Operating Guide | Warranty

Model Number | HD-SAT520 | DIRECTV® High-Definition Receiver

© Copyright 2002, Zenith Electronics Corporation

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:

TO REDUCE THE RISK OF ELECTRONIC SHOCK DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER TO QUALIFIED SERVICE PERSONNEL.

THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.

THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

WARNING: Do not install this equipment in a confined space such as a book case or similar unit.

NOTE TO CABLE/TV/SATELLITE DISH INSTALLER:
This reminder is provided to call the cable TV system/satellite dish installer's attention to Article 820-40 of the National Electric Code (U.S.A.). The code 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 the cable entry as practical.

REGULATORY INFORMATION : FCC PART 15
This equipment 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 when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is 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 equipment and receiver.
- Connect the equipment into 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.

REGULATORY INFORMATION: FCC Part 68
- This product complies with Part 68 of the FCC rules. On the back of this product is a label that contains, among other information, the FCC registration number and Ringer Equivalent Number (REN) for this product. If requested, this information must be provided to the telephone company.
- The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. Typically, the sum of the RENs should not exceed five (5). To be certain of the number of devices that may be connected to the line (as determined by the total RENs) contact the local telephone company.
- If this product causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
- The telephone company may make changes to its facilities, equipment, operations or procedures that could affect the operation of the product. If this happens, the telephone company will provide advance notice so you can make the necessary modifications to maintain uninterrupted service.
- Connection to party line service is subject to state tariffs. (Contact the state public utility commission, public service commission, or corporate commission for information.)
- If trouble is experienced with this product, for repair or warranty information, please contact Zenith Electronics Corporation. If the product is causing harm to the telephone network, the telephone company may request that you disconnect the product until the problem is resolved.
- An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See installation instructions for details.

COMPLIANCE: The responsible party for this product's compliance is:
Zenith Electronics Corporation, 2000 Millbrook Drive, Lincolnshire, IL, 60069, USA • Phone: 1-847-941-8000

CAUTION

DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY WITHOUT WRITTEN AUTHORIZATION FROM ZENITH ELECTRONICS CORPORATION. UNAUTHORIZED MODIFICATION COULD VOID THE USER'S AUTHORITY TO OPERATE THIS PRODUCT.
THIS EQUIPMENT IS INTENDED TO RECEIVE AND DECODE SIGNALS TRANSMITTED ACCORDING TO ATSC DIGITAL TELEVISION STANDARD A/53, DIRECTV® SPECIFICATION AND IS INTENDED TO BE USED WITH AN APPROPRIATE ANTENNA, DISH AND DISPLAY DEVICE THAT YOU MUST PROVIDE.

Dolby Digital®
Manufactured under license from Dolby Laboratories.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.
Confidential Unpublished Works. ©1992-1997 Dolby Laboratories, Inc. All rights reserved.

206-3813

DECLARATION OF CONFORMITY

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Trade Name / Model :	Zenith / HD-SAT520
Responsible Party :	LG Electronics Inc., Chicago office
Address :	6133 North River RD Suite 1100 Rosemont, IL. 60018, U.S.A.
Contact Person :	Mr. P. H. Byun, General Manager Tel. No. 1-847-993-4529 For FCC Inquiry

Equipment Classification : Part 15 TV Interface Device

Type of Product(EUT) : DIRECTV® High-Definition Receiver

Manufacturer : LG Electronics Inc.

Address : 19-1, Cheongho-Ri, Jinwuy-Myon
Pyungtaek-Shi, Kyunggi-Do, 451-713 Korea

Attention : Mr. H.S. Lee - General Manager
Digital Media Standards Group

We here by declare that the equipment bearing the trade and model number specified above was tested conforming to the applicable FCC Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the Commission's requirements.

206-3675

IMPORTANT SAFETY INSTRUCTIONS

CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS IN THIS OWNER'S MANUAL AND THOSE MARKED ON THE UNIT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This set has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use, and servicing.

This unit does not contain any parts that can be repaired by the user.

DO NOT REMOVE THE CABINET COVER, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

1. **Read these instructions. -** All these safety and operating instructions should be read before the product is operated.
2. **Keep these instructions. -** The safety, operating and use instructions should be retained for future reference.
3. **Heed all warnings. -** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow all instructions. -** All operating and use instructions should be followed.
5. **Do not use this apparatus near water. –** For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; or near a swimming pool; and like.
6. **Clean only with dry cloth. –** Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.
7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. -** Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from over- heating. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
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 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.**

206-3813

IMPORTANT INFORMATION

Due to copyright restrictions, you may not be able to view some high definition programs in high definition format using this product. If HD viewing is prohibited due to copyright restrictions, you would need to connect SD interfaces to view the program.

In certain markets, access to local channels requires a DIRECTV® Multi-Satellite Dish Antenna. For the most current information about the availability of local channels in your area, contact your retailer or visit DIRECTV.com. For access to all High Definition programming, a triple LNB Multi-Satellite dish antenna, including a Sat C LNB, is required, along with a High Definition capable DIRECTV® High-Definition Receiver and High Definition television. Satellite Dish Antenna Sold Separately.

Activation of programming may be subject to credit approval and requires valid service address, social security number and/or major credit card. Deposit or prepayment may be required. Programming subject to change. You must be physically located in the U.S. to receive DIRECTV service. DIRECTV services not available outside the U.S. DIRECTV programming is sold separately and independently of DIRECTV System hardware. A valid programming subscription is required to operate DIRECTV System hardware. Activate your DIRECTV programming today at 1-800-DIRECTV (1-800-347-3288)

DIRECTV, Inc. DIRECTV and the Cyclone Design logo, DIRECTV SPORTS and Advanced Program Guide are trademarks of DIRECTV, Inc., a unit of Hughes Electronics Corp.

TABLE OF CONTENTS

	Safety Warning	1
	Declaration of Conformity	2
	Important Safety Instructions	3
	Important Information	4
	Table of Contents	5
1. Introduction	1-1. A New World of Digital Entertainment	7
	1-2. Main Features	8
2. Important Overview	2-1. Sending Signals	9
	2-2. TV Signal Formats	10
	2-3. Display Formats	11
	2-4. Normal and Wide Format Signals	12
	2-5. Audio Signals	14
	2-6. On-Screen Display	16
3. Setup and Connections	3-1. Unpacking	18
	3-2. Back Panel of the DIRECTV® High-Definition Receiver	20
	3-3. General Recommendations	22
	3-4. Connecting to Antennas	23
	3-5. TV Connection	27
	3-6. VCR Connection	31
	3-7. Audio Connection	32
4. Front Panel and Remote Control	4-1. Using the Front Panel of the DIRECTV® High-Definition Receiver	34
	4-2. Using the Remote Control	35
	4-3. Programming the Remote Control	38
	4-4. Remote Control Codes for Other Components	39
5. Initial Setup		42
6. Basic Operation	6-1. Viewing the Channel Banner	43
	6-2. Channel Surfing	45
	6-3. Subscription to DIRECTV® programming and ANT/CABLE-Only operation	46

206-3813

7. Advanced Program Guide™
7-1. About the Advanced Program Guide™ 47
7-2. Layout of the Advanced Program Guide™ Screen . 48
7-3. Moving through the Advanced Program Guide™ . . 49
7-4. Selecting a Program 50
7-5. Getting More Information 51
7-6. Referring to EZ Help 52
7-7. Making a Remind List for Future Viewing 53
7-8. Purchasing DIRECTV® Pay Per View Programs 54
7-9. Searching Programs by Category 55
7-10. Searching Programs by Key word 56

8. Customization
8-1. The Structure of the On-screen Menu 57
8-2. The On-screen Menu 58
8-3. Previewing the Remind List 59
8-4. Managing Program Purchases 60
8-5. Checking the Mail Box 62
8-6. Initializing the System 63
8-7. Managing Channels 67
8-8. EZ Hook-up 71
8-9. Setting the Clock 72
8-10. Advanced 74
8-11. Setting the Audio 75
8-12. Choosing the Aspect Ratio 80
8-13. Setting Closed Caption 82
8-14. Setting Default Signal Out 84
8-15. Setting the Digital TV Input 86
8-16. Running EZ Demo 87
8-17. Setting Locks 88
8-18. Testing the System 94
8-19. Replace Card 95
8-20. Upgrading Software 96

9. EZ Help 97

Reference
Product Specifications 99
Troubleshooting 101
Warranty . . . . . Rear Cover

1. INTRODUCTION

1-1. A New World of Digital Entertainment

Welcome to the new DIRECTV® High-Definition Receiver, an advanced HDTV/digital satellite receiver that showcases a new generation of digital entertainment.

Different from conventional analog broadcasts, digital broadcasts allow you to enjoy superior quality video and audio right in your own home.

The DIRECTV HD Receiver delivers a variety of programs from DIRECTV and has a built-in HDTV Receiver that serves as a digital receiver that makes it possible to view digital programs even on your analog TV.

The Advanced Program Guide™ also enables you to access and view over-the-air broadcasts and cable as well as DIRECTV® programming.

ATSC Tuner uses Zenith's 4th generation VSB technology for improved over the air digital reception.

Built in NTSC tuner with 4th digital comb filter provides optimum Video and Audio from terrestrial/cable analog program.

1-2. Main Features

Ultimate Entertainment

- **A Wide Variety of Programs**
  Hundreds of channels are available by subscription from DIRECTV.
- **DIRECTV Advanced Program Guide™**
  Instant access to up to three days of program listings.
  Ability to jump a day at a time.
  Ability to search and tune by program title, key word and category.

Technical Flexibility

- **Seamless Tuning between Channels**
  Tune seamlessly to over-the-air, cable and satellite.
- **Multiple Output Jacks**
  Multiple output jacks are provided on the back panel of the DIRECTV® High-Definition Receiver.
- **Screen Format Adaptability**
  Various screen formats are available including 1080i, 720p, 480p and 480i, native, hybrid-1, and hybrid-2, and EZ DVI modes.
- **HD Formatted On-Screen Display**
  Advanced look and feel for the on-screen display menu and Advanced Program Guide.
- **Software Upgrade**
  Software upgrading from DIRECTV.
- **ANT/CABLE Only Mode**
  Viewing analog/digital broadcasting through over-the-air antenna.

Superior Performance

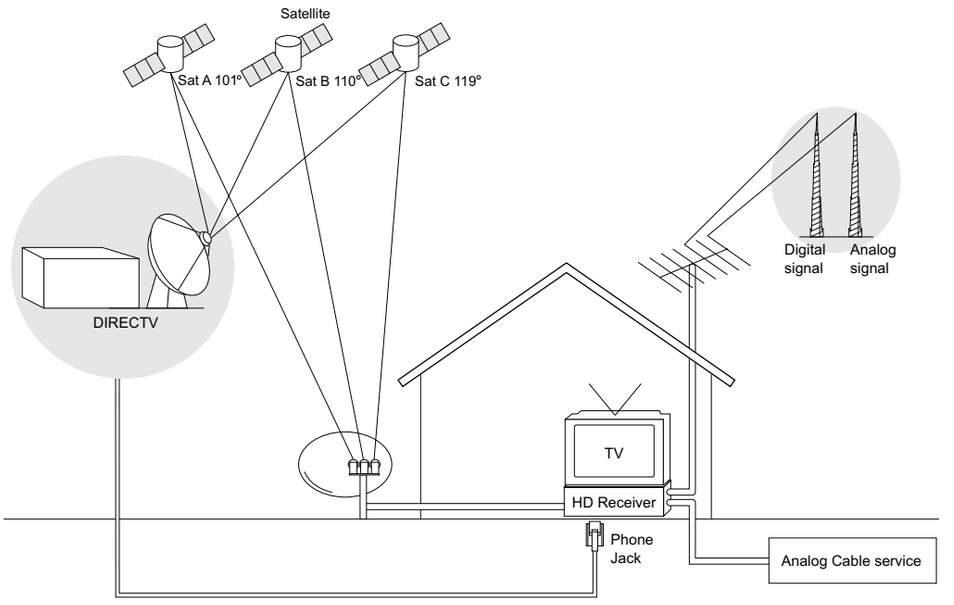
- **Crisp Picture**
  High definition or resolution with a 16:9 aspect ratio.
- **Superior Sound**
  Sensational sound with Dolby Digital 5.1 channels.

Fingertip Convenience

- **EZ Link**
  The DIRECTV HD Receiver can be controlled by the TV remote control through EZ Link connection.
- **EZ Help**
  Easy-to-use on-screen menus with instant spot help and brief on-screen user's guide.
- **EZ Hook-up**
  The on-screen menus show connection schemes on the DIRECTV HD Receiver.
- **Connectivity**
  Product outputs for RGB, Component video, S-video, and A/V, Dolby digital and DVI with HDCP for digital video interface.

2. IMPORTANT OVERVIEW

2-1. Sending Signals



Digital broadcasting is a new way of sending programs over the airwaves with superior quality video and audio. The DIRECTV® High-Definition Receiver enables you to take full advantage of digital broadcasting. To fully enjoy it, you need to understand the ways the program signals are sent.

There are two types of TV signal formats; analog (often called NTSC format; National Television System Committee) and digital (ATSC format; Advanced Television System Committee). Digital formats are classified into three categories: High Definition (HD), Enhanced Definition (ED), and Standard Definition (SD) according to the resolution or digital picture quality.

There are also three ways that program signals can be received; over-the-air (NTSC, ATSC), cable, and satellite.

206-3813

2-2. TV Signal Format

Standard Comparison Table

Signal Format	Analog (NTSC)	Digital (ATSC/DIRECTV)	
		SD	HD
Active Lines	480	480	720 or 1080
Sound	Stereo (2 ch)	Dolby Digital (5.1 ch) MPEG Audio (2 ch)	Dolby Digital (5.1 ch)
Aspect Ratio	4 : 3	4 : 3 or 16 : 9	16 : 9
Resolution	720 x 480	640 x 480 704 x 480	1280 x 720 1920 x 1080

The digital TV standards allow several different formats. Broadcasters can choose between three formats:

- 480p - The picture is 704 x 480 pixels, sent at 60 complete frames per second (480i is also possible).
- 720p - The picture is 1280 x 720 pixels, sent at 60 complete frames per second.
- 1080i - The picture is 1920 x 1080 pixels, sent at 60 interlaced frames per second (30 complete frames per second).

(The “p” and “i” designations stand for “progressive” and “interlaced.” In a progressive format, the full picture updates every sixtieth of a second. In an interlaced format, half of the picture updates every sixtieth of a second.)

The 480p and 480i formats are called the SD formats, and 480i is roughly equivalent to a normal analog TV picture. The 720p and 1080i formats are called the HD formats.

Some NTSC televisions can display a picture 720 pixels wide by 480 pixels high, that’s a total of 345,600 pixels. HD digital signals can have a maximum resolution of 1920 x 1080, that’s 2,073,600 pixels, or six times more pixels than the older resolution. Pictures will be crisper and cleaner, with more detail in every close-up and every panorama.

2. IMPORTANT OVERVIEW

2-3. Display Formats

The DIRECTV® High-Definition Receiver provides several display formats. **Display Format** button in the front panel changes the display format in the cycle of 1080i, 720p, 480p, 480i, native, hybrid-1, hybrid-2, EZ DVI modes. In **1080i, 720p, 480p and 480i** modes, all input signal formats are converted to the chosen display format. In **native, hybrid-1, and hybrid-2** modes, output display format is automatically adapted depending on input signal format, as follows. In **EZ DVI** mode, the output display format is automatically adapted depending on the type of monitor that is connected.

Display Format modes	Input Signal format	Output Display format
1080i	all formats →	1080i
720p	all formats →	720p
480p	all formats →	480p
480i	all formats →	480i
Native	480i/480p →	480p
	720p →	720p
	1080i →	1080i
Hybrid-1	480i/480p →	480p
	720p/1080i →	1080i
Hybrid-2	480i/480p →	480p
	720p/1080i →	720p
EZ DVI	all formats →	changes according to monitor type

(Note : When the 480i display format is selected, the Video Out 1/2 and OUT TO TV are available while Y/PB/PR, RGB, DVI-HDTV outputs are not. The EZ DVI mode is only available when a DVI-HDTV compatible monitor is connected to the receiver.)

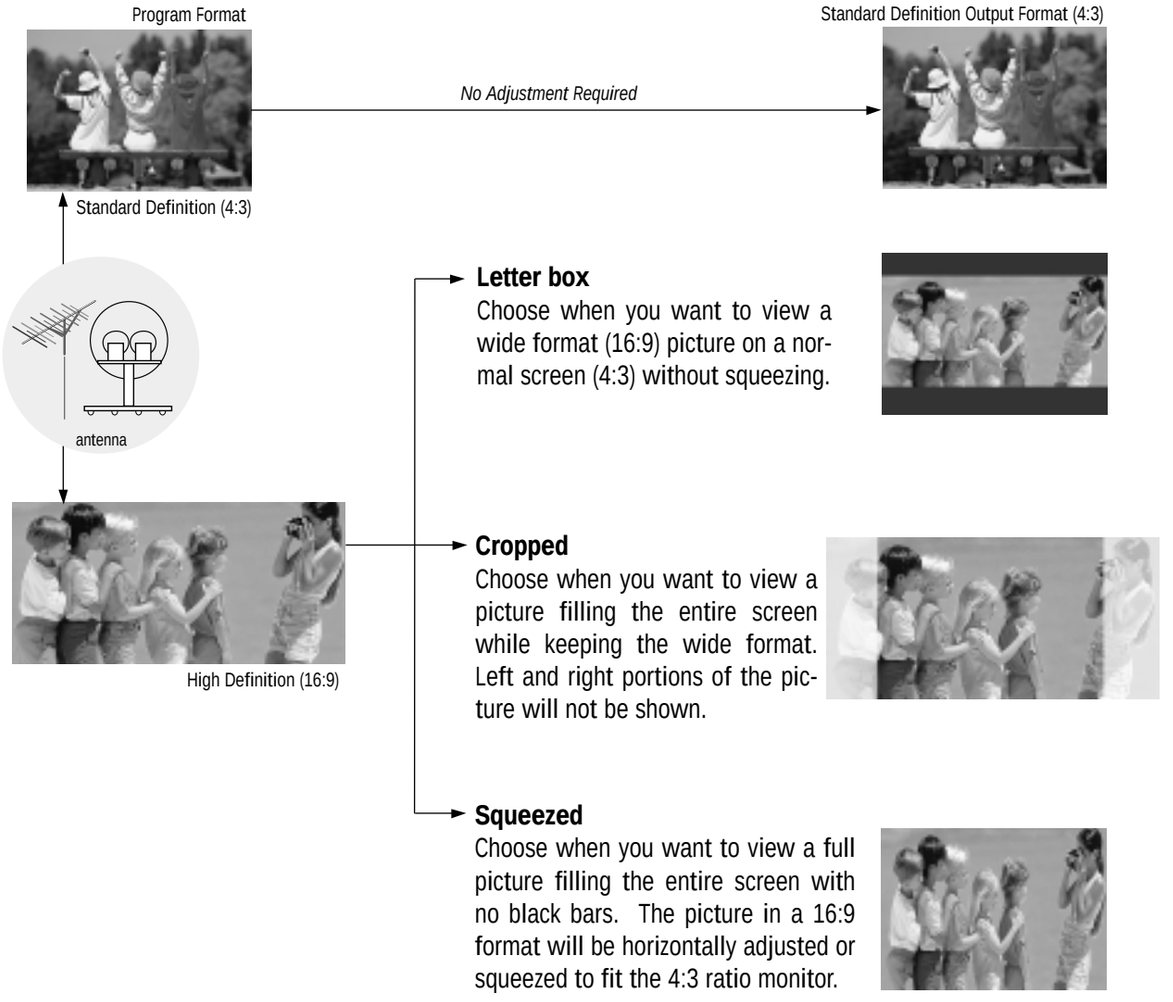
206-3813

2-4. Normal and Wide Format Signals

When you view a high definition picture(16:9) with 480i or 480p format setting, the ratio button on the remote control changes the wide mode in the cycle of Letterbox, Cropped, to Squeezed.

