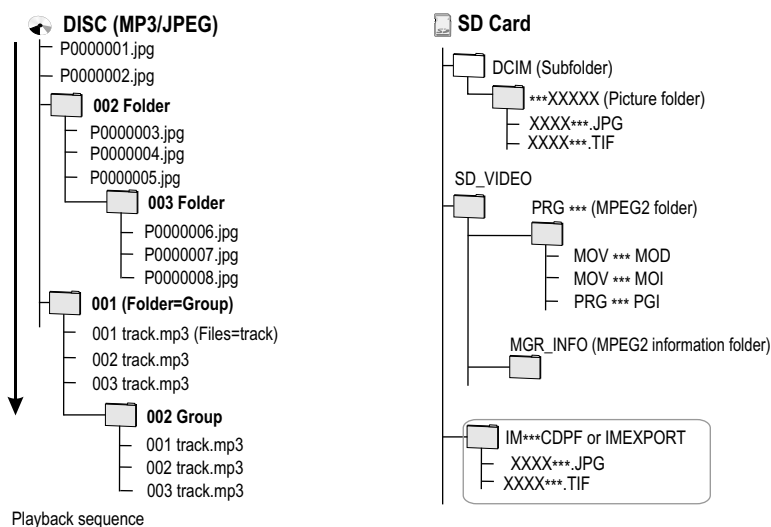


Folder structure

Give the folders and file names three-digit prefix numbers during recording to establish the desired playback sequence. Latin letters and Arabic numerals will display correctly. Other characters may not display correctly.

Folders can be created on another unit, but they cannot be selected as the target of a copy procedure.

A folder in which all numbers are "0" (e.g. DCIM000) cannot be displayed. If a folder or file name was entered with another unit, the name may not be displayed correctly and the data may not be able to be played or edited.



This unit can display the following folder names:

*** : figures

XXX : letters

MP3/JPEG Format

Disc (MP3/JPEG) RAM R CD

Maximum of folders: 300 (including root folder).

Maximum number of MP3 files: 3000.

Maximum number of JPEG files: 3000.

Total number of recognizable files including MP3, JPEG and other files types is 4000.

MP3 Format:

Format: ISO9660 level 1 or 2 (except for extended formats), Joliet.

Compatible compression rate: 32kbps ~ 320kbps.

Compatible sampling rate: 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz.

This unit is not compatible with ID3 tags, MP3 files must have the extension ".mp3" or ".MP3".

JPEG Format:

Format: ISO9660 level 1 or 2 (except for extended formats), Joliet.

Compatible pixels: between 34x34 and 6144x4096 pixels, Sub sampling 4:2:2 or 4:2:0.

Thawing Time: approx. 3 sec (6M pixels).

This unit is not compatible with MOTION JPEG.

SD Card (JPEG) SD

Compatible Media: SD Memory Card, miniSD™ Card (a miniSD™ Card adaptor needs to be inserted), Multi Media Card.

Number of pixels: 34 x 34 to 6144 x 4096.

Thawing Time: Approx. 3sec (6M pixels).

Format: FAT12, FAT16 / JPEG conforming DCF / Sub sampling 4:2:2, 4:2:0 / TIFF (Uncompressed RGB chunky) / DPOF Compatible.



-- Hard disk drive (HDD) **HDD**
 DMR-EX75 160 GB
 DMR-EX85 250 GB
 rewritable



Hard disk

The hard disk is only a temporary memory.

Your HDD (Hard disk drive) is a high-precision recording unit with a particularly recording capacity and high recording speed.

The recording is made in DVD Video Recording format (VR).

22

Films or parts of films can be edited and deleted. Deleting films releases previously used storage space. Creating playback lists does not take up any additional storage space. As well as the TIME SLIP function, dual-channel sound and 16:9 format are also supported.

The hard disk automatically goes into the SLEEP mode if no function is selected for longer than 30 minutes and no disc is placed in the drive. An unexpected noise may be caused when switching on and off or during the SLEEP mode. The unit is working normally.

Your hard disk is a short-term memory medium. You should not use it for permanent data storage of recordings. Use your hard disk to view, edit and save recordings on a disc. If you encounter any problems, save the entire contents of your hard disk on another medium (disc). Please take the unit to your customer service. Recordings on a damaged hard disk cannot be rescued.

