



**Advanced Video Imaging**



## **OPERATING GUIDE AND WARRANTY**

**MTS Stereo Color TV  
with  
Picture-In-Picture  
Surround Sound  
Closed Captions  
Remote Control**



Return the Product Registration  
Card, and your TV could be free!



## 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 TO QUALIFIED SERVICE PERSONNEL.

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### Safety Tips

Refer to the "Safety Tips" booklet that came with your product for important safety considerations.

### Note to Cable TV System Installer

This reminder is provided to call the cable TV 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 the cable entry as practical.

### Power-Cord Polarization

This product 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.

### CAUTION

To prevent electric shock, match wide blade of plug to wide slot, fully insert.

### ATTENTION

Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.

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# INTRODUCTION

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## WELCOME

Welcome into the family of Zenith Color Television owners. This guide provides instructions on how to operate your new TV. It is supplemented by a booklet containing Safety Tips. We urge you to read these publications carefully so that you will receive full enjoyment from your new Zenith TV for many years to come.

Your new Zenith TV has been designed and built to give you the very best in quality, features and performance. There are many regional Zenith distributors and thousands of distributor-approved Zenith service centers throughout the U.S. and Canada who can attend promptly and effectively to ordinary service needs.

If you should have an unusual performance or service problem that cannot be satisfactorily resolved by your distributor-approved Zenith service center, contact the regional Zenith distributor in your area, or write:

Zenith Electronics Corporation  
Customer Service Department  
1900 N. Austin Avenue  
Chicago, Illinois 60639-5079  
Telephone: (312) 745-5152  
Mon-Fri, 8:00 a.m. - 4:30 p.m. Central Time

Send the model number, serial number, and date of purchase or original installation, with a full explanation of the problem and the service history. We will welcome the opportunity to look into your specific question or problem and to be of assistance in resolving it promptly.

The model and serial numbers of your new TV are located on the back of the TV cabinet. For your future convenience and protection, we suggest that you record these numbers here:

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

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

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## INSTALLATION CONSIDERATIONS

Before you install your TV...



**Ventilation** — Proper ventilation keeps your TV running cool. Air circulates through perforations in the back and bottom of the cabinet. Do not block these vents or you will shorten the life of your TV.



**Power Source** — Your TV is designed to operate on normal household current, 120 volt 60 Hertz AC. Do not attempt to operate it on DC current.



**Power Cord** — Your power cord has a polarized plug as required by Underwriters' Laboratories. It has one regular blade and one wide blade and fits only one way into a standard electrical outlet. If the blades will not enter either way, your outlet is very old and non-standard. A new outlet should be installed by a qualified electrician.



**Safe Operation** — Your TV is manufactured and tested with your safety in mind. However, unusual stress caused by dropping or mishandling, exposure to flood, fire, rain or moisture, or accidental spilling of liquids into the TV, can result in potential electrical shock or fire hazards. If this happens, have your TV checked by a service technician before using it again.

Please read and observe each safety point in the "Safety Tips" folder when installing and using your TV.

**FIXED PATTERN DISPLAY CAUTION** — If you use your TV for video games, teletext or other fixed displays, avoid setting the BRIGHTNESS control for an excessively bright picture. A bright, fixed pattern, if used for long periods of time, can result in a permanent imprint on the TV picture tube. You can reduce this possibility by alternating the use of the fixed pattern display with normal TV picture viewing by turning down the CONTRAST control for sustained fixed pattern use, and by turning off the fixed pattern display when not in use.

**PLUGGING IN YOUR TV** — Be sure to plug your TV into an "unswitched" AC power source. The "switched" AC outlets found on some video equipment will not continue supplying power to the TV once the equipment is turned off. If the power to the TV is interrupted, you will have to reset the clock in the TV to the current time.



# CONNECTIONS FOR YOUR TV

## STEP 1. MAKE BASIC CONNECTION TO TV

There are four basic hook ups to your TV; outdoor antenna (or master antenna) with or without VCR, and cable-TV system with or without VCR. Select the hook up that best fits your needs. See the following diagrams.

Your connection is made to one of the ANT/CABLE jacks on the back of the TV. These jacks accept 75-ohm cable terminated in an F-type male connector. You may want to do the hook-up yourself, or call a TV service technician, or a cable company.

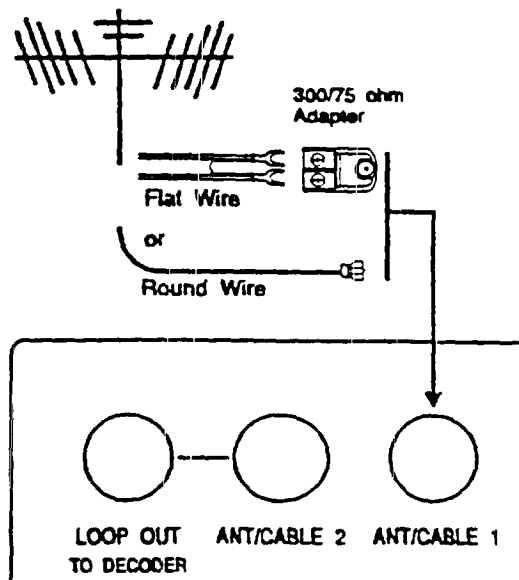
### A. Antenna Connection to TV

#### If You Have a Round Antenna Wire:

Connect the 75-ohm round antenna wire to either the ANT/CABLE 1 or ANT/CABLE 2 jack on the TV.

#### If You Have a Flat, Twin-Lead Antenna Wire:

Use the 300/75 ohm adapter included with the TV. Attach the ends of the wire to the adapter and plug it into either the ANT/CABLE 1 or the ANT/CABLE 2 jack.



**NOTE:** The antenna may be connected into the ANT/CABLE 2 jack, however, connecting to the ANT/CABLE 1 jack may produce a better picture in weak signal areas.

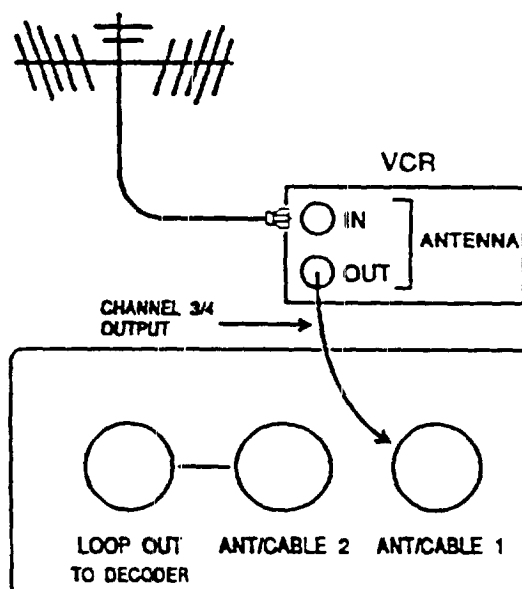
### B. Antenna Connection to VCR and TV

#### 1. Antenna Hook Up

Connect the 75-ohm round antenna wire into ANTENNA IN jack on your VCR.

#### 2. VCR Hook Up

Connect the ANTENNA OUT wire from VCR into either the ANT/CABLE 1 or the ANT/CABLE 2 jack on the TV.



**NOTE:** The antenna may be connected into the ANT/CABLE 2 jack, however, connecting to the ANT/CABLE 1 jack may produce a better picture in weak signal areas.

# CONNECTIONS FOR YOUR TV

## STEP 1. MAKE BASIC CONNECTION TO TV (CONTINUED)

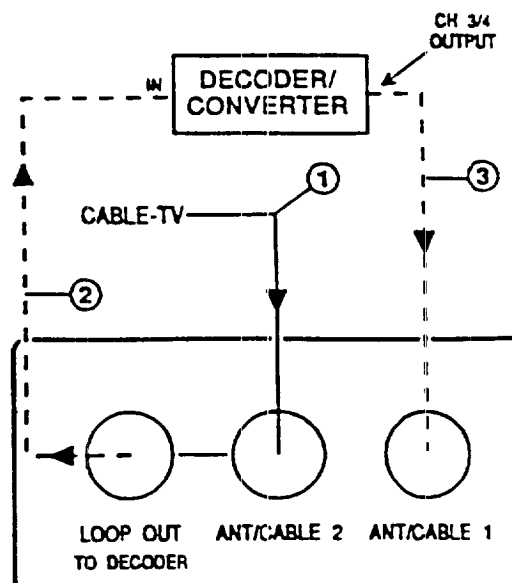
### C. Cable-TV Connection to TV

#### If You Do Not Have a Converter/Decoder Box:

1. Connect the 75-ohm cable-TV input directly to the ANT/CABLE 1 jack.

#### If You Have a Converter/Decoder Box:

1. Connect the 75-ohm cable-TV input to the ANT/CABLE 2 jack on the TV.
2. Connect a 75-ohm cable from the LOOP OUT jack on the TV to the IN jack on the decoder/converter.
3. Connect a 75-ohm cable from the OUT jack on the decoder/converter to the ANT/CABLE 1 jack on the TV.



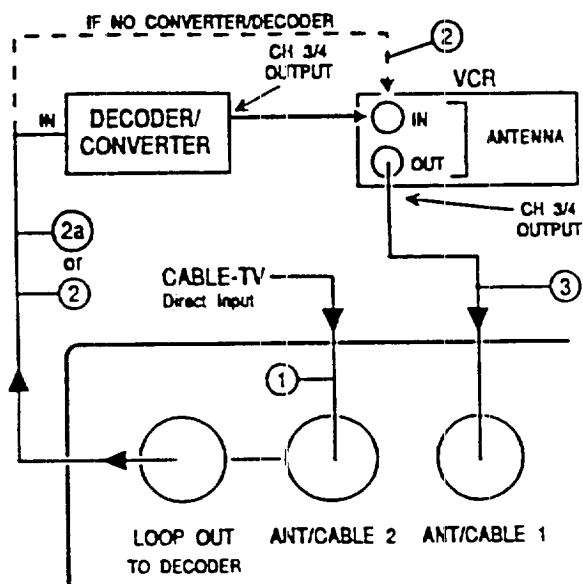
### D. Cable-TV Connection to VCR and TV

#### If You Do Not Have a Converter/Decoder Box:

1. Connect the 75-ohm cable-TV input directly to the ANT/CABLE 2 jack.
2. Connect a 75-ohm cable from the LOOP OUT jack on the TV to the antenna IN jack on the VCR.
3. Connect a 75-ohm cable from the antenna OUT jack on the VCR to the ANT/CABLE 1 jack on the TV.

#### If You Have a Converter/Decoder Box:

1. Connect the 75-ohm cable-TV input directly to the ANT/CABLE 2 jack.
- 2a. Connect a 75-ohm cable from the LOOP OUT jack on the TV to the IN jack on the decoder/converter.
- 2b. Connect a 75-ohm cable from the OUT jack on the decoder/converter to the antenna IN jack on the VCR.
3. Connect a 75-ohm cable from the antenna OUT jack on the VCR to the ANT/CABLE 1 jack on the TV.



#### NOTE:

If you have a stereo VCR, you must make the A/V connections described in Step 2 for you to hear stereo sound while playing a tape.

# CONNECTIONS FOR YOUR TV

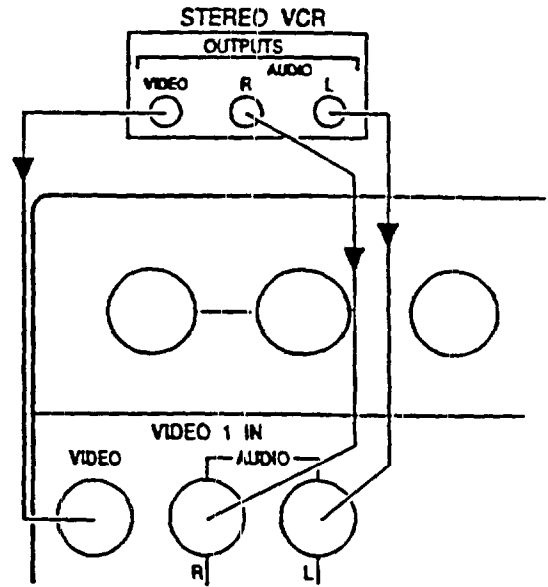
## STEP 2. MAKE VCR CONNECTIONS TO TV

### STEREO VCR

**Connections:** You must make the following connections to obtain stereo sound from your TV while playing a stereo video tape.

1. Connect the VCR RIGHT/LEFT AUDIO OUTPUT into the VIDEO 1 IN RIGHT and LEFT audio jacks on the TV.
2. Connect VCR VIDEO OUTPUT into the VIDEO 1 IN VIDEO jack on TV.

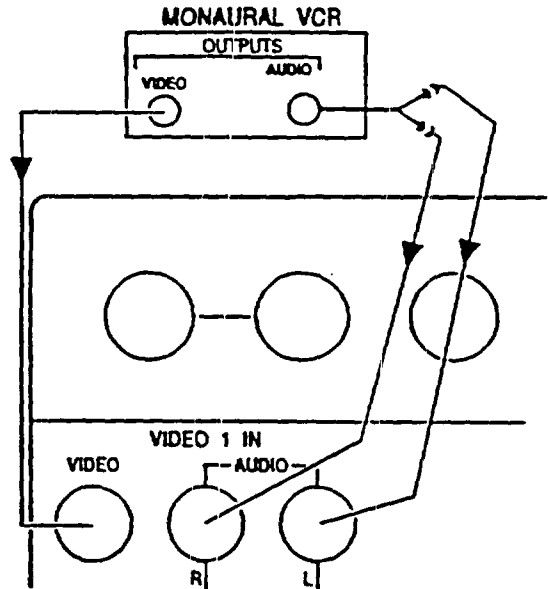
**Operation:** To use these VCR connections, VIDEO 1 must be selected from the SOURCE MENU. To select this source, refer to the SOURCE MENU section of this booklet. For improved picture quality, place VCR/TV switch on your VCR in the VCR position.



### MONAURAL VCR

#### Connections:

1. To get monaural sound from both TV speakers, use a Y-adaptor audio cable (customer supplied) to route VCR AUDIO OUT to the VIDEO 1 IN RIGHT and LEFT audio jacks on the TV.
2. Connect VCR VIDEO OUTPUT into the VIDEO 1 IN VIDEO jack on TV.





# CONNECTIONS FOR YOUR TV

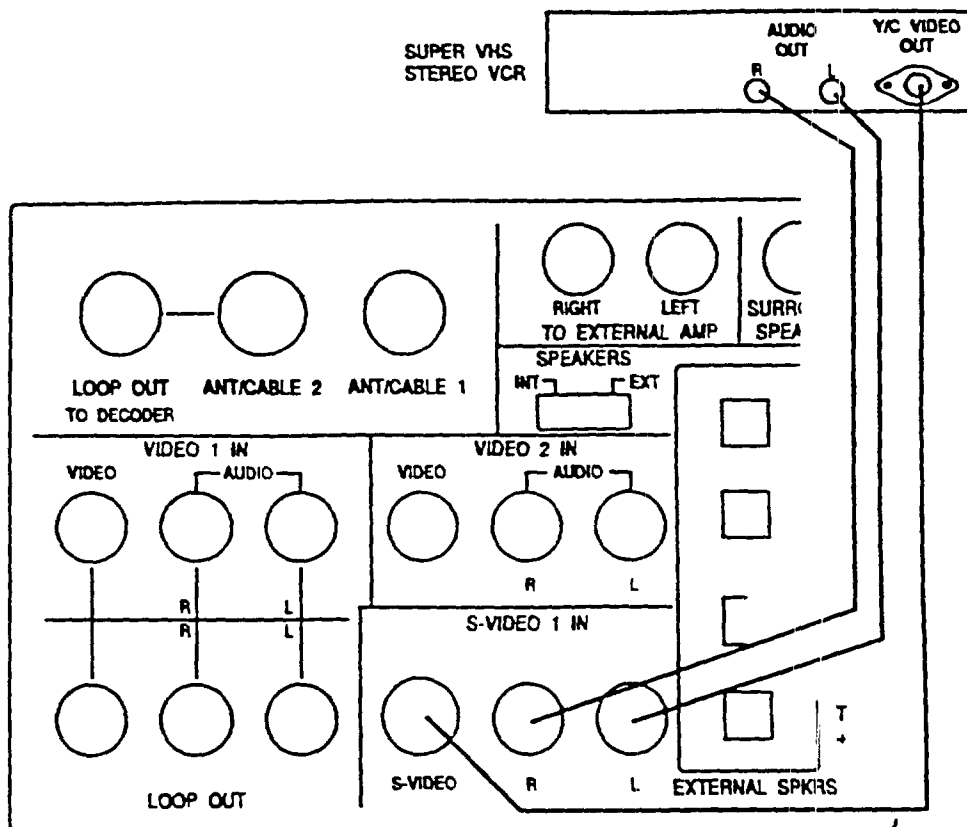
## STEP 3. MAKE SUPER-VHS VCR CONNECTIONS TO TV

In addition to the video connections already described, your TV is also capable of using a Super-VHS VCR as a video source. Refer to the illustration below.