When you view a standard definition picture(4:3) with 720p or 1080i format setting, the ratio button on the remote control changes the wide mode in the cycle of Normal, Wide, Panorama, Zoom1, to Zoom2. (Refer to section 8.12, ‘ Choosing the Aspect Ratio ’)

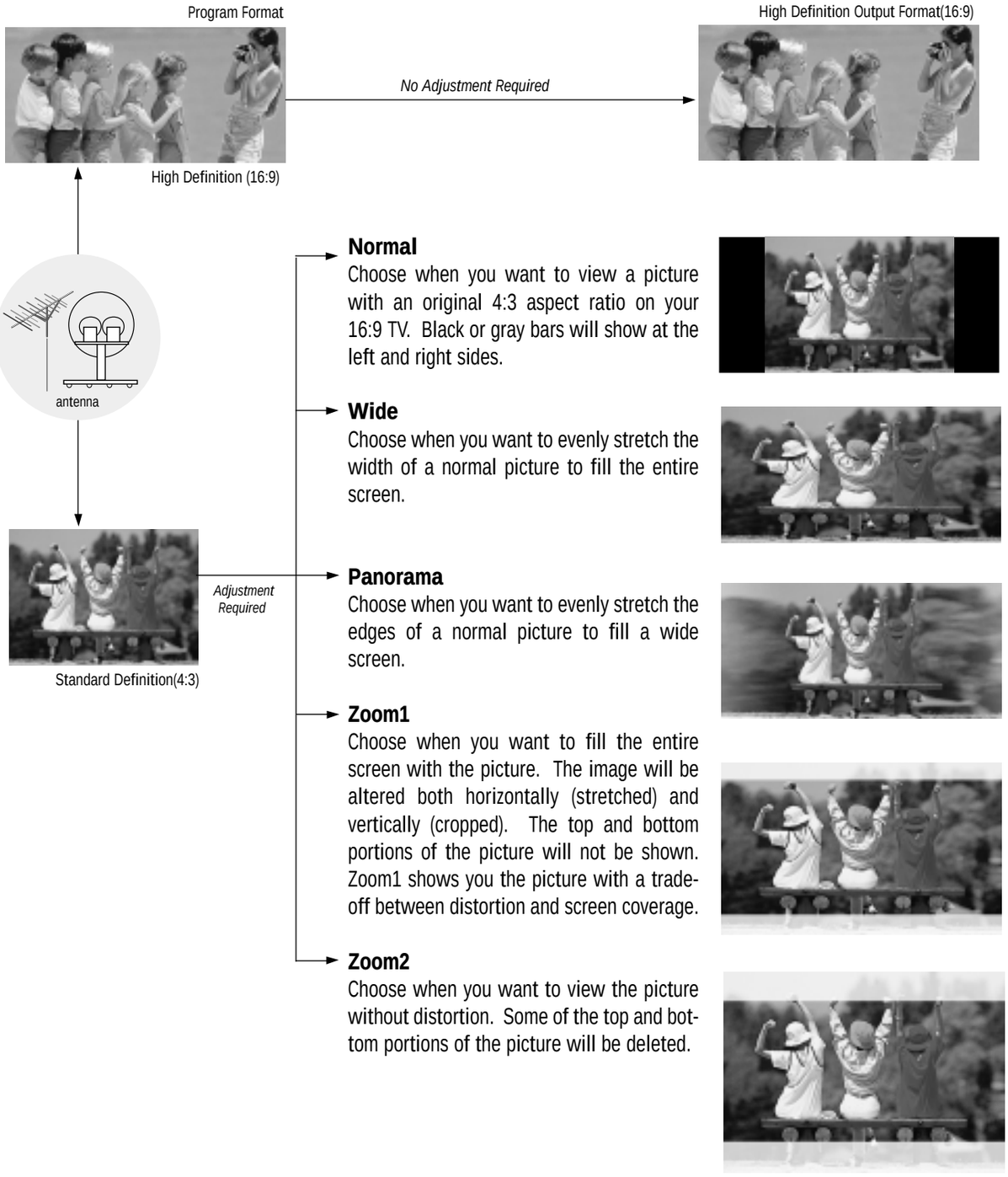
WHEN YOU SET THE DISPLAY FORMAT TO SDTV (480i/480p)



2. IMPORTANT OVERVIEW

2-4. Normal and Wide Format Signals

WHEN YOU SET THE DISPLAY FORMAT TO HDTV (1080i/720p)



Normal
Choose when you want to view a picture with an original 4:3 aspect ratio on your 16:9 TV. Black or gray bars will show at the left and right sides.

Wide
Choose when you want to evenly stretch the width of a normal picture to fill the entire screen.

Panorama
Choose when you want to evenly stretch the edges of a normal picture to fill a wide screen.

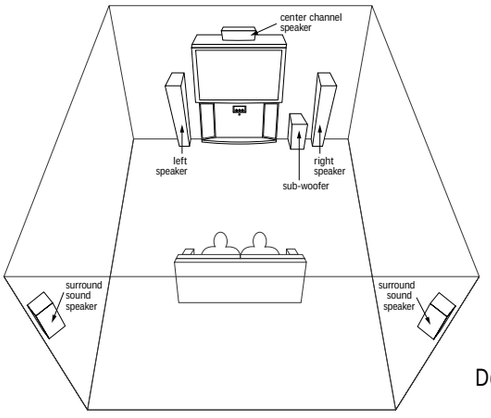
Zoom1
Choose when you want to fill the entire screen with the picture. The image will be altered both horizontally (stretched) and vertically (cropped). The top and bottom portions of the picture will not be shown. Zoom1 shows you the picture with a trade-off between distortion and screen coverage.

Zoom2
Choose when you want to view the picture without distortion. Some of the top and bottom portions of the picture will be deleted.

206-3813

2-5. Audio Signals

Digital Audio Signals



Dolby Digital Sound with 5.1 Channels

The DIRECTV® High-Definition Receiver will be the focal center of your home entertainment system comprising a variety of components, such as TV, DVD, VCR, etc. and external audio systems. Since digital programs being broadcast contain digital-quality audio, you can create a home theater by sending audio signals from the DIRECTV HD Receiver to your audio system externally. HD digital signals use the Dolby Digital audio encoding system - the same digital sound used in many movie theaters, on DVDs, and in many home theater systems.

When you tune to a channel, the DIRECTV HD Receiver can send signals either to a Dolby Digital decoder/receiver or to a PCM (normal digital) decoder. (* Refer to Section 3.7 Connection for Audio for making the required external connections to your system.)

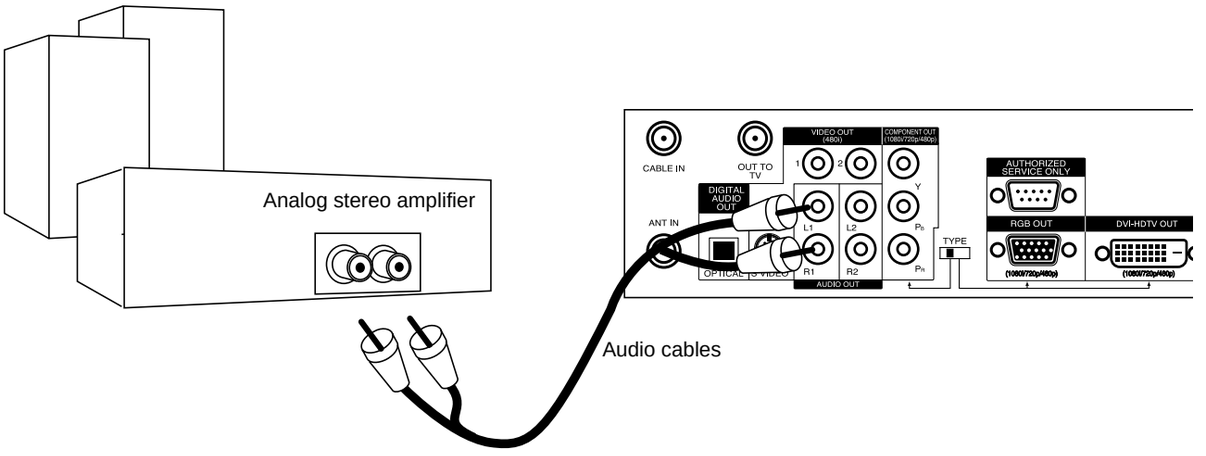
GLOSSARY

Dolby Digital, formally known as AC-3 for Audio Coding 3rd Generation or “5.1” channel audio, is a coding technique that can provide up to five independent, full frequency response audio channels (three in left, center, and right, two in rear left and right, and one low frequency effect for a sound you can feel).

2. IMPORTANT OVERVIEW

2-5. Audio Signals

Analog Audio Signals



The analog audio outputs may be used to drive an external Hi-Fi audio system instead of the TV speakers. These stereo outputs are activated by setting the Analog Mode in the Audio menu to Stereo.

If you set the Analog Mode to SAP (Second Audio Program), you can hear the program's dialog in another language such as French or Spanish, if provided on the broadcast.

206-3813

2-6. On-Screen Display

Main Menu

You can adjust the setup through a user-friendly on-screen menu using the remote control. While viewing a program, the on-screen menu will appear on your TV screen if you press the **Menu** button on your remote control. The on-screen menu is operated using a simple, straight-forward 'Highlight and Select' process. You just highlight a menu item by using "▲▼◄►" on your remote control, and select it by pressing "⊙". The on-screen menu also offers visual cues for easy guidance.

Advanced Program Guide™

The DIRECTV Advanced Program Guide is an on-screen listing of current and future programs that are available from DIRECTV. The DIRECTV® High-Definition Receiver offers you a comprehensive program list that contains information about programs with hundreds of channels, including analog Antenna and digital (ATSC). If you do not subscribe to DIRECTV® programming, you will not be able to see the APG.

2. IMPORTANT OVERVIEW

2-6. On-Screen Display

EZ Help

First, certain features and terminologies used in the on-screen menus require your basic understanding to fully utilize their capabilities. The DIRECTV® High-Definition Receiver provides a powerful feature called "EZ Help" that describes highlighted menu item to help you understand the features. Press and hold the "**Help (?)**" button to display the "EZ Help". Once you release the button, the EZ Help menu disappears from the screen.

Second, if you press the "**Help (?)**" button while you are viewing a program with no menus on -screen, the DIRECTV HD Receiver provides a comprehensive on-screen user's guide. It describes how to use your receiver.
This is, in fact, an on-line version of this Operating Guide.

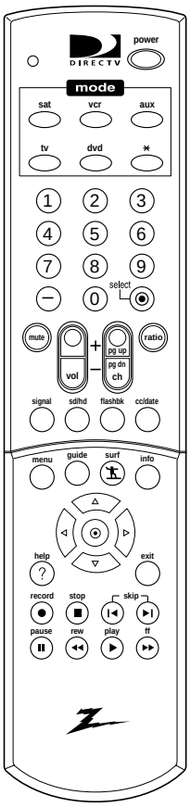
206-3813

3. SETUP AND CONNECTIONS

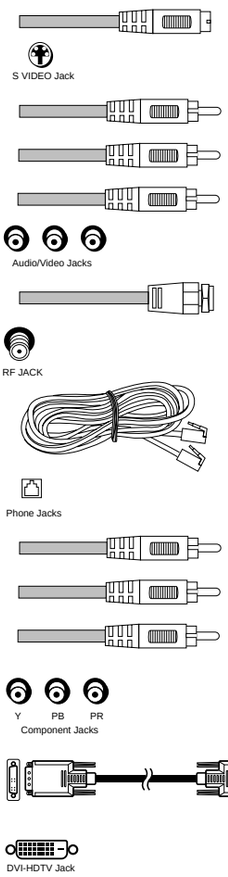
3-1. Unpacking

Make sure you have received all these items listed below with the DIRECTV® High-Definition Receiver.

Remote Control

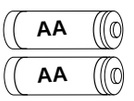


Cables



(Optional)

Batteries



Access Card

3. SETUP AND CONNECTIONS

3-1. Unpacking

DIRECTV® High-Definition Receiver
The DIRECTV HD Receiver is capable of receiving signals from the satellite dish, cable, and/or over-the-air antenna and sending the decoder signals to your TV.

Remote Control
In addition to the DIRECTV HD Receiver, the remote control can be programmed to control many other devices.

Batteries
To install the batteries, slide open the battery compartment and insert the two AA batteries provided.

S-Video Jack and Cable
An S-Video jack is provided on the DIRECTV HD Receiver and is used together with audio cables. Remember to connect the left and right audio cables. An S-Video jack carries only the picture signals, not the sound.

Audio/Video Jacks and Cables
The Audio/Video jacks provide excellent picture and sound quality. They are used for making most Audio/Video connections between components. The Audio/Video jacks may be color coded (yellow for video, red for right audio, and white for left audio). If your component has only one input for audio (mono), connect it to the left (white L/mono) audio jack on the DIRECTV HD Receiver.

RF (Radio Frequency) Jacks and Coaxial Cables (F-type)
RF jacks are necessary for reception of over-the-air broadcasts, cable, and DIRECTV signals. These jacks are also required for antenna or cable connections. The RF and coaxial jacks on the DIRECTV HD Receiver are labeled: Antenna, Cable, Satellite and OUT TO TV. An RG-6 type coaxial cable is required for satellite signal distribution.

Telephone Jack and Cord
A telephone line cord is required to connect the DIRECTV HD Receiver to a phone line. To subscribe to DIRECTV® programming, this phone line is required to be connected.

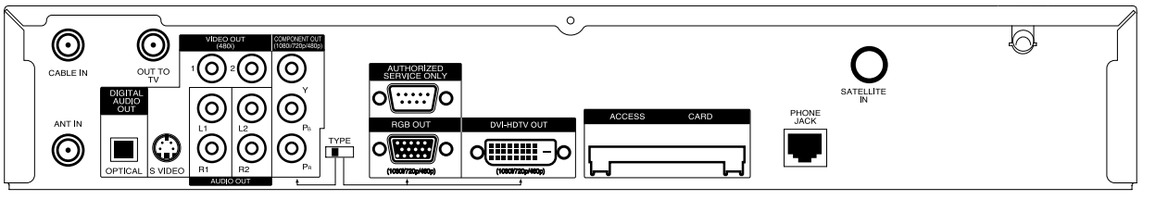
Component Out Jacks and Cables
Component Cables are used to connect the DIRECTV HD Receiver to an industry standard Y/PB/PR compatible HD Monitor.

DVI-HDTV port and Cable
DVI cable is used to connect the DIRECTV HD Receiver to an industry standard DVI-HDTV compatible HD monitor that supports HDCP. (A DVI cable is not supplied.)

Access Card
Access Card is the means by which DIRECTV controls the distribution of its service. The card must be inserted into the access card slot (on the rear of the DIRECTV HD Receiver) at all times to ensure reception of satellite signals.

206-3813

3-2. Back Panel of the DIRECTV® High-Definition Receiver



3. SETUP AND CONNECTIONS

3-2. Back Panel of the DIRECTV® High-Definition Receiver

Ant In
Is used to connect an over-the-air or terrestrial antenna.

Cable In
Is used to connect a coaxial cable coming from your cable TV service outlet or cable box.

Out to TV
Provides an RF connection between the DIRECTV HD Receiver and the TV. Decoded signals are provided on channel 3 or 4 as selected in the Output Channel section of the PREFERENCE menu. If the DIRECTV HD Receiver is in the standby mode, Cable or Antenna signals are provided as chosen in the Out to TV section of the Preference menu.

Video Out 1,2
Is used to provide baseband composite video signal to VCR or TV set. Video connection generally provides picture quality that is superior to RF connections. For the better quality picture connection, use the S-Video jack if it is available.
(Note: These outputs are only available when 480i display format is selected.)

Component Out
Is used to connect to a Y/PB/PR-compatible HD monitor. Three video and two audio jacks for a Y/PB/PR monitor need to be connected and the **TYPE** switch must be set to left position.
(Note: This output is not available when the 480i format is selected.)

RGB/DVI-HDTV Out
Is used to connect to either a RGB-compatible or DVI-HDTV compatible HD monitor. Either a RGB port for a RGB monitor or a DVI-HDTV port for a DVI-HDTV monitor need to be connected and the **TYPE** switch must be set to right position.
(Note: This output is not available when the 480i format is selected. DVI-HDTV port has higher priority than RGB port when both are being used.
Note : For the best access to High Definition Programming at the highest available resolution broadcast by DIRECTV, connect the DVI-HDTV output to the corresponding DVI input that supports high-bandwidth Digital Content Protection (HDCP) technology on a High-Definition Television (HDTV) or HDTV monitor. Please check your HDTV or HDTV Monitor user manual or contact the television manufacturer to find out if your HDTV or HDTV Monitor supports HDCP.)

Audio Out 1,2
Is used to provide analog audio signals to VCR, TV set, HD Monitor, or Analog Hi-Fi System.

Digital Audio Out
Is used to connect a digital optical cable from the DIRECTV HD Receiver to the Dolby Digital receiver or decoder. Dolby Digital enables the viewer to experience theater-quality sound using 5.1 audio channels.

Authorized Service Only
Is used only for authorized service purposes.

Access Card
Is the means by which DIRECTV controls the distribution of its services. The card must be inserted into the access card slot (on the rear of the receiver) at all times to enable reception of satellite signals.

Phone Jack
Is used to connect a phone line.

Satellite In
Is used to connect a satellite dish antenna to your receiver.

206-3813

3-3. General Recommendations

CAUTION: Make all connections before plugging the power supply cord into a standard 120V, 60Hz AC power outlet.

You can connect the DIRECTV® High-Definition Receiver in a variety of configurations. The answers to the following questions will determine the correct setup for you.

- What type of antennas do you have? Satellite dish, cable, and/or over-the-air antennas.
- What type of connectors does your TV or VCR have: Y/PB/PR, RGB, DVI-HDTV, S-VIDEO, A/V (RCA-type), or RF coaxial?
- Do you have an external audio or audio/video system? Consider integrating the DIRECTV HD Receiver into a home theater configuration to take advantage of the audio capabilities of your Dolby Digital System (Digital) or Hi-Fi System (Analog).
- Does your TV have Y/PB/PR connectors? Use it to connect your TV to the DIRECTV HD Receiver. An Y/PB/PR connection provides a better picture than S-VIDEO, RCA-type video, or RF connections.
- Does your TV have an S-VIDEO jack? Use it to connect your TV to the DIRECTV HD Receiver. An S-VIDEO connection provides a better picture than RCA-type video or RF connections.
- Does your TV have RCA-type A/V connectors, but no S-video jack? Use your TV's A/V connectors to connect your components. An A/V connection provides better picture and audio when compared to an RF connection.

Although there are numerous connections possible for optimum video and audio performance, try to follow the guidelines listed below when you hook up your components. Detailed hook-up instructions are provided on the following pages.

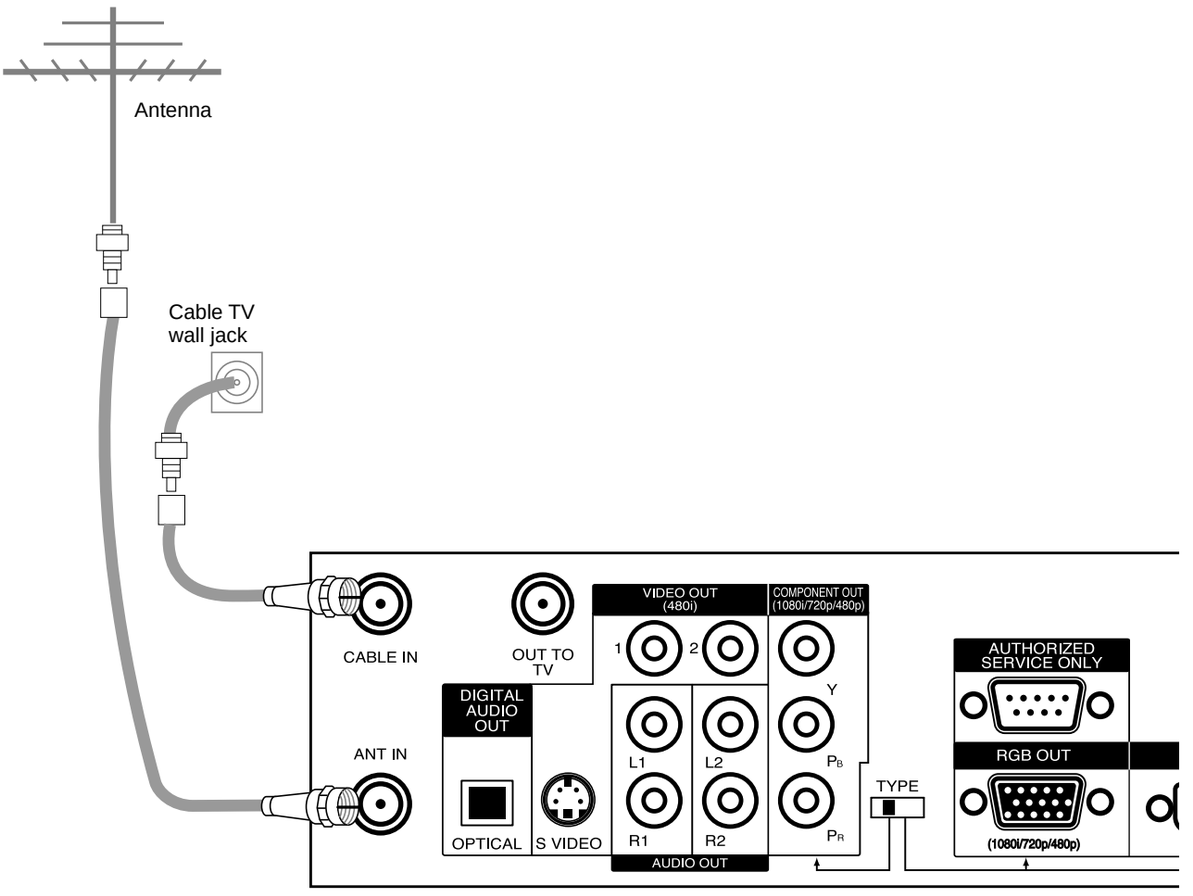
Connection	Component	Page
To Antennas	No Dish	23
	Round Dish (Satellite A)	24
	Oval Dish (Satellite A, B)	25
	Oval Dish (Satellite A, B, C)	26
To TV/Monitor	Analog TV	27
	HD Monitor (Y/PB/PR type)	28
	HD Monitor (RGB type)	29
	HD Monitor (DVI-HDTV type)	30
To A/V Systems	VCR	31
	Digital Audio System	32
	Analog Hi-Fi System	33

Protect your components from power surges by turning off the component and unplugging power cords when you make connections.

