Color Television
Operating Instructions

Panasonic ®

CT–35G31

Read these instructions completely before operating this set.

Contents subject to change without notice or obligation.

Safety Instructions

WARNING

RISK OF ELECTRIC SHOCK DO NOT OPEN

WARNING: To reduce the risk of electric shock do not remove cover or back. No user-serviceable parts inside. Refer servicing to qualified service personnel.
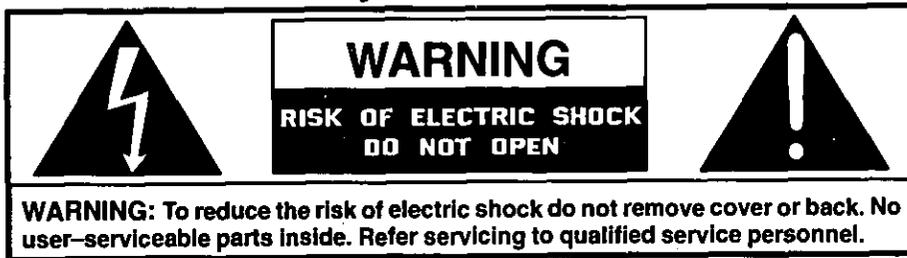
The lightning flash with arrow–head within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.

The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.

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.

Safety Instructions for Television Receivers

1. Read and apply the operating instructions provided with your television receiver.
2. Read all of the instructions given here and retain them for later use.
3. Unplug this television receiver from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use attachments not recommended by the television receiver manufacturer as they may cause hazards.
5. Do not use this television receiver near water. For example: Avoid placing it near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
6. Do not place this television receiver on an unstable cart, stand, or table. The television receiver may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television receiver. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

6A. 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.

7. Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to insure reliable operation of the television receiver and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the television receiver on a bed, sofa, rug or other similar surface. This television receiver should never be placed near or over a radiator or heat register. This television receiver should not be placed in a built–in installation such as a bookcase unless proper ventilation is provided.

8. Operate only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home consult your television dealer or local power company. For television receivers designed to operate from battery power, refer to the operating instructions.

9. This television receiver 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.

10. Do not allow anything to rest on the power cord. Do not locate this television receiver where the cord will be abused by persons walking on it.

11. Follow all warnings and instructions marked on the television receiver.

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

13. Never push objects of any kind into this television receiver 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 receiver.

EXAMPLE OF ANTENNA GROUNDING AS PER (NEC) NATIONAL ELECTRICAL CODE

ANTENNA LEAD–IN WIRE

GROUND CLAMP

ANTENNA DISCHARGE UNIT (NEC SECTION 810–20)

ELECTRIC SERVICE EQUIPMENT

GROUNDING CONDUCTORS (NEC SECTION 810–21)

GROUND CLAMPS

POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
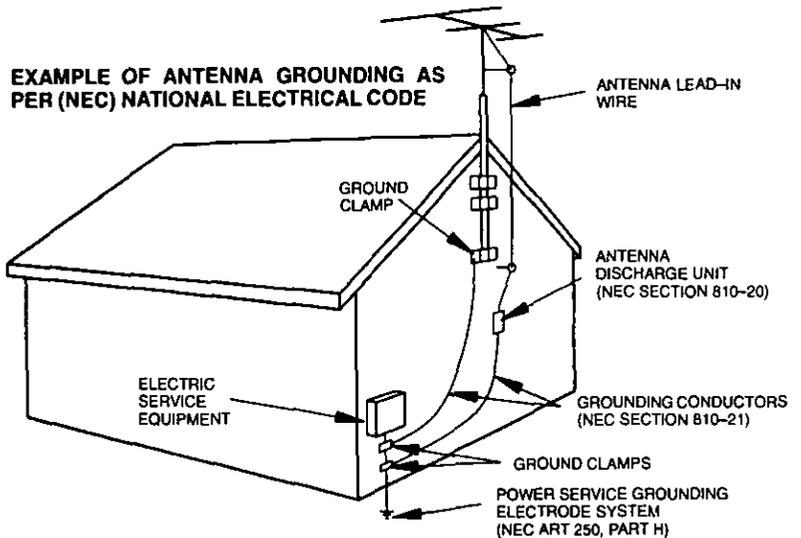
14. If an outside antenna is connected to the television equipment, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. In the U.S. Section 810 of the National Electrical Code and in Canada Part 1 of the Canadian Electrical Code provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead–in wire to an antenna discharge unit, size of grounding conductors, location of antenna–discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.

15. For added protection for this television receiver 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 to the receiver due to lightning and power–line surges.

16. 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.

17. Unplug this television receiver from the wall outlet, and refer servicing to qualified service personnel under the following conditions:
    a. When the power cord or plug is damaged or frayed.
    b. If liquid has been spilled into the television receiver.
    c. If the television receiver has been exposed to rain or water.
    d. If the television receiver does not operate normally by following the operating instructions. Adjust only those controls that are covered by 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 receiver to normal operation.
    e. If the television receiver has been dropped or the cabinet has been damaged.
    f. When the television receiver exhibits a distinct change in performance – this indicates a need for service.

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

19. 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.

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

21. **WARNING: To prevent fire or shock hazard, do not expose this appliance to rain or moisture.**

22. **CAUTION:** TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTE: This equipment is designed to operate in the U.S.A., Canada and other countries where the broadcasting system and AC house current is exactly the same as in the U.S.A. and Canada.

Important Information Regarding Use of Video Games, Computers, Teletext or Other Fixed Image Displays.

The extended use of fixed image program material can cause a permanent "shadow image" on the picture tube. This background image is viewable on normal programs in the form of a stationary fixed image. This type of irreversible picture tube deterioration can be limited by observing the following steps:

A. Reduce the brightness/contrast setting to a minimum viewing level.
B. Do not display the fixed image for extended periods of time.
C. Turn the power off when not in actual use.

NOTE: The marking or retained image on the picture tube resulting from fixed image use is not an operating defect and as such is not covered by Warranty. This product is not designed to display fixed image patterns for extended periods of time.

Specifications

Power Source:	120V, 60Hz, AC
Channel Capability:	181 channels (See chart)
	VHF 2~13, UHF 14~69, Cable 125 channels
Video Input Jacks (2):	1V p–p, 75 ohm, phono jack type
Audio Input Jacks (2):	500mV rms, 47K ohm
To Audio AMP Jacks:	0~2.0V rms 4.7K ohm
S–VHS Input Jack:	S–Video (Y–C) Connector
Picture in Picture:	Two Tuner
Stereo Sound	
Surround Sound	
Closed Caption Display	

Specifications are subject to change without notice or obligation.

Channel Capability Chart

BAND	USA/CAN
VHF	12
UHF	56
CABLE (Mid–Band)	15
CABLE (Super Band)	14
CABLE (Hyper Band)	28
CABLE (Ultra Band)	56
TOTAL CHANNELS	**181**

Introduction
Congratulations on Your New Purchase

Your new video component features an all solid state chassis which is designed to give you many years of enjoyment. It was thoroughly tested and adjusted at the factory for best performance.

In order for you to take full advantage of your new video component, please read and follow the installation and operating instructions supplied with this product.

Customer's Record

The model and serial number of this product may be found on its back cover. You should note the model and serial number in the space provided and retain this book as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model Number: _____   Serial Number: _____

Table of Contents

Installation

Receiver Location

This unit is intended to be used with an optional stand or entertainment center. Consult your dealer for available options. Locate for comfortable viewing. Avoid placing where sunlight or other bright light (including reflections) will fall on the screen.

Use of some types of fluorescent lighting can reduce remote control transmitter range.

Adequate ventilation is essential to prevent internal component failure. Keep away from areas of excessive heat or moisture.

To insure optimum color purity do not position magnetic equipment (motors, fans, other speakers, etc.) nearby.

Optional External Equipment Connections

The Video/Audio connections between components can be made with shielded video and audio cables. For best performance, video cables should utilize 75 ohm coaxial shielded wire. Cables are available from your dealer or electronic supply house.

Before you purchase any cables, be sure you know what type of input and output connectors your various components require. Also determine the length of cable you'll need.

AC Power Supply Cord

CAUTION: To prevent electric shock, match wide blade of plug to wide slot of AC outlet and fully insert. DO NOT USE this (polarized) plug with a receptacle or other outlet unless the blade can be fully inserted to prevent blade exposure.
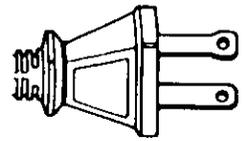
Polarized Plug

Remote Control Battery Installation

Requires two "AA" batteries.
1. Turn the Transmitter face down. Remove top cover by pressing down on marking and sliding cover off in the direction indicated.
2. Install the batteries as shown in the battery compartment. (Polarity (+) or (–) must match the markings in the compartment.)
3. Replace the cover and slide until the lock snaps.

Helpful Hint:

For frequent Remote Control users, replace old batteries with Alkaline batteries for longer life.

CAUTION: Incorrect installation can cause battery leakage and corrosion that will damage the Remote Control Transmitter.

Observe the Following Precautions:
1. Batteries should always be replaced as a pair. Always use new batteries when replacing the old set.
2. Do not combine a used battery with a new one.
3. Do not mix battery types (Example: "Zinc Carbon" with "Alkaline").
4. Do not attempt to charge, short-circuit, disassemble, heat or burn used batteries.
5. Battery replacement is necessary when Remote Control acts sporadically or stops operating the Receiver.

Helpful Hint:

Whenever you remove the batteries to replace them, **you may need to reset the Remote Control Infrared Codes.** We recommend that you record the codes on page 30, prior to setting up the remote.
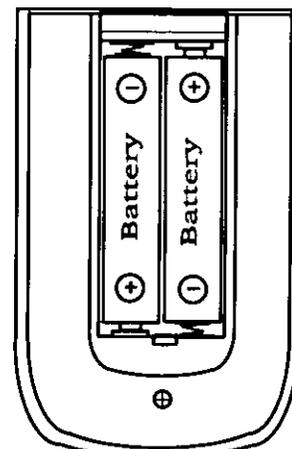
Press Down Here And Slide Cover Back
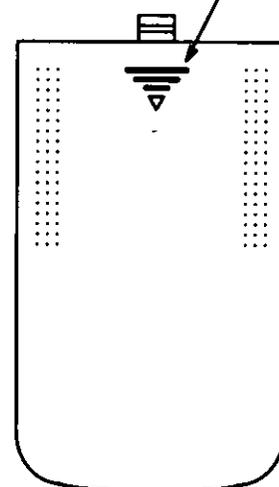
Installation (cont.)

Antenna/Cable Connections

Antenna Connection – For proper reception of VHF/UHF channels an external antenna is required. For best reception an outdoor antenna is recommended. Antenna Mode must be set to TV. (Refer to Antenna Mode section.)

Incoming Cable from Home Antenna (75 Ohm)

VHF/UHF
on Back of Set

Indoor   Outdoor

Typical VHF/UHF Antenna
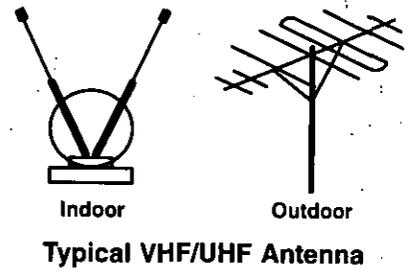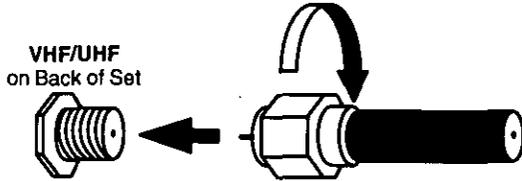
Incoming Cable from Home Antenna (300 Ohm)

VHF/UHF
on Back of Set

300 to 75 ohm Matching
Transformer (Not Included)
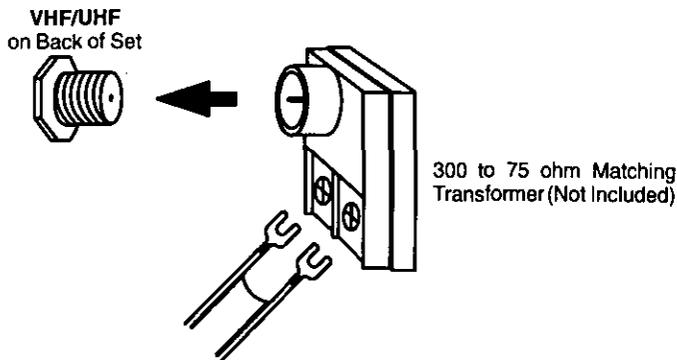
Cable Connection – For reception of cable channels, (connect the cable supplied by your local Cable company. Antenna Mode must be set to CABLE. (Refer to Antenna Mode section.)

Incoming 75 Ohm Cable (from Cable Company)

VHF/UHF
on Back of Set
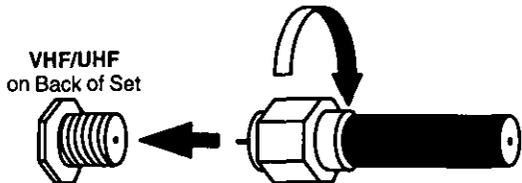
NOTE: Certain cable systems offset some channels to reduce interference or have Premium (scrambled) channels. A Cable Converter box is required for proper reception. Check with your local Cable company for its compatibility requirements.

Other Video Equipment

VCRs, Video Disc Players, Computers, TV games, and Teletext equipment can also be connected to the antenna input connection.

Standard Antenna and External Video Connection

The following illustrations show the standard antenna and video connections which can be used for most situations.