The unit must not be moved or exposed to vibrations or jolts because otherwise this would damage the hard disk.

Do not disconnect the mains plug during recording or playback. This can cause data loss.

Cigarette smoke, insect spray and other vapours must not penetrate the unit because otherwise this can cause faults.

Do not place the unit on any appliance which gives off heat. Do not erect the unit in places where condensation occurs, for example

- rooms with high humidity levels
- in the direct air flow of an air-conditioning system
- rooms with great fluctuations in temperature.

Condensation forms as moisture on a cold surface which is exposed to a sudden extreme change in temperature. This condensation can damage the hard disk and other parts inside the unit.

In such cases, do not switch the unit on. Wait for approx. two to three hours for the moisture to evaporate.

When changing the location of the unit,

- switch the unit off. Wait until "BYE" goes off in the display.
- disconnect the mains plug from the socket.
- do not lift the unit up until it has stopped completely (after approx. 2 minutes), because the hard disk runs on for a brief period after switching off.

Remaining recording time on the hard disk

This unit records with a data compression system (VBR - Variable bit rate). The length of the programmed recording is adjusted variably to the video data being recorded. This is why the display of the remaining recording time can differ from the remaining recording length. If there is not enough storage space for a recording, delete old titles from the hard disk.

Deleting playback lists does not enlarge the storage space.

Panasonic does not assume any liability for direct or indirect problems resulting in the loss of recordings or edited contents (data) and does not guarantee that the recorded or edited contents will work perfectly. This also applies to any repairs to the unit (also refers to parts which are not linked to the hard disk). No compensation is made for lost recordings or discs which have become defective.



The table shows an overview of the most important functions which can be recorded, played back and edited with the various formats on this unit. Not all functions are available to the same extent for all formats. Restrictions are stated separately in the corresponding description of the function.

▶ Playback Functions	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Playback of a recorded title (DIRECT NAVIGATOR)	✓					✓	✓	✓	✓	✓	✓	✓	
Starting playback with Disc menu		✓	✓		✓								
Playback starts with the last recorded title	✓					✓	✓	✓	✓	✓	✓	✓	
Playback starts from the beginning of the disc		✓	✓	✓	✓	✓(MP3)							
Changing the audio channel (DISPLAY)	✓	✓	✓		✓				✓				
Quick View (PLAY/x1.3)	✓												
TIME SLIP	✓					✓	✓	✓	✓	✓	✓	✓	
MANUAL SKIP	✓					✓	✓	✓	✓	✓	✓	✓	
CREATE CHAPTER	✓												
Slow-motion/Frame playback	✓	✓*	✓		✓**	✓	✓	✓	✓	✓	✓	✓	

✓* - film scenes only, ✓** - forwards direction

● Recording	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Flexible Rec	✓					✓		✓		✓		✓	
Playback during recording	✓												
Timer Recording	✓					✓		✓		✓		✓	
Timer Recording with Ext Link	✓					✓		✓		✓		✓	
Timer Recording via external devices	✓					✓		✓		✓		✓	
Recording via DV input	✓					✓		✓		✓		✓	
Manual recording via DV input	✓					✓		✓		✓		✓	

Functions of the DIRECT NAVIGATOR	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Playback	✓								✓				
Delete	✓					✓	✓	✓		✓	✓	✓	✓
Properties	✓					✓	✓	✓	✓	✓	✓	✓	✓
Edit	✓					✓	✓	✓		✓	✓	✓	✓
Enter Name	✓					✓	✓	✓		✓	✓	✓	✓
Set up Protection/Cancel Protection	✓									✓	✓	✓	✓
Partial Delete	✓												
Change Thumbnail	✓					✓	✓	✓		✓	✓	✓	
Divide Title	✓												
Playlist	✓								✓				
Edit Playlist	✓												

✓* - only Playback and Properties

Functions of the DVD/Card Management	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Disc Name	✓					✓	✓	✓		✓	✓		
Disc Protection	✓												
Delete all titles	✓												
Format Disc	✓							✓		✓	✓	✓	✓
Auto-Play Select						✓	✓	✓		✓	✓	✓	
Finalize						✓	✓	✓		✓	✓		
Create Top Menu												✓	



 CPRM (Content Protection for Recordable Media)

This unit is compatible with the CPRM copy protection system for recordable media. When using a CPRM-compatible disc, a programme can be recorded. Programmes broadcast with this copy protection system cannot be recorded to DVD-R or 2.8 GB DVD-RAM.

