

# Panasonic®

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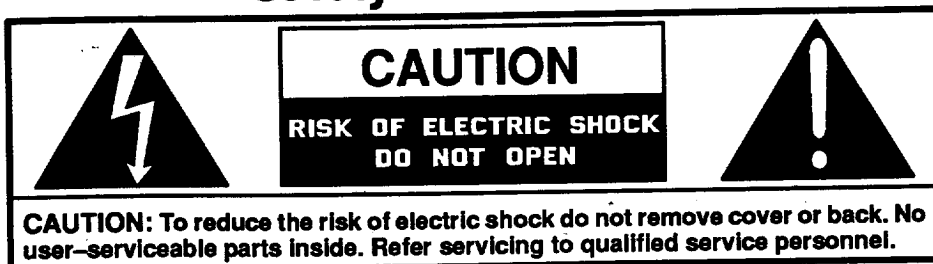
## Color Television

## Operating Instructions

Read these instructions completely before operating this set.

Contents subject to change without notice or obligation.

# Safety Instructions




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.

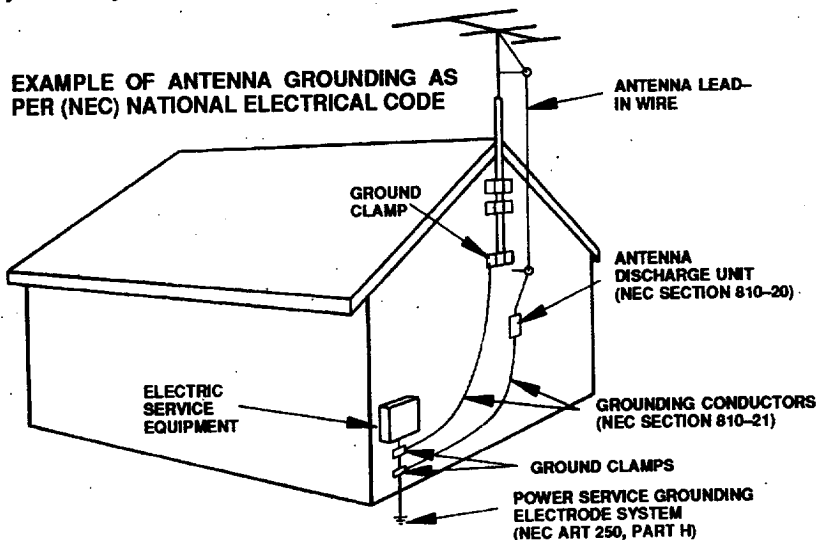


The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.

**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.



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 EXTENSION CORD, 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

<b>Power Source:</b>	120V 60Hz, AC
<b>Channel Capability:</b>	181 channels (See chart) VHF 2-13, UHF 14-69, Cable 125 channels
<b>Video Input Jack (3):</b>	1V p-p, 75 ohm, phono jack type
<b>Audio Input Jack (3):</b>	High impedance – 10K $\Omega$ , 500mV rms
<b>To Audio AMP Jacks:</b>	0-4.0V rms 10K
<b>S-VHS Input Jacks (2):</b>	S-Video (Y-C) Connector
<b>Stereo Sound:</b>	
<b>Dome Speaker System:</b>	
<b>Program Out:</b>	Video 2V p-p 75 ohm phono jack type
<b>Program Out:</b>	Audio 500mV rms 10K $\Omega$ phono jack type
<b>Picture In Picture:</b>	
<b>Closed Caption Display:</b>	

## 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
<b>TOTAL CHANNELS</b>	<b>181</b>

Specifications are subject to change without notice or obligation.

# 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: \_\_\_\_\_

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# Installation

## Location

Locate for comfortable viewing. Avoid placing where sunlight or other bright light (including reflections) will fall on the screen.

Adequate ventilation is essential to prevent internal component failure. Keep away from areas of excessive heat or moisture. Do not position magnetic equipment (motors, fans, other speakers, etc.) nearby.

## Optional External Equipment Connections

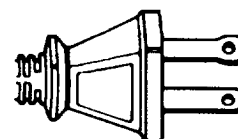
The Video/Audio connections between components can be made with shielded video and audio cables. For best performance, video cables should utilize 75 ohm coaxial shielded wire. Cables are available from your dealer or electronic supply house.

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

## AC Power Supply Cord

Insert (Polarized) plug into 120 volts 60Hz standard AC outlet. Do not defeat the safety purpose of the polarized plug.

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



Polarized Plug

## Remote Control Battery Installation & Replacement

### Battery Installation

Batteries: Use two "AA" batteries.

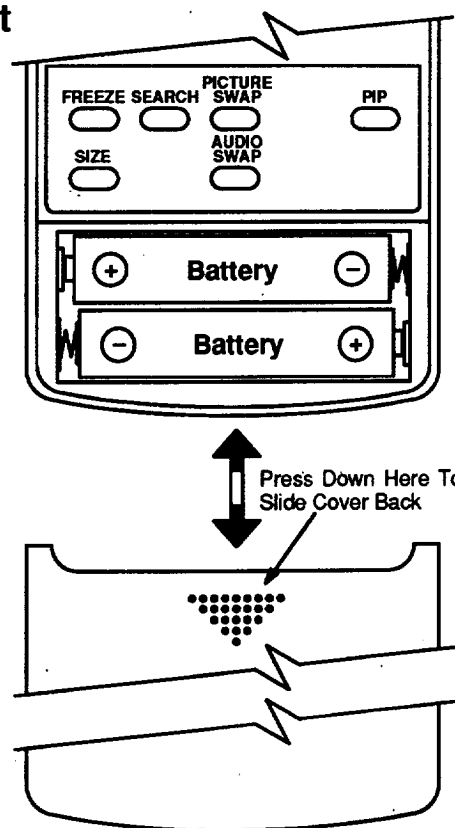
1. Turn the Transmitter face up. To remove bottom cover, press down on marking and slide cover off in the direction indicated.
2. Install the batteries as shown in the battery compartment. (Polarity (+) or (-) must be correct.)
3. Replace the cover and slide in reverse until the lock snaps.

### Precaution on Battery Use

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

**Observe the Following Precautions:**

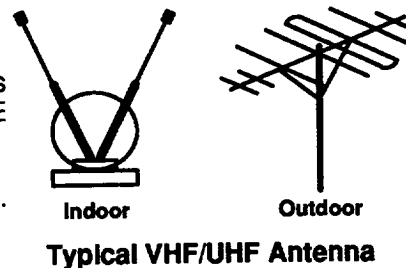
1. Batteries must be replaced as a pair.
2. Do not combine a used battery with a new one.
3. Do not mix battery types (Example: "Zinc Carbon" with "Alkaline").
4. Do not attempt to charge, short-circuit, disassemble, heat, or burn used batteries.
5. Battery replacement is necessary when Remote Control reacts sporadically or stops operating the Receiver or optional equipment. Loss of programmed infra-red codes for VCR and Cable Converter buttons will result when battery power is completely depleted, batteries are removed for more than several minutes, or pressing any Remote Control button while batteries are removed.



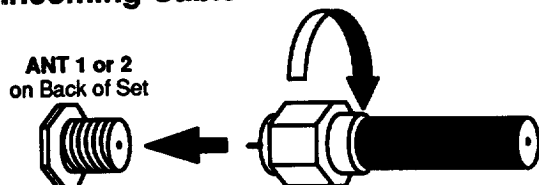
## Antenna/Cable Connections

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

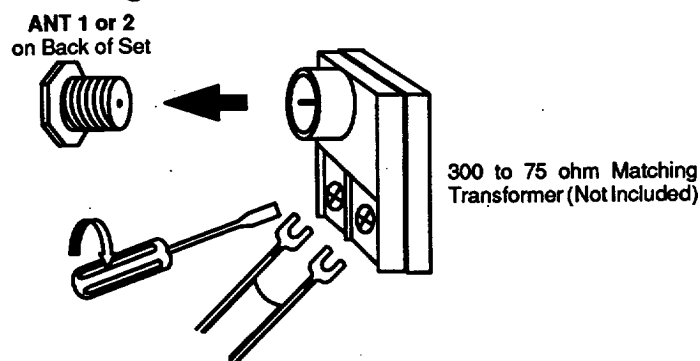
**NOTE:** If necessary, select proper Antenna Input Mode by pressing the ANT button.



### Incoming Cable From Home Antenna (75 Ohm)



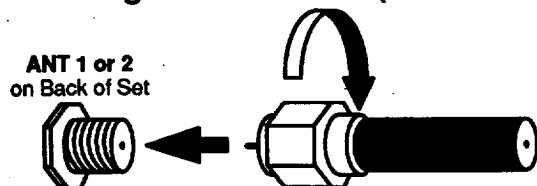
### Incoming Cable From Home Antenna (300 Ohm)



**Cable Connection** – For reception of cable channels (01~125) connect the cable supplied by your local cable company. TV/ANT–CABLE Mode must be set to CABLE. (Refer to TV/ANT–Cable Tuning Mode.)

**NOTE:** If necessary, select proper Antenna Input Mode by pressing the ANT button.

### Incoming 75 Ohm Cable (From Cable Company)



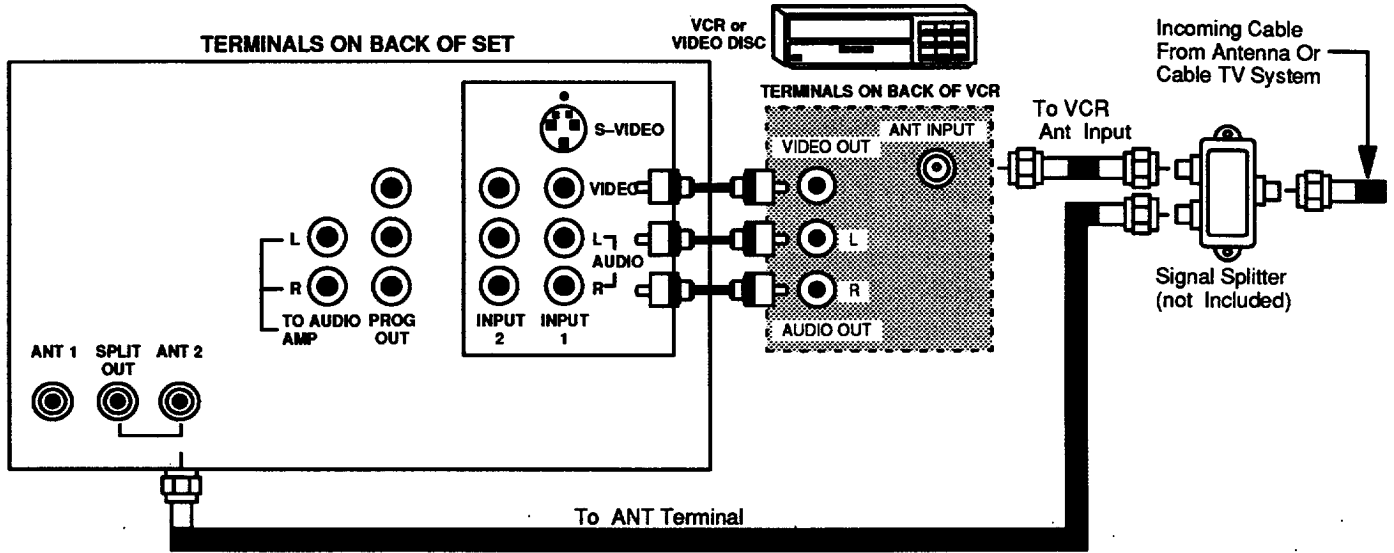
**NOTE:** Certain cable systems offset some channels to reduce interference or have Premium (scrambled) channels. A cable converter box is required for proper reception. Check with your local Cable company for its compatibility requirements.

## Other Video Equipment

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

## Picture in Picture Antenna Connection

This Receiver has the "PICTURE IN PICTURE" feature. For the proper operation of this feature a second video source is required (such as a VCR). We recommend that you make your antenna connection as shown below when a second video source is available.

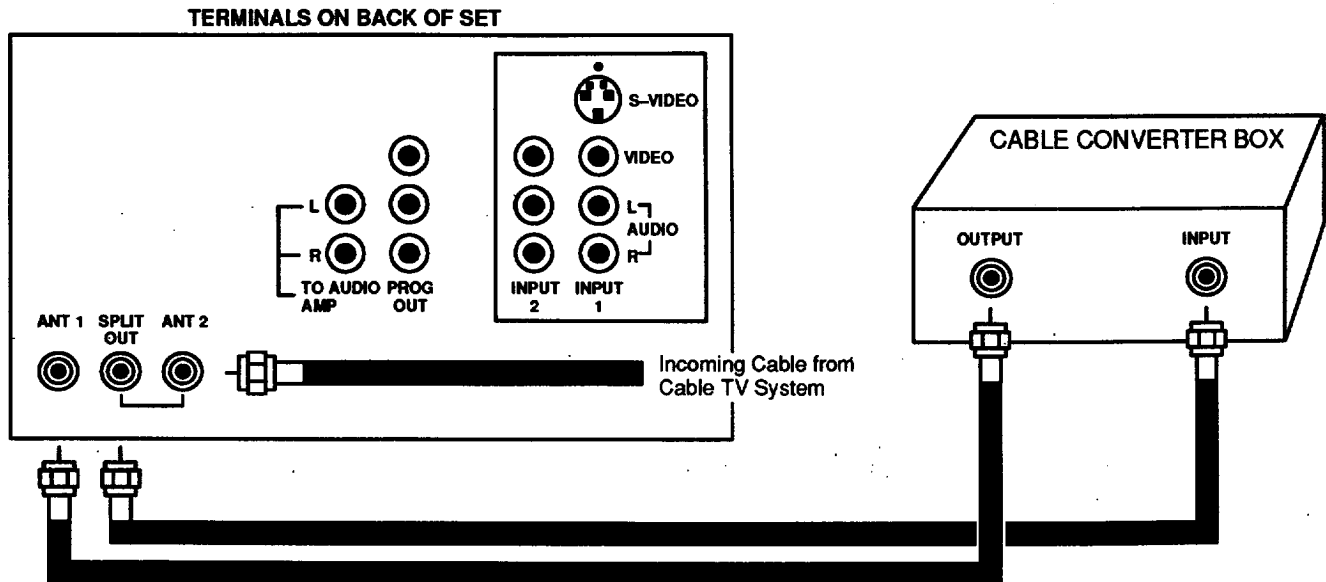


Detail 2 – PIP External Video Connection

### Helpful Hints:

The PIP will operate using Audio/Video input terminals 1, 2 or 3. Use the TV/VIDEO button to select proper mode. The PIP feature will operate using S-Video. Use input terminal 1 or 3 (terminal 3 is located on front of Receiver).

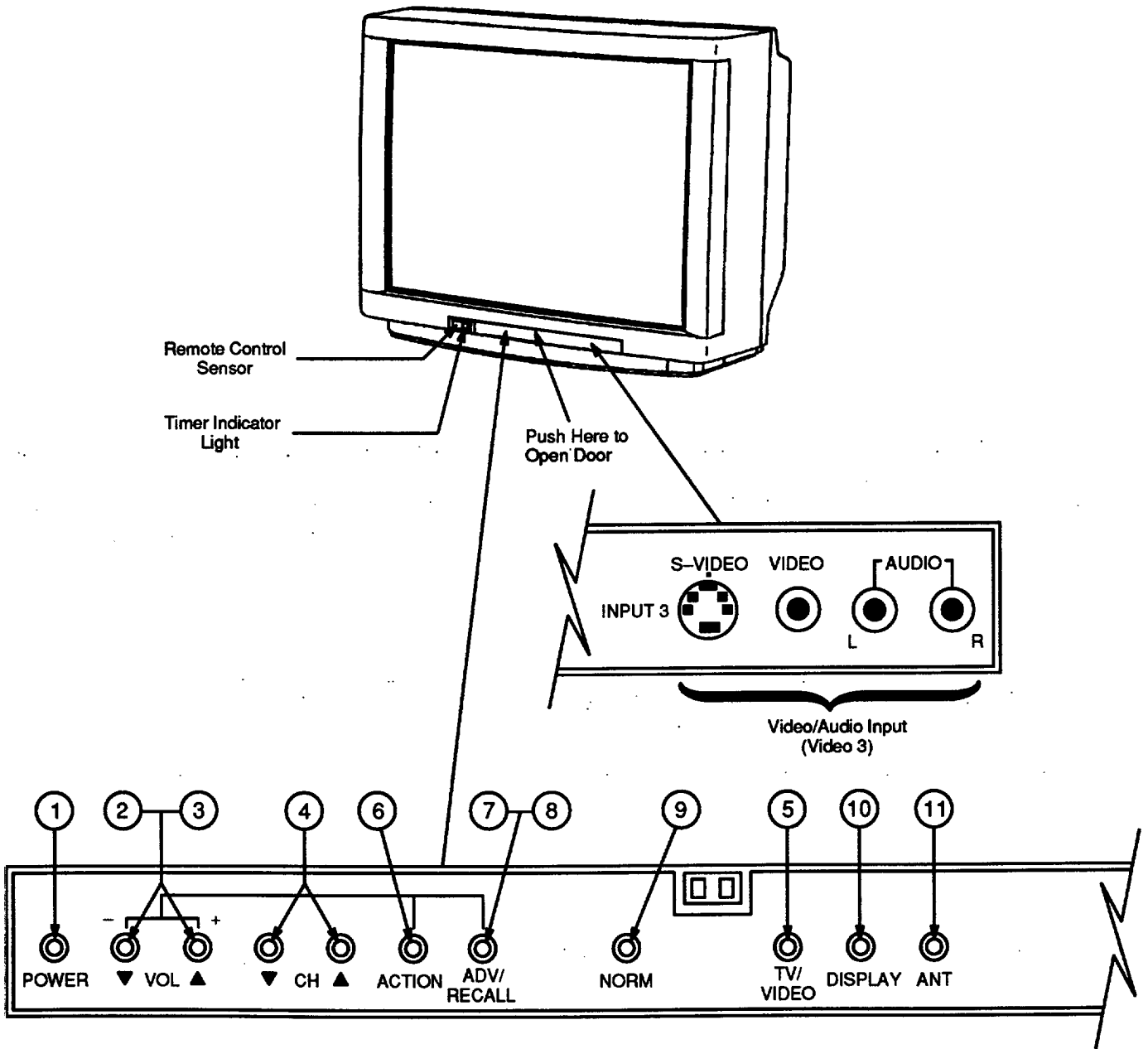
## Recommended Cable Connection when using a Cable Company supplied converter box for scrambled (premium) channels.



When connecting a Cable Company supplied converter box for scrambled (premium) channels, we recommend making your connections as shown above so that the converter box is required only when viewing scrambled channels.

1. ANT 2 Mode (accessed by the ANT button) will allow you to view all non scrambled channels without the use of the cable converter box.
2. When a scrambled channel is desired use ANT 1 Mode (accessed by the ANT button). Select channel on TV as instructed by Cable Company and operate cable converter box.