1. Connect the Y/C-VIDEO Output cable from the Super-VHS VCR to the S-VIDEO Y-C jack on the TV.

2. Connect the RIGHT and LEFT AUDIO Output from the Super-VHS VCR to the RIGHT and LEFT (Audio) S-VIDEO INPUT jacks on the TV. (These audio connections must be made in order to receive sound from the VCR.)

NOTE: Make sure S-VIDEO 1 is selected in the SOURCE Menu to view this source.



# CONNECTIONS FOR YOUR TV

## STEP 4. MAKE STEREO AUDIO CONNECTION TO AUDIO AMPLIFIER

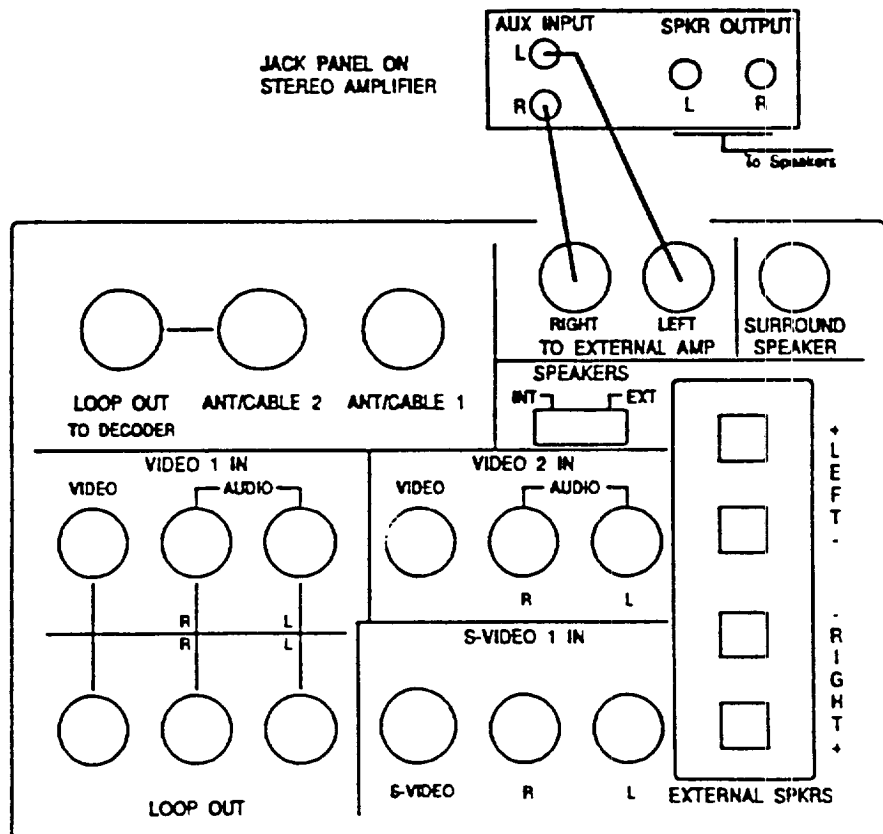
Using an External Amplifier with Speakers While the TV's Speakers are OFF

1. Make the connections to the external amplifier as shown in the diagram below.
2. Place the SPEAKER EXT/INT switch on the TV in the INT position (TV's speakers are ON).
3. Turn the TV ON. Increase the volume level of the TV until the sound just starts to distort (sound bad).
4. Place the SPEAKER EXT/INT switch on the TV in the EXT position (TV's speakers are OFF).
5. Turn the external audio amplifier ON. Adjust the volume level of the audio amplifier for the highest level you will need for your listening pleasure.
6. Adjust the volume level of the TV for the normal listening level as heard through the speakers of your audio amplifier.
7. You can now use the VOLUME control on the TV or on the remote control to adjust the volume of the speakers of your audio amplifier.

Using an External Amplifier with Speakers While the TV's Speakers are ON

1. Make the connections to the external amplifier as shown in the diagram below.
2. Place the SPEAKER EXT/INT switch on the TV in the INT position (TV's speakers are ON).
3. Turn the TV ON. Increase the volume level of the TV until the sound just starts to distort (sound bad).
4. Turn the external audio amplifier ON. Adjust the volume level of the audio amplifier for the highest level you will need for your listening pleasure.
5. Adjust the volume level of the TV for the normal listening level as heard through the speakers of the TV.
6. You can now use the VOLUME control on the TV or on the remote control to adjust the volume of both the TV's speakers and the audio amplifier's speakers.

**NOTE:** If the volume of the internal TV speakers is set too low, you may hear undesirable noises through the speakers connected to your audio amplifier.



# CONNECTIONS FOR YOUR TV

## STEP 5. MAKE EXTERNAL SPEAKER CONNECTION TO TV

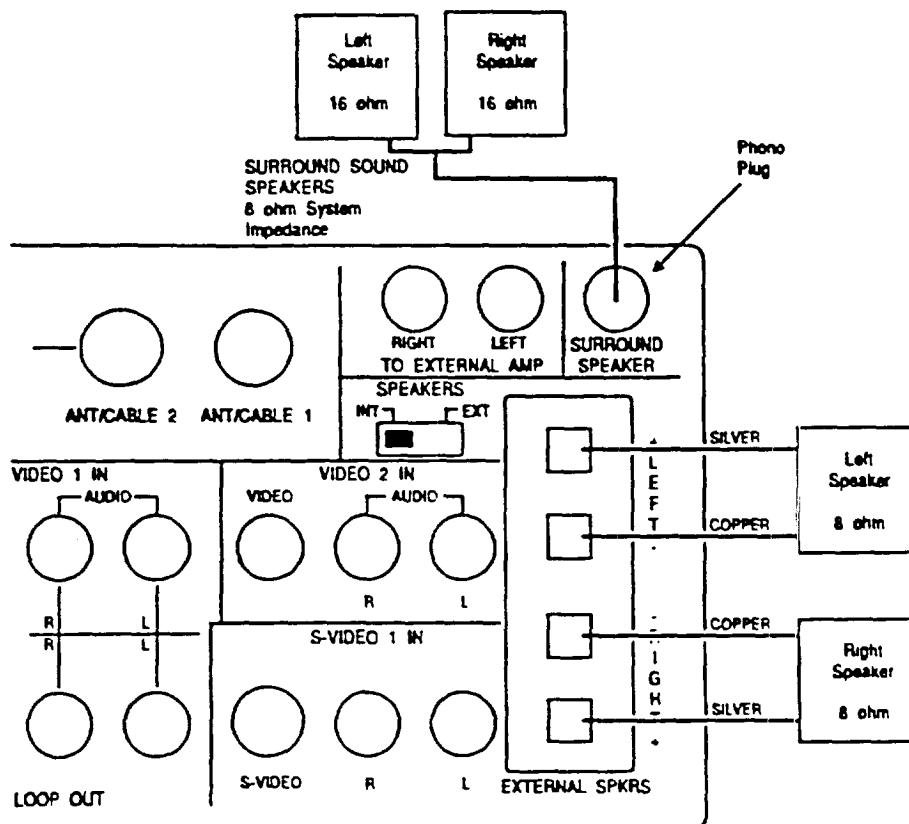
1. Place the **SPEAKERS** switch on the back of the TV in the **INT** position.
2. Connect the two external speaker terminals. Observe polarity of the connections; silver speaker wire to the red terminal and copper speaker wire to the black terminal. Use 8-ohm speakers only.
3. Place the **SPEAKERS** switch on the back of the TV in the **EXT** position.
4. Use the **VOLUME** control on the TV or on the remote control to adjust the volume of the external speakers.

## STEP 6. MAKE SURROUND SOUND CONNECTION TO TV

1. Mount and connect the optional Surround Sound speakers by following the instructions provided with the speakers.
2. In the **AUDIO** Menu, set the TV to **STEREO**.
3. Use the **SURROUND** option in the **AUDIO** Menu to adjust the volume of the surround speakers.
4. Use the **VOLUME** control to adjust the volume of the TV.
5. The level of the Surround sound varies relative to the difference between the left- and right-channel stereo signals. The degree of the Surround sound effect depends on the program source you are using. Some sources, especially video tape, provide greater sensation of Surround sound than may be obtained from a standard TV broadcast.

**NOTE:** The surround jack is always active. Therefore, the position of the speaker switch does not affect the operation of surround speakers.

**CAUTION:** The Surround Sound output has an 8-ohm system impedance. It is for use with two 16-ohm speakers connected in parallel. Use of non-surround speakers may damage your TV.



# THE FIRST TIME YOU OPERATE YOUR TV

## STEP 1. CONNECT THE POWER

Plug your TV into an unswitched AC power source.

The switched AC outlets found on some video equipment will not continue supplying power to the TV once the equipment is turned off. If the power to the TV is interrupted, you will have to set the clock in the TV to the current time.



Do not plug TV into switched outlet on cable-TV decoder.



Do not plug TV into switched outlet on a VCR.

## STEP 2. TURN TV ON

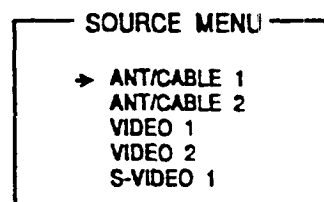
Turn the TV ON by pressing OFF-ON.

## STEP 3. SELECT YOUR VIEWING SOURCE

A TV source refers to the equipment connected to the connection center on the back of your TV. For example, antenna, cable-TV, VCR, video disc player, etc. You can select what source supplies the picture and sound to your TV by pressing SOURCE on your remote control and viewing the SOURCE MENU.

To Access SOURCE MENU

1. Press SOURCE on the remote control to view the SOURCE MENU.
2. Press SOURCE repeatedly until the correct antenna or cable-TV source is highlighted, then press ENTER.
3. Press ENTER again to return to normal viewing.



NOTES: The correct antenna or cable-TV source must be selected before STEP 4 in order for the AUTO CH. SEARCH to correctly find available channels

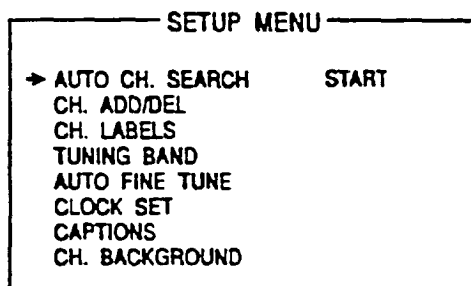
For information about sources, see "Source Menu" section of this operating guide.

## STEP 4. USE AUTO CH. (Channel) SEARCH

When your TV is first powered up, you will see the SETUP MENU with AUTO CH. SEARCH highlighted. AUTO CH. SEARCH finds all available channels from the selected source and stores them in memory for access by CHANNEL Up/Down. To activate AUTO CH. SEARCH, press ADJUST (ADJ) Left/Right. When the search is complete, you can watch the TV program of your choice.

NOTES:

1. The SETUP MENU with AUTO CH. SEARCH highlighted will appear each time you turn on your TV until AUTO CH. SEARCH has been used least once.
2. The AUTO CH. SEARCH message appears only one of the ANT/CABLE sources is selected.
3. Your antenna or cable must be connected to the TV before you use AUTO CH. SEARCH.



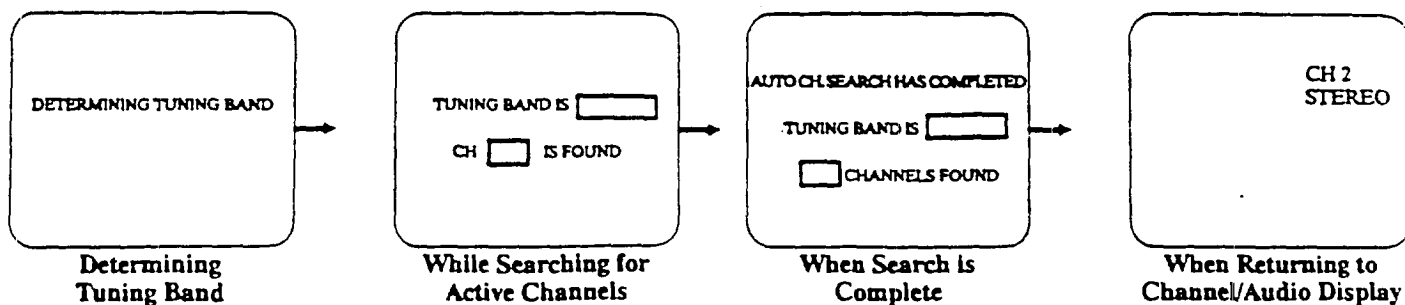
Setup Menu with Auto Ch. Search Highlighted

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## THE FIRST TIME YOU OPERATE YOUR TV

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### STEP 4. USE AUTO CH. (Channel) SEARCH (CONTINUED)



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### STEP 5. USE OTHER OPTIONS

You may want to consider using the following options:

- Program the channels accessed when using CHANNEL Up/Down. Refer to CH. ADD/DEL option of the "Setup Menu" section of this operating guide for details.
- Add labels (such as NBC and ABC) to the Channel/Time display. Refer to CH. LABELS option of the "Setup Menu" section of this operating guide for details.
- Set the clock in the TV. Refer to the CLOCK SET option of the "Setup Menu" section of this operating guide for details.

# OPERATING YOUR TV

## BASIC TV OPERATIONS

### Selecting Channels Using CHANNEL Up/Down:

You may select a channel through channel scanning by using CHANNEL Up/Down keys. Only channels stored in the channel scan sequence can be selected.

### Selecting Channels by Using Numbers on Remote:

Press the numbers corresponding to the channel desired, then press ENTER. Any channel in the band chosen can be selected through direct number entry.

### FLASHBK (Flashback) on Remote (Select Models):

Press FLASHBK to return to the last TV channel you were watching.

### Adjusting Volume:

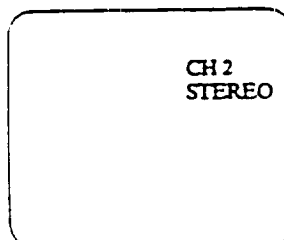
You can adjust the volume of your TV by using VOLUME Up/Down.

### Muting Volume:

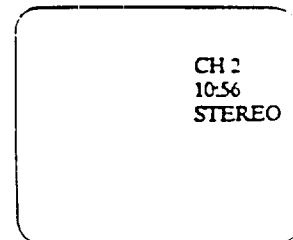
To mute the sound coming from your TV, press MUTE on the remote control. To restore sound, press MUTE again.

### After an Extended Power Outage:

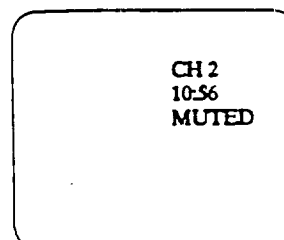
If you previously used AUTO CH. SEARCH, you do not have to use it again unless you permanently changed the connections to the TV. All of the channels previously found are stored in protected memory, and are not affected by a power outage. However, the clock must be reset to the current time.



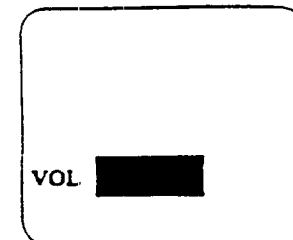
Channel/Audio Display  
(Before Clock is Set)



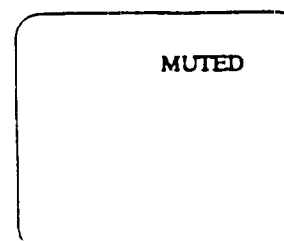
Channel/Time/  
Audio Display  
(After Clock is Set)



Channel/Time Display  
While TV is Muted



Volume Display \*



Mute Display \*

\*VOL or MUTED display is shown only when captions are not being displayed.

## SLEEP TIMER

The remote control is equipped with a TIMER button that provides access to the SLEEP TIMER available with some TV models. By using the SLEEP TIMER, you can program the TV to automatically shut off from 15 minutes up to 4 hours.

