

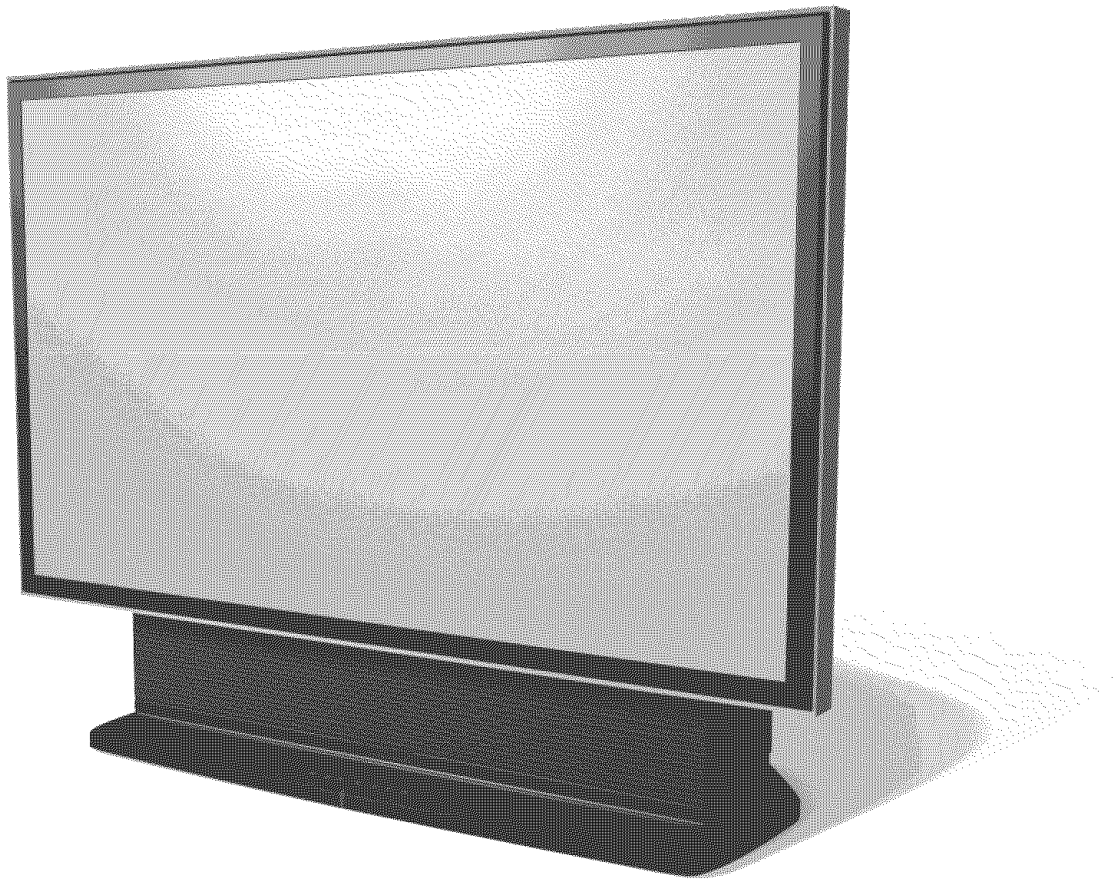
Owner's Manual—DRAFT 2004-05-24-A

# VEOS

## 65" LCoS™ HDTV Monitor

Widescreen Rear-Projection High-Definition Television Monitor

Model 6501MA



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This user's manual contains important safeguards and instructions that must be followed by the user for the safe and proper usage and maintenance of this television. Please read the instructions carefully and keep the manual in a safe place for future use.

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## NOTICES

### WARNINGS AND SYMBOLS

**Caution** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

 <div style="display: inline-block; border: 1px solid black; padding: 2px; text-align: center;"> <b>CAUTION</b>  <small>RISK OF ELECTRIC SHOCK DO NOT OPEN</small> </div> 	<p><b>Service Personnel – Warning</b></p> <ul style="list-style-type: none"> <li>• Eye damage may result from directly viewing the light produced by the lamp.</li> <li>• Always turn off the lamp and allow to cool.</li> <li>• Ultraviolet radiation eye protection required during servicing.</li> </ul> <p><b>Personnel De Service – D’Avertissement</b></p> <ul style="list-style-type: none"> <li>• Peuvent résulter de regarder directement la lumière produite par la lampe.</li> <li>• Arrêtez toujours la lampe et laissez se refroidir.</li> <li>• Protection d’oeil de rayonnement ultraviolet requise pendant l’entretien.</li> </ul> <p><b>Personal De Servicio – AMONESTADORA</b></p> <ul style="list-style-type: none"> <li>• Pueden resultar directamente de ver la luz producida por la lámpara.</li> <li>• Dé vuelta siempre apagado a la lámpara y permita para refrescarse.</li> <li>• Protección de ojo de la radiación ultravioleta.</li> </ul>
<p><b>ATTENTION</b> Risque de choc électrique. Ne pas ouvrir.</p> <p><b>PRECAUCION</b> Riesgo de choque eléctrico. No abrir.</p>	



**“Risk of Electric Shock”** The lightning-flash with arrowhead symbol, within a triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be sufficient to constitute a risk of electric shock. **DO NOT TRY TO SERVICE THIS PRODUCT YOURSELF.**



**“Important Operating and Maintenance Instruction”:** The exclamation point, within a triangle, in or on the literature accompanying the product, is intended to alert the user to the presence of important operating, maintenance, or service instructions to follow.



**“Hot Surface”:** The heat-radiation symbol, within a triangle, is intended to alert the user that the surface or component may be hot during operation and for a time after operation. The operating temperature is sufficient to cause burns. Wait until the surface or component is cool before attempting to access these or nearby components or surfaces. Refer to the instructions for minimum cooling times.

**Warning** TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS TELEVISION TO RAIN OR MOISTURE.

### FCC INFORMATION



#### Changes or Modifications

The FCC requires the user to be notified that changes or modifications not expressly approved by the manufacturer could void the user’s authority to operate the equipment.

#### Interference

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

---

### POWER ON-OFF BEHAVIOR



- The picture takes about 15 seconds to appear after turning on the HDTV.
- If the HDTV monitor is turned on within 60 seconds after turnoff, the picture reappears instantly. If turned on between 60 and 120 seconds after turnoff, the picture will reappear in 135 seconds.



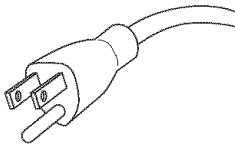
- The lamp used in the HDTV monitor uses a cooling fan which may be heard if the room is relatively quiet. The fan will also run for more than 60 seconds after the HDTV monitor is turned off. The fan and noise is similar to that of the familiar personal computer.

For more detailed information, see "Power and Lamp Indicators" on page 30.

## IMPORTANT SAFETY INSTRUCTIONS

Please read and understand the following important safety instructions before using your product. Save these instructions for future use. Always follow all warnings and instructions marked on your product. Safety is foremost in our minds in the design of these units. To help you operate your product safely, this section illustrates safety tips that will be of benefit to you. Please read this section carefully and follow all safety measures.

### POWER

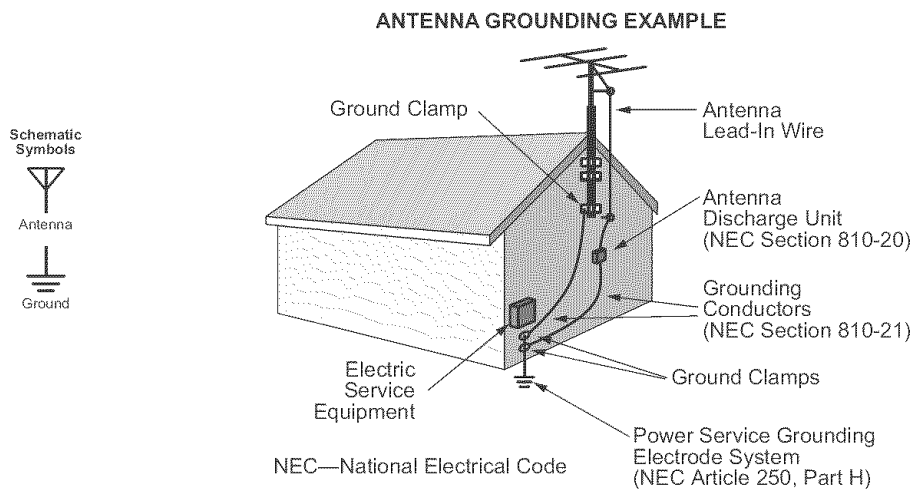


- Operate this television set only on 120Vac 60Hz power.
- This television set uses a 3-prong ac plug and power cord. This is a safety feature. If the location has a 2-prong receptacle, contact a qualified electrician to replace the outlet.
- When unplugging the television, always pull on the plug, not the cord.
- Unplug the television and disconnect the antenna or cable when unused or unattended for long periods of time.
- If the power cord or plug is damaged or frayed, unplug this television set from the wall receptacle and contact qualified service personnel.
- Do not overload wall receptacle as this may result in fire or electric shock.
- Do not allow anything to rest on or roll over the power cord and do not place the television where the power cord is subject to abuse. This may result in shock or fire hazard.

### CATV-INSTALLER GROUNDING REMINDER

- This is a reminder to call the CATV system installer's attention to Article 820-40 of the National Electric Code, which provides 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 possible.

### ANTENNA GROUNDING



- In the USA, refer to National Electrical Code Section 810 for proper grounding.
- In Canada, refer to Canadian Electrical Code Section 54-300.

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## ANTENNA SAFETY

### Instructions

Read and observe the antenna manufacturer's installation and safety instructions and recommendations.

### Site Selection

Select a safe site to install the antenna.

An outside antenna should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it may fall into such power lines or circuits. When installing an outside antenna, the distance between any power lines and the installation site should be at least one and one-half times the height of the antenna and mast assembly. Make the distance even greater, if at all possible. Since all overhead power lines look somewhat alike, consider them all dangerous as contact with them may be fatal.

If you have power lines in the area, call your local electric utility for assistance.

### Antenna Mounting

NEVER work alone; always have someone near who can summon help.

Certain clothing may provide a degree of safety, but don't depend on it for your life (rubber boots or shoes, industrial rubber gloves and a long sleeve shirt or jacket).

Check weather conditions. Be sure that it hasn't rained recently and that the lawn is not wet or muddy. Make sure that rain or thunderstorms are not predicted for the day you decide to install the antenna.

The wind can blow the antenna into a nearby power line. Don't install or remove antennas in moderate or heavy winds.

If you need to use a ladder, make sure it is made of nonconductive (nonmetallic) material.

If possible, have someone present who has been trained in electric shock first aid.

### Antenna Installation

Properly assemble the antenna according to instructions (do this where the antenna is to be put up).

"Tie off" the mast with dry, nonconductive ropes so you can control the side sway and the direction of fall as you walk the assembly up. If it does start to fall, let go of it and let it fall.

Don't attempt to "walk up" a mast over 30 feet tall. Get a professional to do it for you.

Once the antenna is up in full vertical position, securely fasten it by tying it to the side of the house or by using "guy" wires.

Ground the antenna according to the National Electrical Code.

### Rooftop Installations

DO NOT assume that just because you're on a roof, you're isolated from ground. You may still be electrocuted or fall off the roof.

### Emergency Aid for Shock

Be prepared to call for medical assistance in an emergency.

It is advisable to work with several other people when installing or removing an antenna. One person should stand aside to direct the effort and watch for signs of trouble. If someone does receive a shock, don't touch the victim while his body is still in contact with the electricity. Instead, pry or pull him away from the source of electricity with a length of dry wood, rope, a blanket, or another nonmetallic object.



If breathing has stopped, use mouth-to-mouth resuscitation until a doctor or ambulance arrives and relieves you. If the heart has stopped, closed-chest cardiac massage must be done simultaneously. The ambulance should be informed when called that an electric shock has occurred. The ambulance will be equipped with proper equipment such as an intensive care or cardiac care mobile unit equipped with a heart defibrillator and have trained personnel.

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### LIGHTNING RECOMMENDATION

- Disconnect the cable or antenna and unplug the television set during electrical storms to prevent the possibility of lightning-caused damage.
- Unplug the television and disconnect the antenna or cable when unused or unattended for long periods of time.

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### SERVICE AND ACCESSORY INSTALLATION

- The lamp may be replaced by the user or a qualified service person. See "Lamp Assembly Replacement" on page 55.

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### TELEVISION SAFETY

- Follow the operating instructions and safety precautions that have been furnished with your TV.
- If the TV cabinet controls or set are damaged, if the picture fails, or if the performance of the TV deteriorates in any way, unplug the TV and have it checked by a qualified professional service technician. See the back cover of this manual for service information.
- When replacement parts are required, have the service technician verify that the replacements have the same safety characteristics as the original parts.
- Upon completion of any service or repairs to the TV, ask the service technician to perform the safety checks described in the manufacturer's service literature.
- Unlike TVs using picture-tube or CRT technology, this TV technology should not make snapping or popping sounds. If this occurs when the TV is operating, unplug the TV and consult your dealer or qualified service technician. A few clicks during lamp turn-on, as well as a low hum from the cooling fan, is normal.
- Caution children about dropping or pushing objects into the TV cabinet openings. Some internal parts carry hazardous voltages and contact can result in electrical shock or death.
- Never operate the TV if liquid has been spilled into it. Unplug the TV and have it inspected by a qualified service technician before further use. Spilled liquid inside can cause electrical shorts which can result in fire or shock hazards.
- Unplug the product from the wall before cleaning. Never clean the screen while the TV is on. Do not use liquid or aerosol cleaners other than specified in the cleaning instructions in this manual. Excess liquid may drain inside causing a fire or hazard to develop.
- Do not use the television near water; for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious bodily injury to a child or adult and serious damage to the product.
- Never add any attachment and/or equipment without approval of the manufacturer, as such additions may result in risk of fire, shock, or other personal injury.
- Upon completion of any service or repairs to the television, ask the service technician to perform routine safety checks to determine that the television is in safe operating conditions.

- Never expose the set to rain or water. If the TV becomes damp or wet, disconnect the plug and have it inspected by a service technician before further use. Rain or excessive moisture may cause electrical shorts which can result in fire, shock, or death.
- TV sets are provided with ventilation openings in the cabinet to allow heat generated during the operation to be released. If these openings are blocked, heat build-up within the TV can cause failures which may result in a fire hazard.
  - Never cover the openings with cloth or other material.
  - Never place the set near or over a radiator or heat register.
  - Never place a set in a "built-in" enclosure unless proper ventilation is provided.
- Turn the TV off if it is necessary to leave the room for more than a short period of time. Never leave a TV on when leaving the house.
- When leaving the home for extended periods of time, unplug the TV from the wall outlet and disconnect the external antenna lead-in wires at the TV set. A fire hazard could develop due to lightning storms and electrical power line surges.

Do not routinely unplug the TV from the wall outlet after each viewing session. This practice can cause the stranded wires within the cord to break and pose a fire hazard. Also, someone could be seriously shocked if the plug is carelessly removed or inserted into the wall outlet.

- If your TV power cord has become worn for any other reason, have the cord checked by a service technician for possible replacement.

## WARRANTY

### **One Year Full Warranty**

If this product experiences any failure due to a defect in material or workmanship within one year from the date of purchase, contact Sears at 1-800-4-MY-HOME® to arrange to have it repaired free of charge.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179**

## PRODUCT FEATURES AND SPECIFICATIONS

A video glossary is included in this manual beginning on page 62.

- Imaging**
  - Three Brilliant™ UltraContrast™ LCoS™ Gen II microdisplays
  - 1280 × 720-pixel native resolution
- Screen**
  - Ultra-fine-pitch surface, rear-projection
- Mirror**
  - Digital Plus Mirror™ first-surface reflective
- Lamp**
  - High-brightness metal-halide
- Inputs**
  - 1—DVI with HDCP decoder plus audio  
HDMI™ video is also supported using a HDMI-to-DVI adapter (not included).
  - 1—VGA (analog computer video) plus audio
  - 1—480i component video plus audio
  - 2—1080i/720p/480p high-definition component video plus audio
  - 3—component or S-video plus audio
  - 2—VHF/UHF/cable-ready NTSC tuners
  - 1—ATSC-tuner/digital-cable/input adapter accessory port
- Outputs**
  - 1—left/right line-level audio output
  - 1—volume-tracking line-level subwoofer output
- Video**
  - 3-2 pulldown detection (film mode)
  - Motion-adaptive deinterlacing
  - Digital 3-D motion adaptive Y/C separation (comb) filter<sup>1</sup>
  - Sharpness, preprogrammed uniformity, and contrast enhancement
  - Adjustable white point and color optimization
  - Spatial, temporal, and 3-D noise reduction
  - High-quality picture-in-picture and dual-image split screen
- Audio**
  - Virtual Dolby® Surround technology<sup>2</sup>
  - 15-watt/channel stereo audio system
  - Internal 2-way stereo speakers
- Convenience and Security**
  - Interactive OSD (on-screen display) setup and menus
  - Sleep timer
  - Closed-caption decoder
  - “V-Chip” program blocking technology

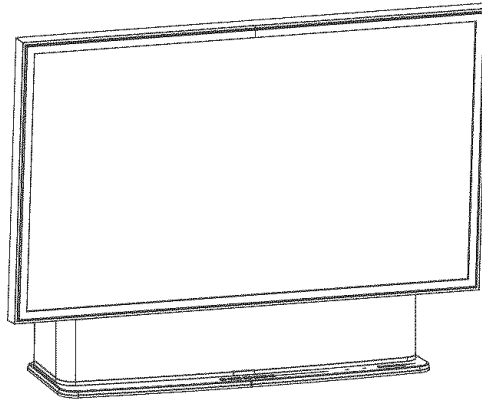
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1. Not available when closed captioning is on.  
2. Described in “Video Glossary” on page 62.