# Location of Controls (Receiver)

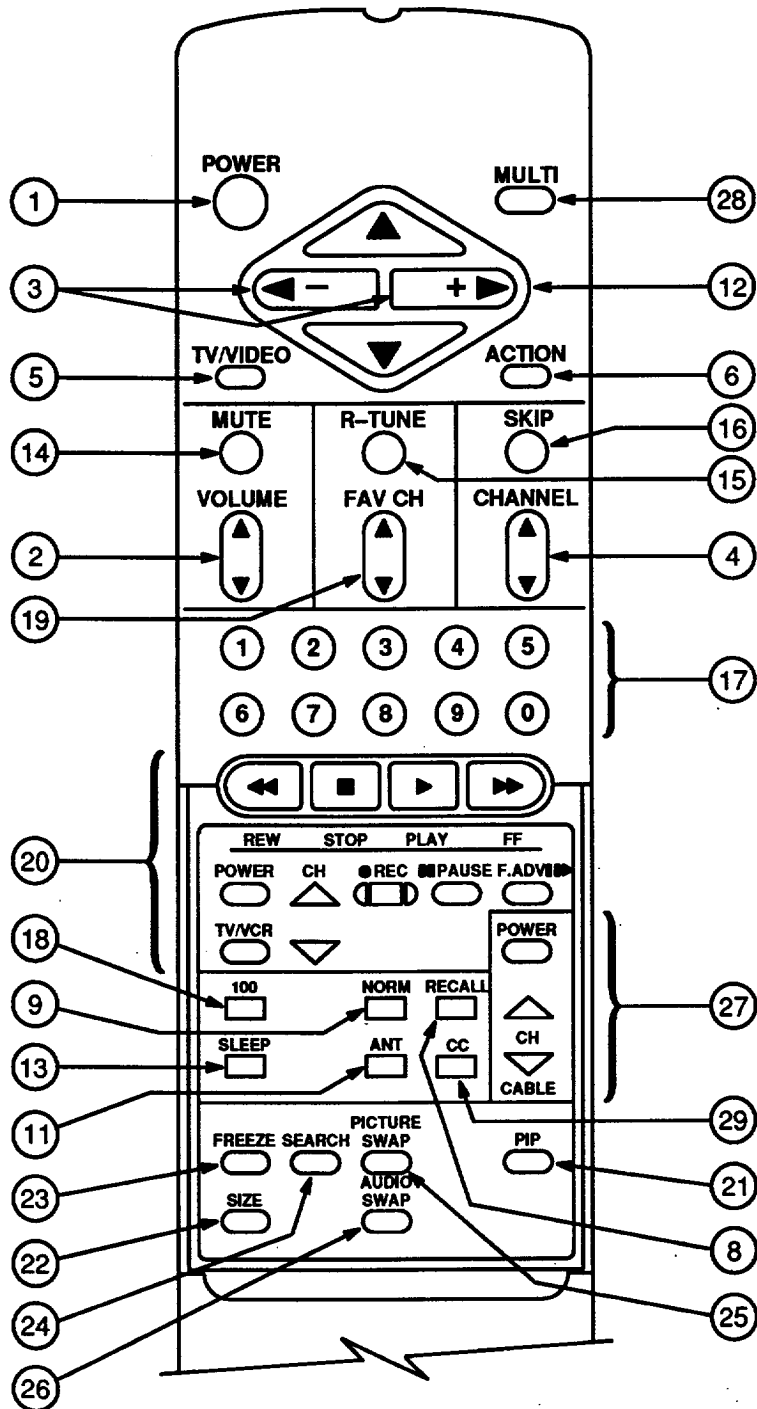




## Quick Reference Control Operation (Receiver)

- ① **Power Button** – Press to turn ON or OFF. (p.12)
- ② **Volume Buttons** – Press to adjust sound level. (p.12)
- ③ **Level (+) and (-) Buttons** – Press to adjust level of Audio Menus, Video Menus and select operating features when On Screen Adjustment Menus are displayed. (p.17)
- ④ **Channel Buttons** – Press to select programmed channels. (p.12)
- ⑤ **TV/Video Button** – Press to select TV or one of three Video Inputs. (p.13)
- ⑥ **Action Button** – Press to display Main Menu and access On Screen feature and adjustment menus. (p.17)
- ⑦ **Adv (Advance) Button** – Press to select desired features when On Screen Menus are displayed. (p.17)
- ⑧ **Recall Button** – Press to display, Time, status of Sleep Timer, Channel, Video Mode and Audio Mode. (p.13)
- ⑨ **Norm (Normalize) Button** – Press while any Audio or Video Adjustment Menu is displayed to set to a factory preset level. (p.19)
- ⑩ **Display Button** – Press for a demonstration of On Screen Menus and PIP features. Press any button to stop. (p. 9)
- ⑪ **ANT (Antenna) Button** – Press to select ANT 1 or ANT 2 Input. (p.14)

## Location of Controls (Remote Control)



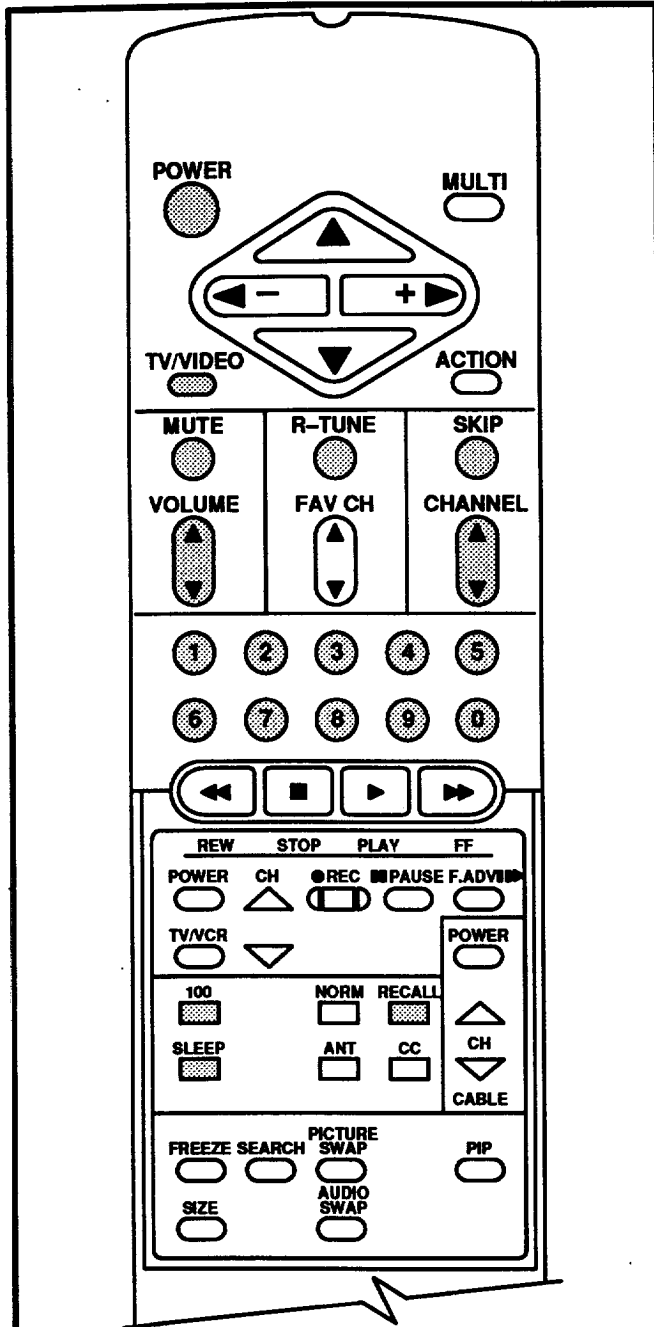
## Quick Reference Control Operation (Remote Control)

- ① **Power Button** – Press to turn ON or OFF. (p.12)
- ② **Volume Buttons** – Press to adjust sound level. (p.12)
- ③ **Level (+) and (-) Buttons** – Press to adjust level of Audio Menus, Video Menus and select operating features when On Screen Adjustment Menus are displayed. (p.17)
- ④ **Channel Buttons** – Press to select programmed channels. (p.12)

## Quick Reference Control Operation (Remote Control Cont'd.)

- ⑤ **TV/Video Button** – Press to select TV or one of three Video Inputs. (p.13)
- ⑥ **Action Button** – Press to display Main Menu and access On Screen feature and adjustment menus. (p.17)
- ⑧ **Recall Button** – Press to display, Time, status of Sleep Timer, Channel, Video Mode and Audio Mode. (p.13)
- ⑨ **Norm (Normalize) Button** – Press while any Audio or Video Adjustment Menu is displayed to set to a factory preset level. (p.19)
- ⑪ **ANT (Antenna) Button** – Press to select ANT 1 or ANT 2 Input. (p.14)
- ⑫ **Advance/PIP Frame Locator Buttons** – Press to select desired features, program Universal Remote codes and locate PIP frame. (p.17)
- ⑬ **Sleep Button** – Press to select automatic turn OFF in 30, 60 or 90 minutes. (p.13)
- ⑭ **Mute Button** – Press to mute sound. A second press returns sound. (p.12)
- ⑮ **R-Tune (Rapid Tune) Button** – Press to switch between two channels. (p.13)
- ⑯ **Skip Button** – Press the SKIP button repeatedly to select desired time, up to six minutes, then select any other channel(s) or Video Mode. When the time elapses you will automatically return to the original channel. (p.13)
- ⑰ **Keyboard “0 through 9” Buttons** – Press desired channel number to access any channel. (p.12)
- ⑱ **100 Button** – Press for access of cable channels over 99. (p.12)
- ⑲ **Fav Ch (Favorite Channel) Button** – Press to scan up to 15 channels in favorite channel programming. (p.14)
- ⑳ **VCR Function Buttons** – Programmable to operate many brands of VCR's. (p.14)
- ㉑ **PIP (Picture In Picture) Button** – Press to display PIP picture. (p.34)
- ㉒ **Size Button** – Press to select size of PIP frame. (p.34)
- ㉓ **Freeze Button** – Press to stop action displayed in the PIP frame. (p.35)
- ㉔ **Search Button** – Press to scan channels programmed into memory. Press again when channel desired is highlighted. That channel will appear as the PIP picture when the PIP button is pressed. (p.35)
- ㉕ **Picture Swap Button** – Press to interchange PIP frame with main picture while in PIP mode. (p.35)
- ㉖ **Audio Swap Button** – Press to monitor audio of PIP frame. Press again to return to normal audio. (p.35)
- ㉗ **Cable TV Buttons** – Programmable to operate many brands of CATV Converter boxes. (p.14)
- ㉘ **Multi Button** – Programmable to operate up to six Remote Function buttons. (p.15)
- ㉙ **CC (Closed Caption) Button** – Press the CC (CLOSED CAPTION) button to provide visual depiction (white or color letters on a black background) of information simultaneously with the audio portion of a television program. (p.16)

# Control Operation



**Power** – Press the POWER button to turn ON. Press again to turn OFF.



**Volume** – Press the VOLUME (VOL) ▲ or ▼ button for desired listening level.



**Mute** – Press the MUTE button to quickly reduce sound level (Mute will appear on screen). Press again to restore sound.



## Channel Change – (Two options)

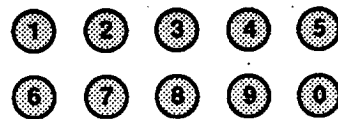
### Option 1.

Press the CHANNEL (CH) ▲ or ▼ button to sequentially scan through programmed channels.



### Option 2.

Press two digits on keyboard (Example press 0, then 5 for channel 05). For cable channels over 100, press 100 button first.



## Helpful Hints:

A helpful On Screen display will appear momentarily when Receiver is first turned on and when the channel is changed.

The 100 button will not function when Receiver is in TV/ANT Mode.

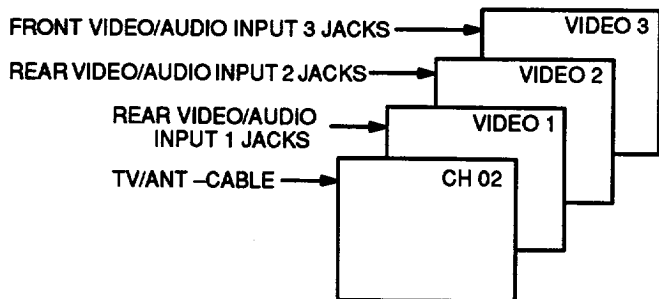
If you do not receive channels above 13, confirm the type of signal at ANT Input (TV/ANT or Cable) and set the TV/ANT–Cable Tuning Mode accordingly. (Refer to Set–Up Icon, TV/ANT–Cable Tuning Mode.)

**NOTE:** If SPEAKER OFF is displayed On Screen after pressing the VOLUME button, refer to Set–Up Menu to turn speakers ON.

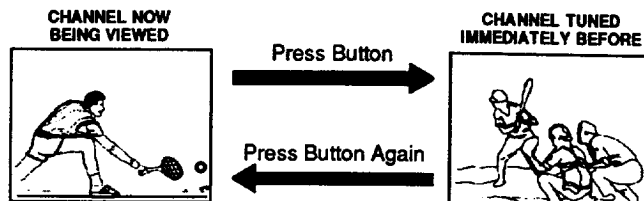
**TV/Video Mode** – Press the TV/VIDEO button to select desired input mode.



Signal connected to:

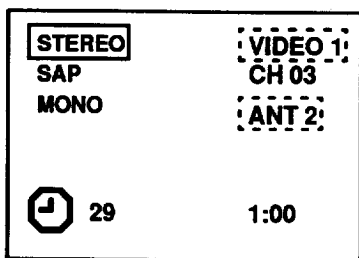


**R-Tune (Rapid Tune)** – Press the R-TUNE (RAPID TUNE) button to instantly switch between the last two channels or video modes selected (without any On Screen display being activated).

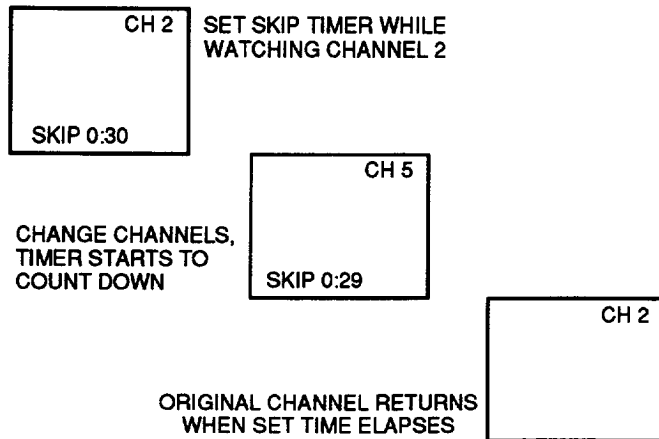


**Recall** – Press the RECALL button to review:

1. Audio Mode status.
2. CH number or Video Mode selected.
3. Sleep Timer status (time remaining if activated).
4. Clock time (If flashing not set).
5. When in Antenna 2 Mode, ANT 2 will display.

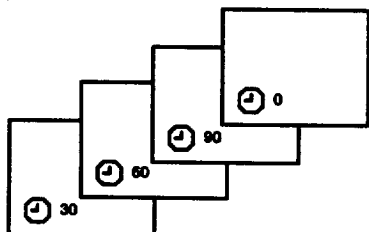


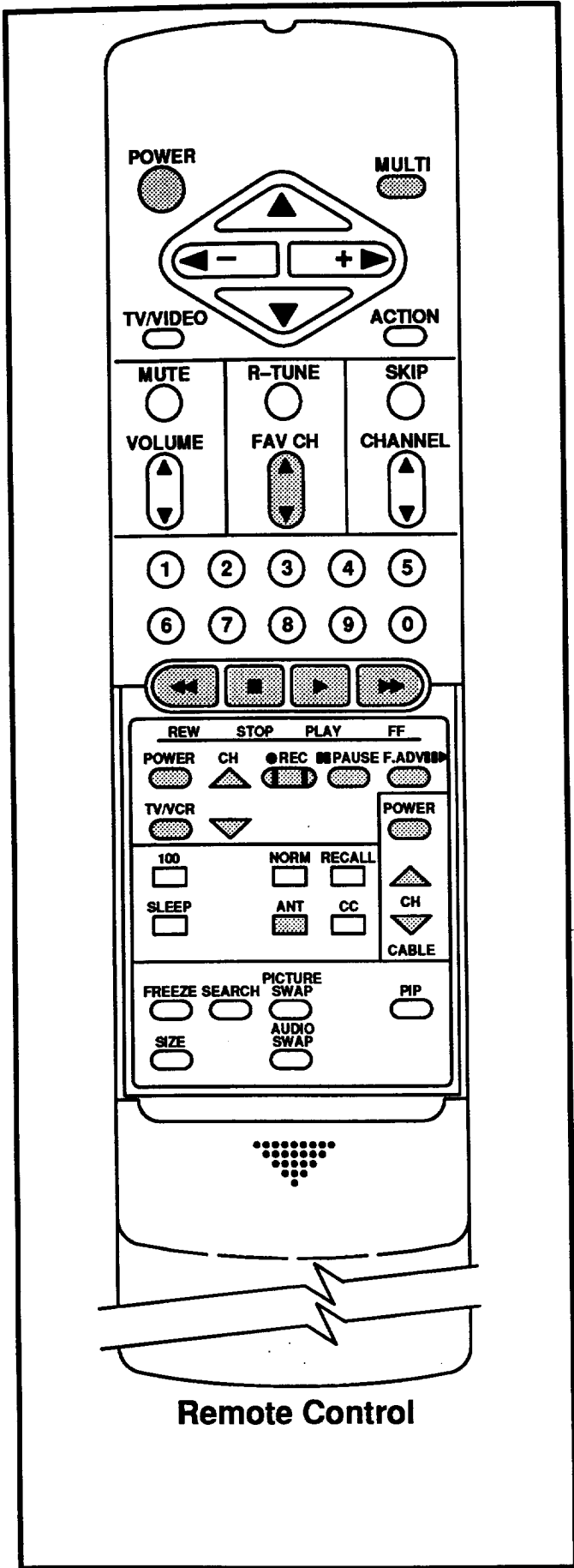
**Skip Feature** – Press the SKIP button repeatedly to set the Skip Timer for a desired length of time up to 6 minutes. Then change channels or select Video Mode. When the set time elapses, the original channel will return.



**Sleep** – Press the SLEEP button repeatedly for automatic turn off in 30, 60 or 90 minutes as desired. Sleep Timer clock will flash prior to automatic turn off.

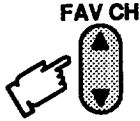
**NOTE:** Display will flash 3, 2 and 1 to indicate the last three remaining minutes prior to turn OFF. To deactivate, press the Sleep button continuously until the display reads "0".





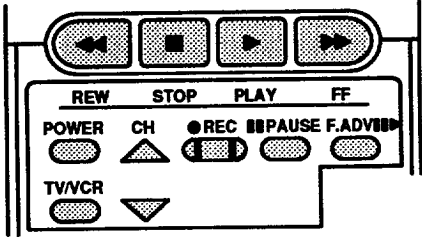
Remote Control

**Fav Ch (Favorite Channel)** – The FAV CH (FAVORITE CHANNEL) button will scan up to 15 of your favorite channels in sequence. However, these channels must first be programmed into Favorite Channel memory (refer to Favorite Channels Programming). Once your favorite channels have been placed in memory just press the FAV CH (FAVORITE CHANNEL) button ▲ or ▼ to avoid scanning through unwanted channels.



Scans Only Those Channels In Favorite Channel Memory

**VCR Function Buttons** – The VCR FUNCTION buttons have been designed to operate numerous brands of VCRs. The proper VCR infra-red code must be obtained prior to use. (Please refer to Programming the Universal Remote for programming instructions.)



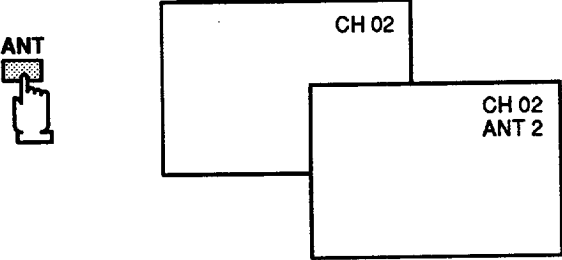
VCR Function Buttons

**Cable TV Buttons** – The CABLE TV buttons have been designed to operate selected brands of Cable Television Converter boxes. The proper cable television converter infra-red code must be obtained prior to use. Please refer to programming the universal remote for programming instructions.



From Bottom Right Section of Remote Control

**Ant (Antenna) Button** – The ANT button allows you to select one of two Antenna Input.



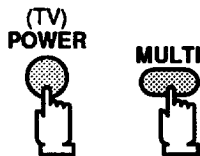
## Multi Button

The **MULTI** button can be programmed to operate up to 6 Remote function buttons at the same time.

**For Example:** TV Power/On, VCR Power/On (selected brands) 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 VCR and Cable Box Infra-red 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 the Remote TV POWER button and the **MULTI** button simultaneously. (All previous commands are erased.)



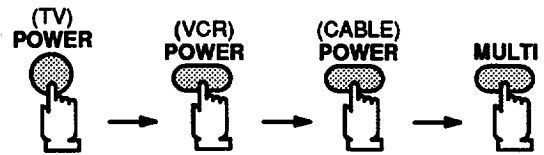
**PRESS SIMULTANEOUSLY**

4. Press a maximum of 6 buttons on the Remote. Each button you press is equal to one function. If six remote button functions are entered, all will register in the **MULTI** button memory in the sequence entered. When less than six remote button functions are entered, press the **MULTI** button to end the program mode. (Waiting more than 30 seconds without pressing another button will also end the program mode.)

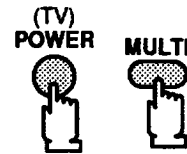
The following is an example of Remote functions that can be programmed into the **MULTI** button.

- TV Power - For turning TV ON and OFF.
- VCR Power - For turning VCR ON and OFF.
- Cable Box Power - For turning cable box ON and OFF.

All can be turned ON or OFF with one press of the **MULTI** button.

