

HITACHI

PROJECTION COLOR TV

60SX10B/11K

50SX7P

50UX22B/23K

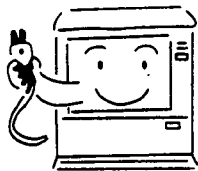
46UX20B/21K

OPERATING GUIDE



IMPORTANT SAFEGUARDS

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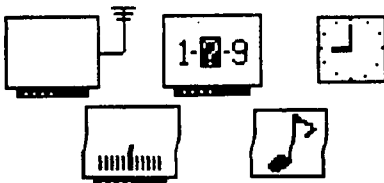
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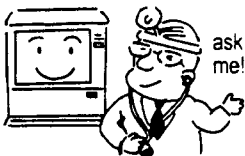
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IMPORTANT

Follow all warnings and instructions marked on this television receiver.

 <table border="1"><tr><td>CAUTION</td></tr><tr><td>RISK OF ELECTRIC SHOCK DO NOT OPEN</td></tr></table> 	CAUTION	RISK OF ELECTRIC SHOCK DO NOT OPEN		<p>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.</p>
CAUTION				
RISK OF ELECTRIC SHOCK DO NOT OPEN				
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		<p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p>		

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS TELEVISION SYSTEM TO RAIN OR MOISTURE.

NOTE:



- There are no user serviceable parts inside the receiver.
- Model number and serial number are indicated on back side of the set.

POWER SOURCE:

This projection color TV is designed to operate on 120 volts 60 Hz, AC household current. Insert power cord into a 120 volt 60 Hz outlet.

TO PREVENT ELECTRIC SHOCK, DO NOT USE THE TELEVISION'S PLUG WITH AN EXTENSION CORD, RECEPTACLE, OR OTHER OUTLET UNLESS THE BLADES AND GROUND TERMINAL CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NEVER CONNECT THE TV TO 50 Hz, DIRECT CURRENT, OR ANYTHING OTHER THAN THE SPECIFIED VOLTAGE.

NOTE: This television receiver will display television closed captioning, ( or ), in accordance with paragraph 15.119 of the FCC rules.



CAUTION: Never remove the back cover of the set as this can expose you to very high voltages and other hazards. If the set does not operate properly, unplug the set and call your dealer or service shop.

SAFETY TIPS



IMPORTANT SAFEGUARDS

CAUTION:

- Read all of these instructions.
- Save these instructions for later use.
- Follow all warnings and instructions marked on the television receiver.

SAFETY POINTS YOU SHOULD KNOW ABOUT YOUR HITACHI TELEVISION RECEIVER

Our reputation has been built on the quality, performance, and ease of service of HITACHI television receivers.

Safety is also foremost in our minds in the design of these units. To help you operate these products properly, this section illustrates safety tips which will be of benefit to you. Please read it carefully and apply the knowledge you obtain from it to the proper operation of your HITACHI television receiver.

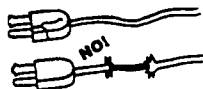
Please fill out your warranty card at once and mail it to HITACHI. This will enable HITACHI to notify you promptly in the improbable event that a safety problem should be discovered in your model of product.

FOR YOUR PERSONAL SAFETY

1 This television set is 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.



2 When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.



3 Do not overload wall outlets and extension cords as this can result in fire or electric shock.



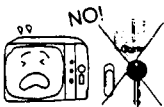
4 Do not allow anything to rest on or roll over the power cord, and do not place the TV where the power cord is subject to traffic or abuse. This may result in a shock or fire hazard.



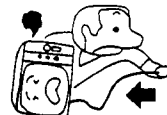
5 Do not attempt to service this television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.



6 Never push objects of any kind into this television set through cabinet slots 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 television set.



7 If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.



8 If liquid has been spilled into this television set, unplug it from the wall outlet and refer service to qualified service personnel.



9 Do not subject your television set to impact of any kind. Be particularly careful not to damage the picture tube surface.



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



11-1 Do not place this television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.



11-2 An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



PROTECTION AND LOCATION OF YOUR SET

12 Do not use this television set near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.



• Never expose the set to rain or water. If the set has been exposed to rain or water, unplug the set from the wall outlet and refer to servicing personnel.



13 Choose a place where light (artificial or sunlight) does not shine directly on the screen.



14 Avoid dusty places, since accumulated dust inside the chassis may cause failure of the set when high humidity persists.

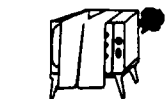
15 The set has slots, or openings in the cabinet for ventilation purposes, to provide reliable operation of the receiver, and to protect from overheating. These openings must not be blocked or covered.

• Never cover the slots or openings with cloth or other material.

• Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.

• Never place the set near or over a radiator or heat register.

• Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

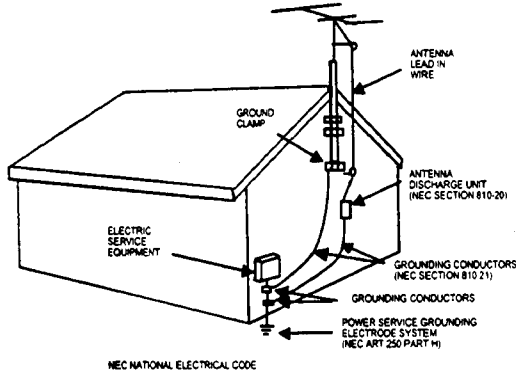




SAFETY TIPS

PROTECTION AND LOCATION OF YOUR SET

16-1 If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure.

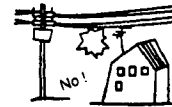


EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS

grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrode, and requirements for the grounding electrode.

16-2 Note to CATV system installer:
(Only for the television set with CATV reception)
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.

17 An outside antenna system should not be located in the vicinity of overhead power lines or other electrical lights 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.



18 For added protection for this television set 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. This will prevent damage due to lightning and power-line surges.



OPERATION OF YOUR SET

19 This television set 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 at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.



20 If the television set does not operate normally by following the operating instructions, unplug this television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.



21 When going on a holiday: If your television set is to remain unused for a period of time, turn the television set "off" and unplug it from the wall outlet.



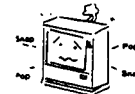
IF THE SET DOES NOT OPERATE PROPERLY

22 If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustment. Unplug the set and call your dealer or service technician.



23 Whenever the television set is damaged or fails, or a distinct change in performance indicates a need for service, unplug the set and have it checked by a professional service technician.

24 It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.



FOR SERVICING AND MODIFICATION

25 Do not use attachments not recommended by the television set manufacturer as they may cause hazards.



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

27 Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.





WARNING

Continuous on-screen displays such as video games, stock market quotations, computer generated graphics, and other fixed (non-moving) patterns can cause permanent damage to projection television receivers. Such "PATTERN BURNS" constitute misuse and are NOT COVERED by your Hitachi Factory Warranty.

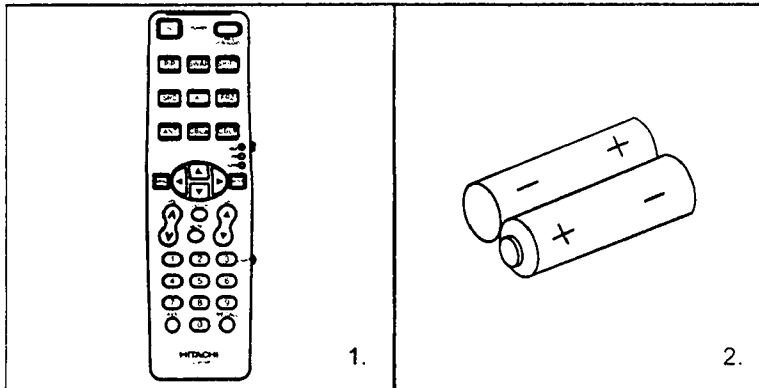
When using the Picture-in-Picture function, the sub-picture should not be left permanently in one corner of the screen or a "pattern burn" may develop over a long period of time.

This projection television receiver was intended mainly for the private viewing of programs broadcast by TV stations and cable companies and programs from other video sources. Public viewing may require prior authorization from the broadcaster or owner of the video program.



ACCESSORIES

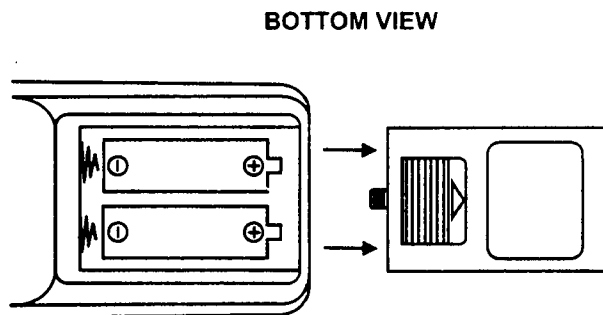
Check to make sure you have the following accessories before disposing of the packing material.



1. Remote Control Unit CLU-951MP (Part No. HL00211).
2. Two "AA" size, 1.5V batteries (For Remote Control Unit).

REMOTE CONTROL BATTERY INSTALLATION AND REPLACEMENT

1. Open the battery cover of the remote transmitter by pushing the notched part of the cover with your fingers.
2. Insert two new "AA" size batteries or equivalent for the remote. When replacing old batteries, push them towards the springs and lift them out.
3. Match the (+) and (-) marks in the battery compartment.
4. Replace the cover.



HOW TO SET UP YOUR NEW HITACHI PROJECTION TV



ANTENNA

Unless your TV is connected to a cable TV system or to a centralized antenna system, a good outdoor color TV antenna is recommended for the best performance. However, if you are located in an exceptionally good signal area that is free from interference and multiple image ghosts, an indoor antenna may be sufficient.

LOCATION

Select an area where sunlight or bright indoor illumination will not fall directly on the picture screen. Also, be sure that the location selected allows a free flow of air to and from the perforated back cover of the set.

To avoid cabinet warping, cabinet color changes, and increased chance of set failure, do not place the TV where temperatures can become excessively hot. For example, in direct sunlight or near a heating appliance, etc.

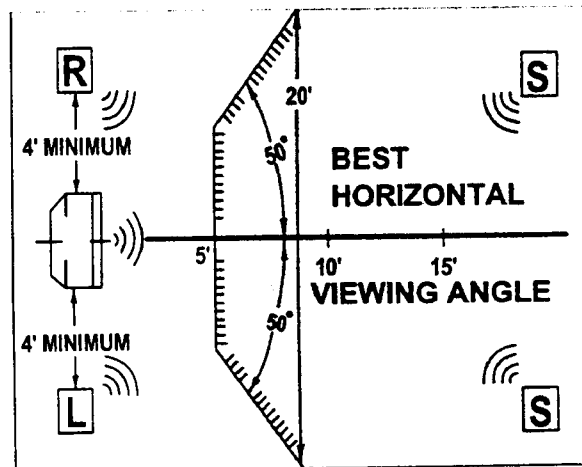
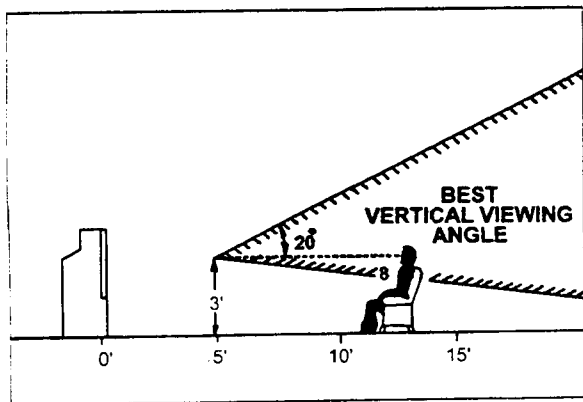
VIEWING

The major benefit of the HITACHI Projection Television is its large viewing screen. To see this large screen at its best, test various locations in the room to find the best spot for viewing. The drawings give several suggestions.

The best picture is seen by sitting directly in front of the TV and about 10 to 18 feet from the screen. Picture brightness decreases as the viewer moves to the left or right of the receiver.

During daylight hours, reflections from outside light may appear on the screen. If so, drapes or screens can be used to reduce the reflection or the TV can be located in a different section of the room.

If the TV's audio output will be connected to a Hi-Fi system's external speakers, the best audio performance will be obtained by placing the speakers equidistant from each side of the receiver cabinet and as close as possible to the height of the picture screen center. For best stereo separation, place the external speakers at least 4 feet from the side of the TV. Place the surround speakers to the side or behind the viewing area. Differences in room sizes and acoustical environments will require some experimentation with speaker placement for best performance.



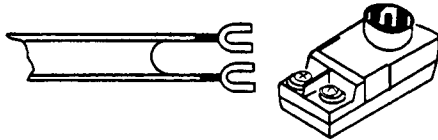
CAUTION: The magnetic field of external speakers may cause the TV picture to distort if the speakers are placed too close to the television. Move the speakers away from the TV until there is no picture distortion.



HOOK-UP CABLES AND CONNECTORS

Most video/audio connections between components can be made with shielded video and audio cables that have phono connectors. For best performance, video cables should use 75-ohm coaxial shielded wire. Cables can be purchased from most stores that sell audio/video products. Below are illustrations and names of common connectors.

Before purchasing any cables, be sure of the output and input connector types required by the various components. Also make sure the cables are the correct length.



300-Ohm Twin Lead Connector

This outdoor antenna cable must be connected to an antenna adaptor (300-Ohm to 75-Ohm).



"F" Type 75-Ohm Coaxial Antenna Connector

For connecting RF signals (antenna or cable TV) to the antenna jack on the television.



Phono Connector

Used on all standard video and audio cables which connect to inputs and outputs located on the Television's rear jack panel and front control panel.



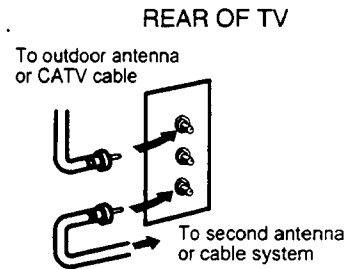
S-Video (Super Video) Connector

This connector is used on camcorders, VCR's, and laser disc players with an S-Video feature in place of the standard video cable to produce a high-quality picture.

ANTENNA CONNECTIONS TO REAR JACK PANEL

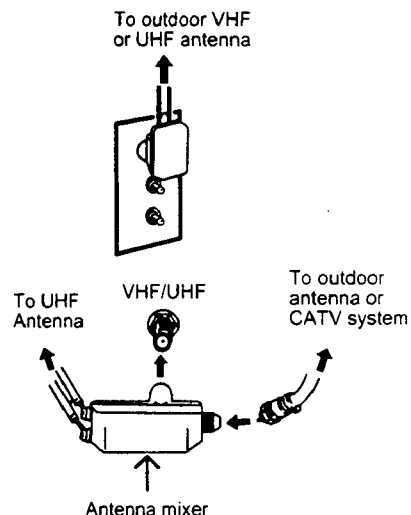
VHF (75-Ohm) antenna/CATV(cable TV)

When using a 75-Ohm coaxial cable system, connect the outdoor antenna or CATV coaxial cable to the VHF/UHF 75 Ohm terminal. If you have a second antenna or cable TV system, connect the coaxial cable to the AUX terminal.