Protect your component from overheating by keeping the ventilation holes open and not stacking components.

3. SETUP AND CONNECTIONS

3-4. Connecting to Antennas - No Dish



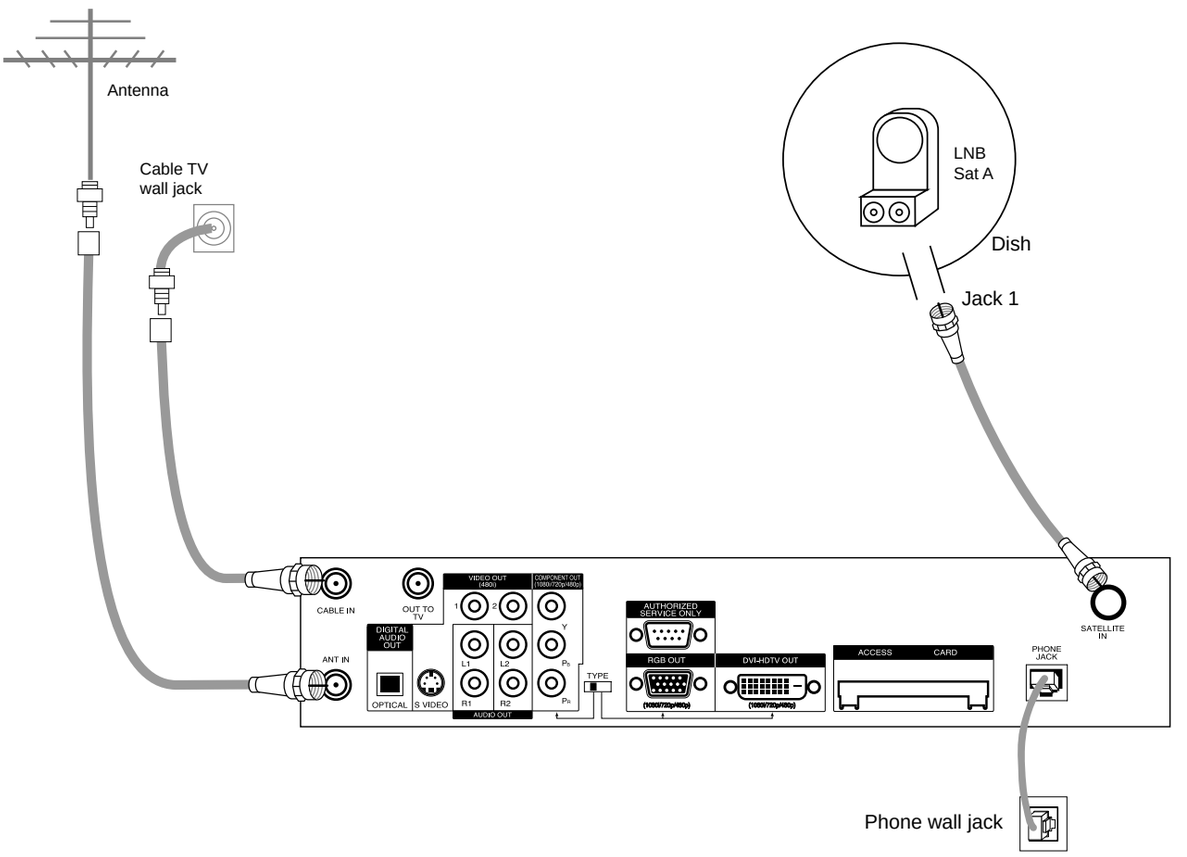
Receiving Signals

1. Connect the “Antenna” to the “ANT IN” jack on the DIRECTV® High-Definition Receiver using a coaxial RF cable.

2. Connect the cable TV signal to the “CABLE IN” jack on the DIRECTV HD Receiver using a coaxial RF cable.

206-3813

3-4. Connecting to Antennas - Round Dish (Satellite A)



Receiving Signals

1. Connect the "Antenna" to the "ANT IN" jack on the DIRECTV® High-Definition Receiver using a coaxial RF cable.

2. Connect the cable TV signal to the "CABLE IN" jack on the DIRECTV HD Receiver using a coaxial RF cable.

3. Connect the "Jack 1" of the dish antenna to the "SATELLITE IN" jack on the DIRECTV HD Receiver using a coaxial RF cable. (For proper dish installation, refer to the "Installer's Guide" provided with your satellite dish antenna.)

4. Connect the "Phone Wall Jack" to "PHONE JACK" on the DIRECTV HD Receiver using a phone cable.

NOTE

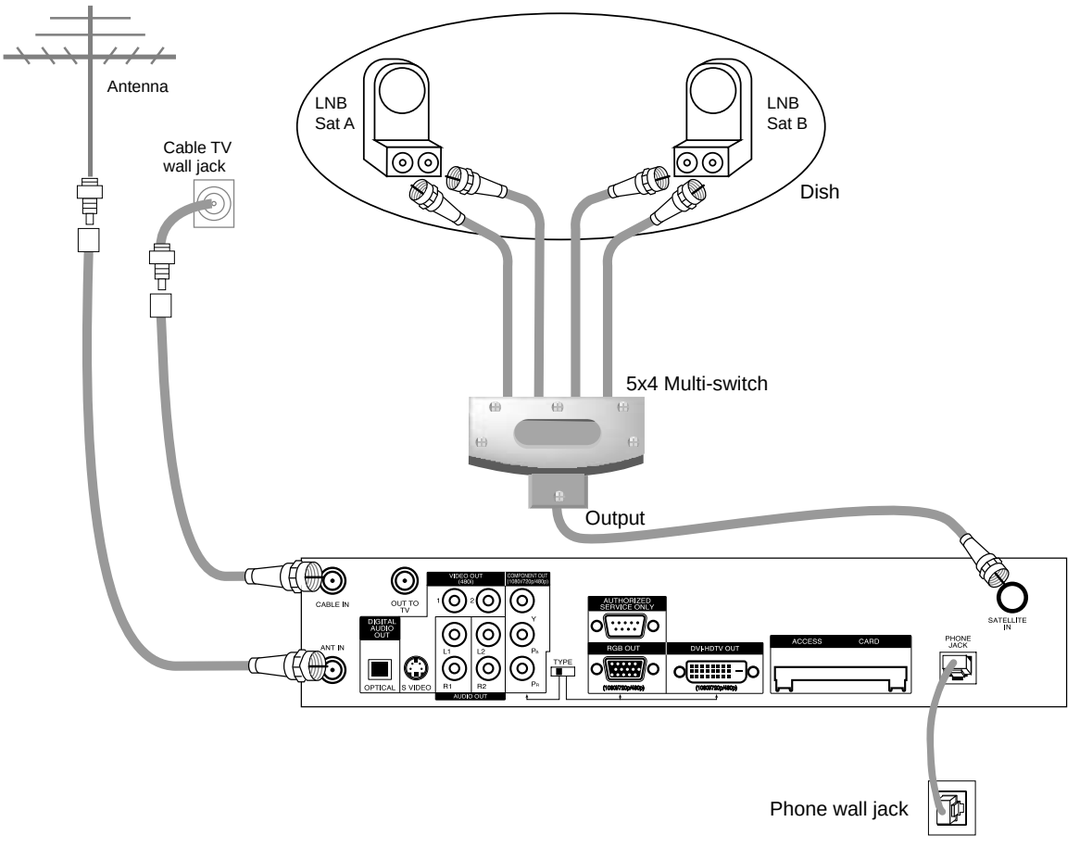
While you are subscribing to a DIRECTV® programming package, you can still view over-the-air and cable TV programs, if you make connections to the over-the-air and/or cable jacks.

NOTE

You may not be able to receive DIRECTV® High-Definition programming with a round dish.
A triple LNB multi-satellite dish antenna with a SAT C LNB is required, along with this DIRECTV HD Receiver and high-definition television.

3. SETUP AND CONNECTIONS

3-4. Connecting to Antennas - Oval Dish (Satellite A, B)



Receiving Signals

1. Connect the "Antenna" to the "ANT IN" jack on the DIRECTV® High-Definition Receiver using a coaxial RF cable.

2. Connect the cable TV signal to the "CABLE IN" jack on the DIRECTV HD Receiver using a coaxial RF cable.

3. Connect the "Jack 1" of the multi-switch to the "SATELLITE IN" jack on the DIRECTV HD Receiver using a coaxial RF cable. (For proper dish installation, refer to the "Installer's Guide" provided with your satellite dish antenna.)

4. Connect the "Phone Wall Jack" to "PHONE JACK" on the DIRECTV HD Receiver using a phone cable.

NOTE

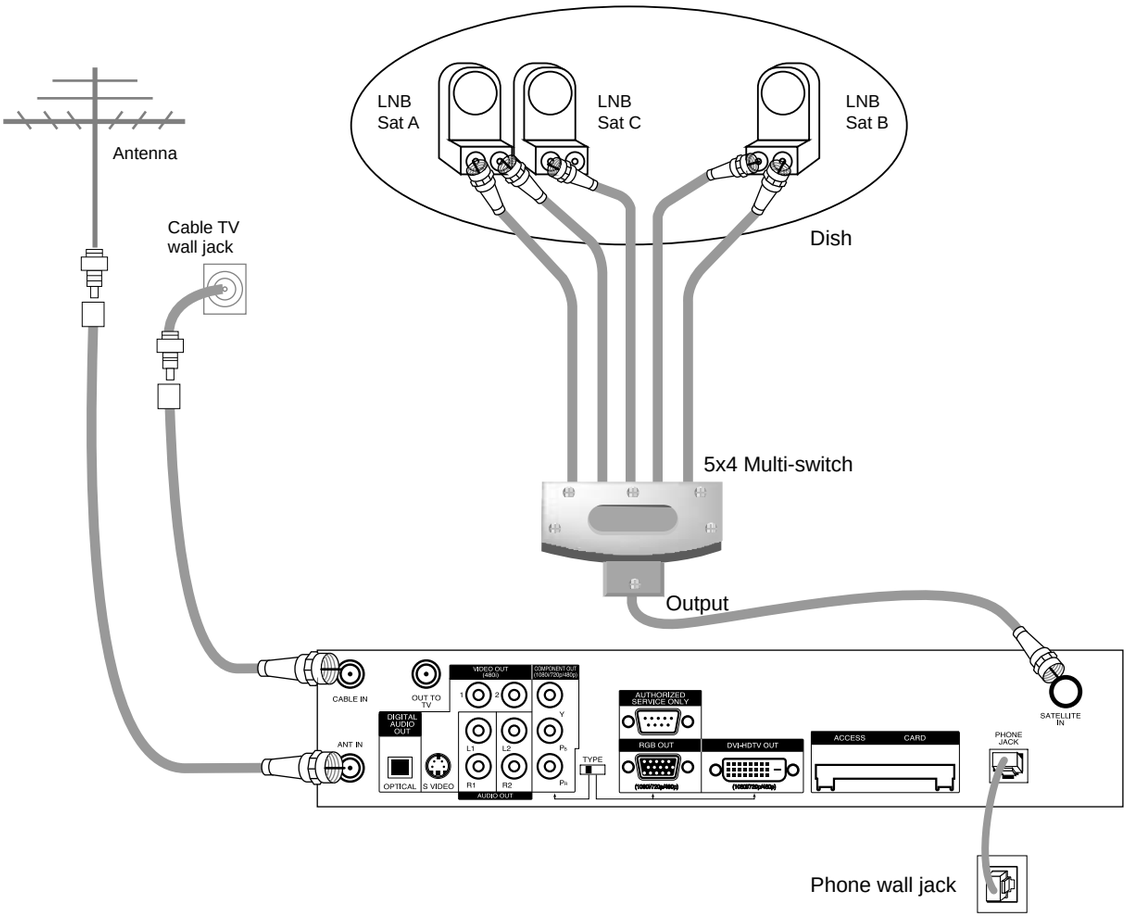
While you are subscribing to a DIRECTV® programming package, you can still view over-the-air and cable TV programs, if you make connections to the over-the-air and/or cable jacks.

NOTE

A triple LNB multi-satellite dish with a SAT C LNB is required to receive all DIRECTV® High-Definition programming, along with this DIRECTV HD Receiver.

206-3813

3-4. Connecting to Antennas - Oval Dish (Satellite A, B, C)



Receiving Signals

1. Connect the "Antenna" to the "ANT IN" jack on the DIRECTV® High-Definition Receiver using a coaxial RF cable.
2. Connect the cable TV signal to the "CABLE IN" jack on the DIRECTV HD Receiver using a coaxial RF cable.
3. Connect the "Jack 1" of the multi-switch to the "SATELLITE IN" jack on the DIRECTV HD Receiver using a coaxial RF cable. (For proper dish installation, refer to the "Installer's Guide" provided with your satellite dish antenna).
4. Connect the "Phone Wall Jack" to "PHONE JACK" on the DIRECTV HD Receiver using a phone cable.

NOTE

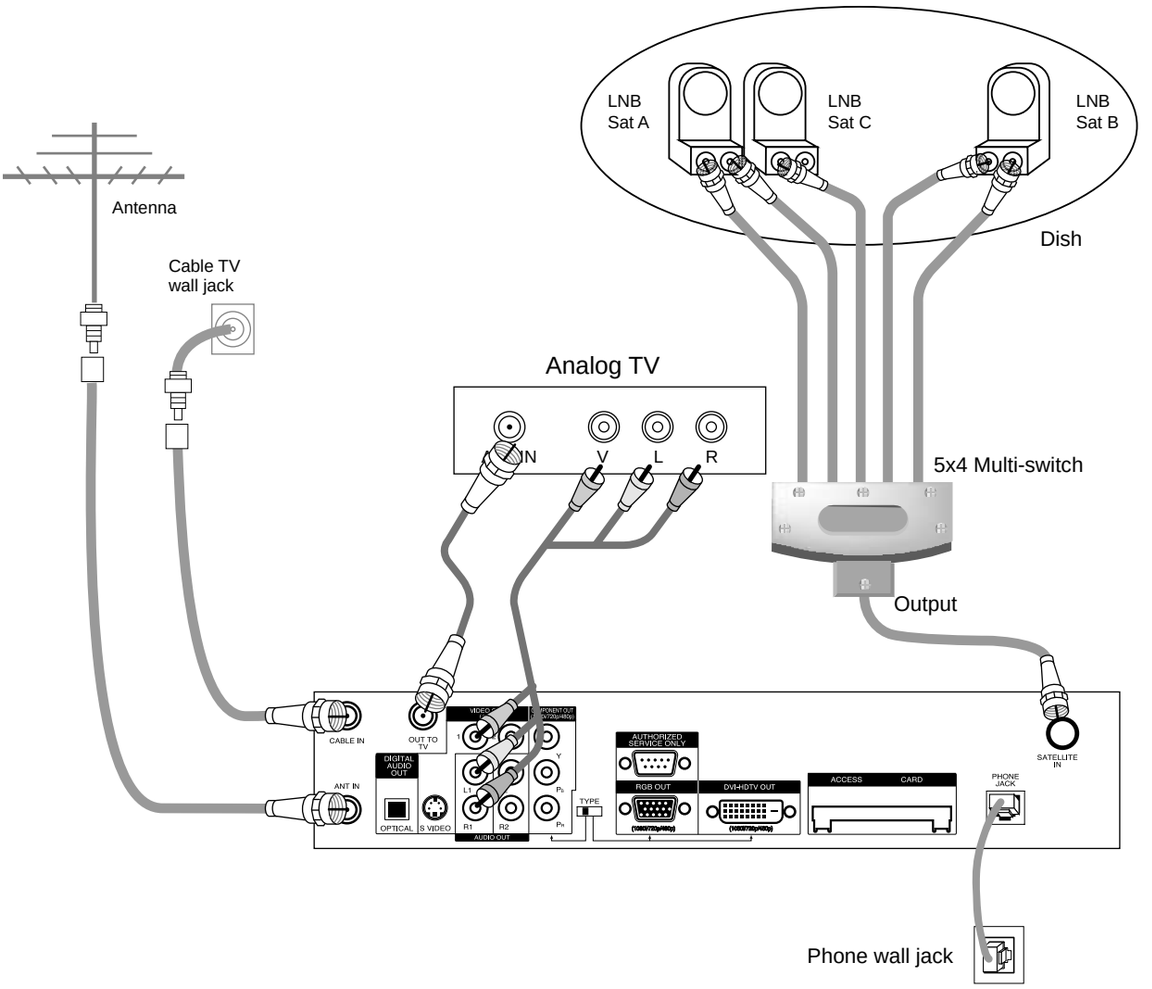
While you are subscribing to a DIRECTV® programming package, you can still view over-the-air and cable TV programs, if you make connections to the over-the-air and/or cable jacks.

NOTE

For access to all DIRECTV® High-Definition programming, a triple LNB multi-satellite dish antenna with a SAT C LNB is required, along with this DIRECTV HD Receiver and high-definition television equipment.

3. SETUP AND CONNECTIONS

3-5. TV Connection - Analog TV



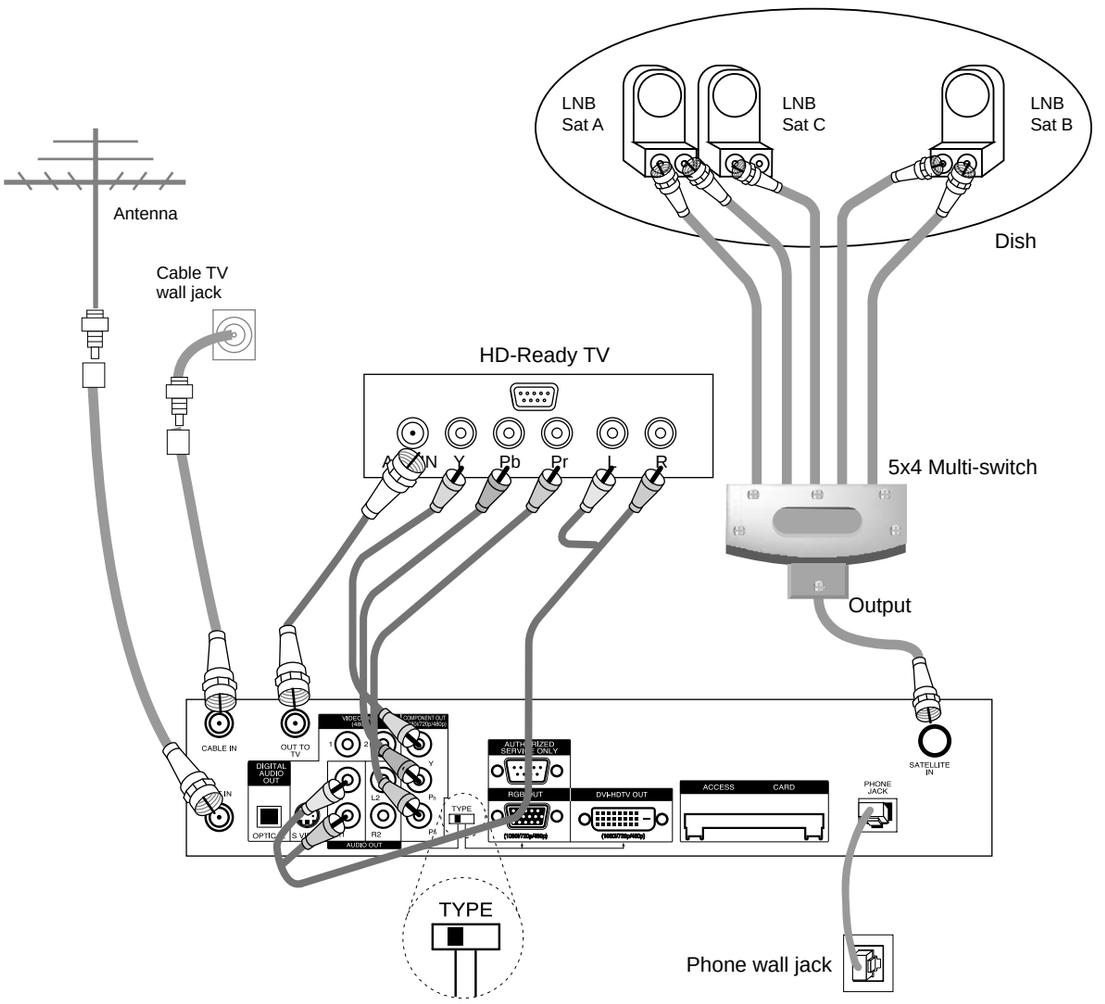
TV Viewing

1. Connect the “OUT TO TV” jack on the DIRECTV® High-Definition Receiver to the “ANT IN” jack on your TV using a coaxial RF cable.

