

Panasonic®

Operating Instructions

 **SHOWSTOPPER™**

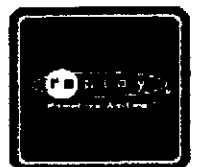
MODEL PV-HS2000



HARD-DISK RECORDER



Please read these instructions carefully before attempting to connect, operate or adjust this product. Please save this manual.



For assistance, **Phone** 1-888-843-9788

Web <http://www.panasonic.com/video>

e-mail Consumerproducts@Panasonic.com

Important Safeguards

Please read all these instructions regarding your the Hard Disk Recorder and retain for future reference. Follow all warnings and instructions marked on the Hard Disk Recorder.

Read instructions All the safety and operating instructions should be read before the product is operated.

Retain instructions The safety and operating instructions should be retained for future reference.

Heed warnings All warnings on the product and in the operating instructions should be adhered to.

Follow instructions All operating and use instructions should be followed.

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

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

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. Do not expose the product to rain or inclement conditions.

Accessories Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product 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. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Moving a 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.



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

The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

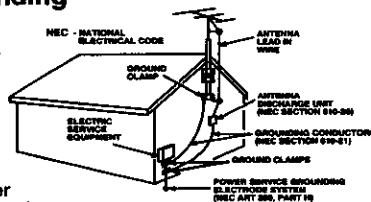
Power sources This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power or other sources, refer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

Grounding or polarization This 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.

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

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 conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



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.

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.

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

Object and liquid entry Never push objects of any kind into the 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.

Servicing Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

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

- 1 When the power-supply cord or plug is damaged.
- 2 If liquid has been spilled, or objects have fallen into the product.
- 3 If the product has been exposed to rain or water.
- 4 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.
- 5 If the product has been dropped or damaged in any way.
- 6 When the product exhibits a distinct change in performance — this indicates a need for service.

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

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 proper operating condition.

Heat The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat as well as direct sunlight. If the product experiences sudden changes in temperature, moisture may form inside the product.

Protect the power cord Do not damage the power cord. Damage to the power cord may cause a fire or shock hazard. When unplugging the power cord, please hold it by the plug and remove it carefully.

Do not place heavy objects on the Hard Disk Recorder Heavy objects placed on the Hard Disk Recorder will cause damage (This does not mean your cable box). The top of the Hard Disk Recorder is also slotted to provide ventilation. Do not obstruct these ventilation slots.

Avoid extremely hot locations Do not place the Hard Disk Recorder over or near any kind of heater or regulator, in direct sun inside a closed vehicle, etc.

Avoid sudden temperature changes Do not move the Hard Disk Recorder suddenly between areas of extreme temperature variation. If the Hard Disk Recorder is suddenly moved from a cold place to a warm place, moisture may condense in the unit.

Protect the hard disk Do not apply any shock to the Hard Disk Recorder at all times in order to avoid damage to the hard disk.

Information

This equipment has been tested and found to comply with the limits Class B digital device, pursuant to Part 15 of the FCC Rules. These are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

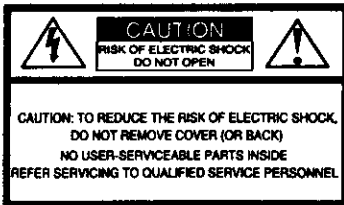
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If necessary, the user should consult the dealer or an experienced radio or television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No.004-000-00345-4.

Precautions



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 product.

IMPORTANT: Recording of copyrighted television programs may violate copyright law.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

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.

IMPORTANT: Carefully read and follow all the "Important Safety Information" beginning on page 2 before proceeding further.

FCC Warning: Any unauthorized changes or modifications to this equipment would void the user's authority to operate.

Copyright and Disclaimer

© 2000 Panasonic. All rights reserved.

This document contains confidential and proprietary information of Panasonic (the "Company"). No part of this document may be copied, reproduced, transmitted, distributed, transcribed, stored in a retrieval system, modified or translated into any other language or computer language, or sublicensed, in any form or by any means - electronic, mechanical, magnetic, optical, chemical, manual or otherwise - without the prior written consent of the Technical Support Manager at the Company. Further, this document may not be disseminated (or otherwise made available) using telecommunications lines or frequencies except in a Limited Access Environment and only to persons authorized by the Company to receive and use this document and the information contained therein. For purposes of this copyright, the term "Limited Access Environment" shall mean a computer network (including, without limitation, a local area network, a wide area network or an intranet) that restricts access to personnel in a reliable fashion (which, at a minimum, shall require each user to enter a unique password in order to access the network) that can reasonably be expected to prevent access to the document by persons other than authorized users. In addition the training and instructional procedures described in this document are confidential and proprietary intelligence of the Company and may not be copied or used except as permitted by the Company. Any unauthorized or otherwise improper use of this document or any of its material by any person will subject that person to liability for damages.

The Company shall not be liable for any errors contained herein or for any damages arising out of or related to this document or the information contained therein, even if the Company has been advised of the possibility of such damages.

This document is intended for informational and instructional purposes only. The Company reserves the right to make changes in the specifications and other information contained in this document without prior notification.

* ReplayTV Service, ReplayZones, and QuickSkip are trademarks of ReplayTV, Inc.

LSQT0269A

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 consumer uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.
U.S. patent Nos. 4,631,603, 4,577,216, 4,819,098 and 4,907,093.

Table of Contents

**Before
Using!**

Welcome to the Hard Disk Recorder	5
Purchasing Information	5
Package Contents	5
Before Using	6, 7
• Installing the Batteries	6
• Watching the Welcome Video	6
• Hard Disk Recorder Feature Updates	6
• Using the Main Menu	7
Basic Connections (Antenna, TV, Telephone)	8, 9
Advanced Connections	10 ~ 17
• Planning, A/B Cable Systems, Satellite Receiver, Cable Box, Television ...	10
• Cable Box Connection, VHF/UHF Jack Only Connections	11
• Cable Box and A/V Receiver Connections	12
• Satellite Receiver and A/V Receiver (Using S-Video) Connections	13
• Cable Box, Satellite Receiver, and VCR Connections	14
• Cable Box, Satellite Receiver, A/V Receiver, and VCR Connections ..	15
• Watching One Show While Recording Another	16
• Attaching Satellite Receiver and Cable Box (IR Blaster Setup)	16, 17
Initial Setup	18 ~ 21
• Changing Your Setup Later On	20
• Input Options	21
• Completing the IR Blaster Setup	21

**Use
Now!**

Controlling Live Television	22 ~ 25
• Viewing Live Television	22
• Using Instant Replay	22
• Pausing Live Television and Recorded Shows	23
• Using Rewind and Fast Forward	23
• Using Slow Motion	24
• Using Frame Advance	24
• Using Quick Skip	24
• Copy Protection Information	25
Recording Shows	26 ~ 34
• Selecting a Show	26
• Watching and Recording a Show That is Currently Airing	27
• Recording a Single Upcoming Show	27
• Recording Multiple Episodes of One Show	28
• Setting the Recording Options	29
• Recording From Show Categories	30
• Recording Shows Based On a Theme You Choose	31
• Record, Create, Cancel	32
• Finding Shows	33
• Find All Episodes of a Show	34
Watching Your Recorded Shows	35 ~ 39
• Seeing What a Replay Channel Will Record	36
• Watching a Show	37
• Preserve a Show	38
• Saving Shows to Videotape	39
Managing Recording Space	40, 41
• Priorities, Guaranteed, Non-Guaranteed Recording	40
• Guaranteed, Space-available Record	41
• Recording Space Management Tips	41
Universal Remote Control	42 ~ 44
• Changing Volume Lock	42
• Setting Up Your Components	42
• Searching for Your Component's Code	43
• Learning the Codes Programmed into the Remote	44
• Re-assigning Component Mode Buttons	44
Code Numbers For Your Components	45 ~ 49

**Other
Information!**

Troubleshooting	50 ~ 52
Specifications and Information	53
Software License Agreement	54
Warranty	55
Service Center List	56
Regulatory Notices for the U.S.	56
Location of Controls	57 ~ 59

Welcome to the Hard Disk Recorder

Congratulations on your purchase of the Hard Disk Recorder. Once you've experienced the exciting new world of personal television right in your very own home, you'll never want to watch plain old television again. Read on and see what the Hard Disk Recorder can do. No videotape. No hassles. No compromises. If this sounds like the television experience you've always dreamed of ... it is!

- The Hard Disk Recorder gives you the ability to easily find and automatically record your favorite television shows, then watch them whenever you want. On your schedule ... not somebody else's. You will never miss your favorite TV shows again!

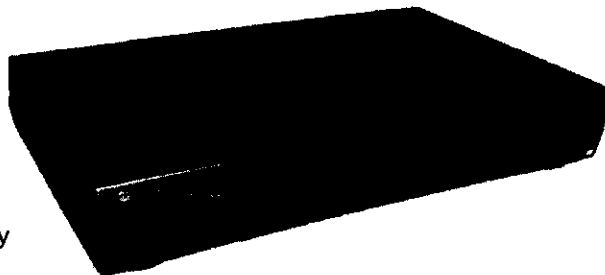
Create personal Replay Channels based on your favorite television shows or themes—like actors, directors, sports teams or hobbies. These channels will automatically record each new episode of your favorite shows, or constantly search for and record shows that match your interests.

Check out the exciting television shows in ReplayZones™—all of your favorites organized by topic, and all in one easy-to-find area.

You have the power to control live television. You can pause, rewind, play in slow motion, see an instant replay and more without missing a single scene.

Instantly jump over undesired recorded television scenes with QuickSkip™.

Unsure of what channel or time a show is on? Looking for a specific show title, actor, director, topic? Use Find Shows—a real-time, keyword search function.



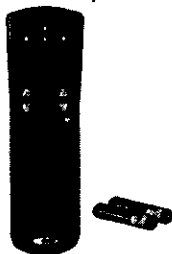
Purchasing Information

Date of Purchase _____ • Dealer Phone No. _____
 Dealer Purchased From _____ • Model No. **PV-HS2000**
 Dealer Address _____ • Serial No. _____

Package Contents

As you unpack the Hard Disk Recorder, make sure the following items were included. If any of these items are missing, call Customer Orders at 1-800-332-5368.

- Remote Control (2000010) with 2 AA Batteries (2300004)



- Power Cord (2100032)



- S-Video Cable (2100011)



- Telephone Splitter (1700034)



- Audio/Video Cable (2100010)



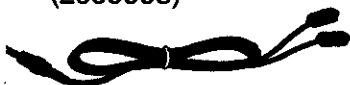
- Telephone Cord (2100029)



- 9 to 15 pin Adapter (1700038)



- IR Blaster (See page 17.) (2000008)



- Serial Cable (2100015)



- RJH to 9-pin Adapter (1700039)



Do the following before you connect the Hard Disk Recorder to your television.

- Save the box and packing material that the Hard Disk Recorder came in. The Hard Disk Recorder should always be transported in the box.
- File your sales receipt in a safe place.
- Thoroughly review the safety information and strictly follow all setup and operating procedures contained throughout this guide.

Before Using

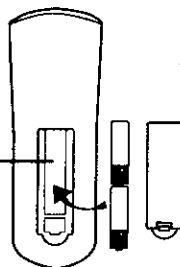
Installing the Batteries

The Hard Disk Recorder remote control requires two (2) new AA alkaline batteries.

1. On the back of the Hard Disk Recorder remote, pull back on the tab and lift the battery cover off.



2. Match the + and - marks on the batteries to the + and - marks in the battery case, then insert the batteries.



3. Press the battery cover back into place.



4. Test the unit by pressing POWER. If the batteries are inserted correctly, the red light will blink.

NOTE: Removing the batteries will not require you to re-program your remote control.

Watching the Welcome Video

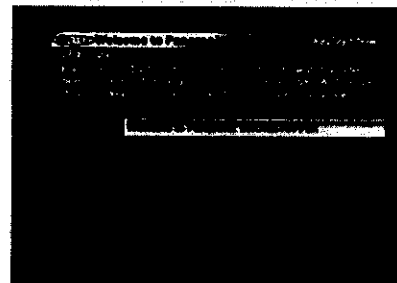
Make sure you have completed all the connections. (See pages 8~17.)

An instructional video is waiting for you to play directly from the Hard Disk Recorder's Replay Guide. To watch the video:

1. Once you complete the on-screen setup, press **REPLAY GUIDE** on the remote.
2. Using the arrow buttons on the remote, highlight the video titled "Welcome to Panasonic SHOWSTOPPER."
3. Press **PLAY** on the remote.

You may use all of the Hard Disk Recorder's television control features, such as pause and rewind, while watching this video. All of the features covered in the instructional video are also referenced in this guide.

After you watch the video and are comfortable with the Hard Disk Recorder's features, you may want to save the video onto a videotape and delete the video from the Replay Guide. This will make more room for recording shows. See "Saving Shows to Videotape" on page 39 for instructions on connecting the Hard Disk Recorder to a VCR.



Hard Disk Recorder Feature Updates

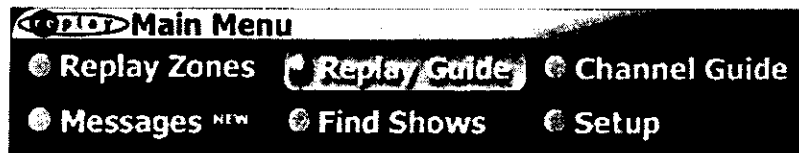
Occasionally, new features are added to the Hard Disk Recorder. These features are updated directly over the telephone line you connect to the Hard Disk Recorder. As features change, you may encounter features that perform differently from those in this guide. In general, follow the on-screen instructions if a feature is not documented in this guide.

Using the Main Menu

Make sure you have completed all the connections. (See pages 8~17.)

Use the Main Menu to change information you provided during the on-screen setup of the Hard Disk Recorder, and to use some of the Hard Disk Recorder's main features.

Press the MENU button on the Hard Disk Recorder remote control to display the Main Menu.



Replay Zones

Go here to record special television programming organized in categories for you. In this frequently updated area, you'll find the best of what's on in an easy-to-use lineup.

Replay Guide

Go here to watch your recorded shows. Every show that the Hard Disk Recorder records is stored in the Replay Guide until you delete it or it's replaced by the next recorded show. Also listed are the upcoming recordings you have set.

Channel Guide

To record any show that is available to you, start from the Channel Guide. The Channel Guide is an interactive, on-screen program guide that lists seven days of television information for all of the channels you currently receive.

Messages

You'll receive a welcome message after completing the on-screen setup of the Hard Disk Recorder for the first time. Messages occasionally appear to inform you of special occurrences while using the Hard Disk Recorder. If you see that a new message has been received, highlight **Message** and press **SELECT**. Read the new message and take the appropriate action.

Find Shows

Select **Find Shows** to quickly locate a show for recording using a keyword search. After the Hard Disk Recorder searches for you, you can set a show for recording, or create a theme channel based on your search.

Setup

Add or Remove Channels: Here you can add or remove channels from the Hard Disk Recorder Channel Guide. This is handy for removing channels you don't subscribe to, or channels that are inappropriate for some audiences.

Change Default Record Options: Change the current recording options that the Hard Disk Recorder uses to record shows.

Change Display Brightness: You can use this feature to adjust the brightness of the Hard Disk Recorder screens.

Change Dialing & Input Settings: Here you can change the information you provided during the on-screen setup process if you later add or remove video equipment, or change the telephone number used to connect to the **teplayTV Service™**. See "Changing Your Setup Later On" on page 20 for more on the setup process.

Important Notes:

- The Hard Disk Recorder does not record copy protected programs. A warning screen will appear if you try to playback a copy-protected program.
- Updates to the software will become available periodically, so please refer to our website at <http://www.panasonic.com/video> or call 1-888-843-9788 for the latest updates to the Operating Instructions.
- The contents of the Replay Guide may change without notice.

Basic Connections

The jacks on the back of the Hard Disk Recorder connect to your television, telephone line, and TV signal. You need at least one input connection, one output connection and a telephone line.

If you receive TV signals from multiple sources, such as cable and satellite, you should connect the Hard Disk Recorder to all. That way you'll have easy access to all the channels from all your sources. For more connections, see pages 10~17 or please visit the website at <http://www.panasonic.com/video>.

- NOTES**
- Do not connect any component to the INPUT jacks on the Hard Disk Recorder other than a satellite receiver, direct cable line (or cable box), or a regular antenna signal. You can, however, connect the Hard Disk Recorder to your VCR to save programs long-term.
 - Do not connect video game machines to the Hard Disk Recorder. It is not designed to receive non-standard video signals like the ones from these devices.
 - A DVD player should be connected directly to your television, not to the Hard Disk Recorder.

You must complete the on-screen setup before using the Hard Disk Recorder. See "Initial Setup" on pages 18~21.

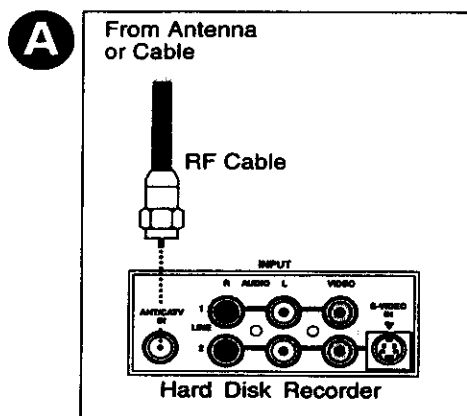
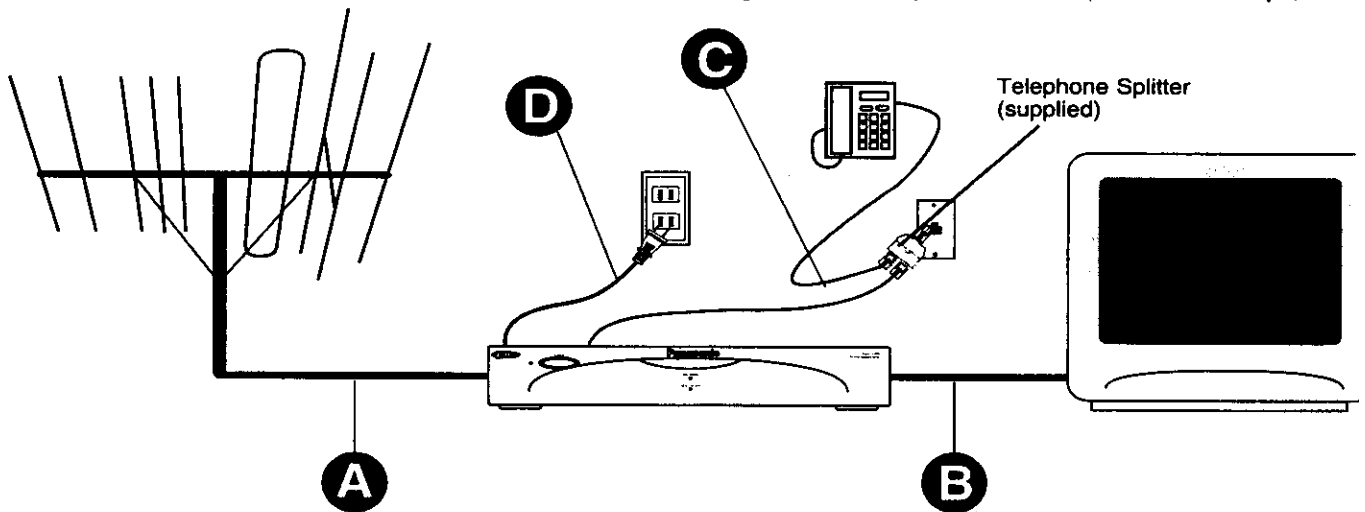
Before you connect any device to the Hard Disk Recorder:

- Be sure there is nothing covering the heat ventilation slots on top of the Hard Disk Recorder. Heat build-up could interfere with the Hard Disk Recorder's performance.
- Be sure both the Hard Disk Recorder and any connected devices are turned off and unplugged.
- Put the Hard Disk Recorder in a place where there is a direct path to the user of the remote control.

Using wireless phone jacks

If there is no phone jack conveniently located near where you have placed the Hard Disk Recorder, consider using a wireless phone jack system. Wireless phone jacks convert ordinary electrical outlets into phone jacks. They are available from Panasonic or at electronics stores, and can be installed with no additional wiring or tools.

Be sure to purchase a wireless phone jack that operates at the highest modem speed available (at least 33.6 kbps, V.34



Connecting the incoming television signal

The ANT/CATV IN jack on the Hard Disk Recorder is reserved for a regular antenna, or the RF cable from a cable system source. The cable system source can be either the actual cable coming from the wall (cable direct) or from the OUTPUT jack of a cable box. If your cable box has Audio and composite Video output, connect an A/V cable to the LINE INPUTs on the Hard Disk Recorder. Select the appropriate setup from the connection options on pages 10~17.

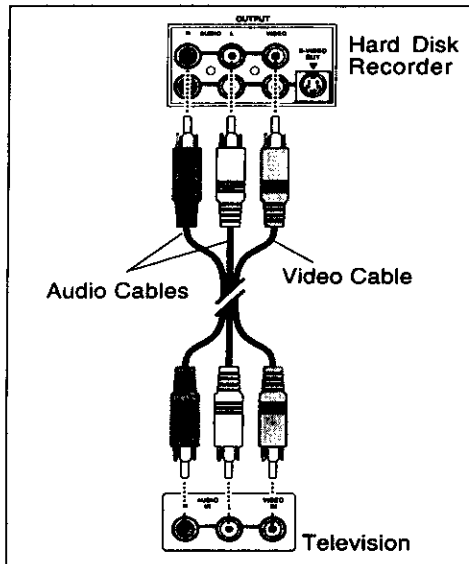
- NOTE** • When using "Nut type" RF coaxial cables, tighten with fingers only. Overtightening may damage the terminals.

Modifying an older type antenna

If your regular antenna does not have an RF cable and compatible connector, like the one illustrated (for example, your antenna is 300-ohm flat twin leads, or separate UHF and VHF antennas) you will need an adapter or combiner to connect it to the Hard Disk Recorder. These adapters can be found at most electronics stores.

Input connections from satellite receivers and cable boxes

You can connect the Hard Disk Recorder to a satellite receiver or a cable box that has either S-Video output or regular composite video output. You can connect two such devices, one S-Video and one composite or, alternatively, two composites. If you have a choice, use S-Video. It provides a sharper image. See pages 12~1

B

Connecting a composite-video television

1. Connect the yellow video cable from one of the yellow VIDEO terminals in the LINE OUT cluster on the Hard Disk Recorder to the yellow VIDEO IN terminal on your television.
2. Connect one end of the red and white audio cables to the AUDIO terminals in the LINE OUT cluster on the Hard Disk Recorder that are in line with the yellow video terminal you used. For example, if you used LINE 1 for video, use LINE 1 for audio.

NOTES

- If your TV has only one AUDIO IN jack, use the white plug and leave the red plug unattached on both the Hard Disk Recorder and your television. You may purchase an adapter that combines the two audio cables and then connect it to the TV's available AUDIO jack.
- If your television has an S-video terminal, see page 13.
- If your TV has a VHF/UHF jack only, you need to purchase an RF modulator. You will only get mono audio this way. However, you can avoid using an RF modulator by connecting the Hard Disk Recorder to a VCR. See "Connecting the Hard Disk Recorder to a TV That Has a VHF/UHF Jack Only" on page 11.
- Refer to your TV's operating instructions for more information on connecting devices to your TV.

C

Connecting the telephone line

You need to connect the Hard Disk Recorder to a telephone jack to communicate with the ReplayTV Service. The telephone connection is used nightly by the Hard Disk Recorder to receive updates to the Channel Guide and other Hard Disk Recorder enhancements. The phone connection is also used to update the Hard Disk Recorder with new features, as they become available.

The Hard Disk Recorder may not be used on coin services provided by the telephone company, and you may not be able to use the Hard Disk Recorder if you are on a party line or if you use a pulse telephone. Contact your local telephone company with regard to these matters. If you have an older, 4-prong telephone wall jack, you need a nodular 4-prong adapter (USOC RJA1X).

Connect the supplied telephone cord from the telephone wall jack in your home to the TEL LINE jack on the Hard Disk Recorder. If the wall jack is being used, plug the supplied telephone splitter into the wall jack. Then plug both phone lines into the splitter.

Interrupted phone signal

On some phone lines, such as those with voice mail, the normal continuous dial tone can be interrupted. The Hard Disk Recorder can use a line only when the tone is uninterrupted. If you can't clear the tone (for example, by clearing new voice mail messages), you need a different line for the Hard Disk Recorder.

Using the telephone while the Hard Disk Recorder is calling the ReplayTV Service

If you need to use the phone while the Hard Disk Recorder is using the phone line, you'll need to stop the Hard Disk Recorder phone call and wait for the dial tone to return. To stop the phone call and return the dial tone:

1. Pick up the handset and wait 5 seconds.
2. Put back the handset and wait 5 seconds.
3. Repeat steps 1 and 2.
4. Pick up the handset and wait 5 more seconds.
5. At this point, you should hear the dial tone. Enter a phone number within 8 seconds; otherwise, the Hard Disk Recorder will automatically reconnect to the service.

D

Connecting the AC Power cord

Connect the supplied AC power cord to the AC-IN jack on the Hard Disk Recorder and to an electrical outlet.

E

Complete the on-screen setup

See "Initial Setup" on pages 18~21.

