

# JVC

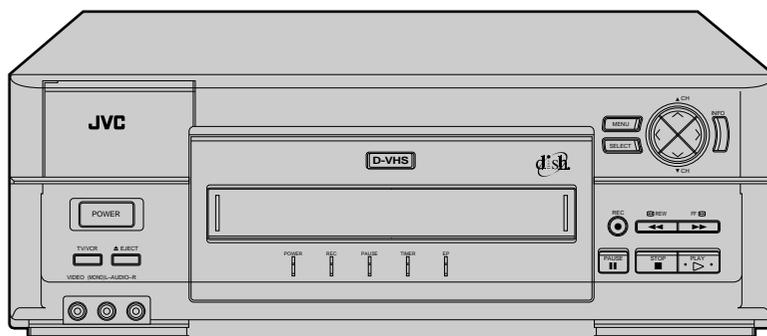


## D-VHS DIGITAL SATELLITE RECORDER

# HM-DSR100U

**HM-DSR100DU (with Antenna Kit)**

**HM-DSR100RU (without Antenna Kit)**



**D VHS** MTP  
NTSC

*Hi-Fi*



## **INSTRUCTIONS**

**For Customer Use:**

Enter below the Serial No. which is located on the rear of cabinet. Retain this information for future reference.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

## Dear Customer,

Thank you for purchasing the JVC D-VHS digital satellite recorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of your new VCR.

# CAUTIONS

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<b>CAUTION:</b> TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING 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 HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

### CAUTION:

This video cassette recorder should be used with AC 120V~, 60Hz only.  
To prevent electric shocks and fire hazards, DO NOT use any other power source.

### CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

### ATTENTION:

POUR ÉVITER LES CHOCS ÉLECTRIQUES,  
INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE  
DANS LA BORNE CORRESPONDANTE DE LA PRISE ET  
POUSSER JUSQU'AU FOND.

### Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

### CAUTION:

Changes or modifications not approved by JVC could void user's authority to operate the equipment.

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited pay-per-view uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

## Failure to heed the following precautions may result in damage to the VCR, remote control or video cassette.

1. **DO NOT** place the VCR . . .
  - ... in an environment prone to extreme temperatures or humidity.
  - ... in direct sunlight.
  - ... in a dusty environment.
  - ... in an environment where strong magnetic fields are generated.
  - ... on a surface that is unstable or subject to vibration.
2. **DO NOT** block the VCR's ventilation openings.
3. **DO NOT** place heavy objects on the VCR or remote control.
4. **DO NOT** place anything which might spill on top of the VCR or remote control.
5. **AVOID** violent shocks to the VCR during transport.

### \*\*MOISTURE CONDENSATION

Moisture in the air will condense on the VCR when you move it from a cold place to a warm place, or under extremely humid conditions—just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the VCR's power turned on for a few hours to let the moisture dry before inserting a tape.

### \*\*ABOUT HEAD CLEANING

Use the optional head cleaning cassette DFC-2 if there is a sudden deterioration in picture or sound quality.

### How to Use

1. Insert the head cleaning cassette into your recorder. Press Play and then wait for about 15 seconds before pressing Stop.
2. Eject the head cleaning cassette. Insert a D-VHS tape to confirm picture and sound quality.
3. If deterioration in either picture or sound quality remains, repeat the cleaning process.

### CAUTIONS

- Use only head cleaning cassettes marked with a **DVHS** mark on this unit.
- Do not rewind the head cleaning cassette halfway through the cleaning process; rewind only after it has reached the end.
- Do not use the head cleaning cassette for longer than 15 seconds at a time.
- If there is deterioration in either picture or sound quality after three cleaning attempts, the problem may not be caused by dirty heads. Please consult your dealer.
- The head cleaning cassette may be used approximately 100 times.
- The head cleaning cassette can not be used for recording or playback.

DISH Network™ is a trademark of Echostar Communications Corporation.



- Cassettes marked "D-VHS" and "VHS" can be used with this video cassette recorder. However, D-VHS recordings are possible only with cassettes marked "D-VHS".
- HQ VHS is compatible with existing VHS equipment.
- D-VHS tapes recorded on video products not using the D-VHS MTP/NTSC standard cannot be played back on this unit.

# IMPORTANT PRODUCT SAFETY INSTRUCTIONS

Electrical energy can perform many useful functions. But improper use can result in potential electrical shock or fire hazards. This product has been engineered and manufactured to assure your personal safety. In order not to defeat the built-in safeguards, observe the following basic rules for its installation, use and servicing.

## ATTENTION:

Follow and obey all warnings and instructions marked on your product and its operating instructions. For your safety, please read all the safety and operating instructions before you operate this product and keep this booklet for future reference.

## INSTALLATION

### 1. Grounding or Polarization

(A) Your product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.

If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

(B) Your product may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

### 2. Power Sources

Operate your product only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. If your product is intended to operate from battery power, or other sources, refer to the operating instructions.

### 3. Overloading

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

### 4. Power Cord Protection

Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

### 5. Ventilation

Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.

- Do not block the openings by placing the product on a bed, sofa, rug or other similar surface.
- Do not place the product 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.

### 6. Wall or Ceiling Mounting

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

## ANTENNA INSTALLATION INSTRUCTIONS

### 1. Outdoor Antenna Grounding

If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding connectors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

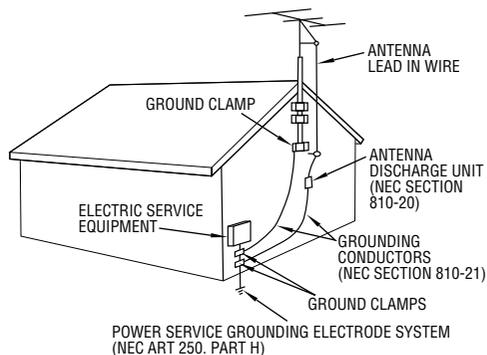
### 2. Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

### 3. Power Lines

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE, ANSI/NFPA 70



NEC – NATIONAL ELECTRICAL CODE

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## USE

### 1. Accessories

To avoid personal injury:

- Do not place this product on an unstable cart, stand, tripod, bracket, or table. It may fall, causing serious injury to a child or adult, and serious damage to the product.
- Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product.
- Use a mounting accessory recommended by the manufacturer and follow the manufacturer's instructions for any mounting of the product.
- Do not try to roll a cart with small casters across thresholds or deep-pile carpets.

### 2. Product and Cart Combination

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

PORTABLE CART WARNING  
(Symbol provided by RETAC)



### 3. Water and Moisture

Do not use this product near water—for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool and the like.

### 4. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

### 5. Attachments

Do not use attachments not recommended by the manufacturer of this product as they may cause hazards.

### 6. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

### 7. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

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## SERVICING

### 1. Servicing

If your product is not operating correctly or exhibits a marked change in performance and you are unable to restore normal operation by following the detailed procedure in its operating instructions, do not attempt to service it yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

### 2. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- a. When the power supply cord or plug is damaged.
- b. If liquid has been spilled, or objects have fallen into the product.
- c. If the product has been exposed to rain or water.
- d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- e. If the product has been dropped or damaged in any way.
- f. When the product exhibits a distinct change in performance—this indicates a need for service.

### 3. Replacement Parts

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

### 4. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating condition.

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## HOW TO USE THIS INSTRUCTION MANUAL

- All major sections and subsections are listed in the Table Of Contents on page iv. Use this when searching for information on a specific procedure or feature.
- The Index on pages I-1 lists frequently-used terms, and the number of the page on which they are used or explained in the manual.

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## BEFORE YOU INSTALL YOUR NEW VCR . . .

. . . please read the sections/literature listed below.

- "Cautions"
- "Important Products Safety Instructions" on the previous pages



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# Introduction

## WELCOME!

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***Congratulations*** on your selection of this satellite television system. Thank you for your purchase. You will be pleased with the performance, capabilities, entertainment options, and ease of operation of your system for many years to come.

Your system complies with MPEG II and DVB standards for compressing audio and video data. Your system also features an advanced new recording technology called D-VHS, which records digital MPEG II satellite signals as digital data.

This means that the system will be compatible with new technologies in consumer electronic products as they arrive on the market, including DVD Video Disc players and data communication networks.

### **FOR MORE INFORMATION:**

*To subscribe to programming, or for assistance with installing or using the system,* call the DISH Network Service Center at 1-800-333-3474, or see the DISH Network's home page at <http://www.dishnetwork.com> on the World Wide Web.

*For warranty service, or for information about the features and operation of the HM-DSR100DU/RU call JVC at 1-800-252-5722.*

*For more information on JVC products, see JVC's home page at <http://www.jvc.com> on the World Wide Web.*

## HIGHLIGHTS

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You have purchased the most advanced, easy-to-use satellite dish system available today. Here is a list of some of the features that make this system powerful, yet simple enough for anyone to use:

- ◆ **Bit Stream (D-VHS) Recording:** The recorder features the new D-VHS format which records digital satellite broadcasts as digital signals, so programs can be recorded "as is" with no loss of quality.
- ◆ **IRR (Integrated Receiver-Recorder):** This HM-DSR100, which is commonly referred to as "recorder" in this manual, is actually an integrated unit which has a satellite receiver, VHF/UHF receiver, and video recorder (VHS and D-VHS formats) built in. This all-in-one design greatly simplifies set-up and operation of the unit.
- ◆ **Easy Timer Programming:** DISH Network's Program Guide provides an easy way to look through all the programs currently being broadcast by DISH Network™, and even lets the user program the built-in VCR's timer to record any program on the list by choosing it.
- ◆ **UHF/IR Universal Remote Control :** The UHF remote, you can use the remote to control the recorder from another room, or even from another floor in the building. The IR remote uses infrared light to control the TV, audio components, and other compatible equipment.
- ◆ **Local TV Link:** In the past you had to compromise quality, or use external switching devices to select between the satellite channels and your local broadcast channels. Now you can attach the TV antenna or cable line directly and access those channels using the **Program Guide**, the same way you access satellite channels.

# User and Installation Guide

## ABOUT SATELLITE TELEVISION

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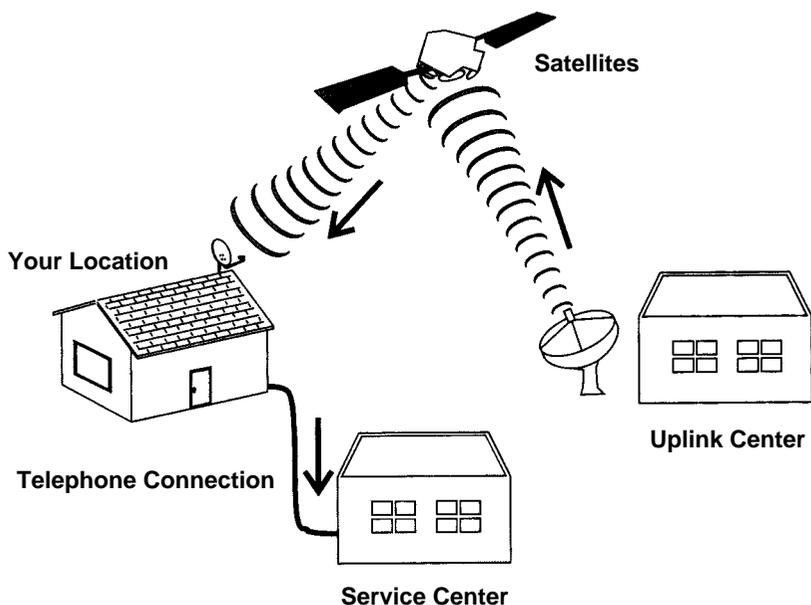
Satellite television uses satellites orbiting in *geosynchronous* orbit over the Earth to deliver television and audio programming. "Geosynchronous" means that the satellites stay aligned over one place on the surface of the Earth. Once your satellite antenna is aimed at the satellites, the antenna does not have to move to follow the satellites.

The programming signal is transmitted to the satellites from a facility on the ground called the "Uplink Center." The satellites then transmit the signal to your antenna.

The signal your system receives is customized for you based on the programming or information services you have ordered.

To receive network services, you must have a satellite antenna and receiver installed that are compatible with the network.

To order pay per view programs using your system, you must connect the recorder to an active telephone connection. The recorder stores information on your pay per view purchases, and transmits this information to the Service Center every few days.



## **ABOUT D-VHS**

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The "D" in D-VHS represents Digital Data. As this name suggests, D-VHS is an extension of the world's most popular VHS home video format, which adds new digital recording (storage) capabilities that make it an ideal match for digital broadcasts.

Like VHS, D-VHS is a tape-based format. Unlike VHS, D-VHS records digital signals as a digital bit stream (data) which is compatible with the MPEG II and DVB standards utilized by your satellite system. Since digital data is stored "as is", there is no loss of quality compared to the original satellite broadcast. D-VHS also offers high capacity, enabling "storage" of up to 5 hours of recorded material per cassette.

And since you will want to continue enjoying all of the regular VHS tapes you've recorded or accumulated, the D-VHS also offers conventional analog (VHS) recording and playback in addition to digital.

The relationship between type of broadcast, cassette used, and resulting recording is as follows:

<b>Broadcast</b>	<b>Cassette</b>	<b>Recording</b>
Digital Satellite	D-VHS	D-VHS (bit stream)
Digital Satellite	VHS	VHS (analog)
Local	D-VHS	VHS (analog)
Local	VHS	VHS (analog)

### **Notes:**

◆ **Recording on Super VHS tape:**

Make sure you turn the "D-VHS" recording mode off if you intend to record a digital satellite recording on a S-VHS cassette. We recommend that you only record digital "bit stream" signals on D-VHS cassettes.

◆ **Playing back D-VHS recording made on other D-VHS VCRs:**

D-VHS recordings made on other VCRs may not playback on your JVC VCR. This is because other D-VHS VCRs may record satellite signals from a system that is not compatible with your DVB/MPEG II DISH system.

## **UNIQUE ALL-IN-ONE DESIGN**

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In addition to the two-way D-VHS/VHS capabilities of the built-in VCR, the recorder offers expanded viewing options with simplified operation thanks to the two built-in tuners. Incorporated into the recorder unit are a satellite receiver for satellite broadcast reception, and a VHF/UHF tuner for local broadcast reception. This all-in-one design serves to simplify the connections necessary for installation, and makes recording and viewing operations easier too.

## **IF YOU ARE INSTALLING YOUR SYSTEM YOURSELF**

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If you are installing your system yourself, Chapters 6 and 7 describe how to unpack and install the antenna and recorder. There is also an optional installation kit available. To buy the installation kit, contact the location where you purchased your system or call the Service Center. See *What You Need* on page 6-6 for more information.

# ***User and Installation Guide***

## **FEATURES OVERVIEW**

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For more detailed information, see **Chapter 2 – The Parts of Your System.**

### **STANDARD FEATURES**

- ◆ Recorder  
The IRR (Integrated Receiver-Recorder) features an all-in-one design that makes it easy to install and operate.
- ◆ Remote Control  
This remote control is specifically designed for easy access to the menus.
- ◆ Simple Menu Operation  
Simple "highlight and select" options allow quick, easy navigation and programming.
- ◆ On-Screen Program Guide  
Use the Program Guide to find out about upcoming events and order special programs.
- ◆ Themes  
You can display a list of those programs within a theme, such as movies or sports.
- ◆ Favorites Lists  
Favorites Lists let you set up a list of your favorite channels for faster channel selection.
- ◆ System/Parental Locks  
Prevent your kids from viewing programs you deem unsuitable.
- ◆ Electronic Mail  
Occasionally, you may receive electronic mail regarding new features or services.
- ◆ Audio-only Programming  
A number of channels feature commercial free audio-only programs.
- ◆ CD-Quality Sound  
The best possible sound quality is available.

### **ADVANCED FEATURES**

- ◆ Event Timers  
Some systems can alert you when a program you want to watch is about to start.
- ◆ Caller ID  
If you have Caller ID through your phone company, use this system to display the Caller ID information on your TV.
- ◆ Local TV Link  
Use Local TV Link to add local broadcast or cable TV channels to the Program Guide.

## AVAILABLE SERVICES

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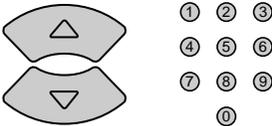
Your system is capable of receiving a wide range of exciting and entertaining services. The available services encompass an unlimited variety of interests, including movies, sports, news, music, shopping, comedy, and more. Call the Service Center for more information on any of these.

- ◆ **Subscription Services** are program channels or services that you purchase for extended periods; they are billed at regular intervals; they remain activated until you call the Service Center to terminate them.
- ◆ **Package Services** are groups of services offered to you at a discount; they provide the greatest value to you because they combine the services that you wish to activate at a reduced rate.
- ◆ **One-Time Services** are special broadcast events and other purchases you use once; they include pay per view programs, installation and repair charges, and merchandise purchases.
  - A **Pay Per View program** is one that you buy once, and that is billed once on your account for a single viewing; the fee varies depending on the specific program you purchase, and is added to your next invoice.
  - **Installation, Activation, and Repair Services** are one-time, non-broadcast charges billed to your account following the completion of a service, such as when an authorized technician installs your system or when an authorized repair facility performs non-warranty repairs on your equipment (see *Limited Warranty* on page A-26 for more information).
  - **Merchandise Services** are shop-from-home products that you purchase via the Service Center; they provide you with an easy and convenient way to purchase a wide array of consumer products.
  - **Local TV link** in addition to the wide range of satellite services you can receive broadcast or cable TV channels.

# User and Installation Guide

## QUICK START TIPS

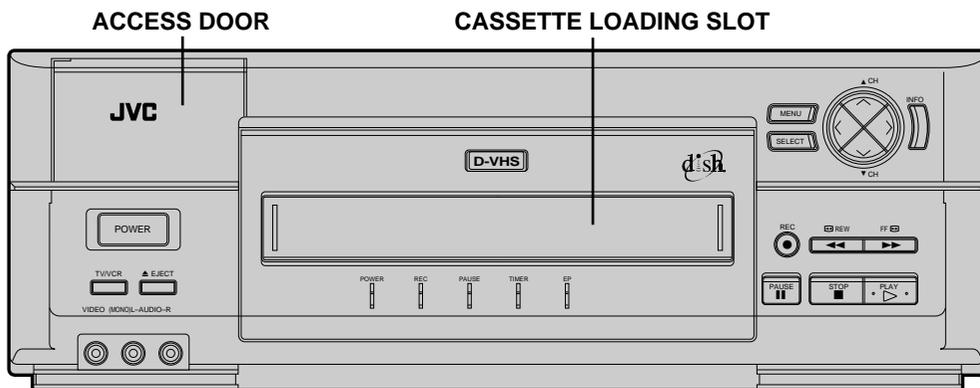
This is a quick reference to start common procedures:

<b>Change Channels</b>	If you are watching a program, press the <b>Up</b> or <b>Down</b> arrow button, or enter the channel number using the number buttons.	
<b>Open the Main Menu</b>	Press the <b>Menu</b> button.	
<b>Open the Program Guide</b>	Press the <b>Guide</b> button.	
<b>Open the Browse Banner</b>	Press the <b>Browse</b> button.	
<b>Order a Pay Per View Program</b>	Select the program using the <b>Program Guide</b> or a <b>Themes</b> list, and follow the instructions.	
<b>See the last channel you viewed</b>	Press the <b>Recall</b> button on the remote control. Press repeatedly to alternate between the last two channels viewed.	
<b>Select a program based on a theme</b>	Press the <b>Theme</b> button, or if the <b>Main Menu</b> is open, select the <b>Themes</b> option. Select the theme. Select the program.	 or 
<b>See information about a program</b>	Press the <b>Info</b> button while using the <b>Program Guide</b> , <b>Browse Banner</b> , <b>Themes</b> , or while viewing a program.	
<b>Read your electronic mail messages</b>	<ol style="list-style-type: none"> <li>1. Press the <b>Menu</b> button.</li> <li>2. Select the <b>Mail</b> option.</li> <li>3. Select the mail message.</li> <li>4. Delete the mail message after reading.</li> </ol>	 
<b>Activate a Favorites List</b>	<ol style="list-style-type: none"> <li>1. Press the <b>Guide</b> button to open the <b>Program Guide</b>.</li> <li>2. Press the <b>Guide</b> button again to select the next Favorites List.</li> </ol>	

# 2 The Parts of Your System

## THE RECORDER

### THE RECORDER FRONT PANEL



The recorder front panel provides control buttons, plus access to the Smart Card slot.

#### ACCESS DOOR

The Smart Card slot is behind this door. The recorder is shipped with the Smart Card pre-installed in this slot. Do not remove the Smart Card for any reason.



The recorder works *only* with the Smart Card installed. Do *not* remove the Smart Card. Keep the access door closed to prevent damage to the Smart Card. The Limited Warranty *does not* cover replacement of Smart Cards that you lose or damage.

#### CASSETTE LOADING SLOT

A "VHS" or "D-VHS" video cassette is loaded into or ejected from this slot.

#### D-VHS INDICATOR

The D-VHS indicator illuminates when a digital satellite broadcast is being received and a D-VHS cassette is loaded, and when playing back a tape that has been recorded in the D-VHS mode.



#### dish LIGHT

The dish light illuminates when a digital satellite broadcast is being received.



#### POWER BUTTON

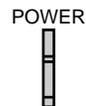
Press the **Power** button to turn the recorder ON or OFF.



# User and Installation Guide

## POWER LIGHT

The POWER light illuminates when the recorder is turned ON. This light flashes when the recorder memory contains unread mail messages.



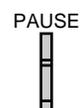
## REC LIGHT

The REC light illuminates while a tape is being recorded. This light blinks during Instant Timer Recording (ITR).



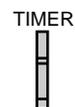
## PAUSE LIGHT

The PAUSE light illuminates when recording or playback is paused.



## TIMER LIGHT

The TIMER light illuminates to show that the recorder's timer has been set to record a program automatically.



## EP LIGHT

The EP light illuminates during recording or playback in the EP (Extended Play) mode.



## INFO BUTTON

The **Info** button displays information about a program or about the system, depending on what you are currently viewing.



## MENU

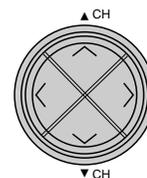
Press the **Menu** button to open the **Main Menu**.



## UP/DOWN/LEFT/RIGHT ARROW BUTTONS

These buttons change the channel numbers move the highlight when in a menu or other screen.

From a program, the **Up/Down** buttons change channels; the **Left/Right** buttons display other menus.



## SELECT BUTTON

Press the **Select** button to select a highlighted menu option and perform that function.



## TV/VCR BUTTON

Press the **TV/VCR** button to select the signal source that your TV receives. Choose TV position to watch TV or to watch one program while recording another. Choose VCR position to watch a tape, monitor a recording, or watch a satellite or local TV broadcast being received by the recorder.



## EJECT BUTTON

Press the **EJECT** button to eject a cassette from the cassette loading slot.



## REC BUTTON

Press the **REC** (Record) button to start recording on a tape.



## REW BUTTON

Press the **REW** (Rewind) button to rewind the tape at high speed. Also, during playback of a VHS recording, press this button to view the picture in rapid reverse visual search.



## FF BUTTON

Press the **FF** (Fast Forward) button to move the tape forward at high speed. Also, during playback of a VHS recording, press this button to view the picture in rapid forward visual search.



## PAUSE BUTTON

Press the **PAUSE** button once to temporarily stop the tape during recording. During playback, press this button to freeze the playback picture, and press again to advance the picture by one frame.



## STOP BUTTON

Press the **STOP** button to stop the tape.



## PLAY BUTTON

Press the **PLAY** button to play a tape.



## AUXILIARY PHONO (RCA) AUDIO/VIDEO INPUT

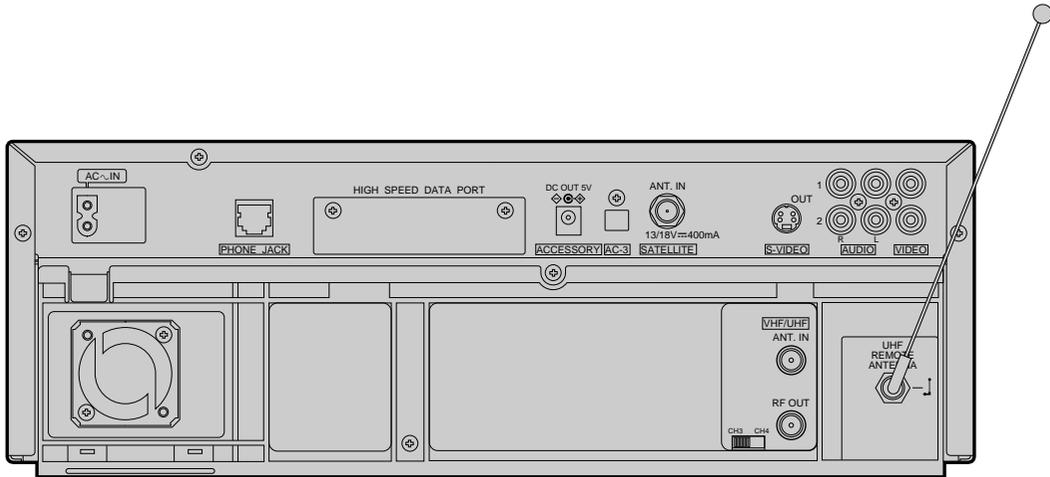
Connect other auxiliary equipment (such as a DVD or laserdisc player) to this phono (RCA) input to get the best available audio and video. Tune to channel 000 to view sources connected to this input.

VIDEO (MONO)-AUDIO-R

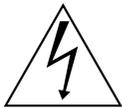


# User and Installation Guide

## THE RECORDER BACK PANEL



The back panel of the recorder provides the connectors that you use to wire the recorder to all the other components and equipment that you may use. Depending on the installation setup that you use, you may not use some of these connectors, but they are provided to support any desired setup.



Tighten the back panel coaxial cable connections *only* by hand. Using a wrench may over-tighten the connections, causing damage. Such damage is *not* covered by the Limited Warranty.

### SATELLITE ANT. IN

Connect the coaxial cable from the satellite antenna to the recorder using this connection.



### VHF/UHF ANT. IN (RF OR VHF CONNECTION)

Connect your broadcast TV antenna or cable TV connection here.



### ACCESSORY JACK

The **Accessory Jack** is reserved for future use.



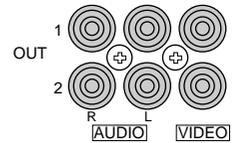
## RF OUT (RF OR VHF CONNECTION)

The recorder sends non-stereo output through this connector. If you are connecting cable TV or a broadcast TV antenna to the recorder, use this connection to connect to the TV for good picture and good non-stereo sound. Use the **TV Phono (RCA) Audio/Video Output** or the **S-VIDEO Output** to support the highest quality stereo sound and video for your satellite channels. See *RF or VHF Connections (Good Picture and Sound)* on page 7-19 for more information.



## PHONO (RCA) AUDIO/VIDEO OUTPUTS

Connect one set of these phono (RCA) connections to a second VCR for editing and connect one set of these phono (RCA) connections to your TV to obtain the best available audio and video from your recorder.



## S-VIDEO OUTPUT

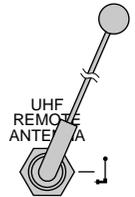
The recorder supports S-VIDEO, which provides the highest quality video available. If you use this connector, you still need to connect the audio using the phono (RCA) audio outputs.



## UHF REMOTE ANTENNA

The recorder uses the UHF antenna to receive commands from the remote.

**Note:** Place the antenna vertically for maximum remote range. If necessary for space you can place the antenna horizontally, but this may reduce the range.



Make sure that the UHF antenna is not touching any metal surface or objects.

## CHANNEL 3/4 SWITCH

If you use the **RF OUT** connection to wire the recorder to your television, you will need to move this switch to the channel to which the recorder will send the programming signal. Select a channel that is not being used by a cable or local television station.

**Note:** It is not possible to operate the **CHANNEL 3/4** switch through the menu screen. Use the **CHANNEL 3/4** switch located on the back panel of this unit.



# User and Installation Guide

## AC-3 (DOLBY DIGITAL OUTPUT)

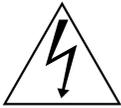
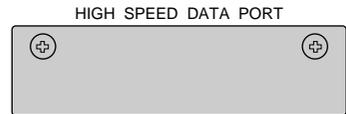
By connecting this output terminal to an external decoder, you can enjoy Dolby Digital (AC-3) 5.1-channel surround sound when viewing appropriately encoded satellite broadcasts or recorded tapes.



- ◆ Dolby, Dolby Digital, AC-3, Dolby Pro Logic are registered trademarks of Dolby Laboratories Licensing Corporation.

## HIGH SPEED DATA PORT

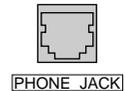
There is a high speed data port under the cover plate. This port is reserved for use with new technologies, such as high speed data networks, as they become available.



Do not remove the plate covering the **High Speed Data Port** until you need to use the port. Damage to an exposed port is not covered by the Limited Warranty.

## TELEPHONE JACK

Connect a telephone line with a standard RJ-11 telephone connector to the recorder here, and then connect the line to an active telephone connection.



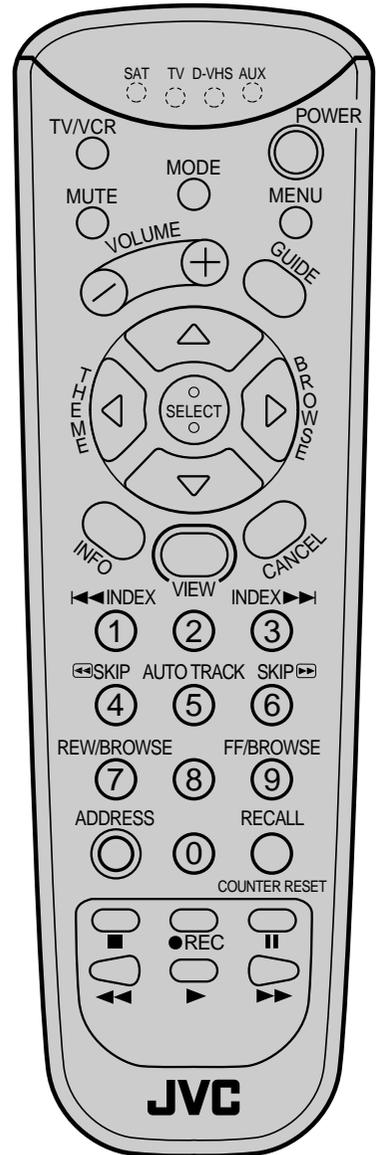
Your recorder *must* be connected to a telephone line at all times to order pay per view programs.

## THE REMOTE CONTROL

This section describes the features of your remote control. For details on using the remote, turn to *Using the Remote Control* on page 3-1.

The remote control lets you access all the features of your system, including changing channels, using the menu system and operating the built-in VCR.

You can program your remote to control your TV, audio amplifier, and other equipment. See *Programming the Remote Control* on page 4-39 for this procedure.



# ***User and Installation Guide***

## **ABOUT THE UHF REMOTE CONTROL**

The UHF remote sends ultra-high frequency radio signals to a UHF antenna that is connected to the back of the recorder. Because UHF signals travel through solid objects, you can use the remote to control the recorder from another room, or even from another floor in the building. The remote uses IR(Infrared) signals to control certain other equipment (see explanation below).

### **UHF REMOTE ADDRESS**

Because the UHF remote operates from such a long range, there may be conflicts if there are other recorders in the vicinity, also operated by UHF remote controls.

To handle this problem, you can set up the remote so that it sends a unique "address" whenever it sends a signal to the recorder. You set up the recorder so that it looks for that address when it receives a signal, and ignores any signals that do not have that address. If you do this, the recorder recognizes signals only from the correct remote. You may choose from 15 different addresses.

You can also install an attenuator at the *UHF Remote Antenna* connection on the recorder back panel. This reduces the sensitivity of the recorder to UHF signals, so it responds only to signals from your remote.

For instructions on these procedures, see *Setting the Remote Address* on page 3-2.

For instructions on installing an attenuator, see *Reducing UHF Remote Control Range* on page 4-41.



You may have to reset the address whenever you change the batteries in the remote.

## **IR CONTROL OF OTHER COMPONENTS**

The IR remote uses infrared light to control the TV, audio components, and other compatible equipment, instead of UHF radio signals.

You must point the remote directly at the component, with no solid objects in the way.

## REMOTE BUTTONS

### TV/VCR BUTTON

Depending on how you wire your system together, the **TV/VCR** button does the following:

- ◆ In SAT (Satellite) mode, the **TV/VCR** button switches the TV connected to the RF or VHF output between satellite TV and broadcast or cable TV. However, the **Local TV Link** feature is an easier way to view both satellite programming and local broadcast programming (see *Local TV Link* on page 3-13 for information).
- ◆ In D-VHS mode, the **TV/VCR** button acts the same as when in the SAT mode.
- ◆ In TV mode, the **TV/VCR** button switches among the inputs available on your TV.
- ◆ The **TV/VCR** button can be used when controlling a receiver or second VCR.

**Note:** The remote does not support this function for all TV's and VCR's.



### POWER BUTTON

Press the **Power** button to turn the recorder ON or OFF. The power light on the recorder illuminates to indicate the recorder is ON.



### MODE BUTTON

You can use the **Mode** button to set the remote to control the recorder, its built-in satellite tuner and other various electronic components, such as TVs, VCRs, Stereo Amplifiers and Cable Boxes.

If you press the **Mode** button once, a mode light flashes rapidly to indicate which mode the remote is using. Press the **Mode** button again to change the mode to the next mode setting. See *Programming the Remote Control* on page 4-39 for the procedure to program the remote to control your TV, the built-in VCR, and other equipment.

The modes are as follows:

- ◆ In SAT (Satellite) mode the remote controls the built-in satellite receiver. Some VCR functions are also controllable.
- ◆ In TV mode the remote controls the TV.
- ◆ In D-VHS mode the remote controls the built-in VCR. The buttons that can be used in the D-VHS mode are labeled in green on the remote control. Some tuner functions are also controllable.
- ◆ In AUX (Auxiliary) mode the remote controls another electronic device. This can be a stereo amplifier, second TV or a second VCR.



# User and Installation Guide

## MUTE BUTTON

Press the **Mute** button to temporarily activate the mute function on your TV. Press the **Mute** button again to restore the sound.

**Note:** This button works only if you have programmed the remote to control a TV or a stereo amplifier. The **Mute** button changes the volume at the corresponding electronic component, not at the recorder.



## MENU BUTTON

Press the **Menu** button to open the **Main Menu**.



## VOLUME BUTTON

Press the (+) side of the **Volume** button to increase the sound volume. Press the (-) side of the **Volume** button to reduce the sound volume.

**Note:** This button works only if you have programmed the remote to control the TV or a stereo amplifier. The **Volume** button changes the volume at that TV or amplifier.



## GUIDE BUTTON

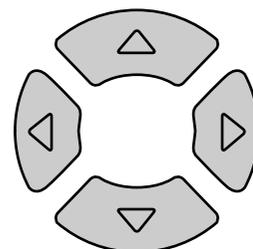
Press the **Guide** button to open the **Program Guide**.



## UP/DOWN/LEFT/RIGHT ARROW BUTTONS

You can use the arrow buttons for several purposes:

- ◆ When you are using a menu, press the **Up, Down, Left,** or **Right** arrow button to move the highlight to the desired option.



- ◆ When viewing a program or playing a digital (D-VHS) recording, press the **Right** arrow button to open the **Browse Banner**.



- ◆ When viewing a program, press the **Left** arrow button to open the **Theme Categories** menu.

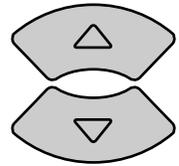


# The Parts of Your System

## The Remote Control

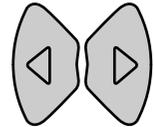
2

- ◆ When viewing a program, press the **Up** or **Down** arrow button to change channels.
- ◆ When you have the **Browse Banner** open, press the **Up** or **Down** arrow button to view the **Browse Banner** for the next channel. (Not available during playback)
- ◆ When a menu offers you a list of choices, press the **Up** or **Down** arrow button to bring more choices into view.
- ◆ When you have the **Program Guide** open, press the **Up** or **Down** arrow button to move the highlight through the channels.
- ◆ When you must enter a number for a menu option, press the **Up** or **Down** arrow button to increase or decrease the number where you have placed the highlight.



When you have the **Browse Banner** or **Program Guide** open, press the **Left** or **Right** arrow button to display programs in different time periods.

**Note:** You cannot display a time period earlier than the present.



### SELECT BUTTON

Press the **Select** button to select the highlighted option in a menu or screen and perform the function.



### INFO BUTTON

You can use the **Info** button several ways.

- ◆ Press the **Info** button for information about a program when:
  - You have the **Program Guide** or a **Browse Banner** open,
  - You have highlighted the program while selecting programs using a **Theme Categories** menu, or
  - You are viewing the program.
  - You are palying back a bit stream (D-VHS) recording of the program.
- ◆ When you have a menu open that contains a **Help** option, press the **Info** button to see the help information for that menu.
- ◆ When you have the recorder powered OFF, press the **Info** button to display system information, including the recorder address and the Smart Card number. You may need to provide this information if you call the Service Center.



### VIEW BUTTON

Press the **View** button to return to viewing your program. If you are already watching your program, press the **View** button to briefly display the **Program Banner**. If you are using the menus, press **View** to cancel the procedure and exit completely back to your program.



# User and Installation Guide

## CANCEL BUTTON

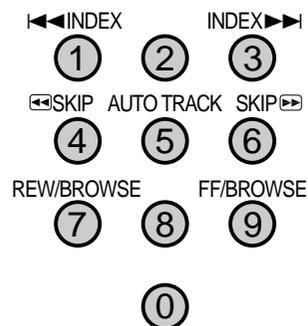
Press the **Cancel** button to cancel the current procedure and to return to the previous menu or to viewing your program.