Note: This Receiver has the "PICTURE IN PICTURE" feature. This allows you to watch two (2) live broadcasts at the same time as long as an external video source is connected.

Standard Antenna Connection (No Cable Box or VCR)

Use this configuration when connecting the TV directly to the antenna or Cable TV system (without a Cable Box). Be sure to select the correct mode (see the *Set Up Features* section in this Manual for details).

TERMINALS ON BACK OF RECEIVER

Incoming Cable
from Antenna or
Cable TV System

1 Connect the cable from the antenna (or cable system) to the ANT terminal on the back of the TV.
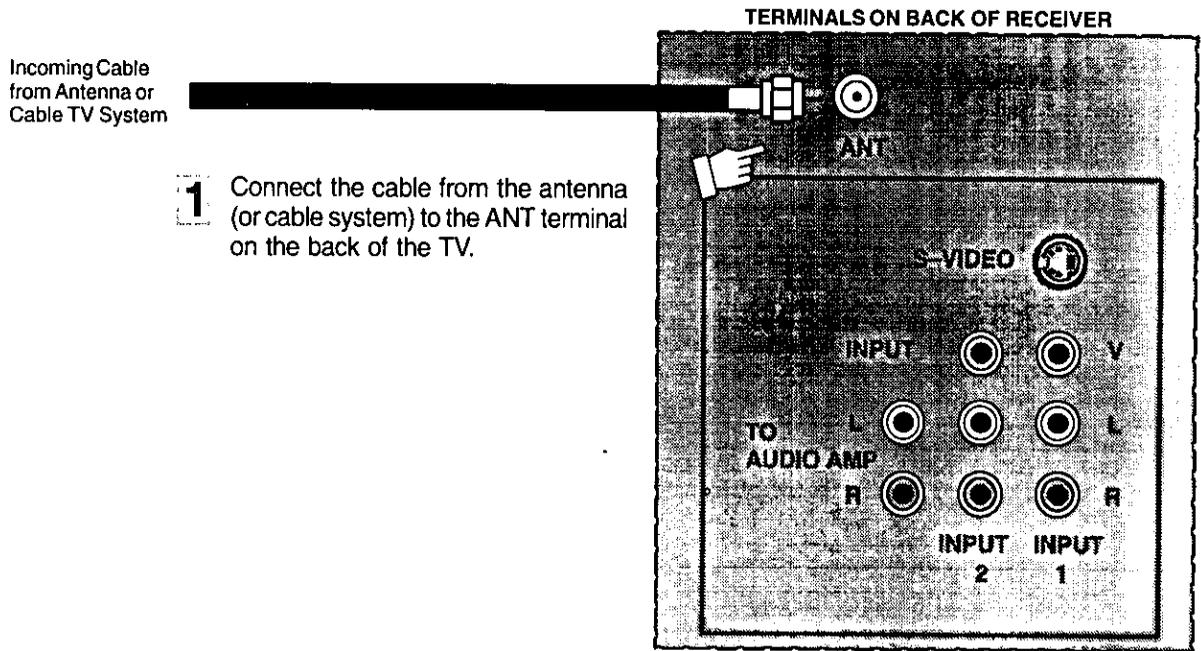
Standard Antenna Connection (Cable Box)

Use this configuration when connecting the TV to the Cable TV system using a Cable Box.

Incoming Cable
from Antenna or
Cable TV System

TERMINALS ON BACK OF RECEIVER

1 Connect the cable from the cable system to the INPUT terminal on the back of the Cable Box.

2 Connect the cable from the Output terminal on the back of the Cable Box to the ANT terminal on the back of the TV.

INPUT

OUTPUT

TERMINALS ON BACK OF CABLE BOX
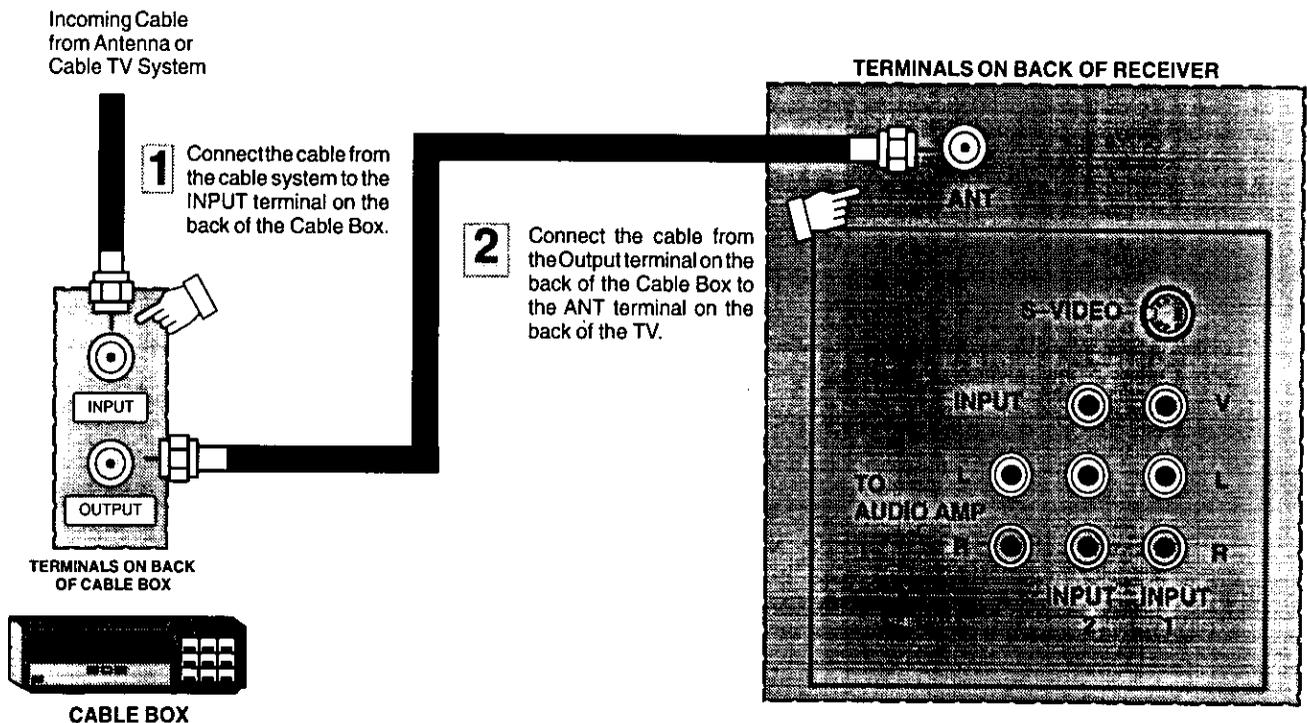
CABLE BOX

Standard Antenna and External Video Connection (cont.)

Standard Antenna Connection (Cable Box and VCR)

Use this configuration when connecting the TV to the antenna or Cable TV system and a VCR (with or without a Cable Box). Be sure to select the correct mode (see the *Set Up Features* section in this Manual for details). This configuration is also recommended for the PIP Feature.

S-Video connection is optional and overrides the standard Video connection when connected.

5 Connect the Audio/Video cables as described in the *Audio/Video Connection* section on the next page.

TERMINALS ON BACK OF RECEIVER

S-VIDEO

INPUT V

OR

TO AUDIO AMP L

R

INPUT 2 INPUT 1

OPTIONAL EQUIPMENT (VCR)

TERMINALS ON BACK OF EQUIPMENT

S-VIDEO

VIDEO OUT

L

AUDIO OUT

R

ANT INPUT

4 Connect the cable from the Output terminal of the signal splitter to the ANT Input terminal on the back of the VCR.

3 Connect the cable from the Output terminal of the signal splitter to the ANT terminal on the back of the TV.

2 Connect the cable from the OUTPUT terminal on the back of the Cable Box to the Input terminal on the signal Splitter (optional).

Signal Splitter (not Included)

If a Cable Box is not used, connect the incoming cable from the antenna or Cable TV system directly to the signal splitter.

Incoming Cable from Antenna or Cable TV System

OUTPUT

INPUT

TERMINALS ON BACK OF CABLE BOX

1 Connect the cable from the antenna or cable system to the INPUT terminal on the back of the Cable Box.

CABLE BOX

Optional Equipment Connection and Operation

To Audio AMP Connection (Stereo)

Connect to an external audio amp auxiliary input for monitoring sound through a stereo system.

TERMINALS ON BACK OF RECEIVER

> "TO AUDIO AMP" terminals cannot be used directly with external speakers.
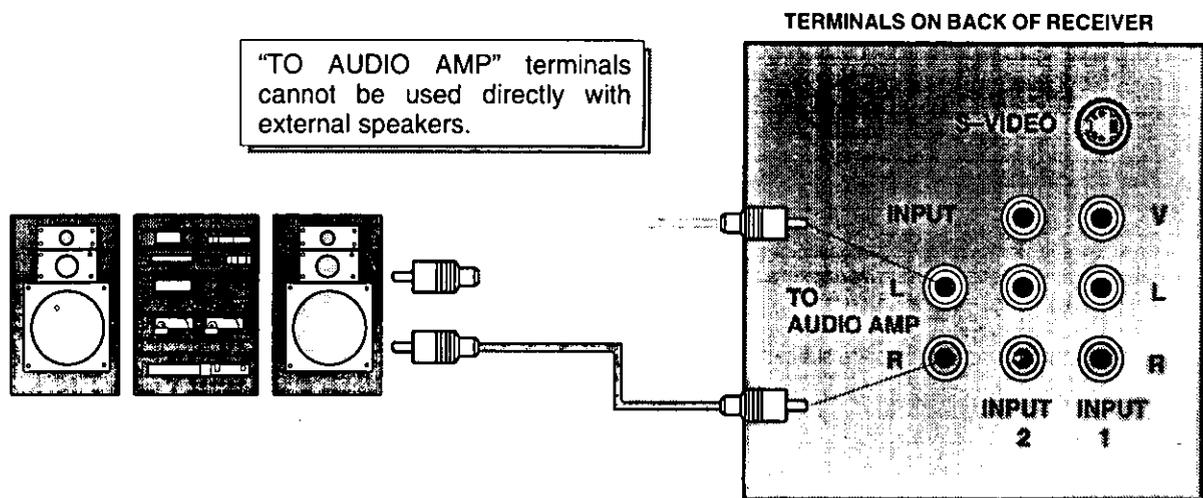
Adjustment – When an audio amp is connected to "TO AUDIO AMP" terminals:

1. Select INT. SPEAKERS "ON" Mode. (Refer to the Audio Menu TV Speakers section.)
2. Set volume of audio amp to near minimum.
3. Adjust volume of TV to desired listening level.
4. Adjust volume of audio amp to match the level of TV.
5. Select INT.TV SPEAKERS "OFF&VAO" (Variable Audio Output) Mode. (Refer to the Audio Menu TV Speakers section.)
6. Audio bass, treble, balance, volume, and mute can now be controlled by the TV Remote Control.

NOTE: When Selecting INT. TV SPEAKERS "OFF&FAO" (Fix Audio Output) Mode, the TV sound output is always at a constant level and cannot be changed from the TV (Refer to the Audio Menu TV Speakers section).

Audio/Video Connection

TERMINALS ON BACK OF RECEIVER

> S-Video connection is optional and overrides the standard Video connection when connected.

OPTIONAL EQUIPMENT

TERMINALS ON BACK OF EQUIPMENT
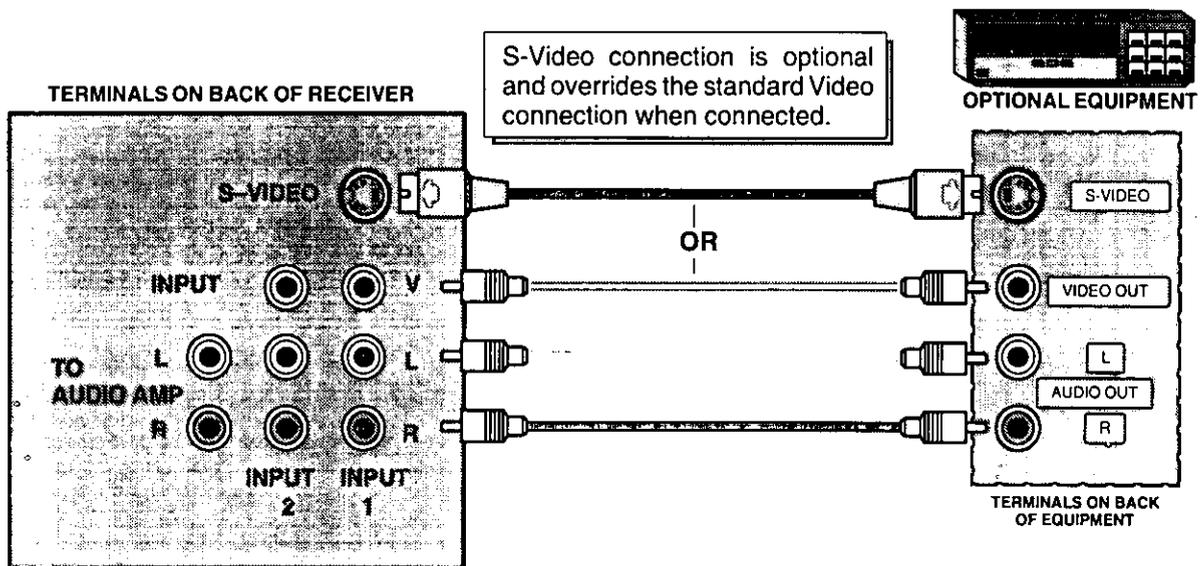
Operation

1. Connect optional equipment as shown to INPUT 1 or 2 terminals. If S-Video is to be used, connect S-Video (YC) connector to S-Video terminal of INPUT 1 instead of connecting the standard video cable.
2. Select the desired Video mode by pressing the TV/VIDEO button.
3. Operate optional equipment (VCR-VDP) as instructed in Optional Equipment manual.