VHF (300-Ohm) antenna/UHF antenna

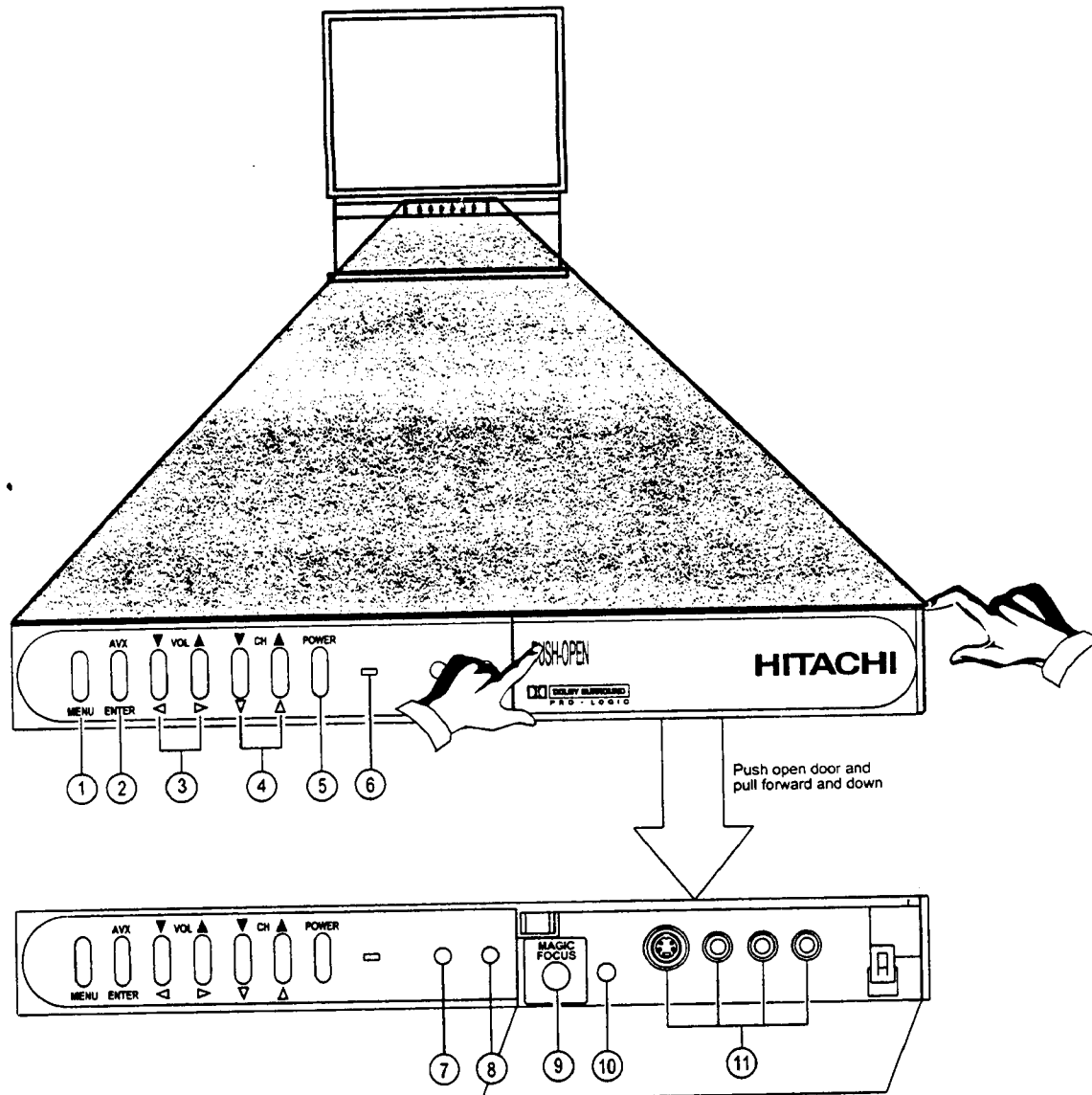
When using a 300-Ohm twin lead from an outdoor antenna, connect the VHF or UHF antenna leads to screws of the VHF or UHF adaptor. Plug the adaptor into the antenna terminal on the TV.



When both VHF and UHF antennas are connected

Attach an optional antenna cable mixer to the TV antenna terminal, and connect the cables to the antenna mixer. Consult your dealer or service store for the antenna mixer.

FRONT PANEL CONTROLS



- ① **MENU BUTTON**
This button allows you to enter the MENU mode without using the remote. This makes it possible to set TV features to your preference, without using the remote.
- ② **AVX (Audio/Video) selector/ENTER button**
Press this button to select the current antenna source, VIDEO: 1, 2, or 3. Your selection is shown in the top right corner of the screen. This button also serves as the ENTER button when in MENU mode.
- ③ **VOLUME level**
Press these buttons for your desired sound level. The volume level will be displayed on the TV screen. These buttons also serve as the cursor left and right buttons when in MENU mode.



FRONT PANEL CONTROLS

- ④ **CHANNEL selector**
Press these buttons until the desired channel appears in the top right corner of the TV screen. These buttons also serve as the cursor down and up buttons when in MENU mode.
- ⑤ **POWER button**
Press this button to turn the TV on or off.
- ⑥ **POWER light**
You will see a red light when the TV is turned on.

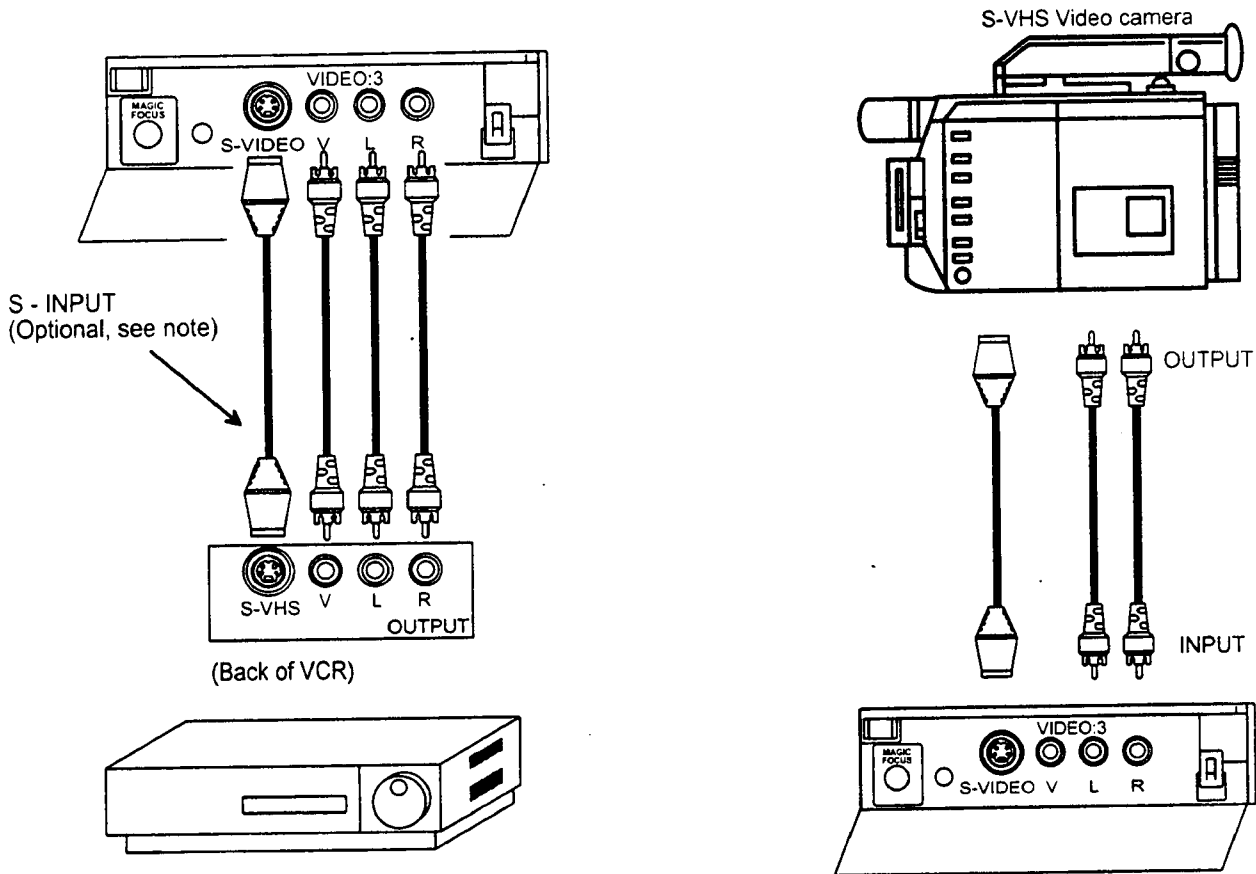
NOTE: Your HITACHI TV will appear to be turned "off" if there is no video input when VIDEO: 1, 2, or 3 is selected. Check the Power Light to make sure the TV is off when not in use.

- ⑦ **AI (Artificial Intelligence) sensor**
This "Artificial Intelligence" sensor will make automatic picture adjustments depending on the amount of light in the room to give the best picture. (See page 38)
- ⑧ **REMOTE CONTROL sensor**
Point your Remote at this area when selecting channels, adjusting volume, etc.
- ⑨ **MAGIC FOCUS**
Use this button to adjust your picture quality to optimum performance. (See page 39)
- ⑩ **ADJUSTMENT MODE button**
This button is for service technicians only. **DO NOT** press this button. If this button is accidentally pressed, please turn off your television using the front panel power button. Your TV will operate normally when you turn it on again.
- ⑪ **FRONT INPUT JACKS (for VIDEO: 3)**
Use these audio/video jacks for a "quick" hook-up from a camcorder or VCR to instantly view your favorite show or new recording. (Press the AVX button until VIDEO: 3 appears in the top right corner of the TV screen.)

FRONT PANEL JACKS AND CONNECTIONS



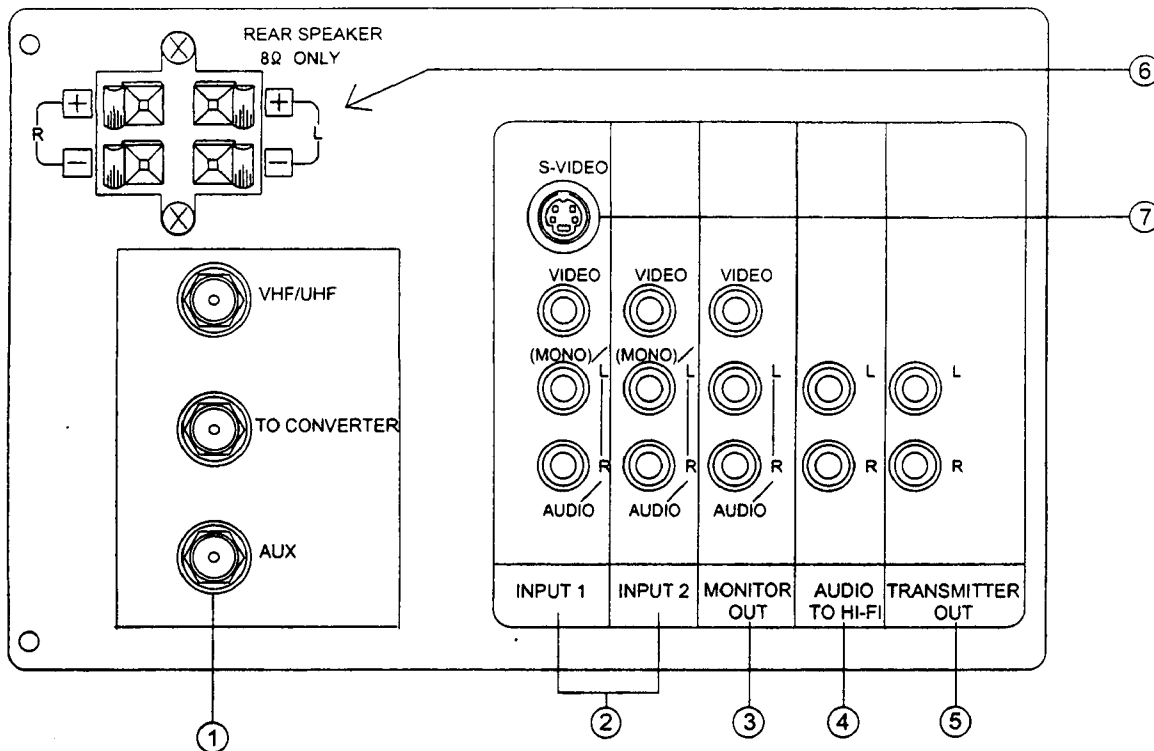
The front panel jacks are provided as a convenience to allow you to easily connect a camcorder or VCR as shown in the following examples:



NOTE: Completely insert connection cord plugs when connecting to front panel jacks. If you do not, the played back picture may be abnormal. If you have a S-VHS VCR, use the S-INPUT cable in place of the standard video cable.

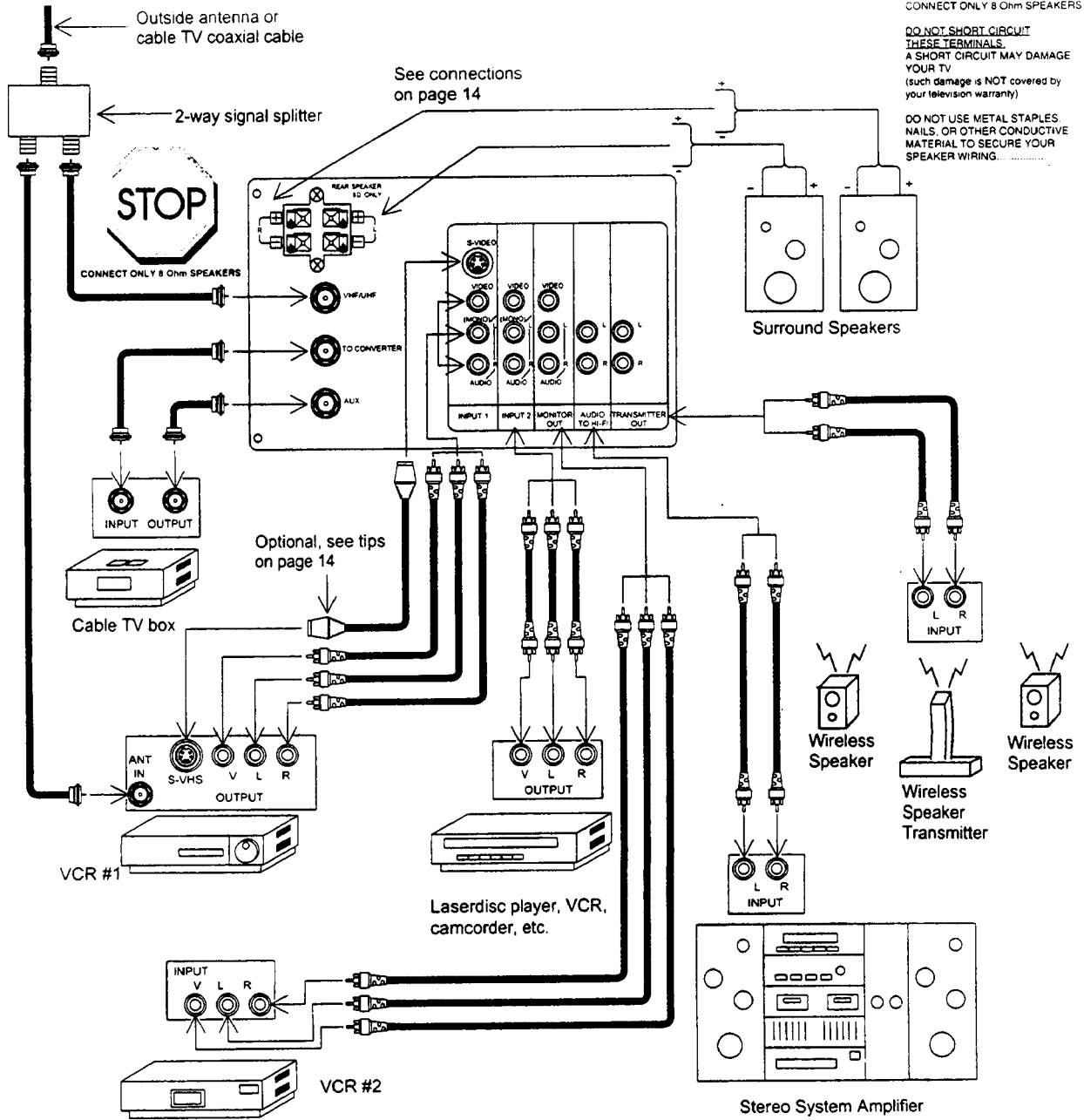


REAR PANEL JACKS



- ① Antenna Input/Output**
The "ANT" button on the remote control allows you to switch between two separate 75-ohm RF antenna inputs, Main (VHF/UHF) and Auxiliary (AUX). The antenna output labeled "To converter" allows the Main (VHF/UHF) antenna connection to pass directly to a different source such as a pay-TV cable decoder.
- ② Audio/Video Inputs 1, 2**
The "AVX" (Auxiliary video) button will step through each video source and the current antenna input each time it is pressed. Use the audio and video inputs to connect external devices, such as VCR's, camcorders, laser disc players, etc. (If you have mono sound, insert the audio cable into the left channel jack.)
- ③ Monitor Out**
These jacks provide fixed audio and video signals which are used for recording.
- ④ Audio to Hi-Fi**
These jacks provide variable audio output to a separate stereo system amplifier. With this connection, the audio to the stereo can be controlled by the television's remote control. Use these jacks for the SURROUND Left and Right channels. (See page 15)
- ⑤ Transmitter Out**
These jacks provide variable audio output to a set of wireless speakers. They can also be used for another stereo system amplifier. With this connection, the audio can be controlled by the television's remote control.
- ⑥ Rear Speaker Terminals**
These terminals are used to connect external speakers, which are used for the surround sound feature. The volume level is controlled by the remote control main volume buttons and also by an independent rear volume feature found in the "sound" function menu. Use speakers with 8 Ohm impedance only.
- ⑦ S-Video**
Input 1 provides S-Video (Super Video) jacks for connecting equipment with S-Video output capability.

