CONTENTS

To enhance the set-top, the on-screen menus may be updated from time to time, over the cable. They may therefore differ from those shown in this manual.

The latest issue of this manual, with related information, is available on the Pace website at: www.pacemicro.com/manuals.asp

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 the set-top, please observe the precautions discussed in this document.

Warnings on the set-top

CAUTION	ATTENTION
RISK OF ELECTRIC SHOCK DO NOT OPEN	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 the 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 the set-top.

Other warnings

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER OF THE SET-TOP.
THERE ARE NO USER-SERVICEABLE PARTS INSIDE IT.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS SET-TOP TO RAIN OR MOISTURE.

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.

Installation

The installation of the 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 your 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 the 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 the home, consult the dealer or local power company.

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

Placement and mounting

Do not place the set-top on an unstable or uneven surface. The set-top may fall, causing serious injury to a child or adult and serious damage to the set-top. If you mount the 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 the set-top are provided for ventilation, to ensure reliable operation of the set-top and to protect it from overheating.

- never block the ventilation openings by placing the 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 the 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 3 inches around the set-top for sufficient ventilation.

See also item 7 in the Important Safety Instructions.

Water and moisture

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

Entry of objects and liquids

Never push objects of any kind into the 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 the set-top.
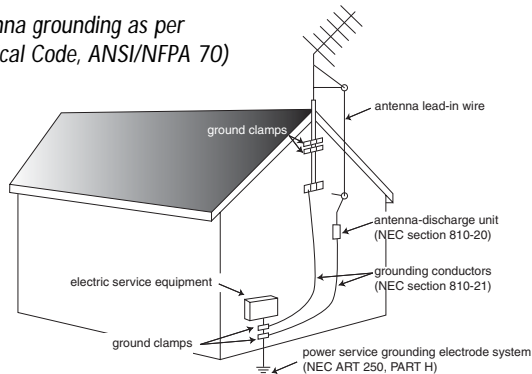
Risk of fire or scorching

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

Outdoor antenna grounding

Be sure that any outside antenna or cable system connected to the 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)

Power lines

You must not locate an outside antenna system in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, you must take extreme care to avoid touching such power lines or circuits, as contact with them might be fatal.

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 the set-top is 32-104°F. If the ambient temperature around the set-top falls outside this range, you must correct this in order for the 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 the set-top, ask the service technician to perform safety checks to determine that the set-top is in its proper operating condition. See also item 14 in the Important Safety Instructions.

SAVE THIS INFORMATION FOR FUTURE REFERENCE

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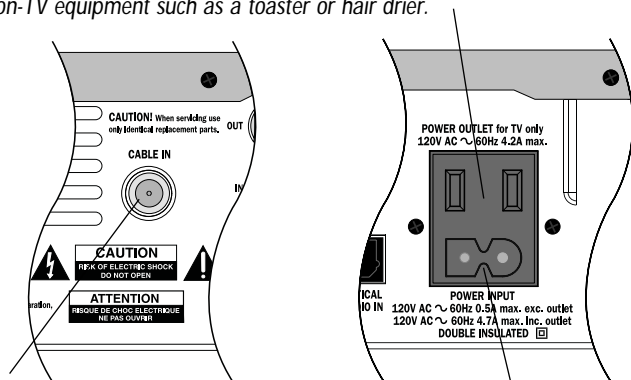
The CABLE IN connector is designed for connection to a cable network only. You must not connect any other equipment, such as a VCR, to this input.

POWER INPUT

Safety aspects of connections

Full details of the rear panel are on page 10.

Connecting

Do not connect the 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.

The set-top operates with a 120 V AC, 60 Hz power supply. Do not connect the 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 only be fitted one way into the power input jack of the set-top. Connect this end first, before inserting the polarized plug into the wall socket-outlet.

Disconnecting

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

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

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 the family, has already suffered symptoms linked to epilepsy (seizure or loss of consciousness) in the presence of stimulation by light, please consult the 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 the television screen.
- Sit at a reasonable distance from the 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 the set-top without written authorization from the manufacturer. Unauthorized modification could void your authority to operate the set-top.

NOTE

The 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. The 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 the set-top does cause harmful interference to radio or television reception, which can be determined by turning the 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 the set-top and the receiver.
- Connect the set-top to an outlet on a circuit different from that to which the receiver is connected.
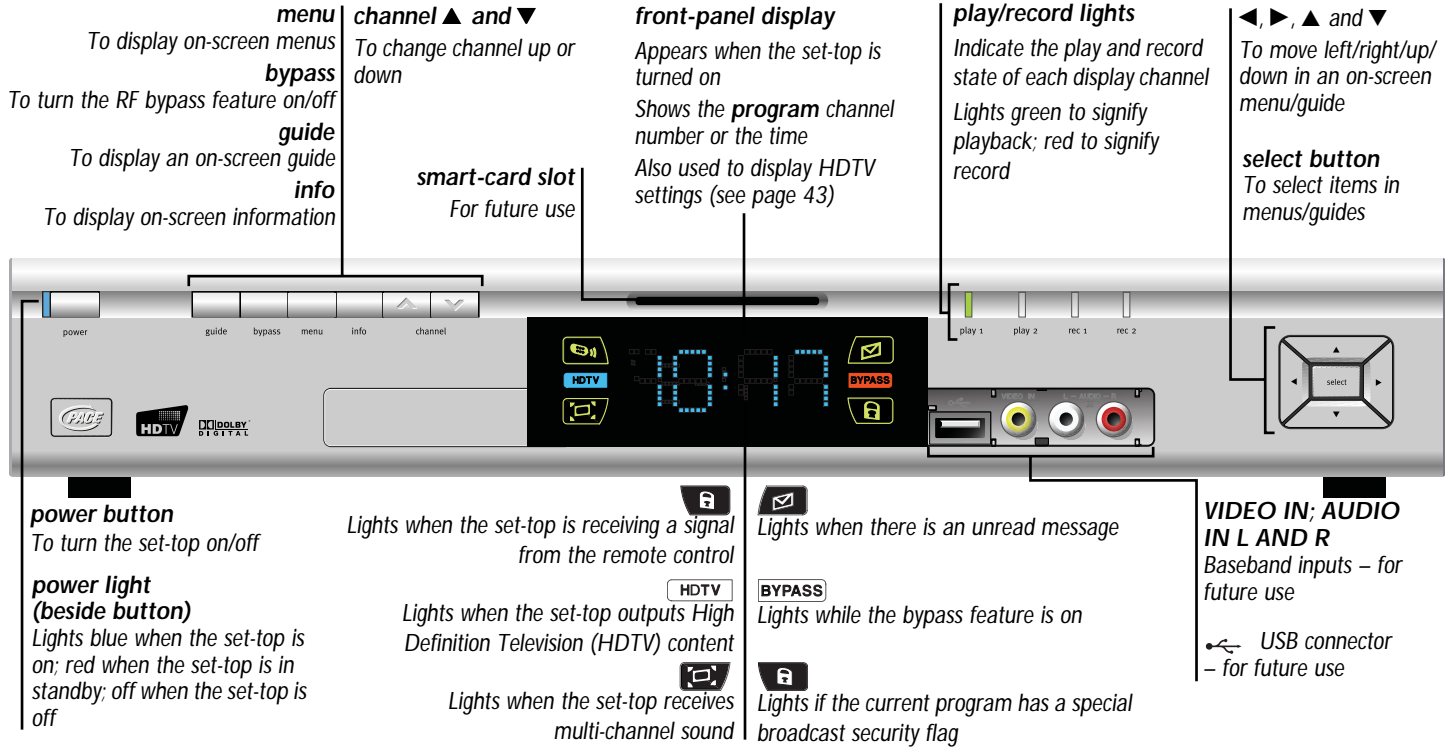- Consult the dealer or an experienced radio/TV technician for help.

OVERVIEW

- Read all the safety information on page 2 through 7.
- Familiarize yourself with the front and rear panels of the set-top (see page 9 and page 10).
- Do you want to control a VCR from the set-top? If so, connect a VCR controller (IR transmitter) (see page 13).
- Is the set-top in a TV cabinet with closed non-transparent doors or somewhere else where its IR-receive window is blocked from view? If so, connect a remote eye (IR receiver) (see page 14).
- Decide how you want to connect the set-top (and to which equipment) and look at the table (right) to see which set-up you should use.
- Be aware of menu settings that could affect your choice of set-up (see page 57).
- Connect the equipment together according to your chosen set-up, but do not yet connect the power cords (see page 15 through 35).
- Connect the power cords and turn on the equipment (see page 36 through 38).
- Check that you can see a picture on the TV and do any necessary tuning (see page 38).
- Check whether the HDTV-display settings are appropriate for the TV being used and change them if necessary (see page 44 through 54).
- Any problems? Consult the "Solving Problems" section on page 58.

Using the TV's HDMI connector:

HDMI TV (+ optional home theater receiver)	Set-up A
DVI HDTV (+ optional home theater receiver)	Set-up B
VCR and HDMI TV	Set-up C
VCR, home theater receiver and HDMI TV	Set-up D
DVD player and HDMI TV	Set-up E
VCR, DVD player, home theater receiver and HDMI TV	Set-up F

Using the TV's component video and stereo audio connectors:

HDTV (+ optional home theater receiver)	Set-up G
DVD player and HDTV (+ optional home theater receiver)	Set-up H
VCR, DVD player, home theater receiver and HDTV	Set-up I

menu
To display on-screen menus

bypass
To turn the RF bypass feature on/off

guide
To display an on-screen guide

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 the set-top is turned on

*Shows the **program** channel number or the time*

Also used to display HDTV settings (see page 43)

play/record lights
Indicate the play and record state of each display channel

Lights green to signify playback; 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 button
To turn the set-top on/off

power light (beside button)
Lights blue when the set-top is on; red when the set-top is in standby; off when the set-top is off

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

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

Lights when the 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
Baseband inputs – for future use

USB connector – for future use

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REAR PANEL

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 connection to a 1394-compatible device

DIGITAL AUDIO OUT
Electrical S/PDIF audio output

COMPONENT VIDEO IN
*Component **analog** video input*

S-VIDEO
S-video output

VIDEO IN
Video baseband input

SATA
For connection to an external hard drive

DIGITAL AUDIO IN
Electrical S/PDIF audio input

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

VIDEO OUT
Video baseband output

POWER OUTLET
(500 W max.)
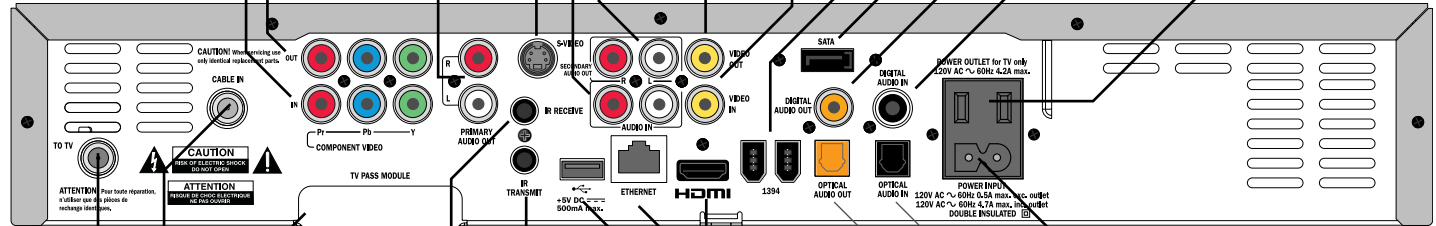
TO TV
RF output to the TV or VCR

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)

CABLE IN
From cable service-provider

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

UNIVERSAL SERIAL BUS (USB)
For future use

ETHERNET
For future use

OPTICAL AUDIO IN
Optical S/PDIF audio input

OPTICAL AUDIO OUT
Optical S/PDIF audio output

CABLE IN	Connect the cable service here.
TO TV	Connect to the RF/antenna input on a TV or VCR.
COMPONENT VIDEO OUT	If the HDTV does **not** have an HDMI (see below), connect the HDTV here.
COMPONENT VIDEO IN	Connect equipment such as a DVD player, if it has component video jacks.
TV PASS MODULE	Connect a **TV pass®** module, if required.
PRIMARY AUDIO OUT	Connect to the stereo audio inputs on a 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 a VCR or TV.
SECONDARY AUDIO OUT	Connect to the stereo audio inputs on a secondary TV, VCR or optional stereo amplifier
AUDIO IN	Connect to the stereo audio outputs on a DVD player (or similar).
VIDEO OUT	Connect to the video baseband input on a VCR (or a standard TV).
VIDEO IN	Connect to the video baseband output on a DVD player (or similar).