NOTES:

- You must select the same VIDEO Mode that the equipment is connected to.
- Connection of optional S-VIDEO jack automatically disconnects the Normal Video Input 1 jack.

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Location of Controls (Receiver)

Front Control Panel

POWER ◀ VOLUME ▶ ▼ CHANNEL ▲ ACTION TV/VIDEO

① ② ③ ④ ⑤   Remote Control
                   Sensor
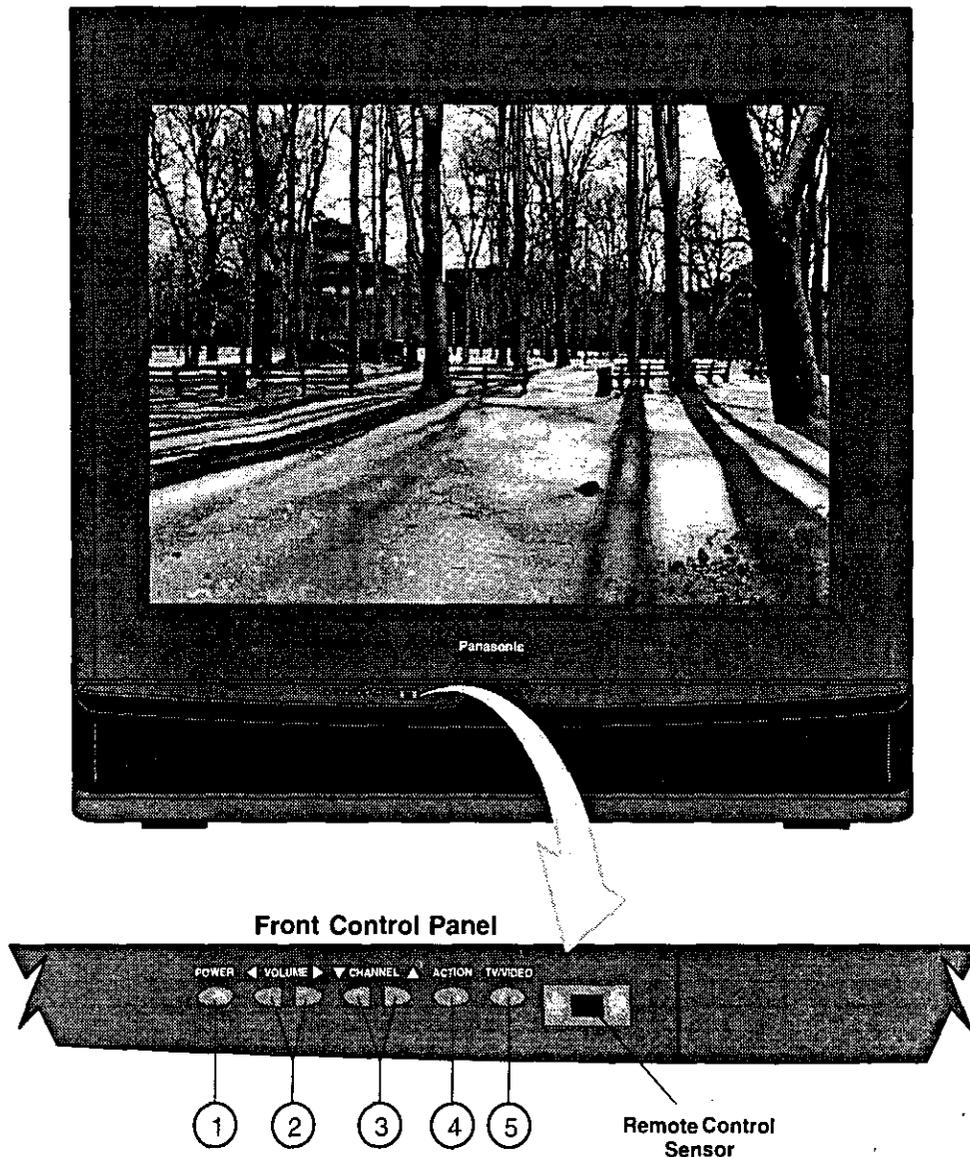
Quick Reference Control Operation (Receiver)

① **Power Button** – Press to turn ON or OFF.

② **Volume Buttons** – Press to adjust Sound Level. Press to adjust Audio Menus, Video Menus, and select operating features when menus are displayed.

③ **Channel Buttons** – Press to select programmed channels. Press to highlight desired features when menus are displayed.

④ **Action Button** – Press to display Main Menu and access or exit On-Screen feature and Adjustment Menus.

⑤ **TV/Video Button** – Press to select TV or one of two Video Inputs, for the Main Picture or the PIP frame (when PIP frame is displayed).

Location of Controls for the Remote Unit

Basic Remote Control Functions

The following is a basic overview of the remote control unit **for television operation. Ensure the TV mode is selected by initially pressing** ⟨TV⟩.
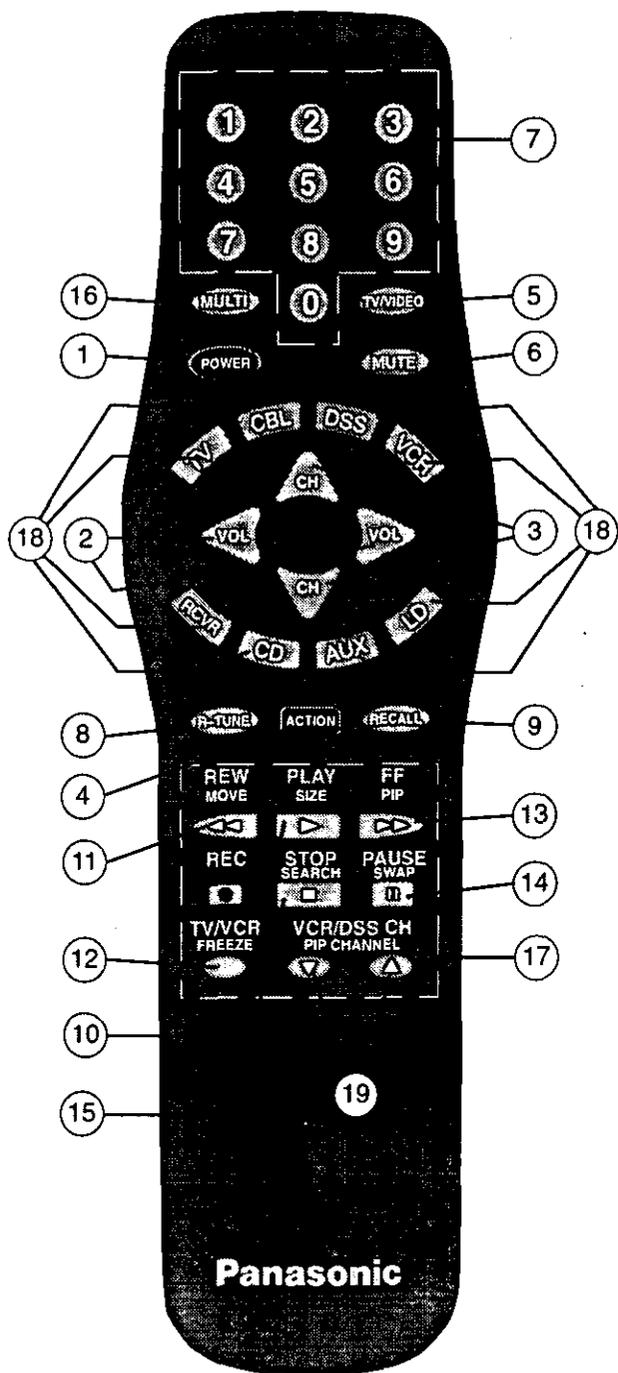
Home Theater Remote Control

Panasonic

(1) **Power Button** – Press to turn the TV ON or OFF.

(2) **Volume Buttons** – Press to adjust TV sound level. Use with Channel buttons to navigate in menus.

(3) **Channel Buttons** – Press to select channels. Use with Volume buttons to navigate in menus.

(4) **Action Button** – Press to display Main Menu and access or exit On-Screen feature and Adjustment Menus.

(5) **TV/Video Button** – Press to select TV or one of two (2) Video Inputs, for the Main Picture or the PIP frame (when the PIP frame is displayed).

(6) **Mute Button** – Press to mute sound. A second press returns sound.

(7) **Numeric Keypad "0 through 9" Buttons** – Press desired channel number to access any channel. ·

(8) **R-Tune (Rapid Tune) Button** – Press to switch to the previous channel.

(9) **Recall Button** – Press to display Time, status of Sleep Timer, Channel, Video Mode, Channel Caption (Station Identifier) and Audio Mode.

(10) **Size Button** – Press to select size of PIP frame (when the PIP frame is displayed).

(11) **Move Button** – Press to position PIP frame to any corner of the Main Picture (when PIP frame is displayed).

(12) **Freeze Button** – Press to stop action in the Main Picture or PIP frame (when the PIP frame is displayed).

(13) **PIP (Picture In Picture) Button** – Press to display the PIP frame, press again to remove PIP frame.

(14) **Swap Button** – Press to interchange PIP frame with Main Picture (when the PIP frame is displayed).

(15) **Search Button** – This button is used to select PIP Search to automatically scan channels within the PIP Frame.

(16) **Multi Button** – Programmable to operate up to six (6) Remote Function buttons simultaneously.

(17) **VCR Function Buttons** – Programmable to operate many brands of VCR's.

(18) **Mode Selection Buttons** – Selects the operation mode for the remote control.

(19) **VCR/DSS (PIP) Channel Buttons** – These buttons are used to select VCR or DSS channels Up or Down, or to change the channels within the PIP Frame.

NOTE: For more information on the Remote Control, please refer to the Remote Control Quick Reference Functional Key Chart.

Helpful Hints:

If the selected component does not respond to the remote control, ensure that the proper mode is selected. **First**, press the **Mode Selection Button** that corresponds to that component. For example, after first pressing the TV Mode Button, the remote will remain in the TV mode for any following commands. If a different mode button is pressed while operating the television, the TV mode button must be pressed again to reset the TV mode condition.

Remote Control
Quick Reference Functional Key Chart

KEY	MODE	FUNCTION
1 2 3 4 5 6 7 8 9 0	TV VCR CABLE, DSS	Selects Channel Selects Channel Selects Channel
	RECEIVER/AMPLIFIER	④ Selects Tuner ⑤ Selects CD Player ⑥ Selects Tape Cassette Player ⑦ VCR 1 ⑧ VCR 2 ⑨ VCR 3
	CD PLAYER	Selects Track Number
	LD PLAYER	Selects Track Number
MULTI	ALL COMPONENTS	Programmable Button That Can Operate Up To Six Remote Functions At Once
TV/VIDEO	TV	Selects the TV Input Mode
POWER	ALL COMPONENTS	Turns On and Off Selected Components
MUTE	TV, DSS, VCR, LDP CABLE RECEIVER/AMPLIFIER	Mutes TV Audio Mutes Audio Mutes Audio
TV	TV	TV Mode Selection for Remote Control
CBL	CABLE	Cable Mode Selection for Remote Control
DSS	DSS (DIGITAL SATELLITE SYSTEM)	DSS Mode Selection for Remote Control
VCR	VCR	VCR Mode Selection for Remote Control
RCVR	RECEIVER/AMPLIFIER	Receiver/Amplifier Mode Selection for Remote Control
CD	COMPACT DISC	CD Mode Selection for Remote Control
AUX	CASSETTE PLAYER, DVD	AUX Mode Selection for Remote Control Enables User to Operate a Tape Cassette Player, or Digital Video Disc
LD	LASER DISC PLAYER	LD Mode Selection for Remote Control
CH ▲ / CH ▼	TV CABLE DSS LDP CD RECEIVER/AMPLIFIER DVD	Channel Up/Down, Menu Navigation Channel Up/Down DSS Guides and Menu Navigation Skip FF, REW Preset or Tuning Frequency Skip FWD / Skip REW
◄ VOL / VOL ►	TV CABLE DSS RECEIVER/AMPLIFIER VCR LDP	Volume Up/Down, Menu Navigation Volume Up/Down DSS Guides and Menu Navigation Volume Up/Down TV Volume Up/Down TV Volume Up/Down

Remote Control
Quick Reference Functional Key Chart

KEY	MODE	FUNCTION
R-TUNE	LDP TV CABLE VCR DSS RECEIVER/AMPLIFIER CD TAPE CASSETTE PLAYER	Side A/B Selects Previously Tuned Channel Selects Previously Tuned Channel Selects Previously Tuned Channel Selects Previously Tuned Channel Switches between AM and FM Selects Next Disc Selects Tape Cassette Player A or B
ACTION	TV DSS	Activates TV Menus Acts as Menu Button for DSS
RECALL	TV DSS VCR LDP	Displays Channel, Time, and Audio Mode Displays Current DSS Settings Displays Current VCR Settings Displays Current LDP Settings
REW MOVE	TV DSS VCR LDP TAPE CD DVD	PIP Move DSS Guide Rewind Rewind Rewind Selects Previous Track Rewind
PLAY SIZE	TV DSS VCR LDP TAPE CD DVD	PIP Size Enter/Select Play Play Play (in Normal Direction) Play Play
FF PIP	TV DSS VCR LDP TAPE CD DVD	PIP On/Off Exit/Clear Fast Forward Fast Forward Fast Forward Selects Next Track Fast Forward
REC	DSS VCR TAPE CABLE	One Touch Record in DSS Mode Record Record VCR Record
STOP SEARCH	TV DVD VCR LDP TAPE CD CABLE	PIP Search Stop Stop Stop Stop Stop VCR Stop
PAUSE SWAP	DVD TV VCR LDP TAPE CD CABLE	Pause PIP Swap Pause Pause Pause Pause VCR Pause
TV/VCR FREEZE	TV VCR DSS CABLE	PIP Freeze Selects TV/VCR Mode Selects TV/DSS Mode Selects TV/VCR Mode
VCR/DSS CH PIP CHANNEL	TV VCR DSS CABLE	PIP Channel Up/Down (2 Tuner PIP Models Only) Channel Up/Down Channel Up/Down VCR Up/Down

Control Operation

Power Button – Press the POWER button after selecting a mode to turn ON. Press again to turn OFF.