## NUMBER PAD BUTTONS

You can use the number pad buttons for several purposes:

- ◆ When viewing a program or when the **Program Guide** is open, enter the 3-digit channel number and press the **Select** button to change immediately to that channel.
- ◆ Use these buttons to enter menu option numbers.
- ◆ If you are using a menu that requests some number such as a ZIP code or a password, press the buttons on the number pad to enter that information.
- ◆ When you have the **Program Guide** open, enter the number of hours, and then press the **Left** or **Right** arrow button to display programs in the time period offset by the designated number of hours. **Note:** You cannot display a time period earlier than the present.



## INDEX BUTTONS

Press the **Index** buttons to use the built-in VCR's Index Search function. See *Index Search* on page 5–8.

## SKIP BUTTONS

Press the **Skip** buttons to use the built-in VCR's Skip Search function. See *Skip Search* on page 5–7.

## AUTO TRACK BUTTON

Press the **Auto Track** button to turn the built-in VCR's automatic tracking function on or off. To adjust tracking manually, see *Manual Tracking* on page 5–10.

## REW/BROWSE AND FF/BROWSE BUTTONS

Press the **REW/Browse** or **FF/Browse** button to use the built-in VCR's REW/Browse and FF/Browse functions. See *REW/Browse and FF/Browse* on page 5–6.

## ADDRESS BUTTON

Use the **Address** button to program the remote to control your TV, or auxiliary device such as a second TV or VCR. You can also use the **Address** button to set the remote address. See *Programming the Remote Control* on page 4-39.



### RECALL BUTTON/COUNTER RESET BUTTON

With the remote in the SAT mode, press the **Recall** button to go back to the last channel you were watching. Press repeatedly to alternate between the last two channels that you viewed. With the remote in the D-VHS mode, and if there is a tape loaded in the recorder, press the **Counter Reset** button to change the current tape counter reading to "0:00:00".



### REC(ORD) BUTTON

Press the **Rec** button to start recording a program. The D-VHS mode is automatically activated if a satellite channel is selected and a D-VHS cassette loaded in the VCR. This button is also used to activate the ITR (Instant Timer Recording) function. See *Instant Timer Recording* on page 5-19. You can also use the **Rec** button to match the recorder and remote addresses. See *Setting the Remote Address* on page 3-2.



### FAST FORWARD BUTTON

With the remote in D-VHS mode, press the **Fast Forward** button to rapidly advance the tape. During playback of an analog (VHS) recording, press this button to rapidly view the video as a forward visual search. In SAT mode, press this button to page up through the **Program Guide** or a **Themes** list.



### REWIND BUTTON

With the remote in D-VHS mode, press the **Rewind** button to rewind the tape. During playback of an analog (VHS) recording, press this button to rapidly view the video as a reverse visual search. In SAT mode, press this button to page down through the **Program Guide** or a **Themes** list.



### PAUSE BUTTON

With the remote in D-VHS mode, press the **Pause** button to temporarily stop the tape during recording or play. Press the **Play** button to restart the tape.



### PLAY BUTTON

With the remote in D-VHS mode, press the **Play** button to play the video tape.



### STOP BUTTON

With the remote in D-VHS mode, press the **Stop** button to stop the video tape.

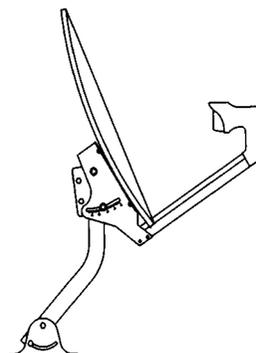


# User and Installation Guide

## THE SATELLITE ANTENNA

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The satellite antenna collects the signals transmitted from the satellites. A coaxial cable (or cables) carries these signals to the receiver (or receivers), where they are decoded and processed so you can view television programming. In this *Guide*, "satellite antenna" means the "dish," as well as the "dish" mounting hardware, including the "mast assembly," the "support arm," and the "LNBF." See *Components of the Satellite Antenna* on page 6-4.



## PROVIDED ACCESSORIES

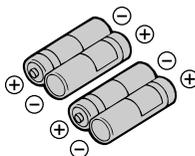
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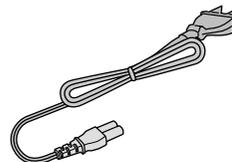
RF cable (F-type)



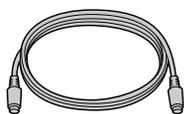
Remote control unit



"AAA" battery x 4



Power cord



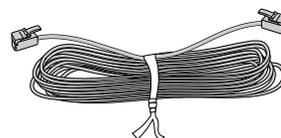
S-Video cable  
(4-pin)



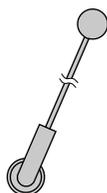
Audio/Video cable



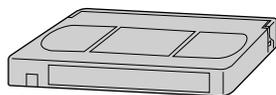
Smart card  
(pre-installed in recorder)



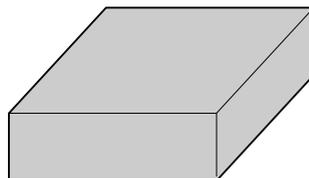
Telephone cord



UHF antenna



D-VHS tape  
(DF-180)



Antenna Kit  
(HM-DSR100DU only)

# 3 Getting Started

## USING THE REMOTE CONTROL

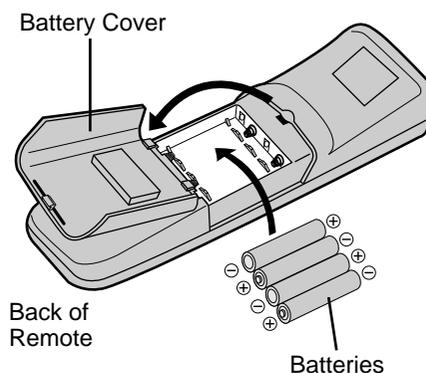
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### INSTALLING BATTERIES IN THE REMOTE



The remote control is shipped with four AAA batteries, packaged separately. When you replace old batteries, you should replace all four batteries. Use four batteries of the same grade, for example, alkaline or carbon zinc, and do not mix batteries of different grades. Alkaline batteries provide longer battery life. *Any time you remove or install the batteries, you may have to reprogram the remote for the TV and any other electronic components. See Programming the Remote Control on page 4-39 for the procedure to reprogram your remote.*

1. Press down on the slot in the battery case cover (on the back of the remote) and remove the cover.
2. If you are replacing old batteries, remove and replace all four batteries.
3. Insert the new batteries, making sure to match the plus (“+”) ends with the plus indicators on the remote. The batteries alternate plus and minus (“-”) ends when properly seated.
4. Replace the cover by inserting the tabs into the slots, and snapping the cover into place.



If the remote does not work after installing the batteries, confirm that the batteries are properly seated, with the plus and minus ends aligned correctly. You may need to reprogram the remote. See *Programming the Remote Control* on page 4-39.

# User and Installation Guide

## CHANGING MODES ON THE REMOTE

Use the **Mode** button to set the remote to control other electronic components, such as your TV. See *Mode Button* on page 2-9 for more information. To change modes, do the following:

Press the **Mode** button on the remote repeatedly until the appropriate mode light flashes rapidly.



For example, to control the built-in satellite receiver, make sure the SAT light is flashing. Or for the D-VHS mode, which is used to control the built-in video recorder and local timer, the D-VHS light should be flashing.



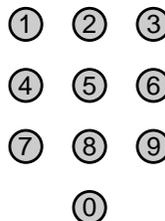
## SETTING THE REMOTE ADDRESS

If your recorder turns ON or OFF, or does anything else without you pressing any buttons, it may be responding to signals from another nearby remote control. To prevent undesired operation of your recorder by a neighbor's remote, you can address your remote to the recorder. You may choose from 15 different addresses.

**Note:** If your remote is addressed to the recorder, you may need to reprogram this address when you change the batteries in the remote.

### Remote Buttons

1. Make sure that fresh batteries are installed in the remote.
2. Press the **Mode** button until the remote is in SAT mode. The SAT mode light flashes rapidly to indicate the mode.
3. Press the **Address** button once. The SAT mode light continues to flash, but at a slower rate.
4. Enter a number from 1 to 15 using the number pad buttons. The SAT mode light stops flashing and stays lit.



**Note:** Do not put a zero before the number when entering this number.

# Getting Started Using the Remote Control

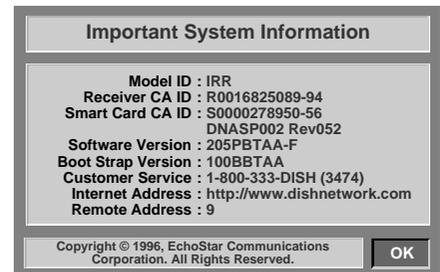
3

5. Press the **Address** button to save the new address in the remote memory. If the address you entered is valid for your remote, the SAT mode light blinks three times.
6. If the recorder is ON, turn it OFF using the recorder **Power** button.
7. Wait for 15 seconds to allow the recorder to reset.
8. Press the **Info** button on the recorder. This will display the **Important System Information** menu.

ADDRESS



9. Press the **Rec(ord)** button on the remote. The remote address displayed on the **Important System Information** menu will change to indicate that the recorder address now matches the remote address.



# User and Installation Guide

## TURNING ON THE SYSTEM

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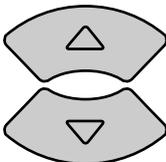
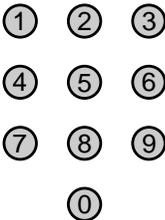
	Remote Buttons	Menu Options
1. Turn ON the TV and any other installed equipment.		
2. Turn ON the recorder. The power light on the recorder front panel illuminates.		
<b>Note:</b> The remote must be in SAT mode to use it to turn ON the recorder.		

## CHANGING CHANNELS

---



If the program you select to view is security locked, you must enter the system password to view it.

	Remote Buttons	Menu Options
<b>Either:</b> Press the <b>Up</b> or <b>Down</b> arrow button to change channels.		
All unpurchased channels are automatically skipped. You will see only the channels in the active Favorites List.		
<b>or</b>		
Enter the desired three-digit channel number using the number pad buttons.		
<b>Note:</b> When changing channels to a channel number that has fewer than three digits (for example channel number 2 or 10), you must enter zeros to make these channel numbers three digits (for example 002 or 010).		

## CANCELING A PROCEDURE

Sometimes, when you are trying to make changes via the menus, you may want to stop and start over. From any menu or screen, you can press the **Cancel** or **View** button repeatedly until you return to your program.

If you do not do anything in a menu for several minutes, such as press a button or select an option, the menu automatically closes. This also discards any changes you made, and returns the recorder to the program you were viewing.



If you want to cancel a procedure, you must press the **Cancel** or **View** button *before* you select the **OK** or **Save** option in the last step of the process.

If selecting **Cancel** or **View** does not exit from the current screen, you must finish the current procedure by selecting one of the available menu options or choices.

### Remote Buttons

### Menu Options

To cancel the procedure and return immediately to watching your program, press the **View** button, **or**



To return to the previous menu, press the **Cancel** button or select the **Cancel** option. **Note:** In some functions, this will also return the recorder immediately to your program, **or**



Wait a few minutes and the menu will automatically close, discarding any changes you have made.

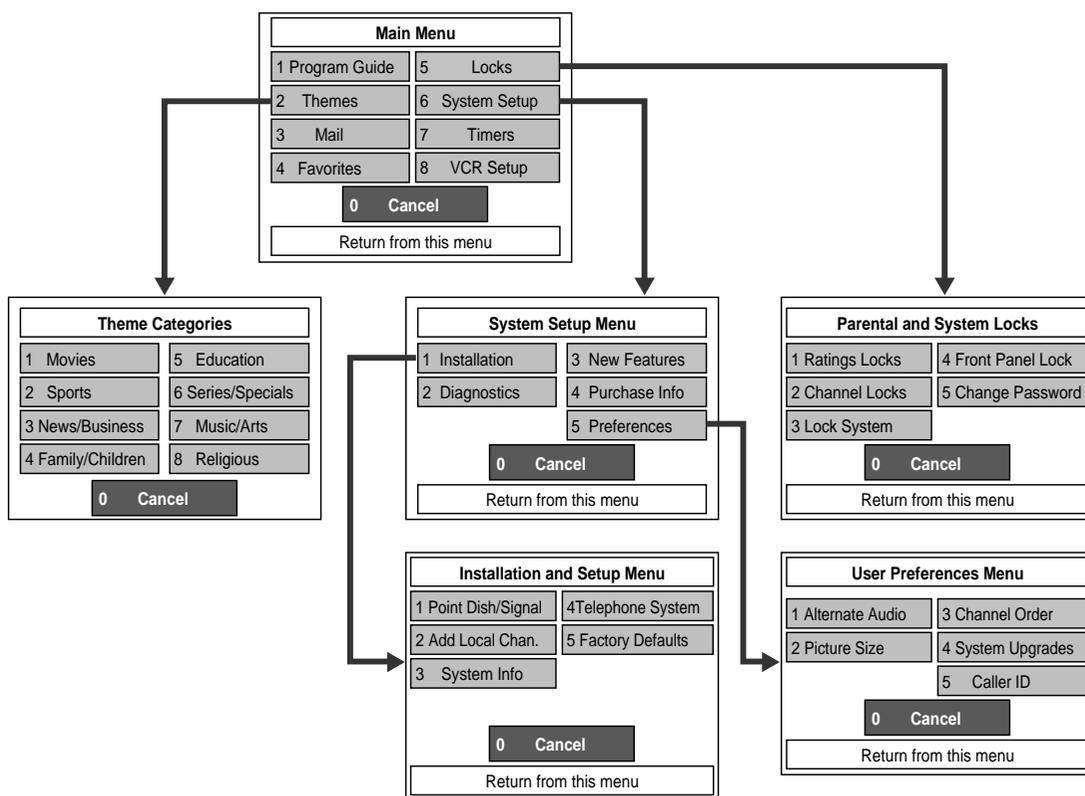
# User and Installation Guide

## ABOUT MENUS AND OTHER MULTIPLE-CHOICE SCREENS

We designed the menus to make programming your recorder and selecting services quick and easy. The recorder displays the menus on your TV screen (“on-screen”). You use menus to communicate with the recorder and use the recorder features, such as setting security locks, selecting a program, or defining a Favorites List. These features are discussed in **Chapter 4 - Using the System**.

### SYSTEM MENU STRUCTURE

The following figure shows the general structure of the menus you will see as you use the system. As you can see, the **Main Menu** is the key to all other menus.



## DISPLAYING MENUS

You can use either of two methods to open the menus.

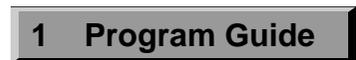
- ◆ Open the **Main Menu**, then open any of the other menus from the **Main Menu**,  
or
- ◆ Press the appropriate button on the remote to immediately open the desired menu.

## MENU OPTIONS

A typical menu option looks like this:



or this:



First you must *highlight* the menu option, then you *select* it.

## HIGHLIGHTING A MENU OPTION

When you *highlight* a menu option using the arrow buttons on your remote, that option will appear a little darker than the other options, and it will look “pushed in.”

A typical highlighted menu option looks like this:



or this:



Once you have *highlighted* a menu option, you can select it.

## SELECTING A MENU OPTION

When you *select* a menu option, that menu function is immediately performed. You press the **Select** button once the menu option is highlighted.

## A SHORTCUT

An easier way to select a menu option is just to display the menu, then, on the remote control, press the number of that menu option (for example, “1” in the example above). This performs the *highlight* and *select* functions all at once.

# User and Installation Guide

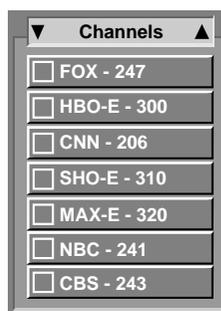
## MULTIPLE - CHOICE LISTS

When you select a choice from a list, the recorder does not apply the change until you select the **Save** or **OK** option. If you do not want to save any changes, select the **Cancel** option to discard all changes made in the menu.

There are two types of lists: *single selection* and *multiple selection*.

*Single-selection* allows only one choice to be selected at one time. If you select another choice, the previous choice is deselected. The single-choice list uses a circle to identify the choice.

*Multiple selection* allows multiple choices to be selected at one time. If you select another choice, the previous choices remain selected. The multiple-choice list uses squares to identify the choice.



## HIGHLIGHTING AND SELECTING A CHOICE IN A LIST

Use the **Up/Down** arrow buttons on the remote to highlight the desired item in the list.

The black arrows on the list indicate the direction(s) in which you can move the highlight.

To select a choice in a list, highlight the choice and then press the **Select** button. Make sure you select the **Save** or **OK** option to save your selection. Select the **Cancel** option to discard your selection.

# Getting Started

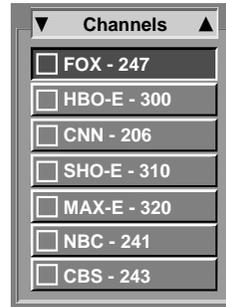
## About Menus and Other Multiple-Choice Screens

3

When you *highlight* a choice in a *single-selection* list, it typically appears as shown below:



When you *highlight* a choice in a *multiple-selection* list, it typically appears as shown below:



When you *select* a choice in a *single-selection* list, the choice is marked as shown below:



When you *select* choices in a *multiple-selection* list, the choices are marked as shown below:

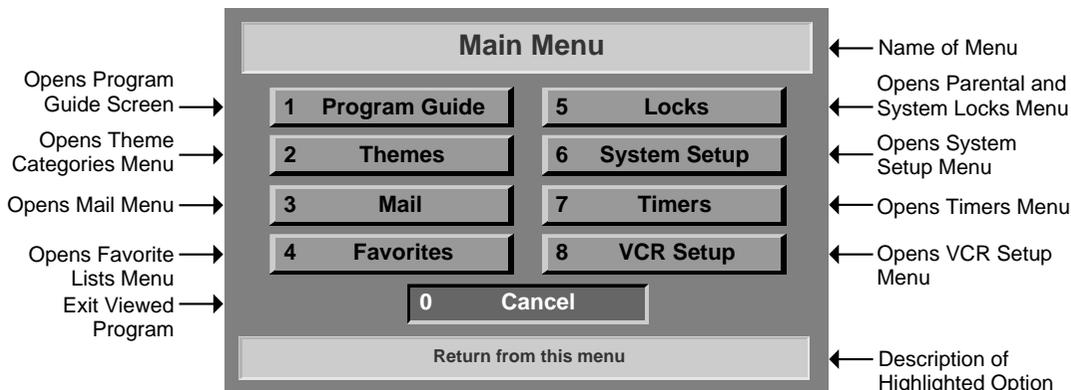


# User and Installation Guide

## THE MAIN MENU

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The **Main Menu** provides access to all the features available in the menus. To open the **Main Menu**, press the **Menu** button. The **Main Menu** looks like the following.



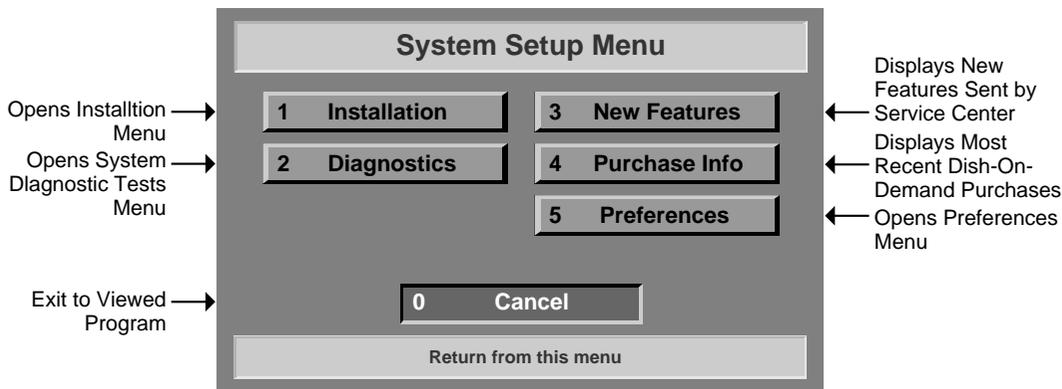
Press the **Menu** button to open the **Main Menu**.



## THE SYSTEM SETUP MENU

---

The **System Setup Menu** provides a number of functions that help you install, customize, and get information about your system. You can display the **System Setup Menu** by pressing the **Menu** button to display the **Main Menu**, then selecting the **System Setup** option. The **System Setup Menu** is similar to the following.



Each option on this menu displays another menu or screen. The following list describes how these options work:

## 1 INSTALLATION

This option displays the **Installation and Setup** menu. You will use this menu most while you are initially setting up your system.

- ◆ Use the **Point Dish and Signal Strength** menu to aim the satellite antenna.  
Transponder refers to the channel transponder numbers that this unit receives.  
Transponder numbers are automatically displayed.  
ZIP Code refers to the postal number code of the region where you live. Enter the ZIP Code with the number pad buttons in Step 6 of *Finding the Direction and Elevation* on page 6-10.
- ◆ See system information on the **Important System Information** menu (see page 7-17).
- ◆ Set up the recorder to work with the type of telephone system you have.
- ◆ Discard all setup information and return the recorder to the factory defaults.
- ◆ Add local or cable channels to the **Program Guide**.

## 2 DIAGNOSTICS

A set of diagnostic functions allow you to test your system. These functions are in the **System Diagnostic Tests** menu. You can perform these functions yourself to verify that your system is in working order; or a Service Center Representative may ask you to perform some of these functions.

## 3 NEW FEATURES

Occasionally the Service Center may send, via the satellite signal, a list of new features available to you. The **New Features** option displays these and allows you to purchase them, if desired.

## 4 PURCHASE INFO

This option displays a screen that shows your most recent pay per view purchases.

## 5 PREFERENCES

This option displays the **User Preferences** menu, which lets you do the following:

Select an alternate language. For example, if a program is transmitted in both English and Spanish, you can choose which language you would prefer.

**Note:** This changes only the audio portion of programs and only if it is provided in multiple languages. This does not change the menus displayed by the recorder.

## ***User and Installation Guide***

- ◆ **Select Picture Size:** You can choose the picture format if a program is transmitted in both standard (4x3) and wide-screen (16x9) formats. You can use the 16x9 format only if you have a wide-screen TV that supports the 16x9 format.
- ◆ **Decide how to order the channel numbers while you are displaying the **Program Guide**.** You can display the channel numbers in ascending or descending order.
- ◆ **Set up the system upgrade authorization.** You can either have system upgrades loaded automatically, or you can specify that you want to authorize each upgrade before it is loaded.
- ◆ **Set up your system to display caller identification:** the name and telephone number of the caller for your incoming telephone calls.  
**Note:** Caller ID must be provided by your local telephone company.

## LOCAL TV LINK

---

The Local TV Link feature allows you to view your local broadcast or cable channels via your system. Once you get the channels set up, you can select and view those channels through the **Program Guide**, or the **Browse Banner**; that is, the same way as you would any of the satellite channels.



The quality of the audio and video you receive on local broadcast channels depends on the distance and terrain (hilly or flat) between the broadcast station and where you live, and the placement and quality of the broadcast TV antenna you use. If you use cable channels, the audio and video quality of these channels depends on your cable provider. If you have any questions about these channels, please contact your service provider, *not* the Service Center!

Due to variations in quality among broadcast and cable television providers, the recorder manufacturer *cannot* be held responsible for the quality of these services

**Note:** The **Program Guide** automatically displays “prime time” program information for the ABC, CBS, and NBC networks. “Prime time” hours vary in different areas. The information may be inaccurate if regularly-scheduled programs are preempted or if other changes occur.

This section explains how you can add your local channels (whether they are network channels or cable channels) yourself, assign the network affiliations, and then access them via the **Program Guide** and via other channel selection methods.

### YOUR BROADCAST TV ANTENNA

If you do not have a broadcast TV antenna installed, and wish to do so, there are a number of options. You can receive a limited number of channels via a “rabbit ears” type antenna that sits on your TV set, or a much wider range via a large VHF/UHF indoor/outdoor antenna. Of course, the higher the quality of the broadcast TV antenna you use, the greater its range and the better your reception will be. Broadcast TV antennas are available from your local consumer electronics retailers.

Make sure to follow the broadcast TV antenna installation instructions correctly. *Make sure to ground the broadcast TV antenna properly!!* The antenna cable plugs into the **VHF/UHF Ant. In** connection on the back panel of the recorder:

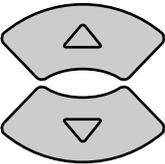
If your TV has an available Phono (RCA) Audio/Video input connections, connect them to one of the recorder's **Phono (RCA) Audio/Video outputs**. This will provide stereo audio and a higher quality picture than the picture obtained when using the recorder's **RF Out (RF or VHF Connection)**.

Once you have attached your broadcast TV antenna or cable hook-up to this connection, you can set up your Local TV Link channels. The rest of this section explains how to do this.

# User and Installation Guide

## ADDING LOCAL OR CABLE CHANNELS

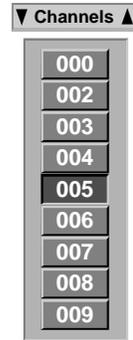
To add local broadcast or cable channels, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.	6 	
4. Select the <b>Installation</b> option.	1 	
5. Select the <b>Add Local Channel</b> option. If you are setting up your local channels for the first time or switching options in the <b>Select Cable/Broadcast</b> list, follow the steps in order. Otherwise, go to step 8 to add channels to the <b>Selected Local Channels</b> list.	2 	
6. Press the <b>Left</b> arrow button to move the highlight into the <b>Select Cable/Broadcast</b> list.		
7. Press the <b>Up</b> or <b>Down</b> arrow button to highlight either the <b>Broadcast Channels</b> option or the appropriate <b>Cable Channels</b> option (Standard, HRC, or IRC)(Contact your cable TV provider for information on whether you have a standard, HRC or IRC cable system. Press the <b>Select</b> button to choose the channel option.	 	   
<p><b>Note:</b> You can add either cable (Standard, HRC, or IRC) or broadcast channels, not both. If you add one type of channel and then select another option, the <b>Selected Local Channels</b> list will not change. In that case, the channels in the list would not be correct for the option you selected. So, whenever you change the option, you should also edit the <b>Selected Local Channels</b> list.</p>		

8. Select the **Choose** option. Press the **Right** arrow and **Up** arrow button to highlight the Choose and press the **Select** button. This will display the **Choose Local Channel** screen.

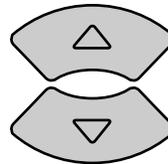


9. Notice that the first time you display the **Choose Local Channel** screen, the only channel in the **Selected Local Channels** list is channel 000. This is the AUX INPUT channel, which is the input from the **Auxiliary Phono (RCA) Audio/Video Input**, usually attached to a VCR.



Press the **Left** arrow button to move the highlight to the **Channels** list.

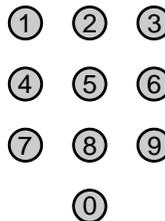
10. Select the desired channel in the **Channels** list.



**Either:** Use the **Up** or **Down** arrow button to highlight the desired channel number.

**or**

Use the number pad buttons to enter the channel number.



**Note:** When entering a channel number that has fewer than three digits (for example, channel number 2 or 10), you must enter zeros to make these channel numbers three digits (for example, 002 or 010).

11. Press the **Select** button. This will display the **Edit Local Channel Name** screen.



12. **Either:** Use this screen to enter the local call letters for the station, such as WXYZ, DISC, KYXO etc.).

**or**

If you do not want to enter a name, select the **Save** option and go to step 16.

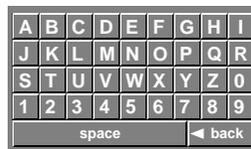
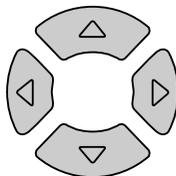


# User and Installation Guide

13. Press the **Left** arrow button to move the highlight to the keypad area.



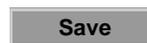
14. Use the arrow buttons to highlight a letter. Press **Select**. Repeat to spell out the name of the channel. You can enter up to five characters for the channel name.



If necessary, select the **space** option to insert a space in the channel name or the **<back** option to correct a letter.

**Note:** You cannot use any channel name more than once. If you try to do this, the recorder will display an error message.

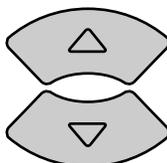
15. Select the **Save** option. This will display the **Select Network Affiliation** screen.



16. Press the **Left** arrow button to move the highlight into the **Network Affiliation** list.



17. Use the **Up** and **Down** arrow buttons to highlight the network affiliation associated with the station you set up.



18. Press **Select**.



19. Once you are finished, select the **Save** option. The recorder will display the **Choose Local Channel** screen. The channel that you have just added should now appear in the **Selected Local Channels** list.



20. Repeat steps 10 through 19 until all desired channels are added.

Once you are finished, select the **Save** option to save the list.



### DELETING A CHANNEL FROM THE SELECTED CHANNELS LIST

To delete a local broadcast or cable channel from the **Selected Local Channels** list so it no longer appears in the **Program Guide**, do the following.

**Note:** You cannot delete **Ch 000**, since it is reserved for input via the **Auxiliary Phono (RCA) Audio/Video Input**.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Installation</b> option.		
5. Select the <b>Add Local Channel</b> option.		
6. Select the <b>Choose</b> option. This will display the <b>Choose Local Channel</b> screen.		

## User and Installation Guide

7. Press the **Left** arrow button twice to move the highlight to the **Selected Local Channels** list.



**Either:** Use the **Up** or **Down** arrow button to highlight the channel you want to delete.



Press **Select**. Repeat until all desired channels are deleted.



**Note:** When the **Selected Local Channels** list is saved, the system will arrange the list to fill in blank spaces caused by deleting channels.

or

Select the **Clear** option to delete all channels from the **Selected Local Channels** list.

Clear

**Note:** If you select the **Clear** option, the recorder will display a warning message indicating that you will be erasing the local channels list completely. Select the **Yes** option to erase the local channels list or select the **No** option to keep the list.

8. Select the **Save** option to save the new list.

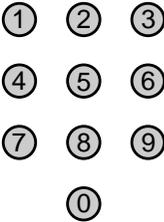
Save

### USING CH 000 IN THE CHANNELS LIST

**Ch 000** in the **Channels** list appears as the default channel name **AUXIN** in the **Selected Local Channels** list. Selecting **Ch 000** in the **Channels** list lets you view the signal coming into the **Auxiliary Phono (RCA) Audio/Video Input**. Usually this signal will be from a connected VCR, DVD player, laserdisc player or other device, so that when you change to channel 000, you are viewing the tape or disc being played by the connected unit.

## EDITING THE NAME OF A CHANNEL

If you have entered the wrong channel name or want to add a channel name for a channel (except **Ch 000**) that is on the **Selected Local Channels** list, do the following:

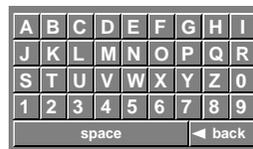
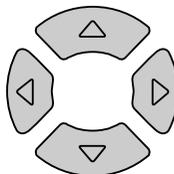
	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Installation</b> option.		
5. Select the <b>Add Local Channel</b> option.		
6. Select the <b>Choose</b> option. This will display the <b>Choose Local Channel</b> screen.		
7. Select the desired channel in the <b>Channels</b> list.  <b>Either:</b> Press the <b>Up</b> or <b>Down</b> arrow button to move the highlight to the desired channel number in the <b>Channels</b> list.  <b>or</b>  On the remote control number pad, press the desired channel number. This will move the highlight to that channel number.	  	
8. Press the <b>Select</b> button. This will display the <b>Edit Local Channel Name</b> screen. Use this screen to enter the new channel name.		

## User and Installation Guide

9. Press the **Left** arrow button to move the highlight to the keypad area.



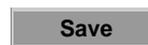
10. Use the arrow buttons to highlight a letter. Press **Select**. Repeat to spell out the name of the channel.



If necessary, select the **space** option to insert a space in the channel name or the **<back** option to correct a letter.

**Note:** You cannot duplicate the name of a channel. If you use any channel name more than once, the recorder will display an error message.

11. Select the **Save** option. The recorder will display the **Select Network Affiliation** screen.



If desired, you can change the network affiliation at this time. See step 16 in *Adding Local or Cable Channels* on page 3-14.

12. Select the **Save** option. The recorder will return to the **Choose Local Channel** screen. The new channel name will appear in the **Selected Local Channels** list.



13. Select the **Save** option to save the new channel name.



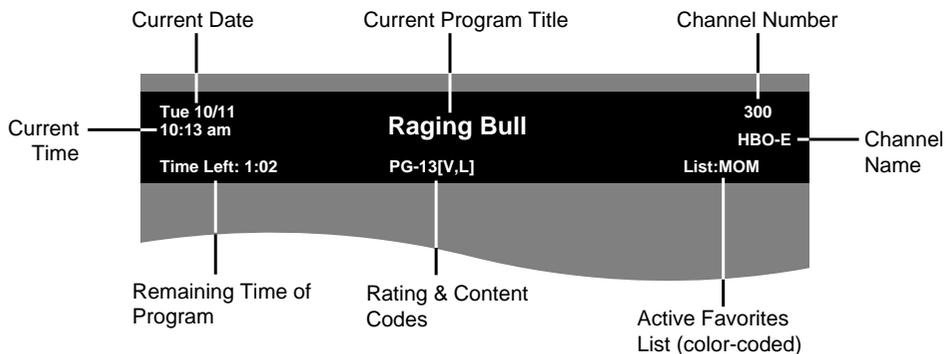
# 4 Using the System

## ABOUT THE PROGRAM BANNER

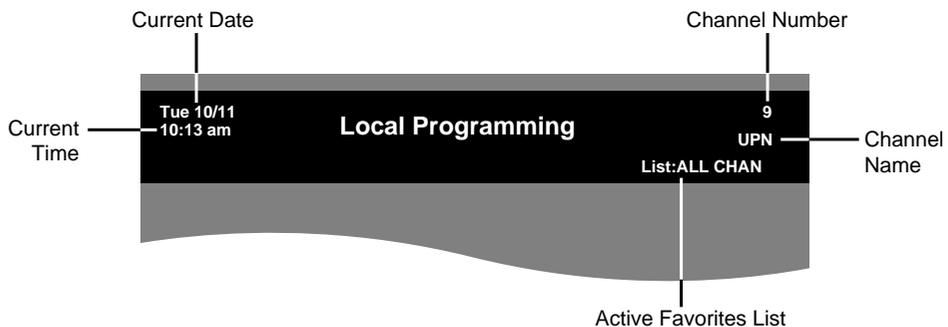
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The **Program Banner** is displayed for a few seconds at the top and bottom of the TV screen every time you change the channel, begin playback of a recording, or press the **View** button on the remote. The top **Program Banner** provides information about the program that you are viewing. The bottom **Program Banner** provides information about the status of your VCR. The figures below show the **Program Banners** for your satellite channels and your local broadcast or cable channels. The information varies, depending on the specific program, but may include any or all of the items in the following figures:

### PROGRAM BANNER FOR SATELLITE CHANNELS:



### PROGRAM BANNER FOR LOCAL BROADCAST TV OR CABLE TV CHANNELS:

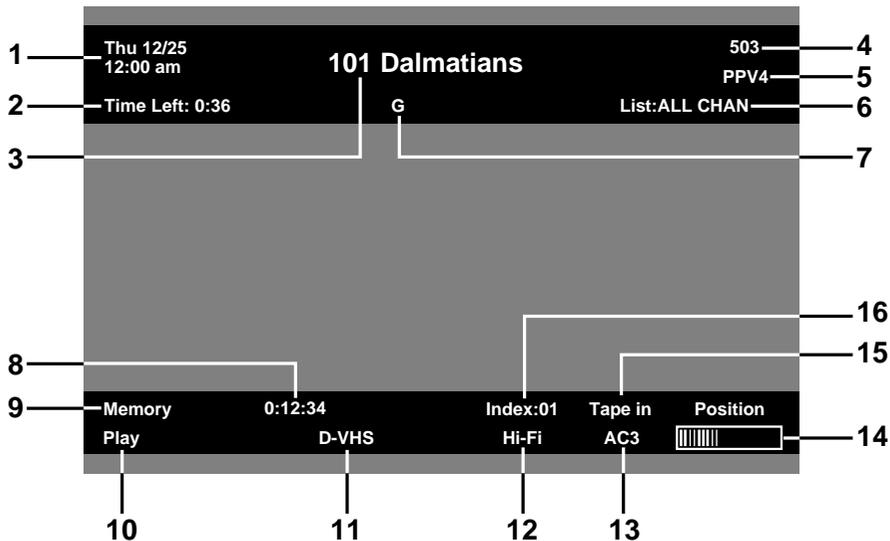


# User and Installation Guide

While recording a program, the **Program Banner** information is expanded to include more information, including a graphical tape position indicator.

At the start of playback, the **Program Banner** provides information about the program being currently played, as well as the current playback status. Depending on the recorded program, the following information may be displayed.