2. Connect the “AUDIO OUT” and “VIDEO OUT” jacks on the DIRECTV HD Receiver to the “A/V IN” jack on your TV using RCA-type cables.
(Note : These connections are only available when 480i display format is selected.)

206-3813

3-5. TV Connection - HD Monitor (Y/PB/PR type)



TV Viewing

1. Connect the "OUT TO TV" jack on the DIRECTV® High-Definition Receiver to the "ANT IN" jack on your TV using a coaxial RF cable.

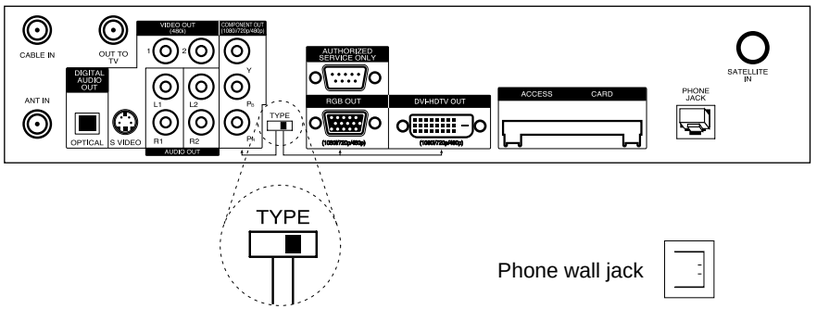
2. Connect the "COMPONENT OUT" jacks on the DIRECTV HD Receiver to the "COMPONENT IN" jacks of your TV using RCA-type cables. (The "TYPE" switch must be set toward the "Y/PB/PR" jacks.)

3. Connect the L/R "AUDIO OUT" jacks on the DIRECTV HD Receiver to the L/R "AUDIO IN" jacks on your TV using RCA-type cables.

(Note : The component out jacks are available when 480p, 720p, or 1080i display format is selected.)

3. SETUP AND CONNECTIONS

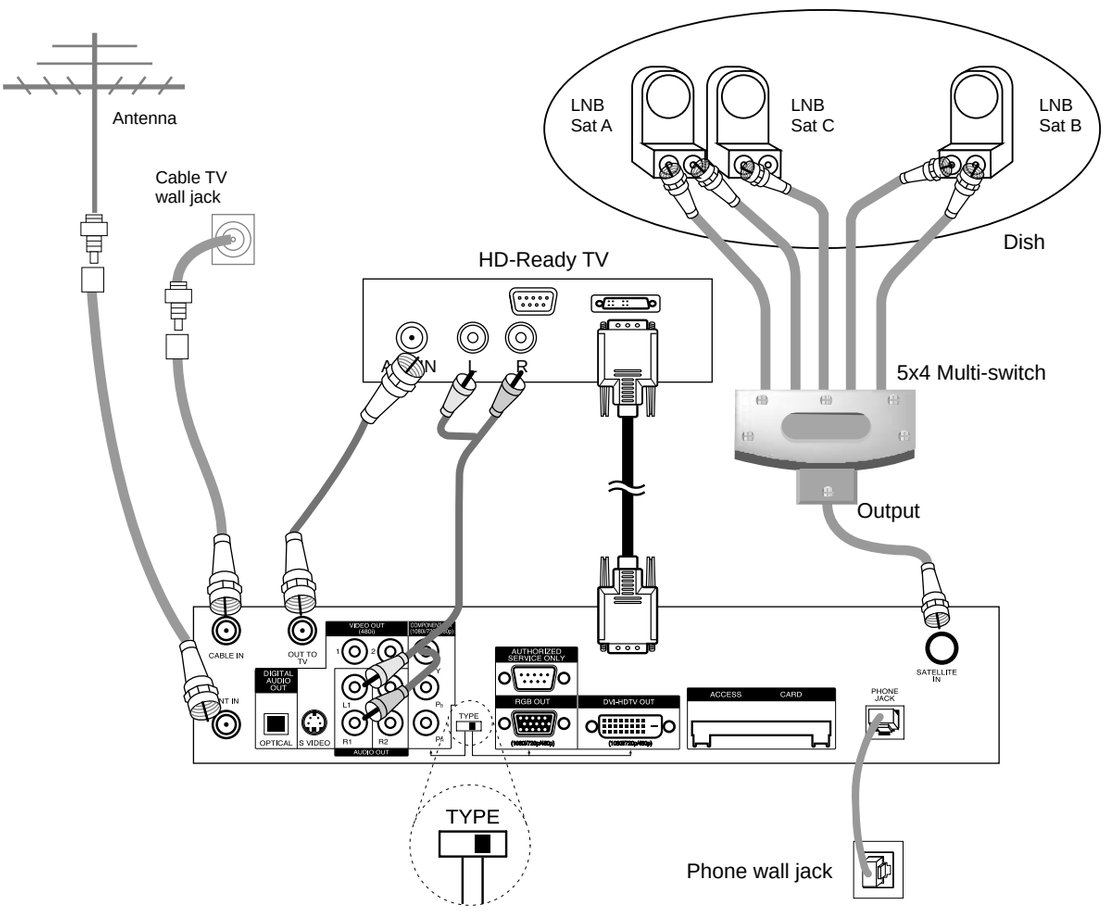
3-5. TV Connection - HD Monitor (RGB type)



Phone wall jack

206-3813

3-5. TV Connection - HD Monitor with HDCP (DVI-HDTV type)



TV Viewing

1. Connect the “OUT TO TV” jack on the DIRECTV® High-Definition Receiver to the “ANT IN” jack on your TV using a coaxial RF cable.

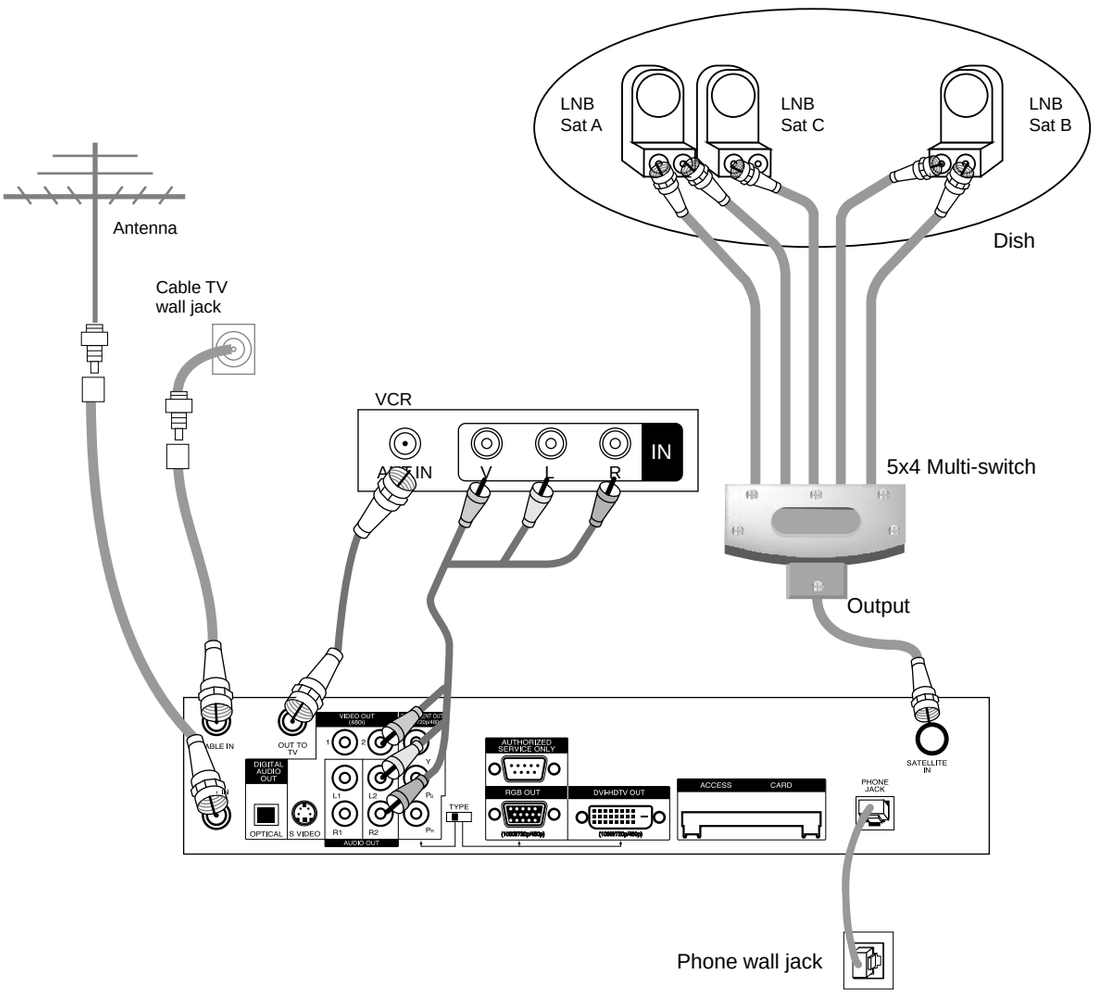
2. Connect the “DVI-HDTV OUT” jack on the DIRECTV HD Receiver to the “DVI-HDTV IN” jack of your TV using DVI-HDTV type connector. (The “TYPE” switch must be set toward the “RGB/DVI-HDTV” jacks.)

3. Connect the L/R “AUDIO OUT” jacks on the DIRECTV HD Receiver to the L/R “AUDIO IN” jacks on your TV using RCA-type cables.
(Note : The DVI-HDTV OUT jack is available when 480p, 720p, or 1080i display format is selected.)

Note : For the best access to high-definition programming at the highest available resolution broadcast by DIRECTV, connect the DVI-HDTV output to the corresponding DVI-HDTV input that supports high-bandwidth Digital Content Protection (HDCP) technology on a High-Definition Television (HDTV) or HDTV monitor. Please check your HDTV or HDTV Monitor user manual or contact the television manufacturer to find out if your HDTV or HDTV Monitor supports HDCP.

3. SETUP AND CONNECTIONS

3-6. VCR Connection



TV Viewing

Refer to Section 3.5, 'TV Connection'.

VCR Recording

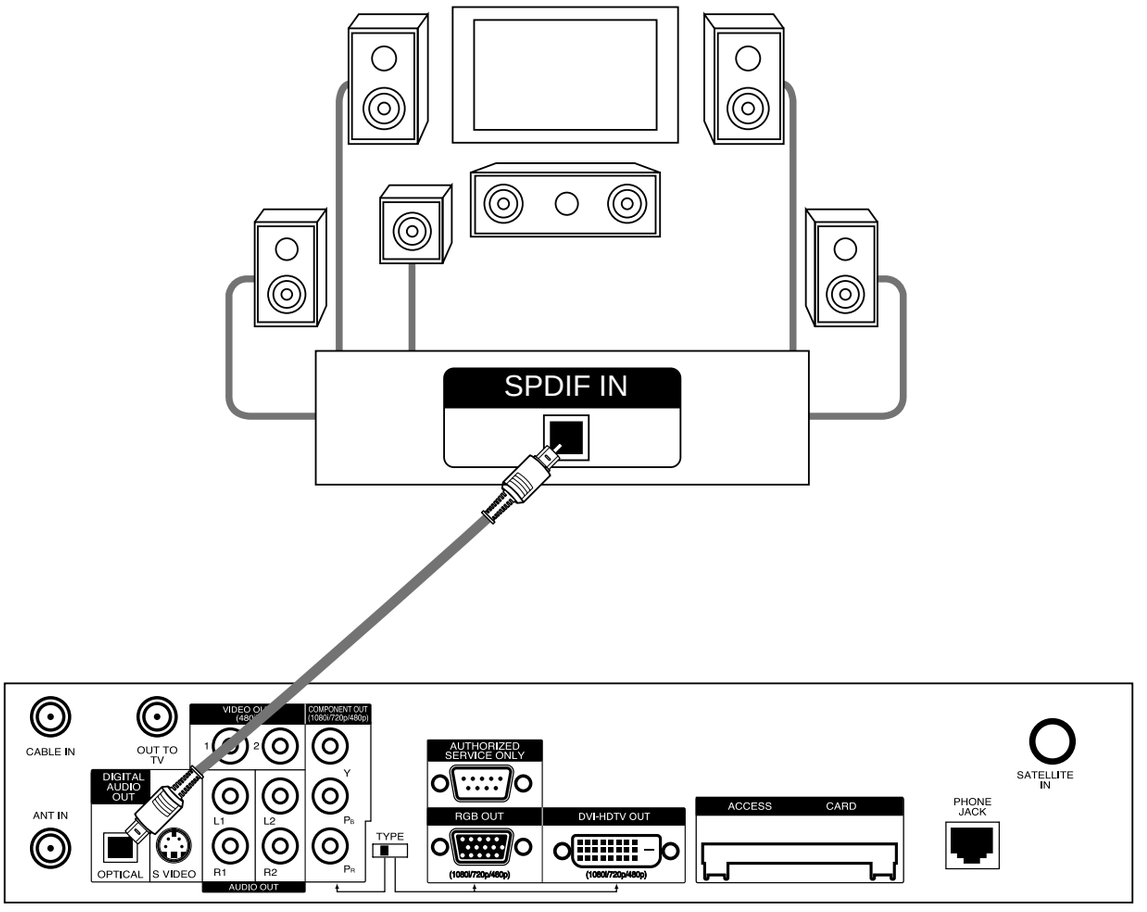
1. Connect the "OUT TO TV" jack on the DIRECTV® High-Definition Receiver to the "ANT IN" jack on your VCR using a coaxial RF cable.

2. Connect the "AUDIO OUT" and "VIDEO OUT" jacks on the DIRECTV HD Receiver to the "A/V IN" jack on your VCR using a RCA-type cable. (If your VCR is equipped with an S-Video jack, use the "S-Video" jack)

(Note: The OUT TO TV and VIDEO OUT 1 / 2 jacks are available when the 480i display format is selected)

206-3813

3-7. Audio Connection - Digital Audio System

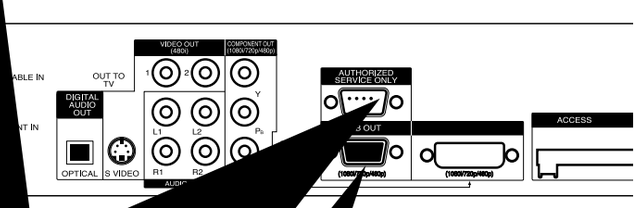


Dolby AC-3 Connection

1. Connect the “DIGITAL AUDIO OUT” jack on the DIRECTV® High-Definition Receiver to the “SPDIF IN” jack on your Dolby Digital decoder using a digital optical cable. (A digital optical cable is not supplied.)

3. SETUP AND [illegible]ECTIONS

3-7. Audio connectio[illegible] Hi-Fi System

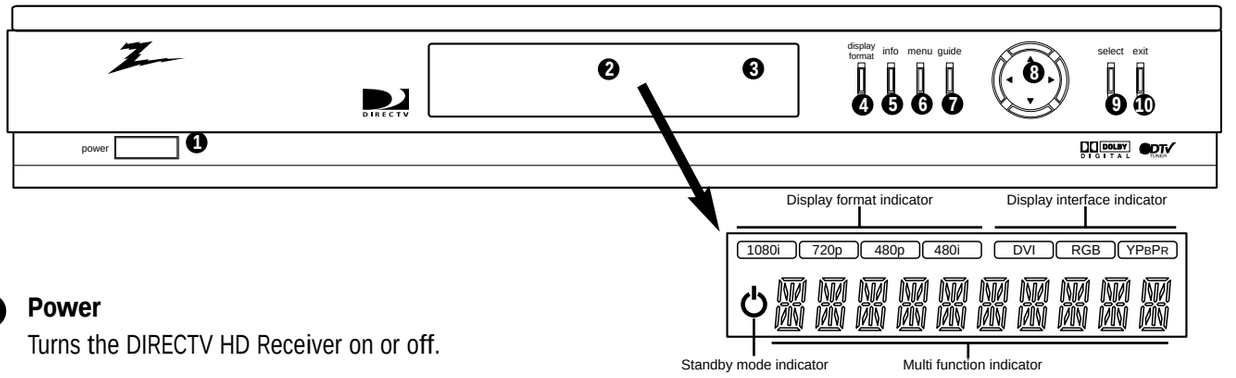


[illegible]V® High-Definition Receiver

[illegible]em.

4. FRONT PANEL AND REMOTE CONTROL

4-1. Using the Front Panel of the DIRECTV® High-Definition Receiver



1 Power
Turns the DIRECTV HD Receiver on or off.

2 Front Display Window
Shows DIRECTV HD Receiver status: Current display output format, output type, and channel number.

3 Remote Control Sensor
Receives signals from the remote control.

4 Display Format
Sets the output resolution to one of 1080i, 720p, 480p, 480i, native, hybrid-1, and hybrid-2, and EZ DVI formats. Choose the correct display format for your TV. (Refer to Section 2.3, 'Display Formats')

5 Info
Shows station and program information in the banner shown at the top of the screen. To remove the banner, press the button again or wait for 10 seconds. You can select the display mode, short or detailed, by pressing "▲▼". You can also change the Audio language, when available, by pressing "◄►".

6 Menu
Shows the main menu on the screen. You can return to normal viewing by pressing the **Exit** button.

7 Guide
Shows the DIRECTV Advanced Program Guide™ screen that shows you a program schedule containing a list of current and future programs. You can also access the Advanced Program Guide™ via the main menu (DIRECTV Guide). You can return to normal viewing by pressing the **Exit** button.

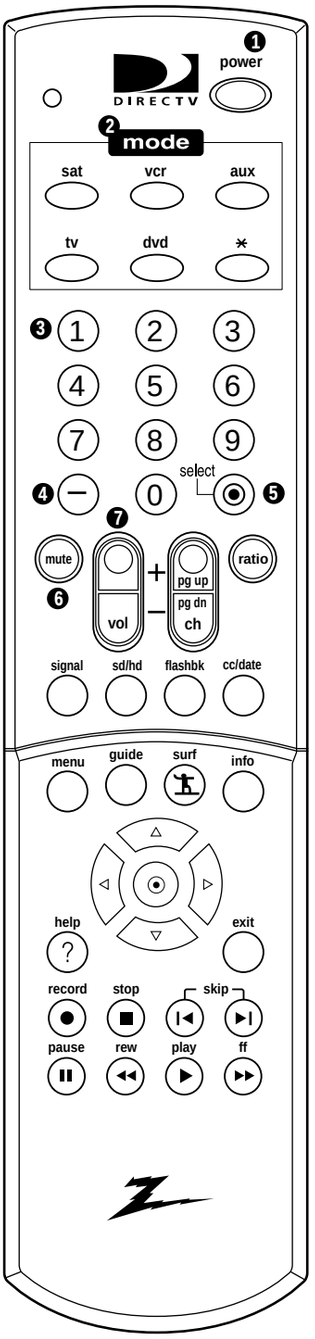
8 Arrow Keys (CH +/-)
Allows you to navigate on-screen menus and to adjust the system settings and preferences. Use the arrow keys to move to a menu option and then use the **Select** button to access it.

9 Select
If the main menu is displayed, pressing the **Select** button will activate the selected MENU item. If the **Select** button is pressed while you are in normal viewing, the information banner will be displayed.

10 Exit
Clears all on-screen displays and returns to normal viewing from any menu.

4. FRONT PANEL AND REMOTE CONTROL

4-2. Using the Remote Control



1 Power

Turns the DIRECTV® High-Definition Receiver on and off. If your remote control is programmed to control other components such as VCR, DVD, etc., Power will turn the component on and off. If you want to control other components from different manufacturers, you must first program your remote control. For further instructions on remote control programming, please refer to the section 4.3 of this operating guide or the Program Remote section of on-screen help.

2 Mode

Selects the device that will be controlled by the remote. For example, if your remote control is set to VCR, the **CH +/-** button will change the channel number of the VCR. If you want to control other devices from different manufacturers, you must first program your remote control.