REAR PANEL CONNECTIONS



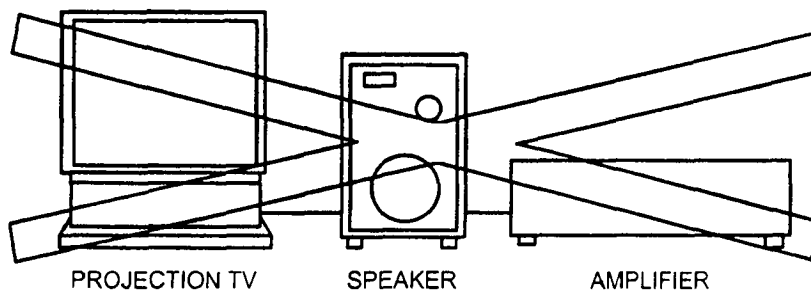
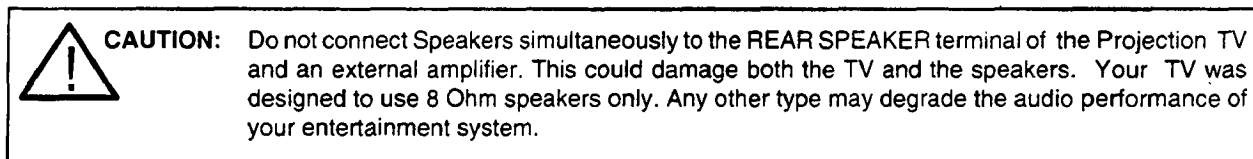
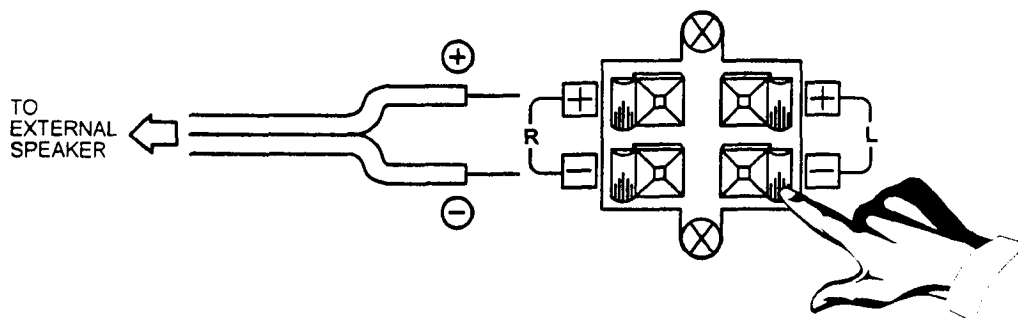
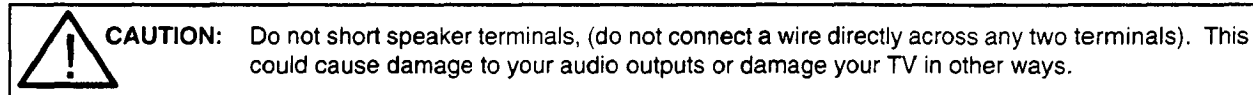
Typical full feature set-up. Follow connections that pertain to your personal entertainment system.



REAR SPEAKER TERMINAL CONNECTIONS

Connect after turning the power to the TV OFF.

Press the Right Speaker red button and insert the positive(+) lead wire into the hole below the button. In the same manner, press the Right Speaker black button and insert the negative (-) lead wire. Repeat this procedure for the Left Speaker.



TIPS ON REAR PANEL CONNECTIONS

The S-Video connection is provided for high performance laser discs, VCR's, etc., that have this feature. Use this connection in place of the standard video connection if your device has this feature.

If your device has only one audio output (mono sound), connect it to the left audio jack on the TV.

Refer to the operating guide of your other electronic equipment for additional information on connecting your hook-up cables.

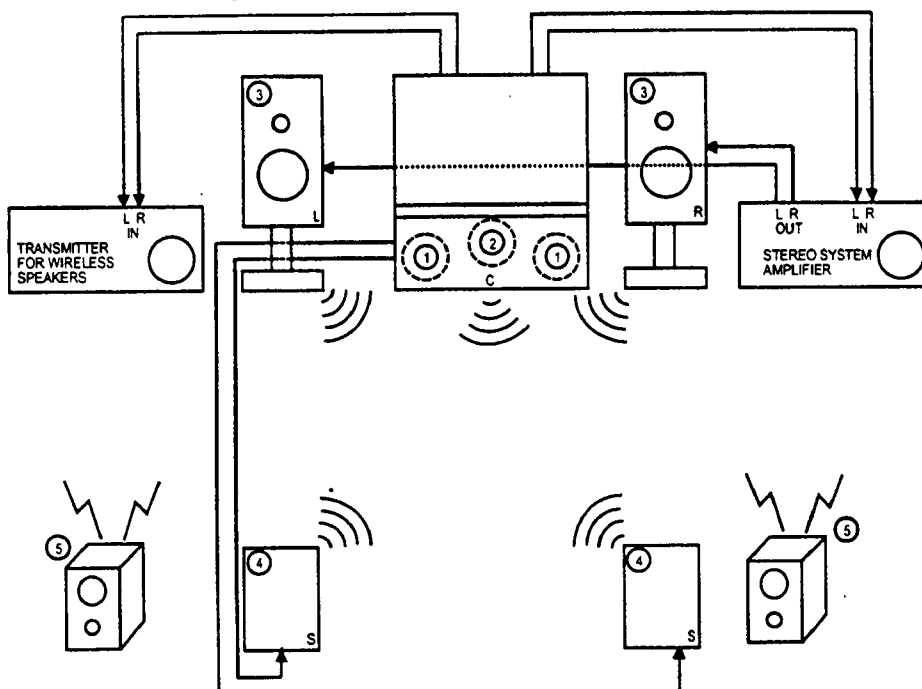
A single VCR can be used for VCR #1 and VCR #2, but note that a VCR cannot record its own video or line output (INPUT: 1 in the example on p. 13). Refer to your VCR operating guide for more information on "line" input-output connections.



AUDIO SYSTEM SET-UP

Match the numbers below to the diagram for speaker placement and refer to the table for the different surround sound requirements. (See page 43 for SURROUND functions.)

- ① The television's internal speakers.
- ② The television's internal center channel speaker, which is on only when the television is in SURROUND-DOLBY PRO LOGIC mode.
- ③ These speakers are connected to a separate audio amplifier. Use the "Audio to Hi-Fi" output on the TV.
- ④ These speakers are connected to the Rear Speaker 8 Ohm output on the TV.
- ⑤ These speakers are controlled by a wireless speaker transmitter. Use the "TRANSMITTER OUT" output on the TV.



SURROUND FEATURE	REQUIRED CONNECTION	OPTIONAL CONNECTION	EFFECT
OFF	①	③	Receive Mono and Stereo Sound.
HALL	① ④	③ ⑤	Concert Hall Sound.
MATRIX	① ④	③ ⑤	Feeling of being at a Stadium.
DOLBY 3CH* (NORMAL)	① ②	③	Movie Theater Reproduction, Surround Channel added to left and right audio amplifier speakers.
DOLBY 3CH (ULTRA BOOST)	① ③	-----	Movie Theater Reproduction, Center Channel added to TV left and right speakers and Surround Channel added to left and right audio amplifier speakers.
DOLBY PROLOGIC* (NORMAL)	① ② ④	③ ⑤	Movie Theater Reproduction with separate left, center, right, and surround channels.
DOLBY PROLOGIC (ULTRA BOOST)	① ③ ④	⑤	Movie Theater Reproduction with separate left, center, right, and surround channels, with left and right channels added to audio amplifier speakers to improve sound clarity and spatial positioning.

*If optional left and right speakers are connected (③), the internal speakers (①) may be turned off for better separation between the left, center, and right channels. The center channel audio will be heard from ②.



THE REMOTE CONTROL (CLU-951MP)

In addition to controlling all the functions on your HITACHI Projection TV, the new remote is designed to operate different types of VCR's, CATV (Cable TV) converters and Audio equipment with one touch. Basic operation keys are grouped together in one area. All other controls are separated from them and arranged in MULTI-PAGE sections.

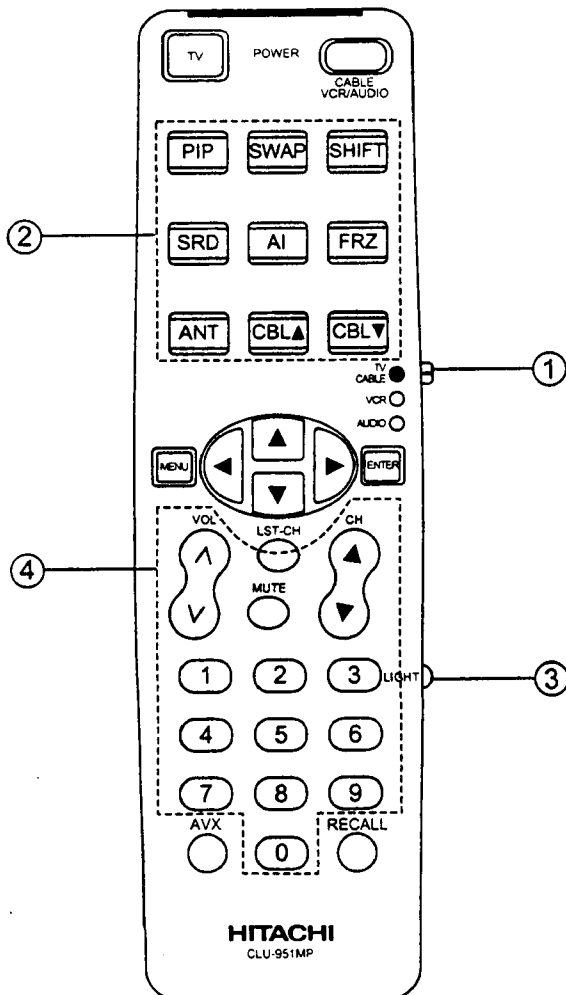
Functions are arranged and properly categorized into windows, making operation simple when multiple functions are to be controlled.

To operate your TV, point the remote at the remote sensor of the TV and press the TV POWER button.

To operate your VCR, point the remote at the remote sensor of the VCR. Slide the MULTI-PAGE select switch to VCR and press the VCR POWER button to turn on the VCR power. The remote will now control your VCR. (See page 23 for instructions on how to program the remote to control your VCR.)

To operate your Cable Box, point the remote at the remote sensor of the cable box. Slide the MULTI-PAGE select switch to TV/CABLE and press the CABLE POWER button to turn on the cable box power. The remote will now control your cable box. (See page 24 for instructions on how to program the remote to control your cable box.)

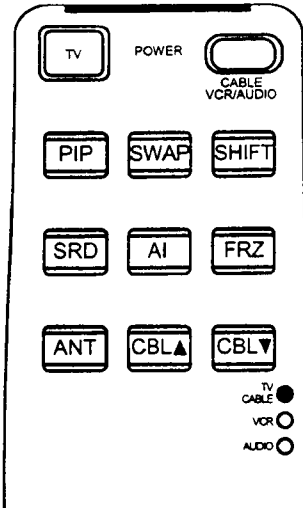
To operate your Audio Equipment, point the remote at the remote sensor of the audio component you would like to operate. Slide the MULTI-PAGE select switch to AUDIO and press the button which corresponds to the component you would like to control (AMP, CD, or TAPE). Press the AUDIO POWER button to turn on the audio component power. The remote will now control your audio equipment. (See page 25 for instructions on how to program the remote to control your audio equipment.)



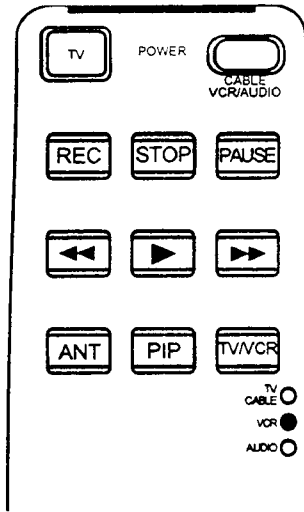
① **MULTI-PAGE select switch**
This selects the button layout of the multi-page section of the remote control.

② **MULTI-PAGE buttons**
These buttons change functions as shown on page 17.

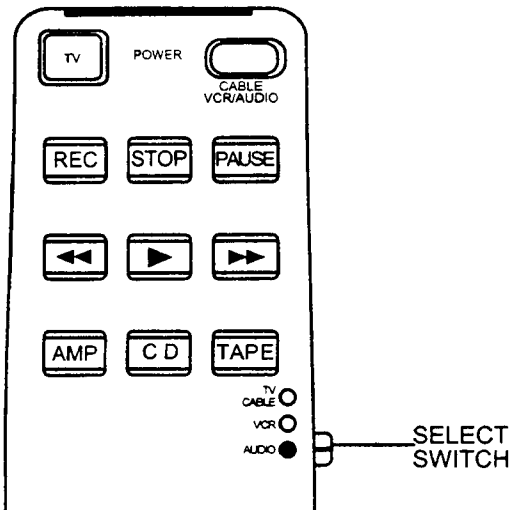
③ ④ **LIGHT BUTTON**
When you are in a dark room, press this button on the side of the remote to light up the buttons shown in ④. The light will stay on for about 8 seconds if the light button is not pressed again. These buttons will not appear to light if the room is too bright.