### To Set SLEEP TIMER

1. Press TIMER to see status display
2. Press TIMER repeatedly until you reach desired shut-off time.

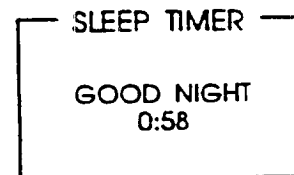
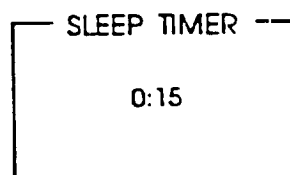
One minute before the TV shuts off, the GOOD NIGHT display appears on the screen. At this time you have a choice of the following three actions.

1. Do nothing. The TV will shut off in one minute. The display will count off the remaining seconds.
2. Remove the GOOD NIGHT display by pressing ENTER. The TV will still shut off in one minute.
3. Delay the shut off by pressing TIMER to select a new shut-off time.

### To Cancel the SLEEP TIMER

You can cancel the SLEEP TIMER by setting the SLEEP TIMER status to OFF.

NOTE: The SLEEP TIMER resets to OFF when you turn off the TV.



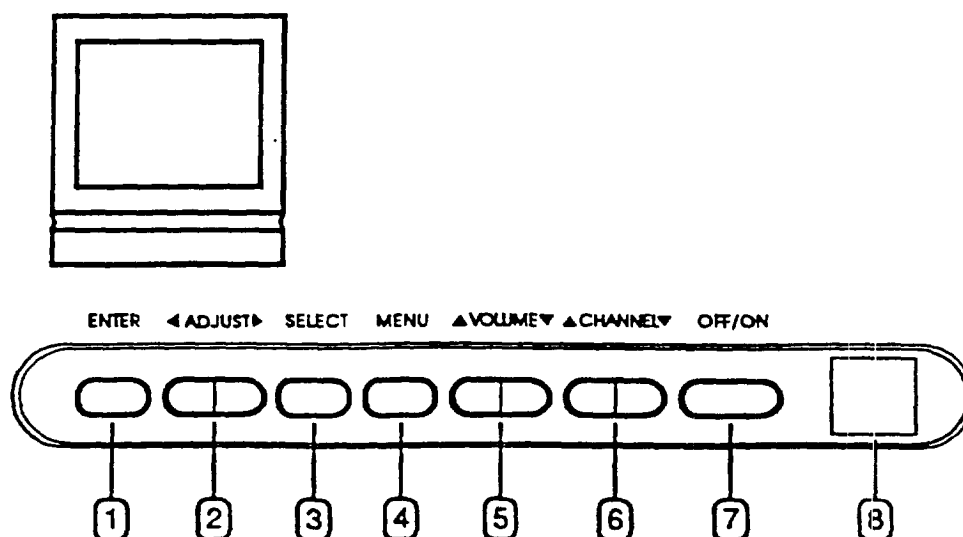
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# GETTING TO KNOW YOUR TV

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## FRONT PANEL CONTROLS

Refer to the illustration below while reading the descriptions of the TV controls.



Typical control panel. The actual control panel may differ slightly from that which is shown.

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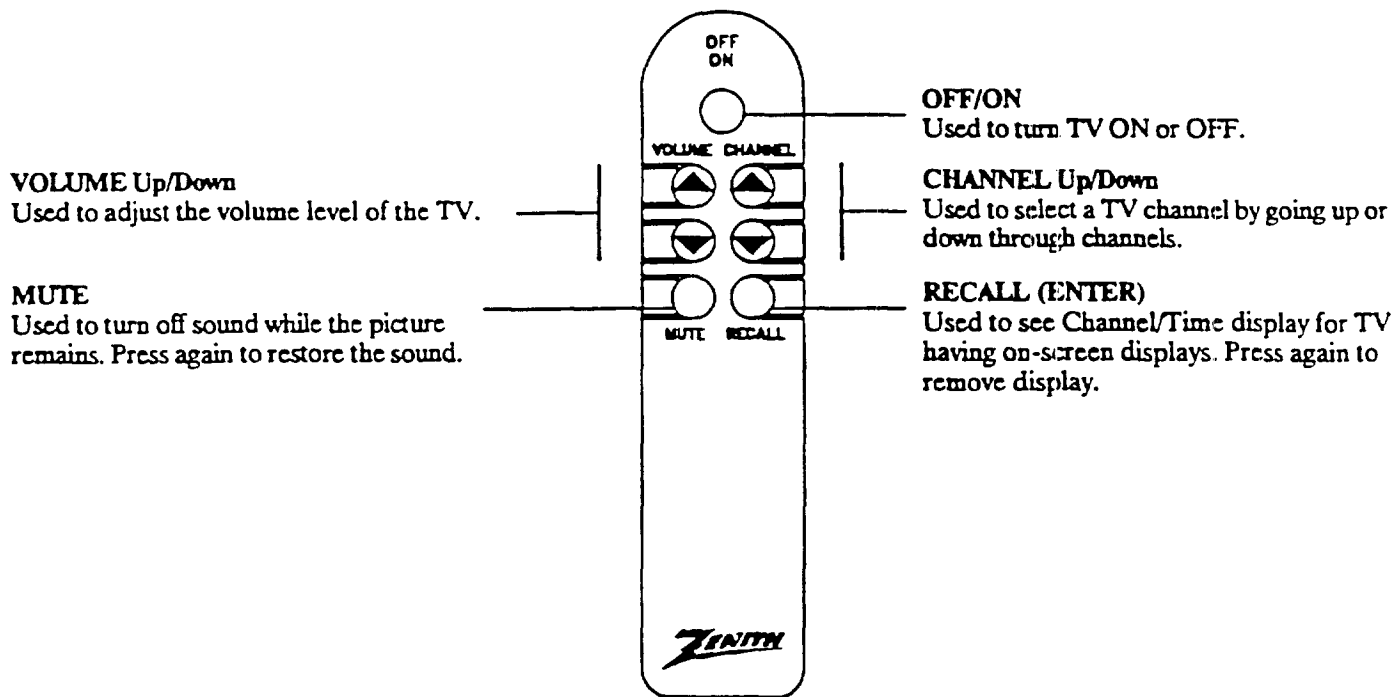
1. **ENTER**  
Press to see the Channel/Time display, or to remove any on-screen display or menu.
2. **ADJUST (ADJ) Left/Right**  
Press during on-screen menu operation to see information/status display for selected option. Press again to adjust the selected menu option.
3. **SELECT**  
Press during on-screen menu operations to select a menu option.
4. **MENU**  
Press once to see a menu. Press repeatedly to sequence through the available menus.
5. **VOLUME Up/Down**  
Press to increase or decrease the sound level.
6. **CHANNEL Up/Down**  
Press to select channels higher or lower than the channels being viewed. You can also add channels or delete channels from the scanning sequence stored in memory. See CH. ADD/DEL option of the "Setup Menu" section of this operating guide for channel programming information.
7. **OFF-ON**  
Press to turn TV power ON or OFF.
8. **Remote Control Detector Window**  
Point the remote control towards this window to operate the TV.

# REMOTE CONTROL MODEL SC2300

## OPERATION



For optimum performance, point the remote control toward your Zenith TV.



SC2300

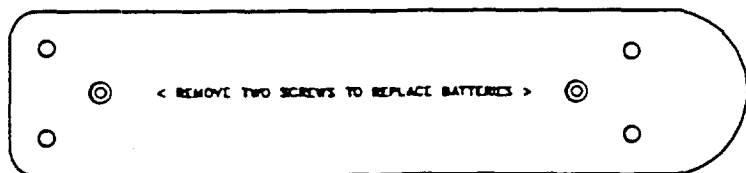
## INSTALLING BATTERIES

When it becomes necessary to replace the batteries, use two (2) high quality, size AAA, alkaline batteries. Note that batteries should be replaced when the effective range of the remote becomes noticeably shorter.

1. Remove the two (2) Phillips head screws from the back of the remote and remove the compartment cover.
2. Remove the old batteries and insert the new batteries making sure the polarity markings (“+” and “-”) on the batteries match those shown in the compartment.

### NOTES:

- Be careful not to place heavy objects on top of the remote control buttons. Prolonged accidental operation will shorten battery life.
- If you do not use the remote control for a month or longer, remove the batteries. Battery leakage can cause damage to the remote control.
- Zenith is not responsible for damage caused by such battery leakage.





# REMOTE CONTROL MODEL LR4455

## OPERATION

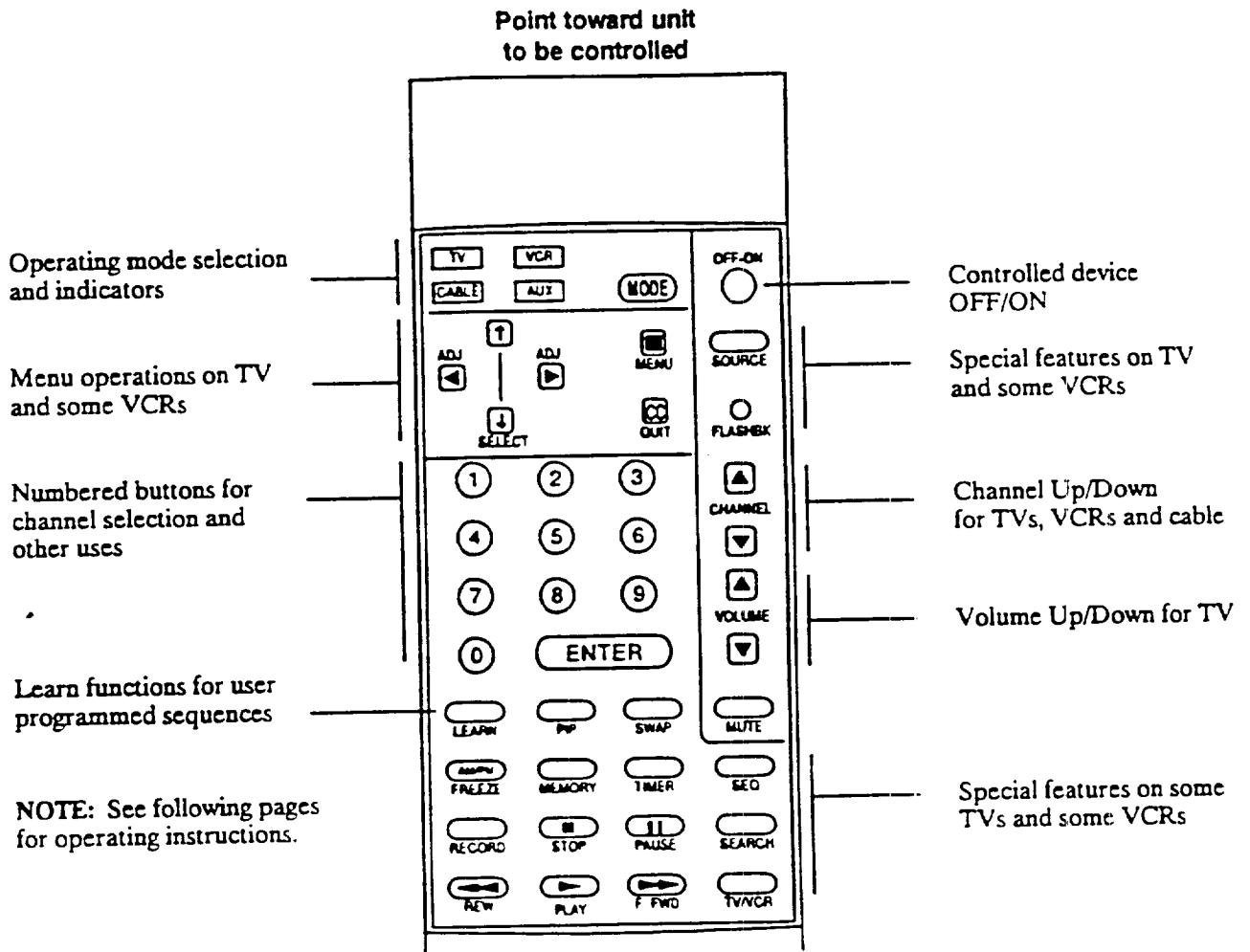
The learning remote supplied with your new Zenith TV allows you to operate most models of infrared (IR) remote-controlled TVs, VCRs and cable-TV converters, even if they are all different brands. In addition, it also allows you to operate other remote-controlled entertainment equipment such as stereo sound systems and video disc players. In this way, it replaces the many remotes previously required to operate all of these appliances.

Your learning remote is manufactured to operate your Zenith TV, a Zenith VCR and a Zenith cable-TV converter. It must be "taught" to operate other brands. The following instructions are for the operation of Zenith equipment. To teach your remote to operate other brands, refer to "Programming Your Remote Control" later in this booklet.

## CHOOSE THE OPERATING MODE

To use the remote to operate your TV, VCR, CABLE-TV converter, or an AUX (auxiliary) device (such as a video disc player), you must first choose the remote's mode of operation. To select the mode, press the MODE key until the desired indicator lights.

Some KEYS on the remote will always operate a particular appliance. For example, VOLUME always operates the TV volume and PLAY always operates the VCR. The function of other keys depends on the mode selected. For example, OFF-ON will turn the TV off and on when in TV mode. If set to VCR mode, this key will turn the VCR off and on.



Remote Control LR4455

# REMOTE CONTROL MODEL LR4455

## TV OPERATIONS

The following functions and operations apply to your Zenith TV. The remote control must be in the TV mode to operate your TV.

The VOLUME control will always adjust the TV volume regardless of the selected operating mode of the remote.

### MODE

Press repeatedly to select the TV mode of operation.

### TV

Lights when TV mode of operation is selected.

### CAPTIONS

Used to view closed captions broadcast with some television programs.

### MENU, SELECT and ADJUST

Used with on-screen menus to see menu, select an option, and adjust that option.

### Numbered Buttons

Used to select a TV channel.

### ENTER

Used to view the Channel/Time Display or to remove any on-screen menu or display.

### LEARN

Used to program remote.

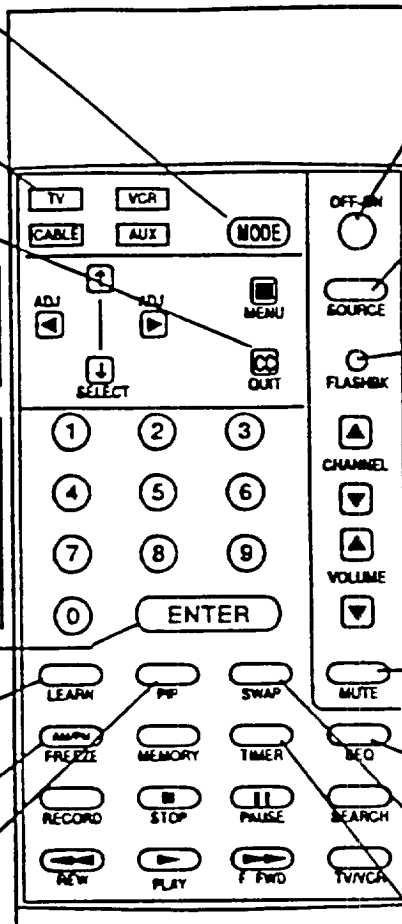
### FREEZE

Used to freeze the motion of the picture on the PIP inset.

### PIP

Used to activate Picture-In-Picture inset.

For optimum performance, point the remote control toward your TV.



### OFF/ON

Used to turn TV ON or OFF.

### SOURCE

Press to display the menu of TV sources for TVs having a SOURCE Menu. Press SOURCE again to step through the source selections. On some TVs, press SOURCE to select the AUX (Auxiliary) channel.

### FLASHBK (Flashback)

Press to return to the last TV channel you were watching.

### CHANNEL Up/Down

Used to sequence through the TV channels. Press CHANNEL Up or Down to change to the next higher or lower channel.

### VOLUME Up/Down

Used to adjust the volume level of the TV.

### MUTE

Used to turn off sound while the picture remains. Press again to restore the sound.

### SPECIAL EQUALIZATION (SEq)

Used to select SEq audio mode on TV equipped with SEq feature.

### SWAP

Used to swap picture in PIP inset with the main television picture.

### TIMER

Used to activate the SLEEP TIMER.

LR4455  
TV Operations

# REMOTE CONTROL MODEL LR4455

## VCR OPERATIONS

The following functions and operations apply to Zenith VCR models built after 1988. The remote control supplied with your VCR may have keys not duplicated on the new remote. If these functions are desired, the original remote control will have to be used.

For complete details on how to operate your Zenith VCR, refer to the operating guide supplied with it.

The remote control must be in the VCR mode to operate your VCR.



For optimum performance, point the remote control toward your TV.

### MODE

Press repeatedly to select the VCR mode of operation.

### VCR

Lights when VCR mode of operation is selected.

### MENU, SELECT, ADJUST and QUIT

Used with the on-screen menus and programming options of the VCR. See VCR operating guide for details

### Numbered Buttons

Used to select a TV channel through the VCR. Also, used to set the timer in the VCR, and to enter programming information.