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 the 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 drive.
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 the set-top.
OPTICAL AUDIO IN	Connect to any **optical** digital audio output that loops through the set-top
POWER OUTLET	Connect the TV's power cord here to provide AC power to a TV.
POWER INPUT	Connect the set-top's power cord here.

GETTING THE CABLES READY

Below is a list of cables (and their connectors) that are shown in the diagrams on page 13 through 34, along with a key to how they are depicted in the diagrams. (Options are shown as dashed lines.)

Cable type	Connector type	Cable numbers	Drawn as
75 Ω coaxial	male F-type		▬▬▬▬
HDMI	HDMI 19-pin type A	1	▬▬▬▬
HDMI (to DVI)	HDMI 19-pin type A	2	▬▬▬▬
Component video 75 Ω coax	male RCA jack	9, 12	▬▬▬▬
Video 75 Ω coaxial	male RCA jack		
S-video	4-way male mini-DIN	4, 5	▬▬▬▬
Stereo audio coaxial	male RCA jack	3, 6, 7, 10	▬▬▬▬
75 Ω digital audio coaxial*	male RCA jack	8, 11	▬▬▬▬
Digital audio optical	Optical S/PDIF		
VCR controller	male 3.5 mm jack		▬▬▬▬
IR receive	male 3.5 mm jack		▬▬▬▬
USB	USB 1.1 series A plug		

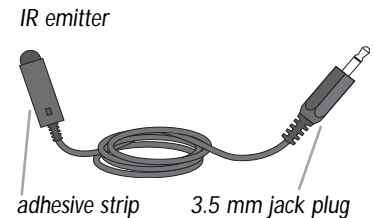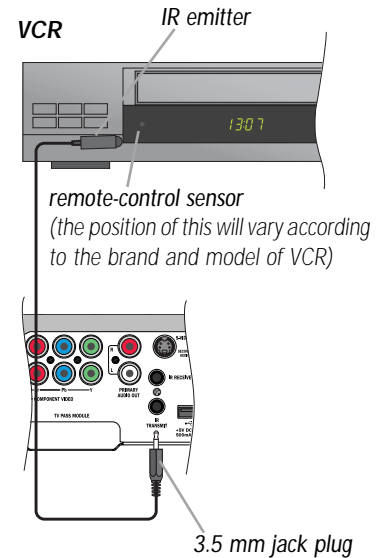*Any cable connected to DIGITAL AUDIO IN or DIGITAL AUDIO OUT must be 75 Ω coaxial, not regular audio cable.*

You can control a VCR by connecting a VCR controller (IR transmitter) to the rear panel of the set-top. As an example, if you set up timers in the set-top (to switch to specific programs at set times), the emitter on the VCR controller will cause the VCR to record at those times.

The Pace VCR controller for use with this set-top is not supplied with the set-top. Contact the cable operator for details. It has an emitter that is designed to stick near to the remote-control sensor of the VCR it controls.

Installing the VCR controller

1. Refer to the VCR's user guide to find out where its remote-control sensor is. (This is also known as the IR or infrared sensor.)
2. Select a location on the VCR to attach the IR emitter. This must be within 3 inches of the remote-control sensor. Make sure the area is clean and dry.
3. Remove the covering from the adhesive strip on the IR emitter.
4. Making sure the round end points towards the remote-control sensor, stick the emitter onto the VCR.
5. Insert the 3.5 mm jack plug on the other end of the VCR controller into the socket labeled "IR TRANSMIT" on the rear panel of the set-top.
6. You must then use the on-screen menus to set up the set-top to recognize the brand of VCR that is being used. Consult the instructions for the on-screen menus and the instructions for the VCR controller for further details on how to do this.

VCR

IR emitter

remote-control sensor
(the position of this will vary according to the brand and model of VCR)

3.5 mm jack plug

IR emitter

adhesive strip   *3.5 mm jack plug*

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CONNECTING A REMOTE EYE (IR receiver)

You may need to install the set-top in an equipment closet with closed non-transparent doors or some other location where the remote-control sensor (IR-receive window) on the set-top's front panel is blocked from view (for example, if the TV is wall-mounted). In that case, you need to connect a remote eye (IR receiver) to the set-top's rear panel. The IR signals from the remote control can be received by the remote eye and they then reach the set-top through the remote eye's cable. This is not supplied with the set-top.

1. Select a location for the remote eye. This will typically be on the top or side of the TV, but could be in a different, but convenient, location. Make sure that it is in a position where there is a clear path between the remote control and the remote eye.

2. Make sure that you can conveniently route the cable. The cable on the remote eye is approximately 10 feet long, so make sure that the location you have chosen is within 10 feet of the IR RECEIVE jack on the set-top's rear panel.

3. Make sure the area where you will attach it is clean and dry.

4. A small adhesive patch is supplied with the remote eye. Remove the paper from one side of the patch and stick the patch to the back (larger, flat side) of the remote eye.

5. Remove the paper from the other side of the adhesive patch and stick the remote eye at the position you want. Make sure that the window at the curved end of the remote eye points towards the position from which the remote control will be operated.

6. Insert the 3.5 mm jack plug on the other end of the remote eye's cable into the socket labeled "IR RECEIVE" on the rear panel of the set-top.

front of HDTV

remote eye

adhesive patch

3.5 mm jack plug

remote eye

14
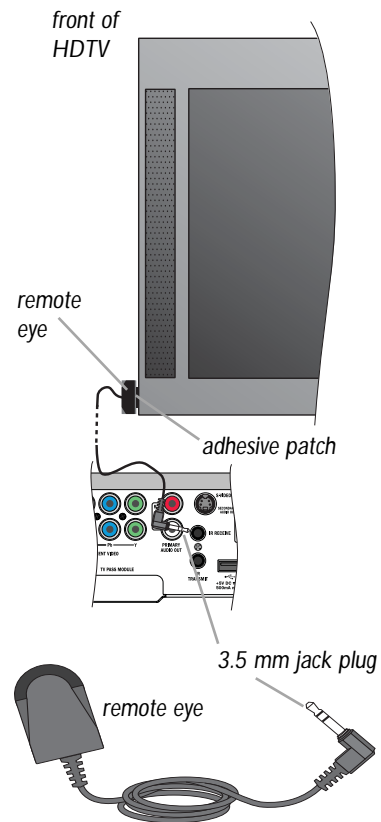
On the following pages are diagrams that show you how to connect typical equipment (HDTV, VCR, DVD player and home theater receiver) to the set-top. The connected items are shown individually and then in combination (see the tables, right). Some of the connections may change when extra equipment is added. For example, when a you add a home theater receiver, some cables that previously went to the TV can, instead, go to the home theater receiver.

Activating baseband loopthrough for a DVD or similar equipment

To activate baseband loopthrough, simply put the set-top into standby 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 the set-top is in standby, the light beside the **power** button is red.

If you activate baseband loopthrough, the following occur:

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

Using the TV's HDMI connector:

HDMI TV (+ optional home theater receiver)	Set-up A
DVI HDTV (+ optional home theater receiver)	Set-up B
VCR and HDMI TV	Set-up C
VCR, home theater receiver and HDMI TV	Set-up D
DVD player and HDMI TV	Set-up E
VCR, DVD player, home theater receiver and HDMI TV	Set-up F

Using the TV's component video and stereo audio connectors:

HDTV (+ optional home theater receiver)	Set-up G
DVD player and HDTV (+ optional home theater receiver)	Set-up H
VCR, DVD player, home theater receiver and HDTV	Set-up I

Set-up A: HDMI TV
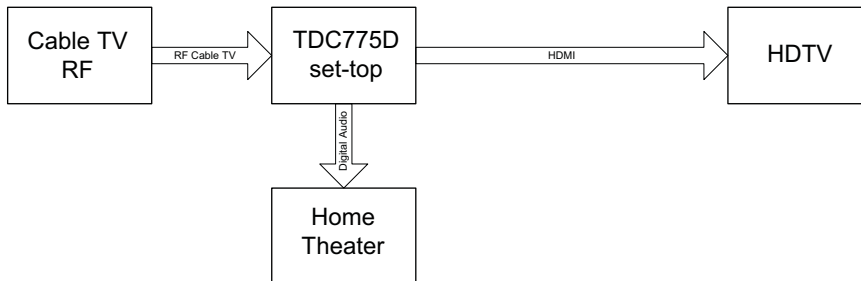## (+ optional home theater)
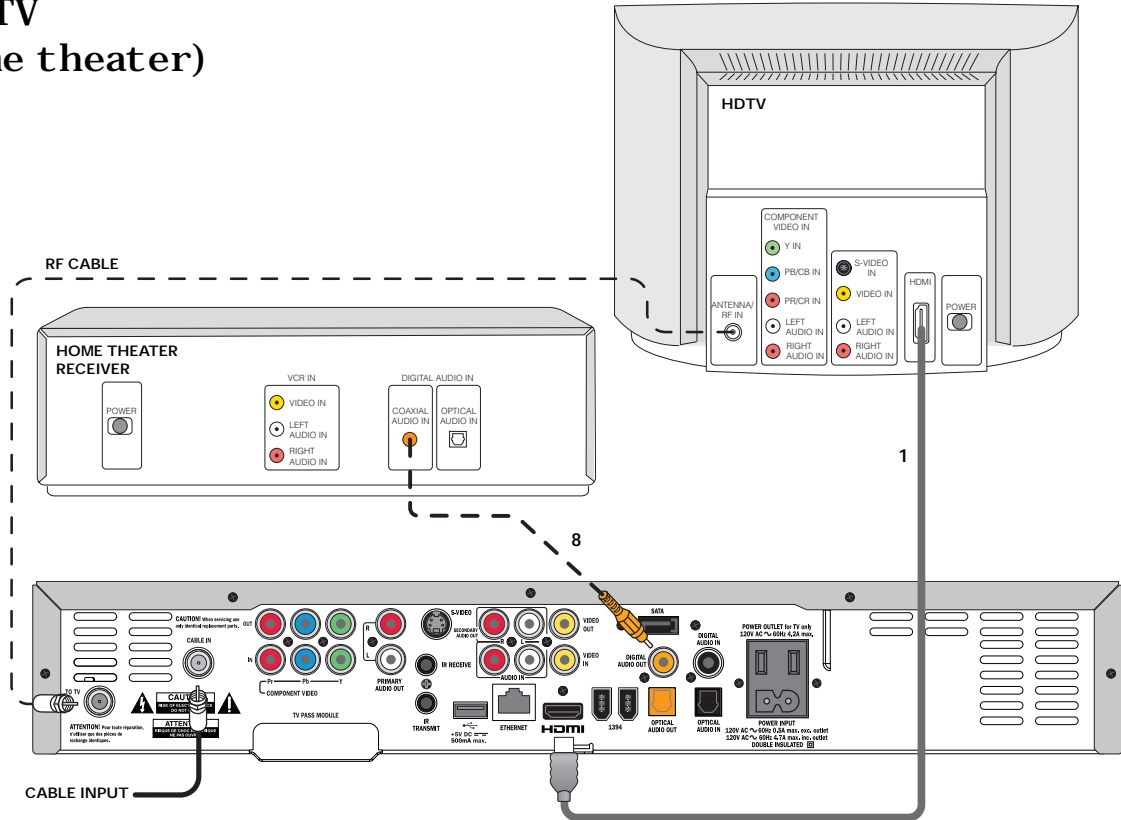
**About Set-up A: Using an HDMI cable to connect a TV
(optional home theater shown)**

This is the most basic set-up, with only an HDTV and optional home theater connected.