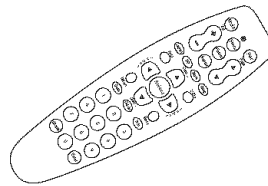
- Power**
- 120Vac, 60Hz nominal (104–132Vac, 57–63Hz)
  - 370 watts maximum operating, 2.5 watts standby
- Size and Weight**
- 61"×44¼"×23¼", 155cm×112cm×59cm (width × height × depth)  
130lbs, 60kg
- Environment**
- +41°F to +95°F (+5°C to +35°C) ambient operating temperature
  - –4°F to 140°F (–20°C to +60°C) storage temperature
  - 10% to 70% relative humidity

# CARTON CONTENTS

- 1. Owner's manual (includes warranty information)
- 2. 6501MA HDTV monitor



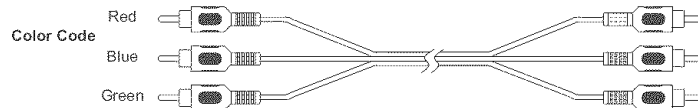
- 3. Remote control



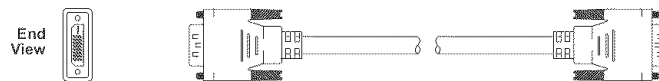
- 4. Batteries



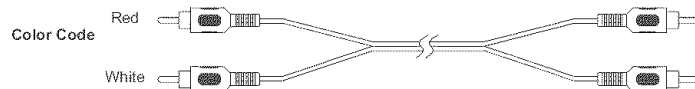
- 5. Component video cable (YPbPr)



- 6. DVI cable



- 7. Audio cable



## INSTALLATION

### LIFTING AND CARRYING



- Although the 6501MA HDTV features LCoS™ technology which weighs much less than large-screen CRT TVs, this is a large device. To prevent accidental damage and/or injury, enlist help when unpacking, lifting, and moving the television.

### ACCLIMATION



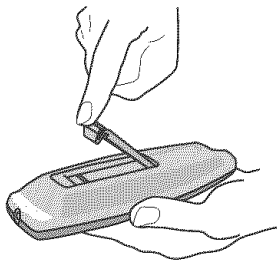
- If the HDTV monitor is transported directly from a cold environment to a warm location or humid room, allow it to sit, unpowered for 2 hours before plugging it in and turning on the power.

### LOCATION



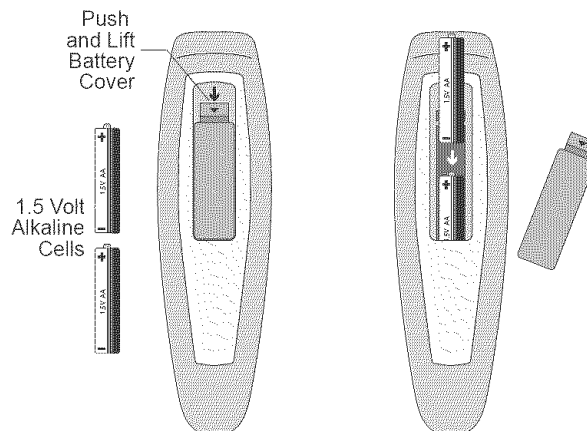
- This RPTV (rear-projection television) product is designed for use in a table-top configuration.
- Do not place the television on any table, stand, cart, or other surface that is not designed to support the size and weight of the television. The television is designed to rest on a flat and level surface.
- Do not expose the television to direct illumination or direct sunlight. It will detract from viewing performance. In some cases, sunlight can produce enough heat to damage the television.
- Do not expose the television to weather, moisture, heat, or extremely high humidity (above 70%).
- Do not operate the television where the ambient temperature exceeds +95°F (+35°C).

### REMOTE CONTROL BATTERY INSTALLATION



The remote control is shipped with the batteries uninstalled.

- Push the tab in the direction of the arrow and lift to remove the battery cover.
- Insert two AA-size alkaline cells, negative (–) end first.
- Replace the battery cover.



**Figure 1. Remote Control Battery Installation**

## CONNECTIONS

### PRECAUTION



Turn off the HDTV monitor and any external audio-video components before connecting or disconnecting audio-video cables. Avoid these risks:

- There is some risk of damage to the HDTV monitor or component by misalignment of connectors if either are operating.
- Separate audio systems may have capabilities beyond the ratings of their loudspeakers. Connecting or disconnecting the audio cables may result in abnormally large signal changes which could damage speakers and amplifiers or receivers.

### CHOOSING AV COMPONENT CONNECTIONS

- For best performance, choose the highest quality connections that are available on both the television and video component.

Signal-quality capability is listed below with the highest at the top:

Input	Signals	Quality
DVI*	digital	best
1080i/720p/480p Component	YPbPr	
PC (VGA)	RGB	
480i Component	YPbPr	
S-Video	Y/C	
Composite	CVBS	

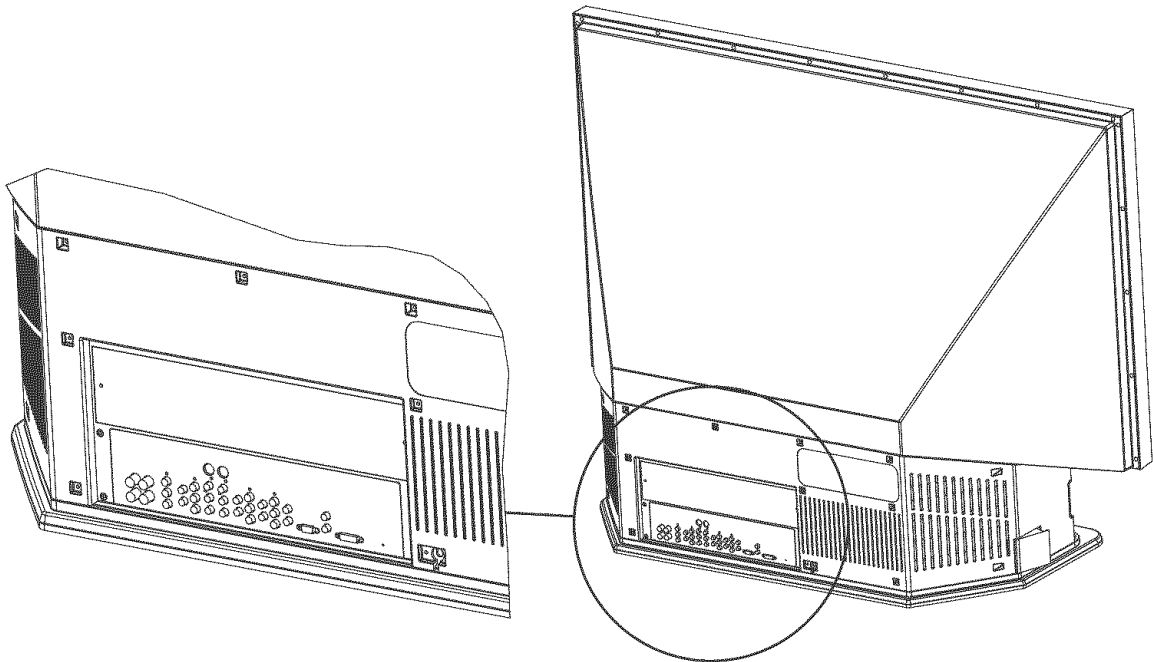
**Table 1: Input Quality**

\* Includes use of an HDMI to DVI adapter.

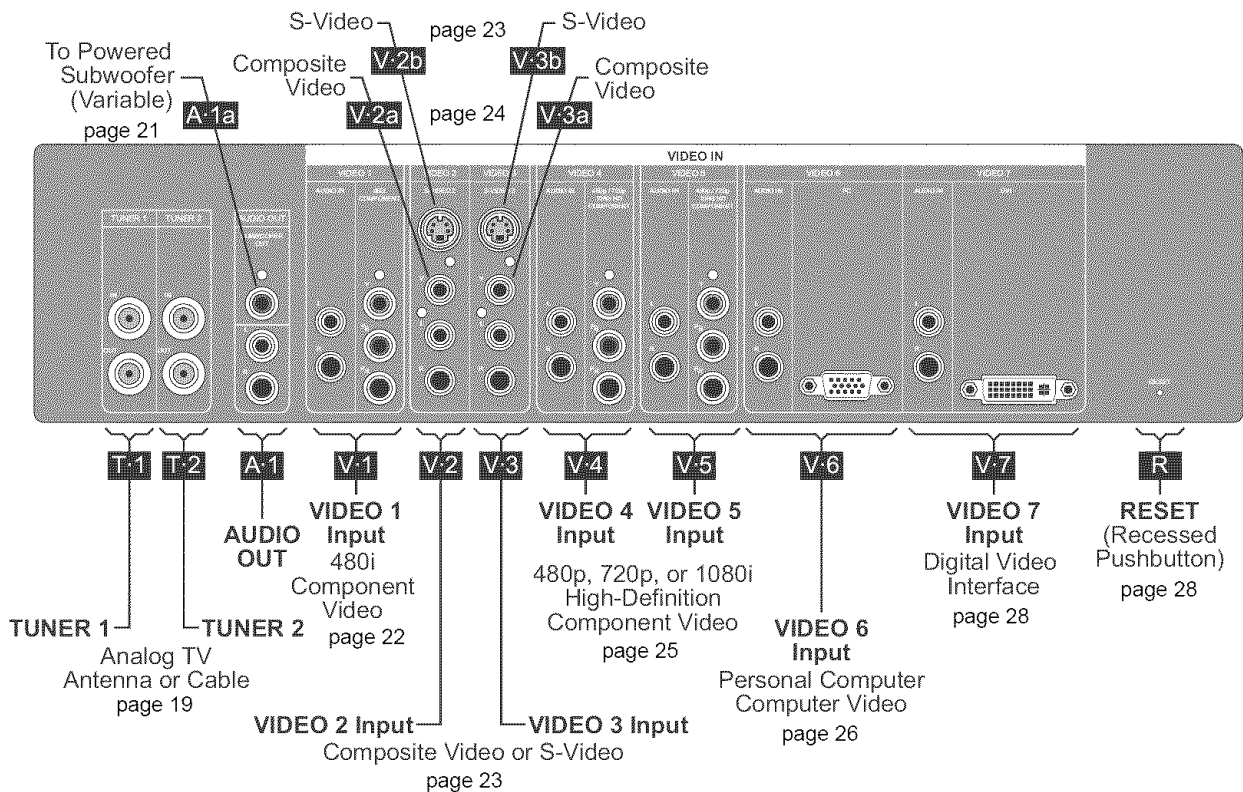
See "Video Glossary" on page 62 for a description of the signals. Also see "Appendix" on page 58 for additional background information and recommendations.



**REAR CONNECTOR PANEL**



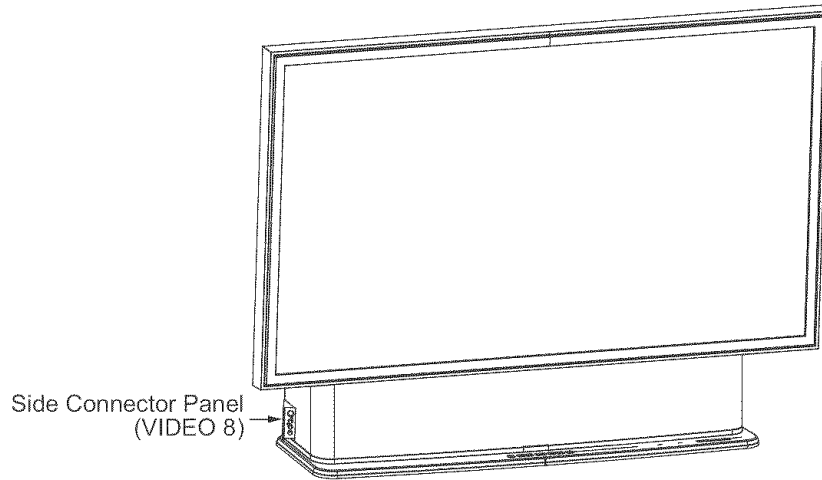
**Figure 2. Rear Connector Panel Location**



**Figure 3. Rear Connector Panel**

**SIDE CONNECTOR PANEL**

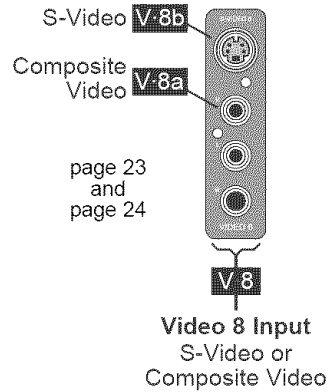
The side connector panel (VIDEO 8) is provided for easy access when temporarily connecting portable video components such as camcorders and digital still cameras.



**Figure 4. Side Connector Panel Location**

The side connector panel is located on a spring-loaded, pop-out door on the left side of the HDTV cabinet.

- To open, press and release the door. To hide, press the door into the HDTV monitor and release.



**Figure 5. Side Connector Panel**

**ANTENNA/CABLE (RF) INPUTS**

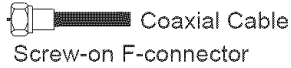


**TUNER 1/TUNER 2**

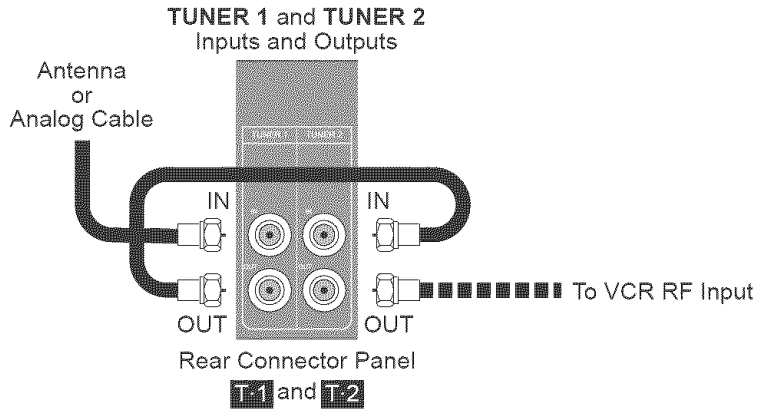
**Use With**

- Broadcast TV antenna
- Analog cable

**Connect**



- Connect a broadcast antenna or analog cable to TUNER 1 IN.
- To connect a single cable or single antenna signal to both tuners, connect TUNER 1 OUT to TUNER 2 IN with a short coaxial cable. This allows PIP or split-screen operation with TUNER 1 and TUNER 2 receiving different channels at the same time. (See "Layout" on page 33 and page 40.)



**Figure 6. Connecting Either an Antenna or Analog Cable**

- VCRs or other video component connections are optional.

## AUDIO OUTPUTS

The 6501MA HDTV monitor includes its own built-in audio system and has audio output connections for use with a separate audio or home-theater sound system.

The 6501MA HDTV monitor's built-in audio system includes a subwoofer output connection that may be used to connect a separate, powered (amplified) subwoofer.



### L/R (Left/Right Audio Output)

- Use With**
- Audio system or AV system receiver
  - Audio system or AV system amplifier

The L (left) and R (right) audio output connectors provide audio signals for connection to a separate audio or home-theater sound system. They can be configured for standard, fixed line-level output, variable output, or turned off.

- Connect**
- Connect the HDTV monitor's AUDIO OUT: L and R connectors to the line-level inputs on a separate audio amplifier or receiver, using a stereo RCA audio cable.
  - Consult the instruction manual for your audio amplifier or receiver to locate its line-level inputs.

The subwoofer connector is not normally used with a separate audio or home theater sound system. (See "SUBWOOFER OUT" on page 21.)

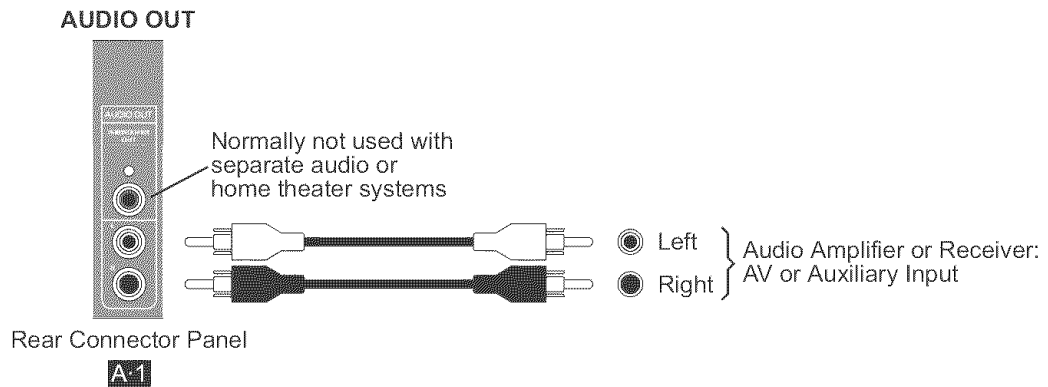


Figure 7. Separate Audio or Home-Theater Sound System Connections

- Configure**
- Turn on the HDTV monitor and wait for it to start up.
  - Press the menu key to display the on-screen menu and navigate to: Audio, Audio Output. Select **Fix** or **Variable** as needed for the connected audio system; or select **Off** to disable the outputs. You may activate them at any time using the on-screen menu.