Volume Button – Press the VOLUME (VOL) LEFT or RIGHT button for desired listening level (when On-Screen menus are not displayed).

Located On Remote Control

Increases Volume Level

Decreases Volume Level
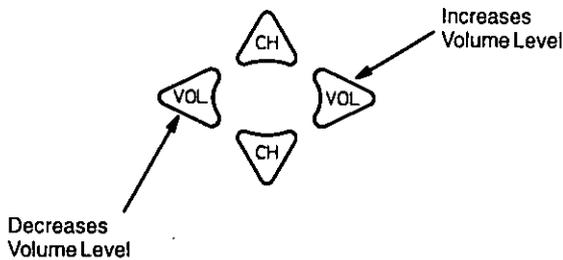
Mute Button – Press the MUTE button to quickly reduce sound level. "MUTE" will appear on screen momentarily. Press again to restore sound.

Channel Buttons (UP/DOWN)

Press the CHANNEL (CH) UP/DOWN button to sequentially scan through programmed channels (when On-Screen menus are not displayed).

NOTE: Press the TV Mode button to operate TV Remote functions, if necessary.

Located On Remote Control

Selects Next Higher Channel

Selects Next Lower Channel
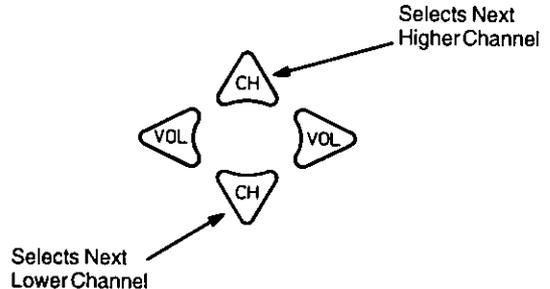
Numeric Keypad (0 through 9 Buttons)

These buttons let you directly access any channel. (Example: press 5 for channel 5; press 1, then 3 for channel 13). For channels over 99, press three number buttons.
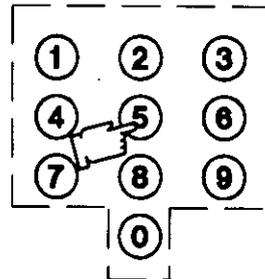
VCR Function Buttons – The VCR function buttons have been designed to operate numerous brands of VCRs. The infrared code must be programmed prior to use. (Please refer to Programming the Universal Remote for programming instructions.)

**Note:** Press the VCR Mode Selection button to operate VCR Remote functions.

REW MOVE	PLAY SIZE	FF PIP
REC	STOP Search	PAUSE SWAP
TV/VCR FREEZE	VCR/DSS CH PIP CHANNEL	
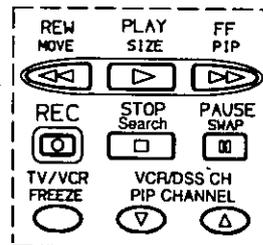
TV/Video Button – Press the TV/VIDEO button
to select desired input for Main Picture or PIP frame
(when the PIP is displayed).

Signal coming from:

REAR VIDEO/AUDIO INPUT 2 TERMINALS → VIDEO 2

REAR VIDEO/AUDIO INPUT 1
TERMINALS → VIDEO 1

TV or CABLE → CH 02

Signal coming from:

REAR VIDEO/AUDIO INPUT 2 TERMINALS → PIP VIDEO 2

REAR VIDEO/AUDIO INPUT 1
TERMINALS → PIP VIDEO 1

TV or CABLE → PIP CH 02

PIP Frame
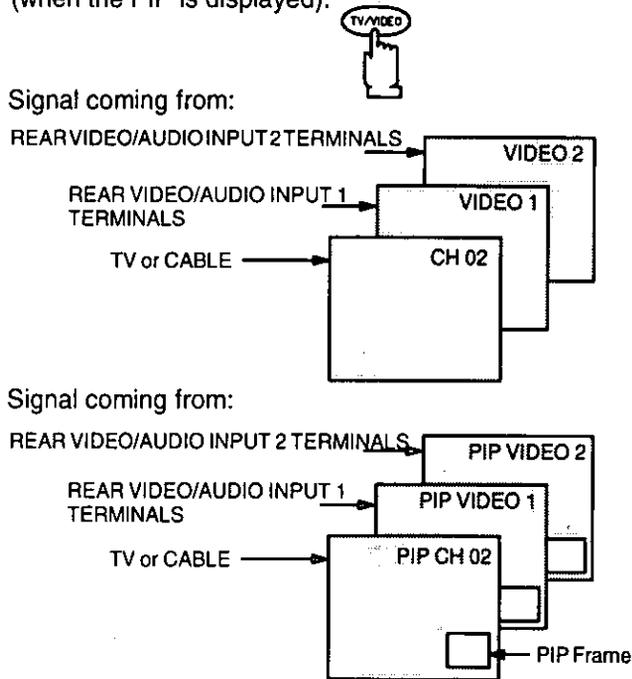
Recall Button – Press the RECALL button to
review:

[1] Audio Mode status
[2] CH number or Video Input selected
[3] Sleep Timer status
[4] Clock time
[5] Channel Caption (Station Identifier)

[1] STEREO   CH 3   [2]
     SAP   [VIDEO 1]
     MONO   KXYZ   [5]

[3] ⏲ 29   1:00   [4]
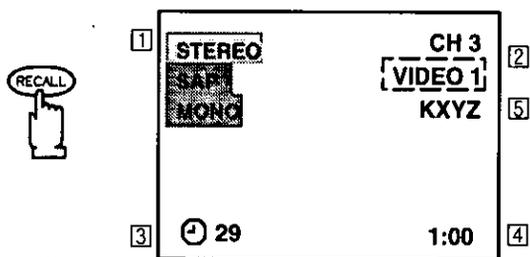
R-Tune Button – Pressing the R-TUNE (RAPID
TUNE) button will switch between the last two channels
selected on the numeric keypad.
NOTE: When rapidly scanning channels with the
CHANNEL UP/DOWN button, pressing the
R-TUNE button will switch between the last
channel scanned, and initial channel at the start
of scanning.

**CHANNEL NOW
BEING VIEWED**   Press Button   **CHANNEL
                                          PREVIOUSLY VIEWED**

                        Press Button Again
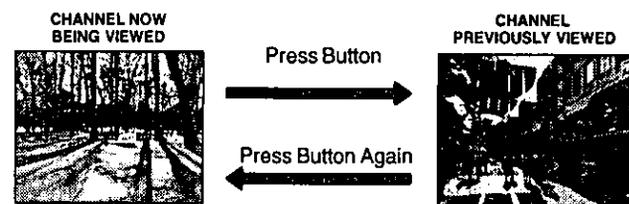
Multi Button
**The MULTI button can be programmed to operate
up to six (6) Remote function buttons at the same
time.**
For Example: TV Power/On, VCR Power/On and
Cable box Power/On (selected brands) can be operated
at the same time with one press of the MULTI button.
Procedure
1. First program the Remote for the selected device
   Infrared access code. Confirm that the Remote
   Control is compatible with the equipment.
2. Face the Remote Control transmitter away from all
   equipment remote sensors.
3. Press and hold the Remote POWER button, then
   press and hold the ACTION button down at the
   same time for three seconds. (All previous
   commands are erased.)

   **PRESS AT THE SAME TIME
   FOR THREE SECONDS**
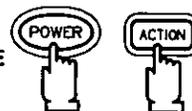
4. After three seconds, let go of the POWER and
   ACTION buttons.
5. Press the MULTI button.(Waiting more than 30
   seconds without pressing another button will exit the
   programming mode.)
6. Press a maximum of six (6) function buttons on the
   Remote.
   Each button you press is equal to one function. If six
   (6) Remote button functions are entered, all will
   register in the MULTI button memory in the
   sequence entered. When finished, press the MULTI
   button to end the program mode.

**The following is an example flow chart of Remote
functions that can be programmed into the MULTI
button (The VCR Mode button should be
programmed before starting procedure see pg. 30).**

POWER ACTION → MULTI → POWER

**PRESS AT THE SAME TIME
FOR THREE SECONDS**   **PRESS**   **PRESS**

VCR → POWER → MULTI

PRESS   **PRESS**   **PRESS TO END
                          PROGRAM MODE**
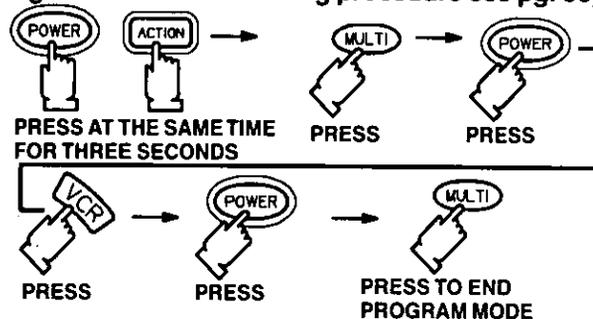
Now you can turn the TV and VCR ON/OFF at the
same time with one press of the MULTI button.

To delete entered functions – Press and hold the
Remote POWER button then press and hold the
ACTION button down at the same time for three
seconds. Now you can enter from one to six different
Remote functions.

NOTE:
You can also program the MULTI button to perform
most individual Remote Control button functions.
Buttons which continuously perform a function as
long as pressed (Volume Up/Down, Channel
Up/Down, etc.) cannot be programmed. Only those
buttons which perform a function when initially
pressed (Power On/Off, Mute, Direct Channel
Entry, etc.) can be programmed.

PIP (Picture in Picture) Button – This

feature allows the viewer to monitor one channel program while watching another. The monitored source (PIP) can be a different channel or a different video source (such as a VCR) when connected to the input jacks.
- S-Video connection will also operate the PIP feature.
- When the Main Picture is in Video mode with no signal, the PIP will not operate properly.

PIP Operation

1. Press the TV Mode Selection button to operate TV Remote functions, if necessary.

2. Press the PIP button (television must be ON). The PIP frame will appear at the position it was last displayed. The Main Picture Video Source and PIP Video Source will display on screen momentarily. Audio will be that of Main Picture.

| Main Picture with Audio | CH 2 | Main Picture Channel |

PIP CH 5 — Picture in Picture Channel

Picture in Picture Frame
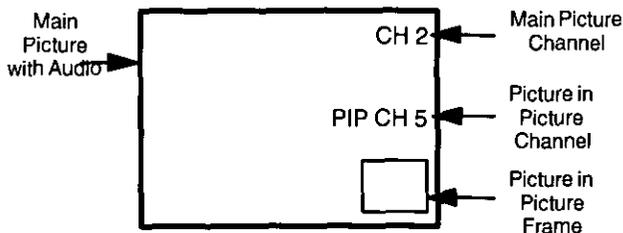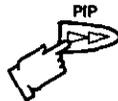
3. Press the PIP button again to cancel PICTURE IN PICTURE feature (if desired).

Note: For PIP Video source connection, refer to the Standard Antenna and External Video Connections section.

Swap Button – Press the SWAP button (when the

PIP frame is displayed) to interchange what is being viewed on the Main Picture with that of the PIP frame.

NOTE: Audio will be that of the Main Picture.

SWAP

| CH 2 | | VIDEO 1 |
| PIP VIDEO 1 | | PIP CH 2 |
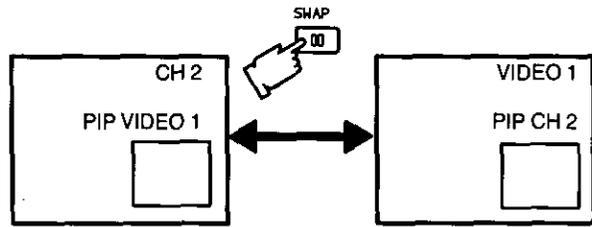
Size Button – Press the SIZE button (when the

PIP frame is displayed) to choose either the large or small PIP frame.

SIZE
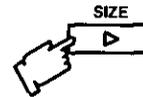
Large PIP Frame   Small PIP Frame

– 16 –

Freeze Button — Press the FREEZE button to stop action in the PIP frame.


Main Picture

Freeze Frame

Note:
- Pressing the FREEZE button when the PIP frame is not displayed will stop action in the Main Picture and display it within a PIP frame.
- Pressing the FREEZE button when PIP frame is displayed will stop action in the PIP frame. Press the FREEZE button again to continue action.
- Press the PIP button to delete PIP frame.

PIP Channel Buttons

Press the PIP CHANNEL UP/DOWN button while the PIP frame is displayed to sequentially scan through Channels.
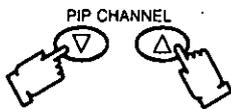
Scan Channel Down (next lower)

Scan Channel Up (next higher)

Search Button — The SEARCH button allows you to scan channels in "Channel Scan memory" one at a time. This feature will work with or without an external video signal as the Main Picture.

