Pace TDC770D Series

Operator's Manual

CONTENTS

SAFETY INFORMATION

This digital set-top has been manufactured and tested with your safety in mind. However, improper use can result in potential electric shock or fire hazards. To avoid defeating the safeguards that have been built into your set-top, please observe the precautions discussed in this document.

Warnings on your set-top

```
        CAUTION
 RISK OF ELECTRIC SHOCK
      DO NOT OPEN
```

```
       ATTENTION
 RISQUE DE CHOC ELECTRIQUE
      NE PAS OUVRIR
```

The lightning flash with arrowhead symbol, within a triangle, is intended to alert you to the presence of uninsulated "dangerous" voltages within your set-top's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within a triangle is intended to alert you to the presence of important instructions in the literature accompanying your set-top.

Other warnings

To reduce the risk of electric shock, do not remove the cover of your set-top. There are no user-serviceable parts inside it.

Do not perform any servicing unless you are qualified to do so. refer all servicing to qualified service personnel. servicing the set-top yourself will invalidate the warranty.

To reduce the risk of fire or electric shock, do not expose this set-top to rain or moisture.

On the rear panel of your set-top there is a tamper-evident label that states 'Warranty void if broken or removed'.

To avoid possible damage to the internal hard disk, do not pick up or otherwise move your set-top while it is connected to the power supply. If you want to move your set-top, first disconnect it, then wait at least 30 seconds before continuing. You should handle your set-top carefully, as any damage you cause to the internal hard disk (or any other component) will invalidate your warranty.

Installation

The installation of your set-top should be carried out by a qualified installer and should conform to local codes.

Note to the installer

This reminder is provided to call the attention of the cable-TV-system installer to Section 820-40 of the National Electrical Code (USA), which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as is practical.

Service address:
Pace Micro Technology (Support Services) Ltd.
3701 FAU Boulevard, Suite 200, Boca Raton
Florida, 33431, U.S.A.

Before you install or use the apparatus, you must read and understand these Important Safety Instructions. At all times when using the apparatus you must follow these Important Safety Instructions to reduce the risk of fire, electrical shock and injury to persons.

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into the outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

In addition to the Important Safety Instructions, please read the Safety Information below.

Power sources

You must operate your set-top only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company. If you move your set-top between locations at different temperatures, allow it to reach room temperature before you apply power to it.

Overloading

Do not overload wall outlets, extension cords or other power outlets as this can result in a risk of fire or electric shock.

Lightning

For added protection for your set-top during a lightning storm, or when it is left unattended and unused for long periods of time, disconnect the cable system from your set-top. See also item 13 in the Important Safety Instructions.

Placement and mounting

Do not place your set-top on an unstable or uneven surface. Your set-top may fall, causing serious injury to a child or adult and serious damage to your set-top. If you mount your set-top, for example to a wall or ceiling, follow the manufacturer's instructions and use a mounting accessory recommended by the manufacturer. See also item 12 in the Important Safety Instructions.

Ventilation

Slots and openings in the casing of your set-top are provided for ventilation, to ensure reliable operation of your set-top and to protect it from overheating.

- never block the ventilation openings by placing your set-top on a bed, sofa, rug or other similar surface;
- never cover the ventilation openings with items such as newspapers, table-cloths or curtains;
- do not place your set-top in a built-in installation such as a bookcase or rack unless proper ventilation is provided or you have adhered to the manufacturer's instructions;
- maintain a minimum distance of 2 inches around your set-top for sufficient ventilation.

See also item 7 in the Important Safety Instructions.

Water and moisture

Do not expose your set-top to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on your set-top. See also item 5 in the Important Safety Instructions.

Entry of objects and liquids

Never push objects of any kind into your set-top through openings as they may touch dangerous voltage points or short-out parts that could result in fire or electric shock. Never spill liquid of any kind on your set-top.
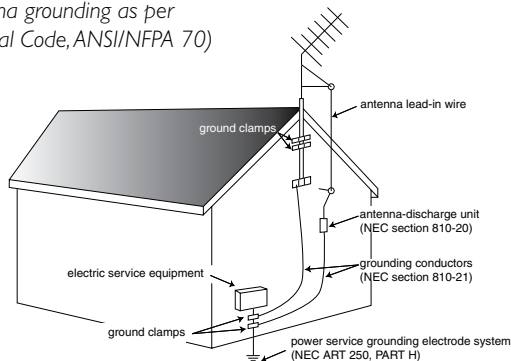
Risk of fire or scorching

Never place naked flame sources, such as lighted candles, on your set-top.

Outdoor antenna grounding

Be sure that any outside antenna or cable system connected to your set-top is grounded so as to provide some protection against voltage surges and static charges that have built up. Article 810 of the National Electrical Code (USA), ANSI/NFPA 70 provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes and requirements for the grounding electrode. See the diagram below.

(Example antenna grounding as per National Electrical Code, ANSI/NFPA 70)

antenna lead-in wire
ground clamps
antenna-discharge unit
(NEC section 810-20)
electric service equipment
grounding conductors
(NEC section 810-21)
ground clamps
power service grounding electrode system
(NEC ART 250, PART H)

Transporting

Move the combination of set-top and cart with care. Quick stops, excessive force and uneven surfaces may cause the combination of set-top and cart to overturn. See also item 12 in the Important Safety Instructions.

Ambient temperature

The operating temperature range of your set-top is 32-104°F. If the ambient temperature around your set-top falls outside this range, you must correct this in order for your set-top to work correctly and safely. For example, if the temperature is too high, switch on the air conditioning.

Replacement parts

When replacement parts are required, be sure that the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards. See also item 14 in the Important Safety Instructions.

Safety check

Upon completion of any servicing or repairs to your set-top, ask the service technician to perform safety checks to determine that your set-top is in its proper operating condition. See also item 14 in the Important Safety Instructions.

SAVE THIS INFORMATION FOR FUTURE REFERENCE

SAFETY ASPECTS OF CONNECTIONS

Full details of the rear panel are on page 8.

Connecting

Do not connect your set-top (or any other equipment such as a TV or VCR) to the power supply until you have properly connected all the other cables.

Your set-top operates with a 120 V AC, 60 Hz power supply. Do not connect your set-top to any supply other than this.

This set-top is equipped with a two-wire power cord, with a polarized plug at one end. The other end of the cord is fitted with a polarized connector, which is shaped such that it can be fitted only one way into the power input jack of your set-top. Connect this end first, before inserting the polarized plug into the wall socket-outlet.

Disconnecting

Disconnect your set-top from the power supply before you disconnect any other equipment from its rear panel.

The only way to disconnect your set-top from the power supply is to remove the power cord from the wall socket-outlet. Your set-top must therefore be installed near to the wall socket-outlet, which should be easily accessible.