• The set-top has a high-definition multimedia interface (HDMI) connector.

• The HDTV has an HDMI, so use an HDMI cable (1) to connect it to the set-top's HDMI.
  HDMI carries both high-resolution digital video and digital audio.

• To enhance the sound, you can connect a home theater receiver.

• There is a choice of two S/PDIF outputs: (i) electrical (labeled DIGITAL AUDIO OUT, which is
  shown connected by cable 8 in the diagram, opposite) and (ii) optical (labeled OPTICAL
  AUDIO OUT).

• When you add a home theater receiver, the set-top's audio connection to the TV (via HDMI) is
  not needed, so you may wish to mute (turn off) the audio on the TV

.

Cable Wiring Diagram A

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Set-up B: DVI TV
(+ optional home theater)

About Set-up B: Using an HDMI-to-DVI cable to connect a TV
(optional home theater shown)

If the TV has a DVI connector, you can still take advantage of the digital video signal.
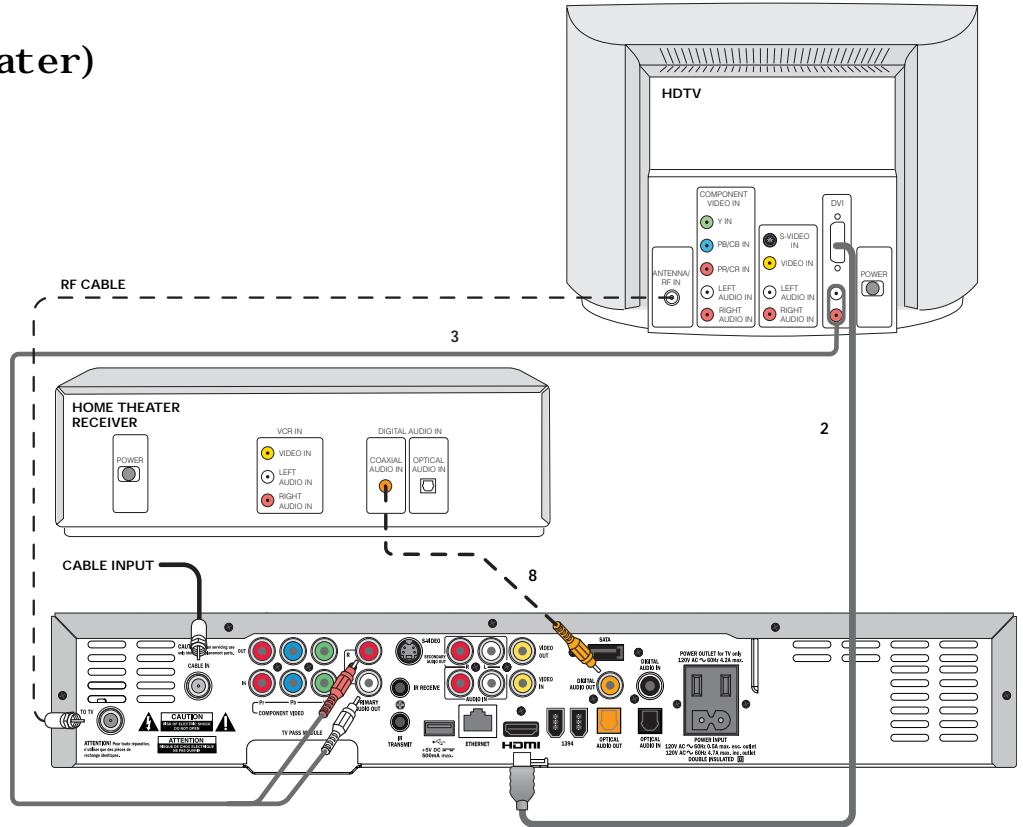
• The set-top has a high-definition multimedia interface (HDMI) connector.

• The HDTV has a DVI, so use a special HDMI-to-DVI cable (2) to connect it to the set-top's HDMI. Both DVI and HDMI carry high-resolution digital video.

• Use baseband audio cables: cable 3 from the set-top's PRIMARY AUDIO OUT jacks to the HDTV's baseband audio inputs, as shown.

• To enhance the sound, you can connect a home theater receiver, using the set-top's DIGITAL AUDIO OUT connector (as shown) or its OPTICAL AUDIO OUT connector. In that case, cable 3 is not needed.

Cable Wiring Diagram B

Cable TV RF	→ RF Cable TV →	TDC775D set-top	DVI & Audio →	HDTV

Digital Audio ↓

Home Theater

19
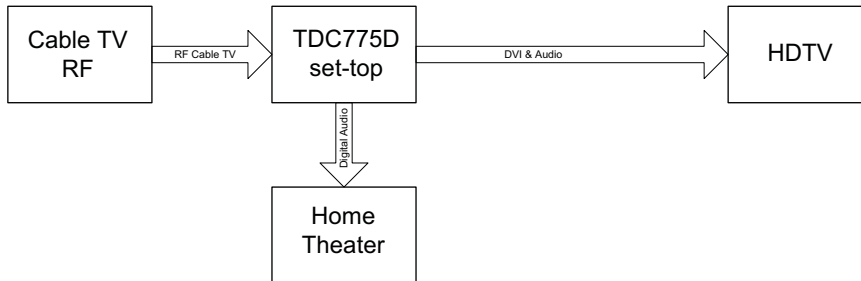
Set-up C: VCR and HDMI TV
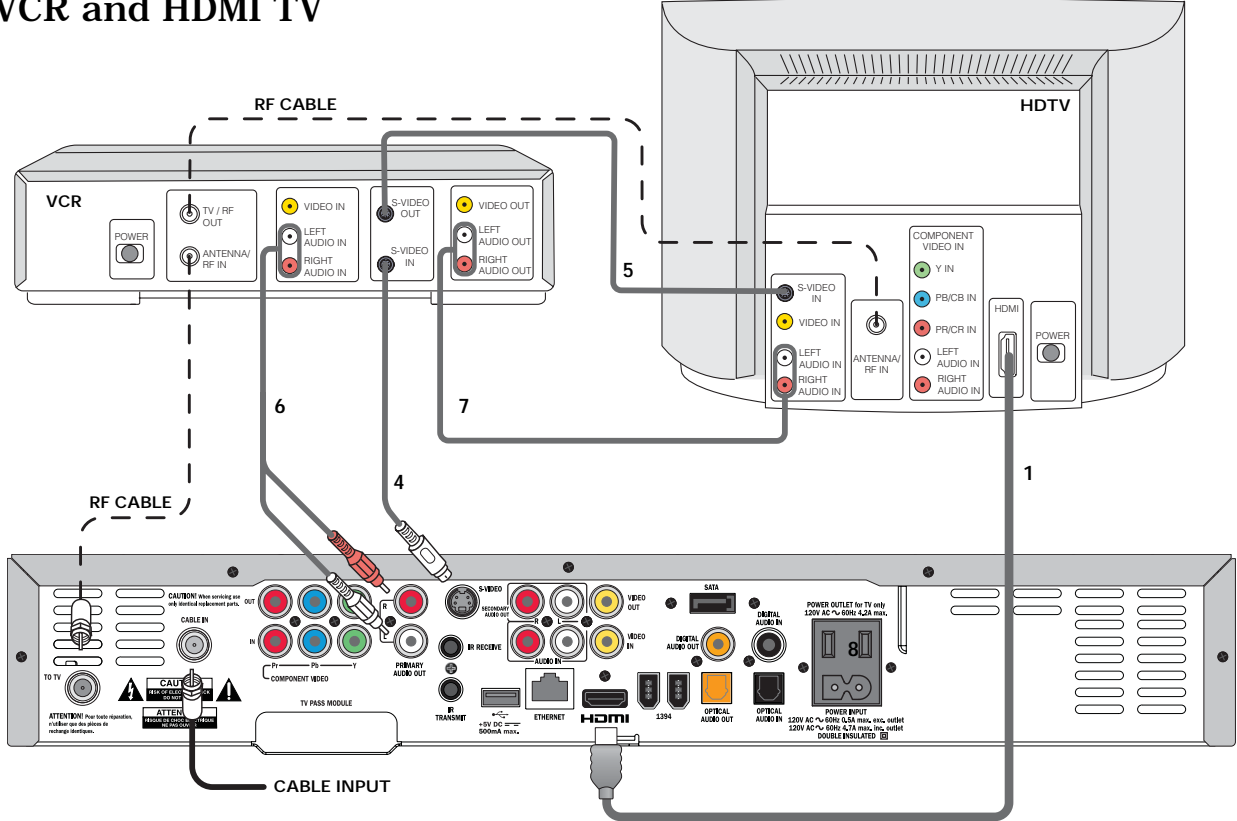
About Set-up C: Using an HDMI cable to connect a TV and S-video cable to connect a VCR

In this set-up, a VCR is added to the basic set-up. The way in which you connect the HDTV to the set-top (either HDMI or component video) does not affect the way you connect the VCR. Therefore an HDMI connection between the set-top and the TV is shown on page 20. (It could be component video instead).
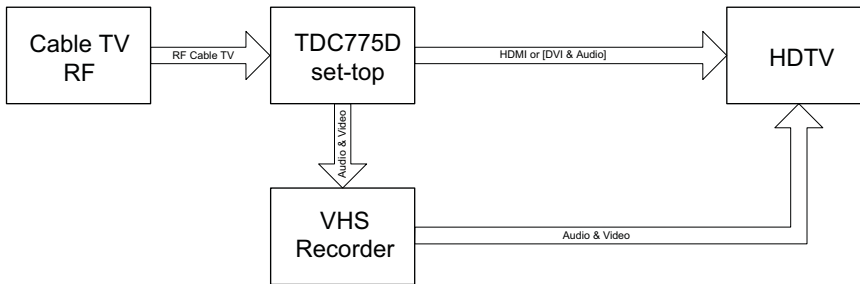
- If the VCR and HDMI TV have S-video connectors, use S-video cables (4 and 5), as this gives a better quality picture. If there are no S-video connectors, use the baseband video jacks and video 75 ohm coaxial cables.

- Use baseband audio jack cables: cable 6 (from the set-top's PRIMARY AUDIO OUT jacks) and cable 7 (between the VCR and the HDMI TV).

- The path for recording on the VCR is cables 6 (baseband stereo audio) and cable 4 (S-video) (or via baseband video jacks).

- The path for playing back from the VCR is cables 7 (baseband stereo audio) and cable 5 (S-video) (or via baseband video jacks).

- If the HDTV has only one pair of baseband audio input jacks and you are using them to connect the set-top to the HDTV (for example, if you are using component video, rather then HDMI), you can connect the baseband audio cables (7) from the VCR to the AUDIO IN jacks on the set-top. The audio then loops through the set-top when the VCR is playing back. The set-top needs to be turned off for this baseband loopthrough to occur.

CONNECTING THE EQUIPMENT (cont.)