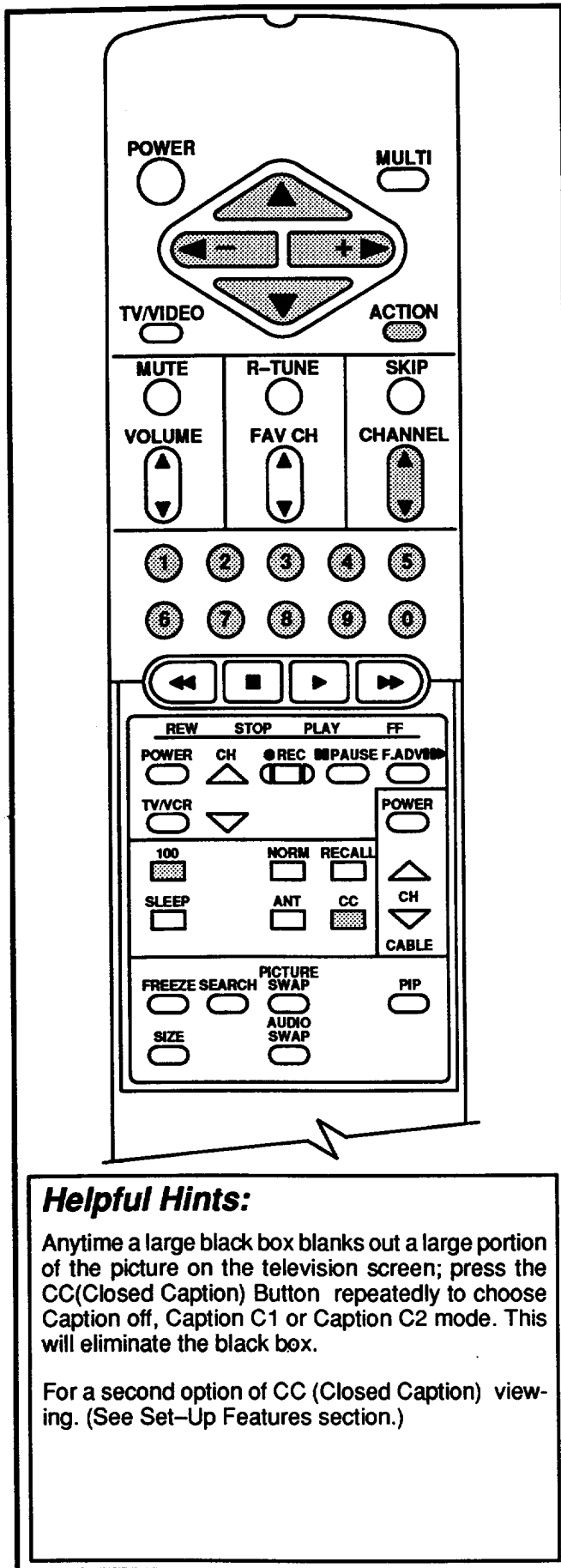


**To delete entered functions** - Press the Remote TV POWER and **MULTI** buttons simultaneously. Now you can enter from one to six different Remote functions.



**PRESS SIMULTANEOUSLY**

**NOTE:** You can 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.



### Helpful Hints:

Anytime a large black box blanks out a large portion of the picture on the television screen; press the CC(Closed Caption) Button repeatedly to choose Caption off, Caption C1 or Caption C2 mode. This will eliminate the black box.

For a second option of CC (Closed Caption) viewing. (See Set-Up Features section.)

## Closed Caption Decoder

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. It allows the viewer to read the dialogue of a television program or read other intended information.

### CC (Closed Caption) Button

Press the CC (CLOSED CAPTION) button to select an option of four Closed Caption viewing modes. To find out if Closed Caption is being broadcasted, look for the abbreviation "CC" or the other "Closed Caption" symbols in local TV guides.

1. With the Remote Control keyboard or the Channel Up/Down buttons select the desired channel of your choice that is broadcasting in Closed Caption.
2. Press the CC (CLOSED CAPTION) button and select the desired mode.



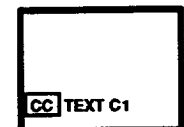
- CAPTION OFF – Recommended mode when you do not wish to view Closed Caption.



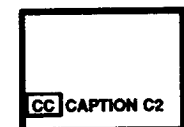
- CAPTION C1 – For video related information that can be displayed (up to 4 lines of script strategically placed on the television screen so that it does not obstruct relevant parts of the picture). Script can be in any language.



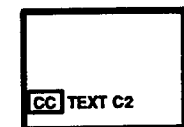
- TEXT C1 – Blanks out a large portion of the picture on the television screen, and displays Program guide or any other information currently being transmitted.



- CAPTION C2 – Another mode used for video related information that displays up to 4 lines of script and strategically place on the television screen so that it does not obstruct relevant parts of the picture.



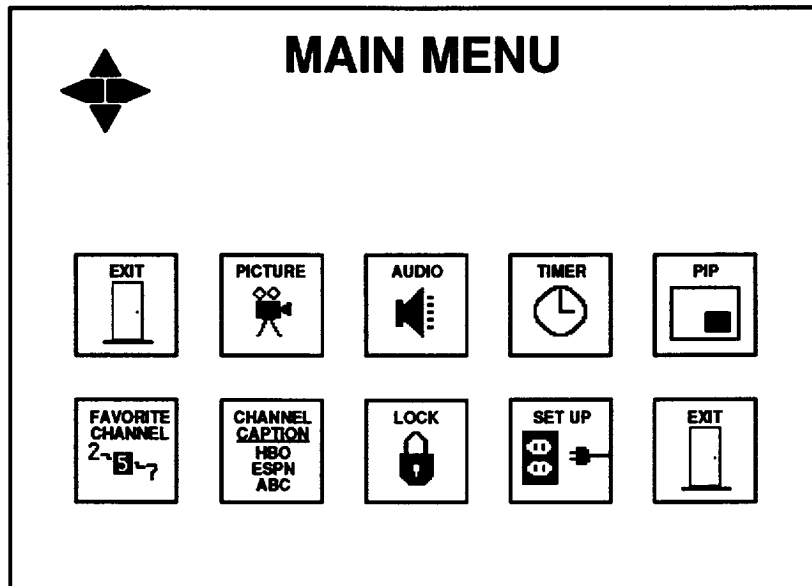
- TEXT C2 – Another mode used to display any kind of information and blanks out a large portion of the picture displayed on the television screen.



**NOTE:** The first time the CC (CLOSED CAPTION) button is pressed, the last used "Closed Caption" mode is recalled. Each additional press of the "CC" button sequentially selects another Closed Caption mode as shown. When not using the Closed Caption feature keep in Caption OFF Mode.

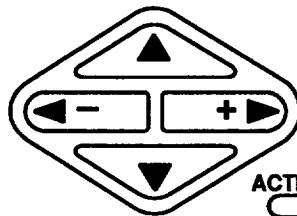


## Main Menu (Icons)



### On Remote

Use the four (4) ADVANCE buttons to select an icon by highlighting the desired icon when the Main Menu is displayed.



ACTION

Press the ACTION button to display the Main Menu.

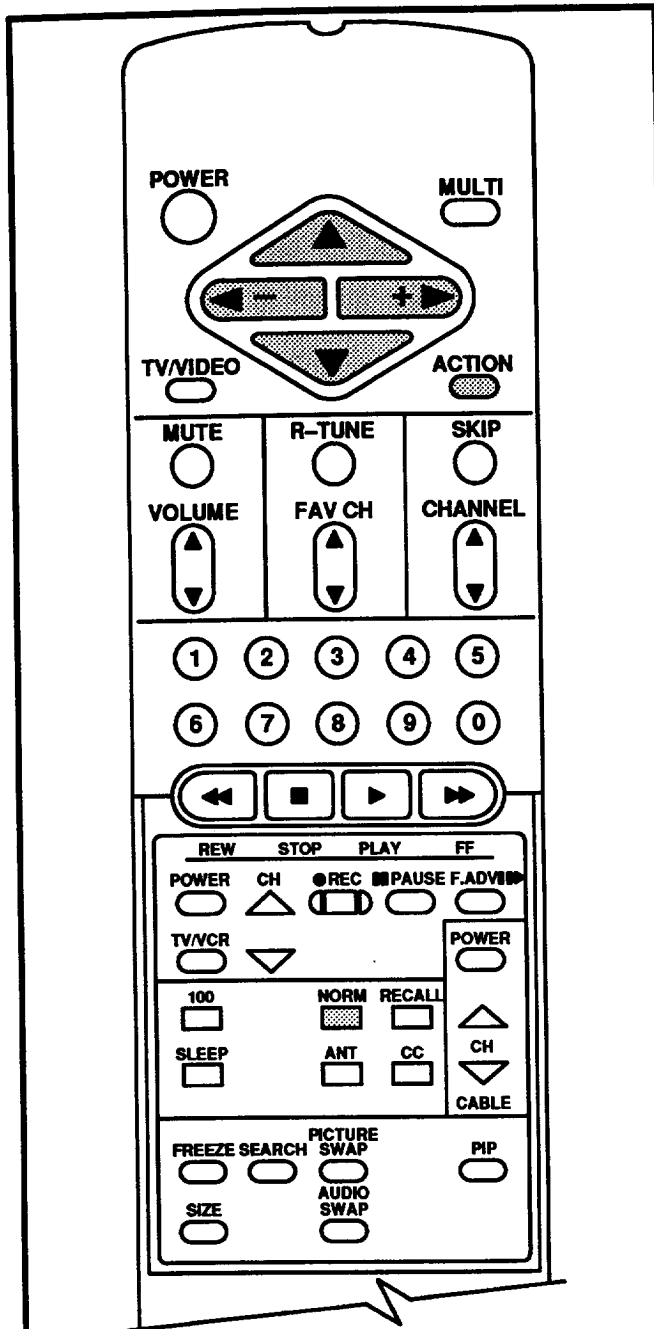
1. Press the ACTION button to display the Main Menu with icons.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ buttons to highlight the desired icon when the Main Menu is displayed.
3. Press the ADVANCE ◀ or ▶ for left and right movement and ▲ or ▼ for up or down movement.

**NOTE:** To exit Main Menu, highlight one of two EXIT icon. Then press the ACTION button to exit the Main Menu.

### ***Helpful Hints:***

You can also use the (+) and (-) and the ADV buttons on the Receiver for:

- Selecting desired icon when the Main Menu is displayed.
- Selecting and adjusting features when On Screen Menus are displayed.



### Helpful Hints:

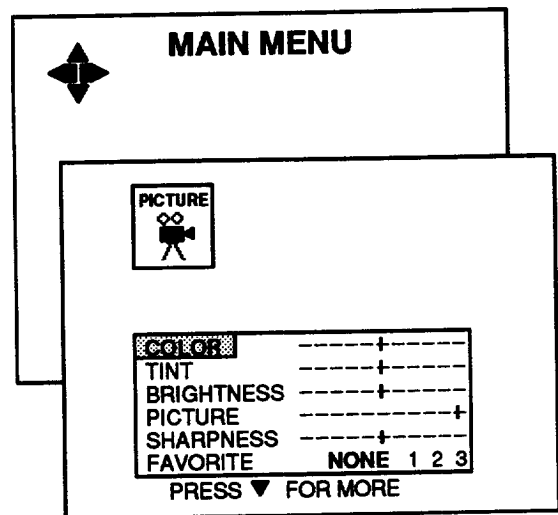
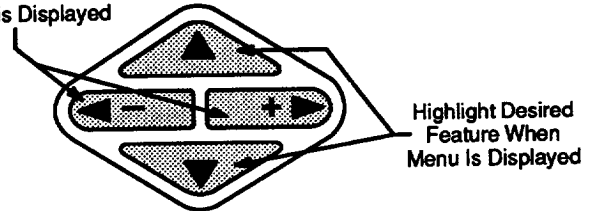
Video Adjustment Used to Adjust:  
**COLOR** – adjust for color intensity.  
**TINT** – adjust for natural flesh tones.  
**BRIGHTNESS** – adjust so dark areas of picture just becomes black for a crisp detail.  
**PICTURE** – adjust so the white areas of the picture are to your liking.  
**SHARPNESS** – adjust for best clarity of outline detail.

### Picture Adjustments

- Color
- Tint
- Brightness
- Picture
- Sharpness
- Favorite (Picture)



Select Or Adjust Feature When Menu Is Displayed

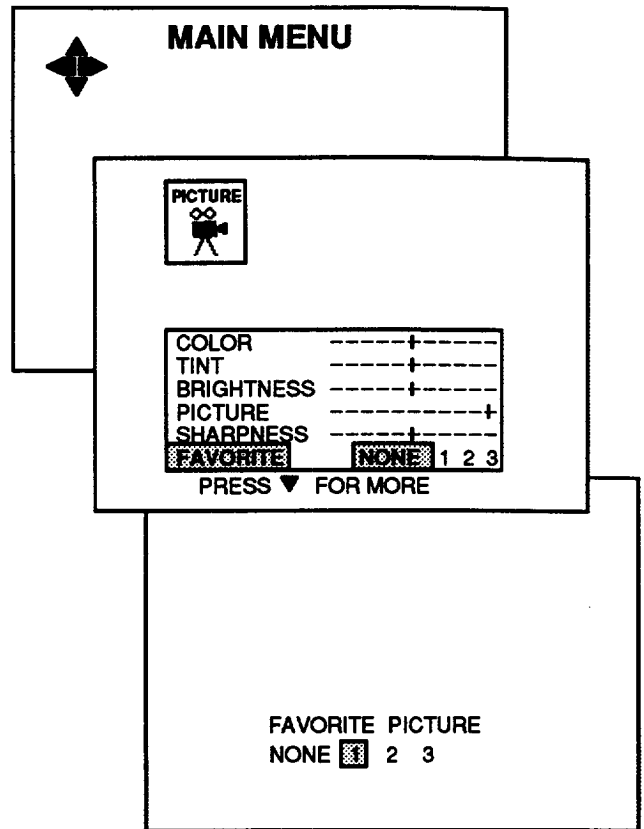
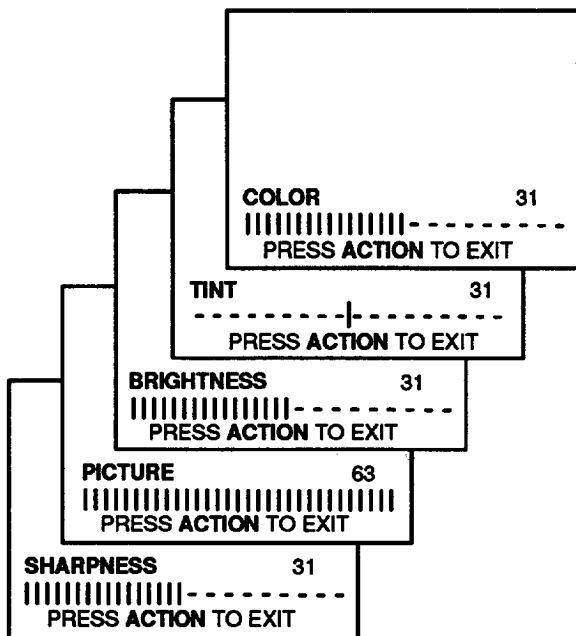


### Color, Tint, Brightness, Picture & Sharpness Adjustments

Picture adjustments when Favorite (Picture) setting is in the "NONE" position.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲/▼ and ◀/▶ buttons repeatedly until the Picture Icon is highlighted.
3. Press the ACTION button to display the Picture Adjustment Menu.
4. Press the ADVANCE ▲ or ▼ button to select the desired Picture Adjustment (Color, Tint, Brightness, Picture or Sharpness).
5. Press the ADVANCE ◀ or ▶ button to adjust your selection.
6. Press the ADVANCE ▲ or ▼ button to select another picture adjustment.

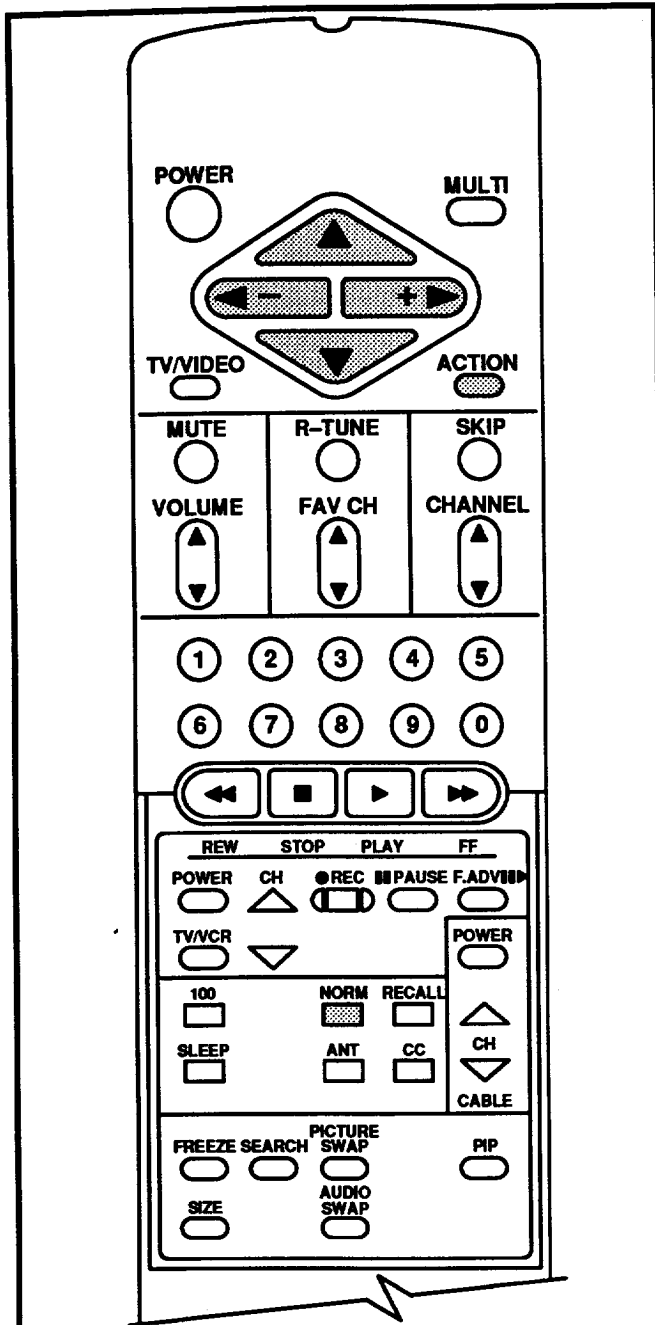
**NOTE:** Press the ACTION button to exit Picture Adjust Menu.



- The NORM (NORMALIZE) button will reset the picture adjustments back to a factory preset level (press NORM button while any video adjustment menu is displayed).

**Favorite (Picture)** – The Favorite (Picture) Feature allows you to select an additional three individual picture adjustment settings. However, you must first set and store these settings (refer to Favorite Picture setting). Once you have set and stored your picture adjustments select your Favorite Picture setting by:

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Picture Icon is highlighted.
3. Press the ACTION button to display the Picture Adjustment Menu.
4. Press the ADVANCE ▲ or ▼ to highlight FAVORITE
5. Press the ADVANCE ◀ or ▶ button to enter the Favorite Picture menu and to select NONE or 1, 2 or 3 Favorite Picture.

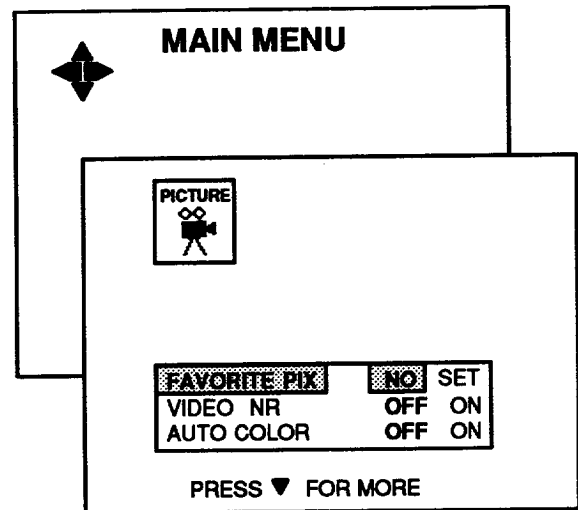
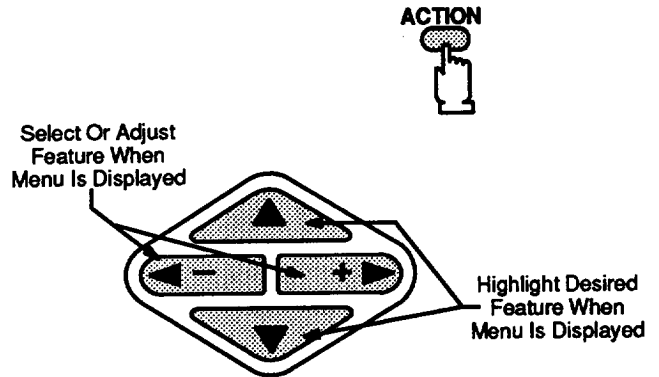


### Helpful Hints:

- For normal signals VIDEO NR (NOISE REDUCTION) should be in the OFF position.
- If you want to view more of picture settings menu press the ADVANCE ▼ button continuously.
- The NORM (NORMALIZE) button will reset the picture adjustments back to a factory preset level (press NORM button while any video adjustment menu is displayed).