*The POWER OUTLET plug is designed only for connection to the AC power cord for a **TV**. The maximum power it can supply is 500 watts.*

Do not connect any equipment that uses more than 500 watts, or any non-TV equipment such as a toaster or hair dryer.
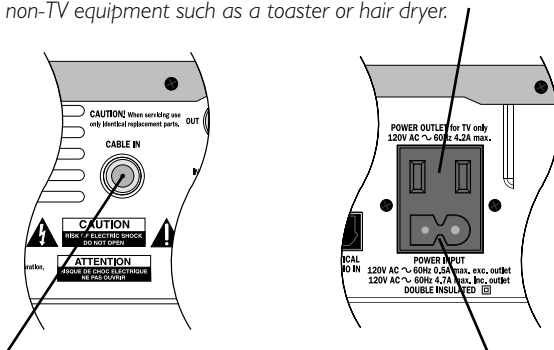
The CABLE IN connector is designed for connection to a cable network only.

You must not connect any other equipment, such as a VCR, to this input

POWER INPUT

Epilepsy and on-screen images

Certain people are susceptible to epileptic seizures or losing consciousness when faced with certain types of flashing lights in our daily environment.

These people are exposed to the risk of seizures if they watch certain television images or if they view certain images while they are browsing the Web. These phenomena may appear even when the subject has no previous history of this problem or has never suffered an epileptic seizure.

If you, or a member of your family, has already suffered symptoms linked to epilepsy (seizure or loss of consciousness) in the presence of stimulation by light, please consult your doctor before using this product.

If you or any person using the equipment experiences dizziness, involuntary movements or convulsion, please immediately stop viewing and consult a doctor.

When you are browsing the Web or playing a Web-based game, take the following precautions:

- Use the equipment in a well-lit room, and turn down the brightness of your television screen.
- Sit at a reasonable distance from your television screen.
- Take a break for ten minutes every hour.

You should avoid using the Web if you are tired or have lost some sleep.

Regulatory information

CAUTION: Do not attempt to modify your set-top without written authorization from the manufacturer. Unauthorized modification could void your authority to operate your set-top.

NOTE

Your set-top has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Your set-top generates, uses and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If your set-top does cause harmful interference to radio or television reception, which can be determined by turning your set-top off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between your set-top and the receiver.
- Connect your set-top to an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician for help

COMPONENT VIDEO OUT
Component video output for **analog** HDTV

AUDIO IN
Audio baseband input (stereo, L and R)

SECONDARY AUDIO OUT
Audio baseband outputs (stereo, L and R)

1394
For connections to 1394-compatible devices

DIGITAL AUDIO OUT
Electrical S/PDIF audio output

S-VIDEO
S-video output

VIDEO IN
Video baseband input

SATA
For connection to an external hard disk

DIGITAL AUDIO IN
Electrical S/PDIF audio input

COMPONENT VIDEO IN
Component **analog** video input

PRIMARY AUDIO OUT
Audio baseband outputs (stereo, L and R)

VIDEO OUT
Video baseband output

POWER OUTLET
(500 W max.)

TO TV
RF output to the TV or VCR

IR RECEIVE
Infra-red input from a remote "eye"

IR TRANSMIT
Infra-red output to control a VCR

HDMI
Video and audio output for **digital** HDTV

POWER INPUT
(Make this connection last of all)

OPTICAL AUDIO IN
Optical S/PDIF audio input

CABLE IN
From cable service-provider

TV PASS MODULE
Connector for a TV pass® module (for installers' use only)

UNIVERSAL SERIAL BUS (USB)
For future use

ETHERNET
For future use

OPTICAL AUDIO OUT
Optical S/PDIF audio output

CABLE IN	Connect the cable service here.
TO TV	Connect to the RF/antenna input on your TV or VCR.
COMPONENT VIDEO OUT	If your HDTV does not have an HDMI (see below), connect your HDTV here.
COMPONENT VIDEO IN	If your HDTV does not have an HDMI (see below), connect your HDTV here.
TV PASS MODULE	Connect a TV pass® module, if required.
PRIMARY AUDIO OUT	Connect to the stereo audio inputs on your stereo TV, stereo VCR or optional stereo amplifier.
IR TRANSMIT	Connect to an optional VCR controller.
IR RECEIVE	Connect to an optional remote ''eye''.
S-VIDEO	Connect to the S-video baseband input (if present) on your VCR or TV.
SECONDARY AUDIO OUT	Connect to the stereo audio inputs on your secondary TV, VCR or optional stereo amplifier
AUDIO IN	Connect to the stereo audio outputs on your DVD player (or similar).
VIDEO OUT	Connect to the video baseband input on your VCR (or a standard TV).
VIDEO IN	Connect to the video baseband output on your VCR (or a standard TV).

USB (Universal Serial Bus)	Connect to compatible optional equipment that supports a USB 1.1 interface, for example: a printer, digital camera, keyboard or mouse.
ETHERNET	Connect to an optional PC network.
HDMI (High Definition Multimedia Interface)	If your HDTV has an HDMI, connect it here for a digital audio/video connection (instead of using the AUDIO and 3 analog COMPONENT VIDEO connectors).
1394	Connect to a 1394-compatible device.
SATA	Connect to an optional external hard disk.
DIGITAL AUDIO OUT	Connect to the electrical digital audio input on optional digital audio equipment, such as an audio decoder or home theater receiver.
OPTICAL AUDIO OUT	Connect to the optical digital audio input on optional digital audio equipment.
DIGITAL AUDIO IN	Connect to any electrical digital audio output that loops through your set-top.
OPTICAL AUDIO IN	Connect to any optical digital audio output that loops through your set-top.
POWER OUTLET	Connect the TV's power cord here to provide AC power to your TV.
POWER INPUT	Connect your set-top's power cord here.

9

Your equipment should have been connected up by your installer. However, if you need to disconnect and re-connect your equipment, please read the information on pages 10 to 14.

On pages 12 and 13 there are two typical connection set-ups for an HDTV, VCR, DVD player and home theater receiver.

These set-ups make efficient use of the connectors on your set-top. However, depending on your other equipment and the connectors on it, the person who installed your system may have chosen to connect things up differently.

Both set-ups allow stereo recording and play-back of video tapes. You hear stereo sound from the home theater's loudspeakers.

Although the RF cables are not absolutely necessary, we recommend that you connect them as a back-up and so that you can use the RF bypass (but note that they will provide only mono sound to the TV and VCR).

If you also connect an optical audio connector, as shown, it means that the home theater receiver can take advantage of digital audio via your set-top's optical audio output.

WARNINGS

Do not connect your set-top (or any other equipment such as a TV or VCR) to the AC power supply until you have properly connected all the other cables.

Disconnect your set-top from the AC power supply before you disconnect any other equipment from its rear panel.

The only way to disconnect your set-top from the AC power supply is to remove the AC power cord (or switch the wall socket-outlet switch, if present, to its OFF position). Your set-top must therefore be installed near to the AC power socket-outlet, which should be easily accessible.