## PROGRAM BANNER DURING RECORDING AND PLAYBACK:



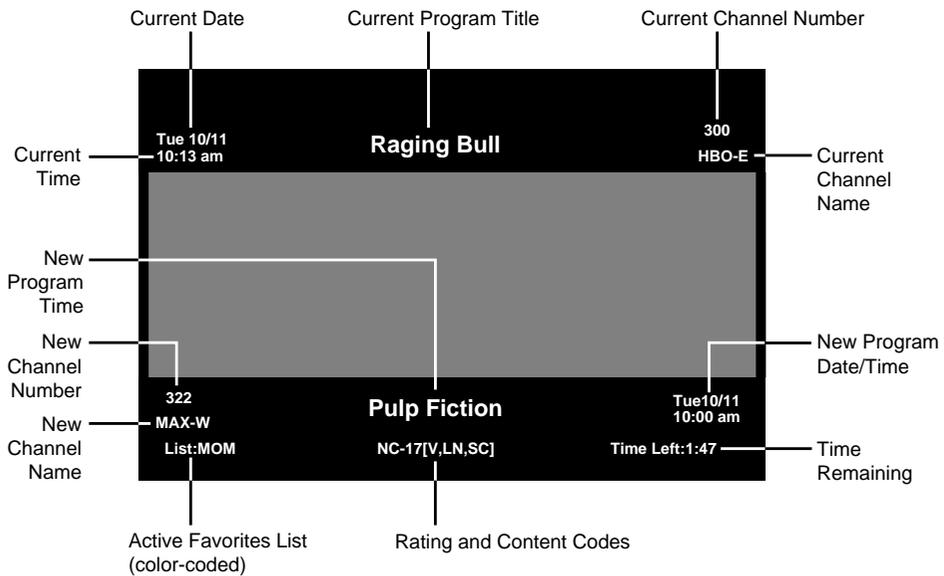
1. Current Date/Time
2. Remaining Time of Program  
Displayed when a satellite channel is received.
3. Current Program Title
4. Current Channel Number
5. Current Channel Name
6. Active Favorites List (color-coded)
7. Rating & Content Codes
8. Counter Reading
9. Counter Memory On/Off
10. Operation Mode  
When the operation mode is changed, the new mode is displayed – RECORD (5 sec.), PLAY (5 sec.), FF/REW (5 sec. when engaged from stop mode), RECORD PAUSE (for as long as Pause is engaged), and RECORD TIMER \*:\* \* (5 sec.).
11. Recording Mode
12. Audio Mode Indicators
13. AC3 Indication
14. Tape Position Indicator
15. Tape in indicator  
When a cassette is loaded, the message is displayed for 5 seconds.
16. Index Indication

## ABOUT THE BROWSE BANNER

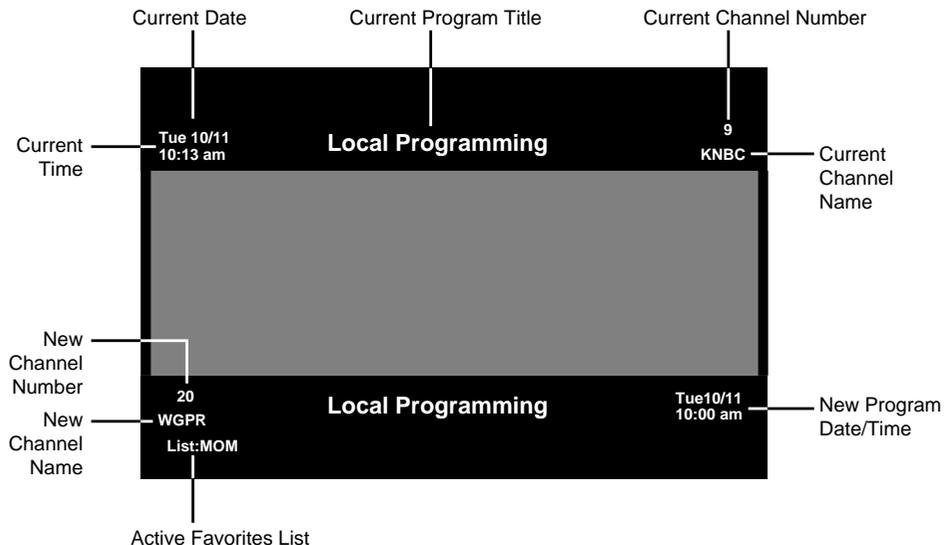
You can use the **Browse Banner** to change channels; see what other programs are on without removing the current program from view; and, create an event timer.

The **Browse Banner** information is displayed at the top and bottom of your TV screen and includes the items in the following pictures:

### BROWSE BANNER FOR SATELLITE CHANNELS:



### BROWSE BANNER FOR LOCAL BROADCAST TV OR CABLE TV CHANNELS:



# User and Installation Guide

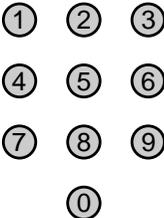
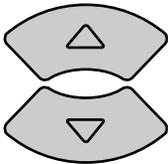
## OPENING THE BROWSE BANNER

To open the **Browse Banner** while you are viewing a program, press the **Right** arrow button.



## VIEWING BANNER INFORMATION FOR OTHER CHANNELS

To view **Browse Banner** information about other channels, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	 MODE	
2. Press the <b>Right</b> arrow button to display the <b>Browse Banner</b> for the current program.		
3. <b>Either:</b> Enter the desired 3-digit channel number using the number pad buttons.		
<b>Note:</b> When changing channels to a channel number that has fewer than three digits (for example, channel number 2 or 10), you must enter zeros to make these channel numbers three digits (for example, 002 or 010).		
<b>or</b>		
Press the <b>Up</b> or <b>Down</b> arrow button to display the desired channel in the bottom part of the <b>Browse Banner</b> . The <b>Browse Banner</b> displays only the channels in the active Favorites List.		
4. You can press the <b>Info</b> button for more information about the program listed in the <b>Browse Banner</b> .		

## CHANGING CHANNELS VIA THE BROWSE BANNER

If you are browsing and see a program that you would like to view, do the following to change to the new channel:

Remote  
Buttons

Menu Options

1. Make sure the channel you want to view is displayed in the lower portion of the **Browse Banner**.
2. Press the **Select** button to change to the new channel. The **Browse Banner** automatically closes.



## CLOSING THE BROWSE BANNER

To close the **Browse Banner**, do the following:

Press the **Cancel** button. Your recorder remains tuned to the channel you are viewing. Or you can wait a few minutes, and the **Browse Banner** automatically closes.



# User and Installation Guide

## ABOUT THE PROGRAM GUIDE

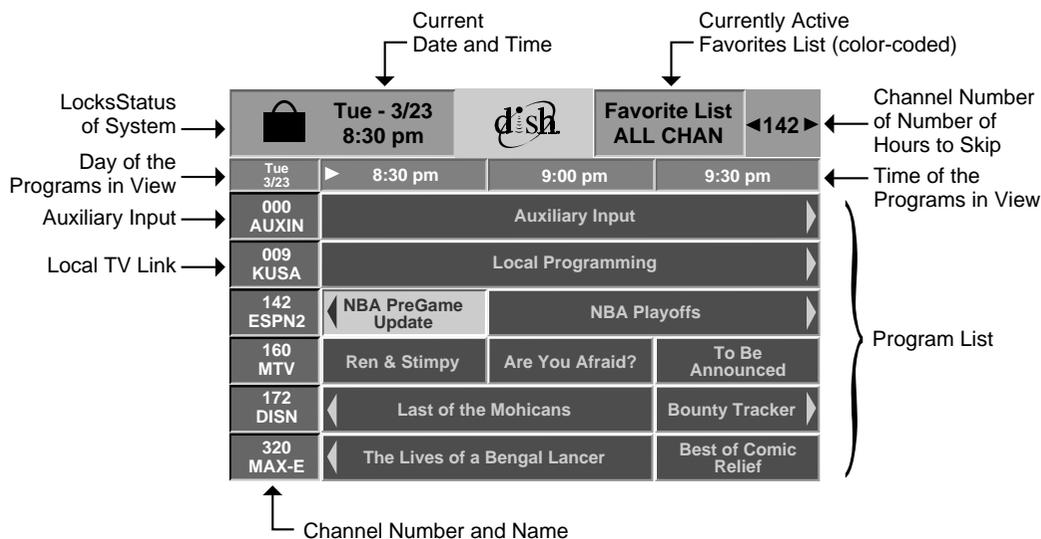
The **Program Guide** provides a complete listing of the available channels and programs.

**Note:** You must add your local broadcast or cable channels to the **Program Guide** yourself. See *Local TV Link* on page 3-13. However, the **Program Guide** automatically displays "prime time" program information for the major broadcast networks. "Prime time" hours vary in different areas. The information may be inaccurate if regularly-scheduled programs are preempted, or if other changes occur.

You can use the **Program Guide** to change channels; see what programs are scheduled in the future; purchase pay per view programs; and, create an event timer.

In the **Program Guide**, you may see some channel numbers with a red background — these are channels to which you have *not* subscribed. See *Available Services* on page 1-5 for more information about subscription channels and adding channels.

The **Program Guide** may contain any or all of the items shown below:



### Favorite List

Each Favorites List name is shown in a different color.



Indicates that this program began or will end in a time period that is not in view.



Indicates that the current time period available is in view (you cannot display a time earlier than this).



Indicates that the last viewable time period is in view (you cannot display a time later than this).



This display is normally blank with two arrows. When it is not blank, it shows:

The number of hours being entered on the remote control number pad. Press the **Left** or **Right** arrow button to skip the display forward or backward that number of hours.

or

The channel number of the channel being entered on the remote control number pad. To skip to the program listing for a channel, enter the channel number and press the **Select** button.

**Note:** The **Program Guide** can display programs scheduled for a limited time beyond the present.

## OPENING THE PROGRAM GUIDE

To open the **Program Guide** and view a listing of available channels and programs, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. <b>Either:</b> Press the <b>Guide</b> button.		
<b>or</b>		
Press the <b>Menu</b> button to open the <b>Main Menu</b> . Then, select the <b>Program Guide</b> option.	MENU  	

# User and Installation Guide

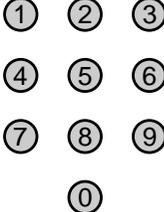
## SCANNING THROUGH CHANNELS

You can scan through the available channels in the **Program Guide** to see what programming is available. To do this, do the following:

	Remote Buttons	Menu Options
<b>Either:</b> Enter the desired 3-digit channel number. <b>Optional:</b> Press the <b>Select</b> button.	① ② ③	
	④ ⑤ ⑥	
<b>or</b>	⑦ ⑧ ⑨	
	⑩	
Press the <b>Up</b> or <b>Down</b> arrow button to highlight the desired channel.		
<b>or</b>		
Press the <b>Fast Forward</b> button to page up, or the <b>Rewind</b> button to page down through the <b>Program Guide</b> .	 	
If desired, press the <b>Info</b> button for more information about the highlighted program.		
Press the <b>Select</b> button to change to the new program.		
<b>Note:</b> Only the channels on the active Favorites List are displayed.		

## CHANGING CHANNELS VIA THE PROGRAM GUIDE

To change to a new channel using the **Program Guide**, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Guide</b> button to open the <b>Program Guide</b> .	GUIDE 	
3. <b>Either:</b> Enter the desired 3-digit channel number using the number pad buttons. Then, press <b>Select</b> to change to the new program.	 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	
<b>Note:</b> When changing channels to a channel number that has fewer than three digits (for example, channel number 2 or 10), you must enter zeros to make these channel numbers three digits (for example, 002 or 010).		
<b>or</b>		
Press the <b>Up</b> or <b>Down</b> arrow button to highlight the desired channel. Then, press <b>Select</b> to change to the new program.	 	
<b>Note:</b> Only the channels in the active Favorites List are displayed.		

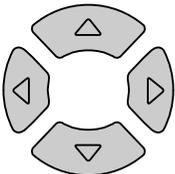


If you select a program that has not started yet, the recorder displays the **Create an Event Timer** menu. See *Viewing Information About Programs* on page 4-10 and *Event Timers* on page 5-22 for more information.

# User and Installation Guide

## VIEWING INFORMATION ABOUT PROGRAMS

If you want more information about a program listed in the **Program Guide**, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.		
2. Press the <b>Guide</b> button to open the <b>Program Guide</b> .		
3. Highlight the desired program using the arrow buttons on the remote control.		
4. Press the <b>Info</b> button. This displays the information screen, which shows start and end times, channel, and other information about the program.		
5. Press the <b>Cancel</b> button to return to the <b>Program Guide</b> .		

## CLOSING THE PROGRAM GUIDE

To close the **Program Guide**, do the following:

Press the **Cancel** button. The recorder returns to the channel you were viewing before you opened the **Program Guide**.



## ABOUT THEMES

The system allows you to list and select programs according to the theme of their contents. For example, you can list just movies or just sports. You can then quickly list programs based on that theme, and select the program you want without having to search through all the channels. The themes list only displays programs that are available for the current date.

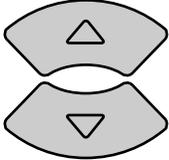
## DISPLAYING PROGRAMS BY THEME

	Remote Buttons	Menu Options
<p>1. <b>Either:</b> While viewing a program, press the <b>Left</b> arrow button.</p> <p><b>or</b></p> <p>Press the <b>Menu</b> button to open the <b>Main Menu</b>. Then, select the <b>Themes</b> option.</p>	  	
<p>2. The recorder displays the <b>Theme Categories</b> menu, which lists the available themes.</p>		
<p>3. Select the theme you want. This displays the list of events with that theme. <i>For example</i>, if you select the <b>Movies</b> theme, you will see a list of upcoming movies, as shown here. Programs on channels to which you have not subscribed are shown with a red background.</p>		

# User and Installation Guide

## SELECTING A PROGRAM IN THE THEMES LIST

You can change to a program in the **Themes** list by doing the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.		
2. Use the <b>Page Up</b> and <b>Page Down</b> options (or the <b>Fast Forward</b> and <b>Rewind</b> buttons) to speed your search for the desired program.		 
3. Press the <b>Left</b> arrow button to move the highlight to the program list.		
4. Press the <b>Up</b> or <b>Down</b> arrow button to highlight the desired program.		
5. Press the <b>Select</b> button to view the program or press <b>Cancel</b> to close the <b>Themes</b> list without selecting a program.		

### ORDERING PAY PER VIEW PROGRAMS

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A pay per view program is a program that you order and pay a small fee to view once. There are many types of programs available through the pay per view service, such as movies, sports, comedies, and musicals. You can find out what pay per view programs are available by viewing the **Program Guide** information starting at channel 500 (see *About the Program Guide* on page 4-6). To preview upcoming pay per view programs, view the Preview Channel. See *Available Services* on page 1-5 for more information about pay per view programs. To purchase and view a pay per view program, do the following:



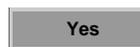
Your recorder must be connected to an active telephone line at all times, in order to purchase pay per view programs using the recorder.

	Remote Buttons	Menu Options
1. Select the desired pay per view program using the <b>Program Guide</b> .		
2. <b>If the system is locked</b> , enter the system password using the number pad buttons.		
Select the <b>OK</b> option to accept the password.		
3. <b>Either:</b> Purchase the pay per view event by selecting the <b>Yes</b> option. <b>The recorder displays a confirmation screen.</b> (see step 4).		
<b>or</b>		
If you <i>do not</i> want to purchase the pay per view program, press the <b>Up</b> or <b>Down</b> arrow button (if you are viewing a program) or select the <b>No</b> option or the <b>Cancel</b> option. <b>If you do this, you can stop here.</b>		

## User and Installation Guide

### 4. At the Confirmation Screen:

**Either:** Select the **Yes** option again to confirm the purchase. The fee will appear on your invoice.



**or**

Select the **No** option or the **Cancel** option to cancel the purchase.



**Note:** You cannot cancel previously ordered pay per view programs using this procedure.



#### **To order through the Service Center:**

Call the Service Center to order the pay per view program. The pay per view fee is added to your next invoice. *This method may add an additional service fee to the pay per view fee.*

## LOCKING PAY PER VIEW PROGRAMS

You can lock your system so that only users who know the password can order pay per view programs. See *Locking the System* on page 4-25 for details.

## FAVORITES LISTS

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### ABOUT FAVORITES LISTS

*Favorites Lists* are lists of your favorite channels that you create and change (adding or deleting channels) as you wish. When you make a Favorites List active, the recorder displays only the channels in that list.

- ◆ You can still view a channel not on the list by entering the 3-digit channel number using the remote number pad buttons, or by selecting a program on that channel using the **Theme Categories** menu.
- ◆ There is also a Favorites List called "ALL CHAN," which contains *all* the channels. You cannot make any changes to this list. If you want all channels in view, make sure that the "ALL CHAN" Favorites List is active.

You can define up to four different Favorites Lists, each with a maximum of 30 channels.

Each Favorites List is indicated by a unique color in the **Program Banner**, the **Browse Banner**, and the **Program Guide**.

When you receive your system, these four lists are named "LIST 1," "LIST 2," "LIST 3," and "LIST 4." They are empty until you add channels to them.

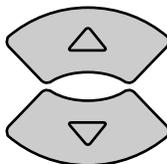
## CREATING OR MODIFYING A FAVORITES LIST

You can add channels to, and remove channels from a Favorites List.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Favorites</b> option.		
4. Select the Favorites List to be changed. This example shows the list names that come with your system. Note that you cannot modify the "ALL CHAN" list in any way.		
5. Select the <b>Modify List</b> option. This displays the channels in the Favorites List.		 
6. At any time you can select the <b>Clear</b> option to immediately remove <i>all</i> channels from the current list.		

# User and Installation Guide

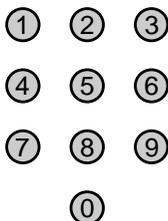
7. In the **Channels** list, highlight the channel you want to add to your Favorites List.



**Either:** Use the **Up** or **Down** arrow button to bring the desired channel into view.

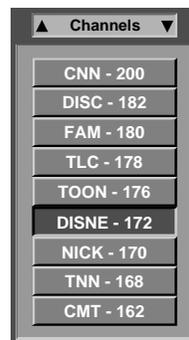
or

Use the number pad buttons to enter the channel number.



**Note:** When entering a channel number that has fewer than three digits (for example, channel number 2 or 10), you must enter zeros to make these channel numbers three digits (for example, 002 or 010).

Press the **Select** button.



8. Repeat step 7 until all desired channels are added.

9. To **delete** a channel from your Favorites List, highlight the channel in the Favorites List .

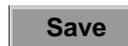


Press the **Select** button.



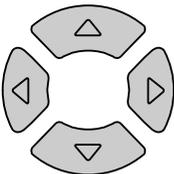
10. Repeat step 9 until all desired channels are deleted.

11. Select the **Save** option to save all changes to the Favorites List or press **Cancel** to discard the changes.



## CHANGING THE NAME OF A FAVORITES LIST

Since the lists are initially named "LIST 1," "LIST 2," etc., you may want to give them more meaningful names. "MOM," "DAD," or "MYFAV" are all possible Favorites Lists names.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Favorites</b> option.		
4. Select the Favorites List to be changed.		
5. Select the <b>Edit List Name</b> option.		
6. At any time, you can select the <b>Clear</b> option to immediately remove all characters from the name.		
7. Use the arrow buttons to highlight a letter. Press <b>Select</b> . Repeat to spell out the desired name.  If necessary, select the <b>space</b> option to insert a space in the channel name or the <b>&lt; back</b> option to correct a letter. You can enter up to eight characters, including spaces.		
8. Select the <b>Save</b> option to save all changes.		

# User and Installation Guide

## MAKING A FAVORITES LIST ACTIVE



When a Favorites List is active, the recorder displays only the channels in that list. However, you can still view a channel not on the list by entering the 3-digit channel number using the remote number pad buttons, or by selecting a program on that channel using the **Theme Categories** menu.

**Note:** When changing channels to a channel number that has fewer than three digits (for example, channel number 2 or 10), you must enter zeros to make these channel numbers three digits (002 or 010).

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.		
2. <b>Either:</b> If the <b>Program Guide</b> is open, press the <b>Guide</b> button to select the next Favorites List. Press <b>Guide</b> repeatedly to scan through all available lists.		
<b>or</b>		
Press the <b>Menu</b> button to open the <b>Main Menu</b> .		
3. Select the <b>Favorites</b> option.		
4. Highlight the desired Favorites List (example lists are shown here).		
5. Select the <b>Save</b> option to make the highlighted Favorites List active.		

**Note:** If you try to make an empty Favorites List active, the recorder highlights the **Modify List** option. You must add at least one channel to this Favorites List before you select it.

## SECURITY FEATURES

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### ABOUT SECURITY FEATURES

Security features let you make sure your system is being used the way you want it to be used.

You can use two levels of security:

- ◆ You can lock your system, so that only those who know the password can access locked features (see below).
- ◆ You can set up a Personal Identification Number (PIN) at the Service Center to keep unauthorized users from calling and ordering services (see *Service Center Security* on page 4-29).

### PARENTAL AND SYSTEM LOCKS

You can set system locks to keep anyone who does not know the password from:

- ◆ Viewing one or more specified channels.
- ◆ Viewing programs with certain rating or extended rating (content) codes.
- ◆ Purchasing additional cost services such as pay per view programs.
- ◆ Using the recorder front panel buttons.

To set locks, you must do the following:

1. Create the channel or program locks (you do not need to do this if you wish to lock only pay per view services).
2. Lock the recorder front panel buttons, if you wish.
3. Lock the system. This puts the locks you have created into effect, and also automatically locks the purchase of additional cost services.

Once the system is locked, anyone who wants to access the locked services must enter the password.



First you *set* the locks; then you *lock the system*.

You *must* lock your system in order to put all locks into effect.

If you want to lock *only* pay per view services, you do not need to create any special locks. Just lock the system, and this automatically locks pay per view services.

# User and Installation Guide

To lock the system, you must set a password:

- ◆ When you lock the system, you must enter and verify a 4-digit number password, which you make up.
- ◆ Later, you must enter the same password to unlock the system, make changes to locked features, or access locked programs.

When you have locked the system:

- ◆ If you try to access a locked program or channel, the recorder displays a message prompting you to enter the password. You must also enter the password to access the **Parental and System Locks** menu.
  - The system allows you three tries to enter the correct password.
  - If you do not enter the correct password in three tries, the system does not allow more tries for several minutes.
- ◆ If you enter the correct password, you can then access the locked item or the **Parental and System Locks** menu.
- ◆ If you exit a locked item or the locks menu, you must reenter the password to access the item or menu again.

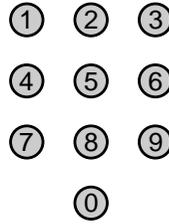


If you forget your password, you will need to speak with a Service Center Representative. You may need to provide the following information: (1) your name; (2) your address; (3) your telephone number; (4) your recorder serial identification number; and, (5) your Personal Identification Number (PIN), if used.

## CREATING OR MODIFYING CHANNEL LOCKS

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Locks</b> option.		

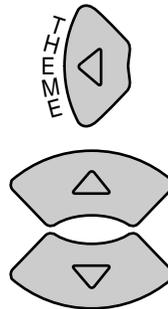
4. **If the system is locked**, enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. Press the **Select** button.



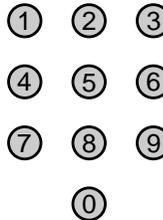
5. Select the **Channel Locks** option.



6. Press the **Left** arrow button to move the highlight into the **Channels** list. Highlight each channel that you want to lock or unlock. If necessary, press the **Up** or **Down** arrow button to bring the desired channels into view.



You can also enter each channel number directly using the number pad buttons.



Press the **Select** button to lock or unlock the channel. If the checkbox next to the channel shows a checkmark in it, it is locked. If there is no checkmark, the channel is not locked.



This is an unlocked channel



This is an locked channel

7. Press the **Right** arrow button to move the highlight to the options. Select the **Save** option to save the changes.



8. **If the system is not already locked**, lock it to put the lock you just created into effect. See *Locking the System* on page 4-25.

# User and Installation Guide

## CREATING OR MODIFYING PROGRAM LOCKS

Do the following to lock programs with certain rating or extended rating (content) codes. Only someone who knows the password can then view these programs. See *Glossary* on page A-7 for a definition of each of the rating codes.



*Parents beware*, the rating and extended rating (content) codes that the system uses for program locks reflect the codes that the original program providers assigned to the programs. The actual content of the programs *may differ* from their assigned ratings.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Locks</b> option.		
4. <b>If the system is locked</b> , enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the <b>OK</b> option. Press the <b>Select</b> button.	 	
5. Select the <b>Ratings Locks</b> option.		
6. Highlight the rating that corresponds to the <i>lowest</i> desired audience age.		
<p><b>Note:</b> All ratings that apply to audience age ranges <i>above</i> that of the selected rating are also selected.</p> <p><i>For example</i>, if you lock PG-13 rated programs, then all programs with the R, NC-17, and NR/AO rating are also locked.</p>		
Press the <b>Select</b> button.		

- Highlight the expanded rating code(s) to lock, if desired.

Press the **Select** button.



- To unlock a rating code, highlight the code and then press the **Select** button.



- Select the **Save** option to save the changes.



- If the system is not locked**, lock it to put the lock you just created into effect. See *Locking the System* on page 4-25.

## LOCKING THE RECORDER FRONT PANEL BUTTONS

Do this procedure to set up the system to ignore all recorder front panel buttons except the **Power** button. This is useful if you want to prevent anyone else from changing the channel or selecting other programs. This does *not* lock the remote control buttons, so you should keep or hide the remote.

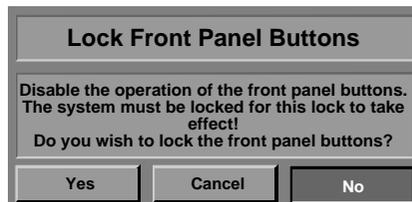
	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Locks</b> option.		
4. <b>If the system is locked</b> , enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the <b>OK</b> option. Press the <b>Select</b> button.	 	

# User and Installation Guide

- In the **Parental and System Locks** menu, select the **Front Panel Lock** option.
- At the **Lock Front Panel Buttons** screen, select the **Lock** option.
- If the system is not locked**, lock it to put the lock you just created into effect. See *Locking the System* on page 4-25.

④

4 Front Panel Lock



## UNLOCKING THE RECORDER BUTTONS

**Note:** You must use the remote control to unlock the recorder front panel buttons.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Locks</b> option.	⑤	5 Locks
4. <b>If the system is locked</b> , enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the <b>OK</b> option. Press the <b>Select</b> button.	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	* * * *
5. Select the <b>Front Panel Lock</b> option.	④	4 Front Panel Lock
6. Select the <b>Yes</b> option.		Yes

## ACCESSING A LOCKED ITEM

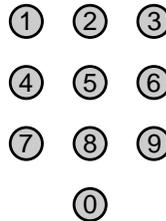
Do the following to view a locked channel or program when the system is locked. See *Ordering Pay Per View Programs* on page 4-13 for the procedure to order a pay per view program when the system is locked.

Remote Buttons

Menu Options

1. Choose a channel or a program that you have locked. The recorder displays an ATTENTION message telling you that the item is locked and prompting you to enter the system password.

2. **If the system is locked**, enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. Press the **Select** button.



3. Select the **OK** option.



## LOCKING THE SYSTEM

Lock your system to put any channel, program rating, and front panel button locks you have created into effect.



Locking your system will automatically lock the purchase of additional cost services, such as pay per view programs.



If you forget your password, you will need to speak with a Service Center Representative. You may need to provide the following information: (1) your name; (2) your address; (3) your telephone number; (4) your recorder serial identification number; and, (5) your Personal Identification Number (PIN), if used.

Remote Buttons

Menu Options

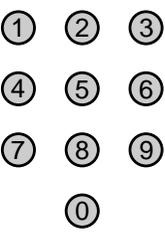
1. Press the **Mode** button until the remote is in SAT mode.



2. Press the **Menu** button to open the **Main Menu**.



# User and Installation Guide

<p>3. Select the <b>Locks</b> option. If the system prompts you for a password, it has already been locked.</p>		
<p>4. Select the <b>Lock System</b> option. The recorder displays a message prompting you to enter the system password. <b>Note:</b> If this option says "Unlock System" instead, then the system has already been locked.</p>		
<p>5. Enter and verify a password, using the number pad buttons. Write down the password and put it in a safe place. From this time on, you must enter this password to unlock the system.</p>		
<p>6. Select the <b>OK</b> option. All the locks you have created are now in effect.</p>		

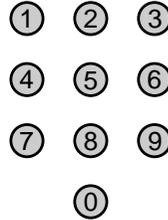
## UNLOCKING THE SYSTEM



After you do this procedure, *all* locks are turned off until you lock the system again.

	Remote Buttons	Menu Options
<p>1. Press the <b>Mode</b> button until the remote is in SAT mode.</p>	MODE 	
<p>2. Press the <b>Menu</b> button to open the <b>Main Menu</b>.</p>	MENU 	
<p>3. Select the <b>Locks</b> option.</p>		

4. Enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. Press the **Select** button.



5. Select the **Unlock System** option.  
**Note:** If this option says "Lock System" instead, then the system has already been locked.



## CHANGING THE SYSTEM PASSWORD

1. Press the **Mode** button until the remote is in SAT mode.

Remote Buttons



Menu Options

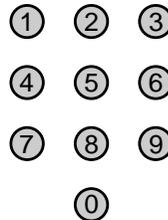
2. Press the **Menu** button to open the **Main Menu**.



3. Select the **Locks** option.



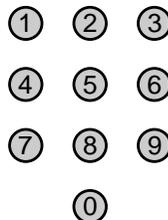
4. **If the system is locked**, enter the system password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. Press the **Select** button.



5. Select the **Change Password** option.

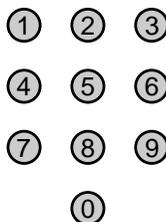


6. Enter the current password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. Press the **Select** button.



## User and Installation Guide

7. Enter the new password using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. *Go on to the next step.*



8. **Either:** Select the **OK** option.

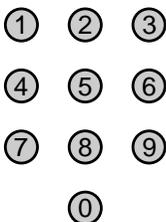


or

If you do not want to change the password, select the **Cancel** option to cancel the password change. You can stop here.



9. Enter the new password again for verification, using the number pad buttons. As soon as you enter the fourth digit of the password, the system highlights the **OK** option. Press the **Select** button.



**Note:** Write down the new password and keep it in a safe place.

### DISCARDING ALL SETUP INFORMATION

If you want to discard changes using the system menus and reset the recorder to be the same as when it was shipped from the factory, do the following:



When you reset the recorder to default settings, all event timers and settings that enable the recorder to control a VCR will be discarded.

If you have defined security locks on the recorder, and the recorder is *locked*, these locks will *not* be discarded. If the recorder is *unlocked*, these locks will be discarded. (You can confirm whether locks have been discarded by opening the **Program Guide** and seeing if the lock symbol is displayed.)

The system password is *not* discarded. You cannot reset the recorder to default settings to discard a password you have forgotten, nor can an unauthorized person do so to bypass a security lock.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Installation</b> option.		
5. Select the <b>Factory Defaults</b> option.		
6. Select the <b>Yes</b> option.		

## SERVICE CENTER SECURITY

You can set up a Personal Identification Number (PIN) at the Dish Service Center for call-in requests only. Anyone calling the Service Center with a request must provide this PIN to authorize any transactions to your account, whether speaking with a Service Center Representative or using the Service Center automatic telephone assistance system. This includes purchasing services, making account inquiries, and overriding the system password.

When you call the Service Center to authorize your service, you can set up a PIN. You may call the Service Center at any later time to set up a PIN.



If you forget your PIN, you will need to speak with a Dish Service Center Representative. The Service Center Representative may ask for additional information to confirm that you are authorized to make transactions to your account.

# User and Installation Guide

## ELECTRONIC MAIL

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You may occasionally receive electronic mail from the Service Center via the satellite signal. If your recorder is powered on and the LED is blinking on the front panel, you have mail. This mail typically tells you about upcoming events, programs, special offers, and system changes. You may also receive mail that is specifically addressed to you, telling you about billing changes or asking you to call the Service Center.

**Note:** You cannot send mail, only receive it.

When you have unread messages, the following occurs.

- ◆ When you press the **Info** button for information on a program, the **Info** menu displays an envelope.
- ◆ The **Power** light on the recorder front panel flashes.

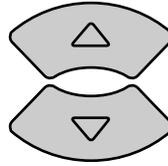


It is important that you read, and then delete the mail messages that you receive. The recorder memory can store only a limited number of messages. If it receives more messages than it can hold, it deletes the oldest messages, as necessary, to make room. If this happens, you may miss important information.

## READING YOUR MAIL

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Mail</b> option.		
4. Use the arrow buttons to move the highlight to the mail message. Press <b>Select</b> .		

5. If necessary, press the **Up** or **Down** arrow button to view all of the message.



6. **Either:** After you are finished reading, select the **Delete** option to delete the mail message.



or



Select the **Save** option to save the message.

## SOFTWARE UPGRADES

Occasionally, the Service Center may send you, at no extra cost, a list of newly available system features. These features will be sent to you using the "flash" feature, which allows you to get system upgrades via satellite. You can set up your system to automatically install these system upgrades, or you can have the system notify you before installing them.

To set up your system to either notify you about new upgrades, or to automatically install new upgrades, do the following:

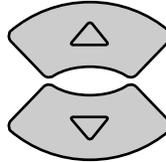
	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Preferences</b> option.		
5. Select the <b>System Upgrades</b> option.		

## User and Installation Guide

6. Press the **Left** arrow button to move the highlight to the **Without my permission** option.



7. Press the **Up** or **Down** arrow button to select either the **Without my permission** option to have upgrades automatically downloaded to your system or the **Ask before downloading** option to have upgrades downloaded with your authorization first. If you select the **Ask before downloading** option, the recorder will display a message to notify you when an upgrade is available.



**Note:** With either option, the download will occur only when the recorder is off.

8. Select the **Save** option.



## VIEWING PROGRAMS IN OTHER LANGUAGES

You can change the language of the programs you view by using the **Alternate Audio** menu. To change to an alternate language, do the following:

**Note:** An alternate language may not be available for all programs. Some programs, such as movies, indicate at the start of the program whether an alternate language is available. Also, the alternate language applies only to the audio portion of programs and does not change the menus displayed by the recorder.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Preferences</b> option.		
5. Select the <b>Alternate Audio</b> option.		
6. Press the <b>Left</b> arrow button to move the highlight to the list of languages.		
7. Use the <b>Up</b> or <b>Down</b> arrow button to highlight the desired language and press <b>Select</b> .	   	

**Note:** If the program is being transmitted in a language not listed, then the **Alternate** option selects that language. If not, then the **Alternate** option selects English.

## User and Installation Guide

8. **Either:** Select the **Save** option to save your language choice. The recorder returns to the **System Setup** menu.



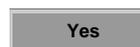
or

Press the **Cancel** button to cancel any changes you have made in the **Alternate Audio** menu. The recorder displays a confirmation screen.



At the **Confirmation Screen**,

**Either:** Select the **Yes** option to abandon any language changes you have made.



or

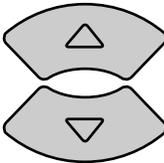
Select the **No** option to save any language changes you have made. The recorder returns to the **System Setup** menu.



## SETTING UP CHANNEL ORDER

You can set up the **Program Guide** to display the channels either in *ascending* order (for example, from top to bottom, 122, 140, 170, 172, 200, ...) or in *descending* order (for example, from top to bottom, 200, 172, 170, 140, 122, ...).

**Note:** If you do not specify a channel order, the recorder automatically displays the channels in ascending order.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Preferences</b> option.		
5. Select the <b>Channel Order</b> option. This displays the <b>Program Guide Channel Ordering</b> menu.		
6. Press the <b>Left</b> arrow button to move the highlight to the <b>Ascending</b> option.		
7. Press the <b>Up</b> or <b>Down</b> arrow button to select either the <b>Ascending</b> or <b>Descending</b> option.		
8. Select the <b>Save</b> option.		

# User and Installation Guide

## DIAGNOSTIC TESTS

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**Diagnostic Tests** are available for you to verify that the main components of your system are working correctly. The **Diagnostics** menu includes tests for the following components: front panel, remote control, dish signal, telephone connection, and the main unit (that is, the recorder). The Customer Service representative may ask you to perform some or all of these tests while trouble-shooting problems. To begin a diagnostic test of your system, do the following:

### STARTING A DIAGNOSTIC TEST

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Diagnostics</b> option.		
5. From the <b>Diagnostics</b> menu, select the diagnostic test that you would like to perform. <b>Note:</b> See the following procedures for the specific test you choose.		

### FRONT PANEL DIAGNOSTIC TEST

This test verifies that the buttons on the front panel of your recorder are working correctly.

	Remote Buttons	Menu Options
1. Select the <b>Front Panel</b> option.		

2. Press any front panel button on your recorder, except the **Power** button. If the front panel is working correctly, the recorder briefly displays a message that says "Front Panel button." If the front panel is not working correctly, the recorder displays a failure message. See the *Diagnostic Test* section of the *Problems and Solutions Tables* on page A-18.

3. Press the **Power** button or **Cancel** button to end the test.



**Note:** If you press the **Power** button to end the test, your recorder powers OFF.



## REMOTE CONTROL DIAGNOSTIC TEST

This test verifies that the buttons on your remote control are working correctly.

Remote  
Buttons

Menu Options

1. Select the **Remote Control** option.



**2 Remote Control**

2. Press any remote control button, except the **Power**, the **Cancel**, the **Address**, or the **VCR** buttons. If the remote control is working correctly, the recorder briefly displays a message that says "Remote Control button." If the remote control is not working correctly, the recorder displays a failure message. See the *Diagnostic Test* section of the *Problems and Solutions Tables* on page A-18.

**Note:** This test does not cover the **Address** button.

3. Press the **Power** button or **Cancel** button to end the test.



**Note:** If you press the **Power** button to end the test, your recorder powers OFF.



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## DISH SIGNAL DIAGNOSTIC TEST

This test verifies that your system has good signal reception.

Select the **Dish Signal** option to begin the test. The recorder displays a message asking you to wait until the test is completed. If the system signal reception is normal, the recorder displays a message that says "Signal Reception OK." If the signal reception is not working correctly, the recorder displays a failure message. In this case, see the *Diagnostic Test* section of the *Problems and Solutions Tables* on page A-18.

③

3 Dish Signal

## TELEPHONE CONNECTION DIAGNOSTIC TEST

Select the **Phone Connection** option to begin the test. The recorder displays a message asking you to wait until the test is completed. If the telephone connection is correct, the recorder displays a message that says "Phone Connection OK." If the telephone is not connected properly, the recorder displays a failure message. In this case, see the *Diagnostic Test* section of the *Problems and Solutions Tables* on page A-18.

④

4 Phone Connection

## MAIN UNIT DIAGNOSTIC TEST

This test verifies that the recorder is working correctly.

