

Hard Disk Recorder

Operating Instructions

Hookups and Settings

Watching TV Programmes

Recording

Playback

Erasing and Labelling

Copying to an External HDD Device

Settings and Adjustments

Additional Information



WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only. Batteries or batteries installed apparatus shall not be exposed to excessive heat such as sunshine, fire or the like.

Precautions

- The supplied AC adaptor must be used to power this recorder. Check that the AC adaptor operating voltage is identical with your local power supply.
- To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.
- Install this system so that the mains lead can be unplugged from the wall socket immediately in the event of trouble.



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)



Disposal of waste batteries (applicable in the European Union and other European countries with separate collection systems)

Notice for customers: the following information is only applicable to equipment sold in countries applying EU directives.

The manufacturer of this product is Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan. The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

Precautions

This equipment has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 metres.

On safety

Should any solid object or liquid fall into the cabinet, unplug the recorder and have it checked by qualified personnel before operating it any further.

About the hard disk drive

The hard disk has a high storage density, which enables long recording durations and quick access to the written data. However, it can easily be damaged by shock, vibration or dust, and should be kept away from magnets. To avoid losing important data, observe the following precautions.

- Do not apply a strong shock to the recorder.
- Do not place the recorder in a location subject to mechanical vibrations or in an unstable location.
- Do not place the recorder on top of a hot surface, such as a VCR or amplifier (receiver).
- Do not use the recorder in a place subject to extreme changes in temperature (temperature gradient less than 10 °C/hour).
- Do not move the recorder with its mains lead connected.
- Do not disconnect the mains lead while the power is on.
- Do not move the recorder for one minute after you have unplugged the mains lead.
- Do not attempt to replace or upgrade the hard disk by yourself, as this may result in malfunction.

- When disconnecting the mains lead, turn off the power and make sure that the hard disk drive is not operating (for at least 30 seconds after the power indicator has turned off and all recording stopped).

If the hard disk drive should malfunction, you cannot recover lost data. The hard disk drive is only a temporary storage space.

About repairing the hard disk drive

- The contents of the hard disk drive may be checked in case of repair or inspection during a malfunction or modification. However, the contents will not be backed up or saved by Sony.
- If the hard disk needs to be formatted or replaced, it will be done at the discretion of Sony. All contents of the hard disk drive will be erased, including contents that violate copyright laws.

On power sources

- The recorder is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the recorder itself has been turned off.
- If you are not going to use the recorder for a long time, be sure to disconnect the recorder from the wall outlet. To disconnect the mains lead, grasp the plug itself; never pull the cord.
- Observe following points to prevent the mains lead being damaged. Do not use the mains lead if it is damaged, as doing so may result in an electric shock or fire.
 - Do not pinch the mains lead between the recorder and wall, shelf, etc.
 - Do not put anything heavy on the mains lead or pull on the mains lead itself.

On AC adaptor

- Use the supplied AC adaptor for this recorder, as other adaptors may cause a malfunction.
- Do not disassemble or reverse-engineer.
- Do not confine the AC adaptor in a closed place such as a bookshelf or an AV cabinet.
- Do not connect the AC adaptor to a traveler's electric transformer, which may generate heat and cause a malfunction.
- Do not drop or apply shock.

On placement

- Place the recorder in a location with adequate ventilation to prevent heat build-up in the recorder.
- Do not place the recorder on a soft surface such as a rug that might block the ventilation holes.
- Do not place the recorder in a confined space such as a bookshelf or similar unit.
- Do not place the recorder in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place the recorder in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the recorder away from equipment with strong magnets, such as microwave ovens, or large loudspeakers.
- Do not place heavy objects on the recorder.

On recording

Make trial recordings before making the actual recording.

On compensation for lost recordings

Sony is not liable and will not compensate for any lost recordings or relevant losses, including when recordings are not made due to reasons including recorder failure, or when the contents of a recording are lost or damaged as a result of recorder failure or repair undertaken to the recorder. Sony will not restore, recover, or replicate the recorded contents under any circumstances.

IMPORTANT NOTICE

Caution: This recorder is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Plasma display panels and projection televisions are especially susceptible to this.

If you have any questions or problems concerning your recorder, please consult your nearest Sony dealer.

About this manual

- Instructions in this manual describe the controls on the remote. You can also use the controls on the recorder if they have the same or similar names as those on the remote.
- The on-screen display illustrations used in this manual may not match the graphics displayed on your TV screen.
- NEED-to-know information (to prevent incorrect operation) is listed under the  icon. NICE-to-know information (tips and other useful information) is listed under the  icon.

Table of Contents

WARNING	2
Precautions	2
Guide to Parts and Controls	7

Hookups and Settings

Step 1: Connecting the Aerial Cable	10
Step 2: Connecting the TV and Audio Component	11
Connecting an HDMI cable	11
Connecting other cables	12
Step 3: Easy Setup	13

Watching TV Programmes

Watching TV	14
Viewing two pictures simultaneously – PIP (Picture-in-Picture)	15
About the “Control for HDMI” functions for BRAVIA Sync (for HDMI connections only)	16
Pausing a TV Broadcast While Watching TV (Time Shift Mode)	16

Recording

Using the EPG (Electronic Programme Guide) Display	17
Recording a TV Programme Using the EPG	18
Setting the Timer Manually (Manual)	19
Checking/Changing/Canceling Timer Settings (Timer list)	19
Checking/changing timer settings	19
Canceling timer settings	20
Recording a TV Programme While Watching	20
Adjusting the recording duration	21
Recording for Two Programmes	21

Playback

Playing Recorded Programmes	22
Playing from the beginning of the programme you are recording (Chase Play)	24
Playing repeatedly (Repeat)	24
Playing from the USB Device	25
Playing photo files	25
Playing MP3/video (data) files	26
Copying photo/music/video (data) files to the HDD	26

Erasing and Labelling

Erasing a Folder/Title/File (Erase)	28
Labelling a Folder/Title/File (Rename)	28

Copying to an External HDD Device

Before Copying the Recorded Titles	30
Connecting an external HDD device	30
Formatting an external HDD device	30
Copying the Recorded Titles	31

Settings and Adjustments

Using the System Menu	32
Recorder Settings (Setup)	33
AV Setting	33
Subtitle	34
Time	34
Region Setting	34
Parental Control	34
Playback Settings	35
Power Management	35
Aerial Reception Settings (Channel)	36
Channel Scan	36
Edit Channel	36
Other Settings (Others)	37
Diagnostics	37
Disk	37
Connection	37
Maintenance	37

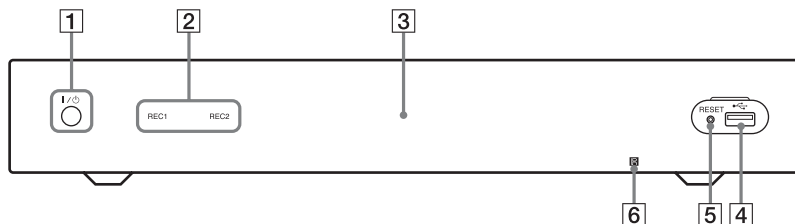
Additional Information

Troubleshooting	38
Notes About This Recorder	41
Specifications	42
Notices and Licenses for Software used in this Product	44
Index	53

Guide to Parts and Controls

For more information, see the pages in parentheses.

Front panel



1 I/⏻ (on/standby)

Turns the recorder on or off.

2 REC1/REC2 indicators

3 Power indicator

Lights up in white when the recorder is turned on.

4 USB jack (25, 26, 30)

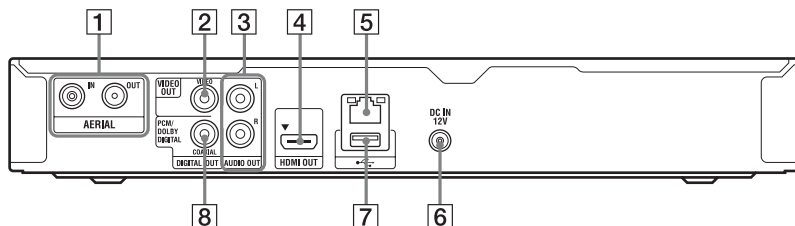
Connect a USB device to this jack.

5 RESET

When the recorder does not operate properly, press and hold the RESET button for more than 3 seconds. When picture noise appears after you change the “HDMI Resolution” setting, briefly press the RESET button (page 33).

6 (remote sensor)

Rear panel



1 AERIAL IN/OUT jacks (10)

2 VIDEO OUT jack (12)

3 AUDIO OUT L/R jacks (12)

4 HDMI OUT jack (11)

5 Maintenance and Service terminal

Used for maintenance and service.

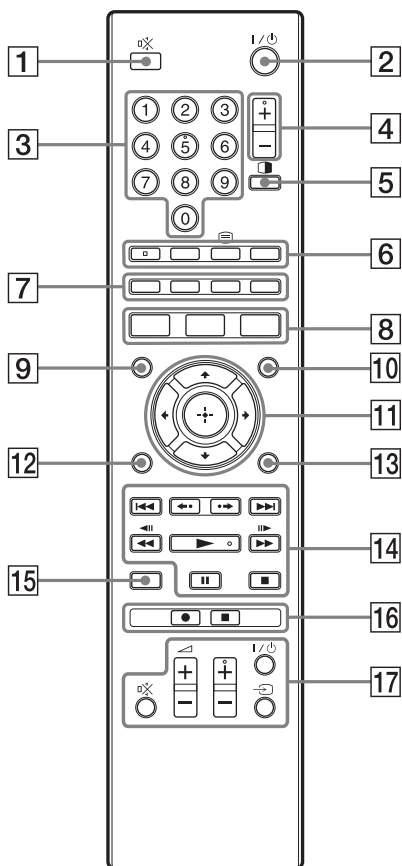
6 DC IN jack (13)

7 USB jack (25, 26, 30)

Connect a USB device to this jack.

8 DIGITAL OUT (COAXIAL) jack (12)

Remote



Number 5, AUDIO, PROG +, ►, and TV PROG + buttons have a tactile dot. Use the tactile dot as a reference when operating the recorder.