When "TV/CABLE" is Set



When "VCR" is Set



When "AUDIO" is Set



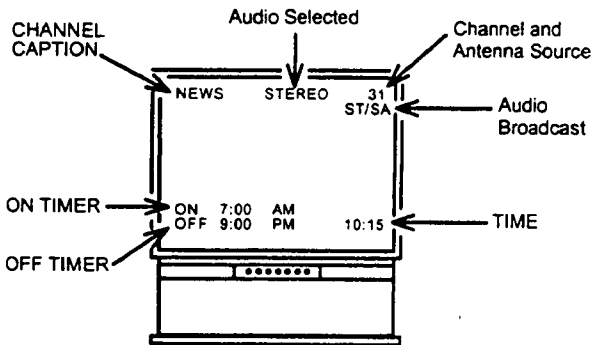
HOW TO USE THE REMOTE TO CONTROL YOUR TV

① **TV POWER button**
 Press this button to turn the TV set on or off. If Message-1 or Message-2 is set, it will be displayed when the TV is first turned on. (See page 36)

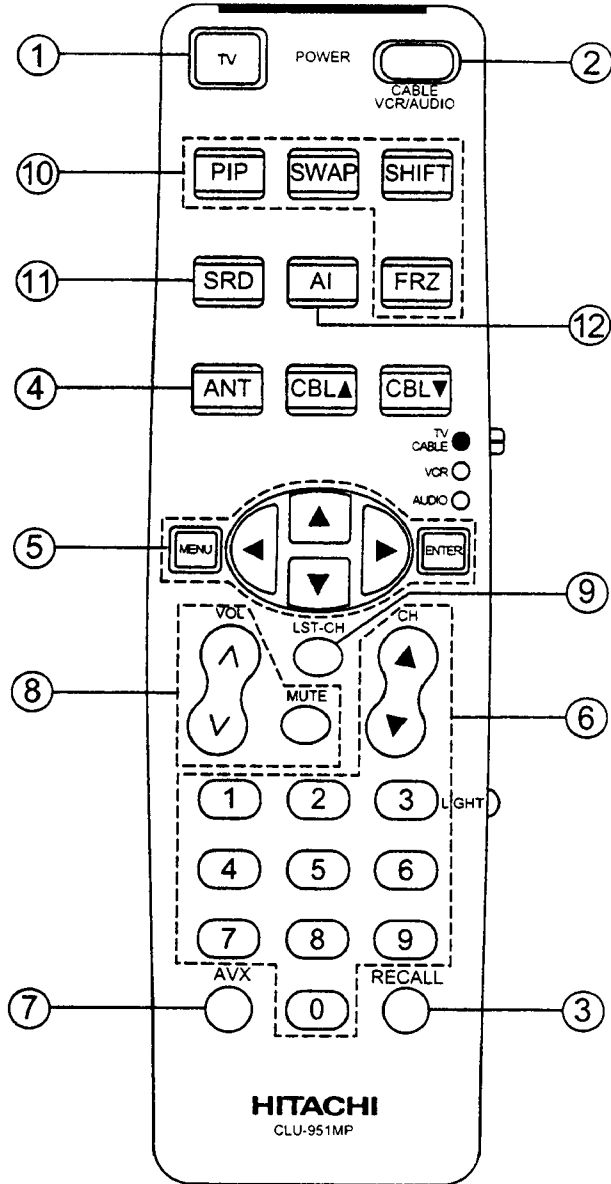
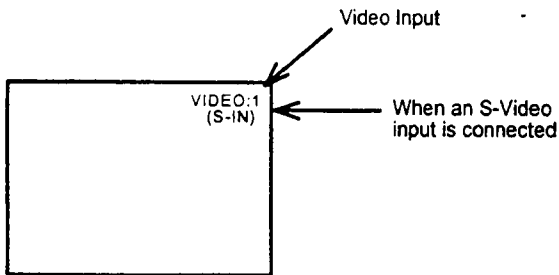
② **CABLE/VCR/AUDIO POWER button**
 Once the remote is programmed, press this button to control power to your Cable Box, VCR or Audio Equipment, depending on the button layout of the MULTI-PAGE section of the remote control, as chosen by the MULTI-PAGE select switch. (See pages 16, 23, 24, 25)

③ **RECALL button**
 When you want to check the channel being received, or if it has a stereo (ST) or second audio program (SAP), press the RECALL button.

You can also check the time, and if the ON TIME or OFF TIME has been set. (See page 35)



If a video input is used:



You can also use the RECALL button to quickly clear many of the other on-screen displays.

HOW TO USE THE REMOTE TO CONTROL YOUR TV



④ ANT button

Use the ANT (Antenna) button to select between the VHF/UHF and AUX (Auxiliary) antenna inputs.

NOTE: When VHF/UHF is selected, the channel number in the upper right corner of the screen is in green. When the AUX input is selected, the channel number is in yellow.

⑤ MENU, ENTER, CURSOR buttons

All the on-screen display features can be set or adjusted by using these buttons.

The "MENU" button will start or exit the on-screen display.

The "CURSOR" buttons will highlight functions or adjust different features.

The "ENTER" button will set features to your preference.

⑥ CHANNEL SELECTOR buttons

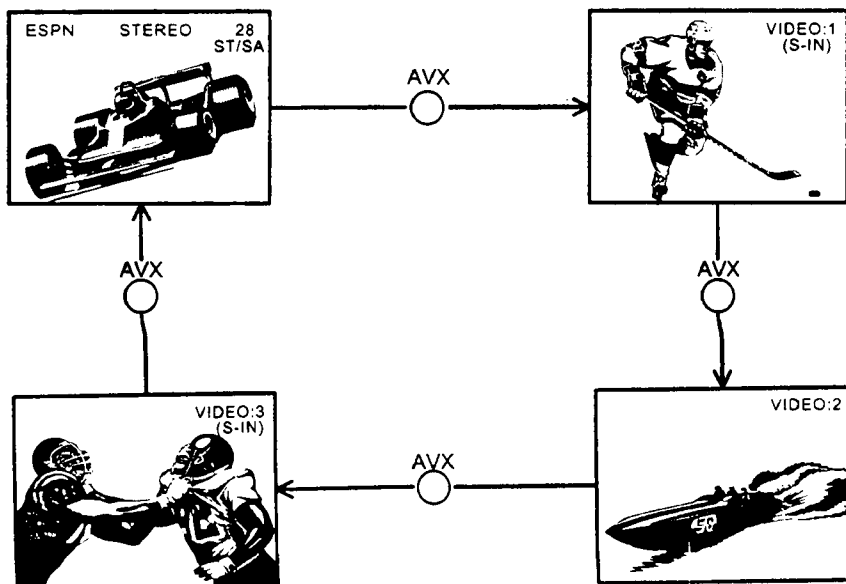
"CHANNEL SELECTOR" buttons are used to set the time, for channel memory, etc..

Channel selection may also be performed by pressing channel up (▲) or down (▼).

NOTE: The TV may not receive some channels if you are not in the correct AIR/CABLE mode. (See page 29)

⑦ AVX button

The AVX (Auxiliary Video) button will select between the antenna signal and the three sets of video input jacks each time the button is pressed. If the Picture-in-Picture (PIP) is on, the AVX will select between the three sets of video input jacks. (See page 21)



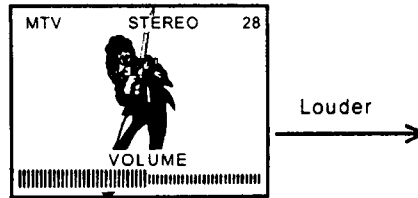


HOW TO USE THE REMOTE TO CONTROL YOUR TV

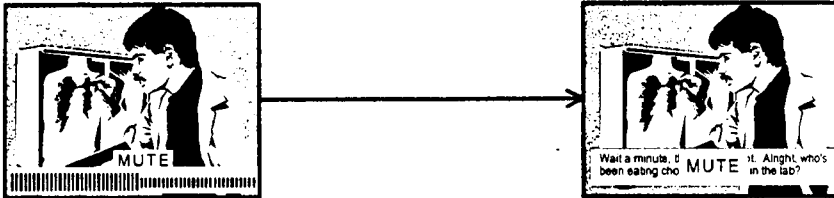
⑧ VOLUME, MUTE buttons

Press the "VOLUME" up (▲) or down (▼) button until you obtain the desired sound level.

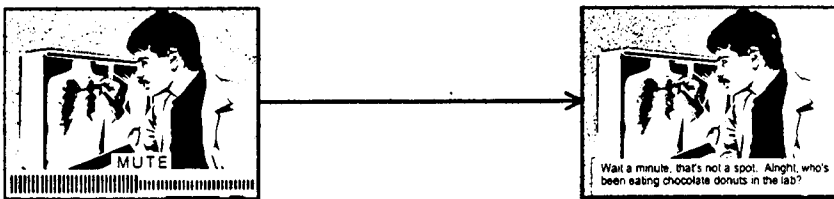
To turn the sound off instantly to answer the telephone, etc., press the "MUTE" button. Press the "MUTE" button again or press the "VOLUME" up (▲) button to restore the sound.



The word "MUTE" will remain displayed if the CLOSED CAPTION feature is turned off. CLOSED CAPTION will also be displayed when the "MUTE" button is pressed.

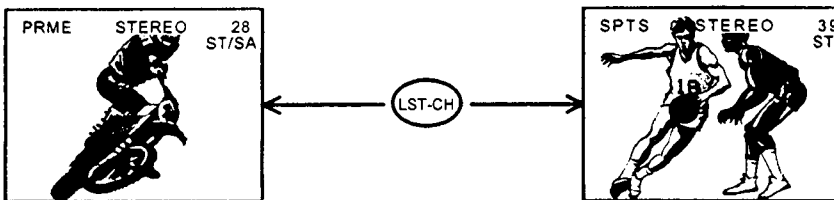


The word "MUTE" will not be displayed if the CLOSED CAPTION feature is on.



⑨ LAST CHANNEL (LST-CH) button

Use this button to select between the last two channels viewed. (Good for watching two sporting events, etc.)



⑩ PICTURE-IN-PICTURE buttons

See separate section on page 21 for a description.

⑪ SURROUND (SRD) button

Press this button to enter the SURROUND menu. (See pages 15 and 42.)

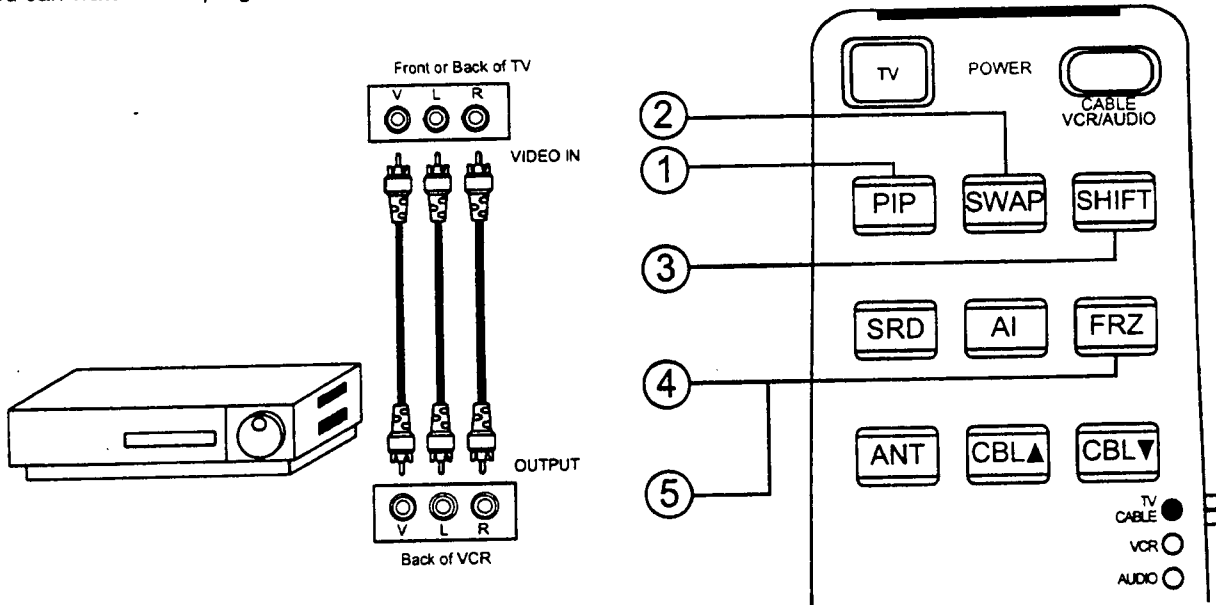
⑫ ARTIFICIAL INTELLIGENCE (AI) button

Press this button to turn the AI function on or off. (See page 38)

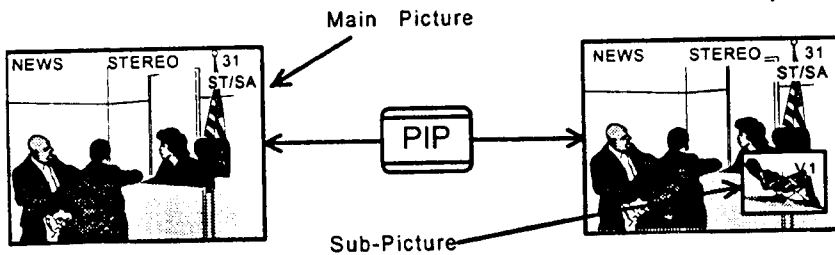
PICTURE-IN-PICTURE (PIP)



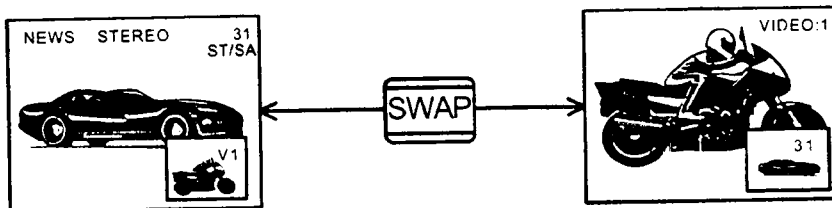
The Picture-in-Picture feature is convenient when you want to watch more than one program at the same time. You can watch a TV program while viewing a VCR program (TV or tape) on any of the video inputs.



- ① **PIP BUTTON**
 Press the "PIP" button and a sub-picture appears in one corner of the screen. Press the button a second time to remove the sub-picture from the screen. Press the AVX button when the sub-picture is on to change between VIDEO: 1, VIDEO: 2 and VIDEO: 3. The TV channel will always be either the main picture or the sub-picture.



- ② **SWAP BUTTON**
 If you wish to switch what is being shown on the main picture to the sub-picture, press the "SWAP" button.

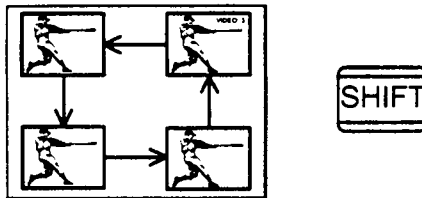




PICTURE-IN-PICTURE (PIP)

③ SHIFT BUTTON

To move the sub-picture to another corner, press the "SHIFT" button. The sub-picture moves one step counter-clockwise every time the "SHIFT" button is pressed.

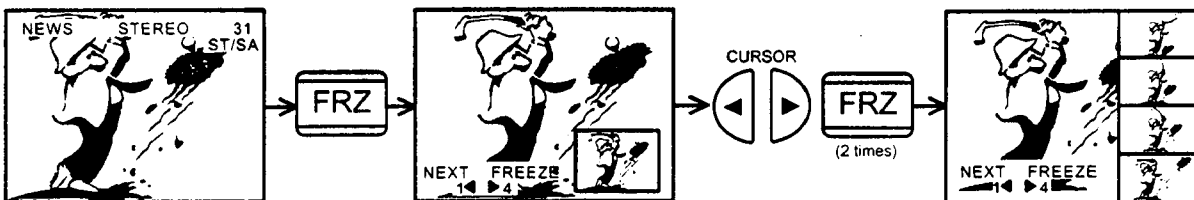


④ FREEZE (FRZ) BUTTON

If you wish to freeze the sub-picture, press the "FRZ" button. This is convenient when trying to write down the address for a mail order company, recording statistics for a sporting event, etc. To return the picture to motion, press the button again.

⑤ STROBE FREEZE

Press this button without a sub-picture to freeze one or four frames of the picture you are currently viewing. Press this button again or PIP to return to normal viewing. The four frame strobe freeze is useful for viewing a moving picture that has many details, for example, a close play in a sporting event or a golf swing.



CAUTION: A pattern burn may develop if the sub-picture is left in the same corner permanently. If the PIP feature is used frequently, occasionally shift the sub-picture to a different corner.

NOTE:

1. Only sound from the main picture can be heard, unless you choose PIP from wireless mode and use the "TRANSMITTER OUT" outputs on the rear panel. (See page 44.)
2. Each strobe freeze frame is delayed about 0.3 (3/10) second.

