

56"

RP56HD21-A

USER GUIDE

Micro Chip Display Projection TV

View of the Digital World





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■ Introducing Your Vivitek Micro Chip Display Projection TV

This chapter provides basic information about Your  Vivitek Micro Chip Display Projection TV.

Read this chapter to learn about :

- Features
- Warnings and Safeguards
- Package Contents
- Controls and Connections

■ **Features**

- A bright, flicker-free image
- Automatic detection and conversion of film content for correct display with minimal motion artifacts (noise)
- Accurate color processing
- Two high-definition component video input sources that automatically synchronize the display to match the incoming source
- Picture-in-picture (PIP) modes that let you watch multiple programs simultaneously
- HDTV signal compatibility using an external HDTV decoder with DVI, RGB or component video outputs
- HDCP support for video protection
- Digital zoom mode to get rid of "black bars" around the display image
- A built-in BBE[®] sound processor that maximizes the sound quality
- A built-in SRS[®] sound processor that simulates "surround" effects using only two speakers
- Selectable fixed/variable audio outputs
- Built-in internal amplifier and speakers
- A built-in Digital Visual Interface (DVI) to eliminate the need for digital-to-analog conversion
- 1024 x 768 XGA support for computer input
- 480i, 480p, 720p and 1080i support for HDTV signals

■ Important Safeguards

Warning



Risk of electric shock – Do not open this RPTV

To reduce the risk of electric shock, do not remove the back cover. There are no user-serviceable parts inside. Removing the back cover voids the warranty. Have your Micro Chip Display Projection TV repaired by qualified service personnel only.

Warnings and precautions

- Do not place your hands, face, or objects close to the ventilation openings of your Micro Chip Display Projection TV.
- Disconnect all cables before moving your Micro Chip Display Projection TV. Moving your Micro Chip Display Projection TV with its cables attached may damage the cables and cause fire or electric shock danger.
- Do not expose your Micro Chip Display Projection TV to rain or moisture.
- Keep your Micro Chip Display Projection TV away from excessive dust, high temperatures, moisture or direct sunlight.
- Use your Micro Chip Display Projection TV in a well-ventilated area and do not cover the ventilation openings.
- Do not modify your Micro Chip Display Projection TV or use an unshielded power cord or video input source cable, or you may experience excessive interference.
- Disconnect your Micro Chip Display Projection TV and unplug the power cord when not used for a long period of time.
- If the picture displayed is in any way abnormal, turn off your Micro Chip Display Projection TV, then disconnect it from the electrical outlet. Make sure that your video input source cable is connected correctly, then reconnect your Micro Chip Display Projection TV to the electrical outlet.
- Disconnect your Micro Chip Display Projection TV from the electrical outlet before cleaning or performing maintenance. Do not use liquid or aerosol cleaners. Use only a slightly damp cloth for cleaning.
- Do not place your Micro Chip Display Projection TV on an unstable cart, stand, or table. Your Micro Chip Display Projection TV may fall, causing serious damage.

- Do not place your Micro Chip Display Projection TV on a bed, sofa, rug, or other similar surfaces.
- Never place your Micro Chip Display Projection TV near or over a radiator or heat source.
- Do not install your Micro Chip Display Projection TV in an enclosed area unless correct ventilation is provided.
- Your Micro Chip Display Projection TV should be operated from the type of power source indicated on the label. If the type of available power is unknown, consult your electrician or local power company.
- Your Micro Chip Display Projection TV is equipped with a 3-pin grounded plug. The plug will only fit into a grounded power outlet. This is a safety feature. If you cannot plug the power cord into the outlet, contact your electrician. Do not alter the plug because
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■ Package Contents

Along with your Micro Chip Display Projection TV, the packaging box contains the following items :

Remote control

Universal Remote



Two AA batteries for universal remote



Power cord



User guide



■ Accessories

You can purchase these optional accessories for your Micro Chip Display Projection TV :

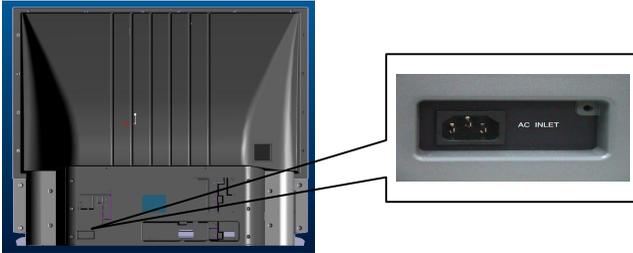
- Filters
- Lamps

Contact  Vivitek for these and other accessories.

■ Turning on the Main Power

► To turn on the power :

- 1 Connect the power cord to the power cord connector on the back of Your Micro Chip Display Projection TV, then plug the other end of the power cord into a correctly grounded electrical outlet or surge protector.



- 2 Press the POWER button on the front of your Micro Chip Display Projection TV. The Status LED on the front turns blue.

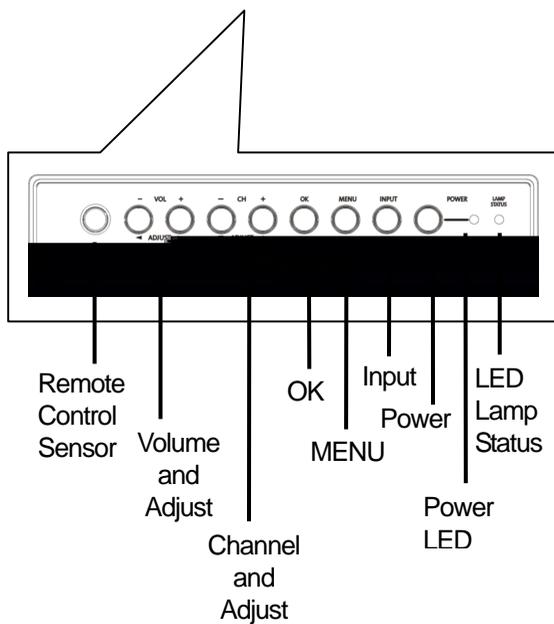
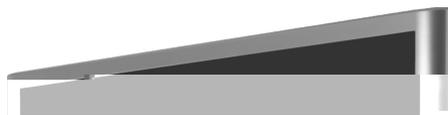


Warning



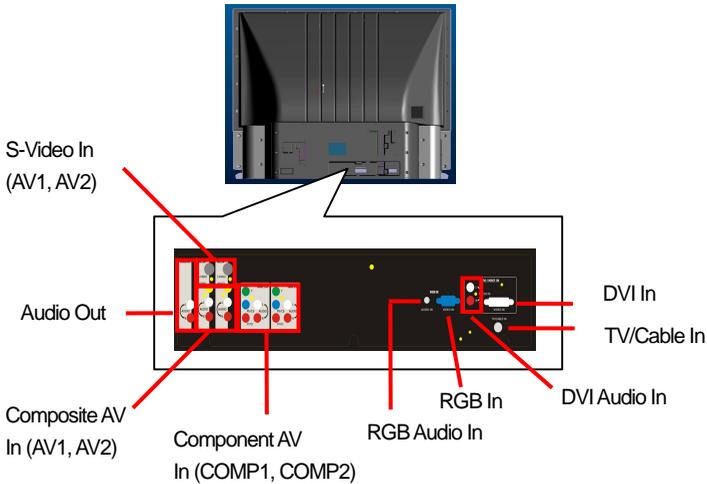
For added protection during a lightning storm or when it is left unattended or unused for long periods of time, unplug your Micro Chip Display Projection TV from the wall outlet and disconnect the antenna or cable system.

■ Front Controls



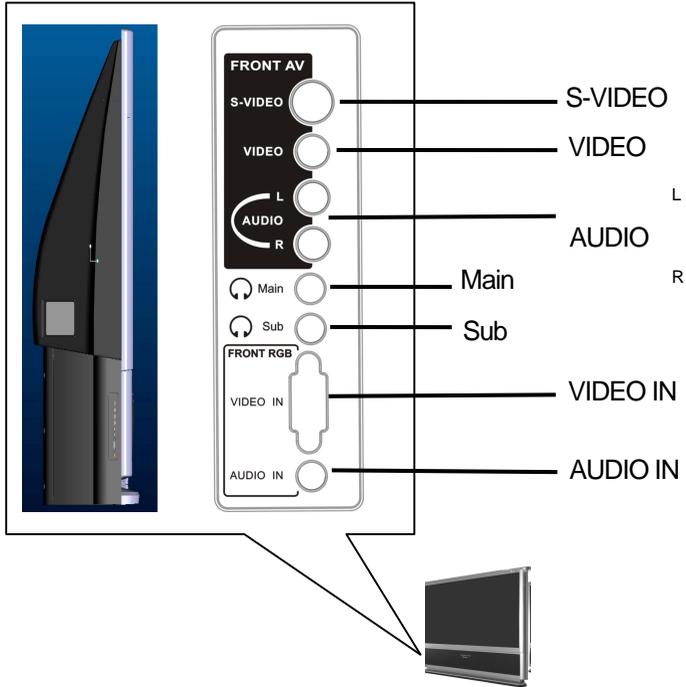
Button	Description
Remote control sensor	Receives signals from the remote control. Do not block.
Volume +/- and Adjustment ▷ and ◁	Increases or decreases the volume. OSD active: Adjusts on-screen display (OSD) options. For more information, see "Using the OSD" on page 31.
Channel +/- and Adjustment ▽ and △	Changes the channel. OSD active : Selects OSD options. For more information, See "Using the OSD" on page 31.
OK	Opens menus in the OSD. For more information, see "Using the OSD" on page 31.
MENU / EXIT	Opens / Closes menus in the OSD. For more information, see "Using the OSD" on page 31.
Input	Switches between available input sources.
Power	Press once to turn your RPTV on. Press twice to turn you RPTV off. When you turn Micro Chip Display Projection TV off, wait two minutes before pressing this button again.
Power LED	Displays the power status of your RPTV. For more information, see "Status LEDs" on page 43.
Lamp LED	Displays the lamp status of your RPTV. For more information, see "Status LEDs" on page 43.

■ Back Connections



Connector	Description
S-Video	Connects to an S-Video device, such as a satellite dish receiver or digital cable box.
Audio Out	Connects to an external audio device, such as an Audio player.
Composite AV In	Connects to a composite audio/video device, such as a VCR or DVD player.
Component AV In	Connects to a component audio/video device, such as a DVD player or set-top box.
RGB Audio In	Connects to the audio on an RGB device, such as a computer or set-top box.
RGB In	Connects to an RGB video device, such as a computer or set-top box.
DVI Audio In	Connects to the audio on a DVI device, such as a computer or set-top box.
TV/Cable In	Connects to a VHF/UHF antenna or cable TV.
DVI In	Connects to a DVI video device, such as a computer or set-top box.

■ **Side Connections**



Connector	Description
S-Video	Connects to an S-Video device, such as a video camcorder.
Video/Audio In	Connects to a composite audio/video device, such as a video camcorder or digital camera.
Main/Sub	<p>MAIN: Plug headphone in here to listen to the audio for the main picture. The built-in speakers are disabled.</p> <p>SUB: Plug headphones in here to listen to the audio for the sub-picture.</p>
Video In	Connects to an RGB video device, such as a computer.
Audio In	Connects to the audio on an RGB device, such as a computer.

■ Connecting Components

Read this chapter to learn how to connect :

- DVD Players
- HDTV decoder set-top boxes
- VCRs
- Off-air TV and cable TV
- External audio devices
- Computers

Warning



Before connecting any external components, unplug your Micro Chip Display Projection TV.

■ Understanding Video Connections

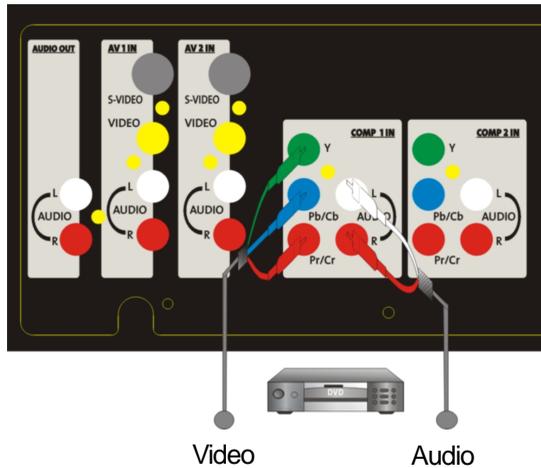
Your Micro Chip Display Projection TV has four types of standard video connections. You should use the best connection available to get the best display. For example, if your DVD player supports a component video connection, connect the DVD Player to your Micro Chip Display Projection TV using component video instead of composite video or S-Video.

Connection Quality	Cable and Connector	Description
Base		Coaxial (RF). The video and audio signals are both carried in one cable (the other three connection types only handle video, and require separate connections for sound). Coaxial is the only way to connect an antenna to your RPTV.
Good		Composite. The video signal is carried through a single "pin." This connection method is the one that is most commonly found on devices.
Better		S-Video. The video signal is split into two signals, black-and-white and color. Text displayed on-screen through this connection will be noticeably sharper than composite or coaxial (RF).
Best		Component. The video signal is split into three signals, two colors, and one black-and-white. Use component video to take advantage of the superior picture provided by signal such sources as HDTV and progressive DVD.

■ Connecting your DVD Player

■ Using Component Video

- ▶ To connect your DVD player using component video :

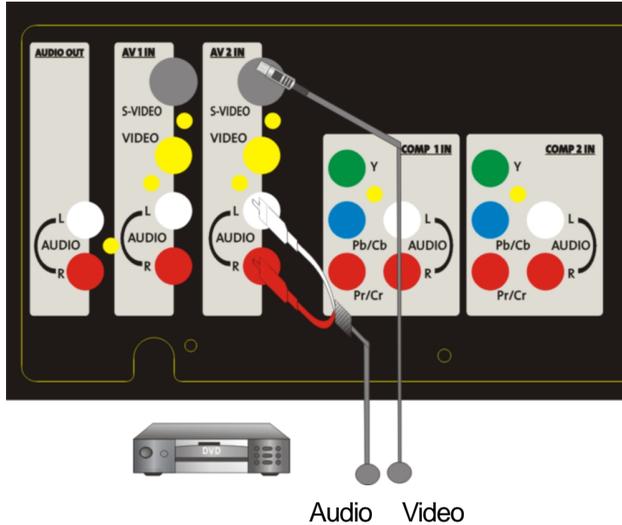


- 1 Connect the green-colored Y jack on the back of your DVD player to the green-colored Y jack on the back of your RPTV.
- 2 Connect the red-colored P_R or C_R jack on the back of your DVD player to the red-colored P_R/C_R jack on the back of your RPTV.
- 3 Connect the blue-colored P_B or C_B jack on the back of your DVD player to the blue-colored P_B/C_B jack on the back of your RPTV.
- 4 Connect the red (R) and white (L) audio jacks on the back of your DVD player to the R and L audio-in jacks on the back of your RPTV.
- 5 Select **COMP 1** using the **INPUT** button on the front of your RPTV.



■ Using S-Video

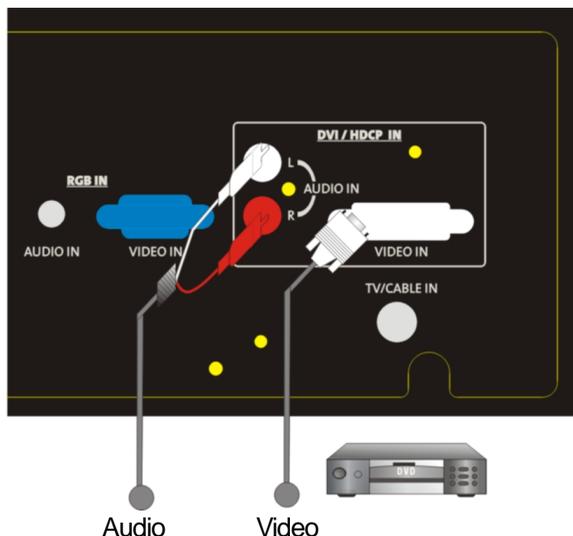
▶ To connect your DVD player using S-Video :



- 1 Connect the S-Video jack on the back of your DVD player to the S-VIDEO jack on the back of your RPTV.
- 2 Connect the red (R) and white (L) audio jacks on the back of your DVD player to the R and L audio-in jacks on the back of your RPTV.
- 3 Select **AV 2** using the **INPUT** button on the front of your RPTV.

■ Using DVI Video

▶ To connect your DVD player using DVI video :



- 1 Connect the DVI connector on your DVD player to the DVI-In connector on the back of your RPTV.
- 2 Connect the Audio Out jack on your DVD player to the DVI Audio In jacks on the back of your RPTV.
- 3 Select **DVI** using the **INPUT** button on the front of your RPTV.



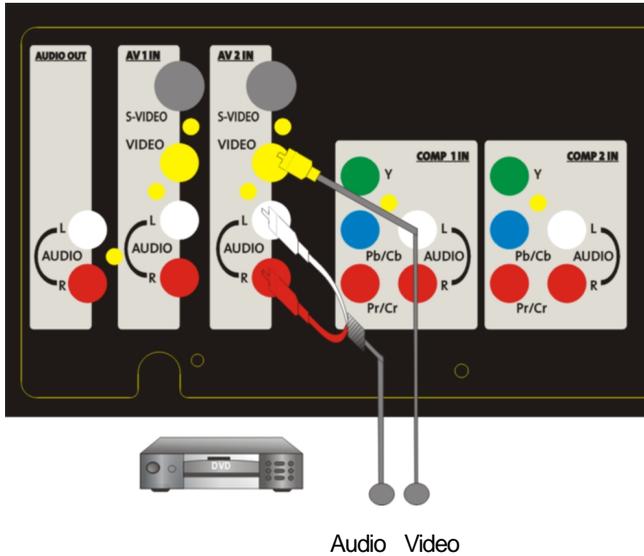
The DVI port supports High-bandwidth Digital Content Protection (HDCP). HDCP encrypts the transmission between the video source and the digital display for added security and protection.

Connecting the Micro Chip Display Projection TV and DVD player by using HDMI/DVI cable can show you the high definition Display.

Please refer to page 46~48 as the related resolution supported timing table.

■ Using Composite Video

▶ To connect your DVD player using composite video :



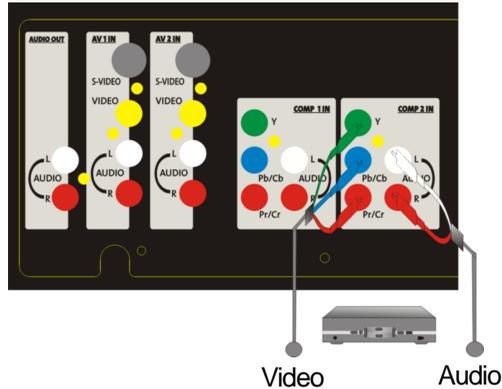
- 1 Connect the yellow video jack on the back of your DVD player to the yellow AV 2 IN jack on the back of your RPTV.
- 2 Connect the red (R) and white (L) audio jacks on the back of your DVD player to the R and L audio-in jacks on the back of your RPTV.
- 3 Select **AV 2** using the **INPUT** button on the front of your RPTV.



■ Connecting your HDTV Set-Top Box

■ Using Component Video

- ▶ To connect your HDTV decoder set-top box using component video :

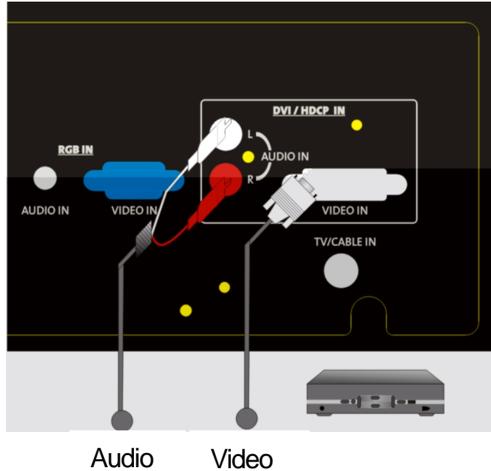


- 1 Connect the green Y jack on the back of your HDTV set-top box to the green Y jack on the back of your RPTV.
- 2 Connect the red P_R or C_R jack on the back of your HDTV set-top box to the red P_R/C_R jack on the back of your RPTV.
- 3 Connect the blue P_B or C_B jack on the back of your HDTV set-top box to the blue P_B/C_B jack on the back of your RPTV.
- 4 Connect the red (R) and white (L) audio jacks on the back of your HDTV set-top box to the R and L audio-in jacks on the back of your RPTV.
- 5 Select **COMP 2** using the **INPUT** button on the front of your RPTV.



■ Using DVI Video

- ▶ To connect your HDTV decoder set-top box using DVI video :



- 1 Connect the DVI connector on the back of your HDTV set-top box to the DVI-In connector on the back of your RPTV.
- 2 Connect the Audio Out jack on the back of your HDTV set-top box to the DVI Audio In jacks on the back of your RPTV.
- 3 Select **DVI** using the **INPUT** button on the front of your RPTV.



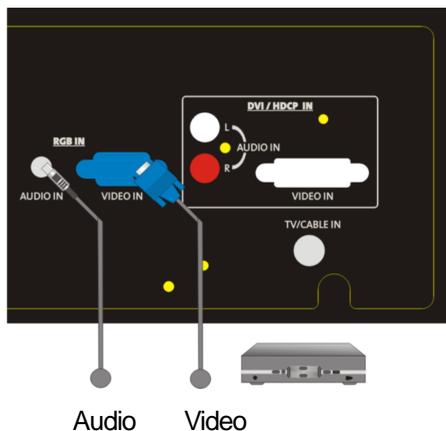
The DVI port supports High-bandwidth Digital Connect Protection (HDCP). HDCP encrypts the transmission between the video source and the digital display for added security and protection.

Connecting the Micro Chip Display Projection TV and DVD player by using HDMI/DVI cable can show you the high definition Display.

Please refer to page 46~48 as the related resolution supported timing table.

■ Using RGB Video

- ▶ To connect your HDTV decoder set-top box using RGB video :



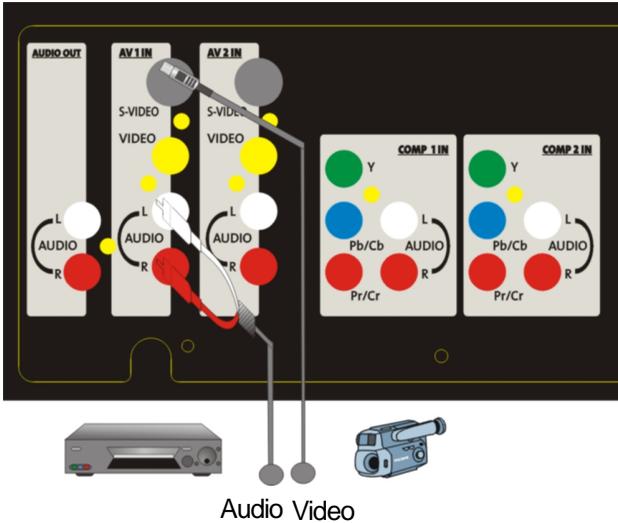
- 1 Connect the 15-pin D-Sub RGB jack on the back of your HDTV set-top box to the RGB-IN jack on the back of your RPTV.
- 2 Connect the red (R) and white (L) audio-out jacks on the back of your HDTV set-top box to the R and L audio-in jacks on the back of your RPTV.
- 3 Select **RGB** using the **INPUT** button on the front of your RPTV.



After you connect your HDTV set-top box to the RGB input jack on your RPTV, you may need to adjust various RPTV picture settings to correctly match the output from the HDTV set-top box.

Please refer to page 46–48 as the related resolution supported timing table.

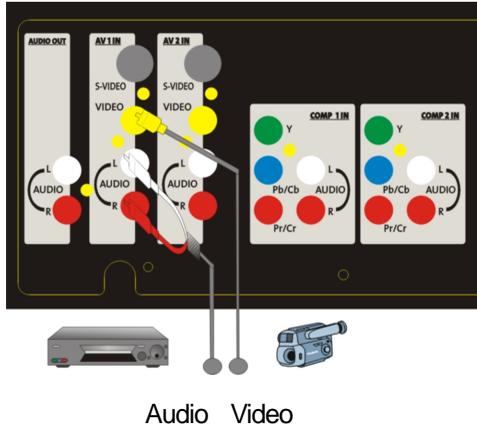
- Connecting your VCR or Video Camera
- Using S-Video
- ▶ To connect your VCR or video camera using S-Video :



- 1 Connect the S-Video jack on the back of your VCR or video camera to the S-VIDEO jack on the back of your RPTV.
 - 2 Connect the red (R) and white (L) audio jacks on the back of your VCR or video camera to the R and L audio-in jacks on the back of your RPTV.
 - 3 Select **AV 1** using the **INPUT** button on the front of your RPTV.
-

■ Using Composite Video

▶ To connect your VCR or video camera using composite video :

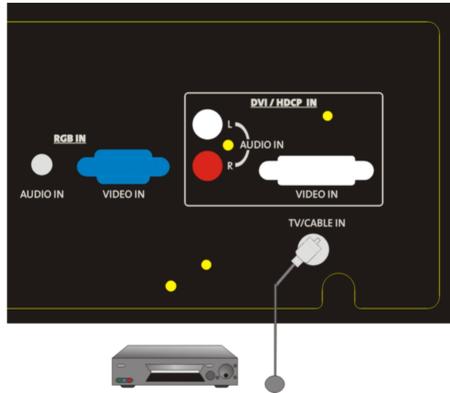


- 1 Connect the yellow video jack on the back of your VCR or video camera to the yellow AV 1 IN jack on the back of your RPTV.
- 2 Connect the red (R) and white (L) audio jacks on the back of your VCR or video camera to the R and L audio-in jacks on the back of your RPTV.
- 3 Select **AV 1** using the **INPUT** button on the front of your RPTV.



■ Using Coaxial (RF)

▶ To connect your VCR using coaxial (RF) audio and video :



- 1 Connect the “output to TV” (RF out or Antenna out) jack on the back of your VCR to the TV/CABLE IN jack on the back of your RPTV.
- 2 Select **TV** using the **INPUT** button on the front of your RPTV, then go to channel 3 or 4.



If you have an off-air antenna or cable box, connect your off-air antenna or cable TV cable to the TV/CABLE IN connector on the back of your VCR.

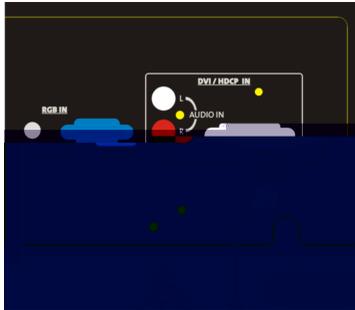
Warning



If an outdoor antenna or cable system is connected to your RPTV, make sure that the antenna or cable system is correctly grounded. For more information, see “Television antenna connectors protection (for systems fitted with TV/cable TV tuner cards)” on page 52.

■ Connecting Off-air TV or Cable TV

- ▶ To connect off-air TV or cable TV using coaxial (RF) audio and video :



- 1 Connect the coaxial (RF) connector from your antenna or cable box to the TV/CABLE IN connector on the back of your RPTV.
- 2 Select **TV** using the **INPUT** button on the front of your RPTV.



Warning

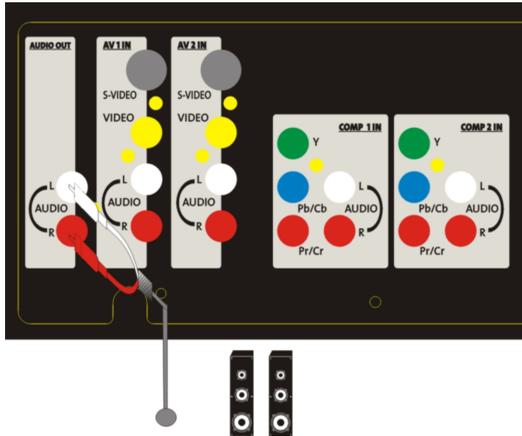


If an outdoor antenna or cable system is connected to your RPTV, make sure that the antenna or cable system is correctly grounded. For more information, see “Television antenna connectors protection (for systems fitted with TV/cable TV tuner cards)” on page 52.

■ Connecting External Amplified Speakers

You can connect your Micro Chip Display Projection TV to a set of external amplified speakers using the AUDIO OUT jacks located on the back of your RPTV.

► To connect your external amplified speakers :



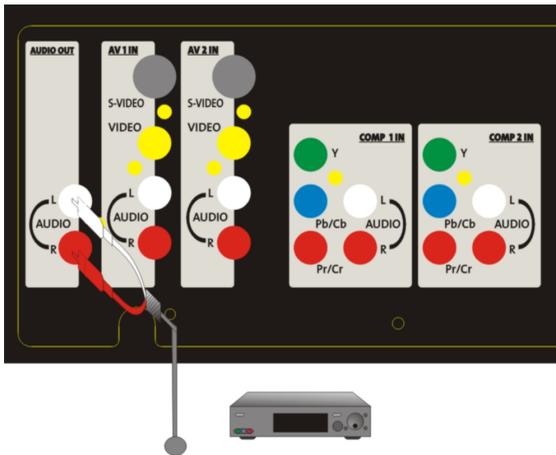
- 1 Connect the red (R) and white (L) audio jacks on the back of your speakers to the AUDIO OUT jacks on the back of your RPTV.
- 2 Set the REAR AUDIO OUTPUT in the OSD to **VARIABLE**. For information about the OSD, see "Using the OSD" on page 31.



■ Connecting an External Receiver or Amplifier

You can connect an external receiver or amplifier to your Micro Chip Display Projection TV.

▶ To connect your external receiver or amplifier :



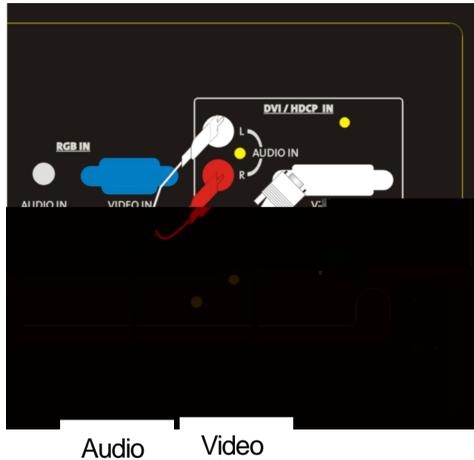
- 1 Connect the red (R) and white (L) audio jacks on the back of your external amplifier or receiver to the AUDIO OUT jacks on the back of your RPTV.
- 2 Set the REAR AUDIO OUTPUT in the OSD to **VARIABLE** if you want to use the volume controls on your RPTV, or **FIXED** if you want to use the volume controls on your amplifier or receiver. For information about the OSD, see "Using the OSD" on page 31.



■ Connecting a Computer

■ Using DVI Video

- ▶ To connect your computer using DVI video :



- 1 Connect the DVI connector on your computer to the DVI-In connector on the back of your RPTV.
- 2 Connect the Audio Out jack on your computer to the DVI Audio In jacks on the back of your RPTV.
- 3 Select **DVI** using the **INPUT** button on the front of your RPTV.



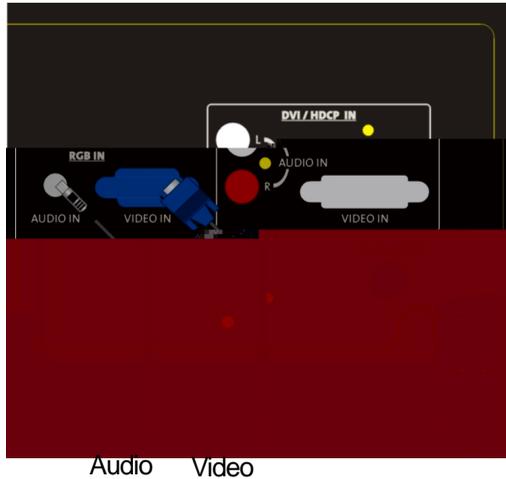
The DVI port supports High-bandwidth Digital Connect Protection (HDCP). HDCP encrypts the transmission between the video source and the digital display for added security and protection.

Connecting the Micro Chip Display Projection TV and DVD player by using HDMI/DVI cable can show you the high definition display.

Please refer to page 46~48 as the related resolution supported timing table.

■ Using RGB Video

▶ To connect your computer using RGB video :



- 1 Connect the 15-pin D-Sub RGB connector on your computer to the RGB-IN connector on the back of your RPTV.
- 2 Connect the Audio Out jack on your computer to the RGB Audio In jacks on the back of your RPTV.
- 3 Select **RGB** using the **INPUT** button on the front of your RPTV.



Please refer to page 46~48 as the related resolution supported timing table.

■ **Adjusting Your Rear Projection TV Settings**

Read this chapter to learn how to adjust your Micro Chip Display Projection TV settings using the on-screen display (OSD).

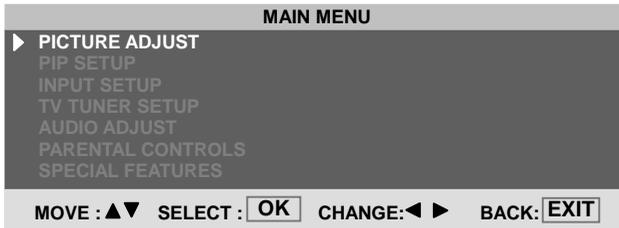


■ Using the OSD

Your Micro Chip Display Projection TV features an on-screen display (OSD) that lets you adjust and save contrast, brightness, and other settings. Your Micro Chip Display Projection TV saves changes you make to the settings, even if you turn off your TV.

► To adjust settings from the OSD :

- 1 Press the **MENU** button on the front of your RPTV. The MAIN MENU opens.



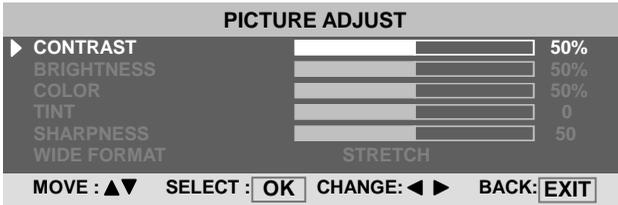
- 2 Press the **ADJUST** ▽ or △ button on the front of your RPTV to select the menu you want.
- 3 Press the **OK** button on the front of your RPTV to open the menu.
- 4 Press the **ADJUST** ▽ or △ button on the front of your RPTV to select the menu option you want.
- 5 Press the **OK** button on the front of your RPTV to open the menu option.
- 6 Press the **ADJUST** ◀ or ▶ button on the front of your RPTV to adjust the option setting.
- 7 Press the **MENU** button on the front of your RPTV repeatedly to exit the OSD.



■ OSD Menu and Options

You can use these OSD menu and options to adjust various settings for your Micro Chip Display Projection TV.

OSD Menu (PICTURE ADJUST) TV Modes



CONTRAST. Adjusts the contrast of the picture.

BRIGHTNESS. Adjusts the brightness of the picture. You may need to readjust brightness after the RPTV warms up.

COLOR. Adjusts the color saturation making colors more intense.

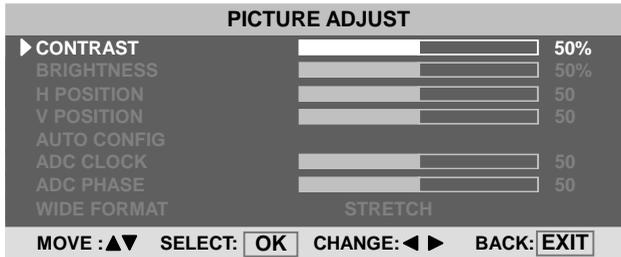
TINT. Adjusts the color of flesh tones.

SHARPNESS. Adjusts the amount of detail enhancement.

WIDE FORMAT. Adjusts the screen width to STRETCH, CENTER, PANORAMIC, or ZOOM viewing mode.

PICTURE ADJUST

PC Modes



CONTRAST. Adjusts the contrast of the picture.

BRIGHTNESS. Adjusts the brightness of the picture. You may need readjust brightness after the RPTV warms up.

H POSITION. Adjusts the horizontal screen position.

V POSITION. Adjusts the vertical screen position.

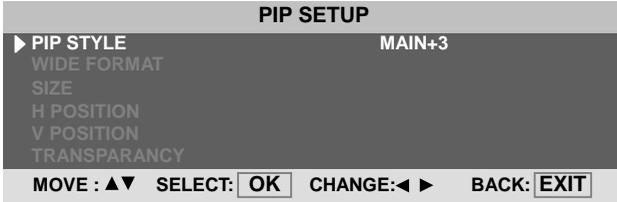
AUTO CONFIG. Automatically adjusts to the best settings.

ADC CLOCK. Removes any vertical distortion and clears or sharpens the displayed characters.

ADC PHASE. Removes any horizontal distortion and clears or sharpens the displayed characters.

WIDE FORMAT. Adjusts the screen width to STRETCH, CENTER, PANORAMIC, or ZOOM viewing mode.

PIP SETUP



PIP STYLE. Turns PIP mode on or off, or choose one of the following pre-set modes:

- **SPLIT.** The screen is divided in half. The left side is the main picture and the right side is the sub-picture.
- **POP.** The screen is in 16:9 mode and divided in half. The left side is the main picture and the right side is the sub-picture.
- **MAIN+3.** The main picture is on the left and there are three small sub-pictures on the right.
- **MAIN+7.** The main picture is on the bottom left and there are four small sub-picture windows across the top and three small sub-pictures on the right.
- **SCAN.** The screen is divided into 12 small sub-pictures.

When PIP STYLE is set to PIP, the following sub-options are available :

WIDE FORMAT. Changes the sub-picture size. Choose between 4:3 and 16:9.

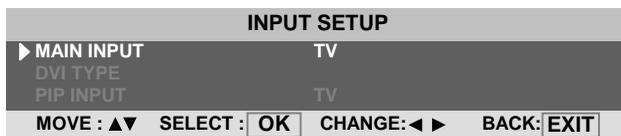
SIZE. Changes the size of the sub-picture.

H POSITION. Moves the sub-picture left or right.

V POSITION. Moves the sub-picture up or down.

TRANSPARANCY. Adjusts the sub-picture transparency.

INPUT SETUP

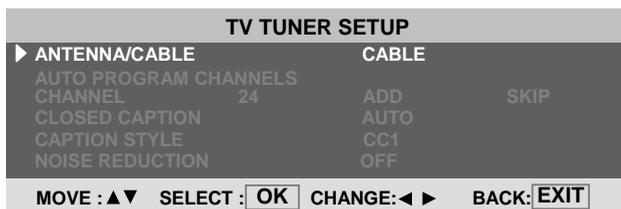


MAIN INPUT. Selects the video input source for the main picture.

DVI TYPE. Selects between VIDEO and COMPUTER devices if the DVI connection is being used.

PIP INPUT. Selects the video input source for the sub-picture when PIP is turned on.

TV TUNER SETUP



ANTENNA/CABLE. Sets the source for the tuner.

Select CABLE (for cable or a satellite dish) or ANTENNA.

AUTOPROGRAM CHANNELS. When TV is the selected video input source, your RPTV adds all channels that have a signal to the channel list.

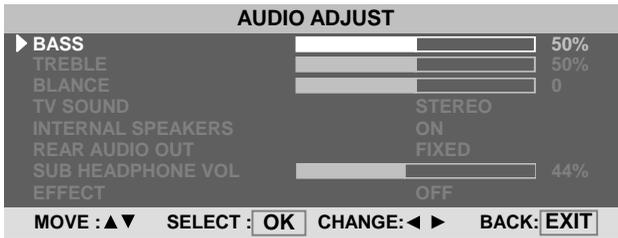
CHANNEL. Displays the current TV channel and lets you skip or add the current channel to the channel list.

CLOSED CAPTION. Turns closed captioning on and off. AUTO automatically turns captioning on when your LCD TV is muted.

CAPTION STYLE. Sets the display style for closed captioning.

NOISE REDUCTION. Turns the noise reduction function on or off.

AUDIO ADJUST



BASS. Adjusts the bass.

TREBLE. Adjusts the treble.

BALANCE. Adjusts the balance level between the channels.

TV SOUND. Changes the sound output for TV Programs. Switch between STEREO, SAP(Second Audio Program), or MONO for audio simulcasts. The TV program must support the output option.

INTERNAL SPEAKERS. Turns the built-in speakers on or off.

REAR AUDIO OUT. Changes the audio output options for the RPTV.

FIXED: Bypasses your RPTV's internal sound controls.

VARIABLE: Adjusts the type of output your RPTV sends to the internal speakers or the audio output jack.

SUB HEADPHONE VOL. Adjusts the volume to the sub-picture headphones jack.

EFFECT. Adds simulated audio effects. Switch between BBE, SRS, VIVAHD3D, EALA, and STEREO.

PARENTAL CONTROLS

BACK: **EXIT**

ACCESS CODE. A password is required to open the PARENTAL CONTROLS menu. You need the remote control to use this option.

SPECIAL FEATURES

MOVE : ▲▼ SELECT : **OK** CHANGE: ◀▶ BACK : **EXIT**

OSD H POSITION. Adjusts the horizontal position of the OSD within the display image.

OSD V POSITION. Adjusts the vertical position of the OSD within the display image.

OSD TIMEOUT. Specifies the number of seconds the OSD menu is displayed before it turns off automatically.

COLOR TEMPERATURE. Adjusts the color temperature to three preset modes. Select COOL, NEUTRAL, or WARM.

LANGUAGE. Changes the language of the OSD menu. Select ENGLISH, FRENCH, or SPANISH.

SYSTEM INFO. Displays current system information.

RESET ALL SETTINGS. Resets all settings, except the parental controls and lamp timer, to the factory defaults.

RESET LAMP TIMER. Resets the lamp timer after replacing the projection lamp.

SLEEP TIMER. Turns sleep timer on and off and selects the number of minutes the RPTV waits before it automatically turns off. You can specify 30, 60, 90, or 120

■ Maintenance and Troubleshooting

Read this chapter to learn how to maintain and troubleshoot your Micro Chip Display Projection TV.

- Cleaning and maintenance
- Status LEDs
- Troubleshooting
- Preset Timing Chart & Reference Timing Table
- Support
- Notice

■ **Cleaning and Maintenance**

■ **Cleaning the Screen**

- Do not use substances such as glass cleaners, solvents, and thinners.
- The screen of your RPTV has been specially treated. Wipe the surface gently using only a cleaning cloth or a soft, lint-free cloth.
- If the surface is particularly dirty, use a soft cloth and water to clean the screen. Squirt a little water on the cloth (never directly on the screen), then wipe the screen with the cloth.

Warning



The screen of your RPTV is made of specially coated plastic and can be scratched or damaged by abrasive or ammonia-based window cleaners. Scratches on the bezel or screen are not covered by your warranty.

- Do not scratch or hit the surface of the screen with your fingers or any hard objects.

■ **Cleaning the Exterior**

- Your Micro Chip Display Projection TV is cooled by air circulated through the vents on the case, so keep the vents free of dust. With your Micro Chip Display Projection TV turned off and unplugged, brush the dust away from the vents with a damp cloth. Be careful not to drip any water into the vents. Do not attempt to clean dust from the inside of your Micro Chip Display Projection TV.
- Do not use abrasive or solvent cleaners because they can damage the finish on components.
- Do not allow any excessive water or moisture to come into contact with the surface of your Micro Chip Display Projection TV. If water or moisture gets inside your Micro Chip Display Projection TV, operating problems and electrical and shock hazards may result.
- Do not scratch or hit the cabinet with your fingers or any hard objects.
- Do not place articles made from rubber or PVC near the cabinet for any extended periods of time.

■ Replacing the Filter

There is a replaceable filter in the back of your Micro Chip Display Projection TV. The filter prevents dust build-up and assures good ventilation for the lamp.

Warning



Do not operate your Micro Chip Display Projection TV without a filter. Check the filter every six months and replace as necessary to prevent heat damage.

► To replace the filter :

- 1 Remove the two filter access panel screws, then remove the access panel.

Screws



- 2 Remove the old filter and insert a new one using the four tabs to hold the filter in place.



- 3 Replace the filter access panel and secure it with the two screws.



■ Replacing the Lamp

You should replace the lamp in the RPTV approximately every 6000 hours to maintain the best possible display image. Do not use a lamp past the rated lamp life.

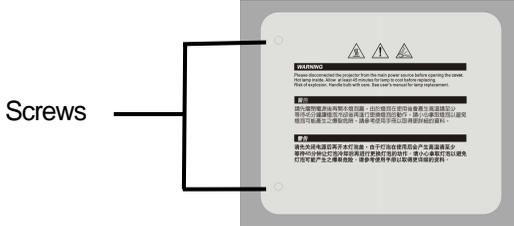
Warning



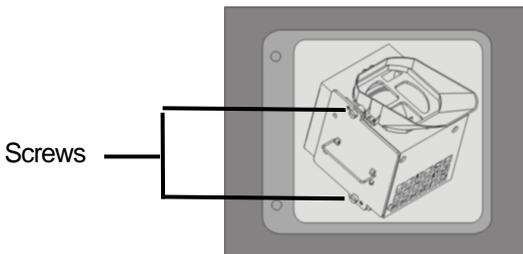
The high-pressure lamp may explode if handled incorrectly. Make sure that your Micro Chip Display Projection TV is turned off, power is disconnected, and the lamp is completely cool (minimum of 45 minutes) before replacing the lamp.

► To replace the lamp :

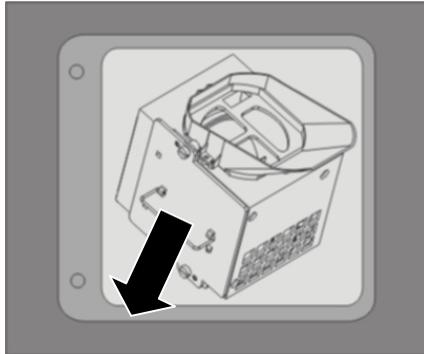
- 1 Turn off your Micro Chip Display Projection TV.
- 2 Disconnect the power cord and all other external cables.
- 3 Let the lamp cool completely (approximately 45 minutes).
- 4 Remove the two lamp access panel screws, then remove the access panel.



- 5 Remove the two lamp module retaining screws.



- 6 Use the lamp removal handle to lift the lamp module straight out of the lamp bay.



- 7 Replace the lamp in the lamp module, then insert the lamp module back into the lamp bay.

Caution



Make sure that you do not touch the lamp. The oils from your hands can cause the lamp to fail prematurely.

- 8 Replace the two lamp module retaining screws.

Important



Make sure that the screws are fastened securely to make sure that the lamp will not shake.

Safety discard the used lamp.

- 9 Replace the lamp bay access panel, then replace the two access panel screws.
- 10 Connect the power cable and all external cables.



■ Status LEDs

There are two status LEDs on the front of your Micro Chip Display Projection TV.

■ Normal Operation

State	Power LED	Lamp LED	Description
AC off	Not lit	Not lit	AC power not connected
Standby mode	Orange	Not lit	AC power is connected and your RPTV is in standby mode.
Warm-up	Blue	Orange Flashing	AC power is connected and the power button has just been turned on.
Cool down	Orange	Orange Flashing	Powering off.
Operation mode	Blue	Not lit	AC power is connected, the power button has been pressed, and the lamp has warmed up.

■ Error Codes

Error Code	Power LED	Lamp LED	Description
21	Flashes blue twice, then orange once.	Not lit	One of the cooling fans has failed. See "Support" on page 49.
32	Flashes blue three times, then orange twice.	Flashing	Lamp trouble or failure. Your RPTV automatically shut down and restart itself. If this does not solve the problem, see "Support" on page 49.
52	Flashes blue five times, then orange twice.	Not lit	Hardware error. Shut off your RPTV, wait one minute, then restart your RPTV. If this does not solve the problem, see "Support" on page 49.

■ Troubleshooting

Use the following information to solve common problems.

You cannot see a picture

- Make sure that the power cord is plugged into a grounded electrical outlet.
- Make sure that the power button is turned on.
- Look in the left air vent to see if the lamp is on.
- Make sure that the selected input source is connected to a working input source.
- If your RPTV is connected to your computer in RGB mode, press any key on your keyboard to “wake” your computer.

You see a distorted picture or hear unusual sound

- You may be getting interference from electrical appliances, cars, motorcycles, or fluorescent lights. Try moving your RPTV to another location.

The color is abnormal

- Make sure that the input source cable is connected securely and correctly to the back of your RPTV.

The picture has abnormal patterns

- Make sure that the input source cable is attached securely and correctly to the back of your RPTV.
- Make sure that the video input source is within the range of your RPTV. Compare the video input source’s specifications with your RPTV specifications.

The display image does not cover the entire screen

- If you are using TV, AV1, AV2, or component with 480i input, use the SCREEN WIDTH or WIDE button on the remote control to scroll through various screen modes.

You can see a picture but you cannot hear sound

- Make sure that the volume is not turned down.
- Make sure that the sound is not muted.
- Make sure that the internal speakers are turned on.
- Make sure that your audio input source cables are connected securely and correctly.

The monitor has pixels that are always dark

- Your RPTV is manufactured using an extremely high level of precision technology. However, sometimes some pixels of your RPTV may not display. Pixel defects within industry specifications are inherent to this type of product and do not constitute a defective product..

You see “noise” or “trash” on the screen

- When your RPTV's digital capabilities exceed a digital broadcast signal, the signal is up-converted (increased) to match your RPTV's display capabilities. Up-converting can cause noise or trash.

Screen brightness is diminished

- Video display devices experience degradation of brightness over the life of the device. Normal brightness degradation is not covered by your warranty.

■ Preset Timing Chart & Reference Timing Table

Model no.	1	2	3	4	5	6	7
Model name	EGA/70	EGA/85	VGA	VGA	VGA	VGA	VESA
Horizontal dots	640	640	640	640	640	640	800
Vertical lines	350	350	480	480	480	480	600
Pixel clock (mhz)	25.175	31.5	25.175	31.5	31.50	36	36
Horizontal freq (khz)	31.469	37.861	31.469	37.861	37.5	43.269	35.156
Sync. Polarity	+	+	-	-	-	-	+
A h.total (us) (pixels)	31.778 (800)	(832)	31.778 (800)	832	26.667 (840)	23.111 (832)	1024
B h.sync (us)(pixels)	3.813 (96)	(64)	3.813 (96)	40	2.032 (64)	1.556 (56)	72
C h.back porch (us) (pixels)	1.907 (48)	(96)	1.907 (48)	128	3.810 (120)	2.222 (80)	128
D h.active (us) (pixels)	25.422 (640)	(640)	25.422 (640)	640	20.317 (640)	17.778 (640)	800
E h.front porch (us) (pixels)	(16)	(32)	0.318 (16)	24	0.508 (16)	1.556 (56)	24
Vertical freq (hz)	70.087	85.08	59.94	72.809	75	85.008	56.25
Sync. Polarity	-	-	-	-	-	-	+
O v.total (ms) (lines)	14.268 (449)	(445)	16.684 (525)	520	13.333 (500)	11.764 (509)	625
P v.sync (ms) (lines)	0.064 (2)	(3)	0.064 (2)	3	0.080 (3)	0.069 (3)	2
Q v.back porch (ms) (lines)	1.112 (60)	(60)	1.048 (33)	28	0.427 (16)	0.578 (25)	22
R v.active (ms) (lines)	11.122 (350)	(350)	15.254 (480)	480	12.800 (480)	11.093 (480)	600
S v.front porch (ms) (lines)	0.222 (37)	(32)	0.318 (10)	9	0.027 (1)	0.023 (1)	1

Model no.	8	9	10	11	12	13
Model name	VESA 800x600	VESA 800x600	VESA 800x600	VESA 800x600	VESA 1024x768	VESA 1024x768
Horizontal dots	800	800	800	800	1024	1024
Vertical lines	600	600	600	600	768	768
Pixel clock (mhz)	40.00	50.00	49.500	56.250	65.00	75.00
Horizontal freq (khz)	37.879	48.077	46.875	53.674	48.363	56.476
Sync. Polarity	+	+	+	+	-	-
A h.total (us)(pixels)	26.400 (1056)	20.800 (1040)	21.333 (1056)	18.631 (1048)	20.677 (1344)	17.707 (1328)
B h.sync (us)(pixels)	3.2 (128)	2.400 (120)	1.616 (80)	1.138 (64)	2.092 (136)	1.813 (136)
C h.back porch(us) (pixels)	2.20 (88)	1.280 (64)	3.232 (160)	2.702 (152)	2.462 (160)	1.920 (144)
D h.active (us)(pixels)	20.000 (800)	16.000 (800)	16.162 (800)	14.222 (800)	15.754 (1024)	13.653 (1024)
E h.front porch(us) (pixels)	1.000 (40)	1.120 (56)	0.323 (16)	0.569 (32)	0.369 (24)	0.320 (24)
Vertical freq (hz)	60.317	72.188	75.00	85.061	60	70.069
Sync. Polarity	+	+	+	+	-	-
O v.total (ms)(lines)	16.579 (628)	13.853 (666)	13.333 (625)	11.756 (631)	16.666 (806)	14.272 (806)
P v.sync (ms)(lines)	0.106 (4)	0.125 (6)	0.064 (3)	0.056 (3)	0.124 (6)	0.106 (6)
Q v.back porch (ms) (lines)	0.607 (23)	0.478 (23)	0.448 (21)	0.503 (27)	0.600 (29)	0.513 (29)
R v.active (ms)(lines)	15.840 (600)	12.480 (600)	12.800 (600)	11.179 (600)	15.880 (768)	13.599 (768)
S v.front porch (ms)(lines)	0.026 (1)	0.770 (37)	0.021 (1)	0.019 (1)	0.062 (3)	0.053 (3)

Model no.	14	15	16	17	18	19
Model name	VESA 1024x 768	Dos/70 720x 400	Dos/85 720x 400	480p 720x 480	720p 1280x 720	1080i 1920x 1080
Horizontal dots	1024	720	720	720	1280	1920
Vertical lines	768	400	400	480(p)	720(p)	1080(i)
Pixel clock (mhz)	78.75	28.327	35.5	27.00	74.25	74.25
Horizontal freq(khz)	60.023	31.468	37.927	31.468	45.00	33.75
Sync. Polarity	+	-	-	-	-	-
A h.total (us)(pixels)	16.660 (1312)	900	936	31.7 (856)	22.222 (1648)	(2200)
B h.sync (us)(pixels)	1.219 (96)	108	36	2.37 (64)	0.54 (40)	(44)
C h.back porch(us) (pixels)	2.235 (176)	54	144	2.07 (56)	3.636 (270)	(192)
D h.active (us)(pixels)	13.003 (1024)	(720)	(720)	26.67 (720)	17.24 (1280)	
E h.front porch(us) (pixels)	0.203 (16)	18	36			
Vertical freq (hz)	75.029	70.077	85.039	60.0	60.00	30
Sync. Polarity	+	+	+	-		
O v.total (ms)(lines)	13.328 (800)	449	446	16.644 (525)	16.667 (750)	(562.5)
P v.sync (ms)(lines)	0.050 (3)	2	3	0.190 (6.0)	0.111 (5.0)	(5.0)
Q v.back porch (ms) (lines)	0.466 (28)	34	42	0.951 (30)	0.444 (20)	(15)
R v.active (ms)(lines)	12.795 (768)	(400)	(400)	(480)	(720)	(1080)
S v.front porch (ms)(lines)	0.017 (1)	13	1		5	

■ Support

If this troubleshooting information does not resolve your problem or if you have other questions relating to you Micro Chip Display Projection TV, visit www.vivitek.us You can also call our Service Center at 1-877-603-3582.

Safety, Regulatory, and Legal Information A

Regulatory compliance statements

United States of America

Federal Communications Commission (FCC)

Unintentional emitter per FCC Part 15

This device 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 radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, with can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures :

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

Compliance Accessories: The accessories associated with this equipment are: shielded video cable when an external monitor is connected. These accessories are required to be used in order to ensure compliance with FCC rules.

FCC declaration of conformity

Responsible party :

Vivitek Corp. 48017 Fremont Blvd. Fremont , CA94538

Toll Free : 1-877-603-3582

Product :

- VIVITEK - RPHD21 RP TV

This device complies with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution



Change or modifications not expressly approved by Vivitek could void the FCC compliance and negate Your authority to operate the product.

Canada

Industry Canada (IC)

Unintentional emitter per ICES-003

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Class B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Power lines

Do not locate the antenna near overhead light or power circuits, or where it could fall into such power lines or circuits.

Warning When installing or realigning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.

Reference	Grounding component
1	Electric service equipment
2	Power service grounding electrode system (NEC Art 250, Part H)
3	Ground clamps
4	Grounding conductors (NEC Section 810-21)
5	Antenna discharge unit (NEC Section 810-20)
6	Ground clamp
7	Antenna lead-in wire

■ Notice

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Vivitek Corp.
8017 Fremont Blvd.
Fremont , CA94538
Toll Free : 1-877-603-3582

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In the interest of continued product development, Vivitek reserves the right to make improvements in this manual and the products it describes at any time, without notices or obligation.

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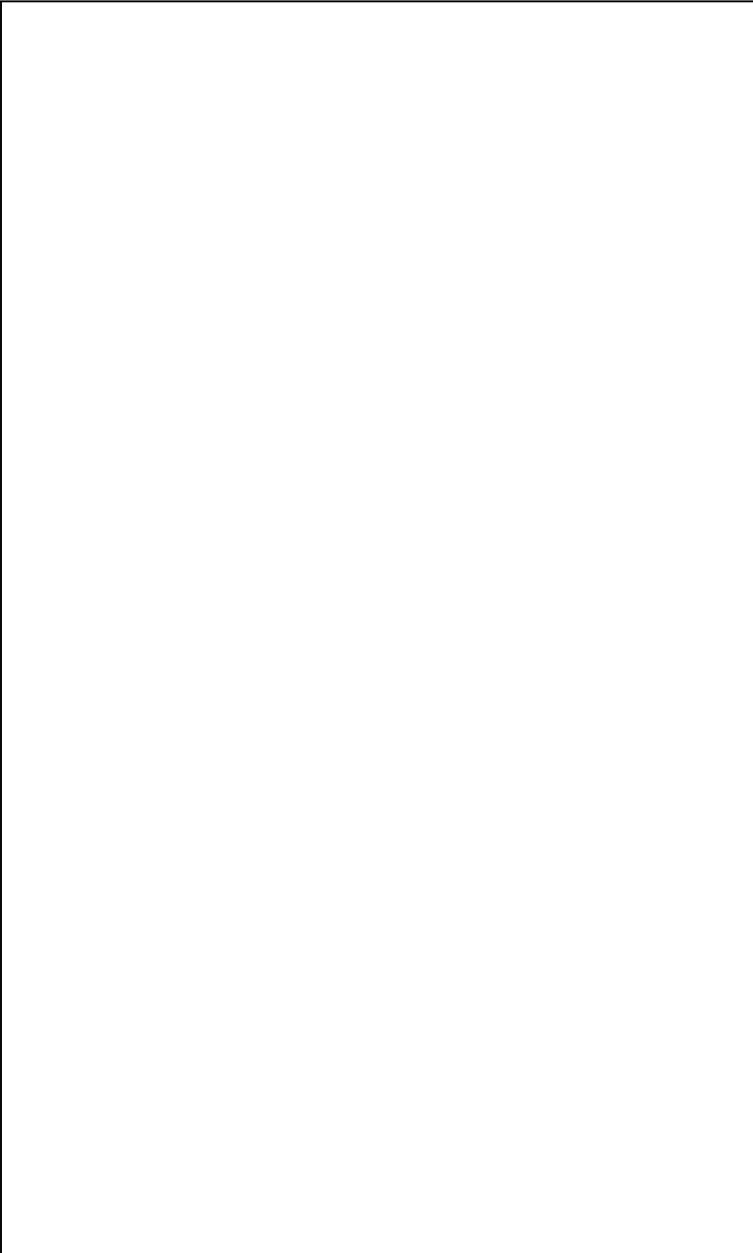
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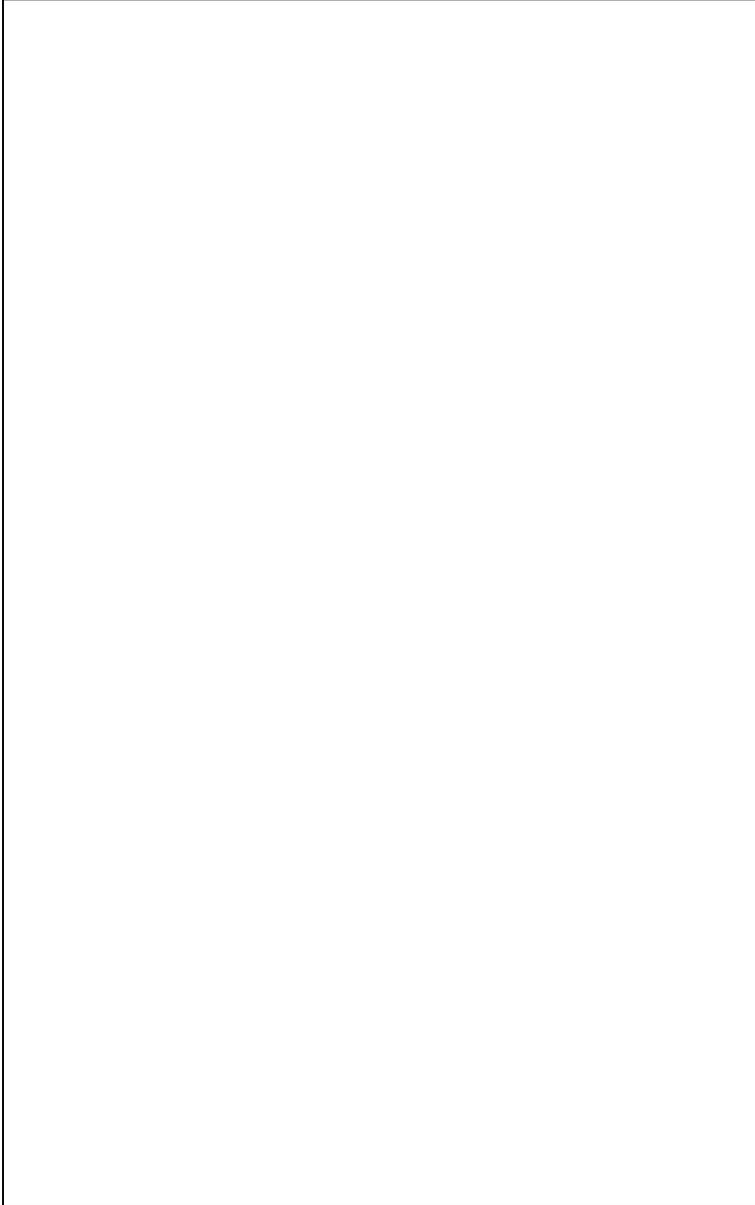
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NOTE





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