## Picture Settings

- Favorite Picture
- Video NR
- Auto Color

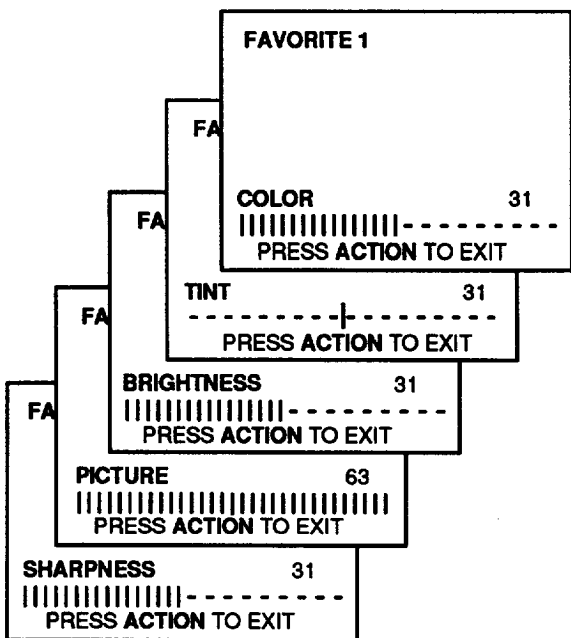
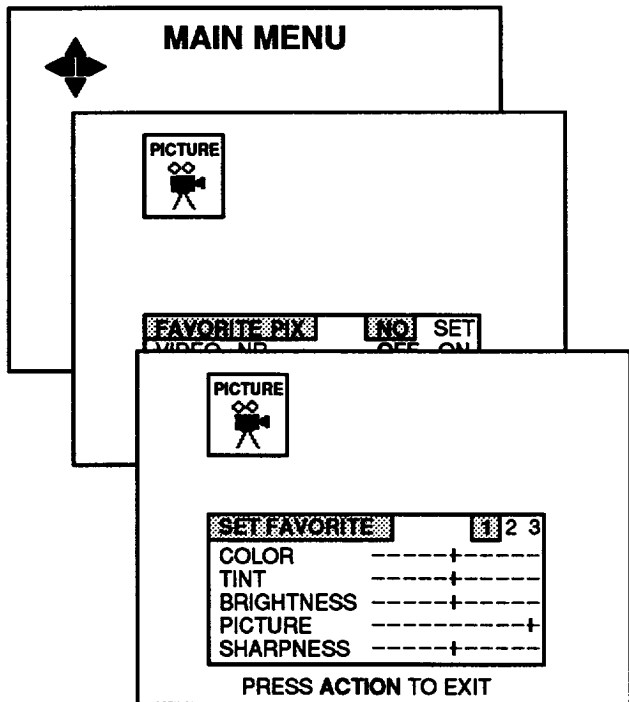


### Favorite Picture Adjustments

This feature allows the selection and adjustment of 3 favorite picture settings. Color, Tint, Brightness, Picture and Sharpness can be adjusted as desired due to personal preference or because of different video signal sources.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until Picture Icon is highlighted.
3. Press the ACTION button to display the Picture Settings Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until FAVORITE PIX is highlighted.
5. Press the ADVANCE ◀ or ▶ button to highlight Set Favorite (Picture) 1,2 or 3.
6. Press ◀ or ▶ button again to select 1.
7. Press the ADVANCE ▲ or ▼ button and select the desired function (Color, Tint, Brightness, Picture or Sharpness).
8. Press the ADVANCE ◀ or ▶ button and adjust the function for desired picture quality. (Please refer to Picture Adjustments section for adjustment qualities.)
9. Press the ADVANCE ▲ or ▼ repeatedly to select another picture quality.
10. Press the ACTION button to return to picture settings menu.

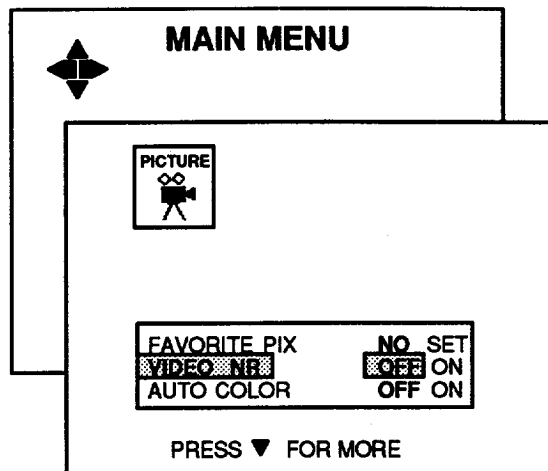
11. Press the ADVANCE ▲ or ▼ button to highlight Set Favorite.
12. Press the ADVANCE ► button to highlight number 2 or 3.
13. Repeat steps 7 thru 9 for Favorite 2 then Favorite 3 picture adjustment menus.
14. Press the ACTION button to EXIT.



## Video NR (Noise Reduction)

This feature reduces video noise (snow in picture) due to weak signal.

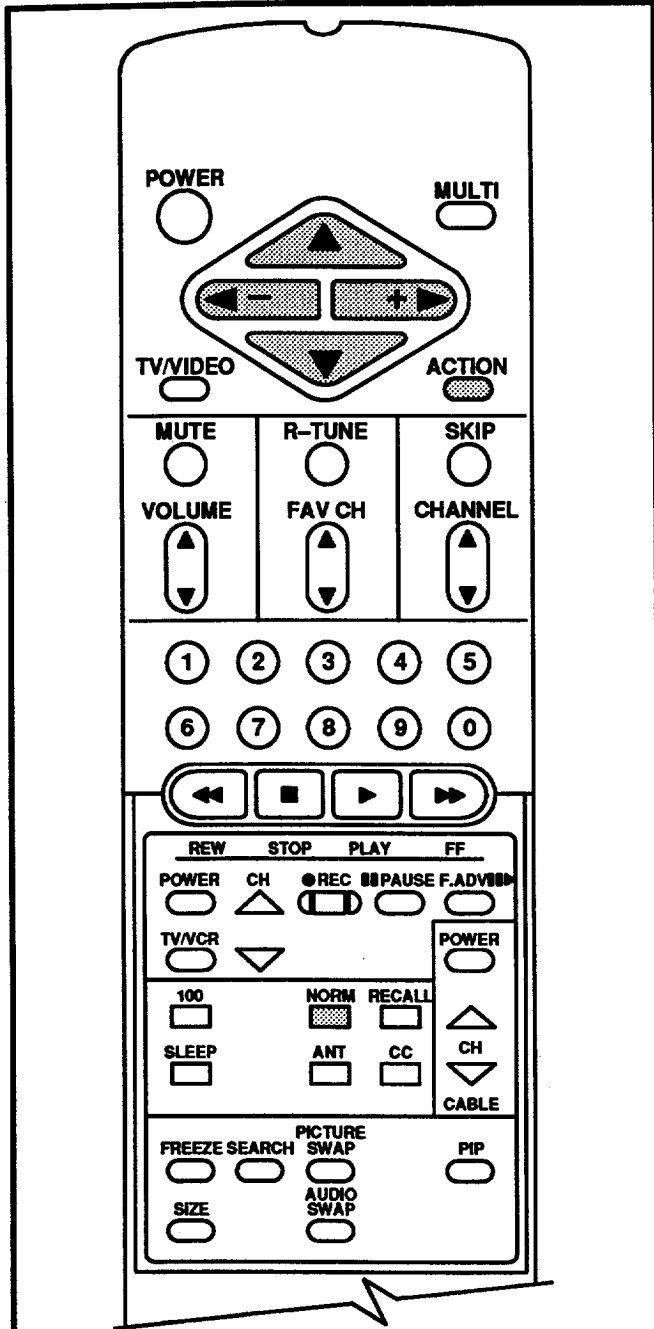
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Picture Icon is highlighted.
3. Press the ACTION button to display the Picture Settings Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until VIDEO NR is highlighted.
5. Press the ADVANCE ◀ or ▶ button to turn VIDEO NR feature OFF or ON.



## Auto Color

This feature automatically optimizes color adjustment to compensate for signal variations.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Picture Icon is highlighted.
3. Press the ACTION button to display the Picture Settings Menu.
4. With Auto Color highlighted press ADVANCE ◀ or ▶ button to turn OFF or ON.

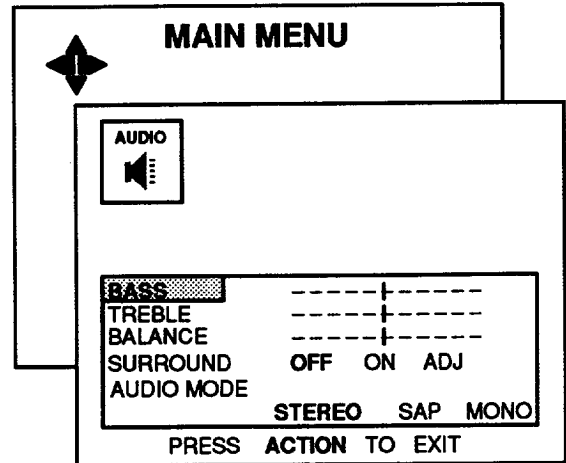
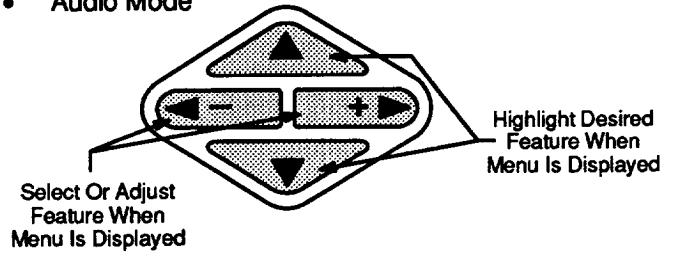


**Helpful Hints:**

STEREO – Two channel Audio reception.  
 SAP – Second Audio programming (Typically used for Bilingual audio).  
 MONO – Use when stereo signal is weak.

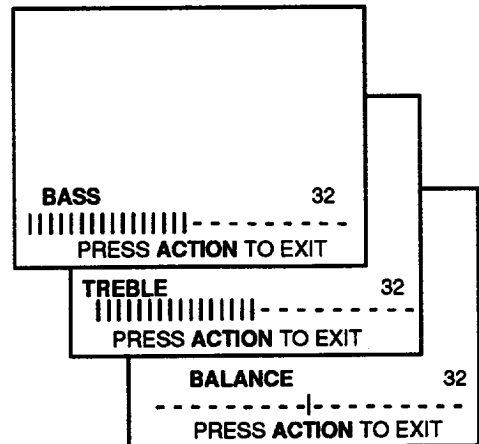
**Audio Adjustments**

- Bass
- Treble
- Balance
- Surround
- Audio Mode



**Bass, Treble and Balance Adjustments**

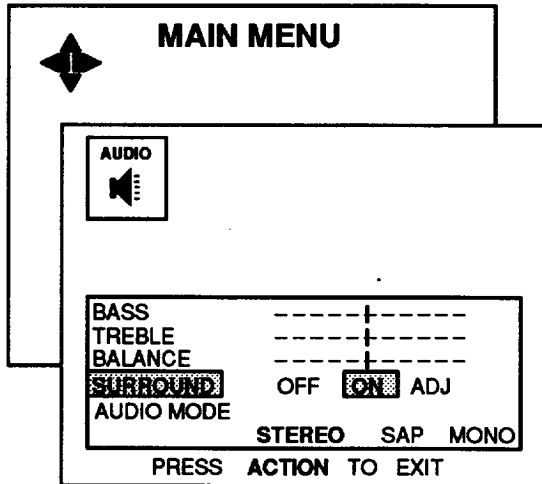
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Audio Icon is highlighted.
3. Press the ACTION button to display the Audio Adjust Menu.
4. Press the ADVANCE ▲ or ▼ button to select desired function; BASS, TREBLE or BALANCE.
5. Press the ADVANCE ◀ or ▶ button to achieve desired audio response.
6. Press the ADVANCE ▲ or ▼ button to advance to the next Audio Adjust Menu.



**NOTE:** The NORM (NORMALIZE) button will reset the audio adjustments back to a factory preset level. (Press NORM button while any audio adjustment menu is displayed.)

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

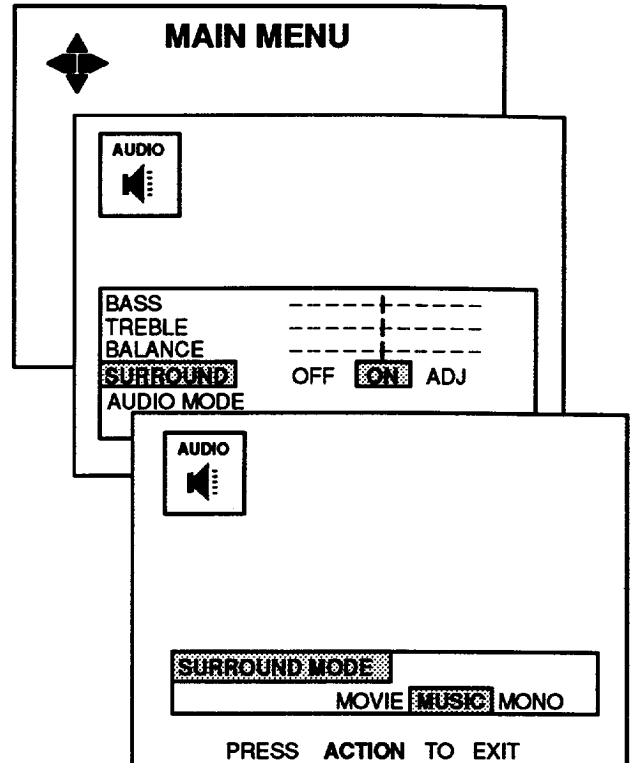
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Audio Icon is highlighted.
3. Press the ACTION button to display the Audio Adjust Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until Surround is highlighted.
5. Press the ADVANCE ▶ button to turn ON. Press the ADVANCE ◀ button to turn OFF



**Surround Mode Stereo Enhancement** – When Audio is broadcast in Stereo and Surround is on, you may select one of two modes of operation.

**NOTE:** Audio must be in Stereo Mode to make selection.

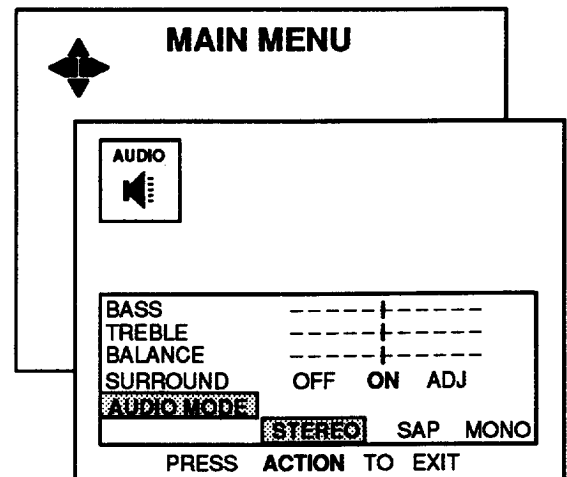
- Movie – A full rich sound experience
  - Music – A concert hall feeling
1. Press the ACTION button to display the Main Menu.
  2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Audio Icon is highlighted.
  3. Press the ACTION button to display the Audio Adjust Menu.
  4. Press the ADVANCE ▲ or ▼ button until Surround is highlighted.
  5. Press the ADVANCE ▶ button repeatedly to display the Surround Adjust Menu.
  6. Press the ADVANCE ◀ or ▶ button to select Movie or Music Surround Mode of operation.

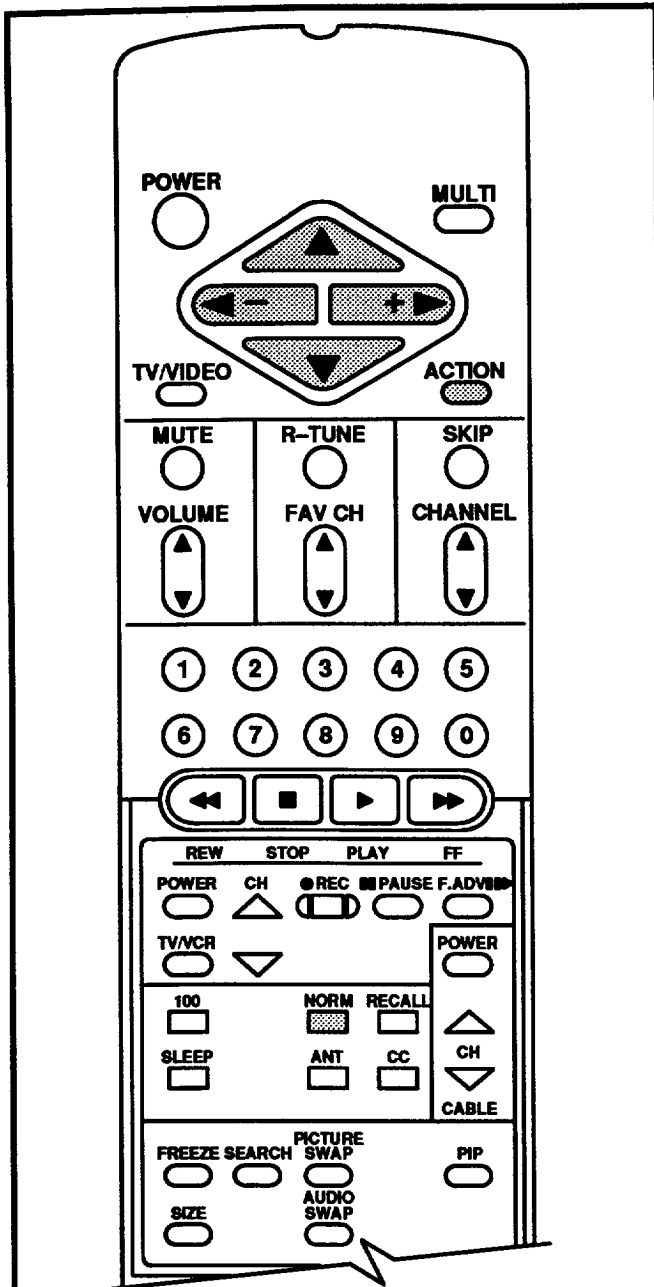


**Audio Mode Selection (Stereo/SAP/Mono) –**

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

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Audio Icon is highlighted.
3. Press the ACTION button to display the Audio Adjust Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until Audio Mode is highlighted.
5. Press the ADVANCE ◀ or ▶ button to select Stereo, SAP (Second Audio Programming) or Mono.

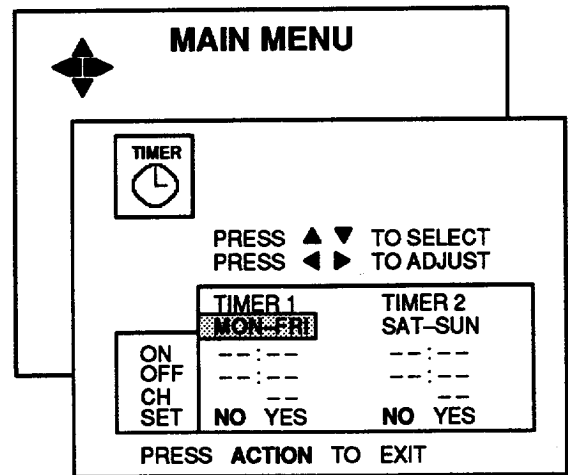
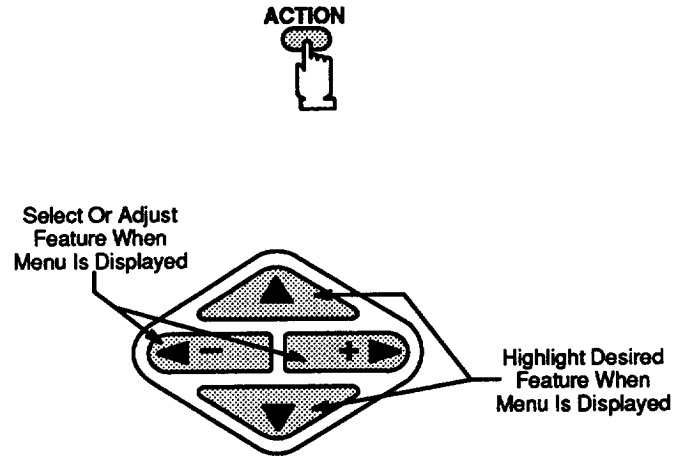




### Helpful Hints:

- The Program Timer overrides the Sleep Timer.
- Program Timer can only access channels in Program Channel memory.
- "Set Timer First" will appear on screen when the set "Yes" option is tried without the clock being set.
- The Timer light located on front of Receiver will be lit when either Program Timer is active.
- When a Timer DAY is set for any single day, the timer program will function once and then deactivate.
- If you see a red "PG" in the upper right hand corner the channel 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.