USING THE REMOTE TO CONTROL VCR FUNCTIONS



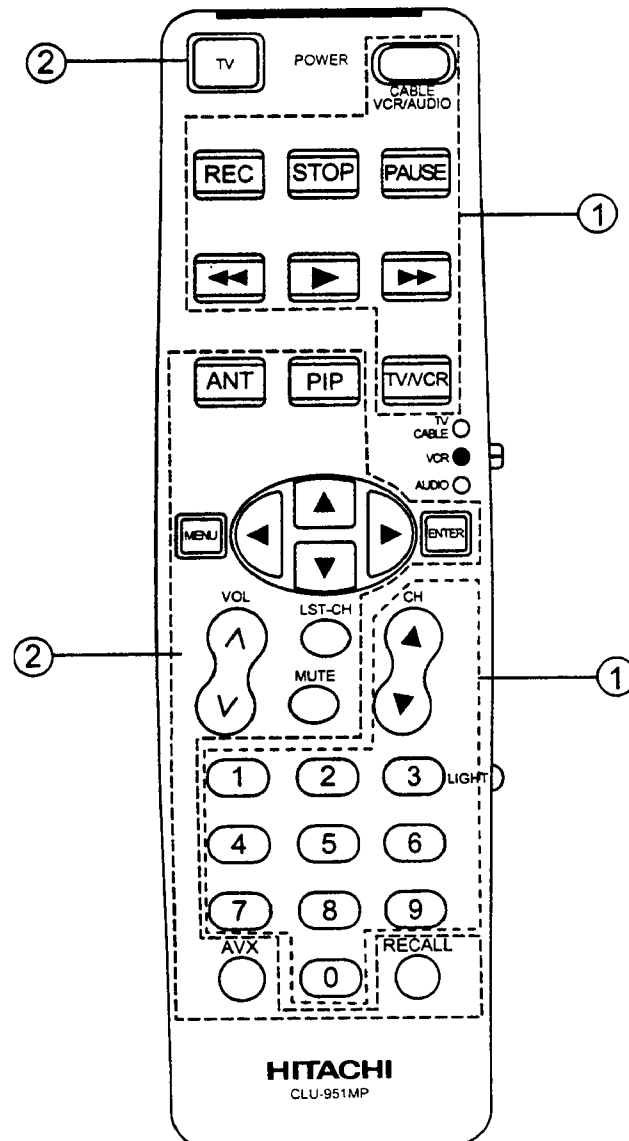
Operating the pre-coded function for your VCR

This remote is designed to operate different types of VCRs. You must first program the remote to match the remote system in your VCR. (Refer to page 26).

1. Set the MULTI-PAGE select switch to "VCR".
2. Turn ON your VCR.
3. Aim the remote control at the front of your VCR.
3. Press the VCR button to switch to the VCR pre-code mode.
4. While holding down the VCR POWER button on the remote, enter the 2 digit preset code that matches your VCR as shown on page 26. The remote will turn off your VCR when the correct 2 digit preset code is entered. When this occurs, the remote control is programmed for your VCR. If the VCR does not turn off after 5 seconds, try a different 2 digit preset code.
5. The remote will now control your VCR.

NOTES:

1. If your VCR cannot be operated after performing the above procedures, this means that your VCR's codes have not been precoded into the remote.
2. In the unlikely event that your VCR cannot be operated after performing the above procedures, please consult your VCR operating guide.
3. The remote control will remember the codes you have programmed in until the batteries are removed from the remote control. After replacing the batteries repeat the entire programming procedure stated above.
4. If your VCR does not have a power function, the remote will issue the CHANNEL UP function.



① PRECODED VCR BUTTONS

These buttons transmit the chosen precoded VCR codes.

② EXCLUSIVE TV BUTTONS

These buttons are for operating the TV.



USING THE REMOTE TO CONTROL CABLE BOX FUNCTIONS

Operating the pre-coded function for your cable box

This remote is designed to operate different types of cable boxes. You must first program the remote to match the remote system in your cable box. (Refer to page 26)

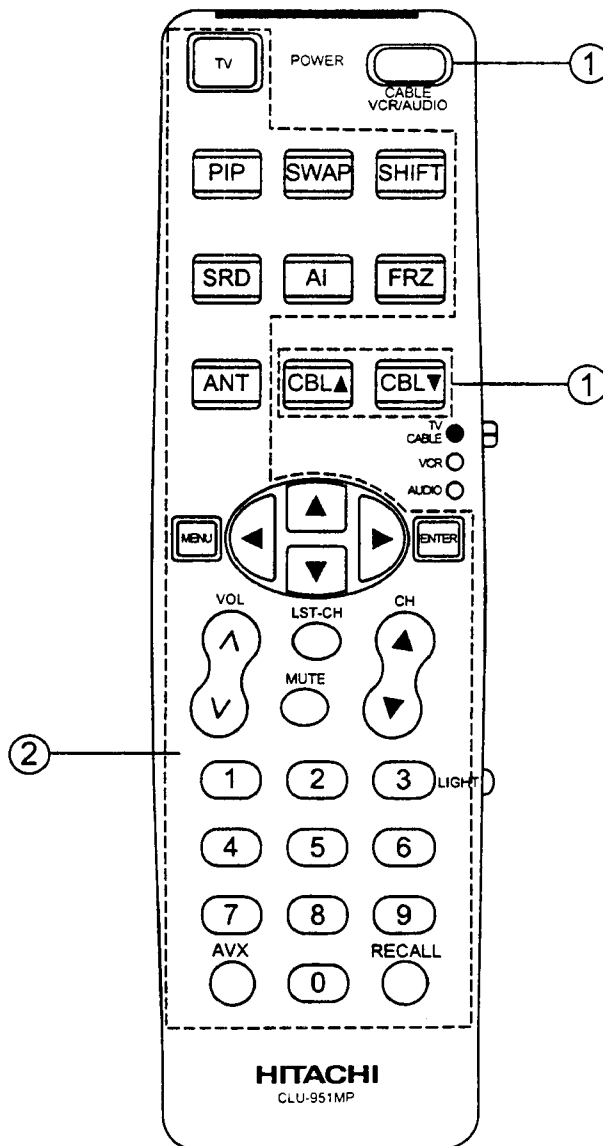
1. Set the MULTI-PAGE select switch to "TV/CABLE".
2. Turn ON your cable box.
3. Aim the remote control at the front of your cable box.
4. While holding down the CABLE POWER button on the remote, enter the 2 digit preset code that matches your cable box as shown on page 26. The remote will turn off your cable box when the correct 2 digit preset code is entered. When this occurs, the remote control is programmed for your cable box. If the cable box does not turn off after 5 seconds, try another 2 digit preset code.
5. The remote will now control your cable box.

NOTES:

1. If your cable box cannot be operated after performing the above procedures, this means that your cable box codes have not been precoded into the remote.
2. In the unlikely event that your cable box cannot operate after performing the above procedures, consult your cable box operating guide.
3. The remote control will remember the codes you have programmed in until the batteries are removed from the remote control. After replacing the batteries, repeat the entire programming procedure stated above.
4. If your cable box does not have a power function, the remote will issue the CHANNEL UP function.

① **PRECODED FOR CABLE BOX**
These buttons transmit the chosen precoded CATV codes.

② **EXCLUSIVE TV BUTTONS**
These buttons are for operating the TV.



USING THE REMOTE TO CONTROL AUDIO EQUIPMENT FUNCTIONS



Operating the pre-coded function for your audio equipment

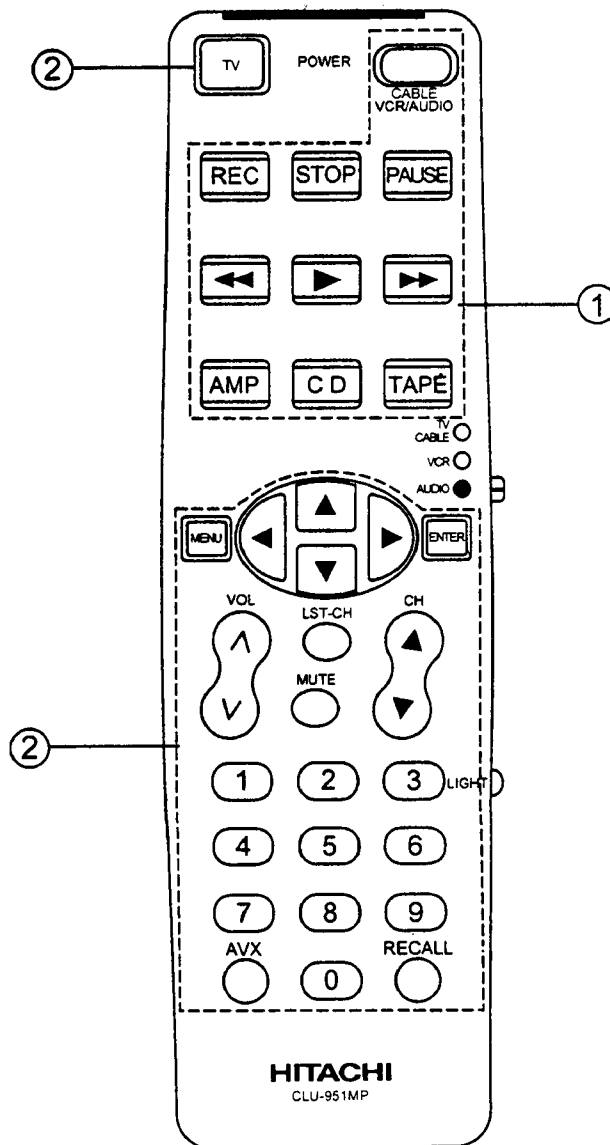
This remote is designed to operate different types of audio equipment. You must first program the remote to match the remote system of your audio equipment. (Refer to page 26)

1. Set the MULTI-PAGE select switch to "AUDIO".
2. Turn ON the audio component you wish to control with your remote (AMP, CD, or TAPE).
3. Aim the remote control at the front of your audio equipment.
4. While holding down the button on the remote which corresponds with the component you wish to control (AMP, CD, or TAPE), enter the 2 digit preset code that matches your audio component as shown on page 26. The remote will turn off your audio component when the correct 2 digit preset code is entered. When this occurs, the remote control is programmed for your audio component. If the audio component does not turn off after 5 seconds, try a different 2 digit preset code.
5. The remote will now control your audio component.
6. Repeat steps 2-5 until all audio equipment preset codes are programmed into the remote.

NOTES:

1. If your audio component cannot be operated after performing the above procedures, this means that your audio components codes have not been precoded into the remote.
2. In the unlikely event that your audio component cannot operate after performing the above procedures, consult your audio component operating guide.
3. The remote control will remember the codes you have programmed in until the batteries are removed from the remote control. After replacing the batteries, repeat the entire programming procedure stated above.
4. If your audio component does not have a power function, the remote will issue another obvious function that the audio component will respond to, such as CD open/close.
5. The default for AUDIO Mode is AMP.

- ① **PRECODED FOR AUDIO EQUIPMENT**
These buttons transmit the chosen precoded AUDIO EQUIPMENT codes.
- ② **EXCLUSIVE TV BUTTONS**
These buttons are for operating the TV.





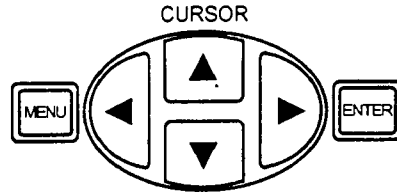
VCR AND CABLE BOX CODES

VCR BRAND	CODE	VCR BRAND	CODE	CABLE BRAND	CODE	AMP BRAND	CODE
Adventura	00	Nikko	10	ABC	03,05,09,11,12,14	Optimus	00,01
Aiko	50	Noblex	48	Archer	40	Pioneer	00,01
Aiwa	00	Olympus	09	Belcor	31	Technics	02
Akai	14,23	Optimus	10,20	Cable Star	31		
American High	09	Panasonic	09,35,46	Century	40	CD BRAND	CODE
Asha	48	Penney	09,10,11,13, 15,48	Citizen	40	Adcom	16
Audiovox	10	Pentax	15,24	Contec	15	Aiwa	17
Beaumarck	48	Philco	09	Garrard	40	CA Audio Lab	06
Bell & Howell	30	Philips	09,28	GC Electronics	31	Carver	17
Broksonic	33,37,43	Pilot	10	Gemini	13	Denon	04
Calix	10	Pioneer	26	General Instrument	09	Emerson	16
Canon	09	Protec	27	Hamlin	08,16,49,50	Fisher	08,11
Carver	28	Pulsar	12	Hitachi	09	Genexxa	07
CCE	27,50	Quarter	18	Hytex	05	Hitachi	07,14,15,16,21,23,24
Citizen	10,50	Quartz	18	Jasco	40	JVC	10
Colt	27	Quasar	09	Jerrold	03,09,10,12,13,51	Kenwood	05,08,19
Craig	10,19,27,48	Radio Shack	00,10	Memorex	00,51	Krell	17
Curtis Mathes	09,22	Radix	10	Movie Time	42	Magnavox	17
Cybernex	48	Randex	10	NSC	42	Marantz	06,17
Daewoo	17,50	RCA	15,22,24	Oak	05,15,47	MCS	06
Dynatech	00	Realistic	00,09,10,18, 19,20,30,48	Panasonic	17	Mission	17
Electrohome	10	Ricoh	08	Paragon	00	NSM	17
Electroponic	10	Runco	12	Philips	40	Onkyo	13
Emerex	06	Samsung	17,48	Pioneer	39	Optimus	03,07,12
Emerson	00,01,10,16, 23, 33,37,40,43	Sanky	12,20	Pulsar	00	Panasonic	06
Fisher	19,30	Sansui	14,26	RCA	17	Philips	17
Fuji	07,09	Sanyo	18,19,30,48	Regal	16,49,50	Pioneer	07,12
Funai	00	Scott	16,17,33,37, 42,43	Rembrant	09	Proton	17
Garrard	00	Sears	09,10,15,18, 19,31	Runco	00	Quasar	06
GE	09,22,24	Sharp	20	Samsung	39	RCA	09,16
Goldstar	10,11	Shintom	27	Scientific Atlanta	04,06,14, 52,56	Realistic	16
Gradiente	00	Shogun	48	Signal	13	Rotel	17
Harley Davidson	00	Singer	27	Signature	09	SAE	17
Harman/ Kardon	11	Sony	06,07,08,09	Sprucer	17	Sansui	17
Harwood	27	STS	15	Standard Components	41	Scott	16
Headquarter	18	Sylvania	00,09,16,28	Starcom	03,13	Sony	03,18
HI-Q	19	Symphonic	00	Stargate	13	Sylvania	17
Hitachi	14,15,24	Tatung	14	Starquest	13	Technics	06,20,22
Jensen	14	Teac	00,14	Tocom	10,11,33	Victor	10
JVC	14,26	Technics	09,35	Toshiba	00	TAPE BRAND	CODE
Kenwood	11,14,18,26	Teknika	00,09,10	Tusa	13	Hitachi	56,57,61,62
KLH	27	TMK	40,48	Unika	40	JVC	59
Kodak	09,10	Toshiba	16,17,42	United Artists	05	Kenwood	55
Lloyd	00	Totevision	10,48	United Cable	03	Optimus	54
Logik	27	Unitech	48	Universal	31,40	Panasonic	60
LXI	10	Vector	17	Videoway	48	Pioneer	54
Magnavox	09,12,28	Vector Research	11,13	Zenith	00	Sony	58
Magnin	48	Video Concepts	13,17,23			Wards	54
Marantz	09,11,28	Videosonic	48				
Marta	10	Wards	00,09,15,19, 20,27,48				
Matsushita	09	XR-1000	09,27				
MEI	09	XR 1000	00				
Memorex	00,09,10,12,18, 19,20,30,48	Yamaha	11,14				
MGA	16,23	Zenith	07,08,12				
MGN Technology	48						
Minolta	15						
Mitsubishi	16,23,26,45						
Motorola	09,20						
MTC	00,48						
Multitech	00,27						
NEC	11,13,14,26						

EASY GRAPHIC GUIDE



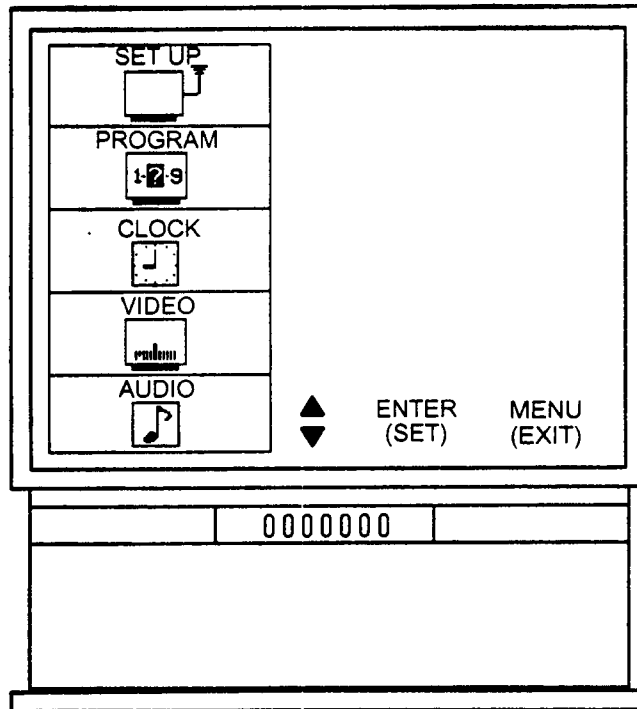
- 1 Press MENU on the remote control to display the different features on your HITACHI TV. The feature to be selected will be highlighted in yellow, the buttons used to choose your selection will be highlighted in blue, and the selection you have chosen will be highlighted in red.
- 2 Press the CURSOR buttons to highlight a different feature.
- 3 Press ENTER on the remote control to select a feature.