Advanced Connections

Planning Input and Output Connections

- S-Video connections provide the best picture quality. If your cable box or satellite receiver has an S-Video OUT jack, use an S-Video cable to connect the device to the Hard Disk Recorder's S-VIDEO IN jack (regardless of whether your television has an S-Video IN jack).
- If your cable box or satellite receiver does not have an S-Video OUT jack or an RF OUT jack, use either the LINE or LINE 2 INPUTS with A/V cables to connect to the Hard Disk Recorder.
- If your television has an S-Video IN jack, use an S-Video cable to connect it to the Hard Disk Recorder's S-VIDEO OUT jack.
- If you want to use both an antenna and cable as inputs, use a cable box with A/V or S-Video output for cable.
- If your TV does not have A/V inputs, you may need to purchase an RF modulator.

Using the Hard Disk Recorder with A/B Cable

If an A/B cable switch is present in your setup, the Hard Disk Recorder does not know if the switch is set to A or B. The Hard Disk Recorder will record shows assuming that the switch is set correctly. Make sure the switch is set to the proper side, A or B, before recording shows with the Hard Disk Recorder.

Connecting DIRECTV™ receivers

If you are connecting a DIRECTV receiver to one of the Hard Disk Recorder's inputs and the receiver has a serial port, use a serial control cable. Otherwise, use the IR (infrared) blaster.

If your DIRECTV receiver has a 15-pin serial connector, use the supplied 15-pin to 9-pin adapter and connect it to the serial cable. Refer to your DIRECTV owner's manual regarding connecting to its serial port.

If the remote control for your DIRECTV receiver has a "UHF" label, or if there is a small antenna on the back of your satellite receiver, you have radio frequency control. Check your receiver owner's manual to see if serial or infrared control is supported.

NOTE

- The Hard Disk Recorder does not support radio frequency (RF) control devices. At this time, only the SERIAL CONTROL port works with DIRECTV.

Connecting Satellite Receivers

If you are connecting a satellite receiver to one of the Hard Disk Recorder's inputs and the receiver has a serial port, use a serial control cable. Otherwise, use the IR (infrared) blaster.

If your satellite receiver has a 15-pin serial connector, use the supplied 15-pin to 9-pin adapter and connect it to the serial cable.

If the remote control for your satellite receiver has a "UHF" label, or if there is a small antenna on the back of your satellite receiver, you have radio frequency control. You can check your satellite receiver owner's manual to verify that serial or infrared control is supported.

NOTE

- The Hard Disk Recorder does not support radio frequency (RF) control devices. At this time, the SERIAL CONTROL port works with Satellite.

Satellite Receiver and Cable Box Controllers

If you connect a satellite receiver or a cable box to the Hard Disk Recorder, you need to attach a controller cable so the Hard Disk Recorder can change the channels on these devices, and control recording and viewing of satellite or cable programming. The controller, either a serial data cable or an IR blaster cable, acts as a remote control for these devices, sending the same signals that their remote controls do. See "Connecting a Serial Cable" on page 16 if your satellite receiver has a serial connector. If your satellite receiver does not have a serial connector, see "Connecting and Setting Up the IR Blaster" on page 17.

Output Connections to the Television

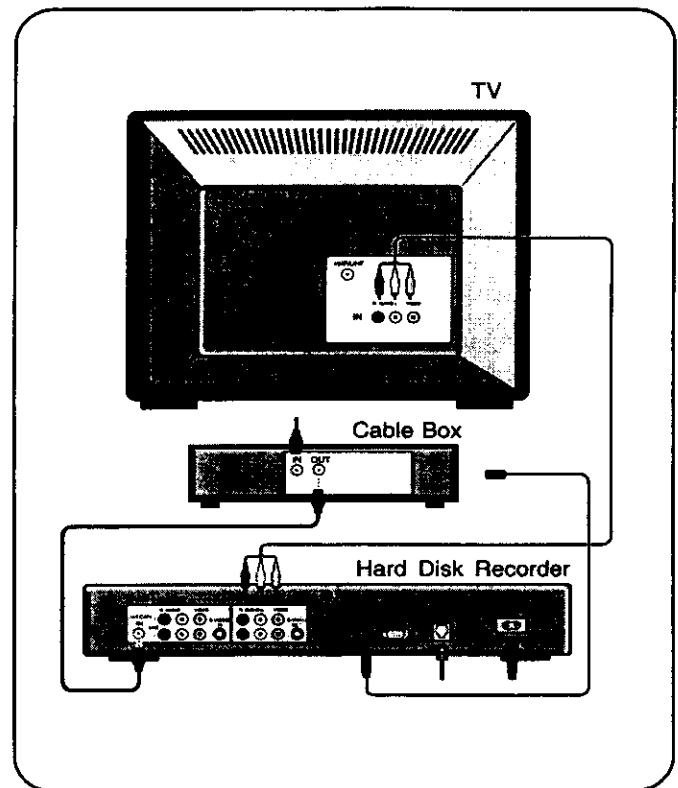
You can connect the Hard Disk Recorder to a television that accepts S-Video or composite-video input. Use S-Video, if possible, to obtain a better image. If your television has a VHF/UHF jack only, you must use an RF modulator or connect the Hard Disk Recorder to your VCR. See "Connecting the Hard Disk Recorder To a TV That Has a VHF/UHF Jack Only" on page 11, or refer to the Quick Setup Guide.

Connecting a Cable Box to the Hard Disk Recorder

1. Connect the incoming television signal to the IN jack on your cable box.
2. Connect the RF cable from the OUT jack on your cable box to the ANT/CATV IN jack on the Hard Disk Recorder.
3. Attach the cable box controller. See "Satellite Receiver and Cable Box Controllers" on page 10.
4. Follow the B ~ E instructions on page 9 for A/V connection, telephone connection, AC power connection, and setup.

NOTES

If your cable box has A/V OUT jacks, connect an A/V cable from these jacks to the INPUT jacks on the Hard Disk Recorder instead of using the RF cable. Refer to your TV or cable box owner's manual for more information on connecting to these components.



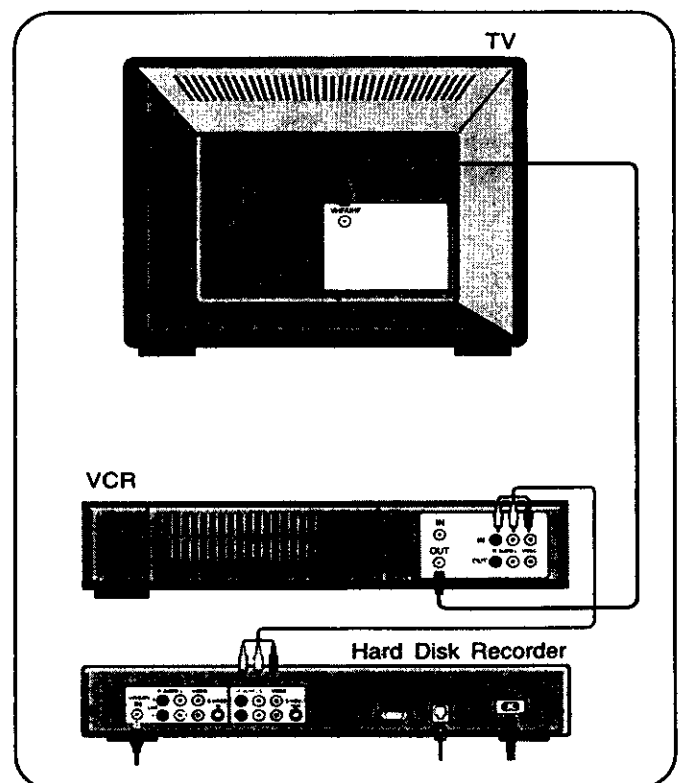
Connecting the Hard Disk Recorder to a TV That Has a VHF/UHF Jack Only

Use this option if you have a television with a VHF/UHF jack only. If you do not have a VCR, you will need to purchase and use an RF modulator.

1. Connect the incoming television signal to the ANT/CATV IN jack on the Hard Disk Recorder.
2. Connect an A/V cable from the OUTPUT jacks on the Hard Disk Recorder to the AUDIO/VIDEO IN jacks on your VCR, matching like colors.
3. Connect the RF cable from the OUT jack on your VCR to the VHF/UHF jack on your television.
4. Follow the C ~ E instructions on page 9 for telephone connection, AC power connection, and setup.

NOTES

- This setup is not recommended for viewing copy-protected programming. Passing the signal through a VCR may reduce video quality.
- You will only get mono audio this way. If you need to purchase an RF modulator, follow the connection instructions that come with the modulator.
- To use the Hard Disk Recorder with this option, you will need to set the input on your VCR to display the output from the Hard Disk Recorder. To do this, press the Input Select or TV/VTR (TV/VCR) button on your VCR.
- You may also need to tune your TV to the channel that displays auxiliary input.
- Refer to your TV or VCR owner's manual for more information on connecting to these components.



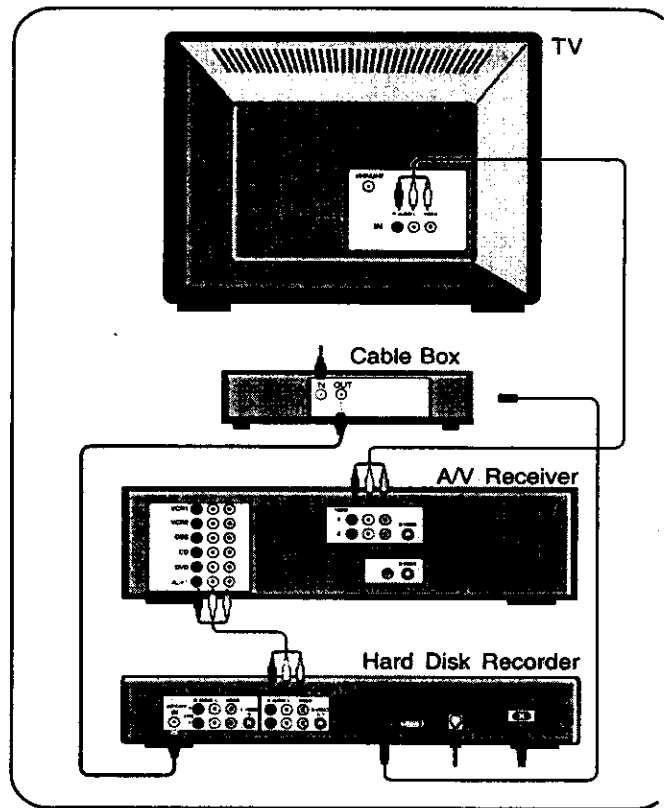
Advanced Connections (continued)

Connecting a Cable Box and an A/V Receiver to the Hard Disk Recorder

1. Connect the incoming television signal to the IN jack on your cable box.
2. Connect the RF cable from the OUT jack on your cable box to the ANT/CATV IN jack on the Hard Disk Recorder.
3. Connect an A/V cable from the OUTPUT jacks on the Hard Disk Recorder to the IN jacks on your A/V receiver, matching like colors.
4. Connect an A/V cable from the OUTPUT jacks on your A/V receiver to the AUDIO/VIDEO IN jacks on your TV, matching like colors.
5. Attach the cable box controller. See "Satellite Receiver and Cable Box Controllers" on page 10.
6. Follow the C ~ E instructions on page 9 for telephone connection, AC power connection, and setup.

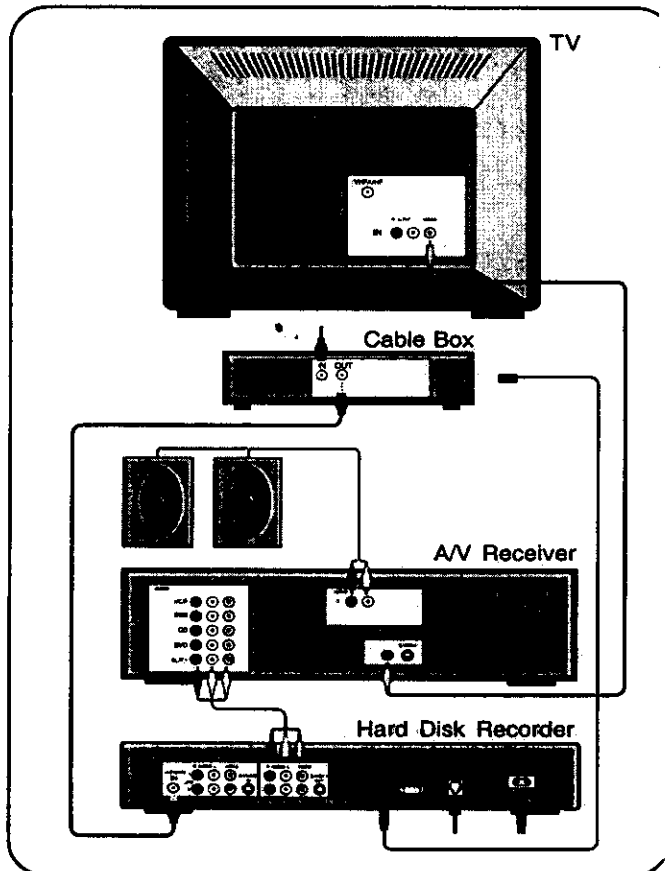
NOTES

- If your cable box has A/V OUT jacks, connect an A/V cable from these jacks to the INPUT jacks on the Hard Disk Recorder instead of using the RF cable.
- Refer to your TV, cable box or A/V receiver owner's manual for more information on connecting to these components.



If you have separate speakers, do the following steps instead of step 4 above.

- a. Connect the Audio cable from the AUDIO OUT jacks on your A/V receiver to the speakers.
- b. Connect the Video cable from MONITOR OUT jack on your A/V receiver to the VIDEO IN jack on your television.

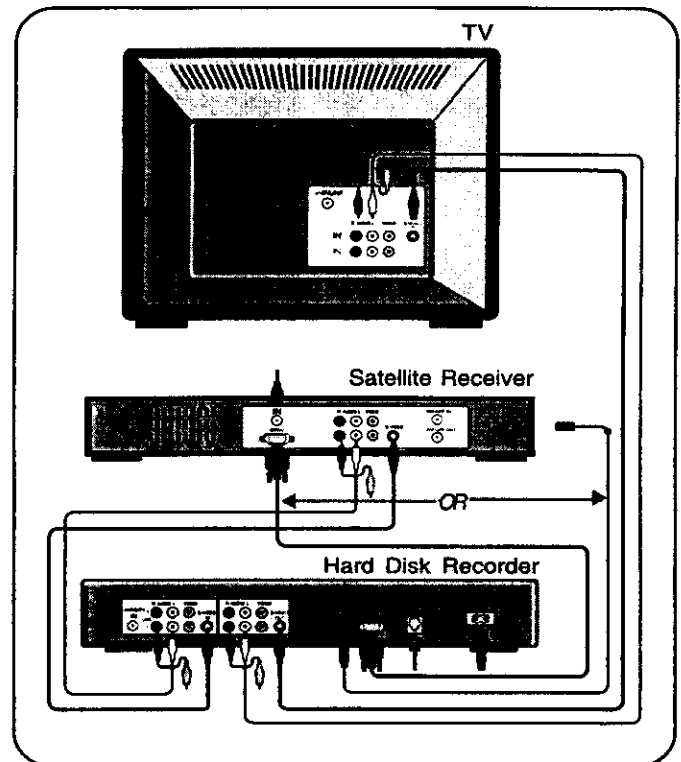


Connecting a Satellite Receiver to the Hard Disk Recorder (Using S-Video)

1. Connect the incoming television signal to the IN jack on your satellite receiver.
2. Connect the red and white Audio plugs of an A/V cable from the AUDIO OUT jacks on your satellite receiver to the LINE 2 INPUT jacks on the Hard Disk Recorder, matching like colors.
3. Connect an S-Video cable from the S-VIDEO OUT jack on your satellite receiver to the S-VIDEO IN jack on the Hard Disk Recorder.
4. Connect the red and white Audio plugs of an A/V cable from the LINE 2 OUTPUT jacks on the Hard Disk Recorder to the AUDIO IN jacks on your television, matching like colors.
5. Connect an S-Video cable from the S-VIDEO OUT jack on the Hard Disk Recorder to the S-VIDEO IN jack on your television.
6. Attach the satellite receiver controller. See "Satellite Receiver and Cable Box Controllers" on page 10.
7. Follow the C ~ E instructions on page 9 for telephone connection, AC power connection, and setup.

NOTES

Leave the yellow video cable unattached on your satellite receiver, the Hard Disk Recorder and television.
Refer to your TV or satellite receiver owner's manual for more information on connecting to these components.

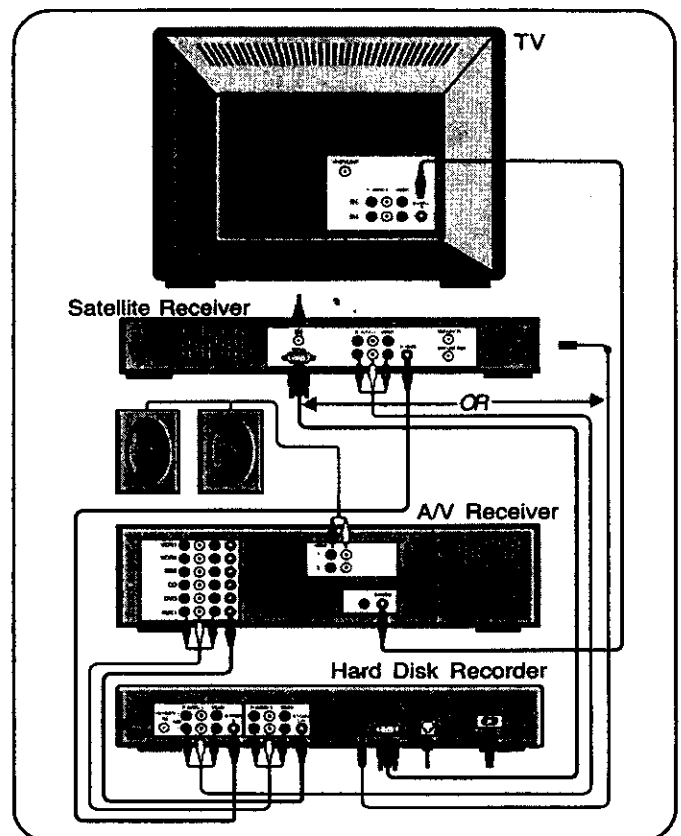


Connecting a Satellite Receiver and A/V Receiver to the Hard Disk Recorder (Using S-Video)

1. Connect the incoming television signal to the IN jack on your satellite receiver.
2. Connect an A/V cable from the AUDIO OUT jacks on your satellite receiver to the LINE 2 INPUT jacks on the Hard Disk Recorder, matching like colors.
3. Connect an S-Video cable from the S-VIDEO OUT jack on your satellite receiver to the S-VIDEO IN jack on the Hard Disk Recorder.
4. Connect the Audio cable from the AUDIO OUT jacks on your A/V receiver to the speakers. Then, connect the S-Video cable from MONITOR OUT jack on your A/V receiver to the S-VIDEO IN jack on your television. (Note: If you do not have separate speakers, see step 4 on page 12.)
5. Connect an S-Video cable from the S-VIDEO OUT jack on the Hard Disk Recorder to the S-VIDEO IN jack on your A/V receiver.
6. Connect an A/V cable from the AUDIO OUT jacks on the Hard Disk Recorder to the IN jacks on your A/V receiver, matching like colors.
7. Attach the satellite receiver controller. See "Satellite Receiver and Cable Box Controllers" on page 10.
8. Follow the C ~ E instructions on page 9 for telephone connection, AC power connection, and setup.

NOTE

- Refer to your TV, satellite receiver, or A/V receiver owner's manual for more information on connecting to these components.



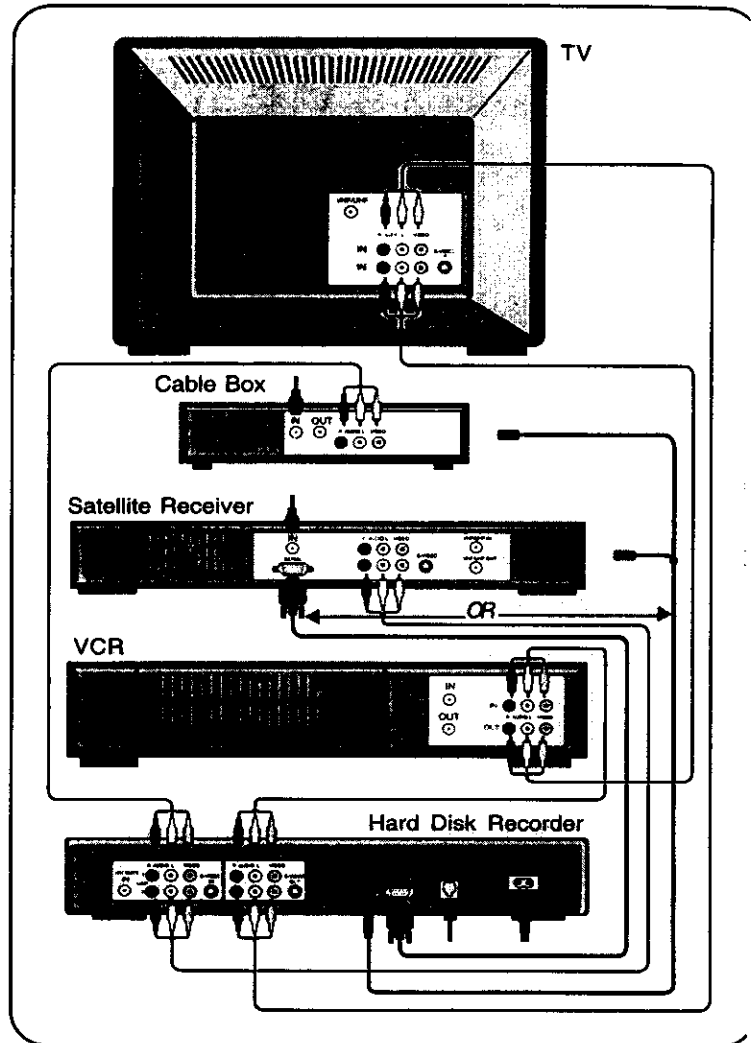
Advanced Connections (continued)

Connecting a Cable Box, Satellite Receiver, and VCR to the Hard Disk Recorder

1. Connect an A/V cable from the AUDIO/VIDEO OUT jacks on your cable box to the INPUT jacks on the Hard Disk Recorder, matching like colors.
2. Connect an A/V cable from the AUDIO/VIDEO OUT jack on your satellite receiver to the INPUT jack on the Hard Disk Recorder, matching like colors.
3. Connect an A/V cable from the OUTPUT jacks on the Hard Disk Recorder to the AUDIO/VIDEO IN jacks on your VCR, matching like colors.
4. Connect a second A/V cable from the OUTPUT jacks on the Hard Disk Recorder to the AUDIO/VIDEO IN jacks on your television, matching like colors.
5. Connect an A/V cable from the OUTPUT jacks on your VCR to the AUDIO/VIDEO IN jacks on your television, matching like colors.
6. Attach your cable box and satellite receiver controllers. See "Satellite Receiver and Cable Box Controllers" on page 10.
7. Follow the C ~ E instructions on page 9 for telephone connection, AC power connection, and setup.

NOTES

- If your cable box does not have A/V OUT jacks, connect an RF cable from the OUT jack to the ANT/CATV IN jack on the Hard Disk Recorder.
- Refer to your TV, cable box, satellite receiver, or A/V receiver owner's manual for more information on connecting to these components.

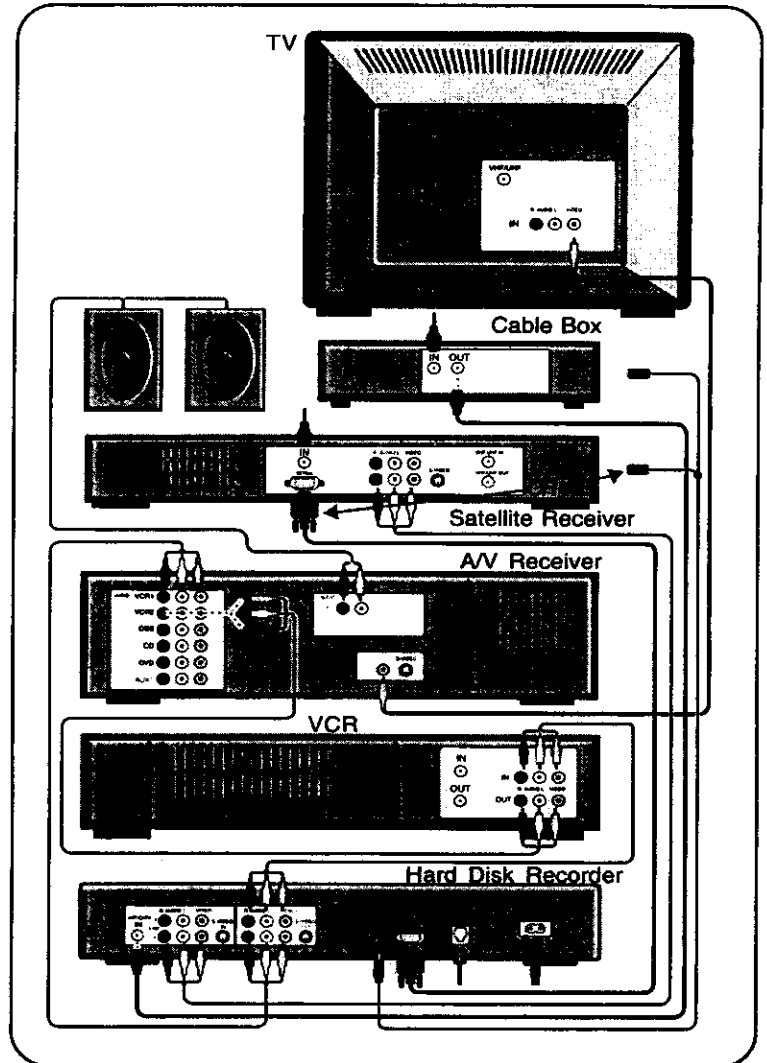


Connecting a Cable Box, Satellite Receiver, A/V Receiver, and VCR to the Hard Disk Recorder

1. Connect an RF cable from the OUT jack on your cable box to the ANT/CATV IN jack on the Hard Disk Recorder.
2. Connect an A/V cable from the AUDIO/VIDEO OUT jacks on your satellite receiver to the INPUT jacks on the Hard Disk Recorder, matching like colors.
3. Connect an A/V cable from the OUTPUT jacks on the Hard Disk Recorder to the AUDIO/VIDEO IN jacks on your VCR, matching like colors.
4. Connect a second A/V cable from the OUTPUT jacks on the Hard Disk Recorder to the AUDIO/VIDEO IN jacks on your A/V receiver, matching like colors.
5. Connect the Audio cable from the AUDIO OUT jacks on your A/V receiver to the speakers. Then, connect the Video cable from the MONITOR OUT jack on your A/V receiver to the VIDEO IN jack on your television. (Note: If you do not have separate speakers, see step 4 on page 12.)
6. Connect an A/V cable from the AUDIO VIDEO OUT jacks on your VCR to the AUDIO/VIDEO IN jacks on your A/V receiver, matching like colors.
7. Attach your cable box and satellite receiver controllers. See "Satellite Receiver and Cable Box Controllers" on page 10.
8. Follow the C~E instructions on page 9 for telephone connection, AC power connection, and setup.