Cable Wiring Diagram C

| Cable TV RF | → RF Cable TV → | TDC775D set-top | → HDMI or [DVI & Audio] → | HDTV |

TDC775D set-top → Audio & Video → VHS Recorder → Audio & Video → HDTV

Cable Wiring Diagram D

| Cable TV RF | → RF Cable TV → | TDC775D set-top | → HDMI or [DVI & Audio] → | HDTV |

TDC775D set-top → Digital Audio → Home Theater → HDTV

TDC775D set-top → A&V → VHS Recorder → Stereo Audio → Home Theater

VHS Recorder → Audio & Video → HDTV

22
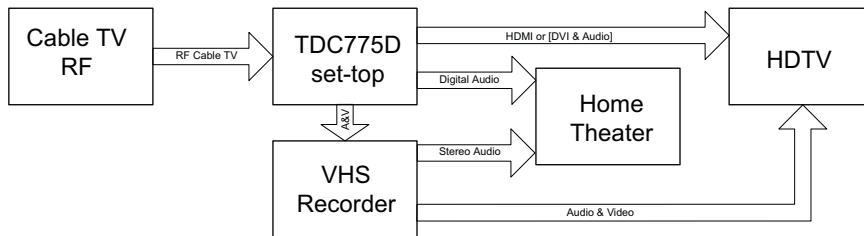
Set-up D: VCR, Home Theater and HDMI TV

RF CABLE

HDTV

VCR

POWER

TV / RF OUT

ANTENNA/ RF IN

VIDEO IN

LEFT AUDIO IN

RIGHT AUDIO IN

S-VIDEO OUT

S-VIDEO IN

VIDEO OUT

LEFT AUDIO OUT

RIGHT AUDIO OUT

RF CABLE

COMPONENT VIDEO IN

S-VIDEO IN

VIDEO IN

LEFT AUDIO IN

RIGHT AUDIO IN

Y IN

PB/CB IN

PR/CR IN

LEFT AUDIO IN

RIGHT AUDIO IN

ANTENNA/ RF IN

HDMI

POWER

HOME THEATER RECEIVER

POWER

VCR IN

VIDEO IN

LEFT AUDIO IN

RIGHT AUDIO IN

DIGITAL AUDIO IN

COAXIAL AUDIO IN

OPTICAL AUDIO IN
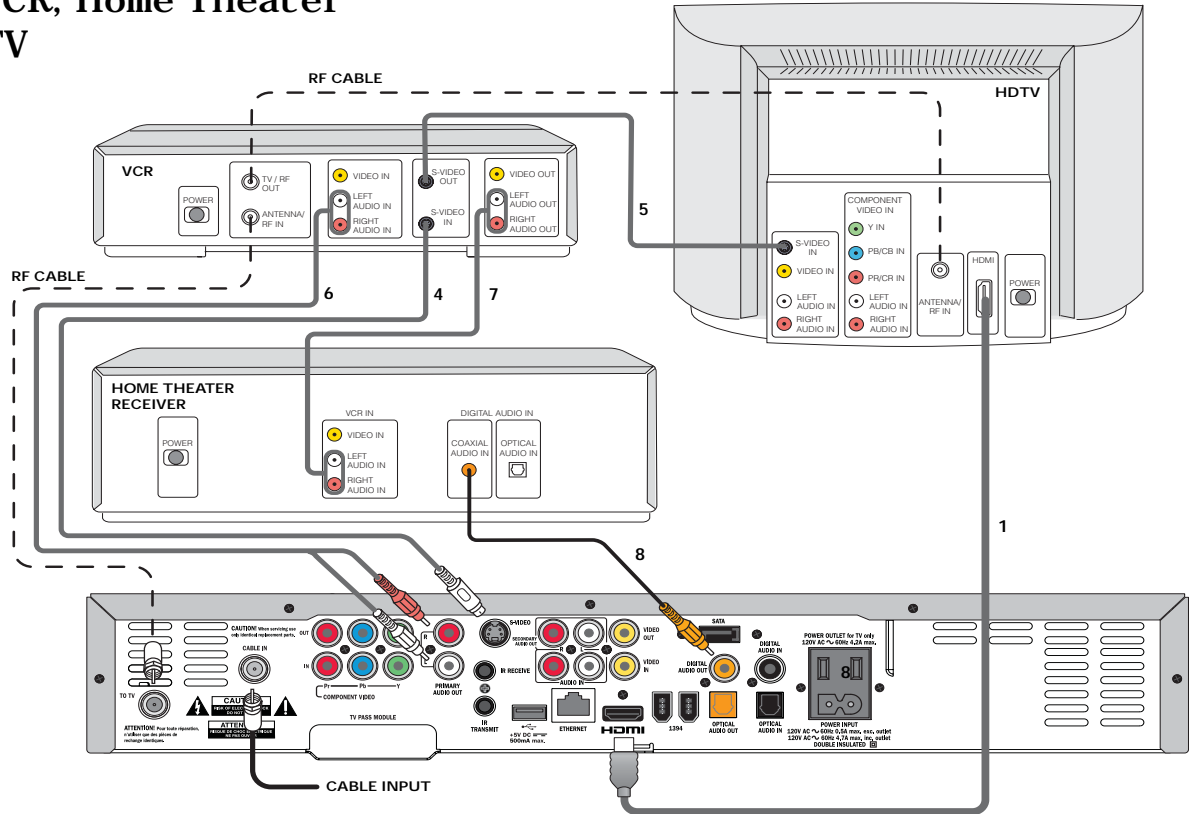
CABLE INPUT

About Set-up D: Adding a home theater receiver to Set-up C

All of the points mentioned in Set-up C apply

- To enhance the sound, connect a home theater receiver.
- There is a choice of two S/PDIF outputs: (i) electrical (labeled DIGITAL AUDIO OUT, which is shown connected by cable 8 in the diagram, opposite) and (ii) optical (labeled OPTICAL AUDIO OUT).
- When you add a home theater receiver, the set-top's audio connection to the TV (via HDMI) is not needed, so you may wish to mute (turn off) the audio on the TV.
- Instead of the VCR's baseband audio output going to the TV, it connects via cables 7 to the home theater receiver.
- When the set-top is turned off, there are the following audio loopthroughs, which allow you to connect additional equipment to the home theater receiver:

|		
DIGITAL AUDIO IN	loops through to	DIGITAL AUDIO OUT
OPTICAL AUDIO IN	loops through to	OPTICAL AUDIO OUT
AUDIO IN	loops through to	PRIMARY AUDIO OUT
AUDIO IN	loops through to	SECONDARY AUDIO OUT

Set-up E: DVD and HDMI TV
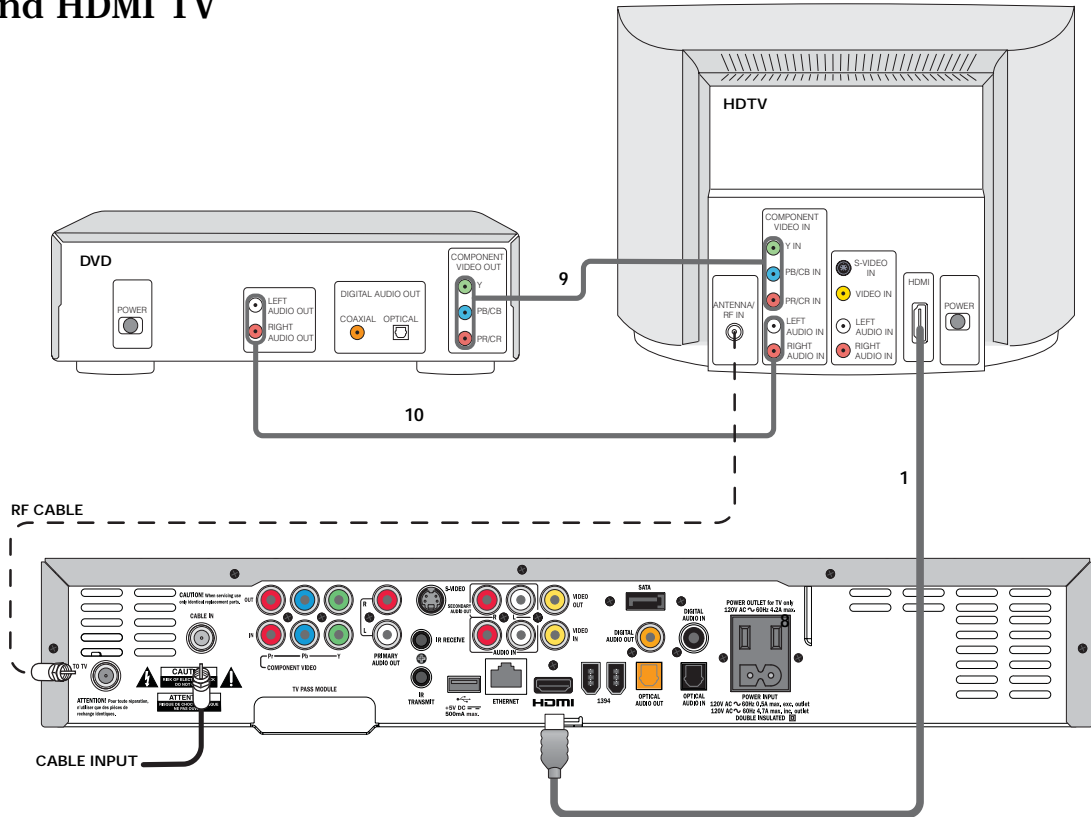
CONNECTING THE EQUIPMENT (cont.)

About Set-up E: Using component video cables to connect a DVD player and an HDMI TV

In this set-up, a DVD player is added to the basic set-up. In this example, the set-top and HDTV are connected by an HDMI cable. The component video option is shown in Set-up H on page 31.

- If the set-top is connected to the HDTV by an HDMI cable, you can connect video directly between the DVD player and HDTV. There is no need to loop the video through the set-top.
- This set-up assumes that the DVD player has component video output jacks and you make the connection using three cables (9). If it does not have component video outputs, then you can connect it to the HDTV using any spare baseband video or S-video input jacks on the HDTV.
- The audio connection from the DVD player can go directly to the HDTV, as shown by cables 10 on page 25 (provided that there are enough audio input jacks on the HDTV).
- If the HDTV's audio inputs are limited, you can use the set-top's baseband audio loopthrough feature to loop the audio through the set-top. The set-top must be turned off for this audio loopthrough to occur.