This part of the screen shows what selections are available.


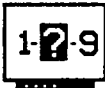





This part of the screen shows which remote control buttons to use.





EASY GRAPHIC GUIDE

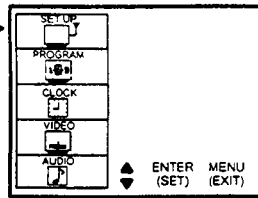
<p>SET UP</p> 	<p>AIR/CABLE AUTO PROGRAM CHANNEL MEMORY CLOSED CAPTION MENU LANGUAGE</p>	<p>Select antenna or cable TV. First time setup for channel buttons. Channel buttons, add or skip. Feature to display dialogue/text. Choose English, French or Spanish dialogue.</p>
<p>PROGRAM</p> 	<p>CHANNEL CAPTION CHILD LOCK PROGRAM LIST VOLUME CORRECTION</p>	<p>Label channels PAY1, ABC, etc. Block channel picture & sound. Check channel name, scan, childlock. Lower volume on selected channels.</p>
<p>CLOCK</p> 	<p>CLOCK SET ON/OFF TIMER MESSAGE 1 MESSAGE 2 CALENDAR</p>	<p>Set before using timer features. Turn TV on or off one time or daily. Set for one time or daily. Set for one time or daily. Check day, month and year.</p>
<p>VIDEO</p> 	<p>PREFERENCE ADJUST PREFERENCE SETTING CONVERGENCE CORRECTION</p>	<p>Adjust color, brightness, etc.. Improve picture performance. Match red, green, and blue colors to make white.</p>
<p>AUDIO</p> 	<p>PREFERENCE ADJUST PREFERENCE SETTING SURROUND WIRELESS MODE</p>	<p>Adjust balance, bass, and treble. Improve sound performance. Special sound effects. Adjust audio output for wireless speakers.</p>

SET UP



Select SET UP when setting your TV up for the first time. Use the CURSOR UP/DOWN buttons on the remote to highlight the function desired.

Your selection is shown here

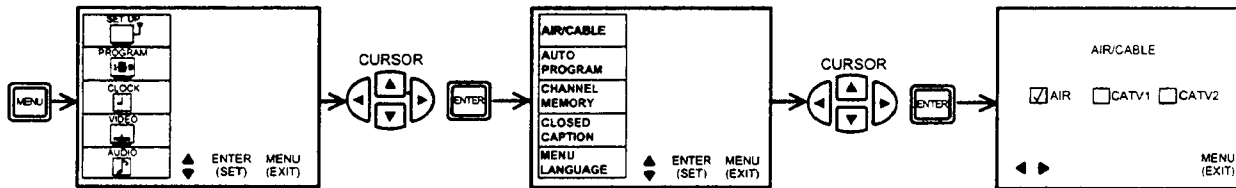


NOTE: To see an autodemonstration of the on-screen display, press and hold the POWER button on the TV set for approximately 5 seconds. Press the POWER button on the TV again to end the autodemonstration.

AIR/CABLE

Select AIR if you are using an indoor or outdoor antenna. Select CATV if you have cable TV.

Press the CURSOR buttons to highlight the correct AIR/CABLE mode and press MENU to exit. Your choice will be shown on the display.



RECEPTION BAND		
AIR	CATV 1 or CATV 2	
	CATV CHANNEL	Indicated on the screen
VHF 2 ~ 13ch UHF 14 ~ 69ch	VHF 2 - 13	2 ~ 13
	Mid band A - I A-5 - A-1	14 ~ 22 95 ~ 99
	Super band J - W	23 ~ 36
	Hyper band W + 1 - W + 28	37 ~ 64
	Ultra band W + 29 - W + 84	65 ~ 125

Reception channels for each mode are shown at the left.

Refer to your cable or TV guide for channel identification standards.

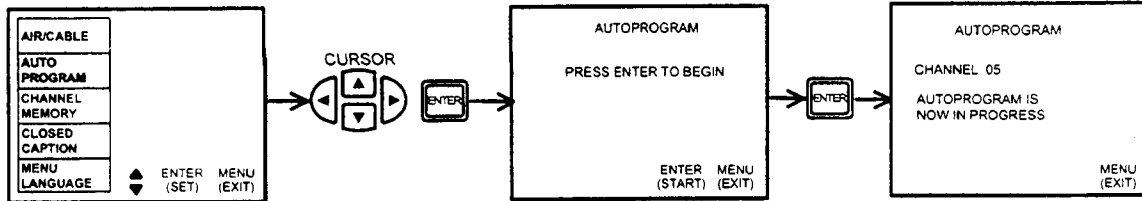
If certain CATV channels are poor or not possible in the CATV1 mode, set AIR/CABLE to CATV2.



SET UP

AUTO PROGRAM

This feature will automatically store active TV channels in CHANNEL MEMORY. This will allow you to skip over unused channels when using the CHANNEL UP (▲) or DOWN (▼) buttons.



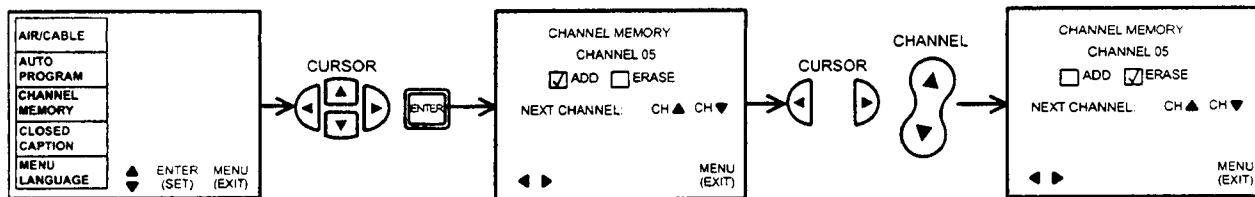
If the MENU button is pressed while the auto programming function is engaged, programming will stop. If two antennas are connected, switch antenna inputs with the ANT button and repeat auto programming for the second antenna input.

Remember to select the correct AIR/CABLE mode before using auto programming for the second antenna input.

See CHANNEL MEMORY to add or erase additional channels.

CHANNEL MEMORY

Use this function after AUTOPROGRAM to add or erase additional channels to the remote control CHANNEL ▲, ▼ buttons. Your choice will be highlighted in yellow.




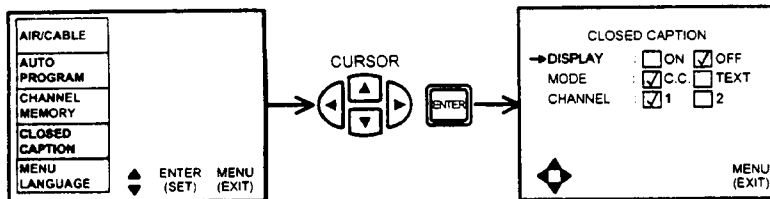
Add or erase additional channels while still in CHANNEL MEMORY using the CHANNEL ▲, ▼ buttons or number buttons and then add or erase using the CURSOR ◀, ▶ buttons.

SET UP



CLOSED CAPTION

Closed captions are the dialogue, narration, and/or sound effects of a television program or home video which are displayed on the TV screen. Your local TV program guide denotes these programs as **CC** or .



The selected function will be in yellow. Your choice for the function will be in red.



DISPLAY: ON/OFF is to turn the cc display on or off.

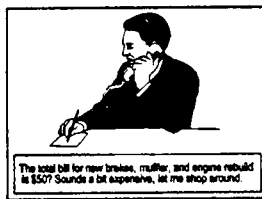
MODE: C.C. (Closed Caption) is for the program you are viewing.

MODE: TEXT is for additional information such as news reports or a TV program guide. This information covers the entire screen and viewing the TV program is not possible. TEXT may not be available with every **CC** program.

CHANNEL: 1 is used for the primary language (usually English).

CHANNEL: 2 is sometimes used for a second language (may vary by region).

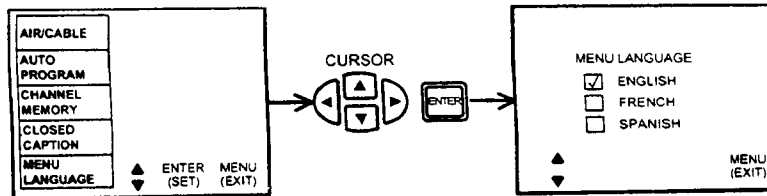
Use the CURSOR  or  to highlight the function to change, press ENTER to change the function, and press MENU to exit.





NOTE: The word MUTE will not be displayed if the DISPLAY is ON. If you do not have sound, make sure MUTE is not set.
CCD will display when "MUTE" is pressed, whether CCD is in the "ON" or "OFF" mode.

MENU LANGUAGE

This feature will allow you to select any one of 3 different languages for all on screen displays.

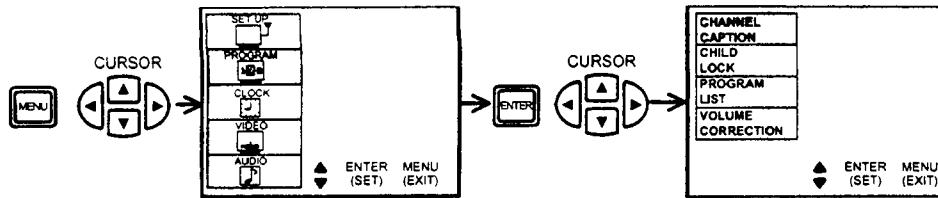


Use the cursor ,  buttons to select the MENU LANGUAGE of your choice.

Press MENU to exit.

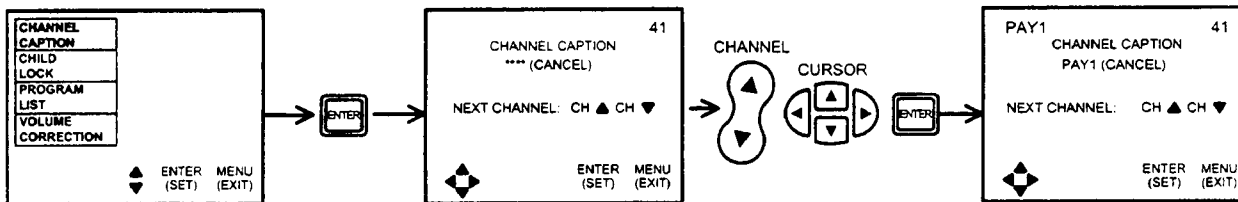
PROGRAM

This selection contains advanced features which will make TV viewing easier and more enjoyable.



CHANNEL CAPTION

Use this feature to give up to 30 channels a name for each antenna source.

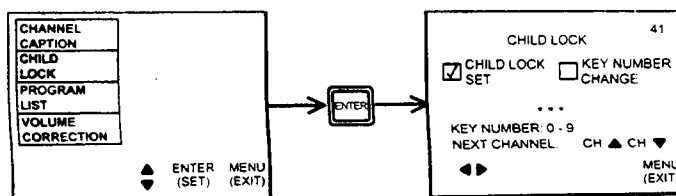


- Press the CURSOR ▲, ▼ to select letters.
- Press the CURSOR ◀, ▶ to change position.
- Press ENTER to set the CHANNEL CAPTION and it will appear in the top left corner of the screen.
- Press CHANNEL ▲, ▼ or the number buttons to select and label additional channels.
- Press MENU to exit.

The (*) represents a blank space.
 Select CANCEL to erase a CHANNEL CAPTION.

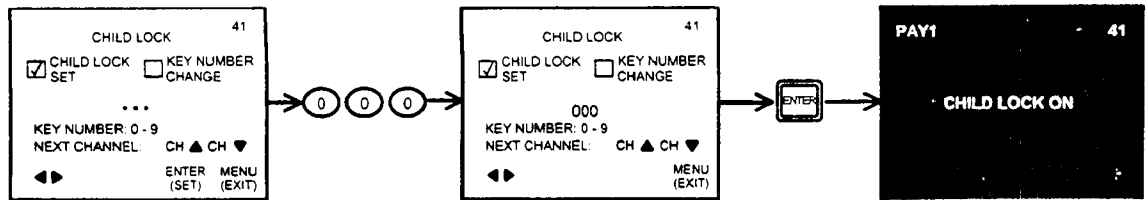
CHILD LOCK

This function will block out the picture and sound of the selected channel.



PROGRAM

The code to set or cancel CHILD LOCK is a three digit key number. The factory preset key number is 000.



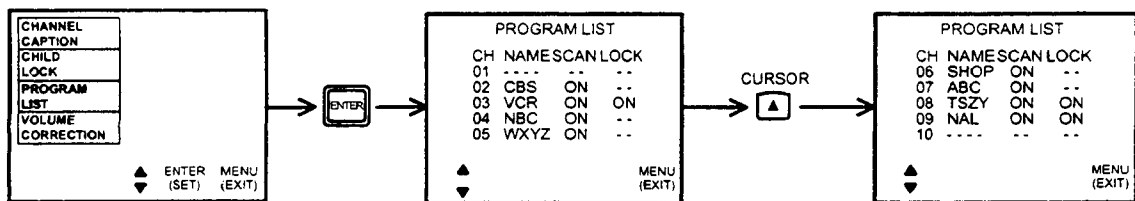
The picture and sound will now be blocked out for this channel. Repeat the same steps to cancel the CHILD LOCK.

To change the key number, select key number change. Enter the old number (factory preset 000 for first time use), then enter a new three digit key number you prefer.

If you forget your key number, use the factory code 777 to erase your key number. This will reset the key number back to the factory preset 000.

PROGRAM LIST

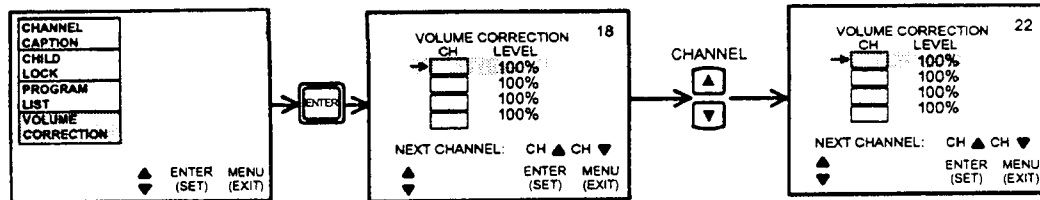
This function allows you to view which channels are labeled in CHANNEL CAPTION (NAME), which have been added to CHANNEL MEMORY (SCAN), and which are protected by CHILD LOCK (LOCK).



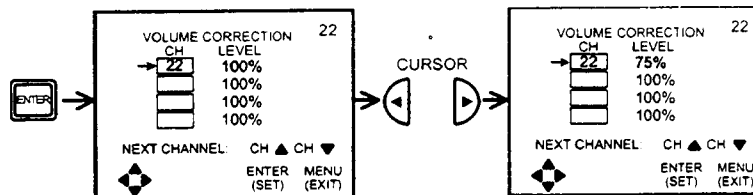
Press CURSOR ▲, ▼ to review more channels.
Press MENU to exit.

VOLUME CORRECTION

Use this function to reduce the volume level of up to four TV channels that sound loud compared to other TV channels.