NOTE

- Refer to your TV, cable box, satellite receiver, A/V receiver, or VCR owner's manual for more information on connecting to these components.



Advanced Connections (continued)

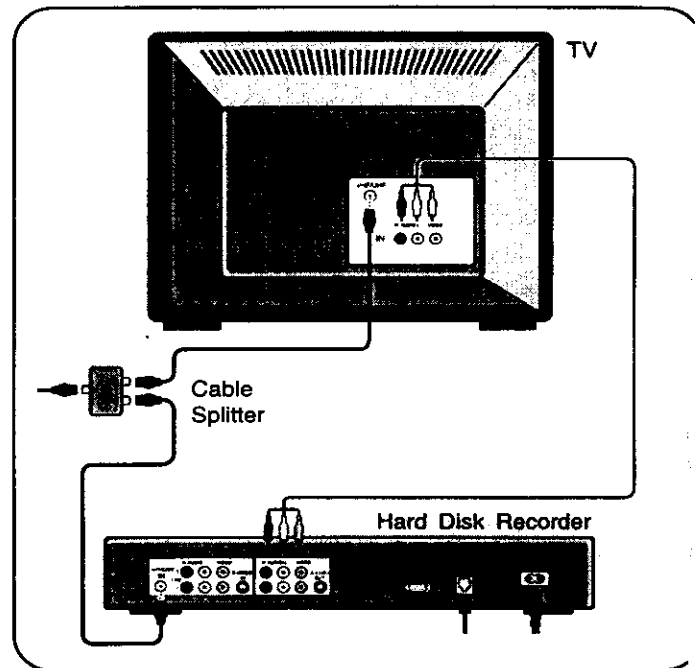
Watching One Show While Recording Another on the Hard Disk Recorder

Use a cable splitter and attach RF cables to both the Hard Disk Recorder and your television if you want to watch one show while recording another show on the Hard Disk Recorder.

1. Connect the incoming RF cable from the wall to the IN jack on the 2-way splitter.
2. Connect an RF cable from one OUT jack on the 2-way splitter to the ANT/CATV IN jack on the Hard Disk Recorder.
3. Connect another RF cable from the other OUT jack on the 2-way splitter to the VHF/UHF jack on your television.
4. Follow the C ~ E instructions on page 9 for telephone connection, AC power connection, and setup.

NOTE

- Refer to your TV owner's manual for more information on making connections to your television.



Attaching Satellite Receiver and Cable Box Controllers

If you connect a satellite receiver or a cable box to the Hard Disk Recorder, you need to attach a controller cable so the Hard Disk Recorder can change the channels on these devices. The controller, either a serial cable or an IR blaster cable, acts as a remote control for these devices. When you press the Channel Up and Channel Down buttons on the Hard Disk Recorder remote control, the channel is changed on your other device. See "Connecting a Serial Cable" if your satellite receiver has a serial connector. If your satellite receiver or cable box does not have a serial connector, see "Connecting and Setting Up the IR Blaster" on page 17.

Connecting a Serial Cable

If the device you want the Hard Disk Recorder to control has a serial connector, use the supplied serial cable instead of the supplied IR blaster.

1. Connect the serial cable to the SERIAL CONTROL port on the Hard Disk Recorder. If your receiver has a 15-pin serial connector, use the supplied 15-pin to 9-pin adapter.
2. Connect the other end of the serial cable to the serial port on your other device.*

Connecting and Setting Up the IR Blaster

If your satellite receiver has a serial connector, use the serial connector instead of the IR blaster. The IR blaster acts as a remote control for your other device. Before attaching the IR blaster, you must find the infrared detector on the device the Hard Disk Recorder will control.

Locating the Infrared Detector On the Other Device

The emitter on the end of the IR blaster must be placed directly over the infrared detector on the other device. The infrared detector is the area that receives the signals from the remote control. Some infrared detectors are labeled. If the detector on your other device is not labeled, it is usually behind a dark, nearly opaque plastic area on the front of the device.

If the infrared detector on the other device is labeled, see "Connecting and Affixing the IR Blaster" below.

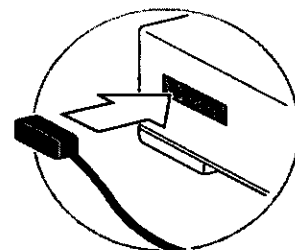
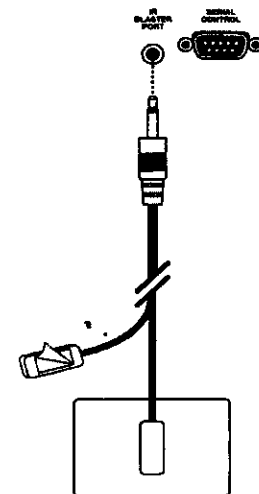
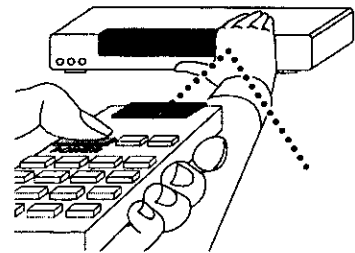
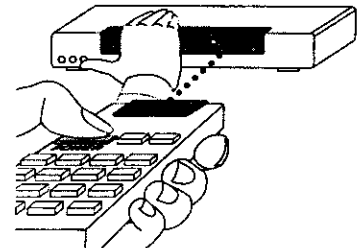
If the Infrared Detector on the Other Device is Not Labeled, Follow These Steps.

Refer to the owner's manual of your cable box or satellite receiver. It may be shown there.

1. Look for an area of dark, nearly opaque plastic on the front of the other device. If you find this area, look closely into it. You may be able to see the infrared detector behind it. If it's visible, you should see a small square frame with a reddish area in the center.

This is the infrared detector. If you see the detector, skip to "Connecting and Affixing the IR Blaster" below.

2. Turn on and start the other device.
3. Shine a flashlight through the dark plastic area on the front of the device. If you see the infrared detector, skip to "Connecting and Affixing the IR Blaster" below.
4. Using the remote control for your cable box or satellite receiver, turn the power on and off. Don't use the Hard Disk Recorder remote control.
5. With the remote control in one hand, place the other hand over one section of the front of the unit.
6. Try to turn the power on and off again. If you succeed, your hand is not covering the infrared detector.
7. Move your hand to a different place on the front of the unit and repeat steps 5 and 6. Keep repeating in this way until you can't turn the power on and off. At this point, your hand is covering the infrared detector.
8. Look closely for the infrared detector at the spot your hand is covering. Even if you are not sure you have found the infrared detector, you have likely found the spot.



Connecting and Affixing the IR Blaster

1. Plug the IR blaster cable into the IR BLASTER PORT on the back of the Hard Disk Recorder.
2. Peel off the protective cover from one of the emitters on the IR blaster. This will expose the adhesive material on the emitter for placement on your other device.
3. Affix the adhesive side of the emitter to the dark plastic area, directly over the center of the infrared detector.

NOTE • If you have only one device you want the Hard Disk Recorder to control, hide the unused emitter behind the equipment, away from any detectors.

Initial Setup

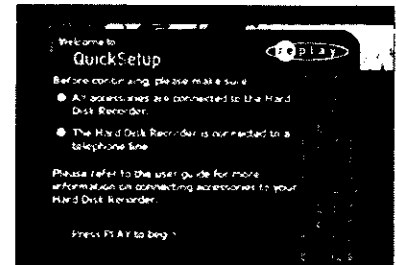
Be sure you've connected the Hard Disk Recorder to your television and other equipment. (See pages 8~17.) You can follow the on-screen instructions to complete the setup. This setup process includes:

- providing a phone number for the nightly connection to the ReplayTV Service
- entering your ZIP code to receive the available channels for your local area
- setting up the video inputs to the Hard Disk Recorder
- providing the setup codes for your satellite receiver or cable box, if you have connected one of these devices to the Hard Disk Recorder

1 Turn on the television.

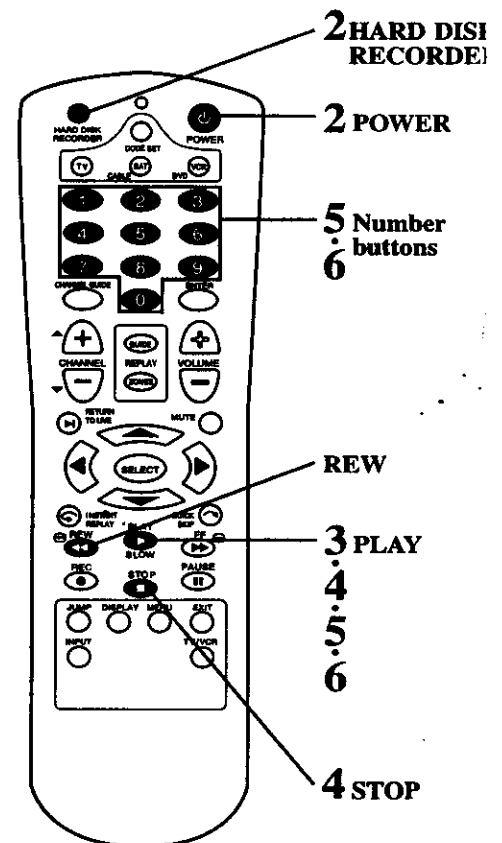
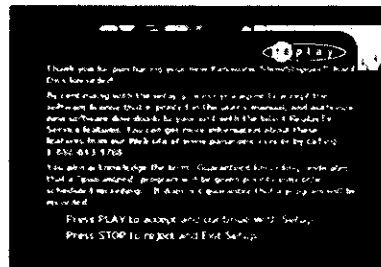
2 Press **HARD DISK RECORDER**, then press **POWER** to turn on the Hard Disk Recorder.

- You can also press **POWER** on the front of the unit to turn the Hard Disk Recorder on.
- The QuickSetup screen appears.
- If you can't see the QuickSetup screen, press the **TV/VIDEO** button on your television remote until you do. Your television may also need to be on a specific channel to display input from other devices. See "Troubleshooting" on pages 50~52 if you still can't see the QuickSetup screen.



3 Press **PLAY** to start the setup process.

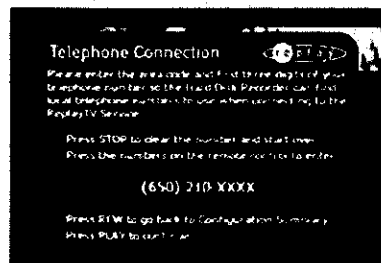
4 Press **PLAY** to accept and continue with Setup, or press **STOP** to reject and exit setup.



If you make a mistake on any setup screen,
Press **REW** to return to the previous screen and start over.
If you make a mistake on any number-input screen,
Press **STOP** to clear the numbers and re-enter.

5 Press **Number buttons** to enter the area code, then press **PLAY** to move to the next screen.

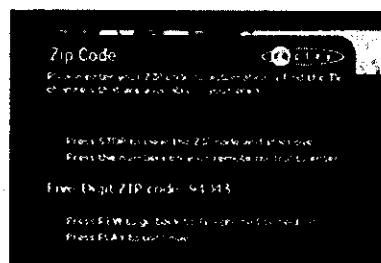
- Each night, a phone call is made to the ReplayTV Service to update current channel guide listings for your area.



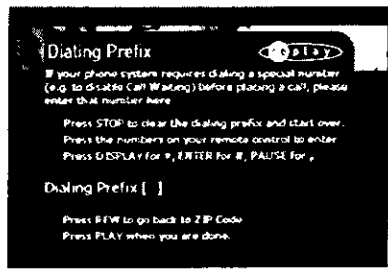
- To receive the latest information from the ReplayTV Service, make sure the telephone cable is always connected to the Hard Disk Recorder.

6 Press **Number buttons** to enter your five-digit ZIP Code, then press **PLAY** to move to the next screen.

- The Hard Disk Recorder uses your zip code to provide you with listings for the channels available in your local area.

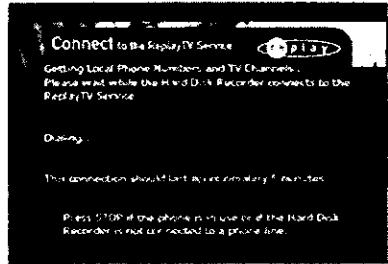


- 7** Press **Number** buttons to enter the dialing prefix, then press **PLAY** to move to the next screen.
- Press **DISPLAY** for *; press **ENTER** for #; and press **PAUSE** for ,.



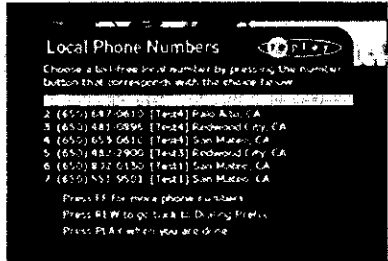
- Some telephone systems must dial a special number prior to placing a phone call, to disable call waiting for example. If your phone system requires a special number, enter it on this screen.

- 8** The Hard Disk Recorder calls the **ReplayTV Service** to retrieve local telephone numbers and TV channels.
- You are notified of the progress of the connection, and if any errors occur during the connection.
 - This connection to the ReplayTV Service lasts about 5 minutes.
 - The internal Hard Disk Recorder clock and time zone are set during this connection.
 - This connection also provides the Hard Disk Recorder with TV channel information for your local area.



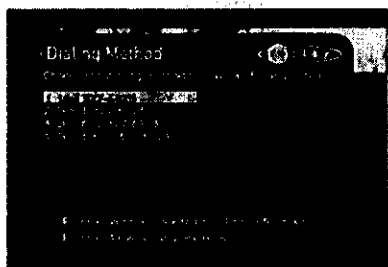
If the connection failed,
Press **PLAY** to try connecting again.
Or, press **REW** repeatedly to return to the previous screen and confirm each setting item. Then, re-enter the correct information.

- 9** Press **▲/▼** to select your local number, then press **PLAY** to move to the next screen.
- The ReplayTV Service finds local phone numbers based on the information you provided.

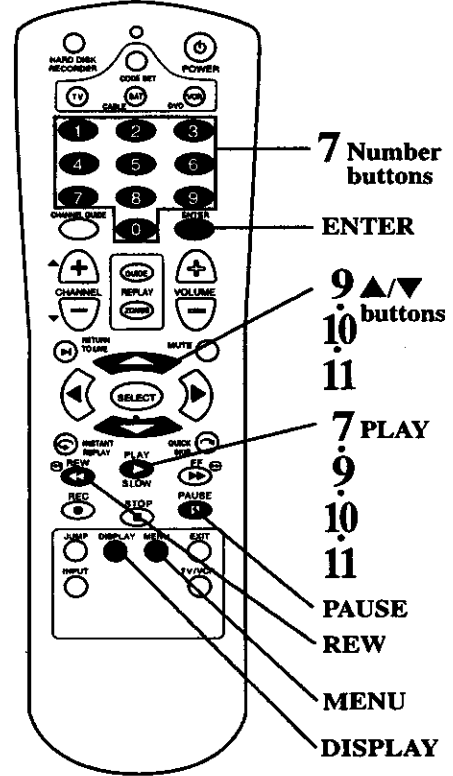
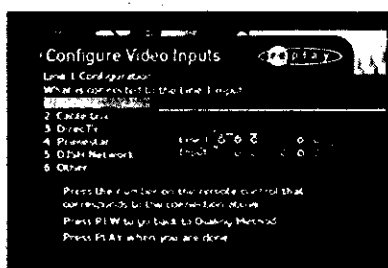


- You can change the number later by pressing **MENU** and selecting "Setup" and then "Change Dialing & Input Settings."

- 10** Press **▲/▼** to select the dialing method, then press **PLAY** to move to the next screen.
- Choose the dialing method for your area. For example, a direct call, or if you need to dial a prefix and/or area code.



- 11** Press **▲/▼** to select the device you have connected to the **LINE 1** input, then press **PLAY** to move to the next screen.
- If nothing is connected to **LINE 1**, just press **PLAY**.



NOTE

- "Other" is reserved for future devices that may be connected to the Hard Disk Recorder.

If you select any components, the setup screen appears. Refer to "Completing the IR Blaster Setup" section on page 21.

Continued on the next page.

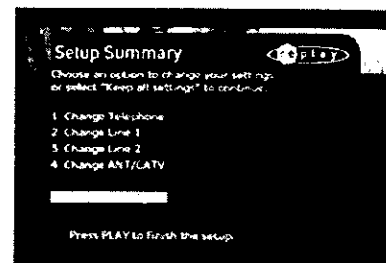
Initial Setup (continued)

12 Complete all the remaining input settings.

You will be asked to provide information about all the remaining devices that you have connected to the Hard Disk Recorder.

- Once you get the hang of the first screen, you should be able to complete the following screens on your own.
- See "Input Options" on page 21 for information on the choice on each configuration.

Once you have completed all of the setup screens, you will see the Setup Summary screen. This screen allows you to make changes if necessary.



13 To change a setting...

- Press $\blacktriangle/\blacktriangledown$ to select the option, then press **PLAY** to display the screen that you want to change.
- After your change is finished, press **PLAY** to finish the setup.

If you do not want to make any changes...

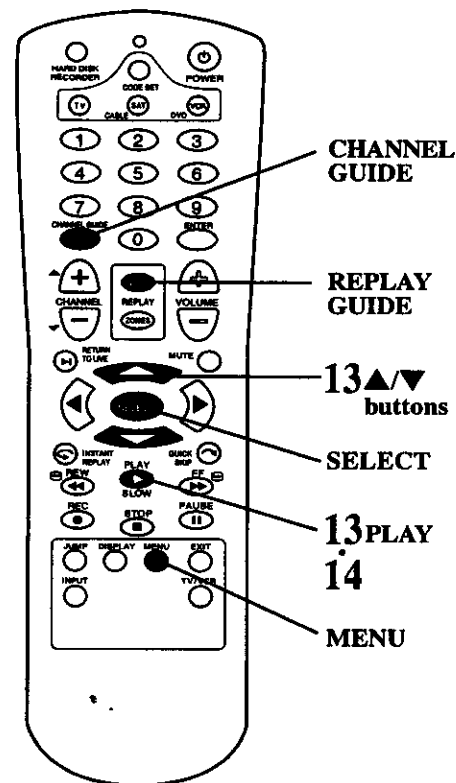
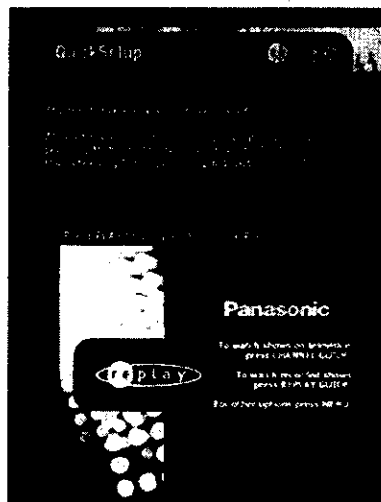
Press $\blacktriangle/\blacktriangledown$ to select "Keep all settings," then press **PLAY** to move to the next screen.

The Hard Disk Recorder connects to the ReplayTV Service to complete the setup. This connection lasts approximately 20 minutes, during which the Hard Disk Recorder receives channel and program information for your local area.

Once the connection is completed, you will be able to use the Hard Disk Recorder.

14 Press **PLAY** to begin using the Hard Disk Recorder.

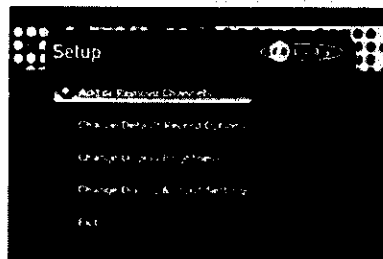
- To select shows to watch from an on-screen guide, press **CHANNEL GUIDE**.
- The Replay Guide is an on-screen collection of all the shows you record. There aren't any recorded shows now. Though, you can watch an instructional video by going to the Replay Guide. Press **REPLAY GUIDE**.



Changing Your Setup Later On

If you move, add another telephone service, change video equipment, or do something else that requires updating the information you provided during first-time setup, you may change the information at any time.

1. Press **MENU**.
2. Select "Setup" from the Main Menu.
3. Select "Change Dialing & Input Settings" from the Setup screen.
4. Select an option to change by pressing $\blacktriangle/\blacktriangledown$ and **SELECT**.



NOTE

- The internal Hard Disk Recorder clock is set during the initial connection to the ReplayTV Service to ensure that the shows you choose to record are recorded completely.

Input Options

Cable

If you have cable television but no cable box, select your cable service provider. If your cable service is not listed on the screen, send mail to Consumerproducts@Panasonic.com or call 1-888-843-9788.

Cable box

If you have a cable box connected to the Hard Disk Recorder, select your cable service provider. You will also need to connect and position the IR blaster that came with the Hard Disk Recorder. This is required so the Hard Disk Recorder can change the channels on your cable box. Once the IR blaster is positioned, you will need to enter the proper setup code for your cable box. See "Connecting and Setting Up the IR Blaster" on page 17.

DIRECTV

If you are not using a serial connector, you will need to connect and position the IR blaster that came with the Hard Disk Recorder. This is required so the Hard Disk Recorder can change the channels on your DIRECTV receiver. Once the IR Blaster is positioned, you will need to enter the proper setup code for your DIRECTV receiver. If you will be using the supplied IR blaster to control your receiver, see "Connecting and Setting Up the IR Blaster" on page 17.

DISH Network™

If you have a DISH Network receiver connected to the Hard Disk Recorder, you will need to connect and position the IR blaster that came with the Hard Disk Recorder. This is required so the Hard Disk Recorder can change the channels on your DISH Network receiver. Once the IR blaster is positioned, you will need to enter the proper setup code for your DISH Network receiver. See "Connecting and Setting Up the IR blaster" on page 17.

Completing the IR Blaster Setup

After you have connected the IR blaster, you need to provide the Hard Disk Recorder with the setup code for your cable box or satellite receiver. This is the final step in ensuring the Hard Disk Recorder and your cable box or satellite receiver work together. Setup codes can be found in "Code Numbers For Your Components" on pages 47 and 48.

1 Make sure the cable box or satellite receiver power is on.

2 Find the setup code for your cable box or satellite receiver in "Code Numbers For Your Components" on pages 47 and 48.

- If more than one code is listed, use the first one.

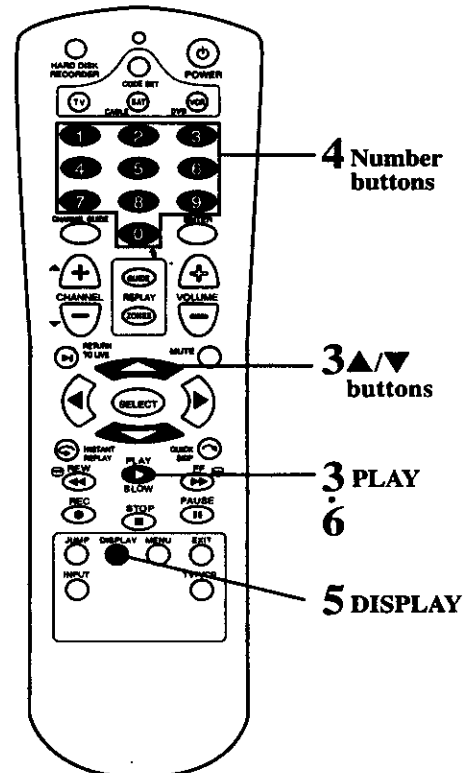
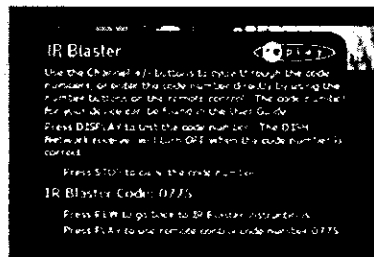
3 Press ▲/▼ to select your cable providers, then press PLAY twice to move to the next screen.

4 Press Number buttons to enter the code for your device.

5 Press DISPLAY to test if the code is correct for your device.

- The cable box or satellite receiver will turn off if the code is correct.
- If the code does not work, try each additional code for your device.