Cable Wiring Diagram E
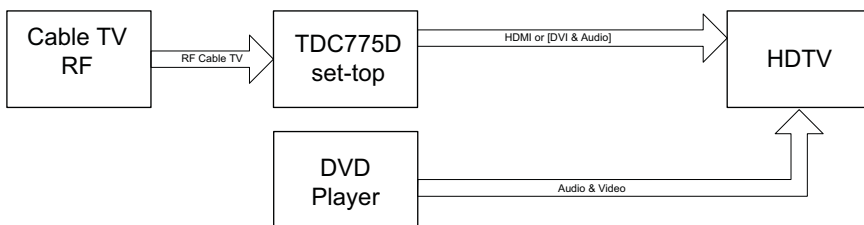
Set-up F: VCR, DVD, Home Theater and HDMI TV
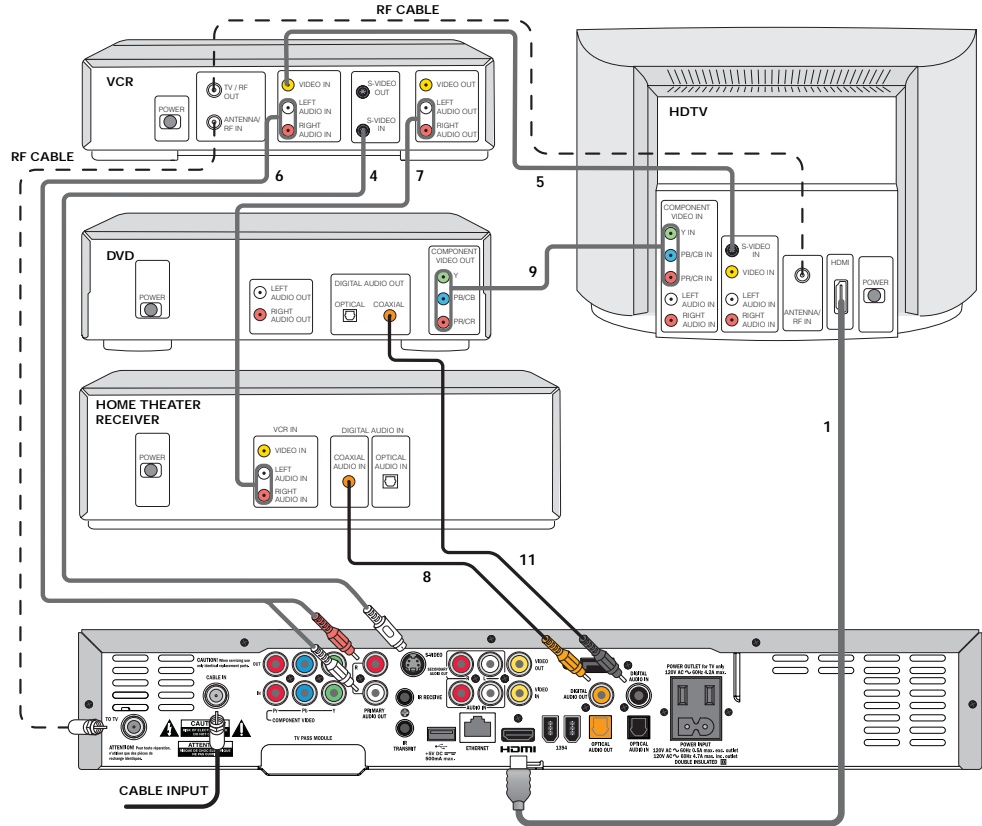
CONNECTING THE EQUIPMENT (cont.)

About Set-up F: Combining all the equipment with an HDMI TV

This set-up shows the best use of cables and connectors if the HDTV has an HDMI and if the DVD player has component video connectors.

- Although the video and audio from the set-top to the VCR could be looped through the home theater receiver, it is not necessary to do this and it requires more cables.

- When you add a home theater receiver, as shown, the set-top's audio connection to the TV (via HDMI) is not needed, so you may wish to mute (turn off) the audio on the TV.

- The digital audio output from the DVD player loops through the set-top to the home theater receiver. For this to occur, the set-top must be turned off.

Cable Wiring Diagram F

Set-up G: Component-video HDTV
(+ optional home theater)

29
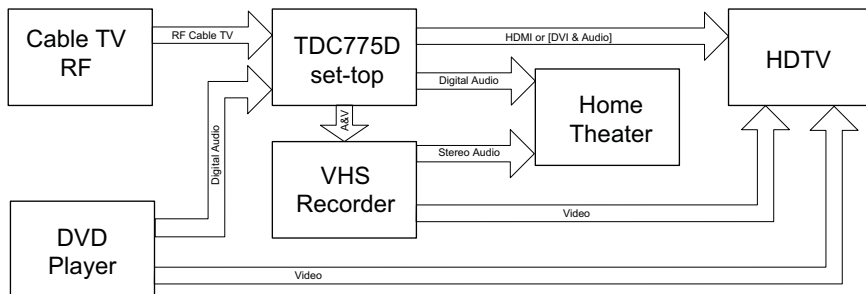
About Set-up G: Using component-video cables to connect an HDTV (optional home theater shown)

This is the most basic set-up for a non-HDMI TV, with only an HDTV and optional home theater.

- The set-top has component-video connectors as well as an HDMI.
- Use component-video cables (12) to connect the HDTV to the set-top.
- In addition, connect baseband audio cables (3) between the PRIMARY AUDIO OUT jacks on the set-top and the baseband audio in jacks on the HDTV.
- To enhance the sound, you can connect a home theater receiver, in which case baseband audio cable 3 is not needed.
- There is a choice of two S/PDIF outputs: (i) electrical (labeled DIGITAL AUDIO OUT, which is shown connected, by cable 8 in the diagram, opposite) and (ii) optical (labeled OPTICAL AUDIO OUT).

Cable Wiring Diagram G
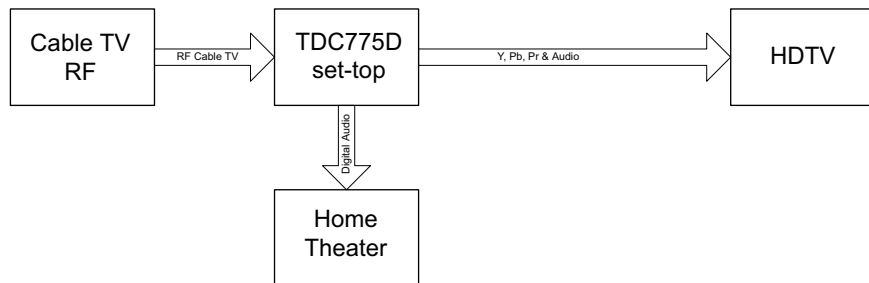
Set-up H: DVD and Component-video HDTV (+ optional home theater)
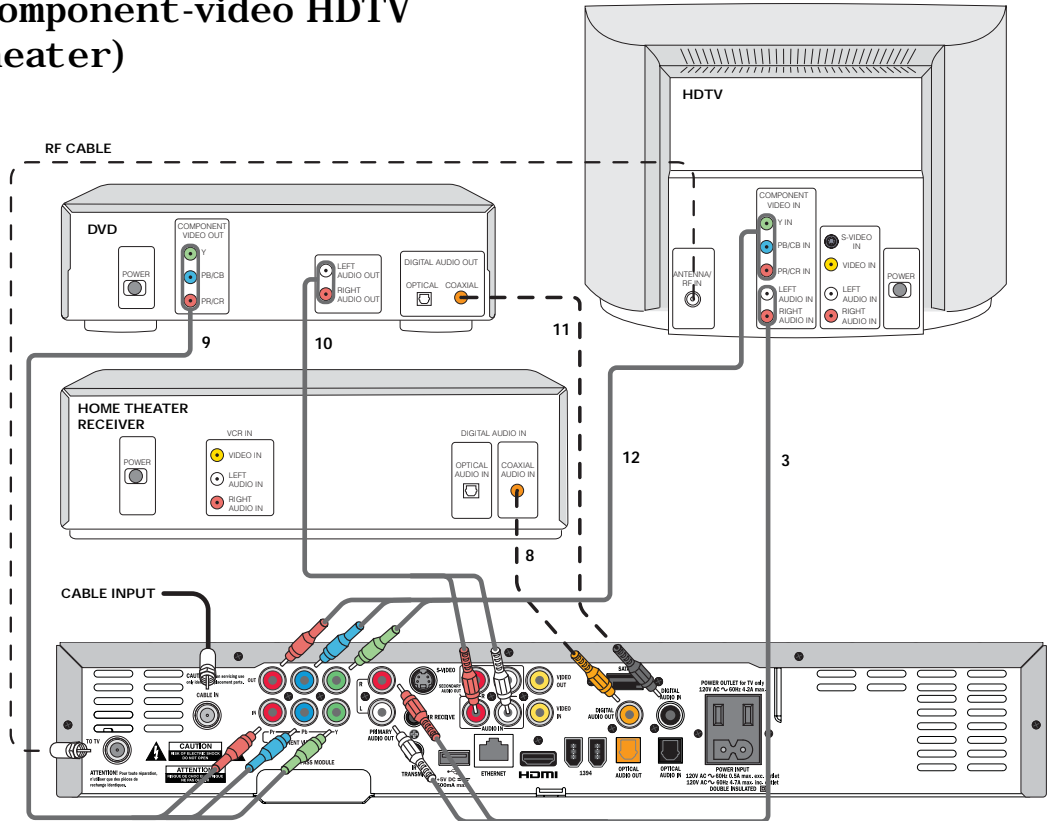
CONNECTING THE EQUIPMENT (cont.)

**About Set-up H: Using component-video cables to connect a DVD player and an HDTV**

In this set-up, a DVD player is added to Set-up G.

- As the HDTV has component video inputs, you can loop the DVD player's video through the set-top, using cables 9 and 12, as shown. The set-top must be turned off for loopthrough to occur.

- If the DVD player does not have component video outputs, then you can connect it directly to the HDTV using any spare baseband video or S-video input jacks that the HDTV may have.

- The audio connection from the DVD player could go directly to the HDTV (provided that there are enough audio input jacks on the HDTV).

- If the HDTV's audio inputs are limited, you can use the set-top's baseband audio loopthrough feature to loop the audio through the set-top (cables 10 and 3) as shown. The set-top must be turned off for this audio loopthrough to occur.

- To enhance the sound, you can connect a home theater receiver, in which case baseband audio cables 3 and 10 are not needed.

- There is a choice of two S/PDIF inputs and outputs on the set-top: (i) electrical (labeled DIGITAL AUDIO, which are shown connected, by cables 8 and 11 in the diagram, opposite, and (ii) optical (labeled OPTICAL AUDIO).

- Audio from the set-top reaches the home theater receiver via cable 8 when the set-top is on.

- Audio from the DVD player loops through the set-top to the home theater receiver via cables 11 and 8 (for this to occur, the set-top must be off).

Cable Wiring Diagram H
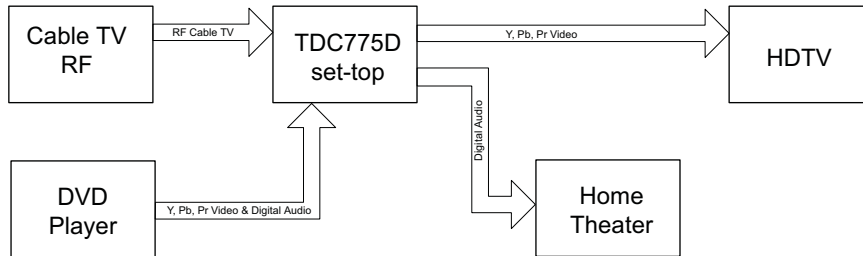
CONNECTING THE EQUIPMENT (cont.)