## (Dual Program) Timer

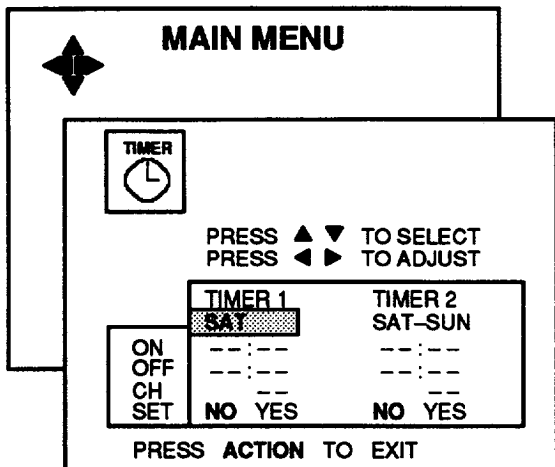


**(Program) Timer** – The (Dual Program) Timer Feature is capable of turning the TV on to a desired channel and then turning the set off at a predetermined time.

**NOTE:** The clock and day must be set for this feature to operate. (Refer to Set-Up Menu to Set Time & Day.)

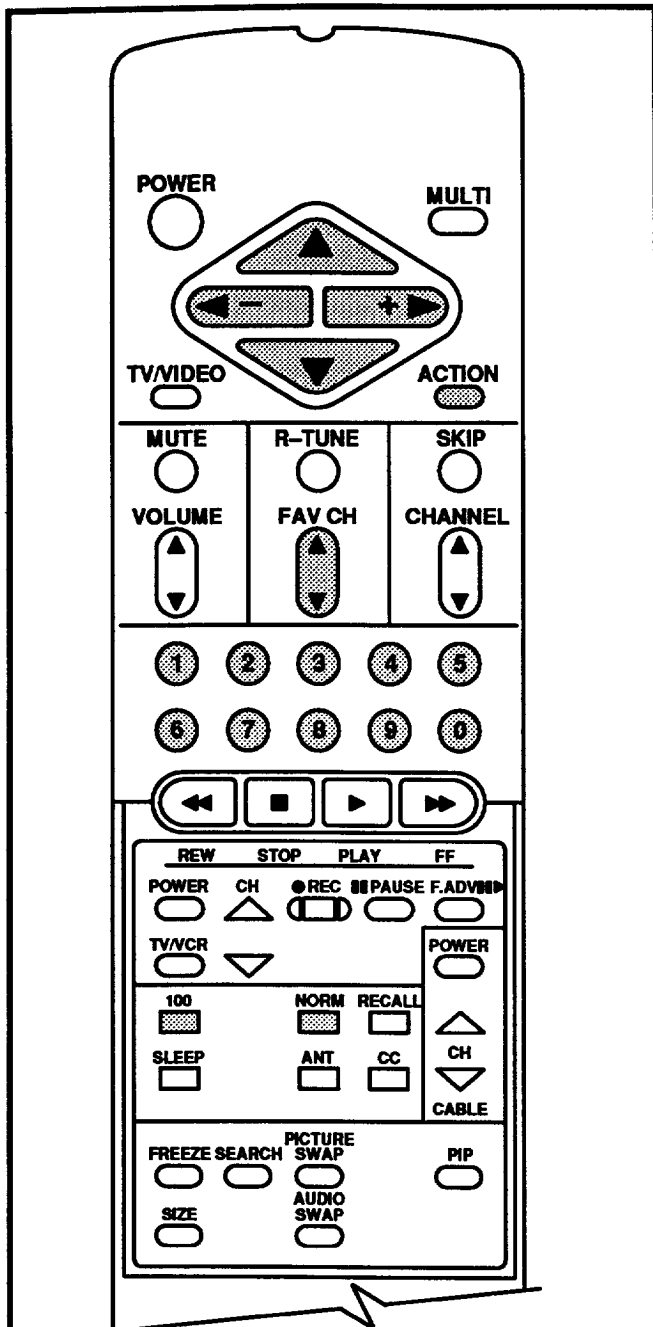
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Timer Icon is highlighted.
3. Press the ACTION button to display the Timer Menu.
4. Press the ADVANCE ▲ or ▼ button to highlight the TIMER 1 or TIMER 2 option desired.
  - Day or days you wish the timer to activate.
  - ON (time) – minutes and seconds
  - OFF (time) – minutes and seconds
  - CH (channel) you want tuned when the timer activates.
  - SET – NO (timer feature will not activate)  
YES (timer feature will activate as options are set)





5. Highlight the Timer 1 Day/Days option.
6. Press the ADVANCE ◀ or ▶ button to set the day or days you wish the Receiver to turn ON.  
The options for setting day are: (Mon~Fri), (Sat~Sun), (Daily), (Sun), (Mon), (Tue), (Wed), (Thr), (Fri), (Sat), (Ev Sun), (Ev Mon), (Ev Tue), (Ev Wed), (Ev Thr), (Ev Fri), (Ev Sat).
7. Press the ADVANCE ▼ button to highlight the ON (Hours/Minutes) position.

8. Press the ADVANCE ◀ or ▶ button to set the time you wish the Receiver to turn ON.
  9. Press the ADVANCE ▼ button to highlight the OFF (Hours/Minutes) position.
  10. Press the ADVANCE ◀ or ▶ button to set the time you wish the Receiver to turn OFF.
  11. Press the ADVANCE ▼ button to highlight the CH position.
  12. Press the ADVANCE ◀ or ▶ button to select a channel (from Program Channel Memory) that you want to be tuned to when the set turns "ON".
  13. Press the ADVANCE ▼ button to highlight the SET position.
  14. Press the ADVANCE ◀ or ▶ button to activate or deactivate Timer 1.
    - YES=Feature is activated (On Timer light turns ON).
    - NO=Feature is not activated (On Timer light is OFF).
  15. Press the ADVANCE ▼ button to set Timer 2 (if desired). Follow Steps 6 through 14.
- The NORM (NORMALIZE) button will reset all the options to their original settings for Timer 1 or Timer 2. (Cursor must be in the Timer Menu that is to be normalized.) Press the NORM button when a mistake is found after setting one of the timer's programs.



### Helpful Hints:

The PIP Scan feature can be set to scan all channels in program memory or only those channels in Favorite Channel memory. Use the PIP Channel Scan Menu to select desired setting.

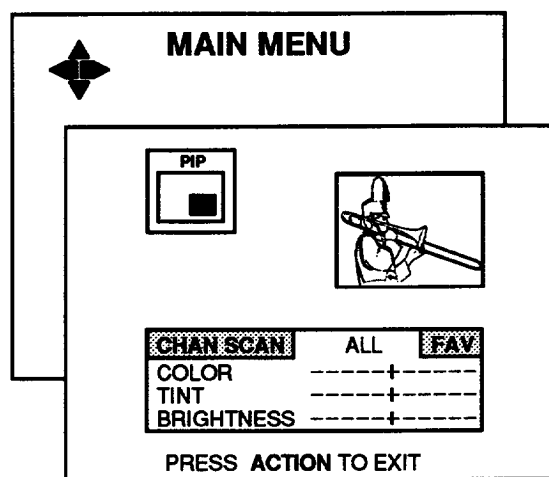
**NOTE:** Press the NORM (NORMALIZE) button to reset settings to a factory preset level.

When using FAV CH button to select your favorite channels, the channel number displays in Blue if it is programmed into channel program memory. If the channel displays in Yellow, the channel is in Favorite channel memory only.

### PIP Channel Scan

This feature selects the channel scan method used during PIP Search (see PIP Search feature).

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button until the PIP Icon is highlighted.
3. Press the ACTION button to display the PIP Settings Menu.
4. Press the ADVANCE ▲ or ▼ button until the PIP CHAN SCAN is highlighted.
5. Press the ADVANCE ◀ or ▶ button to select ALL or FAV.
  - ALL – Searches through all channels available in Program Channel memory.
  - FAV – Searches through the channels programmed into Favorite Channel Memory (Refer to Favorite Channel section for further details).

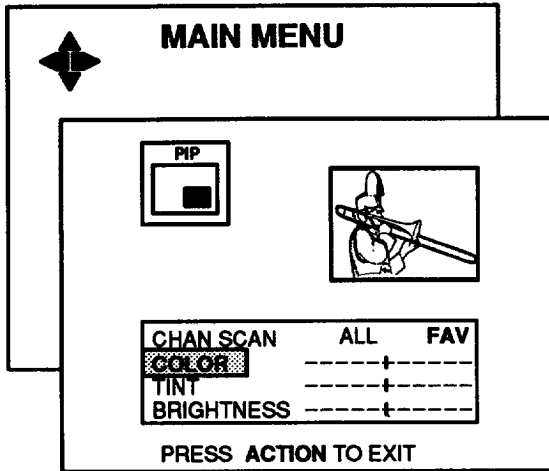


### PIP Video Adjustments

This feature allows video adjustments (Color, Tint and Brightness) to be made within the PIP frame.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the PIP Icon is highlighted.
3. Press the ACTION button to display the PIP Settings Menu.
4. Press the ADVANCE ▲ or ▼ button to select the desired function (Color, Tint or Brightness).

5. Press the ADVANCE ◀ or ▶ button to adjust desired video quality of small picture.



**Favorite Channel Programming** – The Favorite Channel Programming Feature allows you to program up to 15 of your favorite channels. You can use the FAV CH buttons on the Remote Control to scan channels without going through channels you don't normally view.

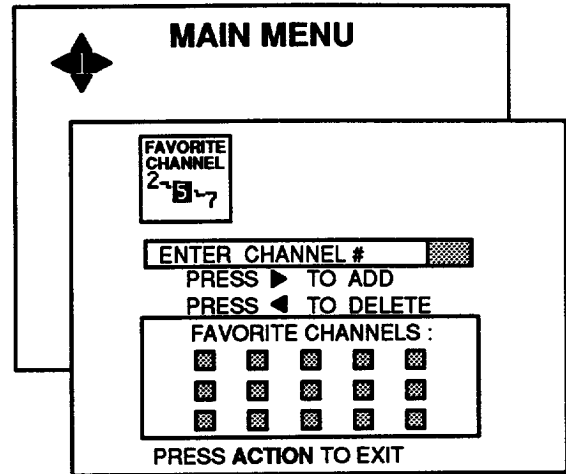


1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Favorite Channel Icon is highlighted.
3. Press the ACTION button to display the Favorite Channel Menu.
4. Enter the channel number you wish to add or delete from Favorite Channel Memory (using the Remote keyboard).

5. Press the ADVANCE ▶ button to add or press the ◀ button to delete channel from Favorite Channel Memory.
6. Repeat Steps 4 and 5 to continue adding or deleting channels (up to 15 channels may be in Favorite Channel Memory).

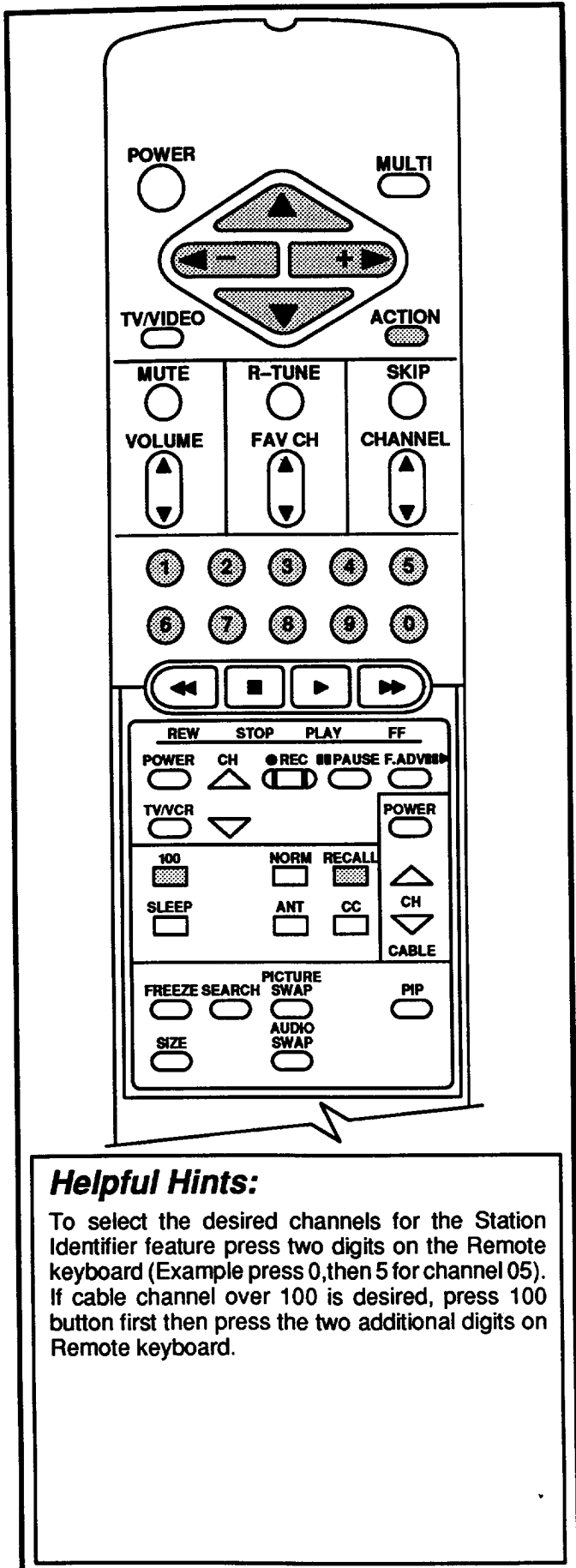
**NOTE:** When your desired channels have been programmed, press the ACTION button to cancel the menu.

7. Press the FAV CH ▲ or ▼ button to scan thru the favorite channels you programmed.

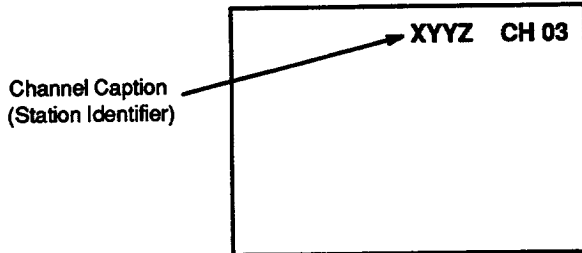


**NOTE:** Press the NORM button while the Favorite Channel Menu is displayed. This will delete all programmed channels from the Favorite Channel Memory.





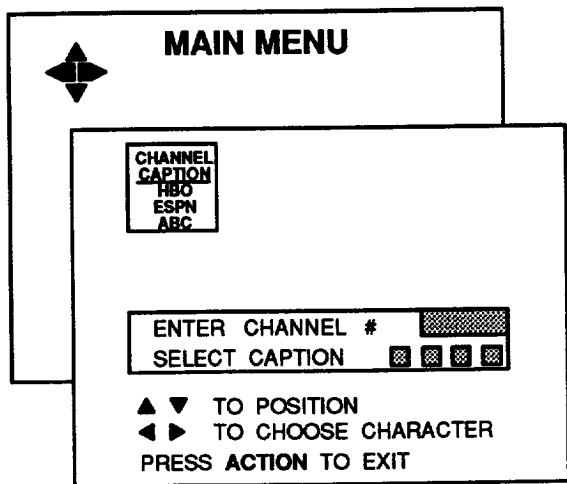
**Channel Caption** – The Channel Caption (Station Identifier) allows you to input the call names of up to 30 stations into memory (using up to 4 characters). The call name will then display along with the channel number when changing channels or pressing RECALL.



1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲/▼ and ◀/▶ button repeatedly until the Channel Caption Icon is highlighted.
3. Press the ACTION button to display the Channel Caption Menu.
4. Using Remote keyboard enter channel number you wish to assign a Station Identifier. (See Helpful Hints).
5. Press the ADVANCE ▼ button to Select Caption position.
6. Press the ADVANCE ◀ or ▶ button to select first character in Station Identifier, press ADVANCE ▼ button to move to second position and repeat until the complete Station Identifier is entered (up to 4 characters).
7. Press the ADVANCE ▼ button repeatedly to select channel number position. Repeat steps 4 through 7 to continue adding channel Station Identifier.

**Helpful Hints:**

To select the desired channels for the Station Identifier feature press two digits on the Remote keyboard (Example press 0, then 5 for channel 05). If cable channel over 100 is desired, press 100 button first then press the two additional digits on Remote keyboard.



**Channel Lockout** – The Channel Lockout Feature allows you to lockout up to 4 channels or all channels along with Video Inputs 1, 2 and 3.

**NOTE:** This feature will lockout some or all channels for up to 48 hours. Be sure to understand this feature before attempting its use. **Use a code that you will easily remember.**

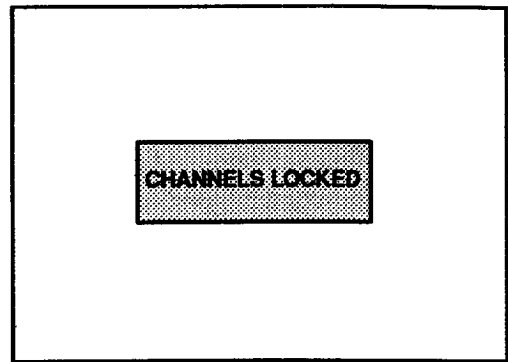
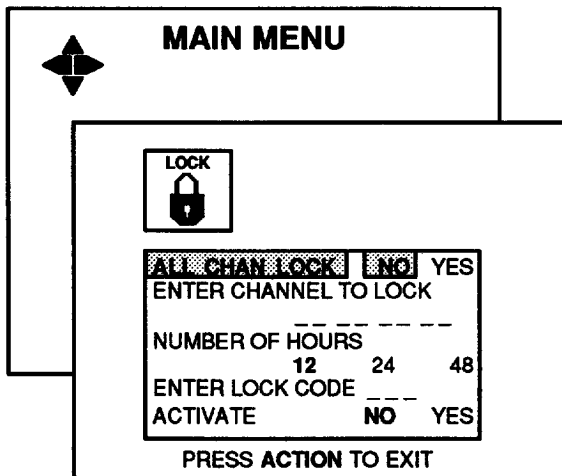
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Lock Icon is highlighted.
3. Press the ACTION button to display the (channel) Lockout Menu.

**NOTE:** When the Lockout Menu is displayed, the ALL CHANNEL LOCK option will be highlighted.

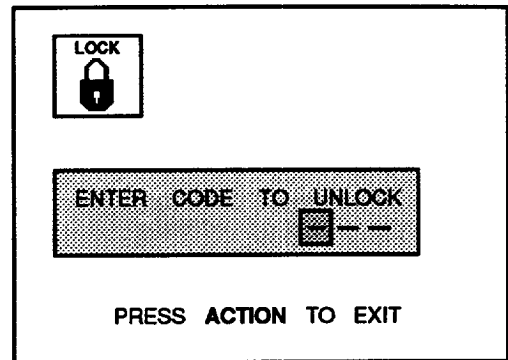
4. Press the ADVANCE ◀ or ▶ button to select YES if you desire to lockout all channels, or NO if you desired to lockout 1 to 4 channels only. If NO is selected, press the ADVANCE ▼ button then use keyboard to select channels you desire to lockout.
5. Press the ADVANCE ▼ button to highlight number of hours.
6. Press the ADVANCE ◀ or ▶ button to select 12, 24 or 48 (hours lockout time).
7. Press the ADVANCE ▼ button then enter a 3 digit code.

**IMPORTANT NOTE:** Use a code you can easily remember.

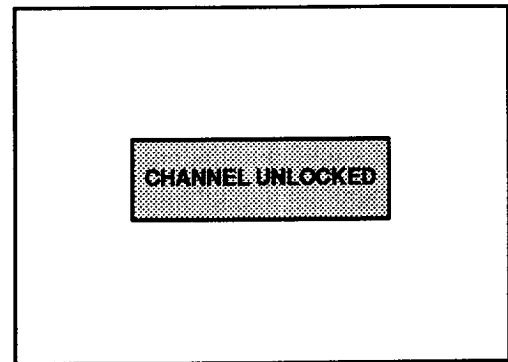
8. Press the ADVANCE ▶ button to “YES” position. The “Channels Locked” Menu will display.



