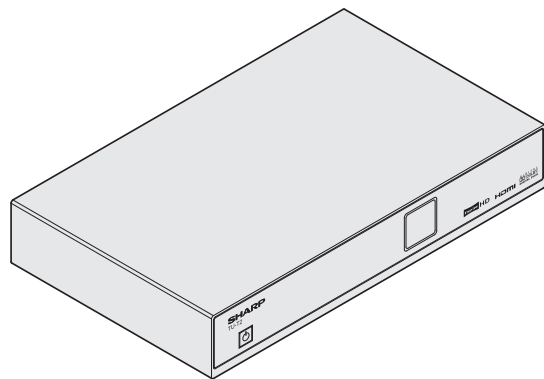# SHARP®

Digital Terrestrial HD Receiver

MODEL

TU-T2

OPERATION MANUAL

Thank you for purchasing this SHARP product. To obtain the best performance from this product, please read this manual carefully. It will guide you in operating your SHARP product.

Freeview HD

digital ✓
Certification mark
Approved product

DOLBY DIGITAL

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

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

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

Important: This product can only receive Digital Terrestrial TV signals, subject to coverage an aerial upgrade may be required. Text your postcode followed by your house name or number to 83331* or go to www.freeview.co.uk/availability (*Costs no more than a normal text).

1 Read this operation manual carefully.
2 If you still encounter a problem, please call our service help line on 0845 880 0421 during normal weekday office hours.

OPERATION MANUAL ENGLISH

- The illustrations and the OSD in this operation manual are for explanation purposes and may vary slightly from the actual operations.
- The examples used throughout this manual are based on the TU-T2 model.

Dear SHARP customer

Thank you for your purchase of the SHARP Digital Terrestrial HD Receiver. To ensure safety and many years of trouble-free operation of your product, please read **Important safety precautions** carefully before using this product.

Contents

TU-T2_GB.indd   2   01/06/2010   16:02:46

Introduction

Important safety precautions

- Cleaning—Unplug the AC power adapter from the AC outlet before cleaning the product. Use a damp cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.
- Use a soft damp cloth to gently wipe the product when it is dirty. To protect the product, do not use a chemical cloth to clean it. Chemicals may cause damage or cracks in the casing of the product.
- Water and moisture—Do not use the product near water, such as bathtub, washbasin, kitchen sink, laundry tub, swimming pool and in a wet basement.
- Do not place vases or any other water-filled containers on this product. The water may spill onto the product causing fire or electric shock.
- Stand—Do not place the product on an unstable cart, stand, tripod or table. Doing so can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only a cart, stand, tripod, or table recommended by the manufacturer or sold with the product.
- When relocating the product placed on a cart, it must be moved with utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.
- Ventilation—The vents and other openings in the casing are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings. This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.
- Heat sources—Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).
- To prevent fire, never place any type of candle or naked flames on the top or near the product.
- To prevent fire or shock hazard, do not place the AC power adapter under the product or other heavy items.
- The product uses power even in Standby. Unplug the product from the AC outlet when you are not using it.
- Servicing—Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified person to perform servicing.
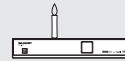
Devices connected to the protective earthing of the building installation through the MAINS connection or through other devices with a connection to protective earthing and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation within a certain frequency range (galvanic isolator, see EN 60728-11).

NOTE
- For requirements in Norway and Sweden, the requirements for isolation are also relevant for devices that can be connected to television distribution systems.

Ⓖ - **3**

Introduction

Remote control unit

1 HDMI
Hold this button down for 5 seconds to revert the output to 1080i (Page 17).

2 MENU
"MENU" screen on/off (Page 16).

3 TEXT
Display Digital Text (Page 12).

4 CH LIST
Display the "CHANNELS" screen (Page 11).

5 GUIDE
Display the EPG (Page 12).

6 ▲/▼/◄/► (Cursor)
Select a desired item on the "MENU" screen (Page 11).

OK
Execute a command within the "MENU" screen.

7 BACK
Return to the previous "MENU" screen.

8 VOL+/−
Increase/decrease the volume (Page 10).

9 MUTE
Volume on/off.

10 AD
Switch Audio Description of/off (Page 18).

11 WIDE
Select a wide mode (page 17).

12 ⏻ (Standby/On)
Switch between standby and on (Page 10).

13 SUBT
Switch subtitles on/off (Page 19).

14 AUDIO
Select the desired audio language (Page 10).

15 Colour buttons
The coloured buttons are correspondingly used to select the coloured items on the screen e.g. Digital Text.

16 INFO
Displays programme information (Page 10).

17 EXIT
Exit the "MENU" screen.

18 LAST
Toggles between the current channel and the previous channel (Page 10).

19 PROG +/-
Select the channel.

20 Numeric buttons 0−9
Set the channel.
Enter desired numbers.
Set the page in Digital Text mode.

21 A/V
Switch to HDMI output or SCART output (Page 10).

TU-T2_GB.indd 4   01/06/2010 16:02:47
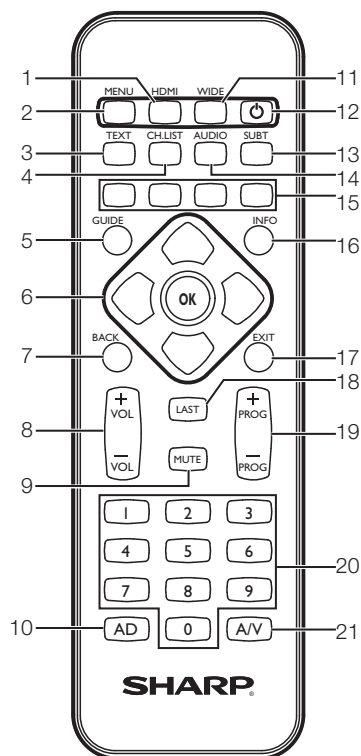
Introduction

Receiver (front view)
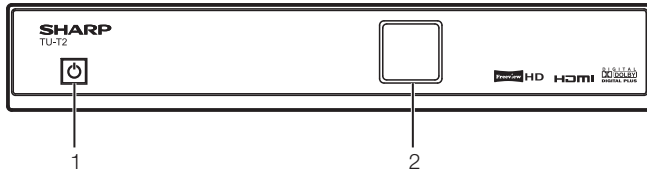
1	⏻ (Power button)
2	Display