6 Press PLAY to use the code you select and move to the next screen.



Controlling Live Television

Before you begin...

You must have connected the Hard Disk Recorder to your television and completed the on-screen setup.

Viewing Live Television

You use the Hard Disk Recorder remote control to watch television just like you normally would using your television remote control.

- 1** Press **TV**, then press **POWER** to turn on your television.
 - See "Universal Remote Control" on page 42~44 if you have not programmed the Hard Disk Recorder remote control to operate your television.
- 2** Press **HARD DISK RECORDER**, then press **POWER** to turn on the Hard Disk Recorder.
- 3** Press **CHANNEL GUIDE** to display the Channel Guide.
 - You can also select "Channel Guide" from the Main Menu.
- 4** Press **▲/▼/◀/▶** to select a current show (light blue listing) in the Channel Guide, then press **SELECT**.

Browse Preset Channels

Press **CHANNEL +** (up) or **CHANNEL -** (down).
(Note: If the Hard Disk Recorder is currently recording a show, you'll need to stop the recording by pressing **STOP** on the remote before browsing channels.)

Select a Channel by Number Button(s)

Press **Number Buttons** to select a channel

Switch Quickly between Two Channels

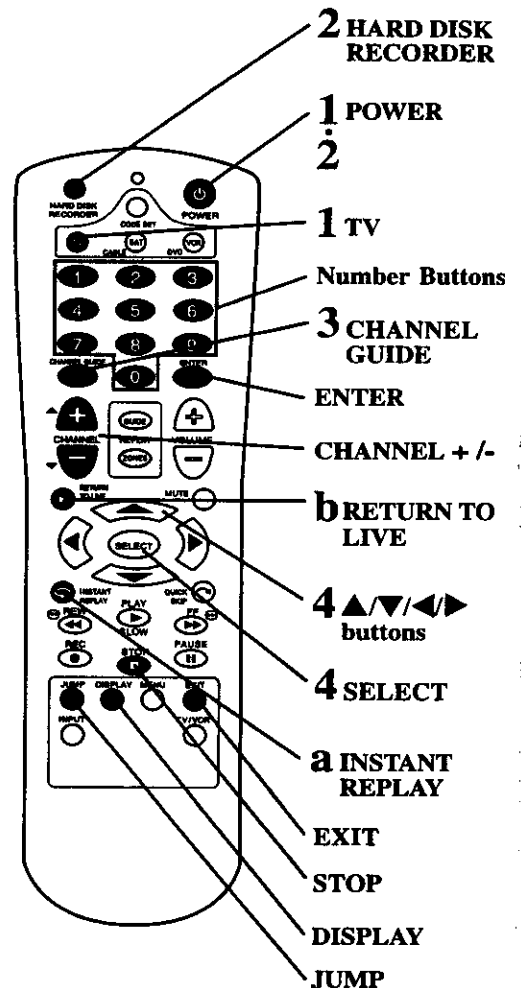
Press **JUMP** to switch to the last show you were watching, and **JUMP** again to switch back to the first show. This can also be between two pre-recorded shows, and between a live show and a recorded show.

Get Information on a Show You're Viewing

Press **DISPLAY** to get program information—a synopsis of the current program you're watching, and information about the length of the show. Press **DISPLAY** again or **EXIT** to dismiss the information, or it will fade away in 15 seconds.

NOTE

- Whenever you start watching a live show, the Hard Disk Recorder automatically starts recording the show, and the recording is temporarily preserved in the Hard Disk Recorder's recording space. Even if you delay viewing by using the pause and rewind features, recording continues. Recording stops if you change to a live or pre-recorded show.



Using Instant Replay

The Instant Replay feature lets you skip back seven seconds during a live or recorded show. It's the perfect way to ensure you don't miss a single word of dialogue in your favorite movie, or any of the important action in a game.

- a** Press **INSTANT REPLAY** while you're watching a live or recorded show.
 - You'll instantly skip back seven seconds and begin watching again from there.
 - You can repeatedly press **INSTANT REPLAY** and move back in seven second increments.

- b** Press **RETURN TO LIVE** when you want to go back to the live broadcast.

Pausing Live Television and Recorded Shows

The Hard Disk Recorder's pause feature lets you attend to interruptions without missing a moment of your favorite television shows. You can pause whatever you're watching: recorded Replay shows or live television.

- 1** Press **PAUSE** while you're watching a live television show or a recorded show.
 - An on-screen message notifies you how much pause time remains.
 - Press **DISPLAY** to see how far you are behind the live show. To avoid screen burn in, press **EXIT** to dismiss the on-screen displays. See "Screen Burn In" on page 53 for more information.
- 2** When you return from your interruption, press **PLAY** to resume watching from where you left off.
 - You can also press **RETURN TO LIVE** if you want to catch up with the live broadcast.

Using Stop

Stop works very much like pause. You can use stop while watching a live television broadcast or when watching a Replay show. Pressing **STOP** displays a Hard Disk Recorder screen, rather than "freezing" the image of the show you're watching. Even though you press **STOP**, you can still return to where you left off in the live broadcast or Replay show by pressing **PLAY**, or press **RETURN TO LIVE** to catch up with a live broadcast.

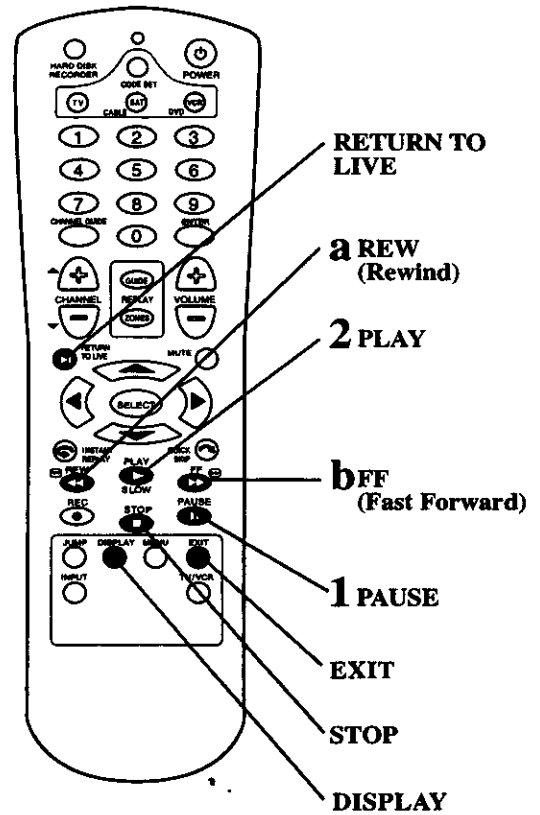
NOTES

- When you pause a live broadcast, it continues to record on the hard disk.
- When recording begins, the pause screen is cancelled.

Using Rewind and Fast Forward

The Hard Disk Recorder records what you want it to record. It also records live television when you start watching a show. If you're watching a live show, you can rewind to the point where you first started watching. Then, turn around and quickly move ahead using Fast Forward.

- a** Press **REW** (Rewind) after you have watched a show for a while.
 - Press **REW** multiple times to select one of five rewind levels (level 1, which displays the rewind symbol on the screen, followed by 2x, 4x, 16x, and 20x).
 - The show will begin playing when you reach the point where you started watching the show.
 - Rewinding stops when you press **PLAY**, **STOP**, or **FF**.
- b** Press **FF** (Fast Forward) to go forward in the show.
 - Press **FF** multiple times to select one of five fast-forward levels (level 1, which displays the fast forward symbol on the screen, followed by 2x, 4x, 16x, and 20x).
 - The Live symbol will display on your screen when you have caught up with the live show.



Controlling Live Television (continued)

Using Slow Motion

You can play your recorded Replay shows and even live television in slow motion with a couple remote control button presses.

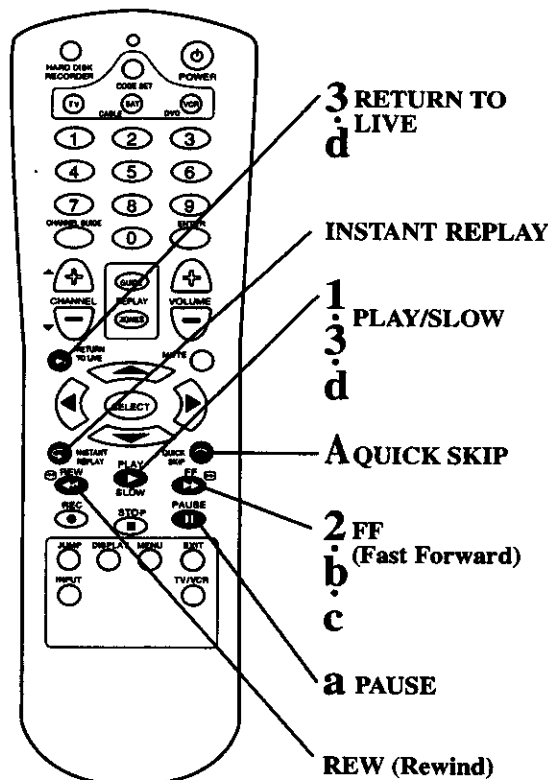
1 Press **PLAY/SLOW** with a Replay show or live broadcast playing.

- The slow motion symbol in the lower right of the screen indicates that the show is now playing in slow motion.

2 Press **FF** (Fast Forward) to increase the speed of slow motion.

- Press **FF** (Fast Forward) twice or three times to speed up slow motion.
- Press **REW** (if in 2x or 3x slow motion) to move back one slow motion speed.

3 Press **PLAY/SLOW** to watch the show at normal speed or press **RETURN TO LIVE** to catch up with a live broadcast.



Using Frame Advance

Frame advance lets you watch a Replay show or a live broadcast in a frame-by-frame manner. This is a great feature to use with fast-moving scenes, when you want to slow things down so you can see every second of the action.

a Press **PAUSE** with a Replay show or live broadcast playing.

- The **PAUSE** symbol displays on the screen and the show remains on screen in a paused mode.

b Press **FF** (Fast Forward) with the show paused.

- Notice that as you press **FF** the show moves forward by a single frame.
- The show then pauses until you press **FF** again, or another button to cancel the frame advance feature.

c Repeatedly press **FF** (Fast Forward) to move ahead frame by frame.

d Press **PLAY** to watch the show at normal speed or press **RETURN TO LIVE** to catch up with a live broadcast.

Using QuickSkip (Bypassing unwanted programming)

The QuickSkip feature automatically skips 30 seconds ahead in the show you're watching. Use it to skip past undesired scenes, or, use it like a Fast Forward button. QuickSkip works for a live show only if you have used Pause or Rewind, and you are watching a show delayed.

A Press **QUICK SKIP** while you're watching a delayed live show or a Replay show.

- You will instantly skip ahead 30 seconds in the show.
- Press it repeatedly to skip in 30-second segments. Use the **INSTANT REPLAY** button to quickly correct for overshoot.

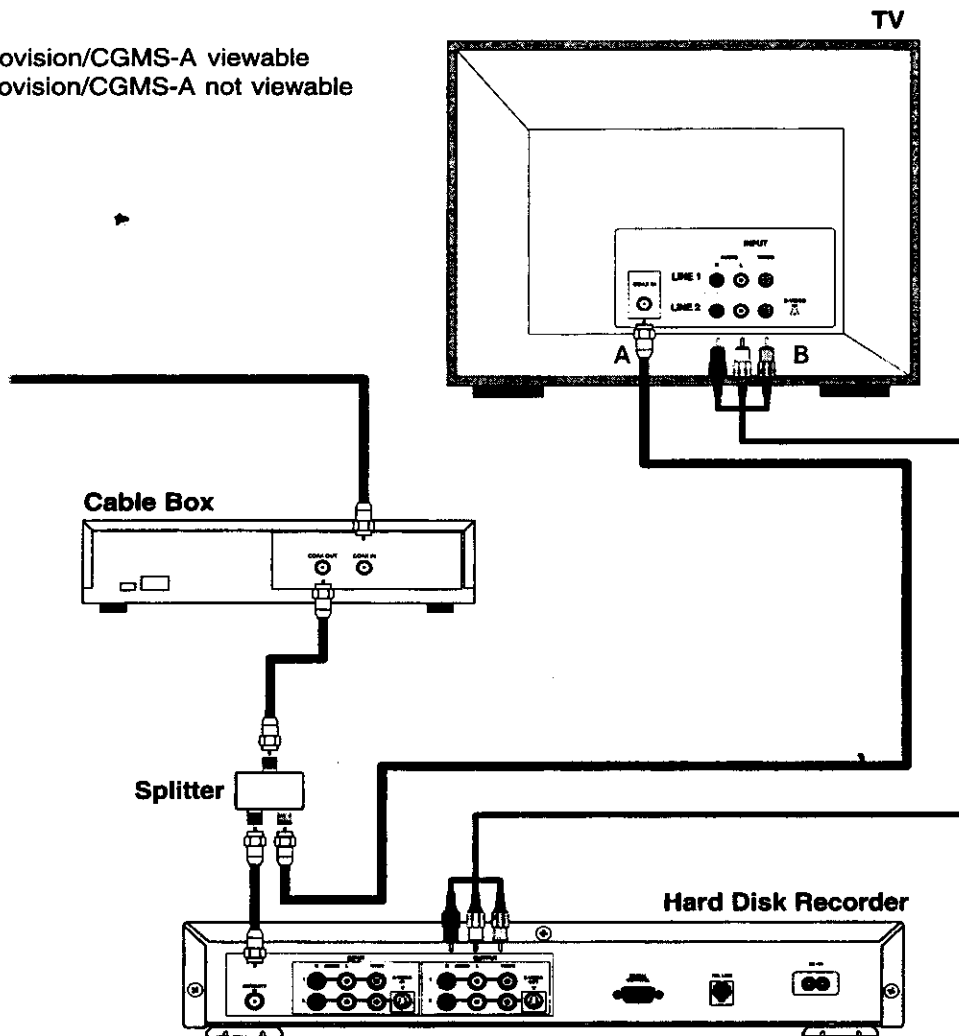
Copy Protection Information

When Macrovision or CGMS-A (Copy Generation Management System-Analog) copy protected signals are available for TV broadcasting, the show is NOT viewable in LIVE TV mode, nor can it be recorded. To view copy protected material, split the RF signal. The following illustration shows how to split the signal.

Viewing copy protected programming

Switch between A and B below by pressing the INPUT button on the TV remote.

- A: Macrovision/CGMS-A viewable
- B: Macrovision/CGMS-A not viewable



For further assistance, call 1-888-843-9788 or go to: <http://www.panasonic.com/video> or send e-mail to Consumerproducts@Panasonic.com

NOTE • Unauthorized copying of copy protected material constitutes copyright infringement.

Recording Shows

To record any show that's on now or in the next several days, start from the Channel Guide. The Channel Guide is an interactive on-screen program guide that lists seven days of television information for all of the channels you currently receive. While the Hard Disk Recorder does not need to be on for recording, cable boxes and satellite receivers must remain on.

Selecting a Show

You can also go back 24 hours within the Channel Guide to see what programs have already aired. (See below.) So, if you missed a show, you can select it in the Channel Guide and have the Hard Disk Recorder search for all the episodes that have not yet aired. Then, have the Hard Disk Recorder record a future airing of the show.

1 Press **CHANNEL GUIDE** to display the Channel Guide.

- You can also select "Channel Guide" from the Main Menu.

2 Press **▲/▼/◀▶** to move around the guide.

- Press **◀** to move back in the Channel Guide to see what has already aired. Then, search for episodes of a show that are upcoming.
- As you move around, notice that the program information changes to the show you have selected.

To jump ahead 12 hours, press **FF**.

To go back 12 hours, press **REW**.

To move up and down one screen at a time, press **CHANNEL +/-**.

To watch a channel in the Channel Guide, select a show that's on now and press **SELECT**.

To go to a channel, press **Number Buttons**, then press **SELECT**.

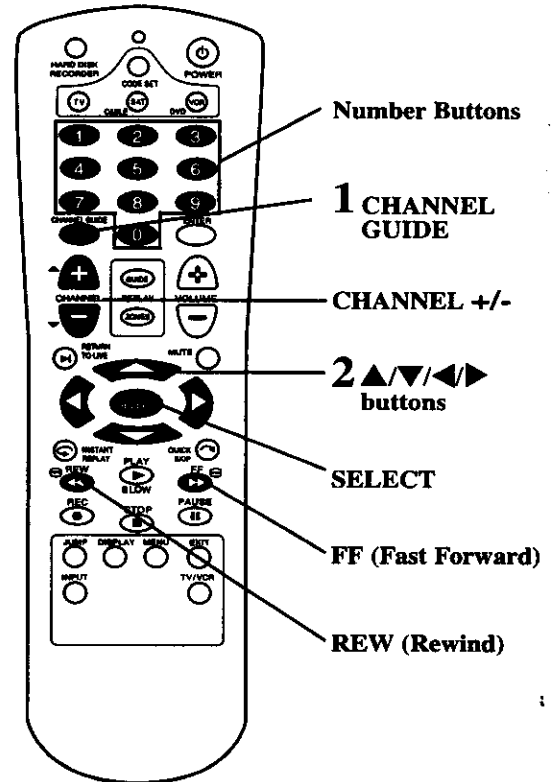
- For example, press 9 - 0, then press **SELECT** to go to channel 90.

NOTES

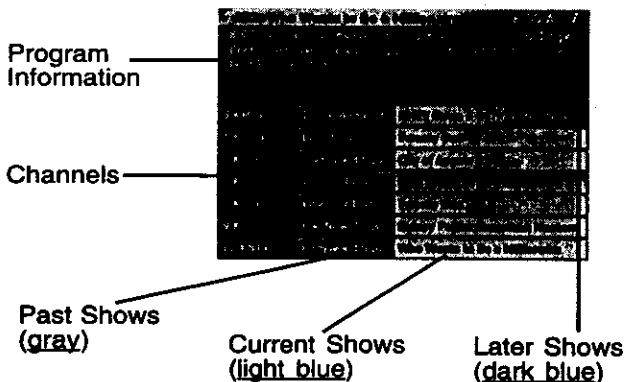
- If you are using a cable or an antenna input and want to watch a live show while recording another on the Hard Disk Recorder, you should consider using a cable splitter. See "Watching One Show While Recording Another on the Hard Disk Recorder" on page 16.
- Channel Guide information is sent to the Hard Disk Recorder from the ReplayTV Service each night. As long as you keep an active phone line plugged into the Hard Disk Recorder, you'll always have seven days of the most up-to-date listings available.

From the Channel Guide you can:

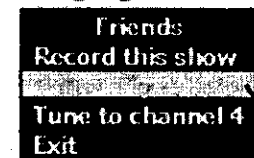
- scroll through listings for shows you want to watch in the next seven days
- select shows to watch or record
- tune to a specific channel



Channel Guide Screen



Channel Guide Popup Menu Items



Record this show: set the recording options for this show then record it. See page 29.

Tune to channel: go directly to the channel.

Find all episodes: find more episodes of this show. See page 34.

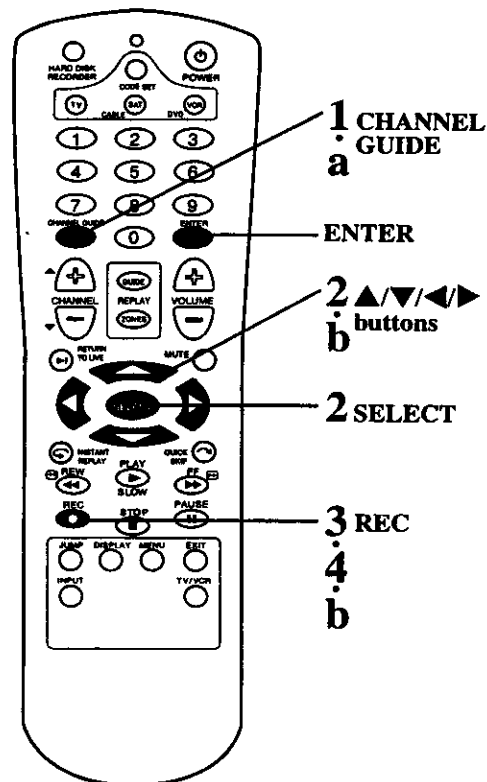
Watching and Recording a Show That Is Currently Airing

Light blue listings indicate shows that are on now.

- 1 Press **CHANNEL GUIDE** to display the Channel Guide.
 - You can also select “Channel Guide” from the Main Menu.
- 2 Press **▲/▼/◀/▶** to select a current show (light blue listing) in the Channel Guide, then press **SELECT**.
 - Unless a show is recording on another channel, the Hard Disk Recorder will tune directly to the channel you’ve selected.
 - The popup menu appears if you press **ENTER** after you select the channel using **▲/▼/◀/▶**.
- 3 Press **REC** to record the show.
 - The Record Options screen will display.
- 4 Press **REC** a second time to accept the current recording settings.

Or

 Adjust the settings on the Record Options screen, then press **REC** to accept the settings.
 - See “Setting the Recording Options” on page 29 for more information on the Record Options screen.



Recording a Single Upcoming Show

Follow these instructions if you want to record a single show using the current recording settings. To change the recording settings, see “Setting the Recording Options” on page 29.

- a Press **CHANNEL GUIDE** to display the Channel Guide.
- b Press **▲/▼/◀/▶** to select an upcoming show (dark blue listing) in the Channel Guide, then press **REC**.
 - A solid red dot is placed next to the show you selected. This means that just this one show, or episode, will be recorded. To view the show after it has been recorded, go to the Replay Guide. See “Watching a Show” on page 37.
 - If you want to change recording options of a show before it begins recording, select the show in the Channel Guide and select “Change options” from the popup menu.

NOTE



- To cancel the recording, see “Cancelling a Recording” on page 28.

Extending Recording Time

If you want to record a show that may extend beyond its scheduled length, record the show immediately following the event. This is handy when recording a sporting event, which may go into extra innings or overtime.

Indication of Red Dots

In the Channel Guide, solid red dots indicate guaranteed recording. Hollow dots indicate non-guaranteed recording.

-  Guaranteed recording
-  Non-guaranteed recording

One dot appears on the Channel Guide listing if you’re recording only one episode; two dots appear if you’re recording all episodes.

- See “Managing Recording Space” on pages 40 and 41 for more information on guaranteed and non-guaranteed recordings.

Recording Shows (continued)

Recording Multiple Episodes of One Show

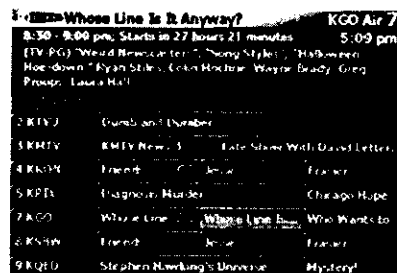
If you have a favorite show that airs once a week, or daily, you can set the Hard Disk Recorder to record every episode. This is called a Show-based Replay channel. See "Show-based Replay Channels" and "Theme-based Replay Channels" on page 34. Follow these instructions to record each episode of a show using the current recording settings. To change the recording settings, see "Setting the Recording Options" on page 29.

1 Press **CHANNEL GUIDE** to display the Channel Guide.

- You can also select "Channel Guide" from the Main Menu.

2 Press **▲/▼/◀/▶** to select an upcoming show (dark blue) you wish to record in the Channel Guide, then press **REC** twice.

- Two solid red dots are placed next to the show you selected. This means that the Hard Disk Recorder will continuously record the most current episode of this show.
- To view an episode of the show after it has been recorded, go to the Replay Guide. See "Watching a Show" on page 37.



Cancelling a Recording (Recording is not in progress)

You can cancel a recording in the Channel Guide at any time before the show starts.

a Press **CHANNEL GUIDE** to display the Channel Guide.

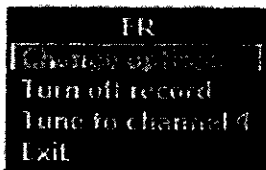
- You can also select "Channel Guide" from the Main Menu.

b Press **▲/▼/◀/▶** to select the show you want to cancel in the Channel Guide.

- You'll know it's set to record because it has at least one red dot next to the show.

c Press **SELECT**.

- The popup menu displays.

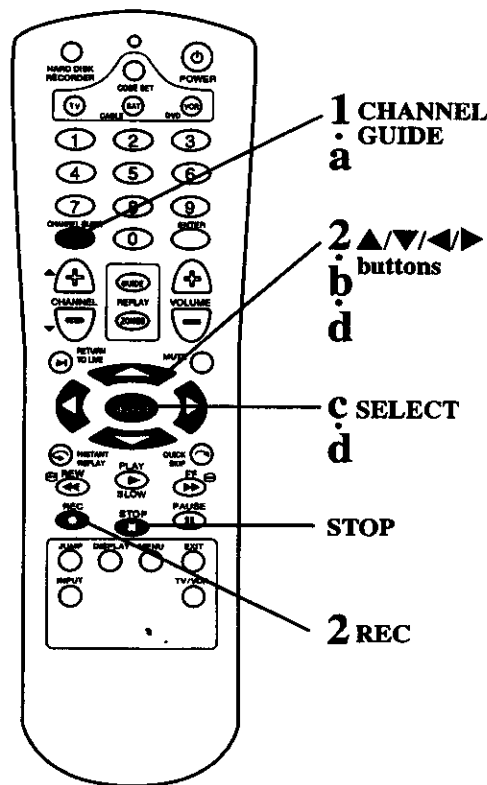


d Press **▲/▼** to select "Turn off record," then press **SELECT**.

- The red dot disappears.