1 (muting)

Turns off the recorder's output sound. If the sound is not turned off by pressing (muting), press TV (muting).

2 (on/standby)

Turns the recorder on or off.

3 **Number buttons**

Enters the programme numbers, etc.

4 **PROG (programme) +/-**

Changes a programme.

5 (PIP) (15)

Displays the sub-screen.

6 **AUDIO**

Selects an audio language.

SUBTITLE

Selects a subtitle language.

(search) (17)

Searches for an EPG programme.

TV/RADIO

Switches between TV and radio channels.

7 **Colour buttons (red/green/yellow/blue)**

Shortcut keys for variable functions.

8 **SYSTEM MENU (32)**

Displays the System Menu.

TITLE LIST (22, 25, 28)

Displays the "Title list."

GUIDE (17)

Displays the EPG screen.

9 **TIMER (19)**

Displays the "Timer list."

10 **INFO (information) (14)**

Displays the programme information.

11 //// (enter)

Selects a desired item.

12 **RETURN**

Returns to the previous display.

13 **OPTIONS**

Available items differ depending on the situation.

14 (previous/next) (23)

(instant replay/instant advance) (23)

(search/freeze frame) (23)

(play) (22)

(pause) (23)

(stop) (22)

15 REPEAT (24)

Repeats a title/file.

16 ● REC

Starts recording a title.

■ REC STOP

Stops recording a title.

17 TV I/⏻ (on/standby) (43)

TV ↵ (input select) (43)

TV PROG (programme) +/- (43)

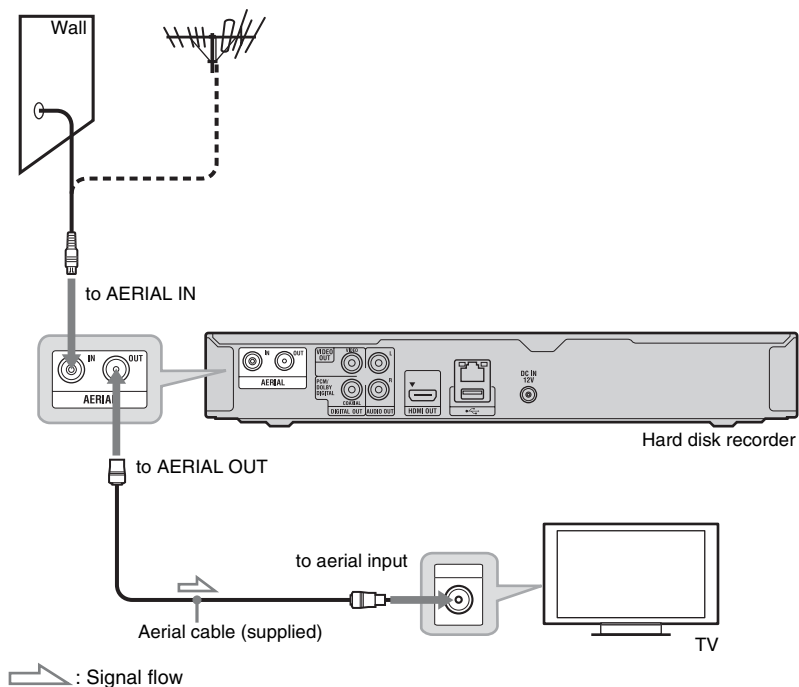
TV ▴ (volume) +/- (43)

TV 🔇 (muting) (43)

Step 1: Connecting the Aerial Cable

Connect the aerial cable by following the steps below. Do not connect the mains lead until you have made all the connections.

To watch TV in standby mode, set “Standby Mode” to “Mode 2” in “Step 3: Easy Setup” (page 13) or use a splitter (not supplied) to divide aerial input signals between the TV and the recorder.



- 1 Disconnect the aerial cable from your TV, and connect it to AERIAL IN on the rear panel of the recorder.**
- 2 Connect AERIAL OUT of the recorder to the aerial input of your TV using the supplied aerial cable.**

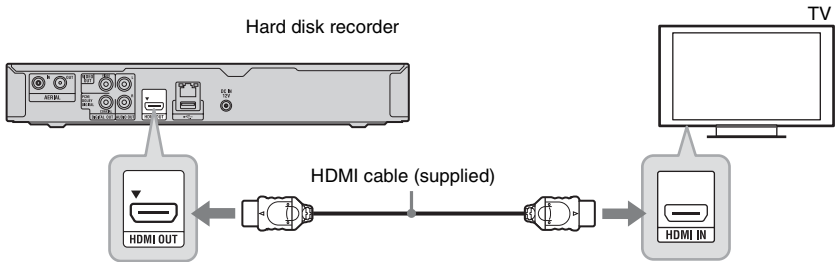
Step 2: Connecting the TV and Audio Component

Select one of the following patterns according to the input jack on your TV, or audio component.

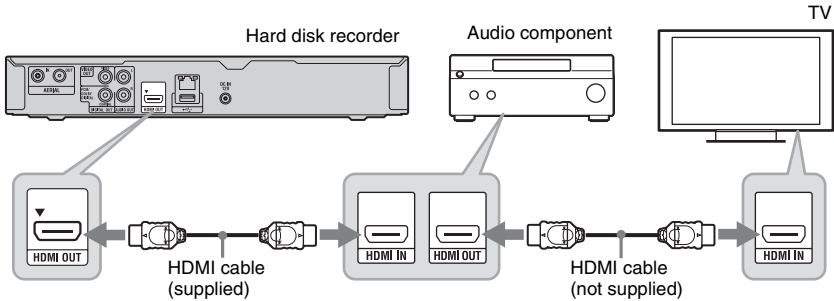
Connecting an HDMI cable

Use a certified HDMI cable to enjoy high-quality digital picture and sound through the HDMI OUT jack.

To connect a TV

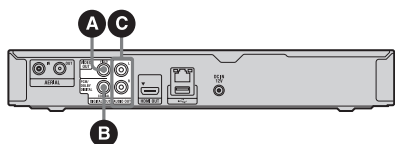


To connect a TV through an audio component



When connecting a Sony TV/audio component that is compatible with the “Control for HDMI” function, see page 16.

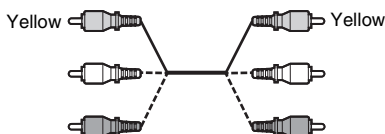
Connecting other cables



To connect to video jacks

Connecting to video jacks will enable you to view pictures.

A Video output jack



You will enjoy standard quality images.

To connect to audio jacks

Connecting to audio jacks will enable you to listen to sound.

B Digital audio output jack (COAXIAL)

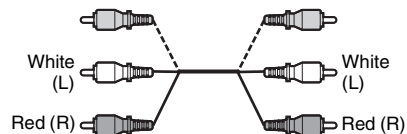


If your audio component has a Dolby* Digital decoder and a digital input jack, use this connection. You can enjoy Dolby Digital (5.1ch) surround effects.

* Manufactured under license from Dolby Laboratories.

Dolby and the double-D symbol are trademarks of Dolby Laboratories.

C Audio L/R (left/right) output jacks

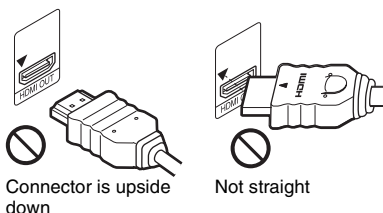


This connection will use your TV's or audio component's two speakers for sound.

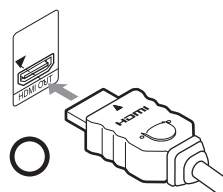
When connecting to the HDMI jack

Follow the steps below. Improper handling may damage the HDMI jack and the connector.

- 1 Carefully align the HDMI jack on the rear of the recorder and the HDMI connector by checking their shapes. Make sure the connector is not upside down or tilted.



- 2 Insert the HDMI connector straight into the HDMI jack. Do not bend or apply pressure to the HDMI connector.

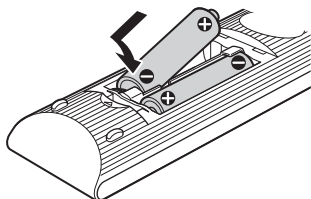


- Do not connect more than one type of video cable between the recorder and your TV at the same time.
- You cannot connect the HDMI OUT jack to DVI jacks that are not HDCP compliant (e.g., DVI jacks on PC displays).
- When connecting to the HDMI OUT jack or DIGITAL OUT (COAXIAL) jack, after you have completed the connection, make the appropriate settings in the "AV Setting" setup (page 33). Otherwise, no sound or a loud noise will come from your speakers.
- Be sure to disconnect the HDMI cable when moving the recorder.
- Do not press the recorder against the cabinet wall when you place the recorder in a cabinet with the HDMI cable connected. It may damage the HDMI jack or the HDMI cable.
- Do not twist the HDMI connector while connecting to or disconnecting from the HDMI jack to avoid damaging the HDMI jack and connector.

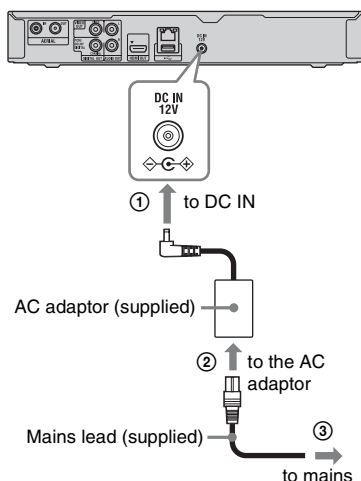
Step 3: Easy Setup

Be careful not to disconnect the cables or exit the “Easy Setup” function during this procedure.

- 1 Insert two R6 (size AA) batteries by matching the ⊕ and ⊖ ends on the batteries to the markings inside the battery compartment.**



- 2 Connect the supplied AC adaptor in the numeric order shown in the following illustration.**



- 3 Turn on the recorder and your TV. Then switch the input selector on your TV so that the signal from the recorder appears on your TV screen.**

- 4 Follow the on-screen instructions to make each setting, and press ⊕ to proceed.**

◆ TV Type

- If you have a widescreen TV, select “16:9 Widescreen.”
- If you have a standard TV, select “4:3 LetterBox.”