Receiver (rear view)
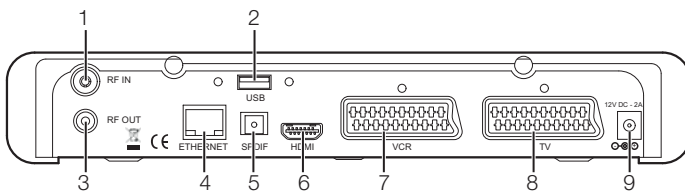
1	RF IN (Antenna in) terminal
2	USB terminal - For service only
3	RF OUT (Antenna out) terminal
4	ETHERNET terminal - For future services
5	SPDIF (Digital audio output) terminal
6	HDMI terminal
7	VCR (SCART) terminal
8	TV (SCART) terminal
9	12V DC terminal

Preparation

Supplied accessories

Remote control unit (x 1)	Power Adaptor (x 1)	HDMI Cable (x 1)	RF Cable (x 1)
Page 4	Page 9	Page 9	Page 9
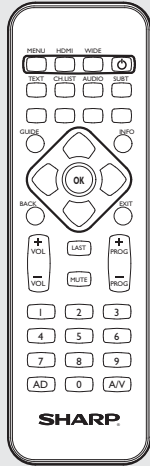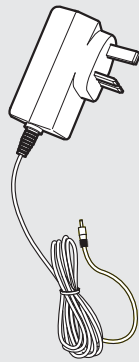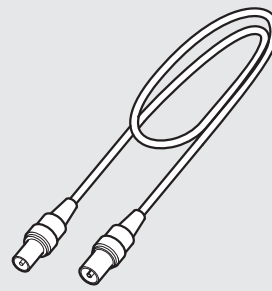
- Operation manual (this publication)
- "AAA" size zinc-carbon battery (x2) page 7

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Preparation

Inserting the batteries

Before using the Receiver for the first time, insert the two supplied "AAA" size zinc-carbon batteries. When the batteries become depleted and the remote control unit fails to operate, replace the batteries with new "AAA" size batteries.
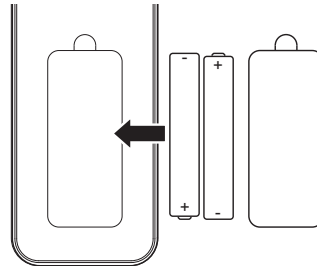
1 Open the battery cover.

2 Insert the two supplied "AAA" size zinc-carbon batteries.
   - Place batteries with their terminals corresponding to the (+) and (−) indications in the battery compartment.

3 Close the battery cover.

CAUTION

Improper use of batteries can result in chemical leakage or explosion. Be sure to follow the instructions below.
- Do not mix batteries of different types. Different types of batteries have different characteristics.
- Do not mix old and new batteries. Mixing old and new batteries can shorten the life of new batteries or cause chemical leakage in old batteries.
- Remove batteries as soon as they have worn out. Chemicals that leak from batteries can cause a rash. If you find any chemical leakage, wipe thoroughly with a cloth.
- The batteries supplied with this product may have a shorter life expectancy due to storage conditions.
- If you will not be using the remote control unit for an extended period of time, remove the batteries from it.
- When replacing the batteries, use zinc-carbon batteries instead of alkaline ones.

Note on disposing batteries:

The batteries provided contain no harmful materials such as cadmium, lead or mercury.
Regulations concerning used batteries stipulate that batteries may no longer be thrown out with the household rubbish.
Deposit any used batteries free of charge into the designated collection containers set up at commercial businesses.

Using the remote control unit

Use the remote control unit by pointing it towards the front of the Receiver. Objects between the remote control unit and sensor may prevent proper operation.

5 m

30°   30°

Remote control sensor
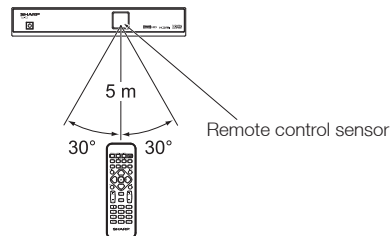
Cautions regarding the remote control unit

- Do not expose the remote control unit to shock. In addition, do not expose the remote control unit to liquids, and do not place in an area with high humidity.
- Do not place the remote control unit under direct sunlight. The heat may cause deformation of the unit.
- The remote control unit may not work properly if the remote control sensor of the Receiver is under direct sunlight or strong lighting. In such cases, change the angle of the lighting or the Receiver, or operate the remote control unit closer to the remote control sensor.
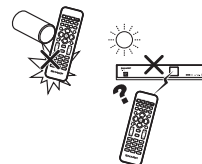
Quick guide

Initial installation overview

Follow the steps below one by one when using the Receiver for the first time.

① Preparation

❶ Connect the antenna cable to the RF IN terminal (Page 9).
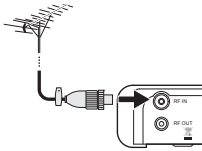
❷ Connect the Receiver to your TV using the supplied HDMI cable (Page 9).
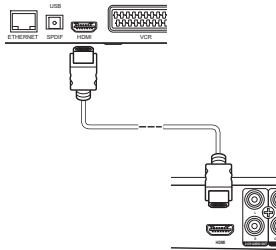
❸ Connect the power adapter to the Receiver (Page 9).

② Run the initial settings

❶ Turn on the power using the ⏻ button on the Receiver (Page 10).

❷ Run the first time installation (Page 9).

✔ Ensure the antenna is connected
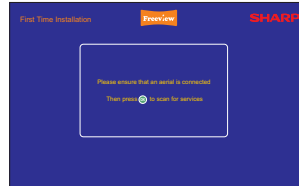
✔ Press OK to continue

⬇

Start searching channels

③ Watch TV

❶ Congratulations! Now you can watch TV.

❷ If necessary, adjust the antenna to attain maximum signal reception.

Connect external devices

❶ Connect external devices such as a DVD player/ recorder as instructed (Page 14).
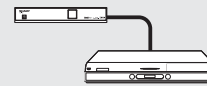
❷ Connect external audio devices such as speakers/ amplifier as instructed (Page 14).

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Quick guide

Before turning on the power
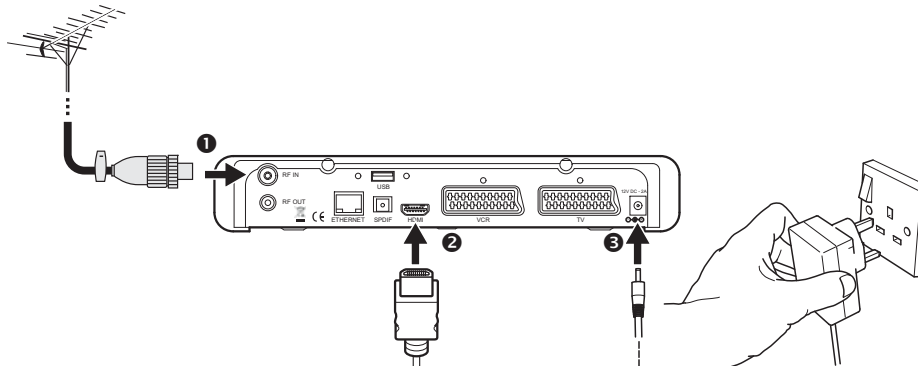
❶ Connect the antenna (standard DIN45325 plug (IEC 169-2) 75 Ω coaxial cable)

❷ Connect the HDMI cable

❸ Connect the power adapter

Place the TV close to the AC outlet, and keep the power plug within reach.