To Cancel a Recording (Recording is in progress)

With the show recording, quickly press **STOP** twice.



To Cancel a Recording from the Channel Guide...

(Recording is in progress)

You can also cancel a recording in the Channel Guide by selecting the show and pressing **REC** once or twice.

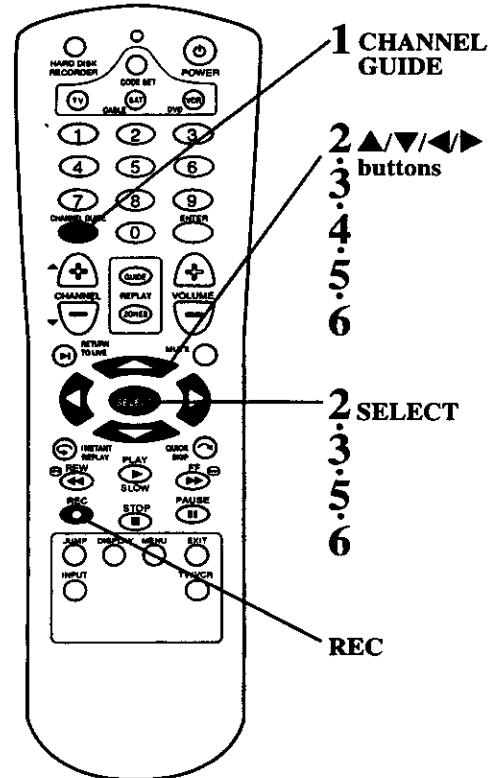
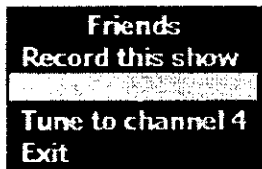
- The red dots are removed.

Setting the Recording Options

There may be times when you want to adjust the record settings for the show you want to record. For example, you might want to record movies or sporting events at higher quality than movies.

Follow these instructions to adjust the recording options of a show before you record it. To change the current record options for every show you select to record, see "Setup" on page 7.

- 1 Press **CHANNEL GUIDE** to display the Channel Guide.
 - You can also select "Channel Guide" from the Main Menu.
- 2 Press **▲/▼/◀/▶** to select an upcoming show (dark blue) that you would like to record, then press **SELECT**.
- 3 Press **▲/▼** to select "Record this show," then press **SELECT**.
 - The Record Options screen displays.
- 4 Press **▲/▼** to select an option you want to change. (See "Record Options Settings" below.)
- 5 Press **SELECT** or **◀/▶** to change a setting.
 - Repeat steps 4 and 5 until you have completed your changes.
 - See below for more information on the Record Options.
- 6 Press **▲/▼** to select "Done," then press **SELECT** to apply your changes.
 - You can also press **REC** to apply your changes.
 - The show will be recorded based on the settings you selected.



Record Options Settings

Recording Level

"High" quality offers the best picture but takes up more space. "Extended" offers the most recording time but sacrifices picture quality. "Medium" offers a balance of the two. Notice that the recording space (hours and minutes available) changes as you adjust the record quality. The higher the recording quality, the less space available for other shows. To conserve space, use the High setting sparingly—for recording fast-action shows, for example.

Guaranteed

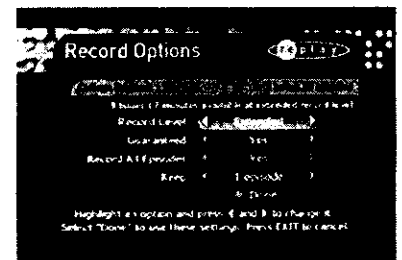
Choices are Yes and No. Guaranteed means space is reserved for this show. Non-guaranteed means the show will be recorded if there is space available (after space is reserved for Show-based Replay channels). See "Guaranteed and Non-guaranteed Recording" on page 40.

Record All Episodes

Choices are Yes and No. Selecting Yes will record all episodes of this show—daily or weekly. No means only this episode will be recorded.

Keep

If you select to record all episodes, here you can tell the Hard Disk Recorder how many you want to keep (up to 7) before the most current episode replaces the oldest episode. If you are setting up a theme-based recording, you can select the recording time between 1/2 hour and 10 hours.

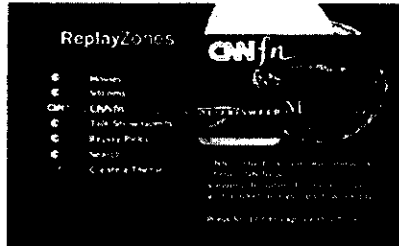


Recording Shows (continued)

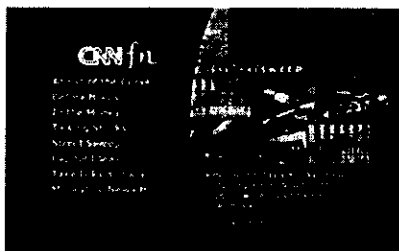
Recording From Show Categories

Visit **ReplayZones** to create channels from topical television categories collected by the **ReplayTV Service**. Zones can be organized in topics like romantic comedies, sitcoms, action-adventure, cartoons, talk shows. **ReplayZones** change regularly, so check them out often to record the best of what's on TV.

- 1 Press REPLAY ZONES to display the ReplayZones screen.**
 - You can also select "Replay Zones" from the Main Menu.



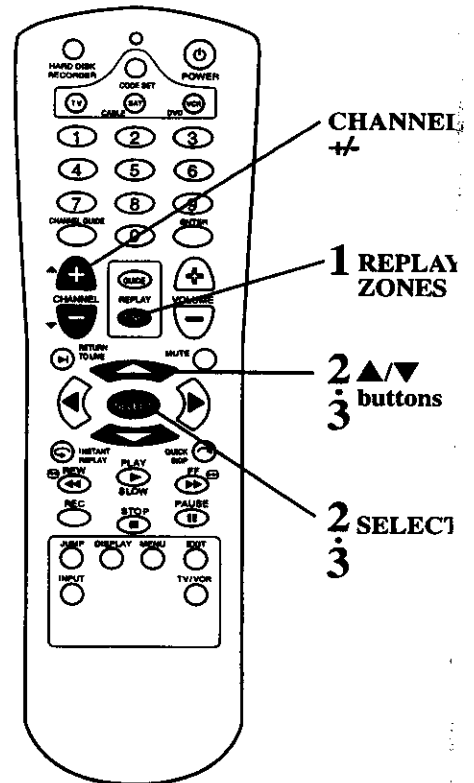
- 2 Press ▲/▼ to search for your topic of interest, then press SELECT with your topic selected.**
 - The Zone you select displays, with its zone channels listed.
 - You can go to the next Zone screen using CHANNEL +/-.



- 3 Press ▲/▼ to select a Zone channel, then press SELECT to select it.**
 - The Hard Disk Recorder searches your channel listings for shows matching the category.

- If you like the shows the Hard Disk Recorder found, you can create a Zone channel which will be stored in the Replay Guide. This means that whenever a show in this Zone category airs, the Hard Disk Recorder will record it for you. You can also select to record individual shows from the list.

To Record *One* of the Shows...
To Create a Show-based Replay Channel...
To Cancel Recording of a Show... } → See page 32.

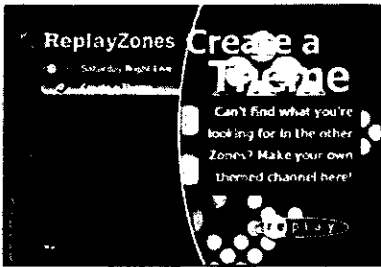


Recording Shows Based On a Theme You Choose

The Hard Disk Recorder lets you record shows based on any theme you choose. Themes can be topics such as golf, news, pets, even your favorite actor or director. For more information on themes, see "Show-based Replay Channels" and "Theme-based Replay Channels" on page 34.

1 Press **REPLAY ZONES** to display the ReplayZones screen.
 • You can also select "Replay Zones" from the Main Menu.

2 Press **▲/▼** to select "Create a Theme," then press **SELECT** to select it.
 • The on-screen keyboard displays.



3 Press **▲/▼/◀/▶** to select the letter you would like to type, then press **SELECT** to enter.
 • Repeat this step until you have typed the complete keyword.
 • The letter you selected is entered in the text area near the top of the screen.

To make corrections,
 Press **▲/▼/◀/▶** to select "Back," then press **SELECT**.
 Then, repeat step 3.

To add a space between words,
 Press **▲/▼/◀/▶** to select "Space," then press **SELECT**.

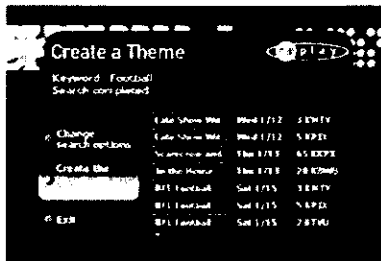
4 Press **▲/▼/◀/▶** to select "Done," then press **SELECT** when you have finished entering your keyword.

5 From the following screen, choose the categories that will be searched. Press **▲/▼** to select a category you want to change, then, **◀/▶** to change a setting.
 • Repeat this step until you have completed your changes.

6 Press **▲/▼** to select "Done," then press **SELECT** to apply your changes.
 • The Hard Disk Recorder searches through the 7 days of Channel Guide listings for shows that match the keyword you typed and the search settings you selected.

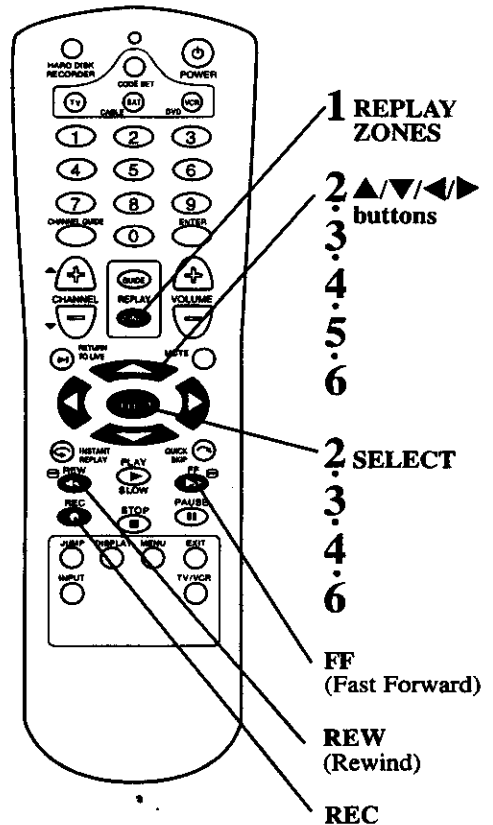
To go back and re-enter your keyword and start over...

- Press **▲/▼/◀/▶** to select "Change search options," then press **SELECT**.
- Repeat steps 3 and 4 above to re-enter your keyword.



To create a Theme-based Replay channel for your keyword.

- Press **▲/▼/◀/▶** to select "Create the 'keyword' Theme channel," then press **SELECT**.
- See "Setting the Recording Options" steps 4, 5, and 6 on page 29 to adjust the recording settings.



* You can remove a character you typed by pressing **REW**, and also insert a space by pressing **FF**.

NOTES

- The Hard Disk Recorder searches only for an entire phrase, not for the separate words in a phrase.
- Use multiple-word themes if they help avoid confusion. For example, use "Harrison Ford" rather than "Ford" if you want movies with the actor but not shows about cars.

Recording Shows (continued)

To Record *One* of the Shows...

1. Press ▲/▼ to select the show you want to record.
2. Press **REC** to record the show.
 - One red dot is placed next to the episode you select.

Or

If you want to adjust the record options...

- a. Press **SELECT** to display the popup menu.
- b. Press ▲/▼ to select "Record this show."
- c. See "Setting the Recording Options" steps 4, 5, and 6 on page 29 to adjust the recording settings.
 - This single-record show will be stored in the Replay Guide.

To Create a Show-based Replay Channel...

1. Press ▲/▼ to select the show you want to record.
2. Press **REC** twice to record the show.
 - Two red dots are placed next to the episode you select.

Or

If you want to adjust the record options...

Repeat steps a, b, and c above.

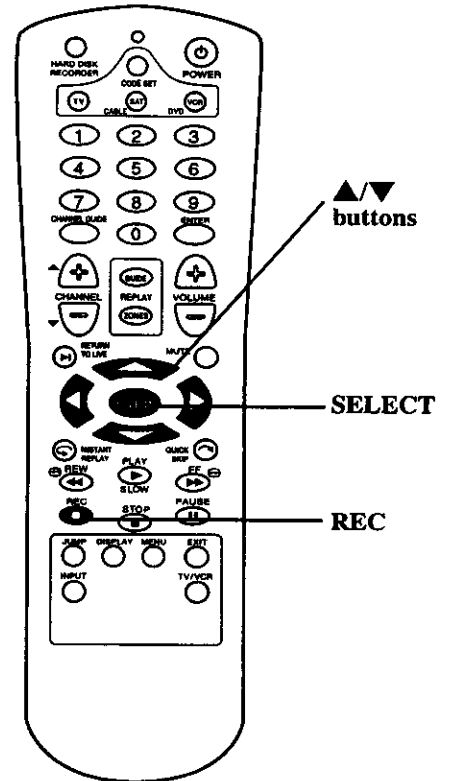
- This Show-based channel will be stored in the Replay Guide.

To Cancel Recording of a Show...

1. Press ▲/▼ to select the show you want to cancel, then press **SELECT**.
2. Press ▲/▼ to select "Turn off record," then press **SELECT**.
 - The red dot disappears.

NOTE

- If there's enough recording space, you can select to record more than one of the shows on this screen. Or, set one show as a guaranteed record and another as non-guaranteed. The non-guaranteed show will be recorded if space allows.



Finding Shows

To quickly find the exact show you're looking for, use Find Shows. This is a great feature if there's a particular show you're looking for but don't know what time or channel it's on.

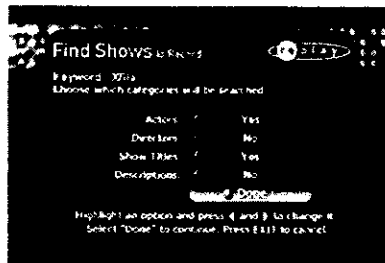
1 Press **MENU** to display the Main Menu.



2 Press **▲/▼/◀/▶** to select "Find Shows," then press **SELECT**.
 • The on-screen keyboard displays.

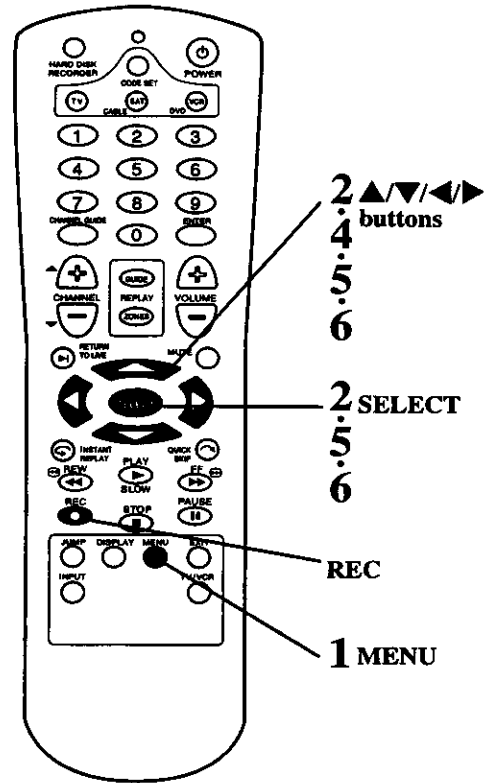
3 See "Recording Shows Based on a Theme You Choose" section on page 31 to type your keyword.

4 Press **▲/▼** to select the categories you want to change.



5 Press **SELECT** or **◀/▶** to change a setting.
 • Repeat steps 4 and 5 until you have completed your changes.

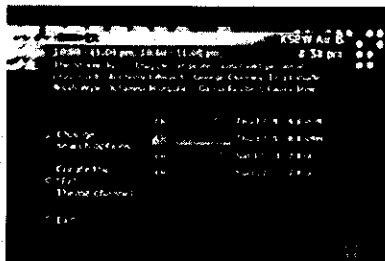
6 Press **▲/▼** to select "Done," then press **SELECT** to apply your changes.
 • You can also apply your changes by pressing **REC** on the remote.
 • The Hard Disk Recorder searches through the 7 days of Channel Guide listings for your show based on the keyword you chose and the search settings you selected.
 • The search results are presented in the order that they're airing. You have a few options on this screen. (See below.)



To go back and re-enter our keyword and start over...

Press **▲/▼/◀/▶** to select "Change search options," then press **SELECT**.

b. Repeat steps 3, 4, 5, and 6 above to re-enter your keyword.



**To Record One of the Shows...
 To Create a Show-based Replay Channel...
 To Cancel Recording of a Show...**

→ See page 32.

To create a Theme-based Replay channel for the show.

a. Press **▲/▼/◀/▶** to select "Create the 'keyword' Theme channel," then press **SELECT**.

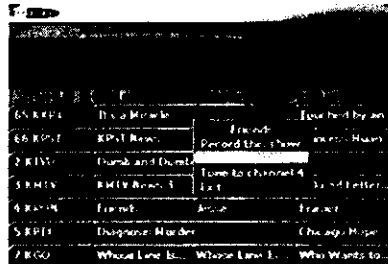
b. Repeat "Setting the Record Options" steps 4, 5, and 6 on page 29 to adjust the recording settings.

Recording Shows (continued)

Finding All Episodes of a Show

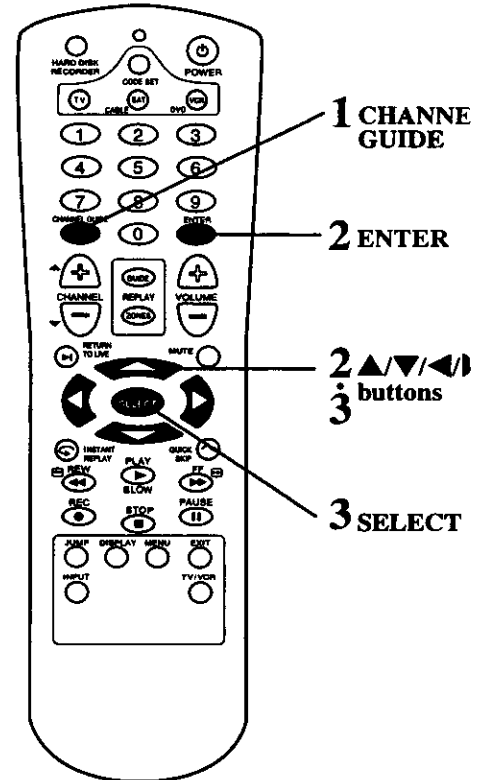
You can find every episode of a show that exists in the 7 days of Channel Guide information. This is a great feature if you want to see what each episode is about, then select which episode you would like to record.

- 1 Press **CHANNEL GUIDE** to display the Channel Guide.
 - You can also select "Channel Guide" from the Main Menu.



- 2 Press **▲/▼/◀/▶** to select the show you want, then press **ENTER**.
 - The popup menu displays.

- 3 Press **▲/▼** to select "Find all episodes," then press **SELECT**.
 - The Hard Disk Recorder searches through the 7 days of Channel Guide listings for every episode of the show.
 - The search results are presented in the order that they're airing.



To create a Theme-based Replay channel for the show.

- a. Press **▲/▼/◀/▶** to select "Create the 'keyword' Theme channel," then press **SELECT**.
- b. See "Setting the Recording Options" steps 4, 5, and 6 on page 29 to adjust the recording settings.

To Record One of the Shows...
 To Create a Show-based Replay Channel...
 To Cancel Recording of a Show... } → See page 32.

NOTE

- If there's enough recording space, you can select to record more than one of the shows on this screen. Or, set one show as a guaranteed record and another as non-guaranteed. The non-guaranteed show will be recorded if space allows.

Show-based Replay Channels

You can set the Hard Disk Recorder to record a recurring show (daily or weekly) in the same time slot on the same channel.

Show-based recordings should be used to create Replay Channels that contain episodes of your favorite shows. They can be created from first run network channels or from syndicated channels. If you don't know what channel a particular show is on or want to capture all episodes regardless of what channel it is aired on, you can create a Theme-based Replay channel using the name of the show as the theme. For example, a Show-based channel created from "The X-Files" on Sunday night at 9PM will only record episodes that broadcast at or around that time on that particular channel. A Theme-based channel with the theme of "The X-Files" will record any episode of The X-Files from any channel on at any time.

Theme-based Replay Channels

If you create a Theme-based channel using the keyword "Friends," the Hard Disk Recorder will look for and record *all* programs with the word "Friends" on all channels—new Friends episodes and reruns, even "Barney & Friends."

Theme-based channels can be created using any theme that you are interested in. For example, an actor, director or category name can be used. The theme you create will dictate the shows that are recorded. Theme-based channels are great for recording shows that change time slots a lot. By creating a Theme-based channel, all episodes are recorded, regardless of what time they air. (Of course, you have to have enough recording space allocated to your channel.) Show-based channels take priority over Theme-based channels if there is a time conflict. Theme-based channels are lots of fun—you never know what the Hard Disk Recorder will find and record for you.

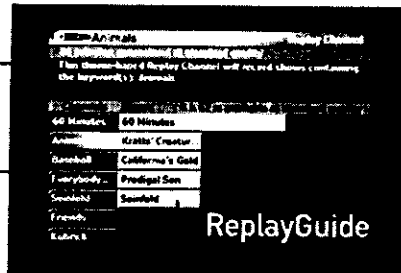
Watching Your Recorded Shows

Every show that the Hard Disk Recorder records is stored in the Replay Guide. Any upcoming recordings you set are also listed here. This is where you go to watch your shows.

Replay Guide Screen

Program Information

Replay Channels



Replay Shows (light blue)

Changing Replay Channel Characteristics

You can change the characteristics of a Replay channel at any time (changing the recording quality from Standard to High, for example). The available menu items for the Replay channels you set up depends on the type of Replay channel.

Single record channels and Show-based channels contain the following choice:

-----> **Change record options**

Theme-based Replay channels contain the following choices:

-----> **Change record options**

-----> **Change search options**

-----> **Find matching shows**

Zone-based Replay channels contain the following choices:

-----> **Change record options**

-----> **Find matching shows**

Four Types of Replay Channels

The Replay Guide stores all your recorded shows and the shows set to record.

- **Single record Replay channels:** one episode or show.
- **Show-based Replay channels:** a series of episodes.
- **Theme-based Replay channels:** shows based on a Theme you select.
- **Zone-based Replay channels:** shows from ReplayZones.

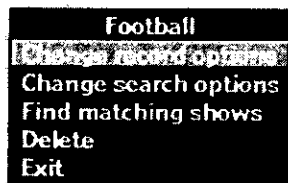
From the Replay Guide you can:

- See a list of shows the Hard Disk Recorder has recorded for you.
- Play recorded shows—from the beginning, or wherever you last left off.
- Delete shows you have previously recorded, or have scheduled to record.

To display the popup menu...

Select a Replay channel or a Replay show using ▲/▼/◀/▶ buttons, then press SELECT.

Replay Channel Popup Menu Items



Change record options: change the channel's recording options. See page 29.

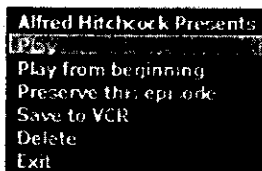
You can't change the recording level of a Replay show after it has been recorded.

Change search options: re-type your search keyword. See page 33.

Find matching shows: see the shows that fit the characteristics of the Replay channel you have set up. See page 36.

Delete: permanently remove the channel.

Replay Show Popup Menu Items



Play: play the show from where you left off. See page 37.

Play from beginning: play the show from the start. See page 37.

Preserve this episode: save a show in the Replay Guide so it is not replaced by the next episode. See page 38.

Save to VCR: save shows to videotape for long-term archiving. See page 39.

Delete: permanently remove the show.

Watching Your Recorded Shows (continued)

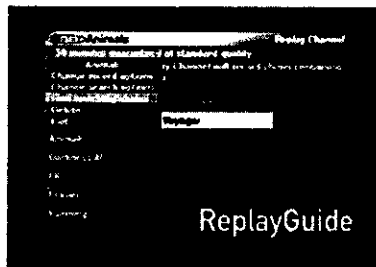
Seeing What a Replay Channel Will Record

To quickly see the types of shows that will be recorded for a Theme-based or a Zone-based channel, use the **Find matching shows** feature. This is a great way to verify that the shows the channel finds are what you want to see. If the shows are not exactly what you want, you can go back to the Replay Channel and adjust the channel's characteristics.

- 1 Press **REPLAY GUIDE** to display the Replay Guide.
 - You can also select "Replay Guide" from the Main Menu.

- 2 Press **▲/▼/◀/▶** to select a Theme-based or Zone-based channel, then press **SELECT**.
 - The popup menu displays.

- 3 Press **▲/▼** to select "**Find matching shows**," then press **SELECT**.
 - The Hard Disk Recorder searches through the 7 days of Channel Guide listings for shows that match the characteristics of the Replay channel.