The power outlet is designed only for connection to the AC power cord for a TV. The maximum power it can supply is 500 watts. Do not connect any equipment that uses more than 500 watts, or any non-TV equipment such as a toaster or hair dryer.

The cable input is designed for connection to a cable network only. You must not connect any other equipment, such as a VCR, to this input.

Any cable connected to DIGITAL AUDIO jacks must be 75 ohm coaxial, not regular audio cable.

Set-up A - Home theater system with HDTV (HDMI connection)

Set-up A (see page 12) uses a HDMI (high definition multimedia interface) connector to connect to the HDTV. This displays the highest quality picture on the HDTV and also means there will be no picture degradation on any future copy-protected programs (provided the link remains secure – see right).

Variation

S-video provides a better TV picture than baseband video, therefore, if the TV and VCR have S-video connectors, replace the baseband video connection with an S-video connection to the VCR, then connect directly via an S-video connection from the VCR to the TV (or loop through the home theater receiver if you prefer).

Set-up B - Home theater system with HDTV (Component video / YPbPr connection)

Set-up B (see page 13) uses a component video connection to connect to the HDTV. This displays a high definition picture on the TV.

NOTE

How you set up your equipment may depend on your home theater receiver. For example, the optical and digital audio inputs may be associated with particular video inputs. Please see your home theater user information for further details.

NOTE

Copy protection via HDMI secure link

The HDMI link between your set-top and the TV/monitor should be a secure link. When the set-top is attached via a HDMI cable to an HDCP (High-bandwidth Digital Content Protection) -compliant monitor, the monitor and set-top negotiate a secure link, which allows the set-top to transmit full resolution video (picture) to the TV/monitor..
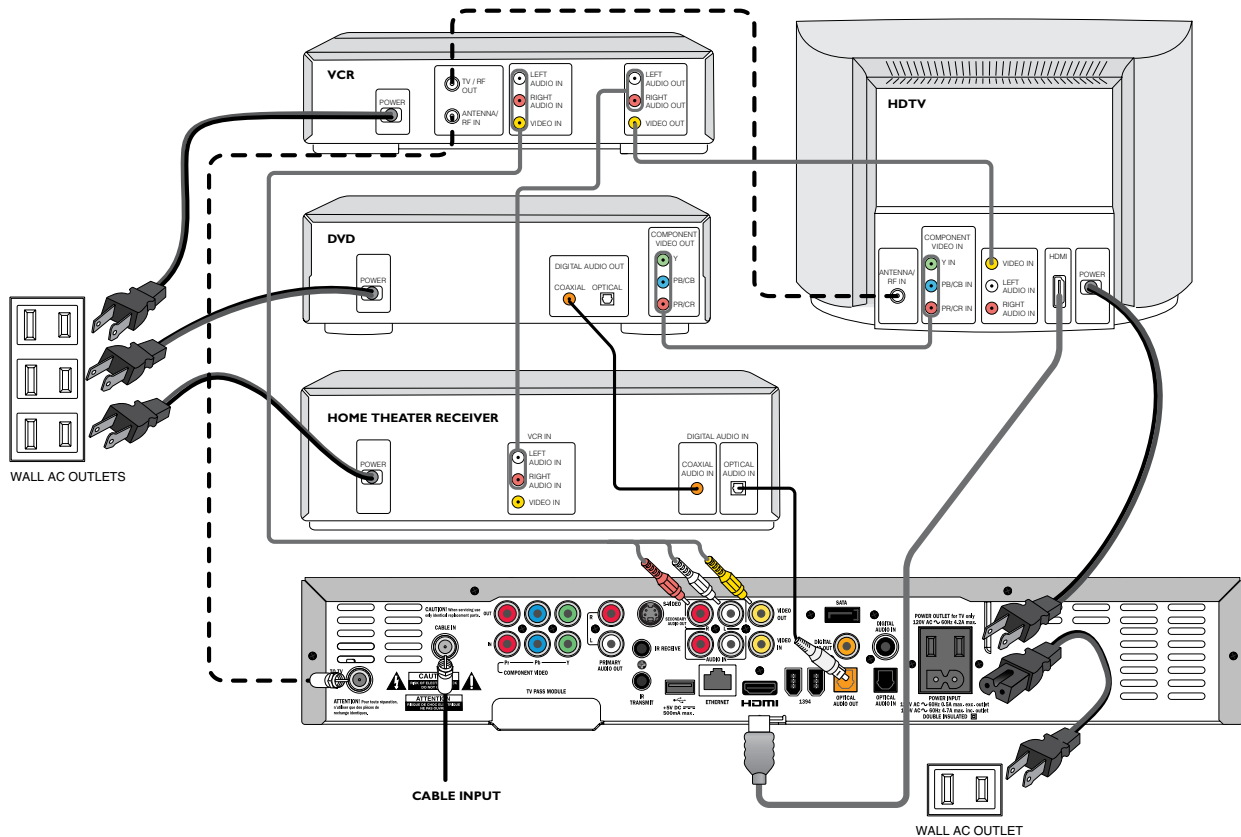
Not all monitors support HDCP. If your set-top is connected to a monitor that does not support HDCP, the following is displayed:

Your HDTV does not support HDCP. Please use the YPbPr component connection to watch TV.

The HDMI output is then disabled, so no picture is transmitted from this connector. In that case use the component video connectors to connect up (see Set-up B).

SET-UP A

VCR

POWER
TV / RF OUT
ANTENNA/ RF IN
LEFT AUDIO IN
RIGHT AUDIO IN
VIDEO IN
LEFT AUDIO OUT
RIGHT AUDIO OUT
VIDEO OUT

HDTV

DVD

POWER
DIGITAL AUDIO OUT
COAXIAL OPTICAL
COMPONENT VIDEO OUT
Y
PB/CB
PR/CR

COMPONENT VIDEO IN
ANTENNA/ RF IN
Y IN
PB/CB IN
PR/CR IN
VIDEO IN
LEFT AUDIO IN
RIGHT AUDIO IN
HDMI
POWER

HOME THEATER RECEIVER

POWER
VCR IN
LEFT AUDIO IN
RIGHT AUDIO IN
VIDEO IN
DIGITAL AUDIO IN
COAXIAL AUDIO IN
OPTICAL AUDIO IN

WALL AC OUTLETS

CAUTION! When servicing use with identical replacement parts.
OUT
IN
CABLE IN
COMPONENT VIDEO
PRIMARY AUDIO OUT
IR RECEIVE
S-VIDEO
VIDEO OUT
VIDEO IN
SATA
DIGITAL AUDIO IN
AUDIO IN
POWER OUTLET for TV only.
120V AC ~60Hz 6.2A max.
ATTENTION! Pour toute réparation, s'adresser que des pièces de rechange identiques.
CAUTION
ATTENTION
TV PASS MODULE
IR TRANSMIT
+5V DC 500mA max.
ETHERNET
HDMI
1394
OPTICAL AUDIO OUT
OPTICAL AUDIO IN
POWER INPUT 120V AC ~60Hz 0.5A max. rec. outlet
DOUBLE INSULATED