Select the **Main Unit Test** option to begin the test. The recorder displays a message asking you to wait until the test is completed. If the main unit is working correctly, the recorder displays a message that says "Main Unit OK." If the main unit is not working correctly, the recorder displays a failure message. In this case, call the JVC Service Center for assistance.

**Note:** This test may temporarily distort the TV picture.

⑤

5 Main Unit Test

## PROGRAMMING THE REMOTE CONTROL

---

You can program the remote to control not only the recorder, but also your TV, and cable box or amplifier. This remote supports most brands and models; however, there may be some brands or models that it does not support. You can program the remote to control a maximum of four different electronic components. Which component is being controlled by the remote depends on the current mode:

- ◆ The built-in satellite receiver (controlled in SAT mode)
- ◆ The TV set (controlled in TV mode)
- ◆ The built-in video recorder (controlled in D-VHS mode)
- ◆ One auxiliary item, such as an amplifier, a cable TV box, or a second TV or VCR (controlled in AUX mode).

The remote is already programmed to control the built-in receiver. However, if you have multiple receivers and remotes, you may need to set a unique *address* for the receiver/recorder, to prevent interference.

Before beginning the following procedures, make sure that all electronic components are powered ON. Make sure that there are fresh batteries installed in the remote.

Then, do the following:

### Remote Buttons

1. Turn ON the piece of equipment you want to program the remote to control.
2. Find the brand name of the equipment in the equipment codes table beginning on page 4-44.

**Note:** If there is more than one code listed for the brand, try each until the remote is able to control the equipment.

3. Press the **Mode** button on the remote until the mode light that matches the equipment flashes rapidly.



**Note:** Select the AUX mode for audio amplifiers, cable boxes, second TVs or second VCRs.

4. Press the **Address** button. The mode light continues to flash more slowly.



# User and Installation Guide

5. Use the number pad buttons to enter the first 3-digit code listed for your equipment brand in the table. The mode light stops flashing and stays lit.

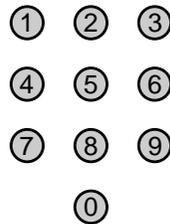
**Note:** If you are entering a code for the AUX mode, you have to enter a four-digit code. The first digit is the code for the piece of equipment:

0 - indicates a second TV

1 - indicates a second VCR

*For example,* to program the AUX mode to control a Sony TV, enter 0 and then 000.

If you are programming for an amplifier or cable TV box, the codes shown in the table include the first digit.



6. Press the **Address** button. If the code you entered is valid, the mode light blinks three times.
7. Test if the code works for the equipment by pressing the **Power** button. If it is the correct code, the equipment should turn OFF.
8. Turn the equipment back ON and try some other functions to make sure you have the correct code. Occasionally the **Power** button may work when others do not.

ADDRESS



POWER



If the code works, then you can stop here. Write all the codes you programmed into the remote on the sticker on the inside of the remote battery cover, and on the inside back cover of this *Guide*.

**Note:** When you change the batteries in the remote, you may need to reprogram these codes back into the remote.

9. If the code you entered is *not* correct, repeat steps 4 through 8, using another code from the table.
10. If you have tried all of the codes listed for your equipment without success, or if you cannot find your equipment manufacturer's name in the table, do the procedure in *The Power Scan: If Your Brand is Not Listed* on the next page.

**Note:** You have a limited time to program the remote control after pressing the **Mode** button. Start the programming procedure again if the mode indicator is no longer lit.

## REDUCING THE RANGE OF THE UHF REMOTE CONTROL

If a neighbor frequently uses a UHF remote control, the signals from that remote may block signals from your remote from reaching your recorder. To prevent such interference, you can install a 10 dB F-connector attenuator. This will reduce the sensitivity of the recorder to UHF signals, so it will not respond to signals from distant remotes. Attenuators are available at some electronics supply and satellite TV stores or from JVC parts at 1-800-882-2345. The JVC part number for this attenuator is T500511.

**Note:** Installing the attenuator will substantially reduce the operating range of your remote.

To install an attenuator,

1. Remove the UHF Antenna from the **UHF Remote Antenna** connection on the recorder back panel.
2. Attach a 10 dB attenuator to the **UHF Remote Antenna** connection.
3. Attach the UHF Antenna to the attenuator.

## THE POWER SCAN: IF YOUR BRAND IS NOT LISTED

If your equipment brand is not listed in the equipment codes, or if the listed codes do not work, you can set up the remote to scan through all the codes, testing each one.

Once the remote reaches a possible correct code, the equipment (whether VCR, TV, or other), powers ON or OFF. Once this happens, try some other functions to make sure you have the correct code. Occasionally, the **Power** button may work when others do not.

**Note:** If you start this procedure, and at any time do not press a button within 20 seconds, the remote will end the procedure automatically.

### Remote Buttons

1. Press the **Mode** button on the remote until the appropriate mode light is flashing rapidly.
2. Press the **Address** button. The mode light starts flashing more slowly.
3. Press the **Power** button. The mode light stops flashing and stays lit.

MODE



ADDRESS



POWER



## User and Installation Guide

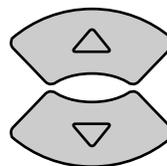
4. Press the **Up** or **Down** arrow button to set the remote to the next code. The **Down** arrow button scans backward, and the **Up** arrow button scans forward.

When the correct code is reached, the equipment (whether VCR, TV, or other) powers OFF.

5. Press the **Address** button to store the code in the remote. If the code is valid for your remote, the mode light blinks three times.
6. Power the equipment back ON.
7. Try some other functions to make sure you have the correct code. Occasionally the **Power** function may work when others do not.
8. If the other buttons work, do the procedure in the following section.
9. If the other buttons *do not* work, power the equipment back on and repeat steps 2 through 7. The scan resumes from the last code stored.

The mode light flashes rapidly when the scan has returned to the starting point and all codes have been tested for that equipment.

**Note:** Remember that the remote may not control some equipment models.



ADDRESS



## DETERMINING THE CURRENT REMOTE SETTINGS

You can find out which code is currently set for each remote mode.

### Remote Buttons

1. Press the **Mode** button on the remote until the appropriate mode light is flashing rapidly.

MODE



2. Press the **Address** button twice.

ADDRESS



For SAT mode, the mode light flashes the number of times that matches the recorder address.

*For example*, if the recorder is addressed to 4, the mode light flashes four times.

For TV, D-VHS, and AUX modes, the mode light flashes the number of times to indicate each digit of the current code. There will be a pause between the flash sequences for the digits. A quick flash indicates zero (0).

*For example*, for an AUX code of 0136, the mode light flashes once quickly (for zero), then once, three times, and six times.

**Note:** Remember that the AUX mode has a 4-digit code.

3. Write all the codes you programmed into the remote on the sticker on the inside of the remote battery cover, and on the inside back cover of this *Guide*.

**Note:** When you change the batteries in the remote, you may need to reprogram these codes back into the remote.

# User and Installation Guide

## EQUIPMENT CODES FOR PROGRAMMING THE REMOTE

### TELEVISIONS

**Note:** Not all the codes listed in these tables are valid for all remote controls.

Akai	032, 070
Alba	113
A-Mark	120
Amstrad	033
Anam	009, 021, 041, 120, 121
AOC	005, 006, 019, 020, 120, 195
Archer	120
Audiovox	120
Bauer	111
Candle	006, 022, 023, 025, 195
Capehart	019, 195
Circuit City	195
Citizen	006, 016, 022, 023, 024, 025, 026
Concerto	023
Contec	027, 028, 041, 091
Craig	021, 041, 194
Crown	026
Curtis Mathes	006, 016, 026, 203
CXC	041
Daewoo	005, 024, 026, 029, 030, 031, 032, 219
Daytron	026, 195
Dixi	032, 088, 120
Dumont	195
Electrohome	026, 195, 209, 213
Elta	032
Emerson	026, 027, 028, 033, 034, 035, 037, 038, 039, 040, 041, 122, 195, 220
Envision	006
Etron	032
Fisher	042, 090
Formenti	111
Fortress	105
Fujitsu	034, 194
Funai	034, 041, 194
Futuretech	041, 194
General Electric (GE)	003, 008, 009, 015, 040, 043, 044, 130, 195
Genexxa	113
Goldstar	005, 023, 026, 045, 046, 088, 195
Granada	195
Grundig	047
Hallmark	195
Hinari	034
Hitachi	023, 026, 048, 049, 050, 051, 052, 053, 054, 055, 126, 202, 213
Infinity	066

JBL	066
Jensen	056
JVC	057, 058, 059, 060
Kawasho	061
Kenwood	006
Kloss	022, 110
KTV	026, 039, 040, 041
Lloyds	195
Lloytron	026
Loewe	088
Logik	018
Luxman	023
LXI	003, 063, 066, 090, 095, 117, 125
Magnavox	006, 020, 025, 064, 065, 067, 068, 069, 110, 210
Marantz	006, 066, 088
Matsui	032, 109
Megatron	195
Memorex	018, 032, 090, 195
MGA	004, 005, 006, 071, 195
Mitsubishi	004, 005, 070, 071, 072, 123, 195, 205, 207
MTC	005, 006, 016, 023, 031, 195
NAD	002, 117, 195
National	009, 021, 197
National Quenties	197
NEC	005, 006, 007, 017, 023, 127
Nikkai	112, 113, 118
Nikko	195
Normande	051, 217
Onwa	041
Optonica	105, 107
Orion	194
Osaki	112
Osume	091
Panasonic	008, 009, 010, 011, 012, 066, 074, 075, 197, 200, 206
Penney	003, 005, 006, 014, 016, 026, 043, 096
Philco	005, 006, 025, 064, 065, 068, 110
Philips	066, 088
Pioneer	002, 048, 051, 076
Portland	005, 026
Proton	013, 019, 026, 124, 195
Pulsar	001
Quasar	008, 009, 077, 200
Radio Shack	026, 041, 107, 112
RCA	003, 005, 014, 015, 048, 079, 080, 081, 082, 083, 084, 085, 086, 087, 125, 133, 134
Realistic	090
Saba	051
Saisho	032, 033, 109
Sampo	006, 019

Samsung	005, 006, 016, 023, 026, 032, 088, 112, 195, 204, 221
Sanyo	042, 089, 090, 091, 092, 109
SBR	088
Schneider	088
Scott	026, 034, 037, 041, 093
Sears	003, 023, 034, 042, 063, 089, 090, 094, 095, 096, 097, 098, 099, 100, 101, 102, 103, 104, 117, 195, 203
Seimitsu	195
Sharp	026, 091, 105, 106, 107, 108, 128, 129
Siemens	091
Signature	018
Solavox	112
Sony	000, 109, 119, 122
Soundesign	025, 041, 195
Spectricon	020, 120
Squareview	194
SSS	005, 041
Supra	023
Supre-Macy	022
Sylvania	006, 025, 064, 065, 066, 068, 110, 111
Symphonic	132, 194
Tandy	105, 113
Tatung	009
Technics	008
Techwood	023
Teknika	004, 005, 016, 018, 022, 023, 024, 025, 026, 034, 041, 114, 115
Teleavia	051
Telefunken	051
Teletex	032
Tera	013
Thomas	195
Thompson	209
Thomson	051, 116
TMK	023, 195
Toshiba	016, 090, 096, 117, 118, 131
Tosonic	028
Television	026
Toyomenko	195
Universal	043
Vector Research	006
Victor	057
Video Concepts	070
Vidtech	005, 195
Viking	022
Wards	005, 006, 015, 018, 034, 043, 064, 065, 067, 068
Yamaha	005, 006
York	195
Zenith	001, 018
Zonda	120

# Installation and Setup Equipment Codes for Programming the Remote



## VCRS

Aiwa	088, 122, 123, 124
Akai	013, 014, 015, 016, 017, 018, 019, 020, 068
Alba	046
Amstrad	088
ASA	065
Audio Dynamics	100
Broksonic	059
Bush	089
Candle	080, 092, 093
Canon	042, 054
Capehart	043, 046
Citizen	091, 092, 093
Craig	091, 108
Curtis Mathes	054, 092, 105
Daewoo	034, 046, 047, 093, 126, 127
Daytron	046
DBX	100
Dumont	049
Dynatch	088
Electrohome	109
Emerson	005, 006, 007, 008, 009, 010, 011, 012, 059, 068, 088, 090, 109, 118
Finlandia	049
Finlux	049, 065, 088
Fisher	048, 049, 084, 108, 110
Funai	088
General Electric (GE)	050, 051, 052, 054, 091, 105
Goldstar	030, 055, 092, 112, 113
Goodmans	085, 089
Go Video	120
Granada	049, 081
Grundig	065
Harman Kardon	030, 069
Hinari	089
Hitachi	036, 037, 038, 039, 040, 041, 088, 096, 097
ITT	018
JC Penney	030, 054, 091, 100, 101
Jensen	060
JVC	061, 062, 063, 064, 092, 100, 101
Kenwood	062, 081, 092, 100, 101
Lloyd	088
Logik	089
Luxor	018
Magnavox	027, 054, 065, 111
Marantz	030, 054, 065, 085, 092, 100, 101, 103
MEI	054
Memorex	033, 049, 054, 066, 081, 085, 088, 108
MGA	067, 068, 109

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MTC	044, 080, 088
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NAD	073
NEC	030, 031, 032, 062, 092, 099, 100, 101, 102, 103, 104
Optonica	085
Orion	006, 007, 129
Panasonic	021, 022, 023, 024, 026, 054, 098, 114, 128
Penney	054, 080
Pentax	037, 092
Perdio	088
Philco	054, 111
Philips	054, 065, 085
Pioneer	062, 073, 074, 075, 076, 100
Portland	046, 093
Proscan	105
Pulsar	033
Quartz	081
Quasar	054, 077, 078
Radio Shack	107, 108, 109, 110
RCA	025, 026, 027, 028, 029, 037, 091, 105, 106, 115, 130, 131
Realistic	049, 054, 080, 081, 084, 085, 088
Ricoh	002
Saisho	006, 007
Salora	067, 081
Samsung	017, 034, 079, 080, 091
Sansui	032, 044, 062, 100, 121
Sanyo	049, 081, 082, 083, 108
SBR	065
Schneider	089
Scott	008, 059, 090
Sears	048, 049, 081, 084
Sentra	046
Sharp	085, 107, 109, 125
Shintom	089
Sony	000, 001, 002, 003, 004
Sylvania	054, 067, 088, 111
Symphonic	088
Tandy	088
Tashiko	088
Tatung	086, 101
Teac	088, 101
Technics	054
Teknika	054, 087, 088
TMK	006
Toshiba	034, 035, 067, 090
Totevision	080, 091
Unitech	080
Vector Research	030, 100
Victor	061, 062, 100

Video Concepts	068, 100
Videosonic	091
Wards	027, 054, 080, 085, 088, 089, 090, 091, 107, 108, 109
Yamaha	030, 092, 100, 101
Zenith	001, 002, 033

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Akai	0167
Carver	0153, 0172
Denon	0174
Fisher	0153, 0172
GE	0165
Goldstar	0177
JVC	0157, 0183
Kenwood	0176
Luxman	0181
LXI	0165
Marantz	0151
Memorex	0175
NAD	0169
Nakamichi	0171
Onkyo	0160, 0162, 0178
Optimus	0164
Panasonic	0152
Pioneer	0158, 0175, 0179
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Quasar	0152
RCA	0155
Realistic	0165, 0166
Scott	0159
Sherwood	0170
Sony	0173, 0180
Symphonic	0166
Technics	0152
Victor	0157
Yamaha	0163, 0182

## CABLE TV BOXES

GI/Tocom	0140
Hamlin	0147, 0148
Jerrold	0135, 0136, 0137, 0149
Oak	0146
Panasonic	0144, 0145
Pioneer	0142, 0143
Scientific Atlanta	0138, 0139, 0150
Zenith	0141

# ***User and Installation Guide***

## **NOTES**

# 5 VCR Features

## SIMPLE PLAYBACK AND RECORDING

This recorder has a built-in VCR which will let you play back tapes that have been recorded in the D-VHS (bit stream) and VHS (analog) formats, as well as make your own recordings in the D-VHS and VHS formats. D-VHS cassettes and VHS can be used in the HM-DSR100DU/RU. For information on what types of cassettes can be used and which recording formats they work with, see the table below.



When loading a cassette, make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointing towards the VCR. *Do not* apply excessive pressure when inserting. Incorrectly loaded cassettes can damage the recorder and/or the cassette being used.

## COMPATIBILITY OF CASSETTES AND RECORDING MODES

Channel	Cassette	Recording Mode	
		Bit Stream Recording (D-VHS)	Analog Recording (VHS)
Satellite Channel	D-VHS	Yes *	Yes
	VHS	No	Yes
Local Channel	D-VHS	No	Yes
	VHS	No	Yes
AUX	D-VHS	No	Yes
	VHS	No	Yes
The recording time when the provided DF-180 cassette is used.		D-VHS: 180 min	SP: 90 min EP: 270 min

\* You can record the same duration as described on the cassette.  
The recording speed for bit stream (D-VHS) recordings remains unchanged regardless of this setting.

### Notes:

- ◆ S-VHS recording is not possible on this unit.
- ◆ S-VHS- recorded tapes cannot be played back on this unit. Make sure you turn the "D-VHS" recording mode off if you intend to record a digital satellite recording on a S-VHS cassette. We recommend that you only record digital "bit stream" signals on D-VHS cassettes.

# User and Installation Guide

## SIMPLE PLAYBACK

To play back a D-VHS or VHS tape, do the following:

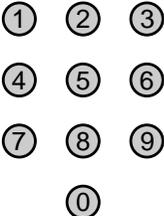
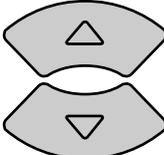
	Remote Buttons	Menu Options
1. Load a cassette into the cassette loading slot. ◆ The VCR's power comes on automatically. ◆ If the cassette's record safety tab has been removed, playback begins automatically.		
2. If you want to rewind or fast forward to a different section of the tape, press the <b>Rewind</b> or <b>Fast Forward</b> button.		
3. Press the <b>Stop</b> button to stop winding.		
4. Press the <b>Play</b> button to start tape playback. ◆ When playing back a tape recorded in the EP mode, the EP indicator on the front panel will light.		
5. Press the <b>Stop</b> button to stop the tape, and then press the <b>Eject</b> button on the recorder's front panel to eject the tape.		

### Notes:

- ◆ Compact VHS camcorder tapes recorded in normal VHS mode can be played on this video recorder. Simply place the recorded cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.
- ◆ Super VHS recordings can not be played back on this recorder.

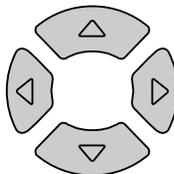
### SIMPLE RECORDING

Remember that both digital and analog signals can be recorded on a D-VHS tape, and that only analog signals can be recorded on a VHS tape. Follow the following procedure to record on a D-VHS or VHS tape:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Load a cassette into the cassette loading slot. ◆ Make sure the record safety tab is intact. ◆ If the tab is missing, cover the hole with adhesive tape before inserting the cassette.		
3. <b>Either:</b> Enter the desired 3-digit channel number.		
<b>or</b>		
Press the <b>Up</b> or <b>Down</b> arrow button to highlight the desired channel.		
<b>or</b>		
Press the CH  or  button on the recorder's front panel.		
◆ If you use the RF connection, you can select the VIDEO mode to view the program to be recorded by pressing the <b>TV/VCR</b> button.	TV/VCR 	

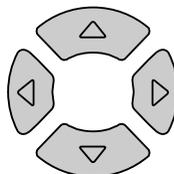
## User and Installation Guide

4. Use the arrow buttons to select Bit Stream (D-VHS) Recording "ON" or "OFF" in the Mode section of the VCR Setup screen. Refer to the next page for further instructions.



- ◆ Bit Stream (D-VHS) Recording is possible only when you record a satellite channel using a D-VHS cassette, and when Bit Stream (D-VHS) Recording setting is set to "ON".

5. Use the arrow buttons to select the Recording Speed ("SP" or "EP") for analog recordings in the Mode section of the VCR Setup screen. Refer to the next page for further instructions.



- ◆ When EP is selected, the EP indicator on the recorder's front panel lights.
- ◆ The recording speed for bit stream (D-VHS) recordings remains unchanged regardless of this setting.

6. Press the **Rec**(ord) button.

- ◆ The REC indicator on the front panel lights during recording.



7. If you wish to pause recording at any time, press the **Pause** button. Pressing the **Play** button will resume recording.

- ◆ The REC and PAUSE indicators on the front panel both remain lit while recording is paused.

- ◆ While recording is paused, neither the channel nor the recording speed can be changed. Press the **Stop** button first, and then change the channel/recording speed as necessary.



8. Press the **Stop** button to stop the tape, and then press the **Eject** button on the recorder's front panel to eject the tape.



### Accidental erasure prevention

- ◆ To prevent accidental recording on a recorded cassette, remove its record safety tab. To record on it later, cover the hole with adhesive tape.

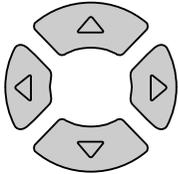
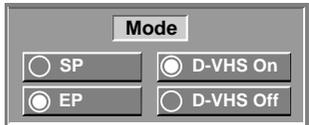
# VCR Features

## Simple Playback and Recording

5

### SETTING THE BIT STREAM (D-VHS) RECORDING AND TAPE SPEED

Remember that a D-VHS tape can record both bit stream and analog signals, while a VHS tape can record only analog signals. To record on a D-VHS or VHS tape, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>VCR Setup</b> option.		
4. Press the arrow buttons to select Bit Stream (D-VHS) Recording (On, Off), or to select the Tape Speed (SP/EP), and then press the <b>Select</b> button.		
5. Press the arrow buttons to move the highlight to <b>Save</b> .		
6. Press the <b>Select</b> button to save all changes.		

# User and Installation Guide

## PLAYBACK FEATURES

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To make finding and playing the taped program or scene you want as easy as possible, the recording is equipped with a variety of convenient playback features.

### HIGH-SPEED SEARCH

Best with: Analog recordings.

To search for a location with a high-speed visual playback picture, do the following:

	Remote Buttons	Menu Options
1. During playback or still, press the <b>Fast Forward</b> button for high-speed search, or press the <b>Rewind</b> button for reverse high-speed search.	 	
2. To resume normal playback, press the <b>Play</b> button.		

#### Notes:

- ◆ When playing back an analog recorded tape, the search speed is 7 times normal playback with SP recordings, and 21 times normal with EP recordings.
- ◆ When this function is used while playing back a bit stream recorded tape, the search speed will be 14 times normal but no playback picture will appear.
- ◆ For short searches, during playback or still press and hold the **Fast Forward** or **Rewind** button for over 2 seconds. When released, normal playback resumes.

### REW/BROWSE AND FF/BROWSE

Best with: Bit stream recordings.

This function finds the location where index codes are placed and automatically activates fast forward search for about 5 seconds, then resumes fast forwarding or rewinding.

Do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. While the tape is stopped, press the <b>REW/Browse</b> or <b>FF/Browse</b> button.	REW/BROWSE  FF/BROWSE 	

3. To stop, press the **Stop** button at any time.



**Notes:**

- ◆ When playing back a bit stream recorded tape, the program information for the program being fast forwarded is displayed on the TV screen for about 5 seconds, but the playback picture may appear frozen (still picture) or block noise may appear during search.
- ◆ When playing back an analog recorded tape, a fast-motion playback picture appears, but no program information is displayed.

## SKIP SEARCH

Best with: Analog recordings.

This function lets you skip over commercials while watching recorded programs, or quickly zoom back to a scene that has just been played. Do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. During playback, press the <b>Skip</b> or  button 1 to 4 times. Each press initiates a 30-second period of fast-motion or reverse-motion playback.	SKIP  SKIP 	
Normal playback resumes automatically.		

**Notes:**

- ◆ To return immediately to normal playback *during* a Skip Search, press the **Play** button.
- ◆ When playing back a bit stream recorded tape, there is no playback picture during search.

# User and Installation Guide

## INDEX SEARCH

Best with: Bit stream and analog recordings.

Index codes are placed on the tape at the start of each recording. You can find and automatically play back from the start of any recording using the Index Search function.

Do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. While the tape is stopped, press the <b>Index</b>  or  button.	◀◀INDEX 	
To access a recording 2—9 index codes away, press the <b>Index</b>  or  button repeatedly until the correct number is displayed on screen (only if Superimpose is set to ON (see pg. 5-12). Playback begins automatically when the desired recording is located.	INDEX▶▶ 	

### Notes:

- ◆ If necessary, press the **Rewind** or **Fast Forward** button when play starts to search visually to find the exact beginning of the desired program.
- ◆ An index code is not placed on the tape when recording is paused and then resumed.

## STILL PICTURE/FRAME-BY-FRAME PLAYBACK

Best with: Analog recordings.

To "freeze" the playback picture and view it one frame at a time, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. During playback, press the <b>Pause</b> button. ◆ If there is vertical jitter, use the <b>Up</b> or <b>Down</b> arrow button to correct the picture.	  	
3. For frame-by-frame playback, press the <b>Pause</b> button repeatedly to advance one frame at a time. ◆ Frame-by-frame is not possible with bit stream recorded tapes.		
4. To resume normal playback, press the <b>Play</b> button.		

## SLOW MOTION

Only with: Analog recordings.

To view the playback picture at a slower speed, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. During playback or still, press and hold the <b>Pause</b> button for over 2 seconds.		
3. To resume normal playback, press the <b>Play</b> button.		

### Notes:

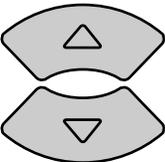
- ◆ If noise bars appear during slow motion, press the remote's **Up** or **Down** arrow button a few times to remove the noise bars from the screen. You may wish to turn off the superimpose function during this adjustment (see page 5-12).
- ◆ Slow motion is not possible with bit stream recorded tapes.

# User and Installation Guide

## MANUAL TRACKING

*Best* with: Bit stream and analog recordings.

Once playback begins, the recorder's automatic tracking functions is engaged. If noise appears in the picture, you can override this and make the adjustment manually by doing the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. During playback, press the <b>Auto Track</b> button on the remote to cancel the automatic tracking mode and enable manual tracking adjustment.	AUTO TRACK 	
3. Press the <b>Up</b> or <b>Down</b> arrow button on the remote, to adjust the tracking. ◆ Press briefly for fine adjustments, or press and hold for substantial adjustment. Watch the screen and continue adjusting until optimum picture and sound quality are achieved.		
4. To re-engage automatic tracking, press the <b>Auto Track</b> button on the remote again.	AUTO TRACK 	

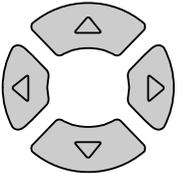
### Notes:

- ◆ To obtain a noiseless still picture it may be necessary to adjust tracking in slow motion and then engage Pause.
- ◆ Manual tracking is possible during slow motion. Press the remote's **Up** or **Down** arrow button to adjust tracking during slow motion playback.

## VIDEO STABILIZER

*Only with:* Playback of analog recorded tapes.

You can correct vertical vibration when playing back unstable EP recordings that were made on another VCR. To turn this function on for automatic correction of vertical vibration, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>VCR Setup</b> option.	8 	<b>8 VCR Setup</b>
4. Press the arrow buttons to move the highlight to <b>Video stabilizer</b> in the <b>Options</b> list.		
5. Press the <b>Select</b> button to place a checkmark in the checkbox next to <b>Video stabilizer</b> . Pressing the <b>Select</b> button again will remove the checkmark.		<input checked="" type="checkbox"/> <b>Video stabilizer</b>
6. Press the arrow buttons to move the highlight to <b>Save</b> .		<b>Save</b>
7. Press the <b>Select</b> button to save all changes.		

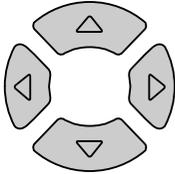
### Notes:

- ◆ Video Stabilizer does not operate during recording, during special effects playback, during playback of a recording made at SP speed, and during playback of a bit stream recorded D-VHS tape.
- ◆ When you finish viewing the tape, be sure to turn this function back off.
- ◆ Turning the VCR's power on or inserting a cassette into the recorder will automatically turn this function off.

# User and Installation Guide

## SUPERIMPOSE

This function, which can be switched on or off, determines whether or not the recorder's operational indicators will appear on the TV screen. Do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>VCR Setup</b> option.		
4. Press the arrow buttons to move the highlight to <b>Superimpose</b> in the <b>Options</b> list.		
5. Press the <b>Select</b> button to remove the checkmark from the checkbox next to <b>Superimpose</b> . Pressing the <b>Select</b> button again will put a checkmark there again.		
6. Press the arrow buttons to move the highlight to <b>Save</b> .		
7. Press the <b>Select</b> button to save all changes.		

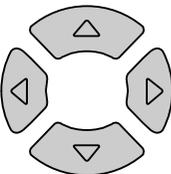
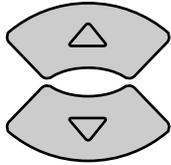
**Note:**

- ◆ When the **View** button is pressed, all indications corresponding to the current status are displayed for 5 seconds.

## SELECTING THE SOUNDTRACK

*Only with:* Playback of analog recorded tapes.

The recorder can record two soundtracks simultaneously (Hi-Fi and Normal) and play back the selected one, or both together. To choose, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>VCR Setup</b> option.		
4. Press the arrow buttons to move the highlight to the <b>Audio</b> list.		
5. Press the <b>Up</b> or <b>Down</b> arrow button to move the highlight to the audio track you wish to hear: Hi-Fi, Normal or Mixed.		
6. Press the arrow buttons to move the highlight to <b>Save</b> .		
7. Press the <b>Select</b> button to save all changes.		

**Note:**

- ◆ If the tape being played back has no Hi-Fi soundtrack, the Normal soundtrack will be heard no matter what choice you make in the Audio mode list.

# User and Installation Guide

## COUNTER RESET

To reset the counter reading to zero, do the following:

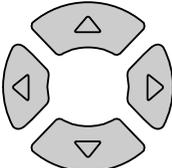
	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the D-VHS mode.	MODE 	
2. Press the <b>Counter Reset</b> button. ◆ The counter is reset, and the new counter reading is displayed on the TV screen.	RECALL COUNTER RESET  	

### Note:

- ◆ If the counter reading does not appear on the TV screen although you want it to appear, turn on the Superimpose function (see Superimpose on page 5–12).

## COUNTER MEMORY

When the Rewind or Fast Forward button is pressed with the Counter Memory function activated, the tape will return to the counter position "zero" and automatically stop. To activate, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
2. Select the <b>VCR Setup</b> option.		
3. Press the arrow buttons to move the highlight to <b>Counter Memory</b> in the <b>Options</b> list.		
4. Press the <b>Select</b> button to place a checkmark in the checkbox next to <b>Counter Memory</b> . Pressing the <b>Select</b> button again will remove the checkmark.	SELECT 	

5. Press the arrow buttons to move the highlight to **Save**.



6. Press the **Select** button to save all changes.



**Note:**

- ◆ If Counter Memory is turned on, "Memory" appears in the **View Banner** displayed on the TV screen.

**REPEAT PLAYBACK**

To repeatedly play the same tape 20 times consecutively, unattended, do the following:

	Remote Buttons	Menu Options
1. During playback, press and hold the <b>Play</b> button for longer than 5 seconds. ◆ "R-Play" is displayed on the <b>View</b> screen and repeated playback begins.		
2. To stop Repeat Playback at any time, press the <b>Stop</b> button.		

**Notes:**

- ◆ Pressing the **Play, Rewind, Fast Forward** or **Pause** button also stops Repeat Play.
- ◆ Even though the Counter Memory is turned on, the tape will not stop at the counter reading of 00:00:00.

# User and Installation Guide

## NEXT-FUNCTION MEMORY

The Next Function Memory "tells" the recorder what to do immediately after rewinding. Before continuing, be sure that the recorder's tape is stopped.

	Front Panel Buttons	Menu Options
(a) For Automatic Start of Playback after Tape Rewind... press the <b>Rewind</b> button, then press the <b>Play</b> button within 2 seconds.	 	
(b) For Automatic Power Off after Tape Rewind... press the <b>Rewind</b> button, then press the <b>Power</b> button within 2 seconds.	 	
(c) For Automatic Eject after Tape Rewind... press the <b>Rewind</b> button, then press the <b>Eject</b> button within 2 seconds. ◆ This function is not available from the remote control.	 	

### Note:

- ◆ If you want the "next function" to automatically start when the counter reads "00:00:00" (instead of at the beginning of the tape), turn on the Counter Memory function (see Counter Memory on page 5–14).

## RECORDING FEATURES

Various features are provided to make video taping an easy and sure process.

### RECORDING ONE PROGRAM WHILE WATCHING ANOTHER

To watch a broadcast or cable TV channel while recording another program using the built-in VCR, do the following:

	Remote Buttons	Menu Options
<ol style="list-style-type: none"> <li>During recording, press the <b>TV/VCR</b> button.                             <ul style="list-style-type: none"> <li>◆ If you are using the RF connection (see p. 7-22) to view the output from your recorder, the TV broadcast being recorded disappears.</li> <li>◆ If you are using the AV connection (see p. 7-23) to view the output from your recorder, change the TV's input mode from AV to TV.</li> </ul> </li> <li>Use the TV's channel selector to choose the channel you want to watch.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>◆ If you have connected the recorder to your TV via RF connection and the picture being received appears distorted, press the <b>Mode</b> button until the remote is in the SAT mode, and then press the <b>TV/VCR</b> button.</li> <li>◆ It is not possible to view one satellite channel while watching another satellite channel.</li> </ul>	<p>TV/VCR</p> 	

### DISPLAY ELAPSED RECORDING TIME

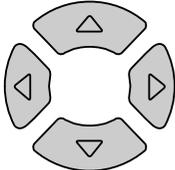
To see the elapsed time of a recording that is taking place, do the following:

	Remote Buttons	Menu Options
<ol style="list-style-type: none"> <li>Before recording starts, press the <b>Counter Reset</b> button.                             <ul style="list-style-type: none"> <li>◆ The counter resets to zero and displays the exact elapsed time as the tape runs.</li> </ul> </li> <li>During recording, press the <b>View</b> button at any time to see the elapsed time. All indications corresponding to the current status of the VCR are displayed for 5 seconds.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>◆ Make sure that Superimpose is turned on (see <i>Superimpose</i> on p. 5-12).</li> <li>◆ The indications are not recorded.</li> </ul>	<p>RECALL</p>  <p>COUNTER RESET</p>  <p>VIEW</p>	

# User and Installation Guide

## STEREO AND SAP (SECOND AUDIO PROGRAM)

The recorder's built-in MTS decoder enables reception of local broadcasts with Multi-channel TV Sound.

	Remote Buttons	Menu Options
To Record Stereo Programs... simply follow the basic recording procedure.		
To Listen To Stereo Soundtrack During Recording... select "HI-FI" at the VCR Setup screen (see <i>Selecting the Soundtrack</i> on page 5-13).		
To Record SAP Programs...		
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>VCR Setup</b> option.		
4. Press the arrow buttons to move the highlight to <b>Second audio</b> in the <b>Options</b> list.		
5. Press the <b>Select</b> button to place a checkmark in the checkbox next to <b>Second audio</b> . Pressing the <b>Select</b> button again will remove the checkmark.		
6. Press the arrow buttons to move the highlight to <b>Save</b> .		
7. Press the <b>Select</b> button to save all changes.		

### Notes:

- ◆ If an SAP program is received, the SAP audio is recorded on both the Normal and Hi-Fi tracks. The main audio program is not recorded.
- ◆ If a non-SAP program is received, the main audio is recorded on both the Hi-Fi and Normal audio tracks.

## INSTANT TIMER RECORDING (ITR)

This "on the fly" timer lets you record from 30 minutes to 6 hours (selectable in 30-min. increments), and shuts the recorder off after recording is finished. To activate, do the following:

	Recorder Buttons	Menu Options
1. During recording, press the <b>Rec(ord)</b> button on the recorder's front panel at any time to engage the ITR. The recording duration appears on the TV screen for approx. 5 seconds. ◆ The REC light on the recorder's front panel flashes slowly when the ITR function is engaged.		
2. If you want to record for more than 30 minutes, press <b>Rec(ord)</b> again to extend the time. Each press extends recording time by 30 minutes.		

**Note:**

- ◆ You can only perform ITR using the **Rec(ord)** button on the recorder's front panel.

# User and Installation Guide

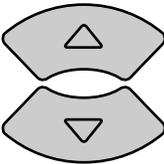
## USING CALLER ID

Your system can display caller identification: the name and telephone number of the caller for your incoming telephone calls. However, caller ID only displays information your telephone company provides. You may not get *all* caller IDs, and some callers may block caller ID. To set up your system to use caller ID, do the following:



If you want to activate this feature, you *must* call your local telephone company and subscribe to the caller ID service. Caller ID operates *only* when both the recorder and your TV are turned ON and your recorder is connected to an active telephone connection.

Some telephone calls will not show the caller name and telephone number. The caller may have blocked Caller ID, or the call may be from an area that does not have the technology.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.	6 	
4. Select the <b>Preferences</b> option.	5 	
5. Select the <b>Caller ID</b> option.	5 	
6. Press the <b>Left</b> arrow button to move the highlight to the <b>Enable Caller ID</b> option.		
7. Press the <b>Up</b> or <b>Down</b> arrow button to select the <b>Enable Caller ID</b> or the <b>Disable Caller ID</b> option.		 

8. Select the **Save** option.



9. If you have not already done so, call your telephone company to activate caller ID.

When the recorder detects an incoming call, it displays an on-screen message showing the caller's name and telephone number.

- ◆ If you receive a telephone call while you are watching a program or using the **Browse Banner**, the recorder displays a message similar to the following at the bottom of your TV screen:



- ◆ If you receive a telephone call while you are using a menu or the **Program Guide**, the recorder displays a message similar to the following:



To clear either of these messages from your TV screen, press the **Select** button on the remote control, *or* press the **Cancel** button. If you wish, you may simply wait a few seconds for the recorder to remove the message.