Initial auto installation

When the Receiver is powered on for the first time after purchase, the first time installation screen appears. Follow the on-screen instructions to search for all available channels.

Confirm the following before turning on the power
● Is the antenna cable connected?
● Is the power adapter connected and plugged in?
● Is the HDMI cable connected between the Receiver and your TV?

1 Press ⏻ on the Receiver.
  • The first time installation screen is displayed.

2 Ensure the antenna cable is connected.

3 Press OK to start the channel search.
  • The Receiver will search for, sort and store all receivable channels.

NOTE
  • The first time installation process will be aborted if the Receiver is left unattended for more than 30 minutes before searching for channels.
  • After the first time installation has been completed, the default PIN is automatically set to '0000'. To change the PIN setting, refer to Page 20.

First Time Installation   Freeview   SHARP

Please ensure that an aerial is connected

Then press OK to scan for services
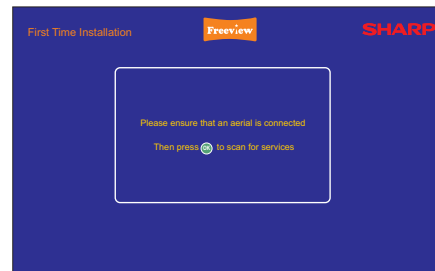
Watching TV

Daily operation

Switching on/off

Standby mode

● **Select standby mode**

If the Receiver is switched on, you can switch it to standby by pressing ⏻ on the remote control unit.

● **Switching on from standby**

From standby, press ⏻ on the remote control unit.
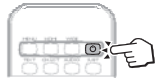
NOTE
- If you are not going to use this Receiver for long periods of time, be sure to remove the power adapter from the supply. (Page 9).
- A small amount of electric power is still consumed with the Receiver in standby mode.

Adjusting the volume

Press the **VOL+** button to increase the volume and the **VOL-** button to decrease the volume.

Changing channels

With PROG +/-:   **With 0—9:**
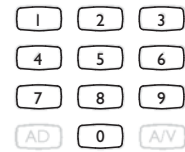
Switching between channels

Switch between the current channel and the previous channel by pressing **LAST**. Each press of the **LAST** button will toggle between the current channel and the previous channel.

Programme information

1. Press the **INFO** button once to display times, channel, programme, start and finish dates.

2. Press the **INFO** button again to display additional information about the current programme.

Selecting a video output source

Once the Receiver is connected to your TV using either a HDMI cable or SCART cable, you can select the appropriate output source by pressing **A/V** on the remote control unit.

Selecting an audio language

Some programmes are broadcast with multiple audio channels. Press **AUDIO** to display the audio menu.

ⓘ INFORMATION			Audio Channel
Select the audio channel that you want to use.			
ENG		Stereo	
ENG		Stereo	
△ Up	▽ Down	ⓞ Select	🖿 Exit Menu

1. Press ▲/▼ to select the desired channel.
2. Press OK to confirm the audio channel

Watching TV

Channel List

Basic operation

● **Display/close the Channel List**

1 Press **CH.LIST**
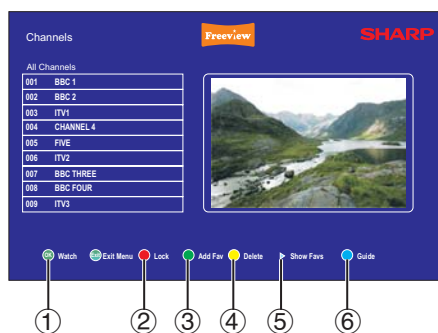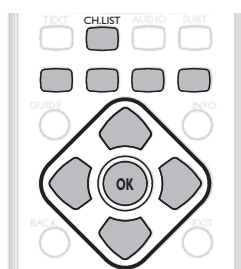
● **Navigating the Channel List**

① **Select a channel**

Press ▲/▼ to select a channel. Press **OK** to watch the current programme.

Useful functions

② **Lock a channel**

You can lock a channel to prevent children viewing scenes of a violent or sexual nature.

1 Press ▲/▼ to select the channel you want to lock.

2 Press the red coloured button. A padlock icon will appear next to the channel name.

NOTE
* If parental controls are enabled (Page 20), the parental settings PIN must be entered before a channel can be locked/unlocked.
* To unlock a channel, select the channel using the ▲/▼ buttons and press the red coloured button.

③ **Set a channel as a favourite**

You can set a channel as a favourite for quick access. All favourite channels will be displayed in the favourites list.

1 Press ▲/▼ to select the channel you want to add to the favourites list.

2 Press the green coloured button.
* The favourites list will be shown listing all favourite channels and the channel you have just added.

3 Press ◄ to return to the channel list.

NOTE
* To delete a channel from the favourites list, press the yellow coloured button. You can choose to delete the channel or cancel.

④ **Deleting a channel**

1 Press ▲/▼ to select the channel you want to delete.

2 Press the yellow coloured button.
* The delete channel screen will be displayed. You can choose to delete the channel or cancel.

NOTE
* To view a channel once it has been deleted, you will need to perform a first time installation (Page 9).

⑤ **Viewing the Favourites List**

1 Press ► to view the favourites list
* While viewing the favourite list, you can select and watch channels in the same way as the Channel List.

2 Press ◄ to return to the channel list.

⑥ **View the EPG**

1 To view the **EPG** (Page 12), press the blue coloured button.

Selecting a programme using the EPG

Basic operation

● **Display/close the EPG screen**

Press **GUIDE**.

② ⑤ ①

Programme Guide
Freeview   SHARP
The Day the Immigrants Left
Evan Davis investigates UK immigration, focusing on the Cambridgeshire town of Wisbech. Contains some strong language. (AD,S)

(NEWS AND FACTUAL) AD SUB ● Contains some strong language.