HDCP (High Bandwidth Digital Content Protection) is copy protection which is transferred via HDMI connections and partly via DVI. The units must be able to decode this copy protection for playback.

Recording formats

DVD Video Recording format (VR)

This format enables recording and playback.

Digital programmes limited to "one-time recording" can be recorded to a CPRM-compatible disc. You can record to a CPRM-compatible DVD-RAM.

Playback is only possible with a compatible DVD player. Use a DVD-RAM to record in DVD Video Recording format.

Suitable data for recording and playback: video and still pictures.

DVD-Video format (V)

This recording format is the standard DVD-Video. Digital programmes that are limited to "one-time recording" cannot be recorded.

To record in DVD-Video format, use a DVD-R/-R DL or -RW(V).

Suitable data for recording and playback: video.

+VR format

Digital programmes that are limited to "one-time recording" cannot be recorded.

To record in +VR format, use a +R/+R DL oder +RW.

Suitable data for recording and playback: video.

Licence information

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



Dolby Digital

Method of encoding digital signals. The signals are very much compressed in the process to enable recordings of large volumes of data.

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are registered trademarks of Dolby Laboratories.



DTS (Digital Theater Systems)

Sound system used in cinemas or movie theaters all over the world. "DTS" and "DTS 2.0 + Digital OUT" are trademarks of Digital Theater Systems, Inc.

MP3 or **MPEG 1 Audio Layer 3** is a file compression format used for digital audio files. It provides files of an extremely small size and may cause a consequential loss of quality. MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

HDAVI Control™

HDAVI Control™ is a trademark of Matsushita Electric Industrial Co., Ltd.



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



VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.

miniSD™ is a trademark of SD Card Association.

SD logo is a trademark.


CUSTOMER SERVICE

Should problems occur, please try to resolve them by referring to the following descriptions. If this does not help, you should contact your dealer or customer service.

Normal disc rotating sounds, atmospheric interference during reception, picture interference while fast-forwarding, and limited reception of the satellite programmes are not signs of a defective unit. If a disc cannot be played due to poor quality, try it again with a disc from Panasonic.

Page

ERROR MESSAGES		
	▶ The unit is malfunctioning.	
The error code H □□, U □□ or F □□ appears.	▶ The numbers following H, U or F indicate the status of the unit. • Switch the unit to Standby mode with ⏻ / I. - If the unit does not switch to Standby mode, press ⏻ / I for approx. 10 seconds or unplug it for a minute and then plug it back in. • Press ⏻ / I to switch on the unit. If this does not solve the problem, contact customer service with the displayed error code.	
Error code U59	▶ The unit is hot and switches to Standby mode for safety reasons. ▶ Wait approx. 30 minutes until the message disappears. Place the unit in a well ventilated location. Do not block the vents at the back of the unit.	
Error code U61	▶ The unit has found an error during recording or playback without an inserted disc. The unit proceeds with the recovery procedure. This procedure restores the normal operating mode. The unit is not defect. Please wait until the message goes off.	
Error code U71	▶ The connected unit is not suitable for connection to HDMI.	
Error code U72 Error code U73	▶ The HDMI connection does not work perfectly. ▶ The connected unit is not suitable for connection to HDMI. ▶ The HDMI cable is too long. ▶ The HDMI cable is broken.	
Error code U88	▶ A problem occurred during recording or playback of a disc. The unit is not defective, but is performing a restore procedure. Wait until the error message disappears from the display.	
HARD ERR	▶ The unit is not functioning properly. • Switch the unit off and back on again. - If this does not solve the problem, contact customer service.	
The unit automatically switches into standby mode.	▶ One of the unit's safety devices may have been activated. • Press ⏻ / I to switch on the unit.	
FUNCTION		
Unit not functioning.	▶ Check the connection to the power supply. ▶ The unit is in Standby mode for a Timer programming via external units. EXT-L appears in the display. • Press EXT LINK to switch off recording standby mode. • To cancel a recording prematurely, stop the transfer of the recording signal on the external unit.	21
The disc cannot be ejected.	▶ The unit is currently recording. • With the unit switched off, press STOP ■ and CH ▲ on the unit at the same time and hold for about 5 seconds. Contact your dealer. ▶ The above procedure cannot be executed if the child-safety feature is activated. • Switch off the child safety feature.	65
Access to the HDD is slow.	• The HDD (Hard disk drive) is in SLEEP mode. ("SLEEP" appears in the display of the unit).	