◆ Region Setting

Select your region using ↑/↓.

◆ Full Rescan

The recorder automatically starts scanning channels. Select “Save” when the scanning is finished.

◆ Standby Mode

Select the standby mode suited to your set up.

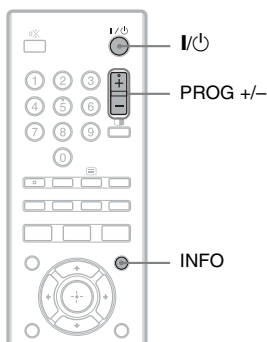
- Select “Mode 1” for the minimum standby power consumption.*
- Select “Mode 2” if you need to maintain the aerial signal to a TV connected to the aerial out jack on the recorder when the recorder is in standby mode.

* If you select “Mode 1” and want to watch TV in standby mode, use a splitter (not supplied) to divide aerial input signals between the TV and the recorder (page 10).



- If you want to change “Standby Mode” setting after “Easy Setup,” press SYSTEM MENU and select “Setup” then “Power Management” (page 35). You can change “TV Type” (page 33) and “Full Rescan” (page 36) in a similar way.
- The recorder sets the clock automatically.

Watching TV



1 Turn on the recorder and your TV. Then switch the input selector on your TV so that the signal from the recorder appears on your TV screen.

2 Press PROG +/- to select the programme position. You can also select the programme position using the number buttons and +.

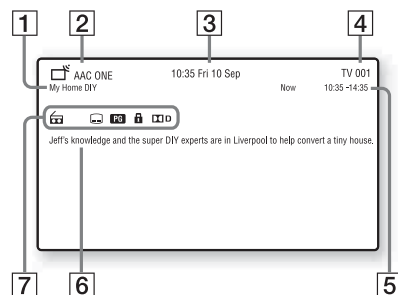
To select a programme using the Channel List

- While watching TV, press +. The "Channel List" appears. To switch to "Radio" or "TV," press ←/→. You can also select the Favourite List only if you created the Favourite List (page 15).
- Select a programme position using ↑/↓, and press +. The selected programme is displayed.

To display the programme information

Press INFO.

The display differs depending on the programme. Press INFO again to display the detailed information. To exit the programme information, press RETURN.



- Programme name
- Station name
- The current time and date
- Programme number
- Programme start and end time
- Programme contents
- Icons that indicate types of the programme (Radio, Subtitle, PG Parental Level, Lock (page 36), Dolby Digital)

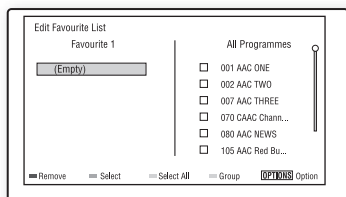


To switch the display between the current and next programme, press ←/→.

To set the Favourite List

You can quickly display the channel to watch if you stored your favourite channels.

- 1 Press SYSTEM MENU and select "Channel."
- 2 Select "Edit Favourite List" in "Edit Channel."
Enter your four-digit password using the number buttons. The default password is "0000."
 - To rename the Favourite List, press OPTIONS to select "Rename Group," and press +.



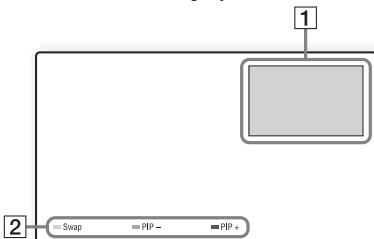
- 3 Select a channel from "All Programmes" you want to add to the Favourite List using ↑/↓, and the green button ("Select").
 - To scroll the list display by page, press ⏮/⏭.
- 4 Repeat step 3 to select all of the channels you want to add.
- 5 Press the red button ("Add"). The selected channels are added to the Favourite List.
 - To remove a channel from the Favourite List, select a channel and press the red button ("Remove").
 - To exit the "Edit Favourite List," press RETURN.

Viewing two pictures simultaneously – PIP (Picture-in-Picture)

You can watch two services simultaneously on one screen by pressing  (PIP) while watching TV. When using the PIP function, the audio from the main screen is output.

Press while watching TV.

The sub-screen is displayed.



- 1 Sub-screen
To move the screen, press ←/↑/↓/→.
- 2 Colour buttons
Press the same colour button on the remote.
 Red button ("Swap"): Switches between the sub-screen and the main screen.
 Yellow button ("PIP-")/Blue button ("PIP+"): Changes the programme position on the sub-screen.

To exit the PIP function

Press  again.



- The sub-screen only supports SD services.
- Depending on the situation, the sub-screen may not be displayed.

About the “Control for HDMI” functions for BRAVIA Sync (for HDMI connections only)

By connecting Sony components that are compatible with the “Control for HDMI” function with a supplied HDMI cable, operation is simplified as below:

- **One-Touch Play**
With one touch of the following buttons, the connected TV turns on and the input selector on the TV is switched to the recorder automatically.
 - **GUIDE**: Displays the EPG screen (page 8).
 - **TITLE LIST**: Displays the “Title list” (page 8).
 - **SYSTEM MENU**: Displays the System Menu (page 8).
- **System Power-Off**
When you turn the TV off using the power button on the TV’s remote, the recorder and components compatible with the “Control for HDMI” function turn off automatically. However, the recorder does not turn off while recording or dubbing even if you turn off the TV.
- **BRAVIA Sync display**
You can control the recorder by pressing the SYNC MENU button on the TV’s remote.



- Depending on the connected component, the “Control for HDMI” function may not work. Refer to the operating instructions supplied with the component.
- You can use the BRAVIA Sync display feature only when the connected TV has the SYNC MENU button. For details on BRAVIA Sync, refer to the operating instructions supplied with the TV.
- To use the BRAVIA Sync features, set “Control for HDMI” to “On” (default) in the “Connection” setup (page 37).

Pausing a TV Broadcast While Watching TV (Time Shift Mode)

You can pause a current TV broadcast, then continue watching the programme at a later time. This is useful when you receive an unexpected phone call or visitor while watching TV.

- 1 Press **II** while watching a TV broadcast tuned by the recorder.**
The recorder switches to the “Time Shift Mode,” and the picture pauses.
- 2 Press **▶** to resume watching the TV broadcast.**

You can fast forward/fast reverse, etc. from the point where “Time Shift Mode” starts to the live broadcasting point.

To exit Time Shift Mode

Press **■**.



- You can change the duration of the “Time Shift Mode.” Set “Time Shift Duration” in the “Playback Settings” setup (page 35).
- Set “Time Shift Auto-Start” to “On” in the “Playback Settings” setup (page 35) to start the “Time Shift Mode” from the point where the recorder is turned on or the programme position is changed.



- Time-Shift-recorded titles are not saved to the HDD.
- When the playback reaches the live broadcasting point, the display switches to the current TV broadcast.
- The “Time Shift Mode” is cancelled depending on the situation.

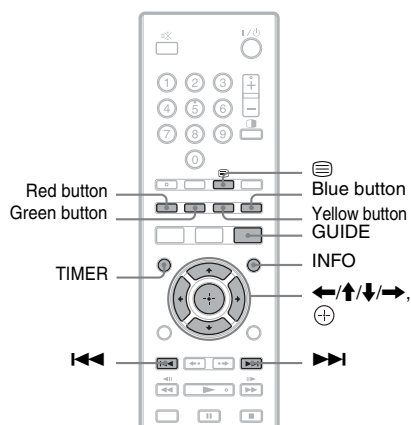
Recording

Using the EPG (Electronic Programme Guide) Display

The Electronic Programme Guide is a guide showing the television programme schedule for a day or more at a time on your television.

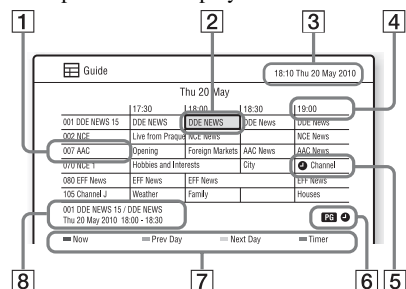


Digital Services availability and content depend on the broadcaster.



Press GUIDE.

Example of EPG Display:



- 1 Programme number and station name
- 2 Indicates the currently selected programme and allows you to move around the list.

- 3 Indicates the current time and date.
- 4 Time slot
- 5 Indicates if “Programme Recording” is associated with the programme (page 18).
- 6 Icons that indicate types of the programme
 - PG**: Shows the parental level of the programme (page 34).
 - : Indicates if “Programme Recording” is associated with the programme (page 18).
- 7 Colour buttons
- 8 Displays the programme information selected on the time slot.

Available buttons in the programme list

Buttons	Operations
◀/↑/↓/▶	Selects the desired item.
◀◀▶▶	Goes to the next or previous page.
⌂	Searches for a programme.
INFO	Displays the detailed information of the selected programme.
Colour buttons (red, yellow, green, blue)	Activates the same colour function on the screen.
⊕	Displays the recording menu or the selected programme.
GUIDE	Closes the EPG display.

To search for programmes (Keyword/ Genre)

- 1** Press  while the EPG screen is displayed.
- 2** Press the yellow button to switch between “Keyword” and “Genre.”
- 3** Select a genre or input a keyword, and press .
To input a keyword, see “Labelling a Folder/Title/File (Rename)” (page 28).

Recording a TV Programme Using the EPG

You can easily make a timer recording by selecting a programme on the EPG display and pressing $\oplus$.

Before you start recording...

- Check that the HDD has enough available space for the recording (page 37).
- You can open up disc space by erasing titles (page 28).

1 Press GUIDE.

2 Select a programme using $\leftarrow/\uparrow/\downarrow/\rightarrow$, and press $\oplus$.

3 Select a type of recording, and press $\oplus$.

- “Programme Recording”: You cannot change the settings manually.
- “Manual Single Recording”: You can change the start/end recording time.
- “Manual Daily/Weekly Recording”: You can set the timer for the same daily or weekly programmes. You can also change the start/end recording time, and set the title name using the number buttons.