Press the CURSOR \blacktriangle , \blacktriangledown to select one of the four volume corrections.
Use the Channel \blacktriangle , \blacktriangledown or number buttons to select a channel.



Press ENTER to set the channel.
Press the CURSOR \blacktriangleleft , \blacktriangleright to adjust volume level.
Press MENU to exit.

- NOTE:**
1. VOLUME CORRECTION adjustment is for the channel displayed in the top right corner of the screen. To adjust a different channel, you must select the channel with the channel or number buttons and press ENTER.
 2. If the channel has been corrected before, use the cursor \blacktriangle , \blacktriangledown to highlight that channel then use the cursor \blacktriangleleft , \blacktriangleright to change the level.
 3. To erase a channel from the volume correction, select channel 00 and press ENTER.
 4. The volume level will change from 50% to 100% in 5% steps.

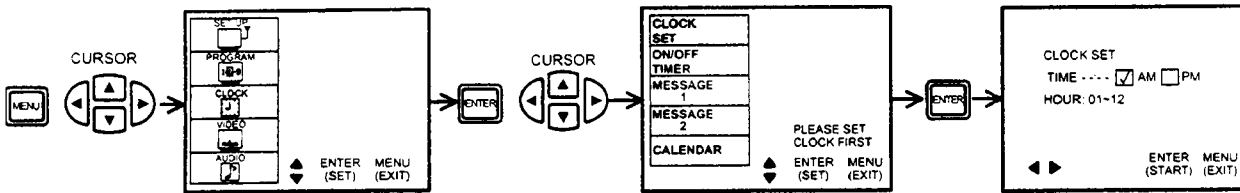
CLOCK



Use this feature for all time related functions.

CLOCK SET

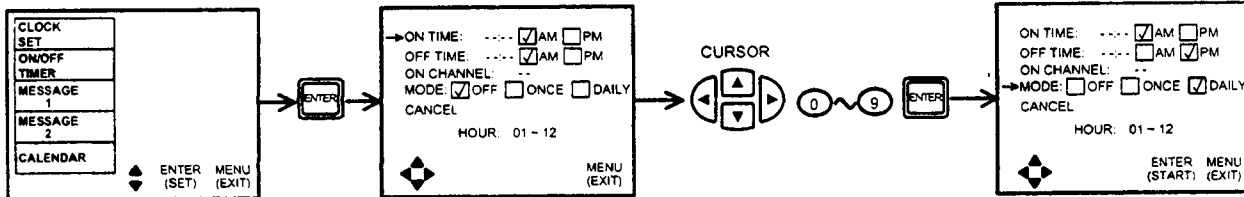
The time must be set before you can use the on/off timer or automatic message.



Use the NUMBER buttons and CURSOR ◀, ▶ to set the time.
The AM or PM selected will be highlighted in red.

ON/OFF TIMER

This function will automatically turn the TV on or off, one time only or everyday.



The selection to change will be in yellow.

Press the number buttons to select the time the TV will turn on or off. (AM: 1, PM: 2)

Press the CURSOR ◀, ▶ buttons for MODE: ONCE (one time only) or MODE: DAILY (TV will turn on/off at the same time every day).

Press CHANNEL ▲, ▼ or the NUMBER buttons to set the channel the TV will tune to when it automatically turns on.

Your choice for AM/PM and MODE will appear in red.

Press ENTER to start.

Select CANCEL and press ENTER to erase times.

NOTE: You can set either ON TIME only, OFF TIME only, or both. The mode will be the same for both.

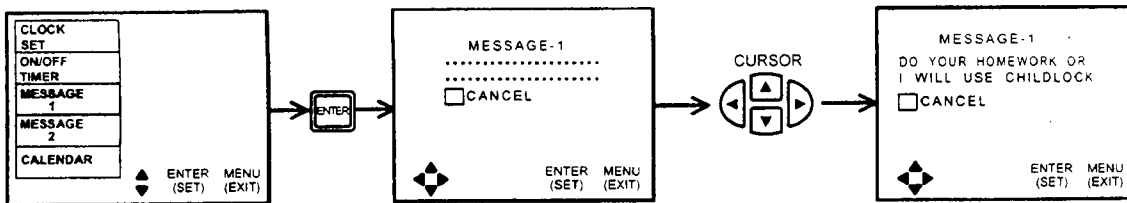


CAUTION: Do not use your TV as a deterrent when away from home by using both the ON and OFF TIMERS. For safety, the TV should be turned off when you are away from home.

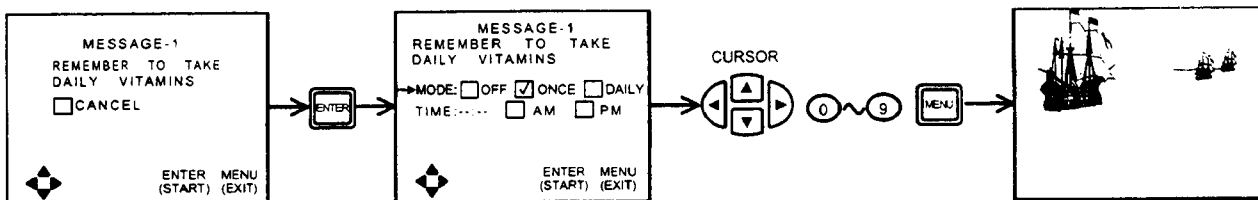


MESSAGE-1

Use this function to set one or two personal messages once a day or one time only.



- Use the CURSOR ▲, ▼ to select a letter or other character.
- Use the CURSOR ◀, ▶ to change position.
- Press ENTER when message is finished.
- The asterisk (*) represents a blank space.
- Move the CURSOR ◀, ▶ until (CANCEL) is red and press ENTER to erase message.

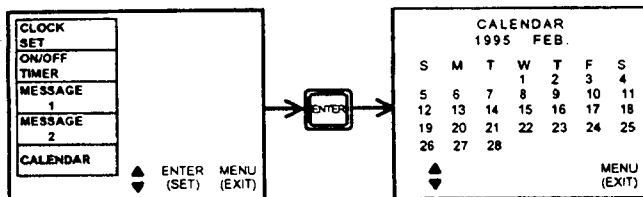


- Use cursor ▲, ▼ to choose MODE or TIME.
- Use cursor ◀, ▶ to set MODE when it is yellow. Your choice will be in red.
- Use the NUMBER buttons to set the time.
- Press ENTER to start and MENU to exit.

Note: At the selected time, the message will be displayed until a remote control button is pressed. Message-2 works in the same way as Message-1.

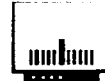
CALENDAR

Use this function to check the day, month, and year.

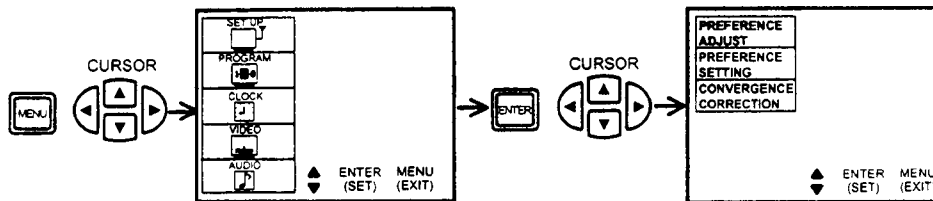


- Use the cursor ▲, ▼ buttons to change the month.
- Press MENU to exit.

VIDEO

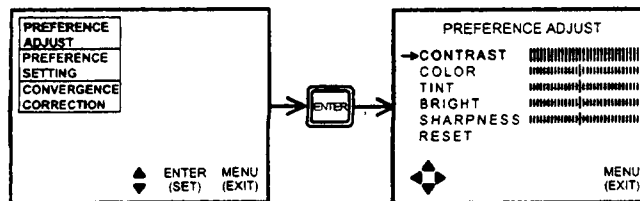


Select VIDEO to adjust picture settings, improve picture quality, and to adjust convergence.



PREFERENCE ADJUST

Use this feature to adjust contrast, color, tint, brightness, and sharpness.



Press the CURSOR buttons to select and make adjustments.
The function to be adjusted will be in yellow.

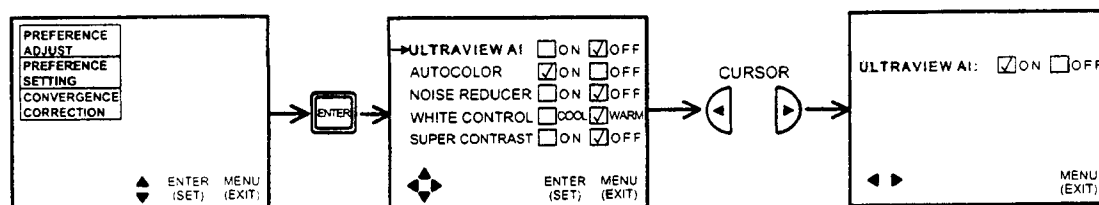
- CONTRAST-** Use this function to change the contrast between black and white level in the picture. This adjustment will only affect the picture when the PICTURE SETTING AI is OFF. (See page 38)
- COLOR-** Use this function to adjust the level of color in the picture.
- TINT-** Use this function to adjust flesh tones so they appear natural.
- BRIGHT-** Use this function to adjust overall picture brightness.
- SHARPNESS-** Use this function to adjust the amount of fine detail in the picture.
- RESET-** When RESET is selected, press ENTER to return video adjustments to factory preset conditions.



PREFERENCE ADJUST

Your HITACHI TV has an AI (Artificial Intelligence) function which will automatically adjust picture settings to produce the highest quality picture possible.

When AI is yellow, use the Cursor ◀, ▶ to turn the AI on or off. Your choice will be in red.



Use the CURSOR ▲, ▼ to select function.

Use the CURSOR ◀, ▶ to turn function on or off. Your choice will be in red.

AI (ARTIFICIAL INTELLIGENCE)

When the AI function is on, the TV's internal computer will perform the following:

1. Automatically monitor and adjust contrast depending on room lighting (sensor is located in the front panel), to produce a more natural picture.
2. Automatically monitor and adjust color levels and maintain natural flesh tones.
3. Automatically compensate for weak or strong TV signals to produce a clear picture.

Turn the AI function off to control other PREFERENCE SETTINGS.

AUTOCOLOR

The AUTOCOLOR function automatically monitors and adjusts the color to maintain constant color levels even after a program or channel changes. It also maintains natural flesh tones while preserving fidelity of background colors. For best picture performance leave the AUTOCOLOR function on.

NOISE REDUCER

The NOISE REDUCER automatically reduces conspicuous noise in the picture without degrading picture quality.

WHITE CONTROL

Change the look of the picture by adding either more or less blue to the picture.

SUPER CONTR (SUPER CONTRAST)

Turn on SUPER CONTR to improve picture detail in areas of high brightness.



CONVERGENCE CORRECTION

Your Projection TV has three color projection tubes: one for red, one for green, one for blue. When mixed together in the proper proportion, the output of these three color tubes can produce any color. To produce these colors, however, the beams must be precisely aligned over each other so that the colors can be mixed. The process of aligning these picture beams is called "convergence".

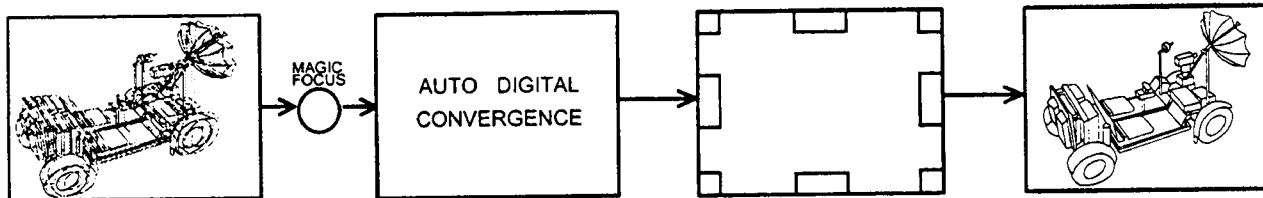
Over a period of time, the picture tubes can drift out of alignment due to normal bumps and vibrations or moving the TV. If you move your TV, or if, after a time, you notice color rings or halos around objects in the picture, you may want to converge (align) the colors.

To simplify convergence, Hitachi incorporates a function called MAGIC FOCUS, which allows the TV to self adjust so it can obtain the highest quality picture possible. Press the MAGIC FOCUS button located on the front panel to allow the TV to self adjust. This process will take approxi-

mately 2 minutes. If this button is pressed during this 2 minute period, no change in picture quality will occur. After this 2 minute self adjust period, picture quality will be optimum. (Do not move TV during self adjust.)

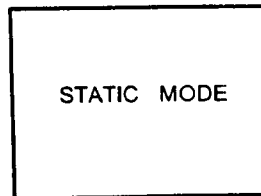
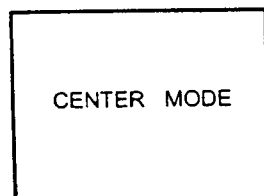
To enter this self adjust mode, you may also select Convergence Correction from the VIDEO Menu. However, this will display a message prompting you to press front panel MAGIC FOCUS button.

Properly converged, the lines appear white, which is actually a combination of the outputs of the three color tubes. The output of the green tube is stationary. The outputs of the red and blue tubes can be adjusted. When properly aligned, the outputs of all three tubes should be directly over each other to produce the white lines.



NOTE: Only a momentary press of the MAGIC FOCUS button is necessary to start AUTO DIGITAL CONVERGENCE. At any time during this convergence correction process, you may press the MAGIC FOCUS button to exit the convergence correction mode.

Do not press the MAGIC FOCUS button for more than 3 seconds. This is only for extreme cases of misconvergence and requires assistance from service. If one of the pictures shown below appears on the television screen, press the MAGIC FOCUS button a second time to exit this manual set up mode.

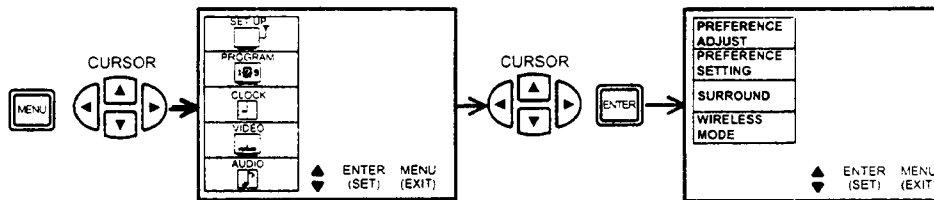




AUDIO

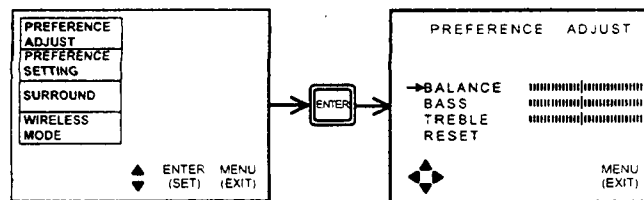


Select AUDIO to adjust the TV to your preference, to improve the sound quality, and to select special sound effects.



PREFERENCE ADJUSTMENT

Use this to set balance, bass, and treble.



Press the CURSOR buttons to select and make adjustments. The function to be adjusted will be in yellow.

BALANCE - This function will control the left to right balance of the TV internal speakers, the AUDIO TO HI-FI output, and TRANSMITTER OUT output. (Use the test tone volume levels to control balance when in "Surround -Dolby Prologic" mode.)

BASS - This function controls the low frequency audio to all speakers.

TREBLE - This function controls the high frequency audio to all speakers.

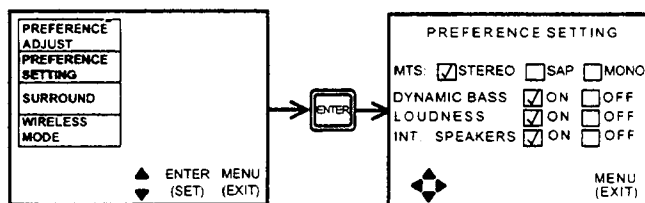
RESET - When RESET is selected, press ENTER to return audio adjustments to factory preset conditions.