PIP CH 2

Press Search to Scan
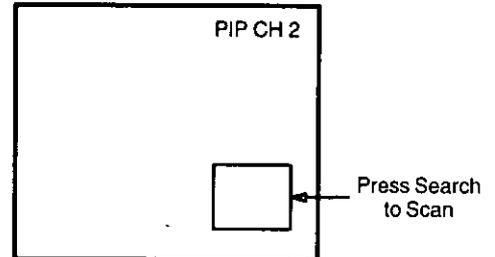
Search Operation
1. Press the SEARCH button. A PIP frame will appear on the Main Picture. The PIP frame will continuously scan channels in sequence as programmed into channel memory.
2. Press the PIP button to stop Search feature on desired picture for PIP frame. Press the SWAP button to switch between the Main Picture and the PIP frame. Press the PIP button again, the PIP frame will disappear.

Move Button — This feature allows the viewer to move the PIP frame to any corner of the Main Picture. Activate the PIP frame. Press the MOVE button to move the PIP frame to the desired location.
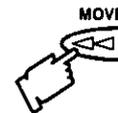

Note: Each time MOVE button is pressed (when the PIP frame is displayed), the PIP frame will move counterclockwise as illustrated.
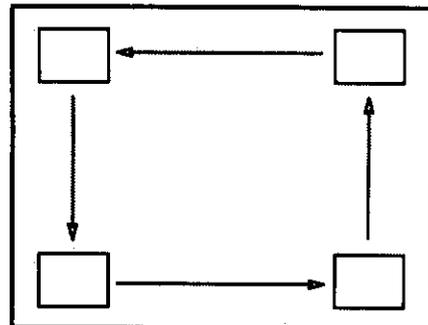
Main Menu (Icons)

Located On Remote Control

Selects Desired Feature when Menu is Displayed

Selects or Adjusts Features when Menu is Displayed
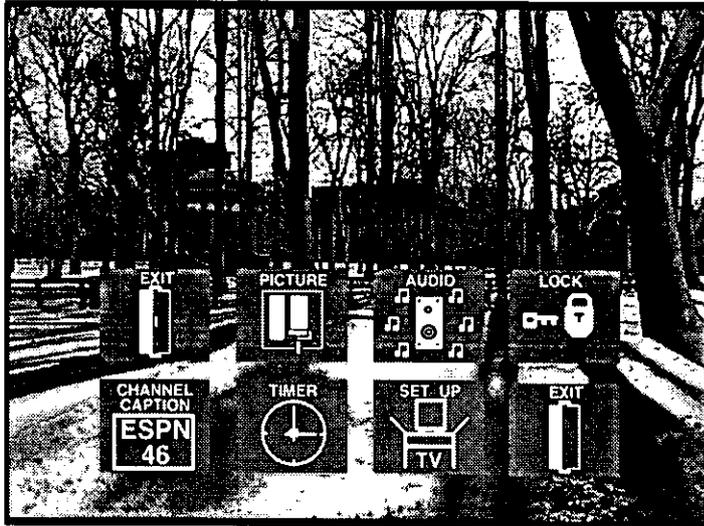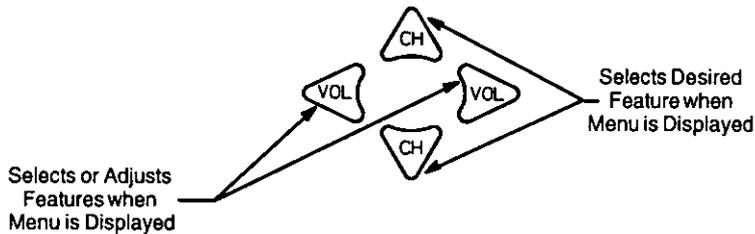
Displays and Exits Menus

1. Press the ACTION button to display the Main Menu with Icons.
2. Press the CH UP/DOWN and the VOL LEFT/RIGHT buttons to select the desired Icon when the Main Menu is displayed (selected Icon will be indicated in Red).
3. Press the VOL buttons for left and right movement and the CH buttons for up or down movement.
4. To exit the Main Menu first select the EXIT Icon, then press the ACTION button.

Bilingual Menu Selection

The Language Menu is factory set to ENGLISH. Follow these instructions to change the Language Menu to French and back to English.

1. Press the ACTION button to display the Main Menu.
2. Press the CH DOWN and VOL RIGHT buttons to select the SET-UP Icon.
3. Press the ACTION button to display the SET-UP Menu.
4. Press the CH UP or DOWN button to highlight "ENGLISH FRANCAIS".
5. Press the VOL LEFT or RIGHT button to highlight ENGLISH or FRANCAIS.
6. Press ACTION button twice to exit menus.

Picture Adjustments

- Picture Norm
- Color
- Tint
- Brightness
- Picture
- Sharpness

Located On Remote Control

Selects Desired Feature when Menu is Displayed

Selects or Adjusts Features when Menu is Displayed

Displays and Exits Menus
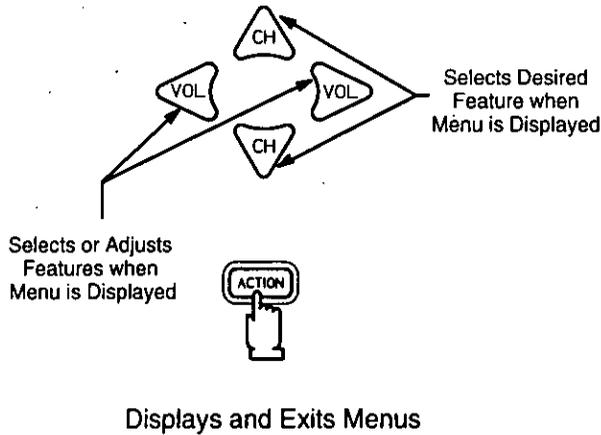
Picture Norm – This feature is used to reset Color, Tint, Brightness, Picture and Sharpness adjustments back to a factory preset level.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Picture Icon.
3. Press the ACTION button to display the Picture Adjustment Menu.
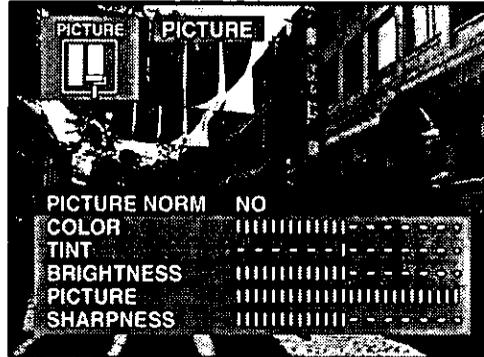
4. Press the CH UP or DOWN button to highlight PICTURE NORM (if necessary).
5. Press the VOL LEFT or RIGHT button to select "SET" to Normalize Color, Tint, Brightness, Picture and Sharpness.
6. Press ACTION button twice to exit menus.

Color, Tint, Brightness, Picture and Sharpness Adjustments

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Picture Icon.
3. Press the ACTION button to display the Picture Adjustment Menu.
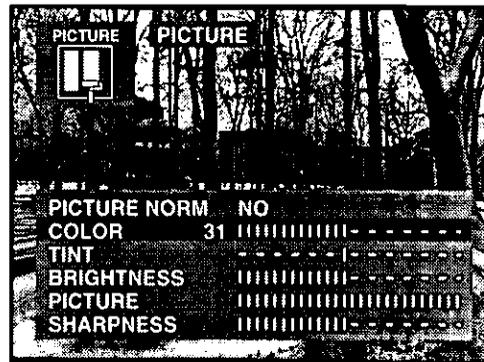
4. Press the CH UP or DOWN button to highlight the desired Picture Adjustment (Color, Tint, Brightness, Picture or Sharpness).
5. Press the VOL LEFT or RIGHT button to adjust your selection. (The selected Picture Adjustment will be displayed).
6. Repeat steps 4 and 5 for the remaining Picture Adjustments.
7. Press ACTION button twice to exit menus.

Helpful Hints:

Picture Adjustments:

- **COLOR** – adjust for desired color intensity.
- **TINT** – adjust for natural flesh tones.
- **BRIGHTNESS** – adjust so dark areas of picture just become black for a crisp detail.
- **PICTURE** – adjust the white areas of the picture for desired viewing levels.
- **SHARPNESS** – adjust for best clarity of outline detail.

Audio Adjustment

- Audio Norm
- Bass
- Treble
- Balance
- (Audio) Mode
- AI Sound
- Surround
- TV Speakers

Located On Remote Control

Selects Desired
Feature when
Menu is Displayed

Selects or Adjusts
Features when
Menu is Displayed
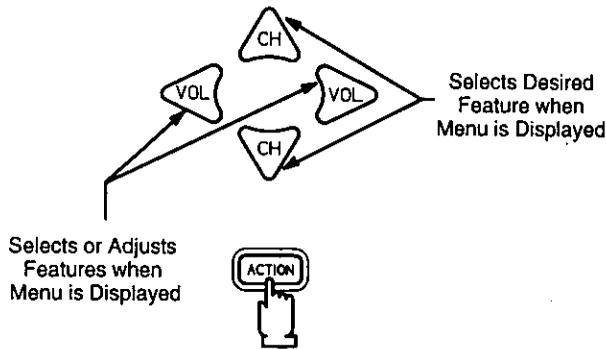
Displays and Exits Menus

Audio Norm – This feature is used to reset BASS, TREBLE and BALANCE back to a factory preset level.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Audio Icon.
3. Press the ACTION button to display the Audio Adjustment Menu.

AUDIO NORM	NO
BASS	31 IIIIIIIIIIIIIII --------
TREBLE	IIIIIIIIIIIIIII --------
BALANCE	-------+--------
MODE	**STEREO** SAP MONO
AI SOUND	OFF SURROUND ON
TV SPEAKERS	ON

4. Press the CH UP/DOWN button to highlight AUDIO NORM.
5. Press the VOL LEFT/RIGHT button to select "SET" to Normalize Bass, Treble, and Balance.
6. Press ACTION button twice to exit menus.

Bass, Treble, and Balance Adjustment

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Audio Icon.
3. Press the ACTION button to display the Audio Adjustment Menu.

AUDIO NORM	NO
BASS	31 IIIIIIIIIIIIIII -------
TREBLE	IIIIIIIIIIIIIII -------
BALANCE	------+-------
MODE	**STEREO** SAP MONO
AI SOUND	OFF SURROUND ON
TV SPEAKERS	ON
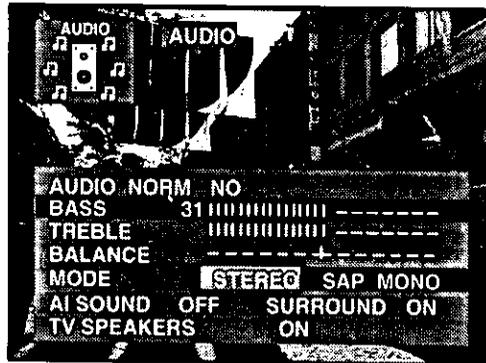
4. Press the CH UP/DOWN button to highlight BASS, TREBLE, or BALANCE.
5. Press the VOL LEFT/RIGHT button to adjust for desired audio response.
6. Repeat steps 4 and 5 for remaining Audio functions.
7. Press ACTION button twice to exit menus.

NOTE: When TV SPEAKERS are in the OFF&FAO mode, the BASS, TREBLE, and BALANCE adjustments will indicate "31 FAO".

Audio Adjustment (cont.)

Located On Remote Control

Selects Desired
Feature when
Menu is Displayed

Selects or Adjusts
Features when
Menu is Displayed
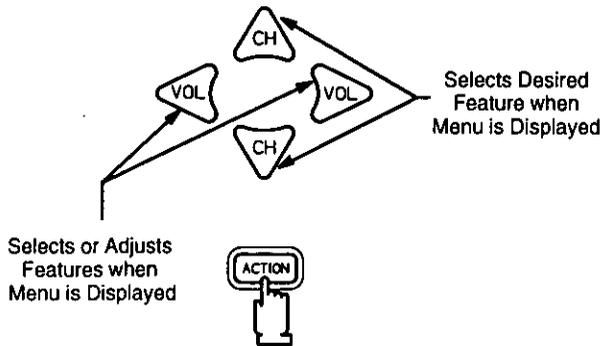
Displays and Exits Menus

(Audio) Mode Stereo/SAP/Mono

When Audio is broadcast in Stereo or SAP, an ON Screen display will appear on initial "Turn On" and "Channel Change". The available choices will be indicated in red.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Audio Icon.
3. Press the ACTION button to display the Audio Adjustment Menu.

4. Press the CH UP/DOWN button to select MODE.
5. Press the VOL LEFT/RIGHT button to select Stereo, SAP (Second Audio Programming) or Mono.
6. Press ACTION button twice to exit menus.

Helpful Hints:

- **STEREO** – Two channel Audio reception.
- **SAP** – Second Audio Programming (typically used for bilingual audio).
- **MONO** – Use when stereo signal is weak.

AI Sound – This feature regulates the volume between programs and commercial audio to maintain a constant sound output level.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Audio Icon.
3. Press the ACTION button to display the Audio Adjustment Menu.

4. Press the CH UP/DOWN button to highlight AI SOUND.
5. Press the VOL LEFT/RIGHT button to select AI SOUND ON or OFF.
6. Press ACTION button twice to exit menus.