4 Press $\oplus$ to select “OK.”

A message indicating that the timer setting is complete appears, and $\odot$ appears next to the programme which is set for “Programme Recording.” Your recorder will automatically begin recording when the programme starts. There is no need to turn off the recorder before the timer recording starts.

- To modify the timer setting, see page 19.



- If you press REC in step 2, “Programme Recording” can be set.
- This recorder automatically adjusts the start/end recording time for the programme set for “Programme Recording” even if the start/end time of the programme has changed.



When you stop the recording during recording the programme set for “Manual Daily/Weekly Recording,” all the same daily or weekly programme recording is cancelled.

Setting the Timer Manually (Manual)

Set the date, time, and programme position of the programme manually.

1 Press **TIMER**.

The “Timer list” display appears.



2 Press the yellow button (“Add”).

3 Select “Single recording” or “Daily/ Weekly Recording,” and press **+**.

Select “Daily/ Weekly Recording” when you want to set the timer for the same daily or weekly programmes. The “Timer Setting” display appears.

4 Adjust the selected item using **←/→**/**↑/↓**, and press **+**.

“Service”: Sets the programme position.

“Start Time”: Sets the start time.

“Duration”: Sets the recording duration.

“Daily/ Weekly Recording”: Sets the timer for recording daily or weekly. (for “Daily/ Weekly Recording” only)

“Title Name”: Sets the title name using the number buttons.

5 Select “OK,” and press **+**.

To modify the timer setting, see below.



If you select “Single” using **←/→** in step 1, “Single recording” can be set. If you select “Every” using **←/→** in step 1, “Daily/ Weekly Recording” can be set.

To turn off the Timer list

Press **TIMER** again.

Checking/Changing/ Cancelling Timer Settings (Timer list)

Checking/changing timer settings



- The timer settings for the same daily or weekly programmes cannot be changed. Cancel the timer setting, and then set the timer again.
- When you change the EPG “Programme Recording” settings,  disappears and the function that adjusts the start/end recording time is automatically disabled.

1 Press **TIMER**.

The “Timer list” display appears.



- All: All the timer settings (Timer settings for the same daily or weekly programmes are listed separately.)
- Single: Timer settings for single recording (“Programme Recording”/ “Manual Single Recording”/ “Single recording”)
- Every: Timer settings for the same daily or weekly programmes (“Manual Daily/Weekly Recording”/ “Daily/ Weekly Recording”) (Only programme titles are listed.)
- To switch to the “Single” or “Every” list, press **←/→**.

2 Select the timer setting you want to check/change using **↑/↓**, and press **+**.

To check the timer settings, press **INFO** instead of **+**.

3 Select an item using **↑/↓**, and press **+**.

- 4** Adjust the selected item using **←/↑/↓/→**, and press **+**.

To enter a character, see “Labelling a Folder/Title/File (Rename)” (page 28)).

- 5** Select “OK,” and press **+**.

Cancelling timer settings

- 1** Press **TIMER**.

The “Timer list” display appears.

- 2** Select the timer setting you want to cancel, and press the red button (“Cancel”).

- 3** Select “Yes,” and press **+**.



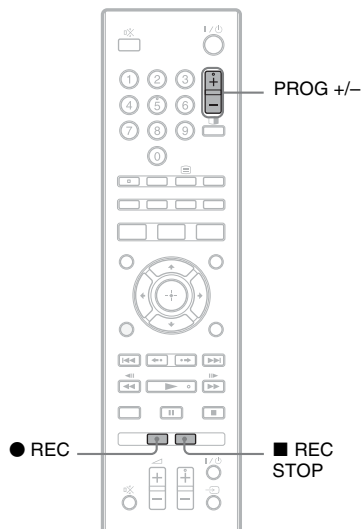
When you erase a programme which is set for “Daily/ Weekly Recording,” all the same daily or weekly programme recording is cancelled.

To turn off the Timer list

Press **TIMER** again.

Recording a TV Programme While Watching

This section introduces the basic operation to record a current TV programme to the hard disk (HDD).



- 1** Press **PROG +/-** to select the programme position.

- 2** Press **● REC**.

Recording starts and stops automatically in 120 minutes.

To stop recording

Press **■ REC STOP** and then press **+**.



- After pressing the **● REC** button, it may take a short while to start recording.
- If there is a power failure, the programme you are recording may be erased.

Adjusting the recording duration

You can set the recording duration after pressing the ● REC button.

- 1 Press ● REC while recording.
- 2 Adjust the recording duration using ↑/↓, and press ⊕.

Recording for Two Programmes

The recorder can record up to two programmes at once. Also, you can set timer recording two programmes at the same time.

Press ● REC while watching a TV programme and recording another programme.

Recording starts on the current programme.

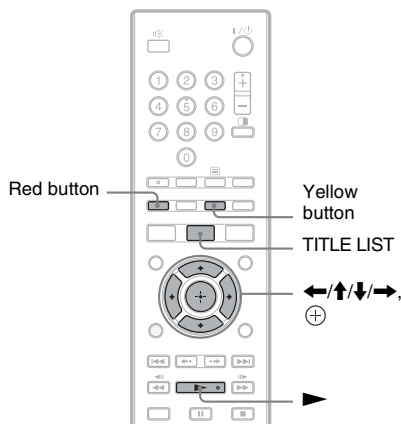


Press INFO to check the programme number/station name and the tuner number (REC1/REC2).

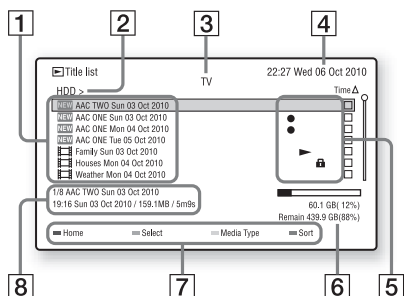
To stop recording

- 1 Press ■ REC STOP.
- 2 Select the one you want to stop using ↑/↓, and press ⊕.

Playing Recorded Programmes



1 Press TITLE LIST.



1 Title name

For the title set to be recorded manually, the programme station name and recording date and time are displayed (page 19).

2 Shows the current Drive. Press ◀/▶ to move to another Drive.

3 Media type: TV, Radio, Music, Photo or Video(Data)

4 Indicates the current time and date.

- 5 Icons that indicate types of the titles
 (● Currently being recorded,
 ▶ Currently being played,
 🔒 Locked title)

6 HDD space

7 Colour buttons

Activates the same colour function on the screen.

8 The detailed information of the selected title

2 Select a title using ↑/↓, and press ⊕ or ▶.

Playback starts from the selected title.



- When you play some titles, your four-digit password may be required. The default password is “0000.” To change the password, see “Change Password” in “Parental Control” setup (page 34).
- Each time you sort the titles by the same sort method, the titles are sorted in ascending/descending order.



- Only the files of the selected media type are displayed in the folder. When other media type of files are stored in the same folder, press the yellow button (“Media Type”) to switch the media type.
- Recorded titles shorter than 30 seconds cannot be played.

To stop playback

Press ■ (stop).

To lock a title

Select “Lock” in “Edit” in the options menu.

To resume playback from the point where you stopped (Resume Play)

Select the title you want to play from the point you stopped and press ⊕. And then select “Resume Play” and press ⊕ or ▶.

Various playback options

Buttons	Operations
 (instant replay/instant advance)	Replays the scene/briefly fast forwards the scene. You can change the interval for instant replay/instant advance (page 35).
 (previous/next)	When playing recorded titles: Goes to the beginning/end of the current title. When playing photo/music/video (data) files: Goes to the previous/next file.
 *1 (fast reverse/fast forward)	Fast reverses/fast forwards the title. Search speed changes as follows: Fast forward 2 → 4 → 16 → 64 To resume normal playback, press  .
 *2 (freeze frame)	Plays one frame at a time when pressed briefly in pause mode. To resume normal playback, press  .
 (pause)	Pauses playback (including Radio titles). To resume normal playback, press  .

*1 Recorded titles/video (data) files only.

*2 Recorded titles only.



To play a recorded title in slow motion (playback direction only), press **OPTIONS** and select “Slow Forward” in “Playback.”

Playing from the beginning of the programme you are recording (Chase Play)

Chase Play allows you to view the recorded part of a programme while the recording is being made. You do not need to wait until the recording finishes.

Press TITLE LIST and select the title which is being recorded, and press ►.

Playback starts from the beginning of the programme you are recording.



You can also play a previously recorded programme while recording programmes (Simultaneous Rec and Play).

Playing repeatedly (Repeat)

You can repeatedly play a single title or selected titles on the HDD.

- 1 Press TITLE LIST.**
- 2 Select a title using ↑/↓, and press the green button ("Select").**
- 3 Press ⊕ to play the selected title(s).**
- 4 Press REPEAT.**

Repeat playback of the selected title(s) starts.

Repeat mode changes by pressing REPEAT.

◀1: Repeats a single title.

◀ALL: Repeats the selected titles.

To play a specific portion repeatedly (Repeat A-B)

- 1** Press OPTIONS to select "Playback" and then "Repeat A-B" during playback.
- 2** Press ⊕ at the starting point (point A) of the portion to be played repeatedly.
- 3** Press OPTIONS to select "Playback" and then "Repeat A-B."
- 4** Continue playing to locate the ending point (point B) and press ⊕. Repeat A-B play starts.
To cancel Repeat A-B play, press OPTIONS to select "Playback" and then "Repeat A-B," and press ⊕.



"Repeat A-B" can be set only within the same title.