### ENTER

Used with the numbered buttons to select a TV channel through the VCR.

### AM/PM

Used to set timer during programming.

### RECORD, STOP, PAUSE, SEARCH, REW, PLAY and F FWD

Used for tape recording and playback functions. See the VCR operating guide for details.

### OFF/ON

Used to turn VCR ON or OFF.

### FLASHBK (Flashback)

Press during VCR playback to view the channel tuned by the VCR.

### CHANNEL Up/Down

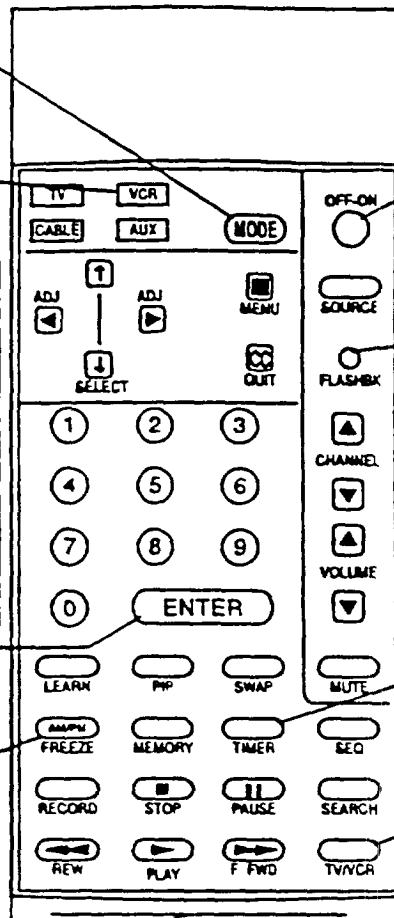
Used to sequence through channels on the VCR. Press CHANNEL Up or Down to change to the next higher or lower channel.

### TIMER

Activates TIME RECORD on some VCRs.

### TV/VCR

Used to select the source of the programs seen on the TV. Switches the VCR between TV mode and VCR mode. TV Mode: channels are selected through the TV. VCR Mode: channels or tape operation are selected through the VCR.



LR4455  
VCR Operations

# REMOTE CONTROL MODEL LR4455

## CABLE-TV OPERATIONS

The following functions and operations apply to a Zenith cable-TV decoder. The remote control supplied with your cable-TV decoder may have keys not duplicated on the new remote. If these functions are desired, the original remote control will have to be used.

For complete information on how to operate your cable-TV decoder, refer to the operating guide provided with it.

The remote control must be in the CABLE mode to operate your cable-TV decoder. The VOLUME control will always adjust the TV volume regardless of the selected operating mode of the remote.



### MODE

Press repeatedly to select the VCR mode of operation.

For optimum performance, point the remote control toward your cable-TV decoder.

### CABLE

Lights when CABLE mode of operation is selected.

### MENU, SELECT, ADJUST and QUIT

Function depends on cable-TV system.

### Numbered Buttons

Used to select channels through cable-TV decoder

### ENTER

Press after a channel number is entered to change channel instantly.

### OFF/ON

Used to turn cable-TV decoder ON or OFF.

### SOURCE

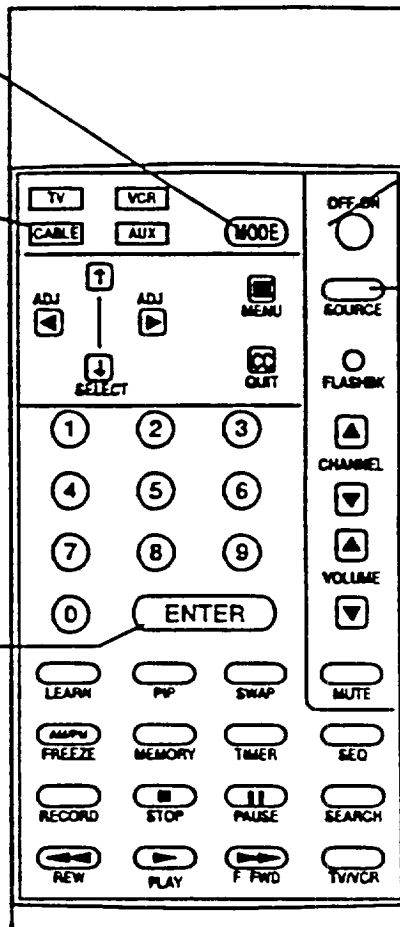
Selects "A" or "B" cable channels.

### CHANNEL Up/Down

Used to sequence through cable-TV channels.

### VOLUME Up/Down

Used to adjust the volume level of the TV



LR4455  
Cable-TV Decoder Operations

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# REMOTE CONTROL MODEL LR4455

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## PREPARATION FOR USE

Batteries are provided with this remote, but you must install them before using the remote.

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## BATTERY REPLACEMENT

Your remote comes with batteries installed. When its effective operating range becomes noticeably shorter, replace the batteries with two high-quality, alkaline, size AAA batteries.

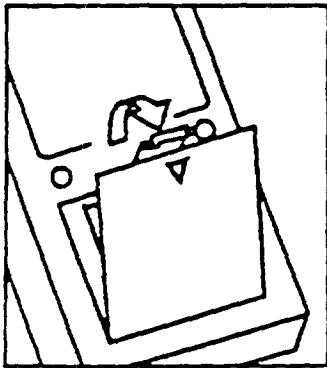
**NOTE:** When the remote does not receive power from its batteries, it may set itself to Zenith video equipment (TV, Zenith VCR, and Zenith cable-TV decoder) default codes. If you have "taught" it to operate other equipment, it will forget what it was taught.

To decrease this possibility, replace the batteries promptly, and do not remove the old batteries until you are ready to insert new ones. The batteries normally have enough power to save the information even if they do not have enough power to operate the remote.

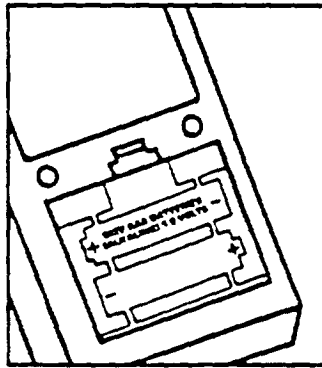
1. Remove the battery compartment cover. PUSH DOWN tab and PULL OUT from top.
2. Insert new batteries as indicated by the diagram inside the compartment. Be careful to place the batteries correctly. If the polarities (the + and -) are reversed, irreparable damage to the remote control can occur.
3. Replace the cover by inserting the tab on the bottom of the cover into its housing. Snap the cover into place.

### NOTES:

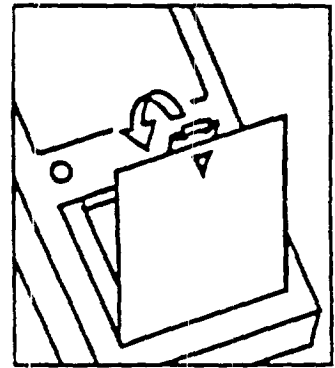
- Be careful not to place heavy objects on top of the remote control buttons. Prolonged accidental operation of the remote control will shorten battery life.
- If you will not use the remote control for a month or more, remove the batteries. Battery leakage can cause damage to the remote control.
- Zenith is not responsible for damage caused by battery leakage.



1.



2.



3.

# REMOTE CONTROL MODEL LR4455

## THREE WAYS TO CUSTOMIZE YOUR REMOTE

This remote allows you to operate most models of most brands of remote-controlled TVs, VCRs and cable-TV decoders.

You can operate your equipment with this remote in three ways:

- By programming brand codes for your equipment.
- By using Auto Find to automatically find the brand codes for your equipment.

- By teaching new functions to specific buttons on the remote.

If you are using a Zenith TV, Zenith VHS/VCR or a Zenith cable-TV decoder, it has already been programmed for you.

**NOTE:** The remote control can only be used to operate one VCR, one TV and one cable-TV decoder at a time. If you program the remote control to operate a TV that is not a Zenith, it will no longer operate your Zenith TV.

## PROGRAMMING BRAND CODES

To program Brand Codes:

1. Find the code that corresponds to each brand and type of equipment you are going to operate. Refer to Tables 1, 2 and 3.

For example, if you were programming the remote for use with a Zenith TV, you would look up "Zenith" in "Table 1.", and find code "101."

Write the brand codes for your equipment on the following lines. Keep this operating guide for future reference.

TV CODE: \_\_\_\_\_

CABLE CODE: \_\_\_\_\_

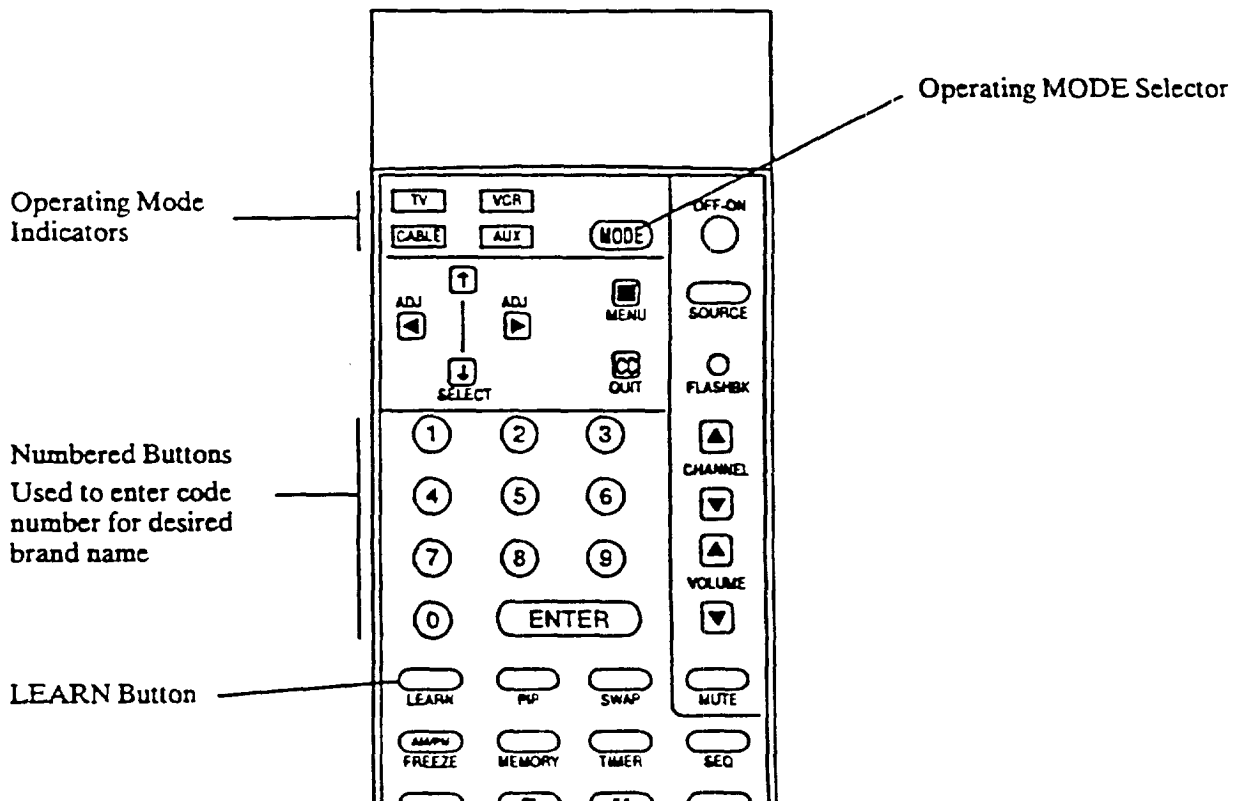
VCR CODE: \_\_\_\_\_

2. Press MODE repeatedly to select the desired TV, VCR or CABLE operating mode for the remote.

3. Press LEARN for about 5 seconds until the MODE indicator lights for the selected TV, VCR or CABLE mode of operation.
4. Enter the proper brand code number determined in Step 1.
5. Press LEARN. All three mode indicators should light briefly, then turn off to indicate the brand code has been programmed.
6. If all three mode indicators fail to light briefly, an error has occurred. Repeat Steps 2-5 to try again.
7. Repeat steps 2 - 5 to program the remote for the other equipment you are using.

**NOTE:** CABLE mode can be programmed to operate a second TV or second VCR, if desired.

**When batteries are removed:** It will be necessary to reprogram the proper VCR and cable-TV decoder codes.



# REMOTE CONTROL MODEL LR4455

## TV, VCR AND CABLE-TV OPERATING CODES

**Table 1. TV Codes by Brand**

TV Brand Name	Code	TV Brand Name	Code
Admiral	116	Montgomery Ward	119
Admiral	121	Montgomery Ward	121
Akai	104	Montgomery Ward	130
Amark	103	NEC	104
AOC	104	NEC	119
Bell & Howell	121	Panasonic	106
Centurion	119	Panasonic	107
Coronado	103	Philco	103
Curtis Mathes	116	Philco	104
Curtis Mathes	119	Philco	112
Curtis Mathes	121	Philco	113
Daytron	119	Philips	112
Emerson	103	Philips	113
Emerson	104	Pioneer	135
Emerson	123	Portland	103
Emerson	124	Quasar	106
Emerson	131	Quasar	107
Emerson	136	Realistic	105
Fisher	109	Realistic	123
Fisher	118	Realistic	124
General Electric	106	RCA	104
General Electric	107	RCA	116
General Electric	114	RCA	126
General Electric	116	Sampo	119
Goldstar	103	Samsung	103
Goldstar	104	Samsung	119
Goldstar	119	Samsung	134
Hitachi	102	Sanyo	108
Hitachi	103	Sanyo	109
Hitachi	129	Sanyo	118
JVC	125	Scott	119
JVC	132	Sears	103
J.C. Penney	104	Sears	108
J.C. Penney	110	Sears	109
J.C. Penney	114	Sears	110
J.C. Penney	117	Sears	111
J.C. Penney	119	Sears	118
KMC	103	Sears	134
KTV	103	Sharp	103
KTV	104	Sharp	105
Lodgenet	121	Sharp	122
Logik	121	Sharp	133
LXI	133	Sharp	137
LXI	137	Sony	115
Magnavox	103	Sylvania	112
Magnavox	112	Sylvania	113
Magnavox	113	Sylvania	117
Magnavox	119	Sylvania	119
Magnavox	127	Sylvania	127
Magnavox	128	Sylvania	128
Majestic	121	Tatung	106
Marantz	104	Teknika	103
Marantz	120	Teknika	112
Memorex	121	Teknika	121
MGA/Mitsubishi	104	Teknika	124
MGA/Mitsubishi	119	Telerent	103
MGA/Mitsubishi	120	Telerent	121
MGA/Mitsubishi	130	Toshiba	110
Montgomery Ward	103	Toshiba	111
Montgomery Ward	104	Toshiba	134
Montgomery Ward	105	Yorx	119
Montgomery Ward	113	Zenith	101
Montgomery Ward	114		

**Table 2. VCR Codes by Brand**

VCR Brand Name	Code	VCR Brand Name	Code
Akai	223	Pentax	215
Audio Dynamics	202	Philco	214
Audio Dynamics	218	Philips	214
Broksonic	221	Philips	227
Canon	214	Pioneer	210
Citizen	209	Pioneer	215
Craig	212	Pioneer Laser Disk	228
Curtis Mathes	214	Quasar	214
Curtis Mathes	216	RCA	215
DBX	202	RCA	216
DBX	218	RCA	220
Emerson	203	RCA	227
Emerson	221	Realistic	206
Emerson	223	Realistic	208
Emerson	226	Realistic	212
Emerson	233	Realistic	214
Emerson	235	Realistic	231
Fisher	211	Samsung	220
Fisher	212	Samsung	230
Fisher	213	Sanyo	206
Funai	231	Sanyo	212
General Electric	214	Scott	204
General Electric	216	Scott	205
General Electric	220	Scott	233
Goldstar	209	Sears	206
Hitachi	215	Sears	209
Instant Replay	214	Sears	211
Instant Replay	227	Sears	212
JVC	202	Sears	215
JVC	225	Sharp	208
J.C. Penney	214	Sony VHS	232
J.C. Penney	218	Sony Video 8	217
J.C. Penney	227	Sylvania	207
Kenwood	202	Sylvania	214
Magnavox	207	Sylvania	227
Magnavox	214	Symphonic	231
Marantz	207	Tashiko	209
Marantz	218	Tatung	202
Marta	209	Teac	202
Memorex	212	Teac	231
Memorex	214	Teknika	234
Memorex	231	Toshiba	205
MGA/Mitsubishi	204	Toshiba	215
MGA/Mitsubishi	222	Vector Research	204
Montgomery Ward	208	Vector Research	216
Montgomery Ward	214	Yamaha	202
Montgomery Ward	219	Yamaha	218
NEC	202	Zenith VHS	201
NEC	218	Zenith VHS	225
Panasonic	214	Zenith VHS	229

**Table 3. Cable Decoder Codes by Brand**

Cable Decoder Brand Name	Code	Cable Decoder Brand Name	Code
Drake Satellite	312	Pioneer	315
Drake Satellite	330	Regency	329
Gemini	305	Samsung	335
Gemini	331	Scientific Atlanta	316
General Instrument	305	Scientific Atlanta	323
General Instrument	306	Scientific Atlanta	336
Hamlin	302	Sprucer	
Hamlin	303	(Panasonic)	313
Jerrold	304	Standard	
Jerrold	307	Components	335
Jerrold	308	STS Satellite	324
Jerrold	309	Telecaption 4000	325
Jerrold	310	Tocom	317
Kale Vision	335	Tocom VIP	318
Macom	314	Toshiba	322
Macom	321	Toshiba Satellite	319
Macom Satellite	322	Zenith	301
Magnavox	334	Zenith	322
NSC	335	Zenith AV3000	327
Oak	311	Zenith Satellite	312
Oak	332	Zenith Satellite	330
Panasonic	313	Zenith Satellite	328
Panasonic	320	Zenith Laser Disk	324
Paragon (Zenith)	333		

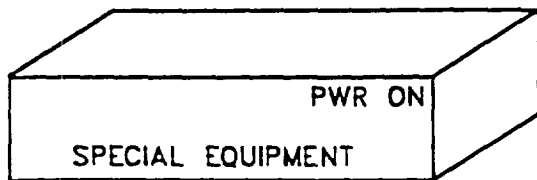
# REMOTE CONTROL MODEL LR4455

## AUTO FIND MODE

Use Auto Find to automatically find the brand code needed to operate your equipment.