Surround – Use the Surround Feature to enhance audio response when listening to Stereo broadcasts.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Audio Icon.
3. Press the ACTION button to display the Audio Adjustment Menu.
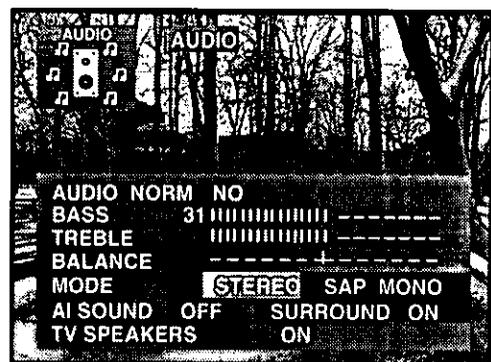
4. Press the CH UP/DOWN button to highlight SURROUND.
5. Press the VOL LEFT/RIGHT button to select SURROUND ON or OFF.
6. Press ACTION button twice to exit menus.

Audio Adjustment (cont.)

Located On Remote Control

Selects Desired Feature when Menu is Displayed
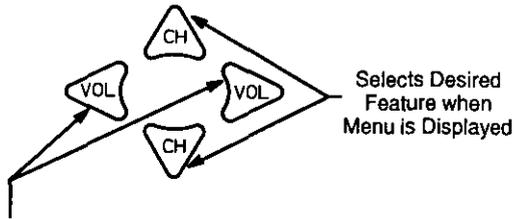
Selects or Adjusts Features when Menu is Displayed

Displays and Exits Menus

TV Speakers – This feature is used to turn the internal speakers "ON" or "OFF". It is used when the Receiver is connected to an External Audio Amplifier. (Refer to "To Audio Amp" section for further information.)

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Audio Icon.
3. Press the ACTION button to display the Audio Adjustment Menu.


```
AUDIO NORM   NO
BASS          31 IIIIIIIIIIIIIIIII ------
TREBLE           IIIIIIIIIIIIIIII ------
BALANCE       ----------+-------
MODE          STEREO   SAP  MONO
AI SOUND  OFF    SURROUND  ON
TV SPEAKERS        ON
```
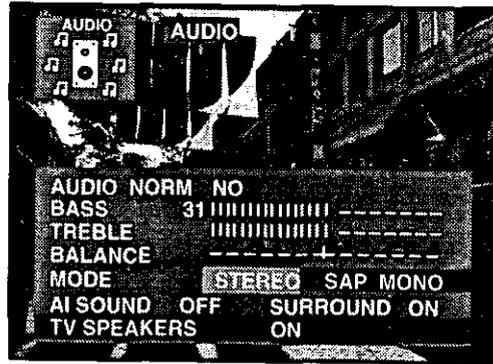
4. Press the CH UP/DOWN button to highlight TV SPEAKERS.
5. Press the VOL LEFT/RIGHT button to select TV Speakers ON, OFF&VAO or OFF&FAO.
   - **ON** – TV SPEAKERS operate normally.
   - **OFF&VAO** (Variable Audio Output) – TV SPEAKERS off, the sound output varies according to the TV volume, use the TV remote to control the volume, muting, bass, treble, and balance of the External Audio System.
   - **OFF&FAO** (Fixed Audio Output) – TV SPEAKERS off, sound output remains constant and cannot be controlled from the TV. Use the External Audio System to control sound levels.
6. Press ACTION button twice to exit menus.

Lock

Lock Game Guard

Prevents video games and other video sources from being viewed. Channel 3, 4, and all video inputs are locked out for 12, 24, or 48 hours.

**NOTE:** Be sure to understand this feature before attempting its use. **Use a code that you will easily remember.**

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Lock Icon.
3. Press the ACTION button to display the Lock (Game Guard) Menu.
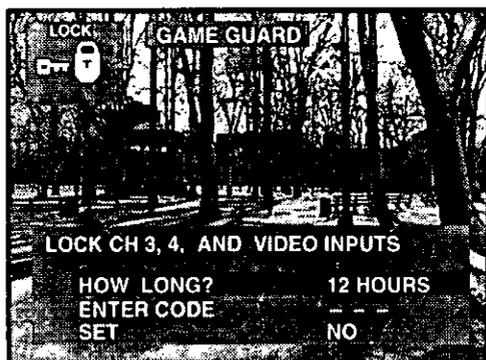
4. Press the VOL RIGHT button to select the desired hours (12, 24, or 48) for Game Guard (Lockout) to be activated.
5. Press the CH DOWN button to select "ENTER CODE". Then enter a 3-digit code with the Remote Control Keypad.
   IMPORTANT NOTE: Use a code you can easily remember.
6. Press the VOL LEFT/RIGHT button after entering 3-digit code. "Game Guard Locked" will display On Screen.
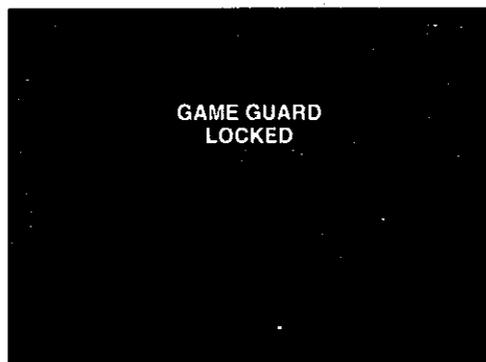
Game Guard Activated

Unlock Game Guard

To unlock the Game Guard feature, repeat steps 1 through 3 from Lock Game Guard. Enter the same 3-digit code previously used in step 5 with Remote Control Keypad.
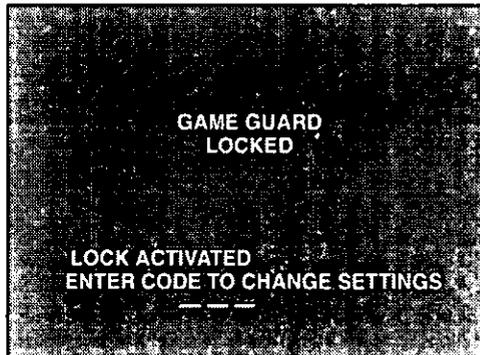
Enter Same 3-Digit Code Previously Used
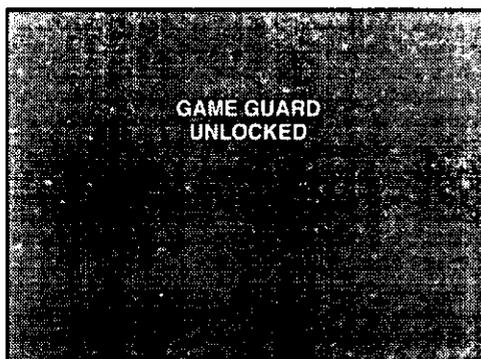
If 3-Digit Code is the Same
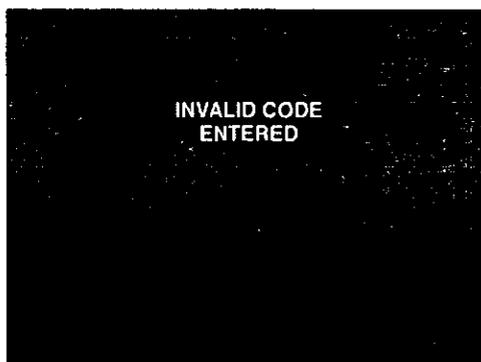
If 3-Digit Code is not the Same

Channel Caption

Located On Remote Control

Selects Desired
Feature when
Menu is Displayed

Selects or Adjusts
Features when
Menu is Displayed

Displays and Exits Menus

Channel Caption (Station Identifier)

This feature allows you to enter the call names of up to
30 stations into memory (using up to four (4) characters
for each station). The call name will then display along
with the channel number when changing channels or
pressing RECALL.

CH 3
KXYZ ◄── Channel Caption
(Station Identifier)

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT
   buttons to select the Channel Caption Icon.
3. Press the ACTION button to display the Channel
   Caption Menu.

Helpful Hints:

When the Maximum amount of station identifiers are
entered, "FULL" will be displayed in the characters
position.

CHANNEL
CAPTION | CHANNEL CAPTION

ESPN
46

ENTER CHANNEL NUMBER
3
ENTER CAPTION
- - - -

▲ TO MOVE   ◄ ► TO SELECT
▼ CURSOR   CHANNEL

4. Press the VOL LEFT/RIGHT button, or use the
   Remote Control Keypad, to enter channel number
   you wish to assign a Station Identifier.
5. Press the CH DOWN button to select "ENTER
   CAPTION".

CHANNEL
CAPTION | CHANNEL CAPTION

ESPN
46

ENTER CHANNEL NUMBER
3
ENTER CAPTION
- - - -

▲ TO MOVE   ◄ ► TO SELECT
▼ CURSOR   CHARACTER
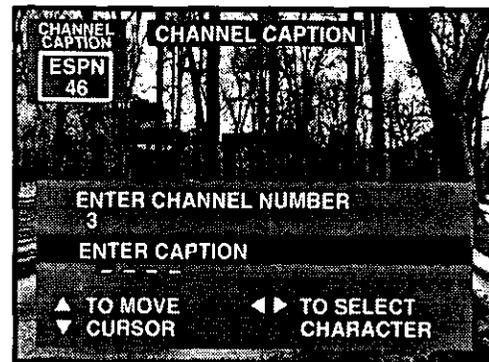
6. Press the VOL LEFT/RIGHT button to select first
   character in Station Identifier. Then press the CH
   DOWN button to move cursor to the second position
   and repeat until the complete Station Identifier is
   entered (up to four (4) characters).
7. Press the CH UP/DOWN button to select "ENTER
   CHANNEL NUMBER". Then repeat steps 4 through
   6 to continue adding Channel Station Identifier(s).
8. Press ACTION button twice to exit menus.

NOTE: To delete a Channel Caption (Station Identifier)
from memory all four character positions must
display dash mark (–).

-24-

Timer Features

- Sleep Timer
- Program Timer

Special Feature:

Automatic "OFF" after 90 minutes.

The TV has a special feature that will shut itself **OFF** after 90 minutes when turned **ON** by the program timer unless a function key is pressed during the 90 minutes.

This feature is useful so that the TV will not remain **ON** unattended for an extended period of time.

Programming the **OFF** timer will also cancel the automatic **OFF** feature.

Sleep Timer — This feature is used for automatic turn off in 30, 60, or 90 minutes.

NOTE: Display will flash 3, 2, and 1 to indicate the last three remaining minutes prior to turn off. The Recall display will also appear.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Timer Icon.
3. Press the ACTION button to display the Timer Control Menu.
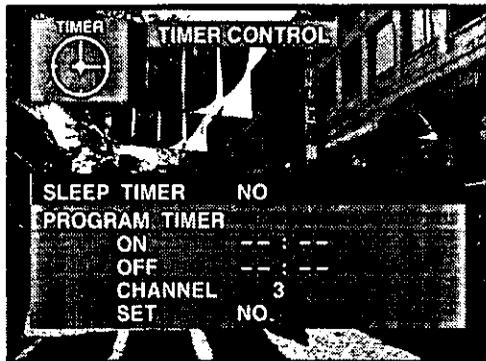
4. Press the VOL RIGHT button to select NO, 30, 60 or 90 minutes (Sleep Timer will be activated).
5. Press ACTION button twice to exit menus.

NOTE: To deactivate Sleep Timer repeat steps 1 through 4. In step 4 select "NO" instead of minutes.

Helpful Hints:

Press the RECALL button to display the remaining minutes for Sleep Timer, the time will display in the bottom left corner.

Program Timer — This feature is capable of turning the TV on, tuned to a desired channel and off at a predetermined time (one day or everyday).

NOTE: The clock must be set for this feature to operate. (Refer to the Set-Up Menu to set time.)

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Timer Icon.
3. Press the ACTION button to display the Timer Control Menu.
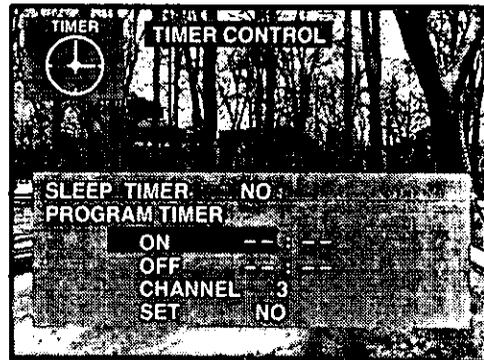
4. Press the CH DOWN button to select "ON" (time).
5. Press the VOL LEFT/RIGHT button repeatedly to set hours (set AM/PM accordingly).
6. Press the CH DOWN button to select the minutes position.
7. Press the VOL LEFT/RIGHT button repeatedly to set minutes.
8. Press the CH DOWN button to select "OFF" (time).
9. Repeat steps 5 through 7 for setting "OFF" (time).
10. Press the CH DOWN button to select "CHANNEL".
11. Press the VOL LEFT/RIGHT button or use the Remote Control Keypad to enter the channel number desired when the set turns "ON".
12. Press the CH DOWN button to select "SET".
13. Press the VOL RIGHT button to select:
    - NO – not activated.
    - ONE DAY – activated.
    - DAILY – activated.

NOTE: To deactivate Program Timer select "NO" in step 13.

14. Press ACTION button twice to exit menus.

Helpful Hints:

- If you see "GAME GUARD" in the upper right hand corner, the channel or Video Input you have selected has been locked out.
- If the Program Timer "ON" functions while the set is operating, the set will automatically tune to the channel designated in the Timer Program.