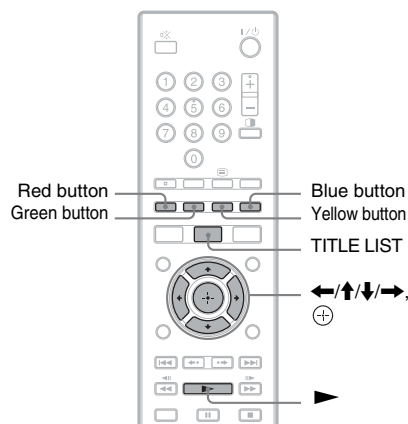
- Repeat play cannot be set during recording.
- When recording starts during repeat play, repeat play will be cancelled.

To cancel repeat play

Press REPEAT again.

Playing from the USB Device

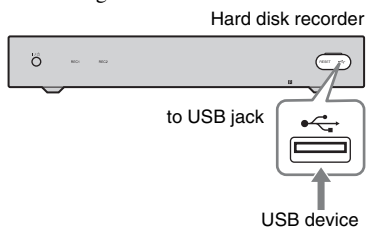
For playable USB devices, see “Playable types of files” (page 42).



Playing photo files

1 Connect the USB device to the USB jack on the recorder.

Refer to the operating instructions supplied with the USB device before connecting.



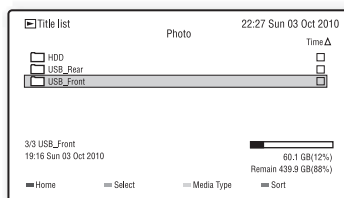
Before you connect the USB device, open the USB jack cover on the front panel.



- Some USB devices may not work with this recorder.
- The recorder can recognise Mass Storage Class (MSC) devices that are FAT-compatible.

2 Press TITLE LIST.

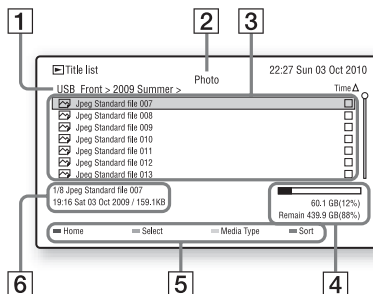
The “Title list” appears.



Press the same colour button on the remote.

- Red button (“Home”): Goes back to the top layer.
- Yellow button (“Media Type”): Switches the list by media type (TV/ Radio/Photo/Music/Video(Data)).

3 Select “USB_Front” or “USB_Rear,” and press +.



1 Current folder

2 Media Type

3 Folder/file name

To display a photo file list, select a folder, and press +.

4 HDD/USB space

5 Colour buttons

Activates the same colour function on the screen.

6 The detailed information of the selected folder/file.

4 Select a photo file, and press ►.

A slideshow of the photo files in the current folder starts.

- To rotate the image, press ◀/▶. To go back to the slideshow, press ► again.
- To go back to the Photo List, press TITLE LIST.



When you select photo files using the green button (“Select”), only the selected photo files are played in slideshow.



Do not remove the USB device during operation. Stop playback and turn off the list menu beforehand.

To stop playback

Press ■ (stop).

To play a slideshow with the sound

- 1 Press OPTIONS during a slideshow.
- 2 Select “BGM” and press ⊕.
- 3 Select a music folder you want to use for BGM, and press the red button (“Select Path”).
The slideshow starts with the sound.
To stop the slideshow, press ■ (stop).

To disconnect the USB device

While the “Title list” is displayed, press OPTIONS to select “Remove USB,” and press ⊕.



You can set the slideshow speed in “Slideshow Time” in the “Playback Settings” setup (page 35).

Playing MP3/video (data) files

- 1 Follow steps 1 to 3 of “Playing photo files” on page 25.
- 2 Select a music or video (data) file, and press ►.
Playback starts.

To stop playback

Press ■ (stop).

Various playback options

See “Various playback options” on page 23.

To play a file repeatedly

See “Playing repeatedly (Repeat)” on page 24.

To disconnect the USB device

See “To disconnect the USB device” on page 26.

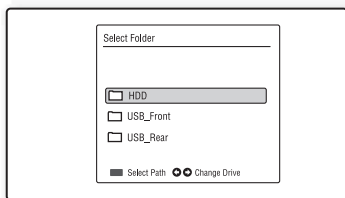
Copying photo/music/video (data) files to the HDD

Before you start copying...

- Check that the HDD has enough available space for the copying (page 37).
- You can open up disc space by erasing titles/files (page 28).

- 1 Follow steps 1 to 3 of “Playing photo files” on page 25.
- 2 Select the folder/file you want to copy using ↑/↓.
 - To copy multiple folders/files, press the green button (“Select”).
- 3 Press OPTIONS to select “Copy To,” and press ⊕.

4 Select “HDD” and press ⊕.



5 Select a folder you want to copy to using ←/→.

6 Press the red button (“Select Path”).

Copying starts.

Wait until the copying status bar disappears.

To cancel copying

Select “Cancel” in the copying status bar, and press ⊕.

To disconnect the USB device

See “To disconnect the USB device” on page 26.



To copy the folders/files to an external HDD device, see “Copying to an External HDD Device” (page 30).



- If you select “Move To” in step 3, the folder/file is moved and the original folder/file is deleted.
- Folders/files cannot be copied or moved during playback of titles (including Radio titles) or photo/music/video (data) files.

Erasing a Folder/Title/ File (Erase)

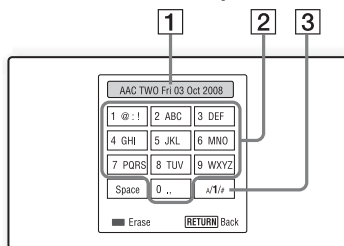
- 1** Press TITLE LIST.
- 2** Select the folder/title/file you want to erase using $\uparrow/\downarrow$.
To erase multiple folders/titles/files, press the green button ("Select").
- 3** Press OPTIONS to select "Erase," and press $\oplus$.
The display asks for confirmation.
- 4** Select "Yes," and press $\oplus$.
The selected folder/title/file is erased.



- If you erase a folder in the "Title list," the titles/ files in the folder are all erased even if they are not displayed.
- Folders/titles/files cannot be erased during playback of titles (including Radio titles) or photo/music/video (data) files.

Labelling a Folder/Title/ File (Rename)

- 1** Press TITLE LIST.
- 2** Select the folder/title/file you want to rename using $\uparrow/\downarrow$.
- 3** Press OPTIONS to select "Edit" and then "Rename," and press $\oplus$.



- 1** Input row
- 2** Ten key buttons
- 3** Switches the character types.
- 4** Press $\leftarrow/\uparrow/\downarrow/\rightarrow$ to select a character, and press $\oplus$.
The selected character appears in the input row.
 - To switch the characters, press $\oplus$ repeatedly.
 - To erase a character, press the red button ("Erase").
- 5** Press $\uparrow$ to move the highlight to the input row, and press $\oplus$.
The new name is displayed in the "Title list."
 - To cancel the setting, press RETURN.

To use the number buttons on the remote

Press the number button while the input row is highlighted.

- To switch the characters, press the number button repeatedly.
- To insert a space, press SUBTITLE.
- To switch the character types, press .



Only the characters displayed on the on-screen keyboard can be input with this recorder.

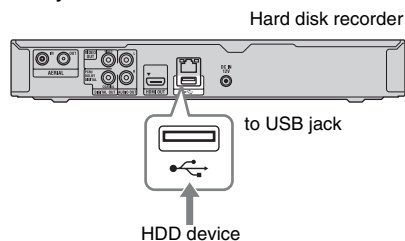
Copying to an External HDD Device

Before Copying the Recorded Titles

You can copy the recorded titles to a connected external device as a backup copy.

Connecting an external HDD device

Connect the external HDD device to the USB jack on the recorder.



To disconnect the USB device, while the “Title list” is displayed, press **OPTIONS** to select “Remove USB.”

Formatting an external HDD device

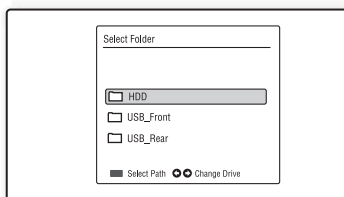
Before copying the titles to an external HDD device for the first time, format the external HDD. When you format an external HDD device, all of the content on the external HDD will be erased.

The external HDD device must have at least 160 GB capacity to be formatted.

Select “Format Disk” in the “Disk” setup (page 37), and press **+**.

Copying the Recorded Titles

- 1 Connect the external HDD device to the USB jack on the recorder.**
- 2 Press TITLE LIST.**
- 3 Select a title you want to copy using $\uparrow/\downarrow$.**
To copy multiple titles, press the green button ("Select").
- 4 Press OPTIONS to select "Copy To," and press $\oplus$.**
- 5 Select "USB_Front" or "USB_Rear" you want to copy to, and press $\oplus$.**



- 6 Select a folder you want to copy to using $\leftarrow/\rightarrow$.**
- 7 Press the red button ("Select Path").**
Copying starts.
Wait until the copying status bar disappears.

To cancel copying

Select "Cancel" in the copying status bar, and press $\oplus$.

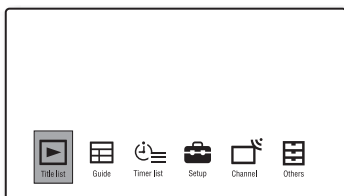


- The titles recorded on this recorder are compliant with the XFS file system and can be played on this recorder only.
- If you select "Move To" in step 4, the title is moved and the original title is deleted.

Using the System Menu

Press SYSTEM MENU when you need to change the settings of the recorder. The default settings are underlined.

- 1 Press SYSTEM MENU.**
- 2 Select a menu icon using ←/→, and press +.**



Title list (page 22, 25, 28)

Displays the titles stored on the HDD or the connected USB device.

Guide (page 17)

Displays the EPG (Electronic Programme Guide) screen.

Timer list (page 19)

Displays the “Timer list” to set the timer manually or to check, change, or cancel the timer settings.

Setup (page 32)

You can adjust the recorder settings to suit your preferences.

Channel (page 36)

You can scan channels or edit the “Channel List” and Favourite List.

Others (page 37)

You can check various information, format the HDD, or reset the recorder, etc.

- 3 Select the desired setup item using ↑/↓, and press +.**

See the explanations in the following sections.