**NOTE:** If no button is pressed for 60 seconds or more during Auto Find, the remote will automatically exit Auto Find without storing any brand codes. (LEDs will flash 3 times upon exiting.)

1. Turn on the equipment you wish the remote to operate.
2. Press and hold LEARN until mode indicator lights (about 4 seconds).
3. Use MODE to select the mode you wish to program (TV, VCR, CABLE or AUX). In the AUX mode Auto Find will search through all TV, VCR and Cable brand codes.
4. Enter "00" then press ENTER within 2 seconds. All four mode indicator lights will turn ON and then OFF, leaving the mode indicator light for the active mode ON.
5. Point remote towards the equipment.



↑  
Point toward  
equipment



6. Press and release OFF/ON on the remote about once every second, until the equipment turns OFF. Press ENTER before pressing any other buttons.

If you press OFF/ON again before pressing ENTER Auto Find will have to be repeated.

7. Try other buttons to see if they operate the equipment. If they do not, you may wish to reenter Auto Find and try to find another code. The remote will begin with codes starting from where it left off prior to exiting Auto Find.
8. Repeat Auto Find for each piece of equipment you want your remote to operate. **NOTE:** Only one brand code can be programmed in each of the four modes.

If no brand code has been entered after searching through all brand codes in any mode, the LEARNING remote will flash all four mode indicator lights in a chasing manner. Wait 60 seconds or press ENTER or LEARN to return to normal operation.

## ERASE MODE

If you wish to erase learned functions or programmed brand codes. You may:

- A. Re-teach a button.
  - B. Erase learned functions from all buttons in an individual mode.
  - C. Erase learned functions from all buttons and erase all programmed brand codes.
- A. Any button except MODE and LEARN can be re-taught at any time. See "Learning Mode" section.
  - B. To Erase Learned Functions from All Buttons in an Individual Mode
    1. Press and hold LEARN until mode indicator lights (about 4 seconds). The mode indicator light for the active mode will turn ON.
    2. Use MODE to select the mode from which all learned functions are to be erased.
    3. Enter one of the following codes to erase all learned functions in an individual mode:
      - 198 for TV Mode
      - 298 for VCR Mode
      - 398 for CABLE Mode
      - 498 for AUX ModePress ENTER within two seconds of the last digit.**NOTE:** Any brand codes programmed into the remote will remain.
  4. All four mode indicator lights will turn on momentarily to indicate that all learned functions in the selected mode have been erased and that you have left the Erase mode.
- C. To Erase All Learned Functions and All Programmed Brand Codes
  1. Press and hold LEARN until mode indicator lights (about 4 seconds).
  2. Enter "911" then press ENTER within 2 seconds.
  3. All four mode indicator lights will turn ON momentarily to indicate that the remote has left the Erase mode. All learned functions and all programmed codes have been erased.The remote is now programmed with the default Zenith brand codes as received from the factory:
  - 101 for TV Mode
  - 201 for VCR Mode
  - 301 for CABLE Mode
  - 330 for AUX Mode (Satellite)



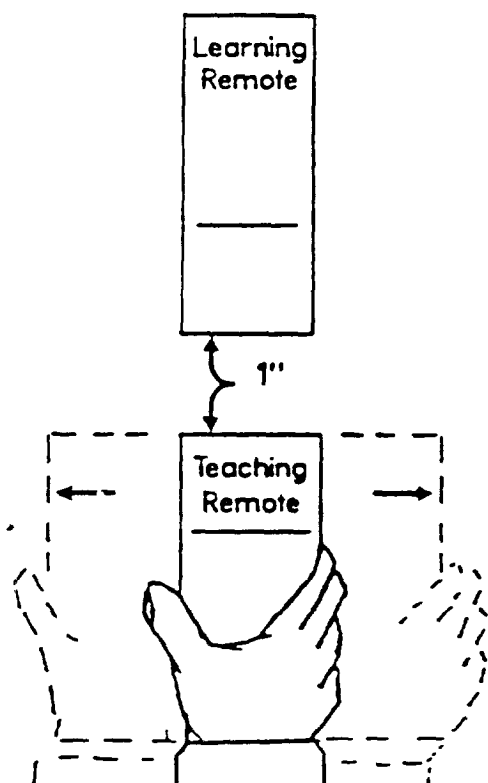
# REMOTE CONTROL MODEL LR4455

## LEARNING MODE

Your remote can learn new functions — a total of 20 — in any or all of its four operating modes. You can teach a new function to any button except MODE and LEARN.

1. Press and hold LEARN until mode indicator lights (about 4 seconds).
2. Enter "99" then press ENTER on the learning remote to enter the Learning mode. All four mode indicator lights will light momentarily. The mode indicator light for the current mode (TV, VCR, CABLE or AUX) will then begin flashing.
3. Place the learning and teaching remotes head to head (on a table or other flat surface). Press and hold any button on the TEACHING remote.

The TEACHING remote may have to be moved side-to-side until the two remotes are aligned properly. The remotes are aligned properly when the mode indicator light on the LEARNING remote stops flashing and remains on continuously. Leave them in this position until all desired functions have been learned.



4. Use MODE on the LEARNING remote to choose the mode for the equipment you wish to operate.
5. Press the button on the LEARNING remote you wish to teach. The mode indicator light will begin flashing.

### NOTES:

- MODE and LEARN cannot be taught.
  - While the mode indicator light is flashing you can change your mind and choose another button on the LEARNING remote to be taught or change operating modes.
6. Press and HOLD the button on the TEACHING remote you want the LEARNING remote to learn. The function has been learned when all mode indicator lights on the LEARNING remote light up.
  7. Repeat steps 5 and 6 to teach up to 20 functions.  
NOTE: If you attempt to teach more than 20 functions, the LEARNING remote will flash all four mode indicator lights in a chasing manner to indicate that no more buttons can be taught. You may now choose to:
    - a. Use LEARN to exit Learning mode.
    - b. Re-teach a button which has already been taught by pressing that button.
  8. Use LEARN to exit the Learning mode. All four mode indicator lights will flash three times to indicate you are leaving the Learning mode.

### NOTES

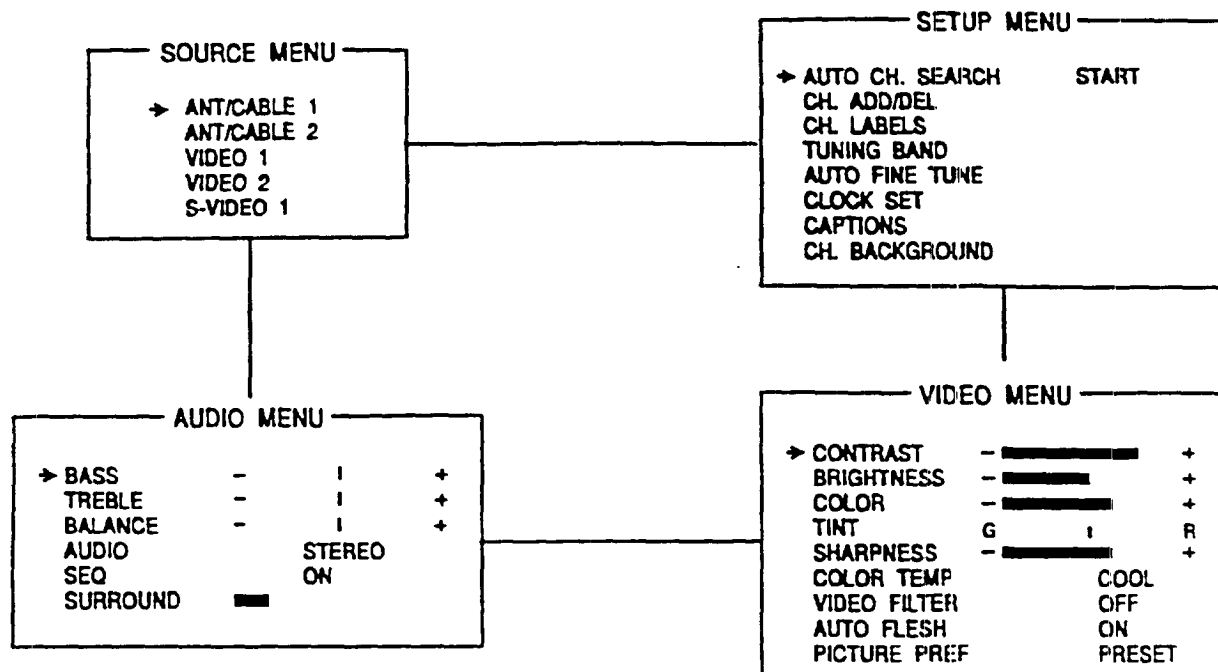
- If no button is pressed for 60 seconds while in Learning mode, the remote will automatically exit Learning mode (all four mode indicator lights will flash three times).
- If a new brand code is programmed in a particular mode (TV, VCR, CABLE or AUX), all buttons in that mode which have learned new functions will need to be re-taught those new functions.

# ON-SCREEN MENUS

## AVAILABLE MENUS

Your TV is menu operated, that is, adjustments that can be made to the TV appear on the screen in a list of choices you can make by using the controls on the front panel of the TV or on the remote control.

There are four basic menus: SOURCE, SETUP, AUDIO, and VIDEO. These menus list everything you can adjust to your personal preference or needs. In addition, separate SOURCE and VIDEO menus appear for PIP while PIP is active.



## SUMMARY OF MENU ITEMS

### SOURCE Menu

**Selecting ANT/CABLE 1 or 2:** Either of these sources may be used for input from an antenna or a cable-TV line.

**Selecting VIDEO 1 or 2:** Either of these sources may be used for input from an auxiliary video source such as a VCR or a video disc player.

**Selecting S-VIDEO 1:** Select this source if a Super-VHS VCR is connected to your TV.

Make sure the selected source corresponds to the jack to which the input cable or antenna wire is connected on the back of the TV.

### SETUP Menu

**AUTO CH. SEARCH:** Finds all available channels and stores them in memory for access by using CHANNEL Up/Down.

**CH. ADD/DEL:** Changes the list of active channels selected by using CHANNEL Up/Down.

**CH. LABELS:** Adds a channel name "LABEL" to the channel display. For example, ABC may appear when this network channel is tuned.

**TUNING BAND:** Determines the operation of the channel tuner inside the TV.

**AUTO FINE TUNE:** Lets your TV compensate for variations in broadcast and cable-TV frequencies.

**CLOCK SET:** Sets the clock in the TV to the correct time.

**CAPTIONS:** Displays closed captions (CC) or informational text when available.

**CH. BACKGROUND:** Changes the background of the channel/time display.

# ON-SCREEN MENUS

## SUMMARY OF MENU ITEMS (CONTINUED)

### AUDIO Menu

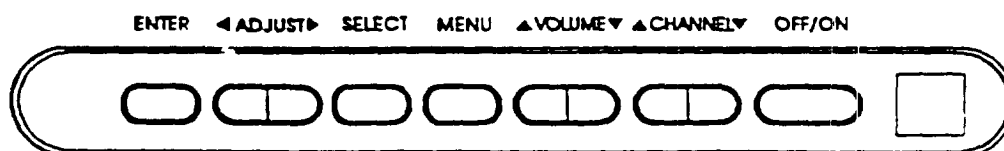
- BASS:** Adjusts the BASS (low frequency) level.
- TREBLE:** Adjusts the TREBLE (high frequency) level.
- BALANCE:** Adjusts the BALANCE of sound between the left and right speakers for stereophonic programs.
- AUDIO MODE:** Allows for receiving a Second Audio Program (SAP), such as a program broadcast with two audio portions (typically two languages), or lets you select stereophonic (STEREO) or monaural (MONO) speaker operation.
- SEQ:** Turns on an enhanced stereo mode.
- SURROUND:** Adjusts Surround Sound volume when used with a separately supplied Surround Sound audio system.

### VIDEO Menu

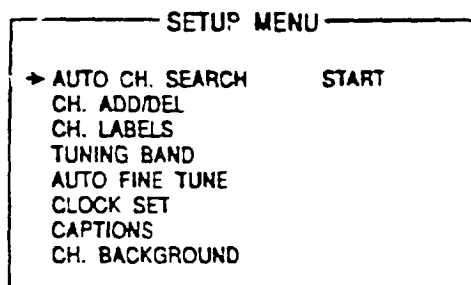
- CONTRAST:** Adjusts the overall contrast and color level of the picture.

- BRIGHTNESS:** Adjusts the brightness level of black areas in the picture.
- COLOR:** Adjusts the intensity of the colors in the picture.
- TINT:** Adjusts the color of the flesh tones.
- SHARPNESS:** Adjusts the clarity for the clearest picture.
- COLOR TEMP:** Allows you to change the "color temperature" or picture white balance between cooler natural whites and warmer (red) colors.
- VIDEO FILTER:** Reduces video "noise" or interference in dark picture areas resulting in clearer overall picture.
- AUTO FLESH:** Automatically maintains natural skin tones under changing scene and video source condition.
- PICTURE PREF:** Lets you decide if you want to use your own CUSTOM video settings, the factory PRESET video settings or the THEATER option for optimum video settings when viewing in low-light conditions.

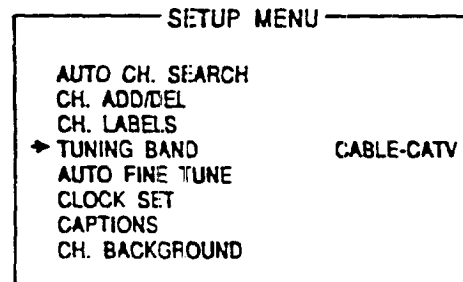
## BASIC MENU OPERATION



1. **To See a Menu or Change a Menu:**  
Press MENU repeatedly until the desired menu is shown. Example shows choosing the SETUP Menu.



Choosing Setup Menu



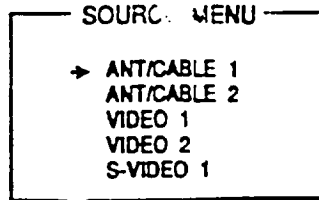
Selecting Tuning Band

2. **To Select an Option/Feature on a Menu:**  
Press SELECT repeatedly until the desired option/feature is highlighted. The example in the next column shows selecting TUNING BAND.
3. **To Adjust an Option/Feature:**  
Press ADJUST (ADJ) Left/Right to see and choose the available options.

4. **To Access a Different Main Menu:**  
Press MENU repeatedly until the desired menu is shown.
5. **To Return to Normal Viewing:**  
Press ENTER (ENT) or wait a few seconds and TV will return automatically to normal operation.

**Service Menus:** In addition to the menus shown in this operating guide, there are menus for factory and field servicing. Service menus are not intended for use by the owner. If you inadvertently access a service menu, press ENTER (ENT) to return immediately to normal TV viewing.