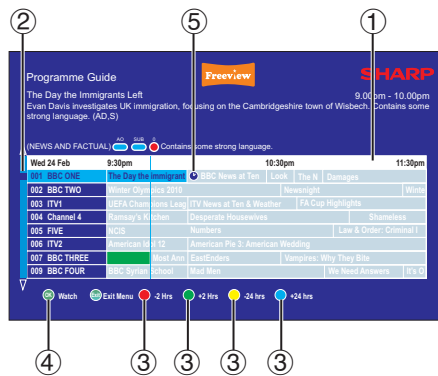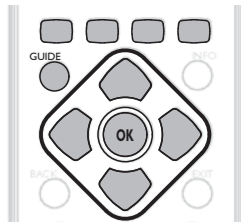| Wed 24 Feb	9:30pm	10:30pm	11:30pm
001 BBC ONE	The Day the immigrant	BBC News at Ten	Look	The N	Damages
002 BBC TWO	Winter Olympics 2010		Newsnight		Winte
003 ITV1	UEFA Champions Leag	ITV News at Ten & Weather	FA Cup Highlights	
004 Channel 4	Ramsay's Kitchen	Desperate Housewives		Shameless	
005 FIVE	NCIS	Numbers		Law & Order: Criminal I	
006 ITV2	American Idol 12	American Pie 3: American Wedding			
007 BBC THREE	Meet Ann	EastEnders	Vampires: Why They Bite	
009 BBC FOUR	BBC Synth School	Mad Men		We Need Answers	It's O

Watch Exit Menu -2 Hrs +2 Hrs -24 hrs +24 hrs

④ ③ ③ ③ ③

● **Select a programme**

① **Select the time span**

Press ◄ / ► to select the time span you want to search.
• Continue to press ► to display the programmes in the next time span.

② **Select the desired programme**

Press ▲/▼ to select the desired programme.
• If ▲ or ▼ are displayed on the left of the services, continue to Press ▲ / ▼ to display the next or previous screen.

Useful functions

③ **Navigate the time span**

1   Press the red coloured button to move backwards 2 hours.
2   Press the green coloured button to move forwards 2 hours.
3   Press the yellow coloured button to move backwards 24 hours.
4   Press the blue coloured button to move forwards 24 hours.

Watch a programme

④ **Watch a programme now**

1   Press ▲/▼ to select a programme.
2   Press **OK** to watch the programme.

⑤ **Set a reminder for a programme**

1   Press ▲ / ▼/ ◄ / ► to select a future programme.
2   Press **OK**. A clock icon will be shown next to the selected programme.

NOTE
• If you set a reminder, just before the programme start time, a message will appear reminding you that the programme is about to start. You can choose to automatically switch channels or cancel the reminder.

Digital text

What is digital text?
Some channels are broadcast with digital text which contains pages of information and entertainment. News, weather, sports information, stock exchange prices and programme previews are among the many services.

Accessing digital text

1   Select a channel which broadcasts digital text.
2   Press **TEXT** or the **RED** button.
   • Not all channels broadcast digital text.
   • You may not be able to receive digital text if you have a poor quality signal.

Buttons for digital text operation

Buttons	Description
▲ / ▼/ ◄ / ►	Navigate the digital text index page and menu system
Coloured buttons	Access digital text shortcuts. These are often displayed on the bottom of the page.
Numeric buttons 0–9	Directly select a page.
EXIT / TEXT	Exit digital text.

TU-T2_GB.indd   12   01/06/2010   16:02:58

Connecting external devices

● **Before connecting ...**
* Be sure to turn off the Receiver and any external equipment before making connections.
* Firmly connect a cable to a terminal or socket.
* Carefully read the operation manual of each external device for possible connection types. This also helps you get the best audiovisual quality to maximise the potential of the Receiver and the connected device.

NOTE
* The cables illustrated in pages 13 to 15 are commercially available items.

Video connections

▭ HDMI connection

Example of connectable devices
● HD Ready TV

The HDMI connection permits digital video and audio transmission via a connection cable to a TV. The digital picture and sound data are transmitted without data compression and therefore lose none of their quality. Analogue to digital conversion is no longer necessary in any connected devices, which would also result in quality losses.
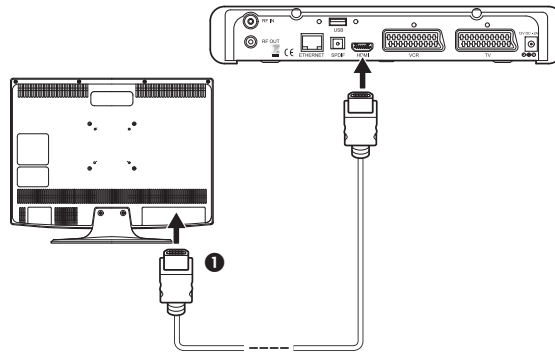
❶ HDMI-certified cable

Connecting external devices

SCART connection

Example of connectable devices
- HD Ready TV
- DVD Recorder
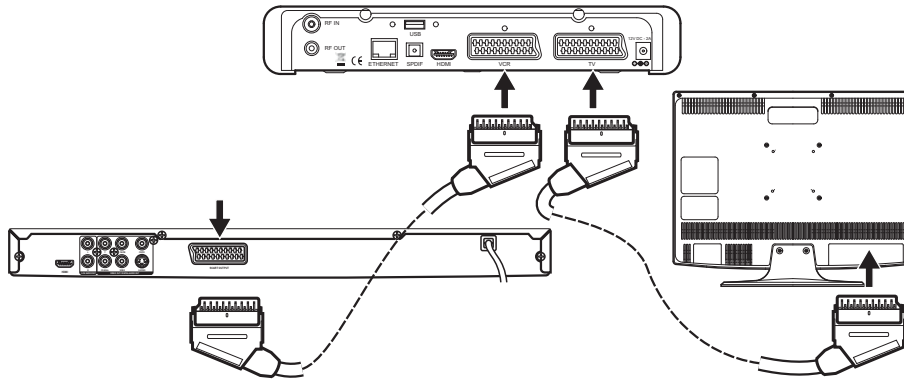
Connecting external devices