PICTURE No picture.	Check the connection to the TV, e.g. AV1.	8
	The PROGRESSIVE output is activated, but the connected TV is not progressive-capable.	61
There is picture interference.	Press and hold STOP ■ and PLAY/x1.3 on the unit at the same time for more than 5 seconds. The function is switched to half-picture (INTERLACE).	61
	- The [TV System] setting does not match that on the disc. - In STOP mode, press and hold STOP ■ and OPEN/CLOSE ▲ on the unit for more than 5 seconds. This switches the unit from PAL to NTSC or vice versa.	50
Television reception worsens when the unit is connected.	Check the antenna connection and the alignment of your antenna. You may need to use a signal amplifier.	
The TV picture format is not set correctly.	Check the [TV Aspect] setting in the [Connection] [Setup] menu.	50
No On-screen messages.	Change the [On-Screen Messages] setting in the [Display] [Setup] menu.	49
Poor picture in spite of good signal quality.	- Overmodulation makes the signal strength display go to red. - Readjust the picture with your room aerial until the picture quality improves.	45
SOUND No sound. Distorted sound. Volume set to quiet.	- Check the connections. - If you connected an amplifier, check the input mode. - Switch off the V.S.S. function if it causes problems.	8
		57
It is not possible to hear the desired sound type.	- Press DISPLAY to select the desired sound type. - Change the appropriate setting in the Sound Setup menu. - The sound cannot be switched on some discs.	57
The sound cannot be set for stereo or NICAM broadcasts.	- Connect external unit with audio cables even if you use a digital connection. - You can change the sound type when using DVD-RAM.	63
REMOTE CONTROL No functions.	- An incorrect remote control code was selected. - Check the batteries. - Point the remote control at the sensor on the unit. - The child lock feature has been activated.	65
		5
		65
		65
The TV cannot be operated.	An incorrect remote control code was selected.	65
DISPLAY The display light is weak.	Change the [FL Display] setting in the [Display] [Setup] menu.	49
"0:00" blinks on the unit display.	No time. Set the time in the [Others] [Clock] [Setup] menu.	52
External Input Video or audio is not recorded from an external unit.	- The external unit is not connected correctly. - The incorrect input channel AV2, AV3, AV4 or DV IN was selected.	63
		63
Software Update When are the software updates broadcast?	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.	53