CABLE INPUT

WALL AC OUTLET

SET-UP B

VCR

TV / RF OUT

ANTENNA/ RF IN

POWER

LEFT AUDIO IN

RIGHT AUDIO IN

VIDEO IN

LEFT AUDIO OUT

RIGHT AUDIO OUT

VIDEO OUT

HDTV

DVD

POWER

DIGITAL AUDIO OUT

COAXIAL   OPTICAL

S-VIDEO OUT

ANTENNA/ RF IN

VIDEO IN

LEFT AUDIO IN

RIGHT AUDIO IN

S-VIDEO IN

COMPONENT VIDEO IN

Y IN

PB/CB IN

PR/CR IN

POWER

WALL AC OUTLETS

HOME THEATER RECEIVER

POWER

VCR IN

LEFT AUDIO IN

RIGHT AUDIO IN

VIDEO IN

DIGITAL AUDIO IN

COAXIAL AUDIO IN

OPTICAL AUDIO IN

CABLE INPUT

WALL AC OUTLET

WARNINGS
Do not connect your set-top (or any other equipment such as a TV or VCR) to the AC power supply until you have properly connected all the other cables.
Do not defeat the safety purpose of the polarized plugs on power cords. A polarized plug has two blades with one wider than the other. This plug fits into the outlet in only one way; match the wide blade of the plug to the wide slot of the outlet.

CONNECTING YOUR TV TO THE AC POWER SUPPLY

If your TV has a rating of less than 500 W, connect the power cord from your TV into the connector labeled "POWER OUTLET" on the rear panel of your set-top. This saves a wall outlet (although, if your TV is rated 500 W or more, you must connect it to a wall outlet).

CONNECTING THE POWER CORD TO YOUR SET-TOP

Before you connect your set-top to a wall outlet, connect the polarized socket on the power cord into the plug labeled "POWER INPUT" on your set-top's rear panel.

CONNECTING EQUIPMENT TO THE AC WALL OUTLETS

Connect the polarized plugs on the power cords from your set-top, VCR and any other equipment into AC wall outlets. If these outlets have switches, switch them to ON.

Turning your set-top on and off

After you have connected your set-top to the AC wall outlet (and switched this outlet ON, if it has a switch), the light next to the **power** button on your set-top's front panel should be red.

Wait for a few seconds, then press the button labeled **power** on the front panel of your set-top to turn it on. The light next to the **power** button goes from red to blue, to show that your set-top is on.

If the light next to the **power** button is neither red nor blue, there is a problem.

To turn your set-top on or off at any time, press the **power** button on its front panel or the **POWER** button on the remote control (making sure the remote control is set to control the set-top).

*To turn on your set-top, press the **power** button.*

The light next to the button changes from red to blue.

NOTES
It is important that, unless there is a lightning storm or you will be away from your home for a long time, you do not unplug your set-top at the wall AC outlet (or do not switch it off there, if the outlet has a switch). Your set-top can not be updated with new features, through the cable, if it is disconnected from the AC power supply.
Depending on your set-top's settings, if you switch your set-top off, any TV that is attached to your set-top's POWER OUTLET may also turn off. For more details, see page 34.
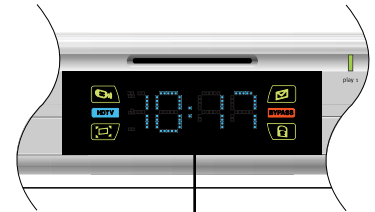
Front panel display, showing the time (see page 34)

15

Using your remote control

It is your cable TV service provider that determines the digital channels, services and screen information that you see on your TV when you use your set-top and its remote control.

Consult the information supplied by your cable operator for details on how to make the most of the digital cable services. Also read the operating instructions that are supplied with your remote control.

Activating baseband loopthrough for a DVD or similar equipment

If you activate baseband loopthrough, your set-top loops the baseband inputs on its rear panel to the baseband outputs as shown in the table below. You need to do this if you have connected a DVD player or similar equipment and wish to watch it on your TV.

COMPONENT VIDEO IN	loops through to	COMPONENT VIDEO OUT
VIDEO IN	loops through to	VIDEO OUT
AUDIO IN	loops through to	PRIMARY AUDIO OUT and SECONDARY AUDIO OUT
DIGITAL AUDIO IN	loops through to	DIGITAL AUDIO OUT
OPTICAL AUDIO IN	loops through to	OPTICAL AUDIO OUT

To activate baseband loopthrough, simply turn off your set-top by pressing the **POWER** button on the remote (making sure the remote control is set to control the set-top) or by pressing the **power** button on the front panel. When your set-top is turned off, the light next to the **power** button is red.

NOTE
Depending on your set-top's settings, if you put turn off your set-top, any TV that is attached to your set-top's POWER OUTLET may also turn off. For more details, see page 34.

Using the front-panel buttons

You can use the buttons on the front panel to operate your set-top, if, for example, there is a problem with your remote control.

guide
To display an on-screen guide

bypass
To turn the RF bypass feature on/off

menu
To display on-screen menus

info
To display on-screen information

channel ▲ and ▼
To change channel up or down

smart-card slot
For future use

front-panel display
Appears when your set-top is turned on
Shows the program channel number or the time
Also displays HDTV settings (see page 21)

play/record lights
Indicate the play or record state of each display channel
Lights green to signify playback; lights red to signify record

◄, ►, ▲ and ▼
To move left/right/up/down in an on-screen menu/guide

select button
To select items in menus/guides

power   guide   bypass   menu   info   channel   play 1   play 2   rec 1   rec 2

HDTV · DOLBY DIGITAL

HDTV · BYPASS

play 1   play 2   rec 1   rec 2

select

power button
To turn your set-top on/off

power light (next to button)
Lights blue when your set-top is on; red when your set-top is off; not lighted when your set-top is disconnected from the power supply

Lights when your set-top is receiving a signal from the remote control

HDTV
Lights when your set-top outputs High Definition Television (HDTV) content

Lights when your set-top receives multi-channel sound

Lights when there is an unread message

BYPASS
Lights while the bypass feature is on

Lights if the current program has a special broadcast security flag

**VIDEO IN;
AUDIO IN L and R**
(behind push panel)
Baseband inputs – for future use

USB connector – for future use

YOUR SET-TOP'S DVR FUNCTIONS

Your set-top has an internal hard disk that is used to record and play back television programs, giving you much more control of your viewing experience. For example, you can pause live television and resume viewing from the point at which you left off. You can also use your set-top to record your favorite programs, and you can watch one program while recording another.