Set-up I: VCR, DVD, Home Theater and Component-video HDTV
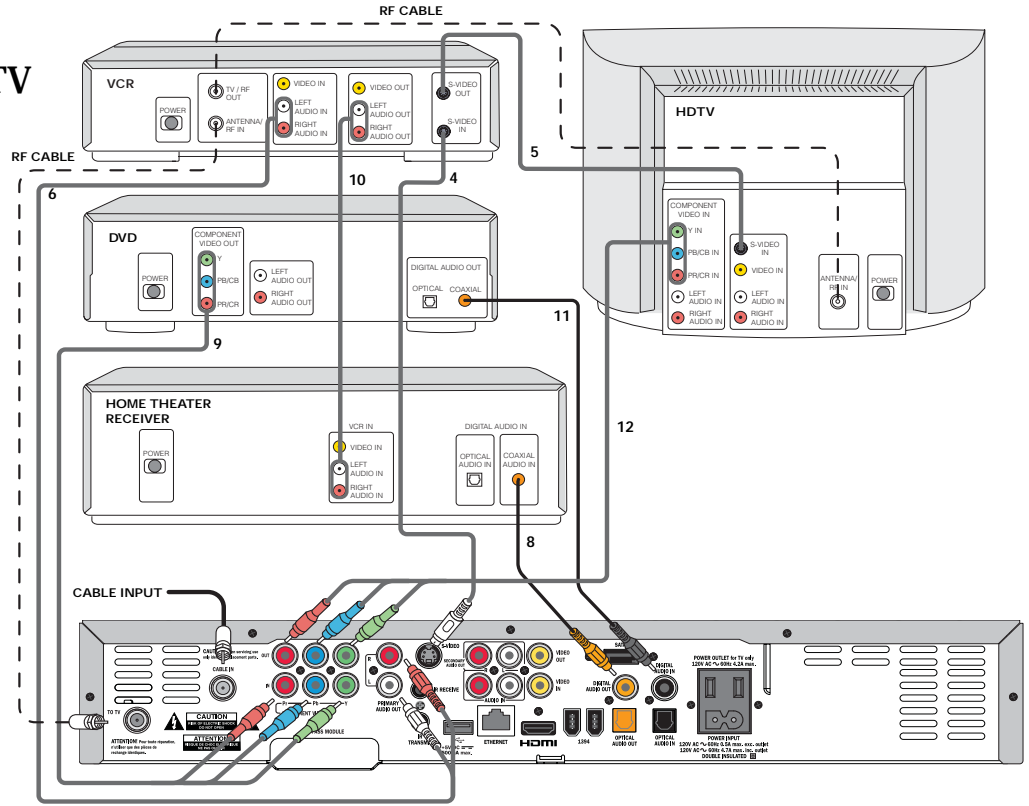
About Set-up I: Combining all the equipment for a component-video HDTV

This set-up shows the best use of cables and connectors if the HDTV and the DVD player have component video connectors.

- The audio output from the VCR goes to the home theater receiver (via cable 10) to enhance the sound during playback.

- Although the video and audio from the set-top to the VCR could be looped through the home theater receiver, it is not necessary to do this and it requires more cables.

- Although the component video output from the DVD player goes to the set-top, the loopthrough from the COMPONENT VIDEO IN jacks is only to the COMPONENT VIDEO OUT jacks. It is not looped though to the VIDEO OUT jack or S-VIDEO OUT jack.

Cable Wiring Diagram I
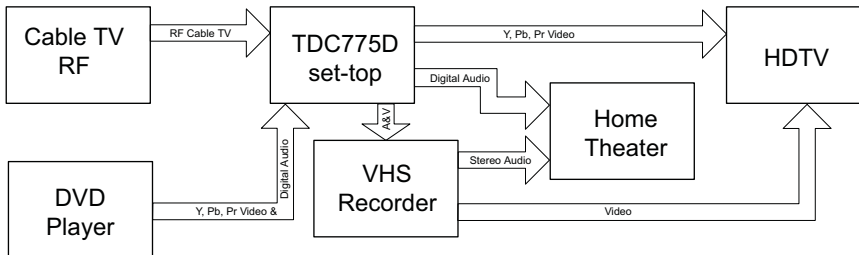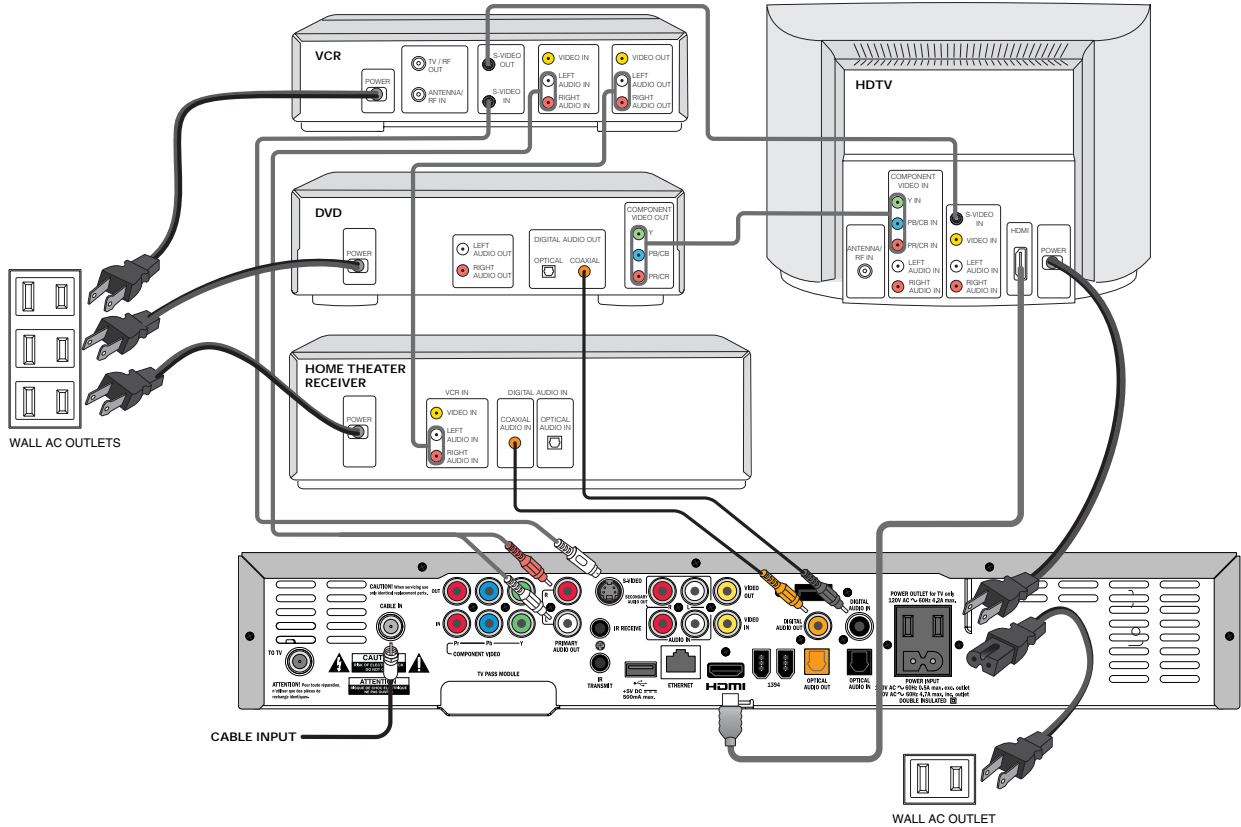
WARNINGS
Do not connect the set-top (or any other equipment such as a TV or VCR) to the AC power supply until you have properly connected all the other cables.
Do not defeat the safety purpose of the polarized plugs on power cords. A polarized plug has two blades with one wider than the other. This plug fits into the outlet in only one way; match the wide blade of the plug to the wide slot of the outlet.
Disconnect the set-top from the AC power supply before you disconnect any other equipment from its rear panel.
The only way to disconnect the 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). The set-top must therefore be installed near to the AC power socket-outlet, which should be easily accessible.

Connecting the TV to the AC power supply

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

Connecting the power cord to the set-top

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

Connecting equipment to the AC wall outlets

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

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Turning the set-top on and off

After you have connected the set-top to the AC wall outlet (and switched this outlet ON, if it has a switch), wait until you can see the time on its front-panel display.

Press the button labeled **power** on the front panel of the set-top to turn it on. The light beside the **power** button lights blue, to show that the set-top is ON.

Tuning the TV and VCR to the set-top

The set-top's RF output port (labeled "TO TV") can transmit signals on either channel 3 or channel 4. The cable operator has set up the set-top to transmit on the channel that is suitable for the installation location and should have told you which channel this is. You must tune the TV and the VCR to this output channel so that programs can be watched and recorded through the RF coaxial cables. To do the tuning, refer to the diagram on page 39 and carry out the following steps.

1. Make sure that all the equipment, including the set-top, is turned on.
   Make sure that you have NOT selected a baseband input at the TV.
   Make sure that the bypass feature is turned off (BYPASS is NOT lighted on the front panel).
2. On the VCR, switch the TV/VCR switch to "TV".
3. Tune the TV to the set-top's RF output channel (3 or 4, as stated by the cable operator).
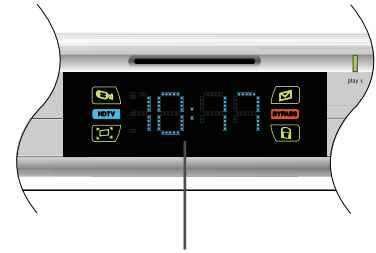
Front panel display, showing the time
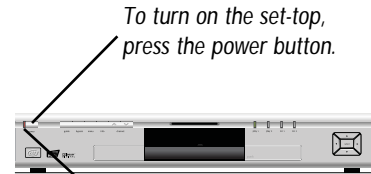
To turn on the set-top, press the power button.

The light beside the button lights blue.

You should now be able to see on the TV a program that is coming from the set-top. If you cannot see a program, check that the RF coaxial cables are securely and correctly connected (see the set-up diagrams). If there is still a problem, check with the cable operator that you are using the correct RF output channel.

1. When you can see a set-top program on the TV, switch the TV/VCR switch on the VCR to "VCR".

If you can still see the picture on the TV, everything is tuned correctly. If the picture disappears, carry out the following final step.

2. Tune the VCR by setting the VCR's RF output channel to the same RF channel number as the set-top and TV (either 3 or 4, as stated by the cable operator).

Everything should now be tuned correctly.

NOTE

Regardless of the program channel number selected on the set-top (and shown on its front-panel display), the RF output channel number will always be fixed (either 3 or 4, as quoted by the cable operator). The TV and VCR must be tuned to this channel if you want to watch and record programs through the RF coaxial cables.

Find out from the cable operator whether the set-top's RF output is channel 3 or

Set the VCR's RF output to the same
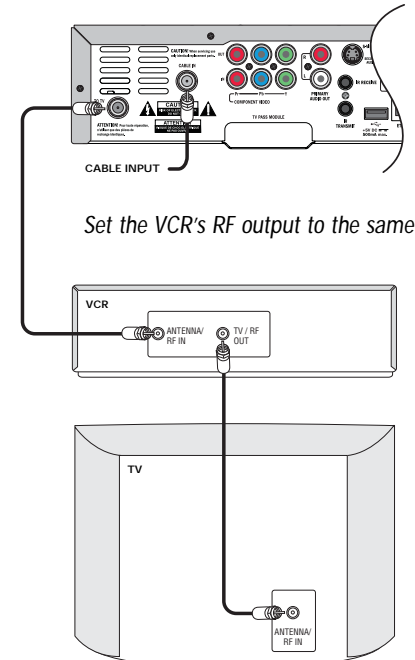
Tune the TV to the same channel number as the set-top's RF output (see step 3)

39

RF BYPASS

You use the RF bypass feature to make the regular (analog) channels bypass the set-top and pass directly to the TV and/or VCR.

For the RF bypass to work, the equipment must be connected by RF leads (see the diagram, right). Other connections are possible in addition to those shown (see connections A to I) provided that the RF connection is included.

When you turn on the bypass, you can use the TV's remote control to tune to any of the regular (analog) channels and watch that channel on the TV. At the same time, you can record a different channel (digital or analog) on the VCR. For this to happen, you must turn on the set-top (so that front-panel power light, around the **power** button, lights up), select on it the channel you wish to record (shown on its front panel) and set up the VCR to record from the set-top.

When you turn off the bypass, you see on the TV, the channel that is selected on the set-top. This is the same channel that the VCR receives. So, when the bypass is off, you can record only the channel that you are watching on the TV.