PLAYBACK		
Playback does not start.	▶ The disc is dirty or badly scratched. ▶ You inserted a disc that is not suitable for playback. ▶ You inserted a blank disc.	66
DVD-Video will not play.	▶ Some DVD-Videos cannot be played if the security level has been changed.	47
No reaction when PLAY ► is pressed.	▶ ⓪ appears on the screen. The procedure is being prevented by the unit or the disc. ▶ The child lock feature has been activated.	65
A title or chapter is not played back after being selected.	▶ Some titles or chapters of DVD-Videos are not played back if the security level has been changed.	47
Soundtrack/subtitles cannot be selected or do not match the language selected in the Setup menu.	▶ The subtitles were not recorded on the disc or are not switched on.	47
	▶ The languages were not recorded on the disc. ▶ You may need to use the disc menu to select the languages.	15
The angle cannot be changed.	▶ The angle perspective can only be changed for scenes that were recorded from different angles.	56
You forgot your security password.	• Select the DVD drive and, while the disc tray is open, press and hold • REC and PLAY/x1.3 on the unit for at least 5 seconds.	
RECORDING		
Cannot record.	▶ Check whether the inserted disc is suitable for recording.	54
	▶ The disc is not formatted. Format the disc.	
	▶ The write-protection device on the cartridge is set to "PROTECT". Deactivate the write protection.	54
	▶ Deactivate the write protection in the DVD Management menu.	
	▶ The material that you want to record is copy-protected. The number of possible copies is limited with some programmes.	
	▶ Discs containing PAL and NTSC signals cannot be recorded.	
Some or all recorded programmes were lost.	▶ If there is a power cut during recording or processing, or if the unit is unplugged from the household mains socket, the programme may be lost or the disc may be damaged. Reformat the disc or use a new disc.	54
Timer Recording is not functioning.	▶ The Timer programming is defective, different Timer programmes overlap each other. Correct the programming.	20
	▶ Check the clock setting.	52
Timer Recording cannot be cancelled.	• With an EXT LINK-controlled recording via an external unit, press EXT LINK. The EXT-L display disappears. ▶ If you want to cancel the recording prematurely, stop the transfer of recording signal on the external unit. Press EXT LINK to switch off recording standby.	21
COPYING		
Noises from rotating Disc.	• When recording or high-speed copying on a Disc, the rotation noise is louder than normal.	
You cannot copy to a DVD-R etc. In High Speed Mode.	• Before recording on the hard disk [Rec for High Speed Copy], adjust to [On] in the [Setup] menu.	47
Copying also takes relatively long in the high-speed mode.	• Sometimes, not even high-speed compatible discs allow for recordings at maximum speed.	



TV Guide		
The displayed information is wrong.	‣ The broadcasting companies are responsible for the information. Deviations are possible when changes are made at the last minute.	
No or incomplete data.	‣ Date/time incorrectly set. ‣ The signal is too weak or no signal was found. Check the aerial. Realign the aerial and check the values with the signal quality in the [Setup] menu. ‣ The broadcasting companies are responsible for the information. Deviations are possible when changes are made at the last minute.	52 45
EPG database empty or incomplete after switching on.	‣ Downloading the data was not possible. Switch the unit to standby over night. ‣ Activate the EPG Download in the [Setup] menu.	67
No current data in spite of active EPG download function.	‣ Downloading the data was not possible. Switch the unit to standby over night.	
DVB-T		
No station found. Time not set.	‣ The signal is too weak or no signal was found. Check the aerial. Realign the aerial and check the values with the signal quality in the [Setup] menu. ‣ Repeat the auto setup.	53 45
Date/time incorrectly set.	‣ The transmission did not work. Repeat the Automatic Time Setting.	52
Unusual station sorting.	‣ The station sorting of this unit is pre-defined. Use profiles to sort the stations as you want them.	
No teletext.	‣ This DVD Recorder does not support analogue teletext. ‣ When subtitle is on or additional information in the Digital channel information is displayed, Digital Teletext does not work.	
No automatic station allocation in VIDEO Plus+.	‣ No unique code for the digital stations. Allocate the stations manually when programming for the first time. The DVD Recorder will then recognise the stations correctly in future.	
Which aerial is suitable for receiving DVB-T?	‣ Any (terrestrial) roof aerial can be used. Room rod aerials are also suitable. Use an active room aerial if the reception is poor.	
After the auto setup, there aren't any stations in the station list although found stations were displayed during auto setup.	‣ [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.	