With your set-top you can:

- Pause live TV
- Instantly replay live TV
- Fast forward up to the point of live TV
- Watch a scene in slow motion
- Rewind through a program you have been watching
- Record high definition digital video
- Record one program while watching another
- Record two programs while watching a previously recorded program
- Schedule your set-top to record a program or a whole series
- Fully manage your stored recordings
- Back up your digital recordings to a VCR
- Retain full control over any parental viewing restrictions you have set up

You control the set-top's DVR functions using your remote control; consult the information supplied by your cable operator for more details. Also read the operating instructions that are supplied with your remote control.

NOTE
The exact functionality of the DVR (digital video recorder) in your set-top depends on your on-screen program guide. For more details, consult the information supplied by your cable operator.

Using RF bypass

You use RF Bypass to watch the regular (analog) channels that are included in the cable service. RF Bypass makes these channels "bypass" your set-top and pass directly to the TV and/or VCR.

To use RF Bypass:

• Your set-top must be installed with the correct connections from the rear panel to the TV or VCR (see the note, right); and

• The RF Bypass feature must be switched to "On" in the Setup menu (see page 34).

Each time you want to use RF Bypass, you then press the **BYPASS** button on your remote control or on your set-top's front panel. The word BYPASS lights up on the front panel of your set-top.

When you have finished using RF Bypass, press the **BYPASS** button again.

For you to start using RF Bypass, your set-top must be turned on. However, once set, RF Bypass will work even if you turn your set-top off.

When RF Bypass is on: you can use the TV's remote control to tune to any of the available regular (analog) channels and watch that channel on your TV. This may be a different channel from the channel that your set-top is tuned to. (When your set-top is switched on, the number of the channel it is tuned to is shown on its front panel.*) You can record on your VCR the channel that your set-top is tuned to. This means that, when the bypass is on, you can watch a regular (analog) channel on your TV and, at the same time, record a *different* channel on your VCR.

When RF Bypass is off: the channel that you see on your TV is the channel that your set-top is tuned to. This is the same channel that your VCR receives. So, when RF Bypass is off, you can record only the channel that you are watching on your TV.

NOTE
If you are not sure whether your set-top has been set up to allow RF bypass, check your installation. If there is a cable (RF cable) going from the TO TV connector on your set-top's rear panel to your TV (or to your VCR and TV, as shown by the dashed line on pages 12 and 13) then RF bypass is correctly set up.

NOTE
* If the "Front LED Display" (see page 34) is set to "Current Time", you will not see the channel number. To see the number of the channel your set-top is tuned to, you should set "Front LED Display" to "Current Channel".

Lightning storms

Occasionally, a lightning storm may affect your set-top. It may appear that it has stopped working, but you can easily restore its operation as follows.

Unplug your set-top's power cord at the wall AC outlet. Then plug this power cord in again at the wall AC outlet (and, if there is a switch by this outlet, switch it to its ON position).

About User Settings

Your installer should have made the correct settings to make sure your set-top is compatible with your HDTV or TV. However you may wish to changes some settings, for example if you purchase a new HDTV. You can make the following settings:

- TV Aspect Ratio (the screen's width-to-height ratio, or shape);

- TV Display Capability (screen resolution);

- Auto Pillarbox;

- Closed Captions;
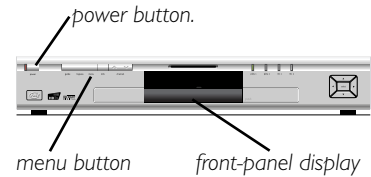
- Front Panel Settings.

You can also reset the user settings to the factory defaults.

You use the ◄,►,▲,▼ and **select** buttons on either the front panel or the remote control to make the settings. You check and change the settings by looking at your set-top's front panel. You can also look at the on-screen menus, although please note, in some circumstances these may not be visible.

Putting your set-top into "user settings mode"

1. Make sure that your set-top is switched on..

2. Press the **power** button on your set-top, then, *within 1 second,* press the **menu** button

The front panel displays "ASPt" as shown far right. Depending on the set-up, you may also see the User Settings menu, shown right, on the TV screen.

3. When you have finished making changes (see pages 22 to 30), press the **power** button to remove the User Settings menu and return to normal viewing.

power button.

menu button   *front-panel display*

USER SETTINGS
TV Aspect Ratio
TV Display Capability
Auto Pillarbox
Closed Captions
Front Panel Settings
Restore Defaults

About the TV Aspect Ratio

The TV that you have connected to your set-top has an aspect ratio (width-to-height ratio) of 4:3 (basic/standard) or 16:9 (widescreen). You must set the appropriate TV Aspect Ratio on your set-top, so that it is compatible with the TV.

Two settings are available: 4:3 and 16:9 You should set the TV Aspect Ratio to 4:3 or 16:9 as appropriate.

Setting the TV Aspect Ratio

If you have not done so, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt".

The flow diagram on the far right shows how you use the **arrow** and **select** buttons on your set-top's front panel to change the display and make the settings. See also the instructions below.

1. To change the **TV Aspect Ratio**, press the ▶ button. The current TV Aspect Ratio (4:3 or 16:9) displays on the front panel. Depending on the set-up, you may also see the menu, shown right, on the TV screen.

2. Press the ▲ or ▼ button to choose the TV Aspect Ratio you want.

3. Press the **select** button to confirm the choice and change to that TV Aspect Ratio.

4. Press the ◀ button. The front panel will display "ASPt" again.
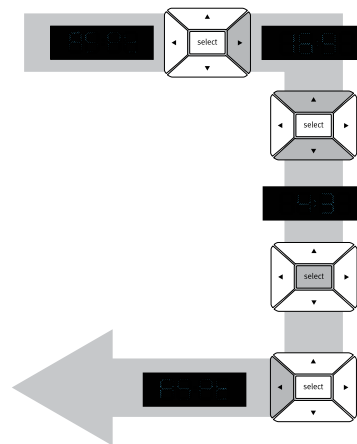
5. To continue making the settings, see the next section.

4:3 standard TV, EDTV or HDTV

16:9 HDTV

TV Aspect Ratio
4:3
16:9

About TV Display Capability (resolution settings)

- *Your set-top* can transmit pictures to your TV in a range of resolutions (also called "Display Capabilities" - see below for the settings available). Generally, higher screen resolutions give better quality pictures. However, the quality will always depend on how the program was originally transmitted.

- *Different TVs* display different screen resolutions. For example, standard TVs display "480i", EDTVs (Enhanced Definition TVs) display "480p" and most HDTVs display "1080i" or "720p". Many HDTVs will display at more than one resolution. For more information, see the information supplied with your HDTV.

You must make the appropriate TV Display Capability setting(s) on your set-top, so that it is compatible with your TV. See the next page for full instructions.

In order to display the best picture every time, you should select *every* resolution that your TV is capable of displaying. This should ensure that programs are displayed with the minimum distortion.