The recorder will *not* display a Caller ID message on the screen while you are recording a program for which you set up a *VCR Event Timer*. However, it *will* display such a message if you are simply recording a program.

# User and Installation Guide

## EVENT TIMERS

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Event timers are a kind of alarm clock, reminding you when a program you want to watch is about to start. You may set three types of event timers:

- ◆ VCR Event Timer                      This timer does all of the above, plus it starts the built-in VCR recording the event.
- ◆ Auto-Tune Event Timer              This timer reminds you that the event is about to start, and changes the channel to that event when it begins.
- ◆ Reminder Event Timer              This timer reminds you that the desired event is about to start.



*Before you can use a VCR Event Timer, you must do the following:*

- Insert a rewind tape on which you want to record.
- Use a D-VHS tape if you wish to make a bit stream (D-VHS) recording of a program. Using a regular VHS tape will automatically record the program in the analog VHS mode.



If an event time changes by *more* than twenty-four hours from the originally scheduled time, the event timer does *not* execute.



In general, you *cannot* set an Event Timer for a program on channels 000 through 099. Channel 000 is reserved for input from another auxiliary device. Channels 001 through 099 are reserved for your local broadcast or cable stations. The title, start and end times for programs on these stations are usually not available; this is why the **Program Guide** displays only the words "Local Programming."

However, suppose you add broadcast channels to the **Program Guide**, assign these channels to a channel number between 001 and 099, and assign them an ABC, CBS, or NBC network affiliation. The **Program Guide** then automatically displays "prime time" program information for the networks. In this case, you *can* set an Event Timer for a program on one of these channels.

**Note:** In this section, "event" means a program such as a TV show, movie, sports event, or pay per view program.

Three minutes before an event timer is to execute, the recorder displays a small blinking icon on your TV screen to remind you that an event timer is scheduled to begin. This icon is displayed only until the event begins.



While the icon is displayed, you may do the following:

- ◆ Press the **Cancel** button to clear the icon from the TV screen (this does not affect the timer—it still executes), **or**
- ◆ Press the **Info** button to display more information about the scheduled event timer. The recorder displays a screen showing the title, the time, and the channel of the event. You will have the following choices:
  - Continue with the event timer (the timer will execute as scheduled),

**or**

- Stop the event timer.  
**Note:** This stops only this occurrence of a *Mon-Fri*, *Daily* or *Weekly* timer. The timer still executes the next time it is scheduled. To stop all executions of a *Mon-Fri*, *Daily* or *Weekly* timer, you must delete the timer (see *Deleting an Event Timer* on page 5-29). For a *Reminder Event Timer*, instead of having the option to stop the timer you have the option to tune to the channel of the event.

**or**

- If you do not respond to the screen, it disappears within a few seconds.

# User and Installation Guide

## CREATE AN EVENT TIMER

You can set the recorder's timer to automatically record a program by choosing the program through the **Browse Banner**, **Program Guide** screen, or **Theme Categories** screen.

### Remote Buttons

### Menu Options

Load a cassette into the cassette loading slot.

- ◆ Make sure the record safety tab is intact.
- ◆ If the tab is missing, cover the hole with adhesive tape before inserting the cassette.

To choose through the **Browse Banner...**

1. Select the desired program using one of the procedures in *Changing Channels via The Browse Banner* on page 4-5. Go to step 2.

To choose through the **Program Guide...**

1. Select the desired program using one of the procedures in *Changing Channels via The Program Guide* on page 4-9. Go to step 2.

To choose through the **Theme Categories** screen...

1. Select the desired program using one of the procedures in *Selecting a Program in the Themes List* on page 4-12. Go to step 2.

**Note:** This program cannot be running currently — it must begin sometime in the future.

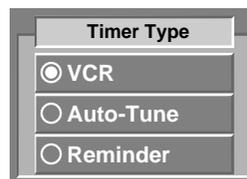
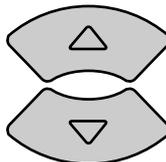
2. Press the **Select** button to display the **Create an Event Timer** menu.



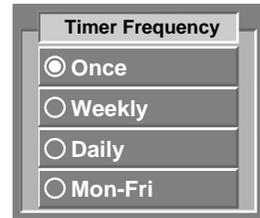
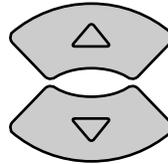
3. Press the **Left** arrow button to move the highlight to the VCR option.



4. Press the **Up** or **Down** arrow button to highlight the desired type of event timer (VCR, Auto-Tune, or Reminder). Then press the **Select** button.

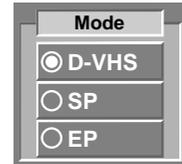


5. Press the **Up** or **Down** arrow button to highlight the desired timer frequency. Next press the **Select** button and then press the **Right** arrow button.



6. Press the **Up** or **Down** arrow button to select "Mode". Then press the **Select** button.

- ◆ Select "D-VHS" when recording a satellite broadcast on a D-VHS tape.
- ◆ Select "SP" or "EP" when recording a satellite broadcast on a VHS tape (analog) or when recording local channels.



7. Press the **Select** button to put a checkmark in the checkbox next to "Start 1min. early" if you want to begin recording one minute prior to the program's scheduled starting time. (Pressing the Select button will remove the checkmark.) Then press the **Right** arrow button.



8. **Either:** Select the **Create** option to save the event timer.



**Note:** Pressing the **Info** button will display the program's contents and the timer icon .



or

If you want to return to the previous menu without creating an event timer, press the **Cancel** button.



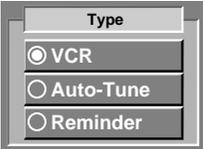
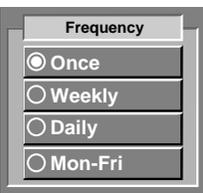
9. Press the **Power** button to turn the recorder off. The **TIMER** light on the recorder's front panel will illuminate.



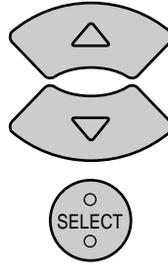
# User and Installation Guide

## CREATE A MANUAL EVENT TIMER

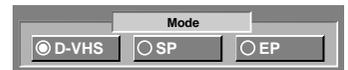
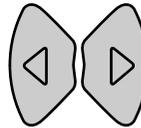
To program the recorder's built-in timer manually, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in the SAT mode.	MODE 	
2. Load a cassette into the cassette loading slot. ◆ Make sure the record safety tab is intact. ◆ If the tab is missing, cover the hole with adhesive tape before inserting the cassette.		
3. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
4. Highlight the <b>Timers</b> option and press <b>Select</b> . The <b>Event Timer Management</b> screen will be displayed.		
5. Press the <b>Up</b> or <b>Down</b> arrow button to highlight the <b>Create</b> option. Then press the <b>Select</b> button. The <b>Create a Manual Event Timer</b> screen will be displayed.	 	
6. Press the arrow buttons to highlight the desired type of event timer (VCR, Auto-Tune, or Reminder). Then press the <b>Select</b> button.		
7. Press the <b>Up</b> or <b>Down</b> arrow button to highlight the desired timer frequency. Next press the <b>Select</b> button and then press the <b>Right</b> arrow button.	   	

8. Press the **Up** or **Down** arrow button or number buttons to select the desired channel. Next press the **Select** button and then press the **Down** arrow button.



9. Press the **Left** or **Right** arrow button to select "Mode". Then press the **Select** button.



- ◆ Select "D-VHS" when recording a satellite broadcast on a D-VHS tape.
- ◆ Select "SP" or "EP" when recording a satellite broadcast on a VHS tape (analog) or when recording local channels.



10. Press the arrow buttons to select "Set Date/Time", and then press the **Select** button. The **Set Date/Time For Manual Timer** screen will be displayed.



11. After pressing the **Left** arrow button, press the number buttons to set the Start Time. (To input a one-digit number, be sure to insert a zero first.)



12. Press the Up or Down arrow button to select AM or PM, and then press the **Select** button.



13. Press the arrow buttons to highlight End Time, and set the End Time using the number buttons. (To input a one-digit number, be sure to insert a zero first.)

14. Press the Up or Down arrow button to select AM or PM, and press the **Select** button. Then press the **Right** arrow button.



# User and Installation Guide

15. Press the number buttons to input the date under Mo./Day.

- ◆ To input a one-digit number, be sure to insert a zero first.
- ◆ Step 15 not necessary if you selected "Mon-Fri" or "Daily" in step 7.
- ◆ If you selected "Weekly" in step 7, press the **Up** or **Down** arrow button to select the Day, and press the **Select** button.



16. **Either:** Select the **Create Timer** option to save the event timer, and press the **Select** button. The **Event Timer Management** screen will be displayed. To program two or more event timers, repeat steps 5 through 16.



**or**

If you want to return to the previous menu without creating an event timer, press the **Cancel** button.



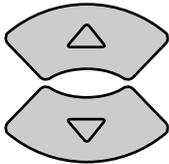
17. Press the **Power** button to turn the recorder off. The **TIMER** light on the recorder's front panel will illuminate.



## SCHEDULING CONFLICTS

If you try to create event timers for overlapping events, the recorder displays a menu that says, "WARNING: Event Timer Scheduling Conflict," and shows the dates and times of both events. The recorder also displays this menu if an event time has changed, causing the event timer to overlap a previously created event timer. You must delete one of the scheduled event timers to resolve the conflict.

### DELETING A CONFLICTING EVENT TIMER

	Remote Buttons	Menu Options
1. In the <b>Event Timer Scheduling Conflict</b> menu, press the <b>Up</b> or <b>Down</b> arrow button to highlight the <b>Delete This Timer</b> option that corresponds to the event timer you want to delete.		
2. Press the <b>Select</b> button.		

### MAXIMUM NUMBER OF EVENT TIMERS ALLOWED

The system allows you to create a maximum number of event timers. If you try to create more than that number of event timers, the recorder displays a menu giving you the option to delete a previously set up event timer first.

**Note:** *Once* (one-time only) event timers are deleted automatically when they execute. You must manually delete all other types of event timers.

### DELETING AN EVENT TIMER

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	

# User and Installation Guide

3. Select the **Timers** option. The **Event Timer Management** screen will be displayed.

7

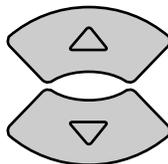
7 Timers



4. Press the **Left** arrow button to highlight the first event timer in the event timers list.



5. Press the **Up** or **Down** arrow button to highlight the event timer that you want to delete.



6. Press the **Select** button. A check mark appears in the box next to the event timer.

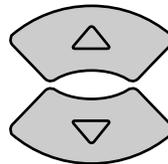


7. If you want to delete more than one event timer, repeat steps 5 and 6 for each event timer that you want to delete.

8. Press the **Right** arrow button, then the **Up** or **Down** arrow button to highlight the **Delete** option.



Delete



9. **Either:** Press the **Select** button to delete the event timer(s),

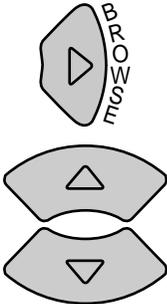
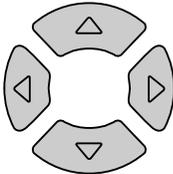
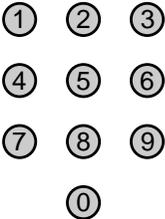
or

To return to the **Main Menu** without deleting any event timers, press the **Cancel** button.



## TO MAKE CHANGES AFTER SETTING EVENT TIMERS

To make changes after you have set event timers, do the following:

	Remote Buttons	Menu Options
1. Perform steps 1 - 6 of Deleting an Event Timer described on page 5-29 and 5-30.		
2. Press the <b>Right</b> arrow button, then the <b>Up</b> or <b>Down</b> arrow button to highlight the <b>Edit</b> option.		
3. Press the <b>Select</b> button. The <b>Edit a Manual Event Timer</b> screen will be displayed.		
4. When you want to change Type/Frequency/Channel/Mode, change it using the arrow buttons.		
5. Press the arrow buttons to select "Set Date/Time", and then press the <b>Select</b> button. The <b>Set Date/Time For Manual Timer</b> screen will be displayed.		
6. Press the arrow buttons to highlight the item you wish to change.		
7. Use the number buttons to change the Start Time/Stop Time/Date. To change AM or PM, make sure your selection with the <b>Up</b> or <b>Down</b> arrow button and then press the <b>Select</b> button.		

## User and Installation Guide

8. Select the **Create Timer** option to save the event timer, and press the **Select** button.



9. Press the **Power** button to turn the recorder off. The **TIMER** light on the recorder's front panel will illuminate.



### REVIEWING EVENT TIMERS

You can display a list of scheduled event timers at any time, using the **Event Timer Management** menu. Or, use this menu to delete event timers. To open the **Event Timer Management** menu, do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>Timers</b> option.		

### RESTRICTED PROGRAMS AND EVENT TIMERS

You must enter the system password *before* you can create a timer for a locked program, and order a pay per view program *before* you can create a timer for it. If you do not, or if the program is blacked out in your area, when the timer executes the recorder may display an error message instead of the program.

### POWER OFF AND EVENT TIMERS

If your recorder is OFF at the time an *Auto-Tune* or *VCR Event Timer* is scheduled to execute, the timer turns the recorder ON. Once the event has ended, your recorder powers OFF (unless you pressed any remote or recorder buttons during the time that the timer was active).

If your recorder is OFF at the time a *Reminder Event Timer* is scheduled to execute, the timer turns the recorder ON and tunes it to the channel you last viewed. The recorder then briefly displays the reminder screen.

## EDITING TO OR FROM ANOTHER VCR

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You can use the recorder as the playback unit or the recording unit to edit from VHS to VHS. It is also possible to use the recorder as the playback unit to edit from D-VHS to VHS. It is not possible to edit from D-VHS to D-VHS by connecting to an external D-VHS recorder. To make an edited VHS tape, do the following:

**Remote  
Buttons**

**Menu Options**

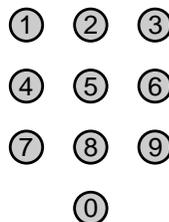
1. Connect the playback unit's VIDEO OUT and AUDIO OUT connectors to the recording unit's VIDEO IN and AUDIO IN connectors using the supplied Audio/Video cable.

- ◆ If using another VCR with an S-VIDEO input connector, it is recommended to use the S-VIDEO connection to minimize picture degradation while editing.
- ◆ When using the recorder as the recording unit and a monaural VCR as the playback unit, connect the VCR's AUDIO OUT connector to the AUDIO IN L connector on the recorder.

2. Load the cassette to be played into the playback unit, and load the cassette to be recorded into the recording unit.

3. Set the recording unit's input mode to AUX.

- ◆ With this recorder, press the number button "000". "AUX" will appear in the on-screen display instead of a channel number.
- ◆ Select the SP or EP tape speed (see page 5-5).



4. Start tape playback on the playback unit.

- ◆ If you do not want superimposed on-screen characters and symbols from the playback unit to be recorded onto the edited tape, turn its superimpose function off (if allowed by the playback unit).

5. Start recording on the recording unit.

# User and Installation Guide

## EDITING FROM A CAMCORDER

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You can use a camcorder as the playback unit and the recorder as the recording unit to edit rough footage into personal videos. Do the following:

	Remote Buttons	Menu Options
1. Connect the camcorder's VIDEO OUT and AUDIO OUT connectors to the recorder's VIDEO IN and AUDIO IN connectors using the supplied Audio/Video cable. ◆ If using a monaural camcorder, connect its AUDIO OUT connector to the AUDIO IN L connector on the recorder.		
2. Load the cassette to be played into the camcorder, and load the cassette to be recorded into the recorder.		
3. Set the recorder's input mode to AUX by pressing the number button "000". "AUX" will appear in the on-screen display instead of a channel number. ◆ Select the SP or EP tape speed (see page 5-5).	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	
4. Start tape playback at the camcorder. ◆ If you do not want superimposed on-screen characters and symbols from the camcorder to be recorded onto the edited tape, turn its superimpose function off (if allowed by the camcorder).		
5. Start recording on the recorder.		

# 6 Starting Your Installation

## INTRODUCTION

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### FOR MORE INFORMATION:

If you *do not* want to install your system yourself, you can have it installed by a professional. Call the DISH Network Service Center at 1-800-799-7175 for information about installation in your area.

If you *do* intend to install your system yourself, this chapter provides installation procedures. The procedures are relatively simple, but do require some skill in construction-related tasks. Make sure to follow *all* warnings and cautions; they are provided for your safety.

An optional Installation Kit is available. This Kit includes typical hardware used during installation, an instructional videotape, and a more detailed *Installation Kit Guide*. See *Optional Installation Kit* on page 6-7 for a list of the contents of this kit.



You should be somewhat familiar with construction related tasks, as the following installation instructions do not contain step-by-step procedures for mounting the antenna to a surface and drilling holes in the building for cable. The optional Installation Kit provides such detailed instructions. You may also choose to have a licensed professional perform the installation.



It is *very* important that you carefully follow *all* local building and electrical codes (especially the latest revision of the *National Electrical Code*) and standard safety procedures for installing and working with this type of equipment. Improper procedures or installation can result in damage to the equipment or the building, and injury or death to you. If you are not sure about whether your installation follows these codes, contact a licensed building inspector or electrician in your area for assistance.



Take *extreme* care to avoid contacting any overhead power lines, lights, and power circuits while you are installing the satellite antenna. Contact with any of these could prove fatal. *Do not* install the satellite antenna near power lines.

See the *Important Product Safety Instructions* on page ii for more information.

# **User and Installation Guide**

## **SUMMARY OF INSTALLATION**

Following is a summary of the procedures to install and set up your system. Perform the procedures in the order presented.

1. Unpack the satellite antenna\*, recorder, and parts (see pages 6–3 through 6–5) and the optional installation kit, if you purchased one (see page 6–7).  
\*Supplied with HM-DSR100DU. Sold separately for HM-DSR100RU.
2. Review "What You Need" (see pages 6–6 through 6–8). Connect the recorder to your TV set.
3. Determine the approximate location of the satellites (see pages 6–9 through 6–12).
4. Find the best location on your property, with a clear line of sight to the satellites, for the satellite antenna (see pages 6–13 through 6–19).
5. Assemble the satellite antenna and attach it to a solid surface (see pages 7–1 through 7–7).
6. Ground the satellite antenna, and wire it to the recorder (see pages 7–8 through 7–11).
7. Aim the satellite antenna for the strongest possible signal (see pages 7–12 through 7–14).
8. Connect the recorder to an active telephone connection (see pages 7–15 through 7–16). With the recorder wired to the TV and the antenna properly installed, you will be able to see the Preview Channel, which tells you about available programs, channels, and services.
9. Order your programming by calling the Service Center (see page 7–17).  
When the services are authorized, you will see channels other than the Preview Channel.
10. Wire the recorder to your other electronic equipment (see pages 7–18 through 7–24).
11. Program the remote control to control the recorder and your other electronic equipment (see pages 4–39 through 4–43).
12. Customize your system. See *Local TV Link* on page 3–13, *Favorites Lists* on page 4–14, *Security Features* on page 4–19.

## BEFORE YOU START INSTALLATION

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### UNPACKING AND CHECKING CONTENTS

As you unpack the system, confirm that all the parts are included. See *Package Contents* below for a list of the included components.

**Note:** Keep the shipping materials in which these items are packed, in case you ever need to return them.

Unpack the contents carefully. Electronic equipment can be easily damaged if bumped or handled roughly. Examine all parts for damage that may have occurred during shipment. If you find any damage, immediately call the location where your system was purchased, or the Service Center, *before* continuing with installation.

### PACKAGE CONTENTS

- ◆ *User and Installation Guide*
- ◆ Satellite antenna assembly (this includes the LNBF, the support arm, the dish, the mounting bracket, the mast, and related hardware; see *Components of the Satellite Antenna* on page 6-4, supplied with HM-DSR100DU)
- ◆ Recorder with built-in receiver
- ◆ Remote control, with four (4) AAA batteries packaged separately
- ◆ Cables:
  - 25 foot RJ-11 telephone cable
  - 8 foot phono (RCA) 3-connector cord
  - 6 foot RF or VHF cable
- ◆ Ultra-high frequency (UHF) antenna for UHF remote

**Note:** Additional hardware is required for installation. See *What You Need* on page 6-6. An optional Installation Kit is available, which includes many of these items. See *Optional Installation Kit* on page 6-7. Contact the location where your system was purchased for more information, or call the Service Center for the location of a licensed dealer near you.

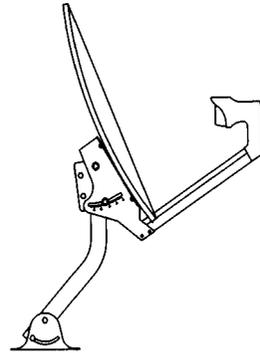
# ***User and Installation Guide***

## **COMPONENTS OF THE SATELLITE ANTENNA**

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**Note:** The following pictures are not to scale.

The fully assembled satellite antenna looks like this.  
Following are descriptions of each piece of the satellite antenna.



### **LNBF (LOW NOISE BLOCK DOWNCONVERTER WITH INTEGRATED FEEDHORN)**

The "dish" focuses the signals transmitted from the satellites onto the LNBF. The LNBF amplifies the signals, converts the whole "block," or range of signals to a lower frequency, and "feeds" the signals into the coaxial cable(s) connected to your recorder(s).

#### **LNBF - SINGLE OUTPUT**

If you purchased the single-output LNBF to use with the recorder, your package contains this LNBF. Note that this LNBF has only one coaxial cable connection.



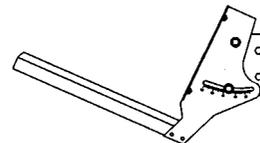
#### **LNBF - DUAL OUTPUT**

The dual output LNBF supplied with the HM-DSR100DU and be used with more than one receiver. Note that this LNBF has two coaxial cable connections.



#### **LNBF SUPPORT ARM**

The LNBF support arm attaches the LNBF and the dish to the mast assembly.



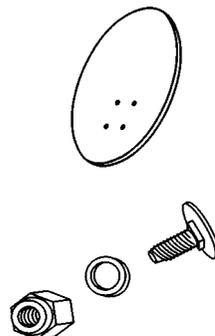
# Starting Your Installation Components of the Satellite Antenna

6

## DISH

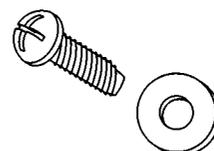
The dish reflects and focuses the signals from the satellites onto the LNBF.

Flathead bolts with nuts attach the dish to the support arm bracket.



## LNBF SCREW AND WASHER

The LNBF screw and washer attach the LNBF to the end of the support arm.



## CABLE CLIP (OPTIONAL)

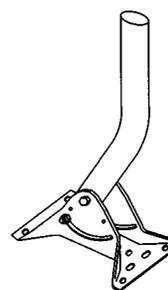
The cable clip holds the coaxial cable(s) to the top of the support arm bracket.



## MOUNTING BRACKET AND MAST ASSEMBLY

The mast assembly attaches the support arm (which holds the dish and the LNBF) to the mounting surface.

**Note:** If you are planning to use a pole to mount the satellite antenna, you will not need the mast assembly. In this case, the pole (instead of the mast) fits into the support arm bracket. However, you should keep the mast assembly in case you decide to relocate the satellite antenna.



# ***User and Installation Guide***

## **WHAT YOU NEED**

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### **WHAT YOU NEED TO KNOW**

Because you will make modifications to the location where you mount the satellite antenna, you should be somewhat familiar with and be able to safely perform the following procedures.

- ◆ You should be able to use a plumb line or level to set both horizontal and vertical surfaces. This is especially critical for vertical surfaces.
- ◆ You should know how to drill holes in the mounting surface (whether wood, brick, cinder block, etc.).
- ◆ You should know how to drill holes and run cabling through your building. This includes sealing the holes once the cable has been installed.

### **WHAT YOU NEED TO HAVE**

You will need the following items to install your system properly and take full advantage of the available features.

**Note:** Items marked with an asterisk (\*) are included in the optional Installation Kit. For the complete list of Installation Kit contents, see page 6-7.

- ◆ 8' triple phono (RCA) audio/video cord \*
- ◆ Copper-clad grounding rod - at least eight feet in length
- ◆ Grounding rod clamp
- ◆ Dual grounding block \*
- ◆ 30' Grounding wire, either 8 gauge aluminum or 10 gauge copper \*
- ◆ 2 RG-6 (coaxial) cables with "F" connectors (These cables should be sealed at the connector and suitable for outdoor use. One cable should reach from the satellite antenna LNBF to the grounding block, and the other cable should reach from the grounding block to the recorder). \*
- ◆ 75' RG-6 (coaxial) cable with "F" connectors
- ◆ 4 Lag screws (3" x 5/16"); 4 Lag screws (2" x 5/16") \*
- ◆ 4 Cable ties; 10 Cable clips for the coaxial cable \*
- ◆ Screwdrivers: Phillips and flathead
- ◆ Ladder (if necessary)

- ◆ Sledgehammer or small fence post driver
- ◆ Drill and 1/2 inch drill bit - long enough to drill through the exterior wall of your building
- ◆ Compass \*
- ◆ Silicone sealant (for sealing drill holes) \*

**Note:** You will need additional tools and materials, depending on the type of surface on which you mount the antenna. Each of the procedures for mounting the antenna lists these. If you find that you do not have the tools and skills for a certain procedure, call a professional, such as a satellite television dealer or an electrician, for assistance.

## OPTIONAL INSTALLATION KIT

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The Installation Kit (VU73457) is an optional product that contains the hardware and materials that you would typically use to install the system. To buy the Installation Kit, contact the location where your system was purchased or call the Service Center.

If you did not purchase the Installation Kit, but still plan to install your system yourself, you should gather the appropriate materials (such as those listed below) before beginning installation. The Installation Kit contains the following:

- ◆ *Installation Kit Guide*
- ◆ Installation video tape with step-by-step demonstrations
- ◆ 25' telephone cord with RJ-11 connectors
- ◆ Dual telephone adapter
- ◆ Telephone coupler, for connecting two telephone cords
- ◆ 8' Triple phono (RCA) audio/video cord
- ◆ Dual grounding block
- ◆ 30' Grounding wire, either 8 gauge aluminum or 10 gauge copper
- ◆ 25' RG-6 (coaxial) cable with "F" connectors
- ◆ 75' RG-6 (coaxial) cable with "F" connectors
- ◆ 4 Toggle anchors (3" x 1/4"); 4 Double expansion anchors
- ◆ 4 Machine bolts (3" x 1/4")
- ◆ 4 Lag screws (3" x 5/16"); 4 Lag screws (2" x 5/16")
- ◆ 4 Cable ties; 10 Cable clips for the coaxial cable

# User and Installation Guide

- ◆ Compass
- ◆ Silicone sealant



Tools, such as drills or screwdrivers, are *not* included in the Installation Kit.

## INSTALLING BATTERIES IN THE REMOTE

Four AAA batteries, packaged separately, are included with the remote control. See *Installing Batteries in the Remote* on page 3-1 for this procedure.

## SETTING THE REMOTE ADDRESS

When you get your recorder and remote, they are addressed to 1. Unless you experience problems, you do not need to change the address at this time. If you want to change the address, change it to a different number.

You may need to set the remote address in any of the following situations:

- ◆ You have a UHF remote, and you encounter interference caused by other nearby UHF remotes (for example, a neighbor's UHF remote or a UHF remote being used in another room of your building).
- ◆ There is another satellite receiver and remote being used in the vicinity.

**Note:** In either of the above situations, you may need to assign an address to your remote and recorder, so that the recorder responds only to that remote.

- ◆ Your recorder does not respond to the remote. You must match the addresses to be able to use the remote. In this case, it could be that the remote and recorder are set to different addresses. See *Setting the Remote Address* on page 3-2 for this procedure.

## TEMPORARILY CONNECTING THE RECORDER TO TV

You must connect the recorder to your TV and make sure the Smart Card is installed to get the information to aim your satellite antenna. In this step, it is not necessary to fully wire your recorder to all your electronic equipment.

See *Wiring Setups* on page 7-21 for suggested wiring configurations. The *Quick Install* on page 7-22 is the quickest and easiest to set up.

## **FINDING THE SATELLITES**

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Before you can decide on the mounting location for the antenna, you must determine the approximate location of the satellites. Then you must find a mounting site that provides an unobstructed signal path from the satellites to the antenna.

### **WHAT YOU WILL NEED**

- ◆ Compass
- ◆ Recorder with built-in satellite receiver, connected to a TV

### **DETERMINING THE DIRECTION TO THE SATELLITES**

You must determine the direction to the satellites from your location, to help you determine where to mount the antenna. You must have a clear line of sight from the antenna location to the satellites. Use the following procedure to find the best location for the antenna, while keeping in mind the considerations discussed in *Discussion of Potential Mounting Sites* on page 6-13.

After you finish mounting the antenna, you must aim the dish to get the strongest signal. See *Aiming the Antenna for the Strongest Signal* on page 7-12 for this procedure.

### **WHERE ARE THEY?**

You must know where the satellites are to choose a good location to mount the antenna. The satellites orbit the Earth together, over the equator. For everyone in the United States, this means that the satellites are south of your location.

The satellites are approximately 22,300 miles up from the surface of the Earth. They are in what is called a "geosynchronous orbit." This means that the satellites stay aligned over one place on the surface of the Earth. If you could see them, they would seem to hang in one spot in the sky.

Because the satellites do not move in relation to the surface of the Earth, it is easy to maintain the signal. Once you aim the antenna at the satellites, you will not have to reposition the antenna to follow the satellites.

The satellites are located over the equator, due south of Reno, Nevada, at 119° West.

# User and Installation Guide

## FINDING THE DIRECTION AND ELEVATION

When determining the approximate location of the satellites, you need to find the azimuth (South, Southeast, or Southwest direction to the satellites) and elevation (angle up to the satellites) from your location. "Azimuth" is also called "direction." This *Guide* uses the term "direction".

Finding the satellites is easy. You first need to connect the recorder to your TV, and turn on the recorder and TV. Tune your TV to channel 3 or 4. *See Wiring Setups* on page 7-21 for more information.

Use the **Point Dish and Signal Strength** menu to find the direction and elevation of the satellites from your location. After you complete the installation of the satellite antenna, you can then fine-tune the aiming of your satellite antenna to receive the strongest signal. To open the **Point Dish and Signal Strength** menu, do the following.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button to set the recorder to the SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Installation</b> option.		
5. Select the <b>Point Dish and Signal Strength</b> option.		
6. Use the arrow buttons to highlight the ZIP Code field. Use the number pad buttons to enter each digit of your ZIP code.	         	Example 
7. As soon as you enter the last digit of your ZIP code, the recorder displays the direction (azimuth) and elevation on the menu. Write down these numbers and go on to the next section.		Example 
Direction or Azimuth : _____ Elevation: _____		

## FINDING A CLEAR LINE OF SIGHT

"Finding a clear line of sight" means finding a location for the satellite antenna so that its view of the orbiting satellites is unobstructed by trees, buildings, or any other obstructions. This includes making sure that sapling trees are not likely to grow up or out into the line of sight. Also, consider seasonal changes. An unobstructed site in winter may be obstructed by foliage in spring and summer.

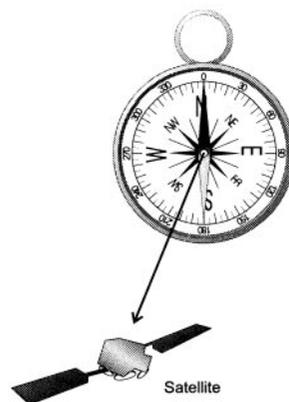
1. Take a compass and the direction and elevation numbers to your planned location for the satellite antenna.

Make sure the compass is at least a foot away from other metal objects, and that there are no magnetic objects or electronic devices nearby. Holding the compass so the needle can swing freely, turn the compass until the dark end of the compass needle is aligned on the N. This points to magnetic North.

The compass face is divided into 360 degrees. From your location, North is zero degrees ( $0^\circ$ ), East is  $90^\circ$ , South is  $180^\circ$ , and West is  $270^\circ$ .



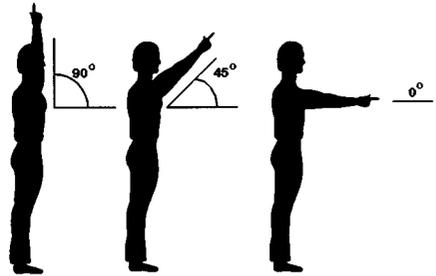
2. On the compass, find the direction number provided by the **Point Dish and Signal Strength** menu. Turn to face this number, while keeping the dark end of the needle over the N. This is the direction to the satellites. Find a landmark, or lay a stick or board on the ground that lines up in that direction.



## User and Installation Guide

3. Use the elevation number to find out how high the satellites are in the sky from your location. You know that vertical is  $90^\circ$ , and horizontal  $0^\circ$ , and halfway in between is  $45^\circ$ .

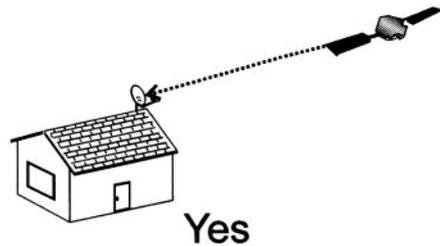
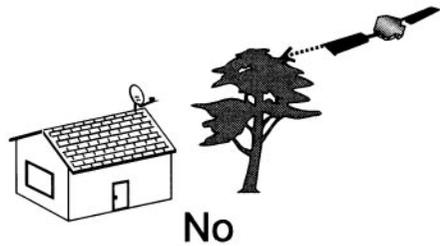
Stand close to where you plan to mount the satellite antenna and face in the direction that you marked for the direction to the satellites. Using the elevation angle, find the closest approximation to that angle in the sky. You now are pointing to the approximate location of the satellites.



4. Note whether there are any obstructions between you and the satellites. Leave a wide margin for adjustment, since you have not yet aimed the antenna exactly.

If there are obstructions, you will have to find a new location, or remove the obstruction, if possible.

Also, make sure that the antenna is accessible for removing snow and other debris. If necessary, repeat steps 1 through 4 until you have located the best location for the antenna. The best location should provide a sturdy support for the antenna, plus it must have a clear line of sight. It should also be easily accessible. Mark the spot and the direction to the satellites.



### DISCUSSION OF POTENTIAL MOUNTING SITES

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When you are surveying your property for appropriate sites for the satellite antenna, keep in mind that you can mount the satellite antenna on a variety of surfaces: brick, cinder block, wood, some sidings, rooftop, or a pole.

Since installing the satellite antenna may involve drilling into the wall or roof of your building, or digging a hole and using cement, you should be very confident of the location *before* beginning installation. Errors can be expensive and time-consuming.

The following guidelines apply to *all* mounting surfaces and locations.

### WEATHER AND WIND CONSIDERATIONS

The satellite antenna can withstand most kinds of weather. However, extremely strong winds could damage the base on which the satellite antenna is mounted.

A strong wind can cause the satellite antenna to exert several hundred pounds of pressure on the mounting surface, so the surface must be stable and strong. Such a mounting surface also helps ensure against movement of the satellite antenna, which would interfere with signal reception. In general, the stronger the signal you maintain, the better the reception during snow, rain, and heavy cloud cover.

### Do's



You should *always* follow these instructions to help ensure against injury to yourself and damage to your equipment or mounting surface. See *Important Product Safety Instructions* on page ii for further safety instructions.

- ◆ Assemble the satellite antenna in a safe location *before* climbing up to the mounting location. Use caution when climbing, and when working at the mounting location.
- ◆ Install the satellite antenna only on a solid surface such as cinder block, brick, or solid foundation material. If you install it on the side of a building, make sure to attach the bolts directly to a building stud or other solid material. Use the appropriate drilling and attachment hardware for the surface.
- ◆ Make sure you have determined the best location for the satellite antenna *before* drilling the holes in your building or setting up the mounting pole. Mistakes can be costly.
- ◆ All installations should conform to your local building and electrical codes. If you are not sure, contact a licensed building inspector or electrician in your area to assist you. Be aware that community covenants, if any, may have additional requirements.
- ◆ Choose a site that is easily accessible in most weather conditions. You may need to clean snow or debris off the satellite antenna.

## User and Installation Guide

- ◆ Place the satellite antenna as close to the recorder as possible. Use no more than 100 feet of cable between the recorder and the satellite antenna, unless you install a line amplifier to boost the signal. Otherwise, the system is more likely to lose the signal during periods of rain, snow, or heavy cloud cover.
- ◆ Consider seasonal changes. The site may appear unobstructed in the winter, but spring and summer foliage could block the signal to the satellite antenna.

### Do NOT'S



You should *always* follow these instructions to help ensure against injury to yourself and damage to your equipment or mounting surface. See *Important Product Safety Instructions* on page ii for further safety instructions.

- ◆ *Never* install the satellite antenna near power lines.
- ◆ Do *not* install the satellite antenna where it can be jostled, bumped, or blocked by people, animals, or vehicles.
- ◆ Do *not* install the satellite antenna where it is exposed to high winds. Do *not* try to install the satellite antenna in windy or stormy weather, particularly if there is a chance of lightning.
- ◆ Do *not* attempt to fasten the satellite antenna to the mortar between bricks or cinder blocks.
- ◆ Do *not* mount the satellite antenna on vinyl or aluminum siding. These materials are structurally too weak to securely hold the satellite antenna, even with a building stud underneath. The siding would have to be crushed, or the forces of wind and weather over time would crush the area under the foot of the antenna mast.
- ◆ Do *not* mount the satellite antenna downwind of a chimney or furnace vent. Ashes and dirt could collect on the dish and LNBF, possibly causing damage and poor reception. If practical, locate the antenna so the dish faces away from the vent.
- ◆ Do *not* install the satellite antenna on stucco or imitation masonry unless the base material is solid. Do *not* mount the satellite antenna on composite materials such as strand, chip, fiber, or particle board unless the fastener attaches securely to a wall stud, rafter, or other foundation material beneath the surface.
- ◆ Do *not* mount the satellite antenna on a railing, on a tile roof, or in a tree.