To exit the System Menu

Press SYSTEM MENU again.

Recorder Settings (Setup)

AV Setting

TV Type

Select the playback picture size according to the type of connected TV.

4:3	Select this when connecting to a 4:3 screen TV without a wide mode function.
16:9	Select this when connecting to a widescreen TV or TV with a wide mode function.

Display Format

Select the playback picture size according to the type of connected TV.

◆ When you set “TV Type” to “4:3”

16:9 Letter Box	Displays the 16:9 picture with bands on the upper and lower portions of the screen.
14:9 Letter Box	Displays the 14:9 picture with bands on the upper and lower portions of the screen.
Centre Cut Out	Enlarges the centre portion of the picture.

◆ When you set “TV Type” to “16:9”

Full	Select this when you can change the aspect ratio on your TV.
Pillar Box	Select this when you cannot change the aspect ratio on your TV. Shows a 4:3 size video with the aspect ratio as it is.

HDMI Resolution

Selects the type of video signals output from the HDMI OUT jack. For details, refer also to the instruction manual supplied with the TV, etc.

Auto	Normally select this. The recorder outputs signals starting from the highest resolution acceptable to the TV: 1080p > 1080i > 720p > 576p > 576i If the resulting image format is undesirable, try another setting that suits your TV.
576i	Outputs 576i video signals.
576p	Outputs 576p video signals.
720p	Outputs 720p video signals.
1080i	Outputs 1080i video signals.
1080p	Outputs 1080p video signals.



When picture noise appears after you change the “HDMI Resolution” setting, briefly press the RESET button on the front panel.

HDMI Colour

Selects the method of outputting video signals for the HDMI jack.

Auto	Automatically detects the connected TV type, and switches to the matching colour setting.
RGB	Select this when connecting to an RGB device.

Dolby Digital

Selects whether or not to output Dolby Digital signals.

On	Select this when the recorder is connected to an audio component with a built-in Dolby Digital decoder.
Off	Select this when the recorder is connected to an audio component without a built-in Dolby Digital decoder.



If the HDMI OUT jack is connected to equipment not compatible with Dolby Digital signals, the PCM signals will be automatically output even when you select “On.”

Lip-Sync Adjustment (msec.)

Adjusts the gap between picture and sound by delaying the sound output (0 to 250 milliseconds). Enter a numeric value using the number buttons or $\uparrow/\downarrow$, and press $\oplus$.



“Lip-Sync Adjustment (msec.)” is available only when a TV is connected to the DIGITAL OUT (COAXIAL) jack.

Subtitle

TV Subtitle

On	Displays subtitles for TV programmes all the time when a programme has subtitles.
Off	Subtitles for TV programmes are not displayed. To display the subtitles, press SUBTITLE repeatedly.

Time

Time Zone Setting

Auto	Normally select this.
GMT -12 to GMT +13	Set the time zone manually.



When you select “Auto” (Default), the recorder sets the summer time automatically.

Region Setting

NSW/ACT	Select this when in New South Wales/Australian Capital Territory.
VIC	Select this when in Victoria.
QLD	Select this when in Queensland.
SA	Select this when in South Australia.
WA	Select this when in Western Australia.
TAS	Select this when in Tasmania.
NT	Select this when in Northern Territory.

Parental Control

Parental Level

Watching some TV programmes can be limited according to the level you set. To watch or play programmes with a level that exceeds the set level, your password is required.

Select a block level, and press $\oplus$.

Off $\rightarrow$ R (Restricted 18+) $\rightarrow$ AV 15+ (Adult Audience, Strong violence 15+) $\rightarrow$ MA 15+ (Mature Adult Audience 15+) $\rightarrow$ M (Mature Audience 15+) $\rightarrow$ PG (Parental Guidance Recommended) $\rightarrow$ G (General) $\rightarrow$ All (All block).

Change Password

You can change the password that gives access to the “Parental Control” settings, etc. Enter your four-digit password using the number buttons, then enter a new password.



The default password is “0000.”

Playback Settings

Instant Replay

Sets the interval for instant replay (“15 Sec.”/“30 Sec.”/“60 Sec.”).

Instant Advance

Sets the interval for instant advance (“30 Sec.”/“60 Sec.”/“120 Sec.”).

Slideshow Time

Sets the time each frame is displayed (“3 Sec.”/“5 Sec.”/“10 Sec.”)

Time Shift Duration

Sets Time Shift recording time (“30 Min.”/“1 Hour”/“2 Hours”).

Time Shift Auto-Start

<u>On</u>	Time Shift function starts automatically when you start watching TV or change a programme position.
Off	Time Shift function starts when you press II while watching TV.

Power Management

Standby Mode

<u>Mode 1</u>	During “Standby Mode,” equipment such as TV connected to the aerial output would not receive TV signal. To watch TV, use a splitter to divide aerial input signals between the TV and the recorder (page 10).
Mode 2	During “Standby Mode,” equipment such as TV connected to the aerial output will receive TV signal. The standby power consumption is higher than that of “Mode 1.”

Auto Standby

<u>On</u>	The recorder automatically turns off when you do not press any buttons for 3 hours in stop mode. The display asks for confirmation about 2 minutes before the recorder turns off. If you want to keep the recorder on, press any key.
Off	Turns off the function.

Aerial Reception Settings (Channel)

Channel Scan

Full Rescan

Erases all the registered channels and scans the channels again.

- 1 Enter your four-digit password using the number buttons.
- 2 Select “Yes” using $\leftarrow/\rightarrow$, and press $\oplus$.
The recorder starts scanning the channels.
- 3 Select “Save” using $\uparrow/\downarrow$, and press $\oplus$.

Update Scan

Scans for newly available channels.

- 1 Enter your four-digit password using the number buttons.
The recorder starts scanning the channels.
- 2 Select “Save” using $\uparrow/\downarrow$, and press $\oplus$.

Manual Scan

- 1 Enter your four-digit password using the number buttons.
- 2 Set “Channel” and “Frequency” using $\uparrow/\downarrow$ and $\oplus$.
- 3 Select “Scan” using $\uparrow/\downarrow$, and press $\oplus$.
The recorder starts scanning the channels.
- 4 Select “Save” using $\uparrow/\downarrow$, and press $\oplus$.



- After “Full Rescan,” select your region using $\leftarrow/\uparrow/\downarrow/\rightarrow$ if necessary.
- Scanning may take time depending on your region.
- When you set channels using “Full Rescan,” the timer settings in the “Timer list” will be erased.

Edit Channel

Edit Channel List

Erases or locks channels in the “Channel List.”

- 1 Enter your four-digit password using the number buttons.
- 2 Select a channel you want to edit using $\uparrow/\downarrow$, and press the corresponding colour button.
 - Red button (“Remove”): Removes the selected channel from the “Channel List.”
 - Green button (“Select”): Selects the highlighted channel.
 - Yellow button (“Select All”): Selects all the channels.
 - Blue button (“Lock”): Locks the selected channel.



Timer recording does not start while editing the Channel List.

Before you start editing, check the “Timer list” for any timer recordings that are due to start while editing the Channel List.

Edit Favourite List

Adds, removes or groups channels in the Favourite List.

- 1 Enter your four-digit password using the number buttons.
- 2 Select a channel you want to edit using $\leftarrow/\uparrow/\downarrow/\rightarrow$, and press the corresponding colour button.
 - Red button (“Remove”/“Add”): Removes/adds the selected channel from/to the Favourite List.
 - Green button (“Select”): Selects the highlighted channel.
 - Yellow button (“Select All”): Selects all the channels.
 - Blue button (“Group”): Groups the selected channels.

Auto Service Update

On	Automatically scans and updates the “Channel List.”
Off	Turns off the function.

Other Settings (Others)

Diagnostics

System Message

When the recorder has failed to record a title, an error message is displayed.

System Information

Displays the system information.

Signal Information

Displays the signal information.

Disk

Disk Information

You can check used/remaining space on the HDD and USB device.

Format Disk

Formats the internal or external HDD to resolve the problem when the hard disk error occurred. All of the recorded content on the HDD will be erased. Enter your four-digit password and follow the on-screen instructions.

After formatting the internal or external HDD, the recorder restarts.



Format an external HDD device only when you want to copy the titles recorded on this recorder to the external HDD device for the first time.

Repair Disk

Repairs the HDD to resolve the problem when the hard disk error occurred. The recorded content on the HDD will not be erased. Enter your four-digit password and follow the on-screen instructions. After repairing the HDD, the recorder restarts.

Connection

Control for HDMI

On	Allows you to use the "Control for HDMI" function (page 16).
Off	Turns off the function.

Maintenance

Software Update

You can check the current software version of the built-in digital tuner and keep it up to date with the latest software. To update the software, enter your four-digit password.

Over Air Download	Updates the software automatically. Normally, select this position.
USB	Updates the software manually.



Do not turn off the recorder during updating the software.

Factory Settings

You can reset the recorder to all its factory settings. Enter your four-digit password and follow the on-screen instructions.

Additional Information

Troubleshooting

If you experience any of the following difficulties while using the recorder, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

Power

The power does not turn on.

- ➔ Check that the AC adaptor is connected securely to the DC IN jack on the rear panel of the recorder.
- ➔ Check that the mains lead is connected securely to the mains.

The power of the recorder turns off at the same time as the TV is turned off.

- ➔ This is caused by the BRAVIA Sync features. Set “Control for HDMI” to “Off” in the “Connection” setup to cancel this function (page 37).

Tuner

The channel is not found or stored or missed.

- ➔ Make sure that your aerial is properly connected to the recorder.
- ➔ Confirm with your dealer that you are in an area that can receive a digital signal.
- ➔ Check your aerial installation.

Picture

There is no picture.

- ➔ Re-connect all connecting cables securely.
- ➔ The connecting cables are damaged.
- ➔ Check the connection to your TV (page 10).
- ➔ Switch the input selector on your TV so that the signal from the recorder appears on the TV screen.
- ➔ Set “Standby Mode” to “Mode 2” in the “Power Management” setup (page 35).
- ➔ A scrambled channel is selected.