AUDIO



PREFERENCE SETTING

Use PREFERENCE SETTING to improve the sound performance of your TV depending on listening conditions.



Use the CURSOR ▲, ▼ to select a function. The function will be in yellow.

Use the CURSOR ◀, ▶ to change function. Your choice will be in red.

MTS MODE (Multi-Channel Television Sound) will allow you to select **STEREO** (a stereo broadcast), **SAP** (second audio program) which may be a secondary language, weather report, etc. or **MONO** (monaural sound) used when receiving a weak stereo broadcast.

The sources received will be displayed below the channel number. The source you select will be displayed to the left of the channel number. See example below for each selection when both stereo and second audio are received (monaural is always received).



DYNAMIC BASS

This function allows you to enjoy spectacular bass sound that would normally be heard only with expensive home speaker systems.

LOUDNESS

This function will improve the quality of both low and high frequency sounds when listening at low volume levels.

INT. SPEAKERS

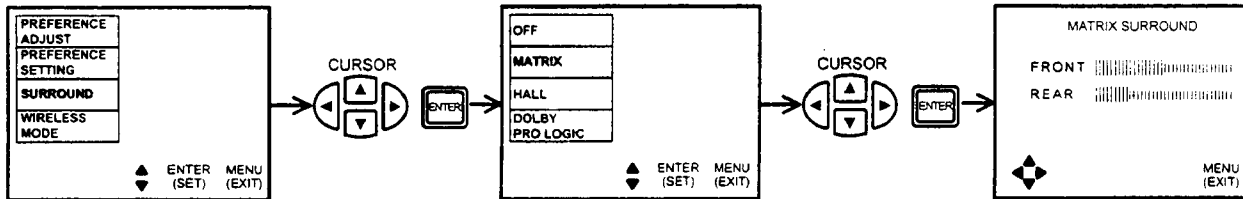
This function is useful when first setting up the external speakers, or if you prefer to use only speakers from a separate stereo system.

NOTE: If the optional left and right speakers are connected while in SURROUND-DOLBY CENTER EXPANSION MODE-NORMAL, the internal speakers may be turned off for better separation between the left, center, and right channels. The center channel audio will still be heard from the television's center speaker.



SURROUND

The following surround settings will reproduce the "live" sound you would hear in concert halls, sports stadiums, movie theaters, etc. when you set up your speaker system as shown in the section on rear panel connections on pages 13-15. The surround sound system is most effective with movie and other stereo material that is Dolby Surround encoded, and played on a stereo VCR.



When using Wireless Mode (TRANSMITTER OUT jacks on rear panel), rear mode must be chosen to receive the Surround audio program.

To enter the SURROUND MODE, use the CURSOR buttons to select SURROUND MODE or you can also press the SRD button on your remote control.

Use the CURSOR buttons to select surround setting and to select and adjust the volume of front and rear speakers. Front volume also controls AUDIO to HI-FI. Adjust front volume first.

Each surround setting has separate front & rear volume controls, except OFF and Dolby 3CH which have no rear volume controls. DOLBY PROLOGIC also has a center volume.

The CENTER and REAR VOLUME will increase or decrease when FRONT VOLUME is adjusted to keep an equal balance between the surround channels.

The maximum volume allowed for the CENTER and REAR will depend on how loud the FRONT volume is set.

The FRONT volume is the same as the main TV volume.

SURROUND OFF

Use this for normal stereo/mono broadcasts.

MATRIX SURROUND

Listener is surrounded by many sound sources such as a sporting event, etc.

NOTE: Some TV systems do not transmit optimum audio channel separation which can reduce the effectiveness of the MATRIX SURROUND function.

HALL SURROUND

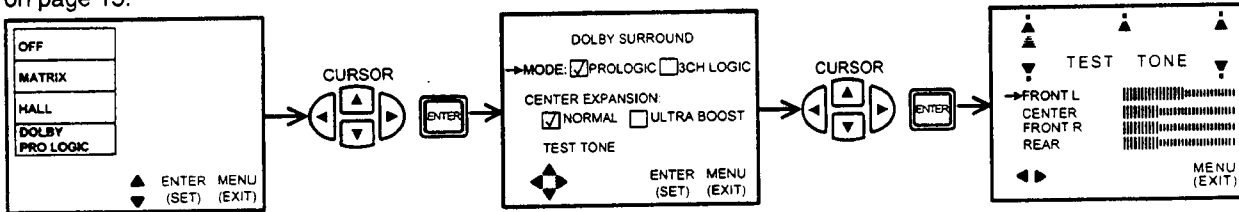
Resonant sound - Listener has the feeling of being in a concert hall.



DOLBY PRO LOGIC

Dolby Pro Logic provides four separate sound channels: left, center, right and surround. For a properly encoded program marked **DOLBY SURROUND** the center sound channel contains the dialogue for the program viewed. The left and right channels produce sound effect that will match the action on the TV screen. For example, Dolby Pro Logic will enhance the effect of a car viewed driving from the left side of the TV screen to the right side. The surround channel (speakers) are placed behind the viewing area to add additional spatial sound effects.

To fully benefit from Dolby Pro Logic Surround, it is recommended that the surround speaker system be complete as shown on page 15.



Use the CURSOR buttons to select the surround function.

MODE

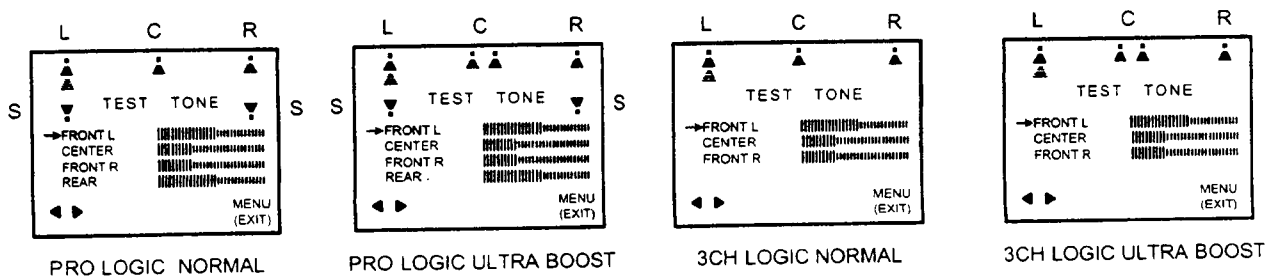
Can be set to 3CH LOGIC or PRO LOGIC. When 3CH LOGIC is set, the surround channel sound is split equally between the left and right speakers of a separate audio amplifier. When PRO LOGIC is set, separate surround sound speakers must be used.

CENTER EXPANSION

This can be set to NORMAL or ULTRA BOOST. When NORMAL is set, center channel sound is sent to the TV center speaker only. When ULTRA BOOST is set, center channel sound is split equally between the left and right TV speakers.

TEST TONE

A test sound is generated allowing the listener to balance volume from each channel. Adjust the volume levels until all channels are equal.

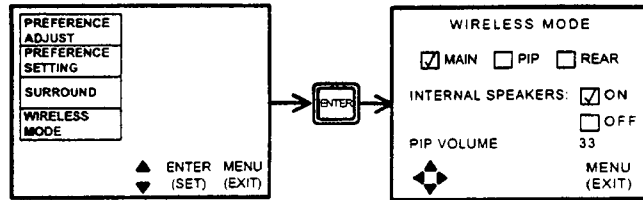


Use the CURSOR buttons to select and adjust VOLUME and BALANCE. Press MENU to exit.



WIRELESS MODE

This feature allows you to choose between 3 possible variable audio outputs for a separate set of wireless speakers or another stereo amplifier. The audio output may be either MAIN, PIP, or REAR. This feature also allows you to turn the interior speaker on or off, as well as adjust PIP volume if you have chosen PIP as your variable audio input.



Use the CURSOR buttons to change and adjust selections.

Press MENU to exit.

MAIN Mode

When set to MAIN mode, your wireless speakers will play the same audio program as played on your TV. When set to this mode, you may choose to turn the televisions' internal speakers on or off. Also, the volume of your wireless speakers will be controlled by the TV volume control.

PIP Mode

When set to PIP mode, your wireless speakers will play the PIP sub-picture audio program. The volume of your wireless speakers will now be controlled by the PIP VOL. control, which may be varied from 01 (min.) to 33 (max.). If no sub-picture is displayed, the wireless speakers will play the main channel audio program, with the volume still controlled by the PIP VOL. control.

REAR Mode

When set to REAR mode, your wireless speakers will play the Surround audio program. The volume of your wireless speakers will be controlled by the TV volume control, dependent upon the amount of REAR selected from SURROUND mode. (See pages 42, 43)

CARE OF YOUR HITACHI PROJECTION TV AND YOUR REMOTE CONTROL

DO

Dust the screen and cabinet with a soft cloth.

Clean the screen with a soft cloth moistened in warm water. Dry with a soft cloth. (A mild soap may be used if the screen is extremely dirty.)

Place your TV and remote control away from extreme heat, humidity and extremely dusty places.

Remove the plug from the wall outlet if your television set will not be used for a long period of time, for instance, when you go on vacation.

DO NOT

Do not clean your screen or cabinet with strong cleaners, polishes or chemically treated cloth.

Do not place rubber or vinyl products or cellophane tape on your set.

Do not touch the screen too often.



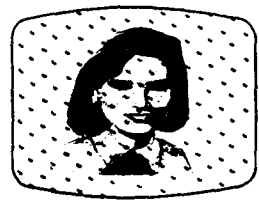
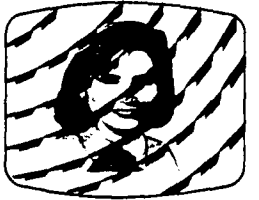
Do not subject the Remote Control to shocks such as dropping it on the floor, etc. Physical damage to the precision parts may result.

Avoid placing the Remote Control in a high humidity place or getting it wet. Don't leave it on or near a heater. Excessive heat or moisture may cause the unit to cease operation.

When the batteries run down, remote control operation will become erratic or possibly stop altogether. Replace the old batteries with two fresh "AA" size batteries.

Exposure of the viewing screen to prolonged direct sunlight or heat may cause the screen to permanently warp, resulting in a distorted picture.

RECEPTION PROBLEMS

	<ul style="list-style-type: none">• IGNITION NOISE: Black spots or horizontal streaks may appear, picture may flutter or drift. Usually caused by interference from automobile ignition systems, neon lamps, electrical drills and other electrical appliances.
	<ul style="list-style-type: none">• GHOSTS: Ghosts are caused by the television signal following two paths. One is the direct path and the other is reflected from tall buildings, hills or some other objects. Changing the direction or position of the antenna may improve reception. Ghosting may also be caused by defects in the antenna system such as unshielded leads or connecting several sets to the same antenna without using multiple antenna couplers.
	<ul style="list-style-type: none">• SNOW: If your receiver is located in the fringe area of a television station where the signal is weak, your picture may be marred by the appearance of small dots. When the signal is extremely weak, it may be necessary to install a special antenna to improve the picture.
	<ul style="list-style-type: none">• RADIO FREQUENCY INTERFERENCE: The interference produces moving ripples or diagonal streaks, and in some cases, causes loss of contrast in the picture.

CHECK HERE BEFORE CALLING FOR SERVICE

SYMPTOMS	CHECK THESE ITEMS AND TRY THESE ADJUSTMENTS											
	Be sure external connection is correct	Be sure power cord is plugged in	Be sure TV is switched "ON"	Try another channel "Dial"	Check antenna connections (station trouble)	Check antenna for broken lead-in wire	Check outside antenna	Adjust Contrast control	Adjust Brightness control	Adjust Color control	Adjust Tint control	Adjust Volume control
No picture, no sound	•	•	•	•	•	•	•					
Sound OK, picture poor	•			•	•	•	•	•	•			
Picture OK, sound poor	•			•	•	•	•	•				•
Picture blurred	•			•	•	•	•	•				
Lines or streaks in picture				•	•	•	•	•				
Poor reception on some channels				•	•	•	•	•				
Picture rolls vertically				•				•				
No color	•			•	•	•	•			•		
Poor color	•			•	•	•	•			•	•	

This Projection Television incorporates advanced power surge protection technology designed to protect against component or circuit damage due to external or internal voltage or power surges.

IF YOUR SET SHOULD APPEAR TO HAVE A LOSS OF POWER, PLEASE FOLLOW THIS PROCEDURE:

- 1) Push the power switch (ON/OFF switch) once.
- 2) If there is still no power, wait 30 seconds and push the power switch again.
- 3) If there is still no power, unplug the power cord from the wall. Wait thirty seconds and plug the power cord back in. Push the power switch again.

This protective technology should provide for years of lasting entertainment from your Projection Television.

SPECIFICATIONS

Features:

- Superfine Picture Quality
1000 Line Horizontal Resolution
- Pure Green and Red Filter Lenses
- Artificial Intelligence System
- Dolby Pro Logic*/Hall/Matrix 3-Way Surround Sound
- Remote (Controls many VCR brands, cable boxes, and other audio equipment)
- Easy Graphic Guide On-Screen Display
- Full set of Input Jacks, Including S-Video
- Closed Caption Decoder
- High Resolution Picture-In-Picture with Strobe Freeze
- Tuned Port Bass Reflex Speakers
- Magic Focus (Auto Digital Convergence)

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Inputs:

- Power Input AC 120V, 60 Hz
- Power consumption (operating)
 - 46UX20B/21K 165W
 - 50UX22B/23K 165W
 - 50SX7P, 60SX10B/11K 162W
- Power consumption (maximum)
 - 46UX20B/21K 240W
 - 50UX22B/23K 240W
 - 50SX7P, 60SX10B/11K 240W
- Antenna input impedance 75 Ohm
- Channel coverage 181 ch.
 - VHF-Band 2-13
 - UHF Band 14-69
 - CATV Mid Band A-5~A-1
A-I
 - Super Band J-W
 - Hyper Band W+1-W+28
 - Ultra Band W+29-W+84
- Video 1.0Vp-p, 75 Ohm
- S-Video
 - Luminance (Y) 1.0Vp-p, 75 Ohm
 - Chrominance (C) 0.286Vp-p, 75 Ohm
- Audio input impedance 47k Ohm
- Average input level 470mVrms
- Maximum input level 940mVrms

Outputs:

- Video 1.0Vp-p, 75 Ohm
- Audio (fixed) 470mVrms, 1k Ohm

Dimensions:

	46UX20B/21K	50UX22B/23K
• Height (in.)	48 ³ / ₈	50 ¹³ / ₁₆
• Width (in.)	40	43 ¹ / ₄
• Depth (in.)	22 ¹ / ₂	21 ⁷ / ₁₆
• Weight (lbs.) ...	221	250
	50SX7P	60SX10B/11K
• Height (in.)	50 ¹³ / ₁₆	52 ¹ / ₈
• Width (in.)	43 ¹ / ₄	60
• Depth (in.)	21 ⁵ / ₈	22 ¹¹ / ₁₆
• Weight (lbs.) ...	250	391

NOTE: Due to improvements, specifications in this operating guide are subject to change without notice.

HITACHI

*Service
hotline*

To locate an authorized
HITACHI service facility
in the continental U.S.A.

DIAL TOLL FREE

7 days a week, 24 hours a day

800 HITACHI

1-800-448-2244

Hitachi Home Electronics (America), Inc.

Hitachi has made every effort to assure you hours of trouble free operation from your unit. However, should you require service, a network of Hitachi Authorized Service Facilities has been established in all 50 states and Puerto Rico. Each facility will provide you with convenient and expedient assistance. Our service "Hotline" operator will direct you to the Hitachi Authorized Service Facility nearest you. Just present proof of purchase and/or delivery receipts to the Hitachi Authorized Service Facility, and service will be rendered in accordance with the terms of the limited warranty as stated on your warranty card or operating guide.

Should you have any questions regarding in-warranty service, operation or technical assistance, please contact:

Hitachi Home Electronics(America), Inc

3890 Steve Reynolds Blvd
Norcross, GA 30093
Tel: 404-279-5600

Hitachi Sales Corporation of Hawaii

3219 Koapaka St.
Honolulu, HI 96819
Tel: 808-836-3621

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