CABLE INPUT

VCR

ANTENNA/ RF IN

TV / RF OUT

TV

ANTENNA/ RF IN
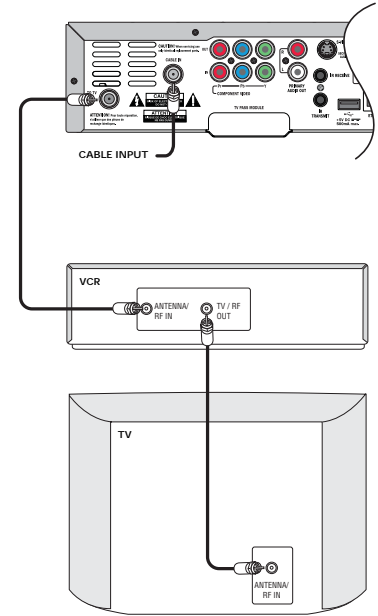
Turning bypass on and off

To turn on the bypass feature, press the **bypass** button on the set-top's front panel. To turn it off, press **bypass** again.

While the bypass is on, the word BYPASS is lighted on the set-top's front panel.

About the bypass feature

If the TV has an RF input only, you can watch only regular (analog) channels while the bypass feature is turned on. You must turn off the bypass in order to watch the channel that the set-top is tuned to.

If, however, the TV is an HDTV or has additional inputs such as baseband inputs and has been connected up as shown on pages 15 to 35, you can watch the channel that the set-top is tuned to without turning off the bypass. You do this by selecting the appropriate input on the TV.

If the stereo TV has picture-in-picture capability, you can turn on the bypass feature so that there are two inputs to the TV: (1) a regular channel through the bypass and (2) the set-top's channel through the video/stereo audio cables. You could achieve the same effect by using an external RF splitter instead of the bypass feature.

The TDC775D set-top has an internal hard disk that is used to record and play back television programs, giving much more control of the viewing experience. For example, you can pause live television and resume viewing from the point at which you left off. You can also use the set-top to record favorite programs, and watch one program while recording another.

With the TDC775D 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 the set-top to record a program or a whole series
- Fully manage the stored recordings
- Back up digital recordings to a VCR
- Retain full control over any parental viewing restrictions you have set up

The TDC775D DVR functions are controlled from the remote control; consult the information supplied by the cable operator for more details. Also read the operating instructions that are supplied with the remote control

About HDTV-display settings

You need to set the appropriate aspect (width-to-height) ratio and TV display (screen resolution) settings for HDTV. Higher screen resolutions result in better quality pictures, but the resulting picture may not, in some circumstances, fill the TV screen. If this occurs, it should be possible to zoom the picture in various ways (see page 45). An explanation of resolutions is on page 47.

In addition to the aspect and display settings, you can change: the "Auto Pillarbox" feature; the Closed Captions settings; and the front panel display settings. You can also reset the HDTV-display settings to the factory defaults.

Use the ◀, ▶, ▲, ▼ and **select** buttons on the front panel to change the settings. Check and change the settings by looking at the 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.

power button.

menu button   *front-panel display*

Putting the set-top into "HDTV settings mode"

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

2. Press the **power** button on the 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 HD Power Menu, shown right, on the TV screen.

3. Once you have finished making changes (see pages 44 to 54), to remove the HD Power Menu, and return to normal viewing, press the **power** button.

> Pace Power Menu
> **TV Aspect Capability**
> TV Display Capability
> Auto Pillarbox
> Closed Captions
> Front Panel Settings
> Restore Defaults

43
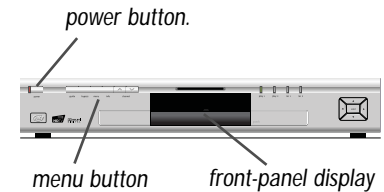
If a screen is connected and set up, the HD Power Menu is displayed. As you use this menu, the front-panel display changes, as shown right. Therefore, if you do not have a TV or monitor set up, you can use the front panel display to help you change the settings. To change the setting for an item, proceed as follows.

1. Press the front-panel ▲ or ▼ button until you highlight the item you want.
2. Using the front panel, press the ▶ button, to highlight the setting for that item, or open the sub-menu, if there is one. On sub-menus, press the front-panel ▲ or ▼ button until you highlight the item you want.
3. Press the **select** button until the setting you want appears.
4. Press ◄ on the front panel to save the displayed setting as the current setting for that item and return to the top-level menu.

To remove the top-level menu and return the front-panel to its normal display (time or channel number), press the **power** button.
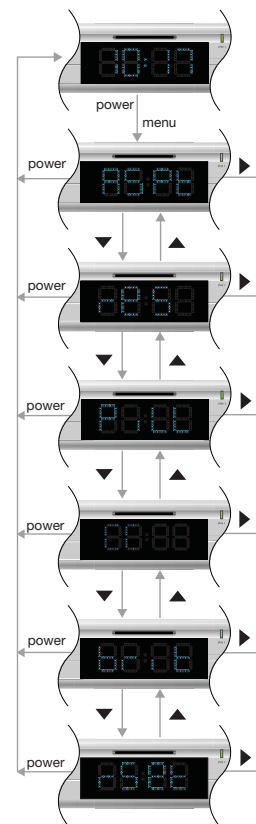
The front-panel display changes as you highlight each item in the top-level menu

44

Explanation of screen aspect ratio

Use the HDTV-display menu (see page 44) to set the correct aspect ratio (width-to-height ratio) for the TV. If it is a wide-screen TV, set 16:9 (otherwise set 4:3).

Appropriate TV Display (see page 48) and Aspect-Ratio settings should ensure that the picture, on the HDTV screen, is not distorted (stretched or squashed) and that it fills as much of the screen as possible.

There are, however, several ways in which the TV picture content is **transmitted** on the cable from the headend. The main four ways are shown in the diagrams, right. Generally, programs are transmitted either as "standard definition" (480i; 4:3) or as "high definition" (1080i or 720p; 16:9). However, sometimes 16:9 pictures are transmitted in standard format and 4:3 pictures are transmitted in high definition format. In these cases, dark bars are transmitted as part of the picture, as shown. In addition, in some circumstances, the set-top and/or the TV itself may add further dark bars.

Zooming to maximize picture size

The remote control that is supplied with the set-top should have a **Zoom** button. If it has, you can use this to "zoom" the picture in various ways, if necessary, to make it fill the screen or to eliminate distortion (see the examples on page 46).

Note, however, that the HDTV itself may have zoom features that also affect how the picture displays itself on the TV screen and different TVs can have different effects.

Standard definition 4:3 transmission

Standard definition 4:3 transmission, but with a 16:9 picture in it, so dark bars are added at the top and bottom for transmission

High definition 16:9 transmission

High definition 16:9 transmission, but with a 4:3 picture in it, so dark bars are added at the sides for transmission

EXAMPLE 1: you have a 4:3 HDTV, connected by HDMI or COMPONENT VIDEO jacks, and the menu settings are 1080i (or 720p) and 4:3

Reduced picture sizes you may see, depending on the different ways the picture can be transmitted

Press Zoom button

Pressing the Zoom button causes a zooming of the picture so that it better fits the screen. The symbol 480p appears briefly on the screen when you do this zooming.

Press Zoom button
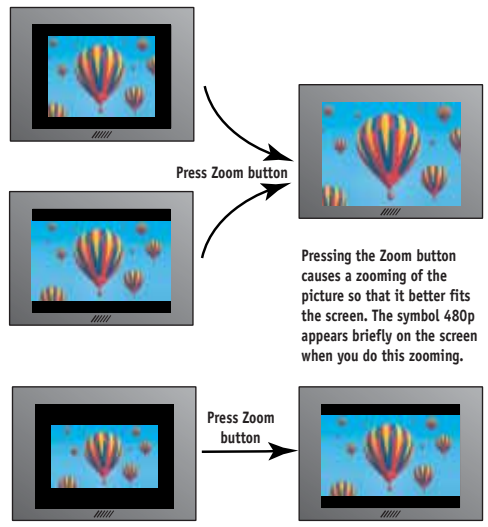
EXAMPLE 2: you have a 16:9 HDTV, connected by HDMI or COMPONENT VIDEO jacks, and the menu settings are 1080i (or 720p) and 16:9

Picture sizes you may see, depending on the different ways the picture can be transmitted

STRETCH: picture-content is maintained for those pictures that had dark bars, but images are stretched sideways

ZOOM: images are properly shaped, but content is sometimes lost at the top and bottom of the screen or at the sides.

Press Zoom button

Press Zoom again

Pressing the Zoom button once causes a stretching of the picture so that it fits the screen from side-to-side. However, you may prefer to press Zoom again to zoom.

Press Zoom button

Press Zoom again

Setting the TV Aspect Ratio

If you have not done so, put the set-top into "HDTV settings mode", as described on page 43. The front panel displays "ASPt", shown right.

The flow diagram on the far right shows how you use the **arrow** and **select** buttons on the 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.

   TV Aspect Ratio
   4:3
   16:9

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.
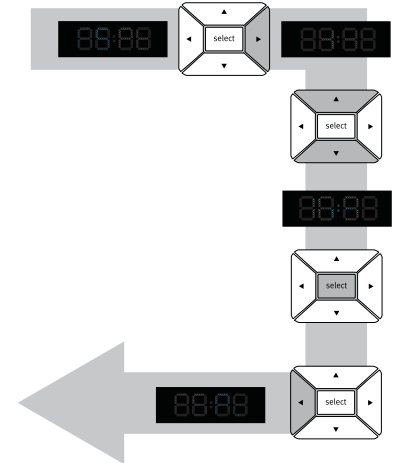
About TV Display (resolution settings)

You must make the appropriate TV Display setting(s) on the set-top, so that it is compatible with the TV.

In order to display the best picture every time, you should select *every* resolution that the 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

Further information

The setting(s) you make affect the output at the HDMI and COMPONENT VIDEO OUT (YPbPr) connectors. The output at the VIDEO OUT and S-VIDEO OUT jacks is always the standard definition 480i.

If equipment is connected via an HDMI cable, it may also pass information back to the set-top, which may affect what settings are available.

NOTE

When an HDTV/monitor with a HDMI is connected to the set-top, the set-top requests information about its display. The set-top then processes the information and reconfigures the TV Display Capabilities to those that the display supports.

The set-top also records the ID of the HDTV/monitor. In this way, one device only is supported at any time.

Once the HDTV/monitor has updated the TV Display Capabilities you may change these settings if you wish, and these will then be stored along with the ID.

If you restore the settings, as described on page 55, the TV Display Capabilities are restored to the factory settings. If you want to restore the settings to those which the HDTV/monitor's display supports, reconnect the set-top to the HDTV/monitor.

Changing the TV Display Capability
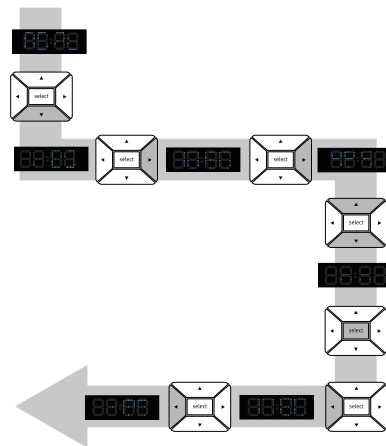
If you have not done so already, put the set-top into "HDTV settings mode", as described on page 43. The front panel displays "ASPt".

The flow diagram on the right shows how you use the **arrow** and **select** buttons on the 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	:	YES
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 the 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 page 48 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 50.
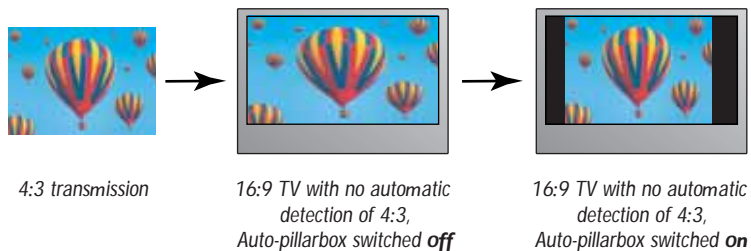

This diagram shows an example only. Please make sure that, for each resolution, you select the correct setting (YES or nO) for the TV.