Picture noise appears.

- ➔ The aerial signal may be weak. Check the signal strength in “Signal Information” in the “Diagnostics” setup (page 37). When the signal strength is poor, amplify the aerial signal using an aerial amplifier (not supplied).
- ➔ Noise may appear in the pictures recorded on the HDD, which is due to the characteristics of HDD, and is not a malfunction.

There is no picture or picture noise appears when connected to the HDMI OUT jack.

- ➔ Try the following: ① Turn the recorder off and on again. ② Turn the connected equipment off and on again. ③ Disconnect and then connect the HDMI cable again.
- ➔ The recorder is connected to an input device that is not HDCP compliant.
- ➔ When picture noise appears after you change the “HDMI Resolution” setting, briefly press the RESET button on the front panel.

There is no TV programme reception.

- ➔ Try “Full Rescan” or “Update Scan” in the “Channel Scan” setup (page 36). If the problem persists, perform “Manual Scan.”

The picture does not fill the screen.

- ➔ Set “TV Type” and “Display Format” in the “AV Setting” setup in accordance with the screen size of your TV (page 33).

Sound

There is no sound.

- ➔ Re-connect all connections securely.
- ➔ The connecting cable is damaged.
- ➔ The input source setting on the audio component or the connection to the audio component is incorrect.
- ➔ The recorder is in reverse play, fast-forward, slow motion, or pause mode.
- ➔ If the audio signal does not come through the DIGITAL OUT (COAXIAL)/HDMI OUT jacks, check the "AV Setting" setup (page 33).
- ➔ The volume is turned off by pressing M . Press M again to restore the sound.

No sound is output from the HDMI OUT jack.

- ➔ Try the following: ①Turn the recorder off and on again. ②Turn the connected equipment off and on again. ③Disconnect and then connect the HDMI cable again.
- ➔ The HDMI OUT jack is connected to a DVI device (DVI jacks do not accept audio signals).
- ➔ The equipment connected to the HDMI OUT jack does not conform to the audio signal format. In this case, set "Dolby Digital" to "Off" in the "AV Setting" setup (page 33).

The sound is breaking up.

- ➔ The signal strength is low. You can check the signal strength in "Signal Information" in the "Diagnostics" setup (page 37).
- ➔ Check aerial installation.

Recording/Timer recording

The programme position cannot be changed from the programme position you are recording.

- ➔ Set the TV's input source to "TV."

Nothing was recorded even though you set the timer setting correctly.

- ➔ There was a power failure during recording.
- ➔ The channel was erased after the timer recording was set. See "Edit Channel List" in the "Edit Channel" setup (page 36).
- ➔ The mains lead was disconnected.
- ➔ The programme contains copy protection signals (pay-per-view) that restrict copying, or a scrambled channel is selected.
- ➔ Check "System Information" in the "Diagnostics" setup (page 37).
- ➔ More than two timer settings are overlapped (page 21).
- ➔ There is not enough disc space for the recording.

Recording does not stop after you press $\blacksquare$.

- ➔ Press $\blacksquare$ REC STOP.

Timer recording is not complete or did not start from the beginning.

- ➔ There was a power failure during recording. If the power recovers when there is a timer recording, the recorder resumes recording but the resumed recording is stored as another title.
- ➔ More than two timer settings are overlapped (page 21).
- ➔ There is not enough disc space for the recording.

Playback

The recorder does not start playback from the beginning.

- ➔ Resume play was activated (page 22).

The music/photo/video (data) files do not play.

- ➔ The files are not recorded in a format that the recorder can play (page 42).

Time Shift Mode does not work.

- ➔ Set the TV's input source to the recorder, and use the recorder's tuner to watch TV programmes.
- ➔ Time Shift Mode is not available when recording two programmes simultaneously (page 21).

External HDD

The external HDD device cannot be formatted.

- ➔ The external HDD device must have at least 160 GB capacity to be formatted.

The copied titles in an external HDD cannot be played.

- ➔ The titles recorded on this recorder can be played on this recorder only.

The recorded titles that are copied to an external HDD device cannot be loaded.

- ➔ Try "Repair Disk." Press SYSTEM MENU to select "Others," "Disk," then "Repair Disk" (page 37).

Display

The folder/title/file or station name is not correctly displayed.

- ➔ Depending on the situation, letters or symbols that the recorder cannot display are replaced with "._."

The power indicator is flashing when I/⏻ is pressed.

- ➔ The recorder is in the process of turning on/off. Do not disconnect the mains lead.

The REC1/REC2 indicator is flashing.

- ➔ There is not enough disc space for the recording. Open up disc space by erasing titles.

Remote control

The remote does not function.

- ➔ The batteries are weak.
- ➔ The remote is too far from the recorder.
- ➔ The remote's manufacturer code returned to the default setting when you replaced the batteries. Reset the code (page 43).
- ➔ The remote is not pointed at  (remote sensor) on the recorder.
- ➔ The  (muting) button may not work when "Dolby Digital" is set to "On" in the "AV Setting" setup (page 34).

Others

You do not have the password.

- ➔ The default password is "0000." To change the password, see "Change Password" in the "Parental Control" setup (page 34).

The recorder does not detect a USB device connected to the recorder.

- ➔ Make sure that the USB device is securely connected to the recorder (page 25).
- ➔ Check if the USB device or a cable is damaged.
- ➔ Check if the USB device is on.
- ➔ The USB device is connected via a USB hub. Connect the USB device directly to the recorder.
- ➔ Try the following: ①Disconnect and then connect the USB cable again. ②Turn the recorder off and on again.

The BRAVIA Sync features do not operate.

- ➔ Your TV is not compatible with the BRAVIA Sync features.
- ➔ "Control for HDMI" is set to "Off" in the "Connection" setup (page 37).
- ➔ The recorder is connected to the TV via an amplifier. Connect the recorder directly to the TV.

The recorder does not operate properly.

- ➔ Press and hold the RESET button on the front panel (page 7) for more than 3 seconds.
- ➔ When static electricity, etc., causes the recorder to operate abnormally, turn off the recorder and wait until the power indicator on the front panel completely turns off. Then, unplug the recorder and after leaving it off for a while, plug it in again.

The Parental Control does not work.

- ➔ Check the "Parental Control" setup (page 34).

Notes About This Recorder

On operation

- If the recorder is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside the recorder. Should this occur, the recorder may not operate properly. In this case, if the recorder is on, leave it on (if it is off, leave it off) for about an hour until the moisture evaporates.
- When you move the recorder, protect it from any shock. If you don't, the hard disk drive may be damaged (page 2).

On adjusting volume

Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

On replacement of parts

In the event that this unit is repaired, repaired parts may be collected for reuse or recycling purposes.

Specifications

System

Transmission standards:

DVB-T

Channel coverage:

VHF: AS6 to AS12

UHF: AS27 to AS69

The above channel coverage merely ensures the channel reception within these ranges. It does not guarantee the ability to receive signals in all circumstances. The channels that can be received differ depending on the region.

Aerial out:

75-ohm asymmetrical aerial socket

Recording format:

DVB-T: DR (Direct Recording)

Inputs and outputs

AUDIO OUT:

Phono jack/2 Vrms/10 kilohms

VIDEO OUT:

Phono jack/1.0 Vp-p

DIGITAL OUT (COAXIAL):

Phono jack/0.5 Vp-p/75 ohms

HDMI OUT:

HDMI™ Connector

USB:

USB jack (For connecting digital still camera, USB memory and external hard disk drive)

General

Power requirements:

DC 12 V 2.3 A

DC 12 V 3.3 A (AC adaptor)

Power consumption:

31 W

Dimensions (approx.):

320 × 50.5 × 231 mm (width/height/depth) incl. projecting parts

Hard disk drive capacity:

1 TB

Mass (approx.):

2.2 kg

Operating temperature:

5°C to 35°C

Operating humidity:

25% to 80%

AC adaptor:

220 – 240 V AC, 50/60 Hz

Supplied accessories:

Mains lead (1)

Aerial cable (1)

HDMI cable (1)

AC adaptor (1)

Remote commander (remote) (1)

R6 (size AA) batteries (2)

Specifications and design are subject to change without notice.

Playable types of files

Type	File format	Extensions
Music	MP3 (MPEG-1 Audio Layer III)	“.mp3”
Photo	JPEG	“.jpg,” “.jpeg”
Video(Data)	MPEG-4 ASP	“.avi”



- The recorder will play any data with the extension “.mp3,” “.jpeg,” “.jpg” or “.avi” even if they are not in MP3, JPEG or MPEG-4 ASP format. Playing these data may generate a loud noise which could damage your speaker system.
- Some files cannot be played.
- Proceeding to the next or another folder may take some time.
- This recorder supports JPEG image files that are width 6,500 pixels by height 4,500 pixels at the maximum and no more than 12 MB.
- This recorder supports MP3 files recorded with a sampling frequency of 32 kHz, 44.1 kHz, and 48 kHz.
- No more than a 4 GB MP3 file can be played.
- This recorder supports only the MP3 format sound for video (data) files.

Copyrights and Trademarks

- This recorder incorporates High-Definition Multimedia Interface (HDMI™) technology. HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.
- MPEG Layer-3 audio coding technology and patents licensed from Fraunhofer IIS and Thomson.
- All other trademarks are trademarks of their respective owners.

Code numbers of controllable TVs

While holding down TV , enter the TV manufacturer's code using the number buttons.

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number
Sony	01 (default)
Grundig	11
Hitachi	24
ITT	15, 16
JVC	33
LG/Goldstar	76
Loewe	45
Nokia	15, 16, 69, 73
Panasonic	17, 49
Philips	06, 07, 08, 72
Saba	12, 13, 74
Samsung	22, 23, 71
Sanyo	25
Sharp	29
Telefunken	36
Thomson	43, 75
Toshiba	38

The remote performs the following:

Buttons	Operations
TV 	Turns your TV on or off.
TV  (volume) +/-	Adjusts the volume of your TV.
TV PROG +/-	Selects the programme position on your TV.
TV  (input select)	Switches your TV's input source.
TV 	Turns off the TV sound.