Audio connections

▣ SPDIF connection

Example of connectable devices
● Dolby Digital Surround Sound System
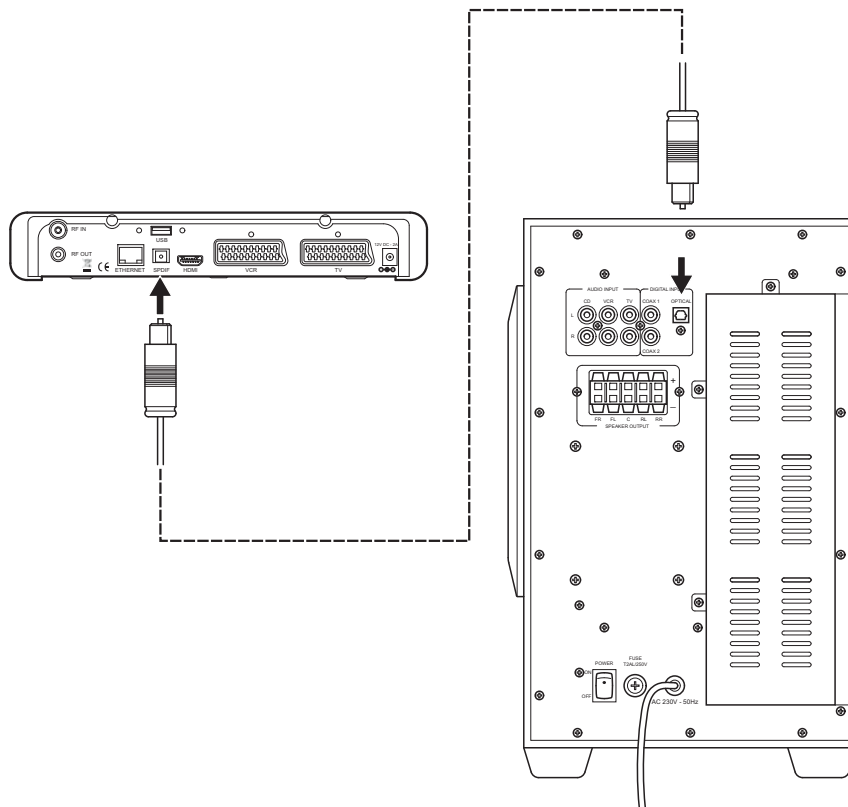
● After connecting

Digital audio output setting
After connecting to a surround sound system with a SPDIF cable, you should set an audio output format compatible
with the programme you are watching or the device connected (Page 17).

Menu operation

What is the MAIN MENU?
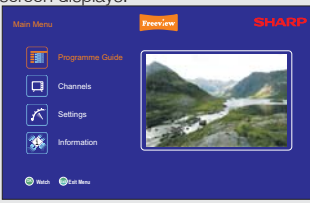
- You need to call up the on screen display (OSD) to perform settings for the Receiver. The OSD for the settings is called "MAIN MENU"
- The "MAIN MENU" enables various settings and adjustments.

Basic operation

1 Display the MAIN MENU screen

Press **MENU** and the "MAIN MENU" screen displays.

3 Exit the MAIN MENU screen

Press **EXIT** to exit the MAIN MENU at any time. If you have not pressed **OK** before exiting, the desired setting will not be changed.
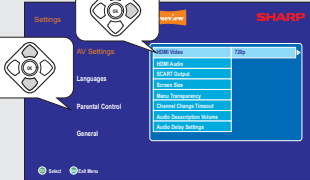
2 Selecting a menu or sub menu

Press ▲/▼ to select one of the main menu options. Press ▶ to display the option. Press ▲/▼ to select one of the sub menus. Press ◀/▶ to display the sub menu. Press ◀/▶ to adjust the desired setting and then press **OK**. Press **BACK** to return to the previous menu.

Selecting a sub-menu in the MAIN MENU

Selecting and adjusting options

About the guide display

The guide display at the bottom of the MAIN MENU screen shows operations with the OSD.

- The guide display is an operational guide for the remote control unit. The bar will change in accordance with each sub-menu and menu setting.

OK Select   Exit Exit Menu

Main Menu Options

The MAIN MENU allows you access to various menu screens.

Item	
Programme Guide	View the EPG (Page 12).
Channels	View the Channel List (Page 11).
Settings	Adjust various settings for the Receiver (Page 17).
Information	View system and software information for the Receiver.

TU-T2_GB.indd 16   01/06/2010 16:03:01

Basic adjustment
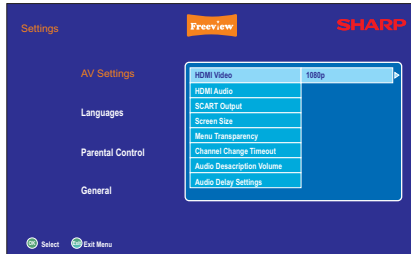
AV Settings

AV Settings
HDMI Video

Adjusts the video resolution when the Receiver is connected to your TV using a HDMI cable. This allows you to watch High Definition (HD) TV.

Item	
576p	Sets the video resolution to 576p.
720p	Sets the video resolution to 720p.
1080i	Sets the video resolution to 1080i.
1080p	Sets the video resolution to 1080p.

NOTE
- Consult the documentation supplied with your TV to select the correct TV resolution.
- If your TV is not HD Ready but has a HDMI socket, select the 576p video resolution.

AV Settings
HDMI Audio

Adjusts the audio output type when the Receiver is connected to surround sound system using a HDMI cable. This allows you to enjoy realistic live sound.

Item	
Stereo	The Receiver will output Stereo sound when connected to a standard surround sound system using the HDMI cable.
Dolby Digital	The Receiver will output Dolby Digital surround sound when connected to a compatible surround sound system using the HDMI cable.

NOTE
- Only select Dolby Digital if you have a compatible surround sound system. If you choose this setting with a non-compatible sound system the audio will not be heard.
- Not all channels are broadcast with Dolby Digital sound.

AV Settings
SCART Output

Adjusts the video signal type when the Receiver is connected to your TV using a SCART cable.

Item	
RGB	This selects an RGB video signal type. The video signal will be splits the video output into separate red, green and blue signals to provide the best picture quality.
Composite	This selects a composite video signal. Produces a single composite video signal which provides poor picture quality.

NOTE
- If your TV is not compatible with RGB signals, select the Composite video output.

AV Settings
Screen Size

Adjusts the screen size (aspect ratio) between 16:9 widescreen and various 4:3 picture sizes.

Item	
16:9 Widescreen	Displays a 16:9 widescreen picture. This ensures the best aspect ratio for widescreen TVs.
4:3 Widescreen (16:9)	In this mode, the picture is stretched towards each side of the screen. This displays a picture similar to 16:9 widescreen on 4:3 TVs.
4:3 Centre Cut Out	Displays a 4:3 picture in the centre of the screen. With some programmes, bars may appear on the left and right hand side of the screen.
4:3 Letterbox (16:9)	Displays a 16:9 picture in the centre of the screen. With some programmes, bars may appear on the top and bottom of the screen.