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.

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Auto Pillarbox

If the TV connected to the set-top 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 this effect is not desired, you can set the 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 the set-top into "HDTV settings mode", as described on page 43. 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 "On" (switched on) or "Off" (switched off) displays. If you can see the on-screen menus, the menu shown right displays.

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?
On
Off

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 45.

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)
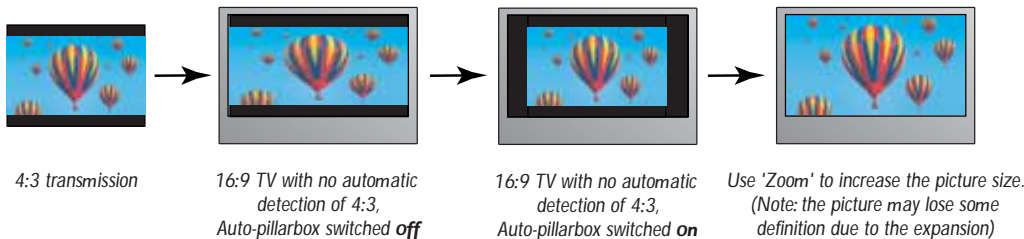
Making Closed Caption settings

Closed captioning is a means of displaying alerts and subtitles on the TV screen, superimposed on whatever the viewer is 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 the set-top into "HDTV settings mode", as described on page 43. 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 displays, 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.
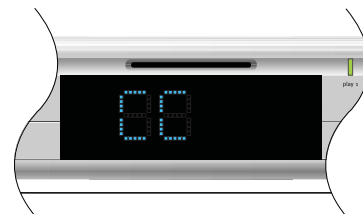
Making Closed Caption settings

Closed captioning is a means of displaying alerts (for example, hurricane warnings) and subtitles on the TV screen, superimposed on whatever is being watched.

Use the HDTV-display menu (see page 44) to turn closed captions on, if required (the default is off).

To make additional closed captioning settings, highlight "CC Config" in the HDTV-display menu, then press **select**. A second menu appears, as shown right.
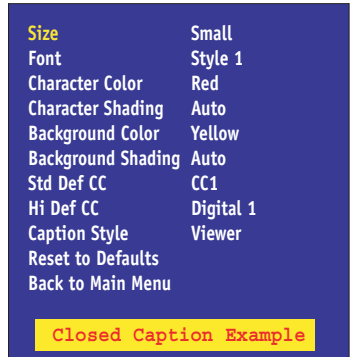
You can use this menu to change the appearance of the closed captions. You highlight and make settings in this menu in the same way as you do for the Main Menu (as described on page 44). As you use this menu, the front-panel display will change, but it can be difficult to interpret the abbreviations displayed in it.

Use the first six menu items to change the appearance of the closed captions. The `Closed Caption Example` at the bottom of the menu changes to reflect the settings you make.

Std Def CC refers to one of 4 possible closed-caption services (CC1 to CC4) that you can select for standard definition channels. These are used for different languages or special services provided by the caption authors. The standard caption service is CC1.

Hi Def CC refers to one of 6 possible closed-caption services (Digital 1 to Digital 6) that you can select for high definition channels. These are used for different languages, as well as special needs, and are available only if the caption authors have provided them. The standard service is Digital 1.

Caption Style has two available settings: Viewer and Program. You must select "Viewer" to save the closed-caption settings that you, the viewer, have made in this menu. These settings will then be used for all the closed captions that will appear on the TV. You need to do this to override the settings that the caption authors use for them (the caption authors' settings are known as "Program").

Size	**Small**
Font	**Style 1**
Character Color	**Red**
Character Shading	**Auto**
Background Color	**Yellow**
Background Shading	**Auto**
Std Def CC	**CC1**
Hi Def CC	**Digital 1**
Caption Style	**Viewer**
Reset to Defaults	
Back to Main Menu	

`Closed Caption Example`

Reset to Defaults: Highlight and select this menu item only if you wish to reset every item in this menu to its standard setting (used by the authors). These are "Auto" for Size, Font, Character and Background, "CC1" and "Digital 1" for the closed-caption services and "Program" for Caption Style.

To go back to the HDTV-display Main Menu (see page 44) at any time, highlight "Back To Main Menu" then press **select** on the front panel or remote control.

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Front Panel Settings

Occasionally, the brightness of the set-top's front panel LED display may change, for example the LED display may dim automatically when the set-top is put in standby. 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 the set-top into "HDTV settings mode", as described on page 43. 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 ▼ buttons 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.)

Front Panel Setting	
Dim Level : Low	
Bright Level: High	

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 HD Power Menu.

Exiting the HDTV menus

Once you have finished making changes, to exit the HD Power Menu, and return to normal viewing, press the **power** button.

Restoring the factory default settings

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

HDTV menu item	Options	Factory default setting
TV Aspect Ratio	–	16:9
TV Display Capability	1080i 720p 480p 480i	Yes Yes Yes Yes
Auto Pillarbox	–	Off
Closed Captions	–	Off
Front Panel Setting	Dim Level Bright Level	Low High

MAKING HDTV-DISPLAY SETTINGS (cont.)

If you have not done so, put the set-top into "HDTV settings mode", as described on page 43. The front panel displays "ASPt".

The flow diagram on the right shows how you use the **arrow**, **select** and **power** buttons on the 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 the 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 43 onwards. If you have finished changing the settings, press the **power** button. The set-top will switch on with the restored settings.
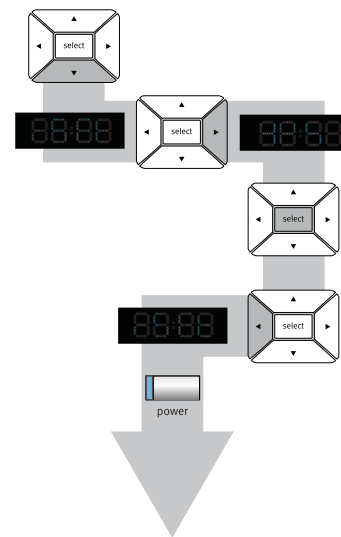
NOTE
If the set-top and HDTV are connected via a HDMI cable, some HDTVs may pass information about the required settings back to the set-top (see page 48). If you wish to restore the set-top's settings to those created by the HDTV, you should disconnect the set-top from the HDTV before you restore the factory default settings. When you reconnect the HDTV to the set-top via the HDMI cable, the HDTV will pass back the information again.   **Always disconnect the set-top from the AC power supply** *before* **you connect or disconnect any other equipment to or from its rear panel.**

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

However, please note there are certain items and settings which may affect how the 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 set to "Current Time", the *time* displays on the front panel when the set-top is switched on. If set to "Current Channel", the *channel number* displays.
	AC Outlet	Switched, Unswitched	If set to "Switched", the AC outlet on the set-top's rear panel is *on* when the set-top is *on*, and *off* when the set-top is *in standby*, so any TV that is receiving its power from this AC outlet will switch off when the set-top is put in standby. If set to "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 the set-top is switched on or in standby.
	RF Bypass	On, Off	You must set this to "On" in order to use RF Bypass. For more information about RF Bypass, see page 40.
	Configuration		Allows you to view the configuration of the set-top.
Audio	Default Audio Track	Channel Default, English, Español, Français, Português	Set the language track that the set-top first attempts to use when tuning to a channel. "Channel Default" means the set-top will use the default audio track for the program. Selecting a language means the set-top will use the corresponding language track, if available.
	Optimal Stereo		Selecting this option enables the 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 the set-top advances with new technology.

SOLVING PROBLEMS

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 the set-top's front panel? **NO ▶** **YES ▼**	Power may not be reaching the 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). Try a new power cord. See also page 61.
Does the remote control operate the set-top? **NO ▶** **YES ▼** Please see the next page	The set-top may not be turned on. Check if the light beside the power button on the front panel is blue. If it is red, press the **power** button on the front panel to turn on the set-top.	Check that nothing is blocking the path from the remote control to the front panel (or remote eye, if you are using one). Check that any remote eye is securely plugged into the set-top. Check that the remote control is currently set to operate the set-top (consult the instructions supplied with the remote control). If the remote control will still not operate the set-top, replace the batteries in the remote control. If there is still a problem, try to operate the set-top by using its front-panel buttons. If this works, then the remote control may be faulty. Try a new one.

Check	Suggested solution	Further checks, if there is still a problem
Can you see a picture on the TV screen? **NO▶**	The TV and other equipment may not be turned on. Check that they are plugged into AC power outlets and turned on. **Note:** Depending on the set-top's settings, if the set-top is switched off, any TV that is attached to the set-top's POWER OUTLET may also turn off. These settings can be changed using the Setup menus. For more information, see page 57.	Make sure the RF-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 the TV: HDMI, COMPONENT VIDEO (YPbPr) or VIDEO IN (depending on how the system is connected up). If the video path between the set-top and the TV loops through other equipment (such as a VCR) you may need to turn off this equipment for the loopthrough to work. Check the HDTV Resolution setting (see page 48). Note that the component video (YPbPr) jacks on some HDTVs do not accept all resolutions. If a particular resolution does not seem to work, try a different one.
YES ▼		
Is the picture distorted or too small? **YES▶** **NO** ▼ Please see the next page	Check that the screen resolution and aspect ratio, as set on the set-top, are appropriate for the TV. Change them if necessary.	If the screen resolution and aspect ratio seem to be correct, try to improve the picture by using the **Zoom** button on the set-top's remote control or any zoom controls on the TV itself (consult the instructions that came with the TV). See pages 45 and 46.

SOLVING PROBLEMS (cont.)

Check	Suggested solution	Further checks, if there is still a problem
Is there any sound? **NO**▶	Check that the audio cables are securely and correctly connected.	Check that you have not muted the sound on the set-top and/or TV. Adjust the volume on the set-top and/or TV. If you can hear only mono sound, first check that the program is likely to have stereo sound (an old movie, for example, may not). See also page 61.
YES ▼		
Can you see and hear a DVD that you are trying to play? **NO**▶ **YES** ▼	For the signal to loop through the set-top from a DVD (or similar equipment) to reach the TV, you must activate baseband loopthrough by turning off the 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 have installed in the system.
Can you see only regular (analog) channels but not any digital channels? **YES**▶	The RF-bypass feature may be turned on. Press the **BYPASS** button on the remote control to turn the feature OFF (make sure the word **BYPASS** is not lighted on the front panel).	See also page 61.

Apparent "problems" that may be caused by certain menu settings

Problem	Reason
No audio	There is a menu to select a second soundtrack (SAP: secondary audio program). If this is selected, but no SAP is being transmitted, there may be no audio.
The HDTV turns off when you play the DVD player or other attached equipment.	If the HDTV is attached to the AC outlet on the set-top's rear panel, it will be affected by a menu item called "AC Outlet". If this is set to "Switched", then, when you turn off the set-top to play back from the DVD player, the attached HDTV will also turn off.
The HDTV turns on when you record on the VCR.	If the HDTV is attached to the AC outlet on the set-top's rear panel, it will be affected by a menu item called "AC Outlet". If this is set to "Switched", then, when you turn on the set-top to record on the VCR, the attached HDTV will also turn on.
Rf-bypass occurs when you turn off the set-top.	There is a menu where you can set the RF-bypass feature to turn on automatically when you turn off the set-top (although this menu may not be available). This feature should not cause a problem as it is still possible (by pressing BYPASS) to turn on the RF-bypass when the set-top is on. These are the circumstances in which you could record one channel from the set-top while you watch, on the TV, a different (analog) channel direct from the cable through a fitted RF-bypass module.
The VCR controller does not work.	You need to use a menu to set up the VCR controller and to set up the set-top to recognize the brand and model of VCR.