3 Digit Buttons (0~9)

Allows you to enter channel numbers for direct tuning or to scroll to the designated page of the program list on the Guide menu. Digit buttons can be used to enter numerical values wherever required e.g. to enter a password.

4 Dash (-)

Is used to enter a channel number for multiple program channels such as 2-1, 2-2, etc. A broadcaster may transmit multiple programs on a single channel. Multiple programs are distinguished by a unique sub-channel number, separated by a dash (-).

5 Sel (⊙) [Select]

Use with numbered buttons for instant channel selection. When you press a channel number, for example, 22, the receiver awaits another stroke for three seconds and then tunes to 22.

6 Mute

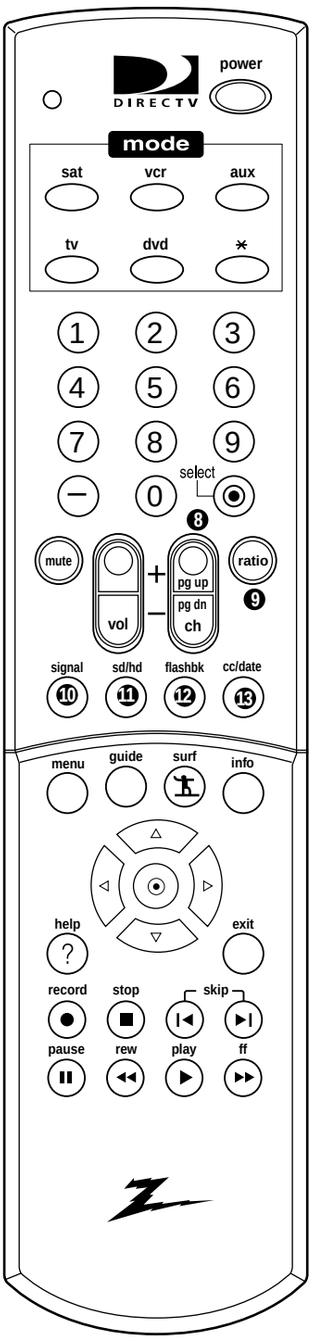
Is used to temporarily turn off the sound. Press again to restore the sound.

7 Vol +/-

Increases/decreases the sound level of the DIRECTV HD Receiver.

206-3813

4-2. Using the Remote Control



8 CH +/-

Scrolls the channels up or down while you are viewing a program, or scrolls the program list in the Guide menu page by page. Press and hold the button to speed up and continue scrolling channels.

9 Ratio

Changes the picture aspect ratio. When you view a picture with a wide (16:9) aspect ratio in 480i or 480p format, the button changes the displaying options in the cycle of Letterbox, Cropped, to Squeezed. When you view a picture with a normal (4:3) aspect ratio in 720p or 1080i format, the button changes the screen format in the cycle of Normal, Wide, Panorama, Zoom1 and Zoom2. Detailed descriptions of the TV aspect ratios are given in section 2.4 or the TV Aspect Ratio of the Preference menu.

10 Signal

Shows the signal strength of the current channel, if it is a digital over-the-air channel or satellite channel. You may improve the signal strength by adjusting the direction of your over-the-air antenna.

11 SD/HD

Sets the output resolution to one of SD (480i format) and pre-selected HD (480p, 720p, 1080i, native, hybrid-1, and hybrid-2 formats). If you want to use VCR recording, set to the STD format.

(Note : Pressing **SD/HD**, "◀", **Sel**, will always cause the box to output SD (480i) display format. Pressing **SD/HD**, "▶", **Sel**, will always cause the box to operate in the pre-selected HD display format. They will work no matter what format has been pre-selected.)

12 Flashbk (Flash Back)

Returns to the last channel viewed. Allows you to move back and forth between the last two channels viewed.

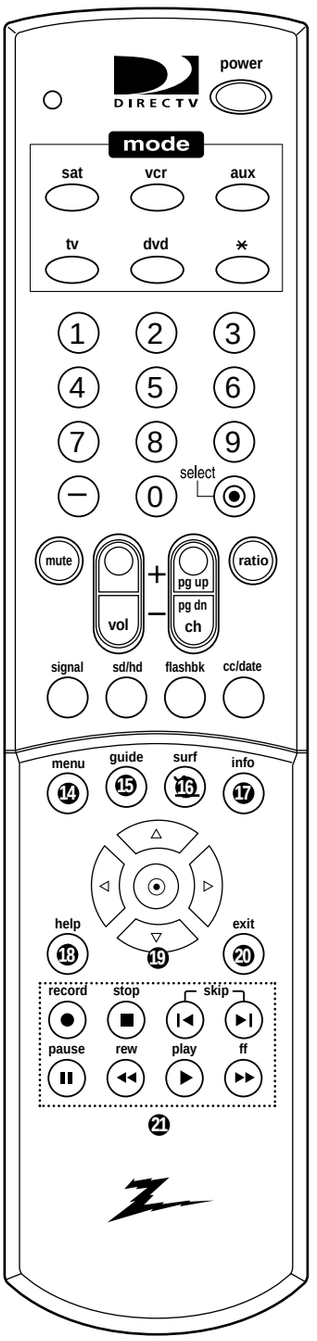
13 CC/Date (Closed Caption)

Lets you turn closed caption on or off. The closed caption mode can be selected in the Closed Caption section of the Preference menu. You can also change the date by pressing the **CC/Date** button in the Advanced Program Guide™.

NOTE : Closed Caption will appear only when it is provided by the broadcaster.

4. FRONT PANEL AND REMOTE CONTROL

4-2. Using the Remote Control



14 Menu

Brings up the main menu. You can return to normal viewing by pressing the **Exit** button or pressing the **Menu** button again.

15 Guide

Brings up the DIRECTV Advanced Program Guide™. You can also access the Advanced Program Guide™ via the main menu. Return to normal viewing by pressing the **Exit** button or pressing the **Guide** button again.

16 Surf

Shows the list of your surf channels. A Surf channel list can contain up to fifty channels. You can return to normal viewing by pressing the **Exit** button or pressing the **Surf** button again. Refer to Section 6.2 for creating and customizing your own Surf channel list.

17 Info

Shows station and program information in the banner shown at the top of the screen. To remove the banner, press the button again or wait for 10 seconds. You can select the display mode, short or detailed, by pressing "▲▼". You can also change the audio language, when available, by pressing "◄►".

18 Help (?)

Shows the on-screen "EZ Help" menu while you are in normal viewing. The "**Help (?)**" button also serves when you are in an on-screen menu. To see the help description of the selected option in the menu, press and hold the "**Help (?)**" button.

19 Navigation/⊙

Allows you to navigate the on-screen menus and adjust the system settings and preferences, by moving to a menu option with "▲▼◄►" and selecting the highlighted option with "⊙". If "⊙" is pressed while you are in normal viewing, the information banner is displayed.

20 Exit

Clears all on-screen displays and returns to TV viewing from any menu.

21 Component Control Buttons

Provides control for DVD players, VCRs, and similar components. The left and right chapter buttons (L Chap, and R Chap) are used to jump chapter by chapter during DVD playback. The remote control must be programmed for the brand of component being used. For further instructions on remote control programming, please refer to Section 4.3 of this operating guide or the Program Remote section of on-screen help.

206-3813

4-3. Programming the Remote Control

The DIRECTV® High-Definition Receiver remote control is a multi-brand or universal remote control that can be programmed to control most remote-controllable devices from other manufacturers.

NOTE

The remote control may not control all models of other brands.

1. Test your remote control

To find out whether your remote control can operate a component without programming. Turn on the component such as a VCR and press the corresponding mode button (VCR) on the remote control while pointing at the component. Use the **Power** and **CH +/-** buttons to see if the component responds properly. If not, the remote control requires programming.

2. Turn on the component to be programmed. Then press the corresponding mode button on the remote control.

3. Press the **Power** button and the **Mute** button simultaneously. The remote control is now ready to program the code for the component.

4. There are two ways to find the right code of the component.

First, if you press the **CH +/-** buttons repeatedly, the code will change one at a time. Press the **Power** button after each code change. If the right code is found, the device will turn off.

Second, enter the code number using the digit buttons on the remote control. The right code numbers for the corresponding component can be found on the following pages. Again, if the code is correct, the device will turn off.

5. Press the **Exit** button to store the programming code.

6. Test the remote control functions to see if the component responds properly. If not, repeat from step 2.

4. FRONT PANEL AND REMOTE CONTROL

4-4. Remote Control Codes for Other Components

TV Codes

Brands	Codes	Brands	Codes	Brands	Codes	Brands	Codes
Akai	146	Hitachi	011 163 166	Nikei	043	Siemens	088
Amark	112 143		158 143 004	OnKing	043	Singnature	072
Ampro	167 073		010 012 023	Onwa	043	Sony	070 147 126
Blaupunkt	088		075 001 009	Optonica	019 081		085 139 041
Broksonic	035		041	Panasonic	034 080 092		079
Candle	002 003 004	Inifinity	164		056 164	Soundesign	028 003 043
Capehart	058	Inkel	129	Philco	003 024 056		116
Citizen	002 003 004	JBL	164		059 060 063	Spectricon	112
	043 101 103	J.C Penny	008 030 065		064 164 004	SSS	004 043 116
	143		010 160 004		143 043 127	Super Macy	002
Classic	043		024 143 009	Philips	164 038 070	Sylvania	003 059 060
Concerto	004		156		093 001 003		063 064 164
Contec	039 043 050	Jensen	013		004 143 059		044 160 116
	051	JVC	038 083 145		160		127 140
Coronado	143		034	Pioneer	135 025 023	Tandy	081
Craig	043 054	KEC	043		001 018 116	Tatung	056 062
Crown	043 143	Kloss	002 059		027	Technics	084
Daewoo	004 016 017	KMC	143	Portand	004 143	Techwood	004
	043 044 055	KTV	043 001 143	Proscan	144	Teknika	002 003 004
	071 076 103		154	Proton	116 131 143		024 028 043
	107 111 114	Lodgenet	072		058 171		072 101 143
	117 120 123	Logik	072	Quasar	034 092 056		031 077 103
	125 127 128	Luxman	004	Radio Shack	019 043 047	Telefunken	037 046 086
	136 143	LXI	166 007 015		116 127 143		087
Daytron	116 143		164 160 081			Telerent	072
Dynasty	043		052	RCA	160 161 165	TMK	004 116
Electrohome	007 143				065 156 144	Toshiba	015 138 030
Emerson	028 048 043	Magnavox	164 059 001		001 004 023		007 040 062
	155 005 096		003 060 061		024 056 074		101 051
	047 116 153		063 064 160	Realistic	007 019 043	Totevision	143
	151 001 050		004 143 127		047	Universal	008 009
Fisher	077 057	Marantz	001 164 077	Runco	168 169	Video Concepts	146
Funai	028 043	Matsui	164	Sampo	058 116	Vidtech	004 116
Futuretech	043	Memorex	007 072 116	Samsung	050 089 101	Wards	004 008 009
General Electric	160 144 165	Metz	088		105 113 116		019 028 060
	073 130 001	MGA	004 028 042		127 133 137		061 063 064
	008 009 034		049 077 116		143 160		072 074 116
	056 074 116	Minerva	088	Sanyo	166 007 057		143
	155 091	Mitsubishi	109 024 124		082 020 053	Yamaha	004
Goldstar	102 106 110		001 004 040		021 033 039	York	116
	112 113 116		116 146 028	Scott	028 043 116	Yupiteru	043
	119 122 127		042	Sears	015 030 004	Zenith	072 073 095
	137 143	MTC	101 130 134		007 028 057		157
Hall Mark	116		001 040 016		143 094 160	Zonda	112
			024 056 007		116 082 101		
			019	Sharp	170 081 019		
					028 029 014		
					004 022 143		

206-3813

4-4. Remote Control Codes for Other Components

VCR Codes

Aiwa	034
Akai	146 043 046
	124 125 142
	016
Ampro	072
Audio dynamics	012 023
	039 043
Broksonic	035
Canon	028 031 033
Capehart	018
Craig	033 040 135
Curtis Mathes	031 033 041
Daewoo	005 007 010
	064 065 108
	110 111 112
	116 117 119
Daytron	108
DBX	012 023 039
	043
Dynatech	034 053
Electrohome	059
Emerson	006 029 035
	025 027 034
	036 037 046
	101 129 131
	138 017 031
Fisher	003 008 009
	010
Funai	034
General Electric	031 072 144
	147 033 063
	107 109
Goldstar	012 013 020
	101 106 114
	123
Go Video	132 136
Harman Kardon	012 045
Hitachi	004 026 034
	043 150 063
	137 018

Instant Replay	031 033
JCL	031 033
J.C Penny	012 013 015
	066 040 033
	101
Jensen	043
JVC	048 043 130
	150 050 055
	060 012 031
	033
Kenwood	014 043 048
	039
Lloyd	034
LXI	034 101 013
	014
Magin	040
Magnavox	067 031 034
	041 033 068
Marantz	031 067 012
	033 069
Marta	101
Matsui	027 030
MEI	031 033
Memorex	101 003 010
	014 031 034
	053 072 139
	134 033
MGA	045 046 059
Minolta	013 020
Mitsubishi	059 061 151
	142 013 020
	045 049
MTC	034 040
Multi Tech	024 034
NEC	012 023 043
	048 039
Nordmende	043
Optonica	053 054

Panasonic	066 070 083
	145 133 140
	074
Pentax	013 020 031
	033 063
Philco	031 033 034
	067
Philips	031 067 034
	101 054 033
	071
Pilot	101
Pioneer	021 048 013
Portland	108
Pulsar	072
Quartz	002 014
Quasar	033 066 075
	145
RCA	013 020 033
	041 062 063
	107 109 140
	144 145 147
Realistic	003 008 010
	014 031 033
	034 040 053
	054 101
Rico	058
Runco	148
Salora	014
Samsung	032 040 102
	104 105 107
	109 112 113
	115 120 122
	125
Sansui	022 043 048
	135
Sanyo	003 010 014
	134 007
Scott	017 037 129
	112 131
Sears	003 008 010
	013 014 081
	101 009 020
	031 042

Sharp	149 031 054
Shintom	024
Sony	009 056 057
	058 077 003
	149 052 076
	031 078
Soundesign	034
STS	013
Sylvania	031 059 033
	034 067
Symphonic	034
Tandy	010 034
Teac	034 039 043
Technics	031 033
Teknika	031 019 033
	034 101
Thomas	034
TMK	006
Toshiba	112 131 008
	047 059 082
	042 013
Totevision	040 101
Unitech	040
Video Research	012
Video Concepts	012 046 034
	141
Videonsonic	040
Wards	013 024 031
	034 040 053
	054 003 017
	033 131
Yamaha	012 043 034
	039
Zenith	072 080 056
	048 034 101
	058

DVD Codes

Code	Supported Brands
960	Zenith 2300
961	Toshiba
962	Sony
963	Pioneer
964	Mitsubishi
965	JVC

4. FRONT PANEL AND REMOTE CONTROL

4-4. Remote Control Codes for Other Components

AUX (AUDIO)

Goldstar	005	Hitachi	010	JVC	006 039 049	KENWOOD	001 013 029
Luxman	017	Marantz	002 021 028		050		031 044
NAD	014		030 032 035	ONKYO	008 009 025	Optimus	011 013 022
Panasonic	003 015 036	Pioneer	007 016 020		040 041	Quasar	003 036
	046		023 024 026	Sharp	013 029 043	Sherwood	021 019
RCA	004		033 037 047		045	Sony	027 034 038
Toshia	042	Victor	006 039				048 053

AUX (CD)

Adc	104	KENWOOD	105 110 113	Optimus	100 107 110	Sharp	110 141 150
Aiwa	149 178 189		118 144 154		124 139 140		181 200 204
	202 219		155 198 200		145 146 162		210 150 217
Akai	134 165 200		216 217		164 165 170	Sherwood	102 115 116
Denon	101 190 221	Luxman	108 123 153	Panasonic	106 151 176		128 141 193
	222 223		173		184 203 219	Sony	100 142 168
Emerson	133 136 152	Magnavox	127 135 172		233		174 182 183
	166 175		179 180	Philips	127 135 195		192 308 234
Marantz	002 021 028	Mcs	111 147 156		199 237		235 236
	030 032 035		169	Pioneer	107 124 167	Technics	106 148 151
Fisher	113 122 138	Mitsubishi	120 179 229		171 179 187		176 184 203
	140 168		230 231		191 205 206		214 218
GE	209	Onkyo	125 126 130		207	Teac	103 112 132
Hitachi	133 166		131 213 215	Quasar	106 176		141 160 161
JVC	117 196 227		232	Radio shack	186 188		177 185 161
	228			Sanyo	121 140 158		197 201
					168	Yamaha	109 119 137
				Sears	147		143 194 211

206-3813

5. INITIAL SETUP

CAUTION: Check your TV screen to determine the format required. The format must be set to appropriate mode using format button on the front panel. The on screen display or the picture may not appear if the wrong format mode is selected.

When you turn on the DIRECTV® High-Definition Receiver for the first time, you will be asked if you want to set up DIRECTV® programming.

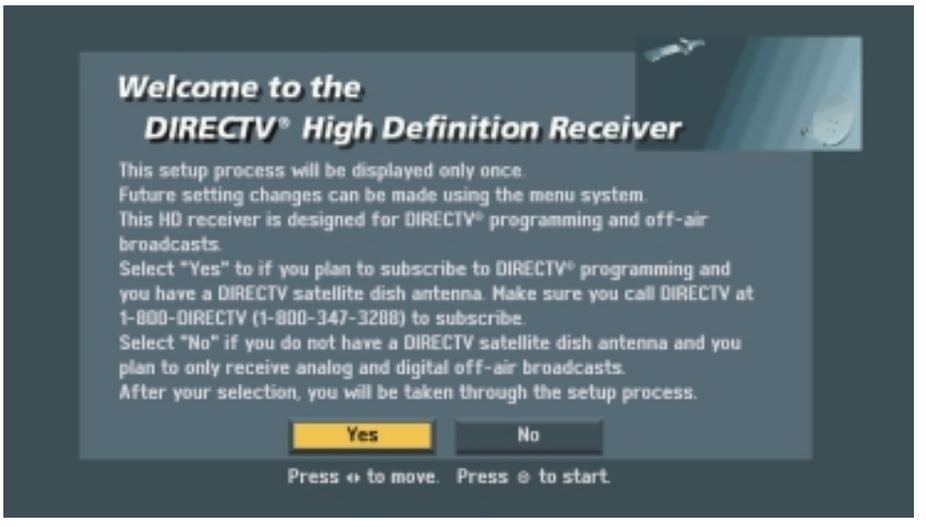
If you have chosen to subscribe to DIRECTV programming, you should initialize the system according to section 8-6.

If you don't have any dish, you should select "NO". This means you can receive only off-air broadcast (analog & digital).

This setup process will be displayed only once. This means that you can change your selection at any time in the future using the DIRECTV Initial setup menu.

If you have chosen to subscribe to DIRECTV, you should contact DIRECTV at 1-800-DIRECTV (or 1-800-347-3288) and order programming.

When you order programming, you need to know your access card number. To get this number, press **MENU** on the remote control, then select SYSTEM on the Menu. Select System Test on the screen, and you will see the Access Card Identifier. Another way to find the number is by taking out the access card and referring to the number printed on it.