Set-Up Features

- Set Time
- Antenna (TV or Cable)
- Auto Program
- Manual Program
- CC (Closed Caption) on Mute
- CC (Closed Caption) Mode
- English or Francais (French)

Located On Remote Control

Selects Desired
Feature when
Menu is Displayed

Selects or Adjusts
Features when
Menu is Displayed

Displays and Exits Menus
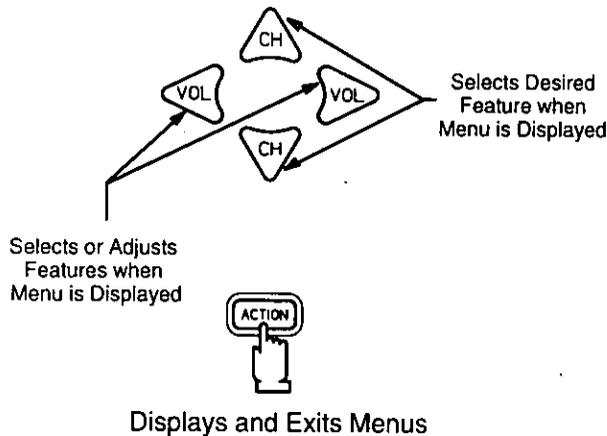
Set Time – Clock (when set) will display on screen
at initial "Turn On", after a channel change and when
pressing the RECALL button. The time must be set first
in order to operate the Program ON/OFF Timer.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT
   buttons to select the Set-Up Icon.
3. Press the ACTION button to display the Set-Up
   Menu, Set Time will be highlighted.

4. Press the VOL LEFT/RIGHT button to set hours
   (set AM/PM accordingly).
5. Press the CH DOWN button to select minutes
   position.
6. Press the VOL LEFT/RIGHT button repeatedly to
   set minutes.
7. Press ACTION button twice to exit menus.

ANT (TV or Cable Tuning Mode) – The proper
Input mode must be selected for the type of signal at the
antenna input.

- TV mode is used when the Receiver is not
  connected to a cable TV system, for example when
  using a VHF/UHF antenna (channels 02 – 69).
- Cable mode is used when the Receiver is con-
  nected to a Cable TV system and you are not using
 a cable company converter box (channels 01 –
  125).

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT
   buttons to select the Set-Up Icon.
3. Press the ACTION button to display the Set-Up
   Menu.

4. Press the CH DOWN button to highlight ANTENNA.
5. Press the VOL LEFT/RIGHT button to select TV or
   CABLE.
6. Press ACTION button twice to exit menus.

Set-Up Features (cont.)

Manual Program

This feature allows you to select which channels are placed into Channel Scan Memory.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to highlight the Set-Up Icon.
3. Press the ACTION button to display the Set-Up Menu.

Located On Remote Control

Selects Desired Feature when Menu is Displayed

Selects or Adjusts Features when Menu is Displayed

Displays and Exits Menus
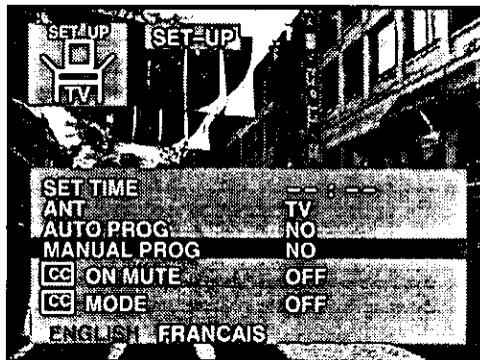
4. Press the CH DOWN button to highlight "MANUAL PROG".
5. Press the VOL LEFT/RIGHT button to display the Manual Programming Menu.

Auto Program

This feature allows you to place all channels with a video signal into Channel Scan Memory.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Set-Up Icon.
3. Press the ACTION button to display the Set-Up Menu.

4. Press the CH DOWN button to highlight "AUTO PROG".
5. Press the VOL LEFT/RIGHT button to start Auto Programming. Channels will automatically advance until all channels have been scanned.
6. Press ACTION button twice after completion of Auto Programming to exit the Set-Up Menu.

NOTE: Channel numbers with signal present will turn blue which indicates stored in Channel Scan Memory.

6. Use the CH UP/DOWN button or the Remote Keypad "0 through 9 buttons" to select channels.
7. Press the VOL RIGHT button to **add** channel(s) to memory (Blue). Press the VOL LEFT button to **delete** channels from memory (Yellow).
8. Repeat steps 6 and 7 to continue adding or deleting channels.
9. Press ACTION button twice to exit menus.

Set-Up Features (cont.)

[CC] On Mute

Activates the On-Screen Closed Captioning when the MUTE button on the Remote Control is pressed. To deactivate press the MUTE button again.

NOTE: This feature only functions when the Closed Caption Mode is in the "OFF" position. The program being viewed must be broadcast with Closed Caption. (Refer to your local TV guide.)

1. Press the ACTION button to display the Main Menu.
2. Press the CH DOWN and VOL RIGHT buttons to select the Set-Up Icon.
3. Press the ACTION button to display the Set-Up Menu.

4. Press the CH DOWN button to highlight "CC ON MUTE".
5. Press the VOL RIGHT button to select OFF, C1, or C2 Mode.

Recommended Set-Up:
- Place CC ON MUTE into the C1 Mode.
- Press the CH DOWN button to select "CC MODE".
- Press the VOL RIGHT button to select "OFF".

6. Press ACTION button twice to exit menus.
7. Press the MUTE button when the program being viewed is broadcast with Closed Caption to activate. Press again to deactivate.
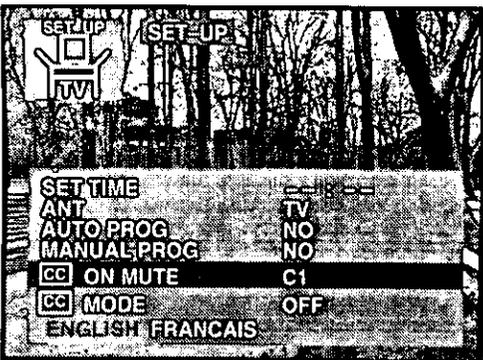
[CC] Mode

— This Receiver has a built-in decoder that provides a visual depiction of the audio portion of a television program in the form of written words across the screen (white or colored letters on a black background). It allows the viewer to read the dialogue of a television program or other information.

1. Press the ACTION button to display the Main Menu.
2. Press the CH UP/DOWN and VOL LEFT/RIGHT buttons to select the Set-Up Icon.
3. Press the ACTION button to display the Set-Up Menu.
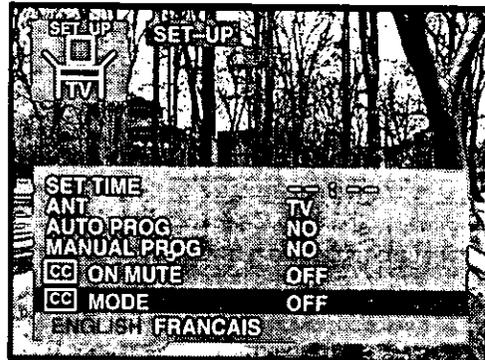
4. Press the CH DOWN button to select "CC MODE".
5. Press the VOL RIGHT button to select OFF, C1, or C2 .

- **OFF** – Select to turn Closed Caption off.

- **C1** – For video related information that can be displayed (up to four (4) lines of script strategically placed on the television screen so that it does not obstruct relevant parts of the picture). Script can be in any language.

- **C2** – Another mode used for video related information that can be displayed (up to four (4) lines of script strategically placed on the television screen so that it does not obstruct relevant parts of the picture).

6. Press ACTION button twice to exit menus.

Helpful Hints:
Closed Caption information may be transmitted on either or both Caption Modes.

Set-Up Features (cont.)

Located On Remote Control

Selects Desired Feature when Menu is Displayed

Selects or Adjusts Features when Menu is Displayed

Displays and Exits Menus
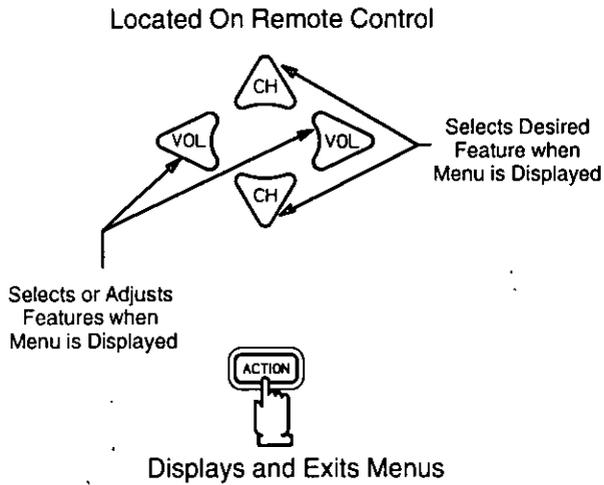
Bilingual Language Feature

The Language Menu is factory set to ENGLISH. Follow these instructions to change the Language Menu to French and back to English.

1. Press the ACTION button to display the Main Menu.
2. Press the CH DOWN and VOL RIGHT buttons to select the SET-UP Icon.
3. Press the ACTION button to display the SET-UP Menu.

4. Press the CH UP/DOWN button to highlight "ENGLISH FRANCAIS".
5. Press the VOL LEFT/RIGHT button to highlight ENGLISH or FRANCAIS.
6. Press ACTION button twice to exit menus.

Helpful Hints:

Language Menu does not affect Closed Caption or other transmitted text information.

-29-

Programming the Remote Control Using Access Codes

The remote control can be preset for other manufacturers, by utilizing the **MODE SELECTION BUTTONS** for **CABLE, DSS, VCR, RCVR** (a **Receiver** or **Amplifier**), **CD, LD,** and **AUX** (for **Cassette Players** or a **DVD.**)

Code From Index Sheet

1	5	9

Procedure – Code Known

Procedure for setting up the remote using the numerical buttons.

☐ Determine brand of device.

☐ Identify code(s) associated with the brand in the infrared code index (located in this manual on pages 31 thru 34). Record all possible codes.

☐ Confirm the device is plugged in and operating properly.

[1] **Press and hold the (ACTION) button, then the (POWER) button so that both are pressed at the same time for at least 5 seconds.**

[2] **Press the desired Mode button.**

[3] **Enter the 3-digit code, by using the Remote Control Keyboard "0 through 9 buttons".**

Now your remote is set for this code.

[4] **Press (POWER) to test your device.**

NOTE: Some brands have multiple codes. Repeat the procedure using each listed code until the device responds correctly.

☐ If you enter an unlisted code, or if you do not complete your entry within 30 seconds, the settings will not change.
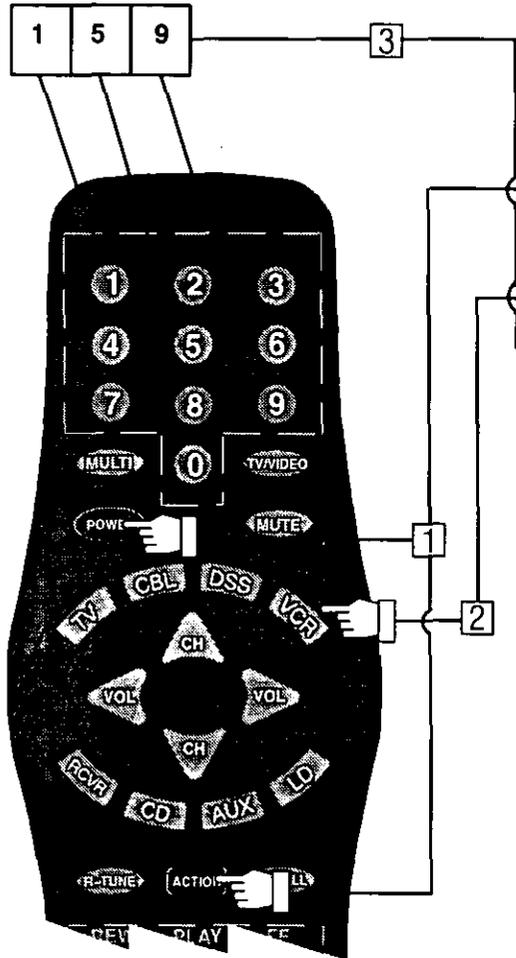
Infrared Remote Codes for Specific Components

Helpful Hint: Write down the code numbers for your components in the space provided below. This will serve as a handy reference whenever you need to reprogram your remote control.

CABLE Cable TV Converter Box				VCR Video Cassette Recorder				CD Compact Disc Player			
DSS Digital Satellite System				RCVR Receiver or Amplifier				LD Laser Disc Player			
Other Component				Other Component				Other Component			
Other Component				Other Component				Other Component			

VCR Infrared Codes Index

The Universal Infrared Remote Control is capable of operating many brands of VCRs. Refer to page 30 for programming procedures.

NOTE: The Universal Remote Control memory is limited. Some models of VCRs may not operate. The Universal Remote Control is not designed to control all features that are available in all models.