TV Display Capability settings

- **480i** is standard definition NTSC and is transmitted in a 4:3 aspect ratio (see right);

- **480p** is enhanced digital TV and can be transmitted in either a 4:3 or 16:9 aspect ratio;

- **720p** and **1080i** are HDTV and are transmitted in a 16:9 aspect ratio (see right).

480i transmission: The aspect ratio is 4:3

1080i transmission: The aspect ratio is 16:9

NOTE

When your HDTV is connected to your set-top via an HDMI, your set-top gets information from your HDTV about the HDTV's display capability. Your set-top uses this information to adjust its TV Display Capability settings.

Your set-top also records the HDTV's ID (identification), so that only one HDTV is supported at any one time. When your HDTV has updated your set-top's TV Display Capability settings, you may change them if you wish. Your changes will then be stored with the ID.

You can restore your set-top's TV Display Capability settings to their factory values, as described on page 31. You can also restore your set-top to the settings that your HDTV has passed to your set-top. To do this you must first restore the factory settings while your set-top is disconnected from your HDTV, then reconnect your HDTV via an HDMI cable.

Changing the TV Display Capability

If you have not done so already, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt".

The flow diagram on the right shows how you use the **arrow** and **select** buttons on your set-top's front panel to change the display and make the settings. See also the instructions below.

1. To change the **TV Display Capability** press the ▼ button. The front panel displays "res" (short for "resolution"), as shown in the flow diagram.

2. Press the ▶ button. The first TV Display Capability resolution displays on the front panel (1080i, although it is displayed as 1080). Depending on the set-up, you may also see the TV Display Capability menu, shown right, on the TV screen.

TV Display Capability		
1080i	:	YES
720p	:	NO
480p	:	YES
480i	:	YES

3. To check the resolution's setting, press the ▶ button. * Either "YES" (selected) or "nO" (not selected) displays. If you can see the on-screen menus, the menu shown right displays.

1080i
Yes
No

   - If this is the correct setting, press the ◄ button. The front panel will display "1080" again.
   - If you want to change the setting, press ▲ or ▼. (On the on-screen menu, the highlight moves between the available settings). Press the select button to confirm your choice and change to the new setting. Then press the ◄ button. The front panel displays "1080" again.

4. Press ▲ or ▼ to display all the resolutions, and repeat step 3 for each. The available resolutions are: 1080i, 720p, 480p and 480i. (See pages 23 and 25 for more information about these).
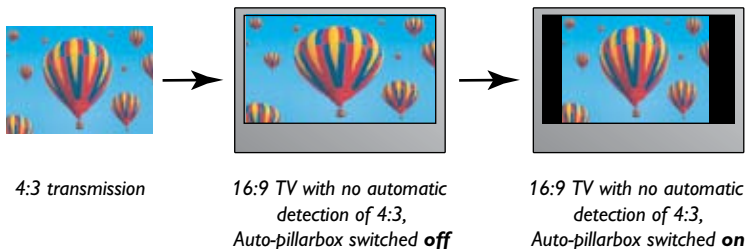
5. When you are satisfied that all the TV resolutions are correct, press the ◄ button. The front panel displays "res" again. To continue making the settings, see page 26.

NOTE
*If you use the **select** button at step 3, it will change the setting. If you accidentally press the **select** button, and the menus disappear from your screen, immediately press the **select** button again to restore the menus.

Further information about the TV Display Capability

The TV Display Capability settings relate to equipment that is connected to the HDMI and COMPONENT VIDEO OUT connectors as the settings control the output at those connectors. If equipment is connected via a HDMI cable, that equipment may also pass information back to your set-top, which may affect what settings are available.

Generally, the TV Display Capability settings do not affect equipment connected to the VIDEO OUT and S-VIDEO jacks, because the output at these jacks will always be the standard definition 480i.

This diagram shows an example only. Please make sure that, for each resolution, you select the correct setting (YES or nO) for the TV.

Auto Pillarbox

If your TV is a 16:9 TV that does not automatically detect 4:3 transmissions (and therefore does not add black bars to the sides of the picture), then 4:3 transmissions may display "stretched" to fit the 16:9 screen. If you do not want this effect, you can set your set-top to add black bars to the 4:3 picture, so that it is transmitted to the TV at a 16:9 aspect ratio. See the example below.

4:3 transmission *16:9 TV with no automatic detection of 4:3, Auto-pillarbox switched **off*** *16:9 TV with no automatic detection of 4:3, Auto-pillarbox switched **on***

Changing the Auto Pillarbox setting

If you have not done so already, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt".

1. To change the Auto Pillarbox setting, press the ▼ button until the front panel displays "PiLL", as shown right.

2. Press the ► button. Either "Yes" (switched on) or "No" (switched off) displays. If you can see the on-screen menus, the menu shown right appears.

3. If you want to change the setting, press ▲ or ▼. Press the select button to confirm the choice and change to the new setting.

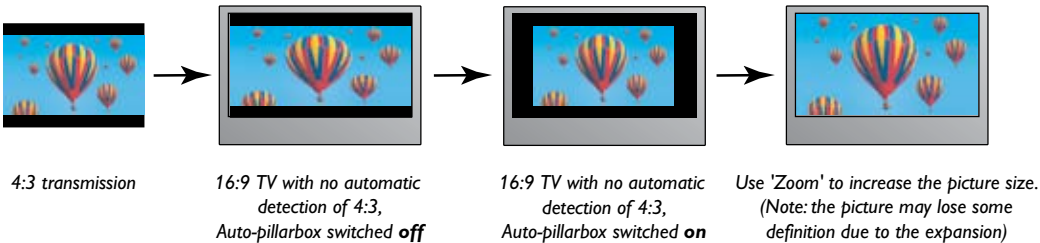4. Press the ◄ button. The front panel displays "PiLL" again.

To continue making the settings, see the next section.

Auto Pillarbox?
YES
NO

NOTE

16:9 picture in a 4:3 transmission
Sometimes 4:3 transmissions may contain a 16:9 picture, with black borders at the top and bottom. On a 16:9 TV this may display with black borders all the way around the picture. To remove these borders, you can use the "Zoom" button on the remote control. See the example below. For more information about using Zoom, see page 33.

4:3 transmission   *16:9 TV with no automatic detection of 4:3, Auto-pillarbox switched **off***   *16:9 TV with no automatic detection of 4:3, Auto-pillarbox switched **on***   *Use 'Zoom' to increase the picture size. (Note: the picture may lose some definition due to the expansion)*

Making Closed Caption settings

Closed captioning is a means of displaying alerts and subtitles on the TV screen, superimposed on whatever you are watching. You can turn closed captions on or off, as required, and you can also change the closed captions' appearance.

Turning closed captions on or off

If you have not done so already, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt".