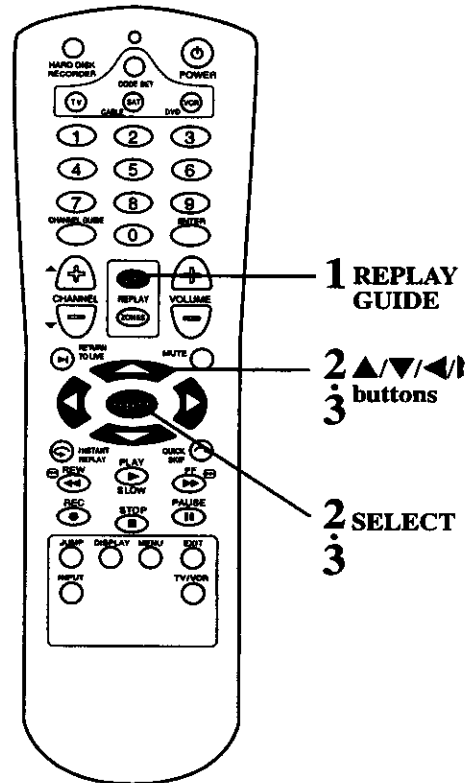


- The shows that you see are shows that match the ReplayZones or Theme channel settings. These shows will be recorded if there's space available and no recording conflicts exist (a guaranteed show, for example).

If you want to adjust the channel's characteristics...

- a. Press **▲/▼** to select "Exit," then press **SELECT** to go back to the Replay Guide.
- b. Press **▲/▼/◀/▶** to select the Replay channel, then press **▲/▼** to select one of the menu choices.
 - See "Changing Replay Channel Characteristics" on page 35.

To Record *One* of the Shows...
 To Create a Show-based Replay Channel... } → See page 32.
 To Cancel Recording of a Show...



NOTES

- If there's enough recording space, you can select to record more than one of the shows on this screen. Or, set one show as a guaranteed record and another as non-guaranteed. The non-guaranteed show will be recorded if space allows.
- If you select to record a single show or create a Show-based Replay channel, you may want to delete the Theme-based or Zone-based channel from the Replay Guide. This way, you will record the exact shows you want and eliminate the recording space taken by the Theme-based or Zone-based Replay channel.

If you want to delete a Replay channel...

- a. Press ▲/▼ to select the *channel* on the Replay Guide screen, then press SELECT. The popup menu displays.
- b. Press ▲/▼ to select "Delete," then press SELECT to delete the Replay channel.

If you want to delete a Replay show...

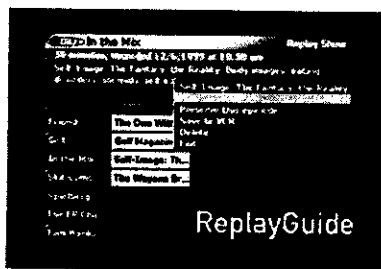
- a. Press ▲/▼/◀/▶ to select the *show* on the Replay Guide screen, then press SELECT. The popup menu displays.
- b. Press ▲/▼ to select "Delete," then press SELECT to delete the Replay show.

Watching a Show

Watching a show that the Hard Disk Recorder has recorded for you is easy.

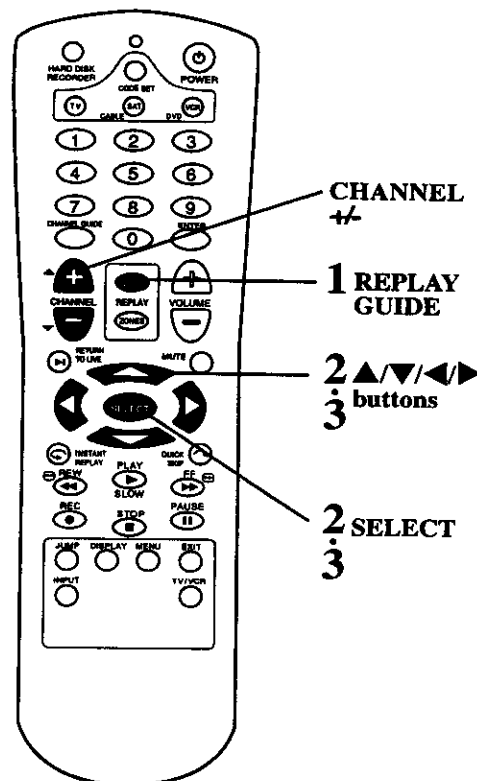
- 1** Press **REPLAY GUIDE** to display the Replay Guide.
 - You can also select "Replay Guide" from the Main Menu.

- 2** Press ▲/▼/◀/▶ to select the recorded show (light blue) you want to watch, then press **SELECT**.
 - The popup menu displays.



- 3** Press ▲/▼ to select "Play" or "Play from beginning," then press **SELECT**.
 - Select "Play" to watch the show from where you last left off.
 - Select "Play from beginning" to watch the show from the start.

The show will begin playing. All of the Hard Disk Recorder's television control features (Stop, Fast Forward, Rewind, Pause, Slow Motion, Frame Advance, QuickSkip, Instant Replay) are available when you play recorded shows. See "Controlling Live Television" on pages 22~24 for more on these features.



Programming blocked by V-Chip technology

The Hard Disk Recorder supports V-Chip technology, but your TV controls the actual settings. Your TV may display a message that the current program is blocked. If you want to watch or record a show that is blocked, you need to unlock the parental control on your TV as you normally would. Refer to your television owner's manual for more information.

- NOTE** • If you are watching a show that is blocked, you can go to another channel by pressing **CHANNEL +/-** on the remote.

Watching shows with closed-captioning

The Hard Disk Recorder records closed caption information. To view the closed captioning for a live or recorded show, enable the feature as you normally would on your TV.

Watching Your Recorded Shows (continued)

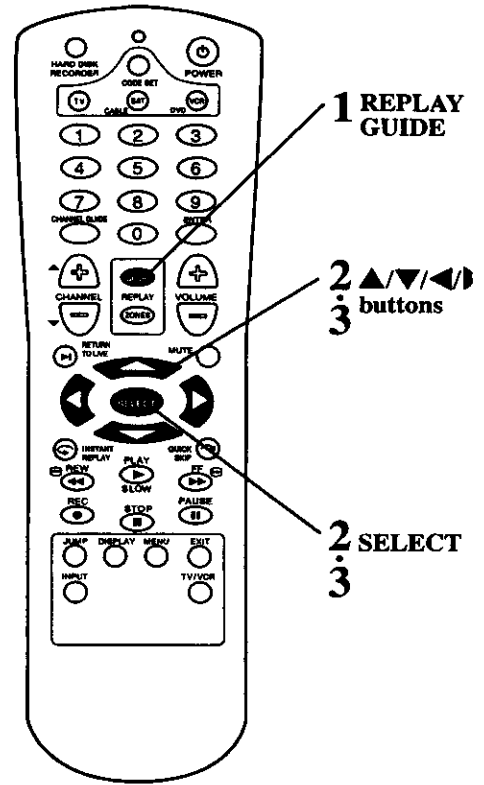
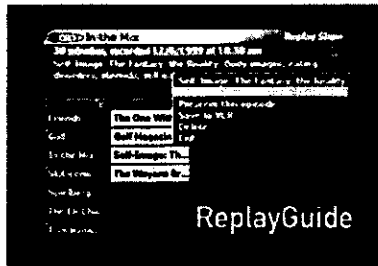
Preserving a Show

You can preserve an episode of a show recorded in a Replay channel. Older episodes of Show-based and Theme-based Replay channels are deleted to make room for new episodes. Use this feature if you don't want a particular episode to be replaced.

1 Press **REPLAY GUIDE** to display the Replay Guide.
• You can also select "Replay Guide" from the Main Menu.

2 Press **▲/▼** to select the show you want to save in the Replay Guide, then press **SELECT**.
• The popup menu displays.

3 Press **▲/▼** to select "Preserve this episode," then press **SELECT**.
• If there is enough guaranteed space to accommodate the length of the show, it is removed from its current Replay channel and moved into a new single-record guaranteed channel.



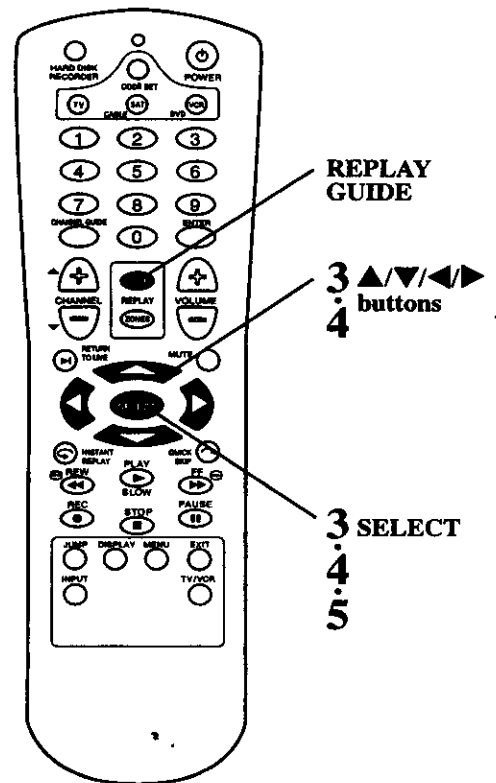
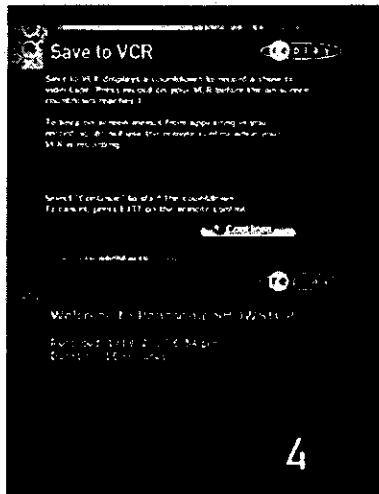
Saving Shows to Videotape

For long-term archiving, or if you want to save a show permanently, you can save shows recorded by the Hard Disk Recorder to videotape. This way, you reserve more space for the Hard Disk Recorder to record other shows. The Hard Disk Recorder is not intended to be used as a long-term storage device.

Before you begin...

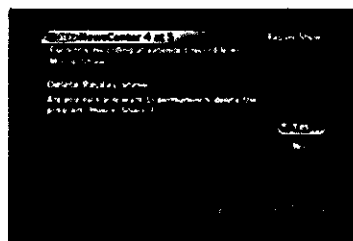
Make sure your VCR is properly connected to the Hard Disk Recorder. This is done by connecting cables from the OUTPUT jacks on the Hard Disk Recorder to the INPUT jacks on your VCR. The cables you use for this connection depend on the types of *input* jacks on your VCR. See page 14 and 15 for more on connecting a VCR to the Hard Disk Recorder.

- 1 Insert a rewind videotape and turn on your VCR.
- 2 Press **REPLAY GUIDE** to display the Replay Guide.
 - You can also select "Replay Guide" from the Main Menu.
- 3 Press **▲/▼** to select the show you want to save, then press **SELECT**.
 - The popup menu displays.
- 4 Press **▲/▼** to select "Save to VCR," then press **SELECT**.
- 5 Press **SELECT** with "Continue" highlighted to start the on-screen countdown.
- 6 Press the Record button on your VCR before the on-screen countdown reaches 1.



To delete the show once it's done recording to videotape.

- a. Press **REPLAY GUIDE** to display the Replay Guide.
- b. Press **▲/▼/◀/▶** to select the show that was recorded to a videotape, then press **SELECT**.
- c. Press **▲/▼** to select "Delete," then press **SELECT**.
- d. Press **▲/▼** to select "Yes," then press **SELECT**.
 - The show is permanently removed from the Replay Guide, freeing up more recording space.



NOTES

- Don't press any buttons on the remote while the show is being saved to videotape or the on-screen displays will be recorded.
- Press the **RECORD** button on your VCR before the countdown reaches 1 if you want to record the information about the show. This will show you what the program is about when you watch the videotape later.
- Some VCRs take longer than others to begin recording. You may want to experiment to see when to begin recording on your VCR.

Managing Recording Space

The Hard Disk Recorder manages recording space based on priorities. The priorities are set when you select to record a single show, or create a Show-based, Theme-based or Zone-based Replay channel. The capacity of the Hard Disk Recorder's recording space is also determined by the level of recording quality you select. "High" quality takes more space than "Extended" quality.

NOTE

- Your Hard Disk Recorder provides 30 hours of standard-quality recording, 15 hours of medium-quality recording, and 10 hours of high-quality recording. Several minutes of recording space are always reserved for the show you are currently viewing live.

Recording Priorities

Guaranteed recordings take priority over non-guaranteed recordings; Show-based Replay channels take priority over Theme-based Replay channels. At the top of the priority list, guaranteed recording sets aside disk space to ensure that your show will be recorded. Think of it as a parking space: guaranteed shows have a reserved spot, always there for your show; non-guaranteed shows do not. If the guaranteed show is about to be recorded and space is needed, your non-guaranteed show may be removed, and the guaranteed show will take its reserved space.

NOTES

- Non-guaranteed shows that you choose to record appear in the Replay Guide even though they may not be recorded.
- A Non-guaranteed show will never be recorded if it conflicts with a Guaranteed show.

How to tell if a show is guaranteed

You guarantee a show for recording using the Record Options screen. You'll know a show is guaranteed when one or two solid red dots appear next to the show in the Channel Guide. You can also tell by selecting the channel in the Replay Guide or in the Channel Guide (select the channel, then look in the show information at the top of the screen).

How Show-based Replay channels are represented

A Show-based Replay channel is created when you select to record episodes of a show on an on-going basis—a weekly sitcom, for example. Show-based Replay channels are represented by two red dots next to the show in the channel guide. Solid red dots indicate a guaranteed Show-based channel; hollow red dots indicate a non-guaranteed Show-based channel. You can also tell by choosing the channel in the Replay Guide.

How Theme-based Replay channels are represented

A Theme-based Replay channel is created when you enter a keyword for a favorite show topic. Theme-based Replay channels are stored in the Replay Guide. Theme-based recordings aren't visible in the Channel Guide (there are no red dots) because shows are only recorded if they fit the criteria you specified.

Indication of Guaranteed or Non-guaranteed recording

In the Channel Guide, solid dots indicate guaranteed recording. Hollow dots indicate non-guaranteed recording. One dot appears on the Channel Guide listing if you're recording only one episode; two dots appear if you're recording all episodes.



Guaranteed recording



Non-guaranteed recording

Whose Line Is It Anyway?		KGO Air 7
8:30 - 9:00 pm, Starts in 27 hours 21 minutes		5:09 pm
(TV-PG) "Word Rewriters", "Song Styles", "Rhinoceros"		
Line down: Ryan Stiles, Colin Mochrie, Wayne Brady, Greg Kinnear, Laura Hall		
2 K1VJ	Dumb and Dumber	
3 K9M3	KRIV News 5	Late Show With David Letterman
4 K8K6	Frank's Place	Travis
5 K2F7	Occasional Murder	Chicago Hope
7 KGO	Whose Line Is It Anyway?	Whose Line Is It Anyway? Who Wants to
8 K5WV	Friends	Travis
9 KQED	Stephen Hawking's Universe	Hysteria

Guaranteed and Non-guaranteed Recording

When setting up your own personal Replay channels, consider the following. Show-based and Theme-based channels can be created as guaranteed or non-guaranteed recordings. A guaranteed recording will allocate recording space for the duration of the show or multiple shows, depending on the number of episodes you selected to be recorded. A non-guaranteed recording will only record the show if there is sufficient storage space.

For example, if you create an "NYPD Blue" channel and used a guaranteed record setting, you have set aside one hour of recording space for NYPD Blue. When NYPD Blue airs it will be recorded in its allocated space. If you also have set up a Show-based "Seinfeld" channel as a non-guaranteed record, when a Seinfeld episode airs, it will be recorded only if storage space permits.

So, how do you know if sufficient space is available? Say NYPD Blue airs on Tuesday nights at 10:00PM. After you watch the episode, you delete it from the Replay Guide. Since NYPD Blue is a guaranteed record, the hour of time that is reserved for the next episode can be used for non-guaranteed shows until the next episode of NYPD Blue is broadcast. Non-guaranteed shows can borrow the space reserved for guaranteed channels if the guaranteed channels don't have episodes recorded in them.

Guaranteed Record and Space-available Record

When you guarantee recording of a future show, recording space is immediately set aside. For this reason, the size of your recording space limits the number of shows you can guarantee. A guaranteed record places solid red dots next to the show-based recording in the Channel Guide.

When you don't guarantee a future show for recording, the show uses whatever space is available at the time it is recorded. If there is no unused space available at the time, the show may not be recorded. A non-guaranteed (space-available) record places hollow red dots next to the show in the Channel Guide. There is no limit to the number of non-guaranteed recordings you can set.

To increase the likelihood of your non-guaranteed shows being recorded, delete viewed shows from the Replay Guide after you have watched them. The time that is reserved for the Show-based channel that you just deleted can be used for non-guaranteed shows. Although, if another episode of the guaranteed show is about to air, it will reclaim its reserved recording space that was borrowed by the non-guaranteed recording.

Recording Space Management Tips

Here are some space saving tips to make sure the Hard Disk Recorder records what you want.

Use the Guaranteed record setting for your can't-miss shows

Use the Guaranteed setting for the shows you can't afford to miss. Then, go ahead and use the non-guaranteed setting for other shows. By using the guaranteed setting for every show, you may eliminate recording of other shows you'd like to watch. If you maintain your Replay Guide regularly, there should always be enough space to record guaranteed and non-guaranteed shows.

Use the High record quality setting sparingly

The High quality setting provides the best picture for the shows you record. This also takes up the most recording space of the three record quality settings. You might want to use the High setting for sporting events, fast-action movies and other shows where quality is vital.

Keep space available for pausing

If you need to pause live TV for longer than 10 minutes, keep more recording space free for the added pause time.

Save shows you want to keep long-term to videotape

For shows you want to keep permanently, connect a VCR to the Hard Disk Recorder and transfer recordings to videotape. See "Saving Shows to Videotape" on page 39. And see page 14 and 15 for connections.

Review your Replay Guide regularly to delete any unwanted shows

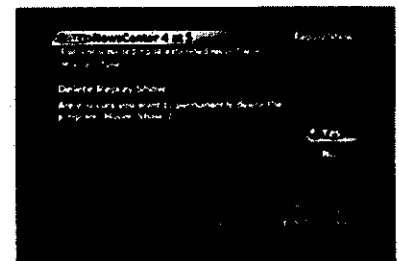
Every show you record remains in your Replay Guide—even after you watch it. As more shows are recorded, available space begins to run out. Rather than leave an old episode in your Replay Guide, delete the show after you watch it. That way, you make space available so that other shows can be recorded, rather than tie that space up from week to week. Check your Replay Guide on a regular basis and delete shows you have already watched.

To delete a show from the Replay Guide:

1. Go to the Replay Guide.
2. Select the show you want to delete.
3. Select **Delete** from the menu.

To delete a show after you watch it:

1. An on-screen message displays when the Hard Disk Recorder has reached the end of a Replay show. When the on-screen message appears, press **SELECT**.
2. Select **Yes** from the following screen to delete the show.
This show is removed from the Replay Guide.



Universal Remote Control

Changing Volume Lock

The Hard Disk Recorder remote is set to control volume through your Hard Disk Recorder while in the CABLE, SAT(ellite), DVD, TV, or VCR modes. If your TV is not remote controllable, or you want to control volume through a different component, you can change the volume lock setting to control volume through a different mode (for example through a cable box while in TV mode). You can set the volume lock to another mode.

1 Hold down **CODE SET** until the remote's red LED blinks twice, then release.

2 Press **9 - 9 - 3**, then press any mode button (except **TV**).

- The red LED will blink twice.

Now, whenever you press **VOLUME +/-** or **MUTE**, volume will be controlled by your mode choice.

To change the volume lock setting back to TV mode...

Repeat steps 1 and 2 and substitute the TV mode button.

Setting Up Your Components

Locate the brand name of your component in the code lists on pages 45-49. The brands are listed in alphabetical order with the most popular codes for each brand listed first. You will use one of these codes to program the Hard Disk Recorder remote to operate your components.

a Turn on your component with the Hard Disk Recorder off.

b Press **TV** or **SAT/CABLE** or **VCR/DVD*** to select your components.

- * If you want to operate TV or TV/VCR Combo volume control, press **TV**. If Satellite or Cable Box, press **SAT/CABLE**. If VCR, TV/VCR Combo, or DVD, press **VCR/DVD**.

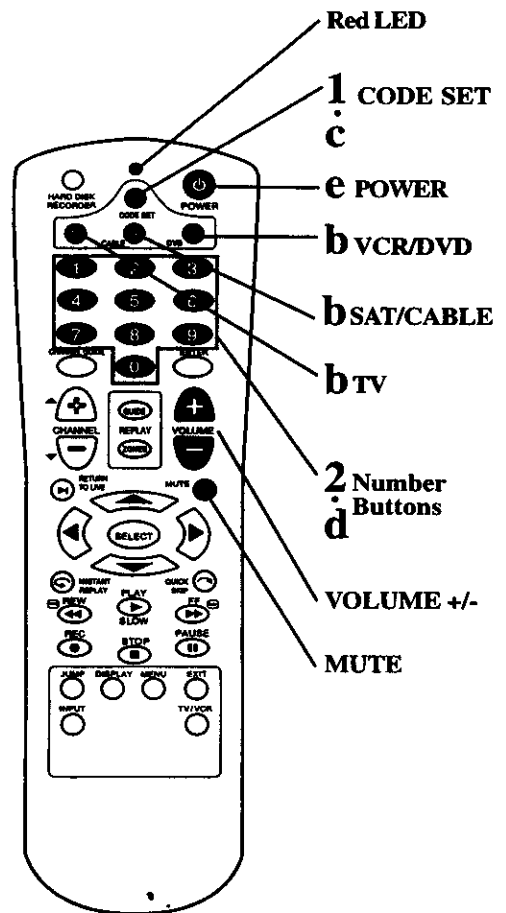
c Hold down **CODE SET** until the remote's red LED blinks twice, then release.

d Press **Number Buttons** to enter the first four digit code of your component brand on pages 45-49.

- If you perform this procedure correctly, the red LED will blink twice when you enter the final digit of your code.

e Point the Hard Disk Recorder remote at your component, then press **POWER**. Your component should turn off.

- If your component does not respond, repeat steps b-e, trying each code listed for your brand until you find the one that operates your component.



NOTES

- Remember, if you want to use your Hard Disk Recorder remote to operate your component, press the component's mode button first. For example, press **TV** first if you want to operate your TV.
- The remote control will not operate all components made by manufacturers listed. If you get no response, your particular brand cannot be controlled.

Searching for Your Component's Code

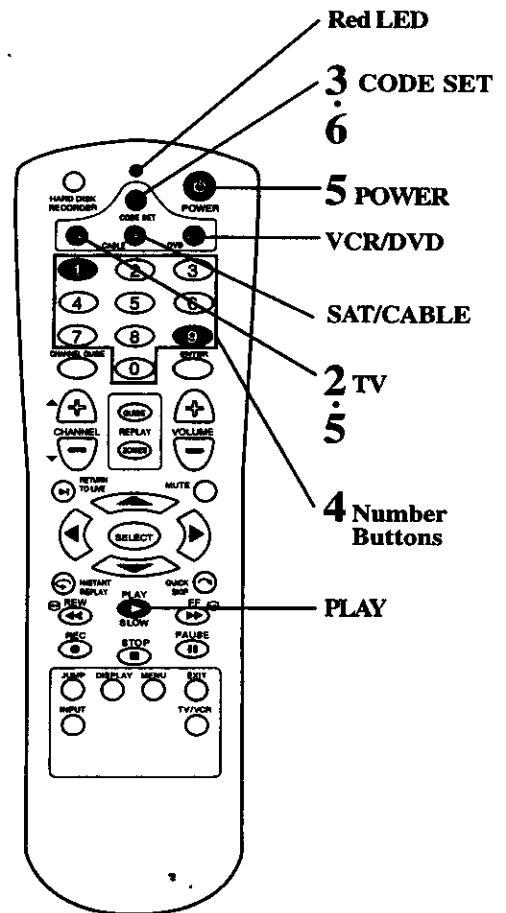
If your component does not respond to the Hard Disk Recorder remote after trying all of the codes listed for your brand, or if your brand is not listed, try searching for your code.

For example, if you try all of the codes for your TV and cannot get the Hard Disk Recorder remote to operate your TV, follow steps below.

- 1 Turn on your TV with the Hard Disk Recorder off.
 - 2 Press TV.
 - 3 Hold down CODE SET until the remote's red LED blinks twice, then release.
 - 4 Press 9 - 9 - 1.*
 - 5 Slowly alternate between pressing **POWER*** and **TV** until your TV turns OFF.
 - Make sure that the Hard Disk Recorder remote is aimed at your TV during the search.
 - You may have to press this sequence of buttons (**POWER*** then **TV**) up to 100 times to search the entire library of codes.
- *If you are searching for your VCR, or DVD player code, you may want to use **PLAY** instead of **POWER** to search for your code. When your VCR starts to play, press **CODE SET** to lock in your code.
- 6 When your TV turns OFF, press **CODE SET** to lock in the code for your TV.
 - Your Hard Disk Recorder remote is now programmed to operate your TV.

NOTE

- To search for the codes of your other components, repeat steps 1~6, and substitute the appropriate device button (TV, SAT/CABLE, or VCR/DVD) for the component.