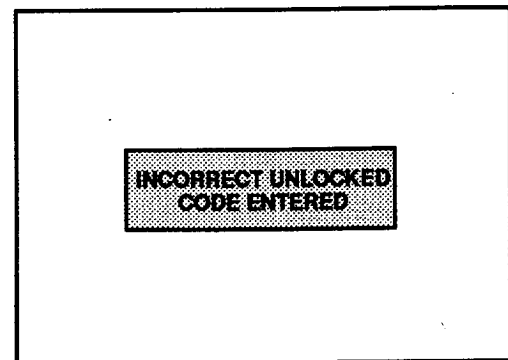
To unlock the Channel Lockout feature, follow Steps 1 through 3 and enter same 3 digit code as in Step 7. Channel Unlocked display will appear.



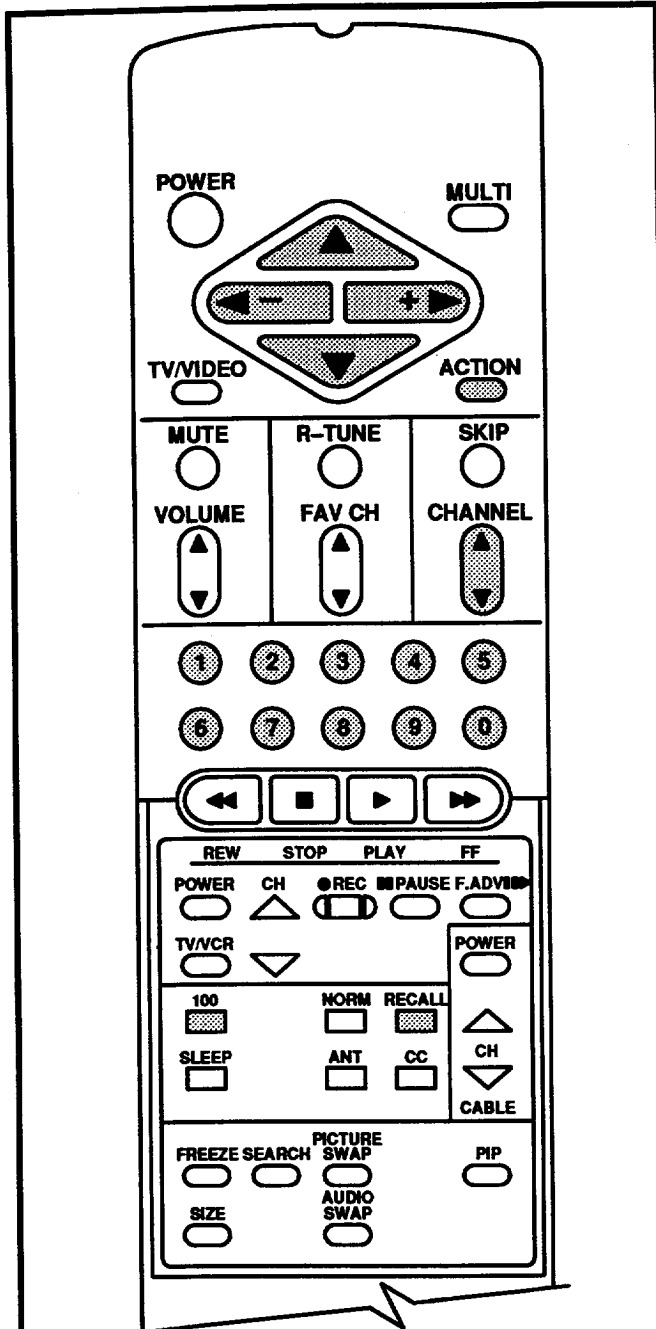
**ENTER SAME 3 DIGIT CODE**



**IF 3 DIGIT CODE IS THE SAME**



**IF 3 DIGIT CODE IS NOT THE SAME**



### Helpful Hints:

#### After Auto Programming:

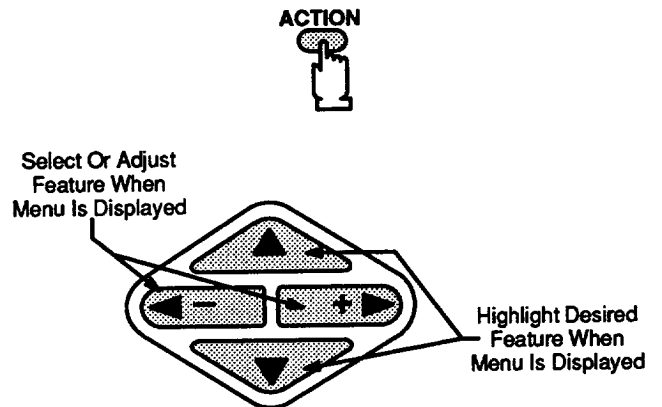
Blue channel number indicates channel is in Channel Scan memory.

All channels are available by direct access using the keyboard numbers "0 through 9" and the "100" button.

After Auto Programming Scan has completed, up to 15 channels will be programmed into the Favorite Channel memory if space is available. Any original channels that were programmed into FAV CHANNEL will remain. (Refer to Favorite Channel Scan for deleting unwanted channels.)

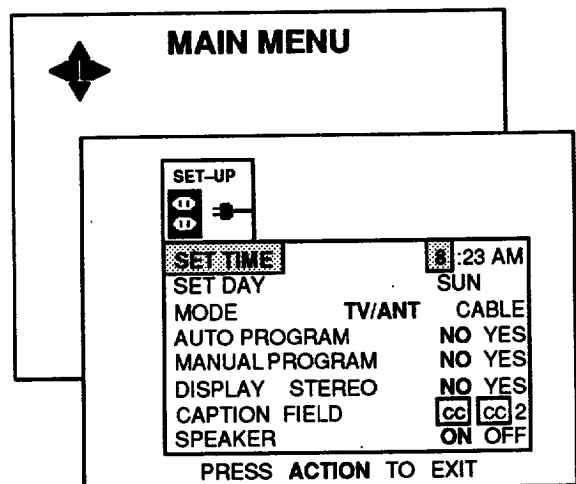
### Set-Up Features

- Set Time
- Set Day
- TV/ANT-Cable Tuning Mode
- Auto Program
- Manual Program
- Display "Stereo-SAP-Mono"
- Caption Field
- Speaker



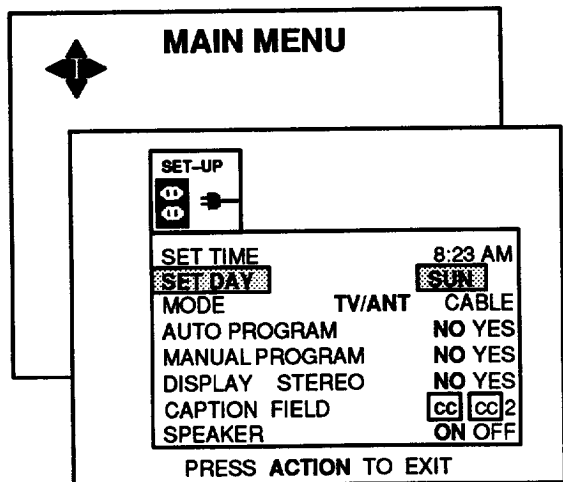
**Set Time (Clock)** – Clock (when set) will display on screen at initial "Turn On", after a channel change and when pressing RECALL button. It must be set in order to operate the dual Timer feature.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button to highlight Set Time position, then select hours position.
5. Press the ADVANCE ◀ or ▶ button to set hours (set AM/PM accordingly).
6. Press the ADVANCE ▼ button to highlight minutes position.
7. Press the ADVANCE ◀ or ▶ button to set minutes.



**Set Day** – The day of the week must be set in order to operate the dual timer feature.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button until Set Day is highlighted.
5. Press the ADVANCE ◀ or ▶ button to select proper day of the week.



1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button until MODE is highlighted.
5. Press the ADVANCE ◀ or ▶ button to select TV/ANT (mode) or CABLE (mode).

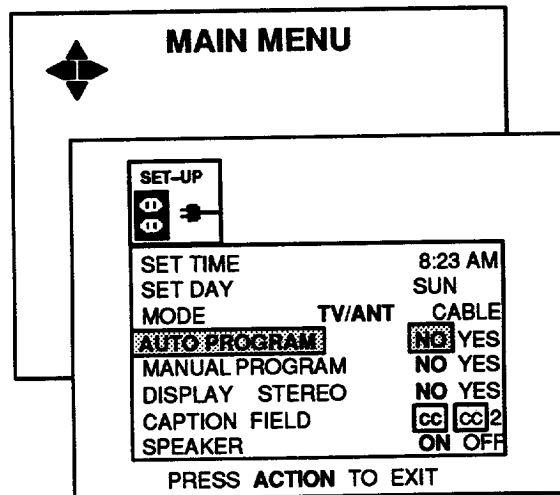
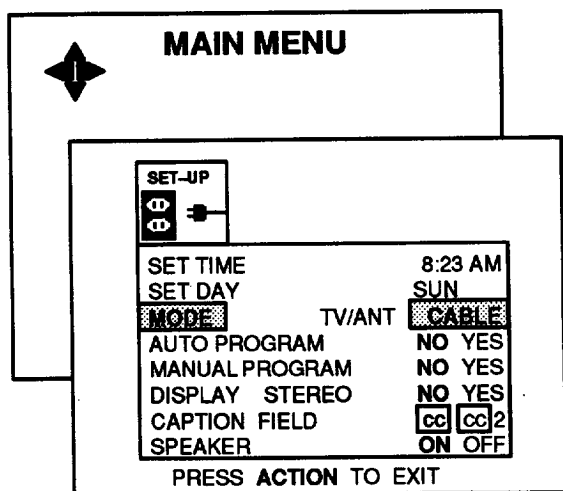
**Auto Programming** – The Auto Programming feature allows you to place all channels with a video signal into Channel Scan memory. Press the CHANNEL ▲ or ▼ button and only those channels with a signal will be accessed.

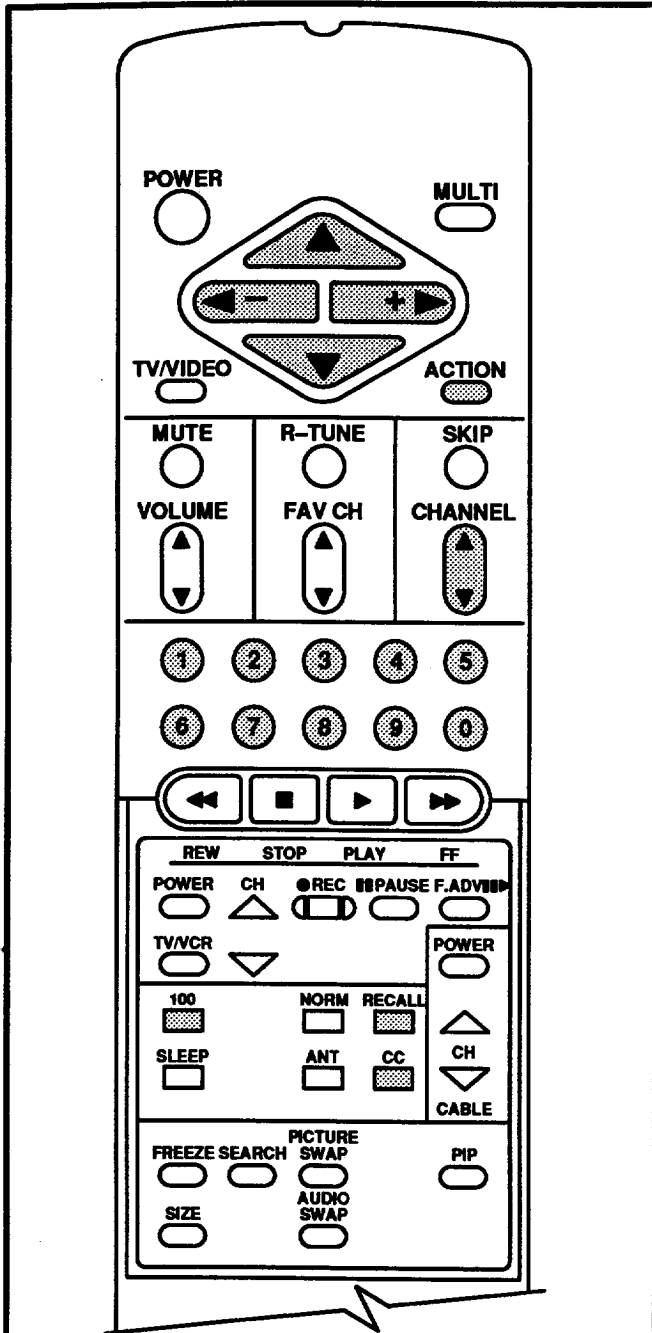
**NOTE:** TV/ANT–Cable tuning mode must be set properly for your system.

1. Press the ACTION button to display the Main Menu.
  2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
  3. Press the ACTION button to display the Set-Up Menu.
  4. Press the ADVANCE ▲ or ▼ button until Auto Program is highlighted.
  5. Press the ADVANCE ▶ button to start Auto Programming. Channels will automatically advance until all channels have been scanned.
- Channel numbers with signal present will turn blue which indicates stored in Channel Scan memory.

**TV/ANT–Cable Tuning Mode – Important Note:**  
The proper input mode must be selected for the type of signal at the antenna input.

- TV/ANT 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 is used when the Receiver is connected to a Cable TV System and you are not using a cable company converter box (Channels 01–125).





**Helpful Hints:**

**After Auto Programming:**

Blue channel number indicates channel is in Channel Scan memory.

Yellow channel number indicates channel is not in Channel Scan memory.

All channels are available by direct access using the keyboard numbers "0 through 9" and the "100" button.

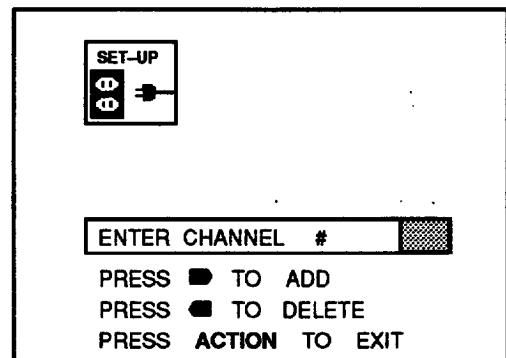
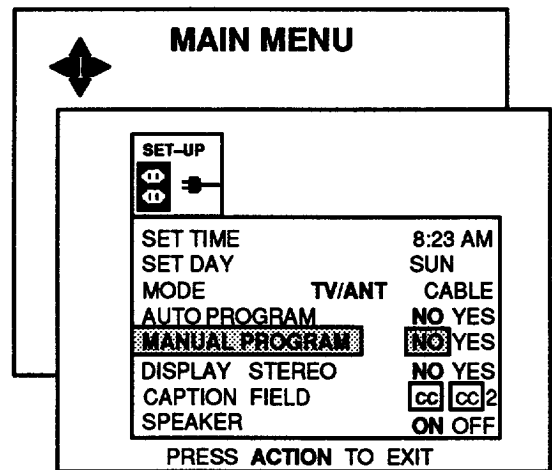
The "Stereo-SAP-Mono" display can be eliminated during channel change by selecting "No" when DISPLAY STEREO Menu is highlighted.

RECALL button will allow you to review the Stereo-SAP-Mono Menu anytime.

**Manual Programming** – This feature allows you to select which channels are placed into Channel Scan memory. Press the CHANNEL ▲ or ▼ button and only those channels you desire will be accessed.



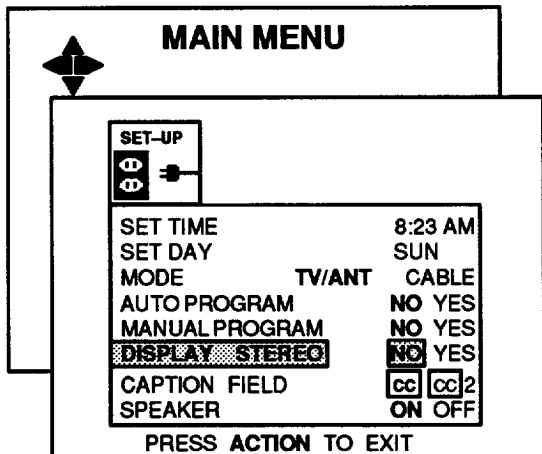
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲/▼ and ◀/▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button until Manual Program is highlighted.
5. Press the ADVANCE ◀ or ▶ button to display Manual Programming Menu.
6. Use Remote keyboard numbers "0 through 9" or the "100" button with "0 through 9" button to select channels.
7. Press the ADVANCE ▶ button to add channel(s) to memory (blue). Press the ADVANCE ◀ button to delete channel(s) from memory (yellow).
8. Repeat Steps 6 and 7 to continue adding or deleting channels.



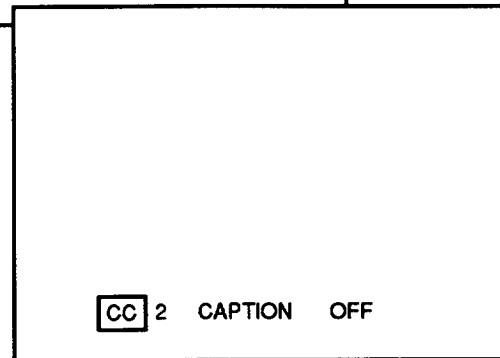
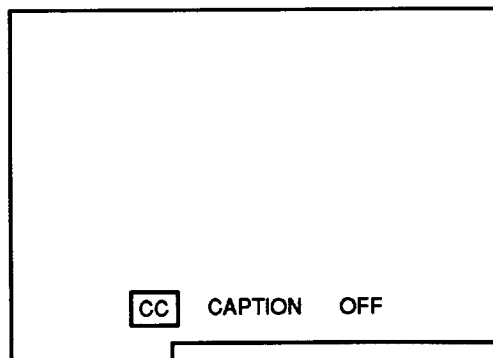


**Display Stereo** – This feature allows the option of displaying Stereo–SAP–Mono Menu On Screen at initial turn on and channel change.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until the Display Stereo is highlighted.
5. Press the ADVANCE ◀ or ▶ button to:
  - “Yes” displays Stereo–SAP–Mono Menu.
  - “No” does not display Stereo–Sap–Mono Menu.



**CAPTION FIELD CC 1**



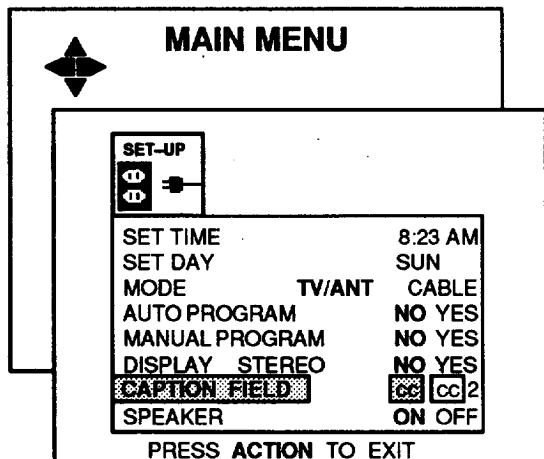
**CAPTION FIELD CC 2**

**NOTE:** Refer to the CC (Closed Caption) section for your desired Closed Caption viewing modes.

**Caption Field** – This feature allows you the option to select Caption Field 1 or 2 for Closed Caption viewing. Closed Caption information may be transmitted on either or both caption fields.

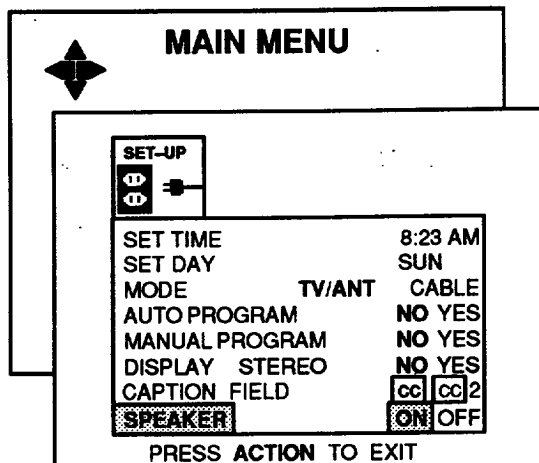
1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until the Caption Field is highlighted.
5. Press the ADVANCE ◀ or ▶ button to select CC or CC2 (Closed Caption Field 1 or 2).
6. Press the CC (Closed Caption) button to verify your selection.