1. To change the Closed Captions setting, press the ▼ button until the front panel displays "CC", as shown right.

2. Press the ▶ button. Either "On" (switched on) or "Off" (switched off) displays. If you can see the menus, the Closed Captions menu appears, see right.

3. If you want to change the setting, press the **select** button - the setting changes.

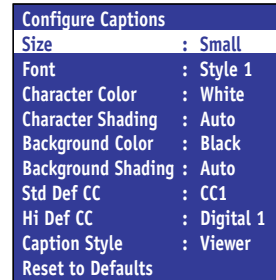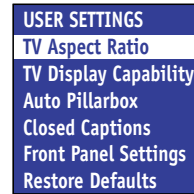4. Press the ◀ button. The front panel displays "CC" again.

To continue making the settings, see the next section

Closed Captions
CC : OFF
Configure Captions
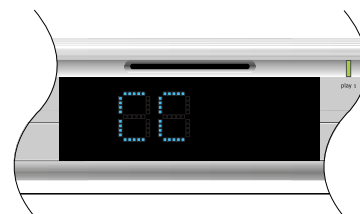
Changing the closed captions' appearance

If you want to change the closed caption's appearance, we recommend you use the on-screen menus, rather than the front-panel display.

1. If you have not done so already, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt", and the User Settings menu, shown right, displays on the TV screen.

2. To change the Closed Captions appearance, press the ▼ button to highlight "Closed Captions", then press ▶. The Closed Captions menu, shown right, displays.

3. Press the ▼ button to highlight "Configure Captions", then press **select**. The Configure Captions menu, shown right, displays.

4. Use the ▲ and ▼ arrows to highlight each option in turn. Use the **select** button to choose the setting you want (the setting changes each time you press **select**). Note: you must set "Caption Style" to "Viewer", in order for the changes to take effect.

5. When you have made all the changes you want to make, press ◀ twice to re-display the User Settings menu.

USER SETTINGS
TV Aspect Ratio
TV Display Capability
Auto Pillarbox
Closed Captions
Front Panel Settings
Restore Defaults

Closed Captions
CC : ON
Configure Captions

Configure Captions
Size	: Small
Font	: Style 1
Character Color	: White
Character Shading	: Auto
Background Color	: Black
Background Shading	: Auto
Std Def CC	: CC1
Hi Def CC	: Digital 1
Caption Style	: Viewer
Reset to Defaults	

Closed Caption Example

Front Panel Settings

Occasionally, the brightness of your set-top's front panel LED display may change, for example the LED display may dim automatically when your set-top is turned off. You can use the Front Panel Settings to set the brightness levels of the display at its brightest and dimmest.

Changing the Front Panel Display Settings

If you have not done so already, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt".

1. To change the Front Panel Display settings, press the ▼ button until the front panel displays "brit", as shown right

2. Press the ▶ button. The Front Panel Setting menu, shown right, displays.

3. Press the ▲ or ▼ button to highlight "Dim Level" or "Bright Level" as required ("Dim Level" is the brightness of the display at its dimmest; "Bright Level" is the brightness of the display at its brightest.)

4. Use the **select** button to choose the setting you want (the setting changes each time you press **select**): "Low", "Std" (Standard) or "High".

5. When you have made all the changes you want to make, press the ◀ button to re-display the User Settings menu.

Exiting the User Settings menus

When you have finished making changes, press the **power** button to remove the User Settings menu and return to normal viewing.

Front Panel Setting	
Dim Level :	Low
Bright Level :	High

RESTORING THE FACTORY DEFAULT SETTINGS

If you wish, you can restore the user settings to their factory defaults. All the changes you have made will be lost and the settings will revert to those that were programmed in the factory. The factory settings are:

User settings menu item	Options	Factory default setting
TV Aspect Ratio	–	16:9
TV Display Capability	1080i 720p 480p 480i	Yes No Yes Yes
Auto Pillarbox	–	No
Closed Captions	–	Off
Front Panel Setting	Dim Level Bright Level	Low High

If you have not done so, put your set-top into "user settings mode", as described on page 21. The front panel displays "ASPt".

The flow diagram on the right shows how you use the **arrow**, **select** and **power** buttons on your set-top's front panel to change the display and make the settings. See also the instructions below.

1. Press the ▼ button until the front panel displays "rSEt" (short for "**r**estore factory **set**tings"), as shown right.

2. Press the ▶ button. "YES" displays on your set-top's front panel. (If you no longer wish to restore the factory settings, press the ◀ button.)

3. To restore the factory settings, press the **select** button.

4. The factory settings are restored. If you want to continue changing the settings, press ◀ then see the sections from page 21 onwards. If you have finished changing the settings, press the **power** button. Your set-top will switch on with the restored settings.
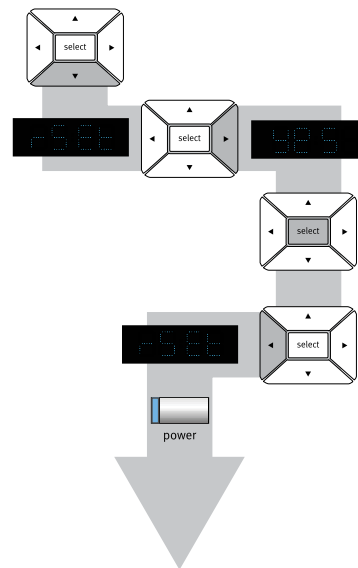
NOTES
If your set-top and HDTV are connected via a HDMI cable, some HDTVs may pass information about the required settings back to your set-top (see page 23). If you wish to restore your set-top's settings to those created by the HDTV, you should disconnect your set-top from the HDTV before you restore the factory default settings. When you reconnect the HDTV to your set-top via the HDMI cable, the HDTV will pass back the information again. **Always disconnect your set-top from the AC power supply before you connect or disconnect any other equipment to or from its rear panel.**

32

Using "Zoom" to change the picture

The appropriate TV Aspect Ratio and TV Display Capability settings should ensure that the picture on your TV screen is not distorted (stretched or squashed) and that it fills as much of the screen as possible.

However, even if you have selected the correct settings, there will be times when a program appears with black borders either at the top and bottom or at the sides of the picture (or sometimes even all the way round the picture). This happens because the aspect ratio (shape) of the *transmitted program* does not match the aspect ratio of your HDTV, or because the transmitted programme includes black borders as part of the transmission (see right).

Use the **Zoom** button on your remote control to change the TV picture until it appears as you want it to:

1. Press **Zoom** once to change the display.

2. Press **Zoom** again to change the display again. Continue to press **Zoom** in this way until the picture appears as you want it to.

Note: The effect that Zoom has on transmissions depends on the transmission itself. On some transmissions Zoom may have no effect at all.