Universal Remote Control (continued)

Learning the Codes Programmed Into the Remote

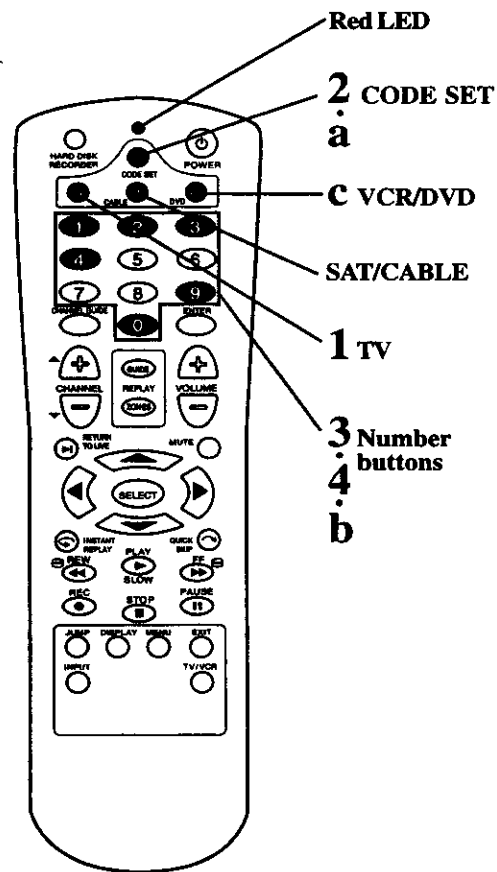
If you set up the Hard Disk Recorder remote by following "Searching for Your Component's Code" on page 43, you may want to figure out which four-digit code is operating your equipment. Use this procedure after you set up your components to find out which four-digit code is operating your equipment.

For example, to find out which code is operating your TV after setting up your TV, follow steps below.

- 1** Press TV.
- 2** Hold down CODE SET until the remote's red LED blinks twice, then release.
- 3** Press 9 - 9 - 0.
- 4** Learn your code.
 - 1) For the first digit of your four-digit code, press 1 and count the number of times the red LED blinks on the remote.
 - 2) For the second digit, press 2 and count the number of times the red LED blinks on the remote.
 - 3) For the third digit, press 3 and count the number of times the red LED blinks on the remote.
 - 4) For the fourth and final digit, press 4 and count the number of times the red LED blinks on the remote.
 - If the LED does not blink, the digit is zero.

NOTE

- To find out the code for your other components, repeat steps 1~4, and substitute the appropriate device button (TV, SAT/CABLE, or VCR/DVD) for the component code you wish to learn.



Re-assigning Component Mode Buttons

You can program the Hard Disk Recorder remote component mode buttons (TV, SAT/CABLE, or VCR/DVD) to control other home entertainment components.

For example, to control a TV, a cable box, and a DVD player, you will need to re-assign the VCR button to operate the DVD player, follow the steps below.

- a** Hold down CODE SET until the remote's red LED blinks twice, then release.
 - b** Press 9 - 9 - 2. The red LED will blink twice.
 - c** Press VCR/DVD twice. The red LED will blink twice.
- You can now program the VCR/DVD button for your DVD player.
- d** See "Setting Up Your Components" on page 42.

To reassign other component mode buttons...

Repeat steps a~d by substituting the button sequence from the list of popular components at right.

Reassigning device keys

TV as 2nd VCR button	Press: CODE SET 9-9-2-VCR-TV
TV as 2nd CABLE button	Press: CODE SET 9-9-2-CABLE-TV
TV back to TV	Press: CODE SET 9-9-2-TV-TV
VCR as 2nd TV button	Press: CODE SET 9-9-2-TV-VCR
VCR as 2nd CABLE button	Press: CODE SET 9-9-2-CABLE-VCR
VCR back to VCR	Press: CODE SET 9-9-2-VCR-VCR

Code Numbers For Your Components

TVs

AOC	0030, 0019	Harvard	0180
Admiral	0093	Hitachi	0145, 0056, 0151
Aiko	0092	Infinity	0054
Akai	0030	Inteq	0017
Alaron	0179	JBL	0054
Allegro	0720, 0774	JCB	0000
Ambassador	0177	JVC	0053
Ampro	0751	KEC	0180
Anam	0180	KTV	0180, 0030, 0039
Audiovox	0451, 0180, 0092, 0623	Kenwood	0030, 0019
Aurmark	0060	LG	0056
Baysonic	0180	LXI	0047, 0054, 0017, 0154, 0156, 0178, 1347
Belcor	0019	Logik	0016
Bell & Howell	0154, 0016	Luxman	0056
Bradford	0180	MGA	0150, 0030, 0178, 0019
Brockwood	0019	MTC	0060, 0030, 0019, 0056
Broksonic	0236, 0463	Magnavox	0054, 0030, 0179
CXC	0180	Majestic	0016
Candle	0030, 0056	Marantz	0054, 0030
Carnivale	0030	Matsushita	0051, 0250
Carver	0054	Megatron	0178, 0145
Celebrity	0000	Memorex	0154, 0250, 0150, 0060, 0178, 0056, 0016
Cineral	0451, 0092	Midland	0047, 0017, 0051, 0039, 0135
Citizen	0060, 0030, 0056, 0039, 0092	Minutz	0021
Concerto	0056	Mitsubishi	0093, 0150, 0178, 0019
Contec	0180	Motorola	0093
Craig	0180	Multitech	0180
Crosley	0054	NAD	0156, 0178, 0166
Crown	0180, 0039	NEC	0030, 0019, 0056
Curtis Mathes	0047, 0054, 0154, 0051	NTC	0092
.....	0451, 0093, 0060, 0030, 0145	Nikko	0047, 0017, 0154, 0156, 0030, 0178, 0092, 1347
.....	0056, 0016, 0039, 0166, 0466, 1147, 1347	Onwa	0180
Daewoo	0451, 0019, 0039, 0092, 0623, 0624	Optimus	0154, 0250, 0166
Daytron	0019, 0039	Optonica	0093, 0165
Denon	0145	Orion	0236, 0463, 0179
Dumont	0017, 0019	Panasonic	0250, 0051
Dwin	0720, 0774	Penney	0047, 0156, 0051, 0060, 0030
Electroband	0000	0178, 0021, 0019, 0056, 0039, 0135, 1347
Emerson	0154, 0236, 0463, 0180, 0282	Philco	0054, 0463, 0030, 0145, 0019
.....	0178, 0019, 0179, 0039, 0177, 0623, 0624	Philips	0054, 0017, 0000, 0021, 0019, 0039
Envision	0030	Pilot	0030, 0019, 0039
Fisher	0154	Pioneer	0166
Fujitsu	0179	Portland	0019, 0039, 0092
Funai	0180, 0179, 0171	Prism	0051
Futuretech	0180	Proscan	0047, 0030, 1347
GE	0047, 0051, 0451, 0093	Proton	0178, 0466
.....	0282, 0178, 0021, 0135, 1147, 1347	Pulsar	0017, 0019
Gibraltar	0017, 0030, 0019	Quasar	0051, 0250, 0165
Go Video	0060	RCA	0047, 0051, 0093, 0019
GoldStar	0030, 0178, 0019, 0056, 0039	0090, 0135, 1047, 1147, 1247, 1347
Gradiente	0053, 0056	Radio Shack	0047, 0154, 0165, 0180
Grunpy	0180, 0179	0030, 0178, 0019, 0056, 0039
Hallmark	0178	Realistic	0154, 0165, 0180
Harley Davidson	0179	0030, 0178, 0019, 0056, 0039
Harman/Kardon	0054		

Code Numbers For Your Components (continued)

TVs (continued)

Runco	0017, 0030, 0603
SSS	0180, 0019
Sampo	0030, 0039
Samsung	0060, 0030, 0178, 0019, 0056, 0039
Samsux	0039
Sansei	0451
Sansui	0463
Sanyo	0154
Scimitsu	0019
Scotch	0178
Scott	0236, 0180, 0178, 0019, 0179
Sears	0047, 0054, 0154, 0156, 0178, 0179, 0056, 0171
Semivox	0180
Semp	0156
Sharp	0093, 0165, 0039
Shogun	0019
Signature	0016
Sony	0000
Soundesign	0180, 0178, 0179
Squareview	0171
Starlite	0180
Supreme	0000
Sylvania	0054, 0030
Symphonic	0171
TMK	0178, 0056, 0177
Tandy	0093
Technics	0047, 0017, 0051, 0250, 1347
Technol Ace	0179
Techwood	0051, 0056
Teknika	0054, 0180, 0150, 0060
.....	0019, 0179, 0056, 0016, 0039, 0092
Telefunken	0056
Toshiba	0154, 0156, 0060
Totevision	0039
Universal	0021
Vector Research	0030
Victor	0053
Vidikron	0054
Vidtech	0178, 0019
Wards	0054, 0156, 0165, 0030, 0178
.....	0021, 0019, 0179, 0056, 0016, 0135
White Westinghouse	0623, 0624
Yamaha	0030, 0019
Zenith	0017, 0016, 0092

VCRs

Admiral	0048
Adventura	0000
Aiko	0278
Aiwa	0037, 0000
Akai	0041
American High	0035
Asha	0240
Audiovox	0037
Beaumarck	0240
Bell & Howell	0104
Broksonic	0184, 0121, 0209, 0002
CCE	0072, 0278
Calix	0037
Canon	0035
Carver	0081
Cineral	0278
Citizen	0037, 0278
Colt	0072
Craig	0037, 0047, 0240, 0072, 0271
Curtis Mathes	0060, 0035, 0041, 0162
Cybernex	0240
Daewoo	0045, 0278
Denon	0042
Dynatech	0000
Electrohome	0037
Electrophonic	0037
Emerex	0032
Emerson	0037, 0184, 0000
.....	0121, 0043, 0209, 0002, 0278
Fisher	0047, 0104
Fuji	0035, 0033
Funai	0000
GE	0060, 0035, 0048, 0240
Garrard	0000
Go Video	0526
GoldStar	0037, 0038
Gradiente	0000
HI-Q	0047
Harley Davidson	0000
Harman/Kardon	0081, 0038
Harwood	0072
Headquarter	0046
Hitachi	0000, 0042, 0041
JVC	0067, 0041
Jensen	0041
KEC	0037, 0278
KLH	0072
Kenwood	0067, 0041, 0038, 0046
Kodak	0035, 0037
LXI	0037
Lloyd's	0000
Logik	0072
MEI	0035
MGA	0240, 0043

VCRs (continued)

MGN Technology	0240	Singer	0072
MTC	0240, 0000	Sony	0035, 0032, 0000, 0033
Magnasonic	0278	Sylvania	0035, 0081, 0000, 0043
Magnavox	0035, 0039, 0081, 0000, 0149	Symphonic	0000
Magnin	0240	TMK	0240
Marantz	0035, 0081, 0038	Tatung	0041
Marta	0037	Teac	0000, 0041
Matsushita	0035, 0162, 0454	Technics	0060, 0035, 0039, 0162
Memorex	0035, 0037, 0048, 0039, 0047 0240, 0000, 0104, 0046, 1162, 1262	Teknika	0035, 0037, 0000
Minolta	0042	Thomas	0000
Mitsubishi	0048, 0067, 0043	Toshiba	0045, 0043
Motorola	0035, 0048	Totevision	0037, 0240
Multitech	0000, 0072	Unitech	0240
NAP	0035, 0037, 0039, 0042, 0033	Vector	0045
NEC	0104, 0067, 0041, 0038	Vector Research	0038
Nikko	0037	Video Concepts	0045
Noblex	0240	Videosonic	0240
Olympus	0035	Wards	0060, 0035, 0048, 0047, 0081 0240, 0045, 0000, 0042, 0072, 0149
Optimus	0037, 0048, 0104 0162, 0454, 1062, 1162, 1262	White Westinghouse	0278
Orion	0184, 0002	XR-1000	0035, 0000, 0072
Panasonic	1162, 0035, 0162, 0454	Yamaha	0041, 0038
Penney	0035, 0037, 0240, 0042, 0038	Zenith	0039, 0000, 0033
Pentax	0042		
Philco	0035, 0209		
Philips	0035, 0081		
Pilot	0037		
Pioneer	0067		
Profitronic	0240		
Proscan	0060		
Protec	0072		
Pulsar	0039		
Quarter	0046		
Quartz	0046		
Quasar	0035, 0162, 0454, 1162		
RCA	0060, 0035, 0048, 0240, 0042, 0149		
Radio Shack	0000		
Radix	0037		
Randex	0037		
Realistic	0035, 0037, 0048, 0047, 0000, 0104, 0046		
Runco	0039		
STS	0042		
Samsung	0240, 0045		
Sanky	0048, 0039		
Sansui	0000, 0067, 0041, 0271		
Sanyo	0047, 0240, 0104, 0046		
Scott	0184, 0045, 0121, 0043		
Sears	0035, 0037, 0047, 0000, 0042, 0104, 0046		
Semp	0045		
Sharp	0048		
Shintom	0072		
Shogun	0240		
Signature	0035		

Satellite Receivers

AlphaStar	0772
Echostar	0775
Expressvu	0775
General Instrument	0627, 0361, 0869
HTS	0775
Hitachi	0819
Hughes Network Systems	0749
JVC	0775
Jerrold	0627, 0361
Magnavox	0724, 0722
Memorex	0724
Next Level	0869
Panasonic	0701
Philips	0724, 0722
Primestar	0627, 0361
Proscan	0566
RCA	0566, 0143, 0855
Radio Shack	0566, 0869
Sony	0639
Star Choice	0869
Toshiba	0790
Uniden	0724, 0722
Zenith	0856

Code Numbers For Your Components (continued)

Cable Boxes

ABC	0003, 0008, 0014, 0017, 0007, 0011, 0013
Allegro	0153, 0315
Archer	0153, 0797
Bell & Howell	0014
Century	0153
Citizen	0153, 0315
Comtronics	0040
Contec	0019
Eastern	0002
Emerson	0797
Everquest	0015, 0040
Focus	0400
Garrard	0153
Gemini	0015
General Instrument	0476, 0276, 0011, 0810
GoldStar	0144, 0040
Goodmind	0797
Hamlin	0020, 0259, 0009, 0034
Hitachi	0011
Hytex	0007
Jasco	0015, 0153, 0315
Jerrold	0003, 0012, 0476 0276, 0014, 0015, 0011, 0810
Magnavox	0014
Memorex	0000
Movie Time	0063
NAP	0007
NSC	0063
Oak	0019, 0007
Optimus	0021
Panasonic	0107, 0021
Paragon	0000
Philips	0153
Pioneer	0144, 0533
Popular Mechanics	0400
Proscan	0021
Pulsar	0000
Quasar	0000
RCA	0021
Radio Shack	0015, 0315, 0797, 0883
Recoton	0400
Regal	0020, 0259
Regency	0002
Rembrandt	0011
Runco	0000
SLMarx	0040
Samsung	0144, 0040
Scientific Atlanta	0008, 0477, 0017, 0877
Signal	0015, 0040
Signature	0011
Sprucer	0021
Starcom	0003, 0015
Stargate	0015, 0040, 0797
Starquest	0015

TV86	0063
Televue	0040
Tocom	0012, 0013
Toshiba	0000
Tusa	0015
Unika	0153
United Artists	0007
Universal	0153, 0191
Viewstar	0063
Zenith	0008, 0000, 0015, 0525
Zentek	0400

DVD Players

Harman/Kardon	0582
JVC	0558
Kenwood	0534
Magnavox	0503
Mitsubishi	0521
Onkyo	0503
Optimus	0525
Panasonic	0490
Philips	0503, 0539
Pioneer	0525, 0571
Proscan	0522
RCA	0522
Samsung	0573
Sony	0533
Technics	0490
Theta Digital	0571
Toshiba	0503
Yamaha	0490, 0545
Zenith	0503, 0591

Laser Disks

Denon	0059
Mitsubishi	0059
NAD	0059
Pioneer	0059
Sony	0193, 0201

TV/VCR Combos

American High	0035*
Brocksonic	0002, 0294
Colt	0072
Curtis Mathes	0035*
Daewoo	0278*
Emerson	0002, 0294, 0479
Funai	0000
GE	0035*, 0060*, 0048*, 0240
Hitachi	0035*, 0000
HQ	0000
Lloyds	0000
Magnavox	0000, 0035*, 0081*
Magnin	0240
Memorex	0037, 0162*
MGA	0240
Mitsubishi	0048*
Orion	0002, 0294, 0479
Panasonic	1162*, 0035*, 0162*
Penney's	0035*, 0240, 0162*
Quasar	0035*, 0162*
RCA	0035*, 0060*, 0048*, 0240
Sansui	0000, 0479
Sanyo	0240
Sears	0000, 0037
Sony	0032*
Symphonic	0000
Zenith	0000

Important Note

If your TV/VCR Combo is working on one of the above codes highlighted with an asterisk (*), you may need to program a separate TV code in order to control the volume. Check the list of codes below and follow the instructions detailed in the "Setting Up Your Components" section to program the supplied TV code.

- TV/VCRs working on VCR code 0032 may require TV code 0000 for volume control.
- TV/VCRs working on VCR code 0035 may require TV code 0051 for volume control.
- TV/VCRs working on VCR code 0048 may require TV code 0093 for volume control.
- TV/VCRs working on VCR code 0060 may require TV code 0047 for volume control.
- TV/VCRs working on VCR code 0081 may require TV code 0054 for volume control.
- TV/VCRs working on VCR code 0162 may require TV code 0250 for volume control.
- TV/VCRs working on VCR code 1162 may require TV code 0250 for volume control.
- TV/VCRs working on VCR code 0278 may require TV code 0451 for volume control.

Troubleshooting

Please note that the Panasonic Web site at www.panasonic.com is also a great place to ask operational and troubleshooting questions. If, after reading the troubleshooting information on our Web site and in this manual, you find you still have unanswered questions, please contact Technical Support by phone at 1-888-843-9788.

PROBLEM	SOLUTION
<p>When attempting to connect to the ReplayTV Service in Setup, I get one of the following error messages: "no dial tone," "modem timed out," "no response from modem," or "network connection error."</p>	<ul style="list-style-type: none"> • Confirm that there is no dial tone on the line by hooking up a phone to it and listening for the dial tone. • If you have call waiting, confirm that it has been disabled by entering the correct telephone prefix number in Setup. Contact your phone company to obtain the correct dialing prefix information. • The Hard Disk Recorder cannot connect to the ReplayTV Service if your phone line has a stutter dial tone. If you have a message service that enables a stutter dial tone when you have messages, you will need to delete/save all of your messages in order to disable the stutter dial tone. • Confirm that the line that you are dialing out on is an analog line. • Remove the AC (power) cable from the rear of the Hard Disk Recorder. Wait 15 seconds, then re-attach the AC cable (the Hard Disk Recorder will reboot itself). Once the Hard Disk Recorder has rebooted, press the POWER button on the Hard Disk Recorder remote control to exit standby mode. Proceed as instructed by the on-screen instructions.
<p>The Hard Disk Recorder is connected to my TV, but I don't see the Hard Disk Recorder introduction screen.</p>	<ul style="list-style-type: none"> • Confirm that the correct line input is selected on your TV. • Confirm that the Hard Disk Recorder is not in "standby mode" by pressing the POWER button on the remote control. Verify that the green POWER light on the unit is illuminated. • If you are using an A/V receiver in your setup, verify that the input source is the same as the output source going to your television. For example, if you are using an S-Video output on the Hard Disk Recorder going to an A/V receiver, you will need to output an S-Video signal from your A/V receiver to your TV. This is a limitation of most A/V receivers.
<p>When setting up my Hard Disk Recorder, the correct cable company does not appear as a menu item in Setup.</p>	<ul style="list-style-type: none"> • Contact the Panasonic Technical Support department by phone at 1-888-843-9788. Please provide the following information: 1) Complex name (if applicable), 2) Community, 3) State, 4) Cable Provider Name, 5) Cable Provider contact information, and 6) Problem description. In most cases, the correct information can be added to the ReplayTV Service database within 48 hours.
<p>When entering my phone number in Setup, I am only able to enter the first 6 digits.</p>	<ul style="list-style-type: none"> • This is correct! The Hard Disk Recorder only needs the first 6 digits of your phone number. The last four (4) numbers will appear as follows: XXXX
<p>The red light on the Hard Disk Recorder remote does not blink when I press a button on the remote control.</p>	<ul style="list-style-type: none"> • Replace the batteries in the remote control with 2 new AA alkaline batteries.
<p>The Hard Disk Recorder remote control does not operate my home entertainment components, or is not performing commands properly.</p>	<ul style="list-style-type: none"> • Make sure you're pointing the Hard Disk Recorder remote control directly at the component, and that there is nothing blocking the path of the infrared signal between the remote control and the unit. If that doesn't work, try all of the codes listed for your brand of home entertainment component in the "Code Numbers For Your Components" section of this guide. Many setup codes may allow for partial functionality, however, only one code will operate your home entertainment component correctly. Make sure that all of the components you are setting up can be operated with an infrared remote control.

PROBLEM	SOLUTION
When viewing show content through the Hard Disk Recorder, shows appear to be in black and white.	<ul style="list-style-type: none"> • This condition will exist if you have a composite input source going into the Hard Disk Recorder on LINE 2, but the input source in Setup (on LINE 2) is set to S-Video. Go to Setup to correct the information.
When I select a channel in the Channel Guide, the channel number does not change on my satellite receiver or cable box.	<ul style="list-style-type: none"> • If you're using an IR blaster connection to control channel changing, verify that you have affixed the IR blaster directly in front of the IR detector on your cable box or satellite receiver. • Confirm that you have selected the correct IR code for your cable box or satellite receiver. (Refer to "Cable Numbers For Your Components" on pages 47 and 48 for a list of codes.)
When I select a channel in the Channel Guide, I get a blue screen that states "no video source."	<ul style="list-style-type: none"> • Confirm that you subscribe to the channel in question. • Verify that the A/V connections going from your cable box/satellite receiver to the Hard Disk Recorder are correct. • Verify that all your components are turned on.
When selecting a show in the Channel Guide, I get a solid blue screen.	<ul style="list-style-type: none"> • Confirm that you have the correct input source specified in Setup. (Note: Press the MENU button on the Hard Disk Recorder remote control. Highlight Setup and press SELECT. Highlight Change Dialing & Input Settings and press SELECT. Use the ARROW buttons on the remote control to highlight each input and verify that it is configured correctly. Press SELECT when you've found the correct inputs.
When selecting a show from the Channel Guide, I get a screen that fades to black.	<ul style="list-style-type: none"> • Typically, this is caused by a weak video source. Contact Technical Support for further suggestions by phone at 1-888-843-9788. Phone support personnel answer calls between 6:00 AM and 6:00 PM (PST), Monday through Friday.
After purchasing the Hard Disk Recorder, I discovered that I have a television without composite or S-Video inputs.	<ul style="list-style-type: none"> • You can purchase an RF modulator, which will convert a composite video signal into an RF signal. RF modulators can be found at most electronics stores. • Refer to "Connecting the Hard Disk Recorder to a TV That Has a VHF/UHF jack only" on page 11.
While setting up the Hard Disk Recorder, I realized that the nearest phone outlet is too far away to connect to the Hard Disk Recorder directly.	<ul style="list-style-type: none"> • If you do not have a phone jack near the Hard Disk Recorder, you can use a wireless phone jack instead. In particular, the Phonex Wireless Modem Jack (Part # PX-421) has been qualified to work with the Hard Disk Recorder. It operates at speeds up to 33.6 baud. Wireless phone jacks can be found at most electronics stores. • For your convenience, Panasonic offers the Phonex Wireless Modem Jack on-line at http://www.panasonic.com/video
Currently, the only phone line near my Hard Disk Recorder is being used by my satellite receiver/cable box.	<ul style="list-style-type: none"> • The Hard Disk Recorder ships with a telephone splitter. This will allow you to plug the Hard Disk Recorder and your cable box/satellite receiver into the same phone line.
I'm having problems programming my TV/VCR combination component.	<ul style="list-style-type: none"> • Try the VCR setup codes for your brand. Some combo units may require both a TV code for volume control and a VCR code for the remaining functions.
The VCR is not recording.	<ul style="list-style-type: none"> • As a safety feature on the Hard Disk Recorder remote, you must press the REC button twice.
Channel +/- and JUMP features are not working for my RCA TV.	<ul style="list-style-type: none"> • Due to RCA design (1983-1987), only the original remote control will operate these functions.

Troubleshooting (continued)

PROBLEM	SOLUTION
I'm having problems changing channels.	<ul style="list-style-type: none"> • If your original remote control required an Enter button press when changing channels, press the ENTER button on the Hard Disk Recorder remote control after you enter the channel number.
Only one device's volume control code is sent regardless of which mode I have put the remote control in.	<ul style="list-style-type: none"> • Refer to "Changing Volume Lock" on page 42 and unlock the volume controls.
I'm using an IR blaster to control my cable box or DBS receiver and I'm having trouble changing channels using the Hard Disk Recorder remote.	<ul style="list-style-type: none"> • This may be dependent on how many digits you needed to enter to tune to a specific channel using the remote control for your cable box or satellite receiver, prior to hooking up the Hard Disk Recorder. For example, if you needed to enter 0 - 5 to tune to channel 5, you need to "tell" the Hard Disk Recorder this information during the on-screen setup. To update this information, you need to go back to Setup and enter a new code for your cable box or satellite receiver. <ol style="list-style-type: none"> 1. Press the MENU button on the Hard Disk Recorder remote. 2. Choose Setup from the Main Menu, then choose Change Dialing & Input Settings. 3. From the Setup Summary screen, choose the option number that your cable box or satellite receiver is connected to. 4. Proceed through the steps to configure your box. 5. When you reach the screen that asks for your cable box or satellite receiver setup code, do the following: <ol style="list-style-type: none"> A. If your unit required 2 digits to tune to a one-digit channel, enter the number 6 followed by the code for your box. B. If your unit required 3 digits to tune to a one-digit channel, enter the number 8 followed by the code for your box. <p>Refer to "Code Numbers For Your Components" on pages 47 and 48 to find your code.</p> <ol style="list-style-type: none"> 6. Continue through the remaining screens and complete the setup. 7. Once you have completed setup, try changing the channels on your cable box or satellite receiver. 8. If you are still having trouble changing channels, repeat step 5 above with the following changes: <ul style="list-style-type: none"> • If you used step 5A, replace the number 6 with the number 7. • If you used step 5B, replace the number 8 with the number 9.
My cable box sometimes fails to change channels when using the Hard Disk Recorder remote control.	<ul style="list-style-type: none"> • If you are using the IR blaster, your cable box receives IR commands from both the Hard Disk Recorder remote and the IR blaster. Some cable boxes can be confused by this. You can prevent your cable box from receiving the commands from the Hard Disk Recorder remote control by affixing an opaque covering around the area where you have placed the IR emitter on your cable box. Don't cover the IR emitter.
The Hard Disk Recorder does not respond when I press buttons on the remote control. Or, the image on my television screen is "frozen."	<ul style="list-style-type: none"> • Press and hold the power button on the front of the unit for 10 seconds, then release. The Hard Disk Recorder will start up in a few moments. • Unplug the power cord for 15 seconds then plug it back in. The Hard Disk Recorder will restart and power on in a few moments.