HDMI		
Which accessories are required to hear multi-channel Surround Sound?	Multi-channel sound can only be played back with this unit if it is connected with an HDMI cable or a digital audio optical fibre cable to an amplifier with an integrated decoder.	
Switching on takes longer in spite of the Quick Start function.	All units connected by HDMI are checked while switching on. This can take a while.	
No picture on the television set.	Check whether the television set and DVD Recorder are connected correctly with the HDMI cable. If the external unit has been connected correctly, the HDMI message appears briefly on the display of the DVD Recorder.	59
	- If more than four units are connected with HDMI cables, you may possibly not be able to see a picture. Reduce the number of connected units. - If the unit is connected via COMPONENT VIDEO OUT to a television unit which is not progressive-compatible, no unit can be connected with HDMI. The [Progressive] setting is automatically switched to [On] in the Setup if a unit is connected up with HDMI.	50
Wrong screen format.	If a television set is connected via HDMI AV OUT, in the [Setup] menu, set the setting [Aspect for 4:3 Video] to [4:3].	51
	Check the setting [TV Aspect] in the [Setup] menu.	50
Part of the picture appears duplicated some of the time when using the output. COMPONENT VIDEO OUT	- Do not connect this unit to the television set with an HDMI cable. - In the Setup menu, set the [Progressive] setting to [Off].	50
No sound. Low volume. Sound with interference. The required audio type cannot be heard.	- The amplifier connected via HDMI does not support CPPM and the HDMI Ver. 1.1. Standard. No Multi Audio-Disc can be played back. - The sound is not played back if the Bitstream Signal is output from HDMI AV OUT or OPTICAL DIGITAL AUDIO OUT. - If more than four units are connected with HDMI cables, you may possibly not hear any sound. Reduce the number of connected units. - If the unit is connected with an HDMI cable to a television set and OPTICAL DIGITAL AUDIO OUT is used as audio output, in the [Setup] menu, set the setting [Digital Audio Output] to [Optical only]. - When one or several units are connected via HDMI AV OUT, it is possible for there to be interference with the sound. Select another connection type.	51
HDAVI Control is not working.	In the [Setup] menu, change the setting [Control with HDMI / Q Link] to [HDMI and Q Link].	51
	- Use a fully wired HDMI cable. - The connected unit possibly does not support HDAVI control.	59



Bitstream

Digital multi-channel audio data (e.g. 5.1-channel) before decoding to the individual channels.

Decoder (e.g. DTS / Dolby Digital)

A decoder converts the coded audio signals of the DVDs back to the original signals. This procedure is called decoding.

Digital audio optical fibre cable

When this cable is connected, the electronic signals for output to the amplifier are converted into optical signals.

DPOF (Digital Print Order Format)

DPOF is the standard format for printing pictures recorded with a digital camera etc. It enables automatic printing in a photo shop or on your own printer.

Chrominance signal

The three signals red, green and blue can be converted into three other signals: luminance Y (luminance signal) and 2 chrominance signals P_B/P_R (colour difference signals).

Brightness signal Y

Analogue video signal showing the brightness levels of the picture, regardless of the colour signal (C) chrominance signal. It allows for higher resolution and colour reproduction true to the original colour.

LPCM (Linear PCM)

These are uncompressed digital signals, similar to those on CDs. LPCM sound can be used during recording in XP mode.

PCM (Pulse Code Modulation)

Standard procedure for recording uncompressed digital audio signals.

RGB (Red Green Blue)

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.

Scan frequency

When converting (encoding) to a digital signal, the (analogue) sound signal is scanned at certain time intervals. The number of scans per second is called the scan frequency. The higher the scan frequency, the better the original sound is reproduced.

Sound mixing

This is the remixing of the multi-channel sound that exists on some discs to two channels for stereo output. Sound mixing makes sense e.g. if you want to playback the 5.1-channel sound of a DVD over your television speakers. However, some discs do not allow mixing. In this case, only the two front channels are output.

TIFF (Tag Image File Format)

This is a system used for compressing/decoding colour still pictures, a common format for storing high quality images on digital cameras and other devices.