NOTE: After entering the proper infrared code, press the Remote VCR Selection Mode button (*). To operate the Remote VCR function buttons, refer to pages 12 and 13 for Remote Control Key Functions.

```
  VCR
 *
  ⟨VCR⟩
```
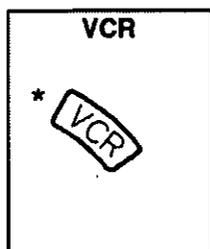
Code Index For VCRs

VCR Brand	Code(s)	VCR Brand	Code(s)
Adventura	000	MTC	000, 240
Aiko	278	Multitech	000, 072
Aiwa	000	NEC	038, 041, 067
Akai	041, 061	Nikko	037
American High	035	Noblex	240
Asha	240	Olympus	035
Audiovox	037	Optimus	037, 048, 104
Beaumark	240	Panasonic	035, 162, 225, 454
Bell & Howell	104	Penney	035, 037, 038, 042
Broksonic	121, 184		240
Calix	037	Pentax	042
Canon	035	Philco	035
Carver	081	Philips	035, 081
CCE	072, 278	Pilot	037
Citizen	037, 278	Pioneer	067
Colt	072	Protec	072
Craig	037, 047, 072, 240	Pulsar	039
Curtis Mathes	035, 041, 060	Quarter	046
Cybernex	240	Quartz	046
Daewoo	045, 278	Quasar	035
Dynatech	000	Radio Shack	000, 037
Electrohome	037	Radix	037
Electrophonic	037	Randex	037
Emerex	032	RCA	042, 060
Emerson	000, 002, 037, 043,	Realistic	000, 035, 037, 046
	061, 121, 184, 278		047, 048, 104, 240
Fisher	047, 104	Ricoh	034
Fuji	033, 035	Runco	039
Funai	000	Samsung	045, 240
Garrard	000	Sanky	039, 048
GE	035, 060	Sansui	041, 067
Goldstar	037, 038	Sanyo	046, 047, 104, 240
Gradiente	000	Scott	043, 045, 121, 184
Harley Davidson	000	Sears	035, 037, 042, 046,
Harman/kardon	038		047, 104
Harwood	072	Sharp	048
Headquarter	046	Shintom	072
HI-Q	047	Shogun	240
Hitachi	041, 042	Singer	072
Jensen	041	Sony	032, 033, 034, 035
JVC	041, 067	STS	042
Kenwood	038, 041, 067	Sylvania	000, 035, 043, 081
KLH	072	Symphonic	000
Kodak	035, 037	Tatung	041
Lloyd	000	Teac	000, 041
Logik	072	Technics	035, 162
LXI	037	Teknika	000, 035, 037
Magnavox	035, 039, 081	TMK	240
Magnin	240	Toshiba	043, 045
Marantz	035, 081	Totevision	037, 240
Marta	037	Unitech	240
Matsushita	035	Vector	045
MEI	035	Vector Research	038
Memorex	000, 035, 037, 039,	Video Concepts	045, 061
	046, 047, 048, 104	Videosonic	240
	240	Wards	000, 035, 042, 047,
MGA	043, 061		048, 072, 240
MGN Technology	240	XR-1000	000, 035, 072
Minolta	042	Yamaha	038
Mitsubishi	043, 061, 067	Zenith	033, 034, 039
Motorola	035, 048		

Cable Converter Box and CD Players
Infrared Codes Index

The Universal Infrared Remote Control is capable of operating many brands of Cable Converter Boxes, and CD Players. Refer to page 30 for programming procedures.

NOTE: The Universal Remote Control memory is limited. Some models of Cable Converter Boxes and CD Players may not operate. The Universal Remote Control is not designed to control all features that are available in all models.

NOTE: After entering the proper infrared code, press the Remote **CBL** Selection Mode button (☆). To operate the Remote Cable function buttons, refer to pages 12 and 13 for Remote Control Key Functions.
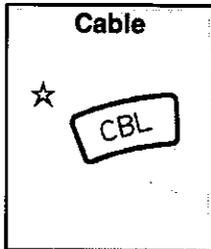
Codes For Cable Converter Box

Brand of Cable-TV Box	Code(s)	Brand of Cable-TV Box	Code(s)
ABC	003, 007, 008, 011, 013, 014, 017	Pioneer	144, 533
Archer	153	Pulsar	000
Century	153	RCA	021
Citizen	153	Regal	020, 259
Contec	019	Rembrandt	011
Dae Ryung	008	Runco	000
Garrard	153	Samsung	144
Gemini	015	Scientific Atlanta	008, 017, 477
General Instrument	011, 476	Signal	015
Goldstar	144	Signature	011
Hamlin	009, 020, 259	Sprucer	021
Hitachi	011	Starcom	003, 015
Hytex	007	Stargate	015
Jasco	153	Starquest	015
Jerrold	003, 011, 012, 014, 015, 476	Tocom	012, 013
		Toshiba	000
Memorex	000	Tusa	015
Oak	007, 019	Unika	153
Panasonic	000, 021, 107	United Artists	007
Paragon	000	United Cable	003
Philips	153	Universal	153
		Zenith	000, 525

Cable

☆ CBL

NOTE: After entering the proper infrared code press the Remote **CD** Selection Mode button (☆☆). To operate the Remote CD Player function buttons, refer to pages 12 and 13 for Remote Control Key Functions.
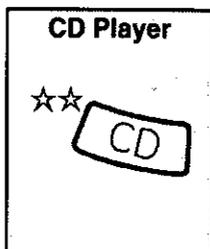
Codes For CD Players

Brand of CD Players	Code(s)	Brand of CD Players	Code(s)
Aiwa	124, 157	Onkyo	101
CA Audio Lab	029	Optimus	000, 032, 037, 305, 426, 468
Carver	157		
Denon	003	Panasonic	029, 367
DKK	000	Philips	157
Emerson	305	Pioneer	032, 468
Fisher	048	Proton	157
Genexxa	032, 305	QED	157
Harman-Kardon	426	Quasar	029
Hitachi	032	RCA	305
JVC	072	Rotel	157
Kenwood	028, 037, 048, 190	SAE	157
Krell	157	Sansui	157, 305
LXI	305	Scott	305
Magnavox	157	Sears	305
Marantz	029, 157	Sharp	037
MCS	029	Sherwood	426
Mission	157	Sony	000
Nakamichi	147	Technics	029, 303
NSM	157	Victor	072

CD Player

☆☆ CD

Cassette Players, Receivers, and Amplifiers
Infrared Codes Index

The Universal Infrared Remote Control is capable of operating many brands of Cassette Players, Receivers, or Amplifiers. Refer to page 30 for programming procedures.

NOTE: The Universal Remote Control memory is limited. Some models of Cassette Players, Receivers, and Amplifiers may not operate. The Universal Remote Control is not designed to control all features that are available in all models.

NOTE: After entering the proper infrared code, press the Remote **AUX** Selection Mode button (✳). To operate the Remote Cassette Player function buttons, refer to pages 12 and 13 for Remote Control Key Functions.

Cassette Players

✳
[AUX]
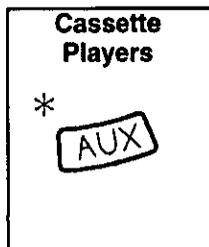
Code Index For Cassette Players			
Brand of Cassette Players	**Code(s)**	**Brand of Cassette Players**	**Code(s)**
Aiwa	029	Panasonic	272
Carver	029	Philips	029
Denon	076	Pioneer	027, 220
Kenwood	070	Sansui	029
Magnavox	029	Sherwood	337, 338
Marantz	029	Sony	170, 243
Nakamichi	147	Technics	229
Optimus	027, 220, 337, 338	Wards	027
		Yamaha	094, 097

NOTE: After entering the proper infrared code, press the Remote **RCVR** Selection Mode button (✳✳). To operate the Remote Receiver or Amplifier function buttons, refer to pages 12 and 13 for Remote Control Key Functions.

Receivers Amplifiers

✳✳
[RCVR]
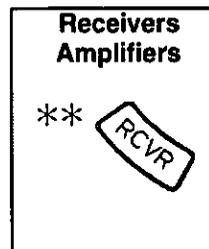
Code Index For Receivers And Amplifiers			
Brand of Receiver / Amplifier	**Code(s)**	**Brand of Receiver / Amplifier**	**Code(s)**
ADC	531	Panasonic	039
Aiwa	121, 158, 189	Penney	195
Carver	008, 042, 189, 269	Philips	189, 269
Casio	195	Pioneer	013, 014, 080, 300, 531
Clarinette	195		
Denon	004	Quasar	039
Fisher	042, 219	RCA	531
JVC	074	Realistic	195
Kenwood	027, 186	Sansui	189, 321
Lloyd's	195	Sanyo	219
Magnavox	189, 195, 269, 531	Sharp	186
Marantz	039, 189, 269, 321	Sherwood	502
MCS	039	Sony	158
Modulaire	195	Technics	039, 208, 308, 309, 518
NAD	320		
Nakamichi	321, 347	Victor	074
Onkyo	135	Wards	013, 014, 042, 080, 158, 189
Optimus	013, 080, 186, 219, 300, 531		
		Yamaha	176, 186, 354
		Yorx	195

Laser Disc, DSS (Digital Satellite System), and DVD (Digital Videodisc) Infrared Codes Index

The Universal Infrared Remote Control is capable of operating selected brands of Laser Disc, DSS Digital Satellite System, and DVD (Digital Videodisc). Refer to page 30 for programming procedures.

NOTE: The Universal Remote Control memory is limited. Some models of Laser Disc, DSS Digital Satellite System, and DVD (Digital Videodisc) may not operate. The Universal Remote Control is not designed to control all features that are available in all models.

NOTE: After entering the proper infrared code, press the Remote **LD** Selection Mode button (◇). To operate the Remote Laser Disc function buttons, refer to pages 12 and 13 for Remote Control Key Functions.

Laser Disc Player

Codes For Laser Disc	
Brand of Laser Disc	**Code(s)**
Mitsubishi	059
NAD	059
Panasonic	204
Pioneer	059
Quasar	204
Sony	201

NOTE: After entering the proper infrared code, press the Remote **DSS** Selection Mode button (◇◇). To operate the Remote Satellite function buttons, refer to pages 12 and 13 for Remote Control Key Functions.

DSS
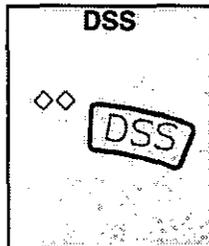
Codes For DSS (Digital Satellite System)	
Brand of Satellite	**Code(s)**
Panasonic	701
RCA	566
Sony	639

NOTE: After entering the proper infrared code, press the Remote **AUX** Selection Mode button (★). To operate the Remote DVD (Digital Videodisc) function buttons, refer to pages 12 and 13 for Remote Control Key Functions.
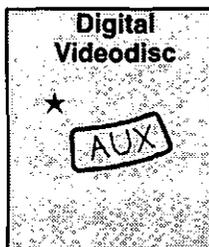
Digital Videodisc

Codes For DVD (Digital Videodisc)	
Brand of DVD	**Code(s)**
Panasonic	490

Care and Cleaning

Picture Tube (Turn set off)
Use a mild soap solution or window cleaner and a clean cloth. DO NOT USE ABRASIVE CLEANERS. Avoid excessive moisture and always wipe dry.

Plastic Cabinets
Wipe the cabinet with a soft cloth dampened with water or a mild detergent solution and wipe dry with a soft clean cloth. Avoid excessive moisture. Do not use benzene, thinners, or other petroleum based cleaners.

Wood Cabinets
When dusting or polishing the cabinet, use a clean soft cloth and stroke straight with the grain. An occasional coat of furniture polish will help preserve the finish. Do not use benzene, thinners, or other petroleum based cleaners. Do not place objects made of plastic or rubber directly on top of the cabinet. A chemical reaction could result causing permanent marring of the finish.

Remote Control Transmitter
Do not use benzene, thinners, or other petroleum based cleaners to clean the Remote Control Transmitter. To clean, wipe with a soft cloth slightly moistened with a mild detergent and then wipe dry with a soft clean cloth.

Power Loss

Prolonged power interruption causes the following features to reset to their factory preset state.

FEATURE	FACTORY PRESET STATE	FEATURE	FACTORY PRESET STATE
POWER	OFF	CLOCK	NOT SET
VOLUME	APPROX.-1/3	SLEEP TIMER	NO/OFF
CHANNEL	CH 03	TIMER	NO/OFF
PROGRAM MEMORY	UNPROGRAMMED	ANTENNA MODE	CABLE
VIDEO MENUS	NORMALIZED	TV/VIDEO	TV
STEREO/SAP/MONO	STEREO	BILINGUAL MENU	ENGLISH

Troubleshooting Chart

Before you call for service, determine the symptoms and make a few simple checks shown below.

Symptoms		Check
Picture	**Sound**	
SNOWY PICTURE	NOISY SOUND	– ANTENNA LOCATION AND/OR CONNECTION
MULTIPLE IMAGE	NORMAL SOUND	– ANTENNA DIRECTION AND/OR LOCATION – ANTENNA LEAD-IN WIRE
INTERFERENCE	NOISY SOUND	– ELECTRICAL APPLIANCES, LIGHTS, CARS AND TRUCKS – DIATHERMY AND OTHER MEDICAL EQUIPMENT
NORMAL PICTURE	NO SOUND	– VOLUME CONTROL SETTING – MUTE CONTROL (IF APPLICABLE) – TRY ANOTHER CHANNEL – TV SPEAKERS (IF APPLICABLE) IN THE OFF MODE
NO VIDEO	NOISY SOUND	– TV OR CABLE TUNING MODE SET TO PROPER SETTING – ANTENNA INPUT CORRECT (IF APPLICABLE)
NO PICTURE	NO SOUND	– CHECK THAT AC POWER LINE IS PLUGGED INTO AC OUTLET – BRIGHTNESS AND AUDIO CONTROLS SET PROPERLY – TRY ANOTHER CHANNEL
NO COLOR	NORMAL SOUND	– COLOR CONTROL SETTINGS – TRY ANOTHER CHANNEL
BLUE PICTURE	NO SOUND	– RECEIVER IN VIDEO MODE WITH NO SIGNAL
BLACK BOX IN PICTURE	SOUND	– CC (CLOSED CAPTION) IN TEXT MODE (IF APPLICABLE) – SELECT CAPTION OFF MODE TO ELIMINATE BLACK BOX
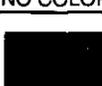
Should this unit turn ON momentarily and then turn OFF, or fail to operate, unplug the AC cord and contact your Authorized Servicer for repairs.