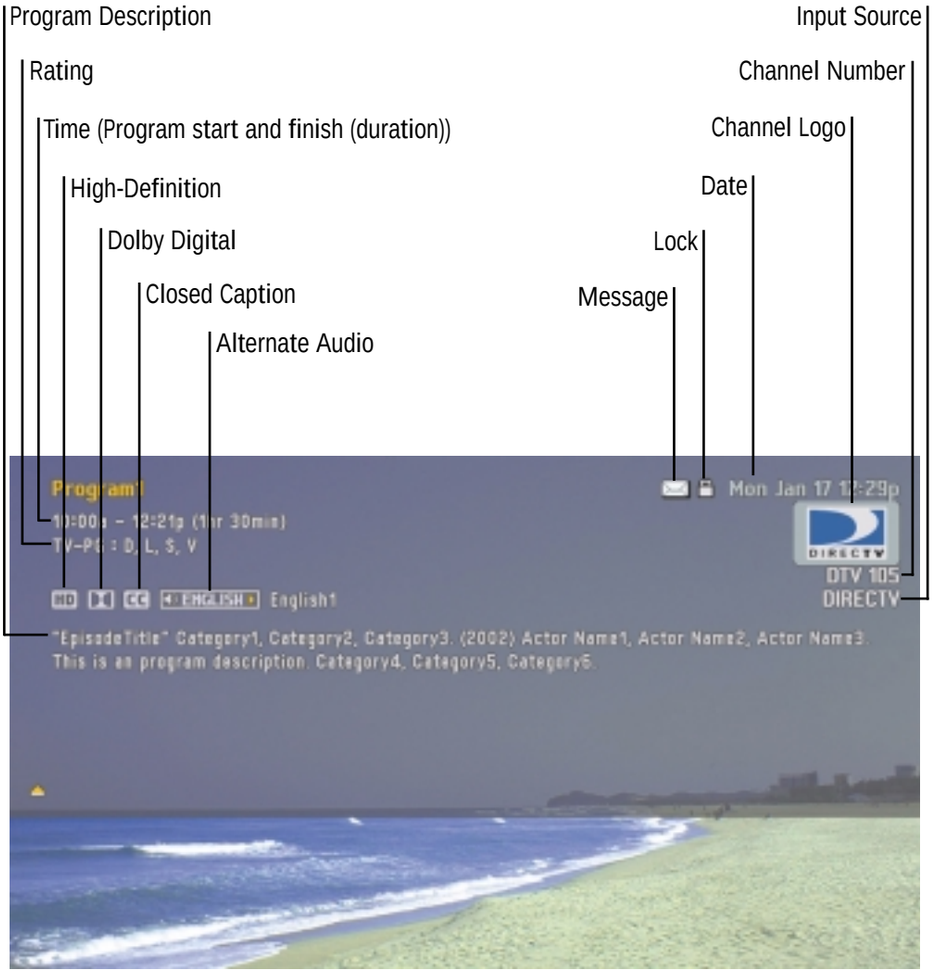


6. BASIC OPERATION

6-1. Viewing the Channel Banner

The Channel Banner appears whenever you tune to a new channel or press the **Info** button on the remote control while viewing a program. It displays channel and program information in the banner shown at the top of the screen. When the Channel Banner is displayed, pressing "▲▼" toggles between extended and regular information banners. To remove the banner, press **Info** again or wait for 10 seconds.

The icons in the Channel Banner represent the status or availability of important features. The icons will be highlighted when the feature is active or available as provided by the broadcaster and service provider. The information available on the Channel Banner is described below.



206-3813

6-1. Viewing the Channel Banner

Input Source Icon (DIRECTV)
Indicates from which source the current program signal is being received. The DIRECTV® High-Definition Receiver can receive a signal from ANT, ANT/Digital, CABLE or DIRECTV.

Lock Icon ( )
Indicates that the lock system is activated.

Alternate Audio (ENGLISH)
DIRECTV and ATSC channels or programs sometimes provide multiple audio tracks, usually in different language. When multiple audio tracks are available, the Alternate Audio icon changes its appearance to indicate that you can select one of those audios by pressing "◄►" buttons.

Mail Icon ( )
Indicates that your DIRECTV HD Receiver has electronic mail messages from DIRECTV. The mail icon will appear in the channel banner to indicate that a new mail message has arrived or there are unread messages in the box.

HD Icon (HD)
Indicates that the current program is in the HD format.

DD Icon ( )
Indicates that the currently selected audio track is Dolby Digital.

CC Icon (CC)
Indicates that the current program provides the closed caption service.

Channel Logo
Displays the logo of the current channel. If a channel logo is not available, the channel name will be displayed instead.

Channel Number
Displays the current channel number.

Start and End Time
Displays the start time and end time of the current program.

Rating
Displays the rating of the current program.

Date
Displays the current date and time.

Program Description
Displays a brief description of the current program (if available).

Category
Displays the genre of the current program.

6. BASIC OPERATION

6-2. Channel Surfing

The surf list appears on the TV screen when you press the **Surf** button on the remote control. It enables you to surf up to 50 favorite channels that were chosen in the Edit Channel section of the Setup menu. The surf list consists of the channel logos or channel numbers. If the logo of a certain channel is not available, the channel number is displayed instead.

You can easily move the highlight on the surf list using "▲▼◄►" on the remote control. The next page is accessible by using **Pg Up/Dn** button on the remote. You can tune to a favorite channel by pressing "⊙". Or the **Exit** button on the remote will clear the surf list and take you back to the current channel.

You are also able to add or delete the logo of a channel on the surf list by pressing the **Info** button on the remote. A dialog box will ask what you want to do with the highlighted logo area: you can replace the highlighted logo area with the current channel, or delete it.

206-3813

6-3. Subscription to DIRECTV® programming and ANT/CABLE-Only operation

The DIRECTV® High-Definition Receiver is designed to receive signals from DIRECTV, ANT and /or CABLE. If you are a DIRECTV customer, you can enjoy programming provided by DIRECTV.

You can also receive the analog and digital over-the-air broadcasts, with the benefit of the Advanced Program Guide™ (APG) which is an integrated electronic program guide. The APG provides program listings and information on analog and digital channels from over-the-air local stations as well as DIRECTV channels. You can easily navigate and tune to hundreds of channels from various signal sources with the APG.

If you don't subscribe to DIRECTV® programming, however, the function of the DIRECTV HD Receiver will be limited to receiving signals only from ANT and/or CABLE. You can still enjoy HD services provided by over-the-air digital broadcast along with the conventional analog broadcast. Without the DIRECTV service, however, no electronic program guide is available.

7. ADVANCED PROGRAM GUIDE™

7-1. About the Advanced Program Guide™

The DIRECTV Advanced Program Guide™ (APG), contains schedule and program information for all DIRECTV® channels. The APG also provides local over-the-air channels information including both conventional analog and digital channels if you receive satellite service.

Helping you to find a program easily and conveniently, the APG allows you to view schedule and descriptive program information for the channels. The receiver offers five different channel lists: ALL, CUSTOM, SURF, MOVIES and SPORTS. You may edit the CUSTOM and SURF channel lists to customize and design your favorite channels, respectively. In addition, you can easily find specific programs by using the CATEGORY search of KEYWORD search functions. An explanation of each channel list is described in Section 7-2.

You can bring up the APG in two ways and exit from it in three ways.

To bring up the APG:

- Press the **Guide** button on your remote control.

or

- Press the **Menu** button on the remote control and select the DIRECTV menu. Several options will appear. Choose the Guide option (MENU → DIRECTV → Guide)

To exit the APG:

- Press the **Exit** button to return to the last channel you were tuned to.

or

- Press the **Guide** button on the remote control twice when a program or channel is highlighted. The first press moves the highlight to the Guide menu at the far left. Pressing the button a second time makes the APG disappear.

or

- When any currently broadcasted program is highlighted, pressing "⊙" will make the guide screen disappear and tune to that channel.

206-3813

7-2. Layout of the Advanced Program Guide™ Screen

The on-screen guide maintains five different channel lists, each of which shows you only those channels and programs that belong to that channel list. The meaning and generation of each channel list is described below

All Shows program listings for all channels that you are eligible to access. They include DIRECTV® channels that your dish antenna can receive, and over-the-air channels that you have selected to add into the channel list during the initial setup procedure.

Custom Shows the program listings that belong to the CUSTOM channel list. You can customize the CUSTOM channel list by hiding channels from the All Channel List that you do not wish to view.

Surf Shows program listings only for those channels on the SURF channel list. You can generate a FAVORITE channel list, which is a short list of channels you tune to most frequently, by setting a favorite icon to the channels from the menu sequence MENU → SETUP → Favorite/Ch. Edit.

Movies Lists only movie programs from channels in the All Channel List that have acceptable ratings. The DIRECTV® High-Definition Receiver generates the list automatically based on the category information of each program identified in the APG.

Sports Shows only sports programs. The DIRECTV HD Receiver generates the list automatically based on the category information of each program identified in the APG.

The guide screen also provides two search menus:

Category Searches for programs that belong to a given category. The DIRECTV HD Receiver first shows you currently applicable categories and allows you to search for programs in that category.

Keyword Searches for programs that have or are related to a specific key word. You can choose a key word for program titles or credit titles (for example, actor/actress, director, writer, awards, etc.).

When accessing an on-screen guide, you will always return to the guide menu, one of the five channel lists or one of the two search menus, that you have previously viewed.

7. ADVANCED PROGRAM GUIDE™

7-3. Moving through the Advanced Program Guide™

The Advanced Program Guide™ is operated based on a simple and straightforward "Highlight and Select" process.

1. Use "▲▼◄►" on your remote control to navigate the guide screen.
2. Press "⊙" to select or execute the highlighted menu or function.

The on-screen guide shows you program listings for seven channels within a one and one half hour time slot. For example:, 6:00 - 7:30. In order to view a list of future programs or other channels, you may continuously press "▲▼◄►" to scroll horizontally or vertically. This may take a while to reach a specific channel or program, if the channel or program is listed far from the currently highlighted program. The Advanced Program Guide™ thus offers you shortcuts to minimize your effort in navigating channels and time slots.

Line Scrolling

You can reach other time slots or channels that are currently hidden from the screen using the arrow buttons "▲▼◄►". Move horizontally to reach other time slots and move vertically to reach other channels.

Page Scrolling

You can move faster vertically by scrolling page by page with the **Pg Up/Dn** buttons on the remote control. Each button stroke scrolls one page up or down.

Date Scrolling

You can scroll time slots day-by-day using the **CC/Date** button on the remote control. Alternatively, you can move the highlight to the Date Change Box and change the date to jump to the time slot of that day.

Direct Jumping

You can quickly jump to a page that contains a specific channel by directly entering a channel number using the digit buttons "0~9" on the remote control.
Pressing "⊙" following the digit button strokes will move to the channel immediately.

NOTE

Press the **Guide** button to return immediately to the guide menus, the left-most column of the guide screen. This is very useful when the highlight is located far from the current time and you want to return to the guide menus.

206-3813

7-4. Selecting a Program

The top region of the guide screen displays the schedule and program information of the currently highlighted program. You can also see other detailed information about the program by pressing the **Info** button.

When you select the highlighted program by pressing "⊙", what happens or appears next depends on whether the highlighted program is currently on-air or scheduled in the future, and whether or not it is a pay per view program.

Current / Not PPV
If the selected program is a current program and not a PPV programs, you will directly tune to the program.

Future / Not PPV
If the selected program is scheduled in the future and is not a PPV program, you will be offered a dialog box that enables you to reserve this program for watching. If you select Remind in the dialog box, this program is put on the Remind List and you will be reminded by a message at the top-left corner of the screen 10 seconds before its airing time.

Current / DIRECTV® Pay Per View
If the selected program is a current pay per view program, you will be asked if you want to purchase this program.

Future / DIRECTV® Pay Per View
If the selected program is a pay per view program scheduled in the future, you will also be asked if you want to purchase this program. Once you confirm the purchase, this program is put on the Future Purchase list. You can view the Future Purchase list from the menu sequence Menu → DIRECTV → Future Purchase and cancel any purchase on the list anytime before its airing time.

A continuous connection to a land-based phone line is required to perform this function with your remote control.
(Note: Pay per view programs can only be purchased with the 24 hours of the program times.)

7. ADVANCED PROGRAM GUIDE™

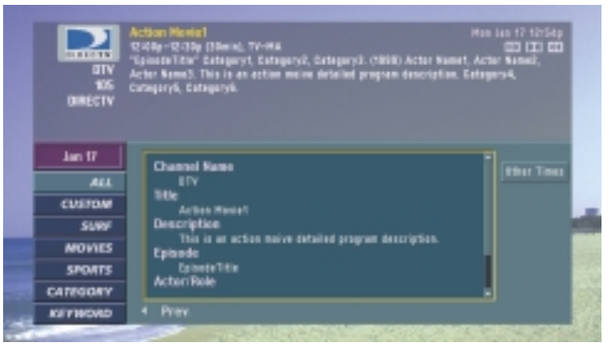
7-5. Getting More Information

Pressing the **Info** button will display available additional information about the highlighted program. It includes actor and role relationships, original material, production studio, the date on which the program was first shown, and so on.

To display program details:

1. Move the highlight to a desired program using "▲▼◄►", **Pg Up**, **Pg Dn** or **CC/Date** on the remote control.

2. Press the **Info** button on the remote control to display the available additional information.



3. If you want to check any other broadcasting schedules for this same program, move the highlight to the "Other Times" option, located on the right side of the additional information box, and press "⊙".

4. To return to the previous guide screen, press "◄" or the **Info** button again.

NOTE

To get channel information, press "⊙" when the channel number, the second column from the left of the screen, is highlighted. The top region of the guide screen displays the channel name and description about the channel, if available.

206-3813

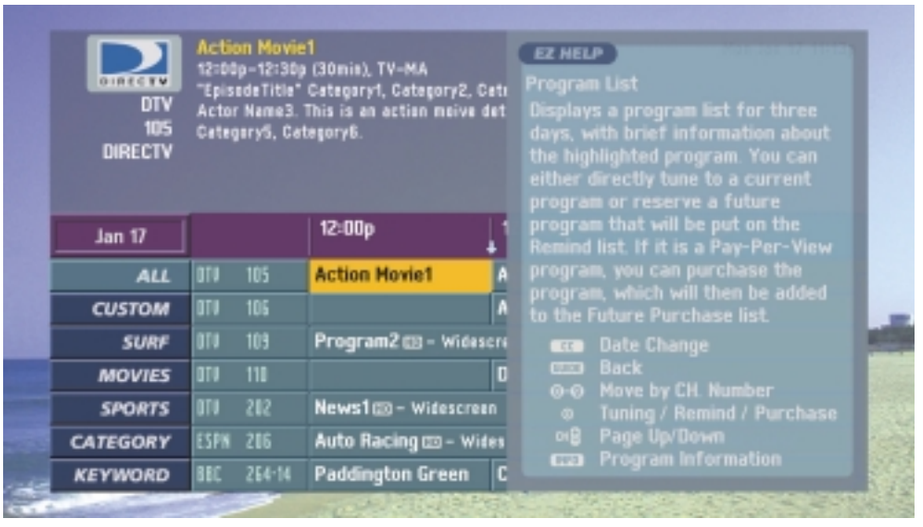
7-6. Referring to EZ Help

Your basic understanding of certain features and terminology used in the APG will help you to fully enjoy the functionality of the DIRECTV® High-Definition Receiver. The receiver's unique feature called 'EZ Help' serves as an on-line snapshot user's manual.

If you want to find out what the highlighted menu item is for and how it works while you are in the APG, just press and hold the "**Help (?)**" button on your remote control. A quick help screen with brief and focused descriptions will appear at the right side of the screen. EZ Help also provides operation tips at the bottom of every page.

Once you release the "**Help (?)**" button, the help display will disappear instantly.

If you press the "**Help (?)**" button while you are viewing a program, it will guide you to the EZ Help feature, which is an on-line version of this Operating guide.



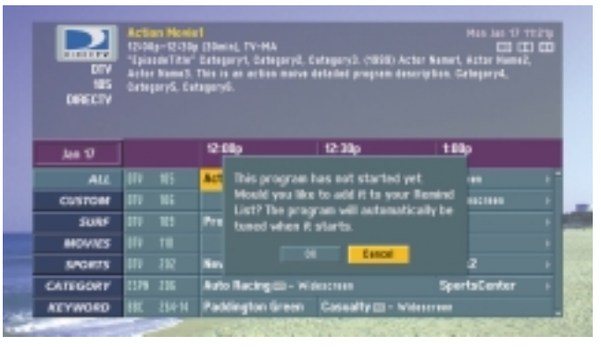
7. ADVANCED PROGRAM GUIDE™

7-7. Making a Remind List for Future Viewing

If you want to view a program scheduled in the future, you can put that program on the Remind List so that a reminder message will appear right before the program starts.

To schedule a future viewing :

1. Move the highlight to a future program you want to watch using "▲▼◄►" on the remote control.
2. Press "⊙". A dialog box will appear for your information.
3. Move the highlight to the Remind option in the dialog box and press "⊙" to confirm. The program name will be preceded by the mark (√). If you want to cancel any reservation, execute the menu sequence MENU → DIRECTV → Remind List and press "⊙" when the highlight is on the reservation.



NOTE

A reminder message will appear at the top-left corner of the screen 10 seconds before the reserved program actually starts. The receiver will automatically tune to the program if you do not cancel it.

Pay per view programs can only be purchased with the 24 hours of the program times.

206-3813

7-8. Purchasing DIRECTV® Pay Per View Programs

If you subscribe to DIRECTV® programming, you may preview pay per view movies on channel 200, the DIRECTV promo channel, to determine if you would like to purchase them.

To purchase PPV programs:

1. From the program guide, press "⊙" on the remote control to select the PPV program.
   A dialog box will appear to ask you whether you want to purchase or not.
   Selecting the "Others" button will show you other time schedules for the program.

2. Move the highlight to the right to "Buy" in the dialog box and press "⊙".
   Another pop-up box will be displayed to verify your purchase.

3. If the price to record the program is different, a Record button will appear. Move the highlight to the right again to "Record" in the dialog box and press "⊙".
   The program may be recorded via Audio Out and Video Out 1 or 2 if the Format is set to 480i.
   A continuous connection to a land based phone line is required to order PPV with your remote control.
   (Note: Pay per view programs can only be purchased within the 24 hours of the program times.)

7. ADVANCED PROGRAM GUIDE™

7-9. Searching Programs by Category

You can search for specific programs by their categories. The category information of each program is provided by the APG so that you can choose one of them to search for matching programs. You can also set a search range to One Day or Three Days, (within 24 hours and 72 hours from now, respectively). In the search result one program may have multiple showings in different channels and/or in different time slots.

To search programs by Category :

1. Highlight the CATEGORY in the guide menu. You will see currently applicable categories in a two-level structure. The Category Search screen consists of three columns: the first column from the left shows the top-level categories, the middle column shows the second-level categories that belong to the same top-level category, and the right-most column lists programs resulting from a category search.
2. Move the highlight to a top-level category. You will see its second-level categories, if any in the middle column. By moving the highlight around and viewing available categories, you can select any of them, top-level or second-level, and press "⊙" for searching.
3. The program resulting from the search will be listed in the right-most column. The highlight goes to the top program on the list and its program information will be displayed at the top region of the guide screen. You can see program information on each program by moving the highlight using "▲▼". If you choose a program and press "⊙", you will be asked to select one of the available showings of that program. Once a choice is made, ALL channel listings will replace the Category Search screen and the highlight will go to the specified showing.

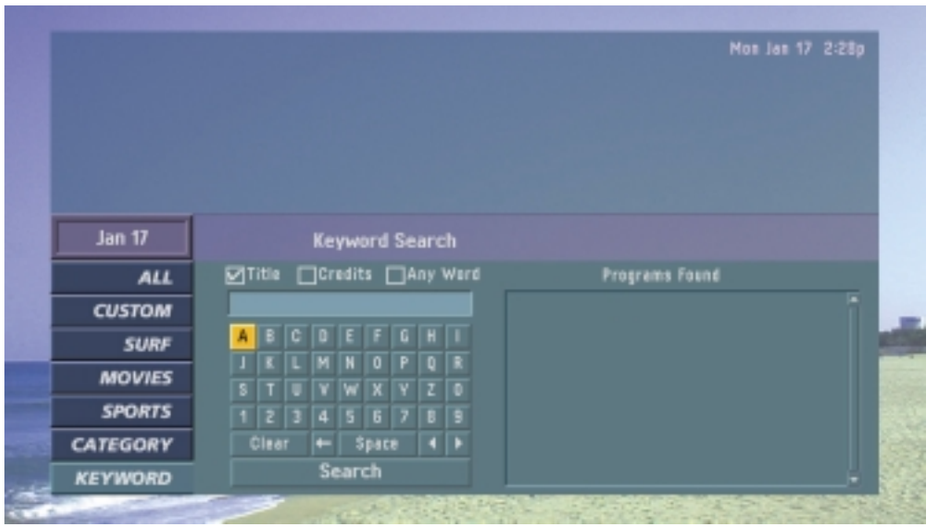
206-3813

7-10. Searching Programs by Keyword

You can also search for programs by keyword that include the keyword in their program titles or credit titles such as actor/actress name, director name, etc.

To search programs by keyword:

1. Move the highlight to the KEYWORD in the guide menu. The Keyword Search screen will appear on the right side of the guide menu.
2. Move the highlight to the right and enter a word using the screen keyboard. Highlight a letter first and press "⊙" to type it in.
3. When a word is completed or even when only a partial word is typed in, you may, move the highlight to the Search option located on the bottom of the screen keyboard and press "⊙" to execute searching.
5. The receiver first searches for candidate keywords that include the word or the partial word you entered. You can select one of the candidate keywords to search for programs that have or are related to the selected keyword.
6. The programs resulting from the search will be listed in the right-most column. The highlight goes to the top program on the list. Its program information will be displayed at the top region of the guide screen. You can see program information on each program by moving the highlight using "▲▼". If you choose a program and press "⊙", you will be asked to select one of available showings of that program. Once a choice is made, all channel listings will replace the Keyword Search screen and the highlight will go to the specified showing.