# Starting Your Installation

## Discussion of Potential Mounting Sites

6

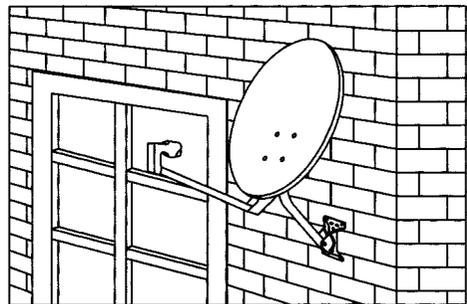
### MOUNTING THE ANTENNA ON BRICK

Materials Required	Tools Required
<ul style="list-style-type: none"><li>◆ 4 wall anchors, 1/4"</li><li>◆ 4 machine bolts, 1/4" x 3"</li></ul>	<ul style="list-style-type: none"><li>◆ drill</li><li>◆ 1/2" masonry drill bit</li><li>◆ 7/16" socket or box-end wrench</li><li>◆ bubble level or plumb line</li><li>◆ pencil</li></ul>



"Brick" is defined as a solid brick wall or other structure. This does *not* include brick facing that is used on some buildings over the main structure. If you are mounting the satellite antenna on brick facing, see *Mounting the Antenna on Siding* on page 6-16.

You can mount the satellite antenna on a solid brick wall.



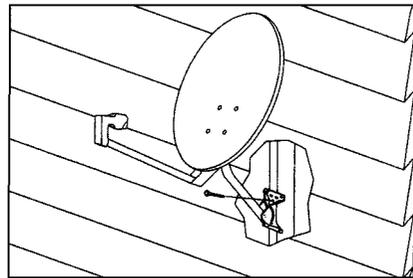
- ◆ The surface must be flat and even.
- ◆ The mortar between the bricks should be in good to excellent condition. The satellite antenna foot should be mounted on several bricks. As the wind tugs on the satellite antenna, the foot will put heavy pressure (several hundred pounds) on those bricks in different directions. Loose or weakened mortar may allow the bricks to shift, changing the dish angle and reception quality, and possibly damaging the satellite antenna and the building. The installed satellite antenna could also hasten the deterioration of old mortar.
- ◆ To mount the satellite antenna on brick, make sure that all of the fasteners are set into the brick, not into the mortar between the bricks. Use materials necessary to follow the local building codes.

# User and Installation Guide

## MOUNTING THE ANTENNA ON SIDING

Materials Required	Tools Required
<ul style="list-style-type: none"><li>◆ 2 lag screws, 1/4" x 3"</li><li>◆ 4 lag screws, 5/16" x 2"</li></ul>	<ul style="list-style-type: none"><li>◆ drill</li><li>◆ 1/8" twist drill bit</li><li>◆ 3/16" twist drill bit</li><li>◆ 7/16" socket or box-end wrench</li><li>◆ bubble level or plumb line</li><li>◆ pencil</li></ul>

We do *not* recommend mounting the satellite antenna on aluminum or vinyl siding. These materials can be structurally unsound, causing eventual shifting of the dish. To mount the satellite antenna on solid siding, make sure to follow the suggestions below.



- ◆ The surface must be flat and even. You may need to use a separator, or shim, between the shingles to even the siding surface.
- ◆ Mount the foot on the foundation material beneath the siding surface. This may be a building stud, cinder block, or other solid material. To locate the studs, find the vertical line of nails where the siding is attached to the building, or use a stud finder.

# Starting Your Installation

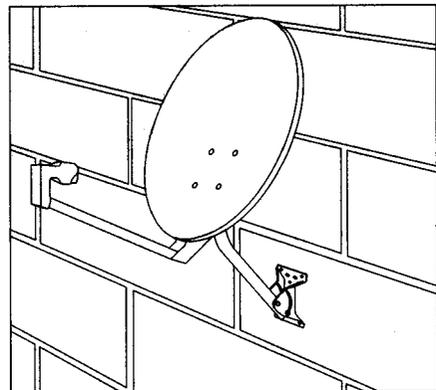
## Discussion of Potential Mounting Sites

6

### MOUNTING THE ANTENNA ON CINDER BLOCK

Materials Required	Tools Required
<ul style="list-style-type: none"><li>◆ 4 toggle anchors, 1/4"</li><li>◆ 4 machine bolts, 1/4" x 3"</li></ul>	<ul style="list-style-type: none"><li>◆ drill</li><li>◆ 1/2" masonry drill bit</li><li>◆ 7/16" socket or box-end wrench</li><li>◆ bubble level or plumb line</li><li>◆ pencil</li></ul>

You can mount the satellite antenna on cinder blocks, whether they are part of a wall or the side of a building.



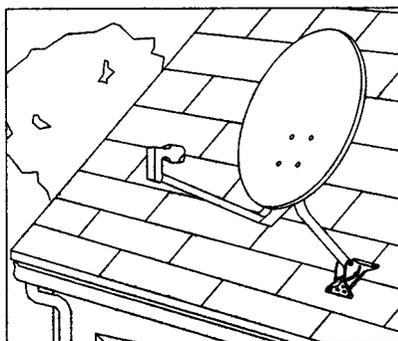
- ◆ The surface must be flat and even.
- ◆ If you are mounting the satellite antenna on a building, make sure that the surface is true cinder block, not just a block facing over another material. If you are mounting the satellite antenna on block facing, see *Mounting the Antenna on Siding* on page 6-16.
- ◆ Make sure that the cinder block and mortar is in good to excellent condition.
- ◆ Use toggle anchors and machine bolts, inserted into the hollow of the block, as fasteners. Other types of anchors may not have the required strength.

# User and Installation Guide

## MOUNTING THE ANTENNA ON THE ROOF

Materials Required	Tools Required
<ul style="list-style-type: none"><li>◆ 2 lag screws, 1/4" x 3"</li><li>◆ 4 lag screws, 5/16" x 2"</li><li>◆ roof sealant</li></ul>	<ul style="list-style-type: none"><li>◆ drill</li><li>◆ 1/8" twist drill bit</li><li>◆ 3/16" twist drill bit</li><li>◆ 7/16" socket or box-end wrench</li><li>◆ bubble level</li><li>◆ ladder</li><li>◆ pencil</li></ul>

You can mount the satellite antenna on the roof. This usually provides the highest available location.



- ◆ Attach the satellite antenna to a rafter beneath the roof surface. You can locate the rafter by looking for the nails attaching the fascia board to the rafters. You can also locate the rafters from inside the attic.
- ◆ Make sure that the location is easily accessible in most weather conditions. You may need to sweep off snow, remove debris, or clean dirt from the dish surface.
- ◆ To prevent the roof from leaking, you should caulk the holes, or use silicone sealant around the holes and at the bottom of the satellite antenna foot where it contacts the surface. Apply the sealant before you bolt the foot down tight.
- ◆ Place the antenna so it is not directly downwind from a chimney or furnace vent. Soot can gather on the dish surface, weakening the reception. If practical, locate the antenna so the dish faces away from the chimney.
- ◆ Do *not* mount the satellite antenna on a tile roof.

# Starting Your Installation

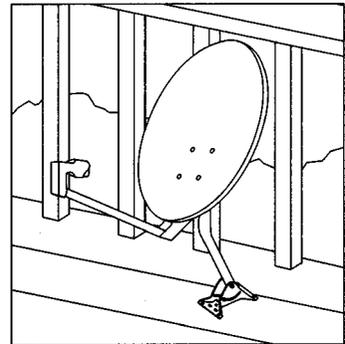
## Discussion of Potential Mounting Sites

6

### MOUNTING THE ANTENNA ON WOOD

Materials Required	Tools Required
◆ 4 lag screws, 5/16" x 2"	◆ drill ◆ 1/8" twist drill bit ◆ 3/16" twist drill bit ◆ 7/16" socket or box-end wrench ◆ bubble level or plumb line ◆ pencil

You can mount the satellite antenna on a wooden deck, wooden beam, or other wooden surface.



- ◆ The surface must be flat and even.
- ◆ Make sure that the wood has a solid foundation, and is secured. It should be a strong piece that cannot be moved or jiggled.
- ◆ Do *not* mount the satellite antenna on a railing.
- ◆ Do *not* mount the satellite antenna in a tree.

# ***User and Installation Guide***

## **NOTES**

# 7 Installing and Wiring Your System

## INSTALLING THE SATELLITE ANTENNA

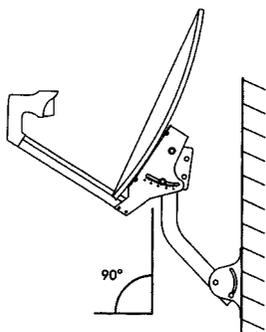
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Once you have found the direction and elevation of the satellites and decided on the best mounting location, you can install the satellite antenna. Read through the *Discussion of Potential Mounting Sites* on page 6-13 before selecting your mounting location.

### ORIENTING THE MAST OR POLE

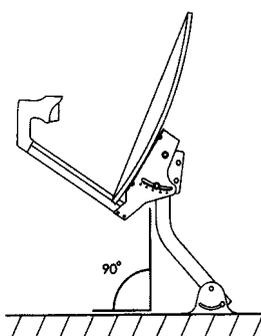
*It is very important that the upper part of the mast or the mounting pole, whichever you use, be truly plumb (that is, vertical).* If not, the elevation provided by the recorder for your location will be inaccurate. This will make it more difficult for you to aim the antenna for the strongest signal.

**Vertical Mounting Surfaces**



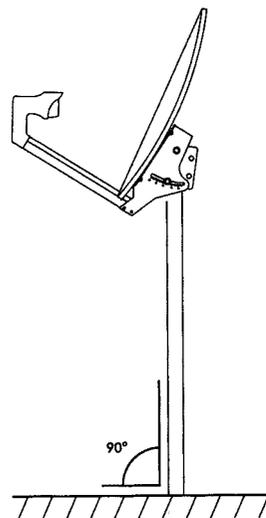
The figure above shows how you should orient the mast on the foot for mounting on vertical surfaces.

**Horizontal Mounting Surfaces**



The figure above shows how you should orient the mast on the foot for mounting on horizontal surfaces.

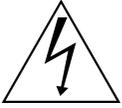
**Pole Mounting Surfaces**



The figure above shows how you should orient the mast on the mounting pole.

# User and Installation Guide

## INSTALLING THE ANTENNA MOUNT

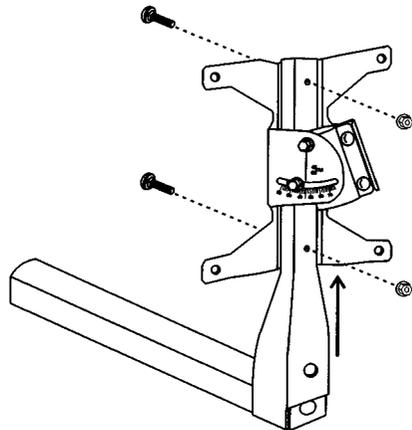


Assemble the satellite antenna in a safe location *before* climbing up to the mounting location. Use caution when climbing, and when working at the mounting location.

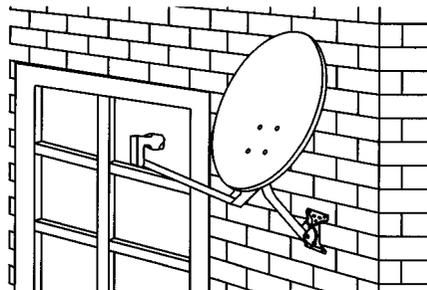


*Before* you attach the satellite antenna to a mounting surface, you should make sure that you can route the cable from your chosen location into the building, drilling holes where necessary, to the recorder.

1. Gather all the items you will need for the assembly.
2. If the dish support arm and the bracket that holds it came separately, attach the arm to the bracket with the supplied bolts.



3. Mount the foot on the solid surface you have chosen.

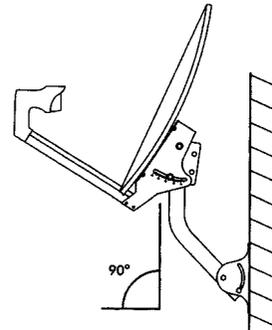


# Installing and Wiring Your System

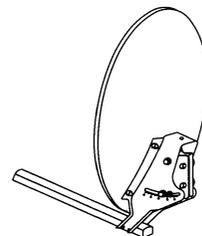
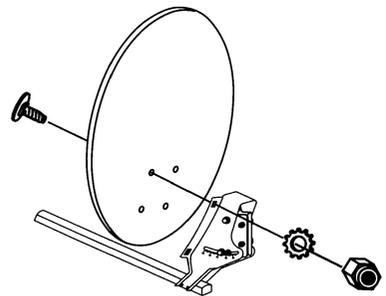
## Installing the Satellite Antenna

7

- Adjust the foot and mast so that when the foot is mounted, the upper part of the mast is, as accurately as possible, vertical. Use a plumb line or bubble level to make sure the upper part of the mast is vertical from at least three readings. *Alignment of the dish is nearly impossible if the mast is not vertical.*



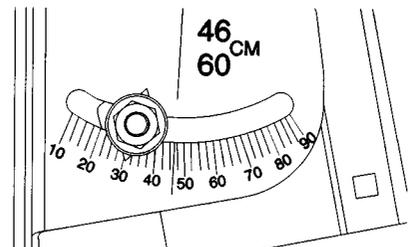
- Place the dish on the support arm. Align the flathead bolts with the dish support bolt holes on the dish supports.
- Insert each flathead bolt into one of the holes, and secure it by threading a lock nut and washer onto the bolt on the back side. Do this for all the flathead bolts.
- Tighten the bolts so that they are snug.



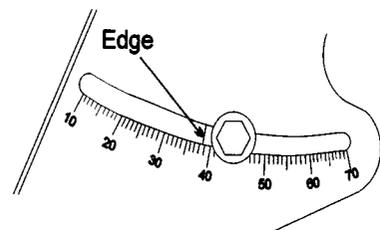
This is a picture of the support arm and bracket with the dish attached.

- Tilt the support bracket to the approximate elevation of the satellites. Use the elevation you found earlier using the **Point Dish and Signal Strength** menu.

If you have the bracket with points above the elevation washer, align the elevation marks on the bracket with the points on the washer. Make sure you are looking at the side with the "46/60" lettering. The other side is for a different-sized dish.



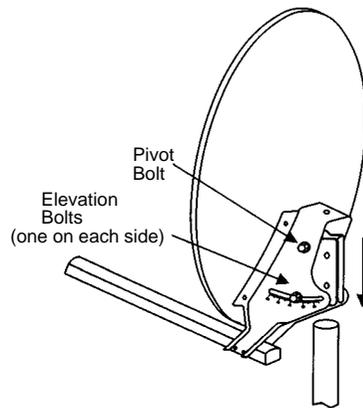
If you have the bracket where the edge of the mast shows through the curved slot, align the edge with the desired elevation mark.



## User and Installation Guide

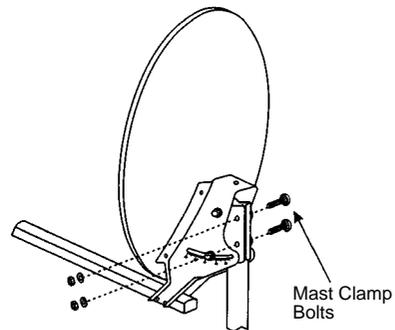
9. Slide the mast clamp down onto the mast.  
Make sure that the pivot bolt rests on the top of the mast.

Tighten the elevation bolts and the pivot bolt so that the bracket is snug, but can still be moved up and down.



10. Turn the antenna mount on the mast or pole to align the LNBF support arm in the direction of the satellites. Use the direction you found earlier using the **Point Dish and Signal Strength** menu.

Tighten the mast clamp bolts so that the clamp is snug, but can still be moved back and forth.



You may have either one or two LNBF cables to attach, depending on which type of LNBF you purchased: single or dual output.

**Note:** If you have to attach two cables to the LNBF, the following instructions apply to both cables. Use only RG-6 coaxial cables with "F" connectors. *Do not use the 6 foot RF or VHF cable supplied with the recorder.* This cable is used for the recorder to TV connection.

# Installing and Wiring Your System

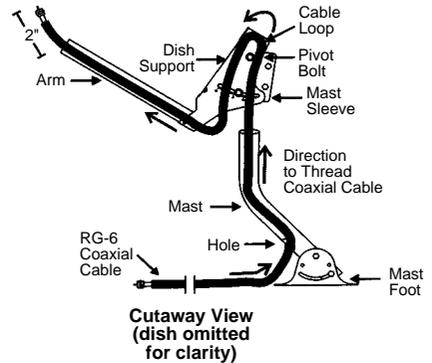
## Installing the Satellite Antenna

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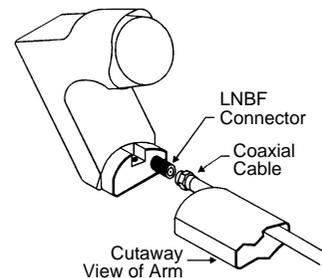
11. Thread the LNBF cable into the cable hole near the mast foot, up the mast and out the top of the mast.

Do *not* kink or pinch the cable.

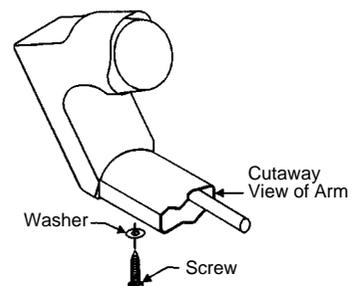
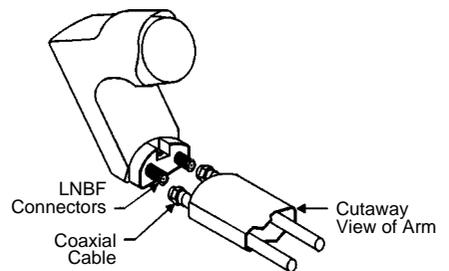
12. Take the end of the cable coming out the top of the mast, and thread it up the support arm.
13. Loop the end of the cable over the pivot bolt.
14. Bring the cable back down on the outside of the mast sleeve, between the dish supports.
15. Thread the cable through the arm and out the end of the arm.
16. Adjust the cable so that there are about 2 inches of cable out the end of the arm.
17. Attach the LNBF to the coaxial cable(s).



18. Fit the LNBF into the dish support arm, sliding it in until it is inserted firmly. You may have to adjust the cable, pulling it back gently through the support arm.

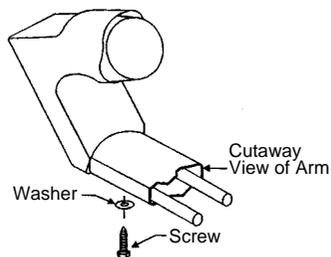


19. Attach the LNBF to the support arm, using the LNBF screw and washer.



# User and Installation Guide

20. Pull the cable loop up into the top of the mast.



## INSTALLING THE ANTENNA ON A METAL POLE

**Note:** Skip this section if you are using the mast that came with the satellite antenna.

Materials Required	Tools Required
◆ cable ties	◆ post hole digger
	◆ cement
	◆ 7/16" socket or box-end wrench
	◆ bubble level or plumb line
	◆ pole

You can mount the satellite antenna on a metal pole if necessary. This allows you a wider range of locations for installation. If used, the metal pole should have an outside diameter of 1.62 to 1.68 inches (typically, 1 5/8 inches), and should be sturdy enough not to flex in high winds. If the clamp is slightly loose, use sandpaper or emery cloth to shim the clamp, and tighten.

You can mount the satellite antenna on a metal pole that is attached to an existing building. Make sure to follow all safety requirements, and ground the satellite antenna, pole, and cables in accordance with the *National Electrical Code* and local electrical codes.

You can also mount the satellite antenna on a metal pole installed in the ground, as long as the soil provides a firm foundation (that is, the soil is not so rocky as to prevent digging a hole, nor so moist as to prevent proper curing of cement in the hole).



Take *extreme* care to avoid contacting any overhead power lines, lights, and power circuits while you are installing the satellite antenna. Contact with any of these could prove fatal. Do *not* install the satellite antenna near power lines.



*Before* you attach the pole to a mounting surface or install the pole in the ground, you should make sure that you can route the cable from your chosen location into the building, drilling holes where necessary, to the recorder.

## ***Installing and Wiring Your System*** ***Installing the Satellite Antenna***

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The most common method to install the pole in the ground is to use cement to secure it in the hole. Make sure that the pole remains at 90° from horizontal as the cement dries. You may want to use guy wires or braces to keep the pole steady.

A way of ensuring that the pole does not rotate in the dried cement is to cut the bottom of the pole at an angle, and to place a brick or flat rock in the bottom of the hole to support the pole before pouring in the cement.

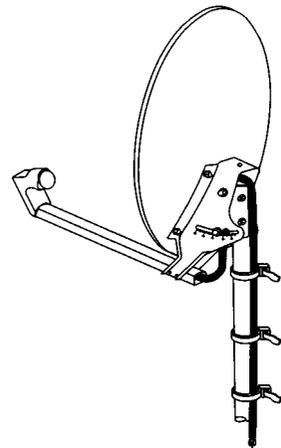
Use a plumb line to ensure that the pole is at 90° from horizontal. Take at least three measurements on different sides of the pole periodically while the cement is drying. Having the pole plumb allows you to accurately aim the antenna. If the pole is slightly off plumb, you can still aim the antenna for good reception, but it is very difficult.

Typically, the cable is routed down outside the pole. However, if you want to route the LNBF cable up through the pole in the same manner as you would through the mast, you will need to drill a hole in the pole big enough to do this. The hole should be above ground after the pole has been set in the cement.

You will not need the metal foot and mast assembly provided with the antenna for this installation, but you should keep the assembly in case you wish to relocate the antenna later.

Follow the instructions for mounting the satellite antenna on a mast, but use the metal pole in place of the mast and foot.

Bring the LNBF cable down the outside of the pole. Make sure to secure the cable firmly, but not too tightly, to the pole using tie-downs.



# User and Installation Guide

## GROUNDING AND WIRING THE SATELLITE ANTENNA

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As with any such installed devices, the satellite antenna and the coaxial cable(s) should be grounded in accordance with the *National Electrical Code* (NEC) and local electrical codes to provide some protection against damage caused by lightning strikes and other electrical discharges. Even lightning strikes several miles away can generate enough electricity in the air to damage your system. This section covers general steps you should take to properly ground both the satellite antenna mast and the cable.



The importance of proper grounding *cannot* be overemphasized. It will minimize the potential for damage to your system and maximize safety. How you ground the system can also affect the performance of the system. *This section is intended as a guideline only.* See page A-3 for applicable sections of the *National Electrical Code* as of the publication date of this Guide. For more information, refer to the *National Electrical Code* and local electrical codes.



The *National Electrical Code* and some local electrical codes permit the use of types of grounding other than those discussed in this Guide. Follow the *National Electrical Code* and all local electrical codes. Consult a licensed electrician or your local electric utility company if you have any questions.



Make sure to locate and avoid underground sewer, gas, water, and telephone lines *before* digging. Your local utility companies can tell you where these are located.

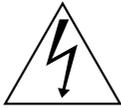
### WHAT YOU WILL NEED

- ◆ Copper-clad grounding rod - at least eight feet in length
- ◆ Grounding rod clamp
- ◆ Cable clips - Use weather-resistant, nail-in cable clips to route the coaxial cable. The clips hold the coaxial cable in place and prevent damage to it. Make sure not to pinch or puncture the cable.
- ◆ Coaxial cable grounding block

# Installing and Wiring Your System Grounding and Wiring the Satellite Antenna

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- ◆ Two pieces of No. 10 solid copper or No. 8 solid aluminum ground wire - long enough to run from the coaxial cable grounding block to the grounding rod. A typical installation requires two to three feet of wire.



A ground wire must *always* be a single piece of wire. *Never* splice two wires together for a ground. Corrosion and weathering can lead to a poor connection at the splice, making the ground ineffective and dangerous. If you cut your ground wire too short, replace it with a new single wire cut to the correct length.

- ◆ Screwdrivers: Phillips and flathead
- ◆ Ladder (if necessary)
- ◆ Sledgehammer or small fence post driver
- ◆ Drill and 1/2 inch drill bit - long enough to drill through the exterior wall of your building
- ◆ Silicone sealant



*Before* drilling any holes in the wall or roof of your building, make sure there are no wires or pipes in the area of the holes. If you are not comfortable doing this, contact a professional in your area. Make sure that you follow *all* safety instructions and building code regulations.

The main objective of routing the cable is to secure it in place where it will not be dislodged by people, animals, or anything else, and it will not be damaged. Use cable clips in appropriate spots to secure the cable to the building. If you need to drill holes in portions of your building that may be exposed to rain or moisture, seal the holes with silicone sealant after installation.

## BEFORE YOU START

The following guidelines apply to *all* grounding systems.

- ◆ Make sure the grounding system provides a solid, permanent earth grounding in accordance with the *National Electrical Code* and local electrical codes. Contact a licensed electrician or the local electric utility company if you have any questions.

# User and Installation Guide

- ◆ Refer to the grounding diagram on page ii of the "Important Product Safety Instructions." Note that this diagram suggests grounding the satellite antenna and coaxial cable to the power service grounding electrode system of the building.
- ◆ If you install a grounding electrode system separate from the power service grounding electrode system, connect the separate electrode to the grounding system in accordance with the *National Electrical Code* and local electrical codes.

## INSTALLING THE GROUNDING BLOCK

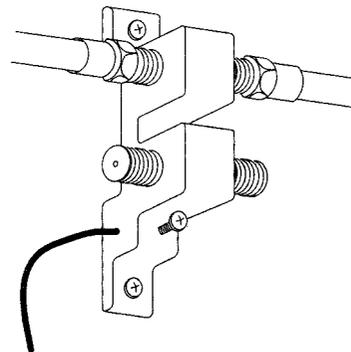
Depending on your mounting site and personal preference, you may want to install the grounding block onto the side of the building, or on some other sturdy structure near the satellite antenna. Make sure that the location is stable, and that you bolt the grounding block down securely.

Locate the grounding block as close to the grounding rod as possible.

## ATTACHING THE CABLE TO THE GROUNDING BLOCK

1. Using the shortest path possible, route the coaxial cable from the LNBF to the coaxial terminal on one side of the grounding block.

If you are using a dual-port LNBF, route both coaxial cables to the grounding block.



Grounding Block with LNBF Cable

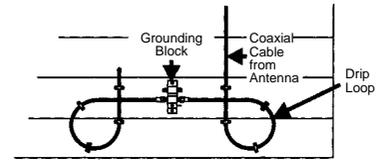
2. For each coaxial cable attached to the grounding block, connect a second coaxial cable onto the coaxial terminal on the other side of the grounding block. This is the cable that you will route into the building to the recorder.
3. Insert one end of the ground wire into the grounding terminal on the grounding block. Tighten the screw to hold the wire firmly.

# Installing and Wiring Your System

## Grounding and Wiring the Satellite Antenna

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4. Attach the other end of the ground wire to a grounding electrode in accordance with the *National Electrical Code* and local electrical codes.
5. Use the cable clips to attach the cable to the side of the building. This helps prevent damage. The drip loops allow moisture to drip from the cables before being channeled into the grounding block or the building.



### GROUNDING THE MAST

To protect your house and recorder, your antenna mast must also be grounded. To ground the mast, run a #8 or larger copper or aluminum wire from one of the bolts in the mast foot to the grounding rod, using the shortest possible path.

### WIRING FROM THE ANTENNA TO THE RECORDER

- ◆ Use the shortest route possible to run the coaxial cable from the grounding block into the building and to your recorder. Do not kink or pinch the cable. This may damage it.
- ◆ Locate your recorder inside the building against or near an outside wall. Then drill a 1/2-inch hole through the outer wall to pass the cable inside the building.
- ◆ If the recorder is located in an interior room, route the cable through the outside wall, and into an attic, basement, or crawl space to access the location.
- ◆ Seal the exterior hole with silicone or other weatherproof sealant material after installation.
- ◆ Once the cable is inside the building, you may attach it to a wall receptacle or directly to the recorder.



Tighten the back panel coaxial cable connections *only* by hand. Using a wrench may over-tighten the connections, causing damage. Such damage is *not* covered by the Limited Warranty.

# User and Installation Guide

## AIMING THE ANTENNA FOR THE STRONGEST SIGNAL

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Typically, once you see a clear picture on your TV, a stronger signal will not noticeably affect the quality. Keep trying to aim the satellite antenna for the strongest possible signal. The stronger the signal, the better your chance of uninterrupted reception during periods of rain, snow, and heavy cloud cover. Do this *after* the satellite antenna is installed, wired, and grounded.

When you are fine-tuning the reception, the **Signal Strength** bar in the **Point Dish and Signal Strength** menu shows you the signal level you are receiving. You can also use the signal tone if you cannot see the television screen.

The possible levels are between 0% and 100%. It is not necessary for the signal strength to reach 100%, and you will most likely not get the signal strength to this level.

The **Signal Strength** bar remains *red* with the word "Unlocked" displayed until you aim the satellite antenna at the satellites, and until you receive a strong enough signal to see a picture. Once this happens, the **Signal Strength** bar turns *green* and the word "Locked" is displayed. You can then fine-tune the aim of the antenna to gain the strongest possible signal.

## FINE-TUNING THE AIM OF THE SATELLITE ANTENNA

If practical, try to keep the TV in view while doing the following procedure. Or, turn up the volume to use the signal sound to tell you when the dish has been aimed for best reception (the tone rises as the signal grows stronger, and lowers if the signal drops). If this is not practical, having an assistant will be helpful. This way one person can adjust the dish while the other person is watching the signal strength on the TV screen. The person watching the TV screen can then tell you when the signal is at its maximum practical strength.

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Installation</b> option.		

# Installing and Wiring Your System Aiming the Antenna for the Strongest Signal

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5. Select the **Point Dish and Signal Strength** option.

The recorder displays the **Point Dish and Signal Strength** menu.

Transponder refers to the channel transponder numbers that the recorder receives. Transponder numbers are automatically displayed.

1

1 Point Dish/Signal

**Point Dish and Signal Strength**

To calculate azimuth and elevation angles, enter your ZIP code

Save

Cancel

Help

Transponder: 01 ZIP Code: 80155

Azimuth Angle: 191  
Elevation Angle: 42

Angles adjusted for magnetic / true north deviations

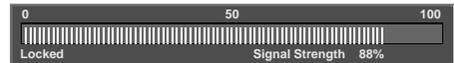
0 50 100

Locked Signal Strength 88%

6. Look at the **Signal Strength** bar.

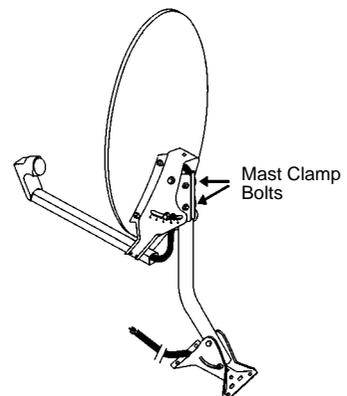
If it is *red* and the word "Unlocked" is displayed, you may be aiming at the satellites but without a strong enough signal for a picture. If you are using the audio tone, the sound will be an intermittent beeping tone.

If it is *green* and the word "Locked" is displayed, you are aiming at the satellites and have a strong enough signal for a picture. Also, the audio tone will be steady. It rises as the signal gets stronger, and lowers as the signal strength drops.



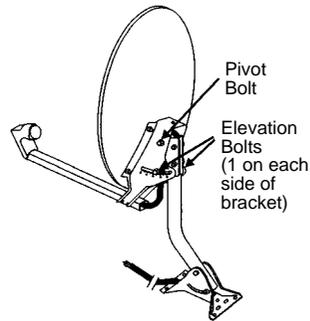
Avoid positioning yourself directly in front of the satellite antenna while aiming it, as your body may block much or all of the satellite signal.

7. Loosen the mast clamp bolts just enough to be able to move the support bracket. Slowly move the dish from side to side until you find the strongest signal. Tighten the mast clamp bolts just enough so the dish cannot be moved horizontally.



## User and Installation Guide

- Loosen the elevation bolts and the pivot bolt just enough to be able to move the support bracket. Slowly move the dish up and down until you find the strongest signal. Tighten the elevation bolts and pivot bolt just enough so the dish cannot be moved vertically.



- Repeat steps 7 and 8 until the **Signal Strength** bar is *green*, the word "Locked" is displayed, and you have gained the strongest signal possible.

**Note:** Move the dish slowly from side to side, or slowly up and down, not both at one time. Loosen the bolts before each movement, and tighten them again before the next movement.

- Press the remote control **View** button to exit the **Point Dish and Signal Strength** menu.

The recorder will display an **Attention** message asking whether the installation is complete. Select the **Yes** option.

The recorder will display a **Warning** message during satellite transmission ("download") of important system information to the recorder. Follow the direction in the message, not to disturb or unplug the recorder during the download.

When the download is done, the recorder will briefly display an **Attention: Acquiring Satellite Signal** message. Then, the recorder should display the Preview Channel, which tells you about available programs, channels, and services. This indicates that you have properly aimed the dish.

- Tighten all the bolts to prevent movement of the satellite antenna.
- Mark the final locations on the mast and mounting bracket with a permanent marker. This assists you later if you have to realign the antenna because of movement due to wind or weather.

**Note:** Do *not* scratch the painted surfaces to mark them. This will cause rusting.

# Installing and Wiring Your System Connecting the Recorder to a Telephone Line



## CONNECTING THE RECORDER TO A TELEPHONE LINE

You *must* connect your recorder to an active telephone line if you want to purchase pay per view programs using the recorder. Attach a telephone line with a standard RJ-11 connector to the **Telephone Jack** on the recorder back panel, and then connect the line to an active telephone connection.

When you purchase pay per view programs, the recorder stores the information in its memory. The recorder dials into the Service Center to send the purchase information. These calls are made in the middle of the night, at irregular times, and are toll-free (no cost to you).

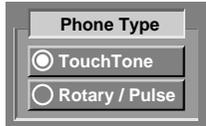


The recorder *must* be connected to an active telephone line at all times to order pay per view programs using the recorder. If you use a wireless telephone jack, be aware that some such jacks *do not* support all the features of this recorder.

You must also set up the recorder for the type of telephone system you have (touchtone or rotary/pulse), and specify a telephone number prefix, if such a prefix is required to place an outside call.

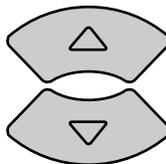
**Note:** A prefix is usually required only for business installations. For most residential installations, the default setting of **No prefix needed** will enable correct operation. In this case, you need only specify the telephone type.

Do the following:

	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>System Setup</b> option.		
4. Select the <b>Installation</b> option.		
5. Select the <b>Telephone System</b> option.		
6. Press the <b>Up</b> arrow button to move the highlight to the <b>Phone Type</b> list.		

# User and Installation Guide

7. Press the **Up** or **Down** arrow button to highlight either the **TouchTone** or the **Rotary/Pulse** option.



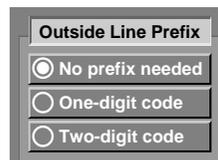
8. Press the **Select** button.



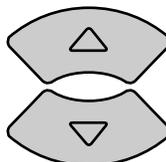
**Note:** For most residential installations, you need only specify the telephone system type. If this is the case, select the **Save** option to save the above setting, and stop here. If not, do steps 9 and 10 before you select the **Save** option.



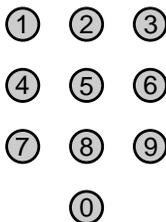
9. Press the **Left** arrow button to move the highlight to the **Outside Line Prefix** list.



10. Press the **Up** or **Down** arrow button to highlight the **No prefix needed**, the **One-digit code**, or the **Two-digit code** option. Press the **Select** button.



If you selected the **One-digit code** option, the recorder displays a box where you must enter the digit. To do this, press the appropriate number pad button.



If you selected the **Two-digit code** option, the recorder displays boxes where you must enter the digits. To do this, press the appropriate number pad buttons.

11. Select the **Save** option to save the above settings.



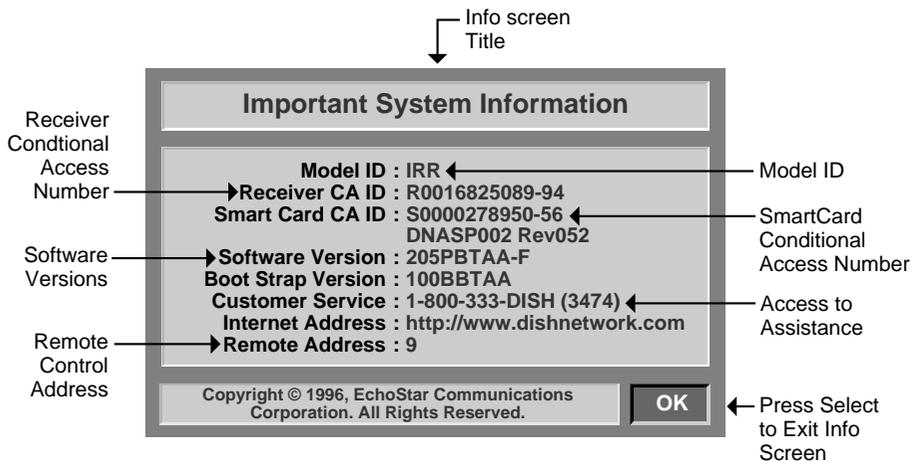
## ORDERING YOUR PROGRAMMING

This procedure notifies the Service Center that your system is on-line and installed. You need to have your services activated before you can start enjoying your desired programming. You must authorize your services when you first install your system, and whenever you request to add or remove services.

All you need to do is call to notify the Service Center that your system has been installed and you would like to begin receiving programming. The Service Representative will explain the available program packages and services. You can then select the services that you want to authorize.

You will need to give the Service Representative information about your system. To get this information, do the following: Power the recorder OFF, using the remote control **Power** button (*not* the recorder **Power** button). Then, press the **Info** button on the recorder or remote. This will display the **Important System Information** menu, as shown below. To exit this menu, press the **Select** button on the recorder or remote.