NOTE
- If you have connected the Receiver to a Widescreen TV, you should select the 16:9 Widescreen setting.
- The wide mode feature lets you adjust the screen size using the WIDE button on the remote control unit. Press WIDE to cycle through the available screen sizes while watching TV.
- If you have selected 16:9 widescreen in the AV settings menu, the wide mode will have no effect.

Basic adjustment

AV Settings
Menu Transparency

This function allows you to adjust the transparency of the OSDs.

Item	
Off	The picture will not be visible behind the OSD.
25%	The picture will be partially visible behind the OSD.
50%	The picture will be mostly visible behind the OSD.
75%	The picture is clearly visible behind the OSD.

NOTE
* The menu transparency settings will not affect the "MAIN MENU".

AV Settings
Channel Change Timeout

This function allows you to adjust the length of time that information screen is displayed for if no other buttons are pressed

Audio Description

Some programmes are broadcast with audio descriptions (AD) which provides a voice-over describing visual information such as scenery, body language and facial expressions.
Press **AD** on the remote control unit to toggle audio description on or off.

NOTE
* If audio description is available for a programme, the AD symbol will be displayed in the Information Screen (Page 10) and the EPG (Page 12).

AV Settings
Audio Description Volume

Adjusts the volume of the audio description when available.
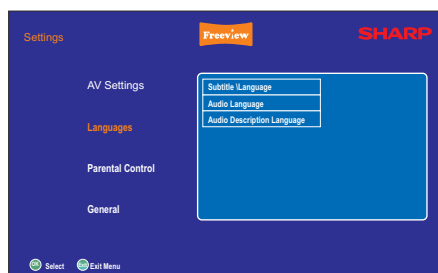
AV Settings
Audio Delay Settings

Synchronises the audio and video outputs when the Receiver is connected to a Dolby Digital Surround Sound System using the SPDIF (digital audio output) connection.

Digital Audio Delay   60 ms

1 Press ▲/▼ to increase or decrease the audio delay time.

2 Press **EXIT** to complete the setting.

Basic adjustment

Languages

Languages
Subtitle Language

This function allows you to set the default subtitle language to English, Welsh, Gaelic or Irish.

NOTE
- Some subtitle languages are available with enhanced subtitles. These provide additional information about the programme for the hard of hearing.

Switching on subtitles

Press **SUB** on the remote control unit to toggle subtitles on or off.

NOTE
- Not all programmes are broadcast with subtitles. If subtitles are available for a programme, the SUB symbol will be displayed in the Information Screen (Page 10) and the EPG (Page 12).
- If subtitles are available they will be displayed at the bottom of the screen in the default subtitle language.

Languages
Audio Language

This function allows you to set the default audio language to English, Welsh, Gaelic or Irish.

Selecting audio languages

Press **AUDIO** on the remote control unit to toggle switch between the available audio languages.

NOTE
- Not all programmes are broadcast with alternative audio languages. If the selected audio language is not broadcast, English will be used.

Languages
Audio Description Language

This function allows you to set the default audio description (AD) language to English, Welsh, Gaelic or Irish.
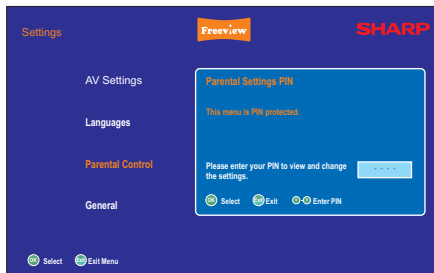
NOTE
- Not all programmes are broadcast with alternative audio description languages. If the selected audio description language is not broadcast, English will be used.

Basic adjustment

Parental Control

The Parental Control feature allows you to prevent accidental changes being made to the Receiver. In addition channels can be locked to prevent children viewing scenes of a violent or sexual nature.

Parental Settings PIN

The default personal identification number (PIN) must be entered before the parental control settings can be adjusted.

Enter the default four digit PIN (0000) using the **0-9** numeric buttons.

NOTE
• If you have changed the default PIN, this must be entered before the parental control settings can be adjusted.

Parental Control
Allow first time installation

This function allows you to prevent a first time installation being performed without first entering the parental settings PIN.

Item	
Enabled	This will allow a first time installation to be performed without entering the parental settings PIN.
Disabled	This will prevent a first time installation to be performed unless the parental settings PIN is entered.

Parental Control
Allow parental changes

This function allows you to prevent changes within the parental control menu without first entering the parental settings PIN.

Item	
Enabled	This will allow access to the parental control menu without first entering the parental settings PIN.
Disabled	This will prevent access to the parental control menu unless the parental settings PIN is entered.

Parental Control
Change PIN
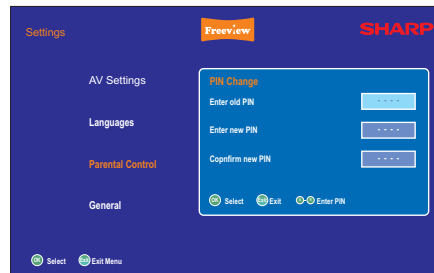
This function allows you to change the PIN.

● Changing the parental settings PIN.

1 Enter the default (0000) or current four digit PIN using the **0-9** numeric buttons.

2 Enter the new four digit PIN using the **0-9** numeric buttons.

3 Confirm the new four digit PIN using the **0-9** numeric buttons.

NOTE
• As a precautionary measure, make a note of your PIN on the back of this operational manual, cut it out and keep it in a safe place that children cannot reach.

Basic adjustment

General

Settings

Freeview | SHARP

AV Settings | Auto Standby | Enabled ▶
| Power Save in Standby Mode
Languages | Upgrade Software
| Auto Retune
Parental Control | Auto Retune Messages
| Manual Tune
| First Time Installation
General

Select   Exit Menu

General
Auto Standby

This function allows you to automatically switch the Receiver into standby mode when there is no user activity for 3 hours.

Item	
Enabled	The Receiver will automatically switch into standby mode when there is no user activity for 3 hours.
Disabled	The Receiver will remain on constantly unless switched into standby mode by the user.

General
Power Save in Standby Mode

This function allows you to control the power saving features of your Receiver.

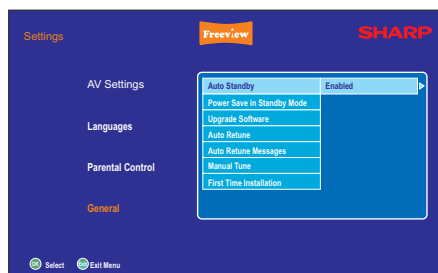| Item	
Enabled	The receiver uses a very low amount of power when in standby.
Disabled	Power saving features are disabled.