8. CUSTOMIZATION

8-1. The Structure of the On-screen Menu

In this menu system, there are several ways to customize the settings provided. Most menus consist of three levels to set up the options, but some menus go to and require further levels to be set. If you press the **Menu** button, only the first level of the menu system will appear at the left side of the TV screen. The second and third level can be displayed by pressing "⊙". If a menu has more than three levels, the pop-up dialogue box can be displayed as the fourth or fifth level. For navigating the menu levels, you will see "⊙" or "►" on the right side of the menu label to help you go to the next level.

To bring up and exit the Menu:
Press the **Menu** button on the remote control to bring up the menu. A second press of the **Menu** button or a press of the **Exit** button will take you back to TV viewing.

To go to the next level:
Press "⊙" or "►" on the remote control.

To go back to the previous level:
Press "◄" on the remote control.

206-3813

8-2. The On-Screen Menu

DIRECTV	Guide Remind List Future Purchase Purchase List Mail List Initial Setup
SETUP	EZ Channel Scan Manual Ch. Add Surf List/Ch. Edit EZ Hook-up Clock Advanced
AUDIO	Digital Output Audio Mode Audio Variable Audio Language
PREFERENCE	TV Aspect Ratio Closed Caption Output Channel Out to TV Digital TV Input EZ Demo
LOCK	Lock System Block Channel Movie Rating TV Rating – Children TV Rating – General Spending Limit
SYSTEM	System Test Replace Card Software Info Feature List

8. CUSTOMIZATION

8-3. Previewing the Remind List

The Remind List shows the programs you have reserved in the Guide menu. You may cancel any program in the list by selecting the program. A pop-up screen will ask if you want to cancel it.

To cancel a program in the Remind List:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.
2. Select the DIRECTV® menu by pressing "⊙"on the remote control.
3. Scroll down to Remind List using "▼".
4. Move the highlight to the right with "►" to select a program from the list.
5. Press "⊙" and the pop-up dialogue box will be displayed.
6. Select "Yes" in the pop-up box if you want to cancel, then the highlight will return to the list.
7. Press "◄" to return to the previous level or press the **Exit** button on the remote control if you want to return to TV viewing.

206-3813

8-4. Managing Program Purchases

Future Purchase

Allows you to review upcoming DIRECTV® Pay Per View purchases. You may only cancel programs that were ordered through the DIRECTV® High-Definition Receiver and have not been viewed. You may do this by selecting the program. A pop-up screen will ask you if you want to cancel the program.

To cancel a newly purchased program :

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Select the DIRECTV® menu by pressing "⊙"on the remote control.

3. Scroll down to Future Purchase using "▼".

4. Move the highlight to the right with "►" to select a program from the list.

5. Press "⊙" and the pop-up dialogue box will be displayed.

6. Select "Yes" in the pop-up box if you want to cancel, then the highlight will return to the list.

7. Press "◄" to return to the previous level or press the **Exit** button on the remote control if you want to return to TV viewing.

8. CUSTOMIZATION

8-4. Managing Program Purchases

Purchase List

Shows you a list of past DIRECTV® Pay Per View purchases. You can see each charge of the PPV programs you purchased and viewed.

To review programs in the Purchase List:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.
2. Select the DIRECTV® menu by pressing "⊙"on the remote control.
3. Scroll down to the Purchase List using "▼".
4. Move the highlight to the right with " ►" to scroll the purchase list.
5. Press "◄" to return to the previous level or press the **Exit** button on the remote control to return to TV viewing.

NOTE

CAM: Conditional Access Module, usually referred to as the access card. A removable, electronic subassembly provides conditional access control of the subscriber terminal.

CAM Slot No: The CAM slot number indicates which slot the purchase occupied. A customer service representative may use these slot numbers to help resolve billing issues.

206-3813

8-5. Checking the Messages

Allows you to view the messages that are sent from DIRECTV. For example, you may receive a message requesting your attention to a new service or special program offering.

To check the Mail Box:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.
2. Select the DIRECTV® menu by pressing "⊙" on the remote control .
3. Scroll down to the Mail List option using "▼".
4. Move the highlight to the right with "►" to select a mail item from the list.
5. Press "⊙" and the full text of the mail will be displayed in the pop-up dialogue box.
6. Select "Delete" on the pop-up box if you want to delete it.
7. Press "◄" to return to the previous level or press the **Exit** button on the remote control if you want to return to TV viewing.

NOTE

The Message icon will be displayed in the Channel Banner only when at least one unread message is in the mail buffer.

8. CUSTOMIZATION

8-6. Initializing the System

About Initial Setup

The DIRECTV® High-Definition Receiver is capable of receiving three types of signals; ANT, CABLE and DIRECTV® programming (if you are a DIRECTV® customer). Initial Setup lets you initialize your system to function properly with your dish antenna.

Select Dish

Lets you select the correct dish type among three different types available; Round Dish for Satellite Network A only, Oval Dish for Satellite Networks A and B, or Oval Dish for Satellite Networks A, B, and C. For advice on selecting a dish that will provide the services that you desire, contact DIRECTV *(1-800-DIRECTV)* or your local DIRECTV retail expert. If you already have a dish, refer to its user's guide to determine its type.

To receive HD programming, you should install and select the Oval dish type (Oval dish (Sat A,B) or Oval dish (Sat A, B, C)) in the Select Dish menu.

Auto Detection is used to enable access to additional DIRECTV® satellites after the dish is pointed. You must select No Dish if you have no dish, and you cannot proceed further in this menu.

To select dish:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Select the DIRECTV® menu by pressing "⊙" on the remote control.

3. Scroll down to Initial Setup using "▼".

4. Move the highlight to the right with "►" to choose Select Dish.

5. Press "⊙" and the pop-up dialogue box will be displayed.

6. Select your dish type using "▼" and press "⊙".
The highlight will return to the previous screen.

7. Select Your Location using "▼" for the next step of the initial setup.

NOTE

Although the initial setup is a sequential process from Select Dish to Channel Setup, each menu can be accessed independently.

206-3813

8-6. Initializing the System

Your Location

Provides the coordinates of elevation, azimuth, and tilt based upon your zip code. Elevation is the up/down angle of the dish. Azimuth is the side-to-side direction, while tilt is the circular rotation of the dish itself around the pointing axis. Full instructions for the installation of your dish are provided with your satellite dish antenna.

To enter your location:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Select the DIRECTV® menu by pressing "⊙" on the remote control.

3. Scroll down to Initial Setup using "▼".

4. Move the highlight to the right with "►" to select Your Location.

5. Press "⊙" and the pop-up dialogue box will be displayed.

6. Enter your zip code using the digit buttons on the remote control.

7. Press "⊙" to show the elevation, azimuth and tilt.
Point your dish properly with the azimuth, elevation and tilt values given.

8. Press "⊙" to return to the Your Location menu.

9. Select Signal Strength using "▲▼" for the next step of initial setup.

NOTE

Although the initial setup is a sequential process from Select Dish to Channel Setup, each menu can be accessed independently.

8-7. Managing Channels

Manual Ch. Add

Manually adds a channel to your channel list without rescanning all the channels again. EZ Channel Scan may not pick up every channel that is available on Air and Cable. Therefore, it may be necessary for you to add channels manually using this feature.

To add the channels missed in your channel list:

1. Press the **Menu** button on the remote control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Setup menu by pressing "⊙".

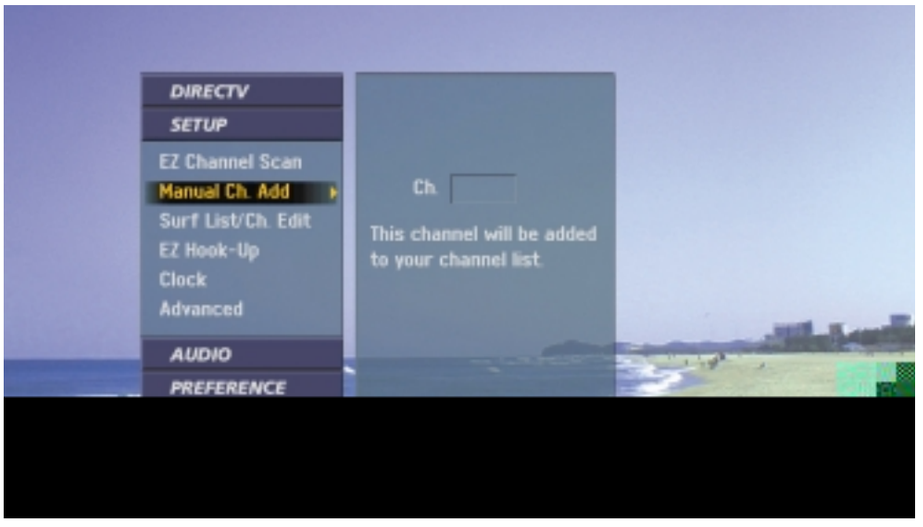
4. Scroll down to Manual Ch. Add using "▼".

5. Move the highlight to the right with "►" to display the channel add box.

6. Enter the channel number desired using the digit buttons on the remote control.

7. Press "⊙" and the pop-up box of the result will be displayed.

8. Press the **Exit** button on the remote control to return to TV viewing.



8-10. Advanced

Advanced Setup

Allows you to configure special settings such as the background matte color for wide aspect ratio programming, the channel banner time-out period and advanced digital closed captioning settings."

To set advanced Setup Menu:

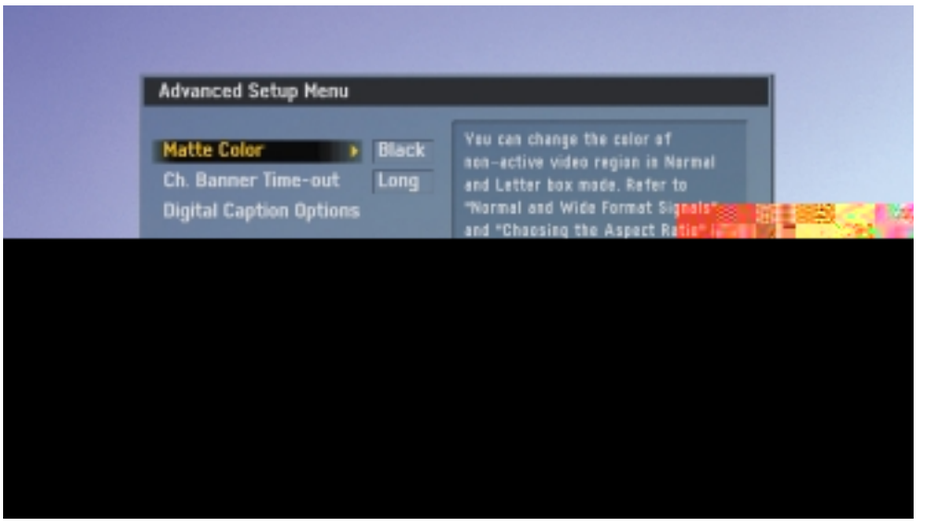
1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Setup menu by pressing "⊙".

4. Scroll down to Advanced using "▼".

5. Press "►" to display the Advanced Setup Menu screen.



8. CUSTOMIZATION

8-11. Setting the Audio

Variable Audio

Allows you to control the volume with the remote control of the DIRECTV® High-Definition Receiver.

To set Variable Audio:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Audio menu by pressing "⊙".

4. Scroll down to Audio Variable using "▼".

5. Move the highlight to the right with "►".

6. Select "On" or "Off" and press "⊙" to return to the previous level.

7. Press the **Exit** button on the remote control to return to TV viewing.

206-3813

8-12. Choosing the Aspect Ratio

Lets you choose the screen format.

When you view a picture with a wide (16:9) aspect ratio on a 4:3 TV, you can choose to view using Letterbox, Cropped, or Squeezed.

When you view a picture with a normal (4:3) aspect ratio on a 16:9 TV, you can choose to view using Normal, Wide, Panorama, Zoom1, or Zoom2.
(Refer to section 2.4 Normal and Wide Format Signals)

Choosing the screen format of your TV:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Preference menu by pressing "⊙".

4. TV Aspect Ratio will be automatically highlighted.

5. Move the highlight to the right with "►".

6. Select one of the options and press "⊙" to return to the previous level.

7. Press the **Exit** button on the remote control to return to TV viewing.

8. CUSTOMIZATION

8-12. Choosing the Aspect Ratio

Modes for viewing wide image (16:9) on a normal TV (4:3) display when output display format is 480i or 480p mode :

Letter Box
Use for a picture with an original 16:9 aspect ratio (in a wide format). Letterbox mode will shrink the picture to fill the screen, with black (or gray) bars appearing at the top and bottom of the screen.

Cropped
Use for a picture filling the entire screen by cropping (removing) the left and right portions of the picture.

Squeezed
Use for a full picture filling the entire screen with no black/gray bars. The picture in a 16:9 format will be horizontally adjusted or squeezed to fit the 4:3 ratio monitor.

Modes for viewing normal image (4:3) on a wide TV (16:9) display when output display format is 720p or 1080i mode :

Normal
Use for a picture with an original 4:3 aspect ratio on your 16:9 monitor, with black/gray bars appearing at the left and right sides.

Wide
Use for a picture adjusted horizontally (in a linear proportion) to fill the entire screen.

Panorama
Use to adjust a picture in a non-linear proportion (more at both sides) to create a spectacular view.

Zoom1
Use when you want to fill the entire screen with no black/gray bars appearing. The image will be altered both horizontally (stretched) and vertically (cropped). The top and bottom portions of the picture will be cut.

Zoom2
Use to view the picture without distortion. Note that the top and bottom portions of the picture will be cropped (removed).

206-3813

8-13. Setting Closed Caption

Lets you select a mode for displaying Closed Caption Data. You can choose the Analog Caption Service or the Digital Caption Service. In the Analog Caption Service, Caption 1-4 display program's dialog, and Text 1-4 display information for a data service. In the Digital Caption Service, Service 1-6 represent each Language Service.
(Note : Closed Caption will appear only when it is provided by the broadcaster)

To set Closed Caption:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Preference menu by pressing "⊙".

4. Scroll down to Closed Caption using "▼".

5. Move the highlight to the right with "►".

6. Select one between Analog Caption Service and Digital Caption Service.

7. Move the highlight to the right with "►".

8. Select one of the options and press "⊙" to return to the previous level.

9. Press the Exit button on the remote control to return to TV viewing.

8. CUSTOMIZATION

8-13. Setting Closed Caption

Analog Caption Service

Caption1 (CC1)

CC1 is the primary caption service that synchronizes the captioning language with the sound, used by most broadcasters. The captioning is displayed in the same language as the program's dialog.

Caption2 (CC2)

CC2 is the special non-synchronous caption service that does not need to be in sync with the sound and may provide simplified captioning, which is usually delayed.

Caption3 (CC3)

CC3 serves as an alternate captioning service channel. The captioning is often a secondary language translation such as French, Spanish, simplified English or displayed at a slower rate.

Caption4 (CC4)

CC4 is another special non-synchronous caption service that does not need to be in sync with the sound and may provide simplified captioning, usually delayed.

Text1-4

Text1-4 usually display information at the bottom position and is used for a data service, generally not program related.

Digital Caption Service

Service 1

Service 1 is designated as the Primary Caption Service. This service contains the verbatim, or near-verbatim captions for the primary language being spoken in the accompanying program audio.

Service 2

Service 2 is designated as the Secondary Language Service. This service contains captions in a secondary language which are translations of the captions in the Primary Caption Service.

Service 3-6

The other services are not pre-assigned. It is up to the discretion of the individual caption provider to utilize the remaining service channels.

8-14. Setting Default Signal Out

Output Channel

Lets you choose the channel used to view the DIRECTV® High-Definition Receiver when connected to the TV from the "OUT TO TV" jack, either channel 3 or, 4. Make sure your TV is set to the selected channel and that the DIRECTV HD Receiver's display format is set at "480i".

To set the channel number of the DIRECTV HD Receiver:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Preference menu by pressing "⊙".

4. Scroll down to Output Channel using "▼".

5. Move the highlight to the right with "►".

6. Select Channel 3 or 4 and press "⊙" to return to the previous level.

7. Press the **Exit** button on the remote control to return to TV viewing.

8. CUSTOMIZATION

8-14. Setting Default Signal Out

Out to TV -- Default Connection

Lets you choose whether the OUT TO TV jack is connected to either the CABLE IN or ANT IN jack in standby mode.

To set the standby mode default signal source:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Preference menu by pressing "⊙".

4. Scroll down to Out to TV using "▼".

5. Move the highlight to the right with "►".

6. Select Antenna or Cable and press ⊙ to return to the previous level.

7. Press the **Exit** button on the remote control to return to TV viewing.

206-3813

8-15. Setting the Digital TV Input

Digital TV Input

The DIRECTV® High-Definition Receiver is also capable of receiving an 8-VSB signal, if any, via cable service. Before you move the highlight in the sub menu, the dialogue box will pop up to make sure if you want to change the mode. After changing it, you should run "EZ Channel Scan" to view a program sent via the designated input.

To set the Digital TV signal source:

1. Press the **Menu** button on the Remote Control to display the screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Preference menu by pressing "⊙".

4. Scroll down to Digital TV Input using "▼".

5. Move the highlight to the right with "►".

6. The pop-up dialogue box will appear when you move the highlight to change the mode.

7. Choose "OK " if you want to change the mode, Otherwise, choose "Cancel".

8. Press the **Exit** button on the remote control to return to TV viewing.

8. CUSTOMIZATION

8-16. Running EZ Demo

Shows you how to navigate through the on-screen menus of the DIRECTV® High-Definition Receiver.

To run EZ Demo:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.
2. Scroll down using "▼" on the remote control.
3. Select the Preference menu by pressing "⊙".
4. Scroll down to EZ Demo using "▼".
5. Press "►" to display the EZ Demo screen.
   The screen will run automatically.
6. Press "◄" anytime to return to the previous screen or press the **Exit** button on the remote control to return to TV viewing.

206-3813

8-17. Setting Locks

Lock System

Lets you set up specific channels, ratings and spending limits through blocking schemes. Activates or disables all of the lock schemes previously set up. A password is required to gain access to this menu if the lock system is activated. You can change the password by inputting a new password twice. When the system is unlocked, the Block Channel, Program Rating and Spending Limits are not effective.

To activate or deactivate the Lock System:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Lock menu by pressing "⊙".

4. If unlocked, Lock System will be automatically highlighted, otherwise requires a password.

To lock the system:

1. Move the highlight to the right with "►" in Lock On/Off box.
2. Switch On or Off by using "►" Whenever you switch the lock system on, you need to enter the password as a reminder.

To set the password:

1. Move the highlight to the Set Password with "▼".
2. Enter the password by using the digit buttons on the remote control.
3. Enter the password again to verify the number.

5. Press "◄" to return to the previous screen or press the **Exit** button on the remote control to return to TV viewing.

NOTE

Once you enter the password when unlocking the blocked channel, it will remain unlocked until the DIRECTV® High-Definition Receiver is off.

8. CUSTOMIZATION

8-17. Setting Locks

Block Channel

Blocks any channels that you do not want to view or that you do not want your kids to watch. If you tune in a blocked channel, a black screen with a pop-up screen will appear. You will have to enter the correct password to view the channel. Once you turn off your DIRECTV® High-Definition Receiver, Block Channel will automatically be reactivated.

To block channels:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Lock menu by pressing "⊙".

4. Scroll down to Block Channel using "▼".

5. Press "►" to display the Block Channel screen.

6. Use "▲▼◄►" to move the highlight in the channel editing screen.

7. Toggle Blocked or Unblocked using "⊙".
The screen shown at the top left will indicate if the highlighted channel is blocked or unblocked.

8. Press "◄" to return to the previous screen or press the **Exit** button on the remote control to return to TV viewing.

NOTE

When you tune to the blocked channel, the password is required for access.

The Channel Block feature should not be used as the only parental control. Since station assignments may change from time to time, controls such as rating and spending limits should always be used as the primary parental control. If the power fails or the DIRECTV HD Receiver is unplugged from the AC outlet, these settings may be reset.

206-3813

8-17. Setting Locks

Movie Rating

Blocks movies according to the movie ratings limit, as defined by the Motion Picture Association of America, so children cannot view certain movies. You can set the ratings limit by blocking out all the movies with the ratings above a specified level. Keep in mind that the movie ratings limit applies only to movies shown on TV, not TV programs such as soap operas.

To block movie programs:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Lock menu by pressing "⊙".

4. Scroll down to Movie Rating using "▼".

5. Select the level you want using "▲▼" and press "⊙" to return to the previous level.

6. Press the **Exit** button on the remote control to return to TV viewing.

NOTE

MOVIE/MPAA rating

G: General Audiences
All ages admitted.
PG: Parental Guidance Suggested.
Some material may not be suitable for children.
PG-13: Parents Strongly Cautioned
Some material may not be appropriate for children under 13.
R: Restricted Under 17 requires accompanying parent or adult guardian.
NC-17: No one 17 and under admitted.
X : No one 17 and under admitted.

8. CUSTOMIZATION

8-17. Setting Locks

TV Rating for Children's Programs

Keeps children from watching certain children's TV programs according to the ratings limit as defined by the TV Parental Guidelines Monitoring Board. This rating applies only to TV programs for children. Unless you block TV programs intended for mature audiences in the TV Rating – General menu, your children may view those programs.

To block TV programs:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Lock menu by pressing "⊙".

4. Scroll down to TV Rating-Children using "▼".

5. Select Age or Content, if you want to lock a TV program based on age or content.

6. Select the level you want using "▲▼" and press "⊙" to return to the previous level.

7. Press the **Exit** button on the remote control to return to TV viewing.

NOTE

TV Rating Children Programs

TV-Y: All Children.
This program is designed to be appropriate for all children.

TV-Y7: Directed to Older Children.
This program is designed for children age 7 and above.

206-3813

8-17. Setting Locks

TV Rating for General Programs

Blocks TV programs that you and your family do not wish to watch, based on the rating scheme defined by the TV Parental Guidelines Monitoring Board.

To block TV programs:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Lock menu by pressing "⊙".

4. Scroll down to TV Rating-General using "▼".

5. Select Age or Content, if you want to lock a TV program based on age or content.

6. Select the level you want using "▲▼" and press "⊙" to return to the previous level.

7. Press the **Exit** button on the remote control to return to TV viewing.

NOTE

TV Rating for General Programs

TV-G: General Audience.
Most parents would find this program suitable for all ages.

TV-PG: Parental Guidance Suggested.
This program contains material that parents may find unsuitable for younger children.

TV-14: Parents Strongly Cautioned.
This program contains some material that many parents would find unsuitable for children under 14 years of age.

TV-MA: Mature Audience Only.
This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

8. CUSTOMIZATION

8-17. Setting Locks

Spending Limit

Sets the spending limit of each PPV program. After a spending limit is set and the system is locked, you must enter the password to purchase a PPV program that costs more than your spending limit allows. The system will temporarily unlock the limit you previously set. Once the receiver is turned off and then turned back on, the lock will be reactivated.

To set the spending limit of each PPV program:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the Lock menu by pressing "⊙".

4. Scroll down to Spending Limit using "▼".

5. Move the highlight to the right with "►".

6. Enter the maximum amount of money to be spent on each PPV program.

7. Press "⊙" to return to the previous level.

8. Press the **Exit** button on the remote control to return to TV viewing.

206-3813

8-18. Testing the System

Checks the integrity of the DIRECTV® High-Definition Receiver. If any problems are detected, a short message will be displayed.

To test DIRECTV HD Receiver :

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using "▼" on the remote control.

3. Select the System menu by pressing "⊙".

4. System Test will be automatically highlighted.

5. Move the highlight to the right with "►".

6. Press "⊙" to activate the system test.
It will run automatically from Signal Strength to Phone Connection and if there is any problem in your system, the pop-up box will be displayed.
The highlight will return to the previous level after the process is finished.

7. Press the **Exit** button on the remote control to return to TV viewing.

8. CUSTOMIZATION

8-19. Replace Card

DIRECTV may issue you a replacement access card periodically, if you are a DIRECTV customer. This menu enables you to transfer information, such as the record of your purchases, from the old card onto a new one. The access card fits into the slot on the back panel of the DIRECTV® High-Definition Receiver.

⚠ Once you proceed past “Read the old card”, “Replace Card” cannot be cancelled.

To replace the card :

1. Press the **Menu** button on the Remote Control to display the on-screen menu.

2. Scroll down using “▼” on the remote control.

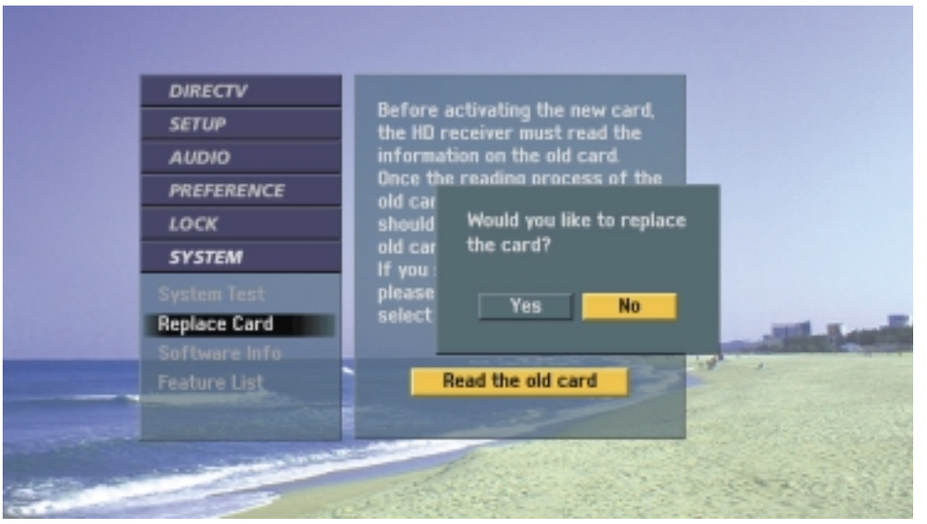
3. Select the System menu by pressing “⊙”.

4. Scroll down to Replace Card using “▼”.

5. Move the highlight to the right with “►”.

6. Press “⊙” to activate the “Replacement Card”.
The pop-up box will be displayed. If you want the process to proceed, follow the instructions in the pop-up box. The highlight will return to the previous level after the process is finished.

7. Press the **Exit** button on the remote control to return to TV viewing.



206-3813

8-20. Upgrading Software

Shows you the current software version. If there is a software planned, you will be notified by a pop-up box on your TV screen and the pop-up box will ask you if you want to upgrade your system.

To upgrade the software in the DIRECTV® High-Definition Receiver:

1. Press the **Menu** button on the Remote Control to display the on-screen menu.
2. Scroll down using "▼" on the remote control.
3. Select the System menu by pressing "⊙".
4. Scroll down to S/W Upgrade using "▼".
5. You can see the current software version on the right side of the menu.
   The next version will be seen if DIRECTV plans to upgrade the software.
6. Press the **Exit** button on the remote control to return to TV viewing.

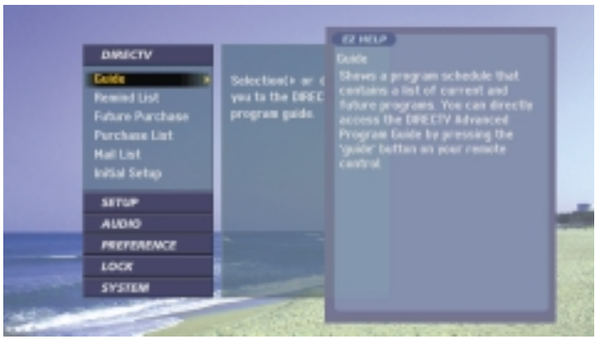
The DIRECTV HD Receiver is able to receive upgrades or modifications to some of its features and functions. These modifications will automatically be made, usually at times when the receiver would likely be turned off. If your receiver is on when an upgrade or modification is sent, you may experience a disruption in reception for a minute or two. Your reception should return to normal after the modification is complete. Your receiver must be plugged in to receive any upgrades. Please consult the Upgrade Menu to find a schedule of upgrades or modifications planned by DIRECTV.
(Note: Do not unplug your receiver while an upgrade is in progress.)

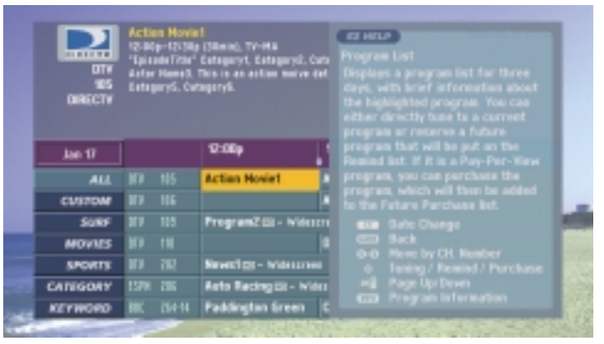
9. EZ HELP

9-1. EZ Help

The EZ Help feature is designed to let you understand each function of the Menu and Advanced Program Guide™ in an easy and convenient way. When you navigate through the Menu and the Advanced Program Guide™, press and hold the "**Help (?)**" button on your remote control if you want information about the highlighted item. The information will be displayed on the right side of the TV screen.

Simply press and hold to see the helpful information.





NOTE

Pressing the "**Help (?)**" button on your remote control independently will activate the overall EZ Help feature. However, when the MENU or the Advanced Program Guide™ is already displayed, pressing the "**Help (?)**" button will activate the specific EZ Help feature.

206-3813

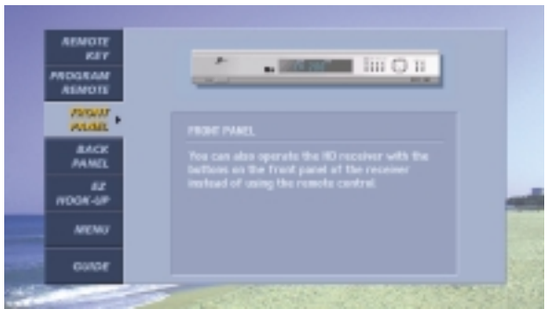
9-1. EZ Help

The EZ Help is an on-line version of this Operating Guide. You can review many features of the DIRECTV® High-Definition Receiver by navigating through a simple structure. It contains a brief overview of the DIRECTV HD Receiver, the use and programming of the remote control, a functional explanation of the front and back panel, and an instructive note about the Menu and the Advanced Program Guide™.

The see the EZ Help feature:

1. Press the "**Help (?)**" button on the remote control to display the EZ Help screen.
2. Scroll up and down to select EZ Help menu items using "▲▼" on the remote control.
3. Move the highlight using "▲▼◄►".
   The explanations of the highlighted item will be displayed on the right side or at the bottom of the screen.
4. Press the **Exit** button on the remote control if you want to return to TV viewing.

Remote Control/Programming Remote



Front & Back panel

Menu and Advanced Program Guide™

PRODUCT SPECIFICATIONS

Specifications For Model No. HD-SAT520 DIRECTV® High-Definition Receiver

INPUT FORMATS (ATSC compliant)	
1280 x 720	16:9 : 60P,30P,24P,23.976P,29.97P,59.94P
1920 x 1080	16:9 : 60I,30P,24P,23.976P,29.97P,59.94I
640 x 480	4:3 : 60I,30P,24P,23.976P,29.97P,59.94P,60P,59.94I
704 x 480 59.94I	4:3/16:9 : 60I,30P,24P,23.976P,29.97P,59.94P,60P,59.94I
Transport	MPEG2, ISO/IEC 13818 - 1 per ATSC spec A/53
Video decoder ISO/IEC 13818 - 2	MPEG2: MP@HL, MP@ML
Tuning System Capabilities	NTSC : 52-806 MHz ATSC : 52-806 MHz, 8-VSB/DIGITAL/Terrestrial over 6 Mhz channels DIRECTV : 950-1450 MHz
INPUTS	
ATSC/NTSC RF	Antenna (1), Cable (1), Loop out (1)
DIRECTV RF	DIRECTV RF Antenna in
Smart Card	Slot on the back
OUTPUTS	
Dolby Digital	Optical Output (1)
A/V output	A/V (525/480i)(2)
RGB Out	15-Pin connector (1)
DVI-HDTV Out	DVI Connector (1)
Component Video Out Y,PB,PR	1080i, 720p, 480p (1)
S-Video Out	S-Video (1)
Authorized Service Only/EZ-LINK port	Serial Port (1)
VIDEO FEATURES	
MPEG2 per ISO/IEC-13818-2	
DIRECTV SD MPEG	
DIRECTV HD MPEG	
Aspect Ratio Mode (16:9)	Normal, Wide, Panorama, Zoom1, Zoom2
Aspect Ratio Mode (4:3)	Letterbox, Crop, Squeeze
Variable bit rate decoding	
Built in format/scan converter	
SYSTEM/CUSTOM INTERFACE FEATURES	
OSD/MENU APG System	Manual Keyboard
Remote Control	11 Keys
RF Remod	Channel 3/4
STBY Loop-out	Antenna/Cable

206-3813

AUDIO FEATURES	
Dolby Digital (AC-3)	Dolby Digital
Linear PCM Audio	20bit
Analog output level	200mV RMS, 1 RCA color-coded jack
Analog output level (Maximum)	3.0V RMS
Frequency Response (+/- 1dB)	20-20kHz
Digital outputs	Optical
Analog outputs	2 RCA (phono type)/color-coded jacks
GENERAL	
Power Consumption	100Watts Max / 120VAC
Standby Power	<35 Watts/120VAC (17Watts typ)
Power line	90 VAC to 137 VAC
Environment	Operation Temperature: 0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit Humidity: 0 to 99 percent non condensing Storage : 10 to + 50 degree Celsius
Safety and Regulation	UL: Complies with UL 1492 and NOM FCC: Complies with FCC Class “B”
Mechanical Dimensions	2.72 inches (H), 16.93 inches (W), 12.95 inches (D)/ 69 mm (H) x 430 mm (W) x 329 mm (D) (Excluding Foot)
AC Line connector/cable	3pin/6.0 feet

TROUBLESHOOTING

Zenith and DIRECTV are dedicated to providing you with quality support and customer service. If you have questions or difficulties that you cannot resolve using the tips in this troubleshooting section, consult your dealer or call DIRECTV at 1-800-DIRECTV (1-800-347-3288) regarding problems with DIRECTV Service problems and Zenith Customer Support at Digital TV Hotline (1-877-993-6484) regarding your DIRECTV® High-Definition Receiver.

SYMPTOMS	SOLUTIONS
No power.	- Is the AC power cord plugged in?
Snowy picture and unclear sound.	- Check your antenna input or location. - Check your cable input. - Check your satellite input.
No picture.	- Make sure that the correct format is selected. If the DIRECTV HD Receiver is connected to your monitor or TV via video 1 or 2 jacks on the back panel, the format must be 480i. Otherwise, you may not be able to see a picture. (see section 3-5) If the DIRECTV HD Receiver is connected to your monitor or TV via Y/PB/PR port or RGB/DVI-HDTV port on the back panel, the format must not be 480i. Otherwise, you may not be able to see a picture. Press the Format button on the front panel to change formats. (see section 3-5) - Make sure that the right component type is selected. If the DIRECTV HD Receiver is connected to your monitor or TV via Y/PB/PR port on the back panel, the “TYPE” switch must be flipped to the left. Otherwise, you may not be able to see a picture. (see section 3-5) If the DIRECTV HD Receiver is connected to your monitor or TV via RGB/DVI-HDTV port on the back panel, the “TYPE” switch must be flipped to the right. Otherwise, you may not be able to see a picture. (see section 3-5) - Select the EZ Channel Scan or Manual Channel Add functions if you have not already done so. (see section 8-7) - If you are only receiving a few satellite channels, you may need to call your service provider to have your programming activated. - Check to make sure all the cables are installed correctly and that the proper source is selected on your TV. For example, channel 3 or 4, Video 1 or 2. - The satellite signal strength may be low. Check the signal strength and adjust the satellite dish as recommended by the satellite antenna installation instructions. (see section 8-6) - You may be trying to access a pay per view program. Follow the on-screen instructions to order the program. - Due to copyright restrictions, you may not be able to view some high definition programs in the high definition format. - Make sure the Access Card is inserted correctly. - For more information about connections, please refer to Section 3 of this manual.

206-3813

SYMPTOMS	SOLUTIONS
Normal picture but no sound.	- Check volume levels. - Make sure the TV is not muted. - Check that the DIRECTV® High-Definition Receiver is connected properly.
Picture is distorted.	- Make sure the proper format is selected. (see section 2-3) - Make sure the proper aspect ratio is selected. (see section 2-4) - Make sure the video output is connected to the TV. (see section 3-5)
Available channels are missing.	- If you are a DIRECTV customer, you can add a channel by running the "Manual Ch. Add" from the SETUP menu or find all available channels by running the "EZ Channel Scan" in the SETUP menu. (see section 8-7) - Otherwise, if the DIRECTV HD Receiver is in the ANT/CABLE mode, the only way that you can find all the available channels is by running the "EZ Channel Scan" in the SETUP menu. (see section 8-7)
4:3 Aspect ratio cannot be selected.	- Aspect ratio depends on both the incoming program format and the Display Format button on the front panel. Once the button for the format is set to a standard definition (480i/480p) and the incoming program is set at a 4:3 video, the aspect ratio can not be adjusted and a warning message will appear on the screen. (see section 8-12)
16:9 Aspect ratio cannot be selected.	- Similar to the above case, once the button for a format is set to high definition (720p/1080i) and an incoming program is set at a 16:9 video, the aspect ratio can not be adjusted and a warning message will appear on the screen.
The remote control is not responding.	- Make sure the batteries are fresh and installed properly. (see section 8-9) - Point the remote control unit at the remote control sensor. - Check if the correct operating mode on the remote control is selected.
The timer does not work.	- Make sure the clock is set properly.
You forget your password.	- If you subscribe to satellite service, contact your service provider to arrange for the password to be re-set - If you do not subscribe to satellite service and the DIRECTV HD Receiver is in the ANT/CABLE mode, enter the master password "7777".

ZENITH ELECTRONICS CORPORATION DIRECTV® HIGH-DEFINITION RECEIVER LIMITED WARRANTY-USA

Zenith will repair or replace your product, at Zenith's option, if it proves to be defective in material or workmanship under normal use during the warranty period listed below from the date of original consumer purchase. This warranty is available only to the original purchaser of the product and is effective only when used in the United States, excluding U.S. Territories.

ONE YEAR WARRANTY PERIOD:	HOW SERVICE IS HANDLED:
0 to 90 days: Your unit will be repaired or replaced with a new, substitute model or factory reconditioned unit. If repaired, parts may be new or remanufactured. **91 to 365 days:** Your unit will be repaired or replaced with a new, substitute model or factory reconditioned unit. Zenith may add a fee for labor charges. If repaired, parts may be new or remanufactured. **Repair Parts and Replacement Units** are warranted for the remaining period of the original warranty.	If a replacement unit is available, to have your unit in 2 working days, Zenith requires a reserved deposit by credit card as surety for advance shipment. Your credit card will not be charged if you return the defective unit within 10 working days. For further instructions please see below for service. Please retain your box to return the unit to Zenith. Shipping charges both ways for claims within the first 90 days will be paid by Zenith; after 90 days during the warranty period, you pay in-bound shipping charges.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ANY IMPLIED WARRANTY IS REQUIRED BY LAW, IT IS LIMITED IN DURATION TO THE EXPRESSED WARRANTY PERIOD ABOVE. ZENITH WILL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION LOST PROFITS, LOST OR CORRUPTED PROGRAMMING OR DATA, OR ANY OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

THIS LIMITED WARRANTY DOES NOT APPLY:

- To damages or problems that result from shipping, installation, calibration, maintenance or separate system components.
- To damages or problems that result from misuse, abuse, operation outside environmental specifications or contrary to the requirements and precautions in the Operating Guide, accident, lightning strikes or other natural causes, modification or alteration, incorrect electrical current or voltage, signal reception, input, software errors that do not disable functionality, operating and software protocols adopted after date of manufacture or for outside the U.S., or institutional or commercial use.

Therefore, the cost of replacement under these circumstances is borne by the customer.

CUSTOMER ASSISTANCE NUMBERS:

If you are a DIRECTV subscriber:	Call 1-800-DIRECTV (1-800-347-3288) FIRST.
To prove warranty coverage:	Retain your dated sales receipt to prove date of purchase as well as your box for shipping the unit in to Zenith. Legible copy of your sales receipt must be submitted at the time warranty service is provided.
To obtain where-to-buy, product assistance, or customer assistance:	Call 1-877-9Zenith (1-877-993-6484) (Mon. - Fri. 7 AM to 8 PM and Sat. 8 AM to 5:00 PM CT) Please select the appropriate option from the menu.

FOR SERVICE:

You must call (1-800-984-9349 Mon. - Fri. 7AM to 7PM CT, please select the appropriate option from the menu) to confirm the product is defective and to obtain Return Authorization (RA). If requesting 2-day advance shipment they will ask for your credit card number. During the warranty period, Zenith will send you a return-shipping label. After you obtain authorization for return, please box your unit with a copy of the sales receipt and enough packing material to assure undamaged delivery of your product. When you receive the label, place it on the box and call the 800 # in the instruction for pick-up. When your unit is received, Zenith will repair or replace your unit in accordance with this Limited Warranty. For advance shipment, the return label will come with the replacement sent to you. Please follow boxing and shipping instructions above.

ZENITH ELECTRONICS CORPORATION
2000 MILLBROOK DRIVE
LINCOLNSHIRE, IL 60069

Zenith Part No. 206-3813
GS# 3835RS0035H
Printed in Korea
Issue O