**Note:** The recorder is still OFF. You will have to press the **Power** button on either the remote or the recorder to turn the recorder back ON.



The Service Representative will authorize your programming signal using the satellite signal. This includes checking that the Smart Card is properly inserted in the recorder.

When the services are authorized, you should see channels other than the Preview Channel.

## SERVICE CENTER PIN

As an option, the Service Representative will ask you if you want to set up a Service Center Personal Identification Number (PIN). See *Service Center Security* on page 4-29 for more information.

# ***User and Installation Guide***

## **WIRING YOUR SYSTEM TOGETHER**

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### **MULTIPLE RECEIVERS**

Each output on the LNBF can support a single receiver. You *cannot* connect two receivers to the same output (for example, by using a line splitter), because the two receivers would interfere with each other during channel selection. This is a characteristic of satellite television in general, and is not a limitation that is specific to this system.

If you want to connect two receivers to the same satellite antenna and be able to watch different channels through each, you *must* use a dual-output LNBF. This allows you to connect each receiver to a different output, preventing interference between the receivers. In this case, during installation you must run a separate coaxial cable from each output on the LNBF to each receiver.

If you want to purchase an LNBF different from the one that you originally purchased, contact your local satellite dealer or call the Service Center.

The following wiring setups assume installation of a single receiver. If you are installing multiple receivers, modify your wiring accordingly.

### **ABOUT CABLING AND CONNECTIONS**

The way in which you wire your system and the kinds of cabling you choose can make a noticeable difference in the quality of the picture and sound. No doubt you will want to wire your system to take advantage of the highest quality supported by your equipment. You will need to examine your electronic equipment to determine what type of connectors and cables, and which wiring setup to use.

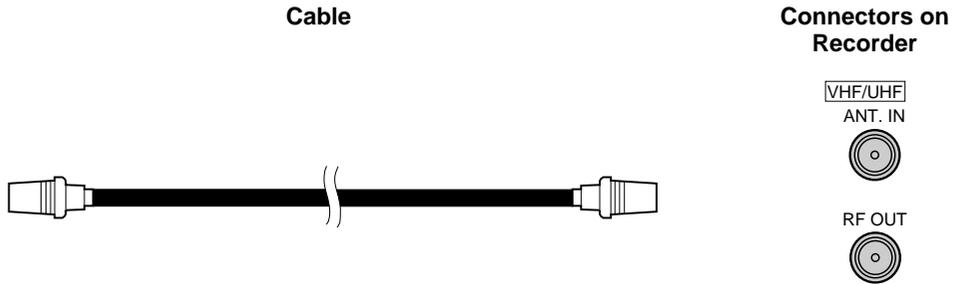
Do the following.

1. Look on the back of each piece of equipment that you are planning to install with the recorder and note the type of connectors on the equipment.
2. Starting from the connectors that support the highest quality, determine which pieces of equipment can be connected together using the designated type of cable.
3. Review the wiring setups beginning on page 7-21 to choose which one is the closest to your planned configuration.
4. Use that setup as the basic plan to wire your system together. If you have additional components, or do not have all of the components that are in the setup, adjust the wiring accordingly.

# Installing and Wiring Your System Wiring Your System Together



## RF OR VHF CONNECTIONS (GOOD PICTURE AND SOUND)

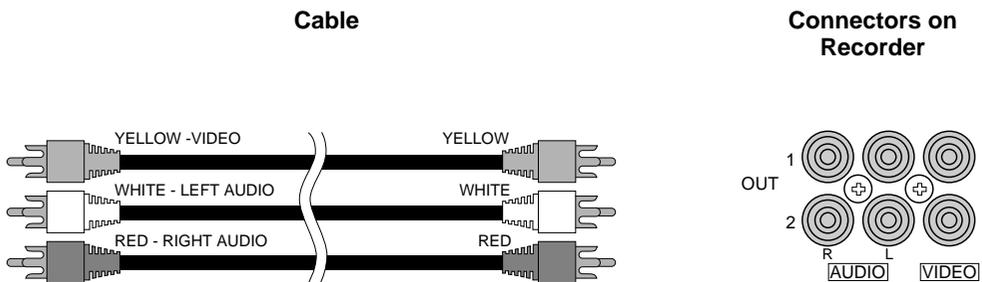


The RF or VHF connections (also called the modulator connections) provide good picture and good mono ("non-stereo") sound quality. Be aware that even if you have a TV and other equipment that support stereo sound, this type of connection will give you only non-stereo sound.

If you connect a cable TV box or a broadcast TV antenna to the recorder, use the **VHF/UHF Ant. In** connection for the local programming signal input. Use the **TV Phono (RCA) Audio/Video Output** or **S-VIDEO** connections for the output if possible, as using the **RF Out (RF or VHF Connection)** will not provide the best quality video on broadcast or cable channels.

This is the simplest cabling scheme, and many people prefer it because of its ease of installation and use. The RF or VHF connections require that you keep the TV tuned to either channel 3 or 4 to view satellite channels. You also need to set the Channel 3/4 switch on the recorder's back panel to match this channel.

## PHONO (RCA) AUDIO/VIDEO CONNECTIONS (BETTER PICTURE, BEST SOUND)



The phono (RCA) audio/video connections provide better picture quality and the best stereo sound. You should use this type of connection for audio, if possible, and for video if your equipment does not support S-VIDEO (see following).

## ***User and Installation Guide***

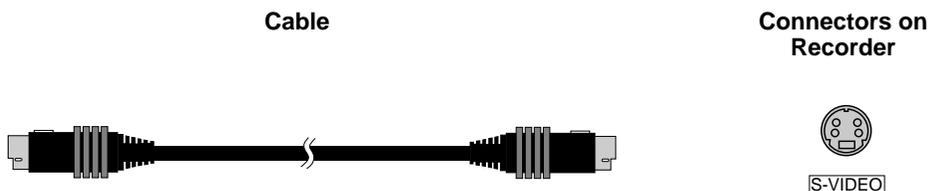
The phono (RCA) audio/video cable is available as a single cable with three connectors on either end, or as three separate cables. The connectors are color-coded according to the type of signal they carry.

- ◆ The yellow connector carries the video signal.
- ◆ The white connector carries the left audio signal.
- ◆ The red connector carries the right audio signal.

If your TV only has one input connection for this type of audio, connect it to the left (L) audio connection on the recorder.

If you use the phono (RCA) audio/video connections, then depending on the type of equipment that you connect to the recorder, you may need to use the menus displayed by each piece of equipment to change the input from local to satellite TV. See the product documentation that came with your other electronic equipment for more information.

### **S-VIDEO CONNECTIONS (BEST PICTURE)**



S-VIDEO, also called super-video or SVHS, provides the best possible picture. Many newer TVs and VCRs support S-VIDEO. If you use these connections, you must still connect the audio signal using the audio connectors; however, you would not use the video connectors. The S-VIDEO connections carry only the video signal.

## **WIRING SETUPS**

The following wiring setups present several methods for wiring your system. Many of these options depend on what electronic components you are connecting, and what type of connectors the components support. See *About Cabling and Connections* on page 7-18 for more information.

Most of the wiring setups assume the following:

- ◆ You have a broadcast TV antenna or a cable TV box that you want to connect to the system.
- ◆ You want to optimize your system to carry the best picture and sound quality that it can support.

The wiring setups presented here range from easiest (RF or VHF connections only), with the fewest electronic components, to the most advanced, with multiple electronic components. All connections are shown in most of the setups.

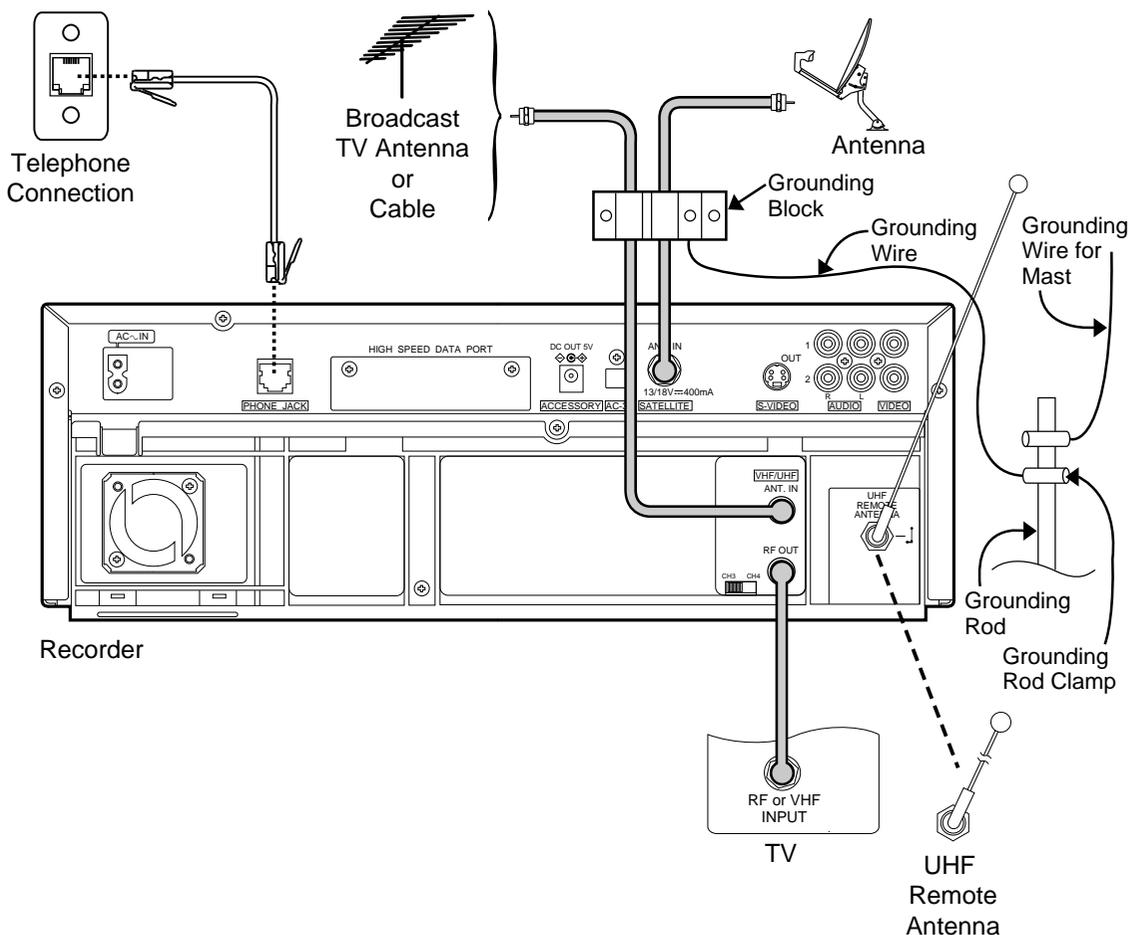
Preview the setups to determine the one that most closely matches your equipment, and then use that setup as the basis for your wiring installation.

# User and Installation Guide

## QUICK INSTALL (WITH RF OR UHF CONNECTION)

The Quick Install setup is designed to get your system running as quickly as possible. This is especially useful if you are setting up your system yourself. You use this setup initially to assist you in finding the direction and elevation of the satellite, as well as obtaining a signal from it.

Features	Equipment	Quality
<ul style="list-style-type: none"> <li>◆ Quickest wiring setup.</li> <li>◆ Minimum number of components.</li> <li>◆ Can easily view both satellite and local programs by using the Local TV Link feature.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Recorder</li> <li>◆ TV</li> <li>◆ Cable TV box or broadcast antenna</li> </ul>	<ul style="list-style-type: none"> <li>◆ Good picture</li> <li>◆ Good non-stereo sound</li> </ul>



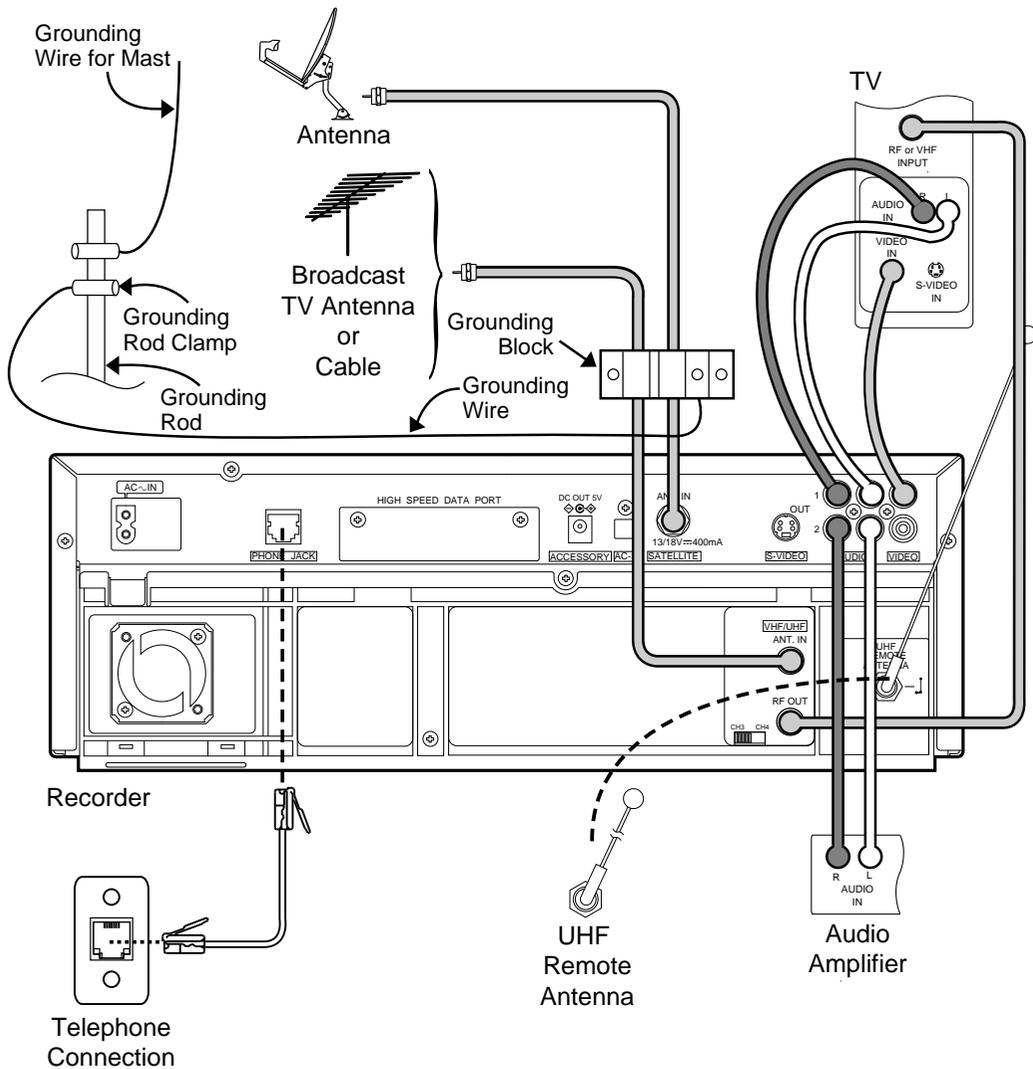
**Note:** Ground the satellite antenna, coaxial cable(s), and broadcast TV antenna in accordance with the National Electrical Code and local electrical codes.

# Installing and Wiring Your System Wiring Your System Together

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## FULL INSTALL (WITH AUDIO/VIDEO CONNECTIONS)

Features	Equipment	Quality
<ul style="list-style-type: none"> <li>◆ Can record local or satellite programming on the VCR (you cannot tape copyrighted materials).</li> <li>◆ Can play back tapes on VCR by tuning to channel 000.</li> <li>◆ Can easily view both satellite and local programs by using the Local TV Link feature.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Recorder</li> <li>◆ TV</li> <li>◆ Cable TV box or broadcast antenna</li> </ul>	<ul style="list-style-type: none"> <li>◆ Better Picture to TV</li> <li>◆ Better stereo sound to TV and VCR.</li> </ul>

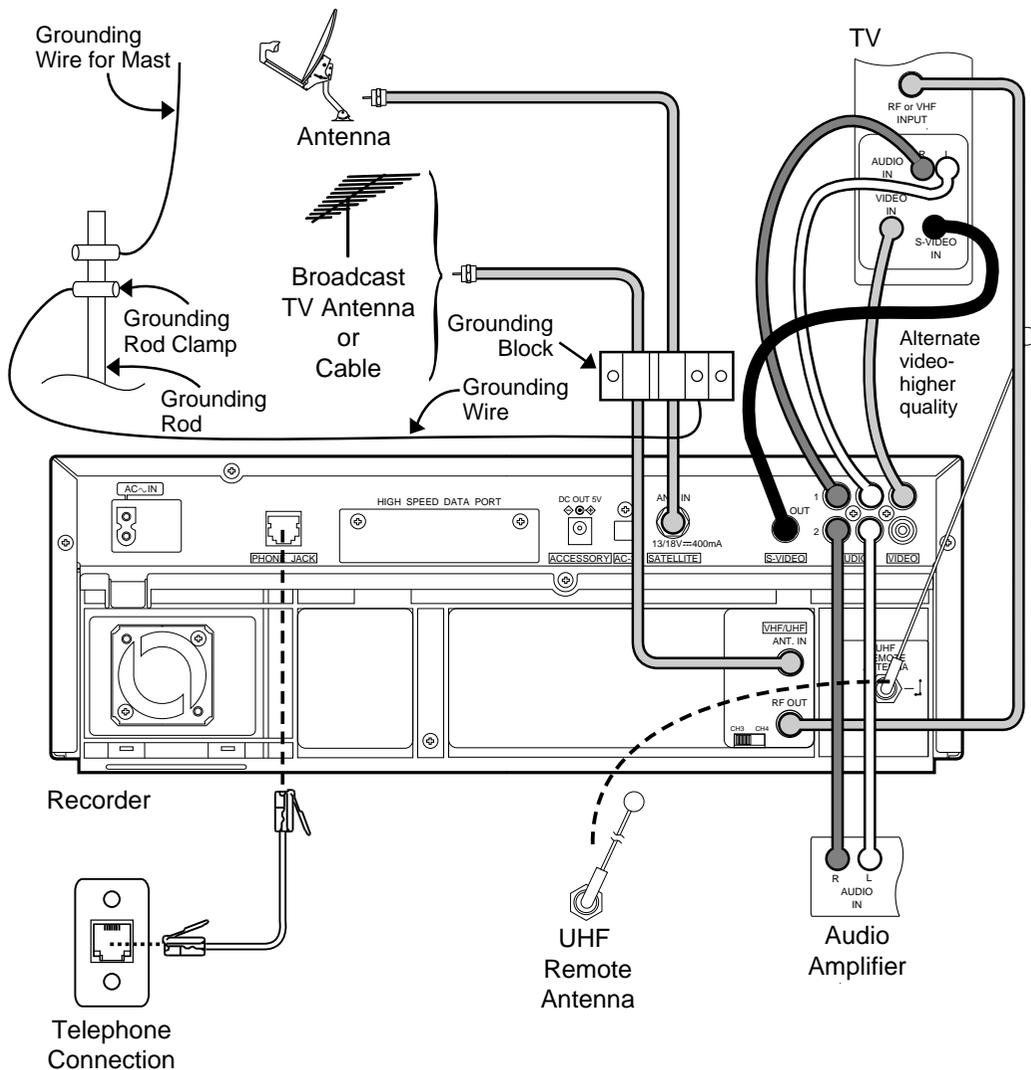


**Note:** Ground the satellite antenna, coaxial cable(s), and broadcast TV antenna in accordance with the National Electrical Code and local electrical codes.

# User and Installation Guide

## FULL INSTALL (WITH S-VIDEO CONNECTION)

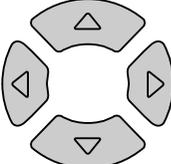
Features	Equipment	Quality
<ul style="list-style-type: none"> <li>◆ Can record local or satellite programming on the VCR (you may not tape copyrighted materials).</li> <li>◆ Can play back tapes on VCR by tuning to channel 000.</li> <li>◆ Can easily view both satellite and local programs by using the Local TV Link feature.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Recorder</li> <li>◆ TV with S-VIDEO IN</li> <li>◆ Cable TV box or broadcast antenna</li> <li>◆ Audio amplifier (optional)</li> </ul>	<ul style="list-style-type: none"> <li>◆ Best picture to TV.</li> <li>◆ Best stereo sound to TV and audio amplifier.</li> <li>◆ If only RF or VHF connections used, good picture and non-stereo sound to TV.</li> </ul>



**Note:** Ground the satellite antenna, coaxial cable(s), and broadcast TV antenna in accordance with the National Electrical Code and local electrical codes.

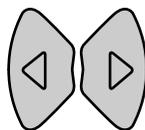
## MANUAL CLOCK SETTING

If the recorder is connected to a properly installed DISH Network™ antenna, the recorder's clock will be set automatically. However, if you ever need to set the clock manually because the DISH antenna has been disconnected, etc., do the following:

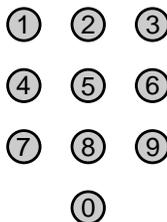
	Remote Buttons	Menu Options
1. Press the <b>Mode</b> button until the remote is in SAT mode.	MODE 	
2. Press the <b>Menu</b> button to open the <b>Main Menu</b> .	MENU 	
3. Select the <b>VCR Setup</b> option.		
4. Press the arrow buttons to move the highlight to <b>Set Date/Time</b> .		
5. Press the <b>Select</b> button to open the <b>Time and Date Setup</b> screen.		
6. Press the <b>Left</b> or <b>Right</b> arrow button to move the highlight to <b>Daylight Savings</b> .		
7. Press the <b>Select</b> button to place a checkmark in the checkbox next to <b>Daylight Savings</b> . Pressing the Select button again will remove the checkmark.		
◆ Turn the Daylight Savings function to let the recorder automatically adjust its clock to Daylight Savings Time, or turn the function off if Daylight Savings Time does not apply to your area.		

# User and Installation Guide

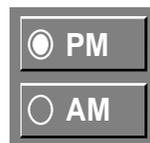
8. Press the **Left** or **Right** arrow button to move the highlight to the "Month" under Date.



9. Press the number buttons to set the Month, Day, Hour and Minute.  
To input a one-digit number, be sure to insert a zero first.



10. Press the arrow buttons to select AM or PM and then press **Select** button.



11. Press the arrow buttons to move the highlight to **Save**.



12. Press the **Select** button to start the clock.



## DAYLIGHT SAVINGS

This function enables automatic adjustment of the recorder's clock at the start and end of Daylight Savings Time.

With Daylight Savings activated,...

...on the first Sunday of April at 2:00 AM, the clock is adjusted to 3:00 AM.

...on the last Sunday of October at 2:00 AM, the clock is adjusted to 1:00 AM.

### Note:

- ◆ While a DISH antenna is properly connected, manual clock setting is not possible.

# **Appendix**

## **FCC COMPLIANCE**

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### **TELEPHONE COMMUNICATION**



The following text is extracted from Federal Communication Commission (FCC) regulations, as of the publication date of this *Guide*. Contact the FCC (see following) or your library for the complete text of the regulations.

This equipment complies with Part 68 of the FCC rules. On the rear panel of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

#### **The REN for this product is 0.7B.**

The REN is used to determine the quantity of devices which 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. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

#### **This equipment uses the following USOC (Universal Service Order Code) jacks: RJ-11C.**

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.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not 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 in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If you experience trouble with this equipment, please contact the Service Center at 1-800-333-3474 for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

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The customer may perform minor adjustments such as the following, in case of problems with the equipment.

- ◆ Move or realign the antenna or receiving device, such as your broadcast TV antenna.
- ◆ Increase the distance between the recorder and the equipment with the interference. Change the angle of the recorder relative to the equipment.
- ◆ Plug the recorder into a different power outlet, preferably on a different fuse circuit within your building.

Refer to the *Problems and Solutions Tables* on page A-10 for a detailed description of recommended customer actions.



You may *not* attempt to open the recorder, as this will void the warranty (with the exception of opening the Smart Card access door on the recorder front panel). There is risk of electrical shock, which may result in damage to the equipment, or personal injury or death. There are no user-serviceable parts inside the recorder. Unauthorized modification will void the warranty.

This equipment is hearing-aid compatible.

It is recommended that the customer install an AC surge arrestor in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

### **RADIO INTERFERENCE**

The recorder complies with the limits for a Class B digital device, as specified in Part 15 of the FCC Rules. This compliance helps ensure against radio interference with other equipment in a typical residential location. Except for the telephone cable, you are required to use shielded cables and cords, such as coaxial and communication cables, to maintain FCC compliance.

The recorder does use radio frequencies during operation. If you do not install or use the recorder properly, radio energy may be generated that can interfere with radio communications. Also, it is possible that radio interference can occur even in a proper installation. The typical symptom of radio interference is distortion of television or radio reception. You can determine if the recorder is the cause by confirming that the interference stops if you unplug the recorder from the power outlet, and the interference returns when you plug the recorder back into the outlet.

If none of the remedies on the previous page stops the radio interference, contact a licensed radio/television technician, your satellite dealer, or call the Service Center at 1-800-333-3474, for assistance.

In addition, the FCC provides a booklet that can help you. You can order the booklet from the following address:

*How to Identify and Resolve Radio-TV Interference Problems*  
Stock No. 004-000-00345-4  
U.S. Government Printing Office  
Washington, DC 20402

## **NATIONAL ELECTRICAL CODE (NEC)**

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The following text contains excerpts of the *National Electrical Code (NEC)* that relate to grounding your system. This text contains only portions of the Code, as of the publication date of this *Guide*. For authoritative guidance, you should consult the latest revision of the *National Electrical Code*, or a licensed electrician. Also, *before* doing any installations in your area, it is important that you check for any local codes that may affect the installation of the system.



Proper grounding is *essential*. Improperly grounded or ungrounded systems could result in electrical shock, fire, and death.

### **250-1. SCOPE**

This article covers general requirements for grounding and bonding of electrical installations and specific requirements in (a) through (f) below.

- (a) Systems, circuits and equipment required, permitted or not permitted to be grounded.
- (b) Circuit conductors to be grounded on grounded systems.
- (c) Location of grounding connections.
- (d) Types and sizes of grounding and bonding conductors and electrodes.
- (e) Methods of grounding and bonding.
- (f) Conditions under which guards, isolation, or insulation may be substituted for grounding.

### **250-81. GROUNDING ELECTRODE SYSTEM.**

If available on the premises at each building or structure served, each item (a) through (d) below, and any made electrodes in accordance with Sections 250-83 (c) and (d), shall be bonded together to form the grounding electrode system. Interior metal water piping located more than 5 feet (152cm) from the point of entrance to the building shall not be used as a conductor to interconnect the electrodes and the grounding electrode conductor. The bonding jumper shall be installed in accordance with Sections 250-92(a) and (b), shall be sized in accordance with Section 250-94, and shall be connected in the manner specified in Section 250-115. The unspliced grounding electrode conductor shall be permitted to run to any convenient grounding electrode available in the grounding electrode system.

## **User and Installation Guide**

It shall be sized for the largest grounding electrode conductor required among all the available electrodes.

- (a) **Metal Underground Water Pipe.** A metal underground water pipe in direct contact with the earth for 10 feet (3.05m) or more (including any metal well casing effectively bonded to the pipe) and electrically continuous by bonding around insulating joints or sections or insulating pipe to the points of connection of the grounding electrode conductor and the bonding conductors. Continuity of the grounding path or the bonding connection to interior piping shall not rely on water meters. A metal underground water pipe shall be supplemented by an additional electrode of a type specified in Section 250-81 or in Section 250-83. The supplemental electrode shall be permitted to be bonded to the grounding electrode conductor, the grounded service-entrance conductor, the grounded service raceway, or any grounded service enclosure.

### **250-83. MADE AND OTHER ELECTRODES.**

Where none of the electrodes specified in Section 250-81 is available, one or more of the electrodes specified in (b) through (d)\* below shall be used. Where practicable, made electrodes shall be embedded below permanent moisture level. Made electrodes shall be free from nonconductive coatings, such as paint or enamel. Where more than one electrode is used, each electrode of one grounding system (including that used for lightning rods) shall not be less than 6 feet (1.83m) from any other electrode of another grounding system.

- (a) **Rod and Pipe Electrodes.** Rod and pipe electrodes shall not be less than 8 feet (2.44m) in length and shall consist of the following materials, and shall be installed in the following manner:
  - (1) Electrodes of pipe or conduit shall not be smaller than 3/4-inch (15.87mm) in diameter, nonferrous rods, or their equivalent shall be listed and shall not be less than 1/2 inch (12.7mm) in diameter.
  - (2) Electrodes of rods of iron or steel shall be at least 5/8 inch (15.87mm) in diameter. Stainless steel rods less than 5/8 inch (15.87mm) in diameter, nonferrous rods, or their equivalent shall be listed and shall not be less than 1/2 inch (12.7mm) in diameter.
  - (3) The electrode shall be installed such that at least 8 feet (2.44m) except that, where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from the vertical or shall be buried in a trench that is at least 2 1/2 feet (762mm) deep. The upper end of the electrode shall be flush with or below ground level unless the aboveground end and the grounding electrode conductor attachment are protected against physical damage as specified in Section 250-1167.

### **250-115. CONNECTION TO ELECTRODES**

The grounding conductor shall be connected to the grounding electrode by exothermic welding, listed lugs, listed pressure connectors, listed clamps, or other listed means. Connections depending on solder shall not be used. Ground clamps shall be listed for the materials of the grounding electrode and the grounding electrode conductor and, where used on pipe, rod, or other buried electrodes, shall also be listed for direct soil burial. Not more than one conductor shall be connected to the grounding electrode by a single clamp or fitting unless the clamp or fitting is listed for multiple conductors. One of the methods indicated in (a), (b), (c), or (d) below shall be used.

- (a) Bolted clamp: A listed bolted clamp of cast bronze or brass, or plain or malleable iron.
- (b) Pipe Fitting, Pipe Plug, etc.: A pipe fitting, pipe plug, or other approved device screwed into a pipe or pipe fitting.
- (c) Sheet-Metal-Strap Type Ground Clamp: A listed sheet-metal-strap type ground clamp having a rigid metal base that seats on the electrode and having a strap of such material and dimensions that it is not likely to stretch during or after installation.

### **810-15. GROUNDING**

Masts and metal structures supporting antennas shall be grounded in accordance with Section 810-21.

### **810-21. GROUNDING CONDUCTORS - RECEIVING STATIONS**

Grounding conductors shall comply with (a) through (j) below.

- (a) Material. The grounding conductor shall be of copper, aluminum, copper-clad steel, bronze, or similar corrosion-resistant material.
- (b) Insulation. Insulation on grounding conductors shall not be required.
- (c) Supports. The grounding conductors shall be securely fastened in place and shall be permitted to be directly attached to the surface wired over without the use of insulating supports.
- (d) Mechanical Protection. The grounding conductor shall be protected where exposed to physical damage, or the size of the grounding conductors shall be increased proportionately to compensate for the lack of protection.
- (e) Run in Straight Line. The grounding conductor for an antenna mast or antenna discharge unit shall be run in as straight a line as practicable from the mast or discharge unit to the grounding electrode.

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- (f) Electrode. The grounding conductor shall be connected as follows:
  - (1) To the nearest accessible location on the building or structure grounding electrode system as covered in Section 250-81, (2) the grounded interior metal water piping system as covered in Section 250-80(a), (3) the power service accessible means external to enclosures as covered in Section 250-71(b), (4) the metallic power service raceway, (5) the service equipment enclosure, or (6) the grounding electrode conductor or the grounding electrode conductor metal enclosures; or
  - (2) If the building or structure served has no grounding means, as described in (f)(1), to any one of the individual electrodes described in Section 250-81; or
  - (3) If the building or structure served has no grounding means, as described in (f)(1) or (f)(2), to (1) an effectively grounded metal structure or (2) to any of the individual electrodes described in Section 250-83.
- (g) Inside or Outside Building. The grounding conductor shall be permitted to be run either inside or outside the building.
- (h) Size. The grounding conductor shall not be smaller than No. 10 copper or No. 8 aluminum or No. 17 copper-clad steel or bronze.
- (i) Common ground. A single grounding conductor shall be permitted for both protective and operating purposes.
- (j) Bonding of Electrodes. A bonding jumper not smaller than No. 6 copper or equivalent shall be connected between the radio and television equipment grounding electrode and the power grounding electrode system at the building or structure served where separate electrodes are used.



## **GLOSSARY**

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Audio Connection	Highest quality phono (RCA) audio connection available. Provides excellent stereo sound. Separate connectors are required for left and right audio signals.
Azimuth	See <i>Direction</i> .
Blacked Out Program	A program that cannot be viewed in specific locations (for example, a sports event).
Broadcast Programming	Your local and network channels. These are local channels available via the system.
Cable Programming	Your local cable channels. These are local channels available via the system.
Changing Channels	While viewing a program, selecting channels using the Up or Down arrow buttons or the number pad.
Channel Surfing	See <i>Changing Channels</i> .
Composite Video	See <i>Video Connection</i> .
Direction	Also called “azimuth.” Refers to the left or right positioning of your satellite antenna. Direction is noted on the compass in the form of numbers indicating degrees. When you are adjusting the antenna, you can enter your ZIP code into the Point Dish and Signal Strength menu. The menu will display the direction and elevation to the satellites so you can aim your satellite antenna.
Elevation	The up/down positioning of the satellite antenna. When you are adjusting the antenna, you can enter your ZIP code into the Point Dish and Signal Strength menu, and the display will show the approximate elevation for your antenna.
Event	See <i>Program</i> .
Flash Feature	A feature that allows recorder memory to be updated by transmission via satellite signal.

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IR (Infra-Red)	Some remotes use infra-red light to transmit signals to equipment. Some remotes that come with the recorder use UHF to control the recorder, and IR to control other equipment; others use IR to control the recorder also.
LNBF	Low-Noise Block amplifier with integrated Feed. This is the component that receives the signals reflected from the dish surface and transmits them to the recorder.
Local TV Link	A feature that allows you to add local broadcast or cable TV channels to the <b>Program Guide</b> .
Modulator Connection	See RF or VHF Connection.
Pay Per View Program	A program that you pay an additional fee to view once.
Program	A TV show, movie, or pay per view event.
Program Guide	An on-screen guide to all the programs that are currently being shown, and all the programs that will be shown for the next week. You can select current and future programs, and purchase pay per view events in the <b>Program Guide</b> .
Rating Codes	<p>Codes have been assigned to the program to indicate content and suggested audience.</p> <p>The following codes are used:</p> <p>G: General Audience. Suitable for young children.</p> <p>P: Parental Guidance suggested.</p> <p>PG-13: Parental Guidance suggested. Not recommended for children under the age of 13.</p> <p>R: Restricted. No children admitted under the age of 17 unless accompanied by an adult.</p> <p>NC-17: No Children under the age of 17 admitted.</p> <p>NR/AO: Not Rated/Adult Oriented</p> <p>Expanded Ratings, locked out by content:</p> <p>Language: Adult language.</p>

Violence: Graphic Violence.

Sexual Content: Sexual scenes.

Nudity: Nude scenes.

Receiver	The piece of equipment that controls your access to all network features and programs.
RF	Radio Frequency.
RF or VHF Connection	Also called modulator connection. A type of connection that supports good picture quality, and good mono (“non-stereo”) sound. Usually the easiest and quickest method to wire your system together.
Satellite Antenna	The piece of equipment that receives the broadcast signal from the satellites, amplifies it, and transmits it to the recorder. This refers to the entire antenna assembly, whether it is mounted on the mast, or on a pole.
S-VIDEO, or Super VHS	Highest quality video connection. If used, the audio connections must also be used.
UHF	Ultra-high frequency. Some remote controls use UHF to control equipment. Some remotes that come with the recorder use UHF to control the recorder and <i>infra-red</i> (IR) to control other equipment. UHF signals can travel longer distances than (IR), and can penetrate objects, making it possible to control the equipment from other rooms in the building. Some broadcast TV channels are UHF (typically 14 through 69).
Video Connection	Better quality phono (RCA) video connection. Also called composite video.
VHF	Very-high frequency. Some broadcast TV channels are VHF (typically 2 through 13).

# ***User and Installation Guide***

## **PROBLEMS AND SOLUTIONS TABLES**

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**Note:** For warranty service on your recorder, call the number printed on the outside back cover of this *Guide*.

**Use this section if you encounter problems operating the system.** Look in this section for a description of your problem before calling the Service Center. Many problems arise from basic misunderstandings of how the system operates, especially when you are just becoming familiar with it. This section addresses many situations, usually with a simple solution for each one.

Do the following to solve your particular problem.

1. Review the section in this *Guide* that relates to your problem.
2. If you cannot find a solution, then find the section of the following tables that relates to your problem. Look down the *What Is Happening* column until you find your problem.
3. If you are interested, read the information in the *Possible Why* column.
4. Try each of the suggested solutions in the *What to Do* column.

If this does not solve your problem, or if you cannot find your problem in these tables, call the DISH Network Service Center at 1-800-333-3474, or see the Dish Network's home page at [http:// www.dishnetwork.com](http://www.dishnetwork.com) on the World Wide Web.



## ASSEMBLE THE SATELLITE ANTENNA

What Is Happening	Possible Why	What to Do
The support arm and bracket are separate pieces.	Some models of the support arm/bracket require assembly.	Assemble the support arm and bracket.
You want your system to support two receivers, but you have only a single input LNBF.	You <i>must</i> have a dual input LNBF to support two receivers. You must also run a separate coaxial cable from each LNBF output to each receiver. This is a characteristic of satellite TV in general, not just this system.	Call the Service Center to order a dual output LNBF.