Informations

Specifications



Power supply: AC 220 V - 240 V 50 Hz		Dimensions: approx. 430 mm (W) x 58 mm (H) x 329 mm (D)	
Power consumption: 33 W (approx. 2 W in power save mode)		Weight: approx. 4.3 kg	
		Operating temperature: 5°C - 40°C	
		Operating humidity: 10% - 80% RH (no condensation)	
LASER specification LASER product of class 1 Wavelength: 662 nm for DVD, 780 nm for CD Laser performance: No hazardous radiation is emitted with the safety protection.		Recording Disc DVD-RAM disc: Ver.2.0 Ver.2.1/3XSPEED DVD-RAM Revision 1.0 Ver.2.2/5X SPEED DVD-RAM Revision 2.0 for General Ver.2.0 for General Ver.2.0/4X SPEED DVD-R Revision 1.0 for General Ver.2.x/8X SPEED DVD-R Revision 3.0 for General Ver.2.x/16X SPEED DVD-R Revision 6.0 for DL Ver.3.0 for DL Ver.3.x/4x SPEED DVD-R for DL Revision 1.0 Ver.1.1 Ver. 1.x/2X SPEED DVD-RW Revision 1.0 Ver. 1.x/4X SPEED DVD-RW Revision 2.0 Ver. 1.x/6X SPEED DVD-RW Revision 3.0 Ver.1.0, Ver.1.1, Ver.1.2, Ver. 1.3, for DL Ver. 1.0 Ver. 1.1, Ver.1.2/4X SPEED DVD-R disc : DVD-RW disc: +R disc: +RW disc:	
Optical pick-up System with 1 lens, 2 integration units.			
Recording format DVD-RAM: DVD Video Recording format DVD-R: DVD-Video format DVD-R DL: DVD-Video format DVD-RW: DVD-Video format +R, +RW, +R DL Playback Disc DVD-RAM (VR format), DVD-R (Video format, MP3, JPEG), DVD-R DL (Video format), DVD-RW (Video format, VR format), +R, +R DL, +RW, DVD-VIDEO, DVD-AUDIO, CD-AUDIO (CD-DA), Video CD, SVCD (conforming to IEC62107), CD-R/CD-RW (CD-DA, Video CD, SVCD, MP3/JPEG formatted discs)			
Regional Code #2		HDD 160/250 GB	
Video interface Input Input impedance: 75 Ohm. AV1 SCART Video: 1 Vp-p AV2 SCART Video: 1 Vp-p, RGB Video: 0.7Vp-p (PAL), S Video: Y: 1 Vp-p, C: 0.3 Vp-p (PAL) AV3 VIDEO Video: 1 Vp-p AV3 S VIDEO IN Y: 1 Vp-p, C: 0.3 Vp-p (PAL) AV4 IN Video: 1 Vp-p AV4 S VIDEO IN Y: 1 Vp-p, C: 0.3 Vp-p (PAL) Output For 75 Ohm termination. AV1 SCART Video: 1 Vp-p; RGB: 0.7 Vp-p S Video: Y: 1 Vp-p, C: 0.3 Vp-p (PAL) AV2 SCART Video: 1 Vp-p VIDEO Video: 1 Vp-p S VIDEO Y: 1 Vp-p, C: 0.3 Vp-p (PAL) COMPONENT- Y: 1 Vp-p, P _B : 0.7 Vp-p, P _R : 0.7 Vp-p VIDEO OUT (PAL: 576p/576i, NTSC:480p/480i) Antenna Receive Input 75 Ohm Termination RF Converter Output not provided Active Antenna not provided		Video interface TV system: PAL Colour Signal 625lines 50fields, NTSC Colour Signal 525Lines 60Fields Recording System: MPEG 2 (Hybrid VBR) DV Input IEEE1394 Standard (4pin), (PAL/NTSC) HDMI output Version 1.2a (576i/480i/ 576p/480p 720p 1080i) (EDID Ver. 1.3) 19pin type A SD Card Slot SD Memory Card Slot	
		Audio interface Input Input impedance: more than 10 kOhm. AV1 SCART Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz AV2 SCART Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz AV3 AUDIO Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz AV4 AUDIO Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz Output The output impedance of each output terminal is less than 1 kOhm. AV1 SCART Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz AV2 SCART Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz AUDIO Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz OPTICAL Optical connection (PCM, Dolby Digital, DTS, MPEG) Recording System: Dolby Digital 2ch, Linear PCM (XP mode)	
Tuner Tuner System [PAL-I] Channel Coverage UHF: CH 21-68; [DVB-T] UHF: CH21-68			
Quick Start: From Power on, recording starts in about 1 second after the ● REC button is pressed. If the GUIDE button is pressed while the unit is off, the Electronic Programme Guide (EPG) displays in about 1 second. (If the TV is connected to the DVD-Recorder with Scart, COMPONENT VIDEO, VIDEO or S VIDEO)			
Note: The values given for weight and dimension are approximate values. The technical data can be changed without advanced notice.			



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- If you see this symbol -
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