- Adjust**
- When using a separate audio or home-theater sound system, use the HDTV volume controls to lower the volume of the built-in audio system.

The volume level is then controlled directly by the separate audio or home-theater sound system.

**A-1a****SUBWOOFER OUT****Use With**

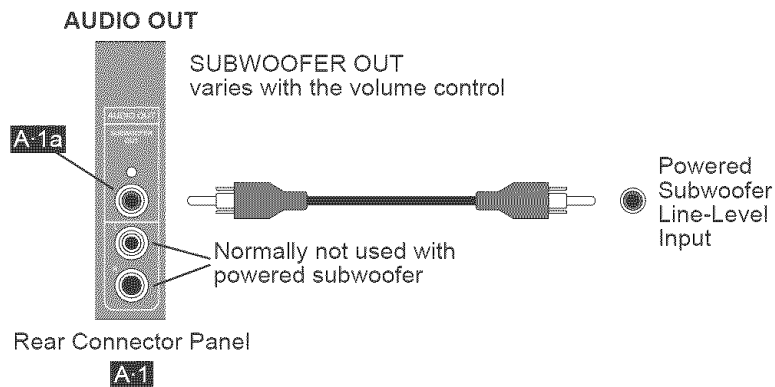
- Separate, powered subwoofer

A separate, powered subwoofer may be used with the HDTV monitor's built-in audio system for extended low-frequency audio range. A powered subwoofer can provide an improved home-theater experience without a complete separate audio system.

Once the subwoofer is installed and adjusted, the HDTV monitor volume control simultaneously adjusts both the built-in audio and subwoofer volume.

**Connect**

- Connect the HDTV monitor's AUDIO OUT: SUBWOOFER OUT connector to the line-level input on a separate, powered (amplified) subwoofer using an RCA audio cable, as shown in Figure 8. Consult the instruction manual for your powered subwoofer to locate its line-level input.



**Figure 8. Powered Subwoofer Connection**

**Configure**

- Do not turn on the subwoofer until requested.
  1. Turn on the HDTV monitor and wait for it to start up.
  2. Press the menu key to display the on-screen menu and navigate to: Audio, Subwoofer. Select **On** for a variable output to the subwoofer.

**Adjust**

3. Lower the manual volume control on the subwoofer.
4. Turn on the subwoofer.
5. Adjust the HDTV volume control for comfortable listening.
6. Adjust the manual volume control on the subwoofer to match the volume level of the HDTV's built-in audio system.

The HDTV volume control adjusts both the HDTV built-in audio system and the subwoofer.

## AUDIO-VIDEO INPUTS



### VIDEO 1 480i Component Input

#### Use With

- DVD players
- Cable boxes
- Satellite boxes

Some video game boxes may have component video cable options. Some models of the video components listed above may not have component outputs.

Some video components with component outputs (YPbPr) may also support 480p, 720p, and 1080i output in addition to 480i. To use these with the VIDEO 1 input, set the video component output to 480i, or connect the component to VIDEO 4 or VIDEO 5.

If the video component has a component output (YPbPr), and the video component is not marked progressive scan, 480p, 720p, or 1080i, or does not mention those settings in its instruction manual, the output is usually 480i.

#### Connect

- Connect the HDTV monitor's VIDEO 1: 480i COMPONENT connectors to the YPbPr, (green, blue, and red) connectors on the DVD player or other video component.
- Connect the HDTV monitor's VIDEO 1: AUDIO IN: L and R connectors to the line-level outputs on the DVD player or other component.
- Consult the instruction manual for your audio/video component for connection and set-up information.

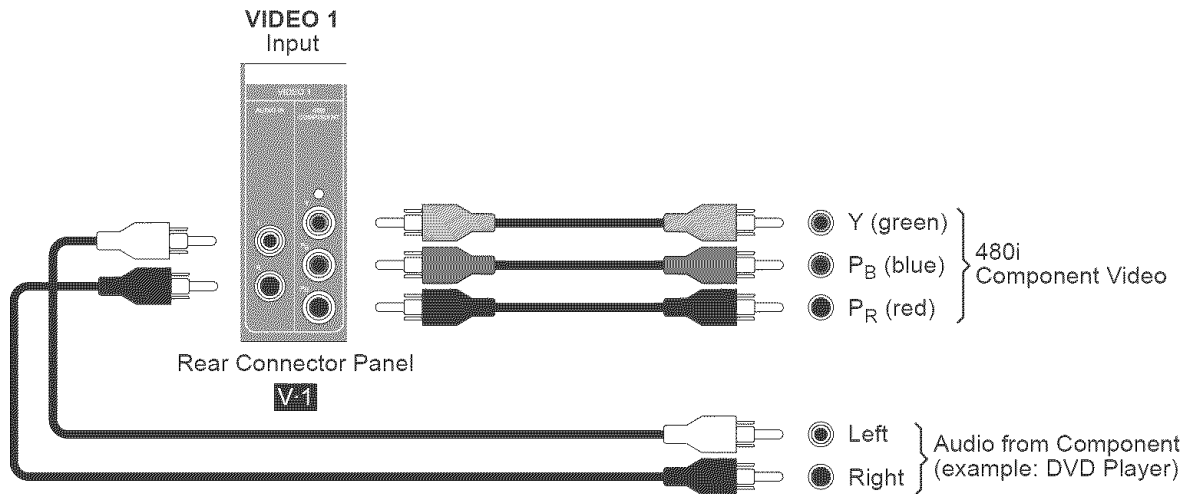


Figure 9. 480i Component Connections

#### Hint

Progressive-scan DVD players should be connected to the VIDEO 4 or VIDEO 5 (480p/720p/1080i) connections when a progressive scan mode is selected.

Turning off the progressive-scan feature of the DVD player (switching the output to 480i) and using the VIDEO 1 input may result in a better picture. To learn more, see "About Deinterlacing and Progressive-Scan DVD Players" on page 58.

#### Info

Connecting a 480p, 720p, or 1080i signal to the 480i input will not harm the HDTV monitor, but the video image will not display correctly.



### VIDEO 2, 3, and 8 Composite and S-Video Inputs

#### Use With

- VCRs
- Camcorders
- DVD players
- Video games

#### Composite or S-Video?

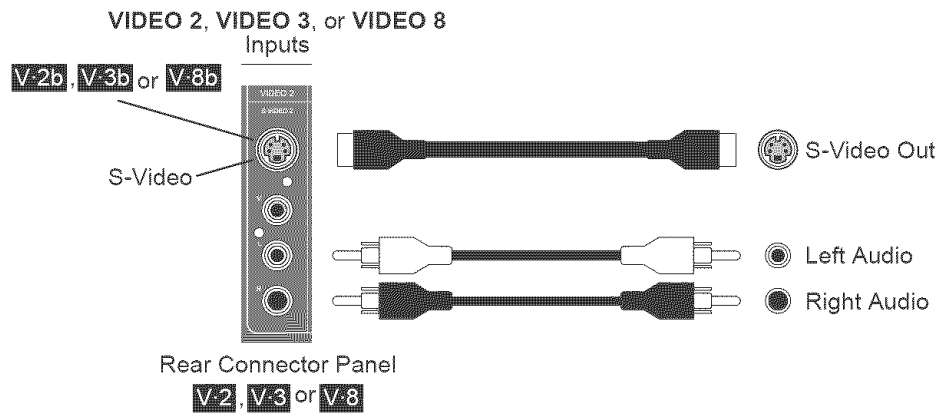
- S-video provides better quality than composite video.

#### Connect



#### S-Video

- Connect the S-video connector on the HDTV to the S-video connector on the video component using an S-video cable.
- Connect the AUDIO IN: L and R connectors to the line-level audio outputs on the video component.
- Select the S-video output on the video component if necessary.
- Consult the instruction manual for your video component for connection and set-up information.

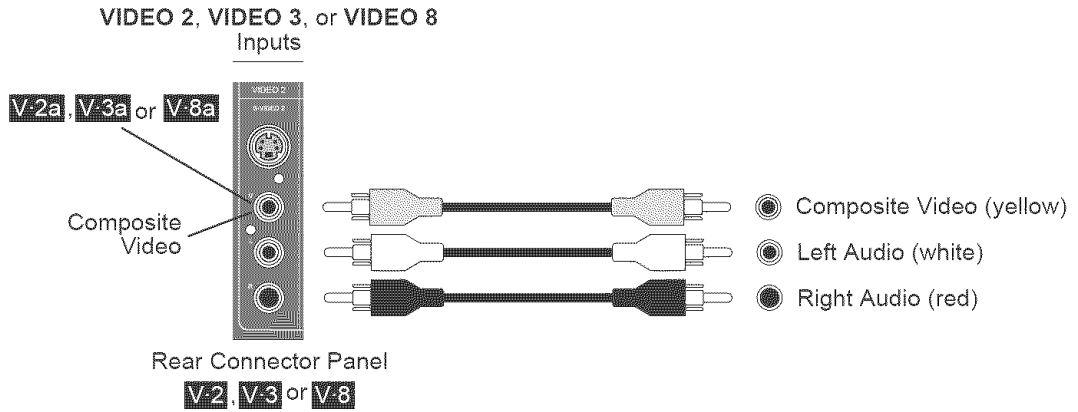


**Figure 10. S-Video Connections**

You may connect both an S-video signal and a composite video signal to any one video input at the same time. Inputs are selected separately and are indicated on the screen as separate selections: VIDEO 2, 3, or 8 composite or VIDEO 2, 3, or 8 S-video.

**Connect Composite Video**

- ■ Connect the composite video connector on the HDTV monitor to the composite video connector on the video component.
- ■ Connect the AUDIO IN: L and R connectors to the line-level audio outputs on the video component.



**Figure 11. Composite Video Connections**

You may connect both a composite video signal and an S-video signal to any one video input at the same time. Inputs are selected separately and are indicated on the screen as separate selections: VIDEO 2, 3, or 8 composite or VIDEO 2, 3, or 8 S-video.





### VIDEO 4 and 5 480p/720p/1080i HD Component Inputs

Enhanced definition (480p) and high-definition (720p and 1080i) component video

#### Use With

- Progressive-scan DVD player (480p output)
- D-VHS (digital) VCR (480p, 720p, or 1080i output)
- ATSC digital TV tuner set-top box (480p, 720p, 1080i output)
- Digital cable set-top box (480p, 720p, 1080i output)
- Digital satellite set-top box (480p, 720p, 1080i output)

#### Connect

- Connect the HDTV monitor's VIDEO 4 or VIDEO 5 connectors to the YPbPr (green, blue, and red) connectors on the DVD player or other video component.
- Connect the HDTV monitor's AUDIO IN: L and R connectors to the line-level outputs on the DVD player or other component.
- Consult the instruction manual for your audio/video component for connection and set up information.

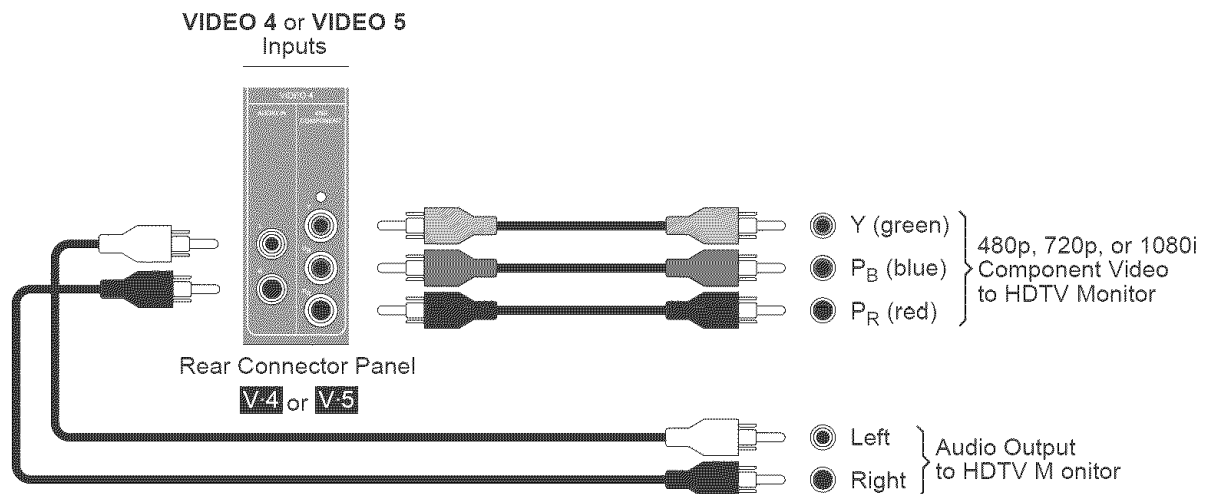


Figure 12. Enhanced-Definition and High-Definition Component Connections

#### Video Component Settings

Do either of the following:

- Set the output of the video component to “No Conversion” if available. Otherwise, set the output of the video component to 1080i.
- See “About 480p/720p/1080i Video-Component Output Settings” on page 59 to determine how to choose your own setting.

#### Hint

Turning off the progressive-scan feature of the DVD player (switching the output to 480i) and using the VIDEO 1 input may result in a better picture. To learn more, see “About Deinterlacing and Progressive-Scan DVD Players” on page 58.

Non-progressive-scan DVD players (480i) should be connected to the VIDEO 1.

#### Info

Connecting a 480p, 720p, or 1080i signal to VIDEO 1(480i) input will not harm the HDTV monitor, but the video image will not display correctly.



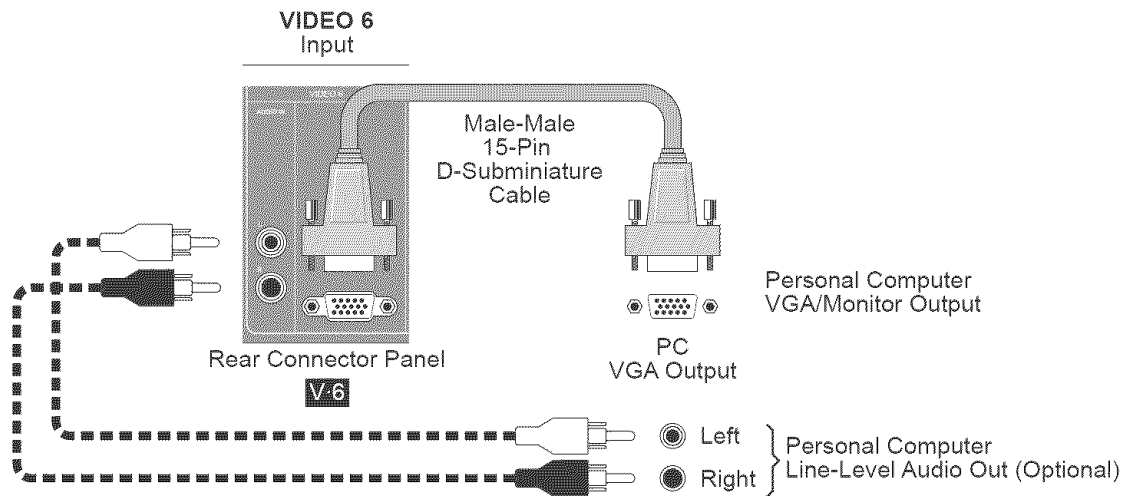
**VIDEO 6  
PC (VGA) Input**

**Use With** ■ Personal computers with analog VGA monitor output connections

**Connect** ■ Connect the HDTV monitor's VIDEO 6: PC connector to the VGA connector on the personal computer using a male-male 15-pin D-subminiature video cable.  
 ■ Connect the HDTV monitor's VIDEO 6: AUDIO IN: L and R connectors to the line-level outputs on the personal computer. Some personal computer users may decide not to use the audio connections.

Note: An adapter may be required to convert RCA connectors to miniature stereo audio jack on the computer.

Personal computers vary. See the instructions included with your personal computer.



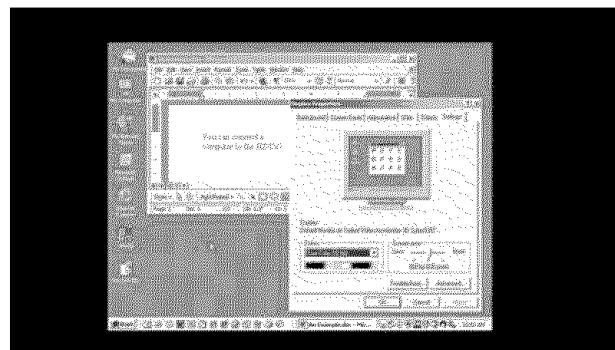
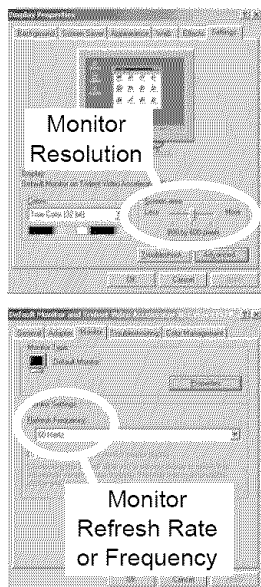
**Figure 13. PC Connection**

**Configure the Computer**

■ Set the computer default monitor setting for the desired resolution and refresh rate to one of the supported settings listed in Table 2.

The location and appearance of these settings may vary by computer and operating system. Consult the operating system documentation for your personal computer.

- Open the computer's Display Properties or Monitor Control Panel.
- For the computer's VGA/Monitor Output, set the screen area to 800 × 600 and set the Refresh Frequency or Refresh Rate to 60Hz.



**Figure 14. HDTV Image Size: Fill 1:1 for 800×600 60Hz**

**Configure the HDTV**

- Press the **MENU** key to display the on-screen menu and navigate to Window: Image Size: Exact Pixels (1:1).

Exact Pixels (1:1) sends each computer pixel to an HDTV pixel for the sharpest text and computer graphics.

The HDTV monitor will automatically adjust itself to accommodate minor variations in computer graphic cards. In some cases, the HDTV monitor may adjust itself before the computer has completed configuring its graphic card.

**Supported Computer Resolutions**

All computer resolutions accepted by the HDTV are shown in Table 2.

The 1024×768, 1152×864 and 1280×1024 computer resolutions are taller than the 720-pixel height of the HDTV screen but may be scaled to fit using the Proportional or Fill Screen settings. See "Image Size— PC Input and DVI" on page 46 for HDTV display options.

Using Proportional and Fill Screen scales the computer video to the screen and slightly reduces the sharpness of text and graphics. See "Image Size— PC Input and DVI" on page 46 for examples.

The preferred setting, Exact Pixels (1:1) vs. Proportional or Fill Screen, is according to the viewer's preference.

Resolution	Refresh Rate
640×480	60Hz
	75Hz
720×400	70Hz
800×600	60Hz
	75Hz
1024×768	60Hz
	75Hz
1152×864	75Hz
1280×1024	60Hz

**Table 2: Computer Display Card Settings**



## VIDEO 7 DVI—Digital Video Interface Input

### Use With

- DVD players and other sources with DVI video output
- Personal computer DVI video output connections

### Connect

- Connect the HDTV monitor's VIDEO 7: DVI connector to the DVI connector on the personal computer using a DVI-I cable.  
For convenience, the HDTV monitor will also accept a DVI digital-analog cable, but the HDTV monitor does not receive analog signals through the DVI connector.
- Connect the HDTV monitor's VIDEO 7: AUDIO IN: L and R connectors to the line-level outputs on the video component or personal computer. Some personal computer users may decide not to use the audio connections.

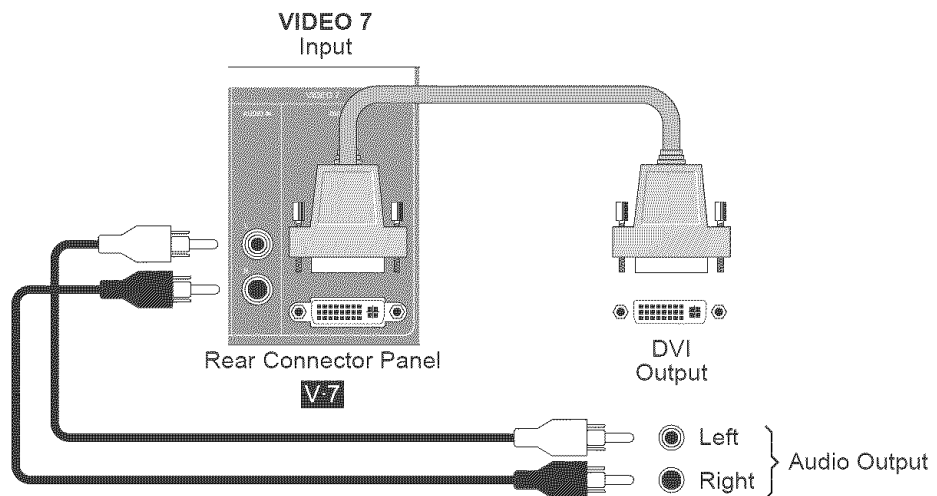


Figure 15. DVI

### Configure the Computer and HDTV

When connecting a computer, follow “Configure the Computer” on page 26 and “Configure the HDTV” on page 27.

### HDMI™ Compatibility

Video components with HDMI (High-Definition Multimedia Interface™) can be connected to the HDTV monitor's VIDEO 7 DVI connector using an HDMI-to-DVI adapter (not included). HDMI-to-DVI adapters pass only video signals. To play audio from a video component with HDMI, separate audio connections, as shown in Figure 15, are required.

## RESET



Reset is not intended for routine use. This pushbutton is recessed. If necessary, use a toothpick to press to reset the HDTV monitor.

- Press to restart the HDTV monitor's internal electronics.
- Press and hold 10 seconds to perform a factory reset. This erases all user settings, including favorites lists, resets the content blocking password, and returns the HDTV monitor to the factory settings.

Factory reset can also be performed from the Options menu. see “Factory Reset” on page 41.

## FRONT PANEL CONTROLS AND INDICATORS

### FRONT PANEL KEYS

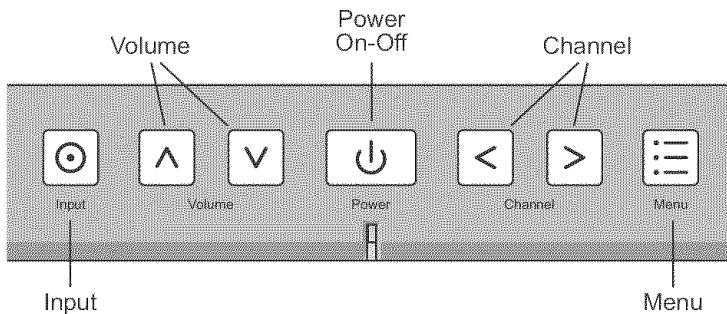
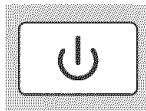


Figure 16. Front Panel Keys

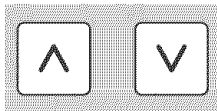


#### Power

- Press once to turn The HDTV monitor on or off.

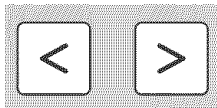
The picture will appear in about 15 seconds.

If turned on within 60 seconds after turnoff, the picture reappears instantly. If turned on between 60 and 120 seconds after turnoff, the picture will reappear in 135 seconds.



#### Volume

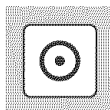
- Press to increase or decrease audio volume.



#### Channel

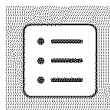
- Press to step through channels.

The channel keys are also used to navigate through the HDTV monitor's on-screen menus.



#### Input

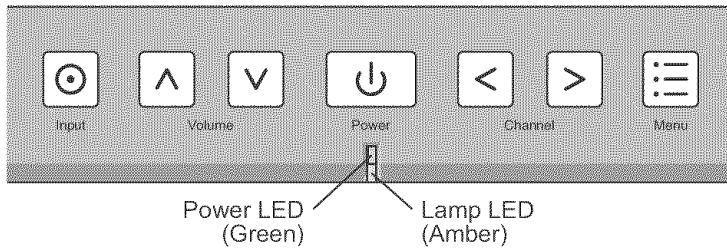
- Press once to display the input (VIDEO 1 Component, VIDEO 2 Composite, VIDEO 2 S-Video, etc.).
- Press again within 5 seconds to select different input for the main display or the selected PIP (picture-in-picture) or POP (picture-outside-picture) window. For information on PIP and POP, see "Window" on page 38.



#### Menu

- Press to display the HDTV monitor's on-screen menu.

**POWER AND LAMP INDICATORS**



**Figure 17. Front Panel Lamps**

The combination of the amber and green HDTV monitor indicator lights provide information about HDTV operation.

Note: To maximize the life of the HDTV monitor's metal-halide lamp, the HDTV monitor automatically manages lamp warm-up and cool-down times.

<p><b>Turn-On</b></p>	Power		Blink	Lamp warm-up: the picture appears in about 15 seconds.
	Lamp		Off	
<p><b>Normal</b></p>	Power		Off	Normal: displaying picture.
	Lamp		Off	
<p><b>Turnoff</b></p>	Power		Blink	HDTV monitor goes to standby for 60 seconds then turns off. The cooling fan will run for more than 60 seconds.
	Lamp		Off	
<p><b>Restarting in 60–120 Seconds</b></p>	Power		Blink	To prolong lamp life, there is a 135-second delay from the time you turn off the HDTV monitor until the picture reappears. (The picture reappears instantly if the HDTV monitor is turned on within 60 seconds after you turn off the HDTV monitor.)
	Lamp		Off	
<p><b>Sleep Timer</b></p>	Power		On	Sleep timer is set: the HDTV monitor will turn off according to the timer setting. (See page 32 or page 42.)
	Lamp		Off	
<p><b>Overheated</b></p>	Power		Off	Temperature in the HDTV monitor is above acceptable limits. Contact a qualified service person.
	Lamp		Blink	
<p><b>Replace Lamp</b></p>	Power		Off	Lamp has failed. See "Lamp Assembly Replacement" on page 55.
	Lamp		On	
<p><b>Lamp Access Door</b></p>	Power		Blink	Lamp door is open or ajar. See "Lamp Assembly Replacement" on page 55 for the door location.
	Lamp		Blink	

# REMOTE CONTROL

## REMOTE CONTROL LAYOUT

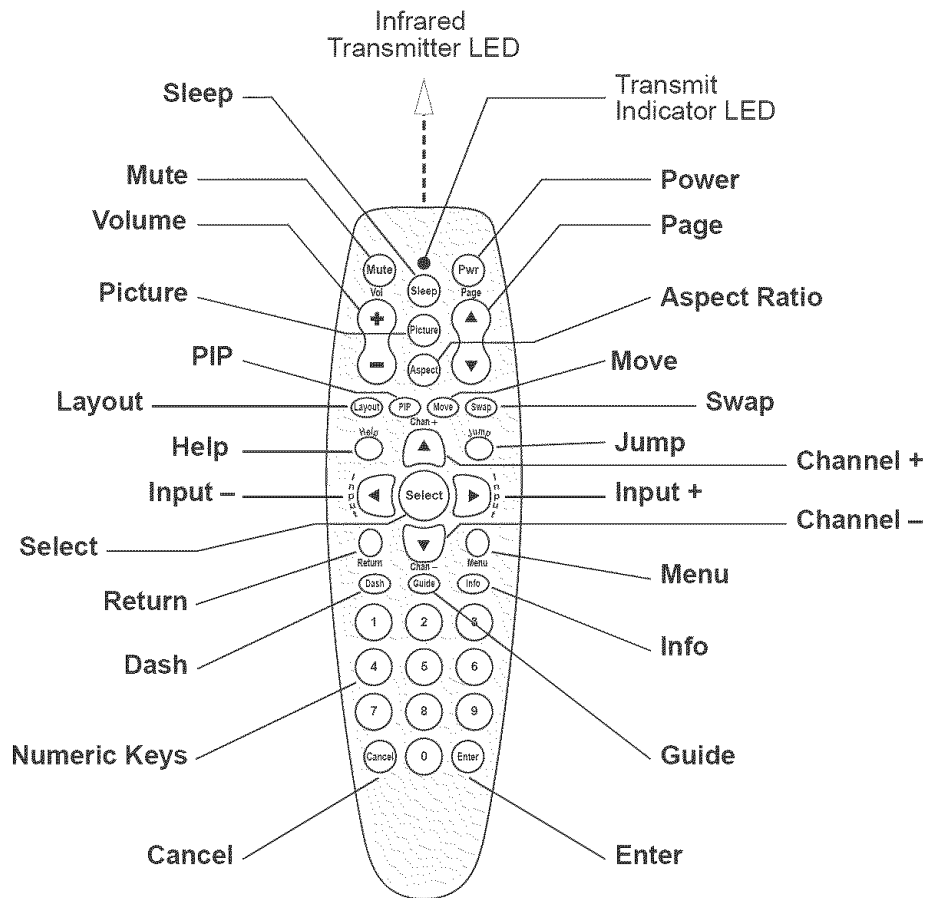


Figure 18. Remote Control

- Batteries** ■ Batteries must be installed before using the remote control. See “Remote Control Battery Installation” on page 15.

## REMOTE CONTROL KEYS

Keys are described below in approximately top-to-bottom layout order.



### Pwr (Power)

- Press once to turn the HDTV monitor on or off. The picture appears in about 15 seconds. See "Power and Lamp Indicators" on page 30 for turn-on and turnoff behavior.



### Mute

- Press once to silence or restore audio. The mute symbol appears for a few seconds in the upper-left of the screen after pressing the key. Also see "Mute" on page 47.



### Sleep

- Press one or more times to set the HDTV monitor's turnoff timer for 30, 60, 90, or 120 minutes or off. Also see "Sleep Timer" on page 38.

When the sleep timer is activated, the green power indicator will be on. See "Power and Lamp Indicators" on page 30.



### Volume +/-

- Press once or press and hold to increase or decrease the audio volume.



Volume is also available through the on-screen menu. See "Volume" on page 47.



### Page

- When displaying PIP or POP windows, press the **PAGE**  $\Delta$  or **PAGE**  $\nabla$  keys to select the individual windows. You must select the individual window to change inputs or perform other actions on that window. A border appears to indicate the selected window.



PIP Window Selected



Main Window Selected

- When editing labels, press the **PAGE**  $\Delta$  or **PAGE**  $\nabla$  keys to change channels. See "Edit Labels" on page 51.



### Picture Mode

- Press one or more times to select one of the room lighting conditions:
  - **Standard** for normal room lighting conditions
  - **Cinema** for dark room lighting conditions
  - **Vivid** for bright room lighting conditions

These are preset behaviors affecting the low-, midrange-, and high-brightness areas of the picture. Technically related to gamma settings, they accommodate the human eye in different surroundings with different video inputs. The best way to use these settings



is to choose the one you like best. You may prefer different settings with different programs.

Picture Mode is also available through the on-screen menu. See "Picture Mode" on page 41.



### Aspect Ratio

See "Image Size— Composite, S-Video and Component" on page 44 and "Image Size— PC Input and DVI" on page 46 for examples and additional information.

- Press one or more times to select one of the picture aspect ratio modes:
  - **Standard** correctly displays TUNER 1 and TUNER 2, full-screen DVDs, most VHS video tapes, camcorders, high-definition satellite boxes, high-definition cable boxes, ATSC digital TV tuners, and D-VHS (digital) VCRs. Provides undistorted viewing of 1.33 (4:3) programming and undistorted viewing of 1.78 (16:9) high-definition programming.
  - **Standard-Extended** simulates a widescreen program from 4:3 images. They are displayed with the sides stretched to fill the screen.
  - **Widescreen** correctly displays all widescreen DVD videos. Common widescreen DVD videos have movie aspect ratios of 1.78–2.40.
  - **Widescreen Zoom** magnifies widescreen DVD videos by 7%. Intended for widescreen DVD videos with movie aspect ratios of 2.2–2.40, this minimizes the black mattes at the top and bottom of the picture. Some cropping will occur on the sides.
  - **Letterbox** magnifies the image by 20%. Intended for letterbox DVD videos with movie aspect ratios of 1.66.
  - **Letterbox Zoom** magnifies the image by 33%. Intended for letterbox DVD videos with movie aspect ratios of 1.78–2.39.
  - **Letterbox Extend** expands the vertical direction by 33%, and nonuniformly extends the horizontal direction 33%. For letterbox DVD videos with movie aspect ratio of 1.66%. This eliminates the black mattes on the left and right of the picture.

The following images sizes may be selected only through the on-screen menu. See "Image Size— PC Input and DVI" on page 46.

- **Exact Pixels (1:1)** matches the input resolution to the screen, pixel by pixel, with no scaling. This produces the sharpest computer text and graphics.
- **Proportional** fills the screen as much as possible while maintaining the correct aspect ratio (except with 800×600 video).
- **Fill Screen** fills the screen (except with 800×600 video).



### Layout

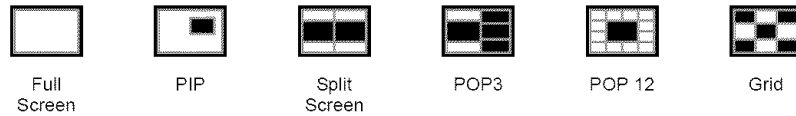
- Press once to access the screen layouts.



Use the ◀ and ▶ keys to choose the layout and the **SELECT** key to accept layout.

- **Full Screen** displays a single, screen-size, full-motion picture.
- **PIP** (picture in picture) displays a screen size full-motion picture, plus a full-motion, resizable, movable, inset picture. One picture, but not both, may be from a HD-component input (VIDEO 4 or 5).
- **Split Screen** displays two reduced-size, full-motion pictures. One picture, but not both, may be from a HD-component input (VIDEO 4 or 5).
- **POP 3** displays one reduced-size, full-motion picture plus three snapshot scans.

- **POP 12** displays one reduced-size, full-motion picture plus twelve snapshot scans.
- **Grid** displays nine snapshot scans.



- To change the PIP window position, press Move one or more times. You may also change the PIP position using the on-screen menu. See "PIP (Picture in Picture)" on page 40.
- To adjust the PIP size when a PIP window is displayed, press the **MENU** key and navigate to Window, then PIP Size. Use ◀ or ▶ to change the size of the window.

**PIP (Picture in Picture)**



- Press once to select the PIP layout. If a PIP layout is currently displayed, this selects the Full-Screen single-window layout.



**Move**

- Press one or more times to move the PIP inset to a different position on the screen.



**Swap**

Press once to exchange images between the PIP inset and the main window, between split screen windows, or between POP windows.



**Help**

- Press to show technical support contact information.



**Jump (Favorites)**

Favorites is a temporary collection of up to 16 channels for quick access during one viewing session. All favorites channels are automatically cleared when the HDTV monitor is turned off.

**Adding a Channel to Favorites**

- Press **ENTER** to add the displayed channel to the list.

**Advancing Through Favorite Channels**

- Press **JUMP** one or more times to quickly advance through the channels included in the favorites list.

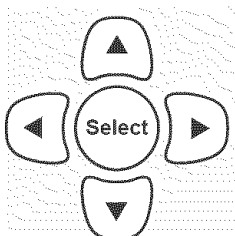
**Removing a Channel From Favorites**

- Display a channel from the favorites list, then press **CANCEL**.

Favorites can also be changed using the on-screen menu. See "Edit Favorites" on page 50.

**Navigation Keys**

- Use the ▲, ▼, ◀, and ▶ arrow keys to navigate through the on-screen menus. Press **SELECT** to accept a selection.





### Channel +/-

- Press the **CHAN +** or **CHAN -** keys once to view the channel number.
- Press one or more times to step through higher- or lower-numbered channels.



### Input +/-

- Press the **INPUT +** or **INPUT -** once to display the input. Press one or more times again, within 5 seconds, to select another input for the main display or selected PIP or POP window.



### Select

- Press once to select a submenu.
- Press once to activate or deactivate selected item.



### Return

- When a tuner is the input, press once to return to previous channel.



### Menu

- Press to show or hide on-screen menu. See "On-Screen Menu" on page 40.



### Dash

- When the PC (VGA) input is selected, this automatically tunes the frequency, phase, horizontal, and vertical position. See "Frequency" on page 43 and "Phase" on page 43.
- When equipped with the optional ATSC digital TV tuner, press once between major and minor channel number entries.



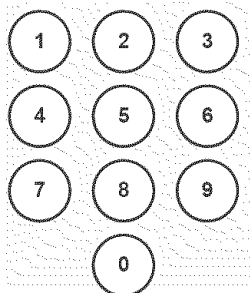
### Guide

- When equipped with the optional ATSC digital TV tuner, press once to display electronic program guide.



### Info

- Press to display current channel, video input, video resolution, and video frequency.



### Numeric Keys

- When a tuner is the input, use to enter channel numbers. Channels are accepted automatically after a 2-second delay.



**Cancel**

- Press to remove a displayed favorites channel from favorite channels. See "Jump (Favorites)" on page 34.

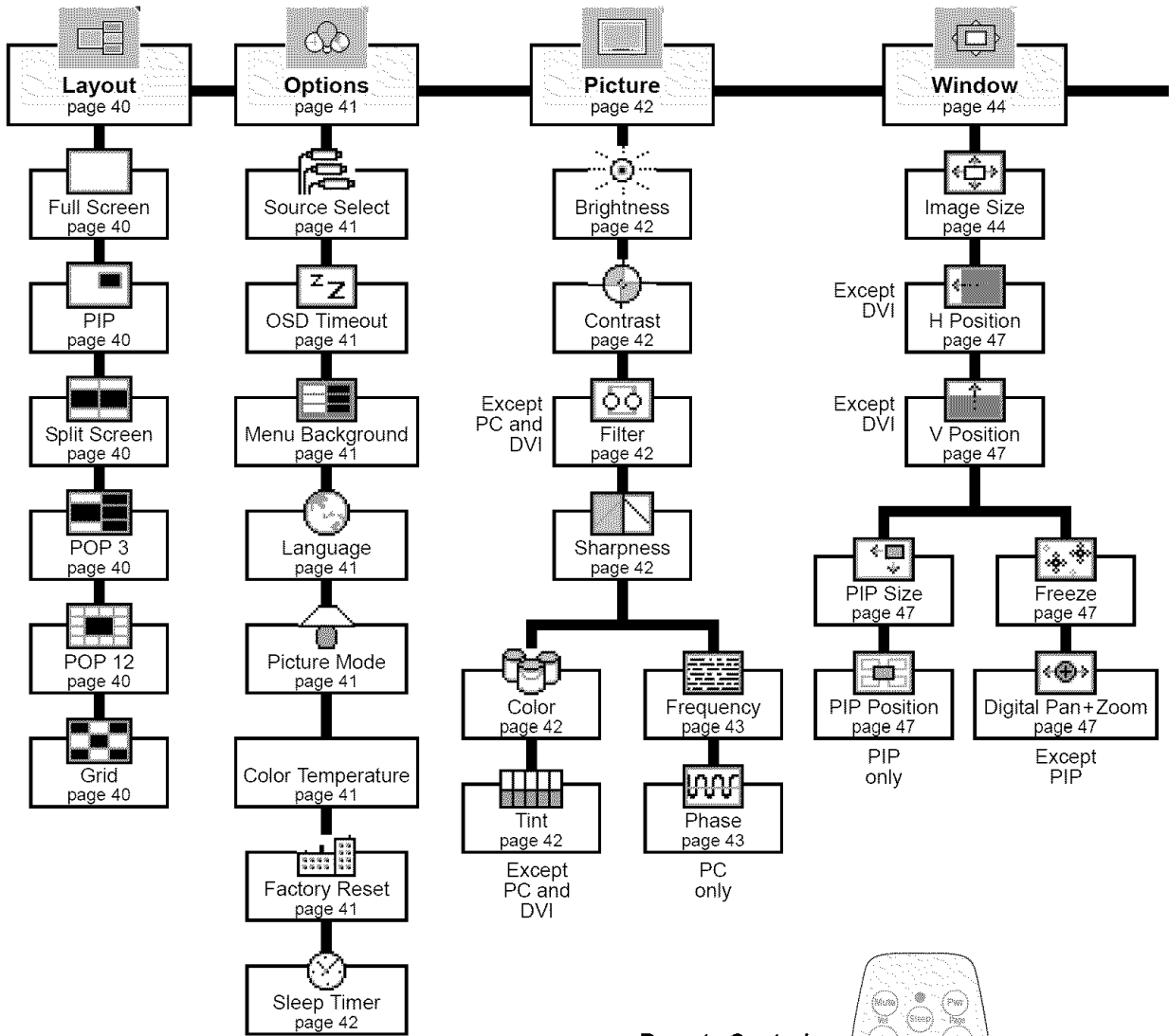


**Enter**

- Press to add the displayed channel to favorites. See "Jump (Favorites)" on page 34.

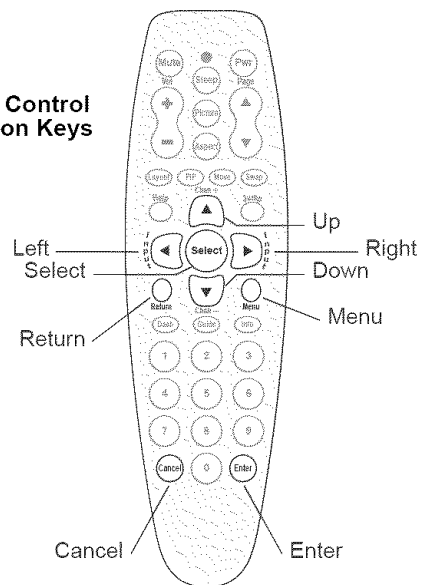


# MENU MAP

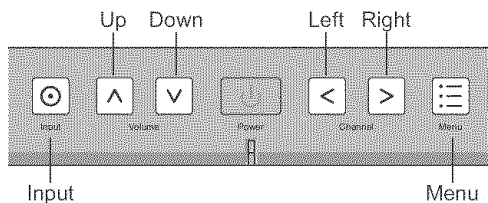


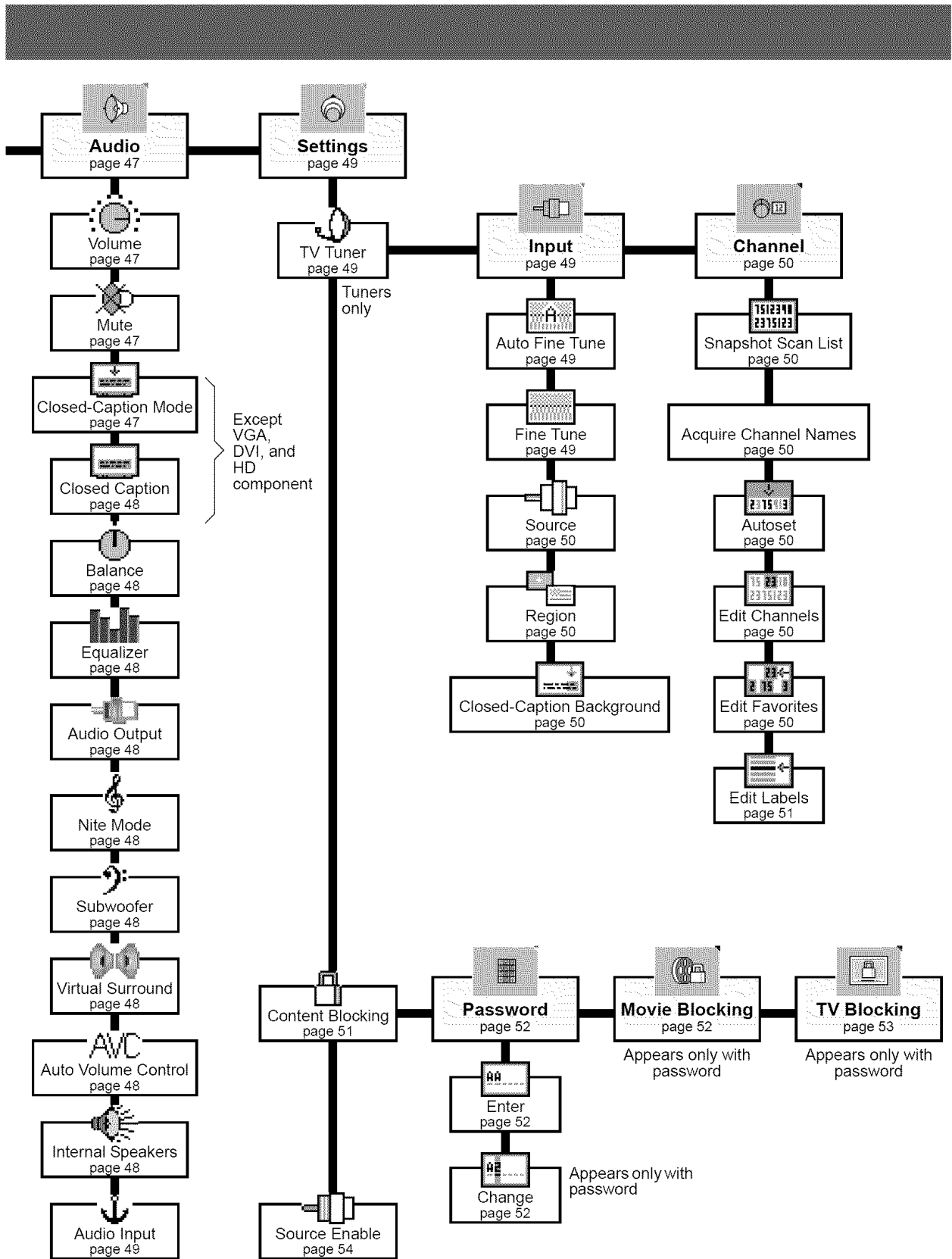
- Press Menu.
- Use the ▲, ▼, ◀, and ▶ keys to navigate the menu.
- Press Menu one or more times to exit menus.

### Remote Control Navigation Keys



### Front Panel Navigation Keys

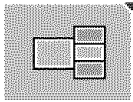




## ON-SCREEN MENU

The on-screen menu will automatically disappear when changes are not made. It is programmable for 5 seconds, 15 seconds, or 60 seconds. See "Options" on page 41.

### LAYOUT



Layouts are window arrangements for one or more pictures on the screen. Layouts that have more than two windows use *snapshot* scans for some of the windows. Snapshots freeze and hold the picture while the input or tuner acquires the next input or channel.

#### Selecting Windows

For layouts with two or more windows, to change the channel, video input, aspect ratio, select the audio, and more, for an individual window, you must select the desired window:

- Press the **PAGE**  $\triangle$  or **PAGE**  $\nabla$  keys on the remote control to select a window. See "Page" on page 32.



#### Full Screen

- Select for a single, screen-size, full-motion picture.



#### PIP (Picture in Picture)

- Select for a screen-size full-motion picture, plus an inset full-motion, resizable, movable picture. One picture, but not both, may be from an HD-component input (VIDEO 4 or 5).
- To adjust the PIP size when a PIP window is displayed, press the **MENU** key and navigate to Window, then PIP Size. Use  $\blacktriangleleft$  or  $\blacktriangleright$  to change the size of the window.
- To adjust the PIP position when a PIP window is displayed, press the **MENU** key and navigate to "Window", then "PIP Position." Select the desired position.

The location of the PIP window can also be changed pressing the **MOVE** key on the remote control. See "Move" on page 34.

To choose the window to provide audio, use the **PAGE**  $\triangle$  or **PAGE**  $\nabla$  keys on the remote control to select the desired window and press **SELECT**.



#### Split Screen

- Select for two reduced-size full-motion pictures. One picture, but not both, may be from a HD-component input (VIDEO 4 or 5).

To choose the window to provide audio, use the **PAGE**  $\triangle$  or **PAGE**  $\nabla$  keys on the remote control to select the desired window and press **SELECT**.



#### POP 3

- Select for 1 reduced-size, full-motion picture with audio, plus 3 snapshot scans.



#### POP 12

- Select for 1 reduced-size, full-motion picture with audio, plus 12 snapshot scans.

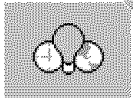


#### Grid

- Select for 9 snapshot scans without audio.



## OPTIONS



### Source Select

- Select **Auto** to allow the HDTV monitor to search for the first active input from video components or the tuners.
- Select **Manual** to choose inputs using the **INPUT +/-** keys on the remote control or the front panel keys.

The Manual setting is recommended when connecting video components that may require some setup before the video component will provide a usable output signal.



### OSD Timeout

- Select **5 sec**, **15 sec**, or **60 sec** to set the time for the on-screen display menus or information to remain on the screen after the last key pressed.

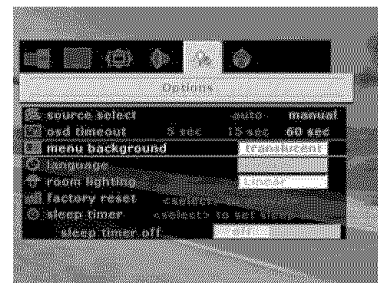


### Menu Background

- Select **Opaque** for a solid background or **Translucent** for a see-through on-screen menu background.



Opaque



Translucent



### Language

- Select **English**, **Français**, or **Español** for the on-screen menu language.



### Picture Mode

- Select:
  - **Standard** for normal room lighting conditions
  - **Cinema** for dark room lighting conditions
  - **Vivid** for bright room lighting conditions

These are preset behaviors affecting the low-, midrange-, and high-brightness areas of the picture. Technically related to gamma settings, they accommodate the human eye in different surroundings with different video inputs. The best way to use these settings is to choose the one you like best. You may prefer different settings with different programs.

To quickly change the setting, press picture on the remote control one or more times. (See "Picture Mode" on page 32.)

### Color Temperature

- Select **Warm**, **Normal**, or **Cool** to adjust the color temperature of the picture.



### Factory Reset

- Select to reset the HDTV monitor to the factory settings. This erases all user settings.

There is also a reset pushbutton on the rear connector panel with an additional reset behavior. See "Reset" on page 28 for additional information. See "Rear Connector Panel" on page 17 for the location.

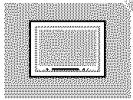


### Sleep Timer

- Press **SELECT** multiple times to set sleep time to **Off**, **30 minutes**, **60 minutes**, **90 minutes**, or **120 minutes**. The HDTV monitor will turn itself off after the selected number of minutes. **Off** disables the sleep timer.

To quickly set or turn off the sleep timer, press the Sleep key on the remote control. (See "Sleep" on page 32.)

## PICTURE



### Brightness

- Adjust the value from 0 to 100 to change the luminance from darkest to brightest. Each input individually retains its last setting. The factory setting is 50.



### Contrast

- Adjust the value from 0 to 100 to emphasize or de-emphasize the difference between light and dark areas. Each input individually retains its last setting. The factory setting is 50.



### Filter

Filter does not appear for PC (VGA) and DVI inputs.

- Select **Sharpest**, **Sharp**, **Normal**, **Soft**, **Softest** to adjust the apparent focus of the picture. Each input individually retains its last setting.



### Sharpness

- Adjust the value from 0 to 100. Adjusts the definition of the edges of objects. Each input individually retains its last setting.



### Color

- Adjust the value from 0 to 100 to change the color saturation. Each input individually retains its last setting.



### Tint

- Adjust the value from 0 to 100 to adjust the hue. Each input individually retains its last setting.

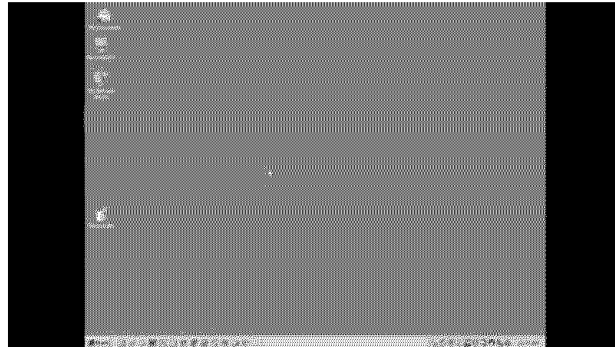


## Frequency

Frequency appears only for the "PC" input (analog RGB signal connected to the VIDEO 6).

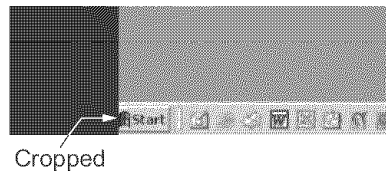
Frequency is automatically set by the HDTV monitor, but it can also be manually adjusted.

- Adjust the frequency control for the best image. Appearance and results may vary depending on the computer graphics card output.
- Alternately, you may force the HDTV monitor to automatically reset the frequency by pressing the **DASH** key on the remote control. See "Dash" on page 35 for additional information.

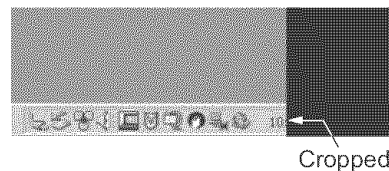


**Figure 19. Correct Frequency Setting**

To see the change, locate an easy to observe graphic item along the edges of the screen image. Look for undesired cropping.



**Figure 20. Frequency Too Low**



**Figure 21. Frequency Too High**

This adjustment accommodates differences in computer graphic cards.



## Phase

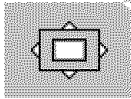
Phase appears only for the "PC" input (analog RGB signal connected to VIDEO 6).

Phase is automatically set by the HDTV, but it can also be manually adjusted.

- Adjust the phase control for the best image. Appearance and results may vary depending on the computer graphics card output.
- Alternately, you may force the HDTV monitor to automatically reset the phase by pressing the **DASH** key on the remote control. See "Dash" on page 35 for additional information.

This adjustment accommodates differences in computer graphic cards.

**WINDOW**



**Image Size—  
Composite, S-Video and Component**

1. Set the connected video components for output to a widescreen (16:9) TV. This is usually a one-time setup for video component outputs connected to VIDEO 1, 4, and 5 (component video inputs), and VIDEO 7 (DVI) on the HDTV monitor.
2. Choose the image size settings according to the descriptions, below. Aspect ratios for widescreen and letterbox DVD movies is often on the DVD jacket.

To quickly change the image size, press **ASPECT** on the remote control one or more times. (See "Aspect Ratio" on page 33.)

**Info** DVDs come in full-screen, wide-screen, and letterbox formats that each work best with a different setting. For additional information, see "About DVD Formats" on page 60.

Image Size Setting	Description	Picture
<p><b>Standard</b></p>	<p>Use with TUNER 1 and TUNER 2, full-screen DVDs, most VHS video tapes, camcorders, high-definition satellite boxes, high-definition cable boxes, ATSC digital TV tuners, and D-VHS (digital) VCRs.</p> <p>Recommended for undistorted viewing of 1.33 (4:3) programming (windowbox) and undistorted viewing of 1.78 (16:9) high-definition programming.</p> <p>(Some analog cable or broadcast programs may be letterboxed and can use one of the letterbox settings.)</p>	
<p><b>Standard Extend</b></p>	<p>Use with TUNER 1, TUNER 2, full-screen DVDs, most VHS video tapes, and camcorders.</p> <p>For viewing of 1.33 (4:3) programming. This simulates widescreen video by stretched the sides to fill the screen.</p>	
<p><b>Widescreen</b></p>	<p>Use with widescreen DVD videos with movie aspect ratios of 1.78–2.40.</p> <p>Displays the entire available video height and width.</p> <p>Black mattes at the top and bottom increase for movies of aspect ratios greater than 1.78 (16:9).</p>	

**Table 3: Aspect Ratio Selections**

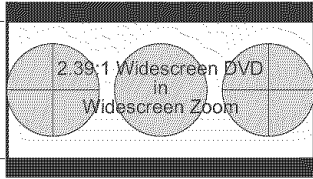
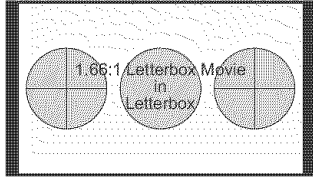
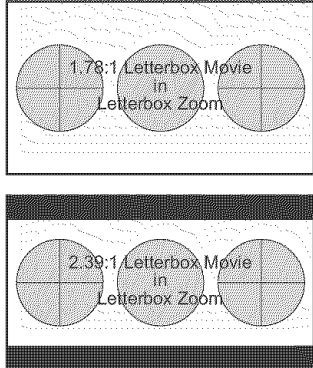
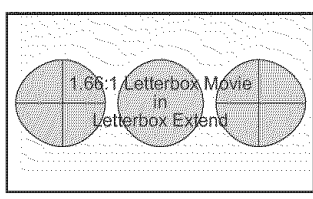
Image Size Setting	Description	Picture
<b>Widescreen Zoom</b>	<p>Use with widescreen DVD videos with movie ratios of 2.2–2.40.</p> <p>The 7% magnification reduces the black matte at the top and bottom, but also crops about 7% of the available video on the sides.</p>	
<b>Letterbox</b>	<p>Use with letterbox DVD or VHS videos with a movie aspect ratio of 1.66.</p> <p>The 25% magnification is approximately the height of the screen.</p> <p>Black mattes on each side are normal.</p>	
<b>Letterbox Zoom</b>	<p>Use with letterbox DVD or VHS videos with movie aspect ratios of 1.78–2.39.</p> <p>The 33% magnification displays the entire available video width.</p> <p>Black mattes at the top and bottom increase for movies of aspect ratios greater than 1.78 (16:9).</p>	
<b>Letterbox Extend</b>	<p>Use with letterbox DVD or VHS videos with a movie aspect ratio of 1.66.</p> <p>An alternate to the Letterbox setting, this expands the vertical direction by 25%, and nonuniformly extends the horizontal direction 33%. This slightly distorts the picture to eliminate the black mattes found on each side in the Letterbox setting.</p>	

Table 3: Aspect Ratio Selections (Continued)



**Exact Pixels (1:1)**  
Sharp Text  
and Graphics



**Proportional  
or Fill Screen**  
Scaled Text  
and Graphics

**Image Size—  
PC Input and DVI**

**Exact Pixels (1:1)**

- Select for one-to-one correspondence from computer pixels to HDTV monitor pixels.

This produces the sharpest text and images from a computer. Monitor settings greater than 1024×720 pixels will be cropped to 1024×720 pixels.

**Proportional**

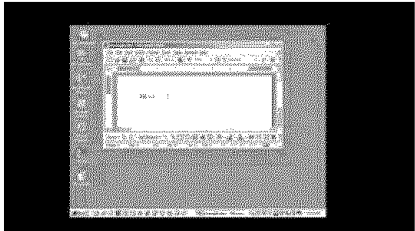
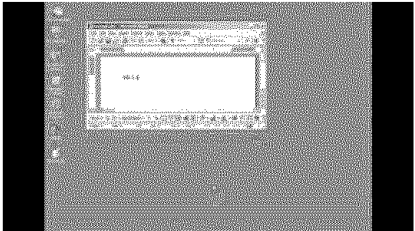
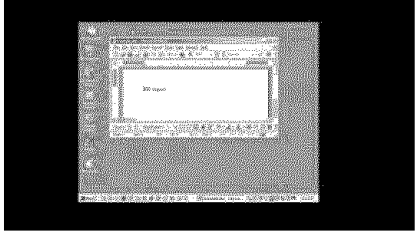
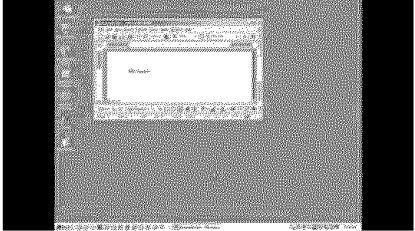
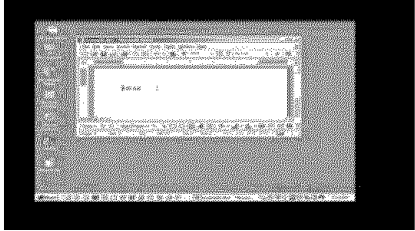
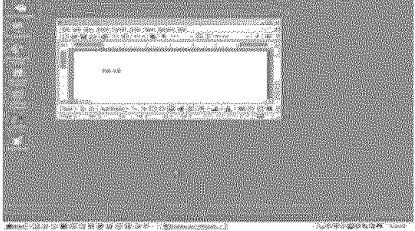
- Select to fit computer resolutions greater than 1024×720 to the HDTV monitor screen while maintaining the correct aspect ratio.

Text and graphics are scaled.

**Fill Screen**

- Select to fit computer resolutions greater than 1024×720 to the full HDTV monitor screen.

Text and graphics are scaled.

Image Size	800×600 Computer Resolution	1024×768 Computer Resolution
<b>Exact Pixels (1:1)</b>	 No Scaling ✓	 No Scaling (Cropped Bottom)
<b>Proportional</b>	 Scaled X	 Scaled With Correct Aspect Ratio ✓
<b>Fill Screen</b>	 Scaled X	 Scaled to Fit Entire Screen

**Table 4: Example Aspect Ratio Selections for PC or DVI Input**

Recommended settings are marked "✓". Settings not recommended, for scaling reasons, are marked "X." Settings not marked are by personal preference.



### H Position (Horizontal Position)

- Adjust the value from 0 to 100 to adjust the image left or right. The factory setting is 50.



### V Position (Vertical Position)

- Adjust the value from 0 to 100 to adjust the image up or down. The factory setting is 50.



### Freeze Window

Freeze Window is not available when a PIP window is on the screen.

- Select **On** to stop the image on the screen or **Off** to return to the moving image.



### Digital Pan and Zoom

Digital Pan and Zoom is not available when a PIP window is on the screen.

- Use Pan to move the viewing area within a zoomed picture. This is only meaningful at zoom settings greater than 1.
- Use Zoom to view a close-up area of a picture. Zoom range is 1 to 15.94.



### PIP Size

PIP Size only appears when a PIP window is on the screen.

- Press ◀ and ▶ keys to decrease or increase the image size.



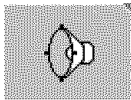
### PIP Position

PIP Position only appears when a PIP window is on the screen.

- Use the ◀ and ▶ keys to choose the PIP position and the **SELECT** key to accept the PIP position.



## AUDIO



### Volume

- Adjust from 0 to 100 to change the loudness of the audio.

To quickly change the setting, press, or press and hold, **VOLUME +** or **VOLUME -** on the remote control. (See "Volume +/-" on page 32.)



### Mute

- Select **On** to silence the audio. This controls the speakers and rear-panel audio outputs, including the subwoofer.

To quickly mute or restore the audio, press **MUTE** once on the remote control. (See "Mute" on page 32.)



### Closed-Caption Mode

To view any of the closed-caption settings, either:

- Closed Caption must be set to **On**, or
- Closed Caption must be set to **On Mute** and Mute must be **On**.
- **CC1**—selects the primary language closed-caption text (the text that is coordinated with the sound)
- **CC2**—selects the supplemental closed-caption text (displays additional text related to the program)
- **T1**—selects the first text service (information usually not related to the program)
- **T2**—selects the second text service (information usually not related to the program)

- **XDS**—Extended Data Services (displays information including program type, MPAA ratings, weather service bulletins, and more)



### Closed Caption

- Select **On Mute** to display the closed captioning text when the remote control **MUTE** key is pressed or when Mute is selected using the on-screen menu.
- Select **On** or **Off** to continuously show or hide closed captioning text.



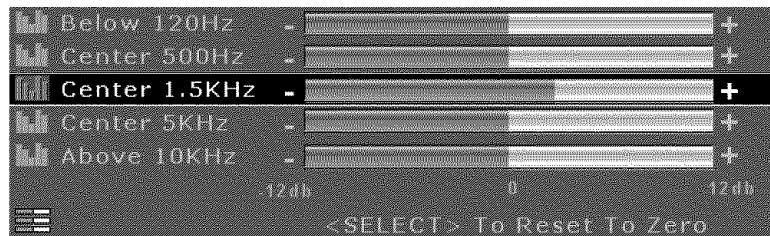
### Balance

- Adjust between L (left) and R (right) to compensate for an off-center seating location.



### Equalizer

- Choose and adjust the 5 individual audio ranges for the best sound.



### Audio Output

The audio outputs are labeled AUDIO OUT: L and R on the rear panel. (The subwoofer output is controlled separately.)

- Select **Fix** for fixed line-level output.
- Select **Variable** to have the line-level output follow the volume controls.
- Select **Off** to disable the audio outputs.



### Nite Mode

- Select **On** for a preprogrammed audio response.
- Select **Off** to normal audio response.



### Subwoofer

- Select **On** for variable line-level output.
- Select **Off** to disable the output.



### Virtual Surround

- Select **On** to enable the Virtual Dolby® Surround technology. For a description, see page 63 in the glossary.
- Select **Off** for basic stereo operation.



### Auto Volume Control

- Select **On** to automatically manage the volume. This may be used to limit extreme changes in the volume level.
- Select **Off** to provide exact reproduction of the volume levels.



### Internal Speakers

- Select **On** to use the HDTV monitor's internal speakers.
- Select **Off** to silence the HDTV monitor's internal speakers. This is usually desirable when using a separate audio or home-theater sound system with the HDTV monitor.





## Audio Input

- Select **Follow** to accept audio at the audio input connector associated with the selected video input.
- Select **Video 5** to accept audio only from VIDEO 5's associated audio input, regardless of which video input is selected.

The Video 5 setting may be used where all audio switching is performed externally to the HDTV monitor. It also makes it possible to use the HDTV monitor's internal audio system for the center channel of a separate audio or home-theater audio system.

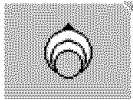


- Connect only a *line-level* output to any audio input. Do not connect speaker (amplified) outputs to any audio input on the HDTV. Speaker output signal levels may damage the inputs on the HDTV monitor. Not all receivers or amplifiers have line-level outputs accompanying speaker outputs.

To use the HDTV monitor's internal audio system for the center channel audio:

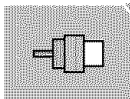
1. Set Audio Input to **Video 5**.
  2. Set the Internal Speaks to **On**.
  3. Connect the HDTV monitor's VIDEO 5: AUDIO IN to the line-level center-channel outputs of the audio system. Note: Not all receivers or amplifiers have line-level outputs. You may use a Y-cable to connect the audio system's center channel output to both the L (left) and R (right) audio inputs on the HDTV monitor. This will use both the channels as the single-center-channel speaker.
  4. Adjust separate audio system to a comfortable listening level.
  5. Adjust the HDTV monitor's volume control to a corresponding level.
- If the separate audio system has a variable (volume-tracking) line-level output, the audio system will also control the volume of the HDTV monitor.
  - If the separate audio system has a fixed line-level output, you must adjust both the separate audio system and the HDTV monitor volume to change the overall volume.

## SETTINGS



### TV Tuner

The TV Tuner menu item only appears when TUNER 1 or TUNER 2 is selected. Pressing the ► key, when a TV tuner is selected, displays the Input and Channel menus.



### Input



#### Auto Fine Tune

- Choose **On** to allow the HDTV monitor to adjust itself to the receive frequency of the channel for the best picture and sound. Choose **Off** to enable manual fine tuning.



#### Fine Tune

Fine Tune is available for manually adjusting the tuner to a TV channel received through the TUNER 1 or TUNER 2 inputs. Use Fine Tune when automatic fine tuning is not desired.

1. Set Auto Fine Tune to **Off** to allow manual fine tuning.
2. Select Fine Tune.
3. Adjust the value between 0 and 100 to change the receive frequency for the best reception. The factory setting is 50.



Source

- Select **Antenna** to receive analog broadcast channels using an antenna connected to the TUNER inputs.
- Select **Cable** to receive analog cable channels using a cable connected to the TUNER inputs.



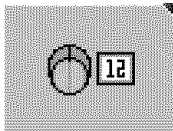
Region

- **United States** is preselected.



Closed Caption Background

- Select **Opaque** for a solid background or **Transparent** for a see-through background for the closed-caption display area.



Channel

Not all channels have active signals. To limit the HDTV monitor's internal channel list to channels with active signals of interest:

1. Acquire all active channels. See "Autoset", below.
2. Remove channels of no interest, See "Edit Channels" below.

The result is an an internal list of valid channels which is used by the **CHAN +** and **CHAN -** keys and the Snapshot Scan List, below.



Snapshot Scan List

The Snapshot Scan List limits the channels available to select in the snapshot windows in POP and Grid layouts.

- Select **All**, **Valid**, or **Favorites**.

**All** allows the snapshot window to access any channels.

**Valid** limits the channels that can be selected in snapshot windows to channels that have been added using Edit Channels, or to channels that have been acquired using Autoset and added or removed using Edit Channels.

**Favorites** limits the channels that can be selected in snapshot windows to channels that have been memorized into the Favorites list (see "Edit Favorites" below).

Acquire Channel Names

- Select to acquire channel information from the broadcast or cable TV signal. This typically adds station callsigns or network designations to the label, which is information displayed below the channel number. Not all stations provide this information in their signal. This can be edited. See "Edit Labels" on page 51.



Autoset

- Navigate to Autoset and press Select to have the HDTV monitor automatically memorize a list of all active channels. The **CHAN +** and **CHAN -** keys use this list to skip over inactive channels.

This list can be modified using "Edit Channels," below.



Edit Channels

1. Select the channel using the **CHAN +** and **CHAN -** keys.
2. Navigate to **Add** and press **SELECT** once to add the current channel.
3. Navigate to **Remove** and press **SELECT** once to remove the current channel.



Edit Favorites

Favorites, or favorite channels, are accessed using the Jump key on the remote control. See "Jump (Favorites)" on page 34.

1. Select the channel using the **CHAN +** and **CHAN –** keys.
2. Navigate to **ADD** and press **SELECT** once to add the current channel.
3. Navigate to **REMOVE** and press **SELECT** once to remove the current channel.



You may also quickly add and remove channels from favorites using the **ENTER** and **CANCEL** keys on the remote control. See “Jump (Favorites)” on page 34 for instructions.



#### Edit Labels

Labels can be useful for identifying channels. For example the channel can be labeled with its broadcast network affiliation.

1. Select the channel using the **PAGE Δ** and **PAGE ▽** keys.
2. Use the **◀** and **▶** keys to select individual characters. Use the **▲** and **▼** keys to change the selected character.

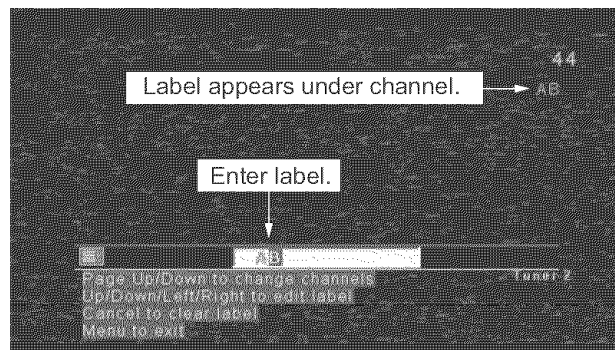


Figure 22. Label Entry



#### Content Blocking

Use Content Blocking to access the Movie Blocking and the TV Blocking parental controls. These allow you to program the “V-chip” to limit viewing of programs that you may consider unsuitable for children. The Movie Blocking and TV Blocking menu items only appear after a password is entered.

Blocked content is indicated by a black screen with a lock symbol.

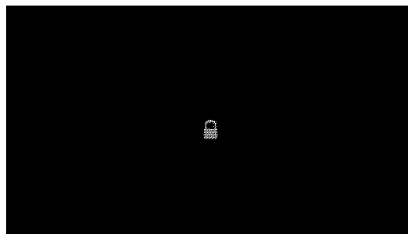
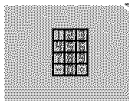


Figure 23. Content Blocked

While the content is active, you may access the on-screen menu, enter a password, and block or unblock the content. Blocking choices are accepted instantly.

Note: The HDTV monitor detects content blocking information in NTSC-signals. HD-component (VIDEO 4 and VIDEO 5), PC VGA (VIDEO 6), and DVI (VIDEO 7) inputs are not NTSC signals and cannot be blocked by the HDTV monitor. However, DVD players may contain content blocking features for DVD movies regardless of the output signal. Consult the instruction manual for your DVD player to block content from DVD movies.



**Password**

- To view the Movie Blocking and TV Blocking menus, change the restrictions, or to manage your password, you must first enter your password.

The factory default password is 000000.

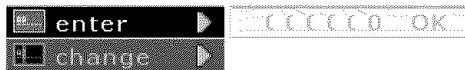
Enter



1. Use the ◀ and ▶ keys to select individual digits in the password. Use the ▲ and ▼ keys to change each number. The numeric keys are not available for passwords.
2. Complete the entry by navigating to "OK" and pressing **SELECT** once.



3. If the password is accepted, the **Change** item will appear. Use the ▲ key to move to the top of the menu to access the Password, Movie Blocking, and TV Blocking menus.



Change

This selection only appears after a password has been entered.

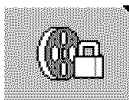
1. Use the ◀ and ▶ keys to select individual digits in the password. Use the ▲ and ▼ keys to change each number. The numeric keys are not available for passwords.



2. Complete the entry by navigating to "OK" and pressing **SELECT** once.

**Info**

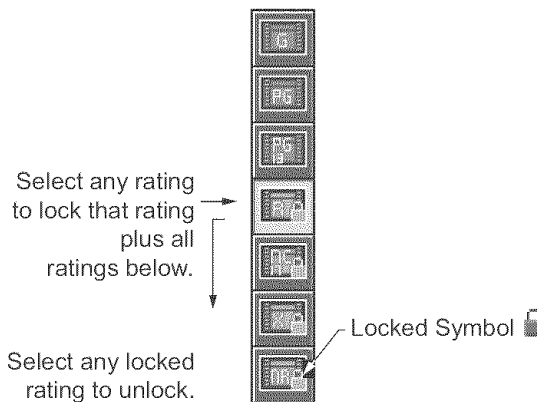
If you have lost your password, you may reset the password to 000000 by performing a factory reset. See "Factory Reset" on page 41 or "Reset" on page 28. Performing a factory reset will erase all user settings.



**Movie Blocking**

A password is required to access Movie Blocking.

1. Navigate to the lowest rating to be restricted. Press **SELECT**.
2. If desired, navigate to any locked item that you wish to unlock and press **SELECT**.
3. Press **MENU** to return to the menu selection.



**G** General Audiences

All ages admitted.

**PG** Parental Guidance Suggested

Some material may not be suitable for children.

**PG17** Parents Strongly Cautioned

Some material may be inappropriate for children under 13.

**R** Restricted

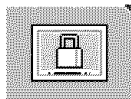
Under 17 requires accompanying parent or guardian.

**NC-17** No one 17 and under admitted.

**X**

This not an MPAA (Motion Picture Association of America) rating.

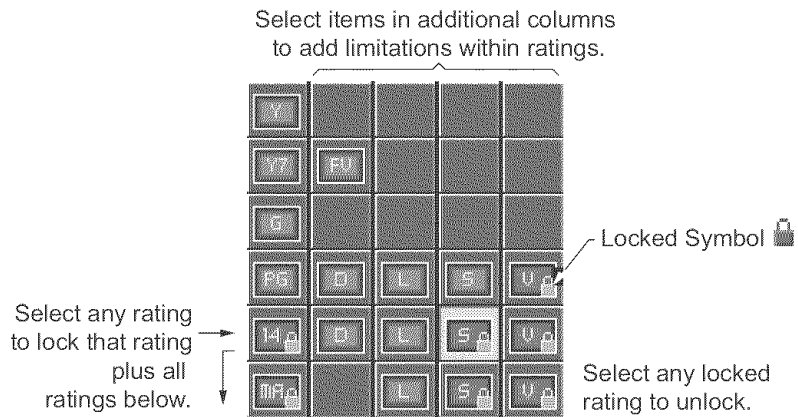
**NR** Not rated.



**TV Blocking**

A password is required to access TV blocking. The rating symbols descriptions follow the illustration.

1. Navigate to the lowest rating (Y, Y7, G, PG, 14, or MA) to be restricted. Press **SELECT**.
2. Navigate to any subcategories (FV, D, L, S, or V) to be restricted. Press **SELECT**.
3. If desired, navigate to any locked item that you wish to unlock and press **SELECT**.



**TV-Y** All Children.

This program is designed to be appropriate for all children. Whether animated or live-action, the themes and elements in this program are specifically designed for a very young audience, including children from ages 2 through 6. This program is not expected to frighten younger children.

**TV-Y7** Directed to Older Children.

This program is designed for children age 7 and above. It may be more appropriate for children who have acquired the developmental skills needed to distinguish between make-believe and reality. Themes and elements in this program may include mild fantasy violence or comedic violence, or may frighten children under the age of 7. Therefore, parents may wish to consider the suitability of this program for their very young children.

**TV-Y7-FV** Directed to Older Children—Fantasy Violence

For those programs where fantasy violence may be more intense or more combative than other programs in this category, such programs will be designated TV-Y7-FV.

**TV-G** General Audience.

Most parents would find this program suitable for all ages. Although this rating does not signify a program designed specifically for children, most parents may let younger

children watch this program unattended. It contains little or no violence, no strong language and little or no sexual dialogue or situations.

**TV-PG** Parental Guidance Suggested.

This program contains material that parents may find unsuitable for younger children. Many parents may want to watch it with their younger children. The theme itself may call for parental guidance and/or the program contains one or more of the following: moderate violence (**V**), some sexual situations (**S**), infrequent coarse language (**L**), or some suggestive dialogue (**D**).

**TV-14** Parents Strongly Cautioned.

This program contains some material that many parents would find unsuitable for children under 14 years of age. Parents are strongly urged to exercise greater care in monitoring this program and are cautioned against letting children under the age of 14 watch unattended. This program contains one or more of the following: intense violence (**V**), intense sexual situations (**S**), strong coarse language (**L**), or intensely suggestive dialogue (**D**).

**TV-MA** Mature Audience Only.

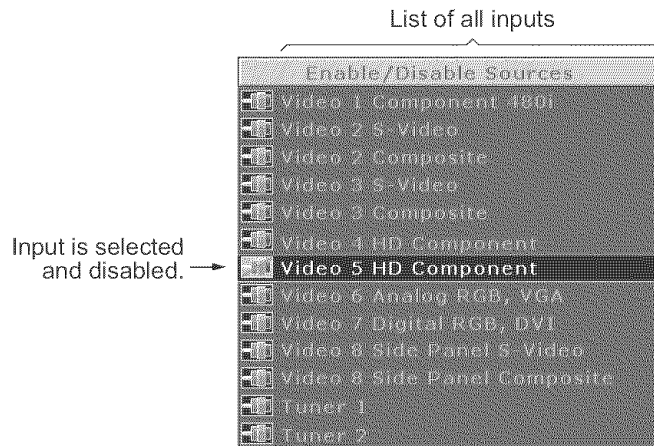
This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17. This program contains one or more of the following: graphic violence (**V**), explicit sexual activity (**S**), or crude, indecent language (**L**).



**Source Enable**

To hide specific inputs so that they don't appear when using **INPUT -** or **INPUT +** keys on the remote control, or **INPUT** on the front-panel keys, you may disable those inputs as follows:

1. Navigate to the input that you wish to disable or enable. Press **SELECT** once.
2. Press **MENU** to return to the Settings menu.



**Figure 24. Source (Input) Listing**

Disabled inputs are indicated by a diagonal red line through the connector symbol.

## CARE, CLEANING, MAINTENANCE

### SCREEN AND CABINET CLEANING

#### Precautions

The screen features a hard-coat surface; however, it can still be scratched. To keep the screen in its best viewing condition, avoid touching the screen to minimize the need for cleaning.

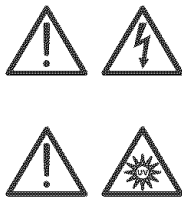
- Do not use commercial window cleaning solutions on the screen or cabinet.
- Do not use strong commercial cleaning solutions on the screen or cabinet.
- Do not spray cleaning solutions directly onto the screen or cabinet.
- Do not allow any liquid to drip or run into the HDTV monitor openings, seams, or around the keys.
- Do not use any abrasive cloths or cleaners on the screen or cabinet.

#### Cleaning

- Clean the screen and cabinet using a soft cloth dampened with a very mild, soapy solution. Again, be especially careful not to let any liquid drip or run into the openings, seams, or around the keys.

### LAMP ASSEMBLY REPLACEMENT

The lamp is a user-replaceable item. If you are uncomfortable with replacing the lamp, contact a qualified service professional to replace the lamp. See the back cover of this manual for service information.



#### Precautions

- Do not defeat any of the power interlocks.
- Do not attempt to operate the HDTV monitor without its protective cabinet.
- Do not attempt to look at the lamp when it is operating. Unfiltered light from the lamp is a UV (ultraviolet) hazard and may cause eye damage.

The UV light is filtered and removed inside the internal optical system. The screen picture is safe to view.

- Do not experiment with a new or spent lamp. The lamp is an arc lamp and has no filament. The lamp cannot be tested for electrical continuity with an ohm meter.
- Do not touch the lamp with bare hands, even when cold.

The lamp operates at extremely high temperature and pressure. Finger prints remaining on the glass surface of the lamp may chemically react with the glass, weaken the glass, and cause the lamp to fail.

If necessary, the lamp can be cleaned with a lint-free towel before operation.

- Do not attempt to remove the spent lamp until after the 60-minute waiting period.

#### Lamp Type

- Replace only with an ULTREX3 lamp assembly.  
See the back cover for information on obtaining service or replacement parts.

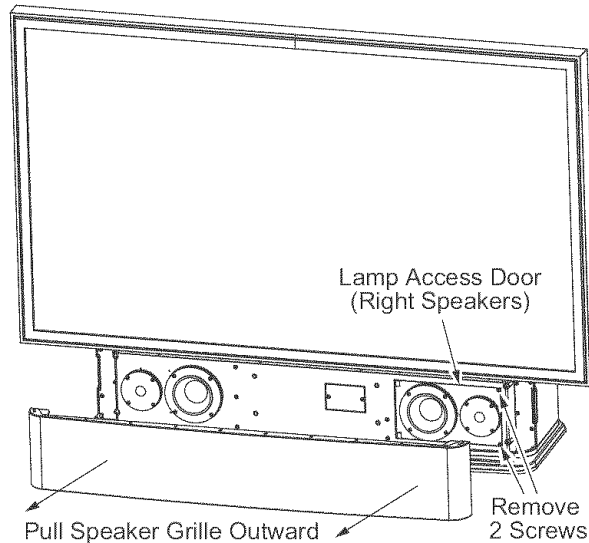


#### Tools

- #2 Phillips screwdriver.

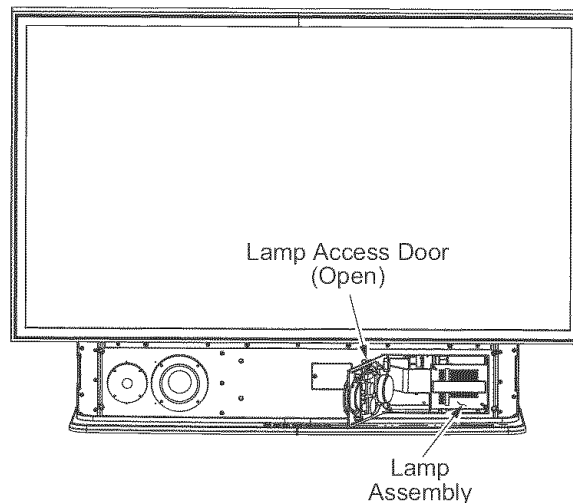
### Step-by-Step Lamp Replacement

1. Turn off the HDTV monitor.
2. Wait at least 1 minute for the lamp cooling fan to stop.
3. Unplug the HDTV monitor.
4. The lamp is **HOT** shortly after operation. Allow at least 60 minutes for the lamp to cool.
5. Remove the speaker grille by carefully pulling the grille away from the front of the HDTV monitor. The speaker grill is attached by plastic ball-and-socket fasteners (two along the left side, two along the right side, and 4 in the center).



**Figure 25. Speaker Grille and Lamp Access Door Screws**

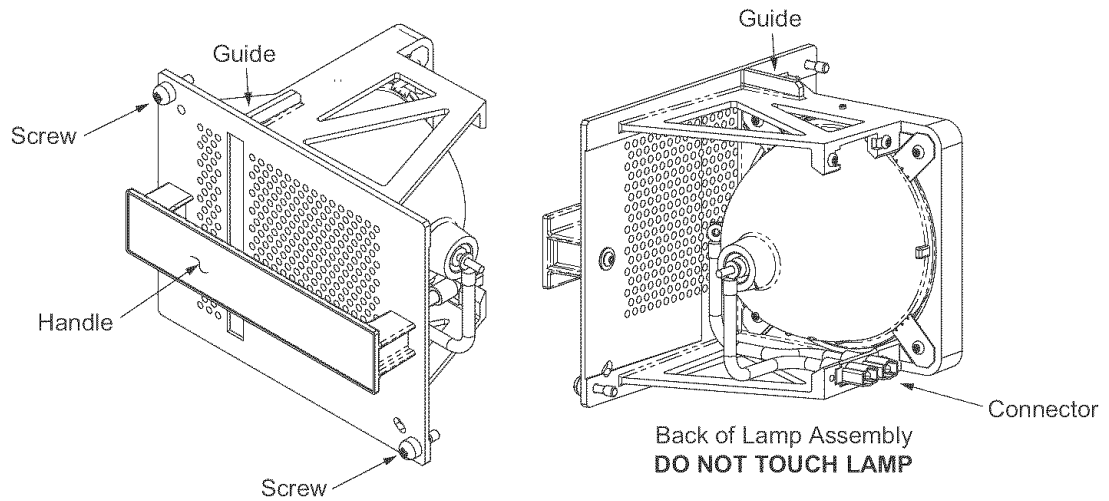
6. Remove the two screws (see Figure 25) and open the lamp access door (see Figure 26).



**Figure 26. Lamp Assembly Location**

7. Locate the lamp assembly (see Figure 26) and completely loosen the two captive screws on the lamp assembly (see Figure 27).
8. Grasp the old lamp assembly by the handle (see Figure 27) and gently pull straight out of the base of the HDTV monitor.



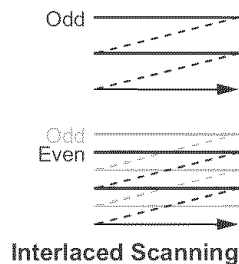


**Figure 27. Lamp Assembly**

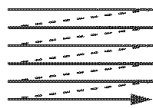
9. Grasp the new lamp assembly only by the handle.  
Inspect the lamp for obvious damage. Do not install or attempt to operate the lamp with a broken, cracked, or loose reflector or cover glass.
10. Align the guides on the lamp assembly with the lamp enclosure, and slide the new lamp assembly into the lamp housing.
11. Tighten both screws.
12. Close the lamp access door and tighten both screws. Do not overtighten.
13. Carefully snap the speaker grille into place.
14. Discard the spent lamp according to federal, state, and provincial hazardous disposal rules and regulations.

## APPENDIX

### ABOUT DEINTERLACING AND PROGRESSIVE-SCAN DVD PLAYERS



Progressive Scanning



Television pictures are normally created from 480, 720, or 1080 horizontal lines (rows of pixels). The video signals that create the pictures are also described as either interlaced or progressive.

#### Interlaced Video

Interlaced video creates a complete picture in two steps:

- The first step presents every other scan line (odd lines).
- The second step fills in the remaining scan lines (even lines).

An interlaced signal is identified by adding the letter "i" to the number of lines.

- 480i is the 480-line interlaced format. The 480i format is compatible with NTSC (analog) television sets.<sup>1</sup>
- 1080i is the 1080-line interlaced high-definition format.

#### Progressive-Scan Video

Progress-scan video creates a complete picture in a single top-to-bottom step.

A progressive-scan signal is identified by adding the letter "p" to the number of lines.

- 480p is the 480-line progressive-scan enhanced definition format.
- 720p is the 720-line progressive-scan high-definition format.

#### DVDs and DVD Players

DVD movies contain their images in an interlaced arrangement with 480 lines of picture information.<sup>2</sup>

- Basic DVD players commonly have a component video (YPbPr) output and generally do an excellent job of producing 480i video.

If a DVD player is not marked "progressive scan," and it doesn't mention 480p, 720p, or 1080i in the instructions, then it is probably a basic DVD player with 480i output. If the DVD player has no component video output (YPbPr), it is not a progressive-scan player.

- Progressive-scan DVD players can produce 480p (progressive-scan) output. Some can also produce 720p and 1080i output.

Progressive-scan DVD players create their 480p or 720p output using a *deinterlacer*. The quality of deinterlacers inside progressive-scan DVD players varies widely. The quality of the deinterlacer affects the appearance of the edges of moving objects.

#### Getting the Best DVD Performance

The 6501MA HDTV monitor always converts 480i or 1080i interlaced video to 720p progressive-scan video using its own high-quality, motion-adaptive deinterlacer. This deinterlacer can generally outperform the deinterlacers in all but the best progressive-scan DVD players.

To use the HDTV monitor's high-quality deinterlacer:

1. Connect the DVD player's YPbPr output to INPUT 1 on the HDTV monitor.
2. If it is a progressive-scan DVD player, select the 480i setting (turn off the progressive-scan feature).

1. NTSC signals have 525-lines but only 480 lines of picture information.  
2. This is a simplified explanation of DVD video storage.

- If INPUT 1 is used for another video component, consider using an S-video connection on either VIDEO 2, VIDEO 3, or VIDEO 8.

**ABOUT 480p/720p/1080i VIDEO-COMPONENT OUTPUT SETTINGS**

Video components that may have 480p/720p/1080i component-video outputs include:

- Digital cable set-top boxes
- Digital satellite set-top boxes
- ATSC digital TV tuner set-up boxes
- D-VHS (digital) videocassette players
- Other high-definition players

These video components may have switches on the outside of the unit, or on-screen menu settings, to choose component video output formats. A switch or menu item may be labeled "Output Resolution".

- 480p, 720p, and 1080i formats appear only on component video (YPbPr) outputs. Connect these outputs only to the VIDEO 4 or VIDEO 5 inputs on the HDTV monitor.
- If the video component provides only 480i component video (YPbPr), connect it to the VIDEO 1 input on the HDTV monitor for the best performance.

**Choosing a Setting**

- Choose "No Conversion" if available. Any necessary conversion (scaling and deinterlacing) will be performed automatically by the high-performance circuits in the HDTV monitor.
- If you know that the signal provided by your service originates in a specific format (480p, 720p, or 1080i), select that format on the video component. Any conversion that is needed (scaling and deinterlacing) will be performed by the circuits in the HDTV monitor.
- Select 1080i to get excellent performance without experimenting.
- Try both 720p or 1080i and choose the best picture.
- If you are familiar with the technical details and performance of your video component, choose a setting according to the following information:

Video Component Setting	Description
No Conversion	May not be available on all video components.
	480p, 720p, and 1080i programs keep their format at the video component output.
	The 6501MA HDTV monitor will display any of these inputs automatically.
1080i	1080i is the highest-resolution, high-definition broadcast format.
	480p programs are upscaled to 1080i by the video component. The resulting 1080i is downscaled and deinterlaced by the HDTV monitor.
	720p programs are upscaled to 1080i by the video component. The resulting 1080i is downscaled and deinterlaced by the HDTV monitor.
	1080i programs have little or no resampling by the video component. The resulting 1080i is downscaled and deinterlaced by the HDTV monitor.
720p	720p is the internal format of the 6501MA HDTV monitor. (The LCoS™ imagers are 1280 pixels wide × 720 pixels high and are operated in progressive-scan mode.)
	480p programs are upscaled to 720p by the video component.
	720p programs have little or no scaling by the video component.
	1080i programs are downscaled and deinterlaced to 720p by the video component.

**Table 5: Video Component Settings and Behaviors**

Video Component Setting	Description
480p	480p is below high-definition quality. This setting will produce a less detailed picture unless the program was originated in 480p format.
	480p programs have little or no resampling by the video component.
	720p and 1080i programs are downscaled to 480p by the video component.

Table 5: Video Component Settings and Behaviors (Continued)

**ABOUT DVD FORMATS**

DVDs are available in *full-screen*, *widescreen* (sometimes called *anamorphic*), or *letterbox* formats. Some DVDs even have full-screen format on one side and widescreen format on the flip side.

1.78 (16:9)
1.33 (4:3)
2.39

Aspect Ratio Examples

While widescreen TVs have an aspect ratio of 1.78 (16÷9 = 1.78), many filmed movies are even wider (for example 2.40). When very wide movies are transferred to widescreen DVDs, the manufacturer may proportionally reduce the movie to fit the TV screen width. In this case, it will be normal to see black mattes at the top and bottom of a very wide movie.

- To determine your DVD's format, check the DVD jacket.
- If the package is not clearly marked, view the DVD using the "Standard" image size setting and use the table below to choose the best setting.

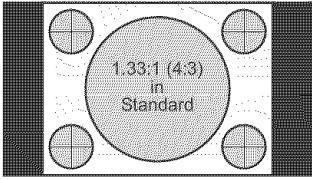
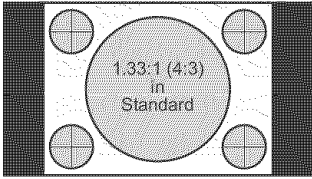
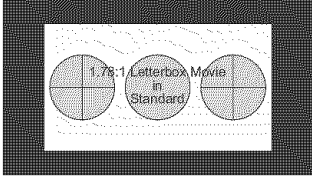
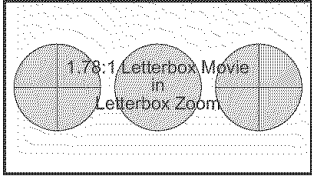
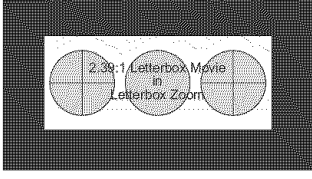
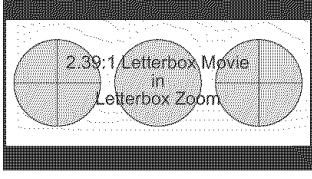
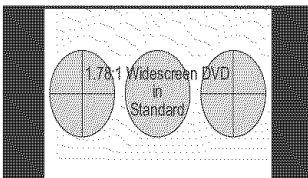
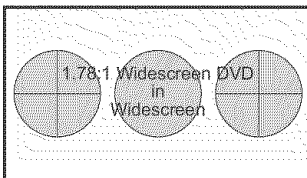
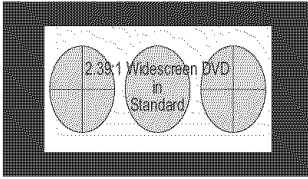
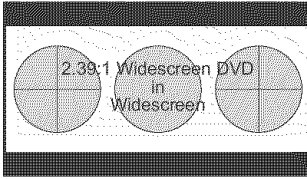
Standard Image Size Setting	Recommended Setting
 <p>1.33:1 (4:3) in Standard</p> <p><b>Full-Screen DVD Video</b></p>	 <p>1.33:1 (4:3) in Standard</p> <p>Remain at <b>Standard</b> or try Standard Extend</p>
 <p>1.78:1 Letterbox Movie in Standard</p>	 <p>1.78:1 Letterbox Movie in Letterbox Zoom</p>
 <p>2.39:1 Letterbox Movie in Letterbox Zoom</p>	 <p>2.39:1 Letterbox Movie in Letterbox Zoom</p> <p><b>Use Letterbox Zoom</b></p>

Table 6: Aspect Ratio Selections

Standard Image Size Setting	Recommended Setting
	
	
<b>Widescreen DVD Video</b>	<b>Use Widescreen</b>

**Table 6: Aspect Ratio Selections (Continued)**

Widescreen DVD video provides the most picture detail on a widescreen TV. It takes advantage of as much of the picture height as possible in the DVD video format by squeezing the picture horizontally. The HDTV monitor's widescreen setting expands the picture to restore the intended movie aspect ratio. (When a widescreen DVD is shown on an ordinary 1.33 (4:3) TV set, the DVD player must scale it to fit the TV screen at a loss of some detail.)

Letterbox DVD video will contain the least detail. It is intended to show the entire width of the movie, with the picture in its original filmed aspect ratio, on a 1.33 (4:3) TV. Letterbox formats lose a significant amount of detail to the black mattes at the top and bottom of the screen.

## VIDEO GLOSSARY

**3-2 pulldown** technique for converting 24-frame/second movie film images to 60-field/second video. One film frame is transferred to three video fields and the following film frame is transferred to two video fields. This pattern is repeated in a 3, 2, 3, 2, 3, 2... sequence.

**480i** 480-vertical-line, interlaced-scan video format

**480p** 480-line, progressive-scan video format

**720p** 720-line, progressive-scan video format

**1080i** 1080-line, interlaced-scan video format

**amplified subwoofer** See "powered subwoofer."

**anamorphic DVD** See widescreen DVD.

**aspect ratio** Width and height of the screen or picture expressed as a ratio or a number. TV aspect ratios are 16:9 (or 1.78) for widescreen and 4:3 (or 1.33) for full screen. Movie film formats may vary and are often slightly wider. Many DVD videos list their aspect ratio on the back of their package.

**analog tuner** Refers to "old" NTSC over-the-air broadcast TV or cable-ready tuners.

**ATSC** Abbreviation for Advanced Television Systems Committee which created the digital over-the-air broadcast signal format.

**AV** Audio-video.

**CATV** Cable TV (community access television or community antenna television); channels 1 to 125.

**broadcast TV** Over-the-air television, normally excluding satellite television.

**comb filter** An improved electronic circuit that separates the luminance (Y) from color information (C) in a composite video signal. This circuit is inside the TV and helps prevent color from smearing across finely detailed areas in the picture.

To produce the best picture from composite video inputs, the 6501MA HDTV features a digital 3-D motion-adaptive Y/C separation (comb) filter.

**component video** YPbPr video. This is high-quality analog three-signal video. The component video connectors usually have green, blue, and red color coding.

**composite video** Single video signal that contains luminance (black and white), color, and sync. This may also be labeled "V" or "CVBS."

**CVBS** Composite video (or composite video, blanking, sync). See "composite video."

**deinterlacer** Circuit that converts an interlaced video signal into a progressive-scan video signal. Deinterlacers may be included in progressive-scan televisions (such as the 6501MA HDTV) and may be included in some components such as progressive-scan DVD players.

**digital tuner** New ATSC over-the-air broadcast or new digital cable tuner.

**Dolby** See Virtual Dolby® Surround.

**DTV** Digital television.

**DVD** Digital Versatile Disc or Digital Video Disc.

**D-VHS** Digital VHS. A VHS videotape format capable of high-definition recording and playback. D-VHS tapes cannot be played on a standard VHS VCR.

**DVI** Digital Visual Interface. Digital video signal connection standard used to send digital video signals from video components such as DVD players, digital cable boxes, digital satellite boxes, and computers to digital televisions and monitors.

**DVI-I connector** Variation of DVI connector. The DVI-I receptacle accepts both DVI digital and DVI digital-analog plugs and cables.

**EDTV** Enhanced definition television. Intended to identify a digital TV receiver with active vertical scanning lines of 480p or higher. Sometimes used to describe signals that are 480p. An *EDTV monitor* does not include an ATSC digital tuner.

**F-connector** Common threaded broadcast antenna or cable television coaxial-cable connector. Inputs or outputs may be labeled *RF*. F-connector equipped cables are available in threaded or push-on versions.

**full-screen DVD** A DVD that is formatted to fill a 4:3 television screen. (Compare to widescreen DVD.)

**HDCP** High-Bandwidth Digital Content Protection. HDCP is a type of digital signal encryption used between some DVI- and HDMI-equipped video components, including DVD players, digital cable boxes, digital satellite boxes with DVI outputs, and digital TVs or displays. HDCP encryption discourages illegal duplication of copyrighted material. The 6501MA HDTV includes an HDCP decoder for compatibility with video components that use HDCP encryption.

**HDMI™** High-Definition Multimedia Interface™. A digital audio-video interface.

The 6501MA HDTV accepts video from HDMI-equipped video components using an HDMI-to-DVI adapter. Audio is connected using a separate audio cable.

**HDTV** High-definition television receiver capable of displaying 480p, 720p, 1080i, with a 16:9 aspect ratio, and includes an ATSC digital over-the-air tuner.

**HDTV monitor** High-definition television capable of displaying 480p, 720p, 1080i, with a 16:9 aspect ratio, but without an ATSC digital over-the-air tuner.

**interlaced scan** Complete images created in twosteps by displaying every other horizontal line and then filling in the remaining lines. Formats include 480i, 1080i.

**LCoS™** Brillian Corporation trademark for its unique liquid-crystal-on-silicon microdisplays and technology.

**letterbox** Video format where widescreen pictures are reduced to the width of a 4:3 TV. The format includes prominent black bars across the top and bottom of the screen. A "zoom" size setting can expand the picture to fill a widescreen TV but the vertical detail is limited. (Compare to "anamorphic."). See "About DVD Formats" on page 60.

**line-level audio** Analog audio signals commonly used between audio components. (The amplified signals to speakers are not line-level audio singles.)

**NTSC** Abbreviation for National Television Systems Committee which created the "old" analog broadcast signal format.

**OSD** On-screen display. Screen-based control and information menus.

**PIP** Picture in picture.

**pixel** Picture element. One of the thousands of points of brightness and color that make up a television or computer screen.

**POP** Picture outside picture.

**powered subwoofer** Self-contained subwoofer speaker plus an amplifier with a line-level input.

**progressive scan** Complete images created in one step by displaying horizontal lines from top to bottom. Formats include 480p, 720p.

**reset** "Start over" switch that usually clears memories and behaviors in the main electronic circuits. Reset usually returns a device to the factory settings.

**RCA connector** Common type of push-on coaxial connector used for individual right/left line-level audio and composite and component video connections.

**RGB** Red, green, and blue video signals carried by VGA cables and connectors. In the 6501MA HDTV, these are accepted at the PC Input.

**RF** Radio frequency. Sometimes used to identify antenna and cable television inputs.

**scaling** Converting a picture to higher or lower line count. This is the electronic version of magnification; however, you cannot create additional detail.

**SDTV** Standard definition television. Intended to identify a digital TV receiver with active vertical scanning lines less than provided by EDTV. An SDTV monitor does not include an ATSC digital tuner. Sometimes misused to describe analog TVs or signals that are 480i.

**set-top box** General term that usually refers to separate cable, satellite, terrestrial converters that are connected to a TV.

**subwoofer** Speaker that produces only very-low-frequency audio. Also see "powered subwoofer."

**surround sound** Audio that uses multiple speakers around the listener. For example, a 5.1 surround sound system has left, center, right, right-rear, and left-rear speakers plus a subwoofer.

**S-video** Video signal that is separated into its luminance (Y) and color (C) components and uses a 4-pin DIN connector.

**VGA** Video graphics array. An analog video signal used between PCs (personal computers) and analog monitors. It uses a D-subminiature connector carrying red, green, blue and sync signals.

**VHF** Very-high-frequency broadcast channels 2 to 13.

**Virtual Dolby® Surround** The BR6501m HDTV features Virtual Dolby Surround technology using the Micro-nas 3D-PANORAMA® virtualizer. 3D-PANORAMA virtualizer is a technology certified by Dolby Laboratories that creates a virtualized surround-sound experience from two speakers using Dolby Pro Logic or Dolby Pro Logic II. 3D-PANORAMA virtualizer retains all the original multichannel audio information and provides the listener with the sensation of being surrounded by additional speakers.

**UHF** Ultra-high-frequency broadcast channels 14 to 69.

**widescreen** TV image format that is 16:9 (1.78). Film movies may vary from this aspect ratio slightly or noticeably.

**widescreen DVD** Video format where widescreen pictures are stored at nearly full height but are squeezed horizontally. When presented on a widescreen TV, the picture is expanded horizontally back to its widescreen shape. This preserves the best vertical detail when shown on a widescreen TV. Widescreen DVDs may be labeled "Anamorphic," "Enhanced for Widescreen TVs," or similar. (They can also be correctly displayed in letterbox format on a 4:3 TV.) See "About DVD Formats" on page 60.

**windowbox** 4:3 picture presented in correct proportions on a widescreen with black mattes on the sides.

**XDS** Extended Data Service. Information included in the TV signal which is capable of displaying information including program type, MPAA ratings, weather service bulletins, and more.

**Y/C** Type of analog signal. Separate luminance (Y) and color (C) components of a video signal. "S-video" is an implementation of Y/C.

**YCbCr** Digital component video signal. Digital video is usually more specifically labeled "DVI" or "HDMI". YPbPr connections are sometimes mislabeled YCbCr.

**YPbPr** Analog component video signal. It consists of three signals over three cables: luminance (Y) and two color-difference signals (Pb and Pr) derived from red green and blue signals. Component video connectors and cables are typically color-coded red, green, and blue.





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