# SOURCE MENU



## TO SELECT A SOURCE

### Purpose

The SOURCE MENU is used to specify the equipment that is being used to supply the video and audio signals. You select the source you want by selecting the SOURCE MENU. It shows the possible sources available for your viewing selection.

### To Access the SOURCE MENU Directly

1. Press SOURCE on the remote control to bring up the SOURCE MENU.
2. Press SOURCE repeatedly until the source you want is highlighted.
3. Press ENTER to return to normal viewing.

### To Access the SOURCE MENU Indirectly

1. Press MENU until the SOURCE Menu is displayed.
2. Press SELECT Up/Down until the desired source is highlighted.
3. Press ENTER to return to normal viewing.

### Source Identification

The Channel/Time display is used to determine the type of input source currently being viewed. To see the Channel/Time display, press ENTER. If an antenna or cable-TV source is being viewed, the Channel/Time display is shown in the Channel Number/Time format. If a VIDEO source is being viewed, the Channel/Time display is shown in the VIDEO/Time format.

### Source Equipment Connections

The actual source selected for viewing on your TV depends on how the TV is connected to external equipment.

### Selecting ANT/CABLE 1 or 2 from SOURCE Menu:

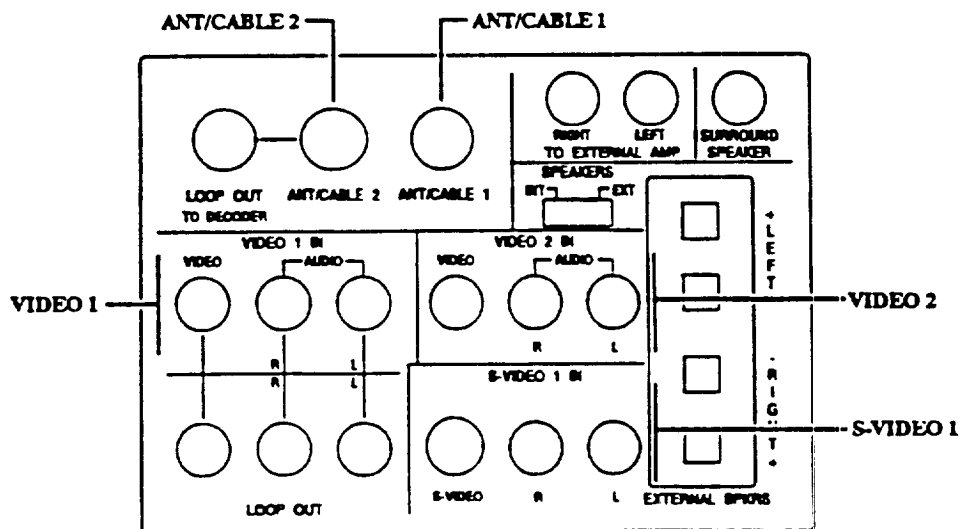
Routes the ANTENNA or cable-TV source to the TV for viewing. You see program material from whichever signal source is connected to the ANT/CABLE jack. Usually the antenna is connected to the ANTENNA jack. In cable applications, the output from a cable-TV decoder is connected to this jack. For VCR application, the ANT OUT from the VCR is connected to this jack.

**Selecting VIDEO 1 or 2 from SOURCE Menu:** Routes the auxiliary video source (such as a VCR or a Video Disc player) to the TV for viewing. The video source must be connected to the corresponding VIDEO 1/2 jacks.

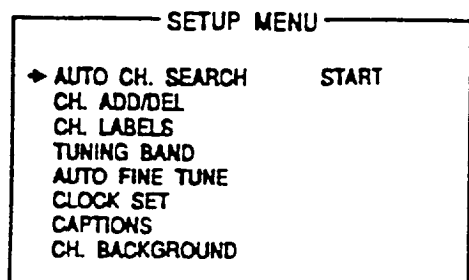
**Selecting S-VIDEO 1:** Routes the auxiliary Super-VHS VCR Source to the TV for viewing. The Super-VHS VCR must be connected to the corresponding input jacks.

**NOTE:** The sources are identified by color in both the on-screen displays and on the connection center on the back of the TV. The color for the Channel/Time display, Volume and Muted display will match the color of the source you are watching. The color will also help to identify which source you are watching when viewing PIP. The colors are as follows:

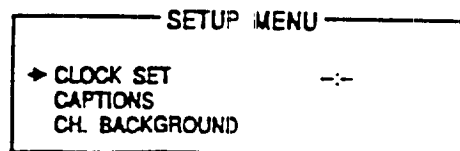
SOURCE	COLOR
ANT/CABLE 1 .....	RED
ANT/CABLE 2 .....	BLUE
VIDEO 1 .....	MAGENTA
VIDEO 2 .....	LT. BLUE
S-VIDEO 1 .....	GREEN



# SETUP MENU



Main Setup Menu



Setup Menu for Video and S-Video Sources

## AUTO CH. (Channel) SEARCH

### Purpose

Finds all available channels and stores them in memory for access by CHANNEL Up/Down.

Use AUTO CH. SEARCH only when you first install your TV, or when you permanently change the connections to the TV. For example, when you replace the antenna with a cable-TV system.

### Before Using AUTO SEARCH

Connect and turn ON all external equipment, such as a cable-TV decoder, VCR, etc.

**NOTE:** AUTO CH. SEARCH can only be used with ANT/CABLE 1 or 2 source selection.

### To Use AUTO SEARCH

1. AUTO CH. SEARCH should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. Press ADJUST (ADJ) Left/Right to start the AUTO CH. SEARCH. The status of the search is shown in the display. When the search is complete, you can watch the TV program of your choice.

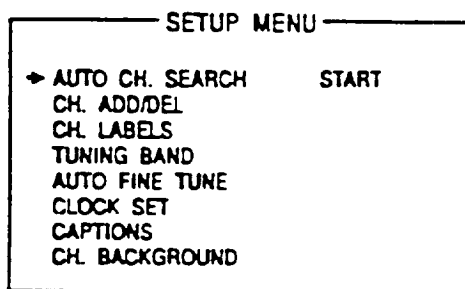
3. Use the AUTO CH. SEARCH feature independently for each ANTENNA or CABLE signal source connected to your TV. Select one source by using the SOURCE MENU (ANT/CABLE 1 or 2) and use AUTO CH. SEARCH. When completed, select the other source and use AUTO CH. SEARCH again.

### When Some Channels Are Not Found

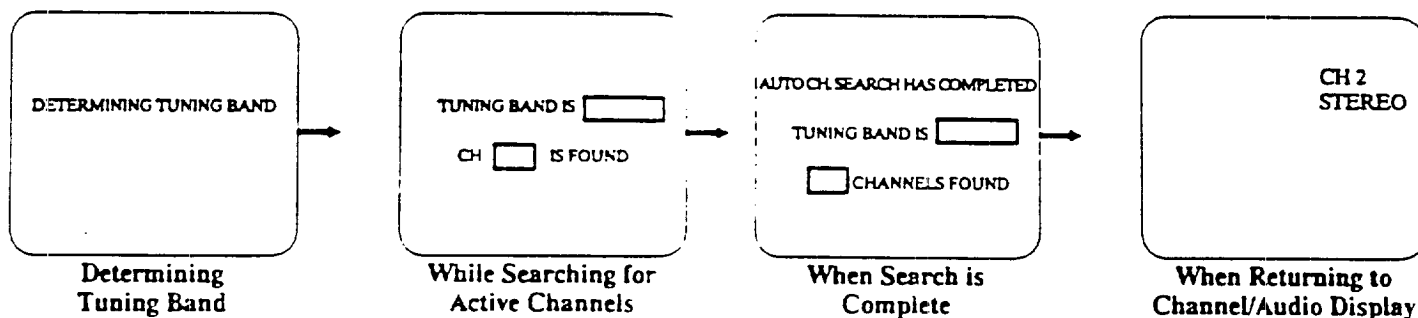
AUTO CH. SEARCH finds only active channels and stores them in its channel memory. You can add channels to those stored in memory by using the CH. ADD/DEL option.

If you have difficulty tuning some channels, you may have to manually change the BAND SELECT and AUTO FINE TUNE mode. Refer to respective option for details.

**NOTE:** If the output from a cable box is the input to your TV, the only active channel will be either 3 or 4.



Selecting Auto Ch. Search



# SETUP MENU

## CH. (Channel) ADD/DEL

### Purpose

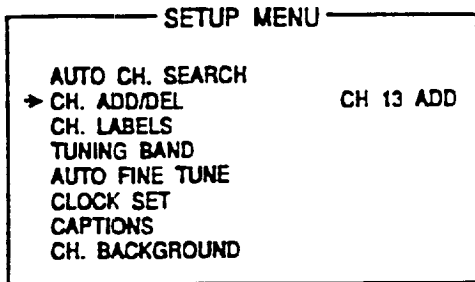
Lets you add channels to and remove channels from the active channels found by the AUTO CH. SEARCH option. In this way, you can customize the channels that are accessed through CHANNEL Up/Down.

CH. ADD/DEL is an optional feature. You do not have to activate this feature in order to use your TV.

### Before Using CH. ADD/DEL

Use the AUTO CH. SEARCH feature, if not previously used when you first installed the TV.

NOTE: CH. ADD/DEL can only be used with ANT/CABLE 1 or 2 Source selection.



Selecting Ch. Add/Del

### To Add a Channel to Scan Sequence

1. CH. ADD/DEL should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. Use the numbered buttons to access channels not presently stored in the channel scan sequence.
3. Add channel by pressing ADJUST (ADJ) Left/Right until the display shows ADD.
4. Press ENTER to return to normal TV viewing.

### To Delete a Channel from Scan Sequence

1. CH. ADD/DEL should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. Using CHANNEL(CH) Up/Down go to the channel you wish to remove.
3. Remove channel by pressing ADJUST (ADJ) Left/Right until the display shows DEL.
4. Press ENTER to return to normal TV viewing.

### When Some Channels Can Not Be Tuned

If you have difficulty tuning some channels, you may have to manually set the TUNING BAND option. If you have the correct band, but are still having difficulty finding a channel you know to be active, set the AUTO FINE TUNE to SEARCH.

## CH. (Channel) LABELS

### Purpose

This option allows you to show a channel "name" each time the Channel/Time display appears on the TV. In other words, if you choose the label "ABC" for channel 13, "ABC" appears in the Channel/Time display. Therefore, you always know what channel you are watching.

The labels shown in the following table may be "assigned" to channels.

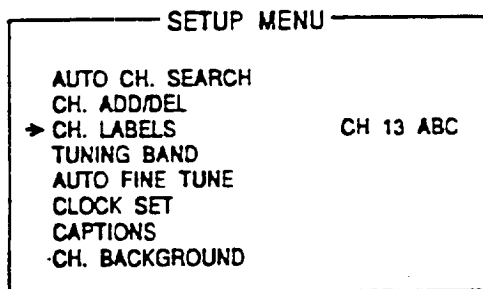
### NOTES:

- CH. LABELS is not displayed when an auxiliary video source (Video 1, 2 or S-Video 1) is being used.
- These labels are in the memory of the TV. You can not make your own labels.
- To remove an assigned channel label, select the one that is "blank."

A&E	ABC	ACTS	ADC	AMC	BET
BRAV	CA	CBC	CBN	CBS	CMTV
CNBC	CNN	COM	CSPN	CTN	CTV
DIS	DISC	E!	ENC	ESPN	ET
EWTN	FAM	FNN	FOX	GALA	HBO
HN	HSE	HSN	IC	INSP	LIFE
MAX	MEU	MMT	MTV	NBC	NICK
NOS	PBS	PLAY	PTL	QVC	REQ
SC	SHOW	SIN	TBS	TBN	TLC
TMC	TNN	TNT	TRAV	TSN	TWN
USA	VC	VCR	VH1	VISN	VJN
WGN	WTBS	WWOR	YTV	----	

### To Use CH. LABELS

1. CH. LABELS should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. Using the number buttons or CHANNEL Up/Down, select a channel.
3. Press ADJUST (ADJ) Left/Right to sequence through the available choices until the desired label appears.
4. Press ENTER to return to normal TV viewing.



Selecting Ch. Labels

# SETUP MENU

## TUNING BAND

### Purpose

Allows for setting the TV tuner to match your antenna or cable-TV system.

If you used the AUTO CH. SEARCH feature, the proper BAND was set automatically for your TV. If you did not use AUTO CH. SEARCH, or you are having difficulty tuning channels, the TUNING BAND may have to be set manually to match your viewing needs.

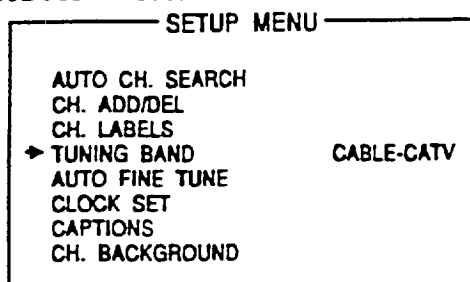
### Before Using TUNING BAND

Connect and turn ON all external equipment, such as a cable-TV decoder, VCR, etc. Use CH. AUTO SEARCH, if not previously used.

**NOTE:** TUNING BAND can only be used with ANT/CABLE 1 or 2 Source selection.

### To Use TUNING BAND

1. TUNING BAND should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.



Selecting Tuning Band

2. Press ADJUST (ADJ) Left/Right to select the desired tuning band, as shown below:
  - BROADCAST is used for standard over-the-air broadcasts.
  - Cable – CATV is used for most standard cable-TV (CATV) systems.
  - Cable – HRC is used for cable-TV systems that use HRC (Harmonically Related Carrier).
  - Cable – ICC is used for cable-TV systems using ICC (Incremental Coherent Carrier).

### Available Channels per Band

The channels that are available in the broadcast and cable tuning bands are shown below:

#### BROADCAST Band

VHF 2 to 13      UHF 14 to 69\*

- \* Channels above 69 are not selectable.

#### CATV, HRC and ICC Bands

1 to 125\*\*

- \*\* Channels above 125 are not selectable.

### When Some Channels Are Not Clear

If some channels are not clear, change the AUTO FINE TUNE. You may have to try different TUNING BAND and AUTO FINE TUNE combinations until you get a clear picture, channel-to-channel. Refer to the AUTO FINE TUNE option for details.

## AUTO FINE TUNE

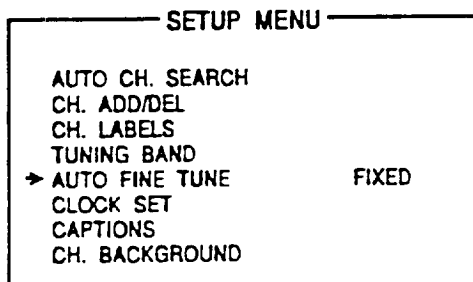
### Purpose

Lets your TV compensate for variations in broadcast and cable-TV frequencies.

If you are having difficulty tuning channels, the AUTO FINE TUNE may have to be set manually to match your viewing needs.

### Before Using AUTO FINE TUNE

Connect and turn ON all external equipment, such as cable-TV decoder, VCR, etc.



Selecting Auto Fine Tune

**NOTE:** AUTO FINE TUNE can only be used with ANT/CABLE 1 or 2 Source selection.

### To Use AUTO FINE TUNE

1. AUTO FINE TUNE should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. Press ADJUST (ADJ) Left/Right to select the desired mode of operation, as follows.
  - FIXED is used to receive "over-the-air" TV station and with many cable-TV systems.
  - SEARCH is used only when the TV must search to find the frequency being received, such as when used with certain VCRs and video game controllers.

### When Some Channels Are Not Clear

If some channels are not clear, change the TUNING BAND. You may have to try different AUTO FINE TUNE and TUNING BAND settings until you get a consistently clear picture, channel-to-channel. Refer to the TUNING BAND option for details.

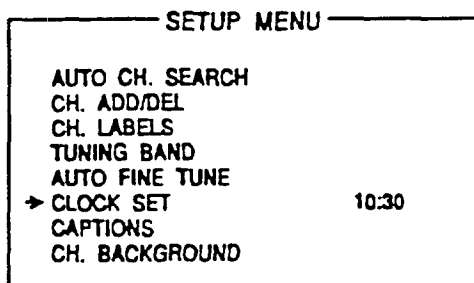
# SETUP MENU

## CLOCK SET

### Purpose

Sets the clock in the TV to the correct time. After the time is set, the current time will appear on the Channel/Time display whenever the TV is turned on, the channel is changed, or ENTER is pressed.