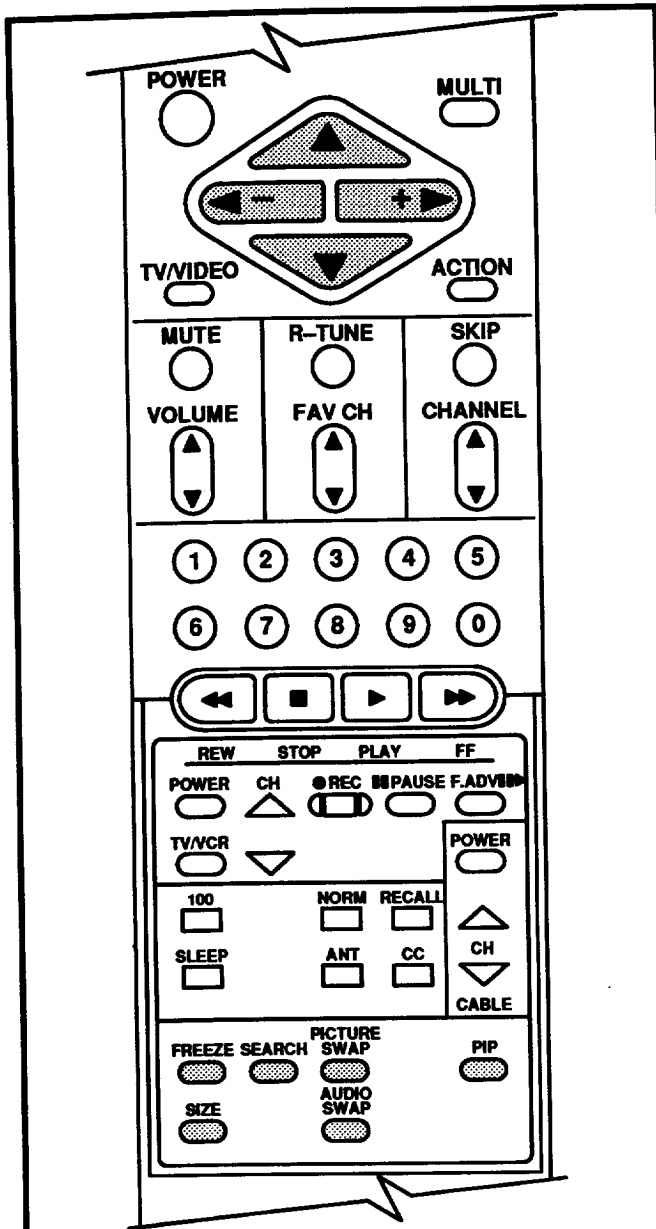
**NOTE:** Anytime the Receiver power is interrupted Caption Field will automatically switch to Caption Field 1 mode.



**[TV] Speaker** – This feature is used to turn the internal speakers ON or OFF when the Receiver is connected to an external audio amplifier.

1. Press the ACTION button to display the Main Menu.
2. Press the ADVANCE ▲ / ▼ and ◀ / ▶ button repeatedly until the Set-Up Icon is highlighted.
3. Press the ACTION button to display the Set-Up Menu.
4. Press the ADVANCE ▲ or ▼ button repeatedly until the Speaker is highlighted.
5. Press the ADVANCE ◀ or ▶ button to select Speaker ON or OFF.





### Helpful Hints:

The Search Functions can operate without a second video source.

The PIP feature displays video information sourced from the TV tuner as the main picture and video information sourced from equipment connected to the external video input as the PIP picture. Should the PIP feature not operate in this manner perform the following:

1. With PIP "OFF" select TV Mode with the TV/VIDEO button (channel selected will display on screen momentarily).
2. With PIP "ON" select VIDEO Mode with the TV/VIDEO button (Video source will display on screen momentarily).

**NOTE:** If your Receiver has more than one video input for external equipment, you must select the video input that the equipment is connected to.

## PIP (Picture in Picture) Button

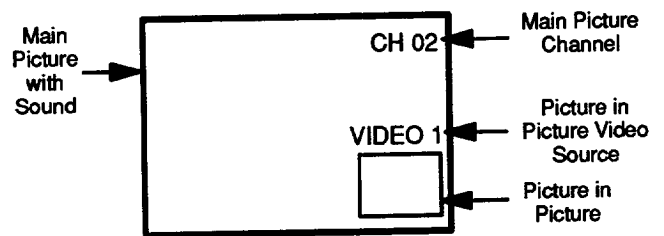
This feature allows monitoring one channel while watching another when a second video source is connected (such as a VCR) to the television.

**NOTE:** S-Video connection will also operate the PIP feature (refer to Optional S-VIDEO VHS Connection section.)



### PIP Operation

1. Turn VCR ON and select desired channel.
2. Press the PIP button (television must be ON). The PIP picture will appear at the position it was last displayed. The Main Picture Video Source and PIP Video Source will display momentarily. Audio will be that of main picture.
3. Press the PIP button again to cancel PICTURE IN PICTURE feature.



**PIP Frame Size** – Press the SIZE button while the PIP frame is displayed to choose either the large or small PIP frame.

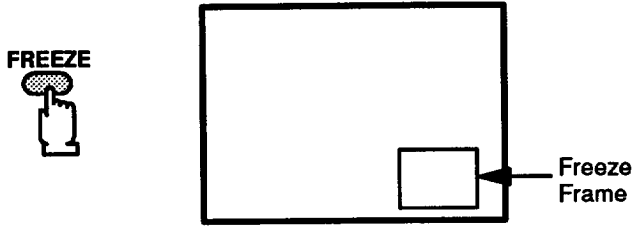


Large PIP Frame

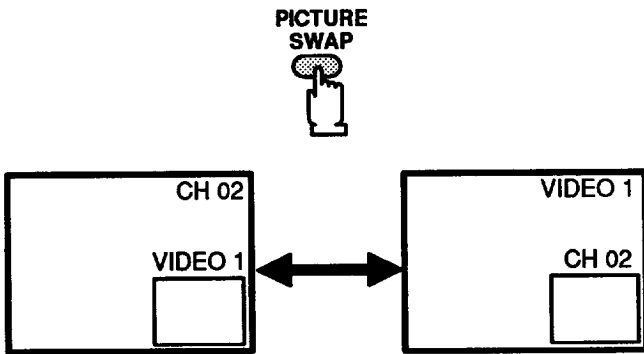


Small PIP Frame

**PIP Freeze Frame Feature** – Press the FREEZE button to stop action in the PIP Frame.

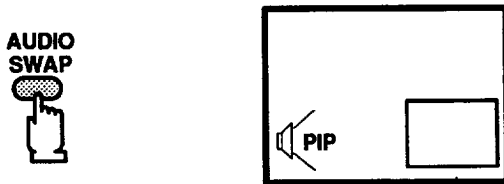


**Picture Swap** – Press the PICTURE SWAP button to interchange what is being viewed on the main picture with that of the PIP frame.



• Audio will be that of the main picture.

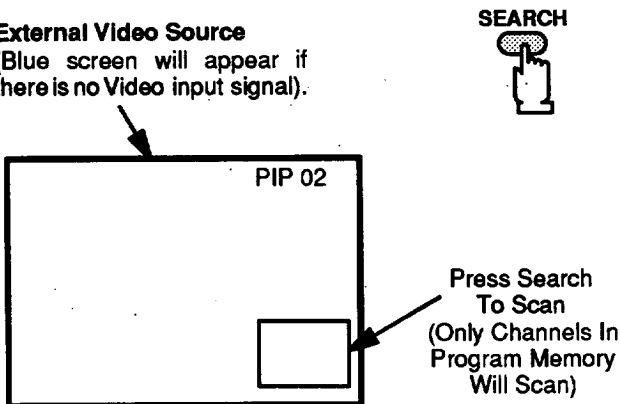
**Audio Swap** – Press the AUDIO SWAP button to listen to the sound corresponding to the picture in the PIP frame. Press AUDIO SWAP button again to restore the main picture sound.



**Search Button**

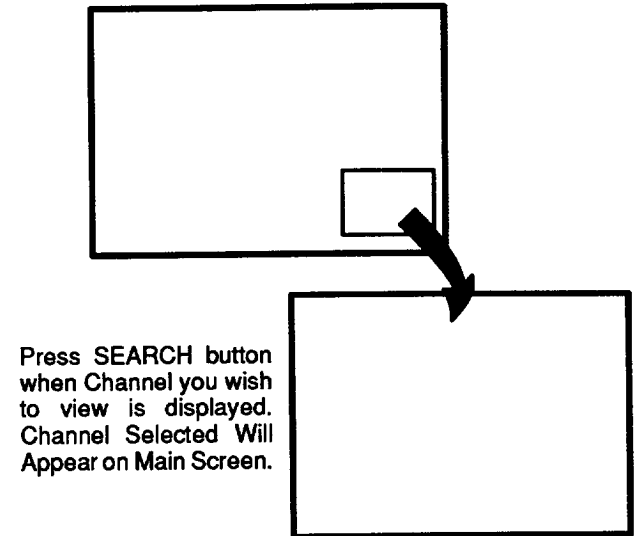
The SEARCH button allows you to scan channels one at a time. This feature will work with or without an external video signal as the main picture.

**External Video Source**  
(Blue screen will appear if there is no Video input signal).



**Search Operation**

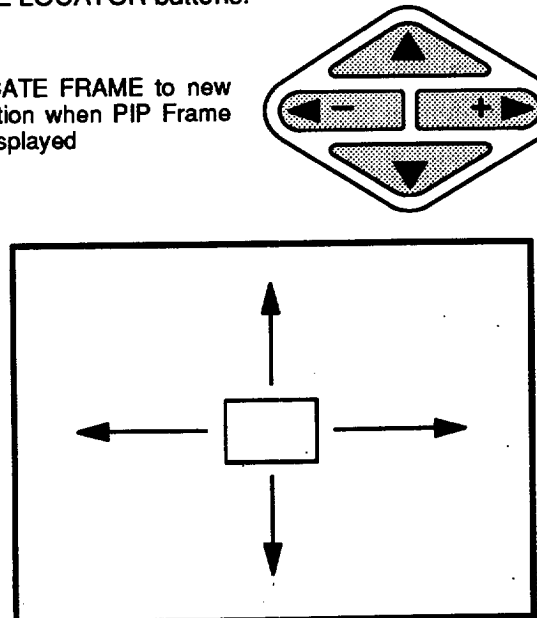
1. Press the SEARCH button. A PIP frame will appear on the main picture.
2. The screen will momentarily scan channels in sequence as programmed into channel memory.
3. Press the SEARCH button again when the channel you wish to view is displayed. Channel you select will switch to the main viewing screen and PIP frame will disappear.



Press SEARCH button when Channel you wish to view is displayed. Channel Selected Will Appear on Main Screen.

**PIP Frame Locator** – The PIP Frame may be located anywhere on the main picture by use of the FRAME LOCATOR buttons.

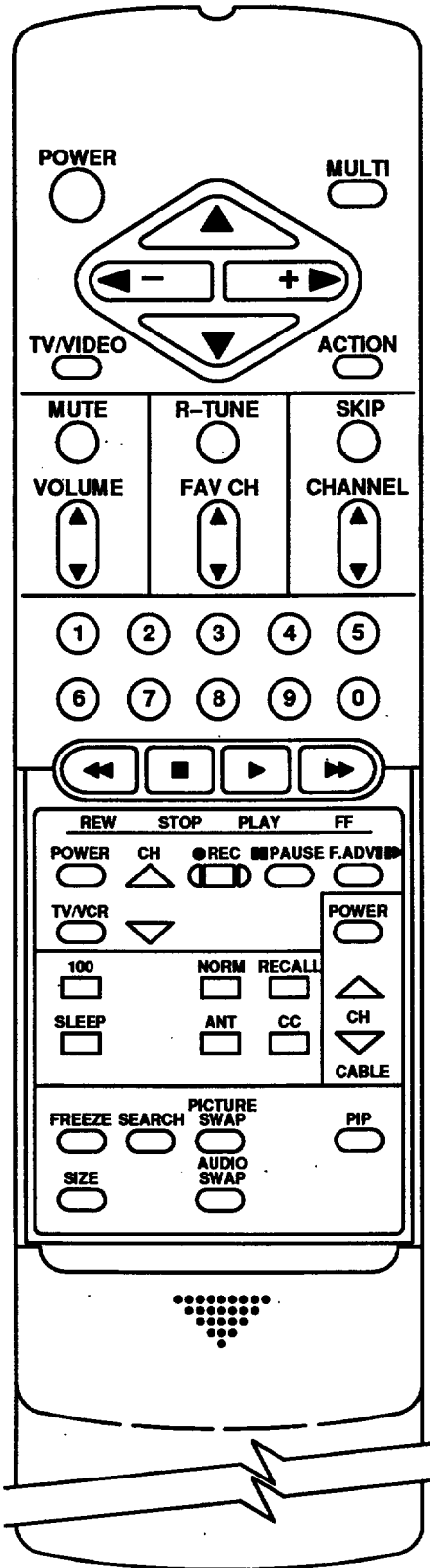
LOCATE FRAME to new location when PIP Frame is displayed



# Programming The Universal Remote Control

The Universal infra-red Remote Control supplied is capable of operating many brands of VCRs and Cable Television Converter boxes after entering the proper infra-red code.

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



The TV FUNCTION buttons are preprogrammed.

VCR FUNCTION buttons allow the user to operate selected brands of VCRs (default code is 00).

The TV FUNCTION buttons are preprogrammed.

CABLE TELEVISION buttons allow the user to operate selected brands of cable television converter boxes (default code is 01).

Remote Control

The proper infra-red code for the VCR Function buttons and cable TV buttons can be obtained two ways.

1. Use the infra-red access codes
2. "Sequence method"

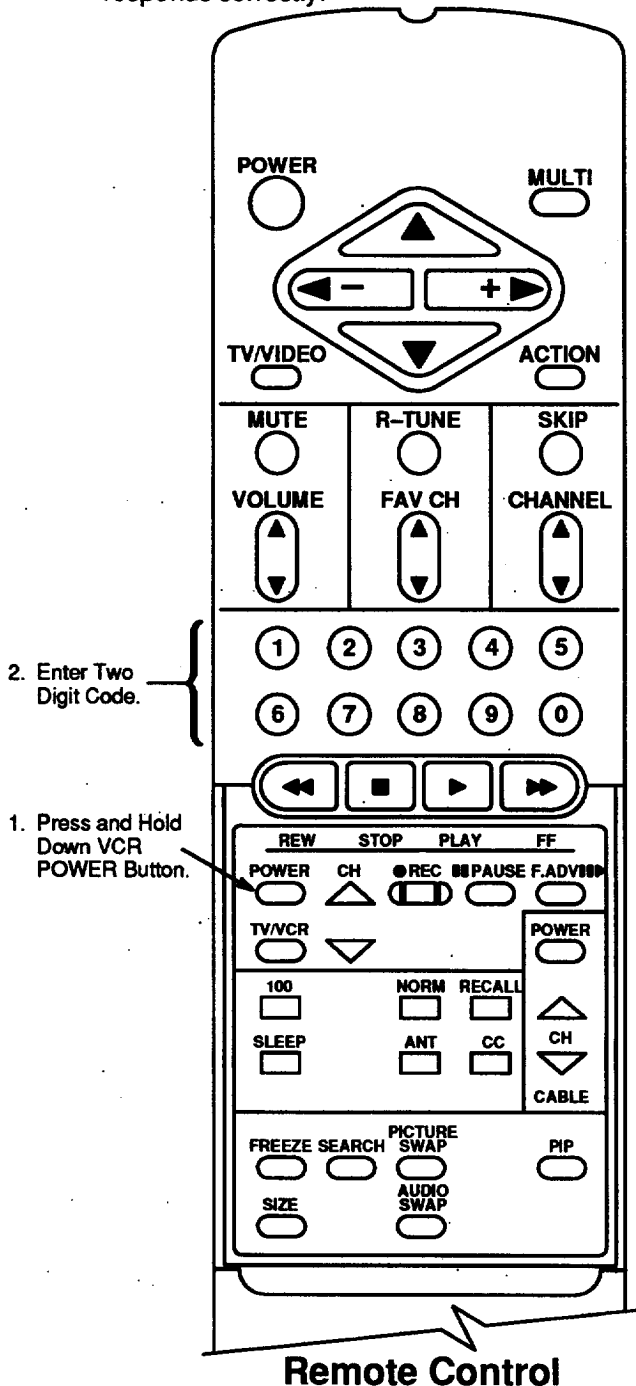
### Preferred Procedure – Code Known Programming Universal Remote Using Infra-Red Access Codes for VCRs

- Determine brand of VCR.
- Identify code(s) associated with the brand in the infra-red code index for VCRs (located in this manual).

#### Procedure

1. Press and hold VCR POWER button down on Universal Remote.
2. Enter two digit code using keyboard "0" through "9" buttons. The Universal Remote is now programmed.

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



### Alternate Procedure – Code Unknown Programming Universal Remote Using the "Sequence Method" for VCRs

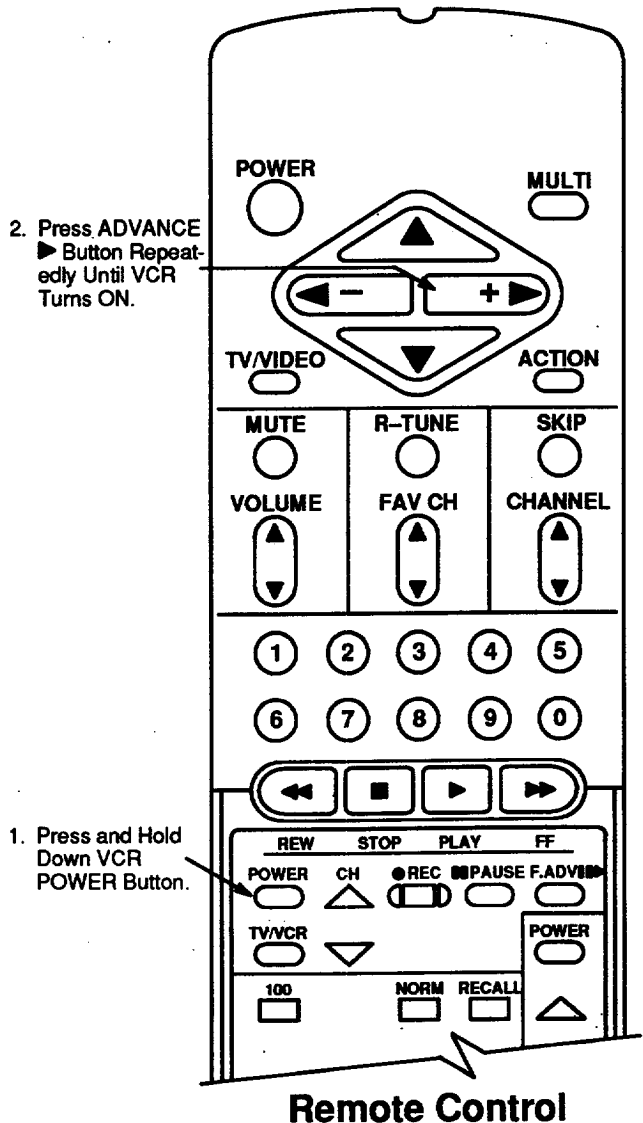
- Confirm VCR is plugged in and operating properly, then turn OFF.

#### Procedure

1. Press and hold the VCR POWER button down on Universal Remote.
2. Press ADVANCE button repeatedly. Check for the VCR to turn ON after each press. Stop pressing the button when the VCR turns ON. The proper infra-red code has now been accessed.

#### NOTE:

1. It may take as many as 35 attempts before the correct code is found.
2. The ADVANCE button can be used to return to a code that was accidentally passed by.
3. Some Remote Controls may have unique operating functions for some buttons. For Example: The POWER button may only turn the VCR OFF as opposed to both ON and OFF. It will then be necessary to modify the procedure. Turn the VCR ON and repeatedly press the ADVANCE button until the VCR turns OFF.