General
Upgrade Software

This function allows you to control when software upgrades are installed.

Item	
Automatic	The receiver will automatically install software upgrades when available.
Manual	The receiver will display a message allowing you to confirm or cancel the software upgrade.

General
Auto Retune

This function allows you to control when new services (channels) are added and stored on the Receiver.

Item	
Always Start	Whenever new services (channels) are detected, the Receiver will automatically tune and store them.
Always Ask	Whenever new services (channels) are detected, a message will appear on screen. You can choose to tune and store the new services or cancel the auto retune.

General
Auto Retune Messages

This function controls when retune messages are displayed.

Item	
All	All messages are displayed.
No Minor Messages	Only major messages are displayed.
Information Only	Only information messages are displayed.
None	No messages are displayed.

NOTE
• During the digital switchover, Auto retune messages may be displayed. Follow the on-screen instructions to retune.

TU-T2_GB.indd   21   01/06/2010   16:03:12

Basic adjustment

Manually tuning channels

General

Manual tune

You can manually tune new services after the first time installation has been completed.

You can manually tune new services after the first time installation has been completed.

1. Press ◄/► to select the desired UHF channel.
2. Press ▼ to select 'Frequency (kHz).
3. Press ◄/► to adjust the frequency.
4. Press ▼ to select 'Bandwidth'.
5. Press ◄/► to adjust the 'bandwidth'
6. Press ▼ to select 'System.
7. Press ◄/► to select a 'System'.
8. Press the blue coloured button to start scanning for the specified channel. If the channel is found it will be stored in the Receiver and will be available in the channel list and EPG.

Item	
UHF Channel	The channel number you want to save the manually tuned channel as.
Frequency	The frequency of the service (channel) you are manually tuning.
Bandwidth	The bandwidth of the service (channel) you are manually tuning.
System	The type of tuning system

NOTE
- You can enter the UHF Channel and Frequency using the 0-9 numeric buttons.

General

First time installation

This function allows you to perform a first time installation (page 9).

Appendix

Troubleshooting

The following conditions in the table below do not always indicate a problem. Please perform the checks described below before calling for service. If the problem can not be corrected by the use of this manual, remove the mains plug from the power socket and contact the Helpline on 0845 880 0421 in order to obtain service or advice.
Where this is not possible please visit our web site www.sharp.co.uk/customersupport.aspx

Customers without Internet access may phone 0845 880 0421 during office hours.
In the unlikely event of this equipment requiring repair during the guarantee period, you will need to provide proof of purchase to the repair company. Please keep your purchase invoice or receipt in a safe place.

WARNING
Under no circumstances should you try and repair this product yourself. This will invalidate the warranty. Do not open the unit as there is risk of electric shock.

Problem	Possible solution
• No power.	• Check if you pressed ⏻ on the remote control unit. • Is the AC power adapter disconnected? • Check if you pressed ⏻ on the Receiver.
• The Receiver cannot be operated.	• External influences such as lightning, static electricity, etc., may cause improper operation. In this case, operate the Receiver after first turning off the power, or unplugging the AC power adapter and re-plugging it in after one or two minutes.
• Remote control unit does not operate.	• Are batteries inserted with polarity (+, −) aligned? • Are batteries worn out? (Replace with new batteries.) • Are you using it under strong or fluorescent lighting? • Is a fluorescent light illuminating the remote control sensor?
• Picture is cut off.	• Are screen mode adjustments (WIDE MODE) such as picture size made correctly? (Page 17)
• Power is suddenly turned off.	• The Receiver's internal temperature has increased. Remove any objects blocking the vent or clean. • Is auto standby activated? (Page 21)
• No picture.	• Are connections to external equipment correct? (Pages 13 to 15) • Is the input signal type selected correctly after connection? (Page 17) • Is the correct output source selected? (Page 10) • Is the antenna connected properly? (Page 9) • Hold the HDMI button on the remote control for 5 seconds to reset the output to 1080i. (Page 17)
• No sound.	• Is the volume too low? • Check if you pressed mute on the remote control unit.
• The Receiver sometimes makes a cracking sound.	• This is not a malfunction. This happens when the casing slightly expands and contracts according to changes in temperature. This does not affect the Receiver's performance.
• Freezing / Blocking	• Check Freeview reception information as we have listed on the front of the manual. • Refer to the page 21 and 22 to perform the First Time Installation.
• There is noise interference on the TV while a broadcast is being received.	• Depending on the reception of the broadcast, interference may appear on the picture while you watch a TV broadcast and the unit is left on. This is not a malfunction of the unit.

Cautions regarding use in high and low temperature environments
• When the Receiver is used in a low temperature space (e.g., room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the Receiver will recover when the temperature returns to normal.
• Do not leave the Receiver in a hot or cold location. Also, do not leave the Receiver in a location exposed to direct sunlight or near a heater.

Appendix

Specifications

Item		TU-T2 Digital Terrestrial HD Receiver for Freeview HD	
Tuner / Demodulator	Receiving Signal Type (DVB-T)	All combinations of the below parameters can be received and automatically detected. (Except bandwidth).	
		Channel Bandwidth	6, 7, 8 MHz
		Modulation Type	QPSK, 16QAM, 64QAM
		FFT Mode	2K, 8K
		Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
		Guard Internal	1/4, 1/8, 1/16, 1/32
	Receiving Signal Type (DVB-T2)	All combinations of the below parameters can be received and automatically detected. (Except bandwidth).	
		Channel Bandwidth	6, 7, 8 MHz
		Modulation Type	QPSK, 16QAM, 64QAM, 256QAM
		FFT Mode	1K, 2K, 4K, 8K, 16K, 32K
		Code Rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
		Guard Internal	1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
System	CPU / Clock	STi7105/ST40 core, 450MHz	
	Transport	DVB Demultiplexer	
	Flash Memory	8MB	
	System Memory	128MByte X 2 DDR	
	Software	Pixsan Elgist and MHEG middleware	
Video	CPU Core	ST231 / 450MHz	
	Video Standards	MPEG-1 ISO/IEC 11172-2 MPEG-2 MP@ML and MP@HL, ISO/IEC 13818-2 MPEG-4 AVC MP@L4 and HP@L4.1	
	Field / Frame Rate	60/30 Hz for NTSC or 50/25 Hz for PAL	
	HD/SD Decoding Capability	Interlaced Mode/ Progressive Mode: 1080i, 720p, 576p, and 576i	
	Aspect Ratio	16:9 Widescreen 4:3 Widescreen (16:9) 4.3 Centre Cut Out 4.3 Letter Box (16:9)	
	Video Input / Output	Digital Video HDMI with HDCP supported CVBS, R/G/B for TV SCART OUT CVBS for VCR SCART OUT CVBS, R/G/B for VCR SCART IN	
	Output Modes	HD	1080P / 1080i / 720p / 576p Output format changed by specific hot-key (software switchable)
		SD	576i
Teletext / Subtitle	Decoding and display for supporting Closed Captions & Teletext		
Audio	CPU Core	ST231/ 450MHz	
	Audio Standards	MPEG-1 layer I & layer II, MP3 MPEG-2 layer II , Dolby Digital MPEG-2 AAC/AAC+	
	Audio Input / Output	AL/AR for TV SCART OUT (Volume adjustable) AL/AR for VCR SCART OUT (Fixed volume) AL/AR for VCR SCART IN AL/AR for one pair RCA connectors (Volume adjustable) Optical Digital Audio SPDIF	
	Digital Audio SPDIF Output Format	IEC-60958 for PCM data IEC-61937 for Encoded Bitstream Data	
	Sampling Rate	32, 44.1, 48, and 96 KHz	
Connectivity	Serial Port	RS-232 Software Upgrade and Diagnostic (Reserved Internally)	