**Power Failure Note:** The time will have to be reset if power to the TV is interrupted.



Selecting Clock Set

### To Use CLOCK SET from Remote Control

1. CLOCK SET should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. Use the numbered buttons on the remote control to enter the current time. Press ENTER to start the clock.

For example, to set the clock to 10:30, press 1, then 0, then 3, then 0; and then press ENTER. If you enter an invalid time, such as 14:35 or 2:80, the time will disappear and you can enter another time.

### To Use CLOCK SET from Control Panel

1. Use SELECT Up/Down to highlight CLOCK SET in the SETUP MENU.
2. Use ADJ Left/Right to set the time, and then press ENTER to start the clock.

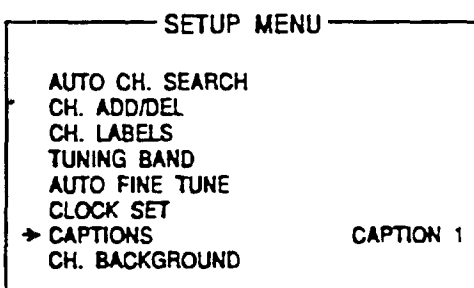
## CAPTIONS

### Purpose

Displays closed captions (CC) or informational text when available on the selected channel.

### To Access CAPTIONS Indirectly

1. CAPTIONS should be selected if you followed the "Basic Menu Operation" given in the "On-Screen Menu" section.
2. One of five different selections is shown: OFF, CAPTION 1, CAPTION 2, TEXT 1, and TEXT 2.
3. Press ADJUST (ADJ) Left/Right to select desired mode of operation.
4. The display disappears from the screen automatically in about 10 seconds, or you may press ENTER (ENT) to remove the display immediately.



Selecting Captions

### To Access CAPTIONS Directly

1. Press CC-QUIT on the remote control to select CAPTIONS. One of the five different selections shown: OFF, CAPTION 1, CAPTION 2, TEXT 1, and TEXT 2.
2. Press ADJUST (ADJ) Left/Right to select the desired status.
3. The display disappears from the screen automatically in about 10 seconds, or you may press ENTER (ENT) to remove the display immediately.

### Application

Your new TV is able to decode and display the closed captions and informational text that are broadcast with some TV shows. Captions can be subtitles for the hearing impaired, or translations into another language. Informational text can be the daily program schedule for the TV station, or special announcements.

Look for a (CC) or similar sign in your TV schedule, or on the video tape cassette, which indicates that captions are provided.

The closed caption signal is recorded by all VCRs when recording a TV broadcast or copying a tape having closed captions.

(continued on next page)





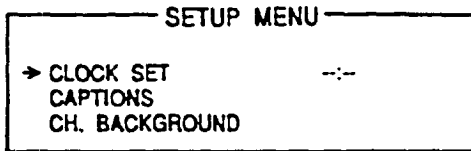
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# SETUP MENU

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## SETUP MENU WITH AUXILIARY VIDEO SOURCE SELECTED

If one of the auxiliary video sources (VIDEO 1, VIDEO 2, or S-VIDEO 1) is selected for your main viewing picture, many of the SETUP MENU options will not appear when the SETUP MENU is accessed. The illustration below shows the SETUP MENU as it would appear. Only the CLOCK SET, CAPTIONS and CH. BACKGROUND options remain. Refer to the earlier discussions when setting these options.

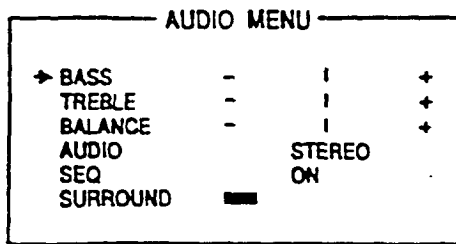


Setup Menu for Video 1/2 and S-Video Sources

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# AUDIO MENU

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**NOTE:** All adjustments on the AUDIO MENU are optional. You do not have to use these features in order to use your TV.

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## GENERAL INFORMATION

Your TV is equipped to receive Multi-channel Television Sound (MTS) when available in your area. It can also receive a Second Audio Program (SAP), that is, a program broadcast with two audio portions (two languages). The following modes of operation are available.

### STEREO

Directs the sound to the left and right speakers as supplied by the program source (broadcast TV station, VCR, etc.)

### MONO (Monaural)

Directs the same sound to both left and right speakers even if the source being received is in stereo.

### 2ND AUDIO/SAP (Second Audio Program)

Directs the sound for the (SAP) Second Audio Program (typically a second language) to both the left and right speakers. SAP sound is always monaural.

### Surround Sound

Surround sound gives the effect of surrounding you in sound while listening to your TV. Surround speakers are used with the rear-channel Surround sound provided by the TV.

Surround sound is available in programs specially encoded for the rear-channel sound track. Many broadcast television programs, pre-recorded video tapes and video discs provide surround sound. Tapes and discs may provide a greater sensation of Surround sound than obtained from a TV broadcast.

**NOTE:** Surround sound can be enabled only if stereo has been previously selected by using the AUDIO option and the signal being received is stereophonic.

The level of Surround sound varies relative to the Surround information encoded into the program material. Some sources, especially if from a video tape, provide greater sensation of Surround sound than may be obtained from a standard TV broadcast.

### Automatic Mode Selection

We recommend that you use the STEREO option. The TV will switch automatically between the STEREO and MONO modes dependent on the signal being received.

If you prefer SAP, use the 2ND AUDIO/SAP option. On those stations which broadcast two audio portions, you will hear the SAP (usually a second language). When the SAP broadcast ends, the TV switches automatically between STEREO and MONO modes. The TV switches back to 2ND AUDIO when the SAP broadcast resumes.

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## BASS

Use ADJUST (ADJ) Left/Right to adjust the amount of BASS (low-frequency level) in the sound. To decrease (-) BASS, press ADJUST (ADJ) Left. To increase (+) BASS, press ADJUST (ADJ) Right.

## TREBLE

Use ADJUST (ADJ) Left/Right to adjust the amount of TREBLE (high-frequency level) in the sound. To decrease (-) TREBLE, press ADJUST (ADJ) Left. To increase (+) TREBLE, press ADJUST (ADJ) Right.

## BALANCE

Use ADJUST (ADJ) Left/Right to shift the BALANCE sound between the left and right speakers as indicated by the on-screen display. To increase the relative sound level in the Left (L) speaker, press ADJUST (ADJ) Left. To increase the relative sound level in the Right (R) speaker, press ADJUST (ADJ) Right.

# AUDIO MENU

## AUDIO

Use ADJUST (ADJ) Left/Right to select the speaker audio output mode. You may choose either STEREO, MONO or 2ND AUDIO/SAP. If STEREO is selected but not received, the following line appears at the bottom of the menu:

**THIS PROGRAM IS NOT IN STEREO**

If 2ND AUDIO/SAP is selected but not received, the following line appears at the bottom of the menu:

**THIS PROGRAM HAS NO 2ND AUDIO**

In either of these cases, the Channel/Time display will always show what type of AUDIO signal is being received and has been selected default.

If you choose STEREO, you may want to enable Surround sound by using the SURROUND option.

## SEQ (Spatial Equalization)

Use ADJUST (ADJ) Left/Right to turn SEQ ON or OFF. SEQ improves tonal balance and increases apparent stereo separation to produce a spacious and more natural sound. Music and sounds appear to emanate from points outside the television set, while dialogue is localized within the picture.

SEQ is only available if a stereo signal is being received and you have previously selected STEREO using the AUDIO option or if STEREO is selected by default.

If no stereo signal is being received, the words NOT AVAILABLE appear next to SEQ, and the following line appears at the bottom of the menu:

**THIS PROGRAM IS NOT IN STEREO**

If your AUDIO selection is either MONO or 2ND AUDIO/SAP, the words NOT AVAILABLE appear next to SEQ and one of the following lines appear at the bottom of the menu:

**MONO HAS BEEN SELECTED**

**2ND AUDIO HAS BEEN SELECTED**

Some weak or nonstandard signals may not be suitable for SEQ, which may make imperfections in the audio transmission more obvious. Turn SEQ off if this condition exists.

**NOTE:** If SEQ is available, you can turn SEQ ON or OFF directly by pressing SEQ on the remote control.

## SURROUND

Use ADJUST (ADJ) Left/Right to adjust the level of Surround sound you wish to obtain. To decrease (-) Surround sound, press ADJUST (ADJ) Left. To increase (+) Surround sound, press ADJUST (ADJ) Right.

SURROUND sound is only available if a stereo signal is being received and you have previously selected STEREO using the AUDIO option or if STEREO is selected by default.

When SURROUND is activated, "SURROUND SPEAKERS REQUIRED" appears at the bottom of the menu. This is a reminder that surround sound is only available when you have optional surround speakers connected to the SURROUND SPEAKER jack. The TV's internal speakers do not produce surround sound.

If no stereo signal is being received, the words NOT AVAILABLE appear next to SURROUND, and the following line appears at the bottom of the menu:

**THIS PROGRAM IS NOT IN STEREO**

If your AUDIO selection is either MONO or 2ND AUDIO/SAP, the words NOT AVAILABLE appear next to SURROUND and one of the following lines appear at the bottom of the menu:

**MONO HAS BEEN SELECTED**

**2ND AUDIO HAS BEEN SELECTED**

## NOTES

1. Continuously pressing ADJ Left automatically turns Surround speakers OFF.
2. If the current program is not in stereo, you will not be able to change the SURROUND option. The status display shows "THIS PROGRAM IS NOT IN STEREO."
3. If Surround speakers are not used, set SURROUND option to OFF for optimum stereo sound reproduction.
4. If you are in the SURROUND menu option and press MUTE on the remote control, only the Surround speakers are muted.

# AUDIO MENU

## AUDIO SELECTION CONSIDERATIONS

The last line of the Channel/Time display shows the current audio heard. The display is shown each time you turn the TV ON, change channels, or press ENTER. The audio heard depends on the following:

- AUDIO mode selected on AUDIO MENU: STEREO, MONO or 2ND AUDIO/SAP.
- Audio signal being received.
- Whether SEQ is ON or OFF.

### NOTES:

- Your AUDIO mode selection can override the type of audio heard. For example, if you select MONO, you will always hear monaural sound even if the signal received is stereo.
- If one of the auxiliary video sources (Video 1/2 or S-Video 1) is selected for the main picture source, the Channel/Time display will not show an audio mode except to show whether or not SEQ is turned on.

CH 2  
10:56  
STEREO

STEREO selected using the AUDIO option on the AUDIO Menu and a stereo signal is received; you will hear stereo sound. The Channel/Time display shows STEREO

CH 2  
10:56  
MONO

MONO selected using the AUDIO option on the AUDIO Menu; you will hear monaural sound regardless of the signal actually received. The Channel/Time display shows MONO.

CH 2  
10:56  
SEQ

STEREO selected using the AUDIO option on the AUDIO Menu and a stereo signal is received; SEQ is turned ON. You will hear SE stereo sound. The Channel/Time display shows SEQ.

CH 2  
10:56  
SAP

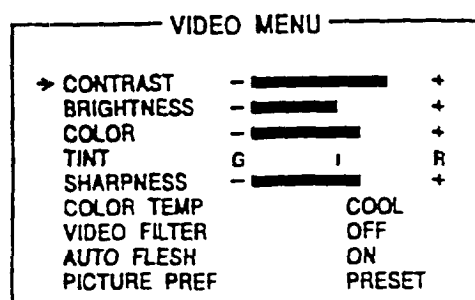
SAP selected using the AUDIO option on the AUDIO Menu and a SAP signal is received; you will hear the SAP audio. The Channel/Time display shows SAP. If a SAP signal is not received the audio heard will be what is being received. The Channel/Time display shows what type of signal is being received.

Audio Heard For Different Audio Mode Options

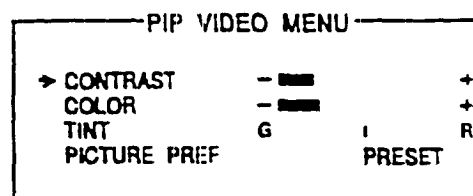
AUDIO Selected	Signal Received	Audio Heard, SEQ OFF	Audio Heard, SEQ ON
STEREO	Stereo Stereo and SAP Monaural and SAP Monaural	Stereo Stereo Monaural Monaural	SEQ Stereo SEQ Stereo Monaural Monaural
MONO	Stereo Stereo and SAP Monaural and SAP Monaural	Monaural Monaural Monaural Monaural	Monaural Monaural Monaural Monaural
2ND AUDIO/SAP	Stereo Stereo and SAP Monaural and SAP Monaural	Stereo 2nd Audio 2nd Audio Monaural	SEQ Stereo 2nd Audio 2nd Audio Monaural

\* For VIDEO and S-VIDEO Sources, the signal being received is assumed to be stereo.

# VIDEO MENU



Main Video Menu



PIP Video Menu Appears When PIP is ON

**NOTE:** All adjustments on the VIDEO MENUS are optional. You do not have to use these features in order to use your TV.

## CONTRAST

Adjusts the overall contrast and color level of the picture. If the light areas in the picture are overly bright and some of the highlight details are missing, press ADJUST (ADJ) Left until the highlights are restored.

If the picture is grayish and lacks contrast and sparkle, press ADJUST (ADJ) Right until you reach the CONTRAST level you prefer.

## BRIGHTNESS

Adjusts the brightness level of black areas in the picture. If the black areas are too light, press ADJUST (ADJ) Left until you reach the BRIGHTNESS level you prefer.

If the black areas in the picture are too dark and show little detail, press ADJUST (ADJ) Right until you reach the BRIGHTNESS level you prefer.

## COLOR

Adjusts the intensity of the colors in the picture.

If all the colors seem too vivid or intense, press ADJUST (ADJ) Left to decrease the COLOR intensity.

If all the colors seem faded or washed out, press ADJUST (ADJ) Right to increase the COLOR intensity.

## TINT

Adjusts the color of the flesh tones.

If the flesh tones are too red or purple, press ADJUST (ADJ) Left until you reach the desired flesh tones.

If the flesh tones are green or have a greenish TINT, press ADJUST (ADJ) Right until you reach the desired flesh tones.

## SHARPNESS

Adjusts the clarity for the clearest picture.

If the picture is too "grainy" and vertical edges show multiple lines on the right side, press ADJUST (ADJ) Left to obtain the desired SHARPNESS.

If the picture is too "soft" and vertical edges are fuzzy, press ADJUST (ADJ) Right to increase the SHARPNESS.

## COLOR TEMP

Allows you to change the "color temperature" or picture white balance between cooler natural whites and warmer (red) colors. To use COLOR TEMP, press ADJ until either WARM or COOL shows in the display.

## VIDEO FILTER

The VIDEO FILTER reduces video "noise" or interference in dark picture areas while retaining detail and sharpness in bright areas, resulting in overall clearer pictures.

Select VIDEO FILTER from the VIDEO Menu

To turn the VIDEO FILTER ON, press ADJUST (ADJ) until the word ON shows in the display. To turn the VIDEO FILTER OFF, press ADJUST (ADJ) until OFF shows in the display.

## AUTO FLESH

Automatically maintains natural skin tones under changing scene and video source conditions. To turn the AUTO FLESH ON, press ADJUST (ADJ) until the word ON shows in the display. To turn the AUTO FLESH OFF, press ADJUST (ADJ) until OFF shows in the display.

## PICTURE PREF (Preference)

Lets you decide if you want to use your own CUSTOM video settings, the factory PRESET video settings, or the THEATER option.

Press ADJUST (ADJ) Left/Right to obtain the desired setting.

If the factory PRESET or THEATER setting is selected, any adjustment made to the VIDEO Menu options from this point, automatically changes the PICTURE PREF setting to CUSTOM, and saves your current video settings in the CUSTOM mode.

# PIP OPERATION AND CONNECTIONS

## PIP (PICTURE-IN-PICTURE)

Your Zenith TV must be connected to a video component such as a VCR in order to view a different picture in the PIP inset. This video component must be connected to one of the TV's video/audio input jacks (VIDEO 1 IN or VIDEO 2 IN) by using Audio/Video cables.

The most common use of PIP is to view two different channels; one from the TV tuner and the other from the VCR tuner. For example, you can view two sporting events or two movies at the same time.

Other uses for PIP would include monitoring what you are recording on your VCR while watching another channel on the TV, or monitoring a baby's room by connecting a video camera or camcorder to one of the video/audio input jacks.