*A 4:3 **transmission**, with a 16:9 picture. Dark bars are added at the top and bottom of the transmission*

*A 16:9 **transmission,** with a 4:3 picture in it. Dark bars are added at the sides of the transmission*

USING THE SETUP MENUS

The Setup menus allow you to make further settings to control how your set-top works. These are available from your TV Guide and should be fully described in the information provided by your service provider. There may also be on-screen information to explain these menus.

However, please note there are certain items and settings that may affect how your set-top and TV work. See the table below for information about these.

Item	Setting	Options	Notes
Cable Box Setup	Front LED Display	Current Time, Current Channel	If setting is "Current Time", the time displays on the front panel when your set-top is switched on. If setting is "Current Channel", the **program** *channel number* displays..
	AC Outleti	Switched, Unswitched	If setting is "Switched", the AC outlet on your set-top's rear panel is *on* when your set-top is *on*, and *off* when your set-top is *off*, so any TV that is therefore receiving its power from this AC outlet will switch off when your set-top is turned off. If setting is "Unswitched", the AC outlet is *always on*, so any TV that is receiving its power from this AC outlet will continue to receive power whether your set-top is switched on or off.
	RF Bypass	Off, On	You must set this to "On" in order to use RF Bypass. For information about RF Bypass, see page 19.
	Configuration		Allows you to view the configuration of your set-top.
Audio	Default Audio Track	Channel Default, English, Espagñol, Français, Português	Set the language track that your set-top first attempts to use when tuning to a channel. "Channel Default" means your set-top will use the default audio track for the program. Selecting a language means it will use the corresponding language track, if available.
	Optimal Stereo		Selecting this option enables your set-top to regulate the volume to minimize sudden changes in volume, for example during a commercial break.
	Audio Output	TV Speakers, Stereo, Advanced	If you select "Advanced", further settings are displayed, allowing you to set the Compression (to None, Light or Heavy) and the Stereo Output (to Mono, Stereo or Matrix Stereo).
Screen position			This allows you to adjust how the picture displays in the TV screen.

Other items and options may be available on these screens. The menus may be subject to change in the future, as your set-top advances with new technology.

If the installed system does not seem to be working properly, first make sure that all the cables are securely connected, then carry out the following checks, in the order shown

Check	Suggested solution	Further checks, if there is still a problem
Is anything lighted on your set-top's front panel? **NO** ▶ **YES** ▼	Power may not be reaching your set-top. Make sure that the power cord is properly plugged in. If there is a switch by the wall AC power outlet, switch it to ON.	Check that the wall AC power outlet is working (for example by plugging in a lamp).
Does the remote control operate your set-top? **NO** ▶ **YES** ▼ Please see the next page	Your set-top may not be turned on. Check if the light next to the **power** button on the front panel is blue. If it is off, press the power button on the front panel to turn on your set-top.	Check that nothing is blocking the path from your remote control to the front panel. Check that your remote control is currently set to operate your set-top (consult the instructions supplied with your remote control). If your remote control will still not operate your set-top, replace the batteries in your remote control. If there is still a problem, try to operate your set-top by using its front-panel buttons. If this works, then your remote control may be faulty.

Check	Suggested solution	Further checks, if there is still a problem
Can you see a picture on your TV screen? **YES** **NO** ▶ ▼ Please see the next page	Your TV and other equipment may not be turned on. Check that they are plugged into AC power outlets and turned on. **Note:** If you have connected your TV to the POWER OUTLET (AC outlet) on your set-top, when you turn off your set-top, your TV may turn off automatically, if the "AC Outlet" is set to "Switched" (see page 34). You may wish to keep this feature, or you may wish to set "AC Outlet" to "Unswitched".	Make sure the bypass feature is turned OFF (the word **BYPASS** on the front panel is not lighted). Check that you have selected the appropriate AV input on your TV: HDMI, COMPONENT VIDEO (YPbPr) or VIDEO IN (depending on how your system is connected up). If the video path between your set-top and your TV loops through other equipment (such as a VCR) you may need to turn off this equipment for the loopthrough to work. If you are using the HDMI connection, make sure the connection goes directly from the set-top to the TV. If the set-top detects that the link is not secure, the set-top will not transmit a picture (see page 11). If you expect the link to be secure, try disconnecting and reconnecting the HDMI cable.

Check	Suggested solution	Further checks, if there is still a problem
Is the picture distorted or too small? **YES** ▶ **NO** ▼	Check that the TV Aspect Ratio and TV Display Capability, as set on your set-top, are appropriate for your TV (see pages 21 to 25). Change them if necessary.	If the TV is a 16:9 TV, you can use Auto Pillarbox to add black borders to 4:3 transmissions, so that the picture is not stretched (see page 26). If the TV Aspect Ratio and TV Display Capability settings are correct, try using Zoom to improve the picture (see page 33) or consult the instructions that came with your TV and try adjusting the TV's display.
Can you display menus and guides on the screen? **NO** ▶ **YES** ▼	If your TV is connected to the VIDEO OUT or S-VIDEO jacks, then you will see menus and guides only if the screen resolution **480i** is set to "**Yes**" and **480p**, **720p** and **1080i** are set to "**No**".	Use the front panel to check the user settings (see page 21) and change the TV Display Capability resolution settings if necessary (see page 23).
Is there any sound? **NO** ▶ **YES** ▼ Please see the next page	Check that the audio cables are securely and correctly connected.	Check that you have not muted the sound on your set-top and/or TV. Adjust the volume control on your set-top and/or TV. If you are using a home theater, check it is set up correctly.

37

Check	Suggested solution	Further checks, if there is still a problem
Can you hear stereo sound? **YES** ▼ **NO** ▶	First check that the program is likely to have stereo sound (an old movie, for example, may not be in stereo). Check the TV Guide Setup Menu, Audio settings (see page 34). The Stereo Output may be set to "Mono". Change it to "Stereo".	If the TV is mono, you will only hear stereo sound if you have a stereo audio amplifier and speakers or home theater connected to the stereo VCR or set-top. This is also the case if the stereo TV has only an RF input.
Can you see and hear a DVD that you are trying to play? **YES** ▼ **NO** ▶ Please see the next page	For the signal to loop through your set-top from a DVD (or similar equipment) to reach your TV, you must activate baseband loopthrough by turning off your set-top..	Check that all the audio and video cables are securely and correctly connected, including any to a home theater receiver that you may be using to enhance the sound.

Check	Suggested solution	Further checks, if there is still a problem
Is the picture low quality, or "fuzzy", when you are expecting to see an HDTV-quality picture? **YES** ▶ **NO** ▼	Some programmes may include "copy protection" which means, if your set-top is connected to your HDTV via the component video jacks, the picture is downgraded to standard TV quality. To prevent this from happening, use an HDMI (high definition multimedia interface) connection instead.	
Can you see only regular (analog) channels but not any digital channels? **YES** ▶	The bypass feature may be turned on. Press the **BYPASS** button on your remote control to turn the feature OFF (make sure the word **BYPASS** is not lighted on the front panel).	

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