Appendix

Item		TU-T2 Digital Terrestrial HD Receiver for Freeview HD
Software Upgrade	Over Air Download	Yes, via DVB-SSU
	USB Port	Yes
Front Panel	Display	4-digit 7-segment for time and channel number 1 LED indicator
	Keypad	5 Keypads: Power, CH Up/Down, Volume Up/Down
	IR Sensor	Yes
Rear Panel	RF Input Connector	F type, Female (for NTSC)/IEC type, Female (for PAL), 75 Ohm
	Loop Through Output Connector	F type/IEC type, Male/Female, 75 Ohm
	Stereo (left & right) Audio output CVBS, R/G/B video output	Dual SCART for TV/VCR For TV SCART: w/ OSD and Volume adjustable For VCR SCART: w/o OSD and fixed Volume
	Digital Video & Audio Output	HDMI Connector
	Optical Digital Audio SPDIF	TosLink Interface
	RJ 45	Ethernet connection with unique Mac address
Power Interface	Input Voltage	100~240 VAC, 50/60 z
	Power Consumption	Normal Operation: TBD, Standby Mode: Less than 2W with build in power Save mode to meet European initiatives EuP
Others	Accessory	Customer Selectable Remote Controller (and Batteries) User's Manual HDMI Cable (1.5M)
	EMC/ Safety	Compliant to CE
	ATC	HDMI 1.3, HDCP
	Dolby	Dolby Digital Stereo, Dolby Digital+ (HE AAC)
	Software	Dbook 6.1 compliant Tested to DTG Test Suite Audio Description, receiver mix MHEG5 HD Dbook 6.1 MHEG5 interaction channel MHEG5 iPlayer ready

PIN CODE reminder

NOTE
• You need to insert the PIN code here and refer it to the pages in the manual where this is covered.

NOTE
• Removal of a PIN code could be subject to a service charge and if you would like to use this feature the PIN code should be written down.

Appendix

Trademarks

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

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

Appendix

End of life disposal

Attention: Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

A. Information on Disposal for Users (private households)

1. In the European Union

Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!

Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.
Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.
*) Please contact your local authority for further details.

If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

For Switzerland: Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don't purchase a new product. Further collection facilities are listed on the homepage of www.swico.ch or www.sens.ch.

B. Information on Disposal for Business Users

1. In the European Union

If the product is used for business purposes and you want to discard it:

Please contact your SHARP dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.

For Spain: Please contact the established collection system or your local authority for take-back of your used products.

2. In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.

Pb

The battery supplied with this product contains traces of Lead.

For EU: The crossed-out wheeled bin implies that used batteries should not be put to the general household waste! There is a separate collection system for used batteries, to allow proper treatment and recycling in accordance with legislation. Please contact your local authority for details on the collection and recycling schemes.

For Switzerland: The used battery is to be returned to the selling point.

For other non-EU countries: Please contact your local authority for correct method of disposal of the used battery.

Important Notice

Digital Switchover and Your TV Equipment

WHAT YOU NEED TO DO TO ENJOY WATCHING TV DURING AND FOLLOWING DIGITAL SWITCHOVER

Starting in 2008 and ending in 2012, television services in the UK will go completely digital, TV region by TV region.

To continue using this digital TV equipment during and following digital switchover, you will need to "reset" your digital TV channels.

Users of this product must reset their channels on at least 2 different occasions, normally 1 month apart when switchover happens. Digital UK, the body leading digital TV switchover, and broadcasters will advise you when to reset your channels on each occasion.

If you do not reset your channels, you risk losing some or all of your TV services during and following switchover.

Please refer to pages 21 and 22.of this manual for help with resetting channels.

Please note that in order to receive the maximum number of available TV services on your equipment you must preform a first time installation and do not just add channels.

If you have questions relating to digital switchover please don't hesitate to call us on 0845 6 50 50 50.
or visit www.digitaluk.co.uk.

The FREEVIEW service is subject to coverage. An aerial upgrade may be required. The FREEVIEW PLAYBACK word and logo are trade marks of DTV Services Ltd and are used under licence. © DTV Services Ltd 2006.

SHARP

TERMS OF GUARANTEE

Sharp Electronics (UK) Ltd. ("Sharp") guarantees to provide for the repair, or at its option the replacement, of this product subject to the conditions listed below:

1. This guarantee shall only apply to faults which are due to inferior workmanship or materials. It does not cover faults or damage caused by accident, misuse, fair wear and tear, signal related issues, neglect, tampering with the product, or repair other than by a Service Facility appointed by Sharp.

2. As this product is intended for private domestic use only, the guarantee will not apply if the product is used in the course of a business, trade or profession.

3. To benefit from this guarantee, any fault which occurs must be notified to Sharp, or its appointed Service Facility within one year from the date this product was purchased. Proof of purchase must be provided.

4. In the unlikely event of this product requiring repair, please contact the Sharp DTR help line on 0845 880 0421.

5. No person has any authority to vary the terms or conditions of this guarantee.

6. This guarantee is offered as an additional benefit to your statutory rights, and does not affect these rights in any way.

If you have any difficulty operating this product, or would like information on other Sharp products, please telephone the Sharp DTR Help Line on the number given below.

Sharp DTR Help Line - 0845 880 0421

SHARP ELECTRONICS (U.K.) LTD.
4 Furzeground Way, Stockley Park, Uxbridge,
Middlesex, UB11 1EZ

Notes

Notes

SHARP

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