Specifications & Information

Specifications

General

Operating voltage	120VAC 60Hz
Power Consumption	28W (Power On) 19W (Power Off)

Tuner MTS

Input Connectors

Tuner	Type F
Composite	Phono x 2
Audio	Phono (L+R) x 2
S-Video	4-pin miniature DIN

Output Connectors

Composite	Phono x 2
Audio	Phono (L+R) x 2
S-Video	4-pin miniature DIN
Telephone	RJ-11, 2wire
Serial Control	DB-9
IR Blaster	

Dimensions/Weight

Height	76mm
Width	430mm
Depth	290mm
Weight (net)	5.9kg

Audio/Video Signals

Audio output level	2.0Vp-p
Video output level	1.0Vp-p
Video output impedance	75 ohm

Operating/Storage Conditions

Operating temp. range	+5°C to +40°C
Storage temp. range	-20°C to +55°C for 100 hours

Record

HDD Capacity	30.4GB
Video compression format	MPEG2
Audio compression format	MPEG1 layer2
Recording level	Extended/Medium/High
Recording time	30H/15H/10H*

MODEM

Speed	56kbps
-------	--------

* Actual available recording time is not maximum because the "Welcome Video" is already recorded in the Replay Guide. To make the most of the available recording time, delete the welcome video from the Replay Guide or save it to a videotape.

Resetting Hard Disk Recorder

If the Hard Disk Recorder does not respond when you press buttons on the remote, press and hold the POWER button on the front of the unit for 10 seconds. The Hard Disk Recorder will start up in a few moments.

The Hard Disk Recorder's green power LED does not need to be lighted to record shows. If you have a cable box or a satellite receiver, however, these device must remain on for the Hard Disk Recorder to record from them.

Screen Burn In

When any image is displayed on a television screen for an extended period of time, a permanent mark can remain even after the image is changed. This is called "screen burn in." Projection TVs are the most susceptible to screen burn in. To prevent this, don't leave the Channel Guide, or any other screen displayed when you don't need to use them. You can also adjust the brightness of the Hard Disk Recorder screens to help prevent this. See "Change Display Brightness" on page 7.

NOTE

- To dismiss the Pause on-screen image from your TV screen and keep a show paused, press the EXIT button on the remote control.

Software License Agreement

IMPORTANT — READ CAREFULLY: By pressing "PLAY" and accepting to continue with the setup process to begin using the software in your Hard Disk Recorder Product ("Product"), you agree to be bound by the terms of this ReplayTV Software License Agreement (this "Agreement"). If you do not agree to the terms of this Agreement, you may promptly return the Product to the point of purchase for a refund of your purchase price or you may contact Panasonic for instructions on where to ship the Product, at Panasonic's cost, for a full refund of the purchase price after inspection.

1. License Grant: Restrictions.

Subject to the terms of this Agreement, ReplayTV grants you a non-exclusive, non-transferable license, without the right to sublicense, to use all software included with the Product or subsequently provided to you, and related documentation (together, "Software") solely for your internal, noncommercial use and solely in connection with your use of the Product and access to the ReplayTV Service ("RTVS"). You acknowledge and agree that ReplayTV may periodically update, modify or enhance the Software remotely through the RTVS. You further agree that: (a) use of the Software or the Product with any third party service competitive with the RTVS is a violation of this Agreement and is grounds for ReplayTV's termination thereof; (b) you will not attempt to modify, enhance, disassemble, decompile, reverse engineer or otherwise attempt to gain access to the source code to the Software; and (c) you will not attempt to remove or unbundle the Software from the Product. Any resale or transfer of the Product by you will be subject to the terms and conditions of this Agreement.

2. Ownership.

ReplayTV and its licensors own and retain all proprietary rights, including all patent, copyright, trade secret, trademark and other intellectual property rights, in and to the Software and any corrections, bug fixes, enhancements, updates or other modifications to the Software. You acknowledge that the license granted under this Agreement does not provide you with title to or ownership of the Software, but only a right of limited use under the terms and conditions of this Agreement.

3. Confidential Information.

You agree that the Software contains confidential information, including trade secrets, know-how and other information, that is the exclusive property of ReplayTV. You agree to keep this information confidential and to not use or disclose this information to any third party except as authorized by this Agreement.

4. No Warranties.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, ReplayTV MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SOFTWARE OR THE RTVS, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY RIGHTS AND THOSE ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE. NO WARRANTY IS MADE THAT USE OF THE SOFTWARE OR THE RTVS WILL BE ERROR FREE OR UNINTERRUPTED, THAT ANY ERRORS OR DEFECTS WILL BE CORRECTED, OR THAT THE FUNCTIONALITY OF THE SOFTWARE OR THE RTVS WILL MEET YOUR REQUIREMENTS. BECAUSE SOME STATES/JURISDICTIONS DO NOT PERMIT ALL DISCLAIMERS OF WARRANTY, THESE LIMITATIONS MAY NOT APPLY TO YOU.

5. Limitation of Liability.

THE ENTIRE RISK ARISING OUT OF THE USE OR PERFORMANCE OF THE SOFTWARE AND THE PRODUCT REMAINS WITH YOU. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, ReplayTV AND ITS SUPPLIERS OR LICENSORS WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR OTHER DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION, LOSS OF INFORMATION OR DATA, OR OTHER PECUNIARY LOSS) ARISING OUT OF THIS AGREEMENT OR THE USE OF OR INABILITY TO USE THE SOFTWARE OR THE RTVS, EVEN IF ReplayTV OR ITS SUPPLIERS OR LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES/JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

6. Termination.

This Agreement and the licenses granted hereunder shall terminate automatically if you fail to comply with the limitations described in this Agreement. No notice will be required from ReplayTV to effectuate such termination. On termination of this Agreement, you must destroy all copies of the Software and accompanying documentation. Sections The obligations of ReplayTV and You in Sections 2, 3, 4, 5, 6, 7 and 8 shall survive termination of this Agreement. Nothing in this Section 6 shall limit any other remedies that ReplayTV may have for your breach of this Agreement.

7. Export Controls: Government Restricted Rights.

You acknowledge and agree that none of the Software or underlying information or technology may be downloaded or otherwise exported or re-exported (i) into (or to a national or resident of) Angola, Cuba, Iran, Iraq, Libya, North Korea, Sudan, Syria, or any other country to which the U.S. has embargoed goods; or anyone on the U.S. Treasury Department's list of Specially Designated Nationals or the U.S. Commerce Department's Table of Denial Orders. By using the Software, you represent and warrant that you are not a national or resident of any such country or on any such list.

The Software is a commercial product, developed at private expense, and provided with restricted rights. Use, reproduction, release, modification or disclosure of the Software, or any part thereof, including technical data, by the Government is restricted in accordance with Federal Acquisition Regulation ("FAR") 12.212 for civilian agencies and Defense Federal Acquisition Regulation Supplement ("DFARS") 227.7202 for military agencies.

8. Miscellaneous.

This Agreement shall in all respects be governed by the laws of the State of California without reference to its principles of conflicts of laws. The United Nations Convention on Contracts for the International Sales of Goods shall not apply to this Agreement. You hereby agree that all disputes arising out of this Agreement shall be subject to the exclusive jurisdiction of and venue in the federal and state courts within Santa Clara County, California, and you hereby consent to the personal and exclusive jurisdiction and venue of these courts. If any of the provisions of this Agreement are held to be invalid under any applicable statute or rule of law, they are, to that extent, deemed omitted. The waiver of any breach or default, or any delay in exercising any rights shall not constitute a waiver of any subsequent breach or default. This Agreement constitutes the complete and exclusive agreement between you and ReplayTV with respect to the subject matter hereof, and supersedes all prior oral or written understandings, communications or agreements. This agreement may not be modified except in writing duly signed by an authorized representative of ReplayTV.

Warranty

**Panasonic Consumer Electronics
Company, Division of Matsushita
Electric Corporation of America**
One Panasonic Way Secaucus,
New Jersey 07094

Panasonic Hard Disk Recorder Products Limited Warranty

Panasonic Consumer Electronics Company (referred to as "the Warrantor") warrants the Hard Disk Recorder against defects in materials or workmanship as follows :

1. **LABOR:** For a period of 90 days from the date of original purchase, if Hard Disk Recorder is determined to be defective, Panasonic will repair or replace the unit, with new or refurbished product at its option, at no charge.
2. **PARTS:** In addition, Panasonic will supply replacement parts for a period of one (1) year. After one (1) year from the date of original purchase.

To obtain warranty service, please contact a Technical Support Representative at 1-888-843-9788 Monday through Friday from 9:00 AM to 9:00 PM Eastern Time or Saturday and Sunday from 9:00 AM to 7:00 PM Eastern Time.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered.

This warranty only covers failures due to defects in materials and workmanship which arise during normal use. This warranty does not cover damage which occurs in shipment, or failures which are caused by products not supplied by the Warrantor, or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a Hard Disk Recorder authorized repair facility, or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above. THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO RECORDING MEDIA) RESULTING FROM THE USE OF THIS PRODUCTS, OR ARISING OUT OF ANY BREACH OF THE WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations 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. If the problem is not handled to your satisfaction, then write to the Customer Satisfaction Center at the Panasonic Consumer Electronics Company address above.

SERVICE CALLS WHICH DO NOT INVOLVE DEFECTIVE MATERIALS OR WORKMANSHIP AS DETERMINED BY THE WARRANTOR, IN ITS SOLE DISCRETION, ARE NOT COVERED. COSTS OF SUCH SERVICE CALLS ARE THE RESPONSIBILITY OF THE PURCHASER.

Service Center List

Panasonic

PRODUCT INFORMATION - OPERATION ASSISTANCE - CED - LITERATURE REQUEST - DEALER LOCATIONS

For all Customer Service Inquires please call: **1-888-843-9788**
Monday – Friday 9am-9pm EST, Saturday-Sunday 9am-7pm EST (including Holidays).

PANASONIC WEB SITE

<http://www.panasonic.com/video>
You can purchase parts and accessories by visiting our Web Site

PRODUCT SUPPORT – PRODUCT REPAIR

Should you require assistance with installation, operating information, or service for your Hard Disk Recorder, Please contact the Panasonic Customer Call Center at:

1-888-843-9788
Monday – Friday 9am-9pm EST,
Saturday-Sunday 9am-7pm EST
(including Holidays).

PRODUCT SUPPORT – ACCESSORIES

For Accessory Purchases (Customer Orders Only) Please Call:

1-800-332-5368
Panasonic Service Company 20421 84th Avenue South, Kent, WA 98032
Monday – Friday 6am – 5pm PST
Saturday 6am – 10:30am PST

Regulatory Notices for the U.S.

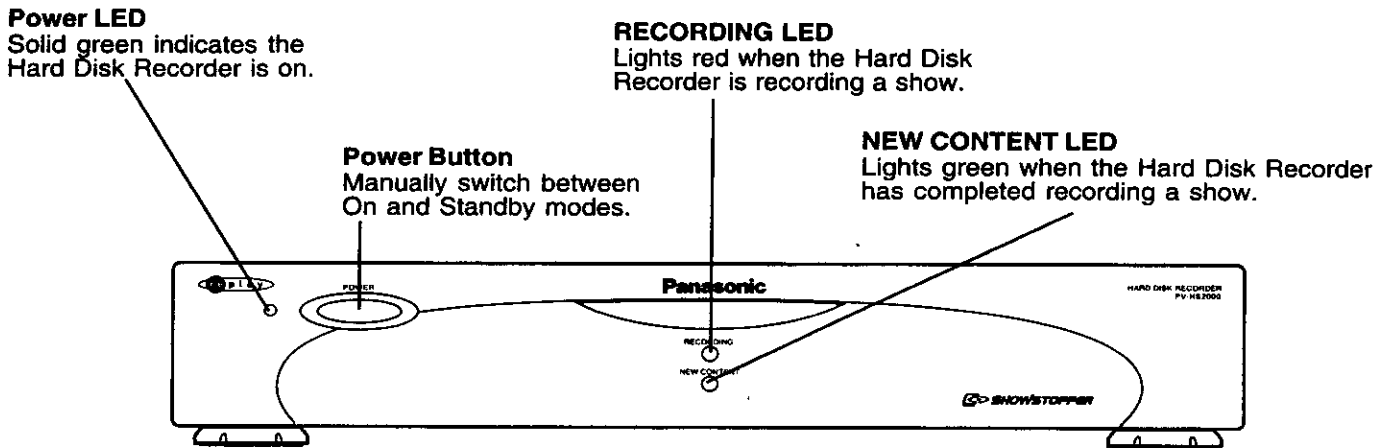
FCC Requirements

1. The Federal Communications Commission (FCC) has established Rules which permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin phones.
2. If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.
3. The telephone company may make changes in its technical operations and procedures; if such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.
4. If the telephone company requests information on what equipment is connected to their lines, inform them of:
 - a. The telephone number to which this unit is connected.
 - b. The ringer equivalence number: REN: 0.4B
 - c. The USOC jack required: RJ11C
 - d. The FCC Registration Number: 6HAUSA-27667-DT-T

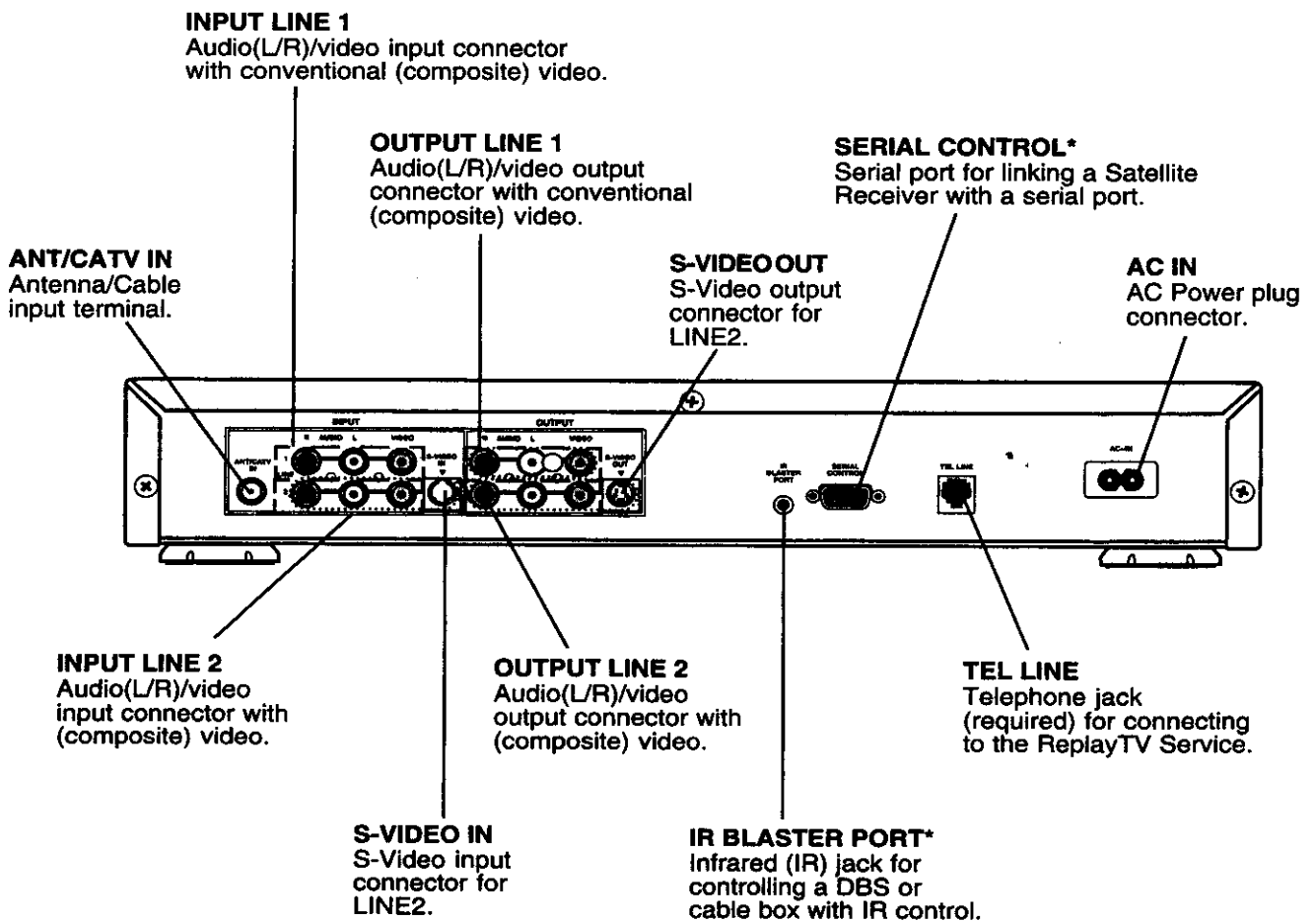
Items (b) and (d) are indicated on the label. The Ringer Equivalence Number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the REN's of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

Location of Controls

Front View of the Hard Disk Recorder



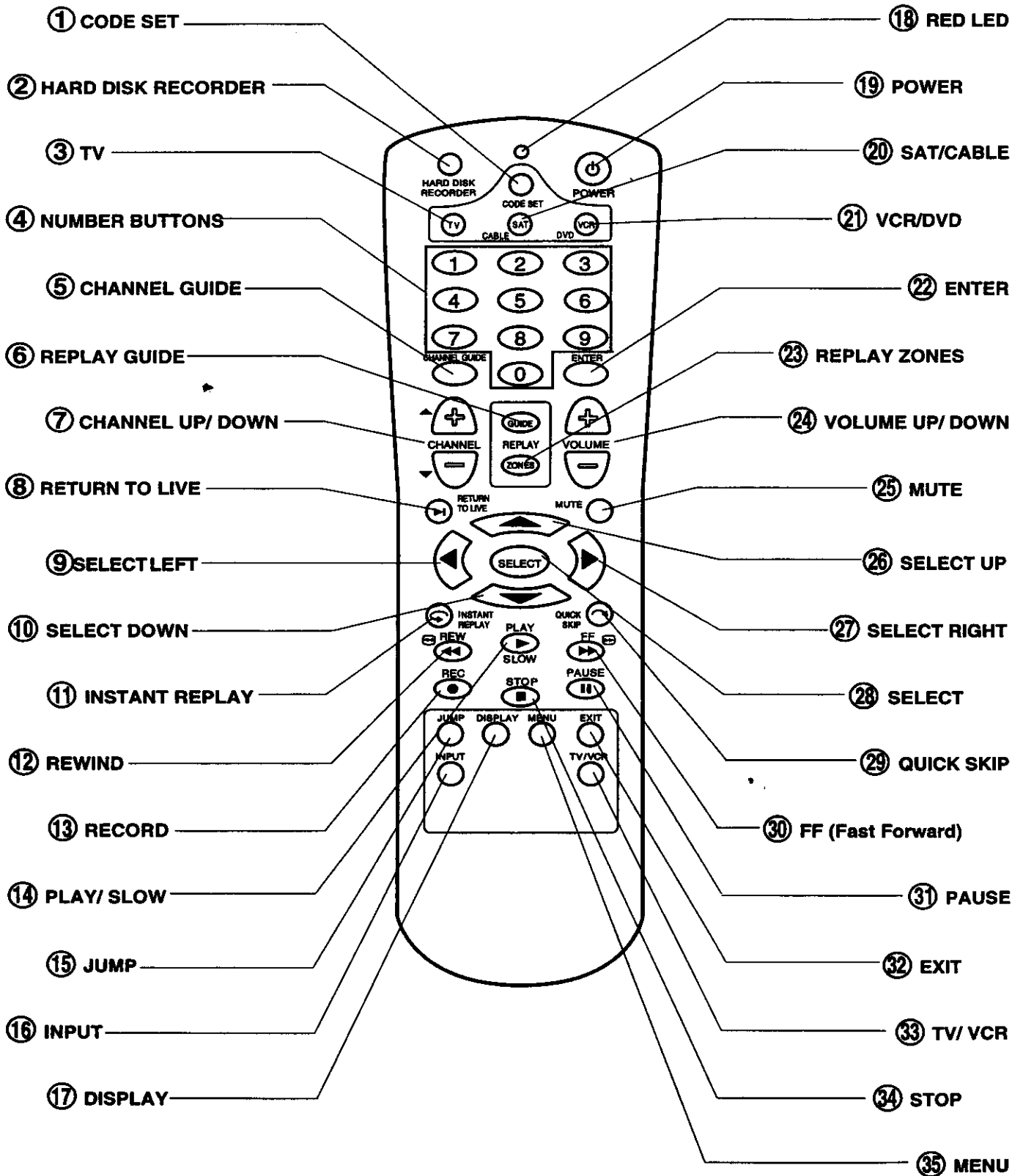
Rear View of the Hard Disk Recorder



* Serial and IR controls are used only with Satellite receiver equipment and cable boxes. Serial control can be used only with a Satellite receiver that has a serial port.

Location of Controls (continued)

Remote Control Buttons



- ① Code Set**
Used to program the remote control to operate additional home entertainment components. See "Setting Up Your Components" on page 42.
- ② Hard Disk Recorder**
Puts the remote control in the Hard Disk Recorder mode, giving you control of the Hard Disk Recorder features and functions.
- ③ TV ⑳ SAT/CABLE ㉑ VCR/DVD**
Puts the remote control in a particular mode—to operate your television, satellite receiver, cable box, VCR, DVD, TV/VCR Combo, or laser disk. If a component does not respond when you press a remote control button (or responds incorrectly), press the appropriate device button (HARD DISK RECORDER, TV, SAT/CABLE, VCR/DVD) first to choose which component to operate.
- ④ Number buttons**
Use the keypad (0-9) to directly select channels (for example, 09 or 31).
- ⑤ Channel Guide**
Displays the Channel Guide, an on-screen guide of all the channels you receive.
- ⑥ Replay Guide**
Displays the Replay Guide, a menu of the shows the Hard Disk Recorder has recorded for you.
- ⑦ Channel Up/Down**
Enable you to select the next higher (or lower) television channel.
- ⑧ Return to Live**
Return to live television after using PAUSE, REW, FF or STOP.
- ⑨ Select Left ㉒ Right ㉓ Up ㉔ Down**
Control navigation (move the yellow highlight bar around on-screen menus).
- ⑪ Instant Replay**
Skips back 7 seconds in a live or recorded show.
- ⑫ REW ㉕ PLAY/SLOW ㉖ FF ㉗ REC**
㉘ STOP ㉙ PAUSE
Used to control the similar functions on your video components.
- ⑮ Jump**
Similar to a "Last Channel" or "Recall" button on a television remote control, allowing you to quickly jump back to the channel you were watching previously.
- ⑯ Input**
Press INPUT to switch the input of the chosen component. If you have more than one component connected to your television, you may have to scroll through several inputs to find the one that corresponds to the component you want to see on the screen.
- ⑰ Display**
Activates the on-screen display function for each of your home entertainment components.
- ⑱ Red LED**
Flashes red to indicate that the remote control is working and sending a signal.
- ⑲ POWER**
Turns on or off the currently selected video component (Hard Disk Recorder, TV, VCR, cable box, or a re-assigned video component).
- ㉚ Enter**
Operates the same way as the Enter button on your original television remote control. If your television remote control required you to use an Enter button to change channels, use the ENTER button on the Hard Disk Recorder remote control after entering the appropriate channel number.
- ㉛ Replay Zones**
Takes you to the screen where you can create a Theme-based Replay channel and channels from topical television categories collected by the ReplayTV Service.
- ㉜ Volume Up/Down**
Raises or lowers the sound volume on your television.
- ㉝ Mute**
Turns television sound on or off.
- ㉞ Select**
Use to choose options from a selected component's menu or guide.
- ㉟ QuickSkip**
Skips forward 30 seconds in a recorded show, allowing you to jump ahead through unwanted parts of the show. Also works for a live broadcast if you have used the STOP, PAUSE, or REW buttons.
- ㊱ Exit**
Exit a selected component's on-screen menu or guide.
- ㊲ TV/VCR**
This button works the same way as the TV/VCR button on your original VCR remote control. It also controls the following functions in other modes: TV mode = TV/VIDEO; CABLE mode = A/B.
- ㊳ Menu**
Press MENU to access the menu of your chosen component.

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation of America
One Panasonic Way Secaucus,
New Jersey 07094

Printed in U.S.A.
LSQT0269A