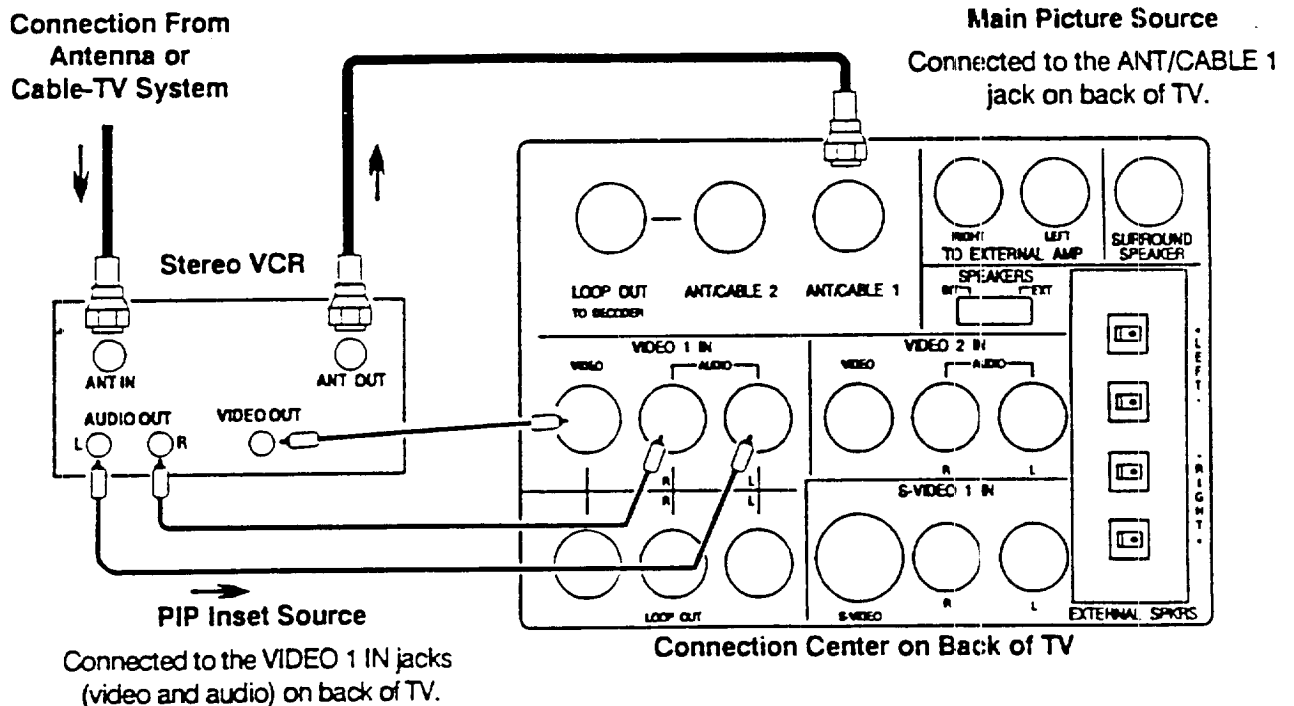
## CONNECTION ALTERNATIVES

The input jacks of your TV provide for 5 different audio/video input sources. (Some TV models have two additional inputs for a total of 7 possible sources.) *Antenna or Direct Cable Connection* and *Cable Decoder Connection* illustrate two of the most common connection alternatives.

### Antenna or Direct Cable Connection

This illustration shows the basic connection of your TV to a stereo VCR. Using this connection, you are capable of the following operation:

- You may select ANT/CABLE 1 for main picture source to view channels tuned by the TV's channel selector. Simultaneously, you may select VIDEO 1 for PIP source to view — in the PIP inset — a tape playing in the VCR or a different channel tuned by the VCR's channel selector. (VCR's TV/VCR button must be set to TV.)
- Sources may also be swapped. In other words, VIDEO 1 may be the main picture source and ANT/CABLE 1 the PIP source.



Antenna or Direct Cable Connection

# PIP OPERATIONS AND CONNECTIONS

## Cable Decoder Connection

This illustration shows the connection of both a cable-TV decoder and a stereo VCR to your TV. Using this connection, you are capable of, but not limited to, the following operation:

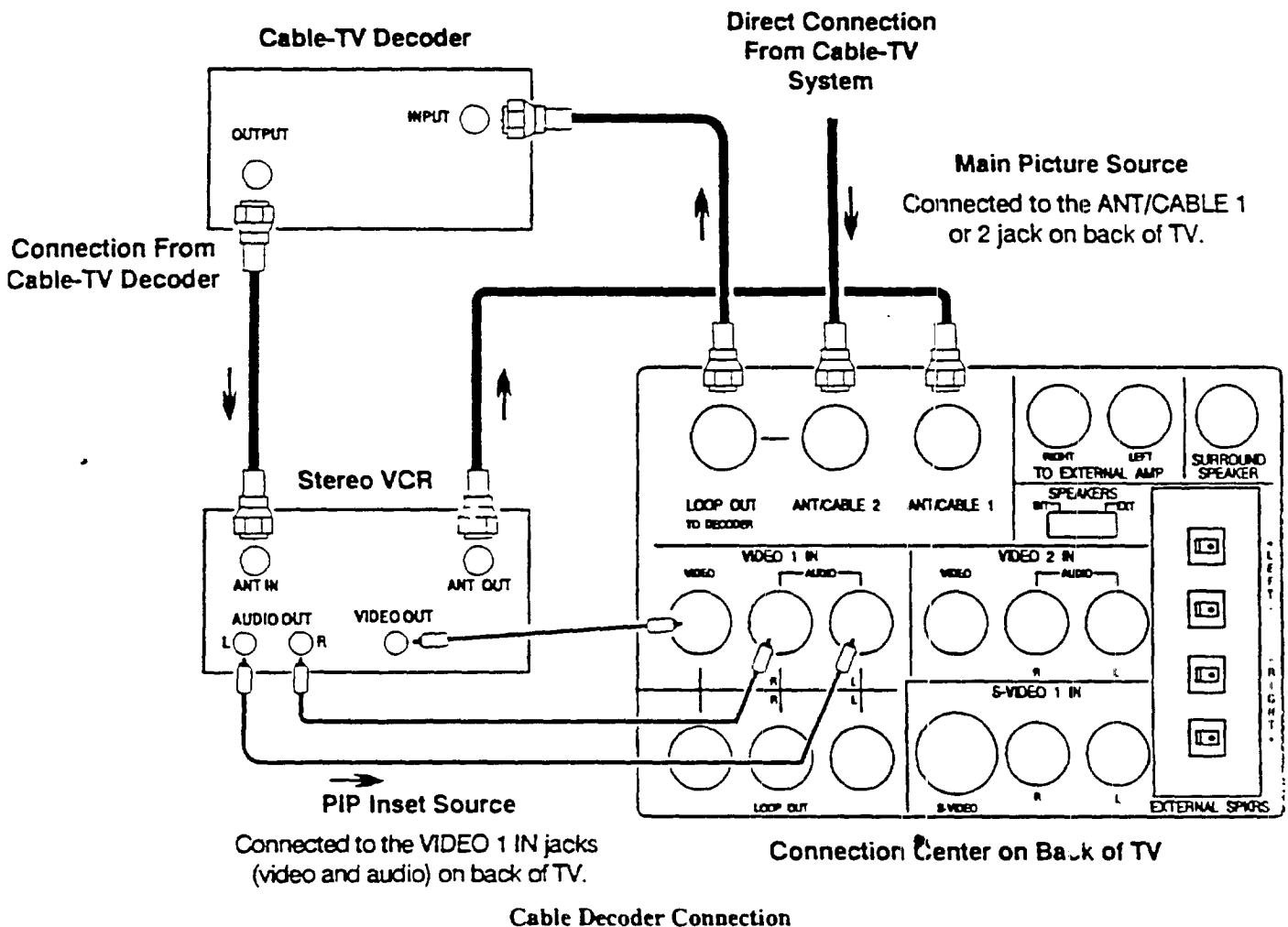
- You may select ANT/CABLE 2 for main picture source to view unscrambled cable channels tuned by the TV. Simultaneously, you may select VIDEO 1 for PIP source to view – in the PIP inset – a tape playing in the VCR or a different channel tuned by the cable decoder. (VCR's TV/VCR button set to VCR.)
- You may select ANT/CABLE 1 for main picture source to view premium cable channels tuned by the cable decoder. (Tune TV to channel 3 or 4.) Simultaneously, you may select VIDEO 1 for PIP source to view – in the PIP inset – a tape playing in the VCR. (VCR's TV/VCR button set to TV.)
- Sources may also be swapped. In other words, VIDEO 1 may be the main picture source and ANT/CABLE 1 the PIP source.

## HOW TO SELECT MAIN PICTURE & PIP SOURCE

In order to watch a different picture in the PIP inset, you must choose a different source than the one used for your main TV picture. "Source" refers to the input jacks on the back of your TV set from which the video and audio signals are being received. These jacks correspond to the selections in the source menu.

- ANT/CABLE 1 or 2 (Input from antenna, direct cable connection, or cable decoder)
- VIDEO 1 or 2 (Input from VCR, Laser Disc, Camcorder etc.)
- S-VIDEO 1 (Input from Super-VHS VCR)

The sources are identified by color in both the displays and on the connection center. The color for the Channel/Time display, Volume and Mute displays match the color of the source you are watching. The color also helps identify which source you are watching when viewing PIP.





# MAINTENANCE AND TROUBLESHOOTING

## BEFORE CALLING FOR SERVICE

Check these items and see if you can correct the trouble by changing the adjustment of a control or the setting of a switch.

By making these simple checks before calling for service, you may save time and money.

Problem	Try This
Picture OK. Poor sound.	Re-orient antenna. Check for local interference. Try another channel – possible station trouble. Check AUTO FINE TUNE and TUNING BAND options in SETUP Menu.
Sound OK. Poor picture.	Re-orient antenna. Adjust VIDEO Menu options with PICTURE PREF in CUSTOM mode. Try another channel – station trouble? Trouble with cable-TV system?
No picture or sound.	Is TV on? Is there AC power to the TV? Is antenna hooked up? Is cable hooked up? Check with your cable company. Check auxiliary audio/video equipment. Check channel selection. Check TUNING BAND and AUTO FINE TUNE option in SETUP Menu.
Picture blurred, ghost in picture, or distorted	Check antenna or cable hook up for broken wires? Possible station trouble – try another channel. Check for local interference.
No color, or poor color.	Check antenna or cable hook up. Adjust VIDEO menu options with PICTURE PREF in the CUSTOM mode. Is it a color program?
No sound.	Check MUTE button operation on remote control.
Cannot select certain channels.	Channels may be skipped in channel scan (CH. ADD/DEL) menu option. Check AUTO FINE TUNE menu option.
No picture or sound when VCR Source is selected.	Is VCR hooked up properly? Are wires connected to VCR VIDEO 1/2 jacks on connection center?
No sound or weak stereo sound when using a stereo VCR.	Check AUDIO mode? Is it STEREO? Was it present before selecting VIDEO 1/2 or S-VIDEO Source?
PIP is black when using VCR for PIP source.	Is VCR hooked up properly? Are wires connected to the VIDEO 1/2 input jacks on connection center? Is VCR selected for PIP source?
PIP lacks contrast when using VCR for PIP source.	Is VCR hooked up properly? Are wires connected to the VIDEO 1/2 input jacks on connection center?
PIP inset frame is snowy when using TV tuner for PIP and VCR for main picture.	Is TV/VCR switch on VCR in the TV position?
Remote control does not work.	Are batteries okay? Is TV turned ON? Is TV plugged in?

Always request that your technician use only genuine Zenith exact replacement parts for continued Quality and Safety performance. Keep your Zenith ALL Zenith.

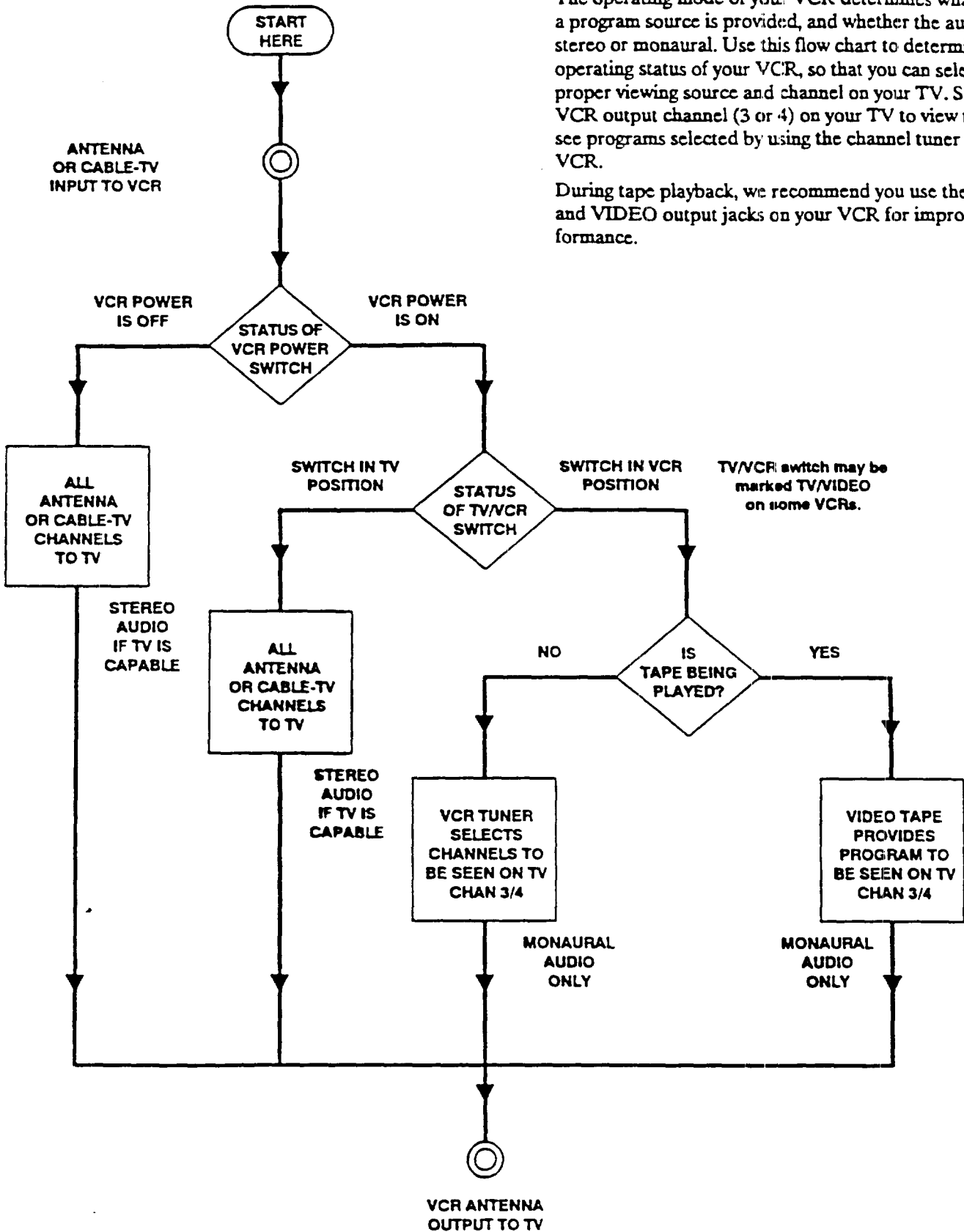
**NOTE:** If your TV fails to respond to the VIDEO SENTRY selection, or to any other menu selection, you must reset the TV. Simply disconnect the AC power. Wait a few minutes, then reconnect AC power. You may have to set the clock to the proper time.

# MAINTENANCE AND TROUBLESHOOTING

## VCR MODE CHART 1. OUTPUT TO TV FROM ANTENNA OUT JACK ON VCR

The operating mode of your VCR determines what type of a program source is provided, and whether the audio is stereo or monaural. Use this flow chart to determine the operating status of your VCR, so that you can select the proper viewing source and channel on your TV. Select the VCR output channel (3 or 4) on your TV to view tapes or to see programs selected by using the channel tuner in the VCR.

During tape playback, we recommend you use the AUDIO and VIDEO output jacks on your VCR for improved performance.



# MAINTENANCE AND TROUBLESHOOTING

## VCR MODE CHART 2. OUTPUT TO TV FROM AUDIO/VIDEO JACKS ON VCR

The operating mode of your VCR determines what type of program source is provided, and whether the audio is stereo or monaural. Use this flow chart to determine the operating status of your VCR, so that you know when to select the VCR (or auxiliary) source on your TV.

Use the LEFT and RIGHT AUDIO output jacks on the VCR to get stereo sound. Select STEREO audio mode of operation for the TV by using the options on the AUDIO Menu of the TV. You must use the VIDEO output when the LEFT and RIGHT AUDIO outputs are used.