Notices and Licenses for Software used in this Product

GPL/LGPL LICENSED SOFTWARE

The following GPL executables and LGPL libraries are used in this product and are subject to the GPL/LGPL License Agreements included as part of this documentation:

Package list:

- Linux Initrd Kernel
- uclibc toolchain binary
- BusyBox
- Smartd
- Libexif
- parse_conf
- libzvtbi

Source code for these executables and libraries, as well as other executables and libraries, can be obtained using the following link:

<http://www.sony.net/Products/Linux/>

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights.

These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps:

(1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of
what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of
author Gnomovision comes with ABSOLUTELY NO
WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in
the program 'Gnomovision' (which makes passes at
compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989 Ty Coon, President
of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method:

(1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not.

Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a “work that uses the Library” with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer’s own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user’s computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the “work that uses the Library” must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

libjpe

The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy.

This software is copyright (C) 1991-1998, Thomas G. Lane. All Rights Reserved except as specified below.

Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:

- (1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.
- (2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".
- (3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us.

Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software".

We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

FreeType

Portions of this software are ©2003 The FreeType Project (www.freetype.org). All rights reserved.

The FreeType Project LICENSE

2006-Jan-27

Copyright 1996-2002, 2006 by
David Turner, Robert Wilhelm, and Werner Lemberg

Introduction

The FreeType Project is distributed in several archive packages; some of them may contain, in addition to the FreeType font engine, various tools and contributions which rely on, or relate to, the FreeType Project.

This license applies to all files found in such packages, and which do not fall under their own explicit license. The license affects thus the FreeType font engine, the test programs, documentation and makefiles, at the very least.

This license was inspired by the BSD, Artistic, and IJG (Independent JPEG Group) licenses, which all encourage inclusion and use of free software in commercial and freeware products alike. As a consequence, its main points are that:

- We don't promise that this software works. However, we will be interested in any kind of bug reports. ('as is' distribution)
- You can use this software for whatever you want, in parts or full form, without having to pay us. ('royalty-free' usage)
- You may not pretend that you wrote this software. If you use it, or only parts of it, in a program, you must acknowledge somewhere in your documentation that you have used the FreeType code. ('credits')

We specifically permit and encourage the inclusion of this software, with or without modifications, in commercial products.

We disclaim all warranties covering The FreeType Project and assume no liability related to The FreeType Project.

Finally, many people asked us for a preferred form for a credit/disclaimer to use in compliance with this license. We thus encourage you to use the following text:

Portions of this software are copyright ©<year> The FreeType Project (www.freetype.org). All rights reserved.

Please replace ©<year> with the value from the FreeType version you actually use.

Legal Terms

0. Definitions

Throughout this license, the terms 'package', 'FreeType Project', and 'FreeType archive' refer to the set of files originally distributed by the authors (David Turner, Robert Wilhelm, and Werner Lemberg) as the 'FreeType Project', be they named as alpha, beta or final release.

'You' refers to the licensee, or person using the project, where 'using' is a generic term including compiling the project's source code as well as linking it to form a 'program' or 'executable'. This program is referred to as 'a program using the FreeType engine'.

This license applies to all files distributed in the original FreeType Project, including all source code, binaries and documentation, unless otherwise stated in the file in its original, unmodified form as distributed in the original archive. If you are unsure whether or not a particular file is covered by this license, you must contact us to verify this.

The FreeType Project is copyright (C) 1996-2000 by David Turner, Robert Wilhelm, and Werner Lemberg. All rights reserved except as specified below.

1. No Warranty

THE FREETYPE PROJECT IS PROVIDED 'AS IS' WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL ANY OF THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY DAMAGES CAUSED BY THE USE OR THE INABILITY TO USE, OF THE FREETYPE PROJECT.

2. Redistribution

This license grants a worldwide, royalty-free, perpetual and irrevocable right and license to use, execute, perform, compile, display, copy, create derivative works of, distribute and sublicense the FreeType Project (in both source and object code forms) and derivative works thereof for any purpose; and to authorize others to exercise some or all of the rights granted herein, subject to the following conditions:

- Redistribution of source code must retain this license file ('FTL.TXT') unaltered; any additions, deletions or changes to the original files must be clearly indicated in accompanying documentation. The copyright notices of the unaltered, original files must be preserved in all copies of source files.
- Redistribution in binary form must provide a disclaimer that states that the software is based in part of the work of the FreeType Team, in the distribution documentation. We also encourage you to put an URL to the FreeType web page in your documentation, though this isn't mandatory.

These conditions apply to any software derived from or based on the FreeType Project, not just the unmodified files. If you use our work, you must acknowledge us. However, no fee need be paid to us.

3. Advertising

Neither the FreeType authors and contributors nor you shall use the name of the other for commercial, advertising, or promotional purposes without specific prior written permission.

We suggest, but do not require, that you use one or more of the following phrases to refer to this software in your documentation or advertising materials: 'FreeType Project', 'FreeType Engine', 'FreeType library', or 'FreeType Distribution'.

As you have not signed this license, you are not required to accept it. However, as the FreeType Project is copyrighted material, only this license, or another one contracted with the authors, grants you the right to use, distribute, and modify it.

Therefore, by using, distributing, or modifying the FreeType Project, you indicate that you understand and accept all the terms of this license.

4. Contacts

There are two mailing lists related to FreeType:

- freetype@nongnu.org
Discusses general use and applications of FreeType, as well as future and wanted additions to the library and distribution. If you are looking for support, start in this list if you haven't found anything to help you in the documentation.
- freetype-devel@nongnu.org
Discusses bugs, as well as engine internals, design issues, specific licenses, porting, etc.

Our home page can be found at
<http://www.freetype.org>

curl

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2010, Daniel Stenberg,
<daniel@haxx.se>.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. INNO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

libpng

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file `png.h` that is included in the libpng distribution, the latter shall prevail.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

libpng versions 1.2.6, August 15, 2004, through 1.4.3, June 26, 2010, are Copyright (c) 2004, 2006-2007 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux
Eric S. Raymond
Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane
Glenn Randers-Pehrson
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler
Kevin Bracey
Sam Bushell
Magnus Holmgren
Greg Roelofs
Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

A "png_get_copyright" function is available, for convenient use in "about" boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31)" and "pngnow.png" (98x31).

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

Glenn Randers-Pehrson
glennrp at users.sourceforge.net
June 26, 2010

zlib

zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.5, April 19th, 2010

Copyright (C) 1995-2010 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly
Mark Adler

hdparm

BSD-Style Open Source License:

You may freely use, modify, and redistribute the hdparm program, as either binary or source, or both.

The only condition is that my name and copyright notice remain in the source code as-is.

Mark Lord (mlord@pobox.com)

OpenSSL

Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"

4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.

5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.

6. Redistributions of any form whatsoever must retain the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young (ey@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

MPEG4-AVC

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com)

MPEG-4 VISUAL

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER FOR DECODING VIDEO IN COMPLIANCE WITH THE MPEG-4 VISUAL STANDARD ("MPEG-4 VIDEO") THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED BY MPEG LA TO PROVIDE MPEG-4 VIDEO.

NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL, INTERNAL AND COMMERCIAL USES AND LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com)

Index

Words in quotations appear in the on-screen displays.

A

Aerial 10
Audio output 12
“Auto Service Update” 36
“Auto Standby” 35
“AV Setting” 33

B

Batteries 13
BRAVIA Sync 16

C

“Change Password” 34
“Channel” 36
“Channel Scan” 36
Chase Play 24
Connecting
 the aerial cable 10
 the HDMI cable 11
 the video cables 11
“Connection” 37
Copying
 external HDD device 30
 HDD 26

D

“Diagnostics” 37
Digital Services
 EPG 17
“Disk” 37
“Disk Information” 37
“Display Format” 33
“Dolby Digital” 33
Dolby Digital 12

E

Easy Setup 13
“Edit Channel” 36
“Edit Channel List” 36
“Edit Favourite List” 36
EPG
 Viewing a list of available channels 17
“Erase” 28

F

“Factory Settings” 37
“Format Disk” 37
Freeze Frame 23
Front panel 7
“Full Rescan” 13, 36

H

HDMI
 “Control for HDMI” 37
 “HDMI Colour” 33
 “HDMI Resolution” 33
HDMI cable 11

I

“Instant Advance” 35
“Instant Replay” 35

L

“Language” 34
“Lip-Sync Adjustment (msec.)” 44
“Lock” 22

M

Mains lead 13
“Maintenance” 37
“Manual Daily/Weekly Recording” 18
“Manual Scan” 36
“Manual Single Recording” 18

O

“Others” 37

P

“Parental Control” 34
“Parental Level” 34
Parts and controls 7
PIP 15
Playback 22
 fast forward 23
 fast reverse 23
 freeze frame 23
 instant advance 23
 instant replay 23
 MP3 files 26
 photo files 25
 “Repeat” 24
 resume play 22
 video (data) files 26
“Playback Settings” 35
“Power Management” 35
“Programme Recording” 18

R

Rear panel 7
“Region Setting” 13, 34
Remote 8, 13
“Repair Disk” 37
“Repeat” 24
Resume Play 22

S

Searching

- fast reverse/fast forward 23
- locating the beginning of the title 23
- locating the previous/next file 23

“Setup” 33

“Signal Information” 37

“Slideshow Time” 35

“Software Update” 37

“Standby Mode” 13, 35

“Subtitle” 34

“System Information” 37

System Menu 32

“System Message” 37

T

“Time” 34

“Time Shift Auto-Start”

35

“Time Shift Duration” 35

Time Shift Mode 16

“Time Zone Setting” 34

“Timer List” 19

Timer recording

- check/change/cancel 19

- manual setting 19

“TV Subtitle” 34

“TV Type” 13, 33

U

“Update Scan” 36

V

Video cable 11

Video output 12



HDMI

<http://www.sony.net/>



I-4265096224