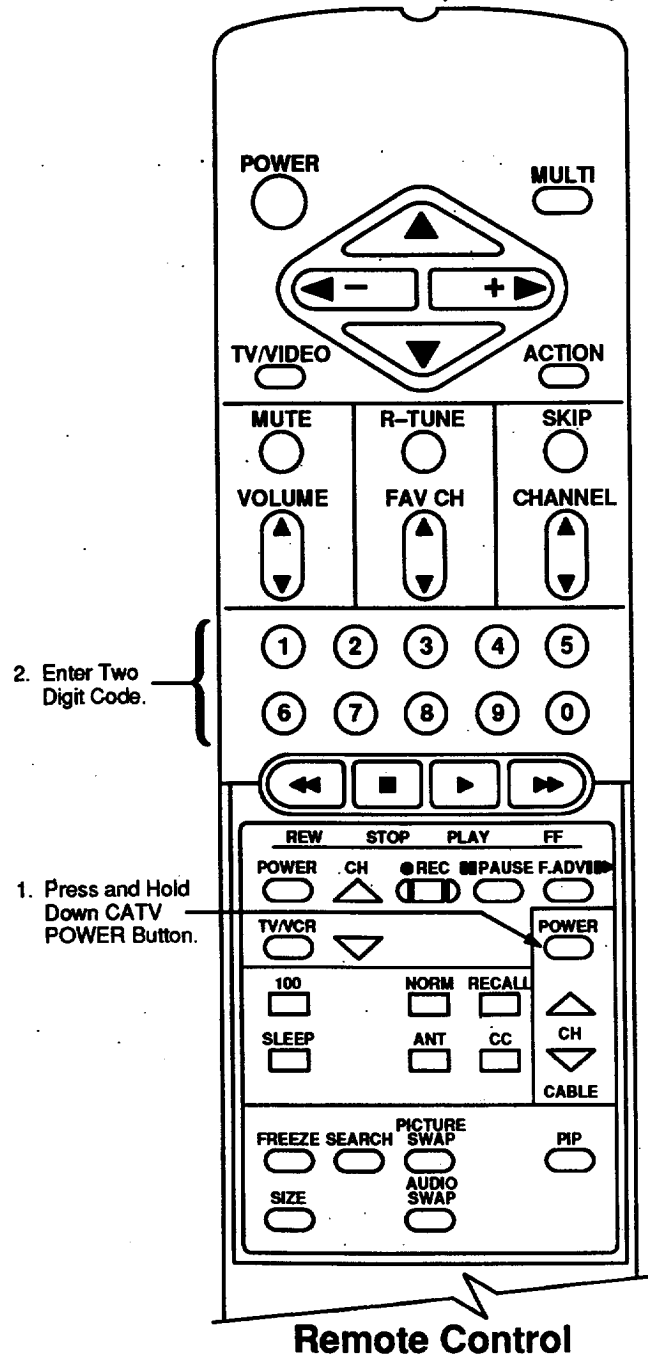
**Preferred Procedure – Code Known  
Programming Universal Remote Using  
Infra-Red Access Codes for Cable Television  
Converter Boxes**

- Determine brand of Cable Television Converter.
- Identify code(s) associated with the brand in the infra-red code index for Cable Television Converter boxes (located in this manual).

**Procedure**

1. Press and hold the CABLE TV POWER button down on Universal Remote.
2. Enter two digit code using keyboard "0" through "9" buttons. The Universal Remote is now programmed.

**NOTE:** Some brands have multiple codes. Repeat procedure using each code listed until Cable Television Converter box responds correctly.



**Alternate Procedure – Code Unknown  
Programming Universal Remote Using  
the "Sequence Method" for Cable Television  
Converter Boxes**

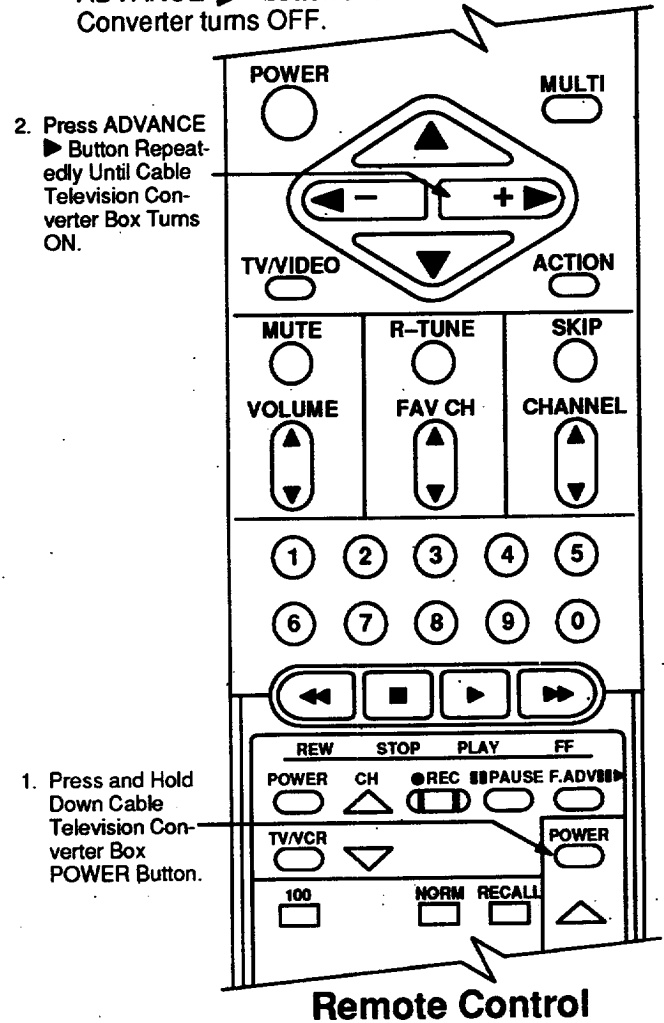
- Confirm Cable Television Converter box is plugged in and operating properly, then turn OFF.

**Procedure**

1. Press and hold the CABLE TV POWER button down on Universal Remote.
2. Press ADVANCE ► button repeatedly. Check for the Cable Television Converter to turn on after each press. Stop pressing the button when the Cable Television Converter turns on. The proper infra-red code has now been accessed.

**NOTE:**

1. It may take as many as 10 attempts before the correct code is found.
2. The ADVANCE ◀ button can be used to return to a code that was accidentally passed by.
3. Some Remote Controls may have unique operating functions for some buttons. For Example: The POWER button may only turn the Cable Television Converter OFF as opposed to both ON and OFF. It will then be necessary to modify the procedure. Turn the Cable Television Converter ON and repeatedly press the ADVANCE ► button until the Cable Television Converter turns OFF.



## Infra-Red Code Index For VCRs

VCR Brand	Code(s)	VCR Brand	Code(s)
Audio Dynamics	14, 16	NEC	02, 14, 16, 30
Broksonic	10	Panasonic	00
Canon	00	Pentax	05
Capehart	01	Philco	00, 29
Citizen	09	Philips	00, 29
Craig	12	Pioneer	05
Curtis Mathes	00, 08, 15	Quasar	00
DBX	14, 16	RCA	05, 07, 08, 28, 35
Emerson	10, 20, 34, 35, 36, 37	Realistic	00, 02, 06, 12, 15
Fisher	12, 18, 19	Samsung	07, 32
Funai	15	Sanyo	02, 12
GE	00, 07, 08, 32	Scott	04, 13, 33, 36
Goldstar	09	Sears	02, 05, 18, 19
Hitachi	05, 35, 36	Sharp	06, 24
Instant Replay	00	Sony	17, 26, 33, 34
JCPenney	00, 02, 05, 14, 16, 30	Sylvania	00, 29
JVC	02, 14, 16, 30	Symphonic	15
Kenwood	02, 14, 16, 30	Tashiko	09
Magnavox	00, 29	Tatung	30
Marantz	02, 14, 16, 29, 30	Teac	15, 30
Marta	09	Teknika	21
Memorex	00, 12	Toshiba	05, 13
MGA	04, 27	Vector Research	14, 16
Minolta	05	Video Concepts	14, 16
Mitsubishi	04, 27	Wards	06
Montgomery Ward	06	Yamaha	02, 14, 16, 30
Multitech	07, 15, 32	Zenith	11, 17

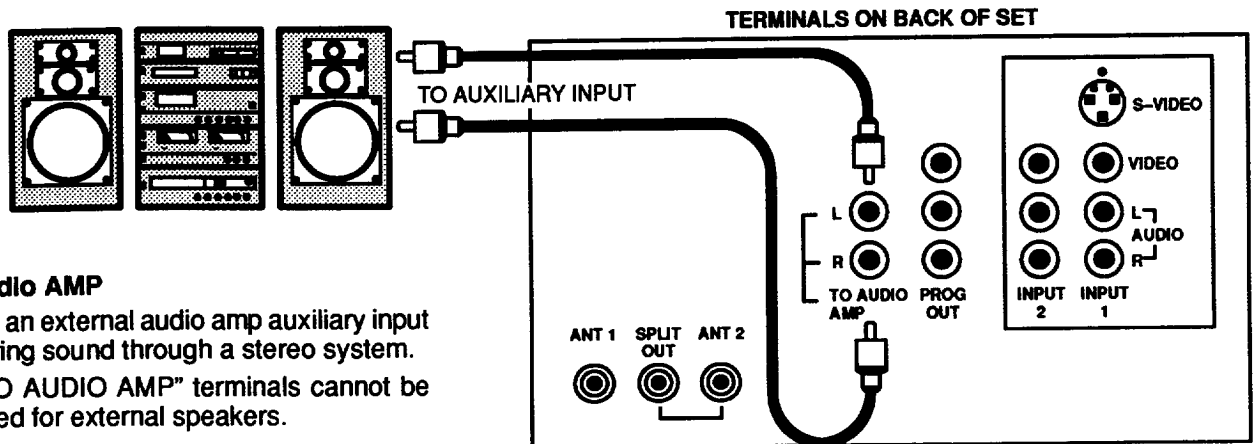
## Infra-Red Code Index For Cable Television Converter Box

Brand of Cable-TV Box	Code(s)	Brand of Cable-TV Box	Code(s)
Jerrold	25	RCA	27
Oak	14, 16	Scientific Atlantic	03, 22
Oak Sigma	16	Zenith	01, 42
Panasonic	27, 39		

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

# Optional Equipment Connection and Operation

## To Audio AMP Connection (Stereo)



### • To Audio AMP

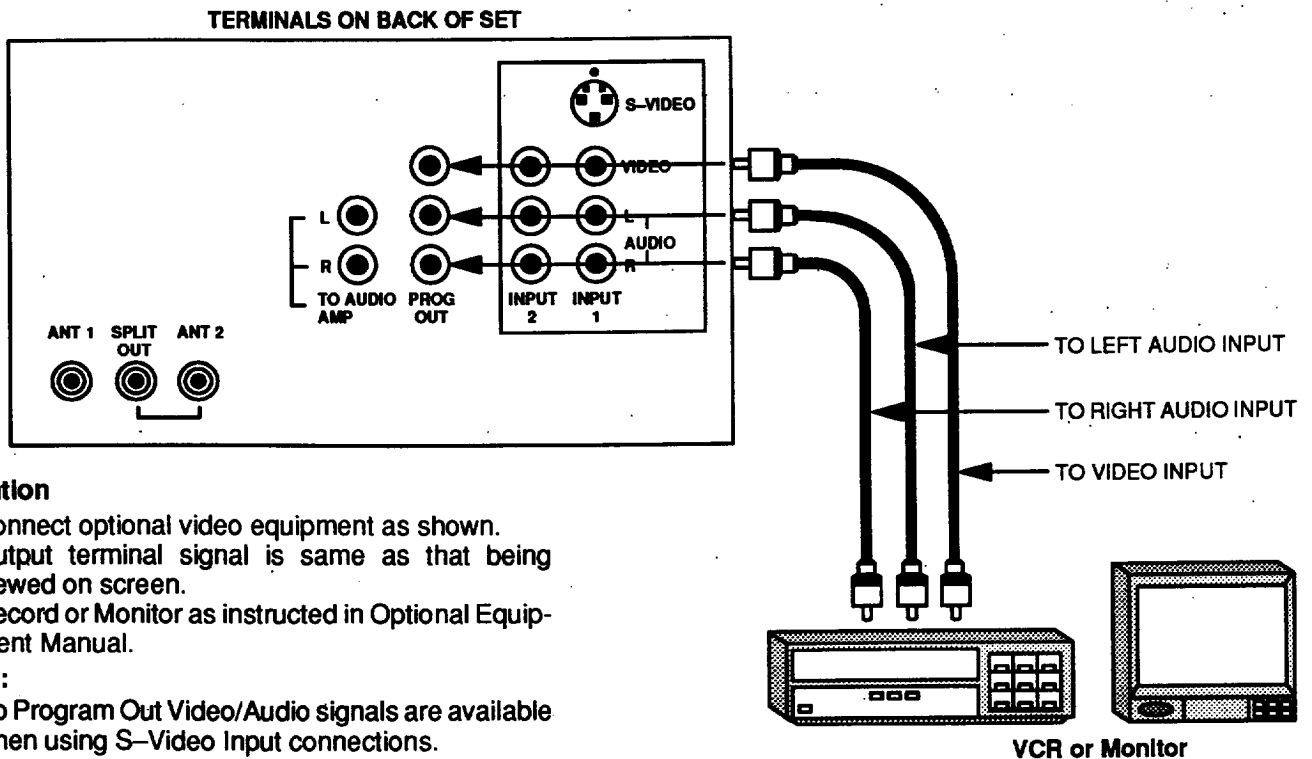
Connect to an external audio amp auxiliary input for monitoring sound through a stereo system.

**NOTE:** "TO AUDIO AMP" terminals cannot be used for external speakers.

**Adjustment** – When an audio amp is connected to "TO AUDIO AMP" terminals:

1. Put the INT. SPEAKERS into the "OFF" Mode. (Refer to the Set-Up 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. Put the INT. SPEAKERS into the "ON" Mode. (Refer to the Set-Up Menu [TV] Speakers section.)
6. Audio bass, treble, balance, volume and mute can now be controlled by the TV Remote Control.

## PROG (Program) Out Connection



### Operation

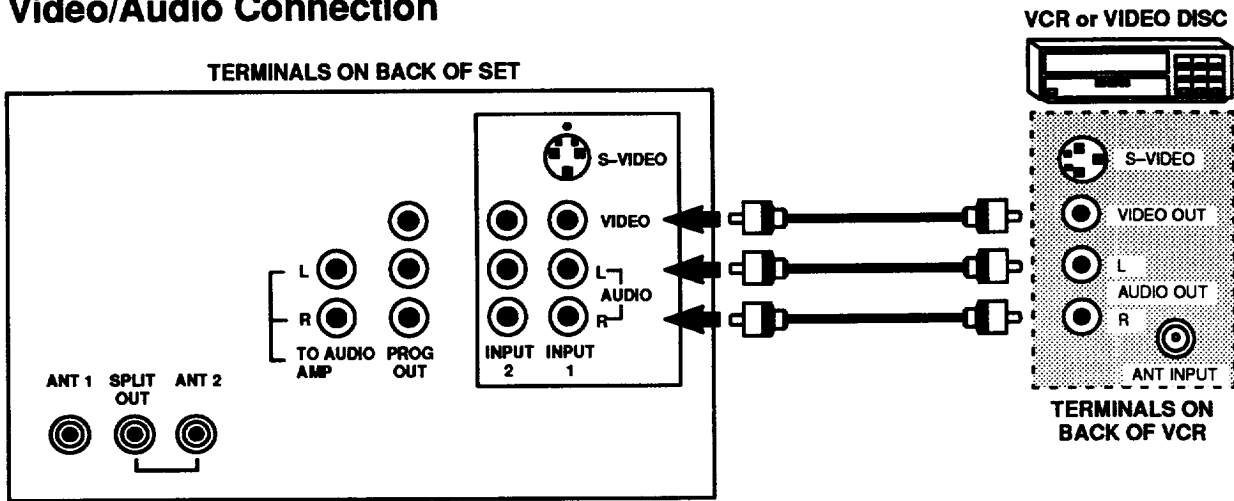
1. Connect optional video equipment as shown.
2. Output terminal signal is same as that being viewed on screen.
3. Record or Monitor as instructed in Optional Equipment Manual.

### NOTE:

- No Program Out Video/Audio signals are available when using S-Video Input connections.
- If your optional equipment is monaural (has only one audio channel) select MONO by use of the Audio Adjust Menu and make connection to either L or R Audio.



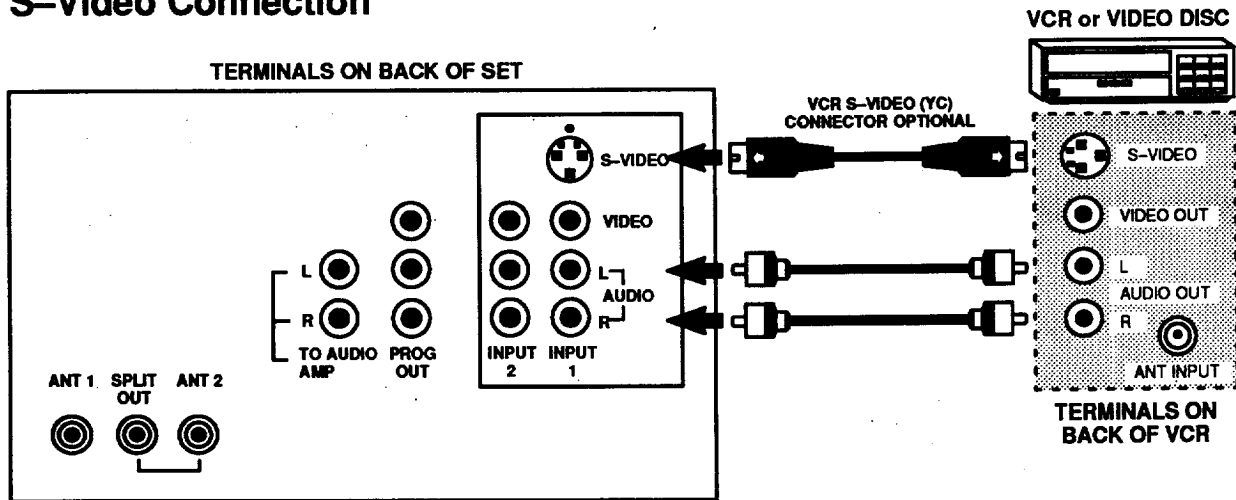
## Video/Audio Connection



### Operation

1. Connect optional equipment as shown to Input 1,2 or 3 (Input 3 is located on the front of Receiver).
2. Select the proper Video Input by pressing TV/VIDEO button.  
**NOTE:** You must select the same Video Input that the equipment is connected to.
3. Operate optional equipment (VCR-VDP) as instructed in Optional Equipment manual.

## S-Video Connection



### Operation

1. Make connections to Input jack 1 or 3.
2. Press the TV/VIDEO button to select Input mode.
3. Operate optional equipment (VCR-VDP) as instructed in Optional Equipment manual.

### NOTE:

- Video/Audio Input 1 or 3 can be used for S-VIDEO connection. (Input 3 is located on front of Receiver).
- Connection of optional S-VIDEO jack automatically disconnects the Normal Video Input jack.

# 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 . . . wipe dry.

## **Plastic Cabinets**

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

## **Wood Cabinets**











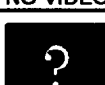







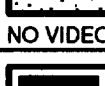

When dusting or polishing the cabinet, use a clean soft cloth and stroke straight with the grain. An occasional coat of furniture polish will help preserve the finish. Do not use benzene, thinners or other petroleum based cleaners. Do not place objects made of plastic or rubber directly on top of the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

# 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) - TV SPEAKERS SWITCH (IF APPLICABLE) IN OFF OR EXT POSITION - TRY ANOTHER CHANNEL - TV SPEAKERS [SET-UP MENU] (IF APPLICABLE) IN THE OFF MODE
 NO VIDEO	 NOISY SOUND	- TV/ANT-CABLE TUNING SYSTEM SET TO PROPER SETTING - ANTENNA INPUT MODE INCORRECT
 NO PICTURE	 NO SOUND	- CHECK THAT AC POWER LINE IS PLUGGED INTO AC OUTLET AND POWER BUTTON IS ON - BRIGHTNESS & 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
 NO VIDEO	 NOISY SOUND	- CHANNEL LOCKOUT FEATURE ACTIVATED
 BLACK BOX IN PICTURE	 SOUND	- CC (CLOSED CAPTION) IN TEXT MODE - PUT IN CAPTION OFF MODE TO ELIMINATE BLACK BOX

Should this unit fail to operate, turn it OFF, unplug the AC cord, and contact your Authorized Service Center for repairs.

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

FEATURE	FACTORY PRESET STATE	FEATURE	FACTORY PRESET STATE
POWER	OFF	SLEEP TIMER	0/OFF
VOLUME	APPROX. -1/3	ON TIMER	OFF
CHANNEL	CH 03	TV/ANT-CABLE	CABLE
PROGRAM MEMORY	UNPROGRAMMED	TV/VIDEO	TV
VIDEO MENUS	NORMALIZED	NOISE REDUCTION	OFF
AUDIO MENUS	NORMALIZED	PIP FEATURES	OFF
STEREO/SAP/MONO	STEREO	AUTO COLOR	ON
CLOCK	NOT SET		

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