## AIM THE SATELLITE ANTENNA

What Is Happening	Possible Why	What to Do
The <b>Signal Strength</b> bar indicates a signal strength, but is <i>red</i> and displays the word “Unlocked.”	The satellite antenna may be aimed at the satellites, but without a signal strength sufficient to display a TV picture.	Adjust the aim of the antenna slowly until the <b>Signal Strength</b> bar turns green and displays the word “Locked.”
The <b>Signal Strength</b> bar is <i>green</i> , but you cannot fine-tune the antenna aim for a 100% signal strength.	A variety of atmospheric factors (in particular, heavy rain or snow) may decrease the signal strength. You will most likely not be able to get the signal strength to 100%.	It is not necessary for the signal strength to reach 100%. If your system provides you an acceptable picture, you do not need to do anything. If not, you may wish to purchase a larger diameter dish for your satellite antenna. Call your local satellite dealer or the Service Center for more information.
No matter what you try, you cannot get the <b>Signal Strength</b> bar <i>green</i> .	Cable connectors may have loosened or have moisture inside. There may be interference with the satellite signal.	Confirm that all cable connectors are firmly connected and dry. Call the Service Center for assistance.
The recorder displays the message, “Acquiring Satellite Signal.”	The recorder may have just been plugged in, and is acquiring the satellite signal. The satellite antenna may have been moved out of alignment with the satellite signal. Connecting cables may have loosened or have moisture inside. There may be interference with the satellite signal. Your dish may be wet from rain, or full of snow or debris.	Wait a few minutes to see if the message is removed. Confirm that the <b>Signal Strength</b> bar is <i>green</i> and displays the word “Locked.” If not, re-aim the satellite antenna. Confirm that all cables are firmly connected and dry. Clean off the dish. Call the Service Center for assistance.
You notice some settings are changed from what you have previously set.	Satellite channel reception may have deteriorated temporarily.	When reception deteriorates temporarily and recovers on its own while receiving a satellite channel, check to make sure that previously-set settings are retained correctly. If not, reset them again.

# User and Installation Guide

## USE THE REMOTE CONTROL

What Is Happening	Possible Why	What to Do
You cannot find the remote control.		Use the front panel control buttons to operate the recorder until you find the remote. If the remote control is permanently lost or too damaged to use, call the Service Center to order a replacement.
When you press a button on the remote control the behavior is not as expected. Instead, you may see one of the following:  No mode light (SAT, TV, D-VHS or AUX) flashes. The remote changes to SAT mode. The other equipment does not respond. The mode lights may or may not flash.	The remote control may be missing batteries, the batteries may be incorrectly placed in the remote, or the batteries may be weak or dead. If a button on the remote is pressed that has no function for the active mode, the mode light may not flash.	If the batteries are missing or dead, insert four fresh AAA-size batteries. Make sure to re-initialize and reprogram the remote, including resetting the remote address if necessary. If the remote has fresh batteries, check whether they are placed according to the label diagram. If not, remove them and place correctly.
When you try to control equipment other than the recorder with the remote, the other equipment does not respond.	The other equipment may not be powered ON. The remote may not be in the correct mode. If the remote is in the correct mode, it may not be programmed for this particular brand of equipment. The batteries may not be properly installed. There may be a solid object between the remote and the equipment, or the remote is not aimed directly at the equipment.	Power the equipment ON. Reposition the remote so that it has a clear line-of-sight to the equipment. Check the remote batteries. If necessary, re-install and make sure they are firmly seated. When you press a button on the remote, note which of the remote mode lights flashes. If the remote is not in the correct mode, press the <b>Mode</b> button until the correct mode light flashes. Program the remote with the correct code for the equipment. Try the Power Scan method, if necessary.
The remote control does not work when the remote is in the D-VHS mode.		<ol style="list-style-type: none"> <li>1. Turn the VCR's power OFF if its power is ON.</li> <li>2. Press the <b>Mode</b> button until the remote is in the D-VHS mode.</li> <li>3. Press the <b>Address</b> button. The D-VHS light blinks.</li> <li>4. Use the <b>number pad</b> buttons to enter "222".</li> <li>5. Press the <b>Address</b> button. The D-VHS light blinks.</li> <li>6. Load a cassette into the cassette loading slot. The VCR's power comes on automatically.</li> <li>7. Make sure that playback starts when the <b>Play</b> button is pressed. If playback does not start, repeat steps 1 through 7.</li> </ol>

# Appendix Problems and Solutions Tables



<p>When you try to control the recorder with the remote, the recorder does not respond (this may occur especially after changing the batteries in the remote).</p>	<p>The remote control may be missing batteries, the batteries may be incorrectly placed in the remote, or the batteries may be weak or dead. You may need to reset the remote address and reprogram the remote for the other equipment. The addresses for the recorder and the remote may not match. If you have a UHF remote, signals from a neighbor's UHF remote may be blocking signals from your remote from reaching the recorder.</p>	<p>If the batteries are missing or dead, insert four fresh AAA-size batteries. If the batteries have just been replaced or taken out and reset, you may need to reset the remote address for the recorder before the recorder will respond. In this case, you also need to reprogram the remote for all components, including the TV, VCR and other equipment controlled by the remote. To readdress the recorder to the remote: If the recorder is on, turn it off and wait 15 seconds. Press the <b>Info</b> button on the recorder to display the <b>Important System Information</b> menu. Press the <b>Record</b> button on the remote. To prevent UHF signal interference, you may reduce the sensitivity of the recorder to UHF signals by installing a UHF attenuator.</p>
<p>When you press the <b>Power</b> button on the remote control to power the recorder ON, a mode light flashes on the remote, but the Power light on the recorder does not illuminate.</p>	<p>You may not be able to see that the power light is on, if other lights in the room are too bright. The remote may not be operating properly or the batteries are weak or dead. The recorder may not be programmed to the remote address. The recorder may not be plugged into a power outlet, or there is a problem with the power.</p>	<p>Try other buttons to see if the recorder is responding. Replace the remote batteries with fresh ones. Reprogram the recorder and remote to the same address. Check that the electrical power is on in your building, and that it has the voltage and current specified for the recorder. Check that the electrical outlet you are using is in good condition and has power (for example, check that a fuse has not blown). Check that the recorder power cord is not damaged, and that the plug is inserted correctly into the outlet.</p>
<p>The recorder turns ON or OFF or does anything else, without you pressing any buttons.</p>	<p>The recorder is responding to signals from another nearby remote control.</p>	<p>Change the address of your remote control and recorder.</p>

## PROGRAM SOUND

What Is Happening	Possible Why	What to Do
<p>The recorder power light is on and there is a good picture on the TV set, but you do not hear any sound.</p>	<p>You may have muted the sound, or set the volume to be inaudible. The audio connections may not be properly connected.</p>	<p>Turn off the mute using the TV mute button, or by pressing the <b>Mute</b> button on the remote. If necessary, change to the appropriate mode before pressing <b>Mute</b>. Turn up the volume at the TV, or by pressing the <b>Volume (+)</b> button on the remote. Check the audio connectors and cords from the recorder to the TV, or to any other sound system you may be using. Check the TV speakers or other sound system you may be using.</p>
<p>A foreign language is used for the audio sound.</p>	<p>The recorder may have been programmed to select an alternate audio language.</p>	<p>Use the <b>Alternate Audio Language</b> menu (within the <b>System Setup</b> menu) to select the language you prefer. Note that some languages listed may not be available at this time.</p>

# User and Installation Guide

## VIEWING A PROGRAM ON THE TELEVISION SCREEN

What Is Happening	Possible Why	What to Do
The <b>TV/VCR</b> button on the remote does not work.		This button works only when the recorder is wired using only the RF or VHF connections. Remember that with any wiring setup, you can use the Local TV Link feature to select local broadcast or cable channels.
The recorder power light is on, but the TV image is:  black (no picture), is frozen, has breakups in the image, or shows multicolored squares.	The TV set may not be operating properly. If the TV and the recorder are operating properly, there may be interference with the satellite signal.	Make sure that the TV set is plugged into an electrical outlet, and that the cord, plug and outlet are in good operating condition. Make sure the outlet has electrical power. Make sure that the TV is turned on. If you connected the recorder to the TV using only the RF or VHF connections, make sure that the TV is tuned to channel 3 or 4 (whichever works best in your area) and that the <b>Chan. 3/4 Setup</b> is set to the same channel as the TV. Make sure that the TV brightness and contrast are adjusted correctly. Make sure that the TV is connected properly to the recorder. Check that your system has been installed correctly. Verify that all required coaxial cables are in place, and check that all cable connectors are firmly connected. Make sure that your satellite antenna is aimed at the satellites. Check the strength of the signal in the <b>Point Dish and Signal Strength</b> menu. Re-aim the antenna, if necessary, to obtain maximum signal strength. Note your local weather conditions. Heavy rain, snow, or cloud cover may be interfering with transmission of the satellite signal. Remove any snow or other debris which may have collected on the satellite antenna.
The recorder power light is on, and there is a picture on the TV screen, but the picture:  has sparkles or is grainy; or has a herringbone pattern; or lacks color or vertical hold, or wobbles, or looks "washed out" or fuzzy.	The TV set may not be operating properly. If you connect the recorder to the TV using only the RF or VHF connections, there may be a strong local broadcast on the same or adjacent channel to the one to which the RF or VHF is tuned. There may be interference from other nearby electrical equipment (such as cellular telephones, computers, microwave ovens, radios, stereos, or TVs). The satellite antenna may have shifted, losing signal strength.	Make sure that the TV brightness and contrast are adjusted correctly, and that the TV is working properly. Make sure that the TV is connected properly to the recorder. Check other nearby electrical equipment as possible sources of interference. Verify that all required coaxial cables are in place. Check for moisture or water leaking in all connections. Dry out if needed, then seal with coaxial cable sealant after reconnection. Check antenna-to-recorder cable run length; if over 100 feet, install a line amplifier. Make sure that the satellite antenna is aimed at the satellites. Check the strength of the signal in the <b>Point Dish and Signal Strength</b> menu. Re-aim the antenna if necessary, to obtain maximum signal strength. Check the antenna mount, tightening bolts if needed.

## SYSTEM FEATURES

What Is Happening	Possible Why	What to Do
You were in the middle of doing something in a menu, and it suddenly closed, taking you back to the program you were viewing.	The menu system has a time-out feature that closes the menu after several minutes of no activity. This will discard any changes you have made.	Start your procedure again.



## PROGRAM GUIDE OR BROWSE BANNER

What Is Happening	Possible Why	What to Do
You try to display future programs in the <b>Program Guide</b> or <b>Browse Banner</b> , but find you cannot display past a limited time.	The <b>Program Guide</b> and <b>Browse Banner</b> can only display programs scheduled for a limited time beyond the present.	Try using the <b>Program Guide</b> or <b>Browse Banner</b> again later. By that time, they may display programs for the time and date you want.
You try to display past programs (programs that have ended) in the <b>Program Guide</b> or <b>Browse Banner</b> , but you cannot find.	The <b>Program Guide</b> and <b>Browse Banner</b> can only display programs that have not yet ended. These features cannot display a time earlier than the present.	
When you are using the <b>Program Guide</b> or <b>Browse Banner</b> , some channels are missing.	You have a Favorites List active other than the list named "ALL CHAN."	You can change the active Favorites List while still in the <b>Program Guide</b> , by pressing the <b>Guide</b> button on the remote. You can choose another custom Favorites List or the "ALL CHAN" list, which includes all the channels.

## CHANGING CHANNELS

What Is Happening	Possible Why	What to Do
You enter the channel number you want. The channel changes, but the new channel is not exactly the channel you entered. You are channeling up or down through the channels, and the system is skipping channels that you know you have purchased.	You may have made a mistake entering the channel number. Or, the channel number you entered may be invalid. If so, the channel displayed is the closest possible to the channel you entered. If you were viewing a program and entered a number to a channel that you have not purchased, the recorder will change to the unpurchased program and display a message. If a Favorites List other than "ALL CHAN" is active, the recorder will skip channels not on the active list.	Carefully retry entering the channel number you want. Call the Service Center to make sure you have purchased the channel. Choose "ALL CHAN" as the active Favorites List.
You can't change channels even though you enter the channel number you want or use the <b>Up/Down</b> buttons.	There may be a recording in progress. This is a safety measure to prevent the channel being changed by mistake during recording.	Press the <b>Pause</b> button to temporarily stop recording, then change channels, and press the <b>Play</b> button to resume recording.

# User and Installation Guide

## ELECTRONIC MAIL

What Is Happening	Possible Why	What to Do
Previously you read messages which are now missing.	The recorder may have deleted some old messages because it ran out of memory space for new messages.	Delete messages as soon as you have read them, unless they are important enough to save.
The Power light on the recorder is flashing.	The recorder has received mail.	Read the mail and the light will stop flashing.

## FAVORITES LISTS

What Is Happening	Possible Why	What to Do
You highlight the "ALL CHAN" list and then highlight either the <b>Modify List</b> or <b>Clear</b> option. The recorder displays an ERROR message.	The system will not allow you to modify the "ALL CHAN" list.	Choose another list to modify.
You highlight an empty list and then highlight the <b>Save</b> option. The recorder displays an ERROR message.	The system will not allow you to make an empty list active.	Choose another list to use.
You want to add a channel to a Favorites List, but the Favorites List is full.	You have the maximum number of channels in your Favorites List.	You must delete a channel from that Favorites List to make room for the new channel.

## USE SECURITY SYSTEM

What Is Happening	Possible Why	What to Do
You set a specific lock (for example, a lock on programs by ratings), but the lock does not seem to prevent viewing.	You have not locked the recorder.	You <i>must</i> lock the recorder for any specific lock to take effect.
You forgot your password, so that you are unable to unlock your recorder.		Call the Service Center. You <i>may need</i> to provide the Service Center Representative with the following information: (1) your name; (2) your address; (3) your telephone number; (4) your recorder serial identification number; and (5) your Service Center Personal Identification Number (PIN), if used.

## TELEPHONE LINE PROBLEMS

What Is Happening	Possible Why	What to Do
During a telephone call, you hear clicks.	The recorder may have tried to call the Service Center on the telephone line. When it registered that the telephone was busy, it automatically disconnected.	You do not have to do anything.
You pick up the telephone to make a call, but you do not hear a dial tone.	The recorder was in the middle of a call to the Service Center. When it registered that the telephone was picked up, it automatically disconnected.	Press the telephone receiver button to hang up. Release the button to get a dial tone.
Your computer or fax attempts to send a fax or modem call, but fails.	The recorder was in the middle of a call to the Service Center. When it registered that a call was attempted on the telephone, it automatically disconnected. The fax or modem registered that there is no dial tone, and canceled the send.	Resend the fax or modem call.
Your computer or fax was receiving a fax or modem call, but an error occurred.	The recorder may have tried to call the Service Center on the telephone line during the fax or modem call. When it registered that the telephone was busy, it automatically disconnected. The resulting clicks corrupted the fax or modem call.	Have the sender resend the fax or modem call.

## ERROR MESSAGES IN THE MENUS

What Is Happening	Possible Why	What to Do
You see an "ERROR" message on your TV screen.	When the system encounters a problem, it displays an error message on the TV screen.	In most cases, the ERROR message explains the error. Occasionally, the ERROR message requests that you do something; however, typically all you need to do is select the OK option on the ERROR message to clear the message from your TV screen.
ERROR message text: "The number of password entry retries has been exceeded. Please try again later."	You may try to enter your password three times. If you do not enter the correct password any of those times, then you must wait several minutes until you may try again.	Wait until several minutes have passed, and try again.
ERROR message text: "The front panel buttons are locked."	You or someone else placed a lock on the recorder front panel buttons.	Use the remote control to unlock the front panel buttons.
ERROR message text: "Unable to acquire signal." or "Unable to acquire program guide information."	The recorder is not receiving a strong enough signal to maintain an uninterrupted, clean picture.	Check the condition of all the coaxial cables and cable connections in your system. Check the condition of the antenna mounting and aiming, and re-aim the antenna if needed. If the system is OK, then there may be a weather-related problem with transmission of the satellite signal.

# User and Installation Guide

ATTENTION: “Your Smart Card does not currently have authorization to view or purchase this program. Please wait or channel up or down.”	There is a problem with the <b>Program Guide</b> information transmitted to your recorder via the satellites.	You cannot watch the selected program, even though it is displayed in the <b>Program Guide</b> . Try a different program or channel.
ATTENTION: “Acquiring satellite signal.”	The recorder was just plugged in, and is acquiring the satellite signal. The satellite antenna may have moved out of alignment with the satellite signal. Connecting cables may have loosened or have moisture inside. The dish may be full of snow or debris. There is interference with the satellite signal.	Wait a few minutes to see if the message is removed. Confirm that the <b>Signal Strength</b> bar in the <b>Point Dish and Signal Strength</b> menu is <i>green</i> and is displaying the word “Locked.” If it is not, re-aim the satellite antenna. Confirm that all the cables are firmly connected and dry. Clean out the dish, call the Service Center for assistance.

## DIAGNOSTIC TEST

What Is Happening	Possible Why	What to Do
You are doing a Front Panel or Remote Control Diagnostic Test, and the recorder turns OFF.	You pressed the <b>Power</b> button on either the front panel or the remote control.	Turn the recorder back ON, and use the on-screen menus to return to the <b>Diagnostics</b> menu. You can now resume the test, but remember not to press the <b>Power</b> button.
You are doing a Front Panel Diagnostic Test, and the recorder displays a failure message.	The front panel buttons are not working correctly. <b>Note:</b> The front panel button lock has no effect on this test.	Call the Service Center for assistance.
You are doing a Remote Control Diagnostic Test, and the recorder does not respond when you press a remote button.	You pressed the <b>Address</b> button, or any of the VCR control buttons.	The Remote Control Diagnostic Test does not cover the <b>Address</b> button or the VCR control buttons.
You are doing a Remote Control Diagnostic Test, and the recorder displays the <b>Diagnostics</b> menu.	You pressed the <b>Cancel</b> button.	Pressing the <b>Cancel</b> button returns the recorder to the <b>Diagnostics</b> menu. Select the <b>Remote Control</b> option to resume the test, but remember not to press the <b>Cancel</b> button.
You are doing a Remote Control Diagnostic Test, and the recorder displays a failure message.	The remote control may be missing batteries, the batteries may be incorrectly placed in the remote, or the batteries may be weak or dead. If you have a UHF remote, signals from a neighbor’s UHF remote may be blocking signals from your remote from reaching the recorder. The remote control may be damaged or defective.	If the batteries are missing or dead, insert four fresh AAA-size batteries. <b>Note:</b> You may need to reset the remote address for the recorder before the recorder will respond. To prevent UHF signal interference, you may reduce the sensitivity of the recorder to UHF signals by installing a UHF attenuator. If the remote is damaged or defective, call the Service Center for assistance.

# Appendix Problems and Solutions Tables



<p>You are doing a Dish Signal Diagnostic Test, and the recorder displays a failure message.</p>	<p>The satellite antenna may have been moved out of alignment with the satellite signal. Connecting cables may have loosened, or have moisture inside. There may be interference with the satellite signal. The dish may be full of snow or debris.</p>	<p>Re-aim the satellite antenna, to obtain maximum signal strength. Check the antenna mount, tightening bolts if needed. Check that all cables are firmly connected and dry. A variety of atmospheric factors (in particular, heavy rain, snow, or cloud cover) may interrupt the satellite signal. Check whether the dish is full of snow or debris, and clean it out if necessary. Call the Service Center for assistance.</p>
<p>You are doing a Telephone Connection Diagnostic Test, and the recorder displays a failure message.</p>	<p>The recorder cannot get a dial tone through the telephone connection.</p>	<p>Check the <b>Telephone Jack</b> connection on the recorder back panel, the telephone line, and the line connection to a telephone connection. Make sure that the telephone line is connected to an active telephone connection. Make sure that no one else is using the telephone line while you do the test. Call your local telephone company for assistance.</p>
<p>You are doing a Main Unit Diagnostic Test, and the recorder displays a failure message.</p>	<p>The recorder may have been damaged or be defective.</p>	<p>Call the Service Center for assistance.</p>

## CALLER ID

What Is Happening	Possible Why	What to Do
<p>You receive a telephone call, but your recorder does not display a Caller ID message on your TV screen.</p>	<p>Your recorder or your television may be turned off. Your recorder may not be connected to an active telephone connection. You may be recording a program using a VCR Event Timer. You may not have purchased Caller ID from your telephone company. You may have disabled the Caller ID feature.</p>	<p>Make sure that both the recorder and the television are turned on. Make sure that the recorder is properly connected to an active telephone connection. If you are recording a program using a VCR Event Timer, the recorder will not display a caller ID message (so that the message does not appear on your video tape). You must purchase Caller ID from your telephone company (the recorder displays caller ID information, but does not generate it). Re-enable the Caller ID feature.</p>
<p>Your recorder displays a Caller ID message with the caller's telephone number but no name, name but no number, or with neither a number nor a name.</p>	<p>The caller has blocked his or her name or telephone number from being displayed.</p>	<p>As with caller ID equipment available from your local telephone company, the caller can block his or her name or number from being displayed.</p>

# User and Installation Guide

## EVENT TIMERS

What Is Happening	Possible Why	What to Do
You try to set up an event timer, but the recorder displays an ERROR message noting that the event is locked.	You must enter the system password before you can create an event timer for a locked event.	To be able to set up an event timer for the event, first enter the system password.
You try to set up an event timer, but the recorder displays an ERROR message noting that the event is a pay per view event.	You must order a pay per view event before you can create an event timer for it.	To be able to set up an event timer for the event, first order it.
You try to set up an event timer, but the recorder displays an ERROR message giving you the option to delete a previously set up event timer.	You have already set up the maximum number of event timers.	To be able to set up a new event timer, delete one of the event timers you previously set up.
You set up an event timer, but your recorder does not tune to the channel of the event, or does not record the event.	You may have set up a <b>Reminder Event Timer</b> but what you should have set up is an <b>Auto-Tune Event Timer</b> or a <b>VCR Event Timer</b> .	Remember that a <b>Reminder Event Timer</b> only reminds you that the event is about to start. An <b>Auto-Tune Event Timer</b> reminds you and tunes the recorder to the channel of the event. A <b>VCR Event Timer</b> does all of the above and starts recording.
You set up an event timer for an event that is repeated (such as a regularly scheduled program), but the timer does not execute for a showing of the event.	You may have set up a timer with an inappropriate frequency.	Remember that a <b>Once</b> event timer executes only one time. A <b>Mon-Fri</b> event timer executes Monday through Friday on the same channel at the same time. A <b>Daily</b> event timer does the same, Monday through Sunday. A <b>Weekly</b> event timer executes once a week on the same channel at the same time.
You set up an event timer, but the timer does not execute at all.	The event time may have changed so that the event timer conflicted with another event timer. The event time may have changed by more than twenty-four hours.	If the recorder is ON and detects an event timer conflict, it will display the <b>Event Timer Scheduling Conflict</b> menu. You must delete one of the conflicting event timers. No event timer will execute if the event time changes by more than twenty-four hours.
You set up a <b>Once</b> event timer, but the timer executes at a different time.	The event time changed.	A <b>Once</b> event timer always executes at the actual time of the event.
You stop the execution of an event timer for one showing of an event that is repeated (such as a regularly scheduled program), but the timer executes for the next showing.	Stopping the event timer applies only to the current showing of the event.	To stop all executions of a repeated event timer, you must delete the event timer. Note that a <b>Once</b> event timer is automatically deleted when it executes.
You set up an event timer, but your recorder stopped recording before the event finished.	There may have been a power outage during recording.	During recording (including ITR and EVENT TIMERS), if there is an interruption in the power supply (as caused by power outages), recording will stop and will not resume automatically.



## ADD LOCAL OR CABLE CHANNELS TO THE PROGRAM GUIDE

What Is Happening	Possible Why	What to Do
A desired local or cable channel does not appear in the <b>Program Guide</b> .	You have not yet added the channel to the <b>Program Guide</b> .	You must add all desired local or cable channels to the <b>Program Guide</b> . Note that you cannot add both local and cable channels.
A desired local broadcast or cable channel appears in the <b>Program Guide</b> , but the programming on the channel does not match published schedules.	You may have added local broadcast channels and then selected one of the <b>Cable Channels</b> options, or added cable channels and then selected the <b>Broadcast Channels</b> option. You may have selected an inappropriate <b>Cable Channels</b> option.	If you add one type of channels and then select another option, the <b>Selected Local Channels</b> list will not change. In that case, the channels on the list would not be correct for the option you selected. Whenever you change the option, you should edit the <b>Selected Local Channels</b> list. Contact your cable TV provider for information on the Standard HRC, and IRC cable systems, and for help in choosing the appropriate <b>Cable Channels</b> option.
A desired local broadcast or cable channel appears in the <b>Program Guide</b> , but the reception of the channel is poor or absent.	Your TV may not be operating properly. The connections in your system may be faulty. Your TV antenna may need to be re-aimed. Other nearby electrical equipment (such as cellular telephones, computers, microwave ovens, radios, stereos, or TVs) may be causing interference.	Make sure that your TV is working properly, and that the brightness, contrast, and tuning are adjusted correctly. Make sure that the TV is connected properly to your recorder. Verify that all required coaxial cables are in place. Check for moisture or water leakage in all connections. Dry out if needed, then seal with coaxial cable sealant after reconnection. Check antenna-to-recorder cable run length; if over 100 feet, install a line amplifier. Make sure that the TV antenna is aimed properly. Note your local weather conditions. Heavy rain, snow, or cloud cover may be interfering with transmission of signals. Check other nearby electrical equipment as possible sources of interference.
You try to enter a channel number, but the recorder does not respond.	You may be entering a channel number with fewer than three digits, for example 2 or 10.	To enter a channel number with fewer than three digits, you must enter leading zeros. For example, enter 002 for channel 2, and 010 for channel 10.
You try to enter a channel name in the <b>Edit Local Channel Name</b> menu, but the recorder does not display the last character(s) of the name.	You may have tried to enter more than the maximum number of characters.	Remember that you can enter only a limited number of characters, including spaces, for a channel name. You may need to abbreviate the name.

## TAPE PLAYBACK AND RECORDING

What Is Happening	Possible Why	What to Do
The cassette gets stuck partway during loading, and is ejected.	The cassette may have been inserted incorrectly.	Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointing towards the recorder. Then insert the cassette.
The tape stops during rewind or fast forward.	The Counter Memory function may be turned on in the <b>VCR Setup</b> screen.	Check to see whether there is a checkmark next to <b>Counter Memory</b> in the <b>VCR Setup</b> screen's Options list. If there is, remove the checkmark from the checkbox (see page. 5-14).

# User and Installation Guide

The tape is running but the picture won't appear on the TV screen.	If you are using the RF OUT connection (see page 7-22), the channel selector on the TV may be set incorrectly. If you are using the AV connection or S-VIDEO connection (see page 7-23, 24), the TV receiver may be set to the wrong mode.	Set the channel selector to channel 3 or 4.  Set the TV receiver to its AV mode.
Breaks are noticeable in the Hi-Fi soundtrack.	This may happen when automatic tracking causes the monaural soundtrack to be reproduced during playback.	Adjust tracking manually (see page 5-10).
The playback picture is blurred or interrupted, even though TV broadcasts are clear.	The video heads may be dirty.	The heads must be cleaned. Call the Service Center for assistance and referral to a qualified JVC service technician.
The Hi-Fi soundtrack cannot be heard.	The Audio option at the <b>VCR Setup</b> screen may be set incorrectly.	Choose "HI-FI" for the Audio in the <b>VCR Setup</b> screen (see page 5-13).
Recording won't start.	There may be no cassette loaded. The loaded cassette may have its record safety tab removed.	Insert a cassette. Remove the cassette and cover the safety tab hole with adhesive tape, or load a cassette with its record safety tab intact.
Tape-to-tape editing won't work.	The recorder and a second VCR or a camcorder may have been incorrectly connected. The power to one or more of the units may not have been turned on. The recorder's input mode may not have been selected.	Refer to the directions and the illustration in the <i>Editing to or from Another VCR</i> (see page 5-32) or <i>Editing from a Camcorder</i> (see page 5-33) to properly connect the units. Make sure the power to all units is turned on. Select the recorder's input mode (see page 5-32, 33).

## TIMER RECORDING

What Is Happening	Possible Why	What to Do
Timer recording won't work.	There may be no cassette loaded. The loaded cassette may have its record safety tab removed.	Load a cassette with the record safety tab intact (or with its record safety hole covered with adhesive tape).  Remove the cassette and cover the safety tab hole with adhesive tape, or load a cassette with its record safety tab intact.
During timer recording, the cassette is automatically ejected, the power is shut off and the TIMER light won't stop blinking.	The end of the tape was reached during timer recording.	The program may not have been recorded in its entirety. Next time make sure you have enough time on the tape to record the entire program.

### ATTENTION:

This recorder contains microcomputers. External electronic noise or interference can cause a microcomputer to malfunction. If the recorder does not operate correctly, switch its power off and unplug the power cord from the AC outlet. Wait for a while and then plug the power back in. Eject and check the condition of the cassette. If everything appears normal, resume operating the recorder as usual.



## **QUESTIONS AND ANSWERS**

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### **PLAYBACK**

- Q. What happens if the end of the tape is reached during playback or search?**  
**A.** The tape is automatically rewound to the beginning.
- Q. Can the VCR indefinitely remain in the still mode?**  
**A.** No. It stops automatically after 5 minutes to protect the heads.
- Q. During search, still and frame-by-frame playback, the picture is intermittent. What's the cause?**  
**A.** Picture loss occurs when these types of playback are attempted with a tape recorded in LP mode. Pressing **PLAY** to return to normal playback will restore the picture.
- Q. When returning from multi-speed search to normal playback, the picture is disturbed. Should I be concerned about this?**  
**A.** No, it is normal.
- Q. Other than preventing further recording, what effect does removing the safety tab have?**  
**A.** It disables marking or erasing of index codes.
- Q. Sometimes, during Index Search, the VCR can't find the program I want to see. Why not?**  
**A.** There may be index codes too close together.
- Q. During playback, on-screen operational indicators sometimes jitter. Why does this happen?**  
**A.** If the condition of the tape being played back is not good, jittering of the video (including on-screen indicators) may occur.

### **RECORDING**

- Q. When I pause and then resume a recording, the end of the recording before the pause is overlapped by the new recording. Why does this happen?**  
**A.** This is normal. It reduces distortion at the pause and resume points.
- Q. Can the VCR indefinitely remain in the Record-Pause mode?**  
**A.** No. The VCR automatically goes to its Stop mode after 5 minutes to protect the heads. When paused during Instant Timer Recording (ITR), the VCR shuts off automatically after 5 minutes.
- Q. What happens if the tape runs out during recording?**  
**A.** The VCR automatically rewinds it to the beginning.

### **TIMER RECORDING**

- Q. REC and TIMER remain lit on the front display panel. Is there a problem?**  
**A.** No. This is a normal condition for a timer recording in progress.
- Q. Can I program the timer while I'm watching a tape or a TV broadcast?**  
**A.** Yes, but while you are setting the timer you won't see the tape's or broadcast program's picture as it is replaced by the on-screen menu. The audio from the tape or broadcast program will be present during the setting of the timer.

# User and Installation Guide

## SPECIFICATIONS

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### GENERAL

Power requirement	: AC 120 V $\sim$ , 60 Hz
Power consumption	: 50 W
Temperature	
Operating	: 5°C to 40°C (41°F to 104°F)
Storage	: -20°C to 60°C (-4°F to 140°F)
Operating position	: Horizontal only
Dimensions (W x H x D)	: 400 x 142 x 350 mm (15-3/4" x 5-5/8" x 13-13/16")
Weight	: 7.9 kg (17.5 lbs)
Maximum recording time	
D-VHS	: 420 min. with DF-420 video cassette
VHS (SP)	: 210 min. with T-210 video cassette
VHS (EP)	: 630 min. with T-210 video cassette

### VIDEO/AUDIO (D-VHS)

Format	: MPEG2 standard mode
Track composition	
Tape speed	: 16.67 mm/sec
Head azimuth	: $\pm$ 30 deg
Drum rotation	: 1800 rpm
Tracking system	: CTL track system
Recording specification	
Main data input rate	: 14.1 Mbps
Sub data input rate	: 0.146 Mbps
Recording rate	: 19.14 Mbps
Track structure	: 1 sector
Length of sync block	: 112 bytes
Inner ECC	: RS code
Outer ECC	: RS code
Code word shuffling	: 6 tracks
Modulation system	: SI-NRZI

### VIDEO/AUDIO (VHS)

Format	: VHS NTSC standard
Signal system	: NTSC-type color signal and EIA monochrome signal, 525 lines/60 fields
Recording/ Playback system	: DA-4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	: 240 lines
Frequency range	
Normal audio	: 70 Hz to 10,000 Hz
Hi-Fi audio	: 20 Hz to 20,000 Hz

### CONNECTOR

Input/Output	: RCA connectors (IN x 1, OUT x 2) S-VIDEO connectors (OUTx1)
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### TUNER (D-VHS)

Signal STD	: DVB
Input frequency	: 950 – 1450 MHz
Wave form	: QPSK demodulator
Symbol rate	: 1 – 20 MS/s
Bandwidth	: 2 – 27 MHz
DBS monitor (as recording VHF or UHF)	: Under study

### TUNER (VHS)

Tuning system	: Frequency-synthesized tuner
Channel coverage	
VHF	: Channels 2 – 13
UHF	: Channels 14 – 69
RF output	: Channel 3 or 4 (switchable; preset to Channel 3 when shipped) 75 ohms, unbalanced

### TIMER

Clock reference	: Quartz
Program capacity	: 1-year programmable timer/ 10 programs

### ACCESSORIES

Provided accessories	: RF cable (F-type) Remote control unit "AAA" battery x 4 Power cord S-Video cable (4-pin) Audio/Video cable Smart card (pre-installed in recorder) Telephone cord UHF antenna D-VHS tape (DF-180) Antenna kit (HM-DSR100DU only)
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*Specifications shown are for SP mode unless otherwise specified.*

*E. & O.E. Design and specifications subject to change without notice.*



**FOR SERVICING**

**HOW TO LOCATE YOUR JVC SERVICE CENTER**

**TOLL FREE: 1-800-252-5722**

**Dear customer:**

*In order to receive the most satisfaction from your purchase, read the instruction booklet before operating the unit. In the event that repair is necessary, or for the address nearest your location, please refer to the factory service center list below or within the Continental United States, call 1-800-252-5722 for your authorized servicer. Remember to retain your Bill of Sale for Warranty Service.*

— JVC

**JVC SERVICE & ENGINEERING  
COMPANY OF AMERICA  
DIVISION OF US JVC CORP.**

**FACTORY SERVICE CENTER LOCATIONS**

107 Little Falls Road  
Fairfield, NJ 07004-2105  
(973) 808-9279

1500 Lakes Parkway  
Lawrenceville, GA 30243-5857  
(770) 339-2522

705 Enterprise Street  
Aurora, IL 60504-8135  
(630) 851-7855

5665 Corporate Avenue  
Cypress, CA 90630-4727  
(714) 229-8011

10700 Hammerly Boulevard, Suite 110  
Houston, TX 77043-2310  
(713) 935-9331

2969 Mapunapuna Place, Suite 101  
Honolulu, HI 96819-2000  
(808) 833-5828

230 Eliot Street  
Ashland, MA 01721-2377  
(508) 881-5923

8192 W State Road 84  
Davie, FL 33324-4611  
(954) 472-1960

890 Dubuque Avenue  
South San Francisco, CA 94080-1804  
(415) 871-2666

*Sophisticated electronic products may require occasional service. Just as quality is a keyword in the engineering and production of the wide array of JVC products, service is the key to maintaining the high level performance for which JVC is world famous. The JVC service and engineering organization stands behind our products.*

NATIONAL HEADQUARTERS  
JVC SERVICE & ENGINEERING COMPANY OF AMERICA  
DIVISION OF US JVC CORP.  
107 Little Falls Road  
Fairfield, NJ 07004-2105

**If you ship the product...**

*Pack your JVC unit in the original carton or one of equivalent size and strength. Enclose, with the unit, a letter stating the problem or symptom that exists and also a copy of the receipt or bill of sale you received when you purchased your JVC unit. Print your home return address on the outside and the inside of the carton. Send to the appropriate JVC Factory Service Center as listed above.*

**Don't service it yourself.**

**CAUTION**

*To prevent electrical shock, do not open the cabinet. No user serviceable parts inside.  
Refer servicing to qualified service personnel.*

**ACCESSORIES**

*To purchase accessories for your JVC product, you may contact your local JVC Dealer.  
Or from the 48 Continental United States call toll free:  
1-800-882-2345.*

# User and Installation Guide

## WARRANTY

### LIMITED WARRANTY

CONSUMER VIDEO 1-90

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period")

PARTS	<b>1</b> YR	LABOR	<b>90</b> DAYS
-------	-------------	-------	----------------

THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY (50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

#### WHAT WE WILL DO:

If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

#### WHAT YOU MUST DO FOR WARRANTY SERVICE:

Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800) 252-5722.

If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus a letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number.

If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

#### WHAT IS NOT COVERED:

This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus (Needle) are covered for 90 days from the date of purchase;
7. Programming fees payable to your service provider if the product is removed for repair or replacement.
8. Accessories;
9. Batteries (except that Rechargeable Batteries are covered for 90 days from the date of purchase); from the date of purchase);

There are no other express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA  
DIVISION OF US JVC CORP.

41 Slater Drive  
Elmwood Park, New Jersey 07407

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

#### For customer use:

Enter below the Model No. and Serial No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No.: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Purchase date: \_\_\_\_\_

Name of dealer: \_\_\_\_\_

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## **NOTES**



# JVC

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DIVISION OF US JVC CORP.  
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To subscribe to programming, or for assistance with installing or using the system, call the DISH Network Service Center at 1-800-333-3474, or see the Dish Network's home page at <http://www.dishnetwork.com> on the World Wide Web.

For warranty service, or for information about the features and operation of the HM-DSR100U call JVC at 1-800-252-5722.

For more information on JVC products see JVC's home page at <http://www.jvc.